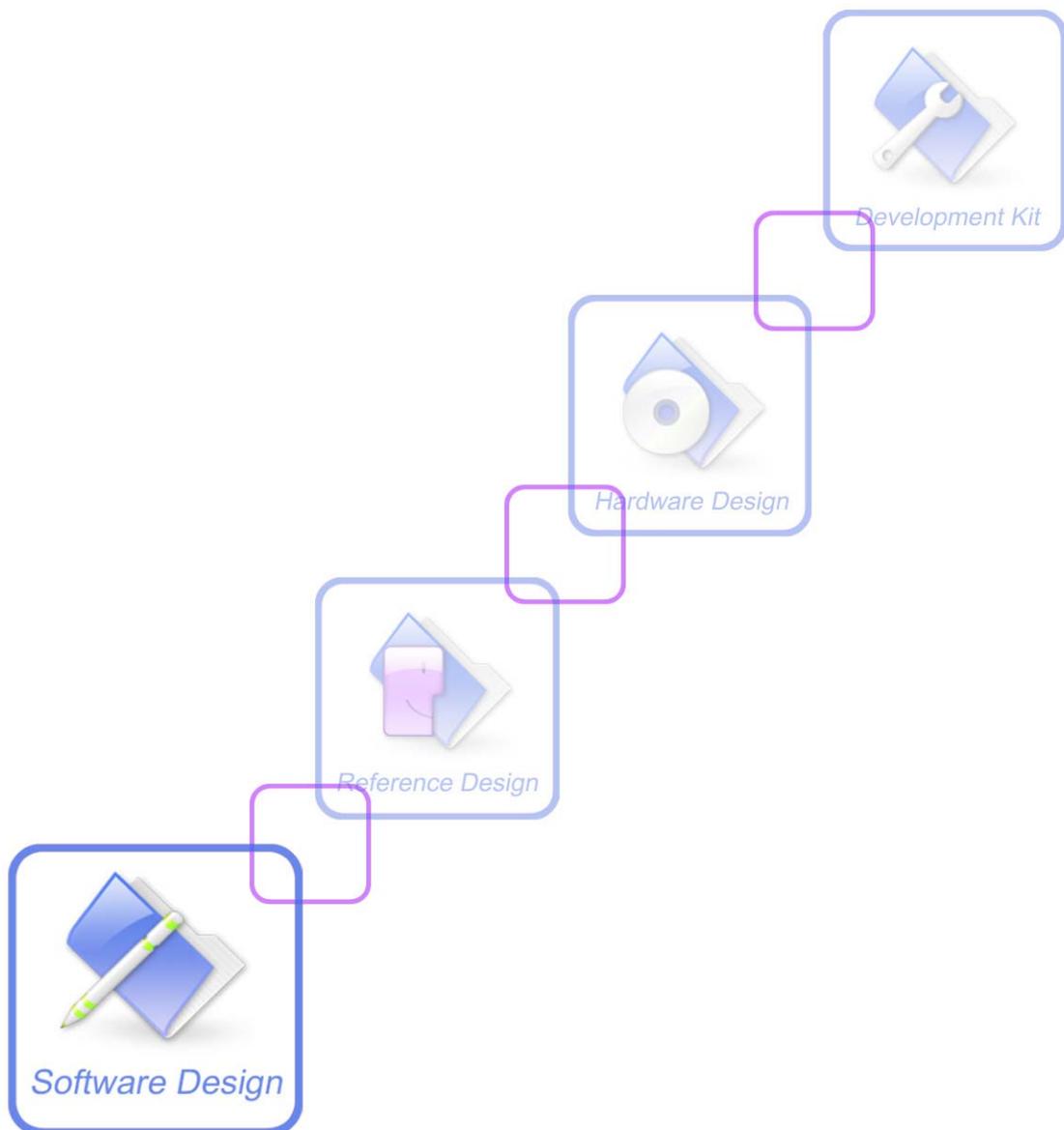




# AT Command Set

## SIM5215\_SIM5216\_ATC\_V1.21



<b>Document Title:</b>	SIM5215_SIM5216 AT Command Set
<b>Version:</b>	1.21
<b>Date:</b>	2012-08-14
<b>Status:</b>	Release
<b>Document ID:</b>	SIM5215_SIM5216_ATC_V1.21

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## Version History

Version	Chapter	Comments
V1.00	New Version	
V1.01	4.18 AT+VTS	Modify the command
	4.30 AT+CPCMFMT	Add this command
	4.31 AT+CPCMREG	Add this command
	4.32 AT+VTD	Add this command
	9.18 AT+CNMP	Modify the command
	10.16 AT+CSIMLOCK	Add this command
	10.17 AT+DSWITCH	Add this command
	13.6 AT+CEMNLIST	Add this command
V1.02	5.9 AT+VPQLTY	Add this command
	10.7 AT+AUTOCSQ	Add the parameter <mode>
	10.15 AT+SIMEI	Modify the description of <imei>
	12.24 AT+CCGSWT	Add this command
	15.1 AT+CTXFILE	Add the parameter <protocol>
V1.03	4.21 AT+CMIC	Remove AT+CMIC command
	5.6 AT+VPRECORD	Modify 9000 to 54000 frames
	10.18 AT+CPASSMGR	Add this command
	10.19 AT+CPLMNWLIST	Add this command
	12.25 AT+CPMVT	Add this command
	12.26 AT+CUSBSPD	Add this command
	12.27 AT+CCAMMD	Add this command
	13.6 AT+CEMNLIST	Modify CMENLIST to CEMNLIST
15.1 AT+CTXFILE	Modify description of AT+CTXFILE=?	
V1.04	9.1 AT+CREG	Add AT+CREG=2 description
	11.5 AT+SPIC	Add this command
	12.16 AT+CADC	Modify the parameter from 0-1 to 0-2
V1.06	3.1 ATI	Add the description of <ES>
	3.8 AT+GCAP	Add the description of <ES>
	3.11 AT+CFGRI	Add this command
	4.6 ATD<str>	Modify the description of <str>
	4.8 +++	Modify the description of this command
	4.9 ATO	Modify the description of this command
	4.11 ATH	Modify the description of this command
	5.9 AT+VPQLTY	Modify the command
	6.10 AT+CMGL	Modify the description of <index>
	6.11 AT+CMGR	Modify the description of <index>
	6.13 AT+CMSS	Modify the description of <index>
	6.14 AT+CMGW	Modify the description of <index>

	6.15	AT+CMGD	Modify the description of <index>
	6.18	AT+CMGMT	Modify the description of <index>
	6.20	AT+CMGWO	Modify the description of <index>
	7.16	AT+CCAMMD	Modify this command
	9.2	AT+COPS	Modify the description of <mode>
	9.22	AT+CPSI	Modify the command
	9.29	AT+CRUS	Modify the command
	9.30	AT+CPLMNWLST	Add the command
	9.31	AT+CPASSMGR	Add the command
	10.1	+CME ERROR	Modify the description of <err>
	11.6	AT+CSPN	Add the command
	12.7	AT+CVALARM	Modify the command
	12.25	AT+CPMVT	Modify the command
	12.26	AT+CUSBSPD	Modify the command
	12.25	AT+CBC	Modify the command
	13.5	AT+CPBW	Modify the description of <number>
	16.4	AT+IFC	Modify the command
	16.5	AT&C	Modify the command
	17.1	AT+CGDCONT	Modify the description of this command
	17.2	AT+CGQREQ	Modify the description of this command
	17.4	AT+CGQMIN	Modify the description of this command
	17.12	AT+CGREG	Modify the command
	18.1	AT+CGSOCKCONT	Modify the description of this command
	18.6	AT+TCPCONNECT	Modify the description of <server_IP>
	18.8	AT+UDPSEND	Modify the description of <IP_address>
	18.17	AT+CIOPEN	Modify the description of <serverIP>
	18.20	AT+CDNSGIP	Add this command
V1.07	10.4	AT+CFUN	Modify the description of this command
V1.08	10.8	AT+ CAPWRON	Modify the description of this command
V1.09	4.1	AT+CSTA	Modify this command
	4.32	AT+CSSN	Add this command
	5.3	AT+VPEND	Modify the description of this command
	9.5	AT+CLIP	Modify this command
	9.15	AT+CLCC	Modify this command
	9.30	AT+CPLMNWLST	Remove this command
	9.31	AT+CPASSMGR	Remove this command
	10.20	AT+CNVW	Add this command
	10.21	AT+CNVR	Add this command
	10.22	AT+CDELTA	Add this command
	12.28	AT+CUSBMSS	Add this command
	13.2	AT+CPBS	Modify this command
	13.5	AT+CPBW	Modify this command

	14.8	AT+FSMEM	Modify this command
	17.1	AT+CGDCONT	Modify the description of this command
	18.1	AT+CGSOCKCONT	Modify the description of this command
V1.10	3.1	ATI	Modify the examples of this command
	3.4	AT+CGMR	Modify the examples of this command
	4.12	AT+CHUP	Modify description of this command
	4.34	AT+CPCMSLOT	Add the command
	6.23	AT+CMGSEX	Add the command
	6.24	AT+CMGENREF	Add the command
	7.17	AT+CCAMCHL	Add the command
	8.9	AT+CECM	Add the command
	8.10	AT+CNSM	Add this command
	9.2	AT+COPS	Modify the description of this command
	9.15	AT+CLCC	Modify the defined value of <type>
	9.30	AT+CPLMNWLST	Add the command
	9.31	AT+CPASSMGR	Add the command
	9.32	AT+CNSVSQ	Add this command
	9.33	AT+CNSVS	Add this command
	9.34	AT+CNSVN	Add this command
	9.35	AT+CNSVUS	Add this command
	9.36	AT+CNSVUN	Add this command
	10.20	AT+CDELTA	Modify the defined value of <delta_package>
	12.21	AT+CSUART	Modify the syntax of this command.
	12.26	AT+CDTRISRMD	Add this command
	12.27	AT+CDTRISRS	Add this command
	16.9	AT&S	Add this command
	18.16	AT+CIPCCFG	Modify the description of this command
	18.22	AT+CIPMODE	Add this command
	20.1.1	AT+SMTPSRV	Add this command
	20.1.2	AT+SMTPAUTH	Add this command
	20.1.3	AT+SMTPFROM	Add this command
	20.1.4	AT+SMTPRCPT	Add this command
	20.1.5	AT+SMTPSUB	Add this command
	20.1.6	AT+SMTPBODY	Add this command
	21.1.7	AT+SMTPFILE	Add this command
	20.1.8	AT+SMTPSEND	Add this command
	21.1.9	AT+SMTPSTOP	Add this command
	20.2.1	AT+POP3SRV	Add this command
	20.2.2	AT+POP3IN	Add this command
	20.2.3	AT+POP3NUM	Add this command
	20.2.4	AT+POP3LIST	Add this command
	20.2.5	AT+POP3HDR	Add this command

20.2.6	AT+POP3GET	Add this command
20.2.7	AT+POP3DEL	Add this command
20.2.8	AT+POP3OUT	Add this command
20.2.9	AT+POP3STOP	Add this command
20.2.10	AT+POP3READ	Add this command
20.3.1	AT+CFTPPORT	Add this command
20.3.2	AT+CFTPMODE	Add this command
20.3.3	AT+CFTPTYPE	Add this command
20.3.4	AT+CFTPSEV	Add this command
20.3.5	AT+CFTPUN	Add this command
20.3.6	AT+CFTPPW	Add this command
20.3.7	AT+CFTPGETFILE	Add this command
20.3.8	AT+CFTPPUTFILE	Add this command
20.3.9	AT+CFTPGET	Add this command
20.3.10	AT+CFTPPUT	Add this command
20.4.1	AT+CHTTPACT	Add this command
20.5.1	AT+CHTTPSSTART	Add this command
20.5.2	AT+CHTTPSSTOP	Add this command
20.5.3	AT+CHTTPSOPSE	Add this command
20.5.4	AT+CHTTPSCLSE	Add this command
20.5.5	AT+CHTTPSEND	Add this command
20.5.6	AT+CHTTPSRECV	Add this command
20.6.1	AT+CFTPSSTART	Add this command
20.6.2	AT+CFTPSSTOP	Add this command
20.6.3	AT+CFTPSLOGIN	Add this command
20.6.4	AT+CFTPSLOGOUT	Add this command
20.6.5	AT+CFTPSMKD	Add this command
20.6.6	AT+CFTPSRMD	Add this command
20.6.7	AT+CFTPSDEL	Add this command
20.6.8	AT+CFTPSCWD	Add this command
20.6.9	AT+CFTPSPWD	Add this command
20.6.10	AT+CFTPSTYPE	Add this command
20.6.11	AT+CFTPSLIST	Add this command
20.6.12	AT+CFTPSGETFILE	Add this command
20.6.13	AT+CFTPSPUTFILE	Add this command
20.6.14	AT+CFTPSGET	Add this command
20.6.15	AT+CFTPSPUT	Add this command
20.6.16	AT+CFTPSSINGLEIP	Add this command
20.6.17	FTPS codes	Add description of FTPS codes
21.1	AT+CMMSURL	Add this command
21.2	AT+CMMSPROTO	Add this command
21.3	AT+CMMSSENDCFG	Add this command
21.4	AT+CMMSEDIT	Add this command

	21.5 AT+CMMSDOWN	Add this command
	21.6 AT+CMMSDELFILE	Add this command
	21.7 AT+CMMSSEND	Add this command
	21.8 AT+CMMSRECP	Add this command
	21.9 AT+CMMSCC	Add this command
	21.10 AT+CMMSBCC	Add this command
	21.11 AT+CMMSDELRECP	Add this command
	21.12 AT+CMMSDELCC	Add this command
	21.13 AT+CMMSDELBCC	Add this command
	21.14 AT+CMMSRECV	Add this command
	21.15 AT+CMMSVIEW	Add this command
	21.16 AT+CMMSREAD	Add this command
	21.17 AT+CMSSNATCH	Add this command
	21.18 AT+CMMSSAVE	Add this command
	21.19 AT+CMMSDELETE	Add this command
	21.20 AT+CMSSYSSET	Add this command
	21.21 AT+CMMSINCLN	Add this command
	22.1 AT+CSCRIPTSTART	Add this command
	22.2 AT+CSCRIPTSTOP	Add this command
	22.3 AT+CSCRIPTCL	Add this command
	22.4 AT+CSCRIPTPASS	Add this command
	22.5 AT+CSCRIPTCMD	Add this command
V1.11	12.27 AT+CDTRISRS	Modify the description of this command
	12.28 AT+CGFUNC	Add this command
	20.6 FTPS related commands	Add description for FTPS related AT commands
	20.6.7 AT+CFTPSDELE	Modify AT+CFTPSDEL to AT+CFTPSDELE
	21.5 AT+CMMSDOWN	Modify description of this command
	21.20 AT+CMSSYSSET	Modify description of this command
V1.12	8.9 AT+CECM	Modify description of this command
	8.10 AT+CNSM	Modify description of this command
	8.11 AT+CECSET	Add this command
	9.30 AT+CPLMNWLST	Modify description of this command
	9.31 AT+CPASSMGR	Modify description of this command
	18.3 AT+CSOCKAUTH	Modify description of this command
	18.19 AT+CIPCLOSE	Modify description of this command
	20.3.11 AT+CFTPLIST	Add this command
	20.7.1 AT+CHTPSERV	Add this command
	20.7.2 AT+CHTPUPDATE	Add this command
	21.14 AT+CMMSRECV	Modify description of this command
	21.20 AT+CMSSYSSET	Modify description of this command
	22.4 AT+CSCRIPTPASS	Modify description of this command
V1.13	4.33 AT+CSSN	Remove this command

	5.4 AT+VPDTMF	Modify the description of this command
	5.5 AT+VPSOURCE	Modify the <src> value of this command
	6.8 AT+CNMA	Modify the description of this command
	6.23 AT+CMGSEX	Modify the description of this command
	7.16 AT+CCAMMD	Modify the description of this command
	8.1 AT+CQCPREC	Modify the responses description of this command
	8.4 AT+CQCPSTOP	Modify the responses description of this command
	8.5 AT+CCMXPLAY	Modify the responses and description of this command
	8.6 AT+CCMXPAUSE	Modify the responses description of this command
	8.7 AT+CCMXRESUME	Modify the responses description of this command
	8.8 AT+CCMXSTOP	Modify the responses description of this command
	9.4 AT+CPWD	Modify the responses description of this command
	9.13 AT+CAOC	Modify the defined values<fac> of this command
	9.16 AT+CPOL	Modify the responses of write command
	9.26 AT+CCINFO	Modify the description of this command
	9.32 AT+CNSVSQ	Modify the defined values of this command
	9.33 AT+CNSVS	Modify the responses of execution command
	9.34 AT+CNSVN	Modify the responses of execution command
	12.18 AT+CVLVL	Modify the responses of this command
	12.30 AT+CUSBSPD	Modify the responses of write command
	15.1 AT+CTXFILE	Add this command
	15.2 AT+CRXFILE	Modify the responses of test command
	13.6 AT+CEMNLIST	Modify the responses of test command
	11.4 AT+CSIMSEL	Modify the responses of execution command
	14 FileSystem Related Commands	Remove this command
	16.10 ATV	Modify the description of this section
	17.3 AT+CGEQREQ	Add this command
	17.5 AT+CGEQMIN	Modify the responses of execution command
	18.3 AT+CSOCKAUTH	Modify the responses of execution command
	19.1 AT+STIN	Modify the description of this command
	20.1.6 AT+SMTPBODY	Modify the description of this command
	20.6.15 AT+CFTSPUT	Modify the description of this command
	20.7.1 AT+CHTSPERV	Modify the description of this command
	21 MMS Commands	Modify the description of this command
	22.6 AT+PRINTDIR	Add the description of this section
	23 Result codes	Add this command
	24.2.2 TCP client	Add this section
		Modify the description of this command
V1.14	4.3 ATD	Add note for Defined value <;> of this command
	4.23 AT+AUTOANSWER	Modify this command
	6.16 AT+CSMP	Modify the write command of this command
	6.22 AT+CMGW0	Modify parameter< toda> range of this command

	7.18 AT+CCAMSETPN	Add this command
	8.5 AT+CCMXPLAY	Modify the description of this command
	9.4 AT+CPWD	Modify examples of this command
	9.15 AT+CLCC	Modify <stat> value of this command
	9.16 AT+CPOL	Modify write command of this command
	9.26 AT+CCINFO	Add <TA> parameter of this command
	10.7 AT+AUTOCSQ	Modify this command
	12.31 AT+CADCI	Add this command
	13.6 AT+CEMNLIST	Modify the description of this command
	14.5 AT+FSDEL	Modify this command
	14.11 AT+FSCOPY	Add this command
	15.1 AT+CTXFILE	Modify the description of this command
	15.3 AT+CMWAIT	Add this command
	16.11 AT&F	Add this command
	18.7 AT+TCPWRITE	Modify this command
	18.8 AT+UDPSEND	Modify this command
	18.9 AT+SERVERSTART	Modify the description of this command
	18.17 AT+CIOPEN	Modify the write command of this command
	18.18 AT+CIPSEND	Modify this command
	18.22 AT+CIPSTAT	Modify this command
	18.23 information about TCP	Modify the description
	20.1.3 AT+SMTPFROM	Modify this command
	20.2.4 AT+POP3LIST	Modify this command
	20.2.6 AT+POP3GET	Modify the description of this command
	20.6.3 AT+CFTPSLOGIN	Modify this command
	20.6.11 AT+CFTPSLIST	Modify the description of this command
	20.6.16 AT+CFTPSSINGLEIP	Modify the description of this command
	23.2Response string of AT+CEER	Add this section
	24.2.2 TCP client	Modify this section
	4.21 AT+CMIC	Remove this command
	4.26 AT+CSDVC	Modify the description of this command
	12.17 AT+CMICAMP1	Modify the description of this command
	21.18 AT+CMMSSAVE	Modify write command of this command
	9.16 AT+CPOL	Modify this command
	13.5 AT+CPBW	Modify this command
V1.15	4.3 ATD	Modify the description of this command
	4.22 AT+AUTOANSWER	Modify the description of this command
	4.26 AT+CSDVC	Modify this command
	5.1 AT+VPMAKE	Modify this command
	6.15 AT+CMGD	Modify the description of this command
	8.11 AT+CECSET	Modify this command
	9.15 AT+CLCC	Modify this command

	12.8 AT+CRIIC	Modify this command
	12.22 AT+CMUX	Add this command
	12.23 AT+CMUXSRVPORT	Add this command
	12.25 AT+CBC	Modify this command
	12.31 AT+CADCI	Modify the examples of this command
	12.32 AT+CAPWRON	Add this command
	12.33 AT+CAPWROFF	Add this command
	15.3 AT+CMWAIT	Modify this command
	15.4 AT+CGEQREQ	Modify this command
	15.5 AT+CGEQMIN	Modify this command
	17.14 AT+CGAUTH	Modify the examples of this command
V1.16	3.9 AT+CATR	Modify <port> value of this command
	4.3 ATD	Modify the description of this command
	6.10 AT+CMGL	Modify <todo> value of this command
	6.11 AT+CMGR	Modify <todo> value of this command
	6.12 AT+CMGS	Modify <todo> value of this command
	6.13 AT+CMSS	Modify <todo> value of this command
	6.14 AT+CMGW	Modify <todo> value of this command
	6.21 AT+CMGSO	Modify <todo> value of this command
	6.23 AT+CMGSEX	Modify <todo> value of this command
	9.30 AT+CPLMNWLIST	Modify <plmnwlist> value of this command
	9.37 AT+CCGMDF	Add this command
	9.38 AT+CPLMNPASS	Add this command
	10.21 AT+CDIPR	Add this command
	10.22 AT+CUDIAG	Add this command
	11.3 AT+CRSM	Modify this command
	12.23 AT+CMUXSRVPORT	Modify this command
	12.36 AT+CBVTBP	Add this command
	18.17 AT+CIOPEN	Modify this command
	18.18 AT+CIPSEND	Modify this command
	18.21 AT+CDNSGHHNAME	Add this command
	23.1 AT+CSVM	Add this command
	23.2 Indication of Voice Mail	Add this command
	24.1 Indication of EONS	Add this command
	25.1 AT+COTADPHONENUMBER	Add this command
V1.17	4.19 AT+CLVL	Modify this command
	4.32 AT+CODEC	Add this command
	5.5 AT+VPSOURCE	Modify this command
	5.6 AT+VPRECORD	Modify this command
	6.23 AT+CMGSEX	Modify this command
	8.11 AT+CECSET	Modify this command
	9.10 AT+CCWA	Modify this command

	9.16 AT+CPOL	Modify this command
	9.22 AT+CPSI	Modify this command
	9.26 AT+CCINFO	Modify this command
	10.23 AT+CUDLOADS	Add this command
	12.16 AT+CGISR	Add this command
	12.18 AT+CVLVL	Modify this command
	12.22 AT+CMUX	Modify this command
	17.2 AT+CGDSCONT	Add this command
	17.3 AT+CGTFT	Add this command
	18.4 AT+CGSOCKQREQ	Add this command
	18.5 AT+CGSOCKEQREQ	Add this command
	18.6 AT+CGSOCKQMIN	Add this command
	18.7 AT+CGSOCKEQMIN	Add this command
	18.16 AT+CIPCCFG	Modify this command
	18.17 AT+CIOPEN	Modify this command
	18.18 AT+CIPSEND	Modify this command
	18.28 AT+CTCPFIN	Add this command
	20.1.8 AT+SMTPSEND	Modify this command
	20.2.6 AT+POP3GET	Modify this command
	20.3.10 AT+CFTPPUT	Modify this command
	20.4.1 AT+CHTTPACT	Modify this command
	21.7 AT+CMMSSEND	Modify this command
	25.1 AT+COTADPHONENUMBER	Modify this command
V1.18	4.33 AT+CVOC	MKBUG00000214
	7.9 AT+CCAMSETZ	Modify this command
	7.16 AT+CCAMMD	Modify this command
	8.1 AT+CQCPREC	Modify this command
	8.9 AT+CCMXSPEC	Add this command
	9.16 AT+CPOL	MKBUG00000110/MKBUG00000219
	9.22 AT+CPSI	MKBUG00000238
	9.39 AT*CNTI	Add this command
	10.11 AT+CPOF	bug10918
	10.23 AT+CUDLOADS	MKBUG00000242
	12.19 AT+CVLVL	Modify the note section
	12.38 AT+CRFOP	Add this command
	17.1 AT+CGDCONT	Modify the Example section
	18.1 AT+CGSOCKCONT	Modify the Example section
	18.20 AT+CIPCCFG	Modify write command section
	18.29 AT+CENDUPPDP	Add this command
	18.30 AT+CTCPKA	Add this command
	18.31 AT+CPING	Add this command
	18.32 AT+CPINGSTOP	Add this command

	18.33 AT+CTEUTP	Add this command
	18.34 AT+CUPURE	Add this command
	18.35 AT+CINICMPALLOW	Add this command
	19.4 AT+STK	Add this command
	20.2.1 AT+POP3SRV	bug10752
	20.2.2 AT+POP3IN	bug 10522
	20.2.6 AT+POP3GET	bug10759
	20.3.6 AT+CFTPPW	bug10872
	20.3.7 AT+CFTPGETFILE	Add field <rest_size>
	20.3.8 AT+CFTPPUTFILE	Add field <rest_size>
	20.3.9 AT+CFTPGET	Add field <rest_size>/ bug10871
	20.3.10 AT+CFTPPUT	Add field <rest_size>
	20.4.1 AT+CHTTPACT	MKBUG00000205
	20.7.1 AT+CHTTPSERV	MKBUG00000051
	21.2 AT+CMMSPROTO	Modify write command
	21.5 AT+CMMSDOWN	Modify this command
	21.7 AT+CMMSSEND	MKBUG00000239
	21.16 AT+CMMSREAD	Modify this command
	26.1 AT+CASSISTLOC	Add this command
	26.2 AT+ CASSISTLOCTRYTIMES	Add this command
	26.3 AT+ CASSISTLOCMODE	Add this command
V1.19	7.16 AT+CCAMMD	MKBUG00000630
	9.1 AT+CREG	MKBUG00000317
	12.13 AT+CGDRT	MKBUG00000715
	12.14 AT+CGSETV	MKBUG00000715
	12.31 AT+CGFUNC	MKBUG00000302
	13.4 AT+CPBF	MKBUG00000310
	17.14 AT+CGREG	MKBUG00000317
	18.9 AT+NETOPEN	MKBUG00000529
	18.13 AT+SERVERSTART	MKBUG00000529
	18.36 AT+TCPCLOSE	MKBUG00000529
	18.37 Information elements related to TCP/IP	Add +NETCLOSE: 1
	20.1.5 AT+SMTPSUB	MKBUG00000843
	20.1.7 AT+SMTPFILE	MKBUG00000843
	20.1.7 AT+SMTPBCH	Add this command
	21.7 AT+CMMSSEND	MKBUG00000601
	21.8 AT+CMMSRECP	MKBUG00000601
	21.9 AT+CMMSCC	MKBUG00000601
	21.10 AT+CMMSBCC	MKBUG00000601
	21.11 AT+CMMSDELRECP	MKBUG00000601
	21.12 AT+CMMSDELCC	MKBUG00000601
	21.13 AT+CMMSDELBCC	MKBUG00000601

	21.22 AT+CMMSUA	MKBUG00000564
	21.23 AT+CMMSPROFILE	MKBUG00000564
	23.1 AT+CSVM	MKBUG00000633
V1.20	8.10 AT+CCMXPLAYRING	Add this command
	10.16 AT+CSIMLOCK	Delete this command
	10.18 AT+CNVW	Delete this command
	10.19 AT+CNVR	Delete this command
	12.12 AT+CGPIO	Modify the description
	12.16 AT+CGISR	Modify the description
	12.24 AT+CMUXSRVPORT	MKBUG00000928
	15.1 AT+CTXFILE	MKBUG00001027
	15.2 AT+CRXFILE	MKBUG00001027
	18.11 AT+TCPWRITE	MKBUG00000312
	18.12 AT+UDPSEND	MKBUG00000312
	18.13 AT+SERVERSTART	MKBUG00000900
	18.27 AT+CIPSTAT	MKBUG00000358
	18.37 Information elements related to TCP/IP	MKBUG00000900
	20.1.7 AT+SMTPBCH	MKBUG00000985
	20.2.2 AT+POP3IN	MKBUG00000416
	20.2.3 AT+POP3NUM	MKBUG00000419
	20.2.6 AT+POP3GET	MKBUG00000420
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# 1 Introduction

## 1.1 Scope

The present document describes the AT Command Set for the SIMCom Module:

SIM5215&SIM5216

More information about the SIMCom Module which includes the Software Version information can be retrieved by the command [ATI](#). In this document, a short description, the syntax, the possible setting values and responses, and some examples of AT commands are presented.

Prior to using the Module, please read this document and the Version History to know the difference from the previous document.

In order to implement communication successfully between Customer Application and the Module, it is recommended to use the AT commands in this document, but not to use some commands which are not included in this document.

## 1.2 References

The present document is based on the following standards:

- [1] ETSI GSM 01.04: Abbreviations and acronyms.
- [2] 3GPP TS 27.005: Use of Data Terminal Equipment – Data Circuit terminating Equipment (DTE – DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS).
- [3] 3GPP TS 27.007: AT command set for User Equipment (UE).
- [4] WAP-224-WTP-20010710-a
- [5] WAP-230-WSP-20010705-a
- [6] WAP-209-MMSEncapsulation-20010601-a

## 1.3 Terms and abbreviations

For the purposes of the present document, the following abbreviations apply:

- AT            ATtention; the two-character abbreviation is used to start a command line to be sent from TE/DTE to TA/DCE
- CSD            Circuit Switched Data
- DCE            Data Communication Equipment; Data Circuit terminating Equipment
- DCS            Digital Cellular Network
- DTE            Data Terminal Equipment
- DTMF          Dual Tone Multi-Frequency
- EDGE          Enhanced Data GSM Environment

- EGPRS Enhanced General Packet Radio Service
- GPIO General–Purpose Input/Output
- GPRS General Packet Radio Service
- GSM Global System for Mobile communications
- HSDPA High Speed Downlink Packet Access
- HSUPA High Speed Uplink Packet Access
- I2C Inter–Integrated Circuit
- IMEI International Mobile station Equipment Identity
- IMSI International Mobile Subscriber Identity
- ME Mobile Equipment
- MO Mobile–Originated
- MS Mobile Station
- MT Mobile–Terminated; Mobile Termination
- PCS Personal Communication System
- PDU Protocol Data Unit
- PIN Personal Identification Number
- PUK Personal Unlock Key
- SIM Subscriber Identity Module
- SMS Short Message Service
- SMS–SC Short Message Service – Service Center
- TA Terminal Adaptor; e.g. a data card (equal to DCE)
- TE Terminal Equipment; e.g. a computer (equal to DTE)
- UE User Equipment
- UMTS Universal Mobile Telecommunications System
- USIM Universal Subscriber Identity Module
- WCDMA Wideband Code Division Multiple Access
- FTP File Transfer Protocol
- HTTP Hyper Text Transfer Protocol
- POP3 Post Office Protocol Version 3
- POP3 client An client that can receive e-mail from POP3 server over TCP session
- RTC Real Time Clock
- SMTP Simple Mail Transfer Protocol
- SMTP client An client that can transfer text-based e-mail to SMTP server over TCP session
- URC Unsolicited Result Code
- MMS Multimedia message system

## 1.4 Definitions and conventions

1. For the purposes of the present document, the following syntactical definitions apply:

<CR> Carriage return character.

<LF> Linefeed character.

- <...>** Name enclosed in angle brackets is a syntactical element. Brackets themselves do not appear in the command line.
- [...]** Optional subparameter of AT command or an optional part of TA information response is enclosed in square brackets. Brackets themselves do not appear in the command line. If subparameter is not given, its value equals to its previous value or the recommended default value.
- underline** Underlined defined subparameter value is the recommended default setting or factory setting.

2. Document conventions:

- ◆ Display the examples of AT commands with *Italic* format.
- ◆ Not display *blank-line* between command line and responses or inside the responses.
- ◆ Generally, the characters <CR> and <LF> are intentionally omitted throughout this document.
- ◆ If command response is ERROR, not list the ERROR response inside command syntax.

**NOTE** AT commands and responses in figures may be not following above conventions.

3. Special marks for commands or parameters:

**SIM PIN** – Is the command PIN protected?

YES – AT command can be used only when SIM PIN is READY.

NO – AT command can be used when SIM card is absent or SIM PIN validation is pending.

**References** – Where is the derivation of command?

3GPP TS 27.007 – 3GPP Technical Specification 127 007.

V.25ter – ITU–T Recommendation V.25ter.

Vendor – The command is supported by SIMCom.

## 2 AT Interface Synopsis

### 2.1 Interface settings

Between Customer Application and the Module, standardized RS-232 interface is used for the communication, and default values for the interface settings as following:

115200bps, 8 bit data, no parity, 1 bit stop, no data stream control.

### 2.2 AT command syntax

The prefix “AT” or “at” (no case sensitive) must be included at the beginning of each command line (except `A/` and `+++`), and the character `<CR>` is used to finish a command line so as to issue the command line to the Module. It is recommended that a command line only includes a command.

When Customer Application issues a series of AT commands on separate command lines, leave a pause between the preceding and the following command until information responses or result codes are retrieved by Customer Application, for example, “OK” is appeared. This advice avoids too many AT commands are issued at a time without waiting for a response for each command.

In the present document, AT commands are divided into three categories: Basic Command, S Parameter Command, and Extended Command.

#### 1. Basic Command

The format of Basic Command is “`AT<x><n>`” or “`AT&<x><n>`”, “`<x>`” is the command name, and “`<n>`” is/are the parameter(s) for the basic command, and optional. An example of Basic Command is “`ATE<n>`”, which informs the TA/DCE whether received characters should be echoed back to the TE/DTE according to the value of “`<n>`”; “`<n>`” is optional and a default value will be used if omitted.

#### 2. S Parameter Command

The format of S Parameter Command is “`ATS<n>=<m>`”, “`<n>`” is the index of the S-register to set, and “`<m>`” is the value to assign to it. “`<m>`” is optional; in this case, the format is “`ATS<n>`”, and then a default value is assigned.

#### 3. Extended Command

The Extended Command has several formats, as following table list:

**Table 2-1: Types of Extended Command**

Command Type	Syntax	Comments
--------------	--------	----------

Test Command	AT+<NAME>=?	Test the existence of the command; give some information about the command subparameters.
Read Command	AT+<NAME>?	Check the current values of subparameters.
Write Command	AT+<NAME>=<...>	Set user-definable subparameter values.
Execution Command	AT+<NAME>	Read non-variable subparameters determined by internal processes.

**NOTE** The character “+” between the prefix “AT” and command name may be replaced by other character. For example, using “#” or “\$” instead of “+”.

## 2.3 Information responses

If the commands included in the command line are supported by the Module and the subparameters are correct if presented, some information responses will be retrieved by from the Module. Otherwise, the Module will report “ERROR” or “+CME ERROR” or “+CMS ERROR” to Customer Application.

Information responses start and end with <CR><LF>, i.e. the format of information responses is “<CR><LF><response><CR><LF>”. Inside information responses, there may be one or more <CR><LF>. Throughout this document, only the responses are presented, and <CR><LF> are intentionally omitted.

## 3 General Commands

### 3.1 ATI Display product identification information

#### Description

The command requests the product information, which consists of manufacturer identification, model identification, revision identification, QCN type, International Mobile station Equipment Identity (IMEI) and overall capabilities of the product.

SIM PIN	References
NO	V.25ter

#### Syntax

Execution Command	Responses
ATI	Manufacturer: <manufacturer> Model: <model> Revision: <revision> QCN: [<qcn_type>] IMEI: <sn> +GCAP: list of <name>s OK

#### Defined values

<manufacturer>	The identification of manufacturer.
<model>	The identification of model.
<revision>	The revision identification of firmware.
<qcn_type>	The identification of QCN. QCN is used to save non-volatile values for software.
<sn>	Serial number identification, which consists of a single line containing IMEI (International Mobile station Equipment Identity) number.
<name>	List of additional capabilities:
+CGSM	GSM function is supported
+FCLASS	FAX function is supported

+DS	Data compression is supported
+ES	Synchronous data mode is supported.

## Examples

```
ATI
Manufacturer: SIMCOM INCORPORATED
Model: SIMCOM_SIM5215
Revision: 1535B01SIM5215
SIM5215_1535_091127_V1.00
QCN:
IMEI: 351602000330570
+GCAP: +CGSM,+FCLASS,+DS
OK
```

## 3.2 AT+CGMI Request manufacturer identification

### Description

The command requests the manufacturer identification text, which is intended to permit the user of the Module to identify the manufacturer.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGMI=?	OK
Execution Command	Responses
AT+CGMI	<manufacturer> OK

### Defined values

<manufacturer>
The identification of manufacturer.

### Examples

```
AT+CGMI
SIMCOM INCORPORATED
OK
```

### 3.3 AT+CGMM Request model identification

#### Description

The command requests model identification text, which is intended to permit the user of the Module to identify the specific model.

SIM PIN	References
NO	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CGMM=?	OK
Execution Command	Responses
AT+CGMM	<model> OK

#### Defined values

<model>
The identification of model.

#### Examples

AT+CGMM
SIMCOM_SIM5215
OK

### 3.4 AT+CGMR Request revision identification

#### Description

The command requests product firmware revision identification text, which is intended to permit the user of the Module to identify the version, revision level, date, and other pertinent information.

SIM PIN	References
NO	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CGMR=?	OK
Execution Command	Responses

AT+CGMR	<revision> OK
---------	------------------

### Defined values

<revision>
The revision identification of firmware.

### Examples

AT+CGMR
+CGMR: 1535B01SIM5215
OK

## 3.5 AT+CGSN Request product serial number identification

### Description

The command requests product serial number identification text, which is intended to permit the user of the Module to identify the individual ME to which it is connected to.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGSN=?	OK
Execution Command	Responses
AT+CGSN	<sn> OK

### Defined values

<sn>
Serial number identification, which consists of a single line containing the IMEI (International Mobile station Equipment Identity) number of the MT.

### Examples

AT+CGSN
351602000330570
OK

### 3.6 AT+CSCS Select TE character set

#### Description

Write command informs TA which character set `<chset>` is used by the TE. TA is then able to convert character strings correctly between TE and MT character sets.

Read command shows current setting and test command displays conversion schemes implemented in the TA.

SIM PIN	References
YES	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CSCS=?	+CSCS: (list of supported <code>&lt;chset&gt;</code> s) OK
Read Command	Responses
AT+CSCS?	+CSCS: <code>&lt;chset&gt;</code> OK
Write Command	Responses
AT+CSCS= <code>&lt;chset&gt;</code>	OK ERROR
Execution Command	Responses
AT+CSCS	<i>Set subparameters as default value:</i> OK

#### Defined values

`<chset>`

Character set, the definition as following:

- `"IRA"` International reference alphabet.
- `"GSM"` GSM default alphabet; this setting causes easily software flow control (XON /XOFF) problems.
- `"UCS2"` 16-bit universal multiple-octet coded character set; UCS2 character strings are converted to hexadecimal numbers from 0000 to FFFF.

#### Examples

```
AT+CSCS="IRA"
```

```
OK
```

```
AT+CSCS?
```

```
+CSCS:"IRA"
```

```
OK
```

### 3.7 AT+CIMI Request international mobile subscriber identity

#### Description

Execution command causes the TA to return `<IMSI>`, which is intended to permit the TE to identify the individual SIM card which is attached to MT.

SIM PIN	References
YES	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CIMI=?	OK
Execution Command	Responses
AT+CIMI	<code>&lt;IMSI&gt;</code> OK

#### Defined values

<code>&lt;IMSI&gt;</code>
International Mobile Subscriber Identity (string, without double quotes).

#### Examples

```
AT+CIMI
460010222028133
OK
```

### 3.8 AT+GCAP Request overall capabilities

#### Description

Execution command causes the TA reports a list of additional capabilities.

SIM PIN	References
YES	V.25ter

#### Syntax

Test Command	Responses
AT+GCAP=?	OK
Execution Command	Responses

AT+GCAP	+GCAP: (list of <name>s) OK
---------	--------------------------------

### Defined values

<name>	
List of additional capabilities.	
+CGSM	GSM function is supported
+FCLASS	FAX function is supported
+DS	Data compression is supported
+ES	Synchronous data mode is supported.

### Examples

AT+GCAP
+GCAP:+CGSM,+FCLASS,+DS
OK

## 3.9 AT+CATR Configure URC destination interface

### Description

The command is used to configure the interface which will be used to output URCs.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CATR=?	+CATR: (list of supported <port>s),( list of supported <save>s) OK
Read Command	Responses
AT+CATR?	+CATR: <port> OK
Write Command	Responses
AT+CATR=<port>[,<save>]	OK ERROR

### Defined values

<port>	
0	– all ports
1	– use UART port to output URCs

- 2 – use MODEM port to output URCs
- 3 – use ATCOM port to output URCs
- 4-7 – mapping to 0-3, the port mapping relation can be set by user

<save>

- 0 – set temporarily
- 1 – set permanently

## Examples

```
AT+CATR=1,0
```

```
OK
```

```
AT+CATR?
```

```
+CATR: 1
```

```
OK
```

## 3.10 A/ Repeat last command

### Description

The command is used for implement previous AT command repeatedly (except A/), and the return value depends on the last AT command. If A/ is issued to the Module firstly after power on, the response “OK” is only returned.

References

V.25ter

### Syntax

Execution Command	Responses
A/	<i>The response the last AT command return</i>

## Examples

```
AT+GCAP
```

```
+GCAP:+CGSM,+FCLASS,+DS
```

```
OK
```

```
A/
```

```
+GCAP:+CGSM,+FCLASS,+DS
```

```
OK
```

## 3.11 AT+CFGRI Indicate RI when using URC

### Description

The command is used to config whether pulling down the RI pin of UART when URC reported. If `<status>` is 1, host may be wake up by RI pin.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CFGRI=?	+CFGRI: (range of supported <code>&lt;status&gt;</code> s), (range of supported <code>&lt;save&gt;</code> s) OK
Read Command	Responses
AT+CFGRI?	+CFGRI: <code>&lt;status&gt;</code> , <code>&lt;save&gt;</code> OK
Write Command	Responses
AT+CFGRI= <code>&lt;status&gt;</code> [, <code>&lt;save&gt;</code> <code>e</code> ]	OK ERROR
Execution Command	Responses
AT+CFGRI	<i>Set <code>&lt;status&gt;</code> = 1, <code>&lt;save&gt;</code> = 0:</i> OK

## Defined values

<code>&lt;status&gt;</code>
0 off
1 on
<code>&lt;save&gt;</code>
0 <code>&lt;status&gt;</code> not saved in nonvolatile memory
1 <code>&lt;status&gt;</code> saved in nonvolatile memory. After it resets, <code>&lt;status&gt;</code> still takes effect.

## Examples

AT+CFGRI=?
+CFGRI: (0-1),(0-1)
OK
AT+CFGRI?
+CFGRI: 0,0
OK
AT+CFGRI=1,1
OK
AT+CFGRI
OK

## 4 Call Control Commands and Methods

### 4.1 AT+CSTA Select type of address

#### Description

Write command is used to select the type of number for further dialing commands (*ATD*) according to GSM/UMTS specifications.

Read command returns the current type of number.

Test command returns values supported by the Module as a compound value.

SIM PIN	References
YES	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CSTA=?	+CSTA:(list of supported <type>s) OK
Read Command	Responses
AT+CSTA?	+CSTA:<type> OK
Write Command	Responses
AT+CSTA=<type>	OK ERROR
Execution Command	Responses
AT+CSTA	OK

#### Defined values

<type>

Type of address octet in integer format:

- 145 – when dialling string includes international access code character “+”
- 161 – national number. The network support for this type is optional
- 177 – network specific number, ISDN format
- 129 – otherwise (default type)

**NOTE** Because the type of address is automatically detected on the dial string of dialing command, command *AT+CSTA* has really no effect.

#### Examples

AT+CSTA?

+CSTA: 129

OK

AT+CSTA=145

OK

## 4.2 AT+CMOD Call mode

### Description

Write command selects the call mode of further dialing commands ([ATD](#)) or for next answering command ([ATA](#)). Mode can be either single or alternating.

Test command returns values supported by the TA as a compound value.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CMOD=?	+CMOD: (list of supported <a href="#">&lt;mode&gt;</a> s) OK
Read Command	Responses
AT+CMOD?	+CMOD: <a href="#">&lt;mode&gt;</a> OK
Write Command	Responses
AT+CMOD= <a href="#">&lt;mode&gt;</a>	OK ERROR
Execution Command	Responses
AT+CMOD	<i>Set default value:</i> OK

### Defined values

[<mode>](#)

0 – single mode(only supported)

**NOTE** The value of [<mode>](#) shall be set to zero after a successfully completed alternating mode call. It shall be set to zero also after a failed answering. The power-on, factory and user resets shall also set the value to zero. This reduces the possibility that alternating mode calls are originated or answered accidentally.

### Examples

AT+CMOD?

+CMOD: 0

OK

AT+CMOD=0

OK

### 4.3 ATD Dial command

#### Description

The dial command lists characters that may be used in a dialing string for making a call or controlling supplementary services.

#### Note:

1. Support several “P” or “p” in the dtmf string but the valid auto-sending dtmf after characters “P” or “p” should not be more than 29.
2. Auto-sending dtmf after character “P” or “p” should be ASCII character in the set 0-9, \*, #.

SIM PIN	References
YES	V25.ter

#### Syntax

Execution Commands	Responses
ATD<n>[<mgsm>][:;]	OK VOICE CALL: BEGIN
	<i>Originate a call unsuccessfully:</i> NO CARRIER

#### Defined values

<n>

String of dialing digits and optionally V.25ter modifiers dialing digits:

0 1 2 3 4 5 6 7 8 9 \* # + A B C

Following V.25ter modifiers are ignored:

, T P ! W @

<mgsm>

String of GSM modifiers:

- I Activates CLIR (disables presentation of own phone number to called party)
- i Deactivates CLIR (enables presentation of own phone number to called party)
- G Activate Closed User Group explicit invocation for this call only
- g Deactivate Closed User Group explicit invocation for this call only

<;>

The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax calls.

**NOTE:** If it is a data call, please refer to the result codes table for response at the end of this document.

## Examples

```
ATD10086;
OK
VOICE CALL:BEGIN
```

## 4.4 ATD<mem><n> Originate call from specified memory

### Description

Originate a call using specified memory and index number.

SIM PIN	References
YES	V.25ter

### Syntax

Execution Commands	Responses
ATD<mem><n>[:]	OK VOICE CALL: BEGIN
	<i>Originate a call unsuccessfully:</i> NO CARRIER

### Defined values

<mem>
Phonebook storage: (For detailed description of storages see <a href="#">AT+CPBS</a> )
"DC" ME dialed calls list
"MC" ME missed (unanswered received) calls list
"RC" ME received calls list
"SM" SIM phonebook
"ME" UE phonebook
"FD" SIM fixed dialing phonebook
"ON" MSISDN list
"LD" Last number dialed phonebook
"EN" Emergency numbers
<n>
Integer type memory location in the range of locations available in the selected memory, i.e. the index returned by <a href="#">AT+CPBR</a> .
<:>
The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax

calls.

## Examples

```
ATD>SM3;
OK
VOICE CALL: BEGIN
```

## 4.5 ATD><n> Originate call from active memory (1)

### Description

Originate a call to specified number.

SIM PIN	References
YES	V.25ter

### Syntax

Execution Commands	Responses
ATD><n>[:]	OK VOICE CALL: BEGIN
	<i>Originate a call unsuccessfully:</i> NO CARRIER

### Defined values

<n>

Integer type memory location in the range of locations available in the selected memory, i.e. the index number returned by [AT+CPBR](#).

<:;>

The termination character ":" is mandatory to set up voice calls. It must not be used for data and fax calls.

### Examples

```
ATD>2;
OK
VOICE CALL: BEGIN
```

## 4.6 ATD><str> Originate call from active memory (2)

### Description

Originate a call to specified number.

SIM PIN	References
YES	V.25ter

## Syntax

Execution Commands	Responses
ATD<str>[:]	OK VOICE CALL: BEGIN
	<i>Originate a call unsuccessfully:</i> NO CARRIER

## Defined values

<str>

String type value, which should equal to an alphanumeric field in at least one phone book entry in the searched memories. <str> formatted as current TE character set specified by AT+CSCS.<str> must be double quoted.

<;>

The termination character ";" is mandatory to set up voice calls. It must not be used for data and fax calls.

## Examples

```
ATD>"Kobe";
```

```
OK
```

```
VOICE CALL: BEGIN
```

## 4.7 ATA Call answer

### Description

The command is used to make remote station to go off-hook, e.g. answer an incoming call. If there is no an incoming call and entering this command to TA, it will be return "NO CARRIER" to TA.

SIM PIN	References
YES	V.25ter

## Syntax

Execution Commands	Responses
ATA	<i>For voice call:</i> OK

	VOICE CALL: BEGIN
	<i>For data call, and TA switches to data mode:</i> CONNECT
	<i>No connection or no incoming call:</i> NO CARRIER

### Examples

ATA
VOICE CALL: BEGIN
OK

## 4.8 +++ Switch from data mode to command mode

### Description

The command is only available during a connecting CSD call or PS data call. The +++ character sequence causes the TA to cancel the data flow over the AT interface and switch to Command Mode. This allows to enter AT commands while maintaining the data connection to the remote device.

**NOTE** To prevent the +++ escape sequence from being misinterpreted as data, it must be preceded and followed by a pause of at least 1000 milliseconds, and the interval between two '+' character can't exceed 900 milliseconds.

SIM PIN	References
YES	V.25ter

### Syntax

Execution Command	Responses
+++	OK

### Examples

+++
OK

## 4.9 ATO Switch from command mode to data mode

### Description

**ATO** is the corresponding command to the **+++** escape sequence. When there is a CSD call or a PS data call connected and the TA is in Command Mode, **ATO** causes the TA to resume the data and takes back to Data Mode.

SIM PIN	References
YES	V.25ter

## Syntax

Execution Command	Responses
ATO	<p><i>TA/DCE switches to Data Mode from Command Mode:</i></p> <p>CONNECT</p> <p><i>If connection is not successfully resumed or there is not a connected CSD call:</i></p> <p>NO CARRIER</p>

## Examples

```
ATO
CONNECT
```

## 4.10 AT+CVHU Voice hang up control

### Description

Write command selects whether **ATH** or “drop DTR” shall cause a voice connection to be disconnected or not. By voice connection is also meant alternating mode calls that are currently in voice mode.

SIM PIN	References
NO	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CVHU=?	+CVHU: (list of supported <mode>s) OK
Read Command	Responses
AT+CVHU?	+CVHU: <mode> OK
Write Command	Responses
AT+CVHU=<mode>	OK ERROR

Execution Command	Responses
AT+CVHU	<i>Set default value:</i> OK

## Defined values

<mode>
0 – “Drop DTR” ignored but OK response given. ATH disconnects.
1 – “Drop DTR” and ATH ignored but OK response given.

## Examples

AT+CVHU=0
OK
AT+CVHU?
+CVHU: 0
OK

## 4.11 ATH Disconnect existing call

### Description

The command is used to disconnect existing voice call. Before using ATH command to hang up a voice call, it must set AT+CVHU=0. Otherwise, ATH command will be ignored and “OK” response is given only.

The command is also used to disconnect CSD or PS data call, and in this case it doesn’t depend on the value of AT+CVHU.

SIM PIN	References
NO	V.25ter

### Syntax

Execution Command	Responses
ATH	<i>If AT+CVHU=0:</i> VOICE CALL: END: <time> [... VOICE CALL: END: <time>] OK OK

## Defined values

<time>
--------

Voice call connection time:

Format – HHMMSS (HH: hour, MM: minute, SS: second)

## Examples

```
AT+CVHU=0
```

```
OK
```

```
ATH
```

```
VOICE CALL:END:000017
```

```
OK
```

## 4.12 AT+CHUP Hang up call

### Description

The command is used to cancel voice calls. If there is no call, it will do nothing but OK response is given. After running AT+CHUP, multiple “VOICE CALL END: ” may be reported which relies on how many calls exist before calling this command.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CHUP=?	OK
Execution Command	Responses
AT+CHUP	VOICE CALL: END: <a href="#">&lt;time&gt;</a> [... VOICE CALL: END: <a href="#">&lt;time&gt;</a> ] OK
	<i>No call:</i> OK

### Defined values

[<time>](#)

Voice call connection time.

Format – HHMMSS (HH: hour, MM: minute, SS: second)

### Examples

```
AT+CHUP
```

```
VOICE CALL:END: 000017
```

```
OK
```

## 4.13 AT+CBST Select bearer service type

### Description

Write command selects the bearer service `<name>` with data rate `<speed>`, and the connection element `<ce>` to be used when data calls are originated. Values may also be used during mobile terminated data call setup, especially in case of single numbering scheme calls.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CBST=?	+CBST: (list of supported <code>&lt;speed&gt;</code> s), (list of supported <code>&lt;name&gt;</code> s), (list of supported <code>&lt;ce&gt;</code> s) OK
Read Command	Responses
AT+CBST?	+CBST: <code>&lt;speed&gt;</code> , <code>&lt;name&gt;</code> , <code>&lt;ce&gt;</code> OK
Write Command	Responses
AT+CBST= <code>&lt;speed&gt;</code> [, <code>&lt;name&gt;</code> ],[ <code>&lt;ce&gt;</code> ]]	OK ERROR
Execution Command	Responses
AT+CBST	<i>Set default value:</i> OK

### Defined values

<code>&lt;speed&gt;</code>	
0	– autobaoding(automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service)
7	– 9600 bps (V.32)
12	– 9600 bps (V.34)
14	– 14400 bps(V.34)
16	– 28800 bps(V.34)
17	– 33600 bps(V.34)
39	– 9600 bps(V.120)
43	– 14400 bps(V.120)
48	– 28800 bps(V.120)
51	– 56000 bps(V.120)
71	– 9600 bps(V.110)
75	– 14400 bps(V.110)

- 80 – 28800 bps(V.110 or X.31 flag stuffing)
- 81 – 38400 bps(V.110 or X.31 flag stuffing)
- 83 – 56000 bps(V.110 or X.31 flag stuffing)
- 84 – 64000 bps(X.31 flag stuffing)
- 116 – 64000 bps(bit transparent)
- 134 – 64000 bps(multimedia)

<name>

- 0 – Asynchronous modem
- 1 – Synchronous modem
- 4 – data circuit asynchronous (RDI)

<ce>

- 0 – transparent
- 1 – non-transparent

**NOTE** If <speed> is set to 116 or 134, it is necessary that <name> is equal to 1 and <ce> is equal to 0.

## Examples

```
AT+CBST=0,0,1
```

```
OK
```

```
AT+CBST?
```

```
+CBST:0,0,1
```

```
OK
```

## 4.14 AT+CRLP Radio link protocol

### Description

Radio Link Protocol(RLP) parameters used when non-transparent data calls are originated may be altered with write command.

Read command returns current settings for each supported RLP version <verX>. Only RLP parameters applicable to the corresponding <verX> are returned.

Test command returns values supported by the TA as a compound value. If ME/TA supports several RLP versions <verX>, the RLP parameter value ranges for each <verX> are returned in a separate line.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CRLP=?	+CRLP: (list of supported <iws>s), (list of supported <mws>s), (list of supported <T1>s), (list of supported <N2>s) [,<ver1>

	<pre> [(list of supported &lt;T4&gt;s)]][&lt;CR&gt;&lt;LF&gt; +CRLP: (list of supported &lt;iws&gt;s), (list of supported &lt;mws&gt;s), (list of supported &lt;T1&gt;s), (list of supported &lt;N2&gt;s) [,&lt;ver2&gt; [(list of supported &lt;T4&gt;s)]] [...] OK </pre>
Read Command	Responses
AT+CRLP?	<pre> +CRLP: &lt;iws&gt;, &lt;mws&gt;, &lt;T1&gt;, &lt;N2&gt; [,&lt;ver1&gt; [, &lt;T4&gt;]]][&lt;CR&gt; &lt;LF&gt; +CRLP:&lt;iws&gt;,&lt;mws&gt;,&lt;T1&gt;,&lt;N2&gt;[,&lt;ver2&gt;[,&lt;T4&gt;]] [...] OK </pre>
Write Command	Responses
AT+CRLP=<iws> [,<mws>[,<T1>[,<N2> [,<ver>[,<T4>]]]]]	<pre> OK ERROR </pre>
Execution Command	Responses
AT+CRLP	OK

## Defined values

<ver>, <verX>

RLP version number in integer format, and it can be 0, 1 or 2; when version indication is not present it shall equal 1.

<iws>

IWF to MS window size.

<mws>

MS to IWF window size.

<T1>

Acknowledgement timer.

<N2>

Retransmission attempts.

<T4>

Re-sequencing period in integer format.

**NOTE** <T1> and <T4> are in units of 10 ms.

## Examples

AT+CRLP?

+CRLP:61,61,48,6,0

+CRLP:61,61,48,6,1

+CRLP:240,240,52,6,2

OK

## 4.15 AT+CR Service reporting control

### Description

Write command controls whether or not intermediate result code “+CR: <serv>” is returned from the TA to the TE. If enabled, the intermediate result code is transmitted at the point during connect negotiation at which the TA has determined which speed and quality of service will be used, before any error control or data compression reports are transmitted, and before the intermediate result code CONNECT is transmitted.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CR=?	+CR: (list of supported <mode>s) OK
Read Command	Responses
AT+CR?	+CR: <mode> OK
Write Command	Responses
AT+CR=<mode>	OK
Execution Command	Responses
AT+CR	<i>Set default value:</i> OK

### Defined values

<mode>	
0	– disables reporting
1	– enables reporting
<serv>	
ASYNCR	asynchronous transparent
SYNCR	synchronous transparent
REL ASYNCR	asynchronous non-transparent
REL sync	synchronous non-transparent
GPRS [<L2P>]	GPRS
The optional <L2P> proposes a layer 2 protocol to use between the MT and the TE.	

### Examples

```
AT+CR?
```

```
+CR:0
OK
AT+CR=1
OK
```

## 4.16 AT+CEER Extended error report

### Description

Execution command causes the TA to return the information text `<report>`, which should offer the user of the TA an extended report of the reason for:

- 1 the failure in the last unsuccessful call setup(originating or answering) or in-call modification.
- 2 the last call release.
- 3 the last unsuccessful GPRS attach or unsuccessful PDP context activation.
- 4 the last GPRS detach or PDP context deactivation.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CEER=?	OK
Execution Command	Responses
AT+CEER	+CEER:<report> OK

### Defined values

`<report>`  
Wrong information which is possibly occurred.

### Examples

```
AT+CEER
+CEER: Invalid/incomplete number
OK
```

## 4.17 AT+CRC Cellular result codes

### Description

Write command controls whether or not the extended format of incoming call indication or GPRS network request for PDP context activation is used. When enabled, an incoming call is indicated to the TE with unsolicited result code “+CRING: <type>” instead of the normal RING.

Test command returns values supported by the TA as a compound value.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CRIC=?	+CRIC: (list of supported <mode>s) OK
Read Command	Responses
AT+CRIC?	+CRIC: <mode> OK
Write Command	Responses
AT+CRIC=<mode>	OK ERROR
Execution Command	Responses
AT+CRIC	<i>Set default value:</i> OK

### Defined values

<mode>	
0	– disable extended format
1	– enable extended format
<type>	
ASYNC	asynchronous transparent
SYNC	synchronous transparent
REL ASYNC	asynchronous non-transparent
REL SYNC	synchronous non-transparent
FAX	facsimile
VOICE	normal voice
VOICE/XXX	voice followed by data(XXX is ASYNC, SYNC, REL ASYNC or REL SYNC)
ALT VOICE/XXX	alternating voice/data, voice first
ALT XXX/VOICE	alternating voice/data, data first
ALT FAX/VOICE	alternating voice/fax, fax first
GPRS	GPRS network request for PDP context activation

## Examples

```
AT+CRC=1
OK
AT+CRC?
+CRC: 1
OK
```

## 4.18 AT+VTS DTMF and tone generation

### Description

The command allows the transmission of DTMF tones and arbitrary tones which cause the Mobile Switching Center (MSC) to transmit tones to a remote subscriber. The command can only be used in voice mode of operation (active voice call).

**NOTE** The END event of voice call will terminate the transmission of tones, and as an operator option, the tone may be ceased after a pre-determined time whether or not tone duration has been reached.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+VTS=?	+VTS: (list of supported<dtmf>s) OK
Write Command	Responses
AT+VTS=<dtmf> [,<duration>]	OK
AT+VTS=<dtmf-string>	ERROR

### Defined values

<dtmf>
A single ASCII character in the set 0-9, *, #, A, B, C, D.
<duration>
Tone duration in 1/10 seconds, from 0 to 255. This is interpreted as a DTMF tone of different duration from that mandated by the <a href="#">AT+VTD</a> command, otherwise, the duration which be set the <a href="#">AT+VTD</a> command will be used for the tone (<duration> is omitted).
<dtmf-string>
A sequence of ASCII character in the set 0-9, *, #, A, B, C, D, and maximal length of the string is 29. The string must be enclosed in double quotes (“”), and separated by commas between the ASCII

characters (e.g. “1,3,5,7,9,\*”). Each of the tones with a duration which is set by the [AT+VTD](#) command.

## Examples

```
AT+VTS=1
OK
AT+VTS=1,20
OK
AT+VTS="1,3,5"
OK
AT+VTS=?
+VTS: (0-9,*,#,A,B,C,D)
OK
```

## 4.19 AT+CLVL Loudspeaker volume level

### Description

Write command is used to select the volume of the internal loudspeaker audio output of the device. Test command returns supported values as compound value.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CLVL=?	+CLVL: (list of supported <a href="#">&lt;level&gt;s</a> ) OK
Read Command	Responses
AT+CLVL?	+CLVL: <a href="#">&lt;level&gt;</a> OK
Write Command	Responses
AT+CLVL= <a href="#">&lt;level&gt;</a>	OK ERROR

### Defined values

[<level>](#)  
Integer type value which represents loudspeaker volume level. The range is from 0 to 8, and 0 represents the lowest loudspeaker volume level, 2 is default factory value.

**NOTE** [<level>](#) is nonvolatile, and it is stored when restart.

## Examples

```
AT+CLVL?
```

```
+CLVL:2
```

```
OK
```

```
AT+CLVL=3
```

```
OK
```

## 4.20 AT+VMUTE Speaker mute control

### Description

The command is used to control the loudspeaker to mute and unmute during a voice call or a video call which is connected. If there is not a connected call, write command can't be used.

When all calls are disconnected, the Module sets the subparameter as 0 automatically.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+VMUTE=?	+VMUTE: (list of supported <mode>s) OK
Read Command	Responses
AT+VMUTE?	+VMUTE: <mode> OK
Write Command	Responses
AT+VMUTE=<mode>	OK
	ERROR

### Defined values

<mode>

0 – mute off

1 – mute on

### Examples

```
AT+VMUTE=1
```

```
OK
```

```
AT+VMUTE?
```

```
+VMUTE:1
```

```
OK
```

## 4.21 AT+CMUT Microphone mute control

### Description

The command is used to enable and disable the uplink voice muting during a voice call or a video call which is connected. If there is not a connected call, write command can't be used.

When all calls are disconnected, the Module sets the subparameter as 0 automatically.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CMUT=?	+CMUT: (list of supported <a href="#">&lt;mode&gt;s</a> ) OK
Read Command	Responses
AT+CMUT?	+CMUT: <a href="#">&lt;mode&gt;</a> OK
Write Command	Responses
AT+CMUT= <a href="#">&lt;mode&gt;</a>	OK ERROR

### Defined values

<a href="#">&lt;mode&gt;</a>
<u>0</u> – mute off
1 – mute on

### Examples

<i>AT+CMUT=1</i>
<i>OK</i>
<i>AT+CMUT?</i>
<i>+CMUT: 1</i>
<i>OK</i>

## 4.22 AT+AUTOANSWER Automatic answer quickly

### Description

The command causes the Module to enable and disable automatic answer. If enabled, the Module will answer automatically after the Module receives a call from network and 3 seconds lapse.

- NOTE**
- 1 .The command is effective on csd call, voice call and video call even if ATSO=0.
  - 2 .The setting will be effective after restart.
  - 3 .The <port> setting only takes effect on csd call video call.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+AUTOANSWER=?	+AUTOANSWER: (list of supported <arg>s), (list of supported <port>s) OK
Read Command	Responses
AT+AUTOANSWER?	+AUTOANSWER: <arg>,<port> OK
Write Command	Responses
AT+AUTOANSWER= <arg>[,<port>]	OK

## Defined values

<arg>

- 0 – disable auto answer
- 1 – enable auto answer

<port>

- 0 – use current PORT(read for other value, refer to notes)
- 1 – use UART port to output URCs
- 2 – use MODEM port to output URCs
- 3 – use ATCOM port to output URCs

- NOTE**
1. If subparameter <port> is omitted, the current port will be used.
  2. If subparameter <port> is zero, read for current port index, it's not zero.
  3. If subparameter <port> is not zero and auto answer is enabled, the corresponding port should be opened when data call incoming.

## Examples

```
AT+AUTOANSWER=1,1
OK
AT+AUTOANSWER?
+AUTOANSWER: 1,1
OK
```

## 4.23 ATSO Automatic answer

### Description

The S-parameter command controls the automatic answering feature of the Module. If set to 000, automatic answering is disabled, otherwise it causes the Module to answer when the incoming call indication (RING) has occurred the number of times indicated by the specified value; and the setting will not be stored upon power-off, i.e. the default value will be restored after restart.

SIM PIN	References
YES	V.25ter

### Syntax

Read Command	Responses
ATSO?	<n> OK
Write Command	Responses
ATSO=<n>	OK

### Defined values

<n>

000 Automatic answering mode is disable. (default value when power-on)

001–255 Enable automatic answering on the ring number specified.

- NOTE**
- 1.The S-parameter command is effective on voice call and data call.
  - 2.If <n> is set too high, the remote party may hang up before the call can be answered automatically.
  - 3.For voice call and video call, [AT+AUTOANSWER](#) is prior to [ATSO](#).

### Examples

```
ATSO?
```

```
000
```

```
OK
```

```
ATSO=003
```

```
OK
```

## 4.24 AT+CALM Alert sound mode

### Description

The command is used to select the general alert sound mode of the device. If silent mode is selected then incoming calls will not generate alerting sounds but only the unsolicited indications RING or +CRING. The value of `<mode>` will be saved to nonvolatile memory after write command is executed.

SIM PIN	References
NO	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CALM=?	+CALM: (list of supported <code>&lt;mode&gt;</code> s) OK
Read Command	Responses
AT+CALM?	+CALM: <code>&lt;mode&gt;</code> OK
Write Command	Responses
AT+CALM= <code>&lt;mode&gt;</code>	OK

## Defined values

<code>&lt;mode&gt;</code>
<u>0</u> – normal mode (factory value)
1 – silent mode; no sound will be generated by the device

## Examples

AT+CALM=0
OK
AT+CALM?
+CALM: 0
OK

## 4.25 AT+CRSL Ringer sound level

### Description

The command is used to select the incoming call ringer sound level of the device. The value of `<level>` will be saved to nonvolatile memory after write command is executed.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CRSL=?	+CRSL: (list of supported <level>s) OK
Read Command	Responses
AT+CRSL?	+CRSL: <level> OK
Write Command	Responses
AT+CRSL=<level>	OK

### Defined values

<level>

Integer type value which represents the incoming call ringer sound level. The range is from 0 to 4, and 0 represents the lowest level, 2 is default factory value.

**NOTE** <level> is nonvolatile, and it is stored when restart.

### Examples

AT+CRSL=2

OK

AT+CRSL?

+CRSL:2

OK

## 4.26 AT+CSDVC Switch voice channel device

### Description

The command is used to switch voice channel device. After changing current voice channel device and if there is a connecting voice call, it will use the settings of previous device (loudspeaker volume level, mute state of loudspeaker and microphone, refer to [AT+CLVL](#), [AT+VMUTE](#), and [AT+CMUT](#)).

**NOTE** Use [AT+CPCM](#) command to enable PCM function and configure the mode that you want before setting [AT+CSDVC=4](#).

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CSDVC=?	+CSDVC: (list of supported <dev>s),(list of supported <save> s) OK
Read Command	Responses

AT+CSDVC?	+CSDVC: <dev> OK
Write Command	Responses
AT+CSDVC= <dev>[,<save>]	OK

### Defined values

<dev>
<ul style="list-style-type: none"> <li>1 – handset</li> <li>2 – headset</li> <li>3 – speaker phone</li> <li>4 – PCM interface</li> </ul>
<save>
<ul style="list-style-type: none"> <li>0 – temporary voice device setting, after reboot it will be resumed.</li> <li>1 – permanent voice device setting.</li> </ul> <p><b>NOTE</b> If subparameter &lt;save&gt; is omitted, voice device setting is temporary.</p>

### Examples

AT+CSDVC=1
OK
AT+CSDVC?
+CSDVC:1
OK
AT+CSDVC=1,1
OK

## 4.27 AT+CPTONE Play tone

### Description

The command is used to play a DTMF tone or complex tone on local voice channel device which is selected by [AT+CSDVC](#).

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CPTONE=?	+CPTONE: (list of supported <tone>s) OK
Write Command	Responses

```
AT+CPTONE=<tone> OK
```

## Defined values

<tone>	
0	– Stop the sound tone
1	– DTMF tone for 1 key, duration 100ms
2	– DTMF tone for 2 key, duration 100ms
3	– DTMF tone for 3 key, duration 100ms
4	– DTMF tone for 4 key, duration 100ms
5	– DTMF tone for 5 key, duration 100ms
6	– DTMF tone for 6 key, duration 100ms
7	– DTMF tone for 7 key, duration 100ms
8	– DTMF tone for 8 key, duration 100ms
9	– DTMF tone for 9 key, duration 100ms
10	– DTMF tone for 0 key, duration 100ms
11	– DTMF tone for A key, duration 100ms
12	– DTMF tone for B key, duration 100ms
13	– DTMF tone for C key, duration 100ms
14	– DTMF tone for D key, duration 100ms
15	– DTMF tone for # key, duration 100ms
16	– DTMF tone for * key, duration 100ms
17	– Subscriber busy sound, duration always
18	– Congestion sound, duration always
19	– Error information sound, duration 1330*3ms
20	– Number unobtainable sound, duration 1330*3ms
21	– Authentication failure sound, duration 1330*3ms
22	– Radio path acknowledgement sound, duration 700*1ms
23	– Radio path not available sound, duration 400*4ms
24	– CEPT call waiting sound, duration 4000*2ms
25	– CEPT ringing sound, duration always
26	– CEPT dial tone, duration always

## Examples

```
AT+CPTONE=?  
+CPTONE:(0-26)  
OK  
AT+CPTONE=17  
OK
```

## 4.28 AT+CPCM External PCM codec mode configuration

### Description

The command will enable PCM or disable PCM function. And configure different PCM mode. Because the PCM pins are multiplex on GPIO, it will switch the function between GPIO and PCM.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CPCM=?	+CPCM: (list of supported <arg_1>s), (list of supported <arg_2>s) OK
Read Command	Responses
AT+CPCM?	+CPCM: <arg_1>,<arg_2> OK
Write Command	Responses
AT+CPCM=<arg_1>[,<arg_2>]	OK

### Defined values

<b>&lt;arg_1&gt;</b>	
0	- disable PCM, switch to common GPIOs.
1	- enable PCM, switch to PCM function.
<b>&lt;arg_2&gt;</b>	
0	- Auxiliary master PCM, 128K clock and 8K synchronize clock.
1	- Primary master PCM, 2M clock and 8K synchronize clock...
2	- Primary slave PCM, clock provided by external codec.

### Examples

AT+CPCM=1
OK
AT+CPCM=?
+CPCM : (0-1),(0-2)
OK
AT+CPCM?
+CPCM : 1,1
OK

## 4.29 AT+CPCMFMT Change the PCM format

### Description

The command allows to change the current PCM format, there are 3 formats currently supported: linear, u-law, a-law

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CPCMFMT=?	+CPCMFMT: (list of supported <format>s) OK
Read Command	Responses
AT+CPCMFMT?	+CPCMFMT: <format> OK
Write Command	Responses
AT+CPCMFMT=<format>	OK ERROR

### Defined values

<format>	
0	u-law
1	a-law
2	linear

### Examples

AT+CPCMFMT=?
+CPCMFMT: (0-2)
OK
AT+CPCMFMT?
+CPCMFMT: 1
OK
AT+CPCMFMT=2
OK

## 4.30 AT+CPCMREG Control PCM data transfer by diagnostics port

### Description

The command is used to control PCM data transfer by diagnostics port. First you should set diagnostics port as data mode by [AT+DSWITCH](#).

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CPCMREG=?	+CPCMREG: (list of supported <n>s) OK
Read Command	Responses
AT+CPCMREG?	+CPCMREG: <n> OK
Write Command	Responses
AT+CPCMREG=<n>	OK
	ERROR

## Defined values

<n>
Switch PCM data transfer by diagnostics port on/off
0     Disable PCM data transfer by diagnostics port
1     Enable PCM data transfer by diagnostics port

## Examples

AT+CPCMREG=?
+CPCMREG: (0-1)
OK
AT+CPCMREG?
+CPCMREG: 0
OK
AT+CPCMREG=1
OK

## 4.31 AT+VTD Tone duration

### Description

This refers to an integer <n> that defines the length of tones emitted as a result of the [AT+VTS](#) command. A value different than zero causes a tone of duration <n>/10 seconds.

SIM PIN	References
---------	------------

YES	3GPP TS 27.007
-----	----------------

## Syntax

Test Command	Responses
AT+VTD=?	+VTD: (list of supported <n>s) OK
Read Command	Responses
AT+VTD?	+VTD: <n> OK
Write Command	Responses
AT+VTD=<n>	OK

## Defined values

<n>
Tone duration in integer format, from 0 to 255, and 0 is factory value.
0      Tone duration of every single tone is dependent on the network.
1...255    Tone duration of every single tone in 1/10 seconds.

## Examples

AT+VTD=?
+VTD: (0-255)
OK
AT+VTD?
+VTD: 0
OK
AT+VTD=5
OK

## 4.32 AT+CODEC Set audio codec mode

### Description

The command is used to configure audio codec mode.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
--------------	-----------

AT+CODEC=?	+CODEC: (list of supported <g_codec>s), (list of supported <w_codec>s) OK
Read Command	Responses
AT+CODEC?	+CODEC: <g_codec>, <w_codec> OK
Write Command	Responses
AT+CODEC=<g_codec>,<w_codec>	OK ERROR
Execution Command	Responses
AT+CODEC	<i>Set default value(63,7)</i> OK

## Defined values

### <g\_codec>

1~63 – Sum of integers each representing a specific codec mode, default value is 63.

- 1 – GSM FR
- 2 – GSM HR
- 4 – GSM EFR
- 8 – GSM FR AMR
- 16 – GSM HR AMR
- 32 – GSM FR AMR-WB

### <w\_codec>

1~7 – Sum of integers each representing a specific codec mode.,default value is 7.

- 1 – UMTS AMR
- 2 – UMTS AMR2
- 4 – UMTS AMR-WB

## Examples

```
AT+CODEC=?
```

```
+CODEC: (1-63),(1-7)
```

```
OK
```

```
AT+CODEC?
```

```
+CODEC: 63,7
```

```
OK
```

```
AT+AUTOCSQ=31,7
```

```
OK
```

### 4.33 AT+CVOC Get the current vocoder capability in a call

#### Description

The command is used to get the current vocoder capability in a call.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+CVOC=?	OK
Execution Command	Responses
AT+CVOC	+CVOC: <voc>,<amr_mode>,<DTX>,<SCR> OK

#### Defined values

<voc>	
0x100	– AMR codec
0x200	– GSM EFR codec
0x400	– GSM Full rate codec
0x800	– GSM Half rate codec
0x1000000	– AMR-WB vocoder
Other values is reserved	
<amr_mode>	
0	– 4.75kbit/s AMR
1	– 5.15kbit/s AMR
2	– 5.9kbit/s AMR
3	– 6.7kbit/s AMR
4	– 7.4kbit/s AMR
5	– 7.95kbit/s AMR
6	– 10.2kbit/s AMR
7	– 12.2kbit/s AMR
8	– 6.60kbit/s AMR-WB
9	– 8.85kbit/s AMR-WB
10	– 12.65kbit/s AMR-WB
11	– 14.25kbit/s AMR-WB
12	– 15.58kbit/s AMR-WB
13	– 18.25kbit/s AMR-WB
14	– 19.58kbit/s AMR-WB
15	– 23.05kbit/s AMR-WB
16	– 23.85kbit/s AMR-WB

17 – undefined

**<DTX>**

0 – Disable encoder DTX mode

1 – Enable encoder DTX mode

**<SCR>**

0 – Disable encoder SCR mode

1 – Enable encoder SCR mode

## Examples

*AT+CVOC*

*+CVOC: 0x200,17,0,0*

*OK*

*AT+CVOC*

*+CVOC: 0x100,7,0,0*

*OK*

## 5 Video Call Related Commands

### 5.1 AT+VPMAKE Originate video call

#### Description

The command is used to originate a video call. Before issue the command, user can select video call TX source by [AT+VPSOURCE](#), and select whether record video after video call is connected or not by [AT+VPRECORD](#).

SIM PIN	References
YES	Vendor

#### Syntax

Write Command	Responses
AT+VPMAKE=<num>	<i>If connecting:</i> VPACCEPT OK VPRINGBACK VPSETUP VPCONNECTED
	<i>If not connecting:</i> VPACCEPT OK VPEND

#### Defined values

<num>
Dialing number, which must less than 32 bytes

#### Examples

```
AT+VPMAKE=123456789
VPACCEPT
OK
VPRINGBACK
VPSETUP
VPCONNECTED
```

## 5.2 AT+VPANSWER Answer video call

### Description

The command is used to answer an incoming video call. If there is no incoming video call, OK response is given only.

SIM PIN	References
YES	Vendor

### Syntax

Execution Command	Responses
AT+VPANSWER	<i>VPINCOM is reported:</i> OK VPSETUP VPCONNECTED
	<i>No incoming video call:</i> OK

### Examples

```

AT+VPANSWER
OK
VPSETUP
VPCONNECTED
  
```

## 5.3 AT+VPEND Cancel video call

### Description

The command is used to end a video call. If recording video is on going, the command will stop recording and end video call. In addition, the command can be used to reject an incoming video call.

SIM PIN	References
YES	Vendor

### Syntax

Execution Command	Responses
AT+VPEND	<i>Video call is connected:</i> OK VPEND[: <seconds>]

	<p><i>Video call is not connected:</i></p> <p>OK</p>
--	--

### Defined values

<seconds>
The duration of video call, from VPCONNECTED to VPEND and the unit is in second.

### Examples

AT+VPEND
OK
VPEND

## 5.4 AT+VPDTMF Send DTMF tone during video call

### Description

The command is used to send DTMF tone during a connected video call, and it is sent as an H.245 user-input indication (basic string) to the other side.

**NOTE** The maximal length of DTMF string is 127.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+VPDTMF=?	+VPDTMF:(list of supported <vpdtmf>s) OK
Write Command	Responses
AT+VPDTMF=<vpdtmf>	OK

### Defined values

<vpdtmf>
DTMF string consisted of ( 0-9, *, #).

### Examples

AT+VPDTMF="12345"
OK
AT+VPDTMF="*"
OK

## 5.5 AT+VPSOURCE Select video TX source

### Description

The command is used to select video TX source which provides video frames to transmit to remote party. If select video TX source before video call is connected, the Module will get video frames from specified TX source when video call is connected.

The command is only effective on current or next video call.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+VPSOURCE=?	OK
Write Command	Responses
AT+VPSOURCE= <src>[, <fname>]	OK

### Defined values

<src>

The Module supports three TX sources – CAMERA, STATIC IMAGE, and FILE SOURCE. In spite of which TX source is used, the size of video frames must be 176\* 144(pixel).

- 0 – Send none image, video or video capture from camera
- 1 – Capture video from camera. (default value)
- 2 – Send a static image, support JPEG and BMP format.
- 3 – Send video frames from file, support MP4 and 3GP format.
- 4 – Reserved.
- 5 – Reserved.

<fname>

Image or video file which is existed in current directory [refer to [AT+FSCD](#)], and it includes extension name.

#### NOTE

1. If <src>=1, <fname> must be ignored, otherwise <fname> must be specified.
2. If the TX source is CAMERA, please make sure the camera is OK, otherwise, video call may not be connected successfully.

### Examples

```
AT+VPSOURCE=1
```

```
OK
```

```
AT+VPSOURCE=2, "image_0.jpg"
```

```
OK
AT+VPSOURCE=3, "video_0.mp4"
OK
```

## 5.6 AT+VPRECORD Record video during video call

### Description

Both far-end and near-end video can be recorded in MP4 format during a video call. File name will be generated automatically based on system time of the Module, and the format is *YYYYMMDD\_HHMMSS\_f.mp4* and *YYYYMMDD\_HHMMSS\_n.mp4*.

*YYYYMMDD\_HHMMSS\_f.mp4* denotes that video recorded is from other side.

*YYYYMMDD\_HH MMSS\_n.mp4* denotes that video recorded is transmitted to remote party.

The storage location of files refers to [AT+FSLOCA](#) (<side>=1/2/3).

**NOTE** The maximal number of video frames that can be recorded is 54000 frames which corresponds to one hour if FPS is 15. If maximal number is reached, **“VP MP4 REACH TIME”** will be reported. If memory for recording video is not enough, **“VP MP4 NO MEMORY”** will be reported. If recording finish, **“VP MP4 DONE”** will be reported. If recording error, **“VP MP4 ERROR”** will be reported. If module is ready for recording, **“VP MP4 READY”** will be reported.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+VPRECORD=?	+VPRECORD:(list of supported <side>s) OK
Write Command	Responses
AT+VPRECORD=<side>	OK ERROR

### Defined values

<side>	
0	– not record video.
1	– only record far-end video.
2	– only record near-end video.
3	– record both far-end and near-end.
4	– record far-end video and send data to host by diag port.
5	– record near-end video and send data to host by diag port.

### Examples

```
AT+VPRECORD=1
```

```
OK
```

```
AT+VPRECORD=0
```

```
OK
```

## 5.7 AT+VPLOOP Loopback far-end video frame during video call

### Description

The command is used to loopback video frame from far-end during a connected video call

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+VPLOOP=?	+VPLOOP: (list of supported <num>s) OK
Read Command	Responses
AT+VPLOOP?	+VPLOOP: <num> OK
Write Command	Responses
AT+VPLOOP=<num>	[+VPLOOP: <num>] OK
	<i>No connected video call:</i> ERROR

### Defined values

<num>

Integer type value indicating that it will loopback a video frame after receiving <num> video frames from remote party.

- 255 – Not loopback far-end video frame.
- 1~254 – Interval of video frame; if <num> is too small, it will release video frame from far-end before previous video frame is looped back.

### Examples

```
AT+VPLOOP=?
```

```
+VPLOOP: (1-255)
```

```
OK
```

```
AT+VPLOOP?
```

```
+VPLOOP: 255
```

OK

## 5.8 AT+VPSM Switch video call to CSD mode

### Description

The command is used to switch video call to CSD mode. In CSD mode, it will report RING, but not VPINCOM when remote party originated a video call, and then use command ATA to answer the incoming call. After call is connected, data stream from network is flowed over the interface, and command +++ is used to switch from Data Mode to Command Mode, however, the data flow is not cancelled and command ATO is forbidden. In CSD mode, command +VPMAKE can't originate a video call.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+VPSM=?	+VPSM: (list of supported <mode>s) OK
Read Command	Responses
AT+VPSM?	+VPSM: <mode> OK
Write Command	Responses
AT+VPSM=<mode>	+VPSM: <mode> OK
	<i>The state of video call is not idle:</i> ERROR

### Defined values

<mode>

Integer type value indicating video call mode or CSD mode.

- 0 – Normal mode of video call application.
- 1 – CSD mode.

### Examples

AT+VPSM=?

+VPSM: (0,1)

OK

AT+VPSM=0

+VPSM: 0

```
OK
AT+VPSM?
+VPSM: 0
OK
```

## 5.9 AT+VPQLTY Setting video quality

### Description

The command is used to setting video quality during video call.

**NOTE** The write command must be setting before making a video call. After restart the module, [<fps>](#) will be setting the default value.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+VPQLTY=?	+VPQLTY: (list of supported <a href="#">&lt;fps&gt;</a> s) OK
Read Command	Responses
AT+VPQLTY?	+VPQLTY: <a href="#">&lt;fps&gt;</a> OK ERROR
Write Command	Responses
AT+VPQLTY= <a href="#">&lt;fps&gt;</a>	OK ERROR

### Defined values

[<fps>](#)  
5-15 5fps is lower fps; 15fps is higher fps.

### Examples

```
AT+VPQLTY?
+VPQLTY: 15
OK
AT+VPQLTY=?
+VPQLTY: (5-15)
OK
AT+VPQLTY=5
```

OK

## 5.10 AT+VPFLOW Output videocall streaming by USB

### Description

The command is used to output the vide call streaming by USB.

**NOTE** Please refer to the application note for the detailed.

*SIM52xx\_Video\_Streaming\_Application\_Note\_V1.00.pdf*

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+VPFLOW=?	+VPFLOW: (list of supported <type>s) OK
Read Command	Responses
AT+VPFLOW?	+VPFLOW: <type> OK
Write Command	Responses
AT+VPFLOW=<type>	OK ERROR

### Defined values

<type>

- 0 – Disable output the video streaming
- 1 – Output far video streaming
- 2 – Output near video streaming
- 3 – Output both far and near video streaming

### Examples

AT+VPFLOW=3

OK

## 6 SMS Related Commands

### 6.1 +CMS ERROR Message service failure result code

#### Description

Final result code +CMS ERROR: [<err>](#) indicates an error related to mobile equipment or network. The operation is similar to ERROR result code. None of the following commands in the same command line is executed. Neither ERROR nor OK result code shall be returned. ERROR is returned normally when error is related to syntax or invalid parameters. The format of [<err>](#) can be either numeric or verbose. This is set with command [AT+CMEE](#).

SIM PIN	References
---	3GPP TS 27.005

#### Syntax

```
+CMS ERROR: <err>
```

#### Defined values

[<err>](#)

300	ME failure
301	SMS service of ME reserved
302	Operation not allowed
303	Operation not supported
304	Invalid PDU mode parameter
305	Invalid text mode parameter
310	SIM not inserted
311	SIM PIN required
312	PH-SIM PIN required
313	SIM failure
314	SIM busy
315	SIM wrong
316	SIM PUK required
317	SIM PIN2 required
318	SIM PUK2 required
320	Memory failure
321	Invalid memory index
322	Memory full
330	SMSC address unknown
331	no network service

```
332 Network timeout
340 NO +CNMA ACK EXPECTED
500 unknown error
```

## Examples

```
AT+CMGS=02112345678
+CMS ERROR: 304
```

## 6.2 AT+CSMS Select message service

### Description

The command is used to select messaging service [<service>](#).

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CSMS=?	+CSMS: (list of supported <a href="#">&lt;service&gt;</a> s) OK
Read Command	Responses
AT+CSMS?	+CSMS: <a href="#">&lt;service&gt;</a> , <a href="#">&lt;mt&gt;</a> , <a href="#">&lt;mo&gt;</a> , <a href="#">&lt;bm&gt;</a> OK
Write Command	Responses
AT+CSMS= <a href="#">&lt;service&gt;</a>	+CSMS: <a href="#">&lt;mt&gt;</a> , <a href="#">&lt;mo&gt;</a> , <a href="#">&lt;bm&gt;</a> OK ERROR +CMS ERROR: <a href="#">&lt;err&gt;</a>

### Defined values

[<service>](#)

- 0 – SMS at command is compatible with GSM phase 2.
- 1 – SMS at command is compatible with GSM phase 2+.

[<mt>](#)

Mobile terminated messages:

- 0 – type not supported.
- 1 – type supported.

[<mo>](#)

Mobile originated messages:

0	- type not supported.
1	- type supported.
<b>&lt;bm&gt;</b>	
Broadcast type messages:	
0	- type not supported.
1	- type supported.

### Examples

<i>AT+CSMS=0</i>
<i>+CSMS:1,1,1</i>
<i>OK</i>
<i>AT+CSMS?</i>
<i>+CSMS:0,1,1,1</i>
<i>OK</i>
<i>AT+CSMS=?</i>
<i>+CSMS:(0-1)</i>
<i>OK</i>

## 6.3 AT+CPMS Preferred message storage

### Description

The command is used to select memory storages **<mem1>**, **<mem2>** and **<mem3>** to be used for reading, writing, etc.

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CPMS=?	+CPMS: (list of supported <b>&lt;mem1&gt;</b> s), (list of supported <b>&lt;mem2&gt;</b> s), (list of supported <b>&lt;mem3&gt;</b> s) OK
Read Command	Responses
AT+CPMS?	+CPMS: <b>&lt;mem1&gt;</b> , <b>&lt;used1&gt;</b> , <b>&lt;total1&gt;</b> , <b>&lt;mem2&gt;</b> , <b>&lt;used2&gt;</b> , <b>&lt;total2&gt;</b> , <b>&lt;mem3&gt;</b> , <b>&lt;used3&gt;</b> , <b>&lt;total3&gt;</b> OK ERROR +CMS ERROR: <b>&lt;err&gt;</b>
Write Command	Responses
AT+CPMS= <b>&lt;mem1&gt;</b>	+CPMS: <b>&lt;used1&gt;</b> , <b>&lt;total1&gt;</b> , <b>&lt;used2&gt;</b> , <b>&lt;total2&gt;</b> , <b>&lt;used3&gt;</b> , <b>&lt;total3&gt;</b>

[,<mem2>[,<mem3>]]	OK
	ERROR
	+CMS ERROR: <err>

## Defined values

<mem1>
String type, memory from which messages are read and deleted (commands List Messages <a href="#">AT+CMGL</a> , Read Message <a href="#">AT+CMGR</a> and Delete Message <a href="#">AT+CMGD</a> ).
“ME” and “MT”      FLASH message storage
“SM”                      SIM message storage
“SR”                      Status report storage
<mem2>
String type, memory to which writing and sending operations are made (commands Send Message from Storage <a href="#">AT+CMSS</a> and Write Message to Memory <a href="#">AT+CMGW</a> ).
“ME” and “MT”      FLASH message storage
“SM”                      SIM message storage
“SR”                      Status report storage
<mem3>
String type, memory to which received SMS is preferred to be stored (unless forwarded directly to TE; refer command New Message Indications <a href="#">AT+CNMI</a> ).
“ME”                      FLASH message storage
“SM”                      SIM message storage
<usedX>
Integer type, number of messages currently in <memX>.
<totalX>
Integer type, total number of message locations in <memX>.

## Examples

<i>AT+CPMS=?</i>
<i>+CPMS: ("ME", "MT", "SM", "SR"), ("ME", "MT", "SM", "SR"), ("ME", "SM")</i>
<i>OK</i>
<i>AT+CPMS?</i>
<i>+CPMS: "ME", 0, 23, "ME", 0, 23, "ME", 0, 23</i>
<i>OK</i>
<i>AT+CPMS="SM", "SM", "SM"</i>
<i>+CPMS: 3, 40, 3, 40, 3, 40</i>
<i>OK</i>

## 6.4 AT+CMGF Select SMS message format

### Description

The command is used to specify the input and output format of the short messages.

SIM PIN	References
YES	3GPP TS 27.005

## Syntax

Test Command	Responses
AT+CMGF=?	+CMGF: (list of supported <mode>s) OK
Read Command	Responses
AT+CMGF?	+CMGF: <mode> OK
Write Command	Responses
AT+CMGF=<mode>	OK ERROR
Execution Command	Responses
AT+CMGF	<i>Set default value (&lt;mode&gt;=0):</i> OK

## Defined values

<mode>
0 – PDU mode
1 – Text mode

## Examples

AT+CMGF?
+CMGF: 0
OK
AT+CMGF=?
+CMGF: (0-1)
OK
AT+CMGF=1
OK

## 6.5 AT+CSCA SMS service centre address

### Description

The command is used to update the SMSC address, through which mobile originated SMS are transmitted.

SIM PIN	References
YES	3GPP TS 27.005

## Syntax

Test Command	Responses
AT+CSCA=?	OK
Read Command	Responses
AT+CSCA?	+CSCA: <sca>,<tosca> OK
Write Command	Responses
AT+CSCA=<sca>[,<tosca>]	OK

## Defined values

<sca>

Service Center Address, value field in string format, BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set (refer to command [AT+CSCS](#)), type of address given by <tosca>.

<tosca>

SC address Type-of-Address octet in integer format, when first character of <sca> is + (IRA 43) default is 145, otherwise default is 129.

## Examples

```
AT+CSCA="+8613012345678"
```

```
OK
```

```
AT+CSCA?
```

```
+CSCA: "+8613010314500", 145
```

```
OK
```

## 6.6 AT+CSCB Select cell broadcast message indication

### Description

The test command returns the supported <operation>s as a compound value.

The read command displays the accepted message types.

Depending on the <operation> parameter, the write command adds or deletes the message types accepted.

SIM PIN	References
---------	------------

YES	3GPP TS 27.005
-----	----------------

## Syntax

Test Command	Responses
AT+CSCB=?	+CSCB: (list of supported <mode>s) OK ERROR
Read Command	Responses
AT+CSCB?	+CSCB: <mode>,<mids>,<dcss> OK ERROR
Write Command	Responses
AT+CSCB= <mode>[,<mides>[,<dcss>]]	OK ERROR +CMS ERROR: <err>

## Defined values

<mode>

- 0 – message types specified in <mids> and <dcss> are accepted.
- 1 – message types specified in <mids> and <dcss> are not accepted.

<mides>

String type; all different possible combinations of CBM message identifiers.

<dcss>

String type; all different possible combinations of CBM data coding schemes(default is empty string)

## Examples

```
AT+CSCB=?
+CSCB: (0-1)
OK
AT+CSCB=0,"15-17,50,86",""
OK
```

## 6.7 AT+CSDH Show text mode parameters

### Description

The command is used to control whether detailed header information is shown in text mode result codes.

SIM PIN	References
YES	3GPP TS 27.005

## Syntax

Test Command	Responses
AT+CSDH=?	+CSDH: (list of supported <show>s) OK
Read Command	Responses
AT+CSDH?	+CSDH: <show> OK
Write Command	Responses
AT+CSDH=<show>	OK
Execution Command	Responses
AT+CSDH	<i>Set default value (&lt;show&gt;=0):</i> OK

## Defined values

<show>

- 0 – do not show header values defined in commands [AT+CSCA](#) and [AT+CSMP](#) (<sca>, <tosca>, <fo>, <vp>, <pid> and <dcs>) nor <length>, <toda> or <toa> in [+CMT](#), [AT+CMGL](#), [AT+CMGR](#) result codes for SMS-DELIVERs and SMS-SUBMITs in text mode; for SMS-COMMANDs in [AT+CMGR](#) result code, do not show <pid>, <mn>, <da>, <toda>, <length> or <data>
- 1 – show the values in result codes

## Examples

```
AT+CSDH?
```

```
+CSDH: 0
```

```
OK
```

```
AT+CSDH=1
```

```
OK
```

## 6.8 AT+CNMA New message acknowledgement to ME/TA

### Description

The command confirms successful receipt of a new message (SMS-DELIVER or SMS-STATUSREPORT) routed directly to the TE. If ME does not receive acknowledgement within required time (network timeout), it will send RP-ERROR to the network.

**NOTE** The execute / write command shall only be used when [AT+CSMS](#) parameter <service>

equals 1 (= phase 2+) and appropriate URC has been issued by the module, i.e.:

<+CMT> for <mt>=2 incoming message classes 0, 1, 3 and none;

<+CMT> for <mt>=3 incoming message classes 0 and 3;

<+CDS> for <ds>=1.

SIM PIN	References
YES	3GPP TS 27.005

## Syntax

Test Command	Responses
AT+CNMA=?	<i>if text mode(AT+CMGF=1):</i> OK <i>if PDU mode (AT+CMGF=0):</i> +CNMA: (list of supported <n>s) OK
Write Command	Responses
AT+CNMA=<n>	OK ERROR +CMS ERROR: <err>
Execution Command	Responses
AT+CNMA	OK ERROR +CMS ERROR: <err>

## Defined values

<n>

Parameter required only for PDU mode.

- 0 – Command operates similarly as execution command in text mode.
- 1 – Send positive (RP-ACK) acknowledgement to the network. Accepted only in PDU mode.
- 2 – Send negative (RP-ERROR) acknowledgement to the network. Accepted only in PDU mode.

## Examples

```
AT+CNMI=1,2,0,0,0
```

```
OK
```

```
+CMT:"1380022xxxx","02/04/03,11 :06 :38",129,7,0<CR><LF>
```

Testing

(receive new short message)

```
AT+CNMA(send ACK to the network)
```

```
OK
AT+CNMA
+CMS ERROR: 340
(the second time return error, it needs ACK only once)
```

## 6.9 AT+CNMI New message indications to TE

### Description

The command is used to select the procedure how receiving of new messages from the network is indicated to the TE when TE is active, e.g. DTR signal is ON. If TE is inactive (e.g. DTR signal is OFF). If set `<mt>=2`, `<mt>=3` or `<ds>=1`, make sure `<mode>=1`, otherwise it will return error.

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CNMI=?	+CNMI: (list of supported <code>&lt;mode&gt;s</code> ),(list of supported <code>&lt;mt&gt;s</code> ),(list of supported <code>&lt;bm&gt;s</code> ),(list of supported <code>&lt;ds&gt;s</code> ),(list of supported <code>&lt;bfr&gt;s</code> ) OK
Read Command	Responses
AT+CNMI?	+CNMI: <code>&lt;mode&gt;</code> , <code>&lt;mt&gt;</code> , <code>&lt;bm&gt;</code> , <code>&lt;ds&gt;</code> , <code>&lt;bfr&gt;</code> OK
Write Command	Responses
AT+CNMI= <code>&lt;mode&gt;</code> [, <code>&lt;mt&gt;</code> ],[ <code>&lt;bm&gt;</code> ],[ <code>&lt;ds&gt;</code> [, <code>&lt;bfr&gt;</code> ]]]]	OK ERROR +CMS ERROR: <code>&lt;err&gt;</code>
Execution Command	Responses
AT+CNMI	<i>Set default value:</i> OK

### Defined values

<code>&lt;mode&gt;</code>	
0	– Buffer unsolicited result codes in the TA. If TA result code buffer is full, indications can be buffered in some other place or the oldest indications may be discarded and replaced with the new received indications.
1	– Discard indication and reject new received message unsolicited result codes when TA-TE link is reserved (e.g. in on-line data mode). Otherwise forward them directly

- to the TE.
- 2 – Buffer unsolicited result codes in the TA when TA-TE link is reserved (e.g. in on-line data mode) and flush them to the TE after reservation. Otherwise forward them directly to the TE.

#### <mt>

The rules for storing received SMS depend on its data coding scheme, preferred memory storage (**AT+CPMS**) setting and this value:

- 0 – No SMS-DELIVER indications are routed to the TE.
- 1 – If SMS-DELIVER is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CMTI: *<mem3>*,*<index>*.
- 2 – SMS-DELIVERs (except class 2 messages and messages in the message waiting indication group (store message)) are routed directly to the TE using unsolicited result code:  
+CMT:[*<alpha>*],*<length>*<CR><LF>*<pdu>* (PDU mode enabled); or  
+CMT:*<oa>*,[*<alpha>*],*<scts>*[,*<toa>*],*<fo>*,*<pid>*,*<dcs>*,*<sca>*,*<tosca>*,*<length>*]  
<CR> <LF>*<data>*  
(text mode enabled, about parameters in italics, refer command Show Text Mode Parameters **AT+CSDH**).
- 3 – Class 3 SMS-DELIVERs are routed directly to TE using unsolicited result codes defined in *<mt>*=2. Messages of other data coding schemes result in indication as defined in *<mt>*=1.

#### <bm>

The rules for storing received CBMs depend on its data coding scheme, the setting of Select CBM Types (**AT+CSCB**) and this value:

- 0 – No CBM indications are routed to the TE.
- 2 – New CBMs are routed directly to the TE using unsolicited result code:  
+CBM: *<length>*<CR><LF>*<pdu>* (PDU mode enabled); or  
+CBM: *<sn>*,*<mid>*,*<dcs>*,*<page>*,*<pages>*<CR><LF>*<data>* (text mode enabled)

#### <ds>

- 0 – No SMS-STATUS-REPORTs are routed to the TE.
- 1 – SMS-STATUS-REPORTs are routed to the TE using unsolicited result code:  
+CDS: *<length>*<CR><LF>*<pdu>* (PDU mode enabled); or  
+CDS: *<fo>*,*<mr>*,[*<ra>*],[*<tora>*],*<scts>*,*<dt>*,*<st>* (text mode enabled)
- 2 – If SMS-STATUS-REPORT is stored into ME/TA, indication of the memory location is routed to the TE using unsolicited result code: +CDSI: *<mem3>*,*<index>*.

#### <bfr>

- 0 – TA buffer of unsolicited result codes defined within this command is flushed to the TE when *<mode>* 1 to 3 is entered (OK response shall be given before flushing the codes).
- 1 – TA buffer of unsolicited result codes defined within this command is cleared when *<mode>* 1 to 3 is entered.

## Examples

```

AT+CNMI?
+CNMI: 0,0,0,0,0
OK
AT+CNMI=?
+CNMI: (0,1,2),(0,1,2,3),(0,2),(0,1,2),(0,1)
OK
AT+CNMI=2,1 (unsolicited result codes after received messages.)
OK

```

## 6.10 AT+CMGL List SMS messages from preferred store

### Description

The command returns messages with status value <stat> from message storage <mem1> to the TE. If the status of the message is 'received unread', the status in the storage changes to 'received read'.

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMGL=?	+CMGL: (list of supported <stat>s) OK
Write Command	Responses
AT+CMGL=<stat>	<p><i>If text mode (AT+CMGF=1), command successful and SMS-SUBMITs and/or SMS-DELIVERs:</i></p> <pre>+CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;oa&gt;/&lt;da&gt;,[&lt;alpha&gt;],[&lt;scts&gt;][,&lt;tooa&gt;/&lt;oda&gt;,&lt;length&gt;] &lt;CR&gt;&lt;LF&gt;&lt;data&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;da&gt;/&lt;oa&gt;,[&lt;alpha&gt;],[&lt;scts&gt;][,&lt;tooa&gt;/&lt;oda&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;[...]] OK</pre> <p><i>If text mode (AT+CMGF=1), command successful and SMS-STATUS-REPORTs:</i></p> <pre>+CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;[...]] OK</pre> <p><i>If text mode (AT+CMGF=1), command successful and SMS-COMMANDs:</i></p> <pre>+CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[&lt;CR&gt;&lt;LF&gt; +CMGL: &lt;index&gt;,&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[...]]</pre>

	<p>OK</p> <p><i>If text mode (AT+CMGF=1), command successful and CBM storage:</i></p> <p>+CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;page&gt;,&lt;pages&gt;</p> <p>&lt;CR&gt;&lt;LF&gt;&lt;data&gt;[&lt;CR&gt;&lt;LF&gt;</p> <p>+CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;page&gt;,&lt;pages&gt;</p> <p>&lt;CR&gt;&lt;LF&gt;&lt;data&gt;[...]]</p> <p>OK</p>
	<p><i>If PDU mode (AT+CMGF=0) and Command successful:</i></p> <p>+CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;alpha&gt;,&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;pdu&gt;[&lt;C R&gt;&lt;LF&gt;</p> <p>+CMGL:&lt;index&gt;,&lt;stat&gt;,&lt;alpha&gt;,&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;pdu&gt;</p> <p>[...]]</p> <p>OK</p> <p>+CMS ERROR: &lt;err&gt;</p>

## Defined values

<stat>

### 1. Text Mode:

"REC UNREAD"	received unread message (i.e. new message)
"REC READ"	received read message
"STO UNSENT"	stored unsent message
"STO SENT"	stored sent message
"ALL"	all messages

### 2. PDU Mode:

0	– received unread message (i.e. new message)
1	– received read message
2	– stored unsent message
3	– stored sent message
4	– all messages

<index>

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

<oa>

Originating-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <tooa>.

<da>

Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.

<alpha>

String type alphanumeric representation of <da> or <oa> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command Select TE Character Set [AT+CSCS](#).

<scts>

TP-Service-Centre-Time-Stamp in time-string format (refer <dt>).

<toa>

TP-Originating-Address, Type-of-Address octet in integer format. (default refer <toda>).

<toda>

TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.

<length>

Integer type value indicating in the text mode ([AT+CMGF=1](#)) the length of the message body <data> in characters; or in PDU mode ([AT+CMGF=0](#)), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length)

<data>

In the case of SMS: TP-User-Data in text mode responses; format:

1. If <dcs> indicates that GSM 7 bit default alphabet is used and <fo> indicates that TP-User-Data-Header-Indication is not set:
  - a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
  - b. If TE character set is "HEX": ME/TA converts each 7-bit character of GSM 7 bit default alphabet into two IRA character long hexadecimal number. (e.g. character Π (GSM 7 bit default alphabet 23) is presented as 17 (IRA 49 and 55))
2. If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number. (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65))
3. If <dcs> indicates that GSM 7 bit default alphabet is used:
  - a. If TE character set other than "HEX":ME/TA converts GSM alphabet into current TE character set.
  - b. If TE character set is "HEX": ME/TA converts each 7-bit character of the GSM 7 bit default alphabet into two IRA character long hexadecimal number.
4. If <dcs> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number.

<fo>

Depending on the Command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format. SMS status report is supported under text mode if <fo> is set to 49.

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<ra>

**Recipient Address**

GSM 03.40 TP-Recipient-Address Address-Value field in string format;BCD numbers (or GSM default alphabet characters) are converted to characters of the currently selected TE character set(refer to command [AT+CSCS](#));type of address given by [<tora>](#)

[<tora>](#)

**Type of Recipient Address**

GSM 04.11 TP-Recipient-Address Type-of-Address octet in integer format (default refer [<toda>](#))

[<dt>](#)

**Discharge Time**

GSM 03.40 TP-Discharge-Time in time-string format:”yy/MM/dd,hh:mm:ss+zz”,where characters indicate year (two last digits),month,day,hour,minutes,seconds and time zone.

[<st>](#)

**Status**

GSM 03.40 TP-Status in integer format

0...255

[<ct>](#)

**Command Type**

GSM 03.40 TP-Command-Type in integer format

0...255

[<sn>](#)

**Serial Number**

GSM 03.41 CBM Serial Number in integer format

[<mid>](#)

**Message Identifier**

GSM 03.41 CBM Message Identifier in integer format

[<page>](#)

**Page Parameter**

GSM 03.41 CBM Page Parameter bits 4-7 in integer format

[<pages>](#)

**Page Parameter**

GSM 03.41 CBM Page Parameter bits 0-3 in integer format

[<pdu>](#)

In the case of SMS: SC address followed by TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number. (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)).

**Examples**

*AT+CMGL=?*

*+CMGL: ("REC UNREAD","REC READ","STO UNSENT","STO SENT","ALL")*

*OK*

*AT+CMGL="ALL"*

*+CMGL: 1,"STO UNSENT","+10011",,145,4*

```
Hello World
OK
```

## 6.11 AT+CMGR Read message

### Description

The command returns message with location value <index> from message storage <mem1> to the TE.

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMGR=?	OK
Write Command	Responses
AT+CMGR=<index>	<p><i>If text mode (AT+CMGF=1), command successful and SMS-DELIVER:</i>            +CMGR: &lt;stat&gt;,&lt;oa&gt;,[&lt;alpha&gt;],&lt;scts&gt;[,&lt;tooa&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcsc&gt;,&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;            OK</p> <p><i>If text mode (AT+CMGF=1), command successful and SMS-SUBMIT:</i>            +CMGR:&lt;stat&gt;,&lt;da&gt;,[&lt;alpha&gt;][,&lt;toda&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcsc&gt;,[&lt;vp&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;            OK</p> <p><i>If text mode (AT+CMGF=1), command successful and SMS-STATUS-REPORT:</i>            +CMGR: &lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;            OK</p> <p><i>If text mode (AT+CMGF=1), command successful and SMS-COMMAND:</i>            +CMGR:&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[,&lt;pid&gt;,[&lt;mn&gt;],[&lt;da&gt;],[&lt;toda&gt;],&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;            OK</p> <p><i>If text mode (AT+CMGF=1), command successful and CBM storage:</i>            +CMGR:&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;dcsc&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;&lt;data&gt;            OK</p>

	<p><i>If PDU mode (AT+CMGF=0) and Command successful:</i></p> <pre>+CMGR:&lt;stat&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;pdu&gt; OK +CMS ERROR: &lt;err&gt;</pre>
--	--

## Defined values

<b>&lt;index&gt;</b>	Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<b>&lt;stat&gt;</b>	<p>1. Text Mode:</p> <p>"REC UNREAD" received unread message (i.e. new message)</p> <p>"REC READ" received read message</p> <p>"STO UNSENT" stored unsent message</p> <p>"STO SENT" stored sent message</p> <p>2. PDU Mode:</p> <p>0 – received unread message (i.e. new message)</p> <p>1 – received read message.</p> <p>2 – stored unsent message.</p> <p>3 – stored sent message</p>
<b>&lt;oa&gt;</b>	Originating-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <a href="#">&lt;tooa&gt;</a> .
<b>&lt;alpha&gt;</b>	String type alphanumeric representation of <a href="#">&lt;da&gt;</a> or <a href="#">&lt;oa&gt;</a> corresponding to the entry found in MT phonebook; implementation of this feature is manufacturer specific; used character set should be the one selected with command Select TE Character Set <a href="#">AT+CSCS</a> .
<b>&lt;scts&gt;</b>	TP-Service-Centre-Time-Stamp in time-string format (refer <a href="#">&lt;dt&gt;</a> ).
<b>&lt;tooa&gt;</b>	TP-Originating-Address, Type-of-Address octet in integer format. (default refer <a href="#">&lt;toda&gt;</a> ).
<b>&lt;fo&gt;</b>	Depending on the Command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format. SMS status report is supported under text mode if <a href="#">&lt;fo&gt;</a> is set to 49.
<b>&lt;pid&gt;</b>	Protocol Identifier GSM 03.40 TP-Protocol-Identifier in integer format 0...255
<b>&lt;dcs&gt;</b>	Depending on the command or result code: SMS Data Coding Scheme (default 0), or Cell

Broadcast Data Coding Scheme in integer format.

<sca>

RP SC address Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <tosca>.

<tosca>

RP SC address Type-of-Address octet in integer format (default refer <toda>).

<length>

Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+CMGF=0), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length).

<data>

In the case of SMS: TP-User-Data in text mode responses; format:

- 1 – If <dcs> indicates that GSM 7 bit default alphabet is used and <fo> indicates that TP-User-Data-Header-Indication is not set:
  - a. If TE character set other than "HEX": ME/TA converts GSM alphabet into current TE character set.
  - b. If TE character set is "HEX": ME/TA converts each 7-bit character of GSM 7 bit default alphabet into two IRA character long hexadecimal number. (e.g. character Π (GSM 7 bit default alphabet 23) is presented as 17 (IRA 49 and 55)).
- 2 – If <dcs> indicates that 8-bit or UCS2 data coding scheme is used, or <fo> indicates that TP-User-Data-Header-Indication is set: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number. (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)).
- 3 – If <dcs> indicates that GSM 7 bit default alphabet is used:
  - a. If TE character set other than "HEX":ME/TA converts GSM alphabet into current TE character set.
  - b. If TE character set is "HEX": ME/TA converts each 7-bit character of the GSM 7 bit default alphabet into two IRA character long hexadecimal number.
- 4 – If <dcs> indicates that 8-bit or UCS2 data coding scheme is used: ME/TA converts each 8-bit octet into two IRA character long hexadecimal number.

<da>

Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.

<toda>

TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.

<vp>

Depending on SMS-SUBMIT <fo> setting: TP-Validity-Period either in integer format (default 167) or in time-string format (refer <dt>).

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<ra>

Recipient Address

GSM 03.40 TP-Recipient-Address Address-Value field in string format;BCD numbers(or GSM default alphabet characters) are converted to characters of the currently selected TE character set(refer to command [AT+CSCS](#));type of address given by <tora>

<tora>

Type of Recipient Address

GSM 04.11 TP-Recipient-Address Type-of-Address octet in integer format (default refer <toda>)

<dt>

Discharge Time

GSM 03.40 TP-Discharge-Time in time-string format:”yy/MM/dd,hh:mm:ss+zz”,where characters indicate year (two last digits),month,day,hour,minutes,seconds and time zone.

<st>

Status

GSM 03.40 TP-Status in integer format

0...255

<ct>

Command Type

GSM 03.40 TP-Command-Type in integer format

0...255

<mn>

Message Number

GSM 03.40 TP-Message-Number in integer format

<sn>

Serial Number

GSM 03.41 CBM Serial Number in integer format

<mid>

Message Identifier

GSM 03.41 CBM Message Identifier in integer format

<page>

Page Parameter

GSM 03.41 CBM Page Parameter bits 4-7 in integer format

<pages>

Page parameter

GSM 03.41 CBM Page Parameter bits 0-3 in integer format

<pdu>

In the case of SMS: SC address followed by TPDU in hexadecimal format: ME/TA converts each octet of TP data unit into two IRA character long hexadecimal number. (e.g. octet with integer value 42 is presented to TE as two characters 2A (IRA 50 and 65)).

## Examples

```
AT+CMGR=1
+CMGR: "STO UNSENT", "+10011", 145, 17, 0, 0, 167, "+8613800100500", 145, 4
Hello World
OK
```

## 6.12 AT+CMGS Send message

### Description

The command is used to send message from a TE to the network (SMS-SUBMIT).

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMGS=?	OK
Write Command	Responses
<p><i>If text mode (AT+CMGF=1):</i>            AT+CMGS=&lt;da&gt;[,&lt;toda&gt;]&lt;CR&gt;  <i>Text is entered.</i>            &lt;CTRL-Z/ESC&gt;</p> <p><i>If PDU mode(AT+CMGF=0):</i>            AT+CMGS=&lt;length&gt;&lt;CR&gt;  <i>PDU is entered</i>            &lt;CTRL-Z/ESC&gt;</p>	<p><i>If text mode (AT+CMGF=1) and sending successfully:</i>            +CMGS: &lt;mr&gt;            OK</p> <p><i>If PDU mode(AT+CMGF=0) and sending successfully:</i>            +CMGS: &lt;mr&gt;            OK</p> <p><i>If sending fails:</i>            ERROR</p> <p><i>If sending fails:</i>            +CMS ERROR: &lt;err&gt;</p>

### Defined values

<da>	Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<toda>	TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
<length>	integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+CMGF=0), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length)

<mr>  
 Message Reference  
 GSM 03.40 TP-Message-Reference in integer format.  
**NOTE** In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

### Examples

```
AT+CMGS="13012832788"<CR>(TEXT MODE)
> ABCD<ctrl-Z/ESC>
+CMGS: 46
OK
```

## 6.13 AT+CMSS Send message from storage

### Description

The command is used to send message with location value <index> from preferred message storage <mem2> to the network (SMS-SUBMIT or SMS-COMMAND).

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMSS=?	OK
Write Command	Responses
AT+CMSS= <index> [,<da>[,<toda>]]	+CMSS: <mr> OK ERROR <i>If sending fails:</i> +CMS ERROR: <err>

### Defined values

<index>  
 Integer type; value in the range of location numbers supported by the associated memory and start with zero.

<da>  
 Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.

<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<tda>
TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
<b>NOTE</b> In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

### Examples

AT+CMSS=3
+CMSS: 0
OK
AT+CMSS=3,"13012345678"
+CMSS: 55
OK

## 6.14 AT+CMGW Write message to memory

### Description

The command is used to store message (either SMS-DELIVER or SMS-SUBMIT) to memory storage <mem2>.

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMGW=?	OK
Write Command	Responses
<i>If text mode(AT+CMGF=1):</i> AT+CMGW=<oa>/<da>[,<t ooa>/<tda>[,<stat>]]<CR>	+CMGW: <index> OK
<i>Text is entered.</i> <CTRL-Z/ESC>	ERROR
<i>If PDU mode(AT+CMGF=0):</i> AT+CMGW=<length>[,<sta t>]<CR> <i>PDU is entered.</i> <CTRL-Z/ESC>	+CMS ERROR: <err>

## Defined values

<index>

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

<oa>

Originating-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <tooa>.

<tooa>

TP-Originating-Address, Type-of-Address octet in integer format. (default refer <toda>).

<da>

Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.

<toda>

TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.

<length>

Integer type value indicating in the text mode (*AT+CMGF=1*) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (*AT+CMGF=0*), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length).

<stat>

1. Text Mode:

"STO UNSENT"    stored unsent message  
 "STO SENT"      stored sent message

2. PDU Mode:

2    –    stored unsent message  
 3    –    stored sent message

**NOTE** In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

## Examples

```
AT+CMGW="13012832788" <CR> (TEXT MODE)
```

```
ABCD<ctrl-Z/ESC>
```

```
+CMGW:1
```

```
OK
```

## 6.15 AT+CMGD Delete message

### Description

The command is used to delete message from preferred message storage [<mem1>](#) location [<index>](#). If [<delflag>](#) is present and not set to 0 then the ME shall ignore [<index>](#) and follow the rules for [<delflag>](#) shown below.

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMGD=?	+CMGD: (list of supported <a href="#">&lt;index&gt;</a> s)[,(list of supported <a href="#">&lt;delflag&gt;</a> s)] OK
Write Command	Responses
AT+CMGD= <a href="#">&lt;index&gt;</a> [, <a href="#">&lt;delflag&gt;</a> ]	OK ERROR +CMS ERROR: <a href="#">&lt;err&gt;</a>

### Defined values

[<index>](#)

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

[<delflag>](#)

- 0 – (or omitted) Delete the message specified in [<index>](#).
- 1 – Delete all read messages from preferred message storage, leaving unread messages and stored mobile originated messages (whether sent or not) untouched.
- 2 – Delete all read messages from preferred message storage and sent mobile originated messages, leaving unread messages and unsent mobile originated messages untouched.
- 3 – Delete all read messages from preferred message storage, sent and unsent mobile originated messages leaving unread messages untouched.
- 4 – Delete all messages from preferred message storage including unread messages.

**NOTE** If set [<delflag>](#)=1, 2, 3 or 4, [<index>](#) is omitted, such as [AT+CMGD=,1](#).

### Examples

```
AT+CMGD=1
```

```
OK
```

## 6.16 AT+CSMP Set text mode parameters

### Description

The command is used to select values for additional parameters needed when SM is sent to the network or placed in storage when text format message mode is selected.

SIM PIN	References
YES	3GPP TS 27.005

## Syntax

Test Command	Responses
AT+CSMP=?	OK
Read Command	Responses
AT+CSMP?	+CSMP: <fo>,<vp>,<pid>,<dc> OK
Write Command	Responses
AT+CSMP= [<fo>[,<vp>[,<pid>[,<dc>]] ]]	OK

## Defined values

<fo>

Depending on the Command or result code: first octet of GSM 03.40 SMS-DELIVER, SMS-SUBMIT (default 17), SMS-STATUS-REPORT, or SMS-COMMAND (default 2) in integer format. SMS status report is supported under text mode if <fo> is set to 49.

<vp>

Depending on SMS-SUBMIT <fo> setting: GSM 03.40,TP-Validity-Period either in integer format (default 167), in time-string format, or if is supported, in enhanced format (hexadecimal coded string with quotes), (<vp> is in range 0... 255).

<pid>

GSM 03.40 TP-Protocol-Identifier in integer format (default 0).

<dc>

GSM 03.38 SMS Data Coding Scheme (default 0), or Cell Broadcast Data Coding Scheme in integer format depending on the command or result code.

## Examples

```
AT+CSMP=17,23,64,244
```

```
OK
```

## 6.17 AT+CMGRO Read message only

### Description

The command returns message with location value `<index>` from message storage `<mem1>` to the TE, but the message's status don't change.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CMGRO=?	OK
Write Command	Responses
AT+CMGRO=<index>	<p><i>If text mode(AT+CMGF=1),command successful and SMS-DELIVER:</i>  +CMGRO:&lt;stat&gt;,&lt;oa&gt;,[&lt;alpha&gt;],&lt;scts&gt;[,&lt;tooa&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcs&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;  OK</p> <p><i>If text mode (AT+CMGF=1),command successful and SMS-SUBMIT:</i>  +CMGRO:&lt;stat&gt;,&lt;da&gt;,[&lt;alpha&gt;][,&lt;toda&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dcs&gt;],[&lt;vp&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;  OK</p> <p><i>If text mode(AT+CMGF=1),command successful and SMS-STATUS-REPORT:</i>  +CMGRO: &lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;  OK</p> <p><i>If text mode (AT+CMGF=1),command successful and SMS-COMMAND:</i>  +CMGRO:&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[,&lt;pid&gt;,[&lt;mn&gt;],[&lt;da&gt;],[&lt;toda&gt;],&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;  OK</p> <p><i>If text mode(AT+CMGF=1), command successful and CBM storage:</i>  +CMGRO:&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;dcs&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;&lt;data&gt;  OK</p> <p><i>If PDU mode (AT+CMGF=0) and command successful:</i>  +CMGR: &lt;stat&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;pdu&gt;  OK</p> <p><i>Otherwise:</i>  +CMS ERROR: &lt;err&gt;</p>

## Defined values

Refer to command [AT+CMGR](#).

## Examples

```
AT+CMGRO=6
+CMGRO:"REC READ","+8613917787249",,"06/07/10,12:09:38+32",145,4,0,0,"+86138002105
00",145,4
abcd
OK
```

## 6.18 AT+CMGMT Change message status

### Description

The command is used to change the message status. If the status is unread, it will be changed read. Other statuses don't change.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMGMT=?	OK
Write Command	Responses
AT+CMGMT=<index>	OK
	ERROR
	+CMS ERROR: <err>

### Defined values

<index>

Integer type; value in the range of location numbers supported by the associated memory and start with zero.

### Examples

```
AT+CMGMT=1
OK
```

## 6.19 AT+CMVP Set message valid period

### Description

This command is used to set valid period for sending short message.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMVP=?	+CMVP: (list of supported <vp>s) OK
Read Command	Responses
AT+CMVP?	+CMVP:<vp> OK
Write Command	Responses
AT+CMVP=<vp>	OK ERROR +CMS ERROR: <err>

### Defined values

<vp>	
Validity period value:	
0 to 143	(<vp>+1) x 5 minutes (up to 12 hours)
144 to 167	12 hours + (<vp>-143) x 30 minutes
168 to 196	(<vp>-166) x 1 day
197 to 255	(<vp>-192) x 1 week

### Examples

AT+CMVP=167
OK
AT+CMVP?
+CMVP: 167
OK

## 6.20 AT+CMGRD Read and delete message

### Description

The command is used to read message, and delete the message at the same time. It integrate **AT+CMGR** and **AT+CMGD**, but it doesn't change the message status.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CMGRD=?	OK
Write Command	Responses
AT+CMGRD=<index>	<p><i>If text mode(AT+CMGF=1),command successful and SMS-DELIVER:</i></p> <p>+CMGRD:&lt;stat&gt;,&lt;oa&gt;,[&lt;alpha&gt;],&lt;scts&gt;[,&lt;toa&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dc&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</p> <p>OK</p> <p><i>If text mode(AT+CMGF=1),command successful and SMS-SUBMIT:</i></p> <p>+CMGRD:&lt;stat&gt;,&lt;da&gt;,[&lt;alpha&gt;][,&lt;toda&gt;,&lt;fo&gt;,&lt;pid&gt;,&lt;dc&gt;],[&lt;vp&gt;],&lt;sca&gt;,&lt;tosca&gt;,&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</p> <p>OK</p> <p><i>If text mode(AT+CMGF=1),command successful and SMS-STATUS-REPORT:</i></p> <p>+CMGRD: &lt;stat&gt;,&lt;fo&gt;,&lt;mr&gt;,[&lt;ra&gt;],[&lt;tora&gt;],&lt;scts&gt;,&lt;dt&gt;,&lt;st&gt;</p> <p>OK</p> <p><i>If text mode(AT+CMGF=1),command successful and SMS-COMMAND:</i></p> <p>+CMGRD:&lt;stat&gt;,&lt;fo&gt;,&lt;ct&gt;[,&lt;pid&gt;,[&lt;mn&gt;],[&lt;da&gt;],[&lt;toda&gt;],&lt;length&gt;]&lt;CR&gt;&lt;LF&gt;&lt;data&gt;]</p> <p>OK</p> <p><i>If text mode(AT+CMGF=1),command successful and CBM storage:</i></p> <p>+CMGRD:&lt;stat&gt;,&lt;sn&gt;,&lt;mid&gt;,&lt;dc&gt;,&lt;page&gt;,&lt;pages&gt;&lt;CR&gt;&lt;LF&gt;&lt;data&gt;</p> <p>OK</p> <p><i>If PDU mode(AT+CMGF=0) and command successful:</i></p> <p>+CMGRD: &lt;stat&gt;,[&lt;alpha&gt;],&lt;length&gt;&lt;CR&gt;&lt;LF&gt;&lt;pdu&gt;</p> <p>OK</p> <p>ERROR</p> <p>+CMS ERROR: &lt;err&gt;</p>

## Defined values

Refer to command [AT+CMGR](#).

## Examples

```
AT+CMGRD=6
+CMGRD:"REC READ","+8613917787249",,"06/07/10,12:09:38+32",145,4,0,0, "+86138002105
00",145,4
How do you do
OK
```

## 6.21 AT+CMGSO Send message quickly

### Description

The command is used to send message from a TE to the network (SMS-SUBMIT). But it's different from [AT+CMGS](#). This command only need one time input, and wait for ">" needless.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMGSO=?	OK
Write Command	Responses
<i>If text mode (AT+CMGF=1):</i> AT+CMGSO=<da>[,<toda> ,<text>	+CMGSO: <mr> OK ERROR
<i>If PDU mode (AT+CMGF=0):</i> AT+CMGSO=<length>,<pd ucontent>	+CMS ERROR: <err>

### Defined values

<mr>
Message Reference GSM 03.40 TP-Message-Reference in integer format.
<da>
Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<length>
Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body

<data> > (or <cdta>) in characters; or in PDU mode (*AT+CMGF=0*), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length).

<tda>

TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.

<text>

Content of message.

<pducontent>

Content of message.

**NOTE** In text mode, the maximum length of an SMS depends on the used coding scheme: It is 160 characters if the 7 bit GSM coding scheme is used.

### Examples

```
AT+CMGSO="10086","YECX"
+CMGSO: 128
OK
```

## 6.22 AT+CMGWO Write message to memory quickly

### Description

The command stores message (either SMS-DELIVER or SMS-SUBMIT) to memory storage <mem2>. But it's different from *AT+CMGW*. This command only need one time input, and wait for ">" needless.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMGWO=?	OK
Write Command	Responses
If text mode ( <i>AT+CMGF=1</i> ): AT+CMGWO=<da>[,<tda>],<text>	+CMGWO: <index> OK
If PDU mode ( <i>AT+CMGF=0</i> ): AT+CMGWO=<length>,<pducontent>	ERROR +CMS ERROR: <err>

## Defined values

<index>	Integer type; value in the range of location numbers supported by the associated memory and start with zero.
<da>	Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <toda>.
<toda>	TP-Destination-Address, Type-of-Address octet in integer format. (when first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.
<text>	Content of message.
<pducontent>	Content of message.

## Examples

```
AT+CMGWO="13012832788","ABCD"
+CMGWO: 1
OK
```

## 6.23 AT+CMGSEX Send message

### Description

The command is used to send message from a TE to the network (SMS-SUBMIT).

SIM PIN	References
YES	3GPP TS 27.005

### Syntax

Test Command	Responses
AT+CMGSEX=?	OK
Write Command	Responses
<i>If text mode (AT+CMGF=1):</i> AT+CMGSEX=<da>[,<toda> >][,<mr>,<msg_seg>,<msg_total>]<CR> <i>Text is entered.</i> <CTRL-Z/ESC>	<i>If text mode (AT+CMGF=1) and sending successfully:</i> +CMGSEX: <mr> OK <i>If PDU mode(AT+CMGF=0) and sending successfully:</i> +CMGSEX: <mr> OK

<p><i>If PDU mode(AT+CMGF=0):</i>  AT+CMGSEX=&lt;length&gt;&lt;C  R&gt;  <i>PDU is entered</i>  &lt;CTRL-Z/ESC&gt;</p>	<p><i>If sending fails:</i>  ERROR</p> <hr/> <p><i>If sending fails:</i>  +CMS ERROR: &lt;err&gt;</p>
--	---

## Defined values

<da>

Destination-Address, Address-Value field in string format; BCD numbers (or GSM 7 bit default alphabet characters) are converted to characters of the currently selected TE character set, type of address given by <tda>.

<tda>

TP-Destination-Address, Type-of-Address octet in integer format. (When first character of <da> is + (IRA 43) default is 145, otherwise default is 129). The range of value is from 128 to 255.

<length>

Integer type value indicating in the text mode (AT+CMGF=1) the length of the message body <data> > (or <cdata>) in characters; or in PDU mode (AT+CMGF=0), the length of the actual TP data unit in octets. (i.e. the RP layer SMSC address octets are not counted in the length)

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

<msg\_seg>

The segment number for long sms

<msg\_total>

The total number of the segments for long sms. It's range is from 2 to 255.

**NOTE** In text mode, the maximum length of an SMS depends on the used coding scheme: For single SMS, it is 160 characters if the 7 bit GSM coding scheme is used; For multiple long sms, it is 153 characters if the 7 bit GSM coding scheme is used.

## Examples

```
AT+CMGSEX="13012832788", 190, 1, 2<CR>(TEXT MODE)
```

```
> ABCD<ctrl-Z/ESC>
```

```
+CMGSEX: 190
```

```
OK
```

```
AT+CMGSEX="13012832788", 190, 2, 2<CR>(TEXT MODE)
```

```
> EFGH<ctrl-Z/ESC>
```

```
+CMGSEX: 190
```

```
OK
```

## 6.24 AT+CMGENREF Generate a new message reference

### Description

The command is used to generate a new message reference which can be used by AT+CMGSEX.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMGENREF=?	OK
Execute Command	Responses
AT+CMGENREF	+CMGENREF: <mr> OK

### Defined values

<mr>

Message Reference

GSM 03.40 TP-Message-Reference in integer format.

### Examples

*AT+CMGENREF=?*

*OK*

*AT+CMGENREF*

*+CMGENREF: 190*

*OK*

## 7 Camera Related Commands

### 7.1 AT+CCAMS Start camera

#### Description

The command is used to start camera. Make sure the sensor is existent and connect well. Camera must be started before taking picture or recording video.

SIM PIN	References
NO	Vendor

#### Syntax

Execution Command	Responses
AT+CCAMS	OK
	<i>If have no sensor:</i> CAMERA NO SENSOR ERROR
	<i>If camera has started:</i> CAMERA INVALID STATE ERROR

#### Examples

AT+CCAMS
OK

### 7.2 AT+CCAME Stop camera

#### Description

The command is used to stop camera.

If [AT+CCAMTP](#) has executed to take a picture and the picture is not saved by [AT+CCAMEP](#), the picture will not be saved after [AT+CCAME](#) execution.

If [AT+CCAMRS](#) has executed to record video and that is not ended by [AT+CCAMRE](#), the video file will be stopped recording and saved after [AT+CCAME](#) execution.

SIM PIN	References
NO	Vendor

## Syntax

Execution Command	Responses
AT+CCAME	OK
	<i>If camera has stopped:</i> CAMERA NOT START ERROR

## Examples

```
AT+CCAME
OK
```

## 7.3 AT+CCAMSETD Set camera dimension

### Description

The command is used to set dimension of camera.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CCAMSETD= <width>,<height>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Defined values

<width> * <height>		
Image mode	STAMP	80 * 48
	QQVGA	160 * 120
	QCIF	176 * 144
	QVGA	320 * 240
	CIF	352 * 288
	VGA	640 * 480
	XGA	1024 * 768
	4VGA	1280 * 960

	SXGA	1280 * 1024
	UXGA	1600 * 1200
Video mode	STAMP	80 * 48
	<u>QCIF</u>	176 * 144
	QVGA	320 * 240

### Examples

```
AT+CCAMSETD=320,240
OK
```

## 7.4 AT+CCAMSETF Set camera FPS

### Description

The command is used to set FPS (frame per second). It is acting when recording video.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CCAMSETF=<fps>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Defined values

<fps>
0 – 7.5 fps
1 – 10 fps
2 – 15 fps

### Examples

```
AT+CCAMSETF=1
OK
```

## 7.5 AT+CCAMSETR Set camera rotation

### Description

The command is used to set the rotation degree of camera.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CCAMSETR= <rotation_degree>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Defined values

<rotation_degree>
0 – not rotate .
90 – rotate 90 degrees clockwise.
180 – rotate 180 degrees clockwise.
270 – rotate 270 degrees clockwise.

### Examples

AT+CCAMSETR=90
OK

## 7.6 AT+CCAMSETN Set camera night shot mode

### Description

The command is used to set night shot mode of camera.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CCAMSETN= <nightsht>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Defined values

<nightsht>
0 – off
1 – on

### Examples

AT+CCAMSETN=1
OK

## 7.7 AT+CCAMSETWB Set camera white balance

### Description

The command is used to set white balance.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CCAMSETWB=<wb>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Defined values

<wb>
------

- 1 – auto
- 4 – fluorescent
- 5 – daylight
- 6 – cloudy daylight

### Examples

```
AT+CCAMSETWB=1
OK
```

## 7.8 AT+CCAMSETB Set camera brightness

### Description

The command is used to set brightness.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CCAMSETB= <brightness>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Defined values

<brightness>  
Range is 0-6 (0 is the lowest, 6 is the highest).

### Examples

```
AT+CCAMSETB=1
OK
```

## 7.9 AT+CCAMSETZ Set camera zoom

### Description

The command is used to set zoom in/out.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CCAMSETZ=?	+CCAMSETZ:(<zmin>-<zmax>),(<zcurrent>) OK
Write Command	Responses
AT+CCAMSETZ=<zoom>	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

## Defined values

<zoom>

Range is <zmin>-<zmax>

<zmin>

The minimum of zoom for current dimension.

<zmax>

The maximum of zoom for current dimension.

<zcurrent>

The current zoom value.

### NOTE

1. Before set the zoom for camera, advice to check response of command (AT+CCAMSETZ=?).
2. Maybe <zmax> value is different in different dimension, but it must between 0 and 91, include 0 and 91.
3. After executed this AT command but without actual effect, maybe we are not support this function in your module.

## Examples

```
AT+CCAMSETZ=?
```

```
+CCAMSETZ:(0-30)(0)
```

```
OK
```

```
AT+CCAMSETZ=15
```

```
OK
```

## 7.10 AT+CCAMTP Take picture

### Description

The command is used to take a picture after camera is started and setting parameters if need.

**NOTE** [AT+CCAMTP](#) is used to take a picture, but not save; and [AT+CCAMEP](#) is used to save the picture after [AT+CCAMTP](#) execution. If [AT+CCAMTP](#) is executed more times continuously, [AT+CCAMEP](#) will save the picture which is taken by the last [AT+CCAMTP](#).

**NOTE** If GPS is running and fixed already, the GPS information (include latitude, longitude, altitude and Date-Time) will store in JPEG EXIF tab when taking picture.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CCAMTP	OK
	<i>If storage space is full:</i> CAMERA NO MEMORY ERROR
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

### Examples

```
AT+CCAMTP
OK
```

## 7.11 AT+CCAMEP Save picture

### Description

The command is used to save a picture taken by last [AT+CCAMTP](#) in JPEG format. File name is generated automatically based on system time [refer [AT+CCLK](#)], and the storage location of picture refers to [AT+FSLOCA](#).

SIM PIN	References
NO	Vendor

## Syntax

Execution Command	Responses
AT+CCAMEP	<path_name> OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

## Defined values

<path_name>
If saved in ME: “C:/Picture/YYYYMMDD_HHMMSS.jpg”
If saved in SD card: “D:/Picture/YYYYMMDD_HHMMSS.jpg”.

## Examples

AT+CCAMEP
C:/Picture/20080420_120303.jpg
OK

## 7.12 AT+CCAMRS Start video record

### Description

The command is used to start video recording and save the video file by MP4 format. The name of video file will be generated automatically based on system time [refer [AT+CCLK](#)], and the storage location of video file refers to [AT+FSLOCA](#).

**Note** If storage space isn't enough during recording, the module will stop recording video and save the media file. Before [AT+CCAMRS](#) execution, please make sure the current dimension is supported for recording video.

SIM PIN	References
NO	Vendor

## Syntax

Execution Command	Responses
-------------------	-----------

AT+CCAMRS	<path_name>
	OK
	<i>If storage space is full:</i> CAMERA NO MEMORY ERROR
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera has a wrong dimension:</i> CAMERA INVALID DIMENSION FORMAT ERROR
<i>If camera not starting:</i> CAMERA NOT START ERROR	

### Defined values

<path_name>
If saved in ME: “C:/Video/YYYYMMDD_HHMMSS.mp4”
If saved in SD card: “D:/Video/YYYYMMDD_HHMMSS. mp4”.

### Examples

AT+CCAMRS
C:/Video/20080420_123003.mp4
OK

## 7.13 AT+CCAMRP Pause video record

### Description

The execution command pause record during recording video by camera.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CCAMRP	OK
	<i>If camera in a wrong state:</i>

	CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

## Examples

```
AT+CCAMRP
OK
```

## 7.14 AT+CCAMRR Resume video record

### Description

The command is used to resume video record, and it executes after record pause by [AT+CCAMRP](#).

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CCAMRR	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

## Examples

```
AT+CCAMRR
OK
```

## 7.15 AT+CCAMRE Stop video record

### Description

The command is used to stop video record, and it is corresponding to [AT+CCAMRS](#).

SIM PIN	References
---------	------------

NO	Vendor
----	--------

## Syntax

Execution Command	Responses
AT+CCAMRE	OK
	<i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR
	<i>If camera not starting:</i> CAMERA NOT START ERROR

## Examples

```
AT+CCAMRE
```

```
OK
```

## 7.16 AT+CCAMMD Switch the AK8856 mode

### Description

This command is used to switch the chip AK8856's working mode between PAL and NTSC, if you have an analog sensor of PAL or NTSC connected to AK8856 then you can use this command to set ak8856 working under the appropriate mode.

This command is savable which means the system will recover to the latest mode if the module restarted.

Default mode is PAL mode.

SIM PIN	References
No	Vendor

### Syntax

Test Command	Responses
AT+CCAMMD=?	+CCAMMD: (0-1) OK
Read Command	Responses
AT+CCAMMD?	+CCAMMD: <mode> OK
Write Command	Responses
AT+CCAMMD=<mode>	OK

	ERROR
--	-------

### Defined values

< mode >	
0	PAL
1	NTSC

### Examples

AT+CCAMMD=1
OK
AT+CCAMMD=0
OK

## 7.17 AT+CCAMCHL Select the input channel of AK8856

### Description

This command is used to select the valid input channel of AK8856, since AK8856 supports 2 input channels, so one must select the right channel first.

This command is savable and the default channel is 1.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCAMCHL=?	+CCAMCHL: (1-2) OK
Read Command	Responses
AT+CCAMCHL?	+ CCAMCHL: <channel> OK
Write Command	Responses
AT+ CCAMCHL =< <channel >	OK ERROR

### Defined values

< channel >:	
1	: channel 1
2	: channel 2

## Examples

```
AT+CCAMCHL=1
OK
AT+ CCAMCHL?
+CCAMCHL: 1
OK
```

## 7.18 AT+CCAMSETPN Setting picture name by user

### Description

The command is used to set picture name format by user.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCAMSETPN=?	OK
Read Command	Responses
AT+CCAMSETPN?	+CCAMSETPN: <name> OK ERROR
Write Command	Responses
AT+CCAMSETPN=<name>	OK ERROR

### Defined values

<name>

Picture name. The length max is 20.

If <name> is "", the picture name create default.

**NOTE** The <name> is only a part of the whole name; the whole name is <name>xxxx.

xxxx

Index of the picture after user defined name.

xxxx range is 0000~9999.

Example: If <name> is "image\_", the whole name is "image\_0000", "image\_0001".

### Examples

```
AT+CCAMSETPN?
```

```
+CCAMSETPN: "image_"
OK
AT+CCAMSETPN=?
OK
AT+CCAMSETPN="image_"
OK
```

## 7.19 AT+CCAMTPEXT Take and save picture

### Description

The command is used to take and save a picture after camera is started and setting parameters if need.

**NOTE** [AT+CCAMTP](#) is used to take a picture only then save picture by [AT+CCAMEP](#), but [AT+CCAMTPEXT](#) can take picture and save it automatically

**NOTE** Please refer to the application note for the detailed of output the streaming.

[SIM52xx\\_Video\\_Streaming\\_Application\\_Note\\_V1.00.pdf](#)

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCAMTPEXT=?	+CCAMTPEXT: (list of supported <quality>s) OK
Write Command	Responses
AT+CCAMTPEXT=<quality>[,<type>]	<p><i>If &lt;type&gt;=0:</i> &lt;path_name&gt; OK</p> <p><i>If &lt;type&gt;=1:</i> OK</p> <p><i>If storage space is full:</i> CAMERA NO MEMORY ERROR</p> <p><i>If camera in a wrong state:</i> CAMERA INVALID STATE ERROR</p> <p><i>If camera not starting:</i> CAMERA NOT START ERROR</p>

### Defined values

<quality>
Range is 10 – 100.
<path_name>
If saved in ME: “C:/Picture/YYYYMMDD_HHMMSS.jpg”
If saved in SD card: “D:/Picture/YYYYMMDD_HHMMSS.jpg”
<b>NOTE:</b> The file name can be set by AT+CCAMSETPN.
<type>
0 – Save the picture in module EFS.
1 – Output the picture streaming by USB

## Examples

```
AT+CCAMTPEXT=100
C:/Picture/19800106_001034.jpg
OK
```

## 7.20 AT+CCAMAFT Add date/time frame on picture

### Description

The command is used to add date frame on the picture.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCAMAFT=?	+CCAMAFT: (list of supported <on/off>s) OK
Read Command	Responses
AT+CCAMAFT?	+CCAMAFT: <on/off> OK
Write Command	Responses
AT+CCAMAFT=<on/off>	OK ERROR

### Defined values

<on/off>
0 – Not display date/time frame on picture
1 – Display date/time frame on picture

## Examples

```
AT+CCAMAFT=1
OK
```

## 7.21 AT+CCAMAF Add user-defined image frame on picture

### Description

The command is used to add user-defined image on the picture.

**NOTE:** The add image format must be RGB565 bmp file.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCAMAF=?	OK
Read Command	Responses
AT+CCAMAF?	+CCAMAFT: <on/off> OK
Write Command	Responses
AT+CCAMAF=<on/off>[,<x>,<y>,<trans>,<file>]	OK ERROR

### Defined values

<on/off>

- 0 – Disable add frame on picture
- 1 – Enable add frame on picture

<x>,<y>

Put the add frame on picture (x, y) position.

**NOTE:**  $x + \text{add\_frame\_width} \leq \text{source\_image\_width}$   
 $y + \text{add\_frame\_length} \leq \text{source\_image\_length}$

<trans>

Transparent of add frame. Example: If set 0xFFFF, the white color of add frame will be transparent on source image.

<file>

The full path of the add frame file. Like "C:/Picture/logo.bmp"

### Examples

```
AT+CCAMAF=1,50,50,0xFFFF,"C:/Picture/logo.bmp"
```

OK

## 7.22 AT+CCAMFLOW Output camera video streaming by USB

### Description

The command is used to output camera video streaming by USB.

**NOTE** Please refer to the application note for the detailed.

*SIM52xx\_Video\_Streaming\_Application\_Note\_V1.00.pdf*

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCAMFLOW=?	+CCAMFLOW: (list of supported <on/off>s) OK
Read Command	Responses
AT+CCAMFLOW?	+CCAMFLOW: <on/off> OK
Write Command	Responses
AT+CCAMFLOW=<on/off>	OK ERROR

### Defined values

<on/off>

- 0 – Disable output the video streaming
- 1 – Enable output the video streaming

### Examples

AT+CCAMFLOW=1

OK

## 8 Audio Application Commands

### 8.1 AT+CQCPREC Start recording sound clips

#### Description

The command is used to start recording sound clip. The name of audio file will be generated automatically based on system time [refer [AT+CCLK](#)], and the storage location of audio file refers to [AT+FSLOCA](#).

**NOTE:** If recording during a call, the [<type>](#) will set automatically refer to the call vocoder.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+CQCPREC=?	+CQCPREC: (list of supported <a href="#">&lt;source&gt;</a> s), (list of supported <a href="#">&lt;format&gt;</a> s), (list of supported <a href="#">&lt;type&gt;</a> s) OK
Write Command	Responses
AT+CQCPREC= <a href="#">&lt;source&gt;</a> , <a href="#">&lt;format&gt;</a> ,[ <a href="#">&lt;type&gt;</a> ]	<a href="#">&lt;path_name&gt;</a> +AUDIOSTATE: audio record OK
	ERROR

#### Defined values

<a href="#">&lt;source&gt;</a>
0 – local path
1 – remote path
<a href="#">&lt;format&gt;</a>
Format of the audio file:
amr – AMR format
qcp – QCP format
wav – WAV format
<a href="#">&lt;type&gt;</a>
Audio file format type:
10 – 4.75kbit/s AMR type QCP format
11 – 5.15kbit/s AMR type QCP format

- 12 – 5.9kbit/s AMR type QCP format
- 13 – 6.7kbit/s AMR type QCP format
- 14 – 7.4kbit/s AMR type QCP format
- 15 – 7.95kbit/s AMR type QCP format
- 16 – 10.2kbit/s AMR type QCP format
- 17 – 12.2kbit/s AMR type QCP format
- 18 – 4.75kbit/s AMR type with DTX enabled QCP format
- 19 – 5.15kbit/s AMR type with DTX enabled QCP format
- 20 – 5.9kbit/s AMR type with DTX enabled QCP format
- 21 – 6.7kbit/s AMR type with DTX enabled QCP format
- 22 – 7.4kbit/s AMR type with DTX enabled QCP format
- 23 – 7.95kbit/s AMR type with DTX enabled QCP format
- 24 – 10.2kbit/s AMR type with DTX enabled QCP format
- 25 – 12.2kbit/s AMR type with DTX enabled QCP format
- 26 – 4.75kbit/s AMR type AMR format
- 27 – 5.15kbit/s AMR type AMR format
- 28 – 5.9kbit/s AMR type AMR format
- 29 – 6.7kbit/s AMR type AMR format
- 30 – 7.4kbit/s AMR type AMR format
- 31 – 7.95kbit/s AMR type AMR format
- 32 – 10.2kbit/s AMR type AMR format
- 33 – 12.2kbit/s AMR type AMR format
- 34 – 4.75kbit/s AMR type with DTX enabled AMR format
- 35 – 5.15kbit/s AMR type with DTX enabled AMR format
- 36 – 5.9kbit/s AMR type with DTX enabled AMR format
- 37 – 6.7kbit/s AMR type with DTX enabled AMR format
- 38 – 7.4kbit/s AMR type with DTX enabled AMR format
- 39 – 7.95kbit/s AMR type with DTX enabled AMR format
- 40 – 10.2kbit/s AMR type with DTX enabled AMR format
- 41 – 12.2kbit/s AMR type with DTX enabled AMR format
- 42 – EFR QCP format
- 43 – FR QCP format
- 44 – HR QCP format

<path\_name>

If saved in ME:

“C:/Audio/YYYYMMDD\_HHMMSS.amr”

If saved in SD card:

“D:/Audio/YYYYMMDD\_HHMMSS.amr”.

## Examples

*AT+CQCPREC= 0,amr*

*C:/Audio/20080520\_120303.amr*

OK

## 8.2 AT+CQCPAUSE Pause sound record

### Description

The execution command pause record sound.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CQCPAUSE	OK

### Examples

```
AT+CQCPAUSE
OK
```

## 8.3 AT+CQCPRESUME Resume sound record

### Description

The command is used to resume sound record.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CQCPRESUME	OK

### Examples

```
AT+CQCPRESUME
OK
```

## 8.4 AT+CQCPSTOP Stop sound record

### Description

The command is used to stop sound record. Execute the command during recording sound.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CQCPSTOP	+AUDIOSTATE: audio record stop  OK

### Examples

```
AT+CQCPSTOP
OK
```

## 8.5 AT+CCMXPLAY Play audio file

### Description

The command is used to play an audio file.

**NOTE:** Make sure the file is in the current folder path queried by command [AT+FSCD](#).

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCMXPLAY=?	CCMXPLAY: (0-3),(0-255)  OK
Write Command	Responses
AT+CCMXPLAY= <a href="#">&lt;file_name&gt;</a> [, <a href="#">&lt;play_path&gt;</a> ]	+AUDIOSTATE: audio play  OK

### Defined values

[<file\\_name>](#)

The name of audio file.

[<play\\_path>](#)

0 – local path (If [<play\\_path>](#) is omitted, default value is used.)

- 1 – local path during call
- 2 – remote path during call
- 3 – both path during call

**NOTE** <play\_path>=1, 2 or 3 must be used during call. GSM call is only applicable to QCP file, and UMTS call is only applicable to AMR file.

## Examples

```
AT+FSCD=Audio
+FSCD: C:/Audio/
OK
AT+FSCD?
+FSCD: C:/Audio/
OK
AT+CCMXPLAY="20080520_120303.amr",0
OK
```

## 8.6 AT+CCMXPAUSE Pause playing audio file

### Description

The command is used to pause playing audio file.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CCMXPAUSE	+AUDIOSTATE: audio play pause  OK

### Examples

```
AT+CCMXPAUSE
OK
```

## 8.7 AT+CCMXRESUME Resume playing audio file

### Description

The command is used to resume playing audio file.

SIM PIN	References

NO	Vendor
----	--------

### Syntax

Execution Command	Responses
AT+CCMXRESUME	+AUDIOSTATE: audio play  OK

### Examples

```
AT+CCMXRESUME
OK
```

## 8.8 AT+CCMXSTOP Stop playing audio file

### Description

The command is used to stop playing audio file. Execute this command during audio playing.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CCMXSTOP	+AUDIOSTATE: audio play stop  OK

### Examples

```
AT+CCMXSTOP
OK
```

## 8.9 AT+CCMXSPEC Get the audio file specification

### Description

The command is used to get the audio file specification. The storage location of audio file refers to [AT+FSLOCA](#).

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CCMXSPEC=?	OK
Write Command	Responses
AT+CCMXSPEC=<file_name>	+CCMXSPEC : <spec>
me>	OK

## Defined values

<file_name>
The name of audio file.
<spec>
0 – MIDI file
5 – MP3 file
6 – AAC file
14 – AMR QCP file
15 – EFR QCP file
16 – FR QCP file
17 – HR QCP file
18 – WAVE file
19 – AMR file
20 – AMR-WB file
Other values is reserved

## Examples

AT+CQCPREC="efr.qcp"
+CCMXSPEC: 15
OK

## 8.10 AT+CCMXPLAYRING Play a user-defined ring

### Description

The command is used to play a user-defined ring file.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCMXPLAYRING=?	+CCMXPLAYRING: (list of supported <on/off>s),(list of

	supported <pause>s) OK
Read Command	Responses
AT+CCMXPLAYRING?	+CCMXPLAYRING: <on/off>,"<file>",<pause> OK
Write Command	Responses
AT+CCMXPLAYRING= <on/off>[,"<file>",<pause>]	OK ERROR

## Defined values

<on/off>

- 0 – disable play user defined ring
- 1 – enable play user defined ring

**NOTE** If setting with one parameter, must make user the <file> is existent.

<file>

User-defined ring file whole path. like "C:/Audio/ring1.mp3".

<pause>

0...60 seconds

Time (in second) of silence between repeating of file. (0 for no repeating)

## Examples

```

AT+CCMXPLAYRING=?
CCMXPLAYRING: (0,1),(0-60)
OK
AT+CCMXPLAYRING=1,"C:/Audio/ring1.mp3",2
OK
AT+CCMXPLAYRING?
CCMXPLAYRING: 1,"C:/Audio/ring1.mp3",2
OK
  
```

## 8.11 AT+CECM Enable/Disable Echo Canceller

### Description

This command is used to select the echo cancellation mode. Each audio channel has it's own default echo cancellation mode. For example:

Handset: at+cecm=1(default open)

Headset: at+cecm=2(default open)

Speaker: at+cecm=4(default open)

PCM: at+cecm=5(default open)

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CECM=?	+CECM: (0-8) OK
Read Command	Responses
AT+CECM?	+CECM: <enable> OK
Write Command	Responses
AT+CECM=<enable>	OK ERROR

## Defined values

< enable >:

- 0 : disable EC mode
- 1 : EC mode recommended for HANDSET
- 2 : EC mode recommended for HEADSET
- 3 : EC mode recommended for HANDSFREE
- 4 : EC mode recommended for SPEAKER
- 5 : EC mode recommended for BT HEADSET
- 6 : EC mode for dynamic adjuston
- 7 : EC mode for dynamic adjuston
- 8 : EC mode for dynamic adjuston

## Examples

```
AT+CECM=0
```

```
OK
```

```
AT+CECM=1
```

```
OK
```

*Note: User should use this AT command together with other related audio AT commands like “CSDVC”, “PCPM” and so on.*

## 8.12 AT+CNSM Enable/Disable Noise Suppression

### Description

This command is used to enable/disable noise suppression. The default value is enable.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CNSM=?	+CNSM: (0-1) OK
Read Command	Responses
AT+CNSM?	+CNSM: <enable> OK
Write Command	Responses
AT+CNSM=<enable>	OK ERROR

### Defined values

< enable >:

- 0 : disable this feature
- 1 : enable this feature

### Examples

```
AT+CNSM=0
```

```
OK
```

```
AT+ CNSM =1
```

```
OK
```

*Note: User should use this AT command together with other related audio AT commands like “CSDVC”, “PCPM” and so on.*

## 8.13 AT+CECSET Adjust the effect for the given echo cancellation mode.

### Description

This command is used to adjust the parameters of the selected EC mode for the given device. It can be used together with +ECM command.

This is a savable command.

SIM PIN	References
---------	------------

NO	Vendor
----	--------

## Syntax

Test Command	Responses
AT+CECSET=?	+CECSET: (list of supported <index>s), (list of supported <value>s) OK
Read Command	Responses
AT+CECSET?	+CECSET: current echo cancellation mode is : <ec_md> <index> -> <value> [...] OK
Write Command	Responses
AT+CECSET =<index>,<value>	OK ERROR

## Defined values

<ec\_md>:

Current echo cancellation mode, please refer +CECM for more details

<index>:

0 – 37, EC has 38 parameters; this is the index of the selected parameter.

<value>:

0 – 65535, EC parameter value.

### NOTE:

1. Currently only three EC mode's parameters can be adjusted, they are 6, 7 and 8 you can use +ECM to select one of these modes.
2. You have to use +ECM to select the right EC mode first in order to change the parameters.

## Examples

```
AT+CSDVC=1
```

```
OK
```

```
AT+CECM =6
```

```
OK
```

```
AT+CECSET=0,65530
```

```
OK
```

```
AT+CECSET=1,1000
```

```
OK
```

## 9 Network Service Related Commands

### 9.1 AT+CREG Network registration

#### Description

Write command controls the presentation of an unsolicited result code +CREG: <stat> when <n>=1 and there is a change in the ME network registration status.

Read command returns the status of result code presentation and an integer <stat> which shows whether the network has currently indicated the registration of the ME.

SIM PIN	References
NO	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CREG=?	+CREG: (list of supported <n>s) OK
Read Command	Responses
AT+CREG?	+CREG: <n>,<stat>[,<lac>,<ci>] OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CREG =<n>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CREG	<i>Set default value (&lt;n&gt;=0) :</i> OK

#### Defined values

<n>
0 – disable network registration unsolicited result code
1 – enable network registration unsolicited result code +CREG: <stat>
2 – there is a change in the ME network registration status or a change of the network cell:

<b>+CREG: &lt;stat&gt;[,&lt;lac&gt;,&lt;ci&gt;]</b>	
<b>&lt;stat&gt;</b>	
0	– not registered, ME is not currently searching a new operator to register to
1	– registered, home network
2	– not registered, but ME is currently searching a new operator to register to
3	– registration denied
4	– unknown
5	– registered, roaming
<b>&lt;lac&gt;</b>	
Two byte location area code in hexadecimal format(e.g."00C3" equals 193 in decimal).	
<b>&lt;ci&gt;</b>	
Two byte cell ID in hexadecimal format.	

## Examples

```
AT+CREG?
+CREG: 0,1
OK
```

## 9.2 AT+COPS Operator selection

### Description

Write command forces an attempt to select and register the GSM/UMTS network operator. **<mode>** is used to select whether the selection is done automatically by the ME or is forced by this command to operator **<oper>** (it shall be given in format **<format>**). If the selected operator is not available, no other operator shall be selected (except **<mode>**=4). The selected operator name format shall apply to further read commands (**AT+COPS?**) also. **<mode>**=2 forces an attempt to deregister from the network. The selected mode affects to all further network registration (e.g. after **<mode>**=2, ME shall be unregistered until **<mode>**=0 or 1 is selected).

Read command returns the current mode and the currently selected operator. If no operator is selected, **<format>** and **<oper>** are omitted.

Test command returns a list of quadruplets, each representing an operator present in the network. Quadruplet consists of an integer indicating the availability of the operator **<stat>**, long and short alphanumeric format of the name of the operator, and numeric format representation of the operator. Any of the formats may be unavailable and should then be an empty field. The list of operators shall be in order: home network, networks referenced in SIM, and other networks.

It is recommended (although optional) that after the operator list TA returns lists of supported **<mode>**s and **<format>**s. These lists shall be delimited from the operator list by two commas.

When executing **AT+COPS=?**, any input from serial port will stop this command.

SIM PIN	References
NO	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+COPS=?	+COPS: [list of supported (<stat>,long alphanumeric <oper> ,short alphanumeric <oper>,numeric <oper>[,< AcT>])s] [,,(list of supported <mode>s),(list of supported <format>s)] OK ERROR +CME ERROR: <err>
Read Command	Responses
AT+COPS?	+COPS: <mode>[,<format>,<oper>[,< AcT>]] OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+COPS=<mode>[,<form at>[,<oper>[,< AcT>]]]	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+COPS	OK

## Defined values

<mode>
<ul style="list-style-type: none"> <li>0 – automatic</li> <li>1 – manual</li> <li>2 – force deregister</li> <li>3 – set only &lt;format&gt;</li> <li>4 – manual/automatic</li> <li>5 – manual,but do not modify the network selection mode(e.g GSM,WCDMA) after module resets.</li> </ul>
<format>
<ul style="list-style-type: none"> <li>0 – long format alphanumeric &lt;oper&gt;</li> <li>1 – short format alphanumeric &lt;oper&gt;</li> <li>2 – numeric &lt;oper&gt;</li> </ul>
<oper>
string type, <format> indicates if the format is alphanumeric or numeric.
<stat>
<ul style="list-style-type: none"> <li>0 – unknown</li> <li>1 – available</li> <li>2 – current</li> </ul>

3	- forbidden
<b>&lt;AcT&gt;</b>	
Access technology selected	
0	- GSM
1	- GSM Compact
2	- UTRAN

### Examples

```

AT+COPS?
+COPS: 0,0,"China Mobile Com",0
OK
AT+COPS=?
+COPS:(2,"China Unicom","Unicom","46001",0),(3,"China Mobile Com","DGTMP",
"46000",0),(0,1,2,3,4),(0,1,2)
OK

```

## 9.3 AT+CLCK Facility lock

### Description

The command is used to lock, unlock or interrogate a ME or a network facility **<fac>**. Password is normally needed to do such actions. When querying the status of a network service (**<mode>**=2) the response line for 'not active' case (**<status>**=0) should be returned only if service is not active for any **<class>**.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CLCK=?	+CLCK: (list of supported <b>&lt;fac&gt;</b> s) OK +CME ERROR: <b>&lt;err&gt;</b>
Write Command	Responses
AT+CLCK= <b>&lt;fac&gt;</b> , <b>&lt;mode&gt;</b> [, <b>&lt;passwd&gt;</b> ],[ <b>&lt;class&gt;</b> ]	OK <i>When <b>&lt;mode&gt;</b>=2 and command successful:</i> +CLCK: <b>&lt;status&gt;</b> [, <b>&lt;class1&gt;</b> ] [ <b>&lt;CR&gt;</b> ] <b>&lt;LF&gt;</b> +CLCK: <b>&lt;status&gt;</b> , <b>&lt;class2&gt;</b> [...] OK +CME ERROR: <b>&lt;err&gt;</b>

## Defined values

### <fac>

"PF"	lock Phone to the very First inserted SIM card or USIM card
"SC"	lock SIM card or USIM card
"AO"	Barr All Outgoing Calls
"OI"	Barr Outgoing International Calls
"OX"	Barr Outgoing International Calls except to Home Country
"AI"	Barr All Incoming Calls
"IR"	Barr Incoming Calls when roaming outside the home country
"AB"	All Barring services (only for <mode>=0)
"AG"	All outGoing barring services (only for <mode>=0)
"AC"	All inComing barring services (only for <mode>=0)
"FD"	SIM fixed dialing memory feature
"PN"	Network Personalization
"PU"	network subset Personalization
"PP"	service Provider Personalization
"PC"	Corporate Personalization

### <mode>

0	- unlock
1	- lock
2	- query status

### <status>

0	- not active
1	- active

### <passwd>

Password.

### <classX>

It is a sum of integers each representing a class of information (default 7):

1	- voice (telephony)
2	- data (refers to all bearer services)
4	- fax (facsimile services)
8	- short message service
16	- data circuit sync
32	- data circuit async
64	- dedicated packet access
128	- dedicated PAD access
255	- The value 255 covers all classes

## Examples

```
AT+CLCK="SC",2
```

```
+CLCK: 0
```

```
OK
```

## 9.4 AT+CPWD Change password

### Description

Write command sets a new password for the facility lock function defined by command Facility Lock [AT+CLCK](#).

Test command returns a list of pairs which present the available facilities and the maximum length of their password.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPWD=?	+CPWD: (list of supported (<fac>,<pwdlength>)s) OK
	+CME ERROR: <err>
Write Command	Responses
AT+CPWD= <fac>,<oldpwd>,<newpwd>	OK
	+CME ERROR: <err>

### Defined values

<fac>
Refer Facility Lock +CLCK for other values: "SC" SIM or USIM PIN1 "P2" SIM or USIM PIN2 "AB" All Barring services "AC" All inComing barring services (only for <mode>=0) "AG" All outGoing barring services (only for <mode>=0) "AI" Barr All Incoming Calls "AO" Barr All Outgoing Calls "IR" Barr Incoming Calls when roaming outside the home country "OI" Barr Outgoing International Calls "OX" Barr Outgoing International Calls except to Home Country
<oldpwd>
String type, it shall be the same as password specified for the facility from the ME user interface or with command Change Password <a href="#">AT+CPWD</a> .
<newpwd>
String type, it is the new password; maximum length of password can be determined with <a href="#">&lt;pwdlength&gt;</a> .
<pwdlength>

Integer type, max length of password.

## Examples

```
AT+CPWD=?
+CPWD: ("AB",4),("AC",4),("AG",4),("AI",4),("AO",4),("IR",4),("OI",4),("OX",4),("SC",8),("P2",8)
OK
```

## 9.5 AT+CLIP Calling line identification presentation

### Description

The command refers to the GSM/UMTS supplementary service CLIP (Calling Line Identification Presentation) that enables a called subscriber to get the calling line identity (CLI) of the calling party when receiving a mobile terminated call.

Write command enables or disables the presentation of the CLI at the TE. It has no effect on the execution of the supplementary service CLIP in the network.

When the presentation of the CLI at the TE is enabled (and calling subscriber allows), +CLIP: <number>,<type>,,[,<alpha>][,<CLI validity>] response is returned after every RING (or +CRING: <type>; refer sub clause "Cellular result codes +CRC") result code sent from TA to TE. It is manufacturer specific if this response is used when normal voice call is answered.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CLIP=?	+CLIP: (list of supported <n>s) OK
Read Command	Responses
AT+CLIP?	+CLIP: <n>,<m> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CLIP=<n>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CLIP	Set default value(<n>=0,<m>=0):

OK

## Defined values

<n>

Parameter sets/shows the result code presentation status in the TA:

- 0 – disable
- 1 – enable

<m>

- 0 – CLIP not provisioned
- 1 – CLIP provisioned
- 2 – unknown (e.g. no network, etc.)

<number>

String type phone number of calling address in format specified by <type>.

<type>

Type of address octet in integer format;

- 128 – Restricted number type includes unknown type and format
- 145 – International number type
- 161 – national number. The network support for this type is optional
- 177 – network specific number, ISDN format
- 129 – Otherwise

<alpha>

String type alphanumeric representation of <number> corresponding to the entry found in phone book.

<CLI validity>

- 0 – CLI valid
- 1 – CLI has been withheld by the originator
- 2 – CLI is not available due to interworking problems or limitations of originating network

## Examples

```
AT+CLIP=1
```

```
OK
```

```
RING (with incoming call)
```

```
+CLIP: "02152063113",128,,,"gongsi",0
```

## 9.6 AT+CLIR Calling line identification restriction

### Description

The command refers to CLIR-service that allows a calling subscriber to enable or disable the presentation of the CLI to the called party when originating a call.

Write command overrides the CLIR subscription (default is restricted or allowed) when temporary mode is provisioned as a default adjustment for all following outgoing calls. This adjustment can be revoked by using the opposite command.. If this command is used by a subscriber without provision of CLIR in permanent mode the network will act.

Read command gives the default adjustment for all outgoing calls (given in <n>), and also triggers an interrogation of the provision status of the CLIR service (given in <m>).

Test command returns values supported as a compound value.

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CLIR=?	+CLIR: (list of supported <n>s) OK
Read Command	Responses
AT+CLIR?	+CLIR: <n>,<m> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CLIR=<n>	OK ERROR +CME ERROR: <err>

## Defined values

<n>
0 – presentation indicator is used according to the subscription of the CLIR service
1 – CLIR invocation
2 – CLIR suppression
<m>
0 – CLIR not provisioned
1 – CLIR provisioned in permanent mode
2 – unknown (e.g. no network, etc.)
3 – CLIR temporary mode presentation restricted
4 – CLIR temporary mode presentation allowed

## Examples

```

AT+CLIR=?
+CLIR:(0-2)
OK
  
```

## 9.7 AT+COLP Connected line identification presentation

### Description

The command refers to the GSM/UMTS supplementary service COLP(Connected Line Identification Presentation) that enables a calling subscriber to get the connected line identity (COL) of the called party after setting up a mobile originated call. The command enables or disables the presentation of the COL at the TE. It has no effect on the execution of the supplementary service COLR in the network.

When enabled (and called subscriber allows), +COLP:<number>, <type> [,<subaddr>, <satype> [,<alpha>]] intermediate result code is returned from TA to TE before any +CR responses.

When the AT+COLP=1 is set, any data input immediately after the launching of "ATDXXX;" will stop the execution of the ATD command, which may cancel the establishing of the call.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+COLP=?	+COLP: (list of supported <n>s) OK
Read Command	Responses
AT+COLP?	+COLP: <n>,<m> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+COLP =<n>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+COLP	<i>Set default value(&lt;n&gt;=0, &lt;m&gt;=0):</i> OK

### Defined values

<n>

Parameter sets/shows the result code presentation status in the TA:

- 0 – disable
- 1 – enable

<m>

- 0 – COLP not provisioned
- 1 – COLP provisioned
- 2 – unknown (e.g. no network, etc.)

## Examples

```
AT+COLP?
```

```
+COLP: 1,0
```

```
OK
```

```
ATD10086;
```

```
VOICE CALL: BEGIN
```

```
+COLP: "10086",129,,,
```

```
OK
```

## 9.8 AT+CCUG Closed user group

### Description

The command allows control of the Closed User Group supplementary service. Set command enables the served subscriber to select a CUG index, to suppress the Outgoing Access (OA), and to suppress the preferential CUG.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CCUG=?	OK
Read Command	Responses
AT+CCUG?	+CCUG: <n>,<index>,<info> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CCUG= <n>[,<index>[,<info>]]	OK ERROR

	+CME ERROR: <err>
Execution Command	Responses
AT+CCUG	Set default value: OK

**Defined values**

<n>	<ul style="list-style-type: none"> <li>0 – disable CUG temporary mode</li> <li>1 – enable CUG temporary mode</li> </ul>
<index>	<ul style="list-style-type: none"> <li>0..9 – CUG index</li> <li>10 – no index (preferred CUG taken from subscriber data)</li> </ul>
<info>	<ul style="list-style-type: none"> <li>0 – no information</li> <li>1 – suppress OA</li> <li>2 – suppress preferential CUG</li> <li>3 – suppress OA and preferential CUG</li> </ul>

**Examples**

AT+CCUG?
+CCUG: 0,0,0
OK

**9.9 AT+CCFC Call forwarding number and conditions**

**Description**

The command allows control of the call forwarding supplementary service. Registration, erasure, activation, deactivation, and status query are supported.

SIM PIN	References
YES	3GPP TS 27.007

**Syntax**

Test Command	Responses
AT+CCFC=?	+CCFC: (list of supported <reason>s) OK
Write Command	Responses
AT+CCFC=<reason>,<mode> >[,<number>[,<type>[,<clas	When <mode>=2 and command successful: +CCFC: <status>,<class1>[,<number>,<type>

s>[,<subaddr>[,<satype>[,<time>]]]]<CR><LF>me> ]]]]]	[,<subaddr>,<satype>[,<time>]]]]<CR><LF>+CCFC: <status>,<class2>[,<number>,<type>[,<subaddr>,<satype>[,<time>]]]][...]<CR><LF>OK<CR><LF>ERROR<CR><LF>+CME ERROR:<err>
--	---

## Defined values

<reason>
0 – unconditional 1 – mobile busy 2 – no reply 3 – not reachable 4 – all call forwarding 5 – all conditional call forwarding
<mode>
0 – disable 1 – enable 2 – query status 3 – registration 4 – erasure
<number>
String type phone number of forwarding address in format specified by <type>.
<type>
Type of address octet in integer format: 145 – dialing string <number> includes international access code character '+' 129 – otherwise
<subaddr>
String type sub address of format specified by <satype>.
<satype>
Type of sub address octet in integer format, default 128.
<classX>
It is a sum of integers each representing a class of information (default 7): 1 – voice (telephony) 2 – data (refers to all bearer services) 4 – fax (facsimile services) 16 – data circuit sync 32 – data circuit async 64 – dedicated packet access 128 – dedicated PAD access 255 – The value 255 covers all classes
<time>

1...30 – when "no reply" is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value 20.

<status>

- 0 – not active
- 1 – active

### Examples

```
AT+CCFC=?
```

```
+CCFC: (0,1,2,3,4,5)
```

```
OK
```

```
AT+CCFC=0,2
```

```
+CCFC: 0,255
```

```
OK
```

## 9.10 AT+CCWA Call waiting

### Description

The command allows control of the Call Waiting supplementary service. Activation, deactivation and status query are supported. When querying the status of a network service (<mode>=2) the response line for 'not active' case (<status>=0) should be returned only if service is not active for any <class>. Parameter <n> is used to disable/enable the presentation of an unsolicited result code +CCWA: <number>,<type>,<class> to the TE when call waiting service is enabled. Command should be abortable when network is interrogated.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CCWA=?	+CCWA: (list of supported <n>s) OK
Read Command	Responses
AT+CCWA?	+CCWA: <n> OK
Write Command	Responses
AT+CCWA= <n>[,<mode>[,<class>]]	<i>When &lt;mode&gt;=2 and command successful:</i> +CCWA:<status>,<class>[<CR><LF> +CCWA: <status>, <class>[...]] OK ERROR

	+CME ERROR: <err>
Execution Command	Responses
AT+CCWA	Set default value (<n>=0): OK

## Defined values

<n>
Sets/shows the result code presentation status in the TA
<ul style="list-style-type: none"> <li>0 – disable</li> <li>1 – enable</li> </ul>
<mode>
When <mode> parameter is not given, network is not interrogated:
<ul style="list-style-type: none"> <li>0 – disable</li> <li>1 – enable</li> <li>2 – query status</li> </ul>
<class>
It is a sum of integers each representing a class of information (default 7)
<ul style="list-style-type: none"> <li>1 – voice (telephony)</li> <li>2 – data (refers to all bearer services)</li> <li>4 – fax (facsimile services)</li> <li>7 – voice,data and fax(1+2+4)</li> <li>8 – short message service</li> <li>16 – data circuit sync</li> <li>32 – data circuit async</li> <li>64 – dedicated packet access</li> <li>128 – dedicated PAD access</li> </ul>
<status>
<ul style="list-style-type: none"> <li>0 – not active</li> <li>1 – active</li> </ul>
<number>
String type phone number of calling address in format specified by <type>.
<type>
Type of address octet in integer format;
<ul style="list-style-type: none"> <li>128 – Restricted number type includes unknown type and format</li> <li>145 – International number type</li> <li>129 – Otherwise</li> </ul>

## Examples

AT+CCWA=?
+CCWA:(0-1)
OK

```
AT+CCWA?
+CCWA: 0
OK
```

## 9.11 AT+CHLD Call related supplementary services

### Description

The command allows the control of the following call related services:

1. A call can be temporarily disconnected from the ME but the connection is retained by the network.
2. Multiparty conversation (conference calls).
3. The served subscriber who has two calls (one held and the other either active or alerting) can connect the other parties and release the served subscriber's own connection.

Calls can be put on hold, recovered, released, added to conversation, and transferred.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CHLD=?	+CHLD: (list of supported <n>s) OK
Write Command	Responses
AT+CHLD=<n>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CHLD <i>Default to &lt;n&gt;=2.</i>	OK ERROR +CME ERROR: <err>

### Defined values

<n>	
0	– Terminate all held calls; or set User Determined User Busy for a waiting call
1	– Terminate all active calls and accept the other call (waiting call or held call)
1X	– Terminate a specific call X
<u>2</u>	– Place all active calls on hold and accept the other call (waiting call or held call) as the active call
2X	– Place all active calls except call X on hold
3	– Add the held call to the active calls

- 4 – Connect two calls and cut off the connection between users and them simultaneously

## Examples

```
AT+CHLD=?
+CHLD: (0,1,1x,2,2x,3,4)
OK
```

## 9.12 AT+CUSD Unstructured supplementary service data

### Description

The command allows control of the Unstructured Supplementary Service Data (USSD). Both network and mobile initiated operations are supported. Parameter `<n>` is used to disable/enable the presentation of an unsolicited result code (USSD response from the network, or network initiated operation) `+CUSD: <m>[,<str>,<dcs>]` to the TE. In addition, value `<n>=2` is used to cancel an ongoing USSD session.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CUSD=?	+CUSD: (list of supported <code>&lt;n&gt;</code> s) OK
Read Command	Responses
AT+CUSD?	+CUSD: <code>&lt;n&gt;</code> OK
Write Command	Responses
AT+CUSD= <code>&lt;n&gt;[,&lt;str&gt;,&lt;dcs&gt;]</code>	OK ERROR +CME ERROR: <code>&lt;err&gt;</code>
Execution Command	Responses
AT+CUSD	<i>Set default value (&lt;n&gt;=0):</i> OK

### Defined values

<code>&lt;n&gt;</code>	
0	– disable the result code presentation in the TA
1	– enable the result code presentation in the TA
2	– cancel session (not applicable to read command response)

<str>
String type USSD-string.
<dc>
Cell Broadcast Data Coding Scheme in integer format (default 0).
<m>
0 – no further user action required (network initiated USSD-Notify, or no further information needed after mobile initiated operation)
1 – further user action required (network initiated USSD-Request, or further information needed after mobile initiated operation)
2 – USSD terminated by network
4 – operation not supported
5 – network time out

### Examples

<i>AT+<b>CUSD</b>?</i>
<i>+<b>CUSD</b>: 1</i>
<i>OK</i>
<i>AT+<b>CUSD</b>=0</i>
<i>OK</i>

## 9.13 AT+CAOC Advice of charge

### Description

The refers to Advice of Charge supplementary service that enables subscriber to get information about the cost of calls. With <mode>=0, the execute command returns the current call meter value from the ME.

The command also includes the possibility to enable an unsolicited event reporting of the CCM information. The unsolicited result code +CCCM: <ccm> is sent when the CCM value changes, but not more that every 10 seconds. Deactivation of the unsolicited event reporting is made with the same command.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CAOC=?	+CAOC: (list of supported <mode>s) OK
Read Command	Responses
AT+CAOC?	+CAOC: <mode>

	OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CAOC=<mode>	(if <mode>=0)
	+CAOC: <ccm>
	OK
	(if <mode>=1 or 2)
	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+ CAOC	Set default value (<mode>=1):
	OK

## Defined values

<mode>

- 0 – query CCM value
- 1 – deactivate the unsolicited reporting of CCM value
- 2 – activate the unsolicited reporting of CCM value

<ccm>

String type, three bytes of the current call meter value in hexadecimal format (e.g. "00001E" indicates decimal value 30), value is in home units and bytes are similarly coded as ACMmax value in the SIM.

## Examples

```
AT+CAOC=0
+CAOC: "000000"
OK
```

## 9.14 AT+CSSN Supplementary service notifications

### Description

The command refers to supplementary service related network initiated notifications. The set command enables/disables the presentation of notification result codes from TA to TE.

When `<n>`=1 and a supplementary service notification is received after a mobile originated call setup, intermediate result code +CSSI: `<code1>[,<index>]` is sent to TE before any other MO call setup result codes presented in the present document. When several different `<code1>`s are received from the network, each of them shall have its own +CSSI result code.

When `<m>`=1 and a supplementary service notification is received during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received, unsolicited result code +CSSU: `<code2>[,<index>[,<number>,<type>[,<subaddr>,<satype>]]]` is sent to TE. In case of MT call setup, result code is sent after every +CLIP result code (refer command "Calling line identification presentation +CLIP") and when several different `<code2>`s are received from the network, each of them shall have its own +CSSU result code.

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CSSN=?	+CSSN: (list of supported <code>&lt;n&gt;</code> s),(list of supported <code>&lt;m&gt;</code> s) OK
Read Command	Responses
AT+CSSN?	+CSSN: <code>&lt;n&gt;,&lt;m&gt;</code> OK
Write Command	Responses
AT+CSSN= <code>&lt;n&gt;[,&lt;m&gt;]</code>	OK ERROR +CME ERROR: <code>&lt;err&gt;</code>

## Defined values

<code>&lt;n&gt;</code>
Parameter sets/shows the +CSSI result code presentation status in the TA:
0 – disable
1 – enable
<code>&lt;m&gt;</code>
Parameter sets/shows the +CSSU result code presentation status in the TA:
0 – disable
1 – enable
<code>&lt;code1&gt;</code>
0 – unconditional call forwarding is active
1 – some of the conditional call forwarding are active
2 – call has been forwarded

3	- call is waiting
5	- outgoing calls are barred
<b>&lt;index&gt;</b>	
Refer "Closed user group +CCUG".	
<b>&lt;code2&gt;</b>	
0	- this is a forwarded call (MT call setup)
2	- call has been put on hold (during a voice call)
3	- call has been retrieved (during a voice call)
5	- call on hold has been released (this is not a SS notification) (during a voice call)
<b>&lt;number&gt;</b>	
String type phone number of format specified by <b>&lt;type&gt;</b> .	
<b>&lt;type&gt;</b>	
Type of address octet in integer format; default 145 when dialing string includes international access code character "+", otherwise 129.	
<b>&lt;subaddr&gt;</b>	
String type sub address of format specified by <b>&lt;satype&gt;</b> .	
<b>&lt;satype&gt;</b>	
Type of sub address octet in integer format, default 128.	

## Examples

<i>AT+CSSN=1,1</i>
<i>OK</i>
<i>AT+CSSN?</i>
<i>+CSSN: 1,1</i>
<i>OK</i>

## 9.15 AT+CLCC List current calls

### Description

Return list of current calls of ME. If command succeeds but no calls are available, no information response is sent to TE.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CLCC=?	+CLCC: (list of supported <b>&lt;n&gt;</b> s) OK
Read Command	Responses
AT+CLCC?	+ CLCC: <b>&lt;n&gt;</b>

	OK
Write Command	Responses
AT+ CLCC =<n>	OK
	ERROR
	+CME ERROR: <err>
Read Command	Responses
AT+CLCC	+CLCC:<id1>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,<alpha>]]][<CR><LF>
	+CLCC:<id2>,<dir>,<stat>,<mode>,<mpty>[,<number>,<type>[,<alpha>]]
	[...]
	OK
	ERROR
	+CME ERROR: <err>

### Defined values

<n>

Parameter sets/shows the result code presentation status in the TA:

- 0 – disable
- 1 – enable

<idX>

Integer type, call identification number, this number can be used in +CHLD command operations.

<dir>

- 0 – mobile originated (MO) call
- 1 – mobile terminated (MT) call

<stat>

State of the cal:

- 0 – active
- 1 – held
- 2 – dialing (MO call)
- 3 – alerting (MO call)
- 4 – incoming (MT call)
- 5 – waiting (MT call)
- 6 – disconnect

<mode>

bearer/teleservice:

- 0 – voice
- 1 – data
- 2 – fax
- 9 – unknown

<mpty>

0	– call is not one of multiparty (conference) call parties
1	– call is one of multiparty (conference) call parties
<b>&lt;number&gt;</b>	
String type phone number in format specified by <b>&lt;type&gt;</b> .	
<b>&lt;type&gt;</b>	
Type of address octet in integer format;	
128	– Restricted number type includes unknown type and format
145	– International number type
161	– national number. The network support for this type is optional
177	– network specific number, ISDN format
129	– Otherwise
<b>&lt;alpha&gt;</b>	
String type alphanumeric representation of <b>&lt;number&gt;</b> corresponding to the entry found in phonebook; used character set should be the one selected with command Select TE Character Set <b>AT+CSCS</b> .	

## Examples

```

ATD10011;
OK
AT+CLCC
+CLCC: 1,0,0,0,0,"10011",129,"sm"
OK
RING (with incoming call)
AT+CLCC
+CLCC: 1,1,4,0,0,"02152063113",128,"gongsi"
OK

```

## 9.16 AT+CPOL Preferred operator list

### Description

The command is used to edit the SIM preferred list of networks.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPOL=?	+CPOL: (list of supported <b>&lt;index&gt;</b> s), (list of supported <b>&lt;format&gt;</b> s) OK
Read Command	Responses

AT+CPOL?	[+CPOL:<index1>,<format>,<oper1>[<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1> ]][<CR><LF> +CPOL: <index2>,<format>,<oper2>[,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1> ] [...]] OK
Write Command	Responses
AT+CPOL=<index> [,<format>,<oper>][,<GSM_AcT1>,<GSM_Compact_AcT1>,<UTRAN_AcT1> ]]	OK
	ERROR
<b>NOTE:</b> If using USIM card, the last three parameters must set.	+CME ERROR: <err>

## Defined values

<index>

Integer type, the order number of operator in the SIM preferred operator list.

If only input <index>, command will delete the value indicate by <index>.

<format>

- 0 – long format alphanumeric <oper>
- 1 – short format alphanumeric <oper>
- 2 – numeric <oper>

<operX>

String type.

<GSM\_AcTn>

GSM access technology:

- 0 – access technology not selected
- 1 – access technology selected

<GSM\_Compact\_AcTn>

GSM compact access technology:

- 0 – access technology not selected
- 1 – access technology selected

<UTRA\_AcTn>

UTRA access technology:

- 0 – access technology not selected
- 1 – access technology selected

## Examples

AT+CPOL?

```
+CPOL: 1,2,"46001",0,0,1
OK
AT+CPOL=?
+CPOL: (1-8),(0-2)
OK
```

## 9.17 AT+COPN Read operator names

### Description

Execute command returns the list of operator names from the ME. Each operator code [<numericX>](#) that has an alphanumeric equivalent [<alphaX>](#) in the ME memory shall be returned.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+COPN=?	OK
Write Command	Responses
AT+COPN	+COPN: <a href="#">&lt;numeric1&gt;</a> , <a href="#">&lt;alpha1&gt;</a> [<CR><LF> +COPN: <a href="#">&lt;numeric2&gt;</a> , <a href="#">&lt;alpha2&gt;</a> [...]] OK
	ERROR
	+CME ERROR: <a href="#">&lt;err&gt;</a>

### Defined values

[<numericX>](#)

String type, operator in numeric format (see [AT+COPS](#)).

[<alphaX>](#)

String type, operator in long alphanumeric format (see [AT+COPS](#)).

### Examples

```
AT+COPN
+COPN: "46000","China Mobile Com"
+COPN: "46001","China Unicom"
.....
OK
```

## 9.18 AT+CNMP Preferred mode selection

### Description

The command is used to select or set the state of the mode preference.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CNMP=?	+CNMP: (list of supported <mode>s) OK
Read Command	Responses
AT+CNMP?	+CNMP: <mode> OK
Write Command	Responses
AT+CNMP=<mode>	OK ERROR

### Defined values

<mode>
2 – Automatic
13 – GSM Only
14 – WCDMA Only

### Examples

AT+CNMP=13
OK
AT+CNMP?
+CNMP: 2
OK

## 9.19 AT+CNBP Preferred band selection

### Description

The command is used to select or set the state of the band preference.

SIM PIN	References
---------	------------

YES	Vendor
-----	--------

### Syntax

Test Command	Responses
AT+CNBP?	+CNBP: <mode> OK
Write Command	Responses
AT+CNBP=<mode>	OK
	ERROR

### Defined values

<mode>	
64bit number, the value is “1” << “<pos>”, then or by bit.	
<pos>	
Value:	
0xFFFFFFFF7FFFFFFF	Any (any value)
7	GSM_DCS_1800
8	GSM_EGSM_900
9	GSM_PGSM_900
16	GSM_450
17	GSM_480
18	GSM_750
19	GSM_850
20	GSM_RGSM_900
21	GSM_PCS_1900
22	WCDMA_IMT_2000
23	WCDMA_PCS_1900
24	WCDMA_III_1700
25	WCDMA_IV_1700
26	WCDMA_850
27	WCDMA_800
48	WCDMA_VII_2600
49	WCDMA_VIII_900
50	WCDMA_IX_1700

### Examples

<i>AT+CNBP=0x00070000FFF0380</i>
<i>OK</i>
<i>AT+CNBP?</i>
<i>+CNBP: 0xFFFFFFFF3FFFFFFF</i>

OK

## 9.20 AT+CNAOP Acquisitions order preference

### Description

Write command resets the state of acquisitions order preference.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CNAOP=?	+CNAOP: (list of supported <mode>s) OK
Read Command	Responses
AT+CNAOP?	+CNAOP: <mode> OK
Write Command	Responses
AT+CNAOP=<mode>	OK ERROR

### Defined values

<mode>
0 – Automatic
1 – GSM,WCDMA
2 – WCDMA,GSM

### Examples

AT+CNAOP=1
OK
AT+CNAOP?
+CNAOP: 2
OK

## 9.21 AT+CNSDP Preferred service domain selection

### Description

Write command resets the state of the service domain preference.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CNSDP=?	+CNSDP: (list of supported <mode>s) OK
Read Command	Responses
AT+CNSDP?	+CNSDP: <mode> OK
Write Command	Responses
AT+CNSDP=<mode>	OK ERROR

### Defined values

<mode>
0 – CS Only
1 – PS Only
2 – CS + PS

### Examples

AT+CNSDP=2
OK
AT+CNSDP?
+CNSDP: 0
OK

## 9.22 AT+CPSI Inquiring UE system information

### Description

The command returns the UE system information.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CPSI=?	+CPSI: (scope of <time>)

	OK
Read Command	Responses
AT+CPSI?	<p><i>If camping on a 2G cell:</i></p> <p>+CPSI:&lt;System Mode&gt;,&lt;Operation Mode&gt;,&lt;MCC&gt;- &lt;MNC&gt; &lt;LAC&gt;,&lt;Cell ID&gt;,&lt;Absolute RF Ch Num&gt;, &lt; RxLev &gt;, &lt;Track LO Adjust&gt;,&lt;C1-C2&gt;</p> <p>OK</p> <p><i>If camping on a 3G cell:</i></p> <p>+CPSI: &lt;System Mode&gt;, &lt;Operation Mode&gt;, &lt;MCC&gt;- &lt;MNC&gt;,&lt;LAC&gt;,&lt;Cell ID&gt;,&lt;Frequency Band&gt;, &lt;PSC&gt;, &lt;Freq&gt;, &lt;SSC&gt;,&lt;EC/IO&gt;,&lt; RSCP &gt;,&lt;Qual&gt;,&lt;RxLev&gt;,&lt;TXPWR&gt;</p> <p>OK</p> <p>ERROR</p>
Write Command	Responses
AT+CPSI=<time>	OK
	ERROR

## Defined values

<time>

The range is 0-255, unit is second, after set <time> will report the system information every the seconds.

<System Mode>

System mode, values: “NO SERVICE”, “GSM” or “WCDMA”.

<Operation Mode>

UE operation mode, values: “Online”, “Offline”, “Factory Test Mode”, “Reset”, “Low Power Mode”.

<MCC>

Mobile Country Code (first part of the PLMN code)

<MNC>

Mobile Network Code (second part of the PLMN code)

<LAC>

Location Area Code (hexadecimal digits)

<Cell ID>

Service-cell ID.

<Absolute RF Ch Num>

AFRCN for service-cell.

<Track LO Adjust>

Track LO Adjust

<C1>

Coefficient for base station selection

<C2>

Coefficient for Cell re-selection

<Frequency Band>
Frequency Band of active set
<PSC>
Primary synchronization code of active set.
<Freq>
Downlink frequency of active set.
<SSC>
Secondary synchronization code of active set
<EC/IO>
Ec/Io value
<RSCP>
Received Signal Code Power
<Qual>
Quality value for base station selection
<RxLev>
RX level value for base station selection
<TXPWR>
UE TX power in dBm. If no TX, the value is 500.

## Examples

<i>AT+CPSI?</i>
<i>+CPSI: GSM,Online,460-00 0x182d,12401,27 EGSM 900,-64,2110,42-42</i>
<i>OK</i>
<i>AT+CPSI=?</i>
<i>+CPSI: WCDMA,Online,001-01,0xED2E ,WCDMA IMT 2000,0,9,10688,0,6,62,43,45,500</i>
<i>OK</i>
<i>AT+CPSI=?</i>
<i>+CPSI: (0-255)</i>
<i>OK</i>

## 9.23 AT+CNSMOD Show network system mode

### Description

The command returns the current network system mode.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CNSMOD=?	+CNSMOD: (list of supported <n>s)

	OK
Read Command	Responses
AT+CNSMOD?	+CNSMOD: <n>,<stat>
	OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CNSMOD=<n>	OK
	ERROR
	+CME ERROR: <err>

### Defined values

<n>
0 – disable auto report the network system mode information
1 – auto report the network system mode information, command: +CNSMOD:<stat>
<state>
0 – no service
1 – GSM
2 – GPRS
3 – EGPRS (EDGE)
4 – WCDMA
5 – HSDPA only
6 – HSUPA only
7 – HSPA (HSDPA and HSUPA)

### Examples

AT+CNSMOD?
+CNSMOD: 0,2
OK

## 9.24 AT+CTZU Automatic time and time zone update

### Description

The command is used to enable and disable automatic time and time zone update via NITZ.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CTZU=?	+CTZU: (list of supported <onoff>s) OK
Read Command	Responses
AT+CTZU?	+CTZU: <onoff> OK
Write Command	Responses
AT+CTZU=<onoff>	OK
	ERROR

## Defined values

<onoff>

Integer type value indicating:

- 0 – Disable automatic time zone update via NITZ (default).
- 1 – Enable automatic time zone update via NITZ.

**NOTE** 1. The value of <onoff> is nonvolatile, and factory value is 0.  
2. For automatic time and time zone update is enabled (+CTZU=1):

If time zone is only received from network and it doesn't equal to local time zone (AT+CCLK), time zone is updated automatically, and real time clock is updated based on local time and the difference between time zone from network and local time zone (Local time zone must be valid).

If Universal Time and time zone are received from network, both time zone and real time clock is updated automatically, and real time clock is based on Universal Time and time zone from network.

## Examples

```
AT+CTZU?
```

```
+CTZU: 0
```

```
OK
```

```
AT+CTZU=1
```

```
OK
```

## 9.25 AT+CTZR Time and time zone reporting

### Description

The command is used to enable and disable the time zone change event reporting. If the reporting is enabled the MT returns the unsolicited result code +CTZV: <tz>[,<time>][,<dst>] whenever the time zone is changed.

**NOTE** The time zone reporting is not affected by the Automatic Time and Time Zone command AT+CTZU.

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CTZR=?	+CTZR: (list of supported <onoff>s) OK
Read Command	Responses
AT+CTZR?	+CTZR: <onoff> OK
Write Command	Responses
AT+CTZR=<onoff>	OK ERROR
Execution Command	Responses
AT+CTZR	<i>Set default value:</i> OK

## Defined values

<onoff>

Integer type value indicating:

- 0 – Disable time zone change event reporting (default).
- 1 – Enable time zone change event reporting.

+CTZV: <tz>[,<time>][,<dst>]

Unsolicited result code when time zone received from network doesn't equal to local time zone, and if the informations from network don't include date and time, time zone will be only reported, and if network daylight saving time is present, it is also reported. For example:

- +CTZV: 32 (*Only report time zone*)
- +CTZV: 32,1 (*Report time zone and network daylight saving time*)
- +CTZV: 32,08/12/09,17:00:00 (*Report time and time zone*)
- +CTZV: 32,08/12/09,17:00:00,1 (*Report time, time zone and daylight saving time*)

For more detailed informations about time and time zone, please refer 3GPP TS 24.008.

- <tz> Local time zone received from network.
- <time> Universal time received from network, and the format is “yy/MM/dd, hh:mm:ss”, where characters indicate year (two last digits), month, day, hour, minutes and seconds.
- <dst> Network daylight saving time, and if it is received from network, it indicates the value that has been used to adjust the local time zone. The values as following:
  - 0 – No adjustment for Daylight Saving Time.
  - 1 – +1 hour adjustment for Daylight Saving Time.
  - 2 – +2 hours adjustment for Daylight Saving Time.

**NOTE** Herein, <time> is Universal Time or NITZ time, but not local time.

## Examples

```
AT+CTZR?
```

```
+CTZR: 0
```

```
OK
```

```
AT+CTZR=1
```

```
OK
```

## 9.26 AT+CCINFO Show cell system information

### Description

The command is used to inquire serving cell and neighbour cell system information in GSM.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCINFO=?	OK
Execution Command	Responses
AT+CCINFO	<p><i>When ME in idle mode:</i></p> <pre>+CCINFO:[&lt;SCELL&gt;],ARFCN:&lt;arfcn&gt;,MCC:&lt;mcc&gt;,MNC:&lt;mnc&gt;,&lt;LAC&gt;:&lt;lac&gt;,ID:&lt;id&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;,C1:&lt;c1&gt;,C2:&lt;c2&gt;,TA:&lt;TA&gt;</pre> <pre>+CCINFO:[&lt;NCELLn&gt;],ARFCN:&lt;arfcn&gt;,MCC:&lt;mcc&gt;,MNC:&lt;mnc&gt;,&lt;LAC&gt;:&lt;lac&gt;,ID:&lt;id&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;,C1:&lt;c1&gt;,C2:&lt;c2&gt;</pre> <p>[...]</p> <p><i>When ME in dedicated mode:</i></p> <pre>+CCINFO:[&lt;SCELL&gt;],ARFCN:&lt;arfcn&gt;,MCC:&lt;mcc&gt;,MNC:&lt;mnc&gt;,&lt;LAC&gt;:&lt;lac&gt;,ID:&lt;id&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;,C1:&lt;c1&gt;,C2:&lt;c2&gt;,TA:&lt;TA&gt;</pre> <pre>+CCINFO:[&lt;NCELLn&gt;],ARFCN:&lt;arfcn&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;</pre> <p>[...]</p>

### Defined values

The command is used to inquire serving cell and neighbors cell system information in GSM.

SIM PIN	References
---------	------------

NO	Vendor
----	--------

## Syntax

Test Command	Responses
AT+CCINFO=?	OK
Execution Command	Responses
AT+CCINFO	<p><i>When ME in idle mode:</i></p> <p>+CCINFO:[&lt;SCELL&gt;],ARFCN:&lt;arfcn&gt;,MCC:&lt;mcc&gt;,MNC:&lt;mnc&gt;,&lt;lac&gt;,ID:&lt;id&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;,C1:&lt;c1&gt;,C2:&lt;c2&gt;,TA:&lt;TA&gt;,TXPWR:&lt;TXPWR&gt;</p> <p>+CCINFO:[&lt;NCELLn&gt;],ARFCN:&lt;arfcn&gt;,MCC:&lt;mcc&gt;,MNC:&lt;mnc&gt;,&lt;lac&gt;,ID:&lt;id&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;,C1:&lt;c1&gt;,C2:&lt;c2&gt;</p> <p>[...]</p> <p><i>When ME in dedicated mode:</i></p> <p>+CCINFO:[&lt;SCELL&gt;],ARFCN:&lt;arfcn&gt;,MCC:&lt;mcc&gt;,MNC:&lt;mnc&gt;,&lt;lac&gt;,ID:&lt;id&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;,C1:&lt;c1&gt;,C2:&lt;c2&gt;,TA:&lt;TA&gt;,TXPWR:&lt;TXPWR&gt;</p> <p>+CCINFO:[&lt;NCELLn&gt;],ARFCN:&lt;arfcn&gt;,BSIC:&lt;bsic&gt;,RXLev:&lt;rxlev&gt;</p> <p>[...]</p>

## Defined values

<SCELL>	indicate serving cell
<NCELLn>	available neighbour cell index
<arfcn>	assigned radio channel
<mcc>	mobile country code
<mnc>	mobile network code
<lac>	localization area code
<id>	cell identifier
<bsic>	base station identification code
<rxlev>	received signal strength in dBm

<TA>
timing advance
<c1>
Coefficient for base station selection
<c2>
Coefficient for Cell re-selection
<TXPWR>
UE TX power in dBm. If no TX, the value is 0.

## Examples

### *AT+CCINFO (idle mode)*

```
+CCINFO:[SCELL],ARFCN:11,MCC:460,MNC:00,LAC:6360,ID:12402,BSIC:52,RXLev:-68dbm,
C1:35,C2:35,TA:0,TXPWR:0
+CCINFO:[NCell1],ARFCN:29,MCC:460,MNC:00,LAC:6360,ID:12625,BSIC:55,RXLev:-81dbm,
C1:21,C2:21
+CCINFO:[NCell2],ARFCN:28,MCC:460,MNC:00,LAC:6360,ID:8466,BSIC:49,RXLev:-81dbm,C
1:21,C2:21
+CCINFO:[NCell3],ARFCN:25,MCC:460,MNC:00,LAC:6360,ID:8498,BSIC:40,RXLev:-81dbm,C
1:21,C2:21
+CCINFO:[NCell4],ARFCN:2,MCC:460,MNC:00,LAC:6362,ID:24644,BSIC:48,RXLev:-87dbm,C
1:15,C2:15
+CCINFO:[NCell5],ARFCN:14,MCC:460,MNC:00,LAC:6360,ID:12403,BSIC:54,RXLev:-86dbm,
C1:16,C2:16
+CCINFO:[NCell6],ARFCN:13,MCC:460,MNC:00,LAC:6362,ID:24705,BSIC:51,RXLev:-89dbm,
C1:13,C2:13
OK
```

### *AT+CCINFO (dedicated mode)*

```
+CCINFO:[SCELL],ARFCN:11,MCC:460,MNC:00,LAC:6360,ID:12402,BSIC:52,RXLev:-61dbm,
C1:42,C2:42,TXPWR:29
+CCINFO:[NCell1],ARFCN:25,BSIC:40,RXLev:-81dbm
+CCINFO:[NCell2],ARFCN:28,BSIC:49,RXLev:-82dbm
+CCINFO:[NCell3],ARFCN:29,BSIC:55,RXLev:-82dbm
+CCINFO:[NCell4],ARFCN:14,BSIC:54,RXLev:-87dbm
+CCINFO:[NCell5],ARFCN:2,BSIC:48,RXLev:-89dbm
+CCINFO:[NCell6],ARFCN:13,BSIC:51,RXLev:-89dbm
OK
```

## 9.27 AT+CSCHN Show cell channel information

### Description

The command is used to inquire serving cell channel information in GSM.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CSCHN=?	OK
Execution Command	Responses
AT+CSCHN	<i>When during a call:</i> +CSCHN:ARFCN:<arfcn>,BISC:<bsic>,HSN:<hsn>,MAIO:<maio>, TN:<tn>,HF:<hf>,TSC:<tsc>,TCH:<tch> OK

## Defined values

<arfcn>	assigned radio channel
<bsic>	base station identification code
<hsn>	HSN
<maio>	MAIO
<tn>	timeslot number
<hf>	hopping flag
<tsc>	TSC
<tch>	channel type

## Examples

```
AT+CSCHN
+CSCHN: ARFCN:11, BISC: 52, HSN: 41, MAIO: 6, TN: 1, HF: 1, TSC: 4, TCH: 3
OK
```

## 9.28 AT+CSRP Show serving cell radio parameter

### Description

The command is used to inquire serving cell radio parameter in GSM.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CSRP=?	OK
Execution Command	Responses
AT+CSRP	<p><i>When during a call:</i></p> <p>+CSRP:ARFCN:&lt;arfcn&gt;,RXLevFull:&lt;rxlevfull&gt;,RXLevSub:&lt;rxlevsub&gt;,RXQualFull:&lt;rxqualfull&gt;,RXQualSub:&lt;rxqualsub&gt;,PWRC:&lt;pwrc&gt;,DTX:&lt;dtx&gt;,RLT:&lt;rlt&gt;</p> <p>OK</p>

## Defined values

<arfcn>	assigned radio channel
<rxlevfull>	received full signal strength in dBm
<rxlevsub>	received sub signal strength in dBm
<rxqualfull>	full quality of reception
<rxqualsub>	sub quality of reception
<pwrc>	PWRC
<dtx>	DTX
<rlt>	radio link timeout

## Examples

```
AT+CSRP
+CSRP:ARFCN:11,RXLevFull:-88dbm,RXLevSub:-89dbm,RXQualFull:7,RXQualSub:7,PWRC:1,
DTX:0,RLT:32
OK
```

## 9.29 AT+CRUS Show cell set system information

### Description

The execution command returns the mobile phone system information in WCDMA.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRUS=?	OK
Execution Command	Responses
AT+CRUS	+CRUS: Active SET, <ActiveSET Cells Num>[, <ActiveSET Cell1 PSC>, <ActiveSET Cell1 Freq>, <ActiveSET Cell1 SSC> , <ActiveSET Cell1 Sttd> , <ActiveSET Cell1 TotEcio> , <ActiveSET Cell1 Ecio> , <ActiveSET Cell1 Rscp> , <UTMS_SETS Cell TPC>, <UTMS_SETS Cell SecCpichOvsf>, <ActiveSET Cell1 WinSize> [...]] +CRUS: Sync Neighbor SET, <SyncSET Cells Num>[, <SyncSET Cell1 PSC>, <SyncSET Cell1 Freq>, < SyncSET Cell1 SSC> , < SyncSET Cell1 Sttd> , < SyncSET Cell1 TotEcio> , < SyncSET Cell1 Ecio> , < SyncSET Cell1 Rscp> , < SyncSET Cell1 WinSize> [...]] +CRUS: Async Neighbor SET, <AsyncSET Cells Num>[, < AsyncSET Cell1 PSC>, < AsyncSET Cell1 Freq>, < AsyncSET Cell1 SSC> , < AsyncSET Cell1 Sttd> , < AsyncSET Cell1 TotEcio> , < AsyncSET Cell1 Ecio> , < AsyncSET Cell1 Rscp> , < AsyncSET Cell1 WinSize> [...]] OK

### Defined values

<UTMS_SETS Cells Num>	cells number
<UTMS_SETS Cell 1-n PSC>	primary synchronization code of the cell
<UTMS_SETS Cell 1-n Freq>	downlink frequency of the cell
<UTMS_SETS Cell 1-n SSC>	secondary synchronization code
<UTMS_SETS Cell 1-n Sttd>	

if the CPICH of this cell uses STTD
<UTMS_SETS Cell 1-n TotEcIo>
the total Ec/Io in the best paths found in a sweep
<UTMS_SETS Cell 1-n 1 EcIo>
Ec/Io
<UTMS_SETS Cell 1-n Rscp>
CPICH RSCP
<UTMS_SETS Cell 1-n TPC>
Forward power control combination
<UTMS_SETS Cell 1-n SecCpichOvsf>
OVSF code of the secondary CPICH
<UTMS_SETS Cell 1-n WinSize>
search window size for this cell
UTMS_SETS contains:
ActiveSET active set
SyncSET neighbor (monitored) set for neighbors whose timing is known
AsyncSET neighbor (monitored) set for neighbors whose timing is unknown

## Examples

```

AT+CRUS
+CRUS: Active SET,1,2,10663,0,0,16,16,101,0,0,1536
+CRUS: Sync Neighbor SET,2,42,10663,0,0,34,33,109,1536,35,10663,0,0,26,26,106,1536
+CRUS: Async Neighbor SET,10,11,10663,0,0,0,49,121,0,6,10663,0,0,0,49,121,0,28, 10663, 0, 0,0,
49,121,0,247,10663,0,0,0,49,121,0,193,10663,0,0,0,49,121,0,493,10663,0,0,0,49,121,0,485,10663,
0,0,0,49,121,0,258,10663,0,0,0,49,121,0,109,10663,0,0,0,49,121,0,226,10663,0,0,38,49,121,1536
OK

```

## 9.30 AT+CPLMNWLIST Manages PLMNs allowed by customer

### Description

The command is used to manage the PLMN list allowed by customer. After setting the plmnwlist, the module needs to be restart.

### Syntax

Read Command	Responses
AT+CPLMNWLIST?	+CPLMNWLIST: <plmnwlist>,<type> OK
Write Command	Responses
AT+CPLMNWLIST=<plmnwlist>[,<type>]	OK ERROR

## Defined values

<plmnwlist>

The list of PLMN separated by semicolon. The maximum count of the items in the list is 20. Empty list represents no filter. If the CPASSMGR has set password for this command, the password must be verified before operating this command.

<type>

The type of PLMN filter:

- 1 – filter by HPLMN.
- 2 – filter by PLMN of the wireless network.
- 3 – filter by both HPLMN and PLMN of the wireless network.

## Examples

```
AT+CPLMNWLIST="46000;46001"
```

```
OK
```

```
AT+CPLMNWLIST=""
```

```
OK
```

```
AT+CPLMNWLIST?
```

```
+CPLMNWLIST:"46000;46001",1
```

```
OK
```

## 9.31 AT+CPASSMGR Manage password

### Description

The command is used to manage password for some AT commands.

### Syntax

Write Command	Responses
AT+CPASSMGR=<module>	OK
>, "<password>"[, <new_password>]	ERROR

### Defined values

<module>

The module for the password operation:

"cplmnwlist" – AT+CPLMNWLIST command

<password>

The password for the module. The maximum length is 8.

<new\_password>

The new password for the module. The maximum length is 8.

## Examples

```
AT+CPASSMGR="cplmnwlist", "", "12345678"
OK
AT+CPASSMGR="cplmnwlist", "12345678", "111111"
OK
AT+CPASSMGR="cplmnwlist", "111111"
OK
AT+CPASSMGR="cplmnwlist", "111111", ""
OK
```

## 9.32 AT+CNSVSQ Network band scan quickly

### Description

The command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

**Note:** This command is not supported in WCDMA mode.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CNSVSQ=<s>,<e>	Network survey started... For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>] [...] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] [...] Network survey end OK
Execution Command	ERROR
	Responses

AT+CNSVSQ	<p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[arfcn: &lt;arfcn_value&gt;,bsic: &lt;bsic_value&gt;,dBm: &lt;dBm_value&gt;]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[arfch: &lt;arfcn_value&gt;,dBm: &lt;dBm_value&gt;]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p> <p>+CNSVSQ: NOT IN GSM (<i>if WCDMA mode</i>)</p> <p>OK</p>
-----------	---

## Defined values

<s>

starting channel.

<e>

ending channel.

<arfcn\_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic\_value>

base station identification code.

<dBm\_value>

the value of dBm.

## Examples

AT+CNSVSQ

Network survey started...

For BCCH-Carrier:

arfcn: 16,bsic: 45,dBm: -75

.....

For non BCCH-Carrier:

arfcn: 89,dBm: -82

arfcn: 1011,dBm: -86

.....

Network survey end

OK

## 9.33 AT+CNSVS Network full band scan in string format

### Description

The command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

**Note:** This command is not supported in WCDMA mode.

SIM PIN	References
NO	Vendor

### Syntax

Read Command	Responses
AT+CNSVS?	+CNSVS: <count> OK
Write Command	Responses
AT+CNSVS=<s>,<e>	Network survey started... For BCCH-Carrier: [arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>,<[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStatus>] or [SIB3 not available]>,<[numArfcn: <num_arfcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]>] [...] For non BCCH-Carrier: [arfch: <arfcn_value>,dBm: <dBm_value>] [...] Network survey end OK
AT+CNSVS=<arfcn_index>	<i>If BCCH-Carrier:</i> arfcn: <arfcn_value>,bsic: <bsic_value>,dBm: <dBm_value>,<[mcc: <mcc_value>,mnc: <mnc_value>,lac: <lac_value>,cellId: <cellId>,cellStatus: <cellStatus>] or [SIB3 not available]>,<[numArfcn: <num_arfcn>, arfcn: <list of arfcns>] or [cell allocation empty]>,<[numChannels: <num_channel>,array: <list of channels>] or [SIB2 not available]> OK <i>If non BCCH-Carrier:</i> arfch: <arfcn_value>,dBm: <dBm_value>

	OK
	+CNSVS: NOT IN GSM
	OK
	+CNSVS: arfcn index invalid
	OK
	ERROR
Execution Command	Responses
AT+CNSVS	<p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[arfcn: &lt;arfcn_value&gt;,bsic: &lt;bsic_value&gt;,dBm: &lt;dBm_value&gt;,&lt;[mcc: &lt;mcc_value&gt;,mnc: &lt;mnc_value&gt;,lac: &lt;lac_value&gt;,cellId: &lt;cellId&gt;,cellStatus: &lt;cellStatus&gt;] or [SIB3 not available]&gt;,&lt;[numArfcn: &lt;num_arfcn&gt;, arfcn: &lt;list of arfcns&gt;] or [cell allocation empty]&gt;,&lt;[numChannels: &lt;num_channel&gt;,array: &lt;list of channels&gt;] or [SIB2 not available]&gt;]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[arfcn: &lt;arfcn_value&gt;,dBm: &lt;dBm_value&gt;]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p> <p>+CNSVS: NOT IN GSM <i>(if WCDMA mode)</i></p> <p>OK</p>

## Defined values

<count>	the count of arfcn.
<s>	starting channel.
<e>	ending channel.
<arfcn_value>	carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>	base station identification code.
<dBm_value>	the value of dBm.
<mcc_value>	mobile country code.

<mnc_value>
mobile network code.
<lac_value>
localization area code.
<cellId>
cell identifier.
<cellStatus>
cell status, this parameter indicates the following statuses:
- CELL_SUITABLE indicates the C0 is a suitable cell.
- CELL_LOW_PRIORITY indicates the cell is low priority based on the system information received.
- CELL_FORBIDDEN indicates the cell is forbidden.
- CELL_BARRED indicates the cell is barred based on the system information received.
- CELL_LOW_LEVEL indicates the cell RXLEV is low.
- CELL_OTHER indicates none of the above, e.g. exclusion timer running, no BCCH available etc.
<num_arfcn>
number of valid channels.
<list of arfcns>
list arfcns BCCH allocation, and the total number is <num_arfcn>.
<num_channel>
number of valid channels.
<list of channels>
list channels, and the total number is <num_channels>.
<arfcn_index>
the index of arfcn, and the minimum value is zero.

## Examples

```

AT+CNSVS
Network survey started...
For BCCH-Carrier:
arfcn: 600,bsic: 54,dBm: -98,mcc: 460,mnc: 0,lac: 6180,cellId: 49443,cellStatus:
CELL_LOW_LEVEL, numArfcn: 6,arfcn: 518 521 542 547 574 600,numChannels: 25,array: 6 9 11
12 14 19 20 21 22 23 24 25 27 28 36 516 525 528 552 556 564 568 572 584 600
.....
For non BCCH-Carrier:
arfcn: 694,dBm: -94
.....
Network survey end
OK

```

### 9.34 AT+CNSVN Network full band scan in numeric format

#### Description

The command is used to perform a quick survey through channels belonging to the band selected, starting from channel <s> to channel <e>. If parameters are omitted, a full band scan is performed. After issuing the command, the information for every received BCCH(BCCH-Carrier and non BCCH-Carrier) is given in the format of string.

**Note:** This command is not supported in WCDMA mode.

SIM PIN	References
NO	Vendor

#### Syntax

Write Command	Responses
AT+CNSVN=<s>,<e>	<p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[&lt;arfcn_value&gt;,&lt;bsic_value&gt;,&lt;dBm_value&gt;,&lt;[&lt;mcc_value&gt;,&lt;mnc_value&gt;,&lt;lac_value&gt;,&lt;cellId&gt;,&lt;cellStatus&gt;] or [SIB3 not available]&gt;,&lt;[&lt;num_afrcn&gt;,&lt;list of arfcns&gt;] or [cell allocation empty]&gt;,&lt;[&lt;num_channel&gt;,&lt;list of channels&gt;] or [SIB2 not available]&gt;]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[&lt;arfcn_value&gt;,&lt;dBm_value&gt;]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p>
AT+CNSVN=<arfcn_index>	<p><i>If BCCH-Carrier:</i></p> <p>&lt;arfcn_value&gt;,&lt;bsic_value&gt;,&lt;dBm_value&gt;,&lt;[&lt;mcc_value&gt;,&lt;mnc_value&gt;,&lt;lac_value&gt;,&lt;cellId&gt;,&lt;cellStatus&gt;] or [SIB3 not available]&gt;,&lt;[&lt;num_afrcn&gt;,&lt;list of arfcns&gt;] or [cell allocation empty]&gt;,&lt;[&lt;num_channel&gt;,&lt;list of channels&gt;] or [SIB2 not available]&gt;</p> <p><b>OK</b><i>If non BCCH-Carrier:</i></p> <p>&lt;arfcn_value&gt;,&lt;dBm_value&gt;</p> <p>OK</p> <hr/> <p>+CNSVN: NOT IN GSM</p> <p>OK</p> <hr/> <p>+CNSVN: arfcn index invalid</p> <p>OK</p> <hr/> <p>ERROR</p>

Execution Command	Responses
AT+CNSVN	<p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[&lt;arfcn_value&gt;,&lt;bsic_value&gt;,&lt;dBm_value&gt;,&lt;[&lt;mcc_value&gt;,&lt;mnc_value&gt;,&lt;lac_value&gt;,&lt;cellId&gt;,&lt;cellStatus&gt;] or [SIB3 not available]&gt;], &lt;[&lt;num_arfcn&gt;,&lt;list of arfcns&gt;] or [cell allocation empty]&gt;,&lt;[&lt;num_channel&gt;,&lt;list of channels&gt;] or [SIB2 not available]&gt;]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[&lt;arfcn_value&gt;,&lt;dBm_value&gt;]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p> <p>+CNSVN: NOT IN GSM <i>(if WCDMA mode)</i></p> <p>OK</p>

## Defined values

<count>	the count of arfcn.
<s>	starting channel.
<e>	ending channel.
<arfcn_value>	carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>	base station identification code.
<dBm_value>	the value of dBm.
<mcc_value>	mobile country code.
<mnc_value>	mobile network code.
<lac_value>	localization area code.
<cellId>	cell identifier.
<cellStatus>	cell status, this parameter indicates the following statuses:

- CELL\_SUITABLE indicates the C0 is a suitable cell.
- CELL\_LOW\_PRIORITY indicates the cell is low priority based on the system information received.
- CELL\_FORBIDDEN indicates the cell is forbidden.
- CELL\_BARRED indicates the cell is barred based on the system information received.
- CELL\_LOW\_LEVEL indicates the cell RXLEV is low.
- CELL\_OTHER indicates none of the above, e.g. exclusion timer running, no BCCH available etc.

<num\_arfcn>

number of valid channels.

<list of arfcns>

list arfcns BCCH allocation, and the total number is <num\_arfcn>.

<num\_channel>

number of valid channels.

<list of channels>

list channels, and the total number is <num\_channels>.

<arfcn\_index>

the index of arfcn, and the minimum value is zero.

## Examples

*AT+CNSVN*

*Network survey started...*

*For BCCH-Carrier:*

*16,45,-82,460,0,6180,42545,0,5, 16 45 49 71 81,11, 11 12 14 16 19 20 21 22 24 26 27*

*.....*

*For non BCCH-Carrier:*

*694, -94*

*.....*

*Network survey end*

*OK*

## 9.35 AT+CNSVUS Network band scan by channels in string

### Description

The command is used to perform a quick survey of user defined channels. It scans the given channels. The result format is in string format.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CNSVUS=<ch1>,[<ch2>,<ch3>,...[<ch10>]]	<p>Network survey started...</p> <p>For BCCH-Carrier:</p> <p>[arfcn: &lt;arfcn_value&gt;,bsic: &lt;bsic_value&gt;,dBm: &lt;dBm_value&gt;,&lt;[mcc: &lt;mcc_value&gt;,mnc: &lt;mnc_value&gt;,lac: &lt;lac_value&gt;,cellId: &lt;cellId&gt;,cellStatus: &lt;cellStatus&gt;] or [SIB3 not available]&gt;,&lt;[numArfcn: &lt;num_arfcn&gt;, arfcn: &lt;list of arfcns&gt;] or [cell allocation empty]&gt;,&lt;[numChannels: &lt;num_channel&gt;,array: &lt;list of channels&gt;] or [SIB2 not available]&gt;]</p> <p>[...]</p> <p>For non BCCH-Carrier:</p> <p>[arfch: &lt;arfcn_value&gt;,dBm: &lt;dBm_value&gt;]</p> <p>[...]</p> <p>Network survey end</p> <p>OK</p>
	+CNSVN: NOT IN GSM
	OK
	ERROR

## Defined values

<chN>

channel number(arfcn). It must be in an increasing order, and the range of "N" is from 1 to 10.

<arfcn\_value>

carrier assigned radio channel (BCCH – Broadcast Control Channel).

<bsic\_value>

base station identification code.

<dBm\_value>

the value of dBm.

<mcc\_value>

mobile country code.

<mnc\_value>

mobile network code.

<lac\_value>

localization area code.

<cellId>

cell identifier.

<cellStatus>

cell status, this parameter indicates the following statuses:

- CELL\_SUITABLE indicates the CO is a suitable cell.
- CELL\_LOW\_PRIORITY indicates the cell is low priority based on the system information received.
- CELL\_FORBIDDEN indicates the cell is forbidden.

- CELL\_BARRED indicates the cell is barred based on the system information received.
- CELL\_LOW\_LEVEL indicates the cell RXLEV is low.
- CELL\_OTHER indicates none of the above, e.g. exclusion timer running, no BCCH available etc.

<num\_arfcn>  
number of valid channels.

<list of arfcns>  
list arfcns BCCH allocation, and the total number is <num\_arfcn>.

<num\_channel>  
number of valid channels.

<list of channels>  
list channels, and the total number is <num\_channels>.

## Examples

```
AT+CNSVUS=16,20,86,96,109
Network survey started...
For BCCH-Carrier:
arfcn: 16,bsic: 45,dBm: -80,mcc: 460,mnc: 0,lac: 6180,cellId: 42545,cellStatus:CELL_SUITABLE,
numArfcn: 5,arfcn: 16 45 49 71 81,numChannels: 11,array: 11 12 14 16 19 20 21 22 24 26 27
For non BCCH-Carrier:
arfcn: 86,dBm: -97
Network survey end
OK
```

## 9.36 AT+CNSVUN Network band scan by channels in numeric

### Description

The command is used to performing a quick survey of user defined channels. It scans the given channels. The result is given in numeric format.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CNSVUN=<ch1>,<ch2>,<ch3>,<ch4>,<ch5>,<ch6>,<ch7>,<ch8>,<ch9>,<ch10>]]	Network survey started... For BCCH-Carrier: [<arfcn_value>,<bsic_value>,<dBm_value>,<[<mcc_value>,<mnc_value>,<lac_value>,<cellId>,<cellStasus>] or [SIB3 not available]>,<[<num_arfcn>,<list of arfcns>] or [cell allocation empty]>,<[<num_channel>,<list of channels>] or [SIB2 not

	available]>] [...] For non BCCH-Carrier: [ <arfcn_value>, <dBm_value>] [...] Network survey end OK
	+CNSVN: NOT IN GSM OK
	ERROR

## Defined values

<chN>	channel number(arfcn). <i>It must be in a increasing order, and the range of "N" is from 1 to 10.</i>
<arfcn_value>	carrier assigned radio channel (BCCH – Broadcast Control Channel).
<bsic_value>	base station identification code.
<dBm_value>	the value of dBm.
<mcc_value>	mobile country code.
<mnc_value>	mobile network code.
<lac_value>	localization area code.
<cellId>	cell identifier.
<cellStatus>	cell status, this parameter indicates the following statuses: <ul style="list-style-type: none"> <li>- CELL_SUITABLE indicates the C0 is a suitable cell.</li> <li>- CELL_LOW_PRIORITY indicates the cell is low priority based on the system information received.</li> <li>- CELL_FORBIDDEN indicates the cell is forbidden.</li> <li>- CELL_BARRED indicates the cell is barred based on the system information received.</li> <li>- CELL_LOW_LEVEL indicates the cell RXLEV is low.</li> <li>- CELL_OTHER indicates none of the above, e.g. exclusion timer running, no BCCH available etc.</li> </ul>
<num_arfcn>	number of valid channels.
<list of arfcns>	list arfcns BCCH allocation, and the total number is <num_arfcn>.

```
<num_channel>
number of valid channels.
<list of channels>
list channels, and the total number is <num_channels>.
```

### Examples

```
AT+CNSVUN=16,20,86,96,109
Network survey started...
For BCCH-Carrier:
14,51, -89, 460, 0, 6180, 41074,0, 8, 5 7 14 51 61 65 74 88, 24, 2 3 9 11 12 15 16 17 19 20 22 24 25
26 27 28 36 81 516 520 525 532 556 600
For non BCCH-Carrier:
86, -97
Network survey end
OK
```

## 9.37 AT+CCGMDF Enable single mode in RAT balancing mode

### Description

The command is used to enable or disable single mode in RAT balancing mode. This command is used for test purpose only. The default setting of RAT balancing depends on EF-RAT, and usually it is “Dual Mode”. After calling AT+CCGMDF=1 and AT+CNMP=13 or 14, the mode can be changed to single mode.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CCGMDF=?	+CCGMDF: (0,1) OK
Read Command	Responses
AT+CCGMDF?	+CCGMDF: <mode> OK
Write Command	Responses
AT+CCGMDF=<mode>	OK ERROR

### Defined values

```
<mode>
```

Whether to enable or disable single mode in RAT balancing condition (mode depends on AT+CNMP):

- 0 – Disable.
- 1 – Enable.

### Examples

```
AT+CCGMDF=1
```

```
OK
```

```
AT+CCGMDF?
```

```
+CCGMDF:0
```

```
OK
```

```
AT+CCGMDF=?
```

```
+CCGMDF:(0-1)
```

```
OK
```

## 9.38 AT+CPLMNPASS Manage PLMN filter password

### Description

The command is used to manage password for AT+CPLMNWLIST.

### Syntax

Write Command	Responses
AT+CPLMNPASS=" <i>&lt;passw ord&gt;</i> "[, <i>&lt;new_password&gt;</i> ]	OK ERROR

### Defined values

*<password>*

The password for the module. The maximum length is 8.

*<new\_password>*

The new password for the module. The maximum length is 8.

### Examples

```
AT+CPLMNPASS= "", "12345678"
```

```
OK
```

```
AT+CPLMNPASS= "12345678", "111111"
```

```
OK
```

```
AT+CPLMNPASS= "111111"
```

```
OK
```

```
AT+CPLMNPASS="111111", ""
OK
```

## 9.39 AT\*CNTI Query Network Mode

### Description

The command is used to query the network mode of the module.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT*CNTI=?	*CNTI: (list of supported <CNTI_option>s)  OK
Read Command	Responses
AT*CNTI?	*CNTI:<CNTI_option>, <network_mode> OK
Write Command	Responses
AT*CNTI = <CNTI_option>	*CNTI:<CNTI_option>, <network_mode>s OK ERROR

### Defined values

<CNTI_option>	
Network query option.	
Value:	
0	Query the current network mode
1	Query the network mode available for the module now
2	Query the network mode supported by the module
<network_mode>	
The wireless access technologies separated by ','. For some products, the HSDPA or HSUPA is not supported.	
Value:	
NONE	
GSM	
GPRS	
EDGE	

UMTS  
HSDPA  
HSUPA

### Examples

```
AT*CNTI =1
```

```
*CNTI: 1, UMTS
```

```
OK
```

```
AT*CNTI?
```

```
*CNTI: 1, GSM, GPRS
```

```
OK
```

## 10 Mobile Equipment Control and Status Commands

### 10.1 +CME ERROR Mobile Equipment error result code

#### Description

The operation of +CME ERROR:<err> result code is similar to the regular ERROR result code: if +CME ERROR: <err> is the result code for any of the commands in a command line, none of the following commands in the same command line is executed (neither ERROR nor OK result code shall be returned as a result of a completed command line execution). The format of <err> can be either numeric or verbose. This is set with command [AT+CMEE](#).

SIM PIN	References
NO	3GPP TS 27.007

#### Syntax

```
+CME ERROR: <err>
```

#### Defined values

<err>

Values (numeric format followed by verbose format):

0	phone failure
1	no connection to phone
2	phone adaptor link reserved
3	operation not allowed
4	operation not supported
5	PH-SIM PIN required
6	PH-FSIM PIN required
7	PH-FSIM PUK required
10	SIM not inserted
11	SIM PIN required
12	SIM PUK required
13	SIM failure
14	SIM busy
15	SIM wrong
16	incorrect password
17	SIM PIN2 required
18	SIM PUK2 required

20	memory full
21	invalid index
22	not found
23	memory failure
24	text string too long
25	invalid characters in text string
26	dial string too long
27	invalid characters in dial string
30	no network service
31	network timeout
32	network not allowed - emergency calls only
40	network personalization PIN required
41	network personalization PUK required
42	network subset personalization PIN required
43	network subset personalization PUK required
44	service provider personalization PIN required
45	service provider personalization PUK required
46	corporate personalization PIN required
47	corporate personalization PUK required
100	Unknown
103	Illegal MESSAGE
106	Illegal ME
107	GPRS services not allowed
111	PLMN not allowed
112	Location area not allowed
113	Roaming not allowed in this location area
132	service option not supported
133	requested service option not subscribed
134	service option temporarily out of order
148	unspecified GPRS error
149	PDP authentication failure
150	invalid mobile class
257	network rejected request
258	retry operation
259	invalid deflected to number
260	deflected to own number
261	unknown subscriber
262	service not available
263	unknown class specified
264	unknown network message
273	minimum TFTS per PDP address violated
274	TFT precedence index not unique
275	invalid parameter combination

**“CME ERROR” codes of MMS:**

170	Unknown error for mms
171	MMS task is busy now
172	The mms data is over size
173	The operation is overtime
174	There is no mms receiver
175	The storage for address is full
176	Not find the address
177	Invalid parameter
178	Failed to read mss
179	There is not a mms push message
180	Memory error
181	Invalid file format
182	The mms storage is full
183	The box is empty
184	Failed to save mms
185	It's busy editing mms now
186	It's not allowed to edit now
187	No content in the buffer
188	Failed to receive mms
189	Invalid mms pdu
190	Network error
191	Failed to read file
192	None

**“CME ERROR” codes of FTP:**

201	Unknown error for FTP
202	FTP task is busy
203	Failed to resolve server address
204	FTP timeout
205	Failed to read file
206	Failed to write file
207	It's not allowed in current state
208	Failed to login
209	Failed to logout
210	Failed to transfer data
211	FTP command rejected by server
212	Memory error
213	Invalid parameter
214	Network error

**“CME ERROR” codes of HTTP:**

220	Unknown error fot HTTP
221	HTTP task is busy
222	Failed to resolve server address

223	HTTP timeout
224	Failed to transfer data
225	Memory error
226	Invalid parameter
227	Network error

## Examples

```
AT+CPIN="1234","1234"
+CME ERROR: incorrect password
```

## 10.2 AT+CMEE Report mobile equipment error

### Description

The command controls the format of the error result codes that indicates errors related to Sim5215&Sim5216

Functionality.Format can be selected between plain “ERROR” output,error numbers or verbose “+CME ERROR: <err>” and “+CMS ERROR: <err>” messages.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CMEE=?	+CMEE: (list of supported <n>s) OK
Read Command	Responses
AT+CMEE?	+CMEE: <n> OK
Write Command	Responses
AT+CMEE=<n>	OK ERROR
Execution Command	Responses
AT+CMEE	<i>Set default value:</i> OK

### Defined values

<n>	
0	– Disable result code,i.e. only “ERROR” will be displayed.
1	– Enable error result code with numeric values.
2	– Enable error result code with string values.

## Examples

```

AT+CMEE?
+CME: 2
OK
AT+CPIN="1234","1234"
+CME ERROR: incorrect password
AT+CMEE=0
OK
AT+CPIN="1234","1234"
ERROR
AT+CMEE=1
OK
AT+CPIN="1234","1234"
+CME ERROR: 16

```

## 10.3 AT+CPAS Phone activity status

### Description

Execution command returns the activity status [<pas>](#) of the ME. It can be used to interrogate the ME before requesting action from the phone.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPAS=?	+CPAS: (list of supported <a href="#">&lt;pas&gt;</a> s) OK
Execution Command	Responses
AT+CPAS	+CPAS: <a href="#">&lt;pas&gt;</a> OK

### Defined values

<a href="#">&lt;pas&gt;</a>
0 – ready (ME allows commands from TA/TE)
3 – ringing (ME is ready for commands from TA/TE, but the ringer is active)
4 – call in progress (ME is ready for commands from TA/TE, but a call is in progress)

### Examples

*RING (with incoming call)*

AT+CPAS

+CPAS: 3

OK

AT+CPAS=?

+CPAS: (0,3,4)

OK

## 10.4 AT+CFUN Set phone functionality

### Description

The command selects the level of functionality **<fun>** in the ME. Level "full functionality" is where the highest level of power is drawn. "Minimum functionality" is where minimum power is drawn. Level of functionality between these may also be specified by manufacturers. When supported by manufacturers, ME resetting with **<rst>** parameter may be utilized.

**NOTE** AT+CFUN=6 must be used after setting AT+CFUN=7. If module in offline mode, must execute AT+CFUN=6 or restart module to online mode.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CFUN=?	+CFUN: (list of supported <b>&lt;fun&gt;</b> s), (list of supported <b>&lt;rst&gt;</b> s) OK ERROR +CME ERROR: <b>&lt;err&gt;</b>
Read Command	Responses
AT+CFUN?	+CFUN: <b>&lt;fun&gt;</b> OK ERROR +CME ERROR: <b>&lt;err&gt;</b>
Write Command	Responses
AT+CFUN= <b>&lt;fun&gt;</b> [, <b>&lt;rst&gt;</b> ]	OK ERROR +CME ERROR: <b>&lt;err&gt;</b>

### Defined values

<b>&lt;fun&gt;</b>
0 – minimum functionality

- 1 – full functionality, online mode
- 4 – disable phone both transmit and receive RF circuits
- 5 – Factory Test Mode
- 6 – Reset
- 7 – Offline Mode

<rst>

- 0 – do not reset the ME before setting it to <fun> power level
- 1 – reset the ME before setting it to <fun> power level. This value only takes effect when <fun> equals 1.

## Examples

```
AT+CFUN?
```

```
+CFUN: 1
```

```
OK
```

```
AT+CFUN=0
```

```
OK
```

## 10.5 AT+CPIN Enter PIN

### Description

The command sends to the ME a password which is necessary before it can be operated (SIM PIN, SIM PUK, PH-SIM PIN, etc.). If the PIN is to be entered twice, the TA shall automatically repeat the PIN. If no PIN request is pending, no action is taken towards MT and an error message, +CME b is returned to TE.

If the PIN required is SIM PUK or SIM PUK2, the second pin is required. This second pin, <newpin>, is used to replace the old pin in the SIM.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPIN=?	OK
Read Command	Responses
AT+CPIN?	+CPIN: <code> OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+CPIN=	OK

<pin>[,<newpin>]	ERROR
	+CME ERROR: <err>

### Defined values

<pin>
String type values.
<newpin>
String type values.
<code>
Values reserved by the present document:
READY – ME is not pending for any password
SIM PIN – ME is waiting SIM PIN to be given
SIM PUK – ME is waiting SIM PUK to be given
PH-SIM PIN – ME is waiting phone-to-SIM card password to be given
SIM PIN2 – ME is waiting SIM PIN2 to be given
SIM PUK2 – ME is waiting SIM PUK2 to be given
PH-NET PIN – ME is waiting network personalization password to be given

### Examples

AT+CPIN?
+CPIN: SIM PUK2
OK

## 10.6 AT+CSQ Signal quality

### Description

Execution command returns received signal strength indication <rss> and channel bit error rate <ber> from the ME. Test command returns values supported by the TA as compound values.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CSQ=?	+CSQ: (list of supported <rss>s),(list of supported <ber>s) OK
Execution Command	Responses
AT+CSQ	+CSQ: <rss>,<ber> OK

ERROR

## Defined values

<rsqi>

0	-	-113 dBm or less
1	-	-111 dBm
2...30	-	-109... -53 dBm
31	-	-51 dBm or greater
99	-	not known or not detectable

<ber>

(in percent)

0	-	<0.01%
1	-	0.01% --- 0.1%
2	-	0.1% --- 0.5%
3	-	0.5% --- 1.0%
4	-	1.0% --- 2.0%
5	-	2.0% --- 4.0%
6	-	4.0% --- 8.0%
7	-	>=8.0%
99	-	not known or not detectable

## Examples

```
AT+CSQ
+CSQ: 22,0
OK
```

## 10.7 AT+AUTOCSQ Set CSQ report

### Description

The command causes the module to disable and enable auto report CSQ information, if we enable auto report, the module reports CSQ information every five seconds or only after <rsqi> or <ber> changing, the format of report is "+CSQ: <rsqi>,<ber>".

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+AUTOCSQ=?	+AUTOCSQ: (list of supported<auto>s),(list of supported<mode>s)

	OK
Read Command	Responses
AT+AUTOCSQ?	+AUTOCSQ: <auto>,<mode> OK
Write Command	Responses
AT+AUTOCSQ=<auto>[,<mode>]	OK ERROR

### Defined values

<aoto>

- 0 – disable auto report
- 1 – enable auto report

<mode>

- 0 – CSQ auto report every five seconds
- 1 – CSQ auto report only after <rssi> or <ber> changing

**NOTE** If the parameter of <mode> is omitted when executing write command, <mode> will be set to default value.

### Examples

```
AT+AUTOCSQ=?
```

```
+AUTOCSQ: (0-1),(0-1)
```

```
OK
```

```
AT+AUTOCSQ?
```

```
+AUTOCSQ: 1,1
```

```
OK
```

```
AT+AUTOCSQ=1,1
```

```
OK
```

```
+CSQ: 23,0 (when <rssi> or <ber> changing)
```

## 10.8 AT+CACM Accumulated call meter

### Description

The command resets the Advice of Charge related accumulated call meter value in SIM file EFACM.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CACM=?	OK
Read Command	Responses
AT+CACM?	+CACM: <acm> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CACM=<passwd>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CACM	OK +CME ERROR: <err>

### Defined values

<passwd>

String type, SIM PIN2.

<acm>

String type, accumulated call meter value similarly coded as <ccm> under +CAOC.

### Examples

AT+CACM?

+CACM: "000000"

OK

## 10.9 AT+CAMM Accumulated call meter maximum

### Description

The command sets the Advice of Charge related accumulated call meter maximum value in SIM file EFACMmax.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CAMM=?	OK

Read Command	Responses
AT+CAMM?	+CAMM: <acmmax> OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CAMM= <acmmax>[,<passwd>]	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CAMM	OK +CME ERROR: <err>

### Defined values

<acmmax>

String type, accumulated call meter maximum value similarly coded as <ccm> under AT+CAOC, value zero disables ACMmax feature.

<passwd>

String type, SIM PIN2.

### Examples

```
AT+CAMM?
+CAMM: "000000"
OK
```

## 10.10 AT+CPUC Price per unit and currency table

### Description

The command sets the parameters of Advice of Charge related price per unit and currency table in SIM file EFPUCT.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPUC=?	OK
Read Command	Responses

AT+CPUC?	+CPUC: [<currency>,<ppu>] OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CPUC=<currency>,<ppu>[,<passwd>]	OK ERROR +CME ERROR: <err>

### Defined values

<currency>

String type, three-character currency code (e.g. "GBP", "DEM"), character set as specified by command Select TE Character Set [AT+CSCS](#).

<ppu>

String type, price per unit, dot is used as a decimal separator. (e.g. "2.66").

<passwd>

String type, SIM PIN2.

### Examples

*AT+CPUC?*

*+CPUC: "GBP",2.66*

*OK*

## 10.11 AT+CPOF Control phone to power down

### Description

The command controls the phone to power off.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CPOF=?	OK
Execution Command	Responses
AT+CPOF	OK

### Examples

```
AT+CPOF
OK
```

## 10.12 AT+CCLK Real time clock

### Description

The command is used to manage Real Time Clock of the module.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CCLK=?	OK
Read Command	Responses
AT+CCLK?	+CCLK: <time> OK
Write Command	Responses
AT+CCLK=<time>	OK ERROR

### Defined values

<time>

String type value; format is “yy/MM/dd, hh:mm:ss±zz”, where characters indicate year (two last digits), month, day, hour, minutes, seconds and time zone (indicates the difference, expressed in quarters of an hour, between the local time and GMT; three last digits are mandatory, range -47...+48). E.g. 6<sup>th</sup> of May 2008, 14:28:10 GMT+8 equals to “08/05/06,14:28:10+32”.

- NOTE**
1. Time zone is nonvolatile, and the factory value is invalid time zone.
  2. Command +CCLK? will return time zone when time zone is valid, and if time zone is 00, command +CCLK? will return “+00”, but not “-00”.

### Examples

```
AT+CCLK="08/11/28, 12:30:33+32"
OK
AT+CCLK?
+CCLK: "08/11/28,12:30:35+32"
OK
AT+CCLK="08/11/26,10:15:00"
OK
```

```

AT+CCLK?
+CCLK: "08/11/26,10:15:02+32"
OK
  
```

## 10.13 AT+CRFEN RF check at initialization

### Description

The command will enable or disable RF check at the initialization, you can disable the RF control status check at the initialization if do not want to check the RF pin status. This status will be saved the check function on reboot.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRFEN=?	+CRFEN: (list of supported <value>s) OK
Read Command	Responses
AT+CRFEN?	+CRFEN:<value> OK
Write Command	Responses
AT+CRFEN= <value>	OK ERROR

### Defined values

```

<value>
0 - disable RF check at initialization
1 - enable RF check at initialization
  
```

### Examples

```

AT+CRFEN=1
OK
AT+CRFEN?
+CRFEN: 1
OK
AT+CRFEN=?
+CRFEN : (0-1)
OK
  
```

## 10.14 AT+CRESET Reset ME

### Description

The command is used to reset ME.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRESET=?	OK
Execute Command	Responses
AT+CRESET	OK

### Examples

<i>AT+CRESET=?</i>
<i>OK</i>
<i>AT+CRESET</i>
<i>OK</i>

## 10.15 AT+SIMEI Set module IMEI

### Description

The command is used to set module IMEI value.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+SIMEI=?	OK
Read Command	Responses
AT+SIMEI?	+SIMEI: <imei> OK
Write Command	Responses
AT+SIMEI=<imei>	OK

	ERROR
--	-------

## Defined values

<imei>
The 15-digit IMEI value.

## Examples

<i>AT+SIMEI=357396012183170</i>
<i>OK</i>
<i>AT+SIMEI?</i>
<i>+SIMEI: 357396012183170</i>
<i>OK</i>
<i>AT+SIMEI=?</i>
<i>OK</i>

## 10.16 AT+DSWITCH Change diagnostics port mode

### Description

The command is used to change diagnostics port mode. The default mode of diagnostics port is debug mode. You can switch it from debug mode to data mode or from data mode to debug mode. In data mode, you can send and receive PCM data.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+DSWITCH=?	+DSWITCH: (list of supported <mode>s) OK
Read Command	Responses
AT+DSWITCH?	+DSWITCH: <mode> OK
Write Command	Responses
AT+DSWITCH =<mode>	OK ERROR

### Defined values

<mode>
Parameter shows the settings of diagnostics port

0	Switch from data mode to debug mode
1	Switch from debug mode to data mode

## Examples

```
AT+DSWITCH=?
```

```
+DSWITCH: (0-1)
```

```
OK
```

```
AT+DSWITCH?
```

```
+DSWITCH: 0
```

```
OK
```

```
AT+DSWITCH=1
```

```
OK
```

## 10.17 AT+CDELTA Write delta package to FOTA partition

### Description

The **AT+CDELTA** command can be used to write delta package to FOTA partition. After writing successfully, it will set the flag of updating. When module resets and checks the flag, then it starts to update firmware. The delta package is saved as a file in file system.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CDELTA=?	OK
Write Command	Responses
AT+CDELTA=<delta_package>	<i>If successful, return:</i> +CDELTA: 1 OK
	<i>If fail, return:</i> +CDELTA: 0,<err_code> OK

### Defined values

<delta\_package>

File name of delta package (string type). <delta\_package> must be double quoted. Please refer to “NOTE” section for more detail.

<err\_code>

The error code of writing delta package.

- 0 The delta package does not exist
- 1 Error occurs when reading delta package
- 2 Error occurs when writing delta package to FOTA partition
- 3 Set the flag of updating unsuccessfully

### Examples

```
AT+CDELTA=?
OK
AT+CDELTA="delta_1_2.mld"
+CDELTA: 1
OK
```

**NOTE:** delta package can be resided in the module or T Flash card, This command will lookup the package under current directory. BTW you can use +FSCD to change current directory

## 10.18 AT+CDIPR Set UART baud rate

### Description

The command sets UART baud rate when upgrade firmware through UART.

**NOTE:**

1. This command depends on which baud rate is set by AT+IPR and download tool.
2. Before using download tool to upgrade firmware through UART, one must use AT+CUDIAG to change UART service for download.
3. The baud rate will be saved as long as this command is executed.
4. Please refer to the document about download firmware through UART, in order to get more usage of this command.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CDIPR=?	+CDIPR:(0-3) OK
Read Command	Responses
AT+CDIPR?	+CDIPR: <value> OK
Write Command	Responses
AT+CDIPR=<value>	OK ERROR

Execution Command	Responses
AT+CDIPR	<i>Set default value:</i> OK

### Defined values

<value>
The baud rate which will be set.
0 – 38400
1 – 57600
<u>2</u> – 115200(default)
3 – 230400

### Examples

<i>AT+CDIPR?</i>
<i>+CDIPR: 2</i>
<i>OK</i>
<i>AT+CDIPR=?</i>
<i>+CDIPR: (0-3)</i>
<i>OK</i>
<i>AT+CDIPR=2</i>
<i>OK</i>

## 10.19 AT+CUDIAG Switch UART from AT service to DIAG service

### Description

The command switches UART from AT service to DIAG service. After executing this command, UART comport can't be used to send AT command, and just used to transmit and receive data.

**NOTE:** This command must be used by the UART comport which is current used port.

SIM PIN	References
NO	Vendor

### Syntax

Execution Command	Responses
AT+CUDIAG	OK

### Examples

<i>AT+CUDIAG</i>
<i>OK</i>

## 10.20 AT+CUDLOADS Switch to UART download mode

### Description

The command switch upgrade mode from USB download mode to UART download mode.

Notice:

1. The default download mode is through USB, this command is used when one wants to use UART to upgrade firmware.
2. When use AT+CUDLOADS=1, USB can never be used to upgrade firmware.
3. When one set this command “1”, after UART download finished, this command will be “0”, and next download mode will be USB download mode.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CUDLOADS=?	+CUDLOADS: (0-1) OK
Read Command	Responses
AT+CUDLOADS?	+CUDLOADS: <value> OK
Write Command	Responses
AT+CUDLOADS=<value>	OK ERROR
Execution Command	Responses
AT+CUDLOADS	<i>Set default value:</i> OK

### Defined values

<value>

The download mode which will be set.

0 – USB download mode.

1 – UART download mode.

### Examples

```
AT+CUDLOADS?
```

```
+CUDLOADS: 0
```

```
OK
```

```
AT+CUDLOADS=?
```

```
+CUDLOADS: (0-1)
```

OK

AT+CUDLOADS=1

OK

***NOTE: Please refer to the application note “SIM52xx\_UART\_Dload\_Application\_note\_V0.02.doc”,  
in order to get more usage of this command.***

## 11 SIMCard Related Commands

### 11.1 AT+CICCID Read ICCID in SIM card

#### Description

The command is used to Read the ICCID in SIM card

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CICCID=?	OK
Execution Command	Responses
AT+CICCID	+ICCID:<ICCID> OK
	ERROR
	+CME ERROR: <err>

#### Defined values

<ICCID>

Integrate circuit card identity, a standard ICCID is a 20-digit serial number of the SIM card, it presents the publish state, network code, publish area, publish date, publish manufacture and press serial number of the SIM card.

#### Examples

```
AT+CICCID
+ICCID: 898600700907A6019125
OK
```

### 11.2 AT+CSIM Generic SIM access

#### Description

The command allows to control the SIM card directly.

Compared to restricted SIM access command [AT+CRSM](#), [AT+CSIM](#) allows the ME to take more control over the SIM interface.

For SIM–ME interface please refer 3GPP TS 11.11.

**NOTE** The SIM Application Toolkit functionality is not supported by [AT+CSIM](#). Therefore the following SIM commands can not be used: [TERMINAL PROFILE](#), [ENVELOPE](#), [FETCH](#) and [TEMINAL RESPONSE](#).

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CSIM=?	OK
Write Command	Responses
AT+CSIM= <length>,<command>	+CSIM: <length>, <response> OK ERROR +CME ERROR: <err>

## Defined values

<length>
Integer type; length of the characters that are sent to TE in <command> or <response>
<command>
Command passed on by the MT to the SIM.
<response>
Response to the command passed on by the SIM to the MT.

## Examples

AT+CSIM=?
OK

## 11.3 AT+CRSM Restricted SIM access

### Description

By using **AT+CRSM** instead of Generic SIM Access **AT+CSIM**, TE application has easier but more limited access to the SIM database.

Write command transmits to the MT the SIM **<command>** and its required parameters. MT handles internally all SIM-MT interface locking and file selection routines. As response to the command, MT sends the actual SIM information parameters and response data. MT error result code +CME ERROR may be returned when the command cannot be passed to the SIM, but failure in the execution of the command in the SIM is reported in **<sw1>** and **<sw2>** parameters.

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CRSM=?	OK
Write Command	Responses
AT+CRSM=<command>	+CRSM: <sw1>,<sw2>[,<response>]
[,<fileID>[,<p1>,<p2>,<p3>	OK
[,<data>]]]	ERROR
	+CME ERROR: <err>

## Defined values

### <command>

Command passed on by the MT to the SIM:

- 176 – READ BINARY
- 178 – READ RECORD
- 192 – GET RESPONSE
- 214 – UPDATE BINARY
- 220 – UPDATE RECORD
- 242 – STATUS
- 203 – RETRIEVE DATA
- 219 – SET DATA

### <fileID>

Identifier for an elementary data file on SIM, if used by <command>.

The follow list the fileID hex value, the user need to convert them to decimal.

EFs under MF

- 0x2FE2      ICCID
- 0x2F05      Extended Language Preferences
- 0x2F00      EF DIR
- 0x2F06      Access Rule Reference

EFs under USIM ADF

- 0x6F05      Language Indication

0x6F07	IMSI
0x6F08	Ciphering and Integrity keys
0x6F09	C and I keys for pkt switched domain
0x6F60	User controlled PLMN selector w/Acc Tech
0x6F30	User controlled PLMN selector
0x6F31	HPLMN search period
0x6F37	ACM maximum value
0x6F38	USIM Service table
0x6F39	Accumulated Call meter
0x6F3E	Group Identifier Level
0x6F3F	Group Identifier Level 2
0x6F46	Service Provider Name
0x6F41	Price Per Unit and Currency table
0x6F45	Cell Bcast Msg identifier selection
0x6F78	Access control class
0x6F7B	Forbidden PLMNs
0x6F7E	Location information
0x6FAD	Administrative data
0x6F48	Cell Bcast msg id for data download
0x6FB7	Emergency call codes
0x6F50	Cell bcast msg id range selection
0x6F73	Packet switched location information
0x6F3B	Fixed dialling numbers
0x6F3C	Short messages
0x6F40	MSISDN
0x6F42	SMS parameters
0x6F43	SMS Status
0x6F49	Service dialling numbers
0x6F4B	Extension 2
0x6F4C	Extension 3
0x6F47	SMS reports
0x6F80	Incoming call information
0x6F81	Outgoing call information
0x6F82	Incoming call timer
0x6F83	Outgoing call timer
0x6F4E	Extension 5
0x6F4F	Capability Config Parameters 2
0x6FB5	Enh Multi Level Precedence and Pri
0x6FB6	Automatic answer for eMLPP service
0x6FC2	Group identity
0x6FC3	Key for hidden phonebook entries
0x6F4D	Barred dialling numbers
0x6F55	Extension 4

0x6F58	Comparison Method information
0x6F56	Enabled services table
0x6F57	Access Point Name Control List
0x6F2C	De-personalization Control Keys
0x6F32	Co-operative network list
0x6F5B	Hyperframe number
0x6F5C	Maximum value of Hyperframe number
0x6F61	OPLMN selector with access tech
0x6F5D	OPLMN selector
0x6F62	HPLMN selector with access technology
0x6F06	Access Rule reference
0x6F65	RPLMN last used access tech
0x6FC4	Network Parameters
0x6F11	CPHS: Voice Mail Waiting Indicator
0x6F12,	CPHS: Service String Table
0x6F13	CPHS: Call Forwarding Flag
0x6F14	CPHS: Operator Name String
0x6F15	CPHS: Customer Service Profile
0x6F16	CPHS: CPHS Information
0x6F17	CPHS: Mailbox Number
0x6FC5	PLMN Network Name
0x6FC6	Operator PLMN List
0x6F9F	Dynamic Flags Status
0x6F92	Dynamic2 Flag Setting
0x6F98	Customer Service Profile Line2
0x6F9B	EF PARAMS - Welcome Message
0x4F30	Phone book reference file
0x4F22	Phone book synchronization center
0x4F23	Change counter
0x4F24	Previous Unique Identifier
0x4F20	GSM ciphering key Kc
0x4F52	GPRS ciphering key
0x4F63	CPBCCCH information
0x4F64	Investigation scan
0x4F40	MExE Service table
0x4F41	Operator Root Public Key
0x4F42	Administrator Root Public Key
0x4F43	Third party Root public key
0x6FC7	Mail Box Dialing Number
0x6FC8	Extension 6
0x6FC9	Mailbox Identifier
0x6FCA	Message Waiting Indication Status
0x6FCD	Service Provider Display Information

0x6FD2	UIM_USIM_SPT_TABLE
0x6FD9	Equivalent HPLMN
0x6FCB	Call Forwarding Indicator Status
0x6FD6	GBA Bootstrapping parameters
0x6FDA	GBA NAF List
0x6FD7	MBMS Service Key
0x6FD8	MBMS User Key
0x6FCE	MMS Notification
0x6FD0	MMS Issuer connectivity parameters
0x6FD1	MMS User Preferences
0x6FD2	MMS User connectivity parameters
0x6FCF	Extension 8
0x5031	Object Directory File
0x5032	Token Information File
0x5033	Unused space Information File
EFs under Telecom DF	
0x6F3A	Abbreviated Dialing Numbers
0x6F3B	Fixed dialling numbers
0x6F3C	Short messages
0x6F3D	Capability Configuration Parameters
0x6F4F	Extended CCP
0x6F40	MSISDN
0x6F42	SMS parameters
0x6F43	SMS Status
0x6F44	Last number dialled
0x6F49	Service Dialling numbers
0x6F4A	Extension 1
0x6F4B	Extension 2
0x6F4C	Extension 3
0x6F4D	Barred Dialing Numbers
0x6F4E	Extension 4
0x6F47	SMS reports
0x6F58	Comparison Method Information
0x6F54	Setup Menu elements
0x6F06	Access Rule reference
0x4F20	Image
0x4F30	Phone book reference file
0x4F22	Phone book synchronization center
0x4F23	Change counter
0x4F24	Previous Unique Identifier
<p1> <p2> <p3>	
Integer type; parameters to be passed on by the Module to the SIM.	
<data>	

Information which shall be written to the SIM(hexadecimal character format, refer [AT+CSCS](#)).

<sw1> <sw2>

Status information from the SIM about the execution of the actual command. It is returned in both cases, on successful or failed execution of the command.

<response>

Response data in case of a successful completion of the previously issued command.

“STATUS” and “GET RESPONSE” commands return data, which gives information about the currently selected elementary data field. This information includes the type of file and its size.

After “READ BINARY” or “READ RECORD” commands the requested data will be returned.

<response> is empty after “UPDATE BINARY” or “UPDATE RECORD” commands.

## Examples

```
AT+CRSM=?
```

```
OK
```

## 11.4 AT+SPIC Times remain to input SIM PIN/PUK

### Description

The command is used to inquire times remain to input SIM PIN/PUK.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+SPIC=?	OK
Execution Command	Responses
AT+SPIC	+SPIC: <pin1>,<puk1>,<pin2>,<puk2> OK

### Defined values

<pin1>

Times remain to input PIN1 code.

<puk1>

Times remain to input PUK1 code.

<pin2>

Times remain to input PIN2 code.

<puk2>

Times remain to input PUK2 code.

## Examples

```
AT+SPIC=?
OK
AT+SPIC
+SPIC: 3,10,0,10
OK
```

## 11.5 AT+CSPN Get service provider name from SIM

### Description

This command is used to get service provider name from SIM card.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CSPN=?	OK
	ERROR
Read Command	Responses
AT+CSPN?	+CSPN: <spn>,<display mode>
	OK
	OK
	+CME ERROR: <err>

### Defined values

<spn>
String type; service provider name on SIM
<display mode>
0 – don't display PLMN.Already registered on PLMN.
1 – display PLMN

### Examples

```
AT+CSPN=?
OK
AT+CSPN?
+CSPN: "CMCC",0
OK
```

## 11.6 AT+CRFSIM Reinitialize the SIM card

### Description

The command is used to reload and initialize the SIM card.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRFSIM=?	OK
Execute Command	Responses
AT+CRFSIM	OK
	ERROR

### Examples

```
AT+CRFSIM=?  
OK  
AT+CRFSIM  
OK
```

## 12 Hardware Related Commands

### 12.1 AT+CTXGAIN Set TX gain

#### Description

The command is used to set audio path parameter – TX gain, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+CTXGAIN=?	+CTXGAIN: (list of supported <tx_gain>s) OK
Read Command	Responses
AT+CTXGAIN?	+CTXGAIN: <tx_gain> OK
Write Command	Responses
AT+CTXGAIN=<tx_gain>	OK

#### Defined values

<tx\_gain>

TX gain level which is from 0 to 65535.

#### Examples

```
AT+CTXGAIN=1234
```

```
OK
```

### 12.2 AT+CRXGAIN Set RX gain

#### Description

The command is used to set audio path parameter – RX gain, and refer to related hardware design document to get more information.

SIM PIN	References
---------	------------

NO	Vendor
----	--------

## Syntax

Test Command	Responses
AT+CRXGAIN=?	+CRXGAIN: (list of supported <rx_gain>s) OK
Read Command	Responses
AT+CRXGAIN?	+CRXGAIN: <rx_gain> OK
Write Command	Responses
AT+CRXGAIN=<rx_gain>	OK

## Defined values

<rx_gain>
RX gain level which is from 0 to 65535.

## Examples

```
AT+CRXGAIN=1234
OK
```

## 12.3 AT+CTXVOL Set TX volume

### Description

The command is used to set audio path parameter – TX volume, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CTXVOL=?	+CTXVOL: (list of supported <tx_vol>s) OK
Read Command	Responses
AT+CTXVOL?	+CTXVOL: <tx_vol> OK
Write Command	Responses
AT+CTXVOL=<tx_vol>	OK

## Defined values

<tx\_vol>

TX volume level which is from 0 to 65535.

## Examples

```
AT+CTXVOL=1234
```

```
OK
```

## 12.4 AT+CRXVOL Set RX volume

### Description

The command is used to set audio path parameter – RX volume, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRXVOL=?	+CRXVOL: (list of supported <rx_vol>s) OK
Read Command	Responses
AT+CRXVOL?	+CRXVOL: <rx_vol> OK
Write Command	Responses
AT+CRXVOL=<rx_vol>	OK

## Defined values

<rx\_vol>

RX volume level which is from -100 to 100.

## Examples

```
AT+CRXVOL=12
```

```
OK
```

## 12.5 AT+CTXFTR Set TX filter

### Description

The command is used to set audio path parameter – TX filter, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CTXFTR=?	+CTXFTR: (list of supported <tx_ftr_N>s) OK
Read Command	Responses
AT+CTXFTR?	+CTXFTR: <tx_ftr_1>,<...>,<tx_ftr_7> OK
Write Command	Responses
AT+CTXFTR= <tx_ftr_1>,<...>,<tx_ftr_7>	OK

### Defined values

<tx\_ftr\_X>

TX filter level which is from 0 to 65535. (N is from 0 to 7)

### Examples

```
AT+CTXFTR=1111,2222,3333,4444,5555,6666,7777
```

```
OK
```

## 12.6 AT+CRXFTR Set RX filter

### Description

The command is used to set audio path parameter – RX filter, and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRXFTR=?	+CRXFTR: (list of supported <rx_ftr_N>s) OK
Read Command	Responses

AT+CRXFTR?	+CRXFTR: <rx_ftr_1>,<...>,<rx_ftr_7> OK
Write Command	Responses
AT+CRXFTR= <rx_ftr_1>,<...>,<rx_ftr_7>	OK

### Defined values

<rx\_ftr\_X>  
RX filter level which is from 0 to 65535. (N is from 0 to 7)

### Examples

```
AT+CRXFTR=1111,2222,3333,4444,5555,6666,7777
OK
```

## 12.7 AT+CVALARM Low voltage Alarm

### Description

The command is used to open or close the low voltage alarm function.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CVALARM=?	+CVALARM: (list of supported <enable>s), (list of supported <voltage>s) OK
Read Command	Responses
AT+CVALARM?	+CVALARM: <enable>,<voltage> OK
Write Command	Responses
AT+CVALARM=<enable>[, <voltage>]	OK ERROR

### Defined values

<enable>  
 0 – Close  
 1 – Open. If voltage < <voltage>, every 20 seconds will report a string: “warning! Voltage

is low:<voltage value>”.

<voltage>

Between 2800mV and 4300mV. Default value is 3450.

**NOTE** the two parameters will be saved automatically.

### Examples

```
AT+CVALARM=1,3400
OK
AT+CVALARM?
+CVALARM: 1,3400
OK
AT+CVALARM=?
+CVALARM: (0-1),(2800-4300)
OK
```

## 12.8 AT+CRIIC Read values from register of IIC device

### Description

Read values from register of IIC device.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRIIC=?	OK
Write Command	Responses
AT+CRIIC= <addr>,<reg>,<len>	+CRIIC: <data> OK ERROR

### Defined values

<addr>

Device address. Input format must be hex, such as 0xFF.

<reg>

Register address. Input format must be hex, such as 0xFF.

<len>

Read length. Range:1-4; unit:byte.

<data>

Data read. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

## Examples

```
AT+CRHIC=0x0F, 0x0F, 2
+CRHIC: FFFF
OK
```

## 12.9 AT+CWIIC Write values to register of IIC device

### Description

Write values to register of IIC device.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CWIIC=?	OK
Write Command	Responses
AT+CWIIC= <addr>,<reg>,<data>,<len>	OK ERROR

### Defined values

<addr>  
Device address. Input format must be hex, such as 0xFF.

<reg>  
Register address. Input format must be hex, such as 0xFF.

<len>  
Read length. Range: 1-4; unit: byte.

<data>  
Data written. Input format must be hex, such as 0xFF – 0xFFFFFFFF.

### Examples

```
AT+CWIIC=0x0F, 0x0F, 0x1234, 2
+CWIIC: 0x1234
OK
```

## 12.10 AT+CVAUXS Set state of the pin named VREG\_AUX1

### Description

The command is used to set state of the pin which is named VREG\_AUX1.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CVAUXS=?	+CVAUXS: (list of supported <state>s) OK
Read Command	Responses
AT+CVAUXS?	+CVAUXS: <state> OK
Write Command	Responses
AT+CVAUXS=<state>	OK ERROR

### Defined values

<state>
0 – the pin is closed.
1 – the pin is opened (namely, open the pin)

### Examples

AT+CVAUXS=1
OK
AT+CVAUXS?
+CVAUXS: 1
OK

## 12.11 AT+ CVAUXV Set voltage value of the pin named VREG\_AUX1

### Description

The command is used to set the voltage value of the pin which is named VREG\_AUX1.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CVAUXV=?	+CVAUXV: (list of supported <voltage>s)

	OK
Read Command	Responses
AT+CVAUXV?	+CVAUXV: <voltage> OK
Write Command	Responses
AT+CVAUXV=<voltage>	OK ERROR

### Defined values

<voltage>

Voltage value of the pin which is named VREG\_AUX1. The unit is in 50\*mV.

### Examples

```
AT+CVAUXV=?
```

```
+CVAUXV: (30-61)
```

```
OK
```

```
AT+CVAUXV=40
```

```
OK
```

```
AT+CVAUXV?
```

```
+CVAUXV: 40
```

```
OK
```

## 12.12 AT+CGPIO Set Trigger mode of interrupt GPIO

### Description

Only set GPIO0 interrupt trigger mode (GPIO0 is used for interrupt).

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CGPIO=<detect>, <polarity>[,<save>]	OK ERROR

### Defined values

<detect>

0 – LEVEL trigger mode

1	- EDGE trigger mode
<b>&lt;polarity&gt;</b>	
0	- trigger when low level
1	- trigger when high level
<b>&lt;save&gt;</b>	
0	- not save the setting
<u>1</u>	- save the setting
<b>NOTE</b> If the parameter of <b>&lt;save&gt;</b> is omitted, it will save the setting.	

### Examples

```
AT+CGPIO=1,1,0
OK
```

## 12.13 AT+CGDRT Set the direction of specified GPIO

### Description

The command is used to set the specified GPIO to in or out state. If setting the specified GPIO to in state, then it can not set the value of the GPIO to high or low.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CGDRT=<gpio_num>, <gpio_io>[,<save>]	OK
	ERROR

### Defined values

<b>&lt;gpio_num&gt;</b>	
0	- GPIO0
2	- GPIO2
3	- GPIO3
5	- GPIO5
<b>&lt;gpio_io&gt;</b>	
0	- in
1	- out
<b>&lt;save&gt;</b>	
0	- not save the setting
<u>1</u>	- save the setting
<b>NOTE</b> If the parameter of <b>&lt;save&gt;</b> is omitted, it will save the direction of specified GPIO.	

## Examples

```
AT+CGDRT=3,0,0
OK
```

## 12.14 AT+CGSETV Set the value of specified GPIO

### Description

The command is used to set the value of the specified GPIO to high or low.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CGSETV=<gpio_num>, <gpio_hl>[,<save>]	OK
	ERROR

### Defined values

<gpio_num>
0 – GPIO0
2 – GPIO2
3 – GPIO3
5 – GPIO5
<gpio_hl>
0 – low
1 – high
<save>
0 – not save the setting
<u>1</u> – save the setting
<b>NOTE</b> If the parameter of <save> is omitted, it will save the value of specified GPIO.

### Examples

```
AT+CGSETV=3,0,0
OK
```

## 12.15 AT+CGGETV Get the value of specified GPIO

### Description

The command is used to get the value (high or low) of the specified GPIO.

SIM PIN	References
NO	Vendor

## Syntax

Write Command	Responses
AT+CGGETV=<gpio_num>	+CGGETV: <gpio_hl>
	OK
	ERROR

## Defined values

<gpio_num>
0 – GPIO0
1 – GPIO1
2 – GPIO2
3 – GPIO3
4 – GPIO4
5 – GPIO5
<gpio_hl>
0 – low
1 – high

## Examples

AT+CGGETV=3
+CGGETV: 0
OK

## 12.16 AT+CGISR set interrupt trigger condition and start such interruption.

### Description

SIM52XX supplies many GPIOs, all of which can be used as General Purpose Input/Oupt pin, interrupt pin and some of them can be used as function pin.

This command is used to set one GPIO pin as an interrupt source. It sets the detect type and polarity type for such interruption and then enables the interruption. Please consult the document “SIM52xx\_GPIO\_Application\_note” for more details.

SIM PIN	References
---------	------------

No

## Syntax

Read Command	Responses
AT+CGISR=<GPIO>	+CGISR: < GPIO >[<detect>,<polarity>] OK
Write Command	Responses
AT+CGISR=< GPIO > >,<detect>,<polarity>	OK

## Defined values

< GPIO >

GPIO number.

< detect >

0 : level detection.

1 : edge detection

< polarity >

0 : low level/edge detection

1 : high level/edge detection

## Examples

```
AT+CGISR=1
```

```
+CGISR : 1[0,1]
```

```
OK
```

```
AT+CGISR=1,0,1
```

```
OK
```

### NOTE:

1. if the interruption is triggered SIM52XX will send the following URC to host.

```
GPIO[0] Interrupt Alarm!value:0
```

2. After setting one GPIO pin as an interrupt source successfully, the setting will be saved.

## 12.17 AT+CADC Read ADC value

### Description

Read the ADC value from modem. We support 3 type of ADC, raw type, temperature type and voltage type.

SIM PIN    References

NO	Vendor
----	--------

## Syntax

Test Command	Responses
AT+CADC=?	+CADC: (range of supported <adc>s) OK
Write Command	Responses
AT+CADC=<adc>	+CADC: <value> OK
	ERROR
Execution Command	Responses
AT+CADC	<i>Same as AT+CADC= 0:</i> +CADC: <value> OK

## Defined values

<adc>
ADC type:
0 – raw type.
1 – temperature type.
2 – voltage type(mv)
<value>
Integer type value of the ADC.

## Examples

AT+CADC=?
+CADC:(0-2)
OK
AT+CADC=0
+CADC: 187
OK

## 12.18 AT+CMICAMP1 Set value of micamp1

### Description

The command is used to set audio path parameter – micamp1. With this command you can change the first stage of MIC amplify value based on your design separately and refer to related hardware design document to get more information

SIM PIN	References
---------	------------

NO	Vendor
----	--------

## Syntax

Test Command	Responses
AT+CMICAMP1=?	+CMICAMP1: (list of supported <amp_val>s) OK
Read Command	Responses
AT+ CMICAMP1?	+CMICAMP1:<amp_val> OK
Write Command	Responses
AT+CMICAMP1= <amp_val>	OK ERROR

## Defined values

<amp_val>
amplify value number which is from 0 to 1. 0 is 0DB and 1 is 24DB.

## Examples

AT+CMICAMP1=0
+CMICAMP1: 0
OK
AT+CMICAMP1?
+CMICAMP1: 0
OK
AT+ CMICAMP1=?
+CMICAMP1: (0-1)
OK

## 12.19 AT+CVLVL Set value of sound level

### Description

The command is used to set audio path parameter – RX volume; this command is different from CRXVOL, command CRXVOL will modify the values of all sound levels offset we provided together. With this command you can change the value of each sound level based on your design separately and refer to related hardware design document to get more information.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CVLVL=?	+CVLVL: (list of supported <lvl>s),(list of supported <lvl_value>s) OK
Read Command	Responses
AT+CVLVL?	+CVLVL: <lvl_value1>,<lvl_value2>,<lvl_value3>,<lvl_value4>,<lvl_value5>,<lvl_value6>,<lvl_value7>,<lvl_value8> OK
Write Command	Responses
AT+CVLVL= <lvl>, <lvl_value>	OK ERROR

## Defined values

<lvl>

Sound level number which is from 1 to 8.

<lvl\_value>

Sound level value which is from -5000 to 5000.

<lvl\_value1>

Sound level value that sound level number equals 1.

<lvl\_value2>

Sound level value that sound level number equals 2.

<lvl\_value3>

Sound level value that sound level number equals 3.

<lvl\_value4>

Sound level value that sound level number equals 4.

<lvl\_value5>

Sound level value that sound level number equals 5.

<lvl\_value6>

Sound level value that sound level number equals 6.

<lvl\_value7>

Sound level value that sound level number equals 7.

<lvl\_value8>

Sound level value that sound level number equals 8.

## Examples

AT+CVLVL=1,-2000

+CVLVL: -2000

OK

AT+CVLVL?

```
+CVLVL: -2000,-200,500,1000
OK
AT+ CVLVL=?
+CVLVL: (1-8),(-5000~5000)
OK
```

*NOTE: Currently level 7 and level 8 are the same, which means the value set for one level also will set for the other automatically(they have the same values).*

## 12.20 AT+SIDET Digital attenuation of sidetone

### Description

The command is used to set digital attenuation of sidetone. For more detailed information, please refer to relevant HD document.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+SIDET=?	+SIDET: (list of supported <st>s) OK
Read Command	Responses
AT+SIDET?	+SIDET:<st> OK
Write Command	Responses
AT+SIDET= <st>	OK ERROR

### Defined values

<st>

Digital attenuation of sidetone, integer type in decimal format and nonvolatile.

Range: from 0 to 65535.

Factory value: HANDSET:2034, HEADSET:1024, SPEAKER PHONE: 0.

### Examples

```
AT+CSDVC=1
OK
AT+SIDET?
+SIDET: 2304
```

OK

## 12.21 AT+CRIRS Reset RI pin of serial port

### Description

The command is used to reset RI pin of serial port(UART device).After the command executed,When a voice(csd ,video) call or a SMS is coming or URC is reported,RI pin is asserted.it can wake up host.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRIRS=?	OK
Write Command	Responses
AT+CRIRS	OK
	ERROR

### Defined values

None

### Examples

```
AT+CRIRS
OK
```

## 12.22 AT+CSUART Switch UART line mode

### Description

The command is used to switch UART line mode between three and seven lines mode.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CSUART=?	+CSUART: (list of supported <mode>s), (list of supported <save>s)

	OK
Read Command	Responses
AT+CSUART?	+CSUART: <mode> OK
Write Command	Responses
AT+CSUART=<mode>[,<save>]	OK ERROR

### Defined values

<mode>	
0	– 3 lines mode
1	– 7 lines mode
<save>	
0	– don't save the setting
1	– save the setting

### Examples

AT+CSUART=1
OK

## 12.23 AT+CMUX Enable the multiplexer over the UART

### Description

This command is used to enable the multiplexer over the UART, after enabled four virtual com ports can be used as DIAG port, NMEA port, AT command port or MODEM port (configured by +CMUXSRVPORT command), the physical UART can no longer transfer data directly under this case.

By default all of the four virtual com ports are used as AT command port.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CMUX=?	+CMUX: (0) OK
Write Command	Responses
AT+CMUX=<value> [ , <subset> [ , <port	OK ERROR

```
_speed>[ ,<N1>[ ,<T1>[ ,
<N2>[ ,<T2>[ ,<T3>[ ,<k
>]]]]]]]]
```

### Defined values

< value >:

0 – currently only 0 is supported(basic operation mode).

< subset >:

Currently omitted

< port\_speed >:

Currently omitted, you can set speed before enable multiplexer

< N1>:

Currently omitted

< T1>:

Currently omitted

< N2>:

Currently omitted

< T2>:

Currently omitted

< T3>:

Currently omitted

< k >:

Currently omitted

### Examples

```
AT+CMUX=0
```

```
OK
```

*NOTE: Currently only basic operation mode has been supported*

## 12.24 AT+CMUXSRVPORT Configure the specific virtual com port to the appropriate service

### Description

This command is used to configure the right service for the certain virtual com port; the setting is savable and will be enabled on the next startup time.

Default all of the virtual com ports are configured as DATA service.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CMUXSRVPORT=?	+CMUXSRVPORT: (0-3),(0,1) OK
Read Command	Responses
AT+CMUXSRVPORT?	virtual port[<port>] - <service> OK
Write Command	Responses
AT+CMUXSRVPORT=<port>,<service>	OK ERROR

## Defined values

< port >: <i>virtual com port</i>
0 – 3 currently support 4 virtual com ports index from 0 to 3
< service >: <i>valid service</i>
0 – DIAG Service
1 – DATA(MODEM) Service

## Examples

```
AT+CMUXSRVPORT=0,1
OK
AT+CMUXSRVPORT=?
+CMUXSRVPORT: (0-3),(0,1)
OK
```

*NOTE: DIAG service is exclusively, so it is forbidden to configure the DIAG service to more than one virtual com port.*

## 12.25 AT+CDCDMD Set DCD pin mode

### Description

The command is used to set DCD pin to DCD mode or GPIO mode.

**NOTE** DCD mode is invalid currently.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CDCDMD=?	+CDCDMD: (list of supported <mode>s) OK
Read Command	Responses
AT+CDCDMD?	+CDCDMD:<mode> OK
Write Command	Responses
AT+CDCDMD=<mode>	OK
	ERROR

### Defined values

<mode>
0 – DCD mode
1 – GPIO mode

### Examples

AT+CDCDMD=0
OK

## 12.26 AT+CDCDVL Set DCD pin high-low in GPIO mode

### Description

The command is used to set DCD pin high-low in GPIO mode.

**NOTE** The command will disable when DCD pin is DCD mode.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CDCDVL=?	+CDCDVL: (list of supported <value>s) OK
Read Command	Responses
AT+CDCDVL?	+CDCDVL:<value> OK
Write Command	Responses
AT+CDCDVL=<value>	OK
	ERROR

### Defined values

<value>	
0	– set DCD pin low in GPIO mode
1	– set DCD pin high in GPIO mode

### Examples

```
AT+CCDVL=0
OK
```

## 12.27 AT+CCGSWT Switch between camera interface and GPIO

### Description

This command is used to switch the function between camera interface and general GPIO, if your project has no camera subsystem existed then you can use this AT command to use camera interface as general GPIO, there are total 14 pins of this type.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CCGSWT=?	+CCGSWT: (list of supported <mode>s) OK
Read Command	Responses
AT+CCGSWT?	+CCGSWT: <mode> OK
Write Command	Responses
AT+CCGSWT=<mode>	OK ERROR

### Defined values

< mode >	
0	– gpio mode
1	– camera mode

NOTE if you config such pins to general gpio mode then you can use GPIO AT command to config these GPIOs, like direction, value.

CAMERA INTERFACE	<—————>	GENERAL GPIO	NUMBER
HSYNC			GPIO6
VSYNC			GPIO7

PCLK	GPIO8
STDBY	GPIO9
DATA0	GPIO10
DATA1	GPIO11
DATA2	GPIO12
DATA3	GPIO13
DATA4	GPIO14
DATA5	GPIO15
DATA6	GPIO16
DATA7	GPIO17
DATA8	GPIO18
DATA9	GPIO19

### Examples

```
AT+CCGSWT=?
```

```
+CCGSWT: (0-1)
```

```
OK
```

```
AT+CCGSWT?
```

```
+CCGSWT: 1
```

```
OK
```

```
AT+CCGSWT=1
```

```
OK
```

## 12.28 AT+CBC Battery charge

### Description

The command is used to query the voltage of power supply.

**NOTE** The SIM5215&SIM5216 do not allow the detection of battery use,so <bcs> and <bcl> may be ignored.They are only compatible with other products like SIM5215,etc.The user can get the voltage of power supply by <vol>.

SIM PIN	References
NO	3GPP TS 07.07

### Syntax

Test Command	Responses
AT+CBC=?	+CBC: (list of supported <bcs>s),(list of supported <bcl>s) OK
Execution Command	Responses
AT+CBC	+CBC: <bcs>,<bcl>,<vol>V

	OK
	+CME ERROR: <err>

### Defined values

<bc>
0 Battery powered
1 Battery charging
2 Battery not connected
3 Battery max
<bcl>
0...100 Battery charge level
<vol>
Current voltage value (V).

### Examples

AT+CBC=?
+CBC: (0-3),(0-100)
OK
AT+CBC
+CBC: 0,75,3.810V
OK

## 12.29 AT+CDTRISRMD Configure the trigger condition for DTR's interrupt.

### Description

This command is used to set the appropriate trigger condition for DTR's interrupt, which will finally waking up the module.

This command is only valid while the UART is under NULL modem mode.

The interrupt is low level triggered by default.

SIM PIN	References
No	Vendor

### Syntax

Test Command	Responses
AT+CDTRISRMD=?	+ CDTRISRMD: (0-1), (0-1) OK
Read Command	Responses

AT+CDTRISRMD?	+ CDTRISRMD: <detect>,<polarity> OK
Write Command	Responses
AT+CDTRISRMD =<detect>,<polarity>	OK ERROR

### Defined values

<detect>	
0	Level trigger
1	Edge trigger
<polarity>	
0	Low trigger
1	High trigger

### Examples

AT+CDTRISRMD=0,1
OK
AT+CDTRISRMD=0,0
OK

## 12.30 AT+CDTRISRS Enable/disable the pin of DTR's awakening function

### Description

This command is used to enable or disable the function of waking up the module by means of UART's DTR pin which to trigger an interrupt

This command will only take effect while the UART is working under NULL modem mode.

The function is disabled by default.

SIM PIN	References
No	Vendor

### Syntax

Test Command	Responses
AT+CDTRISRS=?	+ CDTRISRS: (0-1) OK
Read Command	Responses
AT+CDTRISRS?	+ CDTRISRS: <switch>

	OK
Write Command	Responses
AT+CDTRISRS =<switch>	OK

### Defined values

<switch>	
0	disable such function
1	enable such function

### Examples

AT+CDTRISRS=1
OK
AT+CDTRISRS=0
OK

## 12.31 AT+CGFUNC enable/disable the function for the special GPIO.

### Description

SIM5320 supplies many GPIOs, all of which can be used as General Purpose Input/Output pin, interrupt pin and some of them can be used as function pin.

This command is used to enable/disable the function for the special GPIO. Please consult the document “SIM5320\_GPIO\_Application\_note” for more details.

This command is savable.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CGFUNC=?	+CGFUNC: (list of supported <function>s),(list of supported <switch>s) OK
Read Command	Responses
AT+CGFUNC=<function>	+CGFUNC: <switch> OK
Write Command	Responses
AT+CGFUNC=<function>,<switch>	OK

## Defined values

### <function>

- 1 : function status led.
- 2 : function wakeup me
- 3 : function wakeup host
- 4 : function pcm
- 7 : function keypad
- 9 : function rf switch
- 10 : function uart1 dcd
- 11 : function uart1 flow control
- 12: function wake up SIM5320 module by GPIO43
- 13: function wake up host by GPIO41
- 14:function module power up status(GPIO40)
- 17:function RI line 2G mode control, please see the detail from NOTE

### <switch>

- 0 : disable the function.
- 1 : enable the function

## Examples

```
AT+CGFUNC=1,1
```

```
OK
```

```
AT+CGFUNC=1
```

```
+CGFUNC: 1
```

```
OK
```

### NOTE:

1 .Not all of the Modules of SIM52XX series have the whole upper functions; some may have camera function while others may have keypad function and so on, please refer the Module SPEC for more details.

2. If **AT+CGFUNC=17,1** then assert 60ms when have urc reported;assert 120m when have sms received;and always asserted during the ring(incoming call).

## 12.32 AT+CUSBMSS Enable/Disable USB Mass Storage Device

### Description

This command is used to enable/disable the usb mass storage device. While enabled the TF card at module side can be mapped into mass storage device on PC end which can convenient user's operation of TF card.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
--------------	-----------

AT+CUSBMSS=?	+CUSBMSS: (0-1) OK
Read Command	Responses
AT+CUSBMSS?	+CUSBMSS: <switch> OK
Write Command	Responses
AT+CUSBMSS=<switch>	OK ERROR

### Defined values

< switch >:

- 0 : disable this feature
- 1 : enable this feature

### Examples

```
AT+CUSBMSS=0
```

```
OK
```

```
AT+ CUSBMSS =1
```

```
OK
```

#### Note:

- 1 After enabled this feature there is no Wireless Ethernet Adapter interface in SIM52XX which has been replaced by Mass Storage interface, and if such feature disabled then the Wireless Ethernet Adapter interface is existed again in SIM52XX, of course Mass Storage is disappeared.
- 2 Once this feature is enabled, TF card can only be operated at PC side which means one can't use TF card with AT command running on SIM52XX.
- 3 This command is savable and one must reboot SIM52XX if one needs the command become effective.

## 12.33 AT+CUSBSPD Switch USB high or full speed

### Description

This command is used to switch the speed of USB between high speed and full speed. If you just want to use full speed to simplify the circuit then you can use this command to switch the USB speed. This command will save your configuration so if you don't change the speed the module will use the latest configuration forever.

This command will only takes effect on the next start-up.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CUSBSPD=?	+CUSBSPD: (list of supported <speed>s) OK
Read Command	Responses
AT+CUSBSPD?	+CUSBSPD: <speed> OK
Write Command	Responses
AT+CUSBSPD=<speed>	OK ERROR

### Defined values

<speed>
Integer type and nonvolatile value.
0 – High speed
1 – Full speed (default value)

### Examples

AT+CUSBSPD=?
+CUSBSPD: (0-1)
OK
AT+CUSBSPD=0
OK
AT+CUSBSPD=1
OK

## 12.34 AT+CADC I read internal ADC value

### Description

This command is used to read main battery temperature and so on.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CADC I=?	+CADC I: (list of supported <channel>s) OK
Read Command	Responses
AT+CADC I=<channel>	+CADC I: <value>

	OK
--	----

### Defined values

<channel>: <i>which channel to read</i>
12: main battery temperature (value is temperature formatted)
All other channels are reserved.
<value>:
main battery temperature (value is temperature formatted)

### Examples

AT+CADC1=12
+CADC1: 4 °C
OK
AT+CADC1=?
+CADC1: (0-28)
OK

## 12.35 AT+CAPWRON auto power on setting

### Description

You can use this command to let the module to be powered up automatically at the appointed time.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CAPWRON=?	+CAPWRON: (0-23), (0-59),(0-1) OK
Read Command	Responses
AT+ CAPWRON?	+CAPWRON: <hour>,<minute>,<repeated> OK
Write Command	Responses
AT+CAPWRON=<hour>,<minute>,<repeated>	OK ERROR

### Defined values

<hour>
0 – 23 : the hour to power up

<minute>
0 – 59 : the minute to power up
<repeated>
0 : not repeated.
1 : repeated every day.

## Examples

AT+CAPWRON=8,30,0
OK
AT+CAPWRON?
+CAPWRON: 8,30,0
OK
AT+CAPWRON=?
+CAPWRON: (0-23),(0-59),(0-1)
OK

### NOTE:

You can use the command AT+CAPWRON=255,255,255 to cancel such function.

## 12.36 AT+CAPWROFF auto power off setting

### Description

You can use this command to let the module to be powered down automatically at the appointed time.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CAPWROFF=?	+CAPWROFF: (0-23), (0-59),(0-1) OK
Read Command	Responses
AT+ CAPWROFF?	+CAPWROFF: <hour>,<minute>,<repeated> OK
Write Command	Responses
AT+CAPWROFF=<hour>,<minute>,<repeated>	OK ERROR

### Defined values

<hour>
--------

0 – 23 :	the hour to power down
<minute>	
0 – 59 :	the minute to power down
<repeated>	
0 :	not repeated.
1 :	repeated every day.

## Examples

```

AT+CAPWROFF=22,30,0
OK
AT+CAPWROFF?
+CAPWROFF: 22,30,0
OK
AT+CAPWROFF=?
+CAPWROFF: (0-23),(0-59),(0-1)
OK

```

### NOTE:

You can use the command `AT+CAPWROFF=255,255,255` to cancel such function

## 12.37 AT+CBVTBP Set 800-850 band indicator

### Description

This command is used to set the band indicator to 800 or 850 for the common RF channels of 800 and 850.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CBVTBP=?	+CBVTBP: (0,1) OK
Read Command	Responses
AT+CBVTBP?	+CSVM: <ind> OK ERROR
Write Command	Responses

AT+CBVTBP=<ind>	OK
	ERROR

### Defined values

<ind>	
0	- The common RF channels of 800/850 is regarded as 850
1	- The common RF channels of 800/850 is regarded as 800

### Examples

AT+CBVTBP?
+CBVTBP: 1
OK
AT+CBVTBP=1
OK

## 12.38 AT+CRFOP Set the value of RF output power

### Description

This command is used to set the value of RF output power for different bands supported by the module.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CRFOP=<band> [,<enable>] [<value>]	[+CRFOP: <band>,<value>] OK
	ERROR

### Defined values

<band>	
0	- GSM 850
1	- GSM 900
2	- DCS 1800
3	- PCS 1900
4	- WCDMA 850
5	- WCDMA 900
6	- WCDMA 1900

7	-	WCDMA 2100
<b>&lt;enable&gt;</b>		
0	-	write the third parameter <b>&lt;value&gt;</b> to the module
1	-	write the default value to the module (the third parameter is not needed)
<b>&lt;value&gt;</b>		
(0-3400)	-	the range for <b>&lt;band&gt;</b> 0- <b>&lt;band&gt;</b> 3 , it means 0 dbm to 34 dbm
(0-200)	-	the range for <b>&lt;band&gt;</b> 4- <b>&lt;band&gt;</b> 7 , it means 8 dbm to 28 dbm

### Examples

```
AT+ CRFOP =1
+CRFOP:1,3250
OK
AT+ CRFOP =1,1
OK
AT+ CRFOP =1,0,3100
OK
```

## 12.39 AT+CGGETDBC Get the debounce time of specified GPIO

### Description

The command is used to get the debounce time (ms) of the specified GPIO.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CGGETDBC=?	+ CGGETDBC: >0 OK ERROR
Read Command	Responses
AT+CGGETDBC=<gpio_nu m>	+ CGGETDBC: <time_ms> OK ERROR

### Defined values

0	-	GPIO0
1	-	GPIO1
2	-	GPIO2
<b>&lt; time_ms &gt;</b>		

10

## Examples

```
AT+ CGGETDB=?
+ CGGETDB: >0
OK
AT+ CGGETDB=0
+ CGGETDB: 30
OK
```

## 12.40 AT+CGSETDBC Set the debounce time of specified GPIO

### Description

The command is used to setting the debounce time (ms) of the specified GPIO.

SIM PIN	References
NO	Vendor

### Syntax

Read Command	Responses
AT+CGSETDBC=<gpio_num> m>,< time_ms >[,<save>]	OK
	ERROR

### Defined values

<gpio\_num>

- 0 – GPIO0
- 1 – GPIO1
- 2 – GPIO2

< time\_ms >

10

<save>

- 0 – not save the setting
- 1 – save the setting

**NOTE** If the parameter of <save> is omitted, it will don't save the value of specified GPIO.

### Examples

```
AT+CGSETDBC=0,30,1
OK
```

## 13 Phonebook Related Commands

### 13.1 AT+CNUM Subscriber number

#### Description

Execution command returns the MSISDNs related to the subscriber (this information can be stored in the SIM or in the ME). If subscriber has different MSISDN for different services, each MSISDN is returned in a separate line.

SIM PIN	References
YES	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CNUM=?	OK
Execution Command	Responses
AT+CNUM	[+CNUM: <alpha>,<number>,<type>[<CR><LF> +CNUM: <alpha>,<number>,<type> [...]] OK +CME ERROR: <err>

#### Defined values

<alpha>

Optional alphanumeric string associated with <number>,used character set should be the one selected with command Select TE Character Set [AT+CSCS](#).

<number>

String type phone number of format specified by <type>.

<type>

Type of address octet in integer format.see also [AT+CPBR <type>](#)

#### Examples

AT+CNUM

+CNUM: ,"1369725227",129

OK

## 13.2 AT+CPBS Select phonebook memory storage

### Description

The command selects the active phonebook storage, i.e. the phonebook storage that all subsequent phonebook commands will be operating on.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPBS=?	+CPBS: (list of supported <storage>s) OK
Read Command	Responses
AT+CPBS?	+CPBS: <storage>[,<used>,<total>] OK +CME ERROR: <err>
Write Command	Responses
AT+CPBS=<storage>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CPBS	<i>Set default value "SM":</i> OK

### Defined values

<storage>

Values reserved by the present document:

- "DC" ME dialed calls list  
Capacity: max. 10 entries  
*AT+CPBW* command is not applicable to this storage.
- "MC" ME missed (unanswered received) calls list  
Capacity: max. 10 entries  
*AT+CPBW* command is not applicable to this storage.
- "RC" ME received calls list  
Capacity: max. 10 entries  
*AT+CPBW* command is not applicable to this storage.
- "SM" SIM phonebook

"ME"	Capacity: depending on SIM card Mobile Equipment phonebook Capacity: max. 100 entries
"FD"	SIM fixdialling-phonebook Capacity: depending on SIM card
"ON"	MSISDN list Capacity: depending on SIM card
"LD"	Last number dialed phonebook Capacity: depending on SIM card <i>AT+CPBW</i> command is not applicable to this storage.
"EN"	Emergency numbers Capacity: max. 50 entries <i>AT+CPBW</i> command is not applicable to this storage.
"SN"	Service Dialling Numbers Capacity: depending on SIM card <i>AT+CPBW</i> command is not applicable to this storage.
<used>	Integer type value indicating the number of used locations in selected memory.
<total>	Integer type value indicating the total number of locations in selected memory.

### Examples

```

AT+CPBS=?
+CPBS: ("SM","DC","FD","LD","MC","ME","RC","EN","ON","SN")
OK
AT+CPBS="SM"
OK
AT+CPBS?
+CPBS: "SM",1,200
OK

```

## 13.3 AT+CPBR Read phonebook entries

### Description

The command gets the record information from the selected memory storage in phonebook. if the storage is selected as "SM" then the command will return the record in SIM phonebook, the same to others.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPBR=?	+CPBR: (<minIndex>-<maxIndex>), [<nlength>], [<tlength>] OK +CME ERROR: <err>
Write Command	Responses
AT+CPBR= <index1>[,<index2>]	[+CPBR: <index1>,<number>,<type>,<text>[<CR><LF> +CPBR: <index2>,<number>,<type>,<text>[...]]] OK ERROR +CME ERROR: <err>

## Defined values

<index1>	Integer type value in the range of location numbers of phonebook memory.
<index2>	Integer type value in the range of location numbers of phonebook memory.
<index>	Integer type.the current position number of the Phonebook index.
<minIndex>	Integer type the minimum <index> number.
<maxIndex>	Integer type the maximum <index> number
<number>	String type, phone number of format <type>, the maximum length is <nlength>.
<type>	Type of phone number octet in integer format, default 145 when dialing string includes international access code character "+", otherwise 129.
<text>	String type field of maximum length <tlength>; often this value is set as name.
<nlength>	Integer type value indicating the maximum length of field <number>.
<tlength>	Integer type value indicating the maximum length of field <text>.

## Examples

AT+CPBS?
+CPBS: "SM",2,200
OK
AT+CPBR=1,10

```
+CPBR: 1,"1234567890",129,"James"
+CPBR: 2,"0987654321",129,"Kevin"
OK
```

## 13.4 AT+CPBF Find phonebook entries

### Description

The command finds the record in phonebook(from the current phonebook memory storage selected with [AT+CPBS](#)) which alphanumeric field has substring `<findtext>`.If `<findtext>` is null, it will lists all the entries.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CPBF=?	+CPBF: [ <code>&lt;nlength&gt;</code> ],[ <code>&lt;tlength&gt;</code> ] OK +CME ERROR: <code>&lt;err&gt;</code>
Write Command	Responses
AT+CPBF=[ <code>&lt;findtext&gt;</code> ]	[+CPBF: <code>&lt;index1&gt;</code> , <code>&lt;number&gt;</code> , <code>&lt;type&gt;</code> , <code>&lt;text&gt;</code> [ <code>&lt;CR&gt;&lt;LF&gt;</code> +CBPF: <code>&lt;indexN&gt;</code> , <code>&lt;number&gt;</code> , <code>&lt;type&gt;</code> , <code>&lt;text&gt;</code> [...]] OK ERROR +CME ERROR: <code>&lt;err&gt;</code>

### Defined values

`<findtext>`

String type, this value is used to find the record. Character set should be the one selected with command [AT+CSCS](#).

`<index>`

Integer type values in the range of location numbers of phonebook memory.

`<number>`

String type, phone number of format `<type>`, the maximum length is `<nlength>`.

`<type>`

Type of phone number octet in integer format, default 145 when dialing string includes international access code character "+", otherwise 129.

`<text>`

String type field of maximum length `<tlength>`; Often this value is set as name.

<nlength>
Integer type value indicating the maximum length of field <number>.
<tlength>
Integer type value indicating the maximum length of field <text>.

**Examples**

```
AT+CPBF=" James "
+CPBF: 1,"1234567890",129," James "
OK
```

**13.5 AT+CPBW Write phonebook entry**

**Description**

The command writes phonebook entry in location number <index> in the current phonebook memory storage selected with AT+CPBS.

SIM PIN	References
YES	3GPP TS 27.007

**Syntax**

Test Command	Responses
AT+CPBW=?	+CPBW:(list of supported <index>s),[<nlength>], (list of supported <type>s),[<tlength>] OK +CME ERROR:<err>
Write Command	Responses
AT+CPBW=[<index>][,<number>][,<type>][,<text>]]	OK ERROR +CME ERROR:<err>

**Defined values**

<index>
Integer type values in the range of location numbers of phonebook memory.If <index> is not given, the first free entry will be used. If <index> is given as the only parameter, the phonebook entry specified by <index> is deleted.If record number <index> already exists, it will be overwritten.
<number>
String type, phone number of format <type>, the maximum length is <nlength>.It must be an non-empty string.
<type>

Type of address octet in integer format, If <number> contains a leading “+” <type> = 145 (international) is used. Supported value are:

- 145 – when dialling string includes international access code character “+”
- 161 – national number. The network support for this type is optional
- 177 – network specific number, ISDN format
- 129 – otherwise

**NOTE** Other value refer TS 24.008 [8] subclause 10.5.4.7.

<text>

String type field of maximum length <tlength>; character set as specified by command Select TE Character Set [AT+CSCS](#).

<nlength>

Integer type value indicating the maximum length of field <number>.

<tlength>

Integer type value indicating the maximum length of field <text>.

**NOTE** If the parameters of <type> and <text> are omitted and the first character of <number> is ‘+’, it will specify <type> as 145(129 if the first character isn’t ‘+’) and <text> as NULL.

### Examples

```
AT+CPBW=3,"88888888",129,"John"
```

```
OK
```

```
AT+CPBW=,"66666666",129,"mary"
```

```
OK
```

```
AT+CPBW=1
```

```
OK
```

## 13.6 AT+CEMNLIST Set the list of emergency number

### Description

The command allows to define emergency numbers list according to customers’ requirement .Note that only no sim card is inserted or sim card is locked, these emergency numbers take effect.

When it is set enable and in the above situation, the customer defined emergency numbers in <emergency numbers> take effect, but the emergency numbers in the “EN” phonebook storage do not take effect.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CEMNLIST=?	+CEMNLIST: (list of supported <mode>s), <nlength>,<total>

	OK
Read Command	Responses
AT+CEMNLIST?	+CEMNLIST: <mode>,<emergency numbers> OK
Write Command	Responses
AT+CEMNLIST=<mode>[,<emergency numbers>]	ERROR OK

## Defined values

<mode>
0      disable
1.     enable
2      edit emergency numbers
<nlength>
Integer type value indicating the maximum length of single emergency number.
<total>
Integer type value indicating the total number of emergency numbers.
<emergency numbers>
Emergency numbers list, string type.
<emergency number> includes all of emergency numbers, every emergency number is seperated by comma, for example "911,112".

## Examples

AT+CEMNLIST=?
+CEMNLIST: (0-2),10,30
OK
AT+CEMNLIST?
+CEMNLIST: 1,"911,112"
OK
AT+CEMNLIST=1
OK
AT+CEMNLIST=2,"911,112"
OK

## 14 File System Related Commands

The file system is used to store files in a hierarchical (tree) structure, and there are some definitions and conventions to use the Module.

Local storage space is mapped to “C:”, and storage space of present storage card is mapped to “D:”. In both “C:” and “D:” directories, module creates four directories named “Picture”, “Audio”, “Video” and “VideoCall” automatically; “Picture” is used to store static image when taking picture by camera, “Audio” is used to store audio file, “Video” is used to store video file when recording by camera, and “VideoCall” is used to store media file which is recorded during a video call.

**NOTE** General rules for naming (both directories and files):

- 1 The length of actual fully qualified names of directories and files can not exceed 254. For example: the length of “C:/Picture/first\_image.jpg” (“C:/” should be replaced by “/MultiMedia/”, and “D:/” should be replaced by “/mmc1/”) don’t exceed 254.
- 2 Directory and file names can not include the following characters:  
 $\backslash$  : \* ? “ < > | , ;
- 3 Between directory name and file/directory name, use character “/” as list separator, so it can not appear in directory name or file name.
- 4 The first character of names must be a letter or a numeral or underline, and the last character can not be period “.” and oblique “/”.
- 5 Case sensitive in “C:”, but not case sensitive in “D:” if storage card is present.

### 14.1 AT+FSCD Select directory as current directory

#### Description

The command is used to select a directory. The Module supports absolute path and relative path. Read Command will return current directory without double quotation marks.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+FSCD=?	OK
Read Command	Responses
AT+FSCD?	+FSCD: <curr_path> OK
Write Command	Responses
AT+FSCD=<path>	+FSCD: <curr_path>

	OK
	ERROR

### Defined values

<path>

String without double quotes, directory for selection.

**NOTE** If <path> is “..”, it will go back to previous level of directory. If current directory is **D:/** or in **D:/** and SD card is removed and unmounted, it will set current directory **C:/** automatically after a moment.

<curr\_path>

String without double quotes, current directory.

### Examples

*AT+FSCD=C:*

*+FSCD: C:/*

*OK*

*AT+FSCD=Picture*

*+FSCD: C:/Picture/*

*OK*

*AT+FSCD=C:/Video*

*+FSCD: C:/Video/*

*OK*

*AT+FSCD?*

*+FSCD: C:/Video/*

*OK*

*AT+FSCD=..*

*+FSCD: C:/*

*OK*

## 14.2 AT+FSMKDIR Make new directory in current directory

### Description

The command is used to create a new directory in current directory.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
--------------	-----------

AT+FSMKDIR=?	OK
Write Command	Responses
AT+FSMKDIR=<dir>	OK
	ERROR

### Defined values

<dir>

String without double quotes, directory name which is not already existing in current directory.

### Examples

```
AT+FSMKDIR= SIMTech
OK
AT+FSCD?
+FSCD: D:/
OK
AT+FSLs
+FSLs: SUBDIRECTORIES:
Audio
Picture
Video
VideoCall
SIMTech
OK
```

## 14.3 AT+FSRMDIR Delete directory in current directory

### Description

The command is used to delete existing directory in current directory.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSRMDIR=?	OK
Write Command	Responses
AT+FSRMDIR=<dir>	OK

	ERROR
--	-------

### Defined values

<dir>
string without double quotes, directory name which is relative and already existing.

### Examples

```

AT+FSRMDIR=SIMTech
OK
AT+FSCD?
+FSCD: D:/
OK
AT+FSLS
+FSL: SUBDIRECTORIES:
Audio
Picture
Video
VideoCall

OK

```

## 14.4 AT+FSLS List directories/files in current directory

### Description

The command is used to list informations of directories and/or files in current directory.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSLS=?	+FSL: (list of supported <type>s) OK
Read Command	Responses
AT+FSLS?	+FSL: SUBDIRECTORIES: <dir_num>, FILES: <file_num> OK
Write Command	Responses
AT+FSLS=<type>	[+FSL: SUBDIRECTORIES: <list of subdirectories>

	<CR><LF>] [+FSL: FILES: <list of files> <CR><LF>] OK
Execution Command	Responses
AT+FSL	[+FSL: SUBDIRECTORIES: <list of subdirectories> <CR><LF>] [+FSL: FILES: <list of files> <CR><LF>] OK

## Defined values

<dir_num>	Integer type, the number of subdirectories in current directory.
<file_num>	Integer type, the number of files in current directory.
<type>	<ul style="list-style-type: none"> <li>0 – list both subdirectories and files</li> <li>1 – list subdirectories only</li> <li>2 – list files only</li> </ul>

## Examples

AT+FSL?	+FSL: SUBDIRECTORIES: 2, FILES: 2 OK
AT+FSL	+FSL: SUBDIRECTORIES: FirstDir SecondDir  +FSL: FILES: image_0.jpg image_1.jpg  OK
AT+FSL=2	+FSL: FILES: image_0.jpg

```
image_1.jpg
```

```
OK
```

## 14.5 AT+FSDEL Delete file in current directory

### Description

The command is used to delete a file in current directory. Before do that, it needs to use [AT+FSCD](#) select the father directory as current directory.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSDEL=?	OK
Write Command	Responses
AT+FSDEL=<filename>	OK
	ERROR

### Defined values

<filename>

String without double quotes, file name which is relative and already existing.

If <filename> is \*.\* , it means delete all files in current directory.

### Examples

```
AT+FSDEL=image_0.jpg
```

```
OK
```

## 14.6 AT+FSRENAME Rename file in current directory

### Description

The command is used to rename a file in current directory.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSRENAME=?	OK
Write Command	Responses
AT+FSRENAME= <old_name>,<new_name>	OK ERROR

## Defined values

<old\_name>

String with or without double quotes, file name which is existed in current directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<new\_name>

New name of specified file, string with or without double quotes. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

## Examples

```
AT+FSRENAME=image_0.jpg, image_1.jpg
```

```
OK
```

```
AT+FSRENAME="my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
```

```
OK
```

## 14.7 AT+FSATTRI Request file attributes

### Description

The command is used to request the attributes of file which is existing in current directory.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSATTRI=?	OK
Write Command	Responses
AT+FSATTRI=<filename>	+FSATTRI: <file_size>, <create_date> OK

### Defined values

<filename>
String with or without double quotes, file name which is in current directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.
<file_size>
The size of specified file, and the unit is in Byte.
<create_date>
Create date and time of specified file, the format is YYYY/MM/DD HH/MM/SS Week. Week – Mon, Tue, Wed, Thu, Fri, Sat, Sun

### Examples

```
AT+FSATTRI=image_0.jpg
+FSATTRI: 8604, 2008/04/28 10:24:46 Tue
OK
AT+FSATTRI={non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
+FSATTRI: 6296, 2012/01/06 00:00:00 Sun
OK
```

## 14.8 AT+FSMEM Check the size of available memory

### Description

The command is used to check the size of available memory. The response will list total size and used size of local storage space and SD card if present and mounted.

If SD card exist, the write command can set a limit value. The URC will report automatically when SD card space less than <limit>. After receiving the URC, you can delete the old or useless files for saving the space.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSMEM=?	<p><i>If SD card exist:</i></p> <p>+FSMEM: (list of supported &lt;limit&gt;s),(list of supported &lt;timer&gt;s)</p> <p>OK</p> <p><i>If SD card doesn't exist:</i></p> <p>OK</p>
Read Command	Responses
AT+FSMEM?	<p><i>If SD card exist:</i></p> <p>+FSMEM: &lt;limit&gt;,&lt;timer&gt;</p>

	OK
	<i>If SD card doesn't exist:</i>
	ERROR
Write Command	Responses
AT+FSMEM=<limit>,<time> r>	<i>If SD card exist:</i>
	OK
	<i>If SD card space less than &lt;limit&gt;, report URC automatically:</i>
	+FSMEM: C:(<total>, <used>), D:(<total>,<used>)
	<i>If SD card doesn't exist:</i>
	ERROR
Execution Command	Responses
AT+FSMEM	<i>If SD card exist:</i>
	+FSMEM: C:(<total>, <used>), D:(<total>,<used>)
	OK
	<i>If SD card doesn't exist:</i>
	+FSMEM: C:(<total>, <used>)
	OK

## Defined values

<total>
The total size of local storage space or SD card.
<used>
The used size of local storage space or SD card.
<limit>
0 – Close memory check
<max> – The limit space of SD card. The max value refers to the SD card size (It's only available when SD card exist!)
<timer>
The range is 0-255, unit is second, after set <time> will report the URC when SD card's available space less than <limit> every the seconds. (It's only available when SD card exist!)
<b>NOTE</b>
1. The unit of storage space size is in Byte.
2. The unit of <limit> space of SD card is in MB.

## Examples

AT+FSMEM
+FSMEM: C:(11348480, 2201600), D:(255533056, 42754048)
OK
AT+FSMEM=?
+FSMEM: (0-243),(0-255)
OK

```
AT+FSMEM=10,5
OK
+FSMEM: C:(11348480, 2201600), D:(255533056, 245535421)
```

## 14.9 AT+FSFMT Format the storage card

### Description

The command is used to format storage card which is plugged in. After formatting and remounting, it will create four directories of “Picture”, “Video”, “VideoCall” and “Audio” automatically.

If current directory is in **D:/** but not one of **D:/Picture**, **D:/Video**, **D:/Audio** and **D:/VideoCall**, it will set current directory **D:/** after formatting.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSFMT=?	OK
Execution Command	Responses
AT+FSFMT	OK

### Examples

```
AT+FSFMT
OK
```

## 14.10 AT+FSLOCA Select storage place

### Description

The command is used to set the storage place for media files. If the storage card is not present, it can not set storage place as storage card. When the Module is power on, the value of <loca> is 0.

#### NOTE

1. Static image taken by camera is stored in “**C:/Picture**” or “**D:/Picture**” directory.
2. Video file recorded by camera is stored in “**C:/Video**” or “**D:/Video**” directory.
3. Media file recorded during a video call is stored in “**C:/VideoCall**” or “**D:/Videocall**” directory.
4. Audio file recorded is stored in “**C:/Audio**” or “**D:/Audio**” directory.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+FSLOCA=?	+FSLOCA: (list of supported <loca>s) OK
Read Command	Responses
AT+FSLOCA?	+FSLOCA: <loca> OK
Write Command	Responses
AT+FSLOCA=<loca>	OK ERROR

## Defined values

<loca>

0 – store media files to local storage space (namely “C:/”)

1 – store media files to storage card (namely “D:/”)

**NOTE** If <loca>=1 and SD card is removed and unmounted, it will set <loca>=0 automatically after a moment.

## Examples

```
AT+FSLOCA=0
```

```
OK
```

```
AT+FSLOCA?
```

```
+FSLOCA: 0
```

```
OK
```

## 14.11 AT+FSCOPY Copy an appointed file

### Description

The command is used to copy an appointed file on C:/ to an appointed directory on C:/, the new file name should give in parameter.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+FSCOPY=?	OK
Write Command	Responses
AT+FSCOPY=<file1>,<file	+FSCOPY: <percent>

2>	[+FSCOPY: <percent>] OK  <i>If found any error:</i> SD CARD NOT PLUGGED IN FILE IS EXISTING FILE NOT EXISTING DIRECTORY IS EXISTED DIRECTORY NOT EXISTED FORBID CREATE DIRECTORY UNDER \"C:/\" FORBID DELETE DIRECTORY INVALID PATH NAME INVALID FILE NAME SD CARD HAVE NO ENOUGH MEMORY EFS HAVE NO ENOUGH MEMORY FILE CREATE ERROR READ FILE ERROR WRITE FILE ERROR ERROR
----	---

## Defined values

<file1>

The sources file name or the whole path name with sources file name. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<file2>

The destination file name or the whole path name with destination file name. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii} and the quotation mark.

<percent>

The percent of copy done. The range is 0.0 to 100.0

### NOTE

1. The <file1> and <file2> should give the whole path and name, if only given file name, it will refer to current path (AT+FSCD) and check the file's validity.
2. If <file2> is a whole path and name, make sure the directory exists, make sure that the file name does not exist or the file name is not the same name as the sub folder name, otherwise return error.
3. <percent> report refer to the copy file size. The big file maybe report many times, and little file report less.

## Examples

AT+FSCD?

+FSCD: C:/

*OK*

*AT+FSCOPY= C:/TESTFILE,COPYFILE (Copy file TESTFILE on C:/ to C:/COPYFILE)*

*+FSCOPY: 1.0*

*+FSCOPY: 9.7*

*+FSCOPY: 19.4*

*...*

*+FSCOPY: 100.0*

*OK*

*AT+FSCOPY= "my test.jpg", {non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"*

*+FSCOPY:1.0*

*+FSCOPY:100.0*

*OK*

## 15 File Transmission Related Commands

The module supports file transmission between the Module and PC host over Xmodem protocol, and the transmission is bidirectional.

### 15.1 AT+CTXFILE Select file transmitted to PC host

#### Description

The command is used to select a file which is transmitted from the module to PC host. After selecting the file successfully, use HyperTerminal to get the file over Xmodem protocol [refer AT Commands Samples: [File transmission to PC host](#)]. If available memory is not enough, file transmission will fail.

**Note:** If available memory is not enough, file transmission will fail. If you use HyperTerminal Applet (MS), please to make sure the storage path to PC host can not include Chinese character, but file name can include Chinese character.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+CTXFILE=?	+CTXFILE: (list of supported <a href="#">&lt;dir_type&gt;</a> s), (list of supported <a href="#">&lt;protocol&gt;</a> s) OK
Write Command	Responses
AT+CTXFILE= <a href="#">&lt;file_name&gt;</a> [, <a href="#">&lt;dir_type&gt;</a> [, <a href="#">&lt;protocol&gt;</a> ]]	OK FILE NOT EXISTING ERROR

#### Defined values

[<filename>](#)

String with double quotes, file name to be transmitted to PC host which already exists. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

**NOTE** The path to where you want to save the file by using HyperTerminal, must not contain any Chinese character.

[<dir\\_type>](#)

0 – file to be transmitted is in current directory; before [AT+CTXFILE](#) execution, it needs to

set current directory [refer [AT+FSCD](#)]

**NOTE** If `<dir_type>` is omitted, it will select a file to be transmitted which is in current directory. [AT+FSCD](#) and [AT+FSLs](#) being used in combination can help user to check the file selected whether existing or not.

`<protocol>`

- 0 – Xmodem
- 1 – 1K Xmodem

## Examples

```
AT+CTXFILE="image_0.jpg", 0,1
```

```
OK
```

```
.....
```

```
AT+FSCD=C:/
```

```
+FSCD: C:/
```

```
OK
```

```
AT+FSLs
```

```
video_0.mp4    video_1.mp4
```

```
OK
```

```
AT+CTXFILE="video_2.mp4"
```

```
OK
```

```
....
```

## 15.2 AT+CRXFILE Set name of file received from PC host

### Description

The command is used to set file name which is received from PC host to file system of module. After setting successfully, use HyperTerminal to send the file over Xmodem protocol [refer AT Commands Samples: [File received from PC host](#)].

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CRXFILE=?	+CRXFILE: (list of supported <code>&lt;dir_type&gt;</code> s) OK
Write Command	Responses
AT+CRXFILE= <code>&lt;file_name&gt;</code>	OK
[, <code>&lt;dir_type&gt;</code> ]	FILE IS EXISTING ERROR

## Defined values

<file\_name>

String with double quotes, file name which is received from PC host. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir\_type>

Specify storage location of file which is received from PC host. If this parameter is omitted, it will save the file to current directory [refer [AT+FSCD](#)]

- 0 – save file received from PC host to current directory; before [AT+CTXFILE](#) execution, it needs to set current directory [refer [AT+FSCD](#)]

## Examples

```
AT+CRXFILE="image_8.jpg",0
```

```
OK
```

```
.....
```

```
AT+FSCD=C:/
```

```
+FSCD: C:/
```

```
OK
```

```
AT+CRXFILE="video.mp4"
```

```
OK
```

```
....
```

## 15.3 AT+CMWAIT config the waiting seconds before xmodem start receiving

### Description

This command is used to config the waiting seconds when setup a xmodem receiving task. Set to zero means no wait and start receive process. Ought to be used together with +CRXFILE command.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CMWAIT=?	+CMWAIT: (0-60) OK
Read Command	Responses
AT+CMWAIT?	+CMWAIT: <value> OK

	ERROR
Write Command	Responses
AT+CMWAIT=<value>	OK
	ERROR
Execution Command	Responses
AT+CMWAIT	+CMWAIT: 10
	OK

### Defined values

< value >:

0 – 60 second

### Examples

```
+FSCD=C:/Video
```

```
+FSCD: C:/Video/
```

```
OK
```

```
AT+CMWAIT=5
```

```
OK
```

```
AT+CRXFILE="1.txt"
```

```
OK
```

```
...
```

#### NOTE:

1. The default < value > is 10 second, it can be set to any positive integer value, 0~60 is permitted..
2. The < value > cann't be saved, will be set to default value when the device restart later.

## 15.4 AT+CFTRANRX Transfer a file to EFS

### Description

This command is used to transfer a file to EFS.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CFTRANRX=?	+CFTRANRX: [{non-ascii}]"FILEPATH"
	OK
Write Command	Responses

AT+CFTRANRX=" <i>&lt;filepath&gt;</i> "	>
<i>&lt;len&gt;</i>	OK
	>
	ERROR
	ERROR

### Defined values

<i>&lt;filepath&gt;</i>
The path of the file on EFS.
<i>&lt;len&gt;</i>
The length of the file data to send.

### Examples

```
AT+CFTRANRX="c:\MyDir\t1.txt",10
>testcontent
OK
```

## 15.5 AT+CFTRANRX Transfer a file from EFS to external host

### Description

This command is used to transfer a file from EFS to external host. Before using this command, the AT+CATR must be used to set the correct port used.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CFTRANRX=?	+CFTRANRX: [{non-ascii}]"FILEPATH" OK
Write Command	Responses
AT+CFTRANRX=" <i>&lt;filepath&gt;</i> " >	[ +CFTRANRX: DATA,, <i>&lt;len&gt;</i> ... +CFTRANRX: DATA,, <i>&lt;len&gt;</i> ... ] +CFTRANRX: 0 OK

	ERROR
--	-------

### Defined values

<filepath>

The path of the file on EFS.

<len>

The length of the following file data to output.

### Examples

```
AT+CFTRANTX="c:\MyDir\t1.txt"
```

```
+CFTRANTX: DATA, 10
```

```
Testcontent
```

```
+CFTRANTX: 0
```

```
OK
```

## 16 V24-V25 Commands

### 16.1 AT+IPR Set local baud rate temporarily

#### Description

The command sets the baud rate of module's serial interface temporarily, after reboot the baud rate is set to default value. The default value is 115200.

SIM PIN	References
NO	V.25ter

#### Syntax

Test Command	Responses
AT+IPR=?	+IPR: (list of supported<speed>s) OK
Read Command	Responses
AT+IPR?	+IPR: <speed> OK
Write Command	Responses
AT+IPR=<speed>	OK ERROR
Execution Command	Responses
AT+IPR	<i>Set default value 115200:</i> OK

#### Defined values

<speed>

Baud rate per second:

300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800, 921600,  
3200000, 3686400, 4000000

#### Examples

```
AT+IPR?
+IPR: 115200
OK
AT+IPR=?
```

```
+IPR:(300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600,
3200000, 3686400, 4000000)
OK
AT+IPR=115200
OK
```

## 16.2 AT+IPREX Set local baud rate permanently

### Description

The command sets the baud rate of module's serial interface permanently, after reboot the baud rate is also valid.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+IPREX=?	+IPREX: (list of supported<speed>s) OK
Read Command	Responses
AT+IPREX?	+IPREX: <speed> OK
Write Command	Responses
AT+IPREX =<speed>	OK ERROR
Execution Command	Responses
AT+IPREX	<i>Set default value 115200:</i> OK

### Defined values

```
<speed>
Baud rate per second:
300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 230400, 460800,921600,
3200000,3686400,4000000
```

### Examples

```
AT+IPREX?
+IPREX: 115200
OK
```

```

AT+IPREX=?
+IPREX: (300,600,1200,2400,4800,9600,19200,38400,57600,115200,230400,460800,921600
3200000, 3686400, 4000000)
OK
AT+IPREX=115200
OK

```

### 16.3 AT+ICF Set control character framing

#### Description

The command sets character framing which contain data bit, stop bit and parity bit.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+ICF=?	+ICF: (list of supported<format>s), (list of supported<parity>s) OK
Read Command	Responses
AT+ICF?	+ICF: <format>,<parity> OK
Write Command	Responses
AT+ICF= <format>[,<parity>]	OK ERROR
Execution Command	Responses
AT+ICF	<i>Set default value:</i> OK

#### Defined values

<format>
Only support value “3” at moment: 3 – data bit 8, stop bit 1
<parity>
0 – Odd
1 – Even
2 – mark
3 – none

#### Examples

```

AT+ICF?
+ICF: 3,3
OK
AT+ICF=?
+ICF: (3),(0-3)
OK
AT+ICF=3,3
OK

```

## 16.4 AT+IFC Set local data flow control

### Description

The command sets the flow control of the module.

SIM PIN	References
NO	V.25ter

### Syntax

Test Command	Responses
AT+IFC=?	+IFC: (list of supported<DCE>s), (list of supported<DTE>s) OK
Read Command	Responses
AT+IFC?	+IFC: <DCE>,<DTE> OK
Write Command	Responses
AT+IFC=<DCE>[,<DTE>]	OK ERROR
Execution Command	Responses
AT+IFC	<i>Set default value:</i> OK

### Defined values

<DCE>
0 – none (default)
2 – RTS hardware flow control
<DTE>
0 – none (default)
2 – CTS hardware flow control

### Examples

```
AT+IFC?
```

```
+IFC: 0,0
```

```
OK
```

```
AT+IFC=?
```

```
+IFC: (0,2),(0,2)
```

```
OK
```

```
AT+IFC=2,2
```

```
OK
```

## 16.5 AT&C Set DCD function mode

### Description

The command determines how the state of circuit 109 (**DCD**) relates to the detection of received line signal from the distant end.

**NOTE** After executing `AT+CSUART=1` and `AT+CDCDMD=0`, it takes effect.

SIM PIN	References
NO	V.25ter

### Syntax

Execution Command	Responses
AT&C[<value>]	OK
	ERROR

### Defined values

<value>

- 0 DCD line shall always be on.
- 1 DCD line shall be on only when data carrier signal is present.
- 2 Setting winks(briefly transitions off,then back on)the DCD line when data calls end.

### Examples

```
AT&C1
```

```
OK
```

## 16.6 ATE Enable command echo

### Description

The command sets whether or not the TA echoes characters.

SIM PIN	References
---------	------------

NO	V.25ter
----	---------

### Syntax

Execution Command	Responses
ATE[<value>]	OK
	ERROR

### Defined values

<value>
0 – Echo mode off
<u>1</u> – Echo mode on

### Examples

<i>ATE1</i>
<i>OK</i>

## 16.7 AT&V Display current configuration

### Description

The command returns some of the base configuration parameters settings.

SIM PIN	References
YES	V.25ter

### Syntax

Execution Command	Responses
AT&V	<TEXT>
	OK

### Defined values

<TEXT>
All relative configuration information.

### Examples

<i>AT&amp;V</i>
<i>&amp;C: 0; &amp;D: 2; &amp;F: 0; E: 1; L: 0; M: 0; Q: 0; V: 1; X: 0; Z: 0; S0: 0;</i>
<i>S3: 13; S4: 10; S5: 8; S6: 2; S7: 50; S8: 2; S9: 6; S10: 14; S11: 95;</i>

```
+FCLASS: 0; +ICF: 3,3; +IFC: 2,2; +IPR: 115200; +DR: 0; +DS: 0,0,2048,6;
+WS46: 12; +CBST: 0,0,1;
.....
OK
```

## 16.8 AT&D Set DTR function mode

### Description

The command determines how the **TA** responds when circuit 108/2 (**DTR**) is changed from the **ON** to the **OFF** condition during data mode.

**NOTE** After executing `AT+CSUART=1`, it takes effect.

SIM PIN	References
NO	V.25ter

### Syntax

Execution Command	Responses
AT&D[<value>]	OK
	ERROR

### Defined values

<value>

- 0 **TA** ignores status on **DTR**.
- 1 **ON->OFF** on **DTR**: Change to Command mode with remaining the connected call
- 2 **ON->OFF** on **DTR**: Disconnect call, change to Command mode. During state **DTR** = **OFF** is auto-answer off.

### Examples

```
AT&D1
OK
```

## 16.9 AT&S Set DSR function mode

### Description

The command determines how the state of DSR pin works.

SIM PIN	References
NO	V.25ter

### Syntax

Execution Command	Responses
AT&S[<value>]	OK
	ERROR

### Defined values

<value>
0 DSR line shall always be on.
1 DSR line shall be on only when DTE and DCE are connected.

### Examples

AT&S0
OK

## 16.10 ATV Set result code format mode

### Description

This parameter setting determines the contents of the header and trailer transmitted with result codes and information responses.

**NOTE:** In case of using the command without parameter <value> will be set to 0.

SIM PIN	References
NO	V.25ter

### Syntax

Write Command	Responses
ATV[<value>]	<i>If &lt;value&gt; =0</i>
	0
	<i>If &lt;value&gt; =1</i>
	OK

### Defined values

<value>
0 Information response: <text><CR><LF> Short result code format: <numeric code><CR>
1 Information response: <CR><LF><text><CR><LF> Long result code format: <CR><LF><verbose code><CR><LF>

### Examples

ATV1
------

OK

## 16.11 AT&F Set all current parameters to manufacturer defaults

### Description

The command is used to set all current parameters to the manufacturer defined profile.

#### Notes

List of parameters reset to manufacturer default can be found in defined values, factory default settings restorable with AT&F[<value>].

Every ongoing or incoming call will be terminated.

SIM PIN	References
NO	V.250

### Syntax

Execution Command	Responses
AT&F[<value>]	OK

### Defined values

<value>

0 — Set some temporary TA parameters to manufacturer defaults. The setting after power on or reset is same as value 0.

1 — Set all TA parameters to manufacturer defaults. (**NOTE: Module must reset after setting value 1, otherwise some unknown issue will happen.**)

<value>=1 default value

AT&F1	VALUE
AT+AUTOANSWER	0
AT+CATR	0
AT+CSUART	0
AT+CPCM	0,0
AT+CPCMFMT	2
AT+CPCMSLOT	0
AT+CNBP ①	0x0002000000580380
AT+CNMP	2
AT+CNAOP	2
AT+CNSDP	2
AT+CTZU	0
AT+CRSL	2
AT+CALM	0
AT+CEMNLIST	0, ""

AT+CVALARM	0, 3400
AT+CRFEN	1
AT+CSDVC	1
AT+CLVL ②	2
AT+CVLVL ②	-200,500,1000,2000,3000,4000,5000,5000
AT+CMICAMP1 ②	1
AT+SIDET ②	4000
AT+CTXGAIN ②	22288
AT+CRXGAIN ②	6000
AT+CTXVOL ②	22288
AT+CRXVOL ②	-100
AT+CTXFTR ②	0, 0, 0, 0, 0, 0, 0
AT+CRXFTR ②	0, 0, 0, 0, 0, 0, 0
AT+CVAUXS	1
AT+CVAUXV	57
AT+CCAMMD	0
AT+CDTRISRS	0
AT+CDTRISRMD	0,0
AT+CGDCONT	1,"IP", "", "0.0.0.0",0,0
AT+CGSOCKCONT	+CGSOCKCONT: 1,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 2,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 3,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 4,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 5,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 6,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 7,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 8,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 9,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 10,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 11,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 12,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 13,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 14,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 15,"IP", "", "0.0.0.0",0,0 +CGSOCKCONT: 16,"IP", "", "0.0.0.0",0,0
AT+CMMSENDCFG	6,3,0,0,2,4
AT+CMMSCURL	""
AT+CMMSPROTO	1,"0.0.0.0",0
① Above default band value is for SIM5215E/5216E. SIM5215A/5216A is 0x000000000CB80380. SIM5215J/5216J is 0x000000000C780380	

© These audio parameters is discrepant in different Qualcomm platform version. In this document the default values for 240150. The platform version can be found through ATI command.

### Examples

*AT&F*

*OK*

*AT&F1*

*OK (then reset the module manual)*

## 17 Commands for Packet Domain

### 17.1 AT+CGDCONT Define PDP context

#### Description

The set command specifies PDP context parameter values for a PDP context identified by the (local) context identification parameter `<cid>`. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command. A special form of the write command (`AT+CGDCONT=<cid>`) causes the values for context `<cid>` to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CGDCONT=?	+CGDCONT: (range of supported<cid>s),<PDP_type>,,(list of supported <d_comp>s),(list of supported <h_comp>s) OK ERROR
Read Command	Responses
AT+CGDCONT?	+CGDCONT: [<cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>]<CR><LF> +CGDCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[...]] OK ERROR
Write Command	Responses
AT+CGDCONT= <cid>[,<PDP_type> [,<APN>[,<PDP_addr> [,<d_comp>[,<h_comp>]]]]]	OK ERROR
Execution Command	Responses
AT+CGDCONT	OK ERROR

#### Defined values

<cid>

(PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

1...16

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6

<APN>

(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.

<PDP\_addr>

A string parameter that identifies the MT in the address space applicable to the PDP.

Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using command [AT+CGPADDR](#).

<d\_comp>

A numeric parameter that controls PDP data compression, this value may depend on platform:

- 0 – off (default if value is omitted)
- 1 – on
- 2 – V.42bis

<h\_comp>

A numeric parameter that controls PDP header compression, this value may depend on platform:

- 0 – off (default if value is omitted)
- 1 – on
- 2 – RFC1144
- 3 – RFC2507
- 4 – RFC3095

## Examples

*AT+CGDCONT?*

*+CGDCONT: 1,"IP",,"0.0.0.0",0,0*

*OK*

*AT+CGDCONT=?*

*+CGDCONT: (1-16),"IP",,(0-2),(0-4)*

*+CGDCONT: (1-16),"PPP",,(0-2),(0-4)*

*+CGDCONT: (1-16),"IPV6",,(0-2),(0-4)*

*OK*

## 17.2 AT+CGDSCONT Define Secondary PDP Context

### Description

The set command specifies PDP context parameter values for a Secondary PDP context identified by the (local) context identification parameter, <cid>. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command. A special form of the set command, AT+CGDSCONT=<cid> causes the values for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGDSCONT=?	+CGDSCONT: (range of supported <cid>s),(list of <p_cid>s for active primary contexts),(list of supported <d_comp>s),(list of supported <h_comp>s)  OK
Read Command	Responses
AT+CGDSCONT?	+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp> [<CR><LF>+CGDSCONT: <cid>,<p_cid>,<d_comp>,<h_comp> [...]]  OK
Write Command	Responses
AT	OK
+CGDSCONT=<cid>[,<p_cid>] [,<d_comp>[,<h_comp>]] ]	ERROR

### Defined values

<cid>

a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

NOTE: The <cid>s for network-initiated PDP contexts will have values outside the ranges indicated for the <cid> in the test form of the commands +CGDCONT and +CGDSCONT.

<p\_cid>

a numeric parameter which specifies a particular PDP context definition which has been specified by use of the +CGDCONT command. The parameter is local to the TE-MT interface. The list of permitted values is returned by the test form of the command.

<d\_comp>

a numeric parameter that controls PDP data compression (applicable for SMDCPonly) (refer 3GPP TS 44.065 [61])

- 0 off
  - 1 on (manufacturer preferred compression)
  - 2 V.42bis
  - 3 V.44
- Other values are reserved.

<h\_comp>

a numeric parameter that controls PDP header compression (refer 3GPP TS 44.065 [61] and 3GPP TS 25.323 [62])

- 0 off
  - 1 on (manufacturer preferred compression)
  - 2 RFC1144 (applicable for SMDCP only)
  - 3 RFC2507
  - 4 RFC3095 (applicable for PDCP only)
- Other values are reserved.

## Examples

AT+CGDSCONT?

+CGDSCONT: 2,1,0,0

OK

AT+CGDSCONT=2,1

OK

AT+CGDSCONT=?

+CGDSCONT: (1-16),(1),"IP",,(0-2),(0-4)

+CGDSCONT: (1-16),(1),"PPP",,(0-2),(0-4)

+CGDSCONT: (1-16),(1),"IPV6",,(0-2),(0-4)

OK

## 17.3 AT+CGTFT Define Secondary PDP Context

### Description

This command allows the TE to specify a Packet Filter - PF for a Traffic Flow Template - TFT that is used in the GGSN in UMTS/GPRS and Packet GW in EPS for routing of packets onto different QoS flows towards the TE. The concept is further described in the 3GPP TS 23.060 [47]. A TFT

consists of from one and up to 16 Packet Filters, each identified by a unique <packet filter identifier>. A Packet Filter also has an <evaluation precedence index> that is unique within all TFTs associated with all PDP contexts that are associated with the same PDP address.

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CGTFT=?	<p>+CGTFT: &lt;PDP_type&gt;,(list of supported &lt;packet filter identifier&gt;s),(list of supported &lt;evaluation precedence index&gt;s),(list of supported &lt;source address and subnet mask&gt;s),(list of supported &lt;protocol number (ipv4) / next header (ipv6)&gt;s),(list of supported &lt;destination port range&gt;s),(list of supported &lt;source port range&gt;s),(list of supported &lt;ipsec security parameter index (spi)&gt;s),(list of supported &lt;type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask&gt;s),(list of supported &lt;flow label (ipv6)&gt;s),(list of supported &lt;direction&gt;s)</p> <p>[&lt;CR&gt;&lt;LF&gt;+CGTFT: &lt;PDP_type&gt;,(list of supported &lt;packet filter identifier&gt;s),(list of supported &lt;evaluation precedence index&gt;s),(list of supported &lt;source address and subnet mask&gt;s),(list of supported &lt;protocol number (ipv4) / next header (ipv6)&gt;s),(list of supported &lt;destination port range&gt;s),(list of supported &lt;source port range&gt;s),(list of supported &lt;ipsec security parameter index (spi)&gt;s),(list of supported &lt;type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask&gt;s),(list of supported &lt;flow label (ipv6)&gt;s),(list of supported &lt;direction&gt;s)</p> <p>[...]]</p> <p>OK</p>
Read Command	Responses
AT+CGTFT?	<p>+CGTFT: &lt;cid&gt;,&lt;packet filter identifier&gt;,&lt;evaluation precedence index&gt;,&lt;source address and subnet mask&gt;,&lt;protocol number (ipv4) / next header (ipv6)&gt;,&lt;destination port range&gt;,&lt;source port range&gt;,&lt;ipsec security parameter index (spi)&gt;,&lt;type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask&gt;,&lt;flow label (ipv6)&gt;,&lt;direction&gt;</p> <p>[&lt;CR&gt;&lt;LF&gt;+CGTFT: &lt;cid&gt;,&lt;packet filter identifier&gt;,&lt;evaluation precedence index&gt;,&lt;source address and subnet mask&gt;,&lt;protocol number (ipv4) / next header (ipv6)&gt;,&lt;destination port range&gt;,&lt;source port range&gt;,&lt;ipsec security parameter index (spi)&gt;,&lt;type of service (tos) (ipv4) and mask / traffic class (ipv6)</p>

	and mask>,<flow label (ipv6)>,<direction> [...]]  OK
Write Command	Responses
+CGTFT=<cid>[,<packet filter identifier>,<evaluation precedence index>[,<source address and subnet mask>[,<protocol number (ipv4) / next header (ipv6)>[,<destination port range>[,<source port range>[,<ipsec security parameter index (spi)>[,<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>[,<flow label (ipv6)>[,<direction>]]]]]]]]]]]	OK  ERROR

## Defined values

<cid>
a numeric parameter which specifies a particular PDP context definition (see the +CGDCONT and +CGDSCONT commands).
<packet filter identifier>
a numeric parameter, value range from 1 to 16.
<evaluation precedence index>
a numeric parameter. The value range is from 0 to 255.
<source address and subnet mask>
string type. The string is given as dot-separated numeric (0-255) parameters on the form: "a1.a2.a3.a4.m1.m2.m3.m4" for IPv4 or "a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16.m1.m2.m3.m4.m5.m6.m7.m8.m9.m10.m11.m12.m13.m14.m15.m16", for IPv6.
<protocol number (ipv4) / next header (ipv6)>
a numeric parameter, value range from 0 to 255.
<destination port range>
string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".
<source port range>
string type. The string is given as dot-separated numeric (0-65535) parameters on the form "f.t".
<ipsec security parameter index (spi)>
numeric value in hexadecimal format. The value range is from 00000000 to FFFFFFFF.

<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>  
 string type. The string is given as dot-separated numeric (0-255) parameters on the form "t.m".

<flow label (ipv6)>  
 numeric value in hexadecimal format. The value range is from 00000 to FFFFF. Valid for IPv6 only.

<direction>  
 a numeric parameter which specifies the transmission direction in which the packet filter shall be applied.

0	Pre-Release 7 TFT filter (see 3GPP TS 24.008 [8], table 10.5.162)
1	Uplink
2	Downlink
<u>3</u>	Birectional (Up & Downlink)

## Examples

```

AT+CGTFT?
+CGTFT: 2,1,0,"74.125.71.99.255.255.255.255",0,0,0,0,0,0,0
OK
AT+CGTFT=2,1,0,"74.125.71.99.255.255.255.255"
OK
AT+CGTFT=?
+CGTFT: "IP",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFFFF
FFF),(0-255.0-255),(0-FFFFFF)
+CGTFT: "PPP",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFFF
FFFF),(0-255.0-255),(0-FFFFFF)
+CGTFT: "IPV6",(1-2),(0-255),,(0-255),(0-65535.0-65535),(0-65535.0-65535),(0-FFF
FFFF),(0-255.0-255),(0-FFFFFF)
OK
  
```

## 17.4 AT+CGQREQ Quality of service profile (requested)

### Description

The command allows the TE to specify a Quality of Service Profile that is used when the MT sends an Activate PDP Context Request message to the network.. A special form of the set command (**AT+CGQREQ=<cid>**) causes the requested profile for context number <cid> to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGQREQ=?	+CGQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s), (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s), (list of supported <peak>s), (list of supported <mean>s) [...]] OK ERROR
Read Command	Responses
AT+CGQREQ?	+CGQREQ: [<cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>]<CR><LF> +CGQREQ: <cid>, <precedence>, <delay>, <reliability>, <peak>, <mean>[...]] OK ERROR
Write Command	Responses
AT+CGQREQ=<cid> [,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK ERROR
Execution Command	Responses
AT+CGQREQ	OK ERROR

## Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

<precedence>

A numeric parameter which specifies the precedence class:

0 – network subscribed value

1 – high priority

- 2 – normal priority
- 3 – low priority

<delay>

A numeric parameter which specifies the delay class:

- 0 – network subscribed value
- 1 – delay class 1
- 2 – delay class 2
- 3 – delay class 3
- 4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

- 0 – network subscribed value
- 1 – Non real-time traffic,error-sensitive application that cannot cope with data loss
- 2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss
- 3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-SM,and SMS
- 4 – Real-time traffic,error-sensitive application that can cope with data loss
- 5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

- 0 – network subscribed value
- 1 – Up to 1000 (8 kbit/s)
- 2 – Up to 2000 (16 kbit/s)
- 3 – Up to 4000 (32 kbit/s)
- 4 – Up to 8000 (64 kbit/s)
- 5 – Up to 16000 (128 kbit/s)
- 6 – Up to 32000 (256 kbit/s)
- 7 – Up to 64000 (512 kbit/s)
- 8 – Up to 128000 (1024 kbit/s)
- 9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

- 0 – network subscribed value
- 1 – 100 (~0.22 bit/s)
- 2 – 200 (~0.44 bit/s)
- 3 – 500 (~1.11 bit/s)
- 4 – 1000 (~2.2 bit/s)
- 5 – 2000 (~4.4 bit/s)
- 6 – 5000 (~11.1 bit/s)
- 7 – 10000 (~22 bit/s)
- 8 – 20000 (~44 bit/s)
- 9 – 50000 (~111 bit/s)
- 10 – 100000 (~0.22 kbit/s)

- 11 – 200000 (~0.44 kbit/s)
- 12 – 500000 (~1.11 kbit/s)
- 13 – 1000000 (~2.2 kbit/s)
- 14 – 2000000 (~4.4 kbit/s)
- 15 – 5000000 (~11.1 kbit/s)
- 16 – 10000000 (~22 kbit/s)
- 17 – 20000000 (~44 kbit/s)
- 18 – 50000000 (~111 kbit/s)
- 31 – optimization

### Examples

```

AT+CGQREQ?
+CGQREQ:
OK
AT+CGQREQ=?
+CGQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK

```

## 17.5 AT+CGEQREQ 3G quality of service profile (requested)

### Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QoS was explicitly specified.

The write command allows the TE to specify a Quality of Service Profile for the context identified by the context identification parameter `<cid>` which is used when the MT sends an Activate PDP Context Request message to the network.

A special form of the write command, `AT+CGEQREQ=<cid>` causes the requested profile for context number `<cid>` to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
--------------	-----------

<p>AT+CGEQREQ=?</p>	<p>+CGEQREQ: &lt;PDP_type&gt;,(list of supported &lt;Traffic class&gt;s),(list of supported &lt;Maximum bitrate UL&gt;s),(list of supported &lt;Maximum bitrate DL&gt;s),(list of supported &lt;Guaranteed bitrate UL&gt;s,(list of supported &lt;Guaranteed bitrate DL&gt;s),(list of supported &lt;Delivery order&gt;s),(list of supported &lt;Maximum SDU size&gt;s),(list of supported &lt;SDU error ratio&gt;s),(list of supported &lt;Residual bit error Ratio&gt;s),(list of supported &lt;Delivery of erroneous SDUs&gt;s),(list of Supported &lt;Transfer delay&gt;s),(list of supported &lt;Traffic handling priority&gt;s) [&lt;CR&gt;&lt;LF&gt;</p> <p>+CGEQREQ: &lt;PDP_type&gt;,(list of supported &lt;Traffic class&gt;s),(list of supported &lt;Maximum bitrate UL&gt;s),(list of supported &lt;Maximum bitrate DL&gt;s),(list of supported &lt;Guaranteed bitrate UL&gt;s,(list of supported &lt;Guaranteed bitrate DL&gt;s),(list of supported &lt;Delivery order&gt;s),(list of supported &lt;Maximum SDU size&gt;s),(list of supported &lt;SDU error ratio&gt;s),(list of supported &lt;Residual bit error Ratio&gt;s),(list of supported &lt;Delivery of erroneous SDUs&gt;s),(list of Supported &lt;Transfer delay&gt;s),(list of supported &lt;Traffic handling priority&gt;s) [...]</p> <p>OK</p>
<p>Read Command</p>	<p>Responses</p>
<p>AT+CGEQREQ?</p>	<p>+CGEQREQ: [&lt;cid&gt;,&lt;Traffic class&gt;,&lt;Maximum bitrate UL&gt;,&lt;Maximum bitrate DL&gt;,&lt;Guaranteed bitrate UL&gt;,&lt;Guaranteed bitrate DL&gt;,&lt;Delivery order&gt;,&lt;Maximum SDU size&gt;,&lt;SDU error ratio&gt;,&lt;Residual bit error ratio&gt;,&lt;Delivery of erroneous SDUs&gt;,&lt;Transfer Delay&gt;,&lt;Traffic handling priority&gt;][&lt;CR&gt;&lt;LF&gt;</p> <p>+CGEQREQ: &lt;cid&gt;,&lt;Traffic class&gt;,&lt;Maximum bitrate UL&gt;,&lt;Maximum bitrate DL&gt;,&lt;Guaranteed bitrate UL&gt;,&lt;Guaranteed bitrate DL&gt;,&lt;Delivery order&gt;,&lt;Maximum SDU size&gt;,&lt;SDU error ratio&gt;,&lt;Residual bit error ratio&gt;,&lt;Delivery of erroneous SDUs&gt;,&lt;Transfer Delay&gt;,&lt;Traffic handling priority&gt;[...]</p> <p>OK</p>
<p>Write Command</p>	<p>Responses</p>
<p>AT+CGEQREQ=&lt;cid&gt;[,&lt;Traffic class&gt;[,&lt;Maximum bitrate UL&gt;[,&lt;Maximum bitrate DL&gt;[,&lt;Guaranteed bitrate UL&gt;[,&lt;Guaranteed bitrate DL&gt;[,&lt;Delivery order&gt;[,&lt;Maximum SDU size&gt;[,&lt;SDU error ratio&gt;[,&lt;Residual bit</p>	<p>OK</p> <hr/> <p>ERROR</p>



SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.AT+CGEQREQ=...,32,...).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

0 – subscribed value

10...1520 (value needs to be divisible by 10 without remainder)

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of  $5*10^{-3}$  would be specified as “5E3”(e.g.AT+CGEQREQ=...,”5E3”,...).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of  $5*10^{-3}$  would be specified as “5E3”(e.g. AT+CGEQREQ=...,”5E3”,...).

“0E0” – subscribed value

“5E2”

“1E2”

“5E3”

“4E3”

“1E3”

“1E4”

“1E5”

“1E6”

“6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

- 0 – no
- 1 – yes
- 2 – no detect
- 3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds.

- 0 – subscribed value
- 10...150 – value needs to be divisible by 10 without remainder
- 200...950 – value needs to be divisible by 50 without remainder
- 1000...4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

- 0 – subscribed value
- 1 –
- 2 –
- 3 –

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6

**Examples**

*AT+CGEQREQ?*

*+CGEQREQ:*

*OK*

*AT+CGEQREQ=?*

*+CGEQREQ: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1",  
"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4",  
"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)*

*+CGEQREQ: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1",  
"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4",  
"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)*

*+CGEQREQ: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1",  
"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4",  
"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)*

*OK*

## 17.6 AT+CGQMIN Quality of service profile (minimum acceptable)

### Description

The command allows the TE to specify a minimum acceptable profile which is checked by the MT against the negotiated profile returned in the Activate PDP Context Accept message. A special form of the set command, `AT+CGQMIN=<cid>` causes the minimum acceptable profile for context number `<cid>` to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGQMIN=?	+CGQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s), (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s), (list of supported <peak>s), (list of supported <mean>s)[...] OK ERROR
Read Command	Responses
AT+CGQMIN?	+CGQMIN: [<cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>]<CR><LF> +CGQMIN: <cid>, <precedence >, <delay>, <reliability.>, <peak>, <mean> [...]] OK ERROR
Write Command	Responses
AT+CGQMIN= <cid>[,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK ERROR
Execution Command	Responses
AT+CGQMIN	OK

### Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#))

command).

1...16

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6

<precedence>

A numeric parameter which specifies the precedence class:

- 0 – network subscribed value
- 1 – high priority
- 2 – normal priority
- 3 – low priority

<delay>

A numeric parameter which specifies the delay class:

- 0 – network subscribed value
- 1 – delay class 1
- 2 – delay class 2
- 3 – delay class 3
- 4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

- 0 – network subscribed value
- 1 – Non real-time traffic,error-sensitive application that cannot cope with data loss
- 2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss
- 3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-SM,and SMS
- 4 – Real-time traffic,error-sensitive application that can cope with data loss
- 5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

- 0 – network subscribed value
- 1 – Up to 1000 (8 kbit/s)
- 2 – Up to 2000 (16 kbit/s)
- 3 – Up to 4000 (32 kbit/s)
- 4 – Up to 8000 (64 kbit/s)
- 5 – Up to 16000 (128 kbit/s)
- 6 – Up to 32000 (256 kbit/s)
- 7 – Up to 64000 (512 kbit/s)
- 8 – Up to 128000 (1024 kbit/s)
- 9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

0	– network subscribed value
1	– 100 (~0.22 bit/s)
2	– 200 (~0.44 bit/s)
3	– 500 (~1.11 bit/s)
4	– 1000 (~2.2 bit/s)
5	– 2000 (~4.4 bit/s)
6	– 5000 (~11.1 bit/s)
7	– 10000 (~22 bit/s)
8	– 20000 (~44 bit/s)
9	– 50000 (~111 bit/s)
10	– 100000 (~0.22 kbit/s)
11	– 200000 (~0.44 kbit/s)
12	– 500000 (~1.11 kbit/s)
13	– 1000000 (~2.2 kbit/s)
14	– 2000000 (~4.4 kbit/s)
15	– 5000000 (~11.1 kbit/s)
16	– 10000000 (~22 kbit/s)
17	– 20000000 (~44 kbit/s)
18	– 50000000 (~111 kbit/s)
31	– optimization

## Examples

```

AT+CGQMIN?
+CGQMIN:
OK
AT+CGQMIN=?
+CGQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK

```

## 17.7 AT+CGEQMIN 3G quality of service profile (minimum acceptable)

### Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allow the TE to specify a Quality of Service Profile for the context identified by the context identification parameter <cid> which is checked by the MT against the negotiated profile returned in the Activate/Modify PDP Context Accept message.

A special form of the write command, `AT+CGEQMIN=<cid>` causes the requested for context number `<cid>` to become undefined.

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CGEQMIN=?	+CGEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) [<CR><LF> +CGEQMIN: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) [...] OK
Read Command	Responses
AT+CGEQMIN?	+CGEQMIN: [<cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>][<CR><LF> +CGEQMIN: <cid>,<Traffic class>,<Maximum bitrate UL>,<Maximum bitrate DL>,<Guaranteed bitrate UL>,<Guaranteed bitrate DL>,<Delivery order>,<Maximum SDU size>,<SDU error ratio>,<Residual bit error ratio>,<Delivery of erroneous SDUs>,<Transfer Delay>,<Traffic handling priority>[...] OK
Write Command	Responses

AT+CGEQMIN=<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrate UL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGEQMIN	OK

**Defined values**

**<cid>**

Parameter specifies a particular PDP context definition. The parameter is also used in other PDP context-related commands.

1...16

**<Traffic class>**

- 0 – conversational
- 1 – streaming
- 2 – interactive
- 3 – background
- 4 – subscribed value

**<Maximum bitrate UL>**

This parameter indicates the maximum number of kbits/s delivered to UMTS (up-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as 32 (e.g. AT+CGEQMIN=...,32,...). (refer TS 24.008 [8] subclause 10.5.6.5).

- 0 subscribed value
- 1kbps...63kbps – value needs to be divisible by 1 without remainder
- 64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps
- 576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

**<Maximum bitrate DL>**

This parameter indicates the maximum number of kbits/s delivered to UMTS (down-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as 32 (e.g. AT+CGEQMIN=...,32,...). (refer TS 24.008 [8] subclause 10.5.6.5).

- 0 subscribed value
- 1kbps...63kbps – value needs to be divisible by 1 without remainder
- 64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps
- 576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.[AT+CGEQMIN=...,32,...](#)). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.[AT+CGEQMIN=...,32,...](#)). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets. (refer TS 24.008 [8] subclause 10.5.6.5).

0 – subscribed value

10...1520 (value needs to be divisible by 10 without remainder)

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of  $5 \cdot 10^{-3}$  would be specified as “5E3”(e.g.[AT+CGEQMIN=...,”5E3”,...](#)).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of  $5 \cdot 10^{-3}$  would be specified as “5E3”(e.g.

[AT+ CGEQMIN =...,”5E3”,...](#)).

"0E0" – subscribed value

"5E2"

"1E2"

"5E3"

"4E3"

"1E3"

"1E4"

"1E5"

"1E6"

"6E8"

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

0 – no

1 – yes

2 – no detect

3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds. (refer TS 24.008 [8] subclause 10.5.6.5).

0 – subscribed value

10...150 – value needs to be divisible by 10 without remainder

200...950 – value needs to be divisible by 50 without remainder

1000...4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

0 – subscribed value

1 –

2 –

3 –

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol

IPV6 Internet Protocol Version 6

## Examples

AT+CGEQMIN?

+CGEQMIN:

OK

AT+CGEQMIN=?

+CGEQMIN: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"

```
, "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4",
, "1E5", "1E6", "6E8"), (0-3), (0, 100-4000), (0-3)
+CGEQMIN: "PPP", (0-4), (0-384), (0-384), (0-384), (0-384), (0-2), (0-1520), ("0E0", "1E1",
, "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4",
, "1E5", "1E6", "6E8"), (0-3), (0, 100-4000), (0-3)
+CGEQMIN: "IPV6", (0-4), (0-384), (0-384), (0-384), (0-384), (0-2), (0-1520), ("0E0", "1E1",
, "1E2", "7E3", "1E3", "1E4", "1E5", "1E6"), ("0E0", "5E2", "1E2", "5E3", "4E3", "1E3", "1E4",
, "1E5", "1E6", "6E8"), (0-3), (0, 100-4000), (0-3)
OK
```

## 17.8 AT+CGATT Packet domain attach or detach

### Description

The write command is used to attach the MT to, or detach the MT from, the Packet Domain service.

The read command returns the current Packet Domain service state.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGATT=?	+CGATT: (list of supported <state>s) OK
Read Command	Responses
AT+CGATT?	+CGATT: <state> OK
Write Command	Responses
AT+CGATT=<state>	OK
	ERROR
	+CME ERROR: <err>

### Defined values

<state>
Indicates the state of Packet Domain attachment:
0 – detached
1 – attached

### Examples

```
AT+CGATT?
```

```
+CGATT: 0
OK
AT+CGATT=1
OK
```

## 17.9 AT+CGACT PDP context activate or deactivate

### Description

The write command is used to activate or deactivate the specified PDP context (s).

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGACT=?	+CGACT: (list of supported <state>s) OK
Read Command	Responses
AT+CGACT?	+CGACT: [<cid>, <state>][<CR><LF> +CGACT: <cid>, <state> [...]] OK
Write Command	Responses
AT+CGACT=<state> [,<cid>]	OK ERROR +CME ERROR: <err>

### Defined values

<state>
Indicates the state of PDP context activation:
0 – deactivated
1 – activated
<cid>
A numeric parameter which specifies a particular PDP context definition (see <a href="#">AT+CGDCONT</a> command).
1...16

### Examples

```
AT+CGACT?
```

```
+CGACT: 1,0
OK
AT+CGACT=?
+CGACT: (0,1)
OK
AT+CGACT=0,1
OK
```

## 17.10 AT+CGDATA Enter data state

### Description

The command causes the MT to perform whatever actions are necessary to establish communication between the TE and the network using one or more Packet Domain PDP types. This may include performing a PS attach and one or more PDP context activations.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGDATA=?	+CGDATA: (list of supported <L2P>s) OK
Write Command	Responses
AT+CGDATA=<L2P>,[<cid> >]	CONNECT NO CARRIER ERROR +CME ERROR: <err>

### Defined values

<L2P>

A string parameter that indicates the layer 2 protocol to be used between the TE and MT.

PPP Point-to-point protocol for a PDP such as IP

<cid>

A numeric parameter which specifies a particular PDP context definition (see AT+CGDCONT command).

1...16

### Examples

```
AT+CGDATA=?
+CGDATA: ("PPP")
```

```
OK
AT+CGDATA="PPP",1
CONNECT
```

## 17.11 AT+CGPADDR Show PDP address

### Description

The write command returns a list of PDP addresses for the specified context identifiers.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGPADDR=?	+CGPADDR: (list of defined <cid>s) OK
Write Command	Responses
AT+CGPADDR= <cid>[,<cid>[,...]]	[+CGPADDR:<cid>,<PDP_addr>[<CR><LF> +CGPADDR: <cid>,<PDP_addr>[...]] OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CGPADDR	[+CGPADDR: <cid>,<PDP_addr> +CGPADDR: <cid>,<PDP_addr>[...]] OK ERROR +CME ERROR: <err>

### Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command). If no <cid> is specified, the addresses for all defined contexts are returned.

1...16

<PDP\_addr>

A string that identifies the MT in the address space applicable to the PDP. The address may be static or dynamic. For a static address, it will be the one set by the [AT+CGDCONT](#) command when the context was defined. For a dynamic address it will be the one assigned during the last PDP context activation that used the context definition referred to by <cid>. <PDP\_addr> is omitted if none is available.

## Examples

```

AT+CGPADDR=?
+CGPADDR: ( 1)
OK
AT+CGPADDR=1
+CGPADDR: 1,"0.0.0.0"
OK
  
```

## 17.12 AT+CGCLASS GPRS mobile station class

### Description

The command is used to set the MT to operate according to the specified GPRS mobile class.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGCLASS=?	+CGCLASS: (list of supported <class>s) OK ERROR
Read Command	Responses
AT+CGCLASS?	+CGCLASS: <class> OK ERROR
Write Command	Responses
AT+CGCLASS=<class>	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CGCLASS	<i>Set default value:</i> OK ERROR

### Defined values

<class>  
A string parameter which indicates the GPRS mobile class (in descending order of functionality)  
A – class A (highest)

## Examples

```
AT+CGCLASS=?
+CGCLASS: ("A")
OK
```

```
AT+CGCLASS?
+CGCLASS: "A"
OK
```

## 17.13 AT+CGEREP GPRS event reporting

### Description

The write command enables or disables sending of unsolicited result codes, “+CGEV” from MT to TE in the case of certain events occurring in the Packet Domain MT or the network. `<mode>` controls the processing of unsolicited result codes specified within this command. `<bfr>` controls the effect on buffered codes when `<mode>` 1 or 2 is entered. If a setting is not supported by the MT, ERROR or +CME ERROR: is returned.

Read command returns the current `<mode>` and buffer settings.

Test command returns the modes and buffer settings supported by the MT as compound values.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGEREP=?	+CGEREP: (list of supported <code>&lt;mode&gt;</code> s),(list of supported <code>&lt;bfr&gt;</code> s) OK
Read Command	Responses
AT+CGEREP?	+CGEREP: <code>&lt;mode&gt;</code> , <code>&lt;bfr&gt;</code> OK
Write Command	Responses
AT+CGEREP= <code>&lt;mode&gt;</code> [, <code>&lt;bfr&gt;</code> ]	OK ERROR +CME ERROR: <code>&lt;err&gt;</code>
Execution Command	Responses
AT+CGEREP	OK

### Defined values

`<mode>`

- 0 – buffer unsolicited result codes in the MT; if MT result code buffer is full, the oldest ones can be discarded. No codes are forwarded to the TE.

- 1 – discard unsolicited result codes when MT-TE link is reserved (e.g. in on-line data mode); otherwise forward them directly to the TE.
- 2 – buffer unsolicited result codes in the MT when MT-TE link is reserved (e.g. in on-line data mode) and flush them to the TE when MT-TE link becomes available; otherwise forward them directly to the TE.

<bfr>

- 0 – MT buffer of unsolicited result codes defined within this command is cleared when <mode> 1 or 2 is entered.
- 1 – MT buffer of unsolicited result codes defined within this command is flushed to the TE when <mode> 1 or 2 is entered (OK response shall be given before flushing the codes).

The following unsolicited result codes and the corresponding events are defined:

**+CGEV: REJECT <PDP\_type>, <PDP\_addr>**

A network request for PDP context activation occurred when the MT was unable to report it to the TE with a +CRING unsolicited result code and was automatically rejected.

**+CGEV: NW REACT <PDP\_type>, <PDP\_addr>, [<cid>]**

The network has requested a context reactivation. The <cid> that was used to reactivate the context is provided if known to the MT.

**+CGEV: NW DEACT <PDP\_type>, <PDP\_addr>, [<cid>]**

The network has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT.

**+CGEV: ME DEACT <PDP\_type>, <PDP\_addr>, [<cid>]**

The mobile equipment has forced a context deactivation. The <cid> that was used to activate the context is provided if known to the MT.

**+CGEV: NW DETACH**

The network has forced a Packet Domain detach. This implies that all active contexts have been deactivated. These are not reported separately.

**+CGEV: ME DETACH**

The mobile equipment has forced a Packet Domain detach. This implies that all active contexts have been deactivated. These are not reported separately.

**+CGEV: NW CLASS <class>**

The network has forced a change of MS class. The highest available class is reported (see [AT+CGCLASS](#)).

**+CGEV: ME CLASS <class>**

The mobile equipment has forced a change of MS class. The highest available class is reported (see [AT+CGCLASS](#)).

## Examples

```
AT+CGEREP=?
```

```
+CGEREP: (0-2),(0-1)
```

```
OK
```

```
AT+CGEREP?
```

```
+CGEREP: 0,0
OK
```

## 17.14 AT+CGREG GPRS network registration status

### Description

The command controls the presentation of an unsolicited result code “+CGREG: <stat>” when <n>=1 and there is a change in the MT's GPRS network registration status.

The read command returns the status of result code presentation and an integer <stat> which shows whether the network has currently indicated the registration of the MT.

SIM PIN	References
NO	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGREG=?	+CGREG: (list of supported <n>s) OK
Read Command	Responses
AT+CGREG?	+CGREG: <n>,<stat>[,<lac>,<ci>] OK
Write Command	Responses
AT+CGREG=<n>	OK
Execution Command	Responses
AT+CGREG	<i>Set default value:</i> OK

### Defined values

<n>	<ul style="list-style-type: none"> <li>0 – disable network registration unsolicited result code</li> <li>1 – enable network registration unsolicited result code +CGREG: &lt;stat&gt;</li> <li>2 – there is a change in the ME network registration status or a change of the network cell: +CGREG: &lt;stat&gt;[,&lt;lac&gt;,&lt;ci&gt;]</li> </ul>
<stat>	<ul style="list-style-type: none"> <li>0 – not registered, ME is not currently searching an operator to register to</li> <li>1 – registered, home network</li> <li>2 – not registered, but ME is currently trying to attach or searching an operator to register to</li> <li>3 – registration denied</li> <li>4 – unknown</li> </ul>

5	- registered, roaming
<lac>	
Two byte location area code in hexadecimal format(e.g."00C3" equals 193 in decimal).	
<ci>	
Two byte cell ID in hexadecimal format.	

### Examples

```

AT+CGREG=?
+CGREG: (0-1)
OK
AT+CGREG?
+CGREG: 0,0
OK

```

## 17.15 AT+CGSMS Select service for MO SMS messages

### Description

The write command is used to specify the service or service preference that the MT will use to send MO SMS messages.

The test command is used for requesting information on which services and service preferences can be set by using the [AT+CGSMS](#) write command

The read command returns the currently selected service or service preference.

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGSMS=?	+CGSMS: (list of supported <service>s) OK
Read Command	Responses
AT+CGSMS?	+CGSMS: <service> OK
Write Command	Responses
AT+CGSMS=<service>	OK
	ERROR
	+CME ERROR: <err>

### Defined values

<service>

A numeric parameter which indicates the service or service preference to be used

- 0 – GPRS(value is not really supported and is internally mapped to 2)
- 1 – circuit switched(value is not really supported and is internally mapped to 3)
- 2 – GPRS preferred (use circuit switched if GPRS not available)
- 3 – circuit switched preferred (use GPRS if circuit switched not available)

## Examples

```
AT+CGSMS?
```

```
+CGSMS: 3
```

```
OK
```

```
AT+CGSMS=?
```

```
+CGSMS: (0-3)
```

```
OK
```

## 17.16 AT+CGAUTH Set type of authentication for PDP-IP connections of GPRS

### Description

The command is used to set type of authentication for PDP-IP connections of GPRS.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CGAUTH=?	+CGAUTH:(range of supported <cid>s),(list of supported <auth _-type> s),, OK ERROR +CME ERROR: <err>
Read Command	Responses
AT+CGAUTH?	+CGAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CGAUTH: <cid>,<auth_type>[,<user>]<CR><LF> ... OK ERROR +CME ERROR: <err>
Write Command	Responses

AT+CGAUTH=<cid>[,<auth_type>[,<passwd>[,<user>]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGAUTH	OK
	ERROR
	+CME ERROR: <err>

## Defined values

<cid>

Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands.

1...16

<auth\_type>

Indicates the types of authentication to be used for the specified context. If CHAP is selected another parameter <passwd> needs to be specified. If PAP is selected two additional parameters <passwd> and <user> need to be specified.

- 0 – none
- 1 – PAP
- 2 – CHAP
- 3 – PAP or CHAP

<passwd>

Parameter specifies the password used for authentication.

<user>

Parameter specifies the user name used for authentication.

## Examples

```
AT+CGAUTH=?
```

```
+CGAUTH: (1-16),(0-3),
```

```
OK
```

```
AT+CGAUTH=1,1,"SIMCOM","123"
```

```
OK
```

## 18 TCP/IP Related Commands

### 18.1 AT+CGSOCKCONT Define socket PDP context

#### Description

The command specifies socket PDP context parameter values for a PDP context identified by the (local) context identification parameter `<cid>`. The number of PDP contexts that may be in a defined state at the same time is given by the range returned by the test command. A special form of the write command (`AT+CGSOCKCONT=<cid>`) causes the values for context `<cid>` to become undefined.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CGSOCKCONT=?	+CGSOCKCONT: (range of supported<cid>s),<PDP_type>,,(list of supported <d_comp>s),(list of supported <h_comp>s) OK ERROR
Read Command	Responses
AT+CGSOCKCONT?	+CGSOCKCONT: [<cid>, <PDP_type>, <APN>,<PDP_addr>, <d_comp>, <h_comp>[<CR><LF> +CGSOCKCONT: <cid>, <PDP_type>, <APN>, <PDP_addr>, <d_comp>, <h_comp>[...]] OK ERROR
Write Command	Responses
AT+CGSOCKCONT= <cid>[,<PDP_type> [,<APN>[,<PDP_addr> [,<d_comp>[,<h_comp>]]]]]	OK ERROR
Execution Command	Responses
AT+CGSOCKCONT	OK ERROR

#### Defined values

**<cid>**

(PDP Context Identifier) a numeric parameter which specifies a particular PDP context definition. The parameter is local to the TE-MT interface and is used in other PDP context-related commands. The range of permitted values (minimum value = 1) is returned by the test form of the command.

1...16

**<PDP\_type>**

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP     Internet Protocol  
 PPP   Point to Point Protocol  
 IPV6   Internet Protocol Version 6

**<APN>**

(Access Point Name) a string parameter which is a logical name that is used to select the GGSN or the external packet data network.

**<PDP\_addr>**

A string parameter that identifies the MT in the address space applicable to the PDP.

Read command will continue to return the null string even if an address has been allocated during the PDP startup procedure.

**<d\_comp>**

A numeric parameter that controls PDP data compression:

0   – off (default if value is omitted)  
 1    – on

**<h\_comp>**

A numeric parameter that controls PDP header compression:

0   – off (default if value is omitted)  
 1    – on

**Examples**

```
AT+CGSOCKCONT?
```

```
+CGSOCKDCONT: 1,"IP",,"", "0.0.0.0",0,0
```

```
OK
```

```
AT+CGSOCKCONT=?
```

```
+CGSOCKCONT: (1-16),"IP",,,(0,1),(0,1)
```

```
+CGSOCKCONT: (1-16),"PPP",,,(0,1),(0,1)
```

```
+CGSOCKCONT: (1-16),"IPV6",,,(0,1),(0,1)
```

```
OK
```

**18.2 AT+CSOCKSETPN Set active PDP context's profile number****Description**

The command sets default active PDP context's profile number. When we activate PDP by using [AT+NETOPEN](#) command, we need use the default profile number, and the context of this profile is set by [AT+CGSOCKCONT](#) command.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CSOCKSETPN=?	+CSOCKSETPN: (list of supported <a href="#">&lt;profile_number&gt;</a> s) OK ERROR
Read Command	Responses
AT+CSOCKSETPN?	+CSOCKSETPN: <a href="#">&lt;profile_number&gt;</a> OK ERROR
Write Command	Responses
AT+CSOCKSETPN= <a href="#">&lt;profile_number&gt;</a>	OK ERROR
Execution Command	Responses
AT+CSOCKSETPN	OK ERROR

## Defined values

[<profile\\_number>](#)

A numeric parameter that identifies default profile number, the range of permitted values is one to sixteen.

1...16

## Examples

```
AT+CSOCKSETPN=1
```

```
OK
```

## 18.3 AT+CSOCKAUTH Set type of authentication for PDP-IP connections of socket

### Description

The command is used to set type of authentication for PDP-IP connections of socket.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CSOCKAUTH=?	+CSOCKAUTH:(range of supported <cid>s),(list of supported <auth_type> s), <passwd_len>,<user_len> OK ERROR +CME ERROR: <err>
Read Command	Responses
AT+CSOCKAUTH?	+CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> +CSOCKAUTH: <cid>,<auth_type>[,<user>]<CR><LF> ... OK ERROR +CME ERROR: <err>
Write Command	Responses
AT+CSOCKAUTH=<cid> [,<auth_type>[,<passwd> [,<user>]]]	OK ERROR +CME ERROR: <err>
Execution Command	Responses
AT+CSOCKAUTH	OK ERROR +CME ERROR: <err>

## Defined values

<cid>

Parameter specifies a particular PDP context definition. This is also used in other PDP context-related commands.

1...16

<auth\_type>

Indicates the types of authentication to be used for the specified context. If CHAP is selected another parameter <passwd> needs to be specified. If PAP is selected two additional parameters <passwd> and <user> need to be specified.

- 0 – none
- 1 – PAP
- 2 – CHAP
- 3 – PAP or CHAP

<passwd>	Parameter specifies the password used for authentication.
<user>	Parameter specifies the user name used for authentication.
<passwd_len>	The maximum length of the password.
<user_len>	The maximum length of the user name.

### Examples

```

AT+CSOCKAUTH=?
+CSOCKAUTH: (1-16),(0-3),132,132
OK
AT+CSOCKAUTH=1,2,"SIMCOM","123"
OK

```

## 18.4 AT+CGSOCKQREQ Quality of service profile (requested)

### Description

The command allows the TE to specify a Quality of Service Profile that is used when the MT sends an Activate PDP Context Request message to the network.. A special form of the set command ([AT+CGSOCKQREQ=<cid>](#)) causes the requested profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to [AT+CGSOCKCONT](#)).

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGSOCKQREQ=?	+CGSOCKQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGSOCKQREQ: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [...] OK
	ERROR
Read Command	Responses

AT+CGSOCKQREQ?	+CGSOCKQREQ: [ <a href="#">&lt;cid&gt;</a> , <a href="#">&lt;precedence &gt;</a> , <a href="#">&lt;delay&gt;</a> , <a href="#">&lt;reliability&gt;</a> , <a href="#">&lt;peak&gt;</a> , <a href="#">&lt;mean&gt;</a> ][<CR><LF> +CGSOCKQREQ: <a href="#">&lt;cid&gt;</a> , <a href="#">&lt;precedence &gt;</a> , <a href="#">&lt;delay&gt;</a> , <a href="#">&lt;reliability&gt;</a> , <a href="#">&lt;peak&gt;</a> , <a href="#">&lt;mean&gt;</a> [...]] OK ERROR
Write Command	Responses
AT+CGSOCKQREQ= <a href="#">&lt;cid&gt;</a> [, <a href="#">&lt;precedence&gt;</a> [, <a href="#">&lt;delay&gt;</a> [, <a href="#">&lt;reliability&gt;</a> [, <a href="#">&lt;peak&gt;</a> [, <a href="#">&lt;mean&gt;</a> ]]]]]	OK ERROR
Execution Command	Responses
AT+CGSOCKQREQ	OK ERROR

## Defined values

[<cid>](#)

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

[<PDP\\_type>](#)

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol  
PPP Point to Point Protocol  
IPV6 Internet Protocol Version 6

[<precedence>](#)

A numeric parameter which specifies the precedence class:

0 – network subscribed value  
1 – high priority  
2 – normal priority  
3 – low priority

[<delay>](#)

A numeric parameter which specifies the delay class:

0 – network subscribed value  
1 – delay class 1  
2 – delay class 2  
3 – delay class 3  
4 – delay class 4

[<reliability>](#)

A numeric parameter which specifies the reliability class:

0 – network subscribed value

- 1 – Non real-time traffic,error-sensitive application that cannot cope with data loss
- 2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss
- 3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-SM,and SMS
- 4 – Real-time traffic,error-sensitive application that can cope with data loss
- 5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

- 0 – network subscribed value
- 1 – Up to 1000 (8 kbit/s)
- 2 – Up to 2000 (16 kbit/s)
- 3 – Up to 4000 (32 kbit/s)
- 4 – Up to 8000 (64 kbit/s)
- 5 – Up to 16000 (128 kbit/s)
- 6 – Up to 32000 (256 kbit/s)
- 7 – Up to 64000 (512 kbit/s)
- 8 – Up to 128000 (1024 kbit/s)
- 9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

- 0 – network subscribed value
- 1 – 100 (~0.22 bit/s)
- 2 – 200 (~0.44 bit/s)
- 3 – 500 (~1.11 bit/s)
- 4 – 1000 (~2.2 bit/s)
- 5 – 2000 (~4.4 bit/s)
- 6 – 5000 (~11.1 bit/s)
- 7 – 10000 (~22 bit/s)
- 8 – 20000 (~44 bit/s)
- 9 – 50000 (~111 bit/s)
- 10 – 100000 (~0.22 kbit/s)
- 11 – 200000 (~0.44 kbit/s)
- 12 – 500000 (~1.11 kbit/s)
- 13 – 1000000 (~2.2 kbit/s)
- 14 – 2000000 (~4.4 kbit/s)
- 15 – 5000000 (~11.1 kbit/s)
- 16 – 10000000 (~22 kbit/s)
- 17 – 20000000 (~44 kbit/s)
- 18 – 50000000 (~111 kbit/s)
- 31 – optimization

## Examples

```

AT+CGSOCKQREQ?
+CGSOCKQREQ:
OK
AT+CGSOCKQREQ=?
+CGSOCKQREQ: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQREQ: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK

```

## 18.5 AT+CGSOCKEQREQ 3G quality of service profile (requested)

### Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allows the TE to specify a Quality of Service Profile for the context identified by the context identification parameter <cid> which is used when the MT sends an Activate PDP Context Request message to the network.

A special form of the write command, [AT+CGSOCKEQREQ=<cid>](#) causes the requested profile for context number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to [AT+CGSOCKCONT](#)).

SIM PIN	References
YES	3GPP TS 27.007

### Syntax

Test Command	Responses
AT+CGSOCKEQREQ=?	+CGSOCKEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate DL>s),(list of supported <Delivery order>s),(list of supported <Maximum SDU size>s),(list of supported <SDU error ratio>s),(list of supported <Residual bit error Ratio>s),(list of supported <Delivery of erroneous SDUs>s),(list of Supported <Transfer delay>s),(list of supported <Traffic handling priority>s) [<CR><LF> +CGSOCKEQREQ: <PDP_type>,(list of supported <Traffic class>s),(list of supported <Maximum bitrate UL>s),(list of supported <Maximum bitrate DL>s),(list of supported <Guaranteed bitrate UL>s),(list of supported <Guaranteed bitrate



<cid>

Parameter specifies a particular PDP context definition. The parameter is also used in other PDP context-related commands.

1...16

<Traffic class>

- 0 – conversational
- 1 – streaming
- 2 – interactive
- 3 – background
- 4 – subscribed value

<Maximum bitrate UL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(up-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. [AT+CGSOCKEQREQ=...,32,...](#)).

- 0 subscribed value
- 1kbps...63kbps – value needs to be divisible by 1 without remainder
- 64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps
- 576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. [AT+CGSOCKEQREQ=...,32,...](#)).

- 0 subscribed value
- 1kbps...63kbps – value needs to be divisible by 1 without remainder
- 64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps
- 576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g. [AT+CGSOCKEQREQ=...,32,...](#)).

- 0 subscribed value
- 1kbps...63kbps – value needs to be divisible by 1 without remainder
- 64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps
- 576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g. [AT+CGSOCKEQREQ=...,32,...](#)).

- 0 subscribed value
- 1kbps...63kbps – value needs to be divisible by 1 without remainder
- 64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps
- 576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

<Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

- 0 – no
- 1 – yes
- 2 – subscribed value

<Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets.

- 0 – subscribed value
- 10...1520 (value needs to be divisible by 10 without remainder)

<SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. As an example a target SDU error ratio of  $5 \times 10^{-3}$  would be specified as “5E3”(e.g. AT+CGSOCKEQREQ=...,”5E3”,...).

- “0E0” – subscribed value
- “1E2”
- “7E3”
- “1E3”
- “1E4”
- “1E5”
- “1E6”
- “1E1”

<Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs. As an example a target residual bit error ratio of  $5 \times 10^{-3}$  would be specified as “5E3”(e.g. AT+CGSOCKEQREQ=...,”5E3”,...).

- “0E0” – subscribed value
- “5E2”
- “1E2”
- “5E3”
- “4E3”
- “1E3”
- “1E4”
- “1E5”
- “1E6”
- “6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

- 0 – no
- 1 – yes
- 2 – no detect
- 3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its

delivery at the other SAP,in milliseconds.

<u>0</u>	–	subscribed value
10...150	–	value needs to be divisible by 10 without remainder
200...950	–	value needs to be divisible by 50 without remainder
1000...4000	–	value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

<u>0</u>	–	subscribed value
1	–	
2	–	
3	–	

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP	Internet Protocol
PPP	Point to Point Protocol
IPV6	Internet Protocol Version 6

## Examples

```
AT+CGSOCKEQREQ?
```

```
+CGSOCKEQREQ:
```

```
OK
```

```
AT+CGSOCKEQREQ=?
```

```
+CGSOCKEQREQ: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1",
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4",
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
```

```
+CGSOCKEQREQ: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1",
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4",
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
```

```
+CGSOCKEQREQ: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1",
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4",
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
```

```
OK
```

## 18.6 AT+CGSOCKQMIN Quality of service profile (minimum acceptable)

### Description

The command allows the TE to specify a minimum acceptable profile which is checked by the MT against the negotiated profile returned in the Activate PDP Context Accept message. A special form of the set command, `AT+CGSOCKQMIN=<cid>` causes the minimum acceptable profile for context

number <cid> to become undefined.

This command only affects the embedded socket related PDP context definition (refer to [AT+CGSOCKCONT](#)).

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CGSOCKQMIN=?	+CGSOCKQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s) [<CR><LF> +CGSOCKQMIN: <PDP_type>, (list of supported <precedence>s), (list of supported <delay>s), (list of supported <reliability>s) , (list of supported <peak>s), (list of supported <mean>s)[...] OK ERROR
Read Command	Responses
AT+CGSOCKQMIN?	+CGSOCKQMIN: [<cid>, <precedence >, <delay>, <reliability>, <peak>, <mean>]<CR><LF> +CGSOCKQMIN: <cid>, <precedence >, <delay>, <reliability.>, <peak>, <mean> [...]] OK ERROR
Write Command	Responses
AT+CGSOCKQMIN= <cid>[,<precedence> [,<delay>[,<reliability> [,<peak> [,<mean>]]]]]	OK ERROR
Execution Command	Responses
AT+CGSOCKQMIN	OK

## Defined values

<cid>

A numeric parameter which specifies a particular PDP context definition (see [AT+CGDCONT](#) command).

1...16

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

IP Internet Protocol

PPP Point to Point Protocol  
 IPV6 Internet Protocol Version 6

<precedence>

A numeric parameter which specifies the precedence class:

- 0 – network subscribed value
- 1 – high priority
- 2 – normal priority
- 3 – low priority

<delay>

A numeric parameter which specifies the delay class:

- 0 – network subscribed value
- 1 – delay class 1
- 2 – delay class 2
- 3 – delay class 3
- 4 – delay class 4

<reliability>

A numeric parameter which specifies the reliability class:

- 0 – network subscribed value
- 1 – Non real-time traffic,error-sensitive application that cannot cope with data loss
- 2 – Non real-time traffic,error-sensitive application that can cope with infrequent data loss
- 3 – Non real-time traffic,error-sensitive application that can cope with data loss, GMM/-SM,and SMS
- 4 – Real-time traffic,error-sensitive application that can cope with data loss
- 5 – Real-time traffic error non-sensitive application that can cope with data loss

<peak>

A numeric parameter which specifies the peak throughput class:

- 0 – network subscribed value
- 1 – Up to 1000 (8 kbit/s)
- 2 – Up to 2000 (16 kbit/s)
- 3 – Up to 4000 (32 kbit/s)
- 4 – Up to 8000 (64 kbit/s)
- 5 – Up to 16000 (128 kbit/s)
- 6 – Up to 32000 (256 kbit/s)
- 7 – Up to 64000 (512 kbit/s)
- 8 – Up to 128000 (1024 kbit/s)
- 9 – Up to 256000 (2048 kbit/s)

<mean>

A numeric parameter which specifies the mean throughput class:

- 0 – network subscribed value
- 1 – 100 (~0.22 bit/s)
- 2 – 200 (~0.44 bit/s)
- 3 – 500 (~1.11 bit/s)
- 4 – 1000 (~2.2 bit/s)

5	-	2000 (~4.4 bit/s)
6	-	5000 (~11.1 bit/s)
7	-	10000 (~22 bit/s)
8	-	20000 (~44 bit/s)
9	-	50000 (~111 bit/s)
10	-	100000 (~0.22 kbit/s)
11	-	200000 (~0.44 kbit/s)
12	-	500000 (~1.11 kbit/s)
13	-	1000000 (~2.2 kbit/s)
14	-	2000000 (~4.4 kbit/s)
15	-	5000000 (~11.1 kbit/s)
16	-	10000000 (~22 kbit/s)
17	-	20000000 (~44 kbit/s)
18	-	50000000 (~111 kbit/s)
31	-	optimization

## Examples

```

AT+CGSOCKQMIN?
+CGSOCKQMIN:
OK
AT+CGSOCKQMIN=?
+CGSOCKQMIN: "IP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "PPP",(0-3),(0-4),(0-5),(0-9),(0-18,31)
+CGSOCKQMIN: "IPV6",(0-3),(0-4),(0-5),(0-9),(0-18,31)
OK
  
```

## 18.7 AT+CGSOCKEQMIN 3G quality of service profile (minimum acceptable)

### Description

The test command returns values supported as a compound value.

The read command returns the current settings for each defined context for which a QOS was explicitly specified.

The write command allow the TE to specify a Quality of Service Profile for the context identified by the context identification parameter `<cid>` which is checked by the MT against the negotiated profile returned in the Activate/Modify PDP Context Accept message.

A special form of the write command, `AT+CGSOCKEQMIN=<cid>` causes the requested for context number `<cid>` to become undefined.

This command only affects the embedded socket related PDP context definition (refer to [AT+CGSOCKCONT](#)).

SIM PIN	References
YES	3GPP TS 27.007

## Syntax

Test Command	Responses
AT+CGSOCKEQMIN=?	<p>+CGSOCKEQMIN: &lt;PDP_type&gt;,(list of supported &lt;Traffic class&gt;s),(list of supported &lt;Maximum bitrate UL&gt;s),(list of supported &lt;Maximum bitrate DL&gt;s),(list of supported &lt;Guaranteed bitrate UL&gt;s),(list of supported &lt;Guaranteed bitrate DL&gt;s),(list of supported &lt;Delivery order&gt;s),(list of supported &lt;Maximum SDU size&gt;s),(list of supported &lt;SDU error ratio&gt;s),(list of supported &lt;Residual bit error Ratio&gt;s),(list of supported &lt;Delivery of erroneous SDUs&gt;s),(list of Supported &lt;Transfer delay&gt;s),(list of supported &lt;Traffic handling priority&gt;s) [&lt;CR&gt;&lt;LF&gt;</p> <p>+CGSOCKEQMIN: &lt;PDP_type&gt;,(list of supported &lt;Traffic class&gt;s),(list of supported &lt;Maximum bitrate UL&gt;s),(list of supported &lt;Maximum bitrate DL&gt;s),(list of supported &lt;Guaranteed bitrate UL&gt;s),(list of supported &lt;Guaranteed bitrate DL&gt;s),(list of supported &lt;Delivery order&gt;s),(list of supported &lt;Maximum SDU size&gt;s),(list of supported &lt;SDU error ratio&gt;s),(list of supported &lt;Residual bit error Ratio&gt;s),(list of supported &lt;Delivery of erroneous SDUs&gt;s),(list of Supported &lt;Transfer delay&gt;s),(list of supported &lt;Traffic handling priority&gt;s) [...]]</p> <p>OK</p>
Read Command	Responses
AT+CGSOCKEQMIN?	<p>+CGSOCKEQMIN: [&lt;cid&gt;,&lt;Traffic class&gt;,&lt;Maximum bitrate UL&gt;,&lt;Maximum bitrate DL&gt;,&lt;Guaranteed bitrate UL&gt;,&lt;Guaranteed bitrate DL&gt;,&lt;Delivery order&gt;,&lt;Maximum SDU size&gt;,&lt;SDU error ratio&gt;,&lt;Residual bit error ratio&gt;,&lt;Delivery of erroneous SDUs&gt;,&lt;Transfer Delay&gt;,&lt;Traffic handling priority&gt;][&lt;CR&gt;&lt;LF&gt;</p> <p>+CGSOCKEQMIN: &lt;cid&gt;,&lt;Traffic class&gt;,&lt;Maximum bitrate UL&gt;,&lt;Maximum bitrate DL&gt;,&lt;Guaranteed bitrate UL&gt;,&lt;Guaranteed bitrate DL&gt;,&lt;Delivery order&gt;,&lt;Maximum SDU size&gt;,&lt;SDU error ratio&gt;,&lt;Residual bit error ratio&gt;,&lt;Delivery of erroneous SDUs&gt;,&lt;Transfer Delay&gt;,&lt;Traffic handling priority&gt;[...]]</p> <p>OK</p>
Write Command	Responses

AT+CGSOCKEQMIN=<cid>[,<Traffic class>[,<Maximum bitrate UL>[,<Maximum bitrate DL>[,<Guaranteed bitrateUL>[,<Guaranteed bitrate DL>[,<Delivery order>[,<Maximum SDU size>[,<SDU error ratio>[,<Residual bit error ratio>[,<Delivery of erroneous SDUs>[,<Transfer delay>[,<Traffic handling priority>]]]]]]]]]]]]]]]]	OK
	ERROR
	+CME ERROR: <err>
Execution Command	Responses
AT+CGSOCKEQMIN	OK

### Defined values

#### <cid>

Parameter specifies a particular PDP context definition.The parameter is also used in other PDP context-related commands.

1...16

#### <Traffic class>

- 0 – conversational
- 1 – streaming
- 2 – interactive
- 3 – background
- 4 – subscribed value

#### <Maximum bitrate UL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(up-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQMIN=...,32,...). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576 kbps

#### <Maximum bitrate DL>

This parameter indicates the maximum number of kbits/s delivered to UMTS(down-link traffic)at a SAP.As an example a bitrate of 32kbit/s would be specified as 32(e.g. AT+CGSOCKEQMIN=...,32,...). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64 kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

#### <Guaranteed bitrate UL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(up-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.`AT+CGSOCKEQMIN=...,32,...`). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

#### <Guaranteed bitrate DL>

This parameter indicates the guaranteed number of kbit/s delivered to UMTS(down-link traffic)at a SAP(provided that there is data to deliver).As an example a bitrate of 32kbit/s would be specified as 32(e.g.`AT+CGSOCKEQMIN=...,32,...`). (refer TS 24.008 [8] subclause 10.5.6.5).

0 subscribed value

1kbps...63kbps – value needs to be divisible by 1 without remainder

64 kbps ...568kbps –value needs to be divisible by 8kbps with remainder 64kbps

576 kbps ...8640kbps –value needs to be divisible by 64kbps with remainder 576kbps

#### <Delivery order>

This parameter indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not.

0 – no

1 – yes

2 – subscribed value

#### <Maximum SDU size>

This parameter indicates the maximum allowed SDU size in octets. (refer TS 24.008 [8] subclause 10.5.6.5).

0 – subscribed value

10...1520 (value needs to be divisible by 10 without remainder)

#### <SDU error ratio>

This parameter indicates the target value for the fraction of SDUs lost or detected as erroneous.SDU error ratio is defined only for conforming traffic.As an example a target SDU error ratio of  $5 \times 10^{-3}$  would be specified as “5E3”(e.g.`AT+CGSOCKEQMIN=...,”5E3”,...`).

“0E0” – subscribed value

“1E2”

“7E3”

“1E3”

“1E4”

“1E5”

“1E6”

“1E1”

#### <Residual bit error ratio>

This parameter indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested,Residual bit error ratio indicates the bit error ratio in the delivered SDUs.As an example a target residual bit error ratio of  $5 \times 10^{-3}$  would be specified as “5E3”(e.g.

**AT+ CGSOCKEQMIN** =...,”5E3”,...).

- “0E0” – subscribed value
- “5E2”
- “1E2”
- “5E3”
- “4E3”
- “1E3”
- “1E4”
- “1E5”
- “1E6”
- “6E8”

<Delivery of erroneous SDUs>

This parameter indicates whether SDUs detected as erroneous shall be delivered or not.

- 0 – no
- 1 – yes
- 2 – no detect
- 3 – subscribed value

<Transfer delay>

This parameter indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the other SAP, in milliseconds. (refer TS 24.008 [8] subclause 10.5.6.5).

- 0 – subscribed value
- 10...150 – value needs to be divisible by 10 without remainder
- 200...950 – value needs to be divisible by 50 without remainder
- 1000...4000 – value needs to be divisible by 100 without remainder

<Traffic handling priority>

This parameter specifies the relative importance for handling of all SDUs belonging to the UMTS Bearer compared to the SDUs of the other bearers.

- 0 – subscribed value
- 1 –
- 2 –
- 3 –

<PDP\_type>

(Packet Data Protocol type) a string parameter which specifies the type of packet data protocol.

- IP Internet Protocol
- PPP Point to Point Protocol
- IPV6 Internet Protocol Version 6

**Examples**

*AT+CGSOCKEQMIN?*

*+ CGSOCKEQMIN:*

*OK*

*AT+CGSOCKEQMIN =?*

```
+CGSOCKEQMIN: "IP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQMIN: "PPP",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
+CGSOCKEQMIN: "IPV6",(0-4),(0-384),(0-384),(0-384),(0-384),(0-2),(0-1520),("0E0","1E1"
,"1E2","7E3","1E3","1E4","1E5","1E6"),("0E0","5E2","1E2","5E3","4E3","1E3","1E4"
,"1E5","1E6","6E8"),(0-3),(0,100-4000),(0-3)
OK
```

## 18.8 AT+IPADDR Inquire socket PDP address

### Description

The command inquires the IP address of current active socket PDP.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+IPADDR=?	OK
Execution Command	Responses
AT+IPADDR	+IPADDR: <ip_address> OK
	+IP ERROR:<err_info> ERROR
	ERROR

### Defined values

<ip\_address>

A string parameter that identifies the IP address of current active socket PDP.

<err\_info>

A string parameter that displays the cause of occurring error.

### Examples

```
AT+IPADDR
+IPADDR: 10.71.155.118
OK
```

## 18.9 AT+NETOPEN Open socket

### Description

The command opens socket, and it can also activate the socket PDP context at the same time. For the write command, if the first and second parameters are empty, the third parameter must exist; if the third parameter is empty, the first and second parameters must exist.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+NETOPEN=?	+NETOPEN: (list of supported <a href="#">&lt;sock_type&gt;</a> s), (range of supported <a href="#">&lt;port&gt;</a> s), (list of supported <a href="#">&lt;mode&gt;</a> s) OK ERROR +CME ERROR: <a href="#">&lt;err&gt;</a>
Read Command	Responses
AT+NETOPEN?	+NETOPEN: <a href="#">&lt;net_state&gt;</a> , <a href="#">&lt;mode&gt;</a> OK ERROR +CME ERROR: <a href="#">&lt;err&gt;</a>
Write Command	Responses
AT+NETOPEN= <a href="#">[&lt;sock_type&gt;]</a> <a href="#">[, [&lt;port&gt;]</a> [ <a href="#">,&lt;mode&gt;</a> ]	Network opened OK +IP ERROR: <a href="#">&lt;err_info&gt;</a> ERROR +CME ERROR: <a href="#">&lt;err&gt;</a>

### Defined values

[<sock\\_type>](#)

a string parameter that identifies the type of transmission protocol.

TCP – Transfer Control Protocol

UDP – User Datagram Protocol

When it is “TCP” and only one parameter exists, the AT+TCPCLOSE command can be used to close the socket created.

[<port>](#)

A numeric parameter that identifies the port of socket, the range of permitted values is 0 to 65535.

[<net\\_state>](#)

a numeric parameter that indicates the state of PDP context activation:

- 0 network close (deactivated)
- 1 network open(activated)

<mode>

a numeric parameter that module is used which mode. At present, it supports three mode, such as single-client, tcp-server and multi-client. if <mode> is 1, then <sock\_type> and <port> are ignored.

- 0 single-client or tcp-server
- 1 multi-client

<err\_info>

A string parameter that displays the cause of occurring error.

### Examples

```
AT+NETOPEN="TCP",80
```

```
Network opened
```

```
OK
```

```
AT+NETOPEN=?
```

```
+NETOPEN: ("TCP", "UDP"), (0-65535), (0-1)
```

```
OK
```

```
AT+NETOPEN?
```

```
+NETOPEN: 1, 1
```

```
OK
```

## 18.10 AT+TCPCONNECT Establish TCP connection

### Description

The command establishes TCP connection with TCP server.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+TCPCONNECT =?	OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+TCPCONNECT= <server_IP>, <port>	Connect ok
	OK
	+IP ERROR: <err_info>
	ERROR

	Connect fail
	ERROR
	ERROR

## Defined values

<server_IP>
A string parameter that identifies the IP address of TCP server.The IP address format consists of 4 octets,separated by decimal point:"AAA.BBB.CCC.DDD".In the latest software version,it already Supports DNS query,so it may be a string like " <a href="http://www.google.cn">www.google.cn</a> ".
<port>
A numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.
<err_info>
A string parameter that displays the cause of occurring error.

## Examples

<i>AT+TCPCONNECT="192.168.0.1",80</i>
<i>OK</i>
<i>AT+TCPCONNECT="192.168.0.1",80</i>
<i>Connect fail</i>
<i>ERROR</i>
<i>AT+TCPCONNECT="www.google.cn",80</i>
<i>OK</i>

## 18.11 AT+TCPWRITE Send TCP data

### Description

The command sends TCP data when the TCP connection is established.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+TCPWRITE=?	OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses

AT+TCPWRITE=<length> <CR> <i>data for send</i>	OK  +TCPWRITE: <reqSendLength>, <cnfSendLength>  <i>If sending successfully:</i> Send ok
	+IP ERROR: <err_info> ERROR
	ERROR

### Defined values

<length>	a numeric parameter which indicates the length of sending data, it must be between 1 and 1024.
<reqSendLength>	a numeric parameter that requested number of data bytes to be transmitted.
<cnfSendLength>	a numeric parameter that confirmed number of data bytes to be transmitted.
-1	the connection is disconnected.
0	own send buffer or other side's congestion window are full.
<err_info>	A string parameter that displays the cause of occurring error.

### Examples

AT+TCPWRITE=12 >ABCDEFGHIJKL OK  +TCPWRITE: 12, 12  Send ok
---

## 18.12 AT+UDPSEND Send UDP data

### Description

The command sends UDP data.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+UDPSEND=?	OK
	ERROR
	+CME ERROR: <err>
Write Command	Responses
AT+UDPSEND=<length>,<IP_address>,<port><CR> <i>data for send</i>	OK
	+UDPSEND: <reqSendLength>, <cnfSendLength>
	+IP ERROR: <err_info>
	ERROR
	ERROR

## Defined values

<length>

a numeric parameter which indicates the length of sending data, it must be between 1 and 1024.

<IP\_address>

A string parameter that identifies the IP address of receiver. The IP address format consists of 4 octets, separated by decimal point: "AAA.BBB.CCC.DDD". In the latest software version, it already supports DNS query, so it may be a string like "[www.google.cn](http://www.google.cn)".

<port>

A numeric parameter that identifies the port of receiver, the range of permitted values is 0 to 65535.

<reqSendLength>

a numeric parameter that requested number of data bytes to be transmitted.

<cnfSendLength>

a numeric parameter that confirmed number of data bytes to be transmitted.

-1 the connection is disconnected.

0 own send buffer or other side's congestion window are full.

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

```
AT+UDPSEND=12,"192.168.0.1",80
```

```
>ABCDEFGHIJKL
```

```
OK
```

```
+UDPSEND: 12, 12
```

## 18.13 AT+SERVERSTART Startup TCP server

### Description

The command starts up TCP server, and the server can receive the request of TCP client. After the command executes successfully, an unsolicited result code is returned when a client tries to connect with module and module accepts request. The unsolicited result code is +CLIENT: <client\_IP>:<port>.

**NOTE:** If the module is as a server, this need the Operators to support.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+SERVERSTART=?	OK ERROR
Read Command	Responses
AT+SERVERSTART?	+SERVERSTART: <state> OK +IP ERROR: <err_info> ERROR
Write Command	Responses
AT+SERVERSTART=<port> [<index>]	OK +IP ERROR: <err_info> ERROR
Execution Command	Responses
AT+SERVERSTART	+IP ERROR: <err_info> ERROR OK

## Defined values

<client_IP>	A string parameter that identifies the IP address of client.
<port>	The port to listen on. This parameter can only be used when AT+NETOPEN="TCP" or AT+NETOPEN=,1 is launched.
<index>	The TCP server's index which to start. This parameter can only be used when AT+NETOPEN=,1 is launched. The default value is 0.
<state>	The state of the server socket: - LISTENING - NOT LISTENING

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

```
AT+SERVERSTART
```

```
OK
```

```
At+SERVERSTART? (single client mode)
```

```
+SERVERSTART: LISTENING
```

```
OK
```

```
At+SERVERSTART? (multi client mode)
```

```
+SERVERSTART: 0, LISTENING
```

```
+SERVERSTART: 1, NOT LISTENING
```

```
OK
```

## 18.14 AT+LISTCLIENT List all of clients' information

### Description

The command lists all of clients' information, and these clients have already been connected with TCP server.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+LISTCLIENT=?	OK
Write Command	Responses
AT+LISTCLIENT	[+LISTCLIENT: <index1>, <IP_address>, <port>] ... [+LISTCLIENT: <indexN>, <IP_address>, <port>] OK
	+IP ERROR: <err_info> ERROR
	ERROR

### Defined values

<indexX>

A numeric parameter that identifies the index of client, the max number of client is ten, and the range of permitted values is 0 to 9.

<IP\_address>

A string parameter that identifies the IP address of client.

<port>

A numeric parameter that identifies the port of client, the range of permitted values is 0 to 65535.

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

AT+LISTCLIENT

+LISTCLIENT: 0, 10.71.34.32, 80

+LISTCLIENT: 1, 10.71.78.89, 1020

OK

## 18.15 AT+CLOSECLIENT Disconnect specified client

### Description

The command disconnects the specified client. If the client disconnects connection, an unsolicited result code is returned. The unsolicited result code is +IPCLOSE: <client\_index>, <close\_reason>, <remote\_IP>, <port>.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CLOSECLIENT=?	OK
Write Command	Responses
AT+CLOSECLIENT= <client_index>	OK
	+IP ERROR: <err_info>
	ERROR
	ERROR

### Defined values

<client\_index>

A numeric parameter that identifies the client index which will be closed, The allocated index may be read using command [AT+LISTCLIENT](#).

<close\_reason>

a numeric parameter that identifies reason that the connection closed.

- 1 remote side sends a request of closing first.
- 2 reset the connection because of timeout of sending data, or other reasons.

<remote\_IP>

A string parameter that identifies the IP address of client.

<port>

A numeric parameter that identifies the port of client.

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

```
AT+CLOSECLIENT=0
```

```
OK
```

## 18.16 AT+ACTCLIENT Activate specified client

### Description

The command activates the specified client, when the client is activated, the client is able to receive data from TCP server or send data to the TCP server.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+ACTCLIENT=?	OK
Write Command	Responses
AT+ACTCLIENT= <client_index>	OK
	+IP ERROR: <err_info>
	ERROR
	ERROR

### Defined values

<client\_index>

A numeric parameter that identifies the client index which will be closed. The allocated index may be read using command [AT+LISTCLIENT](#).

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

```
AT+ACTCLIENT=0
OK
```

## 18.17 AT+NETCLOSE Close socket

### Description

The command closes socket, if the socket is opened for a server, then it will disconnect all of clients' connection that is connected with the server.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+NETCLOSE=?	OK
Execution Command	Responses
AT+NETCLOSE	OK
	+IP ERROR: <err_info>
	ERROR
	ERROR

### Defined values

<err\_info>  
A string parameter that displays the cause of occurring error.

### Examples

```
AT+NETCLOSE
Network closed
OK
```

## 18.18 AT+CIPHEAD Add an IP head when receiving data

### Description

The command is used to add an IP head when receiving data.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CIPHEAD=?	+CIPHEAD: (list of supported<mode>s) OK
Read Command	Responses
AT+CIPHEAD?	+CIPHEAD: <mode> OK
Write Command	Responses
AT+CIPHEAD=<mode>	OK ERROR
Execution Command	Responses
AT+CIPHEAD	<i>Set default value:</i> OK

### Defined values

<mode>

a numeric parameter which indicates whether adding an IP header to received data or not

0 – not add IP header

1 – add IP header, the format is “+IPD(data length)”

### Examples

```
AT+CIPHEAD=?
```

```
+CIPHEAD: (0-1)
```

```
OK
```

```
AT+CIPHEAD=0
```

```
OK
```

## 18.19 AT+CIPSRIP Set whether display IP address and port of sender when receiving data

### Description

The command is used to set whether display IP address and port of sender when receiving data.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
--------------	-----------

AT+CIPSRIP=?	+CIPSRIP: (list of supported <mode>s) OK
Read Command	Responses
AT+CIPSRIP?	+CIPSRIP: <mode> OK
Write Command	Responses
AT+CIPSRIP=<mode>	OK ERROR
Execution Command	Responses
AT+CIPSRIP	<i>Set default value:</i> OK

### Defined values

<mode>

a numeric parameter which indicates whether show the prompt of where the data received or not before received data.

0 – do not show the prompt

1 – show the prompt, the format is as follows:

“RECV FROM:<IP ADDRESS>:<PORT>”

### Examples

AT+CIPSRIP=?

+CIPSRIP: (0-1)

OK

AT+CIPSRIP=1

OK

## 18.20 AT+CIPCCFG Configure parameters of socket

### Description

The command is used to configure parameters of socket. For the write command, the parameter part cannot be empty.

SIM PIN	References
---------	------------

NO	Vendor
----	--------

### Syntax

Test Command
--------------

Responses
-----------

AT+CIPCCFG=?	+CIPCCFG: (list of supported <NmRetry>s),(list of supported <DelayTm>s),(list of supported <Ack>s), (list of supported <errMode>s),(list of supported <HeaderType>s)  OK
Read Command	Responses
AT+CIPCCFG?	+CIPCCFG:<NmRetry>,<DelayTm>,<Ack>,<errMode>,<HeaderType> OK
Write Command	Responses
AT+CIPCCFG= [<NmRetry>][,<DelayTm>] [,<Ack>][,<errMode>][,<HeaderType>]]]]	OK ERROR
Execution Command	Responses
AT+CIPCCFG	<i>Set default value:</i> OK

## Defined values

### <NmRetry>

a numeric parameter which is number of retransmission to be made for an IP packet.The default value is 10.

### <DelayTm>

a numeric parameter which is number of milliseconds to delay to output data of Receiving.The default value is 0.

### <Ack>

a numeric parameter which sets whether reporting a string “Send ok” when sending some data as a tcp connection.

- 0 not reporting
- 1 reporting

### <errMode>

a numeric parameter which sets mode of reporting error result code.

- 0 error result code with numeric values
- 1 error result code with string values

### < HeaderType >

a numeric parameter that select which data header of receiving data, it only takes effect in multi-client mode.

- 0 add data header, the format is “+IPD(data length)”
- 1 add data header, the format is “+RECEIVE,<link num>,<data length>”

## Examples

```

AT+CIPCCFG=?
+CIPCCFG: (0-10),(0-1000),(0-1),(0-1),(0-1)
OK
AT+CIPCCFG=3,500,1,1,1
OK
  
```

## 18.21 AT+CIOPEN Establish connection in multi-client mode

### Description

The command is used to establish a connection with TCP server and UDP server, The sum of all of connections are 10.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CIOPEN=?	+CIOPEN: (list of supported <a href="#">&lt;link_num&gt;s</a> ), (list of supported <a href="#">&lt;type&gt;s</a> ) OK ERROR +CME ERROR: <a href="#">&lt;err&gt;</a>
Read Command	Responses
AT+CIOPEN?	+CIOPEN: <a href="#">&lt;link_num&gt;</a> [ <a href="#">,&lt;type&gt;</a> , <a href="#">,&lt;serverIP&gt;</a> , <a href="#">,&lt;serverPort&gt;</a> , <a href="#">,&lt;index&gt;</a> ] +CIOPEN: <a href="#">&lt;link_num&gt;</a> [ <a href="#">,&lt;type&gt;</a> , <a href="#">,&lt;serverIP&gt;</a> , <a href="#">,&lt;serverPort&gt;</a> , <a href="#">,&lt;index&gt;</a> ] [...] OK +IP ERROR: <a href="#">&lt;err_info&gt;</a> ERROR +CME ERROR: <a href="#">&lt;err&gt;</a>
Write Command	Responses
AT+CIOPEN= <a href="#">&lt;link_num&gt;</a> , "TCP", <a href="#">,&lt;serverIP&gt;</a> , <a href="#">,&lt;serverPort&gt;</a> [ <a href="#">,&lt;localPort&gt;</a> ]	Connect ok( <i>if tcp connect</i> ) OK +IP ERROR: <a href="#">&lt;err_info&gt;</a> ERROR +CME ERROR: <a href="#">&lt;err&gt;</a>
AT+CIOPEN= <a href="#">&lt;link_num&gt;</a> , "UDP", <a href="#">,&lt;localPort&gt;</a>	OK( <i>if udp open</i> ) +IP ERROR: <a href="#">&lt;err_info&gt;</a> ERROR

```
+CME ERROR: <err>
```

## Defined values

<link\_num>

a numeric parameter that identifies a connection. the range of permitted values is 0 to 9.

<type>

a string parameter that identifies the type of transmission protocol.

TCP Transfer Control Protocol

UDP User Datagram Protocol

<serverIP>

A string parameter that identifies the IP address of server. The IP address format consists of 4 octets, separated by decimal point: "AAA.BBB.CCC.DDD". In the latest software version, it already supports DNS query, so it may be a string like "[www.google.cn](http://www.google.cn)".

<serverPort>

a numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.

**NOTE:** When open port as TCP, the port must be the opened TCP port;

When open port as UDP, the port may be any port.

But, for Qualcomm, connecting the port 0 is an invalid operation.

<localPort>

a numeric parameter that identifies the port of local socket, the range of permitted values is 0 to 65535.

<index>

a numeric parameter that identifies the server index that the client linked when as a TCP server.

-1 Not as a TCP server

0-1 TCP server index

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

```
AT+CIOPEN=0,"TCP","116.228.221.51",100
```

```
Connect ok
```

```
OK
```

```
AT+CIOPEN=1,"UDP",,,8080
```

```
OK
```

```
AT+CIOPEN=?
```

```
+CIOPEN: (0-9), ("TCP", "UDP")
```

```
OK
```

```
AT+CIOPEN?
```

```
+CIOPEN: 0, "TCP", "116.228.221.51", 100, -1
```

```
+CIOPEN: 1
```

```
+CIOPEN: 2
+CIOPEN: 3
+CIOPEN: 4
+CIOPEN: 5
+CIOPEN: 6
+CIOPEN: 7
+CIOPEN: 8
+CIOPEN: 9
OK
AT+CIOPEN=0,"TCP","www.google.cn",80
Connect ok
OK
```

## 18.22 AT+CIPSEND Send data in multi-client mode

### Description

The command sends some data to remote host in multi-client mode.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CIPSEND=?	+CIPSEND: (list of supported <link_num>s), (list of supported <length >s) OK +IP ERROR: <err_info> ERROR +CME ERROR: <err>
Read Command	Responses
AT+CIPSEND?	OK +CME ERROR: <err>
Write Command	Responses
AT+CIPSEND=<link_num>,<length><CR> <i>data for send</i>	OK +CIPSEND: <reqSendLength>, <cnfSendLength>
(This format is for TCP connect)	<i>If sending successfully(tcp connect):</i> Send ok +IP ERROR: <err_info> ERROR

	+CME ERROR: <err>
AT+CIPSEND=<link_num>,<length>,<serverIP>,<serverPort><CR> <i>data for send</i>	<i>If sending successfully(udp sending):</i> OK +CIPSEND: <reqSendLength>, <cnfSendLength>
(This format is for UDP connect)	+IP ERROR: <err_info> ERROR
	+CME ERROR: <err>

## Defined values

<link\_num>

a numeric parameter that identifies a connection. the range of permitted values is 0 to 9.

<length>

a numeric parameter which indicates the length of sending data, it must be between 1 and 1024.

<serverIP>

A string parameter that identifies the IP address of server. The IP address format consists of 4 octets, separated by decimal point: "AAA.BBB.CCC.DDD". In the latest software version, it already supports DNS query, so it may be a string like "www.google.cn".

<serverPort>

a numeric parameter that identifies the port of TCP server, the range of permitted values is 0 to 65535.

**NOTE:** When open port as TCP, the port must be the opened TCP port;

When open port as UDP, the port may be any port.

But, for Qualcomm, connecting the port 0 is an invalid operation.

<reqSendLength>

a numeric parameter that requested number of data bytes to be transmitted.

<cnfSendLength>

a numeric parameter that confirmed number of data bytes to be transmitted.

-1 the connection is disconnected.

0 own send buffer or other side's congestion window are full.

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

```
AT+CIPSEND=0,1
```

```
> S
```

```
OK
```

```
+CIPSEND: 1, 1
```

```
Send ok
```

```
AT+CIPSEND=1,1,"116.236.221.75",6775
```

```

> S
OK

+CIPSEND: 1, 1

Send ok
AT+CIPSEND=?
+CIPSEND: (0-9), (1-1024)
OK

```

## 18.23 AT+CIPCLOSE Close connection in Multi-client mode

### Description

The command closes a specified connection in multi-client mode.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CIPCLOSE =?	+CIPCLOSE: (list of supported <link_num>s) OK +CME ERROR: <err>
Read Command	Responses
AT+CIPCLOSE ?	+CIPCLOSE:<link0_state>,<link1_state>,<link2_state>,<link3_state>,<link4_state>,<link5_state>,<link6_state>,<link7_state>,<link8_state>,<link9_state> OK +IP ERROR: <err_info> ERROR +CME ERROR: <err>
Write Command	Responses
AT+CIPCLOSE= <link_num>	OK +IP ERROR: <err_info> ERROR +CME ERROR: <err>

### Defined values

<link\_num>

a numeric parameter that identifies a connection. the range of permitted values is 0 to 9.

<linkx\_state>

a numeric parameter that identifies state of <link\_num>. the range of permitted values is 0 to 1.

0 disconnected

1 connected

<err\_info>

A string parameter that displays the cause of occurring error.

## Examples

AT+CIPCLOSE?

+CIPCLOSE: 1, 0, 0, 0, 0, 0, 0, 0, 0, 0

OK

AT+CIPCLOSE=?

+CIPCLOSE: (0-9)

OK

AT+CIPCLOSE=0

OK

## 18.24 AT+CDNSGIP Query the IP address of given domain name

### Description

The command is used to query the IP address of given domain name.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CDNSGIP=?	OK
Write Command	Responses
AT+CDNSGIP=<domain name>	<p><i>If successful, return:</i></p> <p>+CDNSGIP: 1,&lt;domain name&gt;,&lt;IP address&gt;</p> <p>OK</p> <p><i>If fail, return:</i></p> <p>+CDNSGIP: 0,&lt;dns error code&gt;</p> <p>ERROR</p> <p>ERROR</p>

### Defined values

<domain name>

A string parameter (string should be included in quotation marks) which indicates the domain name.

<IP address>

A string parameter (string should be included in quotation marks) which indicates the IP address corresponding to the domain name.

<dns error code>

A numeric parameter which indicates the error code.

10 DNS GENERAL ERROR

## Examples

```
AT+CDNSGIP=?
```

```
OK
```

```
AT+CDNSGIP="www.google.com"
```

```
+CDNSGIP: 1, "www.google.com", "203.208.39.99"
```

```
OK
```

## 18.25 AT+CDNSGHNAME Query the domain name of given IP address

### Description

The command is used to query the domain name of given IP address.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CDNSGHNAME=?	OK
Write Command	Responses
AT+CDNSGHNAME=<IP address>	<p><i>If successful, return:</i></p> <p>+CDNSGHNAME: &lt;index&gt;,&lt;domain name&gt;,&lt;IP address&gt;</p> <p>OK</p> <p><i>If fail, return:</i></p> <p>+CDNSGHNAME: 0,&lt;dns error code&gt;</p> <p>ERROR</p> <p>ERROR</p>

### Defined values

<domain name>

A string parameter (string should be included in quotation marks) which indicates the domain name.

<IP address>

A string parameter (string should be included in quotation marks) which indicates the IP address corresponding to the domain name.

<dns error code>

A numeric parameter which indicates the error code.

10 DNS GENERAL ERROR

<index>

A numeric parameter which indicates DNS result index. This value is always 1 if performing successfully. Currently only the first record returned from the DNS server will be reported.

### Examples

```
AT+CDNSGNAME=?
```

```
OK
```

```
AT+CDNSGNAME=" 58.32.231.148"
```

```
+CDNSGNAME: 1, "mail.sim.com", "58.32.231.148"
```

```
OK
```

## 18.26 AT+CIPMODE Select TCPIP application mode

### Description

The command is used to select **TCPIP** application modes that includes two modes(normal mode and transparent mode).The default mode is normal mode.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CIPMODE=?	+CIPMODE: (list of supported <mode>s) OK
Read Command	Responses
AT+CIPMODE?	+CIPMODE: <mode> OK
Write Command	Responses
AT+CIPMODE=<mode>	OK ERROR
Execution Command	Responses

AT+CIPMODE	Set default value (<mode>=0) : OK
------------	--------------------------------------

### Defined values

<mode>
0 – Normal mode
1 – Transparent mode

### Examples

AT+CIPMODE?
+CIPMODE: 1
OK
AT+CIPMODE=1
OK
AT+CIPMODE=?
+CIPMODE: (0-1)
OK
AT+CIPMODE
OK

## 18.27 AT+CIPSTAT Statistic the total size of data sent or received

### Description

The command is used to statistics the total size of data sent or received for a socket in multiple socket mode(Only valid for client mode).

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CIPSTAT=?	+CIPSTAT: (list of supported <link_num>s) OK
Write Command	Responses
AT+CIPSTAT=<link_num>	+CIPSTAT: <sent_size>, <recv_size> OK
	+IP ERROR: <err_info> ERROR

### Defined values

< link_num>
a numeric parameter that identifies a connection. the range of permitted values is 0 to 9.
<sent_size>
Total size of sent data.
<recv_size>
Total size of received data.
<err_info>
A string parameter that displays the cause of occurring error.

### Examples

```

AT+CIPSTAT=0
+CIPSTAT: 10, 20
OK
AT+CIPSTAT=?
+CIPSTAT: (0-9)
OK

```

## 18.28 AT+CTCPFIN Wait for TCP\_FIN in TCP\_FINWAIT2 state

### Description

The command is used to configure whether the module should wait for TCP\_FIN in TCP\_FINWAIT2 state.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CTCPFIN=?	+CTCPFIN: (list of supported <TCP_FIN_Enable>s),(list of supported <DelayTm>s)  OK
Read Command	Responses
AT+CTCPFIN?	+CTCPFIN:<TCP_FIN_Enable>,<DelayTm> OK
Write Command	Responses
AT+CTCPFIN= <TCP_FIN_Enable>, <DelayTm>	OK  ERROR

## Defined values

< TCP\_FIN\_Enable >

a numeric parameter which sets whether waiting for TCP\_FIN in TCP\_FINWAIT2 state.

0 not waiting

1 waiting

<DelayTm>

a numeric parameter which is number of seconds to delay before closing the PS network. This parameter only affects the AT+NETCLOSE command when using single TCP/UDP mode.

## Examples

```
AT+CTCFIN=?
```

```
+CTCFIN: (0,1),(0-10)
```

```
OK
```

```
AT+CTCFIN=1,2
```

```
OK
```

## 18.29 AT+CENDUPPDP Enable duplicate PDP activation

### Description

The command is used to enable or disable duplicate PDPs activation with the same APN.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CENDUPPDP=?	+CENDUPPDP: (list of supported <DUP_PDP_Enable>s)  OK
Read Command	Responses
AT+CENDUPPDP?	+CENDUPPDP:<DUP_PDP_Enable> OK
Write Command	Responses
AT+CENDUPPDP= <DUP_PDP_Enable>	OK  ERROR

## Defined values

<DUP\_PDP\_Enable>

a numeric parameter which sets whether enable duplicate PDPs activation with the same APN.

- 0 disable
- 1 enable

### Examples

```
AT+CENDUPPDP=?
+CENDUPPDP: (0,1)
OK
AT+CENDUPPDP=1
OK
```

## 18.30 AT+CTCPKA Set TCP\_KEEP\_ALIVE parameters

### Description

The command is used to set TCP\_KEEP\_ALIVE parameters for TCP related AT commands.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CTCPKA=?	+CTCPKA: (list of supported <TCP_KA_Enable>s),(list of supported <KeepIdleTm>s) ,(list of supported <KeepAliveMaxTry>s)  OK
Read Command	Responses
AT+CTCPKA?	+CTCPKA:<TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry>  OK
Write Command	Responses
AT+CTCPKA= <TCP_KA_Enable>,<KeepIdleTm>,<KeepAliveMaxTry>	OK  ERROR

### Defined values

< TCP\_KA\_Enable >  
a numeric parameter which sets whether enable TCP\_KEEP\_ALIVE option.

- 0 disable

1 enable

<KeepIdleTm>

a numeric parameter which is number of minutes to delay after last time of sending TCP data. The range is 1 to 120.

<KeepAliveMaxTry>

Maximum times for sending Keep-Alive checking. The range is 1 to 10.

## Examples

AT+CTCPKA=?

+CTCPKA: (0,1),(1-120),(1-10)

OK

AT+CTCPKA=1,3,3

OK

## 18.31 AT+CPING Ping some destination address

### Description

The command is used to ping some destination address.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CPING=?	+CPING: IP address,(list of supported <dest_addr_type>s),(1-100) OK
Write Command	Responses
AT+CPING=<dest_addr>,<dest_addr_type>[,<num_pings>]	OK ERROR

### Defined values

<dest\_addr>

The destination is to be pinged; it can be an IP address (IPv4 or IPv6) or a domain name.

<dest\_addr\_type>

Integer type. Address family type (IPv4 or IPv6) of the destination address

1 – IPv4.

2 – IPv6.

<num\_pings>

Integer type. The num\_pings specifies the number of times the ping request (1-100) is to be sent. The default value is 4.

### Examples

```
AT+CPING=?
```

```
+CPING:10086;10010
```

```
OK
```

```
AT+CPING="www.baidu.com",1,4
```

```
+CPING: Pinging www.baidu.com with 64 bytes of data:
```

```
OK
```

```
+CPING: Reply from 119.75.218.45: bytes=64 time=626ms TTL=255
```

```
+CPING: Reply from 119.75.218.45: bytes=64 time=2069ms TTL=255
```

```
+CPING: Reply from 119.75.218.45: bytes=64 time=2001ms TTL=255
```

```
+PING: Request timed out.
```

```
+CPING: Ping statistics: Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
```

```
Approximate round trip times in milli-seconds: Minimum = 626ms, Maximum = 2069ms, Average = 1565ms
```

## 18.32 AT+CPINGSTOP Stop an ongoing ping session

### Description

The command is used to stop an ongoing ping session.

SIM PIN	References
YES	Vendor

### Syntax

Write Command	Responses
AT+CPINGSTOP	OK
	ERROR

### Examples

```
AT+CPINGSTOP
```

```
OK
```

## 18.33 AT+CTEUTP Set unknown incoming TCP packet echo

### Description

The command is used to enable or disable unknown incoming TCP packet echo.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CTEUTP=?	+CTEUTP: (list of supported <Echo_Unknown_TCP_Enable>s)  OK
Read Command	Responses
AT+CTEUTP?	+CTEUTP:<Echo_Unknown_TCP_Enable> OK
Write Command	Responses
AT+CTEUTP = <Echo_Unknown_TCP_Enable>	OK  ERROR

## Defined values

<Echo\_Unknown\_TCP\_Enable>

a numeric parameter which sets whether enable or disable unknown incoming TCP packet echo option.

- 0 disable
- 1 enable

## Examples

```
AT+CTEUTP=?
+CTEUTP: (0,1)
OK
AT+CTEUTP=1
OK
```

## 18.34 AT+CUPURE Set UDP port unreachable ICMP echo

### Description

The command is used to enable or disable UDP port unreachable echo.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CUPURE=?	+CUPURE: (list of supported <UDP_PORT_UNREACHABLE_Enable>s)  OK
Read Command	Responses
AT+CUPURE?	+CUPURE:< UDP_PORT_UNREACHABLE_Enable> OK
Write Command	Responses
AT+CUPURE= <UDP_PORT_UNREACHABLE_Enable>	OK  ERROR

## Defined values

<UDP\_PORT\_UNREACHABLE\_Enable>

a numeric parameter which sets whether enable or disable UDP port unreachable ICMP echo option.

0 disable

1 enable

## Examples

```
AT+CUPURE=?
```

```
+CUPURE: (0,1)
```

```
OK
```

```
AT+CUPURE=1
```

```
OK
```

## 18.35 AT+CINICMPALLOW Preferred ICMP filter

### Description

The command is used to filter the incoming ICMP packets that are not allowed.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
--------------	-----------

AT+CINICMPALLOW=?	+ CINICMPALLOW: (list of supported <mode>s) OK
Read Command	Responses
AT+CINICMPALLOW?	+CINICMPALLOW: <mode> OK
Write Command	Responses
AT+CINICMPALLOW=<mode>	OK ERROR

## Defined values

<mode>	
64bit number, the value is “1” << “<pos>”, then or by bit.	
<pos>	
Flag value from 0 to 63.	
Value:	
0	ICMP ECHO REPLY
3	ICMP DESTINATION UNREACH
4	ICMP SOURCE QUENCH
5	ICMP REDIRECT
8	ICMP ECHO REQUEST
9	MIP AGENT ADVERTISEMENT
10	MIP AGENT SOLICITATION
11	TIME-TO-ALIVE EXCEEDED
12	PARAMETER PROBLEM
13	ICMP TIMESTAMP
14	ICMP TIME REPLY
15	INFORMATION REQUEST
16	INFORMATION REPLY
17	ADDRESS MASK REQUEST
18	ADDRESS MASK REPLY
37	DOMAIN NAME REQUEST
38	DOMAIN NAME REPLY

## Examples

AT+CINICMPALLOW=0xFFFFFFFFFFFFEFFF
OK
AT+CINICMPALLOW?
+CINICMPALLOW: 0xFFFFFFFFFFFFEFFF
OK

## 18.36 AT+TCPCLOSE Close the TCP connection

### Description

The command closes TCP connection. This command can only be used when AT+NETOPEN="TCP" or AT+NETOPEN=,1 is launched.

SIM PIN	References
YES	Vendor

### Syntax

Execution Command	Responses
AT+TCPCLOSE[=<index>]	OK
	+IP ERROR: <err_info>
	ERROR
	ERROR

### Defined values

<index>

The TCP server's index which to be close. This parameter can only be used when AT+NETOPEN=,1 is launched. The default value is 0.

<err\_info>

A string parameter that displays the cause of occurring error.

### Examples

```
AT+TCPCLOSE
```

```
OK
```

## 18.37 Information elements related to TCP/IP

The following table lists information elements which may be returned. It should be noted that TCP/IP socket problems may occur or result may be executed.

Information	Description
Network opened	Indicate that the write command of <a href="#">AT+NETOPEN</a> has executed successfully.
Network not opened	Indicate that you should execute <a href="#">AT+NETOPEN</a> first.
Network is already opened	Indicate that the write command of <a href="#">AT+NETOPEN</a> has already executed successfully.

Port overflow	Indicate that input port is out of range.
Create socket failed	Indicate that socket has not been created successfully.
Bind port failed	Indicate that input port is already in use.
Connect ok	Indicate that establishing a connection successfully.
Connection is already created	Indicate that a connection has been already established.
Connect fail	Indicate that establishing a connection unsuccessfully
No clients connected	Indicate that module as TCP server has no any connection.
No active client	Indicate that you should execute <a href="#">AT+ACTCLIENT</a> first and select a connection.
Client index overflow	Indicate that input client's index is out of range.
Connection disconnected	Indicate that the remote end has closed the connection.
Socket closed	Indicate that socket is closed.
Network closed	Indicate that the write command of <a href="#">AT+NETCLOSE</a> has executed successfully.
Network is already closed	Indicate that network has been closed now.
Sending time out	Failed to send TCP or UDP data for timer expire.
Sending failure for network error	Failed to send data for network error
Open failure for network error	Failed to open network for network error.
Server is already listening	Server is already listening
+NETCLOSE: 1	Network is closed for network error

## 19 SIM Application Toolkit (SAT) Commands

### 19.1 AT+STIN SAT Indication

#### Description

Every time the SIM Application issues a Proactive Command, via the ME, the TA will receive an indication. This indicates the type of Proactive Command issued.

**AT+STGI** must then be used by the TA to request the parameters of the Proactive Command from the ME. Upon receiving the **+STGI** response from the ME, the TA must send **AT+STGR** to confirm the execution of the Proactive Command and provide any required user response, e.g. a selected menu item.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+STIN=?	OK
Read Command	Responses
AT+STIN?	+STIN: <cmd_id> OK

#### Unsolicited Result Codes

+STIN: <cmd\_id>

Proactive Command notification

- 21 – display text
- 22 – get inkey
- 23 – get input
- 24 – select item

+STIN: 25

Notification that SIM Application has returned to main menu. If user does any action in 2 minutes, application will return to main menu automatically.

VOICE CALL: BEGIN

Notification that SIM Application has originated a voice call.

#### Defined values

<cmd\_id>

- 21 – display text
- 22 – get inkey
- 23 – get input
- 24 – select item
- 25 – set up menu

## Examples

```
AT+STIN?
+STIN: 24
OK
```

## 19.2 AT+STGI Get SAT information

### Description

Regularly this command is used upon receipt of an URC "+STIN" to request the parameters of the Proactive Command. Then the TA is expected to acknowledge the AT+STGI response with AT+STGR to confirm that the Proactive Command has been executed. AT+STGR will also provide any user information, e.g. a selected menu item. The Proactive Command type value specifies to which "+STIN" the command is related.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+STGI=?	OK
Write Command	Responses
AT+STGI=<cmd_id>	<p><i>If &lt;cmd_id&gt;=10:</i> OK</p> <p><i>If &lt;cmd_id&gt;=21:</i> +STGI:21,&lt;prio&gt;,&lt;clear_mode&gt;,&lt;text_len&gt;,&lt;text&gt; OK</p> <p><i>If &lt;cmd_id&gt;=22:</i> +STGI: 22,&lt;rsp_format&gt;,&lt;help&gt;,&lt;text_len&gt;,&lt;text&gt; OK</p> <p><i>If &lt;cmd_id&gt;=23:</i> +STGI:23,&lt;rsp_format&gt;,&lt;max_len&gt;,&lt;min_len&gt;,&lt;help&gt;,&lt;show&gt;,&lt;text_ext_len&gt;,&lt;text&gt; OK</p> <p><i>If &lt;cmd_id&gt;=24:</i></p>

	<pre>+STGI:24,&lt;help&gt;,&lt;softkey&gt;,&lt;present&gt;,&lt;title_len&gt;,&lt;title&gt;,&lt;item_num&gt; +STGI:24,&lt;item_id&gt;,&lt;item_len&gt;,&lt;item_data&gt; [...] OK</pre>
	<pre><i>If &lt;cmd_id&gt;=25:</i> +STGI:25,&lt;help&gt;,&lt;softkey&gt;,&lt;title_len&gt;,&lt;title&gt;,&lt;item_num&gt; +STGI:25,&lt;item_id&gt;,&lt;item_len&gt;,&lt;item_data&gt; [...] OK</pre>

## Defined values

<b>&lt;cmd_id&gt;</b>
21 – display text
22 – get inkey
23 – get input
24 – select item
25 – set up menu
<b>&lt;prio&gt;</b>
Priority of display text
0 – Normal priority
1 – High priority
<b>&lt;clear_mode&gt;</b>
0 – Clear after a delay
1 – Clear by user
<b>&lt;text_len&gt;</b>
Length of text
<b>&lt;rsp_format&gt;</b>
0 – SMS default alphabet
1 – YES or NO
2 – numerical only
3 – UCS2
<b>&lt;help&gt;</b>
0 – Help unavailable
1 – Help available
<b>&lt;max_len&gt;</b>
Maximum length of input
<b>&lt;min_len&gt;</b>
Minimum length of input
<b>&lt;show&gt;</b>
0 – Hide input text
1 – Display input text

<softkey>
0 – No softkey preferred
1 – Softkey preferred
<present>
Menu presentation format available for select item
0 – Presentation not specified
1 – Data value presentation
2 – Navigation presentation
<title_len>
Length of title
<item_num>
Number of items in the menu
<item_id>
Identifier of item
<item_len>
Length of item
<title>
Title in ucs2 format
<item_data>
Content of the item in ucs2 format
<text>
Text in ucs2 format.

## Examples

```

AT+STGI=25
at+stgi=25
+STGI:25,0,0,10,"795E5DDE884C59295730",15
+STGI:25,1,8,"8F7B677E95EE5019"
+STGI:25,2,8,"77ED4FE17FA453D1"
+STGI:25,3,8,"4F1860E05FEB8BAF"
+STGI:25,4,8,"4E1A52A17CBE9009"
+STGI:25,5,8,"8D448D3963A88350"
+STGI:25,6,8,"81EA52A9670D52A1"
+STGI:25,7,8,"8F7B677E5F6994C3"
+STGI:25,8,8,"8BED97F367425FD7"
+STGI:25,9,10,"97F34E506392884C699C"
+STGI:25,10,8,"65B095FB59296C14"
+STGI:25,11,8,"94C358F056FE7247"
+STGI:25,12,8,"804A59294EA453CB"
+STGI:25,13,8,"5F005FC34F1195F2"
+STGI:25,14,8,"751F6D3B5E388BC6"
+STGI:25,21,12,"00530049004D53614FE1606F"

```

OK

## 19.3 AT+STGR SAT respond

### Description

The TA is expected to acknowledge the [AT+STGI](#) response with [AT+STGR](#) to confirm that the Proactive Command has been executed. [AT+STGR](#) will also provide any user information, e.g. a selected menu item.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+STGR=?	OK
Write Command	Responses
AT+STGR=<cmd_id>[,<data>]	OK

### Defined values

<cmd\_id>

- 22 – get inkey
- 23 – get input
- 24 – select item
- 25 – set up menu
- 83 – session end by user
- 84 – go backward

<data>

*If <cmd\_id>=22:*

Input a character

*If <cmd\_id>=23:*

Input a string.

If <rsp\_format> is YES or NO, input of a character in case of ANSI character set requests one byte, e.g. “Y”.

If <rsp\_format> is numerical only, input the characters in decimal number, e.g. “123”

If <rsp\_faomat> is UCS2, requests a 4 byte string, e.g. “0031”

<rsp\_faomat> refer to the response by [AT+STGI=23](#)

*If <cmd\_id>=24:*

Input the identifier of the item selected by user

*If <cmd\_id>=25:*

Input the identifier of the item selected by user

If *<cmd\_id>*=83:

*<data>* ignore

**Note:** It could return main menu during Proactive Command id is not 22 or 23

If *<cmd\_id>*= 84:

*<data>* ignore

## Examples

```
AT+STGR=25,1
```

```
OK
```

```
+STIN: 24
```

## 19.4 AT+STK STK Switch

### Description

This command is to disable or enable the STK function. If the argument is 1, it is enabled. While if the argument is 0, it is disabled.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+STK=?	+STK: (list of supported <i>&lt;value&gt;</i> s) OK
Read Command	Responses
AT+STK?	+STK: <i>&lt;value&gt;</i> OK
Write Command	Responses
AT+STK= <i>&lt;value&gt;</i>	OK ERROR
Execution Command	Responses
AT+STK	<i>Set default value (&lt;value&gt;=1):</i> OK

### Defined values

*<value>*

0 – Disable STK

1 – Enable STK

## Examples

```
AT+STK=1
```

```
OK
```

## 20 Internet Service Command

### 20.1 Simple mail transfer protocol service

#### 20.1.1 AT+SMTPSRV SMTP server address and port number

##### Description

The synchronous command is used to set SMTP server address and server's port number. SMTP client will initiate TCP session with the specified server to send an e-mail. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current SMTP server address and port number.

Execution command will clear SMTP server address and set the port number as default value.

**NOTE** After an e-mail is sent successfully or unsuccessfully, SMTP server address and port number won't be cleared.

SIM PIN	References
YES	Vendor

##### Syntax

Test Command	Responses
AT+SMTPSRV=?	+SMTPSRV: (list of supported <port>s) OK
Read Command	Responses
AT+SMTPSRV?	+SMTPSRV: <server>, <port> OK
Write Command	Responses
AT+SMTPSRV=<server> [, <port>]	OK
Execution Command	Responses
AT+SMTPSRV	OK

##### Defined values

<server>

SMTP server address, non empty string with double quotes, mandatory and ASCII text string up to

128 characters.

<port>

Port number of SMTP server in decimal format, from 1 to 65535, and default port is 25 for SMTP.

## Examples

```
AT+SMTPSRV="smtp.server.com",25
```

OK

```
AT+SMTPSRV?
```

```
+SMTPSRV: "smtp.server.com", 25
```

OK

```
AT+SMTPSRV
```

OK

```
AT+SMTPSRV?
```

```
+SMTPSRV: "", 25
```

OK

### 20.1.2 AT+SMTPAUTH SMTP server authentication

#### Description

The synchronous command is used to control SMTP authentication during connection with SMTP server. If SMTP server requires authentication while logging in the server, TE must set the authentication control flag and provide user name and password correctly before sending an e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current SMTP server authentication control flag, if the flag is 0, both <user> and <pwd> are empty strings.

Execution Command cancels SMTP server authentication and clear user name and password.

**NOTE** After an e-mail is sent successfully or unsuccessfully, server authentication won't be cleared.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+SMTPAUTH=?	+SMTPAUTH: (list of supported <flag>s) OK
Read Command	Responses
AT+SMTPAUTH?	+SMTPAUTH: <flag>, <user>, <pwd> OK
Write Command	Responses

AT+SMTPAUTH= <flag>[, <user>, <pwd>]	OK
Execution Command	Responses
AT+SMTPAUTH	OK

## Defined values

<flag>

SMTP server authentication control flag, integer type.

- 0 – SMTP server doesn't require authentication, factory value.
- 1 – SMTP server requires authentication.

<user>

User name to be used for SMTP authentication, non empty string with double quotes and up to 128 characters.

<pwd>

Password to be used for SMTP authentication, string with double quotes and up to 128 characters.

**NOTE** If <flag> is 0, <user> and <pwd> must be omitted (i.e. only <flag> is present).

## Examples

*AT+SMTPAUTH?*

*+SMTPAUTH: 0, "", ""*

*OK*

*AT+SMTPAUTH=1,"username","password"*

*OK*

*AT+SMTPAUTH?*

*+SMTPAUTH: 0, "username", "password"*

*OK*

*AT+SMTPAUTH*

*OK*

*AT+SMTPAUTH?*

*+SMTPAUTH: 0, "", ""*

*OK*

### 20.1.3 AT+SMTPFROM Sender address and name

#### Description

The synchronous command is used to set sender's address and name, which are used to construct e-mail header. The sender's address must be correct if the SMTP server requires, and if the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current sender's address and name.

Execution command will clear sender's address and name.

**NOTE** After an e-mail is sent successfully or unsuccessfully, sender address and name won't be

cleared.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+SMTPFROM=?	OK
Read Command	Responses
AT+SMTPFROM?	+SMTPFROM: <saddr>, <sname> OK
Write Command	Responses
AT+SMTPFROM= <saddr>[, <sname>]	OK
Execution Command	Responses
AT+SMTPFROM	OK

## Defined values

<saddr>

E-mail sender address (MAIL FROM), non empty string with double quotes, mandatory and ASCII text up to 128 characters. <saddr> will be present in the header of the e-mail sent by SMTP client in the field: "From: ".

<sname>

E-mail sender name, string with double quotes, and alphanumeric ASCII text up to 64 characters. <sname> will be present in the header of the e-mail sent by SMTP client in the field: "From: ".

## Examples

```
AT+SMTPFROM="senderaddress@server.com","sendername"
```

```
OK
```

```
AT+SMTPFROM?
```

```
+SMTPFROM: "senderaddress@server.com", "sendername"
```

```
OK
```

```
AT+SMTPFROM
```

```
OK
```

```
AT+SMTPFROM?
```

```
+SMTPFROM: "", ""
```

```
OK
```

## 20.1.4 AT+SMTPRCPT Recipient address and name (TO/CC/BCC)

### Description

The synchronous command is used to set recipient address/name and kind (TO/CC/BCC). If only the parameter of “kind” is present, the command will clear all recipients of this kind, and if only parameters of “kind” and “index” are present, the command will clear the specified recipient. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current recipient address/name and kind list.

Execution command will clear all recipient information.

**NOTE** After an e-mail is sent successfully, all recipients will be cleared, if unsuccessfully, they won't be cleared.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+SMTPRCPT=?	+SMTPRCPT: (list of supported <kind>s), (list of supported <index>s) OK
Read Command	Responses
AT+SMTPRCPT?	[+SMTPRCPT: <kind>, <index>, <raddr>, <rname> [<CR><LF>...]] OK
Write Command	Responses
AT+SMTPRCPT= <kind>[, <index> [, <raddr>[, <rname>]]]	OK
Execution Command	Responses
AT+SMTPRCPT	OK

### Defined values

<kind>

Recipient kind, the kinds of TO and CC are used to construct e-mail header in the field: “To: ” or “Cc: ”.

- 0 – TO, normal recipient.
- 1 – CC, Carbon Copy recipient.
- 2 – BCC, Blind Carbon Copy recipient.

<index>

Index of the kind of recipient, decimal format, and from 0 to 4.

<raddr>

Recipient address, non empty string with double quotes, and up to 128 characters.

<rname>

Recipient name, string type with double quotes, and up to 64 characters.

## Examples

```
AT+SMTPRCPT=0,0,"rcptaddress_to@server.com","rcptname_to"
```

OK

```
AT+SMTPRCPT?
```

```
+SMTPRCPT:0,0,"rcptaddress_to@server.com","rcptname_to"
```

OK

```
AT+SMTPRCPT=1,0,"rcptaddress_cc@server.com","rcptname_cc"
```

OK

```
AT+SMTPRCPT?
```

```
+SMTPRCPT:0,0,"rcptaddress_to@server.com","rcptname_to"
```

```
+SMTPRCPT:1,0,"rcptaddress_cc@server.com","rcptname_cc"
```

OK

### 20.1.5 AT+SMTPSUB E-mail subject

#### Description

The synchronous command is used to set the subject of e-mail, which is used to construct e-mail header. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current e-mail subject.

Execution command will clear the subject.

**NOTE** After an e-mail is sent successfully, the subject will be cleared, if unsuccessfully, it won't be cleared.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+SMTPSUB=?	OK
Read Command	Responses
AT+SMTPSUB?	+SMTPSUB: <subject> OK
Write Command	Responses
AT+SMTPSUB=<subject>	OK
Execution Command	Responses

AT+SMTPSUB	OK
------------	----

## Defined values

<subject>

E-mail subject, string with double quotes, and ASCII text up to 512 characters. <subject> will be present in the header of the e-mail sent by SMTP client in the field: “Subject: ”. For write command, if the subject contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

## Examples

AT+SMTPSUB?

+SMTPSUB: “”

OK

AT+SMTPSUB=“THIS IS A TEST MAIL”

OK

AT+SMTPSUB={non-ascii}“E6B58BE8AF95E982AEE4BBB6”

OK

AT+SMTPSUB?

+SMTPSUB: “THIS IS A TEST MAIL”

OK

### 20.1.6 AT+SMTPBODY E-mail body

#### Description

The command is used to set e-mail body, which will be sent to SMTP server with text format.

Read command returns current e-mail body. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Execute command will switch the serial port from command mode to data mode, so TE can enter more ASCII text as e-mail body (up to 5120), and CTRL-Z (ESC) is used to finish (cancel) the input operation and switch the serial port back to command mode.

**NOTE** After an e-mail is sent successfully, the body will be cleared, if unsuccessfully, it won't be cleared. When execute command AT+SMTPBODY, and display “>>”, the previous body will be cleared.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+SMTPBODY=?	OK
Read Command	Responses

AT+SMTPBODY?	+SMTPBODY: <body> OK
Write Command	Responses
AT+SMTPBODY=<body>	OK
Execution Command	Responses
AT+SMTPBODY	>>

### Defined values

<body>

E-mail body, string with double quotes, and printable ASCII text up to 512 or 5120 characters.

**NOTE** In data mode, “BACKSPACE” can be used to cancel an ASCII character.

### Examples

*AT+SMTPBODY="THIS IS A TEST MAIL FROM SIMCOM MODULE"*

*OK*

*AT+SMTPBODY?*

*+SMTPBODY: "THIS IS A TEST MAIL FROM SIMCOM MODULE"*

*OK*

*AT+SMTPBODY*

*>> This is a test mail.<CTRL-Z>*

*OK*

*AT+SMTPBODY?*

*+SMTPBODY: "This is a test mail."*

*OK*

*AT+SMTPBODY*

*>> This is a test mail.<ESC>*

*OK*

*AT+SMTPBODY?*

*+SMTPBODY: ""*

*OK*

#### 20.1.7 AT+SMTPBCH E-mail body character set

##### Description

The synchronous command is used to set the body character set of e-mail. If the process of sending an e-mail is ongoing, the command will return “ERROR” directly.

Read command returns current e-mail body character set.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+SMTPBCH=?	+SMTPBCH: "CHARSET" OK
Read Command	Responses
AT+SMTPBCH?	+SMTPBCH: <charset> OK
Write Command	Responses
AT+SMTPBCH=<charset>	OK

## Defined values

<charset>

E-mail body character, string with double quotes. By default, it is "utf-8". The maximum length is 30 bytes.

## Examples

```
AT+SMTPBCH=?
+SMTPBCH: "CHARSET"
OK
AT+SMTPBCH="gb2312"
OK
AT+SMTPBCH?
+SMTPBCH: "gb2312"
OK
```

### 20.1.8 AT+SMTPFILE Select attachment

#### Description

The synchronous command is used to select file as e-mail attachment. If the process of sending an e-mail is ongoing, the command will return "ERROR" directly.

Read command returns current all selected attachments with full path.

Execute command will clear all attachments.

**NOTE** After an e-mail is sent successfully, attachment will be cleared, if unsuccessfully, it won't be cleared. The same file can't be selected twice.

AT+SMTPFILE=<index> is used to delete the relevant attachments.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+SMTPFILE=?	+SMTPFILE: (list of supported <index>s) OK
Read Command	Responses
AT+SMTPFILE?	[+SMTPFILE: <index>, <filename>, <filesize> [<CR><LF>...]] OK
Write Command	Responses
AT+SMTPFILE= <index>[, <filename>]	OK [+SMTP: OVERSIZE] ERROR
Execution Command	Responses
AT+SMTPFILE	OK

## Defined values

<index>

Index for attachments, from 1 to 10. According to the sequence of <index>, SMTP client will encode and send all attachments.

<filename>

String type with double quotes, the name of a file which is under current directory (refer to file system commands). SMTP client doesn't allow two attachments with the same file name. For write command, if the file name contains non-ASCII characters, this parameter should contain a prefix of {non-ascii}.

<filesize>

File size in decimal format. The total size of all attachments can't exceed 10MB.

## Examples

```
AT+SMTPFILE=1,"file1.txt"
```

```
OK
```

```
AT+SMTPFILE=1,{non-ascii}"E6B58BE8AF95E99984E4BBB62E6A7067"
```

```
OK
```

```
AT+SMTPFILE?
```

```
+SMTPFILE: 1, "C:/file1.txt"
```

```
OK
```

```
AT+SMTPFILE=2,"file2.txt"
```

```
OK
```

```
AT+SMTPFILE?
```

```
+SMTPFILE: 1, "C:/file1.txt"
```

```
+SMTPFILE: 2, "C:/file2.txt"
```

```
OK
```

## 20.1.9 AT+SMTPSEND Initiate session and send e-mail

### Description

The asynchronous command is used to initiate TCP session with SMTP server and send an e-mail after all mandatory parameters have been set correctly. After SMTP client has connected with specified SMTP server and SMTP client receives an indication that indicates SMTP server is working well, the command will return “+SMTP: OK”, but it doesn’t indicate that the e-mail is already sent successfully.

After the e-mail is sent and the session is closed, an Unsolicited Result Code (URC) will be returned to TE, “+SMTP: SUCCESS” indicates the e-mail is sent successfully, and other URCs indicate an failed result and the session is closed.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+SMTPSEND=?	OK
Read Command	Responses
AT+SMTPSEND?	+SMTPSEND: <ongoing> OK
Execution Command	Responses
AT+SMTPSEND	OK  +SMTP: OK  +SMTP: <code> +SMTP: OK +SMTP: <code> OK +SMTP: <code> ERROR

### Defined values

<ongoing>

Whether or not an e-mail is sent in process. If the process of sending an e-mail is ongoing, SMTP client can’t send the e-mail again.

0 – Not ongoing.

1 – Ongoing.

<code>

SUCCESS	SMTP client has sent the e-mail successfully.
ONGOING	The process of sending an e-mail is ongoing.
PARAM ERROR	Mandatory parameter isn't set (SMTP server, or sender/recipient address)
NETWORK ERROR	Invalid SMTP server. Network is bad for establishing session or sending data to SMTP server.
SERVER ERROR	SMTP server released the session. SMTP server rejects the operation with wrong response. SMTP server doesn't give SMTP client a response in time.
AUTH REQUIRED	Authentication is required by SMTP server.
AUTH ERROR	SMTP server rejects the session because of bad user name and password combination.

### Examples

```

AT+SMTPSEND?
+SMTPSEND: 0
OK
AT+SMTPSEND
+SMTP: OK
OK
+SMTP: SUCCESS

```

### 20.1.10 AT+SMTPSTOP Force to stop sending e-mail

#### Description

The synchronous command is used to force to stop sending e-mail and close the TCP session while sending an e-mail is ongoing. Otherwise, the command will return "ERROR" directly.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+SMTPSTOP=?	OK
Execution Command	Responses
AT+SMTPSTOP	OK
	ERROR

### Examples

```

AT+SMTPSEND?

```

```
+SMTPSEND: 1
OK
AT+SMTPSTOP
OK
```

## 20.2 Post Office Protocol 3 Service

### 20.2.1 AT+POP3SRV POP3 server and account

#### Description

The synchronous command is used to set all parameters to get and e-mail from POP3 server, including server address, port number, user name and password. If POP3 client isn't free, the command will return "ERROR" directly.

Read command returns current all information about POP3 server and account.

Execution command will clear POP3 server address, user name and password, and set server's port number as default value.

**NOTE** After an e-mail is sent successfully or unsuccessfully, POP3 server and account information won't be cleared.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+POP3SRV=?	+POP3SRV: (list of supported <port>s) OK
Read Command	Responses
AT+POP3SRV?	+POP3SRV: <server>, <user>, <pwd>, <port> OK
Write Command	Responses
AT+POP3SRV=<server>, <user>, <pwd>[, <port>]	OK
Execution Command	Responses
AT+POP3SRV	OK

#### Defined values

<server>

POP3 server address, non empty string with double quotes, mandatory and ASCII text string up to 128 characters.

<user>

User name to log in POP3 server, non empty string with double quotes, and up to 128 characters.

<pwd>

Password to log in POP3 server, string with double quotes, and up to 128 characters.

<port>

Port number of POP3 server in decimal format, from 1 to 65535, and default port is 110 for POP3.

## Examples

*AT+POP3SRV=?*

*+POP3SRV: (1-65535)*

*OK*

*AT+POP3SRV?*

*+POP3SRV: "", "", "", 110*

*OK*

*AT+POP3SRV="pop3.server.com", "user\_name", "password", 110*

*OK*

*AT+POP3SRV?*

*+POP3SRV: "pop3.server.com", "user\_name", "password", 110*

*OK*

*AT+POP3SRV*

*OK*

*AT+POP3SRV?*

*+POP3SRV: "", "", "", 110*

*OK*

### 20.2.2 AT+POP3IN Log in POP3 server

#### Description

The asynchronous command is used to log in POP3 server and establish a session after POP3 server and account information are set rightly. If the POP3 client logs in POP3 server successfully, the response "+POP3: SUCCESS" will be returned to TE; if no POP3 operation for a long time after the session is ready, POP3 server may release the session.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+POP3IN=?	OK
Read Command	Responses
AT+POP3IN?	+POP3IN: "<server>"
	OK

	+POP3IN: NULL OK
Execute Command	
AT+POP3IN	+POP3: SUCCESS OK
	OK
	+POP3: SUCCESS
	+POP3: <code>
	ERROR
	ERROR

### Defined values

<code>	
NETWORK ERROR	Invalid POP3 server or network is bad for establishing session or sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time.
INVALID UN	Invalid user name to log in POP3 server.
INVALID UN/PWD	Invalid user name and password combination to log in POP3 server.
<server>	
The address of the POP3 server currently logged in.	

### Examples

AT+POP3IN=?
OK
AT+POP3IN
+POP3: SUCCESS
OK

### 20.2.3 AT+POP3NUM Get e-mail number and total size

#### Description

The asynchronous command is used to get e-mail number and total size on the specified POP3 server after the POP3 client logs in POP3 server successfully and no other POP3 operation is ongoing.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+POP3NUM=?	OK
Execution Command	Responses
AT+POP3NUM	+POP3: <num>, <tsize> OK
	+POP3: <code> ERROR

### Defined values

<num>	
	The e-mail number on the POP3 server, decimal format.
<tsize>	
	The total size of all e-mail and the unit is in Byte.
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time.

### Examples

AT+POP3NUM=?
OK
AT+POP3NUM
+POP3: 1, 3057
OK

## 20.2.4 AT+POP3LIST List e-mail ID and size

### Description

The asynchronous command is used to list e-mail number and total size, e-mail ID and each e-mail's size after the POP3 client logs in POP3 server successfully and no other POP3 operation is ongoing. The e-mail ID may be used to do those operations: get e-mail header, get the whole e-mail, and mark an e-mail to delete from POP3 server.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+POP3LIST=?	OK

Write Command	Responses
AT+POP3LIST=<msg_id>	+POP3: <msg_id>, <size> OK
	ERROR
Execution Command	Responses
AT+POP3LIST	+POP3: [<msg_id> <size> [<CR><LF>...]] OK
	+POP3: EMPTY OK
	+POP3: <code> ERROR

## Defined values

<msg_id>	
The e-mail's ID.	
<size>	
The size of e-mail <msg_id>, and the unit is in Byte.	
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID.

## Examples

<i>AT+POP3LIST=?</i>
<i>OK</i>
<i>AT+POP3LIST</i>
<i>+POP3:</i>
<i>1 3056</i>
<i>OK</i>
<i>AT+POP3LIST=1</i>
<i>+POP3: 1, 3056</i>
<i>OK</i>

### 20.2.5 AT+POP3HDR Get e-mail header

#### Description

The asynchronous command is used to retrieve e-mail's sender address, date and sender address, that are present in the mail's header.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+POP3HDR=?	OK
Write Command	Responses
AT+POP3HDR=<msg_id>	From: [<from>] Date: [<date>] Subject: [<sub>] OK
	+POP3: <code> ERROR

## Defined values

<msg_id>	
The e-mail's ID.	
<from>	
E-mail's sender name and sender address from mail	
<date>	
E-mail's date from mail header.	
<sub>	
E-mail's subject from mail header.	
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID.

## Examples

AT+POP3HDR=1
From: sendername<senderaddress@server.com>
Date: Mon, 17 Aug 2009 14:09:27 +0800
Subject: THIS IS A TEST MAIL
OK

## 20.2.6 AT+POP3GET Get an e-mail from POP3 server

### Description

The command is used to retrieve specified e-mail from the POP3 server. After retrieving an e-mail successfully, POP3 client will create a directory and save the e-mail's header and body into file system as file "EmailYYMMDDHHMMSSXYZ.TXT", and save each attachment as a file under the same directory.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+POP3GET=?	OK
Write Command	Responses
AT+POP3GET=<msg_id>,[ <get_type>]	OK  +POP3: <code> <mail_dir>, <mail_file>  +POP3: <code> ERROR  OK +POP3: <code>

### Defined values

<msg\_id>

The e-mail's ID.

<mail\_dir>

The directory for e-mail and attachment, string type without double quotes and the format is "YYMMDDHHMMSS" which is generated according to module's RTC.

According to the setting of command +FSLOCA (refer to file system commands), TE can select the location (local file system or storage card) in which POP3 client saves e-mail file and attachment.

<mail\_file>

If the <get\_type> is 1 or 3, it is the file to save e-mail's header and body, string type without double quotes. Usually, this file name is "EMAIL110511102353000.TXT", and if e-mail includes an attachment whose name is the same as the e-mail file, the first twelve digits of the number in the e-mail is generated according to the module's RTC with format "YYMMDDHHMMSS" and the last three digits of the number in the e-mail file name will be increase by 1, usually it is "000" for the body file of the email. If the <get\_type> is 2, the <mail\_file> should be YYMMDDHHMMSS.eml. If the <get\_type> is 3, the eml file is not reported.

<code>

NETWORK ERROR	Network is bad for sending or receiving data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID.
FILE SYSTEM ERROR	File system is bad for saving e-mail or attachment or storage card is pulled out. If POP3 client encounters this error, POP3 client will close the session with POP3 server.
SUCCESS	POP3 client gets an e-mail from POP3 server successfully.
FAILURE	POP3 client gets an e-mail unsuccessfully.

**<get\_type>**

The type to save when getting message from POP3 server:

- 1 – Save parsed body file and attachments
- 2 – Save the whole message as a “.eml” file.
- 3 – Save the parsed body file, attachments and eml file.

## Examples

*AT+POP3GET=1*

*OK*

*+POP3: SUCCESS*

*C:/Email/090901120000/, EMAIL11090901120000000.TXT*

*AT+POP3GET=1,2*

*OK*

*+POP3: SUCCESS*

*C:/Email/090901120000/, 090901120000.eml*

*AT+POP3GET=2*

*OK*

*+POP3: FAILURE*

### 20.2.7 AT+POP3DEL Mark an e-mail to delete from POP3 server

#### Description

The asynchronous command is used to mark an e-mail to delete from POP3 server. The operation only marks an e-mail on the server to delete it, and after POP3 client logs out POP3 server and closes the session normally, the marked e-mail is deleted on the server. Otherwise, the e-mail isn't deleted.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+POP3DEL=?	OK
Write Command	Responses
AT+POP3DEL=<msg_id>	+POP3: SUCCESS OK
	+POP3: <code> ERROR

## Defined values

<msg_id>	E-mail's ID for mark to delete it on POP3 server.
<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session. POP3 server rejects the operation with wrong response. POP3 server doesn't give POP3 client a response in time. POP3 client gives wrong e-mail's ID.

## Examples

AT+POP3DEL=1
+POP3: SUCCESS
OK

### 20.2.8 AT+POP3OUT Log out POP3 server

#### Description

The command will log out the POP3 server and close the session, and if there are some e-mails which are marked to delete, it also informs POP3 server to delete the marked e-mails.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+POP3OUT=?	OK
Execution Command	Responses
AT+POP3OUT	+POP3: SUCCESS OK

	+POP3: <code>
	ERROR
	ERROR

## Defined values

<code>	
NETWORK ERROR	Network is bad for sending data to POP3 server.
SERVER ERROR	POP3 server released the session.
	POP3 server rejects the operation with wrong response.
	POP3 server doesn't give POP3 client a response in time.
	POP3 client gives wrong e-mail's ID.

## Examples

<i>AT+POP3OUT</i>
<i>+POP3: SUCCESS</i>
<i>OK</i>

### 20.2.9 AT+POP3STOP Force to stop receiving e-mail/close the session

#### Description

The synchronous command is used to force to close the session, and if the process of receiving e-mail is ongoing, the command also stops the operation. Otherwise, the command will return "ERROR" directly. If an e-mail has been marked to delete, POP3 server won't delete the e-mail after the session is closed.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+POP3STOP=?	OK
Execution Command	Responses
AT+POP3STOP	OK
	ERROR

## Examples

<i>AT+POP3STOP</i>
<i>OK</i>

## 20.2.10 AT+POP3READ Read an e-mail from file system

### Description

The command is used to read an e-mail from file system. If the process of receiving e-mail is ongoing, the command can't read an e-mail.

Execution command is used to read the e-mail which is received just now.

SIM PIN	References
YES	Vendor

### Syntax Syntax

Test Command	Responses
AT+POP3READ=?	OK
Write Command	Responses
AT+POP3READ= <location>, <mail_file>	<e-mail> OK ERROR
Execution Command	Responses
AT+POP3READ	<e-mail> OK ERROR

### Defined values

<location>
The location from which TE reads an e-mail. 0 – Local file system. 1 – Storage card.
<mail_file>
The e-mail's file name, string type with double quotes and including a directory name and a text file name separated by the list separator “/”, e.g. “090901103000/EMAIL000.TXT”.
<e-mail>
The content of e-mail, including e-mail header and body.

### Examples

AT+POP3READ=0,"800106072758/EMAIL800106072758000.TXT"
Subject: =?utf-8?B?TWFpbCBUZXR0?= Date: Mon, 02 Jul 2012 16:01:11 +0800 From: SIMCom-3G <hello@163.com> To: 3G-SIMCom <hello@163.com>

```
VGhpcyBpcyBhIHRlc3QgbWFpbCBmcm9tIEExVQSB0ZXN0IHNjcmlwdC4=
```

```
OK
```

## 20.3 File Transfer Protocol Service

### 20.3.1 AT+CFTPPORT Set FTP server port

#### Description

The command is used to set FTP server port.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPPORT=?	+CFTPPORT: (list of supported <port>s) OK
Read Command	Responses
AT+CFTPPORT?	+CFTPPORT: <port> OK
Write Command	Responses
AT+CFTPPORT=<port>	OK +CME ERROR

#### Defined values

<port>

The FTP server port, from 1 to 65535, and default value is 21.

#### Examples

```
AT+CFTPPORT=21
```

```
OK
```

```
AT+CFTPPORT?
```

```
+CFTPPORT:21
```

```
OK
```

```
AT+CFTPPORT=?
```

```
+CFTPPORT: (1-65535)
```

```
OK
```

### 20.3.2 AT+CFTPMODE Set FTP mode

#### Description

The command is used to set FTP passive/proactive mode. Default is proactive mode.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPMODE=?	+CFTPMODE: (list of supported <mode>s) OK
Read Command	Responses
AT+CFTPMODE?	+CFTPMODE: <mode> OK
Write Command	Responses
AT+CFTPMODE=<mode>	OK +CME ERROR

#### Defined values

<mode>
The FTP access mode:
0 – proactive mode.
1 – passive mode.

#### Examples

AT+CFTPMODE=1
OK
AT+CFTPMODE?
+CFTPMODE: 1
OK
AT+CFTPMODE=?
+CFTPMODE: (0,1)
OK

### 20.3.3 AT+CFTPTYPE Set FTP type

#### Description

The command is used to set FTP type. Default is binary type.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CFTPTYPE=?	+CFTPTYPE: (list of supported <type>s) OK
Read Command	Responses
AT+CFTPTYPE?	+CFTPTYPE: <type> OK
Write Command	Responses
AT+CFTPTYPE=<type>	OK +CME ERROR

## Defined values

<type>
The FTP type:
I – binary type.
A – ASCII type.

## Examples

AT+CFTPTYPE=A
OK
AT+CFTPTYPE?
+CFTPTYPE: A
OK
AT+CFTPTYPE=?
+CFTPTYPE: (A,I)
OK

### 20.3.4 AT+CFTPSERV Set FTP server domain name or IP address

#### Description

The command is used to set FTP server domain name or IP address.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CFTPSERV=?	+CFTPSERV: "ADDRESS" OK
Read Command	Responses
AT+CFTPSERV?	+CFTPSERV: "<address>" OK
Write Command	Responses
AT+CFTPSERV= "<address>"	OK +CME ERROR

## Defined values

<address>

The FTP server domain name or IP address. The maximum length is 100 bytes.

## Examples

```
AT+CFTPSERV="www.mydomain.com"
```

```
OK
```

```
AT+CFTPSERV?
```

```
+CFTPSERV: "www.mydomain.com"
```

```
OK
```

```
AT+CFTPSERV=?
```

```
+CFTPSERV: "ADDRESS"
```

```
OK
```

```
AT+CFTPSERV="10.0.0.127"
```

```
OK
```

### 20.3.5 AT+CFTPUN Set user name for FTP access

#### Description

The command is used to set user name for FTP server access.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPUN=?	+CFTPUN: "NAME" OK
Read Command	Responses
AT+CFTPUN?	+CFTPUN: "<name>"

	OK
Write Command	Responses
AT+CFTPUN=" <i>&lt;name&gt;</i> "	OK
	+CME ERROR

### Defined values

*<name>*

The user name for FTP server access. The maximum length is 30 bytes.

### Examples

*AT+CFTPUN="myname"*

*OK*

*AT+CFTPUN="anonymous"*

*OK*

*AT+CFTPUN?*

*+CFTPUN: "myname"*

*OK*

*AT+CFTPUN=?*

*+CFTPUN: "NAME"*

*OK*

## 20.3.6 AT+CFTPPW Set user password for FTP access

### Description

The command is used to set user password for FTP server access.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPPW=?	+CFTPPW: "PASSWORD" OK
Read Command	Responses
AT+CFTPPW?	+CFTPPW: " <i>&lt;password&gt;</i> " OK
Write Command	Responses
AT+CFTPPW=" <i>&lt;password&gt;</i> "	OK
"	+CME ERROR

## Defined values

<password>

The user password for FTP server access. The maximum length is 40 bytes.

## Examples

```
AT+CFTPPW="mypass"
```

```
OK
```

```
AT+CFTPPW?
```

```
+CFTPPW: "mypass"
```

```
OK
```

```
AT+CFTPPW=?
```

```
+CFTPPW: "mypass"
```

```
OK
```

### 20.3.7 AT+CFTPGETFILE Get a file from FTP server to EFS

#### Description

The command is used to download a file from FTP server to module EFS.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPGETFILE=?	+CFTPGETFILE: [{non-ascii}]“FILEPATH”, (list of supported <dir>s) [, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPGETFILE= “<filepath>”,<dir>[,<rest_size>]	OK +CFTPGETFILE: 0 +CME ERROR OK +CFTPGETFILE: <err>

## Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfers file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory to save the downloaded file (For SIM5320, Only 0 is valid):

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<rest\_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It’s range is 0 to 2147483647.

<err>

The error code of FTP operation.

## Examples

```
AT+CFTPGETFILE="/pub/mydir/test1.txt",0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE=" test2.txt",0
OK
...
+CFTPGETFILE: 0
AT+CFTPGETFILE={non-ascii}" B2E2CAD42E747874",0
OK
...
+CFTPGETFILE: 0
```

### 20.3.8 AT+CFTPPUTFILE Put a file in module EFS to FTP server

#### Description

The command is used to upload a file in the module EFS to FTP server.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPPUTFILE=?	+CFTPPUTFILE: [{non-ascii}] “FILEPATH”, (list of supported

	<dir>s)[, (list of supported <rest_size>s)]
	OK
Write Command	Responses
AT+CFTPPUTFILE= “<filepath>”,<dir>[,<rest_size>]	OK
	+CFTPPUTFILE: 0
	+CME ERROR
	OK
	+CFTPPUTFILE: <err>

### Defined values

#### <filepath>

The remote file path. When the file path doesn't contain “/”, this command transfers file to the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

#### <dir>

The directory that contains the file to be uploaded (For SIM5320, Only 0 is valid):

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

#### <rest\_size>

The value for FTP “REST” command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

#### <err>

The error code of FTP operation.

### Examples

```
AT+CFTPPUTFILE="/pub/mydir/test1.txt",0,10
OK
AT+CFTPPUTFILE=" test2.txt",0
OK
...
+CFTPPUTFILE: 0
AT+CFTPPUTFILE={non-ascii} B2E2CAD42E747874",0
OK
...
```

+CFTPFILE: 0

### 20.3.9 AT+CFTPGET Get a file from FTP server and output it from SIO

#### Description

The command is used to get a file from FTP server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPGET=?	+CFTPGET: [{non-ascii}] "FILEPATH" [, (list of supported <rest_size>s)] OK
Write Command	Responses
AT+CFTPGET= "<filepath>"[,<rest_size>]	OK +CFTPGET: DATA,<len> ... +CFTPGET: DATA, <len> ... ... +CFTPGET: 0 +CME ERROR [+CFTPGET: DATA, <len> ... +CFTPGET: DATA, <len> ... ...] +CFTPGET: <err>

#### Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfer file from the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<rest\_size>

The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

<len>	The length of FTP data contained in this packet.
<err>	The error code of FTP operation.

### Examples

```

AT+CFTPGET="/pub/mydir/test1.txt", 10
OK
+CFTPGET: DATA, 1020,
...
+CFTPGET: DATA, 1058,
...
...
+CFTPGET: 0
AT+CFTPGET={non-ascii}"/2F746573746646972/B2E2CAD42E747874"
OK
+CFTPGET: DATA, 1020,
...
+CFTPGET: 0
AT+CFTPGETT=?
+CFTPGET: [{non-ascii}]"FILEPATH" [,(0-2147483647)]
OK

```

### 20.3.10 AT+CFTPPUT Put a file to FTP server

#### Description

The command is used to put a file to FTP server using the data got from serial port. Each <Ctrl+Z> character present in the data flow of serial port when downloading FTP data will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the FTP data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPPUT=?	+CFTPPUT: [{non-ascii}] "FILEPATH" [, (list of supported <rest_size>s)] OK
Execution Command	Responses

AT+CFTPPUT=" <i>&lt;filepath&gt;</i> " [, <i>&lt;rest_size&gt;</i> ]	+CFTPPUT: BEGIN OK
	+CME ERROR
	[+CFTPPUT: BEGIN] +CFTPPUT: <i>&lt;err_code&gt;</i> ERROR

## Defined values

*<filepath>*

The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTP directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

*<rest\_size>*

The value for FTP "REST" command which is used for broken transfer when transferring failed last time. It's range is 0 to 2147483647.

*<err\_code>*

Refer to "Unsolicited FTP Codes".

## Examples

```
AT+CFTPPUT="/pub/mydir/test1.txt", 20
```

```
+CFTPPUT: BEGIN
```

```
.....<Ctrl+Z>
```

```
OK
```

```
AT+CFTPPUT={non-ascii}"/2F746573746646972/B2E2CAD42E747874"
```

```
+CFTPPUT: BEGIN
```

```
.....<Ctrl+Z>
```

```
OK
```

```
AT+CFTPPUT=?
```

```
+CFTPPUT: [{non-ascii}]"FILEPATH" [,(0-2147483647)]
```

```
OK
```

### 20.3.11 AT+CFTPLIST List the items in the directory on FTP server

#### Description

This command is used to list the items in the specified directory on FTP server

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPLIST=?	+CFTPLIST: [{non-ascii}] "FILEPATH" OK
Write Command	Responses
AT+CFTPLIST="<dir>"	OK [+CFTPLIST: DATA,<len> ...] +CFTPLIST:<err> +CME ERROR

### Defined values

<dir>	The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<len>	The length of data reported
<err>	The result code of the listing

### Examples

```
AT+CFTPLIST="/testd"
OK
+CFTPLIST: DATA,193
drw-rw-rw-  1 user   group      0 Sep  1 18:01 .
drw-rw-rw-  1 user   group      0 Sep  1 18:01 ..
-rw-rw-rw-  1 user   group      2017 Sep  1 17:24 19800106_000128.jpg
+CFTPLIST: 0
```

### 20.3.12 AT+CFTPMKD Create a new directory on FTP server

#### Description

This command is used to create a new directory on the FTP server. The maximum length of the full path name is 256.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPMKD=?	+CFTPMKD: "DIR" OK
Write Command	Responses
AT+CFTPMKD=" <i>&lt;dir&gt;</i> "	OK +CFTPMKD: <i>&lt;err&gt;</i> ERROR

### Defined values

<i>&lt;dir&gt;</i>
The directory to be created
<i>&lt;err&gt;</i>
The result code of the command

### Examples

AT+CFTPMKD="/testdir"
OK
AT+CFTPMKD={non-ascii}"74657374646972"
OK

## 20.3.13 AT+CFTPRMD Delete a directory on FTP server

### Description

This command is used to delete a directory on FTP server

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPRMD=?	+CFTPRMD: "DIR" OK
Write Command	Responses
AT+CFTPRMD=" <i>&lt;dir&gt;</i> "	OK +CFTPRMD: <i>&lt;err&gt;</i> ERROR

### Defined values

<dir>

The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

<err>

The result code of the command

## Examples

```
AT+CFTPMD="/testdir"
```

```
OK
```

```
AT+CFTPMD={non-ascii}"74657374646972"
```

```
OK
```

### 20.3.14 AT+CFTPDELE Delete a file on FTP server

#### Description

This command is used to delete a file on FTP server

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPDELE=?	+CFTPDELE: "FILENAME" OK
Write Command	Responses
AT+CFTPDELE="<filename>"	OK +CFTPDELE:<err>
	ERROR

#### Defined values

<filename>

The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

<err>

The result code of the command

## Examples

```
AT+CFTPDELE="test"
```

```
OK
```

```
AT+CFTPDELE={non-ascii}"74657374"
OK
```

### 20.3.15 Unsolicited FTP Codes (Summary of CME ERROR Codes)

Code of <err>	Description
201	Unknown error for FTP
202	FTP task is busy
203	Failed to resolve server address
204	FTP timeout
205	Failed to read file
206	Failed to write file
207	Not allowed in current state
208	Failed to login
209	Failed to logout
210	Failed to transfer data
211	FTP command rejected by server
212	Memory error
213	Invalid parameter
214	Network error

## 20.4 Hyper Text Transfer Protocol Service

### 20.4.1 AT+CHTTPACT Launch a HTTP operation

#### Description

The command is used to launch a HTTP operation like GET or POST. Each <Ctrl+Z> character presented in the data flow of serial port will be coded as <ETX><Ctrl+Z>. Each <ETX> character will be coded as <ETX><ETX>. Single <Ctrl+Z> means end of the HTTP request data or end of the HTTP responded data.

<ETX> is 0x03, and <Ctrl+Z> is 0x1A.

For this command there may be a lot of DATA which need to be transferred to DTE using serial port, it is recommended that the AT+CATR will be used.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CHTTPACT=?	+CHTTPACT: "ADDRESS", (1-65535)

Write Command	Responses
AT+CHTTPACT= “<address>”,<port>	OK
	+CHTTPACT: REQUEST
	+CHTTPACT: DATA, <len>
	...
	+CHTTPACT: DATA, <len>
	...
	...
	+CHTTPACT: 0
	+CME ERROR
	+CHTTPACT: <err>
	ERROR
	+CHTTPACT: REQUEST
	+CHTTPACT: <err>
	ERROR
	+CHTTPACT: REQUEST
	+CHTTPACT: DATA, <len>
	...
	+CHTTPACT: DATA, <len>
	...
	...
	+CHTTPACT: <err>
	ERROR

## Defined values

<address>

The HTTP server domain name or IP address.

<port>

The HTTP server port.

<len>

The length of HTTP data in the packet.

<err>

The error code of HTTP operation.

## Examples

*AT+CHTTPACT="www.mywebsite.com",80*

*+CHTTPACT: REQUEST*

*GET <http://www.mywebsite.com/index.html> HTTP/1.1*

*Host: [www.mywebsite.com](http://www.mywebsite.com)*

*User-Agent: MY WEB AGENT*

*Content-Length: 0*

```
<Ctrl+Z>
OK
+CHTTPACT: DATA, 249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
Test body
</body>
+CHTTPACT: 0
AT+CHTTPACT="www.mywebsite.com",80
+CHTTPACT: REQUEST
POST http://www.mywebsite.com/mydir/test.jsp HTTP/1.1
Host: www.mywebsite.com
User-Agent: MY WEB AGENT
Accept: */*
Content-Type: application/x-www-form-urlencoded
Cache-Control: no-cache
Accept-Charset: utf-8, us-ascii
Pragma: no-cache
Content-Length: 29

myparam1=test1&myparam2=test2<Ctrl+Z>
OK
+CHTTPACT: DATA, 234
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 54
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>result</header>
<body>
```

```
Result is OK
</body>
+CHTTPACT: 0
AT+CHTTPACT=?
+CHTTPACT: "ADDRESS",(1-65535)
OK
```

## 20.4.2 Unsolicited HTTP codes (summary of CME ERROR codes)

Code of <err>	Description
220	Unknown error for HTTP
221	HTTP task is busy
222	Failed to resolve server address
223	HTTP timeout
224	Failed to transfer data
225	Memory error
226	Invalid parameter
227	Network error

## 20.5 Secure Hyper Text Transfer Protocol Service

### 20.5.1 AT+CHTTPSSTART Acquire HTTPS protocol stack

#### Description

This command is used to acquire HTTPS protocol stack.

SIM PIN	References
YES	Vendor

#### Syntax

Execute Command	Responses
AT+CHTTPSSTART	OK ERROR

#### Examples

```
AT+CHTTPSSTART
OK
```

## 20.5.2 AT+CHTTPSSTOP Release HTTPS protocol stack

### Description

This command is used to release HTTPS protocol stack.

SIM PIN	References
YES	Vendor

### Syntax

Execute Command	Responses
AT+CHTTPSSTOP	OK ERROR

### Examples

```
AT+CHTTPSSTOP
OK
```

## 20.5.3 AT+CHTTPSOPSE Open HTTPS session

### Description

This command is used to open a new HTTPS session. Every time, the module must call AT+CHTTPSSTART before calling AT+CHTTPSOPSE.

SIM PIN	References
YES	Vendor

### Syntax

Write Command	Responses
AT+CHTTPSOPSE=" <i>&lt;host&gt;</i> <i>&gt;</i> ", <i>&lt;port&gt;</i>	OK ERROR

### Defined values

<i>&lt;host&gt;</i>
The host address
<i>&lt;port&gt;</i>
The host listening port for SSL

### Examples

```
AT+CHTTPSOPSE="www.mywebsite.com",443
OK
```

## 20.5.4 AT+CHTTPSCLSE Close HTTPS session

### Description

This command is used to close the opened HTTPS session.

SIM PIN	References
YES	Vendor

### Syntax

Execute Command	Responses
AT+CHTTPSCLSE	OK ERROR

### Examples

```
AT+CHTTPSCLSE
OK
```

## 20.5.5 AT+CHTTPSEND Send HTTPS request

### Description

This command is used to send HTTPS request. The AT+CHTTPSEND=<len> is used to download the data to be sent. The AT+CHTTPSEND is used to wait the result of sending.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CHTTPSEND=?	+CHTTPSEND: (1-4096) OK
Read Command	Responses
AT+CHTTPSEND?	+CHTTPSEND: <unsent_len> OK
Write Command	Responses
AT+CHTTPSEND=<len>	> OK ERROR

Execute Command	Responses
AT+CHTTPSSEND	OK +CHTTPSSEND: <result> ERROR

## Defined values

<unsent\_len>

The length of the data in the sending buffer which is waiting to be sent.

<len>

The length of the data to send

<result>

The final result of the sending.

- 0 – ok
- 1 – unknown error
- 2 – busy
- 3 – server closed
- 4 – timeout
- 5 – transfer failed
- 6 – memory error
- 7 – invalid parameter
- 8 – network error

## Examples

```
AT+CHTTPSSEND=88
>GET /HTTP/1.1
Host: www.mywebsite.com
User-Agent: MY WEB AGENT
Content-Length: 0

OK
AT+CHTTPSSEND
OK
+CHTTPSSEND: 0
AT+CHTTPSSEND?
+CHTTPSSEND: 88
OK
```

### 20.5.6 AT+CHTTPSRECV Receive HTTPS response

#### Description

This command is used to receive HTTPS response after sending HTTPS request.

SIM PIN	References
YES	Vendor

## Syntax

Write Command	Responses
AT+CHTTPSRECV=<recv_ len>	OK +CHTTPSRECV: DATA,<len> ... +CHTTPSRECV: DATA,<len> ... +CHTTPSRECV:<result> +CHTTPSRECV:<result> ERROR ERROR

## Defined values

<recv\_len>

The minimum length of the data to be received. The final length of the received data may be larger than the requested length.

<len>

The length of the data received.

<result>

The final result of the receiving.

## Examples

```
AT+CHTTPSRECV=1
OK
+CHTTPSRECV: DATA,249
HTTP/1.1 200 OK
Content-Type: text/html
Content-Language: zh-CN
Content-Length: 57
Date: Tue, 31 Mar 2009 01:56:05 GMT
Connection: Close
Proxy-Connection: Close

<html>
<header>test</header>
<body>
```

```
Test body
</body>

+CHTTPSRECV: 0
```

### 20.5.7 Unsolicited HTTPS Codes

Code of <err>	Description
+CHTTPS: RECV EVENT	When the AT+CHTTPSRECV is not being called, and there is data cached in the receiving buffer, this event will be reported.

## 20.6 Secure File Transfer Protocol Service

The FTPS related AT commands needs the AT+CATR to be set to the used port. AT+CATR=0 may cause some problem.

### 20.6.1 AT+CFTPSSTART Acquire FTPS protocol stack

#### Description

This command is used to acquire FTPS protocol stack.

SIM PIN	References
YES	Vendor

#### Syntax

Execute Command	Responses
AT+CFTPSSTART	OK ERROR

#### Examples

```
AT+CFTPSSTART
OK
```

### 20.6.2 AT+CFTPSSTOP Stop FTPS protocol stack

#### Description

This command is used to stop FTPS protocol stack. Currently only explicit FTPS mode is supported.

SIM PIN	References
---------	------------

YES	Vendor
-----	--------

### Syntax

Execute Command	Responses
AT+CFTPSSTOP	OK ERROR

### Examples

```
AT+CFTPSSTOP
OK
```

## 20.6.3 AT+CFTPSLOGIN Login the FTPS server

### Description

This command is used to login the FTPS server. Each time, the module must call AT+CFTPSSTART before calling AT+CFTPSLOGIN.

SIM PIN	References
YES	Vendor

### Syntax

Write Command	Responses
AT+CFTPSLOGIN=" <i>&lt;host&gt;</i> ", <i>&lt;port&gt;</i> ," <i>&lt;username&gt;</i> ", " <i>&lt;password&gt;</i> "	OK ERROR

### Defined values

*<host>*

The host address, maximum length is 256

*<port>*

The host listening port for SSL Modify this command

*<username>*

The user name, maximum length is 256

*<password>*

The password, maximum length is 256

### Examples

```
AT+CFTPSLOGIN="www.myftpsserver.com",990,"myname","mypassword"
```

OK

## 20.6.4 AT+CFTPSLOGOUT Logout the FTPS server

### Description

This command is used to logout the FTPS server.

### Syntax

Execute Command	Responses
AT+CFTPSLOGOUT	OK ERROR

### Examples

```
AT+CFTPSLOGOUT
OK
```

## 20.6.5 AT+CFTPSMKD Create a new directory on FTPS server

### Description

This command is used to create a new directory on the FTPS server. The maximum length of the full path name is 256.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPSMKD=?	+CFTPSMKD: "DIR" OK
Write Command	Responses
AT+CFTPSMKD="<dir>"	OK ERROR

### Defined values

<dir>

The directory to be created

### Examples

```
AT+CFTPSMKD="testdir"
OK
AT+CFTPSMKD={non-ascii}"74657374646972"
OK
```

## 20.6.6 AT+CFTPSRMD Delete a directory on FTPS server

### Description

This command is used to delete a directory on FTPS server

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPSRMD=?	+CFTPSRMD: "DIR" OK
Write Command	Responses
AT+CFTPSRMD="<dir>"	OK ERROR

### Defined values

<dir>

The directory to be removed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.

### Examples

```
AT+CFTPSRMD="testdir"
OK
AT+CFTPSRMD={non-ascii}"74657374646972"
OK
```

## 20.6.7 AT+CFTPSDELE Delete a file on FTPS server

### Description

This command is used to delete a file on FTPS server

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CFTPSDELE=?	+CFTPSDELE: "FILENAME" OK
Write Command	Responses
AT+CFTPSDELE="<filename <me>"	OK ERROR

## Defined values

<filename>

The name of the file to be deleted. If the file name contains non-ASCII characters, the <filename> parameter should contain a prefix of {non-ascii}.

## Examples

```
AT+CFTPSDELE="test"
```

```
OK
```

```
AT+CFTPSDELE={non-ascii}"74657374"
```

```
OK
```

## 20.6.8 AT+CFTPSCWD Change the current directory on FTPS server

### Description

This command is used to change the current directory on FTPS server

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CFTPSCWD=?	+CFTPSCWD: "DIR" OK
Write Command	Responses
AT+CFTPSCWD="<dir>"	OK ERROR

## Defined values

<dir>

The directory to be changed. If the directory contains non-ASCII characters, the <dir> parameter

should contain a prefix of {non-ascii}.

### Examples

```
AT+CFTPSCWD="testdir"
OK
AT+CFTPSCWD={non-ascii}"74657374646972"
OK
```

## 20.6.9 AT+CFTPSPWD Get the current directory on FTPS server

### Description

This command is used to get the current directory on FTPS server.

SIM PIN	References
YES	Vendor

### Syntax

Execute Command	Responses
AT+CFTPSPWD	+CFTPSPWD: "<dir>" OK ERROR

### Defined values

<dir>  
The current directory on FTPS server.

### Examples

```
AT+CFTPSPWD
+CFTPSPWD: "/testdir"
OK
```

## 20.6.10 AT+CFTPSTYPE Set the transfer type on FTPS server

### Description

This command is used to set the transfer type on FTPS server

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPSTYPE=?	+CFTPSTYPE: (A,I) OK
Read Command	Responses
AT+CFTPSTYPE?	+CFTPSTYPE: <type> OK
Write Command	Responses
AT+CFTPSTYPE=<type>	OK ERROR

### Defined values

<type>
The type of transferring: A – ASCII. I – Binary.

### Examples

AT+CFTPSTYPE=A
OK

## 20.6.11 AT+CFTPSSLIST List the items in the directory on FTPS server

### Description

This command is used to list the items in the specified directory on FTPS server

SIM PIN	References
YES	Vendor

### Syntax

Write Command	Responses
AT+CFTPSSLIST="<dir>"	OK +CFTPSSLIST: DATA,<len> ... +CFTPSSLIST:<err> ERROR
Execute Command	Responses
AT+CFTPSSLIST	OK +CFTPSSLIST: DATA,<len> ...

```
+CFTPSLIST:<err>
OK
+CFTPSLIST:<err>
+CFTPSLIST:<err>
ERROR
ERROR
```

## Defined values

<dir>	The directory to be listed. If the directory contains non-ASCII characters, the <dir> parameter should contain a prefix of {non-ascii}.
<len>	The length of data reported
<err>	The result code of the listing

## Examples

```
AT+CFTPSLIST="/testd"
OK
+CFTPSLIST: DATA,193
drw-rw-rw-  1 user  group      0 Sep  1 18:01 .
drw-rw-rw-  1 user  group      0 Sep  1 18:01 ..
-rw-rw-rw-  1 user  group    2017 Sep  1 17:24 19800106_000128.jpg

+CFTPSLIST: 0
AT+CFTPSLIST
OK
+CFTPSLIST: DATA,193
drw-rw-rw-  1 user  group      0 Sep  1 18:01 .
drw-rw-rw-  1 user  group      0 Sep  1 18:01 ..
-rw-rw-rw-  1 user  group    2017 Sep  1 17:24 19800106_000128.jpg

+CFTPSLIST: 0
```

### 20.6.12 AT+CFTPSGETFILE Get a file from FTPS server to EFS

#### Description

The command is used to download a file from FTPS server to module EFS.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CFTPSGETFILE=?	+CFTPSGETFILE: [{non-ascii}]“FILEPATH”, (0-8) OK
Write Command	Responses
AT+CFTPSGETFILE= “<filepath>”,<dir>	OK +CFTPSGETFILE: 0
	+CFTPSGETFILE: <err> ERROR
	ERROR
	OK +CFTPSGETFILE: <err>

## Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfers file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory to save the downloaded file:

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<err>

The error code of FTPS operation.

## Examples

```
AT+CFTPSGETFILE="/pub/mydir/test1.txt",1
```

```
OK
```

```
...
```

```
+CFTPSGETFILE: 0
```

```
AT+CFTPSGETFILE=" test2.txt",2
```

```
OK
```

```
...
```

```
+CFTPSGETFILE: 0
AT+CFTPSGETFILE={non-ascii}" B2E2CAD42E747874",2
OK
...
+CFTPSGETFILE: 0
AT+CFTSPGETFILE=?
+CFTPSGETFILE: [{non-ascii}]"FILEPATH",(0-8)
OK
```

### 20.6.13 AT+CFTPSPUTFILE Put a file in module EFS to FTPS server

#### Description

The command is used to upload a file in the module EFS to FTPS server.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPSPUTFILE=?	+CFTPSPUTFILE: [{non-ascii}] "FILEPATH", (0-8) OK
Write Command	Responses
AT+CFTPSPUTFILE= "<filepath>",<dir>	OK +CFTPSPUTFILE: 0 +CFTPSPUTFILE: <err> ERROR ERROR OK +CFTPSPUTFILE: <err>

#### Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfers file to the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<dir>

The directory that contains the file to be uploaded:

- 0 – current directory [refer to [AT+FSCD](#)]
- 1 – "C:/Picture" directory
- 2 – "C:/Video" directory
- 3 – "C:/VideoCall" directory

- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<err>

The error code of FTPS operation.

## Examples

```
AT+CFTPSPUTFILE="/pub/mydir/test1.txt",1
OK
AT+CFTPSPUTFILE=" test2.txt",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE={non-ascii}" B2E2CAD42E747874",1
OK
...
+CFTPSPUTFILE: 0
AT+CFTPSPUTFILE=?
+CFTPSPUTFILE: [{non-ascii}]“FILEPATH”,(0-8)
OK
```

### 20.6.14 AT+CFTPSGET Get a file from FTPS server to serial port

#### Description

The command is used to get a file from FTPS server and output it to serial port. This command may have a lot of DATA transferred to DTE using serial port, The AT+CATR command is recommended to be used.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CFTPSGET=?	+CFTPSGET: [{non-ascii}] “FILEPATH” OK
Write Command	Responses
AT+CFTPSGET= “<filepath>”	OK +CFTPSGET: DATA,<len> ...

	+CFTPSGET: DATA, <len>
	...
	...
	+CFTPSGET: 0
	+CFTPSGET: <err>
	ERROR
	ERROR
	+CFTPSGET: DATA, <len>
	...
	+CFTPSGET: DATA, <len>
	...
	...
	+CFTPSGET: <err>

## Defined values

<filepath>

The remote file path. When the file path doesn't contain "/", this command transfer file from the current remote FTPS directory. If the file path contains non-ASCII characters, the file path parameter should contain a prefix of {non-ascii}.

<len>

The length of FTPS data contained in this packet.

<err>

The error code of FTPS operation.

## Examples

```
AT+CFTPSGET="/pub/mydir/test1.txt"
```

```
OK
```

```
+CFTPSGET: DATA, 1020,
```

```
...
```

```
+CFTPSGET: DATA, 1058,
```

```
...
```

```
...
```

```
+CFTPSGET: 0
```

```
AT+CFTPSGET={non-ascii}"/2F74657374646972/B2E2CAD42E747874"
```

```
OK
```

```
+CFTPSGET: DATA, 1020,
```

```
...
```

```
+CFTPSGET: 0
```

```
AT+CFTPSGET=?
```

```
+CFTPSGET:[{non-ascii}] "FILEPATH"
```

```
OK
```

## 20.6.15 AT+CFTPSPUT Put a file to FTPS server

### Description

This command is used to put a file to FTPS server through serial port. The AT+CFTPSPUT=[“<filepath>”,]<len> is used to download the data to be sent. The AT+CFTPSPUT is used to wait the result of sending.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPSPUT=?	+CFTPSPUT: [ {non-ascii} ] "FILEPATH" OK
Read Command	Responses
AT+CFTPSPUT?	+CFTPSPUT: <unsent_len> OK
Write Command	Responses
AT+CFTPSPUT=[“<filepath>”,]<len>	> OK +CFTPSPUT: <result> ERROR ERROR
Execute Command	Responses
AT+CFTPSPUT	OK +CFTPSPUT: <result> ERROR

### Defined values

<filepath>

The path of the file on FTPS server.

<unsent\_len>

The length of the data in the sending buffer which is waiting to be sent.

<len>

The length of the data to send, the maximum length is 512.

<result>

The final result of the sending.

### Examples

```
AT+CFTPSPUT="t1.txt",10
```

```
>testcontent
OK
AT+CFTPSPUT
OK
+CFTPSSPUT: 0
AT+CFTPSPUT?
+CFTPSPUT: 88
OK
```

## 20.6.16 AT+CFTPSSINGLEIP Set FTPS data socket address type

### Description

The command is used to set FTPS server data socket IP address type

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CFTPSSINGLEIP=?	+CFTPSSINGLEIP: (0,1) OK
Read Command	Responses
AT+CFTPSSINGLEIP?	+ CFTPSSINGLEIP: <singleip> OK
Write Command	Responses
AT+CFTPSSINGLEIP=<singleip>	OK
	ERROR

### Defined values

<singleip>

The FTPS data socket IP address type:

- 0 – decided by PORT response from FTPS server
- 1 – the same as the control socket.

### Examples

```
AT+CFTPSSINGLEIP=1
OK
AT+CFTPSSINGLEIP?
+CFTPSSINGLEIP:1
OK
```

```
AT+CFTPSSINGLEIP=?
+CFTPSSINGLEIP: (0,1)
OK
```

### 20.6.17 Unsolicited FTPS Codes

Code of <err>	Description
0	FTPS operation succeeded
1	SSL verify alert
2	Unknown FTPS error
3	FTPS busy
4	FTPS server closed connection
5	Timeout
6	FTPS transfer failed
7	FTPS memory error
8	Invalid parameter
9	Operation rejected by FTPS server
10	Network error

## 20.7 HTTP Time Synchronization Service

The HTP related AT commands are used to synchronize system time with HTP server.

### 20.7.1 AT+CHTPSERV Set HTP server info

#### Description

The command is used to add or delete HTP server information. There are maximum 16 HTP servers.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CHTPSERV=?	+CHTPSERV:"ADD","HOST",(1-65535), (0-1)[,"PROXY",(1-65535)] +CHTPSERV: "DEL",(0-15) OK
Read Command	Responses

AT+CHTSPSERV?	+CHTSPSERV:<index>"<host>",<port>,<http_version> [,"<proxy>",<proxy_port>] ... +CHTSPSERV:<index>"<host>",<port>[,"<proxy>",< proxy_port>] OK OK <i>(if HTP server not setted)</i>
Write Command	Responses
AT+CHTSPSERV= "<cmd>",<host_or_idx>"[,< port>,<http_version> [,"<proxy>",<proxy_port>]]	OK ERROR

## Defined values

<cmd>

The command to operate the HTP server list.

“ADD”: add a HTP server item to the list

“DEL”: delete a HTP server item from the list

<host\_or\_idx>

If the <cmd> is “ADD”, this field is the same as <host>, needs quotation marks; If the <cmd> is “DEL”, this field is the index of the HTP server item to be deleted from the list, does not need quotation marks.

<host>

The HTP server address.

<port>

The HTP server port.

<http\_version>

The HTTP version of the HTP server:

0- HTTP 1.0

1- HTTP 1.1

<proxy>

The proxy address

<proxy\_port>

The port of the proxy

<index>

The HTP server index.

## Examples

```
AT+CHTSPSERV="ADD","www.google.com",80,1
```

```
OK
```

## 20.7.2 AT+CHTPUPDATE Updating date time using HTP protocol

### Description

The command is used to updating date time using HTP protocol.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CHTPUPDATE=?	OK
Read Command	Response
AT+CHTPUPDATE?	+CHTPUPDATE:<status>
Execute Command	Responses
AT+CHTPUPDATE	OK
	+CHTPUPDATE: <err>
	ERROR

### Defined values

<status>
The status of HTP module: Updating: HTP module is synchronizing date time NULL: HTP module is idle now
<err>
The result of the HTP updating

### Examples

<i>AT+CHTPUPDATE</i>
<i>OK</i>
<i>+CHTPUPDATE: 0</i>

## 20.7.3 Unsolicited HTP Codes

Code of <err>	Description
0	Operation succeeded
1	Unknown error
2	Wrong parameter
3	Wrong date and time calculated

4

Network error

## 21 MMS Commands

The maximum of recipients, copy-to recipients, and secret recipients are respective 20. The maximum length of recipients' number is 60.

### 21.1 AT+CMMSCURL Set the URL of MMS center

#### Description

The command is used to set the URL of MMS center.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CMMSCURL=?	+CMMSCURL:"URL" OK
Read Command	Responses
AT+CMMSCURL?	+CMMSCURL: "<mmscurl>" OK
Write Command	Responses
AT+CMMSCURL="<mmscurl>"	OK ERROR +CME ERROR: <err>

#### Defined values

<mmscurl>
The URI of MMS center, not including "http://"

#### Examples

AT+CMMSCURL=" mmsc.monternet.com"
OK
AT+CMMSCURL?
+CMMSCURL:" mmsc.monternet.com"
OK
AT+CMMSCURL=?
+CMMSCURL:"URL"

OK

## 21.2 AT+CMMSPROTO Set the protocol parameters and MMS proxy

### Description

The command is used to set the protocol parameters and MMS proxy address.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSPROTO=?	+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535) OK
Read Command	Responses
AT+CMMSPROTO?	+CMMSPROTO: <type>,<gateway>,<port> OK
Write Command	Responses
AT+CMMSPROTO=<type> [,<gateway>,<port>]	OK ERROR +CME ERROR: <err>

### Defined values

<type>

The application protocol for MMS:

0 – WAP

1 – HTTP

<gateway>

IP address of MMS proxy

<port>

Port of MMS proxy

### Examples

```
AT+CMMSPROTO=0,"10.0.0.172",9201
```

OK

```
AT+CMMSPROTO?
```

```
+CMMSPROTO: 0,"10.0.0.172",9201
```

OK

```
AT+CMMSPROTO=?
```

```
+CMMSPROTO: (0,1),"(0-255).(0-255).(0-255).(0-255)",(0-65535)
OK
```

## 21.3 AT+CMMSENDCFG Set the parameters for sending MMS

### Description

The command is used to set the parameters for sending MMS.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSENDCFG=?	+CMMSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4) OK
Read Command	Responses
AT+CMMSENDCFG?	+CMMSENDCFG: <valid>,<pri>,<sendrep>,<readrep>,<visible>,<class> OK
Write Command	Responses
AT+CMMSENDCFG=<val id>,<pri>,<sendrep>,<readrep>,<visible>,<class>	OK ERROR +CME ERROR: <err>

### Defined values

<valid>

The valid time of the sent MMS:

- 0 – 1 hour.
- 1 – 12 hours.
- 2 – 24 hour.
- 3 – 2 days.
- 4 – 1 week.
- 5 – maximum.
- 6 – Not set (default).

<pri>

Priority:

- 0 – lowest.
- 1 – normal.
- 2 – highest.
- 3 – Not set (default)

<sendrep>

Whether need delivery report:

- 0 – No (default).
- 1 – Yes.

<readrep>

Whether need read report:

- 0 – No (default).
- 1 – Yes.

<visible>

Whether to show the address of the sender:

- 0 – hide the address of the sender.
- 1 – Show the address of the sender even if it is a secret address.
- 2 – Not set (default).

<class>

The class of MMS:

- 0 – personal.
- 1 – advertisement.
- 2 – informational.
- 3 – auto.
- 4 – Not set (default).

## Examples

```
AT+CMMSENDCFG=6,3,1,1,2,4
```

```
OK
```

```
AT+CMMSENDCFG?
```

```
+CMMSENDCFG:6,3,1,1,2,4
```

```
OK
```

```
AT+CMMSENDCFG=?
```

```
+CMMSENDCFG: (0-6),(0-3),(0,1),(0,1),(0-2),(0-4)
```

```
OK
```

## 21.4 AT+CMMSEEDIT Enter or exit edit mode

### Description

The command is used to enter or exit edit mode of mms.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSEEDIT=?	+CMMSEEDIT: (0,1)

	OK
Read Command	Responses
AT+CMMSEEDIT?	+CMMSEEDIT: <mode> OK
Write Command	Responses
AT+CMMSEEDIT=<mode>	OK ERROR +CME ERROR: <err>

### Defined values

<mode>
Whether to allow edit MMS:
0 – No.
1 – Yes.

### Examples

AT+CMMSEEDIT=0
OK
AT+CMMSEEDIT?
+CMMSEEDIT:0
OK
AT+CMMSEEDIT=?
+CMMSEEDIT:(0-1)
OK

## 21.5 AT+CMMSDOWN Download the file data or title from UART

### Description

This command is used to download file data to MMS body. When downloading a text file or title from UART, the text file or title must start with \xFF\xFE, \xFE\xFF or \xEF\xBB\xBF to indicate whether it is UCS2 little endian, UCS2 big endian or UTF-8 format. Without these OCTETS, the text file or title will be regarded as UTF-8 format.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSDOWN=?	+CMMSDOWN: "PIC",(1-<max_pdu_size>),"NAME"

	+CMMSDOWN: "TEXT",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "AUDIO",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "VIDEO",(1-<max_pdu_size>),"NAME" +CMMSDOWN: "SDP",(1-<max_pdu_size>) +CMMSDOWN: "FILE",(0-8),"FILENAME" +CMMSDOWN: "TITLE",(1-40) OK
Write Command	Responses
AT+CMMSDOWN=<type>,<size>[,<name>] Or AT+CMMSDOWN=<type>,<dir>,<filename>	OK ERROR +CME ERROR: <err>

## Defined values

<type>

The type of file to download:

- "PIC" – JPG/GIF/PNG/TIFF file.
- "TEXT" – plain text file.
- "AUDIO" – MIDI/WAV/AMR/MPEG file.
- "VIDEO" – 3GPP/MP4 file.
- "SDP" – application/sdp type
- "FILE" – file in the UE.
- "TITLE" – subject of the MMS.

<size>

The size of file data need to download through AT interface.

<name>

The name of the file to download.

<dir>

The directory of the selected file:

- 0 – current directory[refer to [AT+FSCD](#)]
- 1 – "C:/Picture" directory
- 2 – "C:/Video" directory
- 3 – "C:/VideoCall" directory
- 4 – "D:/Picture" directory
- 5 – "D:/Video" directory
- 6 – "D:/VideoCall" directory
- 7 – "C:/Audio" directory
- 8 – "D:/Audio" directory

<filename>

The name of the file existing in the UE to download.

<max\_pdu\_size>

The maximum size of MMS PDU permitted.

## Examples

```
AT+CMMSDOWN=?
+CMMSDOWN: "PIC",(1-102400),"NAME"
+CMMSDOWN: "TEXT",(1-102400),"NAME"
+CMMSDOWN: "AUDIO",(1-102400),"NAME"
+CMMSDOWN: "VIDEO",(1-102400),"NAME"
+CMMSDOWN:"SDP",(1-102400)
+CMMSDOWN: "FILE",(0-8),"FILEPATH"
+CMMSDOWN: "TITLE",(1-40)
OK
AT+CMMSDOWN="PIC",20112,"test1.jpg" <CR><LF>
>....(20112 bytes of data transferred in AT interface)
OK
AT+CMMSDOWN="FILE",2," test2.wav"
OK
```

## 21.6 AT+CMMSDELFILFILE Delete a file within the editing MMS body

### Description

This command is used to delete a file within the editing MMS body.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSDELFILFILE=?	OK
Write Command	Responses
AT+CMMSDELFILFILE=<inde x>	OK ERROR +CME ERROR: <err>

### Defined values

<index>

The index of the file to delete contains in the MMS body.

## Examples

```
AT+CMMSDELFILE=2
```

```
OK
```

```
AT+CMMSDELFILE=?
```

```
OK
```

## 21.7 AT+CMMSSEND Start MMS sending

### Description

This command is used to send MMS. It can only be performed in edit mode of MMS.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSSEND=?	+CMMSSEND="ADDRESS" OK
Write Command	Responses
AT+CMMSSEND=<address> >	OK +CMMSSEND:0 ERROR +CME ERROR: <err>  Or  OK +CMMSSEND :<err>
Execute Command	Responses
AT+CMMSSEND	OK +CMMSSEND:0 ERROR +CME ERROR: <err>  Or  OK

	+CMMSSSEND :<err>
--	-------------------

### Defined values

<address>

Mobile phone number or email address.

As mobile phone number, the max length is 40;

As email address, the max length is 60;

### Examples

AT+CMMSSSEND="13613623116"

OK

+CMMSSSEND:0

AT+CMMSSSEND

OK

+CMMSSSEND:0

AT+CMMSSSEND=" 13613623116"

OK

+CME ERROR: 190

AT+CMMSSSEND=2,"13613623116"

+CME ERROR: 177

## 21.8 AT+CMMSRECP Add recipients

### Description

This command is used to add recipients.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSRECP=?	+CMMSRECP: "ADDRESS " OK
Read Command	Responses
AT+CMMSRECP?	+CMMSRECP: (list of <addr>s) OK ERROR +CME ERROR: <err>

Write Command	Responses
AT+CMMSRECP=<addr>	OK ERROR +CME ERROR: <err>

### Defined values

<addr>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

### Examples

AT+CMMSRECP=?
+CMMSRECP: "ADDRESS"
OK
AT+CMMSRECP?
+CMMSRECP: "t1@test.com";"15813862534"
OK
AT+CMMSRECP="13818362596"
OK

## 21.9 AT+CMMSCC Add copy-to recipients

### Description

This command is used to add copy-to recipients.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSCC=?	+CMMSCC: "ADDRESS " OK
Read Command	Responses
AT+CMMSCC?	+CMMSCC: (list of <addr>s) OK ERROR +CME ERROR: <err>

Write Command	Responses
AT+CMMSCC=<addr>	OK ERROR +CME ERROR: <err>

## Defined values

<addr>

Mobile phone number or email address.

As mobile phone number, the max length is 40;

As email address, the max length is 60;

## Examples

```
AT+CMMSCC=?
```

```
+CMMSCC: "ADDRESS"
```

```
OK
```

```
AT+CMMSCC?
```

```
+CMMSCC: "t1@test.com"; "15813862534"
```

```
OK
```

```
AT+CMMSCC="13818362596"
```

```
OK
```

## 21.10 AT+CMMSBCC Add secret recipients

### Description

This command is used to add secret recipients.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSBCC=?	+CMMSBCC: "ADDRESS " OK
Read Command	Responses
AT+CMMSBCC?	+CMMSBCC: (list of <addr>s) OK ERROR +CME ERROR: <err>

Write Command	Responses
AT+CMMSBCC=<addr>	OK ERROR +CME ERROR: <err>

## Defined values

<addr>
Mobile phone number or email address.
As mobile phone number, the max length is 40;
As email address, the max length is 60;

## Examples

AT+CMMSBCC=?
+CMMSBCC: "ADDRESS"
OK
AT+CMMSBCC?
+CMMSBCC: "t1@test.com"; "15813862534"
OK
AT+CMMSBCC="13818362596"
OK

## 21.11 AT+CMMSDELRECP Delete recipients

### Description

This command is used to delete recipients. The execute command is used to delete all recipients

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSDELRECP=?	+CMMSDELRECP: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELRECP=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses

AT+CMMSDELRECP	OK ERROR +CME ERROR: <err>
----------------	----------------------------------

### Defined values

<addr>
Mobile phone number or email address. As mobile phone number, the max length is 40; As email address, the max length is 60;

### Examples

AT+CMMSDELRECP=?
+CMMSDELRECP: "ADDRESS"
OK
AT+CMMSDELRECP
OK
AT+CMMSDELRECP="13818362596"
OK

## 21.12 AT+CMMSDELCC Delete copy-to recipients

### Description

This command is used to delete copy-to recipients. The execution command is used to delete all copy recipients

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSDELCC=?	+CMMSDELCC: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELCC=<addr>	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELCC	OK ERROR +CME ERROR: <err>

## Defined values

<addr>

Mobile phone number or email address.

As mobile phone number, the max length is 40;

As email address, the max length is 60;

## Examples

```
AT+CMMSDELCC=?
```

```
+CMMSDELCC: "ADDRESS"
```

```
OK
```

```
AT+CMMSDELCC
```

```
OK
```

```
AT+CMMSDELCC="13818362596"
```

```
OK
```

## 21.13 AT+CMMSDELBCC Delete secret recipients

### Description

This command is used to delete secret recipients. The execution command is used to delete all secret recipients

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSDELBCC=?	+CMMSDELBCC: "ADDRESS " OK
Write Command	Responses
AT+CMMSDELBCC=<addr> >	OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELBCC	OK ERROR +CME ERROR: <err>

### Defined values

<addr>

Mobile phone number or email address.  
As mobile phone number, the max length is 40;  
As email address, the max length is 60;

## Examples

```
AT+CMMSDELBCC=?
+CMMSDELRECP: "ADDRESS"
OK
AT+CMMSDELBCC
OK
AT+CMMSDELBCC="13818362596"
OK
```

## 21.14 AT+CMMSRECV Receive MMS

### Description

This command is used to receive MMS. It can only perform in non-edit mode of MMS

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSRECV=?	+CMMSRECV="LOCATION" OK
Write Command	Responses
AT+CMMSRECV=<locatio n>	OK +CMMSRECV=0 ERROR +CME ERROR: <err>
	Or
	OK +CME ERROR :<err>

### Defined values

<location>  
Reported by +WAP\_PUSH\_MMS message

## Examples

```
AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"
```

```
OK
```

```
+CMMSRECV=0
```

```
AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"
```

```
OK
```

```
+CME ERROR: 190
```

```
AT+CMMSRECV="http://211.136.112.84/MI76xou_anB"
```

```
+CME ERROR: 177
```

## 21.15 AT+CMMSVIEW View information of MMS in box or memory

### Description

This command is used to view information of MMS in box or memory. The title part of the MMS is formatted with UCS2 little endian character set.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSVIEW=?	+CMMSVIEW: (0,1) OK
Write Command	Responses
AT+CMMSVIEW=<index>	+CMMSVIEW:<mmstype>,"<sender>","<receipts>","<ccs>","<bc cs>","<datetime>","<subject>",<size><CR><LF>list of <fileIndex, name, type, filesize><CR><LF> OK ERROR +CME ERROR: <err>
Execute Command	Responses
AT+CMMSVIEW	+CMMSVIEW:<mmstype>,"<sender>","<receipts>","<ccs>","<bc cs>","<datetime>","<subject>",<size><CR><LF>list of <fileIndex, name, type,fileSize><CR><LF> OK ERROR +CME ERROR: <err>

### Defined values

```
<index>
```

The MMS mail box index

<mmstype>

The state of MMS:

- 0 – Received MMS.
- 1 – Sent MMS.
- 2 – Unsent MMS.

<sender>

The address of sender

<receipts>

The list of receipts separated by “;”

<ccs>

The list of copy receipts separated by “;”

<bccs>

The list of secret receipts separated by “;”

<time>

For received MMS, it is the time to receive the MMS. For other MMS, it is the time to create the MMS.

<subject>

MMS title

<size>

MMS data size

<fileIndex>

The index of each file contained in the MMS body

<name>

The name of each file contained in the MMS body

<type>

The type of each file contained in the MMS body:

- 1 – unknown type.
- 2 – text.
- 3 – text/html.
- 4 – text/plain.
- 5 – image.
- 6 – image/gif.
- 7 – image/jpg.
- 8 – image/tif.
- 9 – image/png.
- 10 – audio/midi.
- 11 – audio/x-wav.
- 12 – audio /amr.
- 13 – audio /mpeg.
- 14 – video /mp4.
- 15 – video /3gpp.
- 29 – application/sdp.

30 – application/smil.  
<fileSize>  
The size of each file contained in the MMS body

## Examples

```
AT+CMMSVIEW=?
+CMMSVIEW: (0,1)
OK
AT+CMMSVIEW
+CMMSVIEW:2,"","",,"0000-00-00 00:00:00","dsidfisids",83867
0,"1.txt",4,10
1,"80.jpg",7,83794
OK
AT+CMMSVIEW=1
+CMMSVIEW:0,"","",,"2009-03-10 10:06:12","my title",83867
0,"1.txt",4,10
1,"80.jpg",7,83794
OK
```

## 21.16 AT+CMMSREAD read the given file in MMS currently in memory

### Description

This command is used to read a given file in MMS currently in memory. When reading a text file, it will be converted to UCS2 little endian before final UART output.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSREAD=?	OK
Write Command	Responses
AT+CMMSREAD=<index>	+CMMSREAD:<name>,<datSize> <FileContent>
	OK ERROR

```
+CME ERROR: <err>
```

## Defined values

<index>	The index of the given file contained in the MMS body
<name>	The name of the given file contained in the MMS body
<datSize>	The size of the given file contained in the MMS body
<FileContent>	The content of the file to read

## Examples

```
AT+CMMSREAD=?
OK
AT+CMMSREAD=3
+CMMSSNATCH:"1.jpg",83794
...(File Content)
OK
```

## 21.17 AT+CMMSSNATCH snatch the given file in MMS

### Description

This command is used to snatch the given file in MMS currently in memory, and save it to UE file system. If the file of input name already exists in the selected directory, it will fail.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSSNATCH=?	OK
Write Command	Responses
AT+CMMSSNATCH=<index>,<dir>,"<filename>"	OK ERROR +CME ERROR: <err>

### Defined values

<index>

The index of the given file contained in the MMS body

<dir>

The directory of the selected file:

- 0 – current directory[[refer to [AT+FSCD](#)]
- 1 – “C:/Picture” directory
- 2 – “C:/Video” directory
- 3 – “C:/VideoCall” directory
- 4 – “D:/Picture” directory
- 5 – “D:/Video” directory
- 6 – “D:/VideoCall” directory
- 7 – “C:/Audio” directory
- 8 – “D:/Audio” directory

<filename>

The name of the given file contained in the MMS body

## Examples

```
AT+CMMSSNATCH=?
```

```
OK
```

```
AT+CMMSSNATCH=3,2,"mylocalfile.jpg"
```

```
OK
```

## 21.18 AT+CMMSSAVE Save the MMS to a mail box

### Description

This command is used to save the selected MMS into a mailbox.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSSAVE=?	+CMMSSAVE: (0-1),(0-2) OK
Write Command	Responses
AT+CMMSSAVE=<index>[, <mmstype>]	+CMMSSAVE: <index> OK ERROR +CME ERROR: <err>

Execute Command	Responses
AT+CMMSSAVE	+CMMSSAVE: <index> OK ERROR +CME ERROR: <err>

### Defined values

<index>
The index of mail box selected to save the MMS
<mmstype>
The status of MMS:
0 – Received MMS.
1 – Sent MMS.
2 – Unsent MMS.

### Examples

AT+CMMSSAVE=?
+CMMSSAVE: (0-1),(0-2)
OK
AT+CMMSSAVE=1
+CMMSSAVE: 1
OK

## 21.19 AT+CMMSDELETE Delete MMS in the mail box

### Description

This command is used to delete MMS in the mailbox. The execute command is used to delete all MMS in the mailbox.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSDELETE=?	+CMMSDELETE: (0-1) OK
Write Command	Responses
AT+CMMSDELETE?	+CMMSDELETE: <mmsNum> OK ERROR

	+CME ERROR: <err>
Write Command	Responses
AT+CMMSDELETE=<index>	OK
	ERROR
	+CME ERROR: <err>
Execute Command	Responses
AT+CMMSDELETE	OK
	ERROR
	+CME ERROR: <err>

### Defined values

<index>
The index of mail box selected to save the MMS
<mmsNum>
The number of MMS saved in the mail box

### Examples

AT+CMMSDELETE=?
+CMMSDELETE: (0-1)
OK
AT+CMMSDELETE
OK
AT+CMMSDELETE=1
OK

## 21.20 AT+CMMSYSSET Configure MMS transferring parameters

### Description

This command is used to configure MMS transferring setting.

SIM PIN	References
YES	Vendor

### Syntax

Test Command	Responses
AT+CMMSYSSET=?	+CMMSYSSET: (10240-<max_pdu_size>),(512-4096),(512-4096),(1-<wap_send_b uf_count>)
	OK

Write Command	Responses
AT+CMMSSYSSET?	+CMMSSYSSET: < max_pdu_size >, <wap_send_buf_size>, <wap_rcv_buf_size>, <wap_send_buf_count> OK
Write Command	Responses
AT+CMMSSYSSET=< max_pdu_size >[, <wap_send_buf_size>[, <wap_rcv_buf_size>[, <wap_send_buf_count>]]]	OK ERROR +CME ERROR: <err>

### Defined values

< max_pdu_size >	The maximum MMS pdu size allowed by operator.
<wap_send_buf_size>	The length of WTP PDU for sending
<wap_rcv_buf_size>	The length of WTP PDU for receiving
<wap_send_buf_count>	The count of buffers for WTP sending in group

### Examples

AT+CMMSSYSSET=?	+CMMSSYSSET: (10240-10240),(512-4096),(512-4096),(1-8)
OK	
AT+CMMSSYSSET?	+CMMSSYSSET: 10240,1460,1500,6
OK	
AT+CMMSSYSSET=10240,1430,1500,8	
OK	
AT+CMMSSYSSET=102400	
OK	

## 21.21 AT+CMMSINCLN Increase the length of audio/video attachment header

### Description

The command is used to increase the length of video/audio attachment header length in the length indicator field. This command is used to be compatible with some operators. This command must be set before calling AT+CMMSEDT=1.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CMMSINLEN=?	+CMMSINLEN: (0,1) OK
Read Command	Responses
AT+CMMSINLEN?	+CMMSINLEN: <mode> OK
Write Command	Responses
AT+CMMSINLEN=<mode>	OK ERROR +CME ERROR: <err>

## Defined values

<mode>
Whether to increase the length:
0 – No.
1 – Yes.

## Examples

AT+CMMSINLEN=0
OK
AT+CMMSINLEN?
+CMMSINLEN:0
OK
AT+CMMSINLEN=?
+CMMSINLEN:(0-1)
OK

## 21.22 AT+CMMSUA Set the User-Agent of MMS packet

### Description

The command is used to set the User-Agent of MMS packet.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CMMSUA=?	+CMMSUA:"UserAgent" OK
Read Command	Responses
AT+CMMSUA?	+CMMSUA: "<useragent>" OK
Write Command	Responses
AT+CMMSUA="<useragent>"	OK ERROR +CME ERROR: <err>

## Defined values

<useragent>

The User-Agent of MMS packet. The maximum length is 511 bytes.

## Examples

```
AT+CMMSUA=" Test my UserAgent"
```

```
OK
```

```
AT+CMMSUA?
```

```
+CMMSUA:" Test my UserAgent"
```

```
OK
```

```
AT+CMMSUA=?
```

```
+CMMSUA:"UserAgent"
```

```
OK
```

## 21.23 AT+CMMSPROFILE Set the User-Agent profile of MMS packet

### Description

The command is used to set the User-Agent profile of MMS packet.

SIM PIN	References
YES	Vendor

## Syntax

Test Command	Responses
AT+CMMSPROFILE=?	+CMMSPROFILE:"UserAgentProfile" OK
Read Command	Responses
AT+CMMSPROFILE?	+CMMSPROFILE: "<profile>" OK
Write Command	Responses
AT+CMMSPROFILE="<profile>"	OK ERROR +CME ERROR: <err>

### Defined values

<profile>

The User-Agent profile of MMS packet. The maximum length is 511 bytes.

### Examples

```
AT+CMMSPROFILE=" Test my UserAgent profile"
```

```
OK
```

```
AT+CMMSPROFILE?
```

```
+CMMSUA:" Test my UserAgent profile"
```

```
OK
```

```
AT+CMMSPROFILE=?
```

```
+CMMSPROFILE:"UserAgent profile"
```

```
OK
```

## 21.24 Supported Unsolicited Result Codes in MMS

### Description

This section lists all the unsolicited result code in MMS module.

#### 21.24.1 Indication of Sending/Receiving MMS

MMS Sending	Description
+CMMSEND:<err>	This indication means the result of sending MMS. If successful, it reports +CMMSEND:0, or else, it report +CMMSEND:<err>
MMS Notification	Description
+WAP_PUSH_MMS:<sender>,<transaction_id>,<lo	This indication means there is a new MMS received in the MMS center.

<p>cation&gt;,&lt;timestamp&gt;,&lt;class&gt;,&lt;size&gt;</p>	
MMS Receiving	Description
+CMMSRECV:<err>	This indication means the result of receiving MMS. If successful, it reports +CMMSRECV:0, or else, it reports +CMMSRECV:<err>

### Defined values

< sender>	The sender address of the received MMS
<transaction_id>	The X-Mms-Transaction-ID of the received MMS
<location>	The X-Mms-Content-Location of the received MMS
<timestamp>	The timestamp of the WAP push message
<class>	The X-Mms-Class of the received MMS
	<ul style="list-style-type: none"> <li>0 – Expired</li> <li>1 – Retrieved</li> <li>2 – Rejected</li> <li>3 – Deferred</li> <li>4 – Unrecognized</li> </ul>
<size>	The size of the received MMS

### Examples

```
+WAP_PUSH_MMS
+WAP_PUSH_MMS: "15001844675","RROpJGJVyjeA","http://211.136.112.84/RROpJGJVyjeA",
,"09/03/17,17:14:41+32",0,13338
```

### 21.24.2 Summary of CME ERROR Codes for MMS

Code of <err>	Description
201	Unknown error for mms
171	MMS task is busy now
172	The mms data is over size
173	The operation is over time
174	There is no mms receiver
175	The storage for address is full
176	Not find the address

177	Invalid parameter
178	Failed to read mms
179	There is not a mms push message (reserved)
180	Memory error
181	Invalid file format
182	The mms storage is full
183	The box is empty
184	Failed to save mms
185	Busy editing mms now
186	Not allowed to edit now
187	No content in the buffer
188	Failed to receive mms
189	Invalid mms pdu
190	Network error
191	Failed to read file in UE

## 22 CSCRIPT Commands

### 22.1 AT+CSCRIPTSTART Start running a LUA script file.

#### Description

The command is used to start running a LUA script file. The script file must exist in c:\ in the module EFS. This command shouldn't be used by sio LIB in LUA script files.

SIM PIN	References
NO	Vendor

#### Syntax

Test Command	Responses
AT+CSCRIPTSTART=?	+CSCRIPTSTART: "FILENAME" OK
Write Command	Responses
AT+CSCRIPTSTART="<filename>"[ , "<reportluaerror>"]	OK +CSCRIPT: 0 ERROR OK +CSCRIPT: <err>

#### Defined values

<filename>
The script file name.
<reportluaerror>
Whether report the LUA compiling error or running error to TE.
0 – Not report.
1 – Report.
<err>
The error code of running script.

#### Examples

AT+CSCRIPTSTART="mytest.lua"
OK
+CSCRIPT: 0
AT+CSCRIPTSTART=?
OK

## 22.2 AT+CSCRIPTSTOP Stop the current running LUA script.

### Description

The command is used to stop the current running LUA script. This command shouldn't be used by sio LIB in LUA script files.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CSCRIPTSTOP=?	OK
Read Command	Responses
AT+CSCRIPTSTOP?	+CSCRIPTSTOP: " <filename> " OK
Execute Command	Responses
AT+CSCRIPTSTOP	OK ERROR

### Defined values

<filename>
The script file name.

### Examples

AT+CSCRIPTSTOP?
+CSCRIPTSTOP: "mytest.lua"
OK
AT+CSCRIPTSTOP=?
OK
AT+CSCRIPTSTOP
OK

## 22.3 AT+CSCRIPTCL Compile a LUA script file.

### Description

The command is used to compile a LUA script file. The script file must exist in c:\ in the module EFS. This command shouldn't be used by sio LIB in LUA script files. If the AT+CSCRIPTPASS is set, the compiled file will be encrypted.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+CSCRIPTCL=?	+CSCRIPTCL: "FILENAME", "OUT_FILENAME" OK
Write Command	Responses
AT+CSCRIPTCL="<filename>" [ , " <out_filename> " ]	OK +CSCRIPT: 0 ERROR OK +CSCRIPT: <err>

## Defined values

<filename>	The script file name.
<out_filename>	The output script file name. If this parameter is empty, the default <out_filename> will be the file name of <filename> with the file extension changed to ".out".
<err>	The error code of running script.

## Examples

AT+CSCRIPTCL="mytest.lua"
OK
+CSCRIPT: 0
AT+CSCRIPTCL=?
+CSCRIPTCL: "FILENAME", "OUT_FILENAME"
OK

## 22.4 AT+CSCRIPTPASS Set the password for +CSCRIPTCL.

### Description

The command is used to set the password which will be used for AT+CSCRIPTCL encryption.

SIM PIN	References
NO	Vendor

### Syntax

Write Command	Responses
AT+CSCRIPTPASS="	OK
<old_password>" , "	ERROR
<new_password>"	

### Defined values

<old_password>	The old password. <i>The original password for AT+CSCRIPTCL is empty.</i>
<new_password>	The new password.

### Examples

AT+CSCRIPTPASS="", "12345678"	
OK	
AT+CSCRIPTPASS="12345678", "123456"	
OK	

## 22.5 AT+CSCRIPTCMD Send data to the running LUA script.

### Description

The command is used to send data to the running LUA script

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CSCRIPTCMD=?	+CSCRIPTCMD: <i>CMD1</i> [, <i>CMD2</i> ] OK
Execute Command	Responses
AT+CSCRIPTCMD=<cmd1	OK
>[,<cmd2>]	ERROR

### Defined values

<cmd1>

An integer value to be sent as the second parameter of EVENT 31 to running LUA script.

<cmd2>

An integer value to be sent as the third parameter of EVENT 31 to running LUA script.

## Examples

```
AT+CSCRIPTCMD=?
```

```
+CSCRIPTCMD: CMD1[,CMD2]
```

```
OK
```

```
AT+CSCRIPTCMD=23,98
```

```
OK
```

## 22.6 AT+PRINTDIR Set the value of LUA printdir function.

### Description

The command is used to set the value of LUA printdir function

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+PRINTDIR=?	+PRINTDIR: (0,1) OK
Read Command	Responses
AT+PRINTDIR?	+PRINTDIR: <mode> OK
Write Command	Responses
AT+PRINTDIR=<mode>	OK ERROR

### Defined values

<mode>

The value of printdir:

- 0 – print function is disabled.
- 1 – print function is enabled.

### Examples

```
AT+PRINDIR=0
```

```
OK
```

```
AT+PRINDIR?
```

```
+PRINDIR:0
```

```
OK
```

```
AT+PRINDIR=?
```

```
+PRINDIR:(0-1)
```

```
OK
```

## 22.7 Unsolicited CSCRIPT codes

### Summary of +CSCRIPT Codes

Code of <err>	Description
0	Success
1	No resource
2	Failed to open the script file
3	Failed to run the script file
4	Failed to compile the script file
5	Virtual machine is busy

## 23 Voice Mail Related Commands

The module supports voice mail AT commands.

### 23.1 AT+CSVM Subscriber number

#### Description

Execution command returns the voice mail number related to the subscriber.

SIM PIN	References
YES	3GPP TS 27.007

#### Syntax

Test Command	Responses
AT+CSVM=?	+CSVM: (0-1), "(0-9,+)", (128-255) OK

Read Command	Responses
AT+CSVM?	+CSVM: <valid>, “<number>”,<type> OK ERROR
Write Command	Responses
AT+CSVM=<valid>, “<number>”,<type>	OK ERROR

### Defined values

<valid>

Whether voice mail number is valid:

- 0 – Voice mail number is invalid.
- 1 – Voice mail number is valid.

<number>

String type phone number of format specified by <type>.

<type>

Type of address octet in integer format. see also [AT+CPBR <type>](#)

### Examples

```
AT+CSVM?
+CSVM: 1, "13697252277", 129
OK
```

## 23.2 Indication of Voice Mail

Box Empty	Description
+VOICEMAIL: EMPTY	This indication means the voice mail box is empty
New Message	Description
+VOICEMAIL: NEW MSG	This indication means there is a new voice mail message notification received. This is for CPHS.
Voice Mail Status Updated	Description
+VOICEMAIL: WAITING, <count>	This indication means that there are <count> number of voice mail messages that needs to be got.

### Defined values

< count>

Count of voice mail message that waits to be got.

## Examples

```
+VOICEMAIL: WAITING, <count>
```

```
+VOICEMAIL: WAITING, 5
```

## 24 EONS Related AT commands

The module supports EONS function.

### 24.1 Indication of EONS

OPL INIT	Description
OPL DONE	This indication means EF-OPL has been read successfully. Only after this URC is reported, the AT+COPS? can query the network name that supports EONS function.
PNN INIT	Description
PNN DONE	This indication means EF-PNN has been read successfully
OPL UPDATING	Description
OPL UPDATING	This indication means the EF-OPL is updating using OTA message. After updating, the “OPL DONE” should report.
PNN UPDATING	Description
PNN UPDATING	This indication means the EF-PNN is updating using OTA message. After updating, the “PNN DONE” should report.

## 25 OTAD Commands

### 25.1 AT+COTADPHONENUMBER modify OTAD phone number

#### Description

The command is used to get, add and delete the OTAD phone numbers.

SIM PIN	References
NO	Vendor

## Syntax

Test Command	Responses
AT+COTADPHONENUMBER=?	+COTADPHONENUMBER: (list of supported <flag>s),PHONE NUM OK
Read Command	Responses
AT+COTADPHONENUMBER?	+COTADPHONENUMBER:<phone num> OK
Write Command	Responses
AT+COTADPHONENUMBER= <flag>,<phone num>	OK ERROR +OTAD ERROR:<err>

## Defined values

<flag>

OTAD phone numbers add or delete control flag, integer type

- 1 – add the OTAD phone number to list.
- 2 – delete the OTAD phone number from list..

< phone num >

OTAD phone numbers to be used for OTAD, non empty string without double quotes and smaller than 48 characters.

<err>

1. The phone number exist or the list is full
2. The phone number does not exist or the list is empty
3. The phone number is too long or empty
4. The phone number contains illegal character

## Examples

```
AT+COTADPHONENUMBER?
+COTADPHONENUMBER:10086;10010
OK
AT+COTADPHONENUMBER=1,10086
OK
AT+COTADPHONENUMBER=2,10086
OK
```

## 26 Cell Assistant Location

### 26.1 AT+CASSISTLOC Start/Stop assist location

#### Description

The command is used to start or stop the assist location. When start, it will connect Google server and post request, then receive response. When stop, it will stop the location and release the resource.

SIM PIN	References
YES	Vendor

#### Syntax

Test Command	Responses
AT+CASSISTLOC=?	+CASSISTLOC: (0-2),(1-16),(language),(1-24*60*60) OK
	ERROR
Execution Command	Responses
AT+CASSISTLOC= <autorun>[,<cid>[,<language>[,<time_between_fix>] ]	<p><i>If autorun = 0:</i> OK +CASSISTLOC: &lt;return code&gt;</p> <p><i>If autorun = 1:</i> OK +CASSISTLOC:&lt;charset&gt;,&lt;latitude&gt;,&lt;longitude&gt;,&lt;altitude&gt;,&lt;accuracy&gt;,&lt;altitude_accuracy&gt;,&lt;street_num&gt;,&lt;street&gt;,&lt;premises&gt;,&lt;city&gt;,&lt;county&gt;,&lt;region&gt;,&lt;country&gt;,&lt;country_code&gt;,&lt;postal_code&gt;,&lt;date&gt;,&lt;GMT time&gt;</p> <p>+CASSISTLOC: &lt;return code&gt;</p> <p><i>If autorun = 2:</i> OK +CASSISTLOC:&lt;charset&gt;,&lt;latitude&gt;,&lt;longitude&gt;,&lt;altitude&gt;,&lt;accuracy&gt;,&lt;altitude_accuracy&gt;,&lt;street_num&gt;,&lt;street&gt;,&lt;premises&gt;,&lt;city&gt;,&lt;county&gt;,&lt;region&gt;,&lt;country&gt;,&lt;country_code&gt;,&lt;postal_code&gt;</p> <p>+CASSISTLOC:&lt;charset&gt;,&lt;latitude&gt;,&lt;longitude&gt;,&lt;altitude&gt;,&lt;accuracy&gt;,&lt;altitude_accuracy&gt;,&lt;street_num&gt;,&lt;street&gt;,&lt;premises&gt;,&lt;city&gt;,&lt;county&gt;,&lt;region&gt;,&lt;country&gt;,&lt;country_code&gt;,&lt;postal_code&gt;,&lt;date&gt;,&lt;GMT time&gt;</p> <p>.....</p>
	If ERROR occurred

	OK  +CASSISTLOC: <return code>  +CME ERROR: <error message> <i>Or (if autorun = 0):</i> +CME ERROR: <error message>  ERROR
--	--

## Defined values

< autorun >
0 – stop location 1 – start location, only once (Must set the cid) 2 – start cycle location (Must set the cid)
< cid >
network parameters, refer to AT+CGSOCKCONT.
< language >
accept language. Refer to Google standard: en_GB, zh_CN and so on. Not required, the default value is en_GB
< time_between_fix >
Time interval of fix(second), range: 1 second – 24 hours. Not required, the default value is 1 second.
< charset >
charset for URC(not include the Date and Time). ASCII, UTF-8 and so on.
< latitude >
Latitude of current position. in degrees.
< longitude >
Longitude of current position. in degrees.
< altitude >
Altitude of the fix. Unit is meters(not required).
< accuracy >
The horizontal accuracy of the fix, in meters at a 95% confidence level. This is required unless the request specified a valid location object, i.e. a request for a reverse-geocode of a known position(not required)
< altitude_accuracy >
The accuracy of the altitude, in meters(not required)
< street_num >
The building's street number(not required)
< street >
Street name(not required)
< premises >

Premises, e.g. building name(not required)
< city >
City name(not required)
< county >
County name(not required).
< region >
Region, e.g. a state in the US(not required)
< country >
Country(not required)
< country_code >
Country code(not required)
< postal_code >
Postal code. This is the zip code in the US and postcode in the UK(not required).
< date >
Date when get the address information. Output format is ddmmyy.
< GMT time >
GMT Time when get the address information. Output format is hhmmss.
< return code >
The result code of the location.
0 – OK
1 – Unknow error
2 – Invalid param error
3 – Bad got error
4 – network error
<b>NOTE:</b>
1. When <autorun> is set to 0 and the others parameters not be given (AT+CASSISTLOC=0), the command is to stop the location.
2. When <autorun> is set to 1 or 2, <cid> is required, but <language>,< time_between_fix> is not required.
3. When <autorun> is set to 2 and there is an error occurred, there is not an error report, the location is continuing.
4. The < charset > is only applicable to the address information, not include the <date> and <GMT time>.
5. The coding format of <date> and <GMT time> is ASCII.

## Examples

<i>AT+CASSISTLOC=?</i>
<i>+ CASSISTLOC: (0-2) , (1-16),(language),(1-24*60*60)</i>
<i>OK</i>
<i>AT+CASSISTLOC=1,2,"zh_CN"</i>
<i>OK</i>
<i>+CASSISTLOC:UTF-8,33312E32323137363537,3132312E33353532343739,,3734322E30,,E58D</i>

```

8FE5928CE8B7AF,,E4B88AE6B5B7E5B882,,E4B88AE6B5B7E5B882,E4B8ADE59BBD,434E, ,15
062012,093747
+CASSISTLOC: 0
AT+CASSISTLOC=2,1,"en_GB",2
OK
+CASSISTLOC:,,,,,,,,,,,,,

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,58696
56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,15062012,093747

+CASSISTLOC:UTF-8,33312E32323136363439,3132312E33353532353934,,3734322E30,,,58696
56865205264,,5368616E67686169,,5368616E67686169,4368696E61,434E, ,15062012,093747
AT+CASSISTLOC=0
OK

+CASSISTLOC: 0
AT+CASSISTLOC=0
+CME ERROR: the assistloc is not run

ERROR

```

## 26.2 AT+CASSISTLOCTRYTIMES Set retry times

### Description

The command is used to set the max number to try connection when the http connects if failed.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CASSISTLOCTRYTIMES=?	+CASSISTLOCTRYTIMES: (2-10),(5-60*60) OK
Read Command	Responses
AT+CASSISTLOCTRYTIMES?	+CASSISTLOCTRYTIMES: <num>,<time> OK
Execution Command	Responses
AT+CASSISTLOCTRYTIMES=<num>[, <time>]	OK ERROR

### Defined values

< num >  
the number to retry when error occurred

< time >  
the time between try. The unit is second, range is 5 - 60\*60.

### Examples

```
AT+CASSISTLOCTRYTIMES=?
+CASSISTLOCTRYTIMES: (2-10),(5-60*60)
OK
AT+CASSISTLOCTRYTIMES?
+CASSISTLOCTRYTIMES: 3,5
OK
AT+CASSISTLOCTRYTIMES=3,10
OK
```

## 26.3 AT+CASSISTLOCMODE Set assist location mode

### Description

The command is used to set the mode of location: 0 – using single cell; 1 – using more cell.

SIM PIN	References
NO	Vendor

### Syntax

Test Command	Responses
AT+CASSISTLOCMODE= ?	+CASSISTLOCMODE: (0, 1) OK
Read Command	Responses
AT+CASSISTLOCMODE?	+CASSISTLOCMODE: <mode> OK
Write Command	Responses
AT+CASSISTLOCMODE= <mode>	OK ERROR

### Defined values

<mode>  
the location mode: 0 – using single cell; 1 – using more cell

## Examples

```
AT+CASSISTLOCMODE=?
```

```
+CASSISTLOCMODE: (0,1)
```

```
OK
```

```
AT+CASSISTLOCMODE?
```

```
+CASSISTLOCMODE: 1
```

```
OK
```

```
AT+CASSISTLOCMODE=1
```

```
OK
```

## 27 Result codes

### 27.1 verbose code and numeric code

Verbose result code	Numeric (V0 set)	Description
OK	0	Command executed, no errors, Wake up after reset
CONNECT	1	Link established
RING	2	Ring detected
NO CARRIER	3	Link not established or disconnected
ERROR	4	Invalid command or command line too long
NO DIALTONE	6	No dial tone, dialing impossible, wrong mode
BUSY	7	Remote station busy
NO ANSWER	8	Connection completion timeout

### 27.2 Response string of AT+CEER

Number	Response string
<i>CS internal cause</i>	
0	Phone is offline
21	No service available
25	Network release, no reason given
27	Received incoming call
29	Client ended call
34	UIM not present
35	Access attempt already in progress
36	Access failure, unknown source
38	Concur service not supported by network
29	No response received from network

45	GPS call ended for user call
46	SMS call ended for user call
47	Data call ended for emergency call
48	Rejected during redirect or handoff
100	Lower-layer ended call
101	Call origination request failed
102	Client rejected incoming call
103	Client rejected setup indication
104	Network ended call
105	No funds available
106	No service available
108	Full service not available
109	Maximum packet calls exceeded
301	Video connection lost
302	Video call setup failure
303	Video protocol closed after setup
304	Video protocol setup failure
305	Internal error
<i>CS network cause</i>	
1	Unassigned/unallocated number
3	No route to destination
6	Channel unacceptable
8	Operator determined barring
16	Normal call clearing
17	User busy
18	No user responding
19	User alerting, no answer
21	Call rejected
22	Number changed
26	Non selected user clearing
27	Destination out of order
28	Invalid/incomplete number
29	Facility rejected
30	Response to Status Enquiry
31	Normal, unspecified
34	No circuit/channel available
38	Network out of order
41	Temporary failure
42	Switching equipment congestion
43	Access information discarded
44	Requested circuit/channel not available
47	Resources unavailable, unspecified

49	Quality of service unavailable
50	Requested facility not subscribed
55	Incoming calls barred within the CUG
57	Bearer capability not authorized
58	Bearer capability not available
63	Service/option not available
65	Bearer service not implemented
68	ACM >= ACMmax
69	Requested facility not implemented
70	Only RDI bearer is available
79	Service/option not implemented
81	Invalid transaction identifier value
87	User not member of CUG
88	Incompatible destination
91	Invalid transit network selection
95	Semantically incorrect message
96	Invalid mandatory information
97	Message non-existent/not implemented
98	Message type not compatible with state
99	IE non-existent/not implemented
100	Conditional IE error
101	Message not compatible with state
102	Recovery on timer expiry
111	Protocol error, unspecified
117	Interworking, unspecified
<b><i>CS network reject</i></b>	
2	IMSI unknown in HLR
3	Illegal MS
4	IMSI unknown in VLR
5	IMEI not accepted
6	Illegal ME
7	GPRS services not allowed
8	GPRS & non GPRS services not allowed
9	MS identity cannot be derived
10	Implicitly detached
11	PLMN not allowed
12	Location Area not allowed
13	Roaming not allowed
14	GPRS services not allowed in PLMN
15	No Suitable Cells In Location Area
16	MSC temporarily not reachable
17	Network failure

20	MAC failure
21	Synch failure
22	Congestion
23	GSM authentication unacceptable
32	Service option not supported
33	Requested service option not subscribed
34	Service option temporarily out of orde
38	Call cannot be identified
40	No PDP context activated
95	Semantically incorrect message
96	Invalid mandatory information
97	Message type non-existent
98	Message type not compatible with state
99	Information element non-existent
101	Message not compatible with state
161	RR release indication
162	RR random access failure
163	RRC release indication
164	RRC close session indication
165	RRC open session failure
166	Low level failure
167	Low level failure no redial allowed
168	Invalid SIM
169	No service
170	Timer T3230 expired
171	No cell available
172	Wrong state
173	Access class blocked
174	Abort message received
175	Other cause
176	Timer T303 expired
177	No resources
178	Release pending
179	Invalid user data
 <i>PS internal cause lookup</i>	
0	Invalid connection identifier
1	Invalid NSAPI
2	Invalid Primary NSAPI
3	Invalid field
4	SNDCP failure
5	RAB setup failure
6	No GPRS context

7	PDP establish timeout
8	PDP activate timeout
9	PDP modify timeout
10	PDP inactive max timeout
11	PDP lowerlayer error
12	PDP duplicate
13	Access technology change
14	PDP unknown reason
<b><i>PS network cause</i></b>	
25	LLC or SNDCP failure
26	Insufficient resources
27	Missing or unknown APN
28	Unknown PDP address or PDP type
29	User Aauthentication failed
30	Activation rejected by GGSN
31	Activation rejected, unspecified
32	Service option not supported
33	Requested service option not subscribed
34	Service option temporarily out of order
35	NSAPI already used (not sent)
36	Regular deactivation
37	QoS not accepted
38	Network failure
39	Reactivation required
40	Feature not supported
41	Semantic error in the TFT operation
42	Syntactical error in the TFT operation
43	Unknown PDP context
44	PDP context without TFT already activated
45	Semantic errors in packet filter
46	Syntactical errors in packet filter
81	Invalid transaction identifier
95	Semantically incorrect message
96	Invalid mandatory information
97	Message non-existent/not implemented
98	Message type not compatible with state
99	IE non-existent/not implemented
100	Conditional IE error
101	Message not compatible with state
111	Protocol error, unspecified

## 28 AT Commands Samples

### 28.1 SMS commands

Commands and Responses	Comments
AT+CMGF=1 OK	Set SMS system into text mode, as opposed to PDU mode.
AT+CPMS="SM","SM","SM" +CPMS: 0,40,0,40,0,40 OK	Select memory storages.
AT+CNMI=2,1 OK	Set new message indications to TE.
AT+CMGS="+861358888xxxx" >This is a test <Ctrl+Z> +CMGS:34 OK	Set new message indications to TE.
+CMTI:"SM",1	Unsolicited notification of the SMS arriving.
AT+CMGR=1 +CMGR: "REC UNREAD", "+861358888xxxx", "08/01/30, 20:40:31+00" This is a test OK	Read SMS message that has just arrived. <b>NOTE</b> The number should be the same as that given in the +CMTI notification.
AT+CMGR=1 +CMGR: "REC READ", "+861358888xxxx", "08/01/30 , 20:40:31+00" This is a test OK	Reading the message again changes the status to "READ" from "UNREAD".
AT+CMGS="+861358888xxxx" >Test again<Ctrl+Z> +CMGS:35 OK	Send another SMS to myself.
+CMTI:"SM",2	Unsolicited notification of the SMS arriving.
AT+CMGL="ALL" +CMGL: 1, "REC READ", "+861358888xxxx", , "08/01/30,20:40:31+00" This is a test +CMGL: 2, "REC UNREAD", "", "+861358888xx	Listing all SMS messages.

xx", , "08/01/30,20:45:12+00" Test again OK	
AT+CMGD=1 OK	Delete an SMS message.
AT+CMGL="ALL" +CMGL: 2,"REC READ","+861358888xxxx", "08/01/30,20:45:12+00" Test again OK	List all SMS messages to show message has been deleted.

## 28.2 TCP/IP commands

### 28.2.1 TCP server

Commands and Responses	Comments
AT+NETOPEN="TCP",80 Network opened OK	Activate the specified socket's PDP context and Create a socket.
AT+SERVERSTART OK	For Tcp Server,it starts a Passive open for connections.
AT+LISTCLIENT NO.0 client : 10.71.34.32 80 NO.1 client : 10.71.78.89 1020 OK	List all of clients' information.
AT+ACTCLIENT = 0 OK	Activate the specified client.
AT+TCPWRITE=8 >ABCDEFGH +TCPWRITE: 8, 8 OK  Send ok	Send data to an active client.
AT+CLOSECLIENT=0 OK	Close the specified client.
AT+NETCLOSE Network closed OK	Close all of clients and Deactivate the specified socket's PDP context.

### 28.2.2 TCP client

Commands and Responses	Comments
AT+NETOPEN="TCP",80 Network opened OK	Activate the specified socket's PDP context and Create a socket.
AT+TCPCONNECT="192.168.0.1",80 OK	Attempt to establish the TCP connection with the specified Tcp server.
AT+TCPWRITE=8 >ABCDEFGH +TCPWRITE: 8, 8 OK  Send ok	Send data to server.
AT+NETCLOSE Network closed OK	Disconnect the connection with server and Deactivate the specified socket's PDP context.
+IPCLOSE: <client_index>, <close_reason>, <remote_IP>, <port>. +NETCLOSE: 1	Disconnected by the server
+IPCLOSE: <client_index>, <close_reason>, <remote_IP>, <port>. +NETCLOSE: 1	Disconnected by the server <b>NOTE:</b> Client_index: This value identifies the client index; When the mode is single-client, this value is 255. Close_reason: This value is the reason for close. Remote_IP: This value identifies the IP address of sever. Port: This value identifies the port of sever, the range of permitted values is 0 to 65535

### 28.2.3 UDP

Commands and Responses	Comments
AT+NETOPEN="UDP",80 Network opened OK	Activate the specified socket's PDP context and Create a socket.

AT+UDPSEND=8,"192.168.0.1",80 >ABCDEFGH +UDPSEND: 8, 8 OK	Send data.
AT+NETCLOSE Network closed OK	Close the socket and Deactivate the specified socket's PDP context.

### 28.2.4 Multi client

Commands and Responses	Comments
AT+NETOPEN=,,1 Network opened OK	Activate the specified socket's PDP context and Select in multi-client mode
AT+CIPOPEN=0,"TCP","116.228.221.51", 100 Connect ok OK	Establish a connection with TCP Server
AT+CIPOPEN=1,"UDP","116.228.221.51" ,120 OK	Establish a connection with UDP Server
AT+CIPSEND=0,7 >SimTech  +CIPSEND: 7, 7 OK  Send ok	Send data in the connection of number 0
AT+CIPSEND=1,7 >SimTech  +CIPSEND: 7, 7 OK	Send data in the connection of number 1
AT+CIPCLOSE=0 OK	Close the connection of number 0
AT+NETCLOSE OK	Close all of connections and Deactivate the specified socket's PDP context.

### 28.2.5 TCP server in Multi client mode

Commands and Responses	Comments
AT+NETOPEN=,,1 Network opened OK	Activate the specified socket's PDP context and Select in multi-client mode
AT+SERVERSTART=80, 0 OK	For TCP Server, Create a socket, and it starts a Passive open for connections.
AT+CIPOPEN? +CIPOPEN: 0, "TCP", "116.228.221.51", 100,-1 +CIPOPEN: 1, "TCP", "42.65.221.233", 1000, 0 +CIPOPEN: 2 +CIPOPEN: 3 +CIPOPEN: 4 +CIPOPEN: 5 +CIPOPEN: 6 +CIPOPEN: 7 +CIPOPEN: 8 +CIPOPEN: 9 OK	List all of clients' information (includes Active and Passive clients).
AT+CIPSEND=1,7 >SimTech  +CIPSEND: 7, 7 OK  Send ok	Send data to a passive linked client
AT+CIPSEND=0,7 >SimTech  +CIPSEND: 7, 7 OK	Send data in the connection of number 0 (active linked client)
AT+CIPCLOSE=1 OK	Close the connection of number 1
AT+TCPCLOSE=0 OK	Close the TCP server.
AT+NETCLOSE Network closed OK	Close all of clients and Deactivate the specified socket's PDP context.

## 28.3 Audio commands

### 28.3.1 Sound record

Commands and Responses	Comments
AT+CQCPREC=0,amr C:/Audio/20080420_120303.amr OK	Start recording sound clips
AT+CQCPPAUSE OK	Pause sound recording
AT+CQCPRESUME OK	Resume sound recording
AT+CQCPSTOP OK	Stop sound recording
ATD1381234****; OK VOICE CALL: BEGIN	Make a GSM call
AT+CQCPREC=1,qcp C:/Audio/20080420_120530.qcp OK	Start recording form remote path during GSM call <b>NOTE</b> GSM call is only applicable to QCP file
AT+CQCPSTOP OK	Stop sound recording
AT+CHUP VOICE CALL: END: 000117 OK	Hang up the current call.
ATD1500000****; OK VOICE CALL: BEGIN	Make a UMTS call
AT+CQCPREC=1,amr C:/Audio/20080420_120555.amr OK	Start recording form remote path during UMTS call <b>NOTE</b> UMTS call is applicable to AMR or QCP file
AT+CQCPSTOP OK	Stop sound recording
AT+CHUP VOICE CALL: END: 000117 OK	Hang up the current call.

### 28.3.2 Play audio file

Commands and Responses	Comments
AT+CCMXPLAY=" 20080420_120303.amr",0 OK	Play audio file
AT+CCMXPAUSE OK	Pause playing
AT+CCMXRESUME OK	Resume playing
AT+CCMXSTOP OK	Stop playing
ATD1381234****; OK VOICE CALL: BEGIN	Make a GSM call
AT+CCMXPLAY=" 20080420_120407.qcp",3 OK	Play audio file on both path <b>NOTE</b> GSM call is only applicable to QCP file
AT+CHUP VOICE CALL: END: 000100 OK	Hang up the current call.
ATD1500000****; OK VOICE CALL: BEGIN	Make a UMTS call
AT+CCMXPLAY=" 20080420_1202407.amr",3 OK	Play audio file on both path <b>NOTE</b> UMTS call is only applicable to AMR file
AT+CHUP VOICE CALL: END: 000100 OK	Hang up the current call.

## 28.4 Camera commands

### 28.4.1 Take picture

Commands and Responses	Comments
AT+CCAMS OK	Start camera
AT+CCAMSETD=320,240	Set camera dimension

OK	
..... .....	Set other parameters supported
AT+CCAMTP OK	Take picture
AT+CCAMEP C:/Picture/20080420_120303.jpg OK	Save picture
AT+CCAME OK	Stop camera

### 28.4.2 Record video

Commands and Responses	Comments
AT+CCAMS OK	Start camera
AT+CCAMSETD=176,144 OK	Set camera dimension
AT+CCAMSETF=0 OK	Set FPS
..... .....	Set other parameters supported
AT+CCAMRS C:/Video/20080420_123003.mp4 OK	Start video record
AT+CCAMRP OK	Pause video record
AT+CCAMRR OK	Resume video record
AT+CCAMRE OK	Stop video record
AT+CCAME OK	Stop the camera

## 28.5 Video call commands

### 28.5.1 Unsolicited indications of video call

Indications	Comments
VPINCOM <number>	Indicate an incoming video call and caller information is sent. <number> is caller's phone number of remote party, and this indication will be reported per sis seconds, and reported until answered or released. For automatic answering video call, refer to <a href="#">AT+AUTOANSWER</a> and <a href="#">ATS0</a> .
VPACCEPT	Indicate that video call is in the process of being set up.
VPRINGBACK	Indicate that remote party (other side) is located and ringing.
VPSETUP	Indicate that video call is set up end-to-end.
VPCONNECTED	Indicate that video protocols are set up and video call is connected.
VPEND[: <seconds>]	Indicate that video call has ended. <seconds> is the duration of video call, from VPCONNECTED to VPEND and the unit is in second.
MISSED_VIDEO_CALL: <datetime>,<number>	Indicate that an incoming video call is missed. <datetime> denotes when this indication is reported, and the format is yy/MM/dd,hh/mm/ss, where characters indicate year (two last digits), month, day, hour, minutes, seconds. <number> is caller's phone number.
+VPRXDTMF: <user_input>	Indicate that a user input was received from remote party. <user_input> is DTMFs tone from remote party, and consisted of (0-9, *, #). <b>NOTE</b> DTMFs are sent as an H.245 User Input Indication message (basic string).

### 28.5.2 Call flows – video call origination

Commands and Responses	Comments
AT+VPSOURCE=2,"pic.jpg" OK	Set TX source
AT+VPRECORD=3 OK	Start recording video
AT+VPMAKE="123456789" VPACCEPT OK VPRINGBACK VPSETUP VPCONNECTED	Make video call
AT+VPRECORD=0 OK	Stop recording video
AT+VPSOURCE=1 OK	Switch TX source
AT+VPRECORD=1 OK	Start recording video
AT+VPRECORD=0 OK	Stop recording video
AT+VPEND OK VPEND	End video call

### 28.5.3 Call flows – video call termination

Commands and Responses	Comments
VPINCOM 987654321	Report incoming call
AT+VPSOURCE=2,"pic.jpg" OK	Set TX source
AT+VPRECORD=3 OK	Start recording video
AT+VPANSWER OK VPSETUP VPCONNECTED	Answer video call
AT+VPRECORD=0	Stop recording video

OK	
AT+VPSOURCE=3,"vp.mp4"	Switch TX source
OK	
AT+VPRECORD=2	Start recording video
OK	
AT+VPRECORD=0	Stop recording video
OK	
AT+VPEND	End video call
OK	
VPEND	

## 28.6 File transmission flow

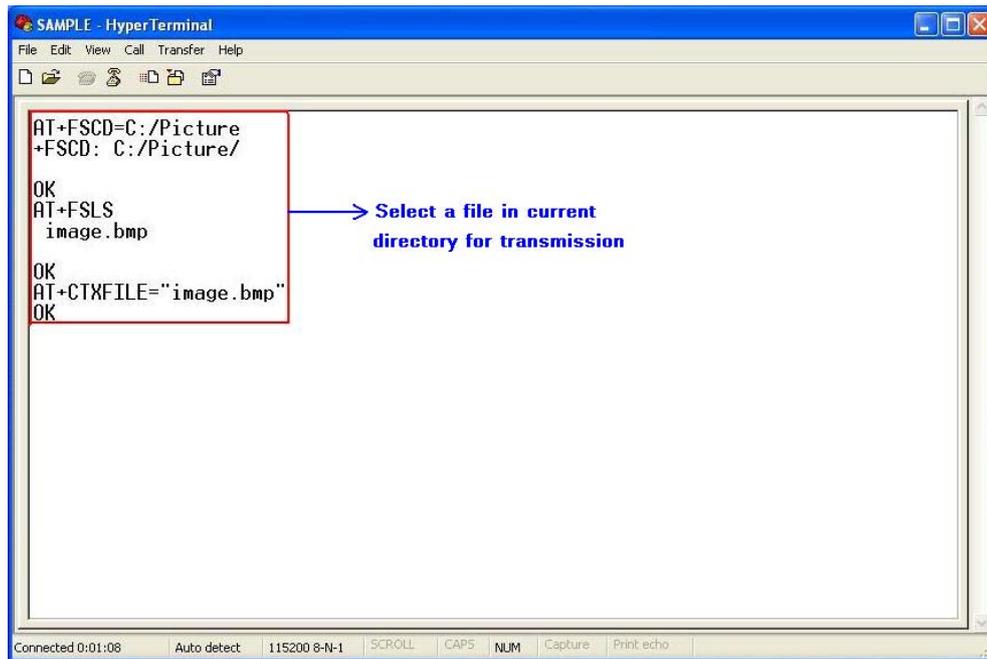
The Module supports to transmit files from the Module to PC host and from PC host to the Module over Xmodem protocol. During the process of transmission, it can not emit any AT commands to do other things.

### 28.6.1 File transmission to PC host

#### Step1. Select file for transmission to PC host

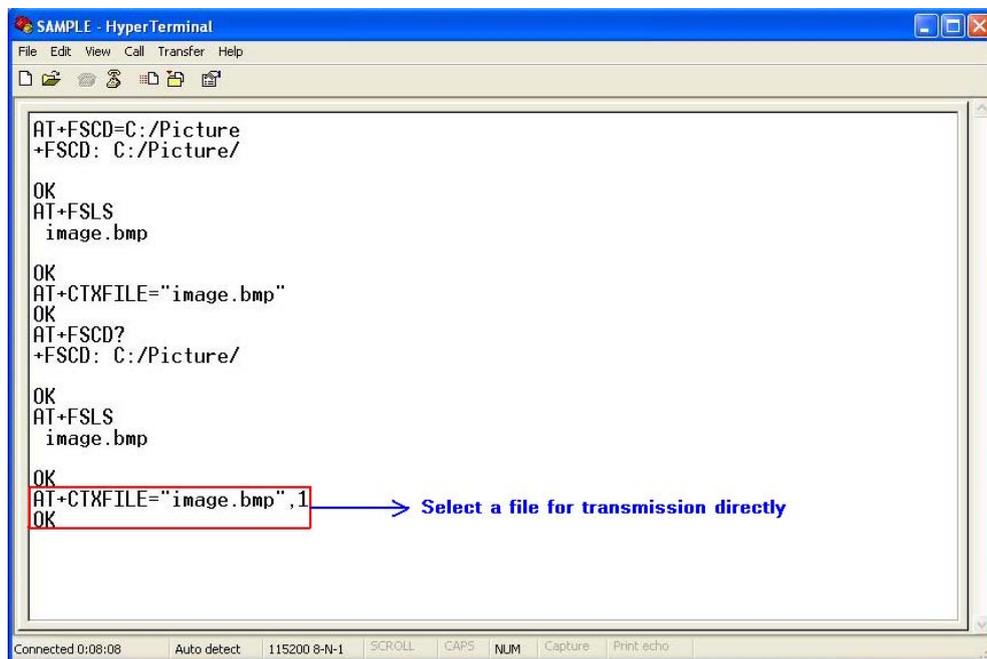
After HyperTerminal is OK for emitting AT commands, it must select a file by one of following methods:

- ①. Select directory as current directory by [AT+FSCD](#), and then select file with parameter [<dir\\_type>](#) of [AT+CTXFILE](#) is 0 or omitted. [Figure 17-1]



**Figure 17-1 Select file for transmission**

②. Select the file directly with subparameter <dir\_type> of AT+CTXFILE is not 0 and not omitted; this method is a shortcut method for limited directories. [Figure 17-2]



**Figure 17-2 Select file directly for transmission**

**Step2. Open “Receive File” dialog box**

After select transmitted file successfully, use “Transfer>Receive File...” menu to open “Receive File” dialog box in HyperTerminal. [Figure 17-3]

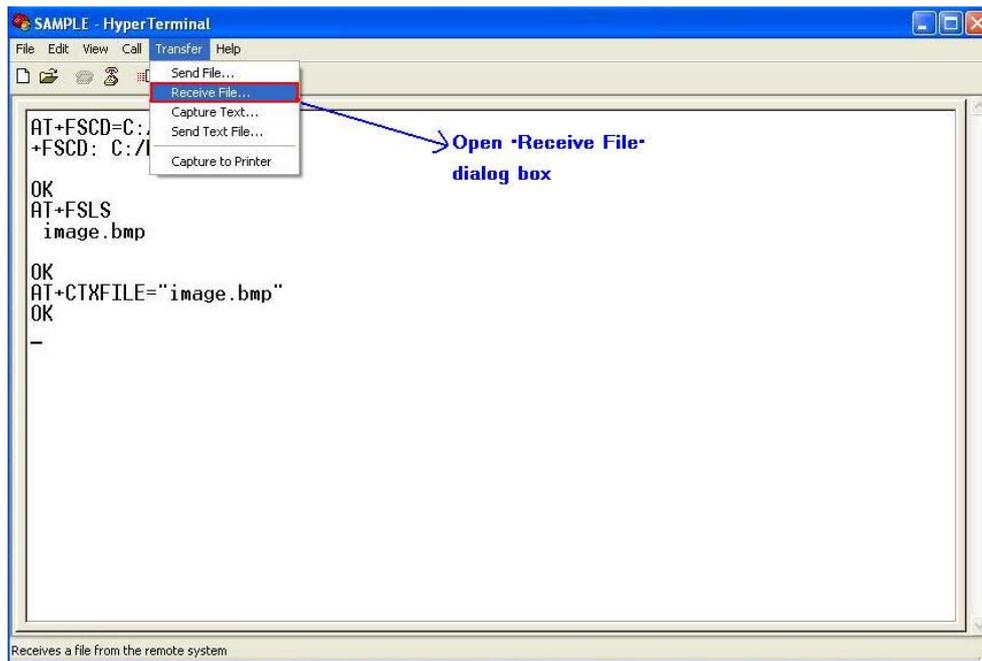


Figure 17-3 Open “Receive File” dialog box

**Step3. Set storage place and receiving protocol**

In “Receive File” dialog box, set the storage place in PC host where file transmitted is saved in text box, and select receiving protocol in combo box.

Then click “Receive” button to open “Receive Filename” dialog box. [Figure 17-4]

**NOTE** The receiving protocol must be “Xmodem” protocol.

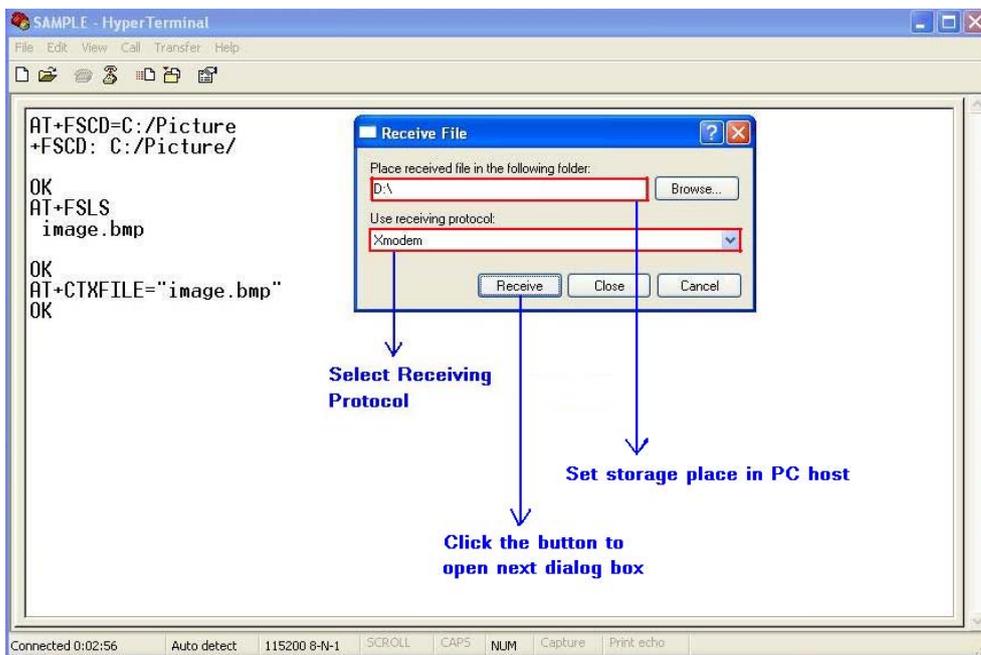
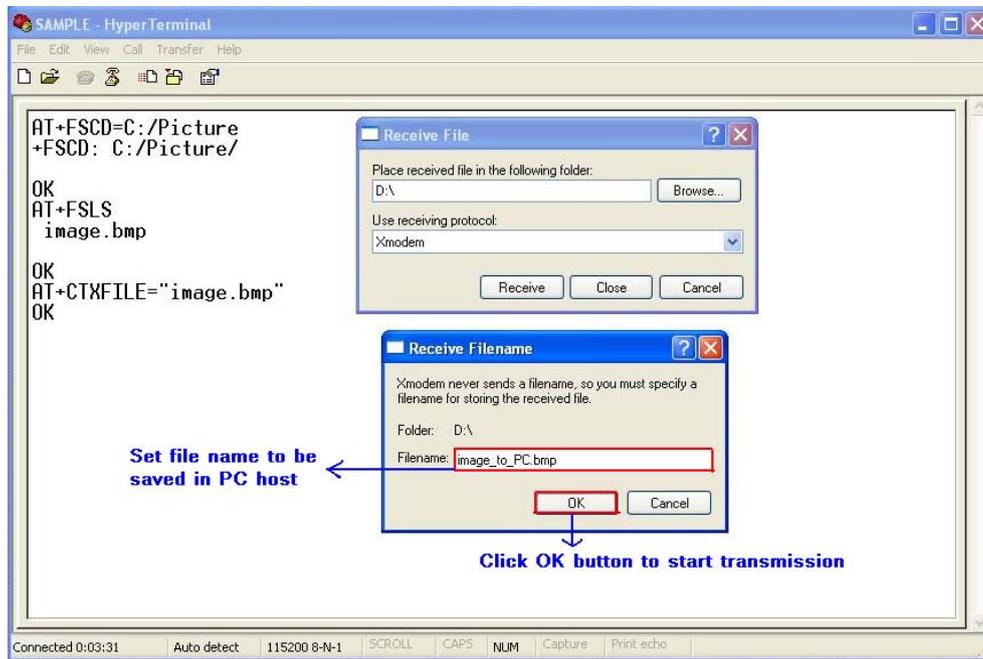


Figure 17-4 Storage place and receiving potocol

**Step4. Set file name**

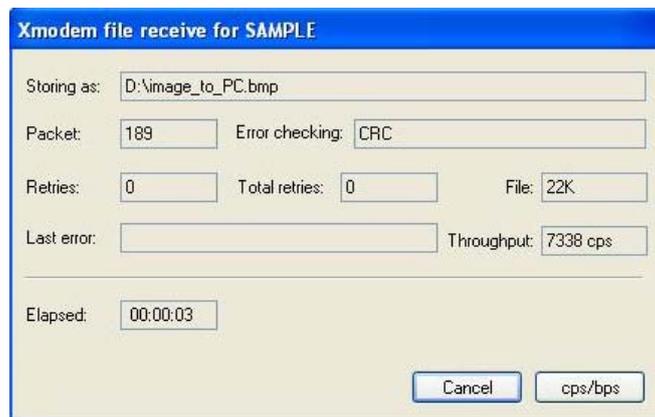
In “Receive Filename” dialog box, input file name in “Filename” text box. And then click “OK” button to start transmitting file. [Figure 17-5]



**Figure 17-5 Set file name**

**Step5. Transmit the file**

After start file transmission, it can't emit any AT commands until transmission stops. In “Xmodem file receive” dialog box, it will display the process of transmission. [Figure 17-6]



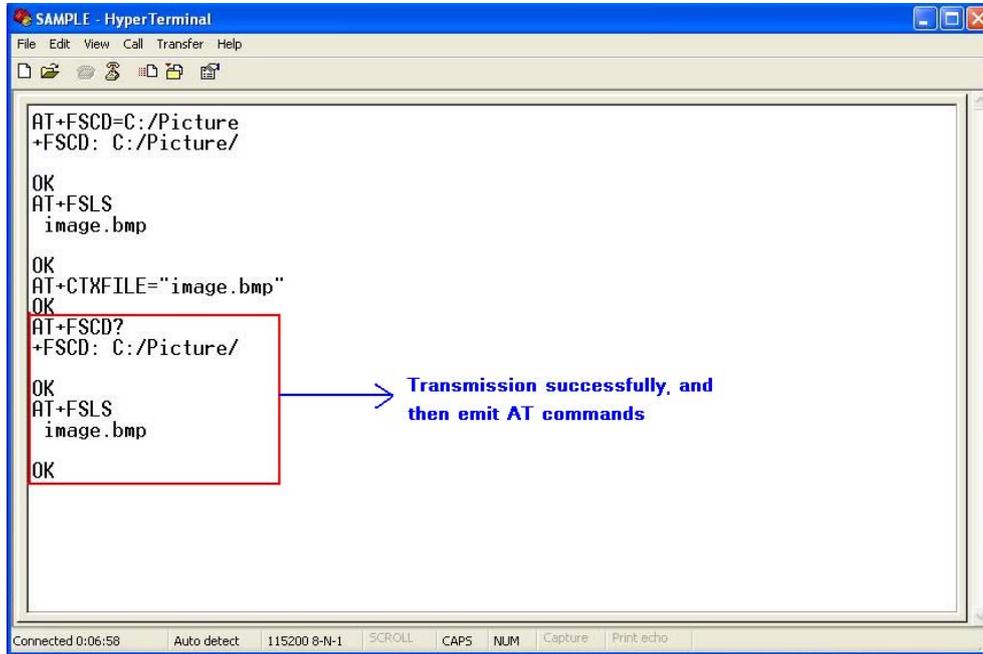
**Figure 17-6 Xmodem file receive**

If cancel the transmission, HyperTerminal will prompt “Transfer cancelled by user”. [Figure 17-7]



**Figure 17-7 Cancel transmission**

After transmission successfully, the receiving dialog box is closed and it can emit AT commands in HyperTerminal. [Figure 17-8]



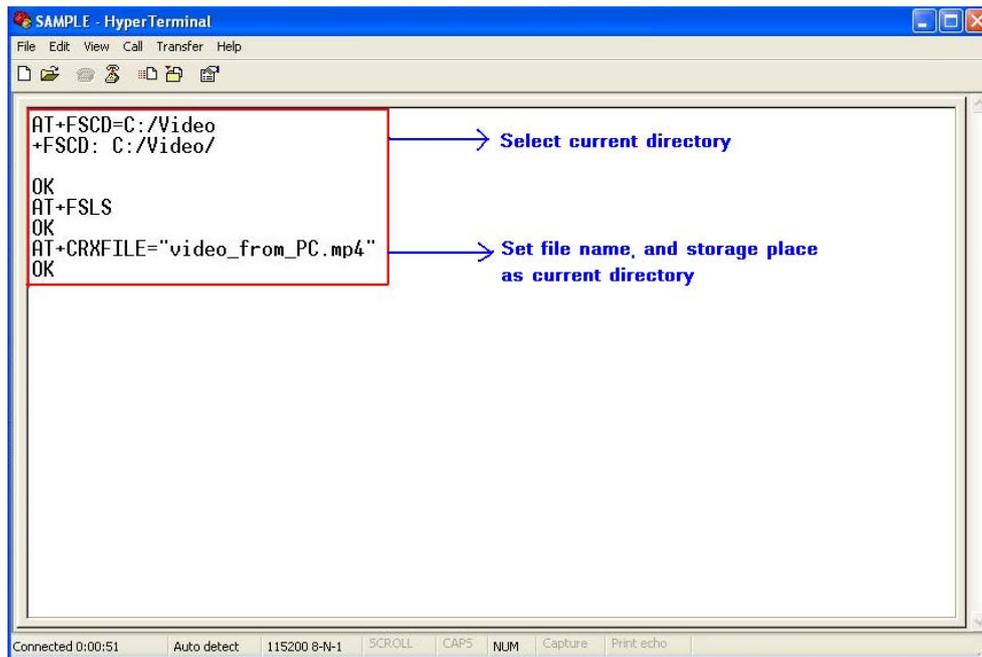
**Figure 17-8 Transmission successfully**

## 28.6.2 File received from PC host

### Step1. Set file name and storage place

Firstly, it must set file name and storage place in file system of module by one of following methods:

- ①. Select directory as current directory by **AT+FSCD**, and then set file name and storage place as current directory with parameter **<dir\_type>** of **AT+CRXFILE** is 0 or omitted. [Figure 17-9]

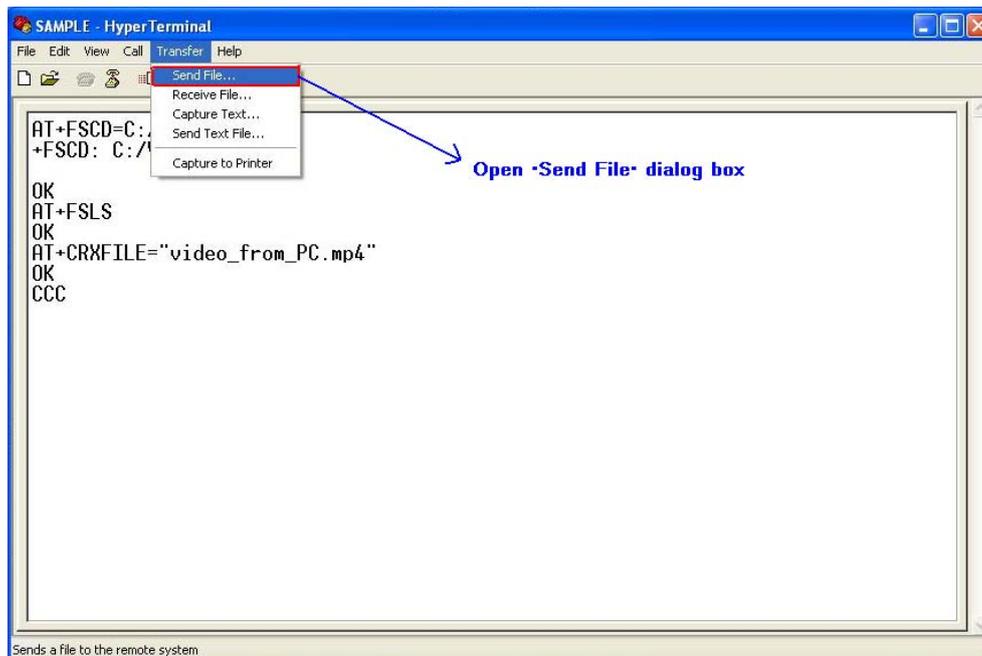


**Figure 17-9 Set file name and storage place**

②. Set storage place directly with parameter `<dir_type>` of `AT+CTXFILE` is not 0 and not omitted; this method is a shortcut method for limited directories.

**Step2. Open “Send File” dialog box**

After set file name and storage place successfully, use “Transfer>Send File...” menu to open “Send File” dialog box in HyperTerminal. [Figure 17-10]



**Figure 17-10 Open “Send File” dialog box**

**Step3. Select file and transmitting protocol**

In “Send File” dialog box, select the file to be transmitted in text box, and select the transmitting protocol in combo box. Then click “Send” button to start transmission. [Figure 17-11]

**NOTE** The transmitting protocol must be “Xmodem” protocol.

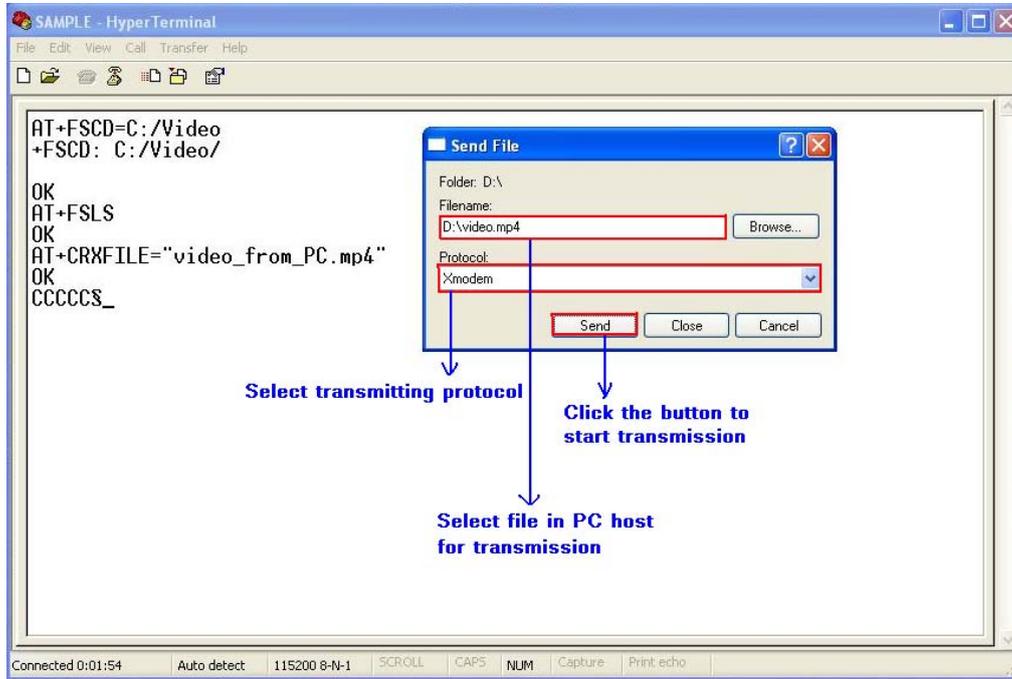
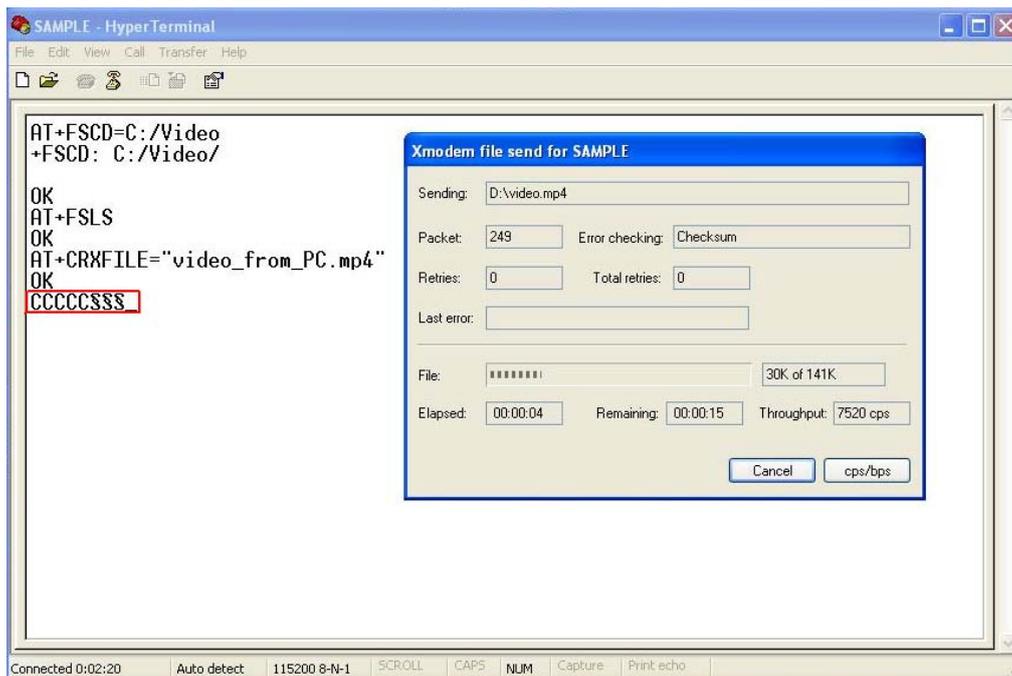


Figure 17-11 Select file and protocol

#### Step4. File transmission

After start file transmission, it can't emit any AT commands until transmission stops. In “Xmodem file send” dialog box, it will display the process of transmission. [Figure 17-12]



**Figure 17-12 The process of file transmission**

If cancel the transmission, HyperTerminal will prompt “Transfer cancelled by user”.

**NOTE** There may be some characters reported which denote interactions between module and PC host.

## 28.7 MMS commands

Set the parameters	Comments
AT+CMMSURL="mmsc.monternet.com" OK	Set the MMS center URL without “http://”
AT+CMMSPROTO=1,"10.0.0.172",80 OK	Use http protocol to send MMS and set the IP address and port of MMS proxy to “10.0.0.172” and 80
AT+CMMSSENDCFG=6,3,0,0,2,4 OK	Set the parameter of MMS to send. This is unnecessary to set.
Send MMS	Comments
AT+CGSOCKCONT=1,"IP","cmwap" OK	Set the PDP context profile.
AT+CMMSEDIT=1 OK	Set the edit mode to 1.
AT+CMMSDOWN="TITLE",10 >Test title OK	Set the title of MMS to “Test title”.
AT+CMMSDOWN="FILE",3,"1.jpg" OK	Add the “1.jpg” in UE to the MMS body.
AT+CMMSDOWN="TEXT",120,"t1.txt" >My test content...(file content, 120 bytes) OK	Add a text file named “t1.txt” with length of 120 bytes.
AT+CMMSRECP="13918181818" OK	Add a recipient of “13918181818”
AT+CMMSRECP="T1@TEST.COM" OK	Add a recipient of <a href="mailto:T1@TEST.COM">T1@TEST.COM</a>
AT+CMMSCC="15013231222"	Add a copy recipient of “15013231222”

OK	Save the MMS to mail box of index 1.
AT+CMMSSAVE=1	
+CMMSSAVE: 1	
OK	Send the MMS including new recipient "13318882322"
AT+CMMSSEND="13318882322"	
OK	After MMS is sent successfully, This command indicates success of sending. If failed, +CME ERROR:<err> will be reported.
+CMMSSEND:0	
Receive MMS	Description
+WAP_PUSH_MMS: "15001844675","RROpJGJVyjeA","http://211.136.112.84/RROpJGJVyjeA" ,"09/03/17,17:14:41+32",0,13338	Receiving a new MMS notification.
AT+CGSOCKCONT=1,"IP","cmwap"	Set the PDP context profile.
OK	
AT+CMMSEEDIT=0	Set the mms edit mode to 0.
OK	
AT+CMMSRECV="http://211.136.112.84/RROpJGJVyjeA"	Receive MMS using the location contained in +WAP_PUSH_MMS indication.
OK	
+CMMSRECV:0	After MMS is received successfully, this command indicates success of receiving. If failed, +CME ERROR:<err> will be reported.
AT+CMMSSAVE=0	
+CMMSSAVE: 0	
OK	If receiving successfully, save it to mail box.

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