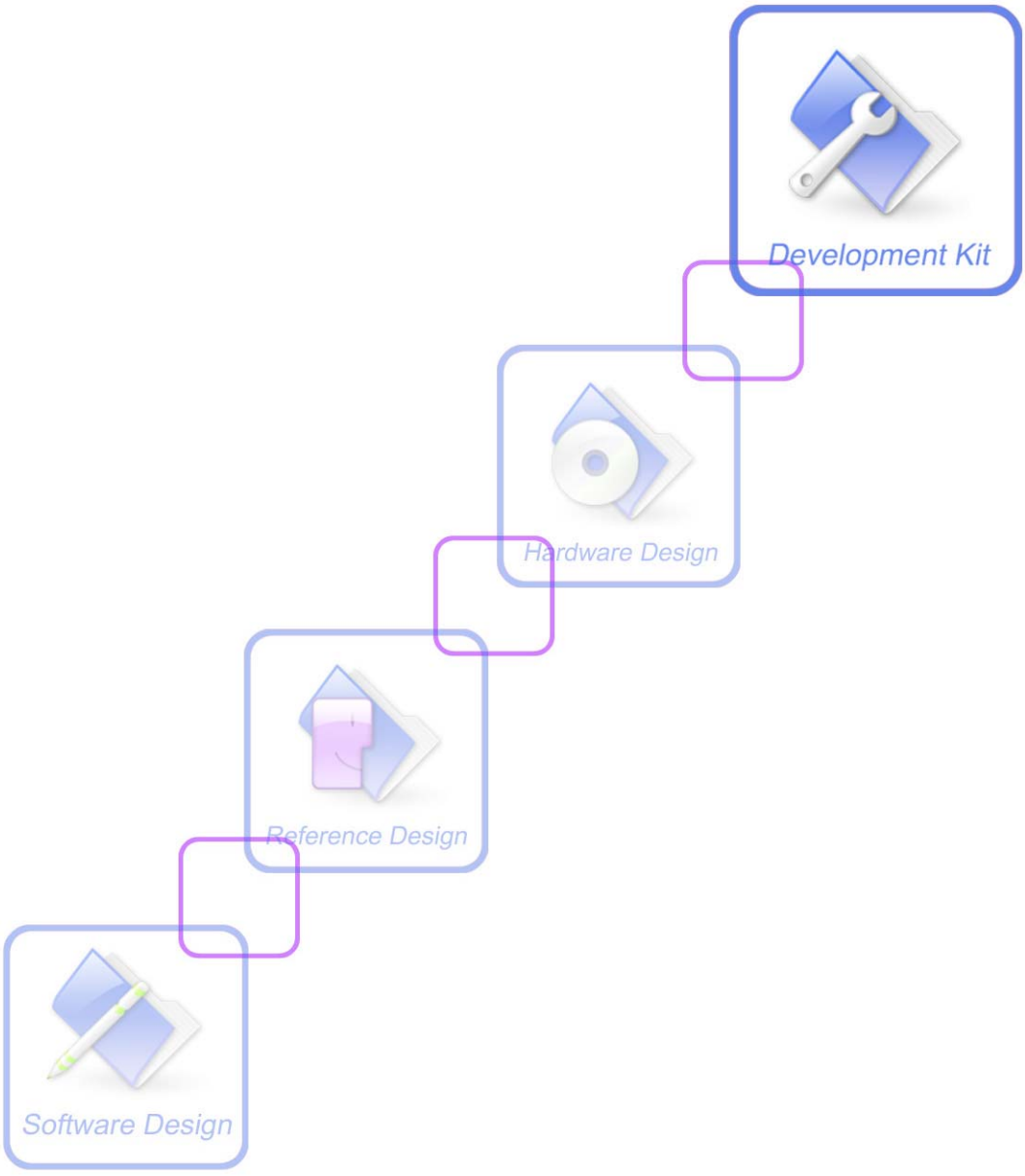
TCP/IP Application Note



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Version History

Version	Chapter	Comments
V0.01	New Version	Bai zhiqiang

Contents

1. Introduction

1.1 Overview

This document gives the usage of SIM52XX TCP/IP functions; user can get useful information about the SIM52XX TCP/IP functions quickly through this document.

The TCP/IP functions are provided in AT command format, and they are designed for customers to design their TCP/IP applications easily. User can access the TCP/IP AT commands through UART/ USB interface which communicates with SIM52XX module.

1.2 References

The present document is based on the following documents:

[1] SIMCOM_WCDMA_Internet_Service_ATC_V1.00.doc.

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
- EDGE Enhanced Data GSM Environment
- EGPRS Enhanced General Packet Radio Service
- TCP/IP Transmission Control Protocol/Internet Protocol
- GPRS General Packet Radio Service
- GSM Global System for Mobile communications
- PIN Personal Identification Number
- TA Terminal Adaptor; e.g. a data card (equal to DCE)
- TE Terminal Equipment; e.g. a computer (equal to DTE)
- UMTS Universal Mobile Telecommunications System
- URC Unsolicited Result Code
- USIM Universal Subscriber Identity Module
- WCDMA Wideband Code Division Multiple Access

2. Settings of PDP context

When you start to use TCP/IP feature,first you need to set some parameters of PDP context by AT commands,then you may active PDP context that you defined.

2.1 Define PDP context

We know that **AT+CGDCONT** can define PDP context.In our products it is only used in the dial-up internet access.When you want to use our internal TCP/IP stack,you need to execute **AT+CGSOCKCONT** to define PDP context.The syntax of **AT+CGDSOCKCONT** is same as the syntax of **AT+CGDCONT**.For example:

AT+CGSOCKCONT=1,"IP","cmnet"

2.2 Set authentication parameters

To some wireless networks,you are requested to provide username and password when you try to active PDP context.In this case,you need to set your username and password by **AT+CSOCKAUTH.**For example:

AT+CGSOCKAUTH=1,1,"TEST","1234"

2.3 Set the number of active PDP context

By **AT+CGSOCKCONT** you can define 16 PDP context and you can select which PDP context will be actived by **AT+CSOCKSETPN**.For example:

AT+CSOCKSETPN=2

3. PDP context activation and deactivation

After setting PDP context's parameters,you may active and deactive PDP context that you want.

3.1 PDP context activation

You can use **AT+NETOPEN** to active PDP context.For example:

AT+NETOPEN=,,1

3.2 PDP context deactivation

You can use **AT+NETCLOSE** to deactive PDP CONTEXT.The command will also close all sockets.For example:

AT+NETCLOSE

4. TCP/IP configure

4.1 Option of Receiving data's length

When remote end send some data,then module will transmit these data to host.If host want to know what length of these data is,the option will be selected.For example:

AT+CIPHEAD=1

4.2 Option of Receiving data's address

When remote end send some data,then module will transmit these data to host.If host want to know where these data come from,the option will be selected.For example:

AT+CIPSRIP=1

4.3 Other Options

When we use TCP/IP feature,we need to adjust number of retransmission according to network status or you want to know whether your data is received by remote end.You can use **AT+CIPCCFG** to select options.For example:

AT+CIPCCFG=3,500,1,1

5. MULTI-CLIENT

5.1 Establish connection

After you active PDP context successfully,you may establish a TCP/UDP connection with remote end,then you can transfer data with remote end.For example:

AT+CIPOPEN=0,"TCP","116.228.221.5",100

5.2 Send data

You can send TCP/UDP data by **AT+CIPSEND**.For example:

AT+CIPSEND=0,4
>Test
+CIPSEND: 4,4
OK

5.3 Disconnect connection

If all data have been send,you may disconnect connection.For example:

AT+CIPCLOSE=0

6. TCP Server

6.1 Create socket

If you want to use module as TCP server,you need to create a socket and appoint a port to it. For example:

AT+NETOPEN=”TCP”,80

6.2 Startup server

After creating socket and appointing a port to it,then you set the port as listening port.The TCPserver may work.For example:

AT+SERVERSTART

6.3 Select a client

As a TCPSERVER,there are some connecting clients at the same time.you need to select a client to transfer data.For example:

AT+ACTCLIENT=0

6.4 Send data

As a Tcpserver,you can use **AT+TCPWRITE** to send data.For example:

AT+TCPWRITE=4
>Test
+TCPWRITE: 4,4
OK

6.5 Disconnect connection

You may close a connection with client.For example:

AT+CLOSECLIENT=0

7. TCP/IP AT COMMAND SAMPLE

7.1 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	Send data in the connection of number 0

>SimTech +CIPSEND: 7, 7 OK Send ok	
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.

7.2 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.

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