ZTE MG3006 Module User Manual

VER: V 1.2

ZTE Corporation

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Preface

Summary

This manual is applicable for ME3000, ME3006, ME3030 and ME3036 modules. Taking ME3000 for example, this manual describes the AT command interfaces of the modules, which contains standard GSM voice and data applications. According to GSM standard, some specific ZTE commands are added for users' convenience.
This manual might help you to understand how to use AT commands of these modules.

Target Readers

- System Designing Engineers
- Hardware Engineers
- Software Engineers
- Testing Engineers

Brief Introduction

Chapters	Contents
1 General Description	Briefly introduces the types and basic formats of ME3000, ME3006, ME3030 and ME3036 modules.
2 AT Command	Explains AT command operations of ME3000 modules in details.

Update History

The update history includes the update descriptions each time. The update contents will be included in the latest version.

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Change the manual name from 《AT Command Manual for ZTE Corporation's GSM/GPRS Modules》to《AT Command Manual for ZTE Corporation's ME3000 Modules》.
Add the applicable modules such as ME3000, ME3006, ME3030 and ME3036 modules.

Document Version: V1.1 （April-17-2007）

This is the second time to release formally. The update contents include:
2. AT Command
Newly added commands:
ATO: Switch from command mode to data mode
+++: Switch from data mode to command mode
CLIP: Set caller ID presentation
CCFC: Set call forwarding number and conditions
CLCK: Lock device or network
CPWD: Modify password

CNMA: SMS confirmation
CSCA: Set short message center number
CPBS: Select contacts memorizer
CPBR: Read contacts
CPBW: Write contacts
CPBF: Search for contacts
IFC: Set flow control
&D: Set DTR mode
&C: Set DCD mode
CGACT: Deactivate/activate PDP mode
CGATT: Set GPRS startup
CGCLASS: Device class
ZIPSETUPU: Bundle UDP port
ZIPSENDU: Send UDP data
ZIPSTATUSU: Query UDP status
ZIPCLOSEU: Close UDP port
ZIPRECVU: Receive UDP data

Document Version: V1.0 （March-05-2007）

This is the first time to release formally.

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1 General Description

1.1 AT Commands

ME3006, ME3030 and ME3036 modules provide AT command interfaces, through which the modules could communicate with external devices. AT command set provided by ME3006, ME3030 and ME3036 modules not only covers standard GSM voice and short message applications, but adds some commands according to GSM specification and some ZTE exclusive commands for users.

1.1.1 Type of AT Commands

Since AT command is used as a standard interface, the returned values and formats of the command are both fixed. As a whole, AT command could be divided into four types:

- Non-parameter command: a type of simple command with the format of AT[+|&]<command>,e.g.: AT+CSQ, AT&W
- Query command: used to inquire the current setting value. The format is AT[+|&]<command>?, e.g.: AT+CNMI?
- Help command: used to list the possible parameters of the command. The format is AT[+|&]<command>=?, e.g.: AT+CMGL=?
- Parameter command: normally used format which provides strong flexibility. The format is AT[+|&]<command>=<par1>,<par2>,<par3>…

  The returned values of this type of command are all the same. This will be clarified in details later. The basic frame format of the returned value is:

  <CR><LF><Response string><CR><LF>

  <CR><LF><OK/ERROR>[ERROR INFO]<CR><LF>

1.1.2 Returned Type and Format of AT Commands

The following are ME3006, ME3030 and ME3036 modules' AT command and their format and returned descriptions:

- AT command format:
  --AT command starts with "AT" and ends with <CR>;
  --After the module runs, the serial port default setting will be: 8-digit data bit, 1-digit stop bit, no parity check, no CTS/RTS, data rate 115200bps.
- AT command returned format:
  --<CR><LF><corresponding strings ><CR><LF>
  --An exceptional case: e.g.: AT+ZPOWEROFF (response format) directly return with "OK"
- AT command status report (OK, ERROR):
  --If there is error in AT command format, "Error" will return;
  --If AT command executes successfully, "OK" will return.

1.2 GSM Glossary

Abbreviations	Definitions
ADC	Analog-Digital Converter
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
ARFCN	Absolute Radio Frequency Channel Number
ARP	Antenna Reference Point
ASIC	Application Specific Integrated Circuit
BER	Bit Error Rate
BTS	Base Transceiver Station
CDMA	Code Division Multiple Access
CDG	CDMA Development Group
CS	Coding Scheme
CSD	Circuit Switched Data
CPU	Central Processing Unit
DAI	Digital Audio interface
DAC	Digital-to-Analog Converter
DCE	Data Communication Equipment
DSP	Digital Signal Processor
DTE	Data Terminal Equipment
DTMF	Dual Tone Multi-Frequency
DTR	Data Terminal Ready
EFR	Enhanced Full Rate
EGSM	Enhanced GSM
EMC	Electromagnetic Compatibility
EMI	Electro Magnetic Interference
ESD	Electronic Static Discharge
ETS	European Telecommunication Standard
FDMA	Frequency Division Multiple Access
FR	Full Rate
GPRS	General Packet Radio Service
GSM	Global Standard for Mobile Communications
HR	Half Rate
IC	Integrated Circuit
IMEI	International Mobile Equipment Identity
ISO	International Standards Organization
ITU	International Telecommunications Union
LCD	Liquid Crystal Display
LED	Light Emitting Diode
MCU	Machine Control Unit
MMI	Man Machine Interface

Abbreviations	Definitions
MS	Mobile Station
PCB	Printed Circuit Board
PCL	Power Control Level
PCS	Personal Communication System
PDU	Protocol Data Unit
PLL	Phase Locked Loop
PPP	Point-to-point protocol
RAM	Random Access Memory
RF	Radio Frequency
ROM	Read-only Memory
RMS	Root Mean Square
RTC	Real Time Clock
SIM	Subscriber Identification Module
SMS	Short Message Service
SRAM	Static Random Access Memory
TA	Terminal adapter
TDMA	Time Division Multiple Access
TE	Terminal Equipment also referred it as DTE
UART	Universal asynchronous receiver-transmitter
UIM	User Identifier Management
USB	Universal Serial Bus
VSWR	Voltage Standing Wave Ratio
ZTE	ZTE Corporation

2 AT Command

2.1 Common Command

2.1.1 A/: repeat previous command

Description	This command is used to repeat the previous command.	
Format	A/	
Example	AT+CSQ	Inquire current signal strength
	A/	Repeat AT+CSQ command

2.1.2 ATA: answer a call

Description	This command is used to answer a call.	
Format	ATA	
Example	RING	Incoming call
	ATA	Answer a call

2.1.3 ATD: dial a number

Description	This command is used to dial a number, transmit data or send a fax.	
Format	ATD<string>; ATD><mem><n>; ATD><n>;	
Example	AT+CPBS="SM" ATD13024540756;	Select SIM card phonebook as the current contacts Search for this number in SIM card phonebook and dial it
	AT+CPBS="SM" ATD>2; OK	Select SIM card phonebook as the current contacts Dial the second number in the current phonebook
	ATD>SM1;	Dial the first number in SIM card phonebook
Description	<mem>: contacts "SM": SIM card phonebook; "LD": last dialled number in the contacts; "MC": missed call contacts; "ME": local contacts; <n>: the n-th option of the contacts. <string>: called number, e.g. *99#.	

2.1.4 ATDL: dial the last outgoing number

Description	This command is used to dial the last outgoing number.	
Format	ATDL	
Example	ATD34394036; OK	Call 34394036
	ATH OK	Hang up the call
	ATDL	Dial 34394036 again

2.1.5 ATE: enable echo

Description	This command is used to enable echo.	
Format	ATE<n>	
Example	ATE0 OK OK	ATE0, don’t display input command on the terminal
	ATE1 OK ATE1 OK	
Parameters	<n>=0 Disable. <n>=1 Enabled.	

2.1.6 ATH: hang up the call

Description	This command is used to hang up the call.	
Format	ATH	
Example	ATA OK	Answer the call
	ATH	Hang up the call

2.1.7 ATQ: set if returned value displayed on the terminal

Description	This command is used to set if the returned value is displayed on the terminal.
Format	ATQ<n>

Example	ATQ0 OK ATQ0 OK	Display the returned value on the terminal
	ATQ1 OK ATQ1ATQ1	Do not display the returned value on the terminal

2.1.8 +++: switch from data mode to command mode

Description	This command is used to switch from data mode to command mode.	
Format	+++	
Example	ATD*99# CONNECT +++ …… AT OK	Dial and enter data mode switch from data mode to command mode

2.1.9 ATO: switch from command mode to data mode

Description	This command is used to switch from command mode to data mode.	
Format	ATO	
Example	ATD*99# CONNECT +++ …… ATO ……	Dial and establish GPRS data connection Switch from data mode to command mode Switch from command mode to data mode

2.1.10 ATP: perform pulse dialing

Description	This command is used to perform pulse dialing.	
Format	ATP	
Example	ATP OK	Set pulse dialing method

2.1.11 ATS0: set auto answer

Description	This command is used to control auto answer mode of the module.	
Format	ATS0=<value>	
Example	ATS0=2 OK	Auto answer after ringing twice
	ATS0? 2 OK	Query the current setting
	ATS0=0 OK	Cancel anto answer
Parameters	<value>:times for ringing.	

2.1.12 +CRC: set incoming call type

Description	This command is used to set the incoming call type.	
Format	AT+CRC=num	
Example	AT+CRC=1 OK +CRING: VOICE	RING prompts the incoming call type Set CRC as the prompt of incoming call
Parameters	num: 0: don't display incoming call type; 1: display incoming call type Incoming call type: -VOICE; -GPRS; -FAX.	

2.1.13 +CLVL: set call volume

Description	This command is used to set the volume of the speaker.	
Format	AT+CLVL=<level>	
Example	AT+CLVL=100 OK	Set the current volume as 100 for the receiver
	AT+CLVL? +CLVL:100	Query the current volume
Parameters	<level> between 0 and 100 <the number is smaller, the volume is lower >.	

2.1.14 +CLIP: set caller ID presentation

Description	This command is used to set caller ID presentation. The default setting is “Turn off caller ID presentation”.	
Format	AT+CLIP=<mode> +CLIP: <mode> retuned value of AT+CLIP? Command +CLIP: <number>,<type>,<> caller ID presentation format	
Example	AT+CLIP=1 OK RING:+CLIP: “130********”,129, “”,“”,0	Turn on caller ID presentation. There is an incoming call, and the number is 130********
	AT+CLIP=0 OK RING	Turn off caller ID presentation. No alert upon an incoming call
Parameters	<mode>: 0: Turn off caller ID presentation; 1: Turn on caller ID presentation. <number>: Incoming call number (need apply for relevant service). <type>: 129.	

2.1.15 +ZSETMUTE: mute control

Description	This command is used for mute control, and it can be used only during the calling.	
Format	AT+ZSETMUTE=<Mode>	
Example	AT+ZSETMUTE=? +ZSETMUT:(0-1) OK	Query the settable parameters
	AT+ZSETMUTE=1 OK	Turn on mute
	AT+ZSETMUTE=0 OK	Turn off mute
Parameters	<Mode> 0: Turn on mute; 1: Turn off mute.	

2.1.16 +CIMI: inquire International ID

Description	This command is used to read SIM card’s international ID and query the PIN code you need input.

Format	AT+CIMI	
Example	AT+CIMI 460030916875923 OK	Inquire CIMI Return with CIMI

2.1.17 +CGMR: obtain product version

Description	This command is used to obtain the product version.	
Format	AT+CGMR	
Example	AT+CGMR=? OK	No meaning
	AT+CGMR <Revision>	Return with the current module version

2.1.18 +ECHO: remove echo

Description	This command is used to remove echo.	
Format	AT+ECHO=num	
Example	AT+ECHO? +ECHO:1 OK	Inquire the current echo setting
	AT+ECHO=0 OK	Cancel remove echo
Parameters	Num: default value,1. 1:set remove echo; 0:cancel remove echo.	

2.1.19 +(C) GSN: obtain current IMEI

Description	This command is used to obtain the current IMEI of the device.	
Format	AT+GSN	
Example	AT+GSN N	Return with the current IEMI

2.1.20 +ZVERS: obtain current software version

Description	This command is used to obtain current software version
Format	AT+ZVERS

Example	AT+ZVERS +ZVERS: ***.bin OK	Obtain the current software version

2.1.21 +CLCK: function lock

Description	This command is used to lock the terminal or the network..	
Format	AT+CLCK=<fac>,<mode>[,<passwd>[,<class>]] +CLCK:<status>	
Example	AT+CLCK=? +CLCK：（“SC”，“AO”，“OI”，“OX”，“AI”，“IR”，“AB”，“AG”，“AC”，“FD”，“BN”，“PN”，“PU”，“PP”，“PC”） OK	
Parameters	<fac>: “SC”: SIM card, “AO”: All originated calls, “OI”: Originate International Calls, “OX”: All international calls except local area; “AI”: All Incoming Calls, “IR”: Roam all incoming calls except local area; “AB”: All call services, “AG”: all outgoing call services, “AC”: all incoming call services, “FD”: SIM card fixed dial space, “PN”: network certification; “PU”network unit certification;“PP”: provider certification; “PC”corporate certification. <mode>: 0: unlock; 1: lock; 2: query status. <passwd>:password, character string “***” <class>: 1: voice service; 2: data service; 4: fax service; 7: all service. <status>: 0: Disable; 1: Enable.	

2.1.22 +CCFC: set call forwarding number and conditions

Description	This command is used to set call forwarding number and conditions.

Format	AT+CCFC=<reason>,<mode>[,<number> [,<type>[,<class>[,<subaddr>[,<saytype>[,time]]]]]] If mode!=2,return after setting is successful: OK; If mode=2, return after setting is successful: +CCFC:<status>,<class>	
Example	AT+CCFC=? +CCFC: (0,1,2,3,4,5) OK	Query call forwarding setting range Return with reason
Parameters	<reason> 0: unconditional; 1: mobile device busy; 2: no reply; 3: unreachable ; 4: all calls; 5: All. <mode> 0: disable; 1: enable; 2: query; 3: register; 4: delete. number: phone number. <type> 145: international number; 129: other number. <subaddr>: string address. <saytype>:128. <class> 1: voice; 2: data; 4: fax; 7: all. Time:1..20..30 (muliply 5) <status>: 0: Disable; 1: Enable.	

2.1.23 *TSIMINS: inquire SIM card status

Description	This command is used to inquire SIM card status.
Format	AT*TSIMINS=num,status

Example	AT*TSIMINS? *TSIMINS:0,0 OK	Inquire SIM card status No SIM card
Parameters	num:0 or 1 has no meaning. status: 0:no SIM card; 1:SIM card.	

2.2 DTMF Command

2.2.1 +VTD: set DTMF duration

Description	AT+VTD set DTMF duration.	
Format	AT+VTD=<duration>	
Example	AT+VTD=? +VTD:(1-255) OK	Query the range for DTMF duration
	AT+VTD? OK	Return with “OK”
	AT+VTD=200 OK	Set DTMF duration as 20s
Parameters	<duration> 0:default setting. 1-255 length, unit: 100ms.	

2.2.2 +VTS: send DTMF

Description	This command is used to send DTMF.	
Format	AT+VTS=<string>	
Example	AT+VTS=? +VTS:(0-9,*#,A,B,C,D),,(1-255) OK	Query +VTS parameter
	ATD********; AT+VTS=“3,6,9”	Dial the call Send DTMF 369
Parameters	String, use comma to separate the symbols. Symbols 0-9,*,#,A-D.	

2.3 Network Service Command

2.3.1 +CREG: network registration and roam

Description	This command is used to query the module's registration and roaming status. Note: need AT&W command to save the results as you set 0 or 1.	
Format	AT+CREG=<mode> +CREG :<mode>,<stat> return code	
Example	AT+CREG=0 OK	Forbid network registration to provide result code
	AT+CREG? +CREG: 0,1	Display module registration status
	AT+CREG=? +CREG: (0-2) OK	Quert status range
Parameters	<mode> 0: Forbid network registration to provide result code(default setting); 1:allow network registration to provide result code:+CREG:<stat>; 2:allow network registration to provide local information. <stat> 0:Unregistered, terminal isn't searching for new operator; 1:Registered to local network; 2:Unregistered, terminal is searching for BS; 4:Unknow code; 5:Registered, roaming.	

2.4 Mobile Device Control and Status Report

2.4.1 +CPAS: module status query

Description	This command is used to query the module's work status.	
Format	AT+CPAS	
Example	AT+CPAS +CPAS:2 OK	Query the module's current work status
Parameters	<pas>: 0:get ready to receive AT command; 2:unknow status (default); 3:Incoming call (ring); 4:In calling.	

2.4.2 +CFUN: set module function

Description	This command is used to set module function.	
Format	AT+CFUN=<func>,<rst>	
Example	AT+CFUN=? +CFUN(0,1,4),(0-1) OK	Query setting range
	AT+CFUN=1,0	Setting valid immediately
	AT+CFUN=1,1	Reset valid
Parameters	<func>: 0: minor function; 1: Full function; 4: Turn off RF Rx/Tx circuit. <rst> : 0: the function activated immediately after setting; 1: the function activated after reset.	

2.4.3 +ZPWROFF: turn off module

Description	This command is used to turn off the module.	
Format	AT+ZPWROFF	
Example	AT+ZPWROFF OK	Turn off the module

2.4.4 +CPIN: input PIN code

Description	This command is used to query PIN code status and input PIN code. The functions can be used only after the correct PIN code is entered.	
Format	AT+CPIN=<pin>	
Example	AT+CPIN? +CPIN:READY OK	Query current PIN code No need to input new PIN code
	AT+CPIN? +CPIN:SIM PIN AT+CPIN="****" OK	Query current PIN code status PIN code must be correct Enter the correct PIN code

Parameters	AT+CPIN?: check if what kind of passwords should be entered. +CPIN:READY::don't need enter any password. +CPIN:SIM PIN: need enter PIN code. Pin: string value.

2.4.5 +CSQ: signal strength query

Description	This command is used to inquire receive signal strength indicator(rssi) and bit error rate (ber)	
Format	AT+CSQ	
Example	AT+CSQ +CSQ:<rssi>,<ber>	
Parameters	<rssi>: 0–113dbm; 1-111dbm; 2..30–109..-53dbm; 31-51dbm; 99: network unavailable. <ber>: 0~7: normal; 99: network unavailable.	

2.4.6 +CCLK: clock management

Description	This command is used to set and query the data/time of real-time clock.	
Format	AT+CCLK=<time>	
Example	AT+CCLK? +CCLK: "04/02/09,17:34:23+8"	Querycurrent time and date Current network time and dat
	AT+CCLK="04/02/09,18: 34:23+08"	Set the data/time of real-time clock
Parameters	Time format:"yy/mm/dd,hh:mm:ss±zz"; ±zz time difference between local time and GMT.	

2.5 SMS Command

2.5.1 +CSCA: set SMS center number

Description	This command is used to set SMS center number.	
Format	AT+CSCA=<sca>[,<tosca>]	
Example	AT+CSCA="1380****500"	Set SMS center number

	OK	
Parameters	<sca>: SMS center address. <tosca>: SMS center format.	

2.5.2 +CNMA: confirm SMS

Description	This command is used to confirm the receipt of short messages.	
Format	AT+CNMA	
Example	at+cnmi=2, 2, 0, 0, 0 OK at+csms=1 +CSMS: 1, 1, 1 OK +CMT:60 …… AT+CNMA OK	Set SMS indicator format Set SMS service format Confirm the receipt of short message
Parameters	It is valid when setting +CNMI=2, 2, 0, 0, 0 and +CSMS=1, 1, 1, 1.	

2.5.3 +CMGF: set SMS mode

Description	This command is used to set SMS input mode.	
Format	AT+CMGF=< num>	
Example	AT+CMGF=1 OK AT+CMGF? +CMGF:1 AT+CMGF=? +CMGF=(0-1) OK	Set SMS input mode as text input Query current input mode setting Current setting as text mode Query current setting range
Parameters	0: PDU mode; 1: Text mode.	

2.5.4 +CNMI: set SMS indicator format

Description	This command is used to set SMS indicator format.
Format	AT+CNMI=<mode>,<mt>,<bm>,<ds>,<bfr>

Example	AT+CNMI=? +CNMI: (0-3),(0-3),(0,2,3),(0-1),(0) OK	Query the range for current settings
	AT+CNMI=3,1,0,0,0 OK +CMTI: "SM",19	Set SMS receiving mode as +CMTI: men,index format Receive new messages
	AT+CNMI=3,2,0,0,0 OK AT+CMGF=1 OK +CMT: "+86130********","","07/02/14, 10:29:04+32" text	Set SMS receiving mode Set current setting as Text Mode Receive SMS text from 130********
Returned Results	+CMTI:<mem>,<index>: indicate receipt of new message. +CMT:,<length><CR><LF><pdu>: directly output received message (PDU mode). +CBM:<length><CR><LF><pdu>: directly output cell broadcast info (PDU mode).	

Description	**<mode>**: Control the handling of message indication code. Support <mode>=2 only, the module could be set as (0, 1, 3), but the handling of code is the same as <mode>=2. 0: the message indication code will be stored in TA, if TA is full, the code will be stored in other places or the original code will be deleted and replaced by the latest received code; 1. As the connection between TA-TE is hold, delete saved message indication code and reject new indication code. In other cases, directly display the code on the terminal; 2. As the connection between TA-TE is hold, message indication code will be saved in TA; while the connection is released, directly display the message indication code on the terminal. In other cases, directly display the code on the terminal.; 3: Directly display the code on the terminal.. **<mt>**: Set new message indication code format;the default value is 1. 0: no any new message indication code, the message won't be saved; 1: new message indication code is +CMTI: "MT", <index>, the message will be saved but not displayed directly; 2: new message indication code format is: (In text mode) +CMT :<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs> <sca>,<tosca>,<length><CR><LF><data>, the message will be displayed directly but not saved. (In PDU Mode) +CMT:[<alpha>],<length><CR><LF><pdu>. **<bm>:** indication method when the broadcast message arrives: 0: don't send CBM indication to termina; 2: directly send to terminal to display when new cell broadcast arrives: (display as below In text mode) +CBM :<sn>,<mid>,<dcs>,<page>,<pages> <CR><LF><data>(text mode), cell broadcast directly displayed but not saved (display as below in PDU mode) +CBM:<length><CR><LF><pdu>. **<ds>:** indicating status as the message is being sent: 0: status report as no message is sent **<bfr>:** 0: as <mode> is set as 1..3, the code of this command stored in TA will be sent to TE, and "OK" will be returned before the module transmits the code; 1: as <mode> is set as 1..3, the code of this command stored in TA wil be cleared.

2.5.5 +CMGR: view SMS

Description	This command is used to view the received messages.
Format	AT+CMGR=?

Example	AT+CMGF=1 AT+CMGR=1 +CMGR:"REC UNREAD","133********",, "04/02/25,12 :58 :04＋04" ABCD OK	 "MT": 1 Receive new message, store it at location 1 Set TEXT mode View the first message in TEXT mode
	AT+CMGF=0 AT+CMGR=1 +CMGR: 1,,127 0891683108705505F00408A17055810600087010919 0 5564236E5C0A656C76845BA26237FF0C60A85DF27ECF 6210529F5F00901A4E860031003000305143004700 50 0052005359579910 4F1860E04E1A52A1FF0C4ECE0032 0030003000375E74003000326708003000 3165E55F00 59CB751F654830028C228C22FF016DF1573379FB52A8 516C53F8	Set PDU format View the first message in PDU format
Returned Results	AT+CMGR=<index> Returned format: The terminal adaptor will return the message with index stored in the memorizer. -If selected text mode (+CMGF=1): +CMGR :<stat>,<oa>,[<alpha>],<scts>[,<tooa>,<fo>,<pid>,<dcs>, <sca>,<tosca>,<length>] <CR><LF> <data> (used to read received messages) +CMGR :<stat>,<da>,[<alpha>][,<toda>,<fo>,<pid>,<dcs>,[<vp>],<sca>, <tosca>,<length>] <CR><LF> <data> (used to read sent messages) -if selected PDU mode (+CMGF=0): +CMGR: <stat>,[<alpha>],<lenth>,<CR>,<LF>,<pdu> OK -if there is error, it will prompt: +CMS ERROR:<err> Note: after viewing the messages, “REC UNREAD”will change as “REC READ”.	

Parameters	<alpha> the corresponding name of <da> or <oa> on the terminal. <stat>: SMS status in memory. <oa>: SMS original number string. <da>: SMS target address string. <scts>: SMS service center time string. <length>: text length in text mode. <data>: TPDU length in PDU mode. <pdu>: ME/TA's hex value <stat>: 0: "REC UNREAD" received unread messages; 1: "REC READ" received read messages; 2: "STO UNSENT" stored unsent messages; 3: "STO SENT" stored sent messages; 4: "ALL": all messages

2.5.6 +CSMS: select SMS service

Desription	This command is used to originate (SMS-MO), terminate (SMS-MT), cell broadcast (SMS-CB).	
Format	AT+CSMS = <service>	
Example	AT+CSMS? +CSMS:128,1,1,1 OK	Query current SMS Support message origination/termination and cell broadcast
	AT+CSMS=0 +CSMS: 1,1,1 OK AT+CSMS? +CSMS:0,1,1,1 OK	Set current SMS as normal mode Support message origination/termination and cell broadcast Inquire setting result Setting succeeded
Parameters	<service> 0: Normal mode ; 128: PDU mode. <mo> 1: support message origination. <mt> 1: support message termination. <bm> 1: support cell broadcast.	

2.5.7 +CMGS: message origination

Description	This command is used to originate the message from the terminal to the network.. Return with parameters to the terminal after the message is originated successfully.	
Format	Text mode (AT+CMGF=1) AT+CMGS=<de><CR> <data><Ctrl-Z/ESC> PDU mode (AT+CMGF=0) AT+CMGS=<length><CR> <pdu><Ctrl-Z/ESC>	
Example	AT+CMGF=1 OK	set as text mode
	AT+CMGS="13316538879"<CR> ABC<ctrl/Z> OK AT+CMGF=0 OK	Send the text of “ABC” to 13316538879 Set as PDU mode
	AT+CMGS=17<CR> 0891683108705505f011000b81312 0882624f700f1ff0361f118<Ctrl-Z> +CMGS:2 OK	Send the text of “ABC” to 13028862427
Parameters	<de>:the number which the message is sent to in text mode. <length>: character length of TPDU text in PDU mode. <data>: text in text mode.	

2.5.8 +CPMS: prioritize message memorizer

Description	This command is used to prioritize message memorizer.	
Format	AT+CPMS=<mem1>[,<mem2>[<mem3>]] +CPMS=<used1>,<total>	
Example	AT+CPMS="SM" +CPMS:4,5,4,5,4,5 OK	Query the message memory status of SIM card: mem1’s total capacity 5 pieces, 4 pieces used; Mem2’s total capacity 5 pieces, 4 pieces used; Mem3’s total capacity 5 pieces, 4 pieces used.
Parameters	<mem1>: "SM" : SIM card is used to view, delete message memory. <mem2>: "SM" : SIM card is used to compose, send message memory. <mem3>: "SM" : SIM card message memorizer when not saved to PC. <used>:used capacity. <total>:total capacity of the memorizer.	

2.5.9 +CMGD: delete a message

Description	This command is used to delete a message from selected memorizer.	
Format	AT+CMGD=<Index>	
Example	AT+CMGF=1 AT+CMGL="all" +CMGL:1,"REC READ","130********","", abcdefg +CMGL:2,"REC READ","131********","", abcdef +CMGL:3,"STO SENT","1331********","" opqrxt OK AT+CMGD=2 OK	Set as text mode List all messages Delete the second message
	AT+CMGF=0 AT+CMGL=4 +CMGL: 1,3,,21 0891683108705505F0010F0B813120882624 F700 0808738B54084F1F5927 +CMGL: 2,3,,21 0891683108705505F001100B813120882624 F700 0808738B54084F1F5927 +CMGL: 3,3,,21 0891683108705505F001110B813120882624 F700 0808738B54084F1F5927 OK AT+CMGD=1 OK	Set as PDU mode List all messages Delete the first message
Parameters	<Index>: record number of stored message	

2.5.10 +CMGL: message list

Description	This command is used to view the stored message, and the message will be viewed in the memorizer selected by +CPMS command.

Format	AT+CMGL=<stat>	
Example	AT+CMGF = 1 OK AT+CMGL="ALL" +CMGL:1,"REC READ","130********","", abcdefg +CMGL:2,"REC READ","131********","", abcdef +CMGL:3,"STO SENT","1331********","", opqrxt OK	Set as text mode Use text mode Query all messages
Returned Format	1) in text mode: +CMGL :<index>,<stat>,<da/oa>,[<alpha>],[<scts>][,<tooa/toda>,<length>] <CR><LF><data><CR><LF> +CMGL :<index>,<stat>,<da/oa>,[<alpha>],[<scts>][,<tooa/toda>,<length>] <CR><LF><data> […] (received/sent message list) OK 2) in PDU mode: +CMGL:<index>,<stat>,[<alpha>],<length><CR><LF><pdu>	
Parameters	1. text mode(+CMGF=1) <stat>: REC UREAD: received unread messages; REC READ: received read messages; STO UNSENT: stored unsent messages; STO SENT: stored sent messages; ALL: all messages. 2.PDUmode (+CMGF=0) <stat>: 0: received unread messages; 1: received read messages; 2: stored unsent messages; 3: stored sent messages; 4: all messages. <index> message index. <length> TPDU length in PDu mode. <pdu> binary content in PDU mode. <data> message text in text mode.	

2.5.11 +CMSS: send messages stored in SIM card

Description	This command is used to send the messages stored in SIM card.	
Format	AT+CMSS=<index>[,<da> [,<toda>]] Returned format:+CMSS : <mr> 或+CMS ERROR: <err> If a new target number is specified, then the number stored in the message will be replaced by the new number	
Example	AT+CMGF=1 AT+CMGW="1331653****";<CR> ABC<ctrl-Z> +CMGW:2 OK	Set as text mode Compose a message and send it to 1331653**** The message will be stored in record 2
	AT+CMSS=2 +CMSS:0 OK	Send the message stored in record 2 Message sent successfully CMSS returned value 0
	AT+CMSS=2 +CMSS:1 OK	When the message is stored: Don't specify the number and send the message, Message sent successfully,(send it to the address where the message is stored) CMSS returned value 1
	AT+CMSS=2, "1302755****" +CMSS:2 OK	Replace the original number 1331653**** with 1302755****, and send the message to the new number

2.6 Phonebook Command

2.6.1 +CPBS: select phonebook

Description	This command is used to select the phonebook..	
Format	AT+CPBS=<type>	
Example	AT+CPBS? +CPBS: "SM",1,250 OK	Query the setting of current phonebook SIM card memory used by current phonebook
	AT+CPBR=1 +CPBR=1,"130********",129,"" OK	Query phonebook status
	AT+CPBS=? +CPBS:("MC","RC","DC","LD","LA","ME","SM","FD","ON","BN","SD","VM") OK	Select SIM card phonebook

Parameters	Type: "SM":SIM card; "FD":SIM card phonebook; "LD":Last dialed number in SIM card; "MC":Missed calls in NV; "DC":Dialed calls in SIM card.

2.6.2 +CPBR: read phonebook

Description	This command is used to read phonebook.	
Format	AT+CPBR=<index1>,[<index2>] +CPBR:<index>,<number>,<type>,<text>	
Example	AT+CPBR=? +CPBR: (1-10),40,13 OK	Query current phonebook
	AT+CPBR=1 +CPBR=1,"130********",129,"" OK	Read the first the number of selectedphonebook
	AT+CPBS="SM" OK AT+CPBR=? +CPBR: (1-10),40,13 AT+CPBR=1,3 +CPBR: 1,"8151****",129,"" +CPBR: 2,"8636****",129,"" +CPBR: 3,"8604****",129,""	Select SIM card phonebook Query SIM card phonebook Read phonebook information saved from 1 to 3
Parameters	index1: read phonebook index. index2: read phonebook from index 1 to index 2 when using this value. index: SN. number: phone number. type: phone type. 129: domestic. 145: international. text: the name of corresponding number.	

2.6.3 +CPBW: write phonebook

Description	This command is used to write phonebook.
Format	AT+CPBW= <index>,<number>,<type>,<name> +CPBW:(<index>),<length>,(<type>),<tlength>

Example	AT+CPBW=? +CPBW: (1-10),40,(129,145, 161,177),13 OK	
	AT+CPBS="SM" OK AT+CPBW=1,"130********",129,"john" OK AT+CPBR=1 +CPBR:1,"130********",129,"john" OK	
Parameters	index: SN. length: phone number length. type: phone type. 129: domestic. 145: international. tlength: the length of the name of corresponding phone number. number: phone number. name: the name of corresponding number.	

2.6.4 +CPBF: find phonebook

Description	This command is used to search for contacts in the phonebook.	
Format	AT+CPBF= <name> +CPBF: <index>,<number>,<type>,<name> +CPBF:<nlength>,<tlength>	
Example	AT+CPBF=? +CPBF:40,13 OK	Query current phonebook Phone number length: 40 Name length:13
	AT+CPBS="SM" OK AT+CPBW=1,"130********",129,"john" OK AT+CPBR=1 +CPBR:1,"130********",129,"john" OK AT+CPBF="john" +CPBF: 1,"130********",129,"john" OK	Select phonebook Write the information in the firstoption in current phonebook Read relevant information Find the information wit h the nameofJohn

Parameters	index: SN. nlength: phone number length. type: phone type. 129: domestic. 145: international. tlength: the length of the name of corresponding phone number. number: phone number. name: the name of corresponding number.

2.7 Data Compression Command

2.7.1 +IFC: flow control

Description	This command is used to set TE-TA flow control.	
Format	AT+IFC=[<mode1 >[,<mode2>]]	
Example	AT+IFC=2,2 OK	Set TE-TA flow control mode1:RTS; mode2:CTS.
Parameters	mode1: 0: No flow control; 1: XON/XOFF, don't transmit data; 2: RTS; 3: XON/XOFF, transmit data. mode2: 0: No flow control; 1: XON/XOFF; 2: CTS.	

2.7.2 &D: set DTR mode

Description	This command is used to set DTR mode.	
Format	AT&D[<value>]	
Example	AT&D0 OK	Ignore DTR signal
Parameters	value: 0: ignore DTR signal; 1: DTR from OFF to ON; 2: DTR from ON to OFF.	

2.7.3 &C: set DCD mode

Description	This command is used to set DCD mode.	
Format	AT&C[<value>]	
Example	AT&C0 OK	DCD signal is always valid
Parameters	value: 0:DCD signal is always valid; 1: DCD signal is only valid when there is data.	

2.7.4 +IPR: set the module's baud rate

Description	This command is used to set the module's baud rate.	
Format	AT+IPR=<baud rate>	
Example	AT+IPR? +IPR: 115200 OK	Query the module's current baud rate
	AT+IPR=?	Query the supported baud rates
	AT+IPR=115200 OK	Set baud rate as 115200
Remarks	Baud rates higher than 115200bps could only be used on EDGE and 3G platform. Use AT&W to save the setting baud rate, otherwise, it will reset to 115200bps if the module is turned off.	

2.7.5 &F: factory default

Description	This command is used to return to factory default setting.	
Format	AT&F	
Example	AT&F	Factory default

2.7.6 &W: save setting

Description	This command is used to save the current setting.	
Format	AT&W	
Example	AT&W	Save setting

2.8 ZTE Exclusive Command

2.8.1 +ZGPIO: read/write GPIO

Description	This command is used to set the port as input/output, and read/write GPIO value.	
Format	AT+ZGPIO=<flag>,<index>,<value>	
Example	AT+ZGPIO=0,5(read) +ZGPIO: 0 OK	
	AT+ZGPIO=1,22,1(write) OK	
Parameters	<flag>: 0: read; 1: write. <index>: the GPIO index to be read/written. <value>: 0: I/O set as 0; 1: I/O set as 1.	
Remarks	Only GPIO5, GPIO22 could be provided to users to operate.	

2.8.2 +SPEAKER: switch audio channel

Description	This command is used to switch between earpiece and receiver.	
Format	AT+SPEAKER=<mode>	
Example	AT+SPEAKER=0 OK	Receiver
	AT+SPEAKER=1 OK	Earpiece
	AT+SPEAKER=? +SPEAKER:(0-1) OK	Query status
Parameters	<mode> 0: receiver(default); 1: earpiece.	

2.8.3 +ZDSLEEP: 32KHz deep sleep mode

Description	This command is used to enable/disable 32KHz sleep mode.	
Format	AT+ZDSLEEP=<mode>	
Example	AT+ZDSLEEP=1	enable sleep mode
	AT+ZDSLEEP=0	disable sleep mode
Parameters	<mode>	

	0: Enable sleep mode; 1: Disable sleep mode.

2.8.4 +ZSTR: query module's status

Description	This command is used to query the module's status.	
Format	AT+ZSTR=<status> +ZSTR: <status>,<value>	
Example	AT+ZSTR=1	Query the initializing status
	AT+ZSTR=2	Query network status
	AT+ZSTR=?	Query parameter list
Parameters	<status> 1:No meaning. Input AT+ZSTR=1 and display ZSTR: 1, 2; 2:Network status. <value> 0: network unavailable; 1: network available; 2: no meaning.	

2.9 GPRS Command

2.9.1 +CGDCONT: set PDP format

Description	This command is used to set GPRS's PDP format.	
Format	at+CGDCONT=cid, type, APN[,PDP_ADDR]	
Example	At+CGDCONT=1, "IP","CMNET" ATD*99# …… Connect	At+CGDCONT=1, "IP","CMNET" ATD*99# …… Connect
Parameters	cid: used to define PDP number; min.:1. type: PDP packet type, IP: use TCP/IP packet. APN: access node network name.. PDP_ADDR: IP address specified by user (optional).	

2.9.2 + CGACT: deactivate/activate PDP setting

Description	This command is used to deactivate/activate PDP setting.
Format	at+CGACT=[<state>[,<cid>[,<cid>[,..]]]]

Example	At+CGDCONT=1,"IP","CMNET" OK AT+CGACT=1,1 OK	
Parameters	cid: used to define PDP number. state: indicate PDP status: 0: deactivated; 1: activated.	

2.9.3 +CGATT: set GPRS

Description	This command is used to set GPRS.	
Format	AT+CGATT=[<state>]	
Example	AT+CGATT? +CGATT: 0 OK AT+CGATT=1 OK	Query GPRS Set GPRS
Parameters	state: 0: not connected; 1: connected.	

2.9.4 +CGCLASS: query GPRS class

Description	This command is used to query GPRS class.	
Format	AT+CGCLASS=[<class>]	
Example	AT+CGCLASS? +CGCLASS:"B" OK	Query GPRS class
Parameters	class: A:support class A; B:support class B; CG :support GPRS only; CC:support circuit exchange only.	

2.10 TCP/IP Command

2.10.1 +ZPNUM: set APN, username, password

Description	This command is used to set the operator's APN, username and password.	
Format	AT+ZPNUM=<APN>,<USER>,<PWD>	
Example	AT+ZPNUM="cmnet","user","pwd" OK	
Parameters	APN: GPRS (APN) provided by GPRS operator. USER: username. PWD: password. APN:USER, PWD "string".	

2.10.2 +ZPPPOPEN: open GPRS data link

Description	This command is used to open GPRS data link.	
Format	AT+ZPPPOPEN	
Example	AT+ZPNUM="cmnet","user","pwd" OK AT+ZPPPOPEN +ZPPPOPEN:CONNECTED OK …. AT+ZPPPOPEN +ZPPPOPEN: ESTABLISHED OK	

2.10.3 +ZPPPCLOSE: close GPRS data link

Description	This command is used to close GPRS data link.	
Format	AT+ZPPPCLOSE	
Example	AT+ZPPPCLOSE OK	
	AT+ZPPPCLOSE +ZPPPCLOSE: DISCONNECTED OK	

2.10.4 +ZIPSETUP: establish TCP server connection

Description	This command is used to establish TCP server connection.

Format	AT+ZIPSETUP=<N>,<IP>,<M>	
Example	AT+ZIPSETUP=1,61.144.216.219,2332 +ZIPSETUP:CONNECTED OK	Establish TCP server connection
Parameters	N: max. number of TCP links is 5, ranging from 0 to 4. IP: IP for next target address, *.*.*.*. * ranges from 0 to 255 M: port.	

2.10.5 +ZIPSEND: send TCP data to target address

Description	This command is used to connect to target server.	
Format	AT+ZIPSEND=<N>,<len>,<DATA>	
Example	AT+ZIPSEND=1,10,abcdefghij OK	Connect to target server
Parameters	N: max. number of TCP links is 5, ranging from 0 to 4. Len: data length (max. 60 characters). DATA: text, composed of characters.	

2.10.6 +ZPPPSTATUS: query GPRS connecting status

Description	This command is used to inquire GPRS link status.	
Format	AT+ZPPPSTATUS	
Example	AT+ZPPPSTATUS ＋ZPPPSTATUS: ESTABLISHED OK	Query GPRS connecting status
	AT+ZPPPSTATUS +ZPPPSTATUS: DISCONNECTED OK	Query GPRS connecting status

2.10.7 +ZIPCLOSE: close TCP link

Description	This command is used to close TCP link.	
Format	AT+ZIPCLOSE=<N>	
Example	AT+ZIPCLOSE=0 OK	Close TCP link
Parameters	N: max. number of TCP links is 5, ranging from 0 to 4.	

2.10.8 +ZIPGETIP: query current IP address of the module

Description	This command is used to obtain the IP address of the module.	
Format	AT+ZIPGETIP	
Example	AT+ZIPGETIP +ZIPGETIP: *.*.*.* OK	Obtain the IP address of the module
Parameters	A value between 0 and 255.	

2.10.9 +ZIPSTATUS: query current TCP link status

Description	This command is used to query current TCP link status.	
Format	AT+ZIPSTATUS=<N>	
Example	AT+ZIPSTATUS=0 +ZIPSTATUS: ESTABLISHED OK	Query current TCP link status
Parameters	ESTABLISHED :TCP link established. DISCONNECTED: TCP link disconnected.	

2.10.10 +ZIPRECV: Prompt to Receive Data from Current Data Link

Description	This command is used to receive data from current data link.	
Format	+ZIPRECV:N,LEN,<DATA>	
Example	…… +ZIPRECV:0,5,abcde ……	…… Receives 5 data abcde
Parameters	N: max. number of TCP links is 5, ranging from 0 to 4. LEN: length of received data. DATA: received data.	

2.10.11 +ZIPSETUPU: establish UDP server link

Description	This command is used to bundle UDP server connection.	
Format	AT+ZIPSETUPU=<N>,<IP>,<M>	
Example	AT+ZIPSETUPU=1,61.144.216.219,2332 OK	Bundle address: 61.144.216.219; port: 2332 Return with bundle succeeded
Parameters	N: max. number of UDP links is 5, ranging from 0 to 4. IP: IP address for target server, *.*.*.*. * ranges from 0 to 255. M: port.	

2.10.12 +ZIPSENDU: send data to UDP server

Description	This command is used to send data to bundled UDP server.	
Format	AT+ZIPSENDU=<N>,<len>,<DATA>	
Example	AT+ZIPSENDU=1,10,abcdefghij OK	After connecting server successfully, send 10-byte data (abcdefghij) to UDP server
Parameters	N: max. number of UDP links is 5, ranging from 0 to 4. Len: data length (max. 60 characters). DATA: text, composed of characters.	

2.10.13 +ZIPSTATUSU: query UDP status

Description	This command is used to query current TCP link status.	
Format	AT+ZIPSTATUSU=<N>	
Example	AT+ZIPSTATUSU=0 +ZIPSTATUSU: ESTABLISHED OK	Query UDP status of number 0 Number O UDP being used
Parameters	ESTABLISHED: UDP used. DISCONNECTED:UDP OFF.	

2.10.14 +ZIPCLOSEU: close UDP link

Description	This command is used to turn off designated UDP link.	
Format	AT+ZIPCLOSEU=<N>	
Example	AT+ZIPCLOSEU=0 OK +ZIPCLOSEU: 0	Successfully turn off/on numbe 0 UDP link Prompts number 0 UDP link turned off
Parameters	N: max. number of UDP links is 5, ranging from 0 to 4.	

2.10.15 +ZIPRECVU: prompt to receive UDP data

Description	This command is used to prompt to receive UDP data from UDP server.	
Format	+ZIPRECVU:N,LEN,<DATA>	
Example	…… +ZIPRECVU:0,5,abcde ……	…… Receives 5 data abcde

Parameters	N: max. number of UDP links is 5, ranging from 0 to 4. LEN: length of received data. DATA: received data.

Warning:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this unit not expressly approved by the party responsible for compliance will void the user's authority to operate the equipment. Any change to the equipment will void FCC grant.

This equipment has been tested and found to comply with the limits for a Class B digital device,pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

--Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

The equipment compliance with FCC radiation exposure limit set forth for uncontrolled Environment