Parameter

<index>	The index of the socket for sending data. This parameter is necessary only if **AT+QIMUX** was set as 1 (refer to **AT+QIMUX**). When **AT+QIMUX** was set as 0, the parameter MUST be omitted
<length>	A numeric parameter which indicates the length of data to be sent, it MUST be less than 1460

NOTES

1. This command is used to send data on the TCP or UDP connection that has been established already. Ctrl+Z is used as a termination symbol. ESC is used to cancel sending data.
2. The maximum length of the data to input at a time is 1460.
3. This command is invalid when QIMUX is 1 (refer to **AT+QIMUX**).
4. There are at most 1460 bytes that can be sent each time.
5. Only send data at the status of connection, otherwise respond with **ERROR**.
6. **SEND OK** means the data have been put into the send window to send rather than it has received the ACK message for the data from the remote node. To check whether the data has been sent to the remote note, it is necessary to execute the command **AT+QISACK** to query it.

11.3. AT+QICLOSE Close TCP or UDP Connection

AT+QICLOSE Close TCP or UDP Connection	
Test Command **AT+QICLOSE=?**	Response **OK**
Execution Command **AT+QICLOSE**	Response If close succeeds: **CLOSE OK** If close fails: **ERROR**
Write Command **AT+QICLOSE=<index>**	Response If close succeeds: **<index>, CLOSE OK** If close fails: **ERROR**
Reference	

Parameter

<index>	The index of the socket for sending data. This parameter is necessary only if **AT+QIMUX**

	was set as 1 (refer to **AT+QIMUX**). When **AT+QIMUX** was set as 0, the parameter MUST be omitted

NOTES

1. Execution Command **AT+QICLOSE**:
   - If QISRVC is 1 (please refer to **AT+QISRVC**) and QIMUX is 0 (please refer to **AT+QIMUX**), this command will close the connection in which the module is used as a client.
   - If QISRVC is 1 and QIMUX is 1, it will return **ERROR**.
   - If QISRVC is 2 and QIMUX equals 0 and the module is used as a server and some clients have been connected to it, this command will close the connection between the module and the remote client.
   - If QISRVC is 2 and QIMUX is 0 and the module is in listening state without any client, this command will cause the module to quit the listening state.
   - If QISRVC is 2 and QIMUX is 1 and the module is used as a server, this command will close all the income connection and cause the module to quit the listening state.
2. Write Command **AT+QICLOSE=<index>**:
   - This command is valid only if QIMUX is 1.
   - If QISRVC is 1 and QIMUX is 1, this command will close the corresponding connection according to **<index>** and the module used as a client in the connection.
   - If QISRVC is 2 and QIMUX is 1, this command will close the incoming connection according to **<index>**.
3. If QISRVC is 1 and QIMUX is 0, **AT+QICLOSE** only closes the connection when the statue is CONNECTING or CONNECT OK, otherwise respond with **ERROR**. After closing the connection, the status is IP CLOSE.

11.4. AT+QIDEACT Deactivate GPRS/CSD PDP Context

AT+QIDEACT Deactivate GPRS/CSD PDP Context	
Test Command **AT+QIDEACT=?**	Response **OK**
Execution Command **AT+QIDEACT**	Response If close succeeds: **DEACT OK** If close fails: **ERROR**
Reference	

NOTES

1. Except at the status of IP INITIAL, you can deactivate GPRS/CSD PDP context by **AT+QIDEACT.** After closing the connection, the status becomes to IP INITIAL.
2. CSD context is not supported at present.

11.5. AT+QILPORT Set Local Port

AT+QILPORT Set Local Port	
Test Command **AT+QILPORT=?**	Response **+QILPORT:** (list of supported **<port>**s) **OK**
Read Command **AT+QILPORT?**	Response **<mode>: <port>** **<CR><LF><mode>: <port>** **OK**
Write Command **AT+QILPORT=<mode>,<port>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A string parameter which indicates the connection type "TCP" TCP local port "UDP" UDP local port
<port>	0-65535 A numeric parameter which indicates the local port

NOTES

This command is used to set the port for listening.

11.6. AT+QIREGAPP Start TCPIP Task and Set APN, User Name and Password

AT+QIREGAPP Start TCPIP Task and Set APN, User Name and Password	
Test Command **AT+QIREGAPP=?**	Response **+QIREGAPP: "APN","USER","PWD"** **OK**
Read Command **AT+QIREGAPP?**	Response **+QIREGAPP: <apn>,<user name>,<password>** **OK**
Write Command **AT+QIREGAPP=<apn>,<user name>,< password>[,<rate>]**	Response **OK** **ERROR**
Execution Command **AT+QIREGAPP**	Response **OK** **ERROR**
Reference	

Parameter

<apn>	A string parameter which indicates the GPRS access point name or the call number of CSD
<user name>	A string parameter which indicates the GPRS/CSD user name
<password>	A string parameter which indicates the GPRS/CSD password
<rate>	The speed of data transmit for CSD

NOTES

1. The write command and execution command of this command is valid only at the status of IP INITIAL. After operating this command, the status will become to IP START.
2. The value of QICSGP (please refer to **AT+QICSGP**) defines what kind of bearer (GPRS or CSD) the parameters are used for.
3. CSD function and related configuration are not supported at present.

11.7. AT+QIACT Activate GPRS/CSD Context

AT+QIACT Activate GPRS/CSD Context

Test Command **AT+QIACT=?**	Response **OK**
Execution Command **AT+QIACT**	Response **OK** **ERROR**
Reference	

NOTES

1. **AT+QIACT** only activates GPRS/CSD context at the status of IP START. After operating this command, the status will become to IP CONFIG. If TA accepts the activated operation, the status will become to IP IND; after GPRS/CSD context is activated successfully, the status will become to IP GPRSACT, respond with **OK**, and otherwise respond with **ERROR**.
2. CSD context is not supported at present.

11.8. AT+QILOCIP Get Local IP Address

AT+QILOCIP Get Local IP Address	
Test Command **AT+QILOCIP=?**	Response **OK**
Execution Command **AT+QILOCIP**	Response If execution successful, respond **<IP address>** Otherwise respond **ERROR**
Reference	

Parameter

<IP address>	A string parameter which indicates the IP address assigned from GPRS or CSD network

NOTES

1. Only at the following status: IP GPRSACT, IP STATUS, TCP/UDP CONNECTING, CONNECT OK, IP CLOSE can get local IP address by **AT+QILOCIP**, otherwise respond ERROR. And if the status before executing the command is IP GPRSACT, the status will become to IP STATUS after the command.
2. CSD function is not supported at present.

11.9. AT+QISTAT Query Current Connection Status

AT+QISTAT Query Current Connection Status	
Test Command **AT+QISTAT=?**	Response **OK**
Execution Command **AT+QISTAT**	Response When **AT+QIMUX=0**, respond **OK** **STATE: <state>** When **AT+QIMUX=1**, respond **List of** **(+QISTAT: <index>,<mode>,<addr>,<port><CR><LF>)** **OK**
Reference	

Parameter

<state> A string parameter to indicate the status of the connection

"IP INITIAL"	The TCPIP stack is in idle state
"IP START"	The TCPIP stack has been registered
"IP CONFIG"	It has been start-up to activate GPRS/CSD context
"IP IND"	It is activating GPRS/CSD context
"IP GPRSACT"	GPRS/CSD context has been activated successfully
"IP STATUS"	The local IP address has been gotten by the command **AT+QILOCIP**
"TCP CONNECTING"	It is trying to establish a TCP connection
"UDP CONNECTING"	It is trying to establish a UDP connection
"IP CLOSE"	The TCP/UDP connection has been closed
"CONNECT OK"	The TCP/UDP connection has been established successfully
"PDP DEACT"	GPRS/CSD context was deactivated because of unknown reason

If **ATV** was set to 0 by the command **ATV0**, the TCPIP stack gives the following numeric to indicate the former status

0	"IP INITIAL"
1	"IP START"
2	"IP CONFIG"
3	"IP IND"
4	"IP GPRSACT"
5	"IP STATUS"

	6	"TCP CONNECTING" or "UDP CONNECTING"
	7	"IP CLOSE"
	8	"CONNECT OK"
	9	"PDP DEACT"
<index>	The index of the connection, the range is (0-5)	
<mode>	The type of the connection	
	"TCP"	TCP connection
	"UDP"	UDP connection
<addr>	The IP address of the remote	
<port>	The port of the remote	

NOTES

1. Display former style of response when **QIMUX=0** and the later style of response when **QIMUX=1**.
2. CSD context is not supported at present.

11.10. AT+QISTATE Query Connection Status of the Current Access

AT+QISTATE Query Connection Status of the Current Access	
Test Command **AT+QISTATE=?**	Response **OK**
Execution Command **AT+QISTATE**	Response When **AT+QIMUX=0**, respond **OK** **STATE: <state>** When **AT+QIMUX=1**, respond **OK** **STATE: <state>** **+QISTAT: <index>,<mode>,<addr>,<port>,<socketstate>** **OK** Otherwise respond **ERROR**
Reference	

Parameter

<state>	A string parameter to indicate the status of the connection When **AT+QIMUX=0**: "IP INITIAL" The TCPIP stack is in idle state "IP START" The TCPIP stack has been registered "IP CONFIG" It has been start-up to activate GPRS/CSD context "IP IND" It is activating GPRS/CSD context "IP GPRSACT" GPRS/CSD context has been activated successfully "IP STATUS" The local IP address has been gotten by the command **AT+QILOCIP** "TCP CONNECTING" It is trying to establish a TCP connection "UDP CONNECTING" It is trying to establish a UDP connection "IP CLOSE" The TCP/UDP connection has been closed "CONNECT OK" The TCP/UDP connection has been established successfully "PDP DEACT" GPRS/CSD context was deactivated because of unknown reason When **AT+QIMUX=1**: "IP INITIAL" The TCPIP stack is in idle state "IP START" The TCPIP stack has been registered "IP CONFIG" It has been start-up to activate GPRS/CSD context "IP IND" It is activating GPRS/CSD context "IP GPRSACT" GPRS/CSD context has been activated successfully "IP STATUS" The local IP address has been gotten by the command **AT+QILOCIP** “IP PROCESSING” Data phase. Processing the existing connection now "PDP DEACT" GPRS/CSD context was deactivated because of unknown reason
<index>	The index of the connection, the range is (0-5)
<mode>	The type of the connection "TCP" TCP connection "UDP" UDP connection
<addr>	The IP address of the remote
<port>	The port of the remote
<socketstate>	A string parameter to indicate the status of the access connection, including INITIAL,CONNECTED

11.11. AT+QISSTAT Query the Current Server Status

AT+QISSTAT Query the Current Server Status	
Test Command **AT+QISSTAT=?**	Response **OK**
Execution Command **AT+QISSTAT**	Response When **AT+QIMUX=0**, respond **OK** **S: <ServerState>** When **AT+QIMUX=1**, respond **OK** **S: <ServerState>** **C : <index>,<mode>,<addr>,<port>** Otherwise respond **ERROR**
Reference	

Parameter

<ServerState>	A string parameter to indicate the status of the connection "INITIAL" The TCPIP stack is in idle state "OPENNING" The TCPIP stack has been registered "LISTENING" Listening to server port "CLOSING" Closing connection now
<index>	The index of the connection, the range is (0-4)
<mode>	The type of the connection "TCP" TCP connection "UDP" UDP connection
<addr>	The IP address of the remote
<port>	The port of the remote

11.12. AT+QIDNSCFG Configure Domain Name Server

AT+QIDNSCFG Configure Domain Name Server	
Test Command **AT+QIDNSCFG=?**	Response **OK**
Read Command **AT+QIDNSCFG?**	Response **PrimaryDns: <pri_dns>**

	SecondaryDns: <sec_dns> **OK**
Write Command **AT+QIDNSCFG=<pri_dns>[,<sec_dns>]**	Response **OK** **ERROR**
Reference	

Parameter

<pri_dns>	A string parameter which indicates the IP address of the primary domain name server
<sec_dns>	A string parameter which indicates the IP address of the secondary domain name server

NOTES

1. Because TA will negotiate to get the DNS server from GPRS/CSD network automatically when activating GPRS/CSD context, it is STRONGLY recommended to configure the DNS server at the status of IP GPRSACT, IP STATUS, CONNECT OK and IP CLOSE if it is necessary.
2. CSD function and configuration are not supported currently.

11.13. AT+QIDNSGIP Query the IP Address of Given Domain Name

AT+QIDNSGIP Query the IP Address of Given Domain Name	
Test Command **AT+QIDNSGIP=?**	Response **OK**
Write Command **AT+QIDNSGIP=<domain name>**	Response **OK** **ERROR** If succeeds, return: **<IP address>** If fails, return: **ERROR: <err>** **STATE: <state>**
Reference	

Parameter

<domain name>	A string parameter which indicates the domain name
<IP address>	A string parameter which indicates the IP address corresponding to the domain name

<err>	A numeric parameter which indicates the error code 1 DNS not Authorization 2 Invalid parameter 3 Network error 4 No server 5 Time out 6 No configuration 7 No memory 8 Unknown error
<state>	Refer to **AT+QISTAT**

11.14. AT+QIDNSIP Connect with IP Address or Domain Name Server

AT+QIDNSIP Connect with IP Address or Domain Name Server	
Test Command **AT+QIDNSIP=?**	Response **+QIDNSIP:** (list of supported **<mode>**s) **OK**
Read Command **AT+QIDNSIP?**	Response **+QIDNSIP: <mode>** **OK**
Write Command **AT+QIDNSIP=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A numeric parameter indicates which kind of server format is used when establishing the connection: IP address server or domain name server 0 The address of the remote server is a dotted decimal IP address 1 The address of the remote server is a domain name

11.15. AT+QIHEAD Add an IP Header when Receiving Data

AT+QIHEAD Add an IP Header when Receiving Data	
Test Command	Response

AT+QIHEAD=?	**+QIHEAD:** (list of supported **<mode>**s) **OK**
Read Command **AT+QIHEAD?**	Response **+QIHEAD: <mode>** **OK**
Write Command **AT+QIHEAD=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A numeric parameter which indicates whether or not to add an IP header before the received data 0 DO Not add IP header 1 Add a header before the received data, and the format is **"IPD(data length):"**

11.16. AT+QIAUTOS Set Auto Sending Timer

AT+QIAUTOS Set Auto Sending Timer	
Test Command **AT+QIAUTOS=?**	Response **+QIAUTOS:** (list of supported **<mode>**s), (list of supported **<time>**s) **OK**
Read Command **AT+QIAUTOS?**	Response **+QIAUTOS: <mode>,<time>** **OK**
Write Command **AT+QIAUTOS=<mode>[,<time>]**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A numeric parameter which indicates whether or not to set timer when sending data

	0	DO Not set timer for data sending
	1	Set timer for data sending
<time>	A numeric parameter which indicates a time in seconds After the time expires since **AT+QISEND**, the input data will be sent automatically	

11.17. AT+QIPROMPT Set Prompt of '>' when Sending Data

AT+QIPROMPT Set Prompt of '>' when Sending Data	
Test Command **AT+QIPROMPT=?**	Response **+QIPROMPT:** (list of supported **<send prompt>**s) **OK**
Read Command **AT+QIPROMPT?**	Response **+QIPROMPT: <send prompt>** **OK**
Write Command **AT+QIPROMPT=<send prompt>**	Response **OK** **ERROR**
Reference	

Parameter

<send prompt>	A numeric parameter which indicates whether or not to echo prompt ">" after issuing **AT+QISEND** Command 0 No prompt ">" and show "SEND OK" when sending successes 1 Echo prompt ">" and show "SEND OK" when sending successes 2 No prompt and not show "SEND OK" when sending successes 3 Echo prompt ">" and show "socket ID" "SEND OK" when sending successes

11.18. AT+QISERVER Configure as Server

AT+QISERVER Configure as Server	
Test Command **AT+QISERVER=?**	Response **OK**
Read Command **AT+QISERVER?**	Response **+QISERVER: <mode>, <num>**

	OK
Execution Command **AT+QISERVER**	Response **OK** **ERROR** If configured as server successfully, return: **SERVER OK** If configured as server unsuccessfully, return: **CONNECT FAIL**
Write Command **AT+QISERVER=<type>[,<max>]**	Response **OK** **ERROR** If configured as server successfully, return: **SERVER OK** If configured as server unsuccessfully, return: **CONNECT FAIL**
Reference	

Parameter

<mode>	0	NOT configured as server
	1	Configured as server
<num>	The number of clients that have been connected in. The range is 1~5	
<type>	A numeric indicates the type of the server	
	0	TCP server
	1	UDP server
<max>	The maximum number of clients allowed to connect in. The default value is 1. The range is 1-5	

NOTES

1. This command configures the module as a TCP server and the maximum allowed client is 1.
2. The parameter **<max>** is excluded when QIMUX is 0.

11.19. AT+QICSGP Select CSD or GPRS as the Bearer

AT+QICSGP Select CSD or GPRS as the Bearer	
Test Command **AT+QICSGP=?**	Response **+QICSGP: 0-CSD,DIAL NUMBER,USER NAME,PASSWORD,RATE(0-3)** **+QICSGP: 1-GPRS,APN,USER NAME,PASSWORD** **OK**
Read Command **AT+QICSGP?**	Response **+QICSGP: <mode>** **OK**
Write Command **AT+QICSGP=<mode>[,(<apn>,<user name>,<password>)/(<dial number>,<user name>,<password>,<rate>)]**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A numeric parameter which indicates the bearer type	
	0	Set CSD as the bearer for TCPIP connection
	1	Set GPRS as the bearer for TCPIP connection
GPRS parameters:		
<apn>	A string parameter which indicates the access point name	
<user name>	A string parameter which indicates the user name	
<password>	A string parameter which indicates the password	
CSD parameters:		
<dial number>	A string parameter which indicates the CSD dial numbers	
<user name>	A string parameter which indicates the CSD user name	
<password>	A string parameter which indicates the CSD password	
<rate>	A numeric parameter which indicates the CSD connection rate	
	0	2400
	1	4800
	2	9600
	3	14400

NOTE

CSD configuration is not supported at present.

11.20. AT+QISRVC Choose Connection

AT+QISRVC Choose Connection	
Test Command **AT+QISRVC=?**	Response **+QISRVC**: (list of supported **<connection>**s) **OK**
Read Command **AT+QISRVC?**	Response **+QISRVC: <connection>** **OK**
Write Command **AT+QISRVC=<connection>**	Response **OK** **ERROR**
Reference	

Parameter

<connection>	A numeric parameter which indicates the chosen connection	
	1	Choose the connection in which MS used as a client
	2	Choose the connection in which MS used as a server

NOTE

There could be two connections at one time: one connection is that MS connects with a remote server as a client; the other connection is that MS accepts a remote client as a server. Using this Command to specify which connection data will be sent through.

11.21. AT+QISHOWRA Set Whether or not to Display the Address of Sender

AT+QISHOWRA Set Whether or not to Display the Address of Sender

Test Command **AT+QISHOWRA=?**	Response **+QISHOWRA:** (list of supported **<mode>**s) **OK**
Read Command **AT+QISHOWRA?**	Response **+QISHOWRA**: **<mode>** **OK**
Write Command **AT+QISHOWRA=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A numeric parameter which indicates whether to show the address (including IP address in dotted decimal style and port of the remote end) before the received data or not 0 DO NOT show the address. Default 1 Show the address; the format to show the address is like: **RECV FROM: <IP ADDRESS>:<PORT>**

11.22. AT+QISCON Save TCPIP Application Context

AT+QISCON Save TCPIP Application Context	
Test Command **AT+QISCON=?**	Response **OK**
Read Command **AT+QISCON?**	Response TA returns TCPIP application context, which consists of the following AT command parameters. **SHOW APPTCPIP CONTEXT** **+QIDNSIP:<mode>** **+QIPROMPT:<sendprompt>** **+QIHEAD:<iphead>** **+QISHOWRA:<srip>** **+QICSGP:<csgp>** **Gprs Config APN:<apn>** **Gprs Config Userld:<gusr>** **Gprs Config Password:<gpwd>** **Gprs Config inactivityTimeout:<timeout>** **CSD Dial Number:<cnum>**

	CSD Config UserId:<usr> **CSD Config Password:<cpwd>** **CSD Config rate:<crate>** **App Tcpip Mode:<mode>** **In Transparent Transfer Mode** **Number of Retry:<nmRetry>** **Wait Time:<waitTm>** **Send Size:<sendSz>** **esc:<esc>** **OK**
Execution Command **AT+QISCON**	Response **OK**
Reference	

Parameter

<mode>	See **AT+QIDNSIP**
<sendprompt>	See **AT+QIPROMPT**
<iphead>	See **AT+QIHEAD**
<srip>	See **AT+QISHOWRA**
<csgp>	See **AT+QICSGP**
<apn>	See **AT+QICSGP**
<gusr>	See **AT+QICSGP**
<gpwd>	See **AT+QICSGP**
<timeout>	See **AT+QICSGP**
<cnum>	See **AT+QICSGP**
<cusr>	See **AT+QICSGP**
<cpwd>	See **AT+QICSGP**
<crate>	See **AT+QICSGP**

The following four parameters are only for transparent transfer mode.

<nmRetry>	See **AT+QITCFG**
<waitTm>	See **AT+QITCFG**
<sendSz>	See **AT+QITCFG**
<esc>	See **AT+QITCFG**

NOTES

1. The execution command TA saves TCPIP Application Context which consists of the following AT Command parameters, and when system is rebooted, the parameters will be loaded automatically: **AT+QIDNSIP**,**AT+QIPROMPT**,**AT+QIHEAD**,**AT+QISHOWRA**, **AT+QICSGP**, **AT+QITCFG**.
2. The execution command only save the corresponding parameters of the foreground context (refer to

AT+QIFGCNT).
3. CSD configuration is not supported at present.

11.23. AT+QIMODE Select TCPIP Transfer Mode

AT+QIMODE Select TCPIP Transfer Mode	
Test Command **AT+QIMODE=?**	Response **+QIMODE:(0-NORMAL MODE,1-TRANSPARENT MODE)** **OK**
Read Command **AT+QIMODE?**	Response **+QIMODE: <mode>** **OK**
Write Command **AT+QIMODE=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	0	Normal mode. In this mode, the data should be sent by the command **AT+QISEND**
	1	Transparent mode. In this mode, UART will enter data mode after TCP/UDP connection has been established. In data mode, all input data from UART will be sent to the remote end. **+++** can help to switch data mode to command mode. And then **ATO** can help to switch command mode to data mode

11.24. AT+QITCFG Configure Transparent Transfer Mode

AT+QITCFG Configure Transparent Transfer Mode	
Test Command **AT+QITCFG=?**	Response **+QITCFG:** (list of supported **<NmRetry>**s),(list of supported **<WaitTm>**s),(list of supported **<SendSz>**s),(list of supported **<esc>**s) **OK**
Read Command	Response

AT+QITCFG?	**+QITCFG: <NmRetry>,<WaitTm>,<SendSz>,<esc>** **OK**
Write Command **AT+QITCFG=<NmRetry>,<WaitTm>,<SendSz>,<esc>**	Response **OK** **ERROR**
Reference	

Parameter

<NmRetry>	Number of times to retry to send an IP packet
<WaitTm>	Number of 100ms intervals to wait for serial input before sending the packet
<SendSz>	Size in bytes of data block to be received from serial port before sending
<esc>	Whether to turn on the escape sequence or not, default is TRUE

NOTES

1. **<WaitTm>** and **<SendSz>** are two conditions to send data packet.
2. Firstly, if the length of the input data from UART is greater than or equal to **<SendSz>**, the TCPIP stack will send the data by length **<SendSz>** to the remote.
3. Secondly, if the length of the input data from UART is less than **<SendSz>**, and the idle time keeps beyond the time defined by **<WaitTm>**, the TCPIP stack will send all the data in the buffer to the remote.
4. This command is invalid when QIMUX is 1.

11.25. AT+QISHOWPT Control Whether or not to Show the Protocol Type

AT+QISHOWPT Control Whether or not to Show the Protocol Type	
Test Command **AT+QISHOWPT=?**	Response **+QISHOWPT:** (list of supported **<mode>**s) **OK**
Read Command **AT+QISHOWPT?**	Response **+QISHOWPT: <mode>** **OK**
Write Command **AT+QISHOWPT=<mode>**	Response **OK**

	ERROR
Reference	

Parameter

<mode>	0	DO NOT show the transport protocol type at the end of header of the received TCP/UDP data
	1	Show the transport protocol type at the end of header of the received TCP/UDP data as the following format.**IPD(data length)(TCP/UDP):**

NOTE

This command is invalid if QIHEAD was set as 0 by the command **AT+QIHEAD=0**.

11.26. AT+QIMUX Control Whether or not to Enable Multiple TCPIP Session

AT+QIMUX Control Whether or not to Enable Multiple TCPIP Session	
Test Command **AT+QIMUX=?**	Response **+QIMUX:** (list of supported **<mode>**s) **OK**
Read Command **AT+QIMUX?**	Response **+QIMUX: <mode>** **OK**
Write Command **AT+QIMUX=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	0	DO NOT enable multiple TCPIP session at the same time
	1	Enable multiple TCPIP session at the same time

11.27. AT+QISHOWLA Control Whether or not to Display Local IP Address

AT+QISHOWLA Control Whether or not to Display Local IP Address	
Test Command **AT+QISHOWLA=?**	Response **+QISHOWLA:** (list of supported **<mode>**s) **OK**
Read Command **AT+QISHOWLA?**	Response **+QISHOWLA**: **<mode>** **OK**
Write Command **AT+QISHOWLA=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	A numeric parameter indicates whether to show the destination address before the received data or not 0 DO NOT show the destination address 1 Show the destination address: **TO:<IP ADDRESS>**

NOTE

Because M35 can activate two GPRS contexts at the same time. i.e. M35 can get two local IP addresses. It is necessary to point out the destination of the received data when two GPRS contexts have been activated at the same time.

11.28. AT+QIFGCNT Select a Context as Foreground Context

AT+QIFGCNT Select a Context as Foreground Context	
Test Command **AT+QIFGCNT=?**	Response **+QIFGCNT:** (list of supported **<id>**s) **OK**
Read Command	Response

AT+QIFGCNT?	**+QIFGCNT: <id>,<channel>** **OK**
Write Command **AT+QIFGCNT=<id>**	Response **OK** **ERROR**
Reference	

Parameter

<id>	A numeric indicates which context will be set as foreground context. The range is 0-1	
<**channel**>	A numeric indicates which channel is controlling the context **<id>**	
	0	VIRTUAL_UART_1
	1	VIRTUAL_UART_2
	2	VIRTUAL_UART_3
	3	VIRTUAL_UART_4
	255	The context is not controlled by any channel

NOTE

When CMUX is opened, if the status of the context defined by **<id>** is not IP_INITIAL and the context is controlled by the other channel, it will return ERROR.

11.29. AT+QISACK Query the Data Information for Sending

AT+QISACK Query the Data Information for Sending	
Test Command **AT+QISACK=?**	Response **OK**
Execution Command **AT+QISACK**	Response **+QISACK**: **<sent>, <acked>, <nAcked>** **OK**
Write Command **AT+QISACK=<n>**	Response **+QISACK**: **<sent>, <acked>, <nAcked>** **OK**
Reference	

Parameter

<n>	The index for querying the connection
<sent>	A numeric indicates the total length of the data that has been sent through the session
<acked>	A numeric indicates the total length of the data that has been acknowledged by the remote
<nAcked>	A numeric indicates the total length of the data that has been sent but not acknowledged by the remote

NOTES

1. This command is invalid when QIMUX was set as 0 by the command **AT+QIMUX=0**.
2. This command could be affected by the command **AT+QISRVC**. If the QISRVC was set as 1, this command is used to query the information of sending data during the session in which M35 serves as a client. If the QISRVC was set as 2, this command is used to query the data information for sending during the session in which M35 serves as a server.

11.30. AT+QINDI Set the Method to Handle Received TCP/IP Data

AT+QINDI Set the Method to Handle Received TCP/IP Data	
Test Command **AT+QINDI=?**	Response **+QINDI:** (list of supported **<m>**s) **OK**
Read Command **AT+QINDI?**	Response **+QINDI**: **<m>** **OK**
Write Command **AT+QINDI=<m>**	Response **OK** **ERROR**
Reference	

Parameter

<m>	A numeric indicates how the mode handles the received data	
	0	Output the received data through UART directly. In the case, it probably includes header at the beginning of a received data packet. Please refer to the commands. **AT+QIHEAD**,**AT+QISHOWRA**, **AT+QISHOWPT**,**AT+QISHOWLA**
	1	Output a notification statement "**+QIRDI: <id>,<sc>,<sid>**" through UART. This statement will be displayed only one time until all the received data from the connection (defined by **<id>,<sc>,<sid>**) has been retrieved by the command

	AT+QIRD<id> A numeric points out which context the connection for the received data is based on. Please refer to the parameter **<id>** in the command **AT+QIFGCNT**. The range is 0-1
<sc>	A numeric points out the role of M35 in the connection for the received data. 1 The module serves as the client of the connection 2 The module serves as the server of the connection
<sid>	A numeric indicates the index of the connection for the received data. The range is 0-5 When QIMUX was set as 0 by the command **AT+QIMUX=0**, this parameter will be always 0.

11.31. AT+QIRD Retrieve the Received TCP/IP Data

AT+QIRD Retrieve the Received TCP/IP Data	
Test Command **AT+QIRD=?**	Response **+QIRD:** (list of supported **<id>**s),(list of supported **<sc>**s),(list of supported **<sid>**s),(list of supported **<len>**s) **OK**
Write Command **AT+QIRD=<id>,<sc>,<sid>,<len>**	Response **[+QIRD:** **<ipAddr>:<port>,<type>,<length><CR><LF><data>]** **OK** **ERROR**
Reference	

Parameter

<id>	A numeric points out which context the connection for the received data is based on. Please refer to the parameter **<id>** in the command **AT+QIFGCNT**. The range is 0-1
<sc>	A numeric points out the role of M35 in the connection for the received data 1 The module serves as the client of the connection 2 The module serves as the server of the connection
<sid>	A numeric indicates the index of the connection for the received data. The range is 0-5. When QIMUX was set as 0 by the command **AT+QIMUX=0**, this parameter will be always 0
<len>	The maximum length of data to be retrieved. The range is 1-1500
<ipAddr>	The address of the remote end. It is a dotted-decimal IP
<port>	The port of the remote end
<type>	An alpha string without quotation marks indicates the transport protocol type TCP the transport protocol is TCP

	UDP	the transport protocol is UDP
<length>	The real length of the retrieved data	
<data>	The retrieved data	

NOTES

1. **<id>**, **<sc>** and **<sid>** are the same as the parameters in the statement "**+QIRDI: <id>,<sc>,<sid>**".
2. If it replies only OK for the write command, it means there is no received data in the buffer of the connection.

11.32. AT+QISDE Control Whether or Not to Echo the Data for QISEND

AT+QISDE Control Whether or Not to Echo the Data for QISEND	
Test Command **AT+QISDE=?**	Response **+QISDE:** (list of supported **<m>**s) **OK**
Read Command **AT+QISDE?**	Response **+QISDE**: **<m>** **OK**
Write Command **AT+QISDE=<m>**	Response **OK** **ERROR**
Reference	

Parameter

<m>	A numeric indicates whether or not to echo the data for **AT+QISEND**	
	0	Do not echo the data
	1	Echo the data

11.33. AT+QPING Ping a Remote Server

AT+QPING Ping a Remote Server	
Test Command **AT+QPING=?**	Response **+QPING: "HOST"**,(list of supported **<timeout>**s),(list of supported **<pingnum>**s)

	OK
Write Command **AT+QPING="<host>"[,[<timeout>][,<pingnum>]]**	Response **OK** **[+QPING: <result>[,<ipAddr>,<bytes>,<time>,<ttl>]<CR><LF> …]<CR><LF> +QPING:<finresult>[,<sent>,<rcvd>,<lost>,<min>,<max>,<avg>]** **ERROR**
Reference	

Parameter

<host>	The host address in string style. It could be a domain name or a dotted decimal IP address
<timeout>	A numeric gives the maximum time to wait for the response of each ping request. Unit: second. Range: 1-255. Default: 1
<pingnum>	A numeric indicates the maximum time of ping request. Range: 1-10. Default: 4
<result>	The result of each ping request
	0 Received the ping response from the server. In the case, it is followed by "**,<ipAddr>,<bytes>,<time>,<ttl>**"
	1 Timeout for the ping request. In the case, no other information follows it
<ipAddr>	The IP address of the remote server. It is a dotted decimal IP
<bytes>	The length of sending each ping request
<time>	The time expended to wait for the response for the ping request. Unit: ms
<ttl>	The value of time to live of the response packet for the ping request
<finresult>	The final result of the command
	2 It is finished normally. It is successful to activate GPRS and find the host. In the case, it is followed by "**,<sent>,<rcvd>,<lost>,<min>,<max>,<avg>**"
	3 The TCP/IP stack is busy now. In the case, no other information follows it
	4 Do NOT find the host. In the case, no other information follows it
	5 Failed to activate PDP context. In the case, no other information follows it
<sent>	Total number of sending the ping requests
<rcvd>	Total number of the ping requests that received the response
<lost>	Total number of the ping requests that were timeout
<min>	The minimum response time. Unit: ms
<max>	The maximum response time. Unit: ms
<avg>	The average response time. Unit: ms

11.34. AT+QNTP Synchronize the Local Time Via NTP

AT+QNTP Synchronize the Local Time Via NTP	
Test Command **AT+QNTP=?**	Response **+QNTP: "SERVER",**(list of supported **<port>**s) **OK**
Read Command **AT+QNTP?**	Response **+QNTP: "<server>",<port>** **OK**
Execution Command **AT+QNTP**	Response **OK** **+QNTP: <result>**
Write Command **AT+QNTP="<server>"[,<port>]**	Response **OK** **+QNTP: <result>** **ERROR**
Reference	

Parameter

<server>	The address of the Time Server in string style. It could be a domain name or a dotted decimal IP address	
<port>	The port of the Time Server	
<result>	The result of time synchronization	
	0	Successfully synchronize the local time
	1	Failed to synchronize the local time because of unknown reason
	2	Failed to receive the response from the Time Server
	3	The TCP/IP stack is busy now
	4	Do Not find the Time Server
	5	Failed to activate PDP context

NOTE

The factory Time Server is the National Time Service Centre of China whose address is "**210.72.145.44**" and port is **123**.

12 Supplementary Service Commands

12.1. AT+CACM Accumulated Call Meter (ACM) Reset or Query

AT+CACM Accumulated Call Meter (ACM) Reset or Query	
Test Command **AT+CACM=?**	Response **OK**
Read Command **AT+CACM?**	Response TA returns the current value of ACM. **+CACM: <acm>** **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Write Command **AT+CACM=[<passwd>]**	Response TA resets the advice of charge related Accumulated Call Meter (ACM) value in SIM file EF (ACM). ACM contains the total number of home units for both the current and preceding calls. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<acm>	String type; three bytes of the current ACM value in hexa-decimal format (e.g. “00001E” indicates decimal value 30) 000000 – FFFFFF
<passwd>	String type: SIM PIN2

12.2. AT+CAMM Accumulated Call Meter Maximum (ACM Max) Set or Query

AT+CAMM Accumulated Call Meter Maximum (ACM Max) Set or Query	
Test Command **AT+CAMM=?**	Response **OK**
Read Command **AT+CAMM?**	Response TA returns the current value of ACM max. **+CAMM: <acmmax>** **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Write Command **AT+CAMM=[<acmmax>[,<passwd>]]**	Response TA sets the advice of charge related Accumulated Call Meter maximum value in SIM file EF (ACM max). ACM max contains the maximum number of home units allowed to be consumed by the subscriber. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<acmmax>	String type; three bytes of the max. ACM value in hex-decimal format (e.g. “00001E” indicates decimal value 30) 000000 Disable ACM max feature 000001-FFFFFF
<passwd>	String type: SIM PIN2

12.3. AT+CAOC Advice of Charge

AT+CAOC Advice of Charge	
Test Command **AT+CAOC=?**	Response **+CAOC**: (list of supported **<mode>**s)

	OK
Read Command **AT+CAOC?**	Response **+CAOC: <mode>** **OK**
Write Command **AT+CAOC=<mode>**	Response TA sets the advice of charge supplementary service function mode. If error is related to ME functionality: **+CME ERROR: <err>** If <mode>=0, TA returns the current call meter value **+CAOC: <ccm>** **OK** If **<mode>**=1, TA deactivates the unsolicited reporting of CCM value **OK** If **<mode>**=2. TA activates the unsolicited reporting of CCM value **OK**
Reference GSM 07.07	

Parameter

<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 CCM value in hex-decimal format (e.g. "00001E" indicates decimal value 30); bytes are similarly coded as ACM max value in the SIM 000000-FFFFFF	

12.4. AT+CCFC Call Forwarding Number and Conditions Control

AT+CCFC Call Forwarding Number and Conditions Control	
Test Command **AT+CCFC=?**	Response **+CCFC:** (list of supported **<reads>**s) **OK**
Write Command **AT+CCFC=<reads>,<mode>[,<numbe**	Response TA controls the call forwarding supplementary service.

r>[,<type>[,<class>[,<subaddr>[,<satype>[,time]]]]]]	Registration, erasure, activation, deactivation, and status query are supported. Only ,**<reads>** and **<mode>** should be entered with mode (0-2,4) If **<mode>**<>2 and command successful **OK** If **<mode>**=2 and command successful (only in connection with **<reads>** 0 –3) For registered call forwarding numbers: **+CCFC: <status>, <class1>[, <number>, <type>[,<subaddr>,<satype>[,<time>]]] [<CR><LF>+CCFC: ....]** **OK** If no call forwarding numbers are registered (and therefore all classes are inactive): **+CCFC: <status>, <class>** **OK** where **<status>**=0 and **<class>**=15 If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<reads>	0	Unconditional
	1	Mobile busy
	2	No reply
	3	Not reachable
	4	All call forwarding (0-3)
	5	All conditional call forwarding (1-3)
<mode>	0	Disable
	1	Enable
	2	Query status
	3	Registration
	4	Erasure
<number>	Phone number in string type of forwarding address in format specified by **<type>**	
<type>	Type of address in integer format; default value is 145 when dialing string includes international access code character "**+**", otherwise 129	
<subaddr>	String type sub-address of format specified by **<satype>**	
<satype>	Type of sub-address in integer	

<class>	1	Voice
	2	Data
	4	FAX
	7	All telephony except SMS
	8	Short message service
	16	Data circuit sync
	32	Data circuit async
<time>	1…30	When “no reply” (**<reads>**=no reply) is enabled or queried, this gives the time in seconds to wait before call is forwarded, default value is 20
<status>	0	Not active
	1	Active

Example

```
AT+CCFC=0,3,”15021012496”          // Register the destination number for unconditional call
                                      forwarding (CFU)
OK
AT+CCFC=0,2                        // Query the status of CFU without specifying <class>
+CCFC: 1,1,"+8615021012496",145

+CCFC: 1,4,"+8615021012496",145

+CCFC: 1,32,"+8615021012496",145

+CCFC: 1,16,"+8615021012496",145

OK
AT+CCFC=0,4                        // Erase the registered CFU destination number
OK
AT+CCFC=0,2                        // Query the status, no destination number
+CCFC: 0,7

OK
```

12.5. AT+CCUG Closed User Group Control

AT+CCUG Closed User Group Control	
Test Command **AT+CCUG=?**	Response **OK**
Read Command **AT+CCUG?**	Response **+CCUG: <n>,<index>,<info>**

	OK
Write Command **AT+CCUG=[<n>][,<index>[,<info>]]**	Response TA sets the closed user group supplementary service parameters as a default adjustment for all following calls. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	0	Disable CUG
	1	Enable CUG
<index>	0...9	CUG index
	10	No index (preferred CUG taken from subscriber data)
<info>	0	Bo information
	1	Suppress OA (Outgoing Access)
	2	Suppress preferential CUG
	3	Suppress OA and preferential CUG

12.6. AT+CCWA Call Waiting Control

AT+CCWA Call Waiting Control	
Test Command **AT+CCWA=?**	Response **+CCWA:** (list of supported **<n>**s) **OK**
Read Command **AT+CCWA?**	Response **+CCWA: <n>** **OK**
Write Command **AT+CCWA=[<n>][,<mode>[,<class>]]**	Response TA controls the call waiting supplementary service. Activation, deactivation and status query are supported. If **<mode>**<>2 and command successful **OK** If **<mode>**=2 and command successful **+CCWA:<status>,<class1>[<CR><LF>+CCWA:<status>,<class2>[...]]**

	OK If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	0	Disable presentation of an unsolicited result code
	1	Enable presentation of an unsolicited result code
<mode>	When **<mode>** parameter is not given, network is not interrogated	
	0	Disable
	1	Enable
	2	Query status
<class>	A sum of integers, each integer represents a class of information	
	1	Voice (telephony)
	2	Data (bearer service)
	4	FAX(facsimile)
	16	Data circuit sync
	32	Data circuit async
<status>	0	Disable
	1	Enable

NOTES

1. **<status>**=0 should be returned only if service is not active for any **<class>** i.e. +CCWA: 0, 7 will be returned in this case.
2. When **<mode>**=2, all active call waiting classes will be reported. In this mode the command is abortable by pressing any key.
3. Unsolicited result code
   When the presentation call waiting at the TA is enabled (and call waiting is enabled) and a terminating call set up during an established call, an unsolicited result code is returned:
   +CCWA: <number>,<type>,<class>[,<alpha>]
   Parameters

<number>	Phone number in string type of calling address in format specified by <**type**>
<type>	Type of address octet in integer format
129	Unknown type (IDSN format number)
145	International number type (ISDN format)
<alpha>	Optional string type alphanumeric representation of **<number>** corresponding to the entry found in phone book

Example

AT+CCWA=1,1	// Enable presentation of an unsolicited result code
OK	
ATD10086;	// Establish a call
OK	
+CCWA: "02154450293",129,1	// Indication of a call that has been waiting

12.7. AT+CHLD Call Hold and Multiparty

AT+CHLD Call Hold and Multiparty	
Test Command **AT+CHLD=?**	Response **+CHLD:** (list of supported **<n>**s) **OK**
Write Command **AT+CHLD=[<n>]**	Response TA controls the supplementary services call hold, multiparty and explicit call transfer. Calls can be put on hold, recovered, released, added to conversation and transferred. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	0	Terminate all held calls or UDUB (User Determined User Busy) for a waiting call. If a call is waiting, terminate the waiting call. Otherwise, terminate all held calls (if any)
	1	Terminate all active calls (if any) and accept the other call (waiting call or held call). It can not terminate active call if there is only one call
	1X	Terminate the specific call number X (X= 1-7)(active, waiting or held)
	2	Place all active calls on hold (if any) and accept the other call (waiting call or held call) as the active call
	2X	Place all active calls except call X (X= 1-7) on hold
	3	Add the held call to the active calls

NOTE

These supplementary services are only available to the teleservice 11 (Speech: Telephony).

Example

```
ATD10086;                                  // Establish a call
OK

+CCWA: "02154450293",129,1                 // Indication of a call that has been waiting
AT+CHLD=2                                  // Place the active call on hold and accept the waiting call as
                                              the active call
OK
AT+CLCC
+CLCC: 1,0,1,0,0,"10086",129,""            // The first call on hold

+CLCC: 2,1,0,0,0,"02154450293",129,""      // The second call becomes active

OK
AT+CHLD=21                                 // Place the active call except call X=1 on hold
OK
AT+CLCC
+CLCC: 1,0,0,0,0,"10086",129,""            // The first call becomes active

+CLCC: 2,1,1,0,1,"02154450293",129,""      // The second call on hold

OK
AT+CHLD=3                                  // Add a held call to the active calls in order to set up a
                                              conference (multiparty) call
OK
AT+CLCC
+CLCC: 1,0,0,0,1,"10086",129,""

+CLCC: 2,1,0,0,1,"02154450293",129,""

OK
```

12.8. AT+CLIP Calling Line Identification Presentation

AT+CLIP Calling Line Identification Presentation	
Test Command **AT+CLIP=?**	Response **+CLIP:** (list of supported **<n>**s)

	OK
Read Command **AT+CLIP?**	Response **+CLIP: <n>,<m>** **OK**
Write Command **AT+CLIP=[<n>]**	Response TA enables or disables the presentation of the calling line identity (CLI) at the TE. It has no effect on the execution of the supplementary service CLIP in the network. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	0	Suppress unsolicited result codes
	1	Display unsolicited result codes
<m>	0	CLIP not provisioned
	1	CLIP provisioned
	2	Unknown

NOTE

Unsolicited result code

When the presentation of the CLI at the TE is enabled (and calling subscriber allows), an unsolicited result code is returned after every RING (or **+CRING: <type>**) at a mobile terminating call.

+CLIP: <number>, <type>,"",,<alphaId>,<CLI validity>

Parameters

<number> Phone number in string type of calling address in format specified by **<type>**

<type> Type of address octet in integer format;

129	Unknown type (IDSN format number)
145	International number type (ISDN format)

<alphaId> 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

Example

```
AT+CPBW=1,"02151082965",129,"QUECTEL"
OK
AT+QCLIP=1
OK
AT+CLIP=1
OK

RING

+CLIP: "02151082965",129,"",,"QUECTEL",0
```

12.9. AT+CLIR Calling Line Identification Restriction

AT+CLIR Calling Line Identification Restriction	
Test Command **AT+CLIR=?**	Response **+CLIR:** (list of supported **<n>**s) **OK**
Read Command **AT+CLIR?**	Response **+CLIR: <n>,<m>** **OK**
Write Command **AT+CLIR=[<n>]**	Response TA restricts or enables the presentation of the calling line identity (CLI) to the called party when originating a call. The 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. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	(Parameter sets the adjustment for outgoing calls)	
	0	presentation indicator is used according to the subscription of the CLIR service
	1	CLIR invocation
	2	CLIR suppression

<m>	(Parameter shows the subscriber CLIR service status in the network)
	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

12.10. AT+COLP Connected Line Identification Presentation

AT+COLP Connected Line Identification Presentation	
Test Command **AT+COLP=?**	Response **+COLP:** (list of supported **<n>**s) **OK**
Read Command **AT+COLP?**	Response **+COLP: <n>,<m>** **OK**
Write Command **AT+COLP=[<n>]**	Response TA enables or disables the presentation of the COL (Connected Line) at the TE for a mobile originating a call. It has no effect on the execution of the supplementary service COLR in the network. Intermediate result code is returned from TA to TE before any +CR or V.25ter responses. **OK**
Reference GSM 07.07	

Parameter

<n>	(Parameter sets/shows the result code presentation status in the TA)
	0 Disable
	1 Enable
<m>	(Parameter shows the subscriber COLP service status in the network)
	0 COLP not provisioned
	1 COLP provisioned
	2 Unknown (e.g. no network, etc.)

NOTE

Intermediate result code
When enabled (and called subscriber allows), an intermediate result code is returned before any +CR or V.25ter responses:
+COLP: <number>,<type>[,<subaddr>,<satype> [,<alpha>]]
Parameters
<number> Phone number in string type, format specified by **<type>**
<type> Type of address octet in integer format
129 Unknown type(IDSN format number)
145 International number type(ISDN format)
<subaddr> String type sub-address of format specified by **<satype>**
<satype> Type of sub-address octet in integer format (refer to GSM 04.08 sub clause 10.5.4.8)
<alpha> Optional string type alphanumeric representation of **<number>** corresponding to the entry found in phone book

Example

```
AT+CPBW=1,"02151082965",129,"QUECTEL"
OK
AT+QCOLP=1
OK
AT+COLP=1
OK
ATD02151082965;
+COLP: "02151082965",129,"",0,"QUECTEL"

OK
```

12.11. AT+CPUC Price Per Unit and Currency Table

AT+CPUC Price Per Unit and Currency Table	
Test Command **AT+CPUC=?**	Response **OK**
Read Command **AT+CPUC?**	Response **+CPUC: <currency>,<ppu>** **OK**
Write Command **AT+CPUC=<currency>,<ppu>[,<passwd>]**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference	

GSM 07.07	

Parameter

<currency>	String type; three-character currency code (e.g. "GBP", "DEM"); character set as specified by command select TE character set **+CSCS**
<ppu>	String type; price per unit; dot is used as a decimal Separator (e.g. "2.66")
<passwd>	String type; SIM PIN2

12.12. AT+CCWE Call Meter Maximum Event

AT+CCWE Call Meter Maximum Event	
Test Command **AT+CCWE=?**	Response **+CCWE:** (list of supported **<mode>**s) **OK**
Read Command **AT+CCWE?**	Response **+CCWE: <mode>** **OK**
Write Command **AT+CCWE=[<mode>]**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<mode>	0	Disable call meter warning event
	1	Enable call meter warning event

NOTE

Unsolicited result codes supported:
+CCWV Shortly before the ACM (Accumulated Call Meter) maximum value is reached, an unsolicited result code **+CCWV** will be sent, if enabled by this command. The warning is issued approximately when 5 seconds call time remains. It is also issued when starting a call if less than 5s call time remains

12.13. AT+CUSD Unstructured Supplementary Service Data

AT+CUSD Unstructured Supplementary Service Data	
Test Command **AT+CUSD=?**	Response **+CUSD:** (list of supported **<n>**s) **OK**
Read Command **AT+CUSD?**	Response **+CUSD: <n>** **OK**
Write Command **AT+CUSD=[<n>[,<str>[,<dcs>]]**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	A numeric parameter which indicates control of the unstructured supplementary service data
	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
<dcs>	Cell Broadcast Data Coding Scheme in integer format (default 0)

Example

```
AT+CSCS="UCS2"
OK
AT+CUSD=1,"002A0031003000300023"
+CUSD:
1,"0031002E59296C14000A0032002E65B095FB000A0033002E8BC15238000A0034002E5F697968000A0035002E751F6D3B000A0036002E5A314E50000A0037002E5E385DDE98CE91C7000A002A002E900051FA000A", 72

OK
```

12.14. AT+CSSN Supplementary Services Notification

AT+CSSN Supplementary Services Notification	
Test Command **AT+CSSN=?**	Response **+CSSN:** (list of supported **<n>**s), (list of supported **<m>**s) **OK**
Read Command **AT+CSSN?**	Response **+CSSN: <n>,<m>** **OK**
Write Command **AT+CSSN=[<n>[,<m>]]**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	A numeric parameter which indicates whether to show the **+CSSI:<code1>[,<index>]** result code presentation status after a mobile originated call setup	
	0	Disable
	1	Enable
<m>	A numeric parameter which indicates whether to show the **+CSSU:<code2>** result code presentation status during a mobile terminated call setup or during a call, or when a forward check supplementary service notification is received	
	0	Disable
	1	Enable
<code1>	0	Unconditional call forwarding is active
	1	Some of the conditional call forwarding are active
	2	Call has been forwarded
	3	Call is waiting
	4	This is a CUG call (also **<index>** present)
	5	Outgoing calls are barred
	6	Incoming calls are barred
	7	CLIR suppression rejected
<index>	Closed user group index	
<code2>	0	This is a forwarded call

13 Audio Commands

13.1. ATL Set Monitor Speaker Loudness

ATL Set Monitor Speaker Loudness	
Execution Command **ATL<value>**	Response **OK**
Reference V.25ter	

Parameter

<value>	0	Low speaker volume
	1	Low speaker volume
	2	Medium speaker volume
	3	High speaker volume

NOTE

The two commands **ATL** and **ATM** are implemented only for V.25 compatibility reasons and have no effect.

13.2. ATM Set Monitor Speaker Mode

ATM Set Monitor Speaker Mode	
Execution Command **ATM<value>**	Response **OK**
Reference V.25ter	

Parameter

<value>	0	Speaker is always off
	1	Speaker is on until TA inform TE that carrier has been detected
	2	Speaker is always on when TA is off-hook

NOTE

The two commands **ATL** and **ATM** are implemented only for V.25 compatibility reasons and have no effect.

13.3. AT+VTD Tone Duration

AT+VTD Tone Duration	
Test Command **AT+VTD=?**	Response **+VTD:** (list of supported **<internalduration>**s)[,(list of supported **<duration>**s)] **OK**
Read Command **AT+VTD?**	Response **+VTD: <internalduration>,<duration>** **OK**
Write Command **AT+VTD=<internalduration>[,<duration>]**	Response This command refers to an integer **<internalduration>** that defines the length of tones emitted as a result of the **+VTS** command. This does not affect the D command. **OK**
Reference GSM 07.07	

Parameter

<internalduration>	1-255	Duration between two tones in 1/10 second
<duration>	0	Do not set duration of every single tone.
	1-100000	Duration of every single tone in 1 ms

13.4. AT+VTS DTMF and Tone Generation

AT+VTS DTMF and Tone Generation	
Test Command **AT+VTS=?**	Response **+VTS:** (list of supported **<dtmf>**s), ,(list of supported **<duration>**s) **OK**
Write Command **AT+VTS=<dtmf-string>**	Response This command allows the transmission of DTMF tones and arbitrary tones in voice mode. These tones may be used (for example) when announcing the start of a recording period. **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<dtmf-string>	It has a max length of 20 characters, must be entered between double quotes (" ") and consists of combinations of the following separated by commas. But a single character does not require quotes	
	1) **<dtmf>**	A single ASCII characters in the set 0-9, #,*, A-D. This is interpreted as a sequence of DTMF tones whose duration is set by the **+VTD** command
	2) **{<dtmf>, <duration>}**	This is interpreted as a DTMF tone whose duration is determined by **<duration>**
<duration>	Duration of the tone in 1/10 seconds range :1-255	

Example

```
ATD10086;                    // Establish a call
OK
AT+VTS=1                     // Send a single DTMF tone according to the prompts of voice
OK
```

13.5. AT+CALM Alert Sound Mode

AT+CALM Alert Sound Mode	
Test Command **AT+CALM=?**	Response **+CALM:** (list of supported **<mode>**s) **OK**
Read Command **AT+CALM?**	Response **+CALM: <mode>** **OK**
Write Command **AT+CALM=<mode>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<mode>	0	Normal mode
	1	Silent mode (all sounds from ME are prevented)

13.6. AT+CRSL Ringer Sound Level

AT+CRSL Ringer Sound Level	
Test Command **AT+CRSL=?**	Response **+CRSL:** (list of supported **<level>**s) **OK**
Read Command **AT+CRSL?**	Response **+CRSL: <level>** **OK**
Write Command **AT+CRSL=<level>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<level>	Integer type value(0-100) with manufacturer specific range (Smallest value represents the lowest sound level)

13.7. AT+CLVL Loud Speaker Volume Level

AT+CLVL Loud Speaker Volume Level	
Test Command **AT+CLVL=?**	Response **+CLVL:** (list of supported **<level>**s) **OK**
Read Command **AT+CLVL?**	Response **+CLVL: <level>** **OK**
Write Command **AT+CLVL=<level>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<level>	Integer type value(0-100) with manufacturer specific range (Smallest value represents the lowest sound level)

13.8. AT+CMUT Mute Control

AT+CMUT Mute Control	
Test Command **AT+CMUT=?**	Response **+CMUT:** (list of supported **<n>**s) **OK**
Read Command **AT+CMUT?**	Response **+CMUT: <n>**

	OK
Write Command **AT+CMUT=<n>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<n>	0	Mute off
	1	Mute on

13.9. AT+QSIDET Change the Side Tone Gain Level

AT+QSIDET Change the Side Tone Gain Level	
Test Command **AT+QSIDET=?**	Response **+QSIDET:** (list of supported **<gainlevel>**s) **OK**
Read Command **AT+QSIDET?**	Response **+QSIDET(NORMAL_AUDIO): <gainlevel>** **OK** **+QSIDET(HEADSET_AUDIO): <gainlevel>** **OK**
Write Command **AT+QSIDET=<gainlevel>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<gainlevel>	Range is 0 - 255

NOTES

<gainlevel> value is related to specific channel.

13.10. AT+QMIC Change the Microphone Gain Level

AT+QMIC Change the Microphone Gain Level	
Test Command **AT+QMIC=?**	Response **+QMIC:** (list of supported **<channel>**s）, (list of supported **<gainlevel>**s) **OK**
Read Command **AT+QMIC?**	Response **+QMIC:** **<gainlevel(Normal_Mic)>,<gainlevel(Headset_Mic)>,<gainlevel(Loudspeaker_Mic)>** **OK**
Write Command **AT+QMIC=<channel>,<gainlevel>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference	

Parameter

<channel>	0	Normal microphone
	1	Headset microphone
	2	Loudspeaker microphone
<gainlevel>	Range is 0 - 15	

14 Hardware Related Commands

14.1. AT+CCLK Clock

AT+CCLK Clock	
Test Command **AT+CCLK=?**	Response **OK**
Read Command **AT+CCLK?**	Response **+CCLK: <time>** **OK**
Write Command **AT+CCLK=<time>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<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; range -48...+48). E.g. May 6th, 1994, 22:10:00 GMT+2 hours equals to "94/05/06,22:10:00+08"

Example

```
AT+CCLK?                          // Query the local time
+CCLK: "08/01/04, 00:19:43+00"

OK
```

14.2. AT+CBC Battery Charge

AT+CBC Battery Charge	
Test Command **AT+CBC=?**	Response **+CBC:** (list of supported **<bcs>**s),(list of supported **<bcl>**s),(**voltage**) **OK**
Execution Command **AT+CBC**	Response **+CBC: <bcs>, <bcl>,<voltage>** **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference GSM 07.07	

Parameter

<bcs>	Charge status	
	0	ME is not charging
	1	ME is charging
	2	Charging has finished
<bcl>	Battery connection level	
	1...100	Battery has 1-100 percent of capacity remaining vent
<voltage>	Battery voltage(mV)	

14.3. AT+QTEMP Set Temperature Detection Mode or Query Temperature

AT+QTEMP Set Critical Temperature Operating Mode or Query Temperature	
Test Command **AT+QTEMP=?**	Response **+QTEMP:** (list of supported <**mode**>s), (list of supported <**Temperature**>s) **OK**
Read Command **AT+QTEMP?**	Response **QTEMP: <mode><Temperature>** **OK**
Write Command **AT+ QTEMP=<mode>**	Response **OK** **ERROR**
Reference	

Parameter

<mode>	0	Disable to query temperature
	1	Enable to query temperature
	2	Reserved
<Temperature>	Range is from -40°C ~ +90°C.	

14.4. AT+QSCLK Configure Slow Clock

AT+QSCLK Configure Slow Clock	
Test Command **AT+QSCLK=?**	Response **+QSCLK:** (list of supported **<n>**s) **OK**
Read Command **AT+QSCLK?**	Response **+QSCLK: <n>** **OK**
Write Command **AT+QSCLK=<n>**	Response **OK**
Reference	

Parameter

<n>	0	Disable slow clock
	1	Enable slow clock, it is controlled by DTR
	2	The module decides when it enters sleep mode. When there is no data on serial port in 5 seconds, module can enter sleep mode. Otherwise, it will quit from sleep mode

15 Others Commands

15.1. A/ Re-issues the Last Command Given

A/ Re-issues the Last Command Given	
Execution Command **A/**	Response Re-issues the previous command
Reference V.25ter	

NOTE

This command does not work when the serial multiplexer is active. It does not have to end with terminating character.

Example

```
AT
OK
A/                                  // Re-issues the previous command
OK
```

15.2. ATE Set Command Echo Mode

ATE Set Command Echo Mode	
Execution Command **ATE<value>**	Response This setting determines whether or not the TA echoes characters received from TE during command state. **OK**
Reference V.25ter	

Parameter

<value>	0	Echo mode off
	1	Echo mode on

15.3. ATS3 Set Command Line Termination Character

ATS3 Set Command Line Termination Character	
Read Command **ATS3?**	Response **<n>** **OK**
Write Command **ATS3=<n>**	Response This parameter setting determines the character recognized by TA to terminate an incoming command line. The TA also returns this character in output. **OK**
Reference V.25ter	

Parameter

<n>	0-13-127	Command line termination character (Default 13=<CR>)

15.4. ATS4 Set Response Formatting Character

ATS4 Set Response Formatting Character	
Read Command **ATS4?**	Response **<n>** **OK**
Write Command **ATS4=<n>**	Response This parameter setting determines the character generated by the TA for result code and information text. **OK**
Reference V.25ter	

Parameter

<n>	0-10-127	Response formatting character (Default 10=<LF>)

15.5. ATS5 Set Command Line Editing Character

ATS5 Set Command Line Editing Character	
Read Command **ATS5?**	Response **<n>** **OK**
Write Command **ATS5=<n>**	Response This parameter setting determines the character recognized by TA as a request to delete the immediately preceding character from the command line. **OK**
Reference V.25ter	

Parameter

<n>	0-8-127	Response editing character (Default 8=<Backspace>)

15.6. AT+DS V.42bis Data Compression Control

AT+DS V.42bis Data Compression Control	
Test Command **AT+DS=?**	Response **+DS:** (list of supported **<p0>**s), (list of supported **<n>**s), (list of supported **<p1>**s), (list of supported **<p2>**s) **OK**
Read Command **AT+DS?**	Response **+DS: <p0>,<n>,<p1>,<p2>** **OK**
Write Command **AT+DS=[<p0>[,<n>[,<p1>[,<p2>]]]]**	Response This parameter setting determines the possible data

	compression mode by TA at the compression negotiation with the remote TA after a call set up. **OK**
Reference V.25ter	

Parameter

<p0>	0	NONE
<n>	0	Allow negotiation of **<p0>** down
	1	Do not allow negotiation of **<p0>** - disconnect on difference
<p1>	512-4096	Dictionary size
<p2>	6-250	Maximum string size (Default value is 6)

NOTES

1. This command is only for data call.
2. GSM transmits the data transparently. The remote TA may support this compression.
3. This command must be used in conjunction with command **AT+CRLP** to enable compression (**AT+CRLP=X,X,X,X,1,X**).

15.7. AT+DR V.42bis Data Compression Reporting Control

AT+DR V.42bis Data Compression Reporting Control	
Test Command **AT+DR=?**	Response **+DR:** (list of supported **<value>**s) **OK**
Read Command **AT+DR?**	Response **+DR: <value>** **OK**
Write Command **AT+DR=[<value>]**	Response This parameter setting determines whether or not intermediate result code of the current data compressing is reported by TA to TE after a connection is established. **OK**
Reference V.25ter	

Parameter

<value>	0	Reporting disabled

15.8. AT+QRIMODE Set RI Time

AT+QRIMODE Set RI Time	
Test Command **AT+QRIMODE=?**	Response **+QRIMODE:** (list of supported **<timemode>**s) **OK**
Read Command **AT+QRIMODE?**	Response **+QRIMODE: <timemode>** **OK**
Write Command **AT+QRIMODE=<timemode>**	Response **OK** If error is related to ME functionality: **+CME ERROR: <err>**
Reference	

Parameter

<timemode>	Time mode	
	0	Receive SMS, RI 120ms low pulse, other URC RI 120ms low pulse
	1	Receive SMS, RI 120ms low pulse, other URC RI 50ms low pulse
	2	When a SMS is received, RI changes to LOW and holds low level for 120ms, other URCs have no effect on RI.

16 Appendix A Reference

Table 3: Related Documents

SN	Document name	Remark
[1]	V.25ter	Serial asynchronous automatic dialling and control
[2]	GSM 07.07	Digital cellular telecommunications (Phase 2+); AT command set for GSM Mobile Equipment (ME)
[3]	GSM 07.05	Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE- DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)
[4]	GSM 07.10	Support GSM 07.10 multiplexing protocol
[5]	GSM_TCPIP_Application_Note	GSM TCPIP Application Note
[6]	GPRS_Startup_ User_Guide	GPRS Startup User Guide
[7]	GSM_MUX_Application_Note	MUX Application Note
[8]	SMS_ Application_Note	SMS Application Note
[9]	M35_ Hardware_Design	M35 Hardware Design

Table 4: Terms and Abbreviations

Abbreviation	Description
AMR	Adaptive Multi-Rate
ME	Mobile Equipment
TA	Terminal Adapter
MS	Mobile Station
DCE	Data Communication Equipment

TE	Terminal Equipment
DTE	Data Terminal Equipment
RTS/CTS	Request To Send/Clear To Send
GPRS	General Packet Radio Service
DCD	Dynamic Content Delivery
DTR	Data Terminal Ready
CSD	Circuit Switch Data
PSC	Primary Synchronization Code
PDP	Packet Data Protocol
TCP	Transmission Control Protocol
UDP	User Datagram Protocol