Fibocom

PERFECT WIRELESS EXPERIENCE

MTC

AT Commands User Manual

TCP&UDP

V1.5

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Contents

Applicable Model

No.	Applicable Model	Description
1	L61x Series	GTSACK is not supported.
2	LC61x Series	GTSACK is not supported.
3	LG61x Series	GTSACK is not supported.
4	MC61x Series	GTSACK is not supported.
5	MG61x Series	GTSACK is not supported.
6	NL66x Series	GTSACK is not supported. Some models support the MIPCALL Command Parameter **Operation Support (0-1)**, please contact technical support for details. Some models support the MIPOPEN command parameter **protocol (0-2)**, please contact technical support for details. Some models support the MIPODM command parameter **Protocol (0-2)**, please contact technical support for details. Some MIPDNS models do not support the **address type** parameter, contact technical support. Some models support the MPING parameter **mode (0-1)**. NL668-AM model does not support +MSV6DNS, contact technical support. MIPREAD<Hexmode> configuration is not supported. For UDP protocol in HEX mode, the response does not contain "**+MIPPUSH: <Socket_ID>,<Status>**",contact technical support.
7	MC11x Series	GTSACK is not supported Some models support the MIPCALL Command Parameter Operation Support (0-1), please contact technical support for details. Some models support the MIPOPEN command parameter protocol (0-2), please contact technical support for details. Some models of MIPODM command parameters are supported by Protocol (0-2), please contact technical support for details. Some MIPDNS models do not support the address

No.	Applicable Model	Description
		type parameter, contact technical support. Some models support the MPING parameter mode (0-1). MIPREAD<Hexmode> configuration not supported. For UDP protocol in HEX mode, the response does not contain "+MIPPUSH: <Socket_ID>,<Status>",contact technical support.
8	MG11x Series	GTSACK is not supported Some models support the MIPCALL Command Parameter Operation Support (0-1), please contact technical support for details. Some models support the MIPOPEN command parameter protocol (0-2), please contact technical support for details. Some models of MIPODM command parameters are supported by Protocol (0-2), please contact technical support for details. Some MIPDNS models do not support the address type parameter, contact technical support. Some models support the MPING parameter mode (0-1). MIPREAD<Hexmode> configuration not supported. For UDP protocol in HEX mode, the response does not contain "+MIPPUSH: <Socket_ID>,<Status>",contact technical support.
9	MC10x Series	GTSACK is not supported Some models support the MIPCALL Command Parameter Operation Support (0-1) , please contact technical support for details. Some models support the MIPOPEN command parameter protocol (0-2), please contact technical support for details. Some models of MIPODM command parameters are supported by Protocol (0-2), please contact technical support for details. Some MIPDNS models do not support the address type parameter, contact technical support. Some models support the MPING parameter mode (0-1). MIPREAD<Hexmode> configuration not supported. For UDP protocol in HEX mode, the response does not

No.	Applicable Model	Description
		contain "+MIPPUSH: <Socket_ID>,<Status>",contact technical support.
10	LC11x Series	GTSACK is not supported. Some models support the MIPCALL Command Parameter Operation Support (0-1), please contact technical support for details. Some models support the MIPOPEN command parameter protocol (0-2), please contact technical support for details. Some models of MIPODM command parameters are supported by Protocol (0-2), please contact technical support for details Some MIPDNS models do not support the address type parameter, contact technical support. Some models support the MPING parameter mode (0-1). MIPREAD<Hexmode> configuration not supported. For UDP protocol in HEX mode, the response does not contain "+MIPPUSH: <Socket_ID>,<Status>",contact technical support.
11	MA51x Series	GTSACK is not supported. MIPREAD<Hexmode> configuration not supported. For UDP protocol in HEX mode, the response does not contain "+MIPPUSH: <Socket_ID>,<Status>",contact technical support.
12	L71x Series	GTSACK is not supported. MIPCONF command does not support setting retr_num, min_TO, or max_TO.
13	LE Series	GTSACK is not supported. LE370-CN-1D7, LE270-CN-1D2, LE270-CN-1D21 and LE371-CN-1D8GW-00-GOODWAY do not support MIPDCNT, MIPFLUSH, MIPPDNCFG and MSV6DNS.
14	FG13x Series	GTSACK is not supported. MIPCONF is not supported.
15	MS18x Series	GTSACK is not supported. MIPCONF is not supported.
16	MC66x Series	GTSACK is not supported.
17	MG66x Series	GTSACK is not supported.

No.	Applicable Model	Description
18	MC91x Series	GTSACK is not supported.

Change History

V1.5 (2025-07-08)	The +MSV6DNS is not supported on the NL668-AM model, Add special instructions for HEX mode.
V1.4 (2025-05-21)	Move the MIPxxx description to the beginning of the basic commands chapter.
V1.3 (2025-03-25)	+MIPODM command adds instructions for using UDP protocol
V1.2 (2025-03-10)	Added protocol options for the **+MIPOPEN** command. Added a note for the **+MIPRUDP** command.
V1.1 (2024-09-13)	Added LE series to applicable models. Added notes for the **+MIPCALL** command.
V1.0 (2024-04-24)	Initial version.

1 Basic Commands

MIPxxx is a complete set of GPRS commands. This set of commands should not be used in conjunction with other GPRS commands, such as CGATT, CGACT and so on.

1.1 +MIPCALL, create a radio link

Description

This command creates a built-in dial and returns a valid dynamic IP for the module.

Format

Type	Command	Response
Setting command	AT+MIPCALL=<operation>[,<cid>/<APN>[,<User name>,<Password>,[<auth>]]]	Response 1: OK +MIPCALL:<Local IP address>[,<Local IPV6 address>] Response 2: OK +MIPCALL:0 Response 3: ERROR
Read current settings	AT+MIPCALL?	+MIPCALL:<status>[,<Local IP address>[,<Local IPV6 address>]] OK
Query command parameter range	AT+MIPCALL=?	+MIPCALL: (list of supported <operation>s) OK

The +MIPCALL command does not have the general ABORT mechanism, so the next command cannot be executed until the previous command has been executed.

The timeout period for activation and deactivation varies depending on the platform, so please contact technical support for details.

If you activate the PDP with AT+MICALL=1, you must set the APN with the command AT+CGDCONT.

The parameters User name and Password can be up to 64 characters. The parameter APN has a maximum character length of 99 bytes.

When volte is turned on, it allows the activated PDP to reduce two paths

Parameter

Name	Description	Value
operation	- -	0: disconnect link 1: create GPRS link for IPv4 2: create GPRS link for IPv6 3: create GPRS links for IPv4 and IPv6
status	- -	0: disconnect 1: connected 2: busy (disconnecting or connecting)
cid	Specifies a numeric string that specified by a particular PDP context definition (see "+CGDCONT, define PDP context").	Type: integer Range: 1 to 7
APN	APN of the service provider (in quotation marks). Please contact your service provider for more information.	Type: string Range: 1 to 99
User name	The user name of the service provider (in quotation marks). Please contact your service provider for more information.	Type: string Range: 1 to 64
Password	Password for the service provider (in quotation marks). Please contact your service provider for more information.	Type: string Range: 1 to 64
auth	Set authentication type	0: no certification required

Name	Description	Value
		1: PAP 2: CHAP
Local IP address	Assigned IP address (string without double quotes) negotiated with server public PPP	Type: string Range: 7 to 15
Local IPV6 address	IP address assigned by the server	Type: string Range: 3 to 66

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	No	Async or Sync Command	Async command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	30000

Example

```
AT+MIPCALL=1,"CMNET"

OK


+MIPCALL:10.173.146.228


AT+MIPCALL?

+MIPCALL:1,10.173.146.228


OK


AT+MIPCALL=?

+MIPCALL:(0,3)


OK
```

1.2 +MIPOPEN, open a socket (UDP or TCP)

Description

This command causes the module to initialize a new socket that waits for a connection from the remote computer, or to open a normal connection to the remote end (depending on the parameters received).

+MIPOPEN will return a +MIPSTAT report event if it fails, such as rejected by the remote end. This command will return after 60 seconds in the event of a DNS error.

Format

Type	Command	Response
Setting command	AT+MIPOPEN=<Socket_ID>,[<Source_Port>],<Remote_IP>,<Remote_Port>,<Protocol>	Response 1: OK +MIPOPEN: <Socket_ID>,<State>[,<Remote_IP>,<Remote_Port>] Response 2: OK +MIPSTAT: <Socket_ID>,<Status> Response 3: ERROR
Read current settings	AT+MIPOPEN?	Each socket that can be opened +MIPOPEN: [list of free <Socket_ID>s] OK If there are no sockets: +MIPOPEN: 0 OK
Query command	AT+MIPOPEN=?	+MIPOPEN: (list of supported <Socket_ID>s),(list of

Type	Command	Response
parameter range		supported <Source_Port>s),(<IP/URL>), (list of <Remote_Port>s),(list of supported <Protocol>s) OK

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Source_Port	Source port number	Type: integer Range: 0 to 65535
Remote_IP	- -	Type: string IP format: "AAA.BBB.CCC.DDD" Range: 0 to 255 Values can be represented as 1, 2, or 3 digits. Host name of remote site: The host name should conform to the convention's description rules. Syntax is not verified except for the maximum length (character 255). In setup mode, <Remote_IP> is returned only in listening mode. IPV6 format: "X:X:X:X:X:X:X:X," where each X represents the 16 bits in the address, expressed in hexadecimal, such as “ABCD: EF01: 2345. 6789. ABCD: EF01: 2345. 6789" .
Remote_Port	Port number of the remote end	Range: 0 to 65535 • Port range: 1-65535 (decimal digits) for output connections • Port 0 for input connections In setup mode, <Remote_IP> is returned only in listening mode.
Protocol	Protocol stack type	0: IPv4 TCP 1: IPv4 UDP 2: IPv4 SSL 3: IPV4 DTLS(only supported by Eigencomm platform) 60: IPv6 TCP

Name	Description	Value
		61: IPv6 UDP 62: IPv6 TLS 63: IPV6 DTLS(only supported by Eigencomm platform)
State	- -	0: inactive 1: activated
Status	- -	0: ACK identification 1: Protocol stack corruption 2: The connection is automatically closed due to a non-fatal alarm.

Port numbers less than 1024 are not recommended. These port numbers are reserved for the operating system.

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Async command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	5000

Example

```
AT+MIPOPEN=1,,"47.110.234.36",3417,0

OK


+MIPOPEN: 1,1


AT+MIPOPEN?

+MIPOPEN: 2,3,4,5,6
```

```
OK


AT+MIPOPEN=?
+MIPOPEN: (1-6),(0-65535),(<IP/URL>),(0-65535),(0-3,60-63)


OK
```

1.3 +MIPCLOSE, close socket

Description

This command allows the module to release the socket accumulation buffer and close the socket.

All data stored in the accumulation buffer will be lost.

Format

Type	Command	Response
Setting command	AT+MIPCLOSE=<Socket_ID>[,<Mode>]	Response 1: OK +MIPCLOSE: <Socket_ID>[,<number_of_acknowledged_bytes>],<close_type> Response 2: ERROR
Read current settings	AT+MIPCLOSE?	For all ACTIVE sockets +MIPCLOSE: [list of activated <Socket_ID>s] OK For all non-ACTIVE sockets +MIPCLOSE: 0 OK
Query command	AT+MIPCLOSE=?	+MIPCLOSE: (list of supported

Type	Command	Response
parameter range		<Socket_ID>s),(list of supported < close_type>s) OK

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Mode	Only used for TCP connections	0: wait for the server to response FIN (default) 1: do not wait for the server to response FIN 2: wait for 2 MSLs
number_of_acknowledged_bytes	All bytes acknowledged	Type: integer
close_type	Connection close type	0: Connection is closed correctly. 1: The remote side did not reply, and the connection was closed due to timeout. 2: Others (remote site replies RST, retransmission timeout, etc.)

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Async command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	3000

Example

```
AT+MIPCLOSE=1

OK


+MIPCLOSE: 1,0
```

```
AT+MIPCLOSE?
+MIPCLOSE: 0

OK

AT+MIPCLOSE=?
+MIPCLOSE: (1-6),(0-2)

OK
```

1.4 +MIPSETS, set the size and timeout of automatic data push

Description

This command allows the module to set a watermark in the accumulation buffer and set a timeout. When the watermark is reached, data is pushed from the accumulation buffer to the protocol stack.

Timeout defines the time interval between when the +MIPSEND command automatically pushes data from the accumulation buffer to the protocol stack.

Data blocks between terminals and modules are limited to less than 1024 characters (encoded form is 2048 characters). To reduce the overhead of sending small amounts of data in the air, the module uses an accumulation buffer. The terminal may specify a watermark within the accumulation buffer size limit to indicate how much data should be accumulated. When the accumulated data in the buffer exceeds the watermark, all the data in the buffer is sent.

Triggers the countdown of the start time (defined in timeout) when data reaches the accumulation buffer. When the timer is reset, the data is moved to the protocol stack. If new data arrives before the timer is reset, the timer is reinitialized. If the data in the accumulation buffer reaches the watermark, it is pushed to the accumulation buffer as usual, but if there is still some data left after the automatic push, the countdown starts.

The +MIPSETS command is rejected if there is data in the accumulation buffer.

Format

Type	Command	Response
Setting command	AT+MIPSETS=<Socket_ID>,<Size>[,<Timeout>]	Response 1: +MIPSETS: <Status> OK Response 2: ERROR
Read current settings	AT+MIPSETS?	For all ACTIVE sockets +MIPSETS: <Socket_ID>,<Size>,<Timeout> OK For all non-ACTIVE sockets +MIPSETS: 0 OK
Query command parameter range	AT+MIPSETS=?	+MIPSETS: (list of supported <Socket_ID>s),(list of supported <Size>s),(list of supported <Timeout>s) OK

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Size	Buffer size	Range: 1 to 2048 Default value: 2048
Timeout	- -	Range: 0 ms to 1000 ms 0: no timeout (default)
Status	- -	Type: integer

Name	Description	Value
		• 0: success • 3: operation not allowed

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	No	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPSETS=1,1024,300

+MIPSETS: 0


OK


AT+MIPSETS?

+MIPSETS: 1,1024,300


OK


AT+MIPSETS=?

+MIPSETS: (1-6),(1-2048),(0-1000)


OK
```

1.5 +MIPDSETS, set the output data size and timeout

Description

This command allows the module to set the maximum length and time span when sending received

data to the TE. The maximum length means that the data the module sends to the TE must be less than this length. The time span is used to define the time interval between two packets when sending data to the TE.

Format

Type	Command	Response
Setting command	AT+MIPDSETS=<Socket_ID>,<Size>[,<Time span>]	Response 1: +MIPDSETS:0 OK Response 2: ERROR
Read current settings	AT+MIPDSETS?	For all ACTIVE sockets +MIPDSETS: <Socket_ID>,<Size>,<Time span> OK For all non-ACTIVE sockets +MIPSETS: 0 OK
Query command parameter range	AT+MIPDSETS=?	+MIPDSETS: (List of supported <Socket_ID>s),(List of supported <Size>s),(List of supported<Time span>s) OK

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Size	Buffer size	Range: 1 to 2048 Default value: 2048
Time span	- -	Range: 0 ms to 1000 ms 0: default value

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	No	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPDSETS=1,1024,300

+MIPDSETS: 0


OK


AT+MIPDSETS?

+MIPDSETS: 1,1024,300


OK


AT+MIPDSETS=?

+MIPDSETS: (1-6),(1-2048),(0-1000)


OK
```

1.6 +MIPSEND, send data

Description

This command allows the module to store data provided by the terminal in the accumulation buffer, and when the amount of data reaches a predefined amount, the data is sent using the existing protocol stack (see "+MIPSETS, set size and timeout for automatic push"). Before sending data, a valid connection must be established using the +MIPCALL and +MIPOPEN commands.

It is recommended that the terminal use the +MIPSETS command to set the watermark in the accumulation buffer before executing this command. By default, the watermark is set to 2048 bytes of data.

Format

Type	Command	Response
Setting command	AT+MIPSEND=<Socket_ID>,<Data>	Response 1: ERROR Response 2: +MIPSEND: <Socket_ID>,<Status>,<FreeSize> OK
Read current settings	AT+MIPSEND?	Response 1: +MIPSEND: <Socket_ID>,<FreeSize> OK For all ACTIVE sockets Response 2: +MIPSEND:0 OK For all non-ACTIVE sockets

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Data	User data encoded with 0-F hexadecimal digits	Type: string
Status	- -	0: successfully sent data to socket buffer 1: received before MIPXOFF, sending failed
FreeSize	The free size of the current buffer The free size is calculated from 2048.	Range: 0 to 2048

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPSEND=1,"31323334"

+MIPSEND: 1,0,2044


OK


AT+MIPSEND?

+MIPSEND: 1,2044


OK
```

1.7 +MIPPUSH, push data to protocol stack

Description

This command allows the module to push the data accumulated in its accumulation buffer onto the protocol stack. Assume that before using this command, some data should exist due to the +MIPSEND command.

Format

Type	Command	Response
Setting command	AT+MIPPUSH=<Socket_ID>[,<Destination_IP>,<Destination_Port>]	Response 1: +MIPPUSH: <Socket_ID>,<Status>[,<accumulated_sent_length>]

Type	Command	Response
		OK Response 2: ERROR
Read current settings	AT+MIPPUSH?	For all ACTIVE sockets +MIPPUSH: [list of active <Socket_ID>s] OK For all non-ACTIVE sockets +MIPPUSH: 0 OK
Query command parameter range	AT+MIPPUSH=?	+MIPPUSH: (list of supported <Socket_ID>s),(<IP>),(list of supported <Destination_Port>s) OK

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Destination_IP	Destination IP address	Type: string IP format: "AAA.BBB.CCC.DDD". Values can be represented as 1, 2, or 3 digits. IPv6 address format: "X:X:X:X:X:X:X:X", where each X represents the 16 bits in the address, expressed in hexadecimal, such as "ABCD: EF01: 2345. 6789. ABCD: EF01: 2345. 6789".
Destination_Port	Port number of destination	Range: 0 to 65535 Hexadecimal
Status	- -	0: success 1: socket flow disabled 2: no data to send in socket
accumulated_sent_length	Length of cumulative set data	Type: integer

Name	Description	Value
	<Destination_IP> and <Destination_Port> are used only in UDP connections. If the user does not provide <Destination_IP> and <Destination_Port>, the datagram is sent to the last destination (or the default destination provided by the +MIPOPEN command).	

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPPUSH=1

+MIPPUSH: 1,2


OK


AT+MIPPUSH?

+MIPPUSH: 1


OK

AT+MIPPUSH=?


+MIPPUSH: (1-6),(<IP>),(0-65535)

OK
```

1.8 +MIPFLUSH, flush data from buffer

Description

This command causes the module to flush (delete) the data accumulated in its accumulation buffer.

Format

Type	Command	Response
Setting command	AT+MIPFLUSH=<Socket_ID>	Response 1: +MIPFLUSH: <Socket_ID> OK Response 2: ERROR
Read current settings	AT+MIPFLUSH?	For all ACTIVE sockets +MIPFLUSH: [list of active <Socket_ID>s] OK For all non-ACTIVE sockets +MIPFLUSH:0 OK
Query command parameter range	AT+MIPFLUSH=?	+MIPFLUSH: (list of supported <Socket_ID>s) OK

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPFLUSH=1
+MIPFLUSH:1

OK

AT+MIPFLUSH?
+MIPFLUSH:1

OK

AT+MIPFLUSH=?
+MIPFLUSH: (1-6)

OK
```

1.9 +MIPSTAT, report status

Description

This unsolicited event is sent to the terminal, indicating a status change. There are currently two possible sources of failure, one is a logical connection interruption, and the other is a physical connection interruption.

Format

Type	Response
Active reporting	+MIPSTAT: <Socket_ID>,<Status>[,<number_of_acknowld_bytes>]

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6

Name	Description	Value
Status	- -	0: ACK identification 1: Protocol stack corruption 2: The connection is automatically closed due to a non-fatal alarm.
number_of_acknowld_bytes	All bytes acknowledged	Type: integer

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

```
AT+MIPOPEN=1,,"47.110.234.6",3417,0
OK


+MIPSTAT: 1,1
```

1.10 +MIPCONF, configure the internal TCP/IP stack

Description

This command allows you to configure TCP stack parameters such as the number of retransmissions, the upper and lower limits for retransmission timeouts, and the shutdown delay. It can be used to configure the TCP socket parameters prior to socket activation. The configuration values are stored in the module until the power supply is turned off.

Format

This command must be used after MIPCALL is enabled.

Type	Command	Response
Setting command	AT+MIPCONF=<Socket_ID>[[,<retr_num>][,<min_TO>][,<max_TO>][,<max_close_delay>][,<is_nack_ind_req>]]	Response 1: OK Response 2: ERROR
Read current settings	AT+MIPCONF?	+MIPCONF:1,<retr_num>,<min_TO>,<max_TO>,<max_close_delay>,<is_nack_ind_req> +MIPCONF:2,<retr_num>,<min_TO>,<max_TO>,<max_close_delay>,<is_nack_ind_req> +MIPCONF:3,<retr_num>,<min_TO>,<max_TO>,<max_close_delay>,<is_nack_ind_req> +MIPCONF:4,<retr_num>,<min_TO>,<max_TO>,<max_close_delay>,<is_nack_ind_req> +MIPCONF:5,<retr_num>,<min_TO>,<max_TO>,<max_close_delay>,<is_nack_ind_req> +MIPCONF:6,<retr_num>,<min_TO>,<max_TO>,<max_close_delay>,<is_nack_ind_req>] OK
Query command parameter range	AT+MIPCONF=?	+MIPCONF: (list of supported <Socket_ID>s),(list of supported <retr_num>s),(list of supported <min_TO>s),(list of supported <max_TO>s),(list of supported <max_close_delay>s),(list of supported <is_nack_ind_req>s) OK

Parameter

Name	Description	Value
Socket_ID	TCP socket to be configured	Range: 1 to 6
retr_num	Number of retransmissions	Range: 1 to 12 Default value: 5
min_TO	Lower limit of retransmission timeout	Range: 100 ms to 1s Default value: 5x100 ms

Name	Description	Value
max_TO	Upper limit of retransmission timeout	Range: 1 to 60s Default value: 600 x100 ms
max_close_delay	Shutdown delay required by RFC 793	Range: 100 to 7500 ms Default value: 75 x100 ms
is_nack_ind_req	NACK/ACK TCP indication feature Activating this parameter enables the module to report data received by the user's remote TCP layer in the event of a loss of TCP connection. This parameter is reset after a restart.	0: turn off function (default) 1: NACK indicates activation 2: ACK indicates activation

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

This feature is not supported on some platforms, please contact technical support for details.

Example

```
AT+MIPCONF=1,4,10,500,50,2

OK


AT+MIPCONF?

+MIPCONF: 1,4,10,500,50,2

+MIPCONF: 2,5,5,600,75,0

+MIPCONF: 3,5,5,600,75,0

+MIPCONF: 4,5,5,600,75,0
```

```
+MIPCONF: 5,5,5,600,75,0

+MIPCONF: 6,5,5,600,75,0


OK


AT+MIPCONF=?

+MIPCONF: (1-6),(1-12),(1-10),(10-600),(1-75),(0-2)


OK
```

1.11 +MIPKEEPCONF, set TCP keep-alive time

Description

This command is used to set parameters related to the TCP live mechanism, including whether to open the mechanism, how long the failure detection handshake lasts, and how long the handshake retransmits (the parameter settings are saved when the power is lost).

Format

Type	Command	Response
Setting command	AT+MIPKEEPCONF=<mode>[,<keepidle>,<keepintvl>,<keepcnt>]	Response 1: OK Response 2: ERROR
Read current settings	AT+MIPKEEPCONF?	+MIPKEEPCONF: <mode>[,<keepidle>,<keepintvl>,<keepcnt>] OK
Query command parameter range	AT+MIPKEEPCONF=?	+MIPKEEPCONF: (list of supported <mode>s),(list of supported <keepidle>s),(list of supported <keepintvl>s),(list of supported <keepcnt>s)

Type	Command	Response
		OK

Parameter

Name	Description	Value
mode	Used to set whether to open the keep-alive mechanism	0: close (default) 1: open The <keepidle>, <keepintvl>, and <keepcnt > parameters are required only when mode=1.
keepidle	Used to set the send TCP handshake detection time	Range: 1 to 36000s Default value: 7200s Due to protocol stack processing, the deviation between real time interval and set value is small, and subject to the actual effect.
keepintvl	Used to set the handshake again message after TCP handshake failure	Range: 1s to 750s Default value: 65s
keepcnt	Used to set the handshake message retry count after TCP handshake failure	Range: 1 to 50 Default value: 9

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	Yes
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPKEEPCONF=1,20,65,9

OK


AT+MIPKEEPCONF?

+MIPKEEPCONF: 1,20,65,9
```

```
OK

AT+MIPKEEPCONF=?
+MIPKEEPCONF: (0,1),(1-36000),(1-750),(1-50)

OK
```

1.12 +MPING, execute ping

Description

This command allows you to verify an IP connection to another remote computer by sending one or more Internet Control Message Protocol (ICMP) echo request messages.

Displaying the receipt of the corresponding echo message and the round trip time.

You must use the AT+MIPCALL command to obtain a valid IP address before executing ping.

Only one ping request is allowed at any given time.

This command sends an ICMP echo request message <count> times to the target node defined by the <Destination IP/hostname> parameter. If the value of <mode> is 0, the parameter is not allowed to follow the <mode> parameter, otherwise an error message is reported to the DTE. If the value of <mode> is 0, the MS will abort sending echo request messages if the ping request is being processed, otherwise it will report an error message to the DTE.

Format

Type	Command	Response
Setting command	AT+MPING=<mode>[,<Destination_IP/hostname>[,<count>[,<size>[,<TTL>[,<TOS>[,<TimeOut>]]]]]]	Response 1: OK Response 2: ERROR
Active reporting	--	+MPING: <Destination_IP>,<type>,<cod

Type	Command	Response
		e> [,<RTT>]
Read current settings	AT+MPING?	+MPING: <count>,<size>,<TTL>,<TOS>, <TimeOut> OK
Query command parameter range	AT+MPING=?	+MPING: (list of supported <mode>s),(list of supported <Destination_IP/hostname>s), (list of supported <count>s),(list of supported <size>s),(list of supported <TTL>s),(list of supported <TOS>s) ,(list of supported <TimeOut>s) OK

Parameter

Name	Description	Value
mode	- -	0: abort the currently executing ping request 1: start a new IPv4 request 2: start a new IPv6 request
Destination_IP/hostname	Specifies the IP address of the target computer	Type: string Specifies the IP address of the target computer, which van be identified by the 4 octets of the IP address (in dotted decimal) or the host name (in dotted decimal). The host name has a maximum of 255 characters excluding double quotes (“”). Valid values for each octet of an IP address range from 0 to 255. Host names are not case sensitive and can contain alphabetic or numeric letters or hyphens (-). If there is no default value or no parameter is provided, an appropriate error will be displayed. For an IPv6 host, the address format is X:X:X:X:X:X:X:X:X:X:X, where each X indicates a 16b in the address and it is

Name	Description	Value
		represented in hexadecimal. For example, ABCD:EF01:2345:6789:ABCD:EF01:2345:6789.
count	Specifies the number of ICMP echo request messages to be sent.	Range: 1 to 255 Default value: 4
size	Specifies the length (in bytes) of the data field in the sent echo request messages.	Range: 0 to 1372 Default value: 32
TTL	Time to Live (TTL) Specifies the number of hops through which echo request messages can be routed (the TTL value is decremented by 1 for each router along the IP packet's entire forwarding path from source to target, and the IP packet is forwarded out). This value is set by using the TTL field in the IP header.	Range: 1 to 255 Default value: 64
TOS	Type of Service (TOS) is used to select internet service quality. TOS is specified in terms of abstract parameters priority, latency, throughput, and reliability. These abstract parameters will map into the actual service parameters of the particular network traversed by the datagram. The minimum and maximum TOS values are 0 and 255, respectively. For details, see RFC 791 and RFC 2474, where the TOS value defined by RFC 791 is obsolete.	Type: integer Default value: 0
TimeOUT	Specifies the time, in milliseconds, to wait for an echo reply message that corresponds to the sent echo request message, based on the time after the echo request message was sent. Execute +MPINGSTAT if no echo reply message is received within the timeout period.	Type: integer Range: 1 to 65535 Default value: 4000ms
Destination_IP	Specifies the computer from which the message is sent. The message	Type: string

Name	Description	Value
	is identified by the IP address, and is 4 octets in dotted decimal. Valid values for each octet of an IP address ranges from 0 to 255. The message sender (computer) can be the target of the echo request message (if the response is an echo reply message), or it can be the gateway (router) for any other ICMP response message in the path the echo request message travels through.	
type	The first octet of the ICMP header is an ICMP type field that specifies the format of the ICMP message. Refer to valid values of <type> in IETF RFC 792.	Type: integer
code	The reason that the packet did not arrive is described by the code field value of the ICMP header. Each <type> has its own defined <code> value. Refer to IETF RFC 792 for valid values of <code>.	Type: integer
RTT	Specifies the round trip time (RTT), in milliseconds. This parameter is reported in the command response only when an echo reply message is received.	Type: integer

From the moment the module receives a valid AT+MPING setting command, it executes the Ping request until it sends an active report of +MPINGSTAT with <status> equal to 0 or 2 to the DTE, or the execution of the ping request is terminated by the AT+MPING=0 command. For detailed information, please refer to the description of the unsolicited response for +MPINGSTAT.

In certain cases, the response message to the echo request may not be an echo reply message, but rather some other ICMP message that reports an error during the

processing of the datagram. To report the exact response type of the sent echo request message, the unsolicited response includes the <type> and <code> fields. The first octet of the data portion of the IP datagram is ICMP. The <type> field's value determines the format of the remaining data. The <type> and <code> fields together define the ICMP message type. For example, when the echo request message encapsulated in the IP datagram exceeds the TTL (equal to zero) to be forwarded by the gateway, the gateway must discard the datagram and may return an ICMP Time Exceeded message.

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Async command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	120000

Example

```
AT+MPING=1,"www.fibocom.com"
OK

+MPING:"159.138.130.163",0,0,481

+MPING:"159.138.130.163",0,0,1238

+MPING:"159.138.130.163",0,0,872

+MPING:"159.138.130.163",0,0,940

+MPINGSTAT:0,"159.138.130.163",4,4,882
```

```
AT+MPING?

+MPING:4,32,64,0,4000


OK

AT+MPING=?

+MPING:(0-2),(<IP/URL>),(1-255),(0-1372),(1-255),(0-255),(500-600000)


OK
```

1.13 +MSDNS, set DNS IP address

Description

This command sets or reads the DNS (Domain Name Server) IP address (primary or secondary) for each socket. If the user does not specify a DNS server through AT+MSDNS, the module uses the default DNS of NW. The defined values are saved during disconnection of the PDP context (available for use in the next PDP context), but are reset after re-power on.

Format

Type	Command	Response
Setting command	AT+MSDNS=<Socket_ID>[,<Primary_DNS_server_IP>[,<Secondary_DNS_server_IP>]]	Response 1: OK Response 2: ERROR
Read current settings	AT+MSDNS?	+MSDNS: 1,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSDNS: 2,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSDNS: 3,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSDNS: 4,<Primary_DNS_server_IP>,<Secon

Type	Command	Response
		dary_DNS_server_IP> +MSDNS: 5,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSDNS: 6,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSDNS: 7,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> OK
Query command parameter range	AT+MSDNS=?	+MSDNS: (list of supported <Socket_ID>s),(<IP>),(<IP>) OK

Parameter

Name	Description	Value
Socket_ID	A unique number identifying the connection (provided by the terminal application)	1, 2, 3, 4, 5, 6: valid socket 7: valid socket number dedicated to +MPING, +MIPDNS, and +MIPNTP If only the Socket_ID parameter is set, the DNS server IP will be cleared; if both parameters are set, the other DNS server IP will not be cleared.
Primary_DNS_server_IP/Secondary_DNS_server_IP	IP of the destination site	Type: string Range: 0 to 255 Format: "AAA.BBB.CCC.DDD" The value can be written in 1, 2, or 3 digits

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration	1000	Max Result Returning Duration (ms)	1000

(ms)

Example

```
AT+MSDNS=1,"114.114.114.114","8.8.8.8"
OK

AT+MSDNS?
+MSDNS: 1,"114.114.114.114","8.8.8.8"
+MSDNS: 2,"211.137.130.2","211.137.130.18"
+MSDNS: 3,"211.137.130.2","211.137.130.18"
+MSDNS: 4,"211.137.130.2","211.137.130.18"
+MSDNS: 5,"211.137.130.2","211.137.130.18"
+MSDNS: 6,"211.137.130.2","211.137.130.18"
+MSDNS: 7,"211.137.130.2","211.137.130.18"

OK

AT+MSDNS=?
+MSDNS: (1-7),(<IP>),(<IP>)

OK
```

1.14 +MSV6DNS, set DNS IPv6 address

Description

This command sets or reads the DNS (Domain Name Server) IPv6 address (primary or secondary) for each socket. If the user does not specify a DNS server through AT+MSV6DNS, the module uses the default DNS of NW. The defined values are saved during disconnection of the PDP context (available for use in the next PDP context), but are reset after re-power on.

Format

Type	Command	Response
Setting command	AT+MSV6DNS=<Socket_ID>[,<Primary_DNS_server_IP>[,<Secondary_DNS_server_IP>]]	Response 1: OK Response 2: ERROR
Read current settings	AT+MSV6DNS?	+MSV6DNS:1,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSV6DNS:2,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSV6DNS:3,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSV6DNS:4,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSV6DNS:5,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSV6DNS:6,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> +MSV6DNS:7,<Primary_DNS_server_IP>,<Secondary_DNS_server_IP> OK
Query command parameter range	AT+MSV6DNS=?	+MSV6DNS:(list of supported <Socket_id>s),(<IP>),(<IP>) OK

Parameter

Name	Description	Value
Socket_ID	A unique number identifying the connection (provided by the terminal application)	1 to 6: valid socket 7: valid socket number dedicated to +MPING, +MIPDNS, and +MIPNTP If only the Socket_ID parameter is set, the DNS server IP will be cleared; if both parameters are set, the other DNS server IP will not be cleared.
Primary_DNS_server_IP/Secondary_DNS_server_IP	IP of the destination site	Type: string Range: 0 to 255 Format: "AAA.BBB.CCC.DDD" The value can be written in 1, 2, or 3 digits

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

None

1.15 +MIPODM, open a socket in online data mode (UDP or TCP)

Description

This command causes the module to initialize a new socket, which waits for a connection from a remote computer or opens a public connection or TCP connection with the remote end (according to the received parameters) and switches it to online (raw data transmission) data mode, and open the connection with the remote end.

MIPxxx is a complete set of GPRS commands. This setting should not be used with other GPRS commands (such as CGATT, CGACT and so on). The online data mode allows users to transmit raw data from the terminal to the network via the GPRS channel, and vice versa. Currently, it only supports RS232 connection to the terminal through hardware flow control.

Each socket is allocated a cumulative buffer, the size of which is 1372 bytes (1372 bytes for 2G modules and 8192 bytes for 3G/4G modules). When the amount of data sent by the user is less than the size of the buffer, the data will be sent to the network after the spooling timeout (200 milliseconds for the 2G module and 50 milliseconds for the 3G or

4G module), otherwise the data will be sent to the network immediately. In online data mode, only one socket can be allowed at the same time.

MIPODM does not support UDP protocol, UDP in ODM mode will have the problem of subpacket and UDP out-of-order, if you want to use UDP, it is recommended to use the form of MIPSEND+MIPPUSH.

Format

Type	Command	Response
Setting command	AT+MIPODM=<Socket_ID>,[<Source_Port>],<Remote_IP>,<Remote_Port>,<Protocol>[,<Pseudo-Command Mode>]	Response 1: OK +MIPODM: <Socket_ID>,<State>[,<Remote_IP>,<Remote_Port>] Response 2: OK +MIPSTAT: <Socket_ID>,<Status> Response 3: ERROR
Read current settings	AT+MIPODM?	For each socket that can be opened +MIPODM:[list of free <Socket_ID>s] OK If there is no free socket +MIPODM:0 OK
Query command parameter range	AT+MIPODM=?	+MIPODM: (supported <Socket_ID> list), (supported <Source_Port> list), (<IP/URL>), (supported <Remote_Port> list), (supported <protocol> list), (supported <Pseudo-

Type	Command	Response
		Command Mode> list) OK

If it fails, the +MIPODM command will return +MIPSTAT<Socket_ID><Status> active event. For example, when it is rejected by the remote end.

Parameter

Name	Description	Value
Socket_ID	A unique number that identifies the connection	Range: 1 to 6
Source_Port	Source port number	Type: integer Range: 0 to 65535
Remote_IP	IPV4 or IPV6 address	Type: string IP: The remote end IP in "AAA.BBB.CCC.DDD" format. The value range of each byte is 0 to 255. The value can be represented by 1, 2 or 3 digits. Host name of remote site: The host name agreement should comply with the rules described in section 2.3 of RFC-1035. Except for the maximum length (character 255), the syntax is not verified. In the setting mode,<Remote_IP> is returned only in listening mode. IPV6: IPV6 address format is "X:X:X:X:X:X:X:X", where each X represents 16 bits in the address, represented in hexadecimal, such as: "ABCD: EF01: 2345: 6789: ABCD: EF01: 2345: 6789".
Remote_Port	The port number of the remote end	Range: 1 to 65535 Port range: 1 to 65535 (decimal number) for output connection.
Protocol	Protocol stack type	Port 0: used for input connection

Name	Description	Value
		• 0: TCP for IPv4 • 1: UDP for IPv4 • 2: SSL for IPv4 • 60: TCP for IPv6 • 61: UDP for IPv6 • 62: SSL for IPv6
State	- -	0: inactive 1: activate
Pseudo-Command Mode	Optional parameter. It enables or disables pseudo-command mode when ODM is executed and the module is in PREMUX state.	0: enabled (the default value when the module is in PREMUX state) 1: disabled
Status	- -	0: ACK identification 1: The protocol stack is damaged. 2: The connection is automatically closed due to a non-fatal alarm.

This setting command returns the <Remote_IP> and <Remote_Port> parameters only for sockets opened in listening mode.

It is not recommended to use port numbers lower than 1024. These port numbers are defined as reserved for the operating system.

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Async command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	5000

Example

```
AT+MIPODM=1,,"47.110.234.36",3417,0
```

```
OK


+MIPODM: 1,1


AT+MIPODM?
+MIPODM: 1,2,3,4,5,6


OK


AT+MIPODM=?
+MIPODM: (1-6),(0-65535),(<IP/URL>),(1-65535),(0-2,60-62),(0,1)


OK
```

1.16 +MIPDNS, resolve a domain name

Description

This command is used to resolve a domain name.

Format

Type	Command	Response
Setting command	AT+MIPDNS=<domain name>[,<address type>]	Response 1: +MIPDNS: <domain name>,<IP> OK Response 2: ERROR

Parameter

Name	Description	Value
domain name	Domain name to be resolved	Type: string
address type	Domain name type	0: IPv4 address (default value)

Name	Description	Value
		1: IPv6 address 2: IPv4/IPv6 address
IP	Resolved IPv4 or IPv6 address (string without double quotes)	Type: string

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	10000	Max Result Returning Duration (ms)	10000

Example

```
AT+MIPDNS="www.fibocom.com"

+MIPDNS: "www.fibocom.com",47.244.139.197


OK
```

1.17 +MIPNTP, synchronize local time through NTP server

Description

This command is used to synchronize local time through NTP server.

Format

Type	Command	Response
Setting command	AT+MIPNTP=<Remote_IP>,<Remote_Port>[,<address type>]	Response 1: OK +MIPNTP: <Result> Response 2: ERROR
Read current settings	AT+MIPNTP?	+MIPNTP: <Remote_IP>,<Remote_Port>

Type	Command	Response
		OK
Query command parameter range	AT+MIPNTP=?	+MIPNTP: (list of supported <Remote_IP>s),(list of supported <Remote_Port>s) OK

Parameter

Name	Description	Value
Remote_IP	Address of the NTP time server, which can be either a dotted decimal IP or a domain name.	Type: string
address type	Type of NTP time server	0: IPv4 address (default value) 1: IPv6 address
Remote_Port	Port for NTP time server	Range: 1 to 65535
Result	- -	0: Failed to synchronize local time 1: Synchronize local time successfully

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Async command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	120000

Example

```
AT+MIPNTP="ntp.ntsc.ac.cn",123

OK


+MIPNTP: 1


AT+MIPNTP?
```

```
+MIPNTP: "ntp.ntsc.ac.cn",123


OK


AT+MIPNTP=?
+MIPNTP: (<IP/URL>),(1-65535)


OK
```

1.18 +MIPREAD, read data from buffer

Description

This command reads data from buffer. Before executing this command, you must run the AT+GTSET="IPRFMT", 5 command to turn on the receive cache mode.

Format

Type	Command	Response
Setting command	AT+MIPREAD=<Socket_ID>,<Read DataLen>[,<Hexmode>]	Response 1: +MIPDATA: <Socket_ID>,<ActualReadDataLen> <DATA> OK Response 2: +MIPREAD: <Socket_ID>,0 OK Response 3: ERROR
Read current settings	AT+MIPREAD?	Response 1: OK Response 2: +MIPREAD:

Type	Command	Response
		<Socket_ID>,<ActualDataLen> OK

Some modules do not support parameters<Hexmode>, and the supported commands are AT+MIPREAD=<Socket_ID>,<ReadDataLen>please refer to the actual module, or contact technical support.

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
ReadDataLen	Length of data to be read	Range: integer
ActualReadDataLen	Length of data actually read	Range: integer
DATA	Data output	Range: integer
ActualDataLen	Length of unread data	Range: integer
Hexmode	HEX encode	Range: 0-1, default 0

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPOPEN=1,,"47.110.234.36",3417,0

OK


+MIPOPEN: 1,1
```

```
AT+MIPSEND=1,32

>

Enter 32-byte long data, for example, 12345678901234567890123456789012.

OK

+MIPPUSH: 1,0

+MIPSEND: 1,0,2048

OK

+MIPREAD: 1,32

AT+MIPREAD?

+MIPREAD: 1,32

+MIPREAD: 2,0

+MIPREAD: 3,0

+MIPREAD: 4,0

+MIPREAD: 5,0

+MIPREAD: 6,0

OK

AT+MIPREAD=1,32

+MIPDATA: 1,32

12345678901234567890123456789012

OK

AT+MIPCLOSE=1,0

OK
```

```
+MIPCLOSE: 1,0
```

1.19 +GTSACK, query the data information to be sent

Description

This command sets whether the module obtains data confirmation, and all data to be sent is sent by the +MIPPUSH command.

Use AT+GTSACK after AT+MIPPUSH.

This command is only supported in some projects, please contact technical support for specific support.

Format

Type	Command	Response
Setting command	AT+GTSACK=<Socket_ID>	Response 1: +GTSACK:<send>,<acked>,<u-cked> OK Response 2: ERROR

Parameter

Name	Description	Value
Socket_ID	Connection ID	Range: 1 to 6
send	Length of transmitting data	- -
acked	Total bytes acknowledged	- -
u-cked	Data length server not acknowledged	- -

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command

Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

None

2 HEX Mode

2.1 +MIPSEND (Ctrl-Z), send data

Description

This command allows the data to be sent in hexadecimal. When the command is received, the module will respond "> <CR> <LF>". Send any data in hexadecimal. The data buffer range is 0 ≤ buffer ≤ 2048 bytes. <CTRL+Z> ends prompt hex mode and returns to normal AT command mode.

Format

Type	Command	Response
Setting command	AT+MIPSEND=<Socket_ID>	Response 1: OK +MIPPUSH: <Socket_ID>,<Status> +MIPSEND: <Socket_ID>,<Status>,<FreeSize> OK (Depends on TCP protocol) Response 2: OK +MIPPUSH: <Socket_ID>,<Status> +MIPSEND: <Socket_ID>,<Status>,<FreeSize>

Type	Command	Response
		OK (Depends on UDP protocol) Response 3: ERROR

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Status	- -	0: success 1: socket flow disabled 2: no data to send in socket
FreeSize	The free size of the current buffer The available size is calculated from 2048.	Range: 0 to 2048

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPOPEN=1,,"47.110.234.36",3417,0

OK


+MIPOPEN: 1,1


AT+MIPSEND=1

>


Enter data such as: 123456, then (Ctrl-Z send)
```

```
OK

+MIPPUSH: 1,0

+MIPSEND: 1,0,2048

OK
```

2.2 +MIPSEND (timeout), send data

Description

This command allows the data to be sent in hexadecimal. When the command is received, the module will respond "> <CR> <LF>". Any data is sent without encoding. The data buffer range is 0 ≤ buffer ≤ 2048 bytes. After a timeout, data is automatically pushed and the module returned to the normal AT command mode.

The default timeout is 12 seconds.

Format

Type	Command	Response
Setting command	AT+MIPSEND=<Socket_ID>	Response 1: OK +MIPPUSH: <Socket_ID>,<Status> +MIPSEND: <Socket_ID>,<Status>,<FreeSize> OK (Depends on TCP protocol)

Type	Command	Response
		Response 2: OK +MIPPUSH: <Socket_ID>,<Status> +MIPSEND: <Socket_ID>,<Status>,<FreeSize> OK (Depends on UDP protocol) Response 3: ERROR

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Status	- -	0: success 1: socket flow disabled 2: no data to send in socket
FreeSize	The free size of the current buffer The available size is calculated from 2048.	Range: 0 to 2048

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPSEND=1
```

```
>

Input data such as: 123456, (wait for 12s timeout to send)
OK

+MIPPUSH: 1,0

+MIPSEND: 1,0,2048

OK
```

2.3 +MIPSEND (data length), send data

Description

This command allows the data to be sent in hexadecimal. When the command is received, the module will respond "> <CR> <LF>". Any data is sent without encoding. The data buffer range is 0 ≤ buffer ≤ 2048 bytes. When the module receives the corresponding length data, the data is automatically pushed and the module returned to the normal AT command mode.

Redundant data will be lost.

Format

Type	Command	Response
Setting command	AT+MIPSEND=<Socket_ID>,<Data_len>	Response 1: OK +MIPPUSH: <Socket_ID>,<Status>

Type	Command	Response
		+MIPSEND: <Socket_ID>,<Status>,<FreeSize> OK (Depends on TCP protocol) Response 2: OK +MIPPUSH: <Socket_ID>,<Status> +MIPSEND: <Socket_ID>,<Status>,<FreeSize> OK (Depends on UDP protocol) Response 3: ERROR

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Status	- -	0: success 1: socket flow disabled 2: no data to send in socket
FreeSize	The free size of the current buffer The available size is calculated from 2048.	Range: 0 to 2048
Data_len	When IPRFMT is set to 2 through the	Type: integer

Name	Description	Value
	+GTSET command, the data size is output.	

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+MIPSEND=1,32

>


Enter 32 bytes of data, e.g. 12345678901234567890123456789012

OK


+MIPPUSH: 1,0


+MIPSEND: 1,0,2048


OK
```

2.4 +GTSET, HEX mode configuration

Description

This command allows the data to be sent in hexadecimal.

Format

Type	Command	Response
Setting command	AT+GTSET=<future>,<value>	Response 1: OK Response 2: ERROR

Parameter

Name	Description	Value
future	“SENDTIME”: sets auto push timeout.	Type: string
value	- -	Range: 1 to 30s Default value: 12
future	“IPRFMT”: format of received data	Type: string
value	- -	0: Data received with “+MIPRTCP:” or “+MIPRUDP:” and encoded (default). 1: Only received data and the data is not encoded. No <CR> <LF> symbols were added to the module in the received string. 2: Data received with “+MIPRTCP:” or “+MIPRUDP:” and the data is not encoded. Receive string, <CR> <LF> will be added before “+MIPRTCP:” or “+MIPRUDP:” of the module. 5: data reading mode

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Sync command
Require Restart to Take Effect	No	Require Data Store at Power Down	Yes
Max Response Duration (ms)	1000	Max Result Returning Duration (ms)	1000

Example

```
AT+GTSET="IPRFMT",0

OK
```

3 Unsolicited Result Code

3.1 +MIPRUDP, receive data from the UDP protocol stack

Description

The module sends this unsolicited code to the terminal when it receives data from the UDP stack.

Format

Type	Response
Active reporting	+MIPRUDP: <Source_IP>,<Source_Port>,<Socket_ID>,<Left/Data_len>,<Data>

Parameter

Name	Description	Value
Source_IP	Source IP (string without double quotes)	Type: string
Source_Port	Source port number	Type: integer
Socket_ID	Unique connection ID	Range: 1 to 6
Left	When IPRFMT is set to 0 through the +GTSET command, the size of the received data remains in the protocol stack.	Type: integer
Data_len	When IPRFMT is set to 2 through the +GTSET command, the data size is output.	Type: integer
Data	Received data in 0-F hexadecimal digits (string without double quotes, ending with <CR>).	Type: string

When connecting to DTLS, MIPRUDP does not report the source IP address and source port number.

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

```
AT+MIPOPEN=1,,"47.110.234.36",5110,1

OK


+MIPOPEN: 1,1

AT+MIPSEND=1,32

>


OK


+MIPPUSH: 1,0


+MIPSEND: 1,0 and 2048


OK


+MIPRUDP:
47.110.234.36,5110,1,0,5465737420446174613A313132323333343435353636373738393930303
030
```

3.2 +MIPRTCP, receive data from the TCP protocol stack

Description

The module sends this unsolicited event to the terminal when it receives data from the TCP stack.

Format

Type	Response
Active reporting	+MIPRTCP: <Socket_ID>,<Left/Data_len>,<Data>

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
Left	When IPRFMT is set to 0 through the +GTSET command, the size of the received data remains in the protocol stack.	Type: integer
Data_len	When IPRFMT is set to 2 through the +GTSET command, the data size is output.	Type: integer
Data	Received data in 0-F hexadecimal digits (string without double quotes, ending with <CR>).	Type: string

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

```
AT+MIPOPEN=1,,"47.110.234.36",3417,0

OK


+MIPOPEN: 1,1

AT+MIPSEND=1,32

>


OK
```

```
+MIPPUSH: 1,0

+MIPSEND: 1,0 and 2048

OK

+MIPRTCP: 1,0,54657374204461746613A313132323333343435353636373738383939303030303030
```

3.3 +MPINGSTAT, update status of +MPING execution

Description

This is an active request sent by the module to the terminal to notify the ping execution status update and to provide summary statistics of the ping request when it is completed.

Format

Type	Response
Active reporting	+MPINGSTAT: <status>[,<Destination_IP>,<SentMessages>,<ReceivedMessages>[,<Average RTT>]]

Parameter

Name	Description	Value
status	Specifies the status of the ping request execution.	0: After the ping request is completed, an unsolicited response with <status> will be sent to the DTE. If the ping request is aborted or the socket connection is terminated for any reason, the unsolicited response will not be reported to the DTE. 1: If the ICMP reply message is not received within the timeout period, an unsolicited response with <status> is sent to the DTE. 2: If the socket connection terminates for any reason, an unsolicited response with <status> will be sent to the DTE. This state essentially means that ping request execution has been aborted. 3: Flow control is disabled. If the phone does not have enough memory to process the send echo request

Name	Description	Value
		message, an unsolicited response with <status> will be sent to the DTE. 4: Flow control is enabled. If the phone has enough memory to send the echo request message after flow control is disabled, an unsolicited response with this <status> is sent to the DTE.
Destination_IP	Specifies the IP address of the target computer.	Type: string An IPV4 address is identified by an IP address in dotted decimal notation that is four octets long. Valid values for each octet of an IP address range from 0 to 255. IPV6 address format: "X:X:X:X:X:X:X:X," where each X represents the 16 bits in the address, expressed in hexadecimal, such as “ABCD: EF01: 2345. 6789. ABCD: EF01: 2345. 6789".
SentMessages	Specifies the total number of sent echo request messages.	- -
ReceivedMessages	Specifies the total number of received echo reply messages that correspond to echo request messages.	Type: integer
AverageRTT	Specifies the average RTT (Round Trip Time) for this ping request.	Type: integer This value is reported only if the value of <ReceivedMessages> is greater than zero. The calculation of this value includes accumulating all RTT values and dividing the total accumulated RTT by the <ReceivedMessages> value. Only the integer part of the result is reported, and any number in the fractional part is truncated.

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

```
AT+MPING=1,"www.fibocom.com"
OK

+MPING: "159.138.130.163",0,0,481

+MPING: "159.138.130.163",0,0,1238

+MPING: "159.138.130.163",0,0,872

+MPING: "159.138.130.163",0,0,940

+MPINGSTAT: 0,"159.138.130.163",4,4,882
```

3.4 +MIPXOFF, flow control – Xoff

Description

When the module does not have enough memory to handle a new +MIPSEND request, this command is an unsolicited response that the module sends to the terminal to stop sending data until the +MIPXON command is received. The module uses the accumulation buffer before pushing data onto the protocol stack. This memory resource is protected by the Xoff_upper watermark.

Format

Type	Response
Active reporting	MIPXOFF: <Socket_ID>

Parameter

Name	Description	Value
Socket_ID	A unique number identifying the connection	Range: 1 to 6

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

```
AT+MIPOPEN=1,,"47.110.234.36",3417,0

OK


+MIPOPEN: 1,1

AT+MIPSEND=1,2048

>


OK


+MIPPUSH: 1,0


+MIPSEND: 1,0,2048


OK


+MIPXOFF: 1
```

3.5 +MIPXON, flow control – Xon

Description

This command is an unsolicited event that the module sends to the terminal when the module detects a +MIPXOFF event and has available memory in the accumulation buffer and can process a new +MIPSEND request.

Format

Type	Response
Active reporting	+MIPXON: <Socket_ID>

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

```
AT+MIPOPEN=1,,"47.110.234.36",3417,0

OK


+MIPOPEN: 1,1

AT+MIPSEND=1,2048

>


OK


+MIPPUSH: 1,0


+MIPSEND: 1,0,2048
```

```
OK

+MIPXOFF: 1

+MIPXON: 1
```

3.6 +MIPDATA, data indication in pseudo-command mode

Description

For an ODM socket, if any data received from the server and module remains in pseudo-command mode (+++switch), the data is buffered in the module and the unsolicited code is sent to the terminal.

When the module returns to the ODM mode through the ATO command, the data buffered in the module under the pseudo-command mode will be immediately sent to the terminal.

Format

Type	Response
Active reporting	+MIPDATA: <Socket_ID>,<length>

Parameter

Name	Description	Value
Socket_ID	Unique connection ID	Range: 1 to 6
length	Length of received data	Type: integer

Characteristic

Require SIM Card Normal	Yes	Require Network Registration	Yes
Require Data Connection	Yes	Async or Sync Command	Unsolicited result code
Require Restart to Take Effect	No	Require Data Store at Power Down	No
Max Response Duration (ms)	- -	Max Result Returning Duration (ms)	- -

Example

None

4 Error Codes

4.1 TCPIP Error Codes

<err> Value	Description
2000	TCPIP Param wrong
2001	TCPIP not supported in PPP mode
2002	TCPIP DNS convert to IP fail
2003	TCPIP socket number limited
2004	TCPIP invalid operation
2005	TCPIP protocol error
2006	TCPIP send data too long
2007	TCPIP send data memory failed
2008	TCPIP service not in correct state
2009	TCPIP PDP not defined
2010	TCPIP new socket failed
2011	TCPIP socket bind fail
2012	TCPIP socket connect fail
2013	TCPIP socket send fail
2014	TCPIP socket close fail
2015	TCPIP get socket receive buffer failed
2016	TCPIP receive data failed
2017	TCPIP socket used
2018	TCPIP get send buffer size failed
2019	TCPIP socket send data failed
2020	TCPIP socket send data size limited
2021	TCPIP socket set listening mode failed
2022	TCPIP socket listen fail
2023	TCPIP socket error
2024	TCPIP socket not opened
2025	TCPIP TCP stack config failed
2026	TCPIP socket no data to send

<err> Value	Description
2027	TCPIP socket send invalid data state
2028	TCPIP socket close client
2029	TCPIP ping error
2030	TCPIP PPP not connected
2031	TCPIP mipcall not active
2032	TCPIP etcpip not active
2033	TCPIP not define