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FIBOCOM L610 AT Commands_FTP

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Versions

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1 FTP Command

1.1 FTP Introduction

File Transfer Protocol (FTP) is a standard network protocol used to transfer files from one host to another host. FTP is an application protocol over TCP/IP protocol which makes it possible to share file among different hosts. FTP uses C/S mode, the client can download files and upload files as well. Of course, FTP gives the user certain authority; user can only use it under authority. There are many types of FTP Server currently (like commonly used SERV-U), as well as client program (like CuteFTP). WINDOWS also provides an FTP client program.

1.2 FTP Commands

1.2.1 +FTPOPEN, Open an FTP Connection with FTP Server

1.2.2.1 Description

This command causes Open an FTP connection with a remote FTP server, based on given parameters.



Notes:

- Only one FTP connection can be in progress at one time.
- FTP connection is based on two TCP sockets, one is for command and another is for data.
- Online Data Mode connection is prohibited when FTP connection is progress and vice versa.

1.2.1.2 Syntax

Command	Response/Action
+FTPOPEN= <"destination_ip/url ">,<"username">,<"password">[,<"account">,<source_control_port>,<destination_control_port>,<source_data_port>[,sftpmode]]	OK +FTPOPEN: <connection_status> Or: ERROR
+FTPOPEN?	+FTPOPEN: <connection_status> OK

Command	Response/Action
+FTPOPEN=?	+FTPOPEN: (<"destination_ip/url ">), (<"username">),(<"password">) [,(<"account">), (range of supported<source_control_port>s), (range of supported <destination_control_port>s), (range of supported <destination on_control_port>s),(range of supported sftp modes)] OK

1.2.1.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.1.4 Defined Values

<destination_ip/url>: integer type for IP or string type for URL of remote FTP server. The range of IP address is 0-255, IP address format: XXX.XXX.XXX.XXX, URL format: www.XXX.com, the max length is 1024 octets.

<username>: Registered Username for FTP Server, string, the max length is 255 octets.

<password>: Registered Password for FTP Server, string, the max length is 255 octets.

<account>: User Account. Some FTP server not only need username password, but also need account, input this information if it is required. String, the max length is 255 octets.

<source_control_port>: integer type.Port for FTP control connection on source side. Range: 0-65535.

<destination_control_port>: integer type.Port for FTP control connection on remote side. The default value is 21.Range: 0-65535.

<source_data_port>: integer type.Port for FTP data connection on source side. Range: 0-65535.

<sftpmode>: integer type and range 0-1

0 disable sftp

1 enable sftp

<connection status>: integer type and range 0-1

0 connection fail

1 connection success

1.2.2 +FTPCLOSE, Close an Established FTP Connection

1.2.2.1 Description

This command is used to close connection between Module and FTP server, it will only takes effect when there is no data transmission or no FTP command is been executed. DTR interruption can close FTP connection as well.

1.2.2.2 Syntax

Command	Response/Action
+FTPCLOSE	OK +FTPCLOSE: <connection_status> Or: ERROR
+FTPCLOSE?	ERROR
+FTPCLOSE=?	ERROR

1.2.2.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.2.4 Defined Values

<connection status>: integer type and range 0-1

- 0 close connection fail
- 1 close connection successfully

1.2.3 +FTPINFO, FTP Unsolicited Indication Enable/Disable

1.2.3.1 Description

This command causes the Module to enable or disable FTP unsolicited indication to the user. FTP unsolicited indication is used for debugging the FTP session and, when the indication is enabled, the Module will show to user all FTP commands, send to remote site and all FTP responses received from the remote side.

1.2.3.2 Syntax

Command	Response/Action
+FTPINFO=<indication>	OK Or: ERROR
+FTPINFO?	+FTPINFO: <indication>

Command	Response/Action
	OK
+FTPINFO=?	+FTPINFO: (range of supported <indication>s) OK



Notes:

- It only works after the AT+FTPOPEN command set and the default data connection mode is passive when the AT+FTPOPEN command is set.
- When indication is enabled, the module will send the user all FTP commands and responses by the following unsolicited response format : +FTPINFO:<data>

1.2.3.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.3.4 Defined Values

<indication>: integer type and range 0-1

- 0 Indication disabled (Default)
- 1 Indication enabled

1.2.4 +FTPCWD, Change Working Directory

1.2.4.1 Description

This command is used to change the server's current working directory.

1.2.4.2 Syntax

command	Response/Action
+FTPCWD=<"directory name">	OK +FTPCWD: <result> Or: ERROR
+FTPCWD?	ERROR
+FTPCWD=?	+FTPCWD: (<"directory name">) OK

1.2.4.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	No	<1s

1.2.4.4 Defined Values

< directory name>: File directory as well as the directory path (optional), string, max length is 255 octets.

< result>: integer type and range 0-1

0 operation fail.

1 operation success

1.2.5 +FTPMKD, Make Directory

1.2.5.1 Description

This command is used to create a specified directory in a path name (for absolute path name) or subdirectory of current working directory (for relative path name).

1.2.5.2 Syntax

Command	Response/Action
+FTPMKD=<"directory name" >	OK +FTPMKD: <result> Or: ERROR
+FTPMKD?	ERROR
+FTPMKD=?	+FTPMKD: (<"directory name">) OK

1.2.5.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.5.4 Defined Values

< directory name>: File directory as well as the directory path (optional), string, max length is 255 octets.

<result>: integer type and range 0-1

0 operation fail.

1 operation success.

1.2.6 +FTPRMD, Remove Directory

1.2.6.1 Description

This command is used to remove a specified directory in a path name (for absolute path name) or

subdirectory of current working directory (for relative path name).

1.2.6.2 Syntax

Command	Response/Action
+FTPRMD=<"directory name">	OK +FTPRMD: <result> Or ERROR
+FTPRMD?	ERROR
+FTPRMD=?	+FTPRMD: (<"directory name">) OK

1.2.6.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	NO	No	Yes	<1s

1.2.6.4 Defined Values

< directory name>: File directory as well as the directory path (optional), string, max length is 255 octets.

<result>: integer type and range 0-1

0 operation fail.

1 operation success

1.2.7 +FTPPWD, Print Working Directory

1.2.7.1 Description

This command is used to request FTP server to return the name of current working directory.

1.2.7.2 Syntax

Command	Response/Action
+FTPPWD	OK +FTPPWD: <result>[,<directory name>] Or ERROR
+FTPPWD?	ERROR
+FTPPWD=?	ERROR

1.2.7.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.7.4 Defined Values

<directory name>: File directory as well as the directory path (optional), string, max length is 255 octets.

<result >: integer type and range 0-2

0 operation fail.

1 operation success

2 text message follows, <directory name> messag follows only when <result>=2

1.2.8 +FTPCDUP, Change Directory up

1.2.8.1 Description

This command changes the working directory to its parent directory. There is no need to change the logging state, account information or transmission parameter.

1.2.8.2 Syntax

Command	Response/Action
+FTPCDUP	OK +FTPCDUP: <result> Or ERROR
+FTPCDUP?	ERROR
+FTPCDUP=?	ERROR

1.2.8.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.8.4 Defined Values

<result >: integer type and range 0-1

0 operation fail.

1 operation success

1.2.9 +FTPDEL, Delete a File

1.2.9.1 Description

This command is used to delete a file on FTP server.

1.2.9.2 Syntax

Command	Response/Action
+FTPDEL=<"file name">	OK +FTPDEL: <result> Or ERROR
+FTPDEL?	ERROR
+FTPDEL=?	+FTPDEL: (<"file name">) OK

1.2.9.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.9.4 Defined Values

< file name>: File name as well as the file path (optional), string, the max length is 255 octets.

<result >: integer type and range 0-1

0 operation fail.

1 operation success

1.2.10 +FTPREN, Rename a File

1.2.10.1 Description

This command is use to rename a file according to given parameters.

1.2.10.2 Syntax

command	Response/Action
+FTPREN=<"file name from">, <"file name to">	OK +FTPREN: <result> Or ERROR
+FTPREN?	ERROR
+FTPREN=?	+FTPREN: (<"file name from">), (<"file name to">)

command	Response/Action
	OK

1.2.10.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.10.4 Defined Values

< file name from>: Old name as well as the file path (optional) of file to be renamed, String, max length is 255 octets.

<file name to>: New name as well as the file path (optional) of file to be renamed, String, max length is 255 octets.

<result >: integer type and range 0-1

- 0 operation fail.
- 1 operation success

1.2.11 +FTPLIST, Request List

1.2.11.1 Description

This command is used to get the list of contents of a special directory from FTP server.



Notes:

- Parameter is optional. No parameter means current working directory by default.
- If path name specifies a directory or other file groups, the server will send a list of the files in the specified directory. If the path name specifies a file, then the server should send the current information of this file.
- When +FTPLIST command is executed, a requested list is being sent to the user in data mode after +FTPLIST:2 unsolicited response immediately, but before +FTPLIST: 1 unsolicited response.

1.2.11.2 Syntax

Command	Response/Action
+FTPLIST [=<"file/directory name">]	OK +FTPLIST: <result><list of directory/files> +FTPLIST: <result> Or ERROR
+FTPLIST?	ERROR
+FTPLIST=?	+FTPLIST: (<"file/directory name">)

Command	Response/Action
	OK

1.2.11.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.11.4 Defined Values

<file/directory name>: string type Name of file or directory on FTP server of which to request list of contents, the max length is 255 octets.

.<result>: integer type and range 0-2

- 0 operation fail.
- 1 operation success
- 2 the following string is the list of contents of the specified directory or the information of the specified file.

1.2.12 +FTPSTAT, Request Status

1.2.12.1 Description

This command causes the module to request the remote FTP server to send status of a file or directory specified by the parameter.



Notes:

This command can include a parameter field, if a full path name is specified; STAT command is similar to LIST command, except that the data will be transmitted through control connection. If a local path is specified, the server will response by a file or properties list related with the specified item. If no parameter is specified, the server will return the general status information of this FTP process, which include the value and connection status of all current transmission parameters.

1.2.12.2 Syntax

Command	Response/Action
+FTPSTAT[=<"file/directory name">]	OK +FTPSTAT: <result>[,<status information>] Or ERROR
+FTPSTAT?	ERROR
+FTPSTAT=?	+FTPSTAT: (<"file/directory name">)

Command	Response/Action
	OK

1.2.12.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.12.4 Defined Values

<file/directory name>: string type, name of file or directory on FTP server of which to request list of contents, the max length is 255 octets.

<result>: integer type and range 0-2

- 0 operation fail.
- 1 operation success
- 2 text message follows , <status information> message follows only when <result>=2

1.2.13 +FTPSYST, Request FTP Server Operating System Type

1.2.13.1 Description

This command is used to request the operating system type of the FTP server.

1.2.13.2 Syntax

Command	Response/Action
+FTPSYST	OK +FTPSYST: <result>[,<system type information>] Or ERROR
+FTPSYST?	ERROR
+FTPSYST=?	ERROR

1.2.13.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.13.4 Defined Values

<result>: integer type and range 0-1

- 0 operation fail.
- 1 operation success
- 2 text message follows , <system type information> message follows only when <result>=2

1.2.14 +FTPNOOP, No Operation

1.2.14.1 Description

This is a no operation command, which means that FTP server will do nothing but return a response to the client.

1.2.14.2 Syntax

Command	Response/Action
+FTPNOOP	OK +FTPNOOP: <result> Or ERROR
+FTPNOOP?	ERROR
+FTPNOOP=?	ERROR

1.2.14.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.14.4 Defined Values

<result>: integer type and range 0-1

- 0 operation fail.
- 1 operation success

1.2.15 +FTPSTOR, Store File on Remoter Server

1.2.15.1 Description

This command makes the server receive a file from data connection. The data end of transmission character of this command is hexadecimal value 0x03. If the data to be transferred is hexadecimal value 0x03 or 0x10, then escape characters 0x10 must be added in front. For example, when sending hexadecimal 03 10 11 03, we actually send 10 03 10 10 11 10 03.



Notes:

- FTPSTOR command makes the server receive the data transmitted through data connection, and store the data as a file. If the specified file in the path name already exists on the server site, then this file will be replaced by transmitted data, otherwise, a new file will be created.
- This command supports file offset as an optional parameter. If file offset is set both by command FTPSTOR as a parameter and by command FTPREST, only that set by

FTPSTOR will take effect. This file offset means from which position to store data in the file on the FTP server, but not from which position of local file to upload. When create a new file on server and store data by this command with an file offset 10, for example, the first 10 bytes will be NULL character.

1.2.15.2 Syntax

Command	Response/Action
+FTPSTOR=<"file name">[, <file type>[,<offset>]]	OK +FTPSTOR: <result> Or ERROR
+FTPSTOR?	ERROR
+FTPSTOR=?	+FTPSTOR: (<"file name">)[,(list of supported <file tpe>s)][,(list of supported <offset>s)] OK

1.2.15.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.15.4 Defined Values

<file name>: A file name or a full file path name, string, the max length is 255 octets.

<file type>: File type (ASCII or Binary), numeric, in the range of 0 -1

0 ASCII

1 Binary (Default)

<offset>: File offset to store, range: 0 - 0xFFFFFFFFFE.

<result>: integer type and range 0-2

0 operation fail.

1 operation success

2 connection established, data can be uploaded

1.2.16 +FTPRETR, Retrieve a File from FTP Server

1.2.16.1 Description

This command makes the server to send a copy of the file specified by the parameter to the client. It won't affect the file status and contents on the server site. Hexadecimal data 0x03 and 0x10 will be translated with 0x10 added in front. For example hexadecimal data 03 11 10 will be translated as 10 03 11 10 10.



Notes:

1. This command supports file offset as an optional parameter. If file offset is set both by command FTPRETR as a parameter and by command FTPREST, only that set by FTPRETR will take effect.
2. For USB port, a timer is used to control the data flow. The timer period value can be set by command: AT+GTSET="FTPLIMIT",n. (n:0—1000, default value is 50);For serial port, the timer will use a fixed value. If the timer period value is set with 0, then the timer will be disabled.

1.2.16.2 Syntax

Command	Response/Action
+FTPRETR=<"file name">[, <file type>[,<offset>]]	OK +FTPRETR: <result> Or ERROR
+FTPRETR?	ERROR
+FTPRETR=?	+FTPRETR: (<"file name">)[, (list of supported <file type>s)][, (list of supported <offset>s)] OK

1.2.16.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	No	Yes	<1s

1.2.16.4 Defined Values

<file name>: A file name or a full file path name, string, the max length is 255 octets.

<file type>: File type (ASCII or Binary), numeric, in the range of 0 - 1

0 ASCII

1 Binary (Default)

<offset>: File offset to download, range: 0 - 0xFFFFFFFFE.

<result>: integer type and range 0-2

0 operation fail.

1 operation success

2 data connection established and UART/USB will enter ODM mode

1.2.17 +FTPREST, Set the Offset of the Download File

1.2.17.1 Description

This command sets the offset of the download file. The following command: FTPRETR or FTPGET

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will download data from specified location of the file instead of downloading the entire file.



Note:

The offset must be less than the length of the file to be downloaded.

1.2.17.2 Syntax

Command	Response/Action
+FTPREST=<start position>	OK Or ERROR
+FTPREST?	+ FTPREST: <start position > OK
+FTPREST=?	+ FTPREST: (list of support <start position >s) OK

1.2.17.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	<1s

1.2.17.4 Defined Values

<start position>: integer type. Set the offset, range: 0 - 0xFFFFFFFFFE. The default value is 0.

1.2.18 +FTPGET, Enter the File Download Mode

1.2.18.1 Description

After connecting FTP server successfully, FTPGET command will make a data connection and download file from FTP server. The download mode will be kept until all data is downloaded or receive FTPCLOSE command. In download mode, only FTPRECV, AT+FTPOPEN? and FTPCLOSE command will be responded, all other FTP commands will return ERROR.

The data received by the module will be store in a buffer (with size of 500K) and won't output from the serial port directly. User must read data by FTPRECV command.



Notes:

- After the buffer is full, data connection will be closed, thus data downloading will stop. If the buffer has at least half size of free memory later, which can be caused by user's reading data from the buffer by sending FTPRECV command, a data connection will be established and data downloading process will continue.
- This command support parameter <offset>. If offset is both set by command FTPGET as an optional parameter and by command FTPREST, file offset set by FTPREST will be ignored,

which means only offset set by FTPGET will take effect.

- After return OK, it still cannot get the data, as it need a procedure to establish the connection and download to buffer. AT+FTPGET can be used for reading data after +FTPGET:2 comes up, can first use AT+FTPGET? to request the data size of current buffer.

1.2.18.2 Syntax

Command	Response/Action
+FTPGET=<"file name">[,<view mode>[,<offset>]]	OK +FTPGET: <result> or: ERROR
+FTPGET?	+FTPGET:<"file name">,<view mode>,<eof> OK Or (For no data in buffer) OK
+FTPGET =?	+FTPGET: ("file name"),(list of supported <view mode>s)],(list of supported <offset>s)] OK

1.2.18.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	<1s

1.2.18.4 Defined Values

<file name>: A file name or a file path name, string, the max length is 255 octets.

<view mode>: integer type and range 0-1

Download mode

0: text mode

1: binary mode (Default)

<offset>: Download offset address range: 0-0xFFFFFFFF

<result>: integer type and range 0-2

0 - operation fails

1- operation success

2 – already download data to cache

<eof>: integer type and range 0-1

0: file downloading

1: All file data have been downloaded

1.2.19 +FTP_RECV, Read Data through the Port

1.2.19.1 Description

This command needs to be used together with FTPGET command. It will read the data cached in the module buffer (500K), which is downloaded by executing command FTPGET. This command is different from FTPRETR command, which is pure output, no escape character. So before output the data, it will show the length of the output data. If the buffer is empty, the data length will be 0, and no data will be output.



Notes:

- The data in cache will be cleaned when execute FTPGET command later. So before you use FTPGET again, please make sure the data in the buffer are fetched to avoid losing data.
- The data in the buffer will be cleaned when FTP is closed.
- FTP connection will be closed automatically and buffer will be clean if the data cannot be fetched in 2 minutes.

1.2.19.2 Syntax

Command	Response/Action
+FTP_RECV=<req_length>	+FTP_RECV: <ret_length> DATA OK Or ERROR:
+FTP_RECV?	+ FTP_RECV: <available> OK
+FTP_RECV =?	+ FTP_RECV : (list of supported <req_length>s)

Command	Response/Action
	OK

1.2.19.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	<3s

1.2.19.4 Defined Values

<req_length>: integer type , length of the requested data, range: 1-3000 bytes.

<ret_length>: integer type , length of the actual output data, range: 0-3000 bytes

<available>: integer type ,length of the data stored in current buffer ,rang 0-512000bytes

1.2.20 +FTPPUT, Upload file to the server by AT command mode

1.2.20.1 Description

This command is used to upload a file to the server by AT command. It is different with the FTPSTOR command and don't define the escape character.

1.2.20.2 Syntax

Command	Response/Action
+FTPPUT=<"file name">,<length>,<eof>[,<file type>]	+FTPPUT: <result>[,< length>] OK or: ERROR:
+FTPPUT?	ERROR
+FTPPUT =?	+FTPPUT: ("file name"),(list of supported <length>s),(list of supported <eof>s)[,(list of supported <file type>s)] OK

1.20.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	<1s

1.20.4 Defined Values

<file name>: string type ,filename will be create at the server.

<length>: integer type ,the count of send data.Range: 1-1024 bytes

<eof>: integer type , range: 0-1,end of flag.

0 remains data to be sent, data connection remains open.

1 the last data to be sent, data connection closed

<file type>: File type (ASCII or Binary), optional, numeric, in the range of 0 - 1

0 ASCII

1 Binary (Default)

<result>: integer type and range 0-2

0 operation fail.

1 operation success

2 data follows , <length> message follows only when <result>=2

1.2.21 +FTPMODE, set FTP mode Passive/Active

1.2.21.1 Description

This command causes the module to set FTP mode as passive or active.

1.2.21.2 Syntax

Command	Response/Action
+FTPMODE=<mode>	OK Or: ERROR
+ FTPMODE?	+ FTPMODE: <mode> OK
+ FTPMODE =?	+ FTPMODE: (range of supported <mode>s) OK

1.2.21.3 Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
Yes	No	Yes	Yes	<1s

1.2.21.4 Defined Values

<mode>: integer type and range 0-1

0 Passive mode(Default)

1 Active mode

2 Error Code

2.1 CME Error

Parameter	Description
<Err>	0, "phone failure"
	1, "no connection to phone"
	2, "phone-adaptor link reserved"
	3, "operation not allowed"
	4, "operation not supported"
	5, "PH-SIM PIN required"
	6, "PH-FSIM PIN required"
	7, "PH-FSIM PUK required"
	10, "SIM not inserted"
	11, "SIM PIN required"
	12, "SIM PUK required"
	13, "SIM failure"
	14, "SIM busy"
	15, "SIM wrong"
	16, "incorrect password"
	17, "SIM PIN2 required"
	18, "SIM PUK2 required"
	19, "incorrect PUK1"
	20, "memory full"
	21, "invalid index"
	22, "not found"
	23, "memory failure"
	24, "text string too long"
	25, "invalid characters in text string"
	26, "dial string too long"
	27, "invalid characters in dial string"
	30, "no network service"
	31, "network timeout"
	32, "network not allowed - emergency calls only"

Parameter	Description
	40, "network personalisation PIN required"
	41, "network personalisation PUK required"
	42, "network subset personalisation PIN required"
	43, "network subset personalisation PUK required"
	44, "service provider personalisation PIN required"
	45, "service provider personalisation PUK required"
	46, "corporate personalisation PIN required"
	47, "corporate personalisation PUK required"
	48, "hidden key required" (NOTE: This key is required when accessing hidden phonebook entries.)
	49, "EAP method not supported"
	50, "Incorrect parameters"
	100, "unknown"
	103, "Illegal MS"
	106, "Illegal ME"
	107, "GPRS services not allowed"
	111, "PLMN not allowed"
	112, "location area not allowed"
	113, "roaming not allowed in this location area"
	114, "GPRS services not allowed in this PLMN"
	116, "MSC temporarily not reachable"
	117, "Network failure"
	132, "Service not supported"
	133, "Service not subscribed"
	134, "service option temporarily out of order"
	135, "NS-api already used"
	148, "Unspecified GPRS error"
	149, "PDP authentication error"
	150, "invalid mobile class"
	244, "Attach failure"
	257, "Invalid error mapping"
	258, "APN not listed in APN Control List (ACL)"
	701, "incorrect security code"

Parameter	Description
	702, "max attempts reached"
	1001, "Unassigned (unallocated) number"
	1003, "No route to destination"
	1006, "Channel unacceptable"
	1008, "Operator determined barring"
	1016, "Normal call clearing"
	1017, "User busy"
	1018, "No user responding"
	1019, "User alerting, no answer"
	1021, "Call rejected"
	1022, "Number changed"
	1026, "Non selected user clearing"
	1027, "Destination out of order"
	1028, "Invalid number format (incomplete number)"
	1029, "Facility rejected"
	1030, "Response to STATUS ENQUIRY"
	1031, "Normal, unspecified"
	1034, "No circuit/channel available"
	1038, "Network out of order"
	1041, "Temporary failure"
	1042, "Switching equipment congestion"
	1043, "Access information discarded"
	1044, "requested circuit/channel not available"
	1047, "Resources unavailable, unspecified"
	1049, "Quality of service unavailable"
	1050, "Requested facility not subscribed"
	1055, "Incoming calls barred within the CUG"
	1057, "Bearer capability not authorized"
	1058, "Bearer capability not presently available"
	1063, "Service or option not available, unspecified"
	1065, "Bearer service not implemented"
	1068, "ACM equal to or greater than ACMmax"
	1069, "Requested facility not implemented"

Parameter	Description
	1070, "Only restr. digital information bearer capability" 1079, "Service or option not implemented, unspecified" 1081, "Invalid transaction identifier value" 1087, "User not member of CUG" 1088, "Incompatible destination" 1091, "Invalid transit network selection" 1095, "Semantically incorrect message" 1096, "Invalid mandatory information" 1097, "Message type non-existent or not implemented" 1098, "Message type not compatible with protocol state" 1099, "Information element non-existent or not implemented" 1100, "Conditional IE error" 1101, "Message not compatible with protocol state" 1102, "Recovery on timer expiry" 1111, "Protocol error, unspecified" 1127, "Interworking, unspecified" 1279, "Number not allowed" 1283, "CCBS possible"

2.2 CMS Error

Parameter	Description
<Err>	1, "Unassigned (unallocated) number" 8, "Operator determined barring" 10, "Call barred" 17, "Network failure" 21, "Short message transfer rejected" 22, "Memory capacity exceeded" 27, "Destination out of service" 28, "Unidentified subscriber" 29, "Facility rejected" 30, "Unknown Subscriber" 38, "Network out of order"

Parameter	Description
	41, "Temporary failure"
	42, "Congestion"
	47, "Resources unavailable, unspecified"
	50, "Requested facility not subscribed"
	69, "Requested facility not implemented"
	81, "Invalid short message reference value"
	95, "Invalid message, unspecified"
	96, "Invalid mandatory information"
	97, "Message type non-existent or not implemented"
	98, "Message not compatible with short message protocol state"
	99, "Information element non-existent or not implemented"
	111, "Protocol error, unspecified"
	127, "Interworking unspecified"
	128, "Telematic interworking not supported"
	129, "Short message type 0 not supported"
	130, "Cannot replace short message"
	143, "Unspecified TP-PID error"
	144, "Data coding scheme (alphabet) not supported"
	145, "Message class not supported"
	159, "Unspecified TP-DCS error"
	160, "Command cannot be actioned"
	161, "Command unsupported"
	175, "Unspecified TP-Command error"
	176, "TPDU not supported"
	192, "SC busy"
	193, "No SC subscription"
	194, "SC system failure"
	195, "Invalid SME address"
	196, "Destination SME barred"
	197, "SM Rejected-Duplicate SM"
	198, "TP-VPF not supported"
	199, "TP-VP not supported"
	208, "SIM SMS storage full"

Parameter	Description
	209, "No SMS storage capability in SIM"
	210, "Error in MS"
	211, "Memory Capacity Exceeded"
	212, "SIM Application Toolkit Busy"
	213, "SIM data download error"
	224, "TP_FCS_APPL_ERR_START"
	254, "TP_FCS_APPL_ERR_STOP"
	255, "TP_FCS_UNSPECIFIED"
	300, "ME failure"
	301, "SMS service of ME reserved"
	302, "operation not allowed"
	303, "operation not supported"
	304, "Invalid PDU mode param"
	305, "invalid text mode parameter"
	310, "SIM not inserted"
	311, "SIM PIN required"
	312, "PH-SIM PIN necessary"
	313, "SIM failure"
	314, "SIM busy"
	315, "SIM wrong"
	317, "SIM PIN2 required"
	318, "SIM PUK2 required"
	319, "incorrect PUK1"
	320, "memory failure"
	321, "invalid memory index"
	322, "memory full"
	330, "SMSC address unknown"
	331, "no network service"
	332, "network timeout"
	340, "no +CNMA acknowledgement expected"
	512, "MN_SMS_RP_ACK"
	513, "MN_SMS_TIMER_EXPIRED"
	514, "MN_SMS_FORW_AVAIL_FAILED"

Parameter	Description
	515, "MN_SMS_FORW_AVAIL_ABORTED"
	516, "MS invalid TP-Message-Type-Indicator"
	517, "MS no TP-Status-Report in Phase 1"
	518, "MS no TP-Reject-Duplicate in Phase 1"
	519, "MS no TP-Reply-Path in Phase 1"
	520, "MS no TP-User-Data-Header in Phase 1"
	521, "MS missing TP-Validity-Period"
	522, "MS invalid TP-Service-Centre-Time-Stamp"
	523, "MS missing TP-Destination-Address"
	524, "MS invalid TP-Destination-Address"
	525, "MS missing Service-Centre-Address"
	526, "MS invalid Service-Centre-Address"
	527, "MS invalid alphabet"
	528, "MS invalid TP-User-Data-Length"
	529, "MS missing TP-User-Data"
	530, "MS TP-User-Data too long"
	531, "MS no Command-Request in Phase 1"
	532, "MS Cmd-Req invalid TP-Destination-Address"
	533, "MS Cmd-Req invalid TP-User-Data-Length"
	534, "MS Cmd-Req invalid TP-User-Data"
	535, "MS Cmd-Req invalid TP-Command-Type"
	536, "MN MNR creation failed"
	537, "MS CMM creation failed"
	538, "MS network connection lost"
	539, "MS pending MO SM transfer"
	540, "RP-Error OK"
	541, "RP-Error OK no icon display"
	542, "SMS-PP Unspecified"
	543, "SMS rejected By SMS CONTROL"

2.3 TCP/IP Error

Parameter	Description
<Err>	<p>2000, "TCPIP Param wrong "</p> <p>2001, "TCPIP not supported in ppp mode"</p> <p>2002, "TCPIP dns convert to ip fail"</p> <p>2003, "TCPIP socket number limited"</p> <p>2004, "TCPIP invalid operation"</p> <p>2005, "TCPIP protol error"</p> <p>2006, "TCPIP send data too long"</p> <p>2007, "TCPIP send data memory failed"</p> <p>2008, "TCPIP service not in correct state "</p> <p>2009, "TCPIP pdp not defined "</p> <p>2010, "TCPIP new socket failed"</p> <p>2011, "TCPIP socket bind fail"</p> <p>2012, "TCPIP socket connect fail"</p> <p>2013, "TCPIP socket send fail "</p> <p>2014, "TCPIP socket close fail"</p> <p>2015, "TCPIP get socket receive buffer failed"</p> <p>2016, "TCPIP receive data failed"</p> <p>2017, "TCPIP socket used"</p> <p>2018, "TCPIP get send buffer size failed"</p> <p>2019, "TCPIP socket send data failed"</p> <p>2020, "TCPIP socket send data size limited"</p> <p>2021, "TCPIP socket set listening mode failed"</p> <p>2022, "TCPIP socket listen fail"</p> <p>2023, "TCPIP socket error"</p> <p>2024, "TCPIP socket not opened "</p> <p>2025, "TCPIP tcp stack config failed"</p> <p>2026, "TCPIP socket no data to send "</p> <p>2027, "TCPIP socket send invalid data state"</p> <p>2028, "TCPIP socket close client"</p> <p>2029, "TCPIP ping error "</p> <p>2030, "TCPIP ppp not connected "</p>

Parameter	Description
	2031, "TCPIP mipcall not active"
	2032, "TCPIP etcpip not active"
	2033, "TCPIP not def4 "

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