FIBOCOM AT Commands

User Manual_FFS

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Applicability Type

No.	Type	Note
1	NL668-CN-00/01/02/03/04/ 10	NA
2	NL668-EAU-00	NA
3	NL668-EU-00/01/03	NA
4	NL668-AM-00/01	NA
5	NL668-JP-00/01	NA
6	NL668-LA-00	NA
7	NL661-EU-00	NA

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Versions

Version	Date	Remarks
V1.0.0	2017-07-19	Initial version
V1.0.1	2017-11-24	Change to new template
V1.0.2	2018-01-25	Change +GTFOPEN, +GTFCLOSE, +GTFDELETE, GTFSEEK command
V1.0.3	2018-04-21	Add NL668 serial
V1.0.4	2018-11-12	Add NL668-AM and NL668-EU serial
V1.0.5	2018-12-26	Add AT example
V1.0.6	2018-04-17	List all the specific application types
V1.0.7	2019-10-14	Add NL668-CN-10

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Contents

1 FFS

1.1 FFS Command

1.1.1+GTFOPEN, Open or Create a file

1.1.1.1Description

This command causes the module to open an existent file or create a non-existent file.

⚠️ **Note:**

If no file opened +GTFOPEN? command return OK only. the number of files opened at the same time can't exceed 10 .

1.1.1.2Syntax

Command	Response/Action
+GTFOPEN=<"filename">[,<iflag>]	+GTFOPEN: <fd> OK or: ERROR: <err>
+GTFOPEN?	+GTFOPEN: <"filename">,<fd> ... OK or OK
+GTFOPEN=?	+GTFOPEN: <"filename">,(list of supproted <iflag>s) OK

1.1.1.3Attributes

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

1.1.1.4Defined Values

<filename>: The name of file to be opened or created, the length is less than 80 characters.

<iflag>: integer type and range 0、1、2、4、5、6

    0   Read only

    1   Write only

    2   Read and write

    4   If the file doesn't exists, the file shall be created.The file is opened with read only mode

    5   If the file doesn't exists, the file shall be created. The file is opened with write only mode

    6   If the file doesn't exists, the file shall be created. The file is opened with read and write mode(default)

<fd>: uint32, file handle.

⚠ **Note:**

Create only a single file in G500 module, and the file size is less than 200k byte, the file will be deleted when download other software version.

1.1.2 +GTFCLOSE, Close a file

1.1.2.1 Description

This command causes the module to close an opened file.

⚠ **Note:**

If no file opened +GTFCLOSE? and +GTFCLOSE=? command return OK only.

1.1.2.2 Syntax

Command	Response/Action
+GTFCLOSE=<fd>	OK or: ERROR: <err>
+GTFCLOSE?	+GTFCLOSE: <"filename">,<fd> ... OK or OK
+GTFCLOSE=?	+GTFCLOSE: (<fd>s of opened files) OK or OK

1.1.2.3 Attributes

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

1.1.2.4 Defined Values

<fd>: uint32, file handle.

<filename>: The name of file which can be closed, the length is less than 80 characters.

1.1.3 +GTFWRITE, Write to file

1.1.3.1 Description

This command causes the module to store the data to a existent file.

The module will switch AT mode to Online(raw data transfer) Data Mode if the parameters are only fd and length, then input data to save the file.The module will save data to the file if the parameters are fd and data.

1.1.3.2 Syntax

Command	Response/Action
+GTFWRITE=<fd>,<"data">	+ GTFWRITE:<length> OK or: ERROR: <err>
+GTFWRITE=<fd>[,<length>]	> <DATA> OK or: ERROR: <err>
+GTFWRITE?	OK
+GTFWRITE=?	ERROR

1.1.3.3 Attributes

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

1.1.3.4Defined Values

<fd>: uint32, file handle.

<data>: User data is sent encoded with ascii string(String ends with a <CR>).

<length>: Size of user data. integer type, range 1-204800 byte

<DATA>: any data.

1.1.4+GTFREAD, Read from file

1.1.4.1Description

This command causes the module to read file contents from a existent file.

1.1.4.2Syntax

Command	Response/Action
+GTFREAD=<fd>,<length>	+ GTFREAD: <data> OK or: ERROR: <err>
+GTFREAD?	OK
+GTFREAD=?	ERROR

1.1.4.3Attributes

Pin Restricted	Persistent	Sync Mode	Effect Immediately	Time of duration
No	No	Yes	Yes	< 70s

⚠️ **Note:**

Time of duration in section 1.1.4.3 depends on the baud rate. It is the total time of read 200KB data if baud rate is 38400.

The max file size supported by G500 module is 200KB.

1.1.4.4Defined Values

<fd>: uint32, file handle.

<length>: The data amount need to be read. integer type, range 1-204800 byte.

<data>: User data were sent by +GTFWRITE command.

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1.1.5+GTFSEEK,The file pointer offset

1.1.5.1Description

This command can set the position of file pointer which can move from origin to any position.

1.1.5.2Syntax

Command	Response/Action
+GTFSEEK=<fd>,[<offset>],<origin>	OK or: ERROR: <err>
+GTFSEEK?	OK
+GTFSEEK=?	ERROR

1.1.5.3Attributes

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

1.1.5.4Defined Values

<fd>: uint32, file handle.

<offset>: The offset value, need to move offset the number of bytes. range 0-204800 byte

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

       0   the beginning of the file

       1   the current position of the file pointer

       2   the end of the file.

 Notes: when <origin> is 2, the value of <offset> is ignore .

1.1.6+GTFSIZE,The file size

1.1.6.1Description

This command causes the module to read the file size.

1.1.6.2Syntax

Command	Response/Action
+GTFSIZE=<fd>	+ GTFSIZE: <size>

Command	Response/Action
	OK or: ERROR: \<err>
+GTFSIZE?	OK
+GTFSIZE=?	ERROR

1.1.6.3Attributes

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

1.1.6.4Defined Values

<fd>: uint32, file handle.

<size>: file size, the unit is byte

1.1.7+GTFDELETE, Delete a file

1.1.7.1Description

This command causes the module to delete an existent file.

1.1.7.2Syntax

Command	Response/Action
+GTFDELETE=<"filename">	OK or: ERROR: \<err>
+GTFDELETE?	OK
+GTFDELETE=?	ERROR

1.1.7.3Attributes

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

1.1.7.4Defined Values

<filename>: The name of file to be deleted, the length is less than 80 characters.

⚠ **Note:**
The file should be in closed status, before trying to delete it .

2 Error Handing and Error Code

2.1 CME Error

Parameter	Description
<Err>	0, "phone failure"
	1, "no connection to phone"
	2, "phone-adapter 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"

Parameter	Description
	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"
	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 accessinghidden phonebook entries.)
	49, "The excute command not support"
	50, " Excute command failure"
	53, " parameters are invalid"
	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"

Parameter	Description
	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"
	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"

Parameter	Description
	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"
	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"
	Note: L710、G500、G510 use respectively other error cause instead of above one with below value:
	50, "Execute command failure"
	100, NA

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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"
	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"

Parameter	Description
	160, "Command cannot be action"
	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"
	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"

Parameter	Description
	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"
	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"

Parameter	Description
	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"
	Note: L710、G500、G510 use respectively other error cause instead of above one with below value:
	513, "Unable to store"
	514, "Invalid status"
	515, "Invalid character in address string"
	516, "Invalid length"
	517, "Invalid character in pdu"
	518, "Invalid parameter"
	519, "Invalid length or character"
	520, "Invalid character in text"

3 Example

3.1 +GTFOPEN

// Open or Create a file

AT+GTFOPEN="testfile"

+GTFOPEN: 2

OK

3.2 +GTFWRITE

//Write data to file

AT+GTFWRITE=2,"314151385678"

+GTFWRITE: 6

OK

Note: Data is HEX Mode

AT+GTFWRITE=2,6

>   //input data

OK

Note: Exit data input mode need input lengths or timeout(15s)

AT+GTFWRITE=2

>   //input data

OK

Note: Exit data input mode need send (CTRL+Z) or timeout(15s)

3.3 +GTFSIZE

//The file size

AT+GTFSIZE=2

+GTFSIZE: 16

OK

3.4 +GTFSEEK

//The file pointer offset

AT+GTFSEEK=2,0,0

OK

3.5 +GTFREAD

//Read data from file

AT+GTFREAD=2,16

+GTFREAD: 1AQ8Vx123456sasd

OK

3.6 +GTFCLOSE

//Close a file

AT+GTFCLOSE=2

OK

3.7 +GTFDELETE

//Delete a file

AT+GTFDELETE="testfile"

OK