ADH8066 GSM/GPRS Module

FTP AT Command

Reference Manual

<V1.1>

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Revision History

No.	Date	Notes
V1.1	2010/6/1	FTP performance adjustment
V1.0	2010/1/7	FTP command set formal definition.
		FTP command example
V0.1	2009/12/31	FTP AT command set draft definition.

Table of Content

1. FTP AT Commands Interface

1.1.   GPRS Active or Inactive   +AIPA

Command	Possible response(s)
+AIPA=<mode>	+AIPA: 1, <IP Address>, <sec>
	+AIPA: 0, <sec>
	ERROR
+AIPA?	+AIPA: 1, <IP Address>, <sec>
	+AIPA: 0
+AIPA=?	+AIPA: (list of supported parameters)

Supported parameter values

<mode>: 0,1 (0: inactive, 1: active)

Response values

+AIPA: 0,1 (0: inactive, 1: active)

<IP Address>: IP address

<sec>: seconds of being active

Notice

You must close all sockets before inactivating GPRS.

1.2.   Open FTP Connection   +AFTPO

Command	Possible response(s)
+AFTPO=<IP>,<port>[,<user name>,<password>]	+AFTPO: Login On
	+AFTPO: USERNAME REQUIRED
	ERROR
+AFTPO?	+AFTPC: <FTP status>
+AFTPO=?	+AFTPO: (list of supported parameters)

Supported parameter values

<IP>: "xxx.xxx.xxx.xxx", FTP IP (the IP address of server).

<port>: 0~65535, remote port (the port of server)(range: 0~65535)

<user name>: "xxxxx", the user ID to login FTP server.

<password>: "xxxxx", the password to login FTP server.

Response values

+AFTPO: Login On

+AFTPO: USERNAME REQUIRED => Use the command (+AFTPUSER) to continue login

+AFTPC: <FTP status> (1: FTP is open, 0: FTP is close)

Notice

It's better that set the quality of network service to default parameters. For example: AT+APIQREQ=0,0,0,0,0 means let network chose the better web connection quality.

1.3.　　FTP Data Transmitting Type　+AFTPTYPE

Command	Possible response(s)
+AFTPTYPE=<transmitting type>	+AFTPS: <Response Code> Type set to I (or A) +AFTPTYPE: <transmitting type> ERROR
+AFTPTYPE?	+AFTPTYPE: <transmitting type>
+AFTPTYPE=?	+AFTPTYPE: (list of supported parameters)

Supported parameter values

<transmitting type>: 0,1 (data transmitting type: 0: Binary, 1: ASCII)

Response values

+AFTPS: <Response Code> Type set to I (or A) (I: Binary, A: ASCII)

+AFTPTYPE: <transmitting type>

<Response Code>: 200

Notice

Default transmitting type is 0 (Binary).

1.4.　　FTP PASSIVE Transfer Mode　+AFTPPASV

Command	Possible response(s)
+AFTPPASV=<transfer mode>	+AFTPS: <Response Code> Entering Passive Mode (<IP>,<port number>) +AFTPPASV: <transfer mode> ERROR
+AFTPPASV?	+AFTPPASV: <transfer mode>
+AFTPPASV=?	+AFTPPASV: (list of supported parameters)

Supported parameter values

<transfer mode>: 1, set to PASSIVE transfer mode (0: ACTIVE transfer mode is

not supported)

Response values

+AFTPS: <Response Code> Entering Passive Mode (<IP>,<port number>)

+AFTPPASV: <transfer mode>

<Response Code>: 227

<IP>: xxx,xxx,xxx,xxx, FTP IP (the IP address of server).

<port number>: **higher byte, lower byte** of the port number the FTP server is listening to for the data connection (port number = higher byte*256 + lower byte)

Notice

Default transfer mode is PASSIVE (only support PASSIVE currently).

1.5. The Name of FTP Retrieved File +AFTPRETR

Command	Possible response(s)
+AFTPRETR=<file name>	+AFTPS: <Response Code> Connection accepted +AFTPRETR: <file name> File Data Ready ERROR
+AFTPRETR?	+AFTPRETR: <file name>
+AFTPRETR=?	+AFTPRETR: (list of supported parameters)

Supported parameter values

<file name>:"xxxxxx.xxx", file name of the retrieved file in FTP server (user's root folder)

Response values

+AFTPS: <Response Code> Connection accepted

+AFTPRETR: <file name> File Data Ready

<Response Code>: 150

If the file name is not found in server, there will be an ERROR response.

Notice

The command of setting transfer mode (+AFTPPASV) must be set before this command (+AFTPRETR).

1.6. Start to Transfer Data from Server +AFTPDATA

Command	Possible response(s)
+AFTPDATA	<enter data mode>

	CONNECT
	...
	NO CARRIER
	ERROR
+AFTPDATA?	+AFTPDATA: 0 (or 1)

Response values

When the data transmission is finished, response NO CARRIER.

At the beginning of the received data, there will be 11 extra bytes ('0x0D''0x0A'CONNECT'0x0D''0x0A'). Please be sure to remove these 11 bytes before using the received file.

If the FTP server is in error or the setting of FTP is incorrect, response ERROR.

+AFTPDATA: 0,1 (0: not able to transfer data, 1: able to transfer data)

Notice

System will directly enter data mode, and receive data from FTP server. The data will output to UART immediately.

Use "+++" to abort the data mode and stop the data transmission.

1.7.   Close FTP Connection   +AFTPC

Command	Possible response(s)
+AFTPC	+AFTPC: <FTP status>
	ERROR
+AFTPC?	+AFTPC: <FTP status>

Response values

+AFTPC: <FTP status>: 0,1 (able to close FTP or not. 1: FTP is open and able to close, 0: FTP is close)

1.8.   FTP Login User Name   +AFTPUSER

Command	Possible response(s)
+AFTPUSER=<user name>	+AFTPO: PASSWORD REQUIRED
	ERROR
+AFTPUSER?	+AFTPUSER: <user name>
+AFTPUSER=?	+AFTPUSER: (list of supported parameters)

Supported parameter values

<user name>: "xxxxxx", enter the user name to login FTP server

Response values

+AFTPO: PASSWORD REQUIRED

1.9. FTP Login Password +AFTPPASS

Command	Possible response(s)
+AFTPPASS=<password>	+AFTPS: Login On ERROR
+AFTPPASS?	+AFTPPASS: "password"
+AFTPPASS=?	+AFTPPASS: (list of supported parameters)

Supported parameter values

<password>: "xxxxxx", enter the password to login FTP server

Response values

+AFTPS: Login On

+AFTPPASS: "password" (The password will not show for safety concern.)

1.10. FTP Data Transfer File Size +AFTPSIZE

Command	Possible response(s)
+AFTPSIZE=<file name>	+AFTPS: <Response Code> <file size> +AFTPSIZE: <file size> ERROR
+AFTPSIZE?	+AFTPSIZE: <file size>
+AFTPSIZE=?	+AFTPSIZE: (list of supported parameters)

Supported parameter values

<file name>:"xxxxxx.xxx", file name of the file in FTP server (user's root folder)

Response values

+AFTPS: <Response Code> <file size>

+AFTPSIZE: <file size>

<Response Code>: 213

<file size>: xxxxx (Bytes)

If the file name is not set or cannot be found in server, response ERROR.

1.11.   Reset and Restart to Transfer Data from Server   +AFTPREST

Command	Possible response(s)
+AFTPREST=<offset>	+AFTPS: <Response Code> Rest supported. Restarting at <offset> +AFTPREST: <offset> ERROR
+AFTPREST?	+AFTPREST: <offset>
+AFTPREST=?	+AFTPREST: (list of supported parameters)

Supported parameter values

    <offset>: 0~file size (Bytes), reset and restart to retrieve file at the specified offset from FTP server.

Response values

    +AFTPS: <Response Code> Rest supported. Restarting at <offset>

    +AFTPREST: <offset>

    <Response Code>: 350

Notice

    Default offset is set to 0.

2. Examples: Using FTP AT Commands and Events

2.1. Activate GPRS Network

Start up GSM/GRPS module and send the AT commands to make sure system is ready to activate GPRS network.

Sample procedure:

AT	
OK	// Make sure system is ready
AT+CSQ	
+CSQ: 25,99	
OK	// Make sure module has camped on GSM network
AT+CPIN?	
+CPIN: READY	
OK	// Make sure SIM card is ready
AT+AIPDCONT="INTERNET" or "CMNET"	// Input APN name "INTERNET" to use GPRS network
+AIPDCONT: "INTERNET","","" OK	
AT+AIPA=1	// Activate GPRS Network
+AIPA: 1,221.120.5.138,0	// Response status including local IP address "221.120.5.138" that system assigned and connection time that is now 0 second.
OK	
AT+AIPQREQ=0,0,0,0,0	//Let network auto chose for better web connection quality.
+AIPQREQ: 0,0,0,0,0 OK	

2.2. Use FTP Function:

1. Connection:

AT+AFTPO="219.84.14.102",21,"slg","123"	// Establish a connection to FTP IP "219.84.14.102". Make sure that IP address is a physical address but not

	virtual. (Note: 192.xxx.xxx.xxx is virtual IP)
+AFTPS: Login On	// If connection is established, response the "Login On" message
OK	

2. Set transfer mode and file name:

AT+AFTPTYPE=0	// Set to Binary transmitting type
+AFTPS: 200 Type set to I	
+AFTPTYPE: 0	
OK	
AT+AFTPPASV=1	// Set to PASSIVE transfer mode
+AFTPS: 227 Entering Passive Mode (219,84,14,102,246,47)	
+AFTPPASV: 1	
OK	
AT+AFTPRETR="User_16.crc"	// Set the name of retrieved file
+AFTPS: 150 Connection accepted	
+AFTPRETR: "User_16.crc" File Data Ready	
OK	

3. Receive Data:

Start to retrieve data from FTP server until finish or user interrupt.

AT+AFTPDATA	// Enter data mode and start to retrieve data from server
CONNECT	
…	// Receive data and output to UART directly
NO CARRIER	// Finish the data transmission

4. Close Connection:

AT+AFTPC	// Close the connection to FTP server
+AFTPC: 0	// Close connection successfully
OK	

2.3. Inactivate GPRS Network

Send the AT commands to inactivate GPRS network Connection:

AT+AIPA=0	// Inactivate GPRS Network
+AIPA: 0,188	
OK	