FIBOCOM AT Commands User Manual_Audio

Version: V1.0.4
Date: 2019-12-03

Application type

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

Copyright

Copyright ©2019 Fibocom Wireless Inc . All rights reserved.

Without the prior written permission of the copyright holder, any company or individual is prohibited to excerpt, copy any part of or the entire document, or transmit the document in any form.

Attention

The document is subject to update from time to time owing to the product version upgrade or other reasons. Unless otherwise specified, the document only serves as the user guide. All the statements, information and suggestions contained in the document do not constitute any explicit or implicit guarantee.

Trademark

The trademark is registered and owned by Fibocom Wireless Inc.

Versions

Version	Date	Remarks
V1.0.0	2019-04-22	Initial version
V1.0.1	2019-05-24	Update command +GTAUDMODE
V1.0.2	2019-06-19	Update command +MAI2SY
V1.0.3	2019-10-14	Add NL668-CN-10
V1.0.4	2019-12-03	Update command +CLVL

Contents

1 AUDIO Command

1.1 AUDIO Introduction

This section describes the Audio features, which includes the following configuration items:

Path: Selection of microphone and speaker to be used.

Gain: Control of volume levels for rings, voice, etc.

Algorithm: Activation of audio algorithms (echo cancellation, noise suppression and sidetone).

Audio Control of Path, Gain and Algorithms is available by these two different modes sets of commands. It is advised to select the audio mode according to the application needs.

1.2 AUDIO Commands

1.2.1+CLVL, Loudspeaker Volume

Description

This command sets the volume of the internal loudspeaker of the Module.

Note:

In this command, the new value remains after power cycle.The +CLVL command can be used even when the SIM is not inserted.

Syntax

Command	Response/Action
+CLVL=<level>	OK or: ERROR: <err>
+CLVL?	+CLVL: <level> OK
+CLVL=?	+CLVL: (list of supported <level>s) OK

Attributes

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

Defined Values

Reference   3GPP TS 27.007

<level>:   0-7 Manufacturer-specific volume range.

0 is lowest volume (not mute).

The default value is 4.

1.2.2+CMUT, Mute/Unmute Microphone and Speaker Path

Description

This command is used to mute/unmute the currently active Microphone and Speaker path by overriding the current mute state. The CMUT setting should take effect only for the current call or for the next call once the command setting was typed in idle mode.

Syntax

Command	Response/Action
+CMUT=<state>	OK or: ERROR: <err>
+CMUT?	+CMUT: <state> OK
+CMUT=?	+CMUT: (list of supported <state>s) OK

Attributes

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

Defined Values

Reference   3GPP TS 27.007

<state> 0 Unmute microphone and speaker path (default value)

1 Mute microphone path, Unmute speaker path

2 Unmute microphone, mute speaker path

3 Mute microphone path, mute speaker path

1.2.3 +VTD, Tone Duration

Description

This command handles the selection of tone duration. An integer <n> defines the length of tones emitted as a result of the +VTS command. This command does not affect the D (dial) command. In this command, the new value is saved after power down.

⚠ **Note:**

1. In GSM, the tone duration value can be modified depending on the specific network

2. In GSM/UMTS the value of tone duration is preset and cannot be altered(27.007-e50)

Syntax

Command	Response/Action
+VTD=<n>	OK or: ERROR: <err>
+VTD?	+VTD: <n> OK
+VTD=?	+VTD: (list of supported <n>s) OK

Attributes

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

Defined Values

Reference   3GPP TS 27.007

<n>   Defines the length of tones emitted by the +VTS command.

1-10   100mS to 1S adjustable.

1.2.4+VTS, Command-Specific Tone Duration

Description

This command transmits a string of DTMF tones when a voice call is active. DTMF tones may be used, for example, when announcing the start of a recording period.The duration does not erase the VTD duration

⚠ Note:

1. In GSM, the tone duration value can be modified depending on the specific network.

If the active call is dropped in the middle of playing a DTMF tone, the following unsolicited message transfers to TE: +VTS: "Call termination stopped DTMF tones transmission".

2. The duration defined by +VTS is specific to the DTMF string in this command only. It does not erase the duration defined by the +VTD command, and is erased when the Module is powered down.If <duration> is not defined, the +VTD value is used.

Syntax

Command	Response/Action
+VTS=<DTMF>[,<duration>]	OK or: ERROR: <err>
+VTS?	N/A
+VTS=?	+VTS: (list of supported <DTMF>,(list of supported <durations>s) OK

Attributes

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

Defined Values

Reference   3GPP TS 27.007

<DTMF>   String of ASCII characters (0-9, #,*,A-D)

String length is up to 32 characters long.

<duration>   A DTMF tone of different duration from that set by the +VTD command.if no set ,module will Use value from VTD

1-10   100mS to 1S adjustable..

1.2.5+VTA, Set play DTMF type

Description

This command enable/disable play DTMF tone at local side when send DTMF to the network by VTS.

Syntax

Command	Response/Action
+VTA=<para>	OK or: ERROR: <err>
+VTA?	+VTA: <para> OK
+VTA=?	+VTA: (list of supported <para>s) OK

Attributes

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

Defined Values

<para>

    0：Disable play DTMF tone at local side(default value)

1.2.6+GTDTMF, Software Decode

Description

This command enables/disables the DTMF software decode. IF DTMF tone is detected in voice mode the module will return the unsolicited result code +GTDTMF:<x>

Syntax

Command	Possible response(s)
AT+GTDTMF=<n>	OK

Command	Possible response(s)
	Or:
	ERROR
AT+GTDTMF?	+GTDTMF: <n>
	OK
AT+GTDTMF=?	+GTDTMF: (0-1)
	OK

Attributes

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

Defined Values

<n>: integer type;

  0   Disable DTMF decode, default value.

  1   Enable DTMF decode unsolicited result code +GTDTMF: <x>

<x>: char type, the range of detected DTMF: 0-9,A-D,*,#

1.2.7+MAVOL, Volume Setting

Description

This command enables you to determine a volume level for a particular feature via a particular accessory.

The gain levels are saved in NVM. Therefore, upon power up, the path active (mic, speaker and alert

speaker) will have these saved gain levels.

⚠ **Note:**

The SMS MT volume is adjusted using the +MAVOL command with type "ring". The RING value is

related to the SMS alert, the MT call, and so on.

Syntax

Command	Response/Action
+MAVOL=<accy>,<feature>,<vol>	OK
	or:
	ERROR: <err>

Fibocom

Command	Response/Action
+MAVOL?	(Current path volume) +MAVOL: <accy>,<feature1>,vol> +MAVOL: <accy>,<feature2>,vol> +MAVOL: <accy>,<feature4>,vol> +MAVOL: <accy>,<feature8>,vol> OK
+MAVOL=?	+MAVOL: (supported accessories),(supported features combinations),(supported volume levels) OK

Attributes

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

Defined Values

<accy>

   1   1st channel SPK+/SPK-

<feature>

   1   Voice

<vol>   Volume level 0-7

1.2.8+MMICG, Microphone Gain Value

Description

This command handles the selection of microphone gain values of MIC. The new value remains after power cycle.

Syntax

Command	Response/Action
+MMICG=<gain>	OK

Command	Response/Action
	or:
	ERROR: <err>
+MMICG?	+MMICG: <gain>
	OK
+MMICG=?	+MMICG: (list of supported <gain>s)
	OK

Attributes

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

Defined Values

<gain>   Microphone gain values:

0-15 Manufacturer-specific mic gain value range.

0 is mute.

The default value is 10.

1.2.9+MAI2SY, Set Digital Audio to Transmit Parameters

Description

This command is used for setting digital audio to transmit the parameters, including master mode and slave mode, transmission mode, sampling rate and word width.

Syntax

Command	Response/Action
+ MAI2SY = <master>,<tran_mode>,<sample>,< width>	OK
	or:
	ERROR: <err>
+MAI2SY ?	If +GTCODECN choose chip ALC5621, it return
	+MAPATH: 1(mode in and out),<accy>
	+ MAI2SY: <master>,<tran_mode>,<sample>,<width>
	OK

Command	Response/Action
+MAI2SY =?	+MAI2SY: (range of <master>),(range of <tran_mode>),(range of <sample>),(range of <width>) OK

Attributes

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

Defined Values

<master >   Set data transmission to master mode or slave mode

1: module is in slave mode, external CODEC is in master mode

< tran_mode >   Data Transimisson Mode

0：I2S mode (For NL668_AM/LA/JP)

1: PCM mode

< sample >   Sampling rate

0: 8k

1: 16k

< width >   Word width:

0: 16BIT

1.2.10   +GTAUDMODE, Switch Audio Scenario

Description

This command is to set the audio mode.It must set before play call.

Syntax

Command	Response/Action
+ GTAUDMODE=<mode>	OK or: ERROR: <err>
+GTAUDMODE?	+GTAUDMODE: <mode> OK or:

Command	Response/Action
	+GTAUDMODE: 0
	OK
+GTAUDMODE=?	+GTAUDMODE:　(1)
	OK

Attributes

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

Defined Values

<mode>

1: Handset mode