

GSM Recording

AT Commands Manual

GSM/GPRS Module Series

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About the document

History

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Contents

| | |
|--|-----------|
| About the document | 2 |
| Contents | 3 |
| Table Index | 4 |
| 1 Introduction | 5 |
| 2 Description | 6 |
| 2.1. AT Command Syntax | 6 |
| 2.2. Description of AT Command | 6 |
| 2.2.1. AT+QAUDRD Record Media File | 6 |
| 2.2.2. AT+QAUDPLAY Play Media File | 7 |
| 2.2.3. AT+QAUDSTOP Stop Playing Media File | 8 |
| 2.3. Supported Recording Format | 9 |
| 2.4. URC Report | 9 |
| 3 Appendix A Reference | 11 |
| 4 Appendix B Summary of CME ERROR Codes | 12 |

Table Index

| | |
|---|----|
| TABLE 1: RECORDING FORMAT..... | 9 |
| TABLE 2: +QAUDRIND CODE..... | 10 |
| TABLE 3: +QAUDPIND CODE..... | 10 |
| TABLE 4: RELATED DOCUMENTS..... | 11 |
| TABLE 5: TERMS AND ABBREVIATIONS..... | 11 |
| TABLE 6: DESCRIPTION OF DIFFERENT CODING SCHEMES..... | 12 |

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1 Introduction

This document presents the AT command set for recording function of Quectel modules, including the format of related AT commands, and the examples of how you can use them.

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2 Description

2.1. AT Command Syntax

| | | |
|-------------------|--------------|--|
| Test Command | AT+<x>=? | This command returns the list of parameters and value ranges set by the corresponding Write Command or internal processes. |
| Read Command | AT+<x>? | This command returns the currently set value of the parameter or parameters. |
| Write Command | AT+<x>=<...> | This command sets the user-definable parameter values. |
| Execution Command | AT+<x> | This command reads non-variable parameters affected by internal processes in the GSM engine |

2.2. Description of AT Command

2.2.1. AT+QAUDRD Record Media File

| AT+QAUDRD Record Media File | |
|--|--|
| Test Command AT+QAUDRD=? | Response +QAUDRD: (0,1),"filename"[,format] OK |
| Read Command AT+QAUDRD? | Response +QAUDRD: <state> OK |
| Write Command AT+QAUDRD=<control>[, "filename"[, <format>]] | Response OK |
| Reference | Audio channel is decided by AT command: AT+QAUDCH |

Parameter

| | |
|-----------------------|---|
| <state> | Recording state |
| 0 | Module is not in recording |
| 1 | Module is in recording |
| "filename" | Name of the file to record, refer to Note 1 |
| <format> | Format of the file, refer to Note 2 |
| 3 | AMR |
| 13 | WAV_PCM16 |
| 14 | WAV_ALAW |
| 15 | WAV_ULAW |
| 16 | WAV_ADPCM |

NOTES

1. "filename" consists of file path, file name and file suffix. Path name could be one of directories of UFS, RAM or SD card. For example, "Example.wav", "RAM:Example.wav", "SD: Example.wav" and "SD:Directory\\ Example.wav". File suffix can be "wav" or "amr" when the <format> is omitted. For "amr" suffix, file is stored by AMR coding format. For "wav" suffix, file is stored by WAV_ADPCM coding format when the module is on calling, stored by WAV_PCM16 coding format when the module is idle.
2. When the file suffix is "amr", the format can only be "3" (AMR). When the file suffix is "wav", the format can be "13" (WAV_PCM16), "14"(WAV_ALAW), "15"(WAV_ULAW), "16"(WAV_ADPCM). Format must be formulated with other file suffix. Please refer to **Table 1: Recording Format**.
3. If the recording file's name and format is same with an existed file. Recording data will be appended to the end of the file.
4. Record media file to SD subdirectory, you need to create the subdirectory manually first.

2.2.2. AT+QAUDPLAY Play Media File

AT+QAUDPLAY Play Media File

| | |
|--|--|
| Test Command AT+QAUDPLAY=? | Response +QAUDPLAY: "filename",(0-1),(0-100),[(0-2)] |
| | OK |
| Write Command AT+QAUDPLAY= "filename", <repeat>,<volume>,<channel >] | Response OK |
| Reference | If the <channel> parameter is omitted, channel is decided by AT command: AT+QAUDCH |

Parameter

| | |
|------------------------|---|
| "filename" | Name of the file to play, including file path, file name and file suffix. File suffix can be AMR,WAV or MP3 |
| <repeat> | Whether or not to play media file repeatedly 0 Play only one time 1 Play repeatedly |
| <volume> | Volume to play media file 0-100 |
| <channel> | Channel to play media file 0 Receiver 1 Headset 2 Loud Speaker |

2.2.3. AT+QAUDSTOP Stop Playing Media File

| AT+QAUDSTOP Stop Playing Media File | |
|--|-----------------------|
| Test Command AT+QAUDSTOP=? | Response OK |
| Execution Command AT+QAUDSTOP | Response OK |
| Reference | |

Example

```

AT+QAUDRD=1,"A.amr",3           // Record a media file in AMR format.
OK                               // Store it in UFS, named as "A"
AT+QAUDRD=0                     // Stop the recording.
OK
AT+QAUDRD=1,"SD:B.wav"          // Record a media file in WAV_PCM16 format, stored it in
OK                               // SD root directory, Named as "B".
AT+QAUDRD=0                     // Stop the recording
OK

// Create a subdirectory named as "picture" before recording
AT+QAUDRD=1,"SD:picture\C.wav"  // Record a media file, and stored it in SD subdirectory,
OK                               // Named as "C".
AT+QAUDRD=0                     // Stop the recording
OK
AT+QAUDPLAY="A.amr",0,100,1     // Play the "A" media file, not repeat, volume 100, through
OK                               // Headset.

+QAUDPIND: 0,5                 // After playing is finished, URC report is output

```

```

AT+QAUDPLAY="SD: B.wav",0,100,1 // Play the "B" media file, not repeat, volume 100,
OK                               through Headset.

+QAUDPIND: 0,5                  // After playing is finished, URC report is output
AT+QAUDPLAY="SD: picture\C.wav",1,80,1
OK                               // Play the "C" media file, repeat, volume 80,
                               through Headset.
AT+QAUDSTOP                     // Stop the playing
OK

```

2.3. Supported Recording Format

Table 1: Recording Format

| Format | Encoding | Sampling Rate | Sampling Resolution | Encoding Digit | Encode Speed | File Size |
|--------|-----------|---------------|---------------------|----------------|--------------|-----------|
| 3 | AMR | | 16 bit | | | 40KB/min |
| 13 | WAV_PCM16 | 8HZ | 16 bit | 16 bit | 128kbps | 960KB/min |
| 14 | WAV_ALAW | 8HZ | 16 bit | 8 bit | 64kbps | 480KB/min |
| 15 | WAV_ULAW | 8HZ | 16 bit | 8 bit | 64kbps | 480KB/min |
| 16 | WAV_ADPCM | 8HZ | 16 bit | 4 bit | 32kbps | 240KB/min |

2.4. URC Report

The recording would be forced to quit in the following cases.

1. Start to record when module is on idle. The recording would be forced to quit when making a call or answer a call.
2. Start to record when module is on a call. The recording would be forced to quit when the call is hanged up.
3. When the recording is forced to quit, URC: +QAUDRIND: 0,<code> would be output through UART.

Table 2: +QAUDRIND Code

| <code> | Meaning |
|---------------------|---------------------------|
| 0 | Reserved |
| 1 | Unknown error |
| 3 | Disc is full |
| 6 | Ended by other audio task |
| 10 | Not found the disc |

When the playing is finished or ended by other audio tasks, URC: **+QAUDPIND: 0,<code>** would be output through UART.

Table 3: +QAUDPIND Code

| <code> | Meaning |
|---------------------|----------------------------|
| 5 | Playing is finished |
| 6 | Ended by other audio tasks |
| 9 | Unknown error |

3 Appendix A Reference

Table 4: Related Documents

| SN | Document name | Remark |
|-----|---------------|--------------------|
| [1] | Mxx_ATC.pdf | Mxx AT Command Set |

Table 5: Terms and Abbreviations

| Abbreviation | Description |
|--------------|------------------|
| UFS | User File System |

4 Appendix B Summary of CME ERROR Codes

Table 6: Description of Different Coding Schemes

| Code of <err> | Meaning |
|---------------|--|
| 4300 | Wrong format |
| 4302 | Audio task busy |
| 4303 | Create file failed |
| 4304 | Additional recording in a different format |
| 4305 | Disc full |
| 4306 | Write protection on file |
| 4499 | Unknown error |