

# **GSM Recording**

# **AT Command Manual**

**GSM/GPRS Module Series**

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**Our aim is to provide customers with timely and comprehensive service. For any assistance, please contact our company headquarters:**

**Quectel Wireless Solutions Co., Ltd.**

Office 501, Building 13, No.99, Tianzhou Road, Shanghai, China, 200233

Tel: +86 21 5108 6236

Mail: [info@quectel.com](mailto:info@quectel.com)

**Or our local office, for more information, please visit:**

<http://www.quectel.com/support/salesupport.aspx>

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# About the Document

## History

Revision	Date	Author	Description
3.0	2012-12-04	Derrick DAI	Initial
3.1	2015-05-08	Derrick DAI	Added applicable modules

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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.

This document is applicable to Quectel M10, M66, M85, M80, M72 and M95 modules.

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## 2 Description

### 2.1. AT Command Syntax

<b>Test Command</b>	<b>AT+&lt;x&gt;=?</b>	This command returns the list of parameters and value ranges set by the corresponding Write Command or internal processes.
<b>Read Command</b>	<b>AT+&lt;x&gt;?</b>	This command returns the currently set value of the parameter or parameters.
<b>Write Command</b>	<b>AT+&lt;x&gt;=&lt;...&gt;</b>	This command sets the user-definable parameter values.
<b>Execution Command</b>	<b>AT+&lt;x&gt;</b>	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

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

## Parameter

<b>&lt;state&gt;</b>	Recording state 0 Module is not in recording 1 Module is in recording
<b>“filename”</b>	Name of the file to record, refer to Note 1
<b>&lt;format&gt;</b>	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 <b>AT+QAUDPLAY=?</b>	Response <b>+QAUDPLAY: “filename”,(0-1),(0-100),[(0-2)]</b>  <b>OK</b>
Write Command <b>AT+QAUDPLAY=</b> <b>“filename”,</b> <b>&lt;repeat&gt;,&lt;volume&gt;,[&lt;channel</b> <b>&gt;]</b>	Response <b>OK</b>
Reference	If the <channel> parameter is omitted, channel is decided by AT command: AT+QAUDCH



## Parameter

<b>"filename"</b>	Name of the file to play, including file path, file name and file suffix. File suffix can be AMR,WAV or MP3
<b>&lt;repeat&gt;</b>	Whether or not to play media file repeatedly 0 Play only one time 1 Play repeatedly
<b>&lt;volume&gt;</b>	Volume to play media file 0-100
<b>&lt;channel&gt;</b>	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 <b>AT+QAUDSTOP=?</b>	Response <b>OK</b>
Execution Command <b>AT+QAUDSTOP</b>	Response <b>OK</b>
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**

<b>&lt;code&gt;</b>	<b>Meaning</b>
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**

<b>&lt;code&gt;</b>	<b>Meaning</b>
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

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# 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