

RGx00U&RM500U Series

Sleep Mode Application

Note

5G Module Series

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About the Document

Revision History

Version	Date	Author	Description
-	2020-11-26	Achang ZHANG	Creation of the document
1.0	2023-04-13	Achang ZHANG	First official release

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1 Introduction

This document introduces sleep mode application instruction and related AT commands of Quectel RG200U-CN, RG500U series and RM500U-CN modules.

2 Sleep Mode Application Instruction

2.1. Sleep Mode Framework

Taking RG500U series module as an example, sleep mode framework is as follows:

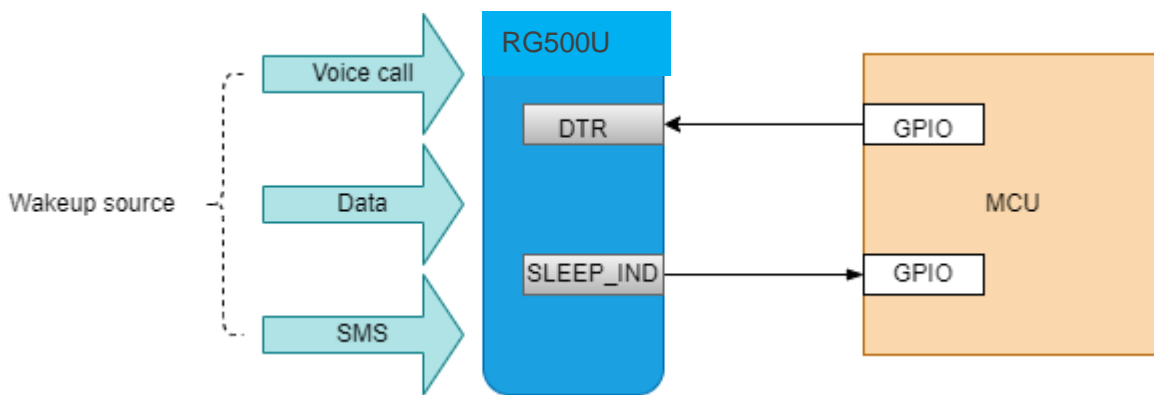


Figure 1: Sleep Mode Framework

NOTE

1. The module can be awakened through voice call, data and SMS.
2. When SLEEP_IND pin is in high level, it indicates the module enters into the sleep state. When SLEEP_IND pin is in low level, it indicates the module is awakened.
3. If the module enters into the sleep mode by executing **AT+QSClk=1** (see **Chapter 3.3** for details) and there is no other wakeup source, the module enters into sleep state when MCU pulls up DTR pin and the module is awakened when MCU pulls down DTR pin.

3 AT Commands Description

3.1. AT Command Introduction

3.1.1. Definitions

- **<CR>** Carriage return character.
- **<LF>** Line feed character.
- **<...>** Parameter name. Angle brackets do not appear on the command line.
- **[...]** Optional parameter of a command or an optional part of TA information response. Square brackets do not appear on the command line. When an optional parameter is not given in a command, the new value equals its previous value or the default settings, unless otherwise specified.
- **Underline** Default setting of a parameter.

3.1.2. AT Command Syntax

All command lines must start with **AT** or **at** and end with **<CR>**. Information responses and result codes always start and end with a carriage return character and a line feed character: **<CR><LF><response><CR><LF>**. In tables presenting commands and responses throughout this document, only the commands and responses are presented, and **<CR>** and **<LF>** are deliberately omitted.

Table 1: Types of AT Commands

Command Type	Syntax	Description
Test Command	AT+<cmd>=?	Test the existence of the corresponding command and return information about the type, value, or range of its parameter.
Read Command	AT+<cmd>?	Check the current parameter value of the corresponding command.
Write Command	AT+<cmd>=<p1>[,<p2>[,<p3> [...]]]	Set user-definable parameter value.
Execution Command	AT+<cmd>	Return a specific information parameter or perform a specific action.

3.2. Declaration of AT Command Examples

The AT command examples in this document are provided to help you learn about the use of the AT commands introduced herein. The examples, however, should not be taken as Quectel’s recommendations or suggestions about how to design a program flow or what status to set the module into. Sometimes multiple examples may be provided for one AT command. However, this does not mean that there is a correlation among these examples, or that they should be executed in a given sequence.

3.3. AT+QSCLK Enable/Disable Module Entering into Sleep Mode

This command enables/disables module entering into sleep mode.

AT+QSCLK Enable/Disable Module Entering into Sleep mode	
Test Command AT+QSCLK=?	Response +QSCLK: (list of supported <n>s) OK
Read Command AT+QSCLK?	Response +QSCLK: <n> OK
Write Command AT+QSCLK=<n>	Response OK
Maximum Response Time	300 ms
Characteristics	-

Parameter

<n>	Integer type. Disable/Enable sleep mode.
<u>0</u>	Disable sleep mode
1	Enable sleep mode

NOTE

1. Executing **AT+QSCLK=1** can enable the module entering into sleep mode. For RG200U-CN and RG500U series, the module enters into sleep mode if DTR pin is in high level; the module is awakened if DTR pin is in low level. For RM500U-CN, the module enters into sleep mode if WAKEUP_IN pin is in low level; the module is awakened if WAKEUP_IN pin is in high level.
2. The module will never enter into sleep mode after executing **AT+QSCLK=0** to disable the module entering into sleep mode.

4 Appendix Reference

Table 2: Terms and Abbreviations

Abbreviation	Description
DTR	Data Terminal Ready
LED	Light Emitting Diode
SMS	Short Message Service