MuYu

MY-BT701 Commands Guide

Version 1.1

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Revision History

Version	Date	Notes	Author
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Content

1. Introduction

This document provides a simple performance introduction and detailed explanation of AT commands of the MY-BT701 module, aiming to guide users to quickly become familiar with the development of the MY-BT701 module.

1.1 Overview

MY-BT701 module supports the 2.4GHz Classic Bluetooth and BLE (Bluetooth Low Energy) 5.3 protocol, supports SPP master-slave integration, and the transparent transmission rate can reach 50kBytes/s.

1.2 Default Setting:

Bluetooth Name	MY-BT701
Serial Port Baud rate	115200bps/8/N/1

2. Command

2.1 AT command format

1. All command start with "AT", end with <CR><LF>
2. <CR> stand for "carriage return", corresponding hex is 0x0D
3. <LF> stands for "line feed", corresponding hex is 0x0A
4. If command has parameter, parameter keep behind "="
5. If command has multiple parameter, parameter must be separated by ","
6. Module will always report command's execution result using "**OK**" for success or "**ERROR**" for failure
7. In this document, << represents command input, >> represents command reply, and the content inside { } is optional.

<center>AT+ Command {=Param1{, Param2{, Param3...}}} <CR><LF></center>

For example:

1. Read the version number

<< AT+VER

>> +VER=1.0.0,MY-BT701

>> OK

2. Change the illegal baud rate

<< AT+BAUD=1234

>>ERROR

2.2   General Command

2.2.1   UART Communication Test

Description: UART communication testing between HOST and Module
Format: AT
Response: OK
Eg: <<   AT >>   OK

2.2.2   AT+CMDLIST

Description: AT command list, print and display all AT commands available in the current version
Format: AT+CMDLIST
Response: +CMDLIST=params

Eg:

<<   *AT+CMDLIST*

>>   *+CMDLIST=*

    {

    AT+NAME

    AT+VER

    ...

    }

>>

    OK

2.2.3 AT+VER

Description: Read Firmware version
Format: AT+VER
Response: +VER=param
Eg: <<   *AT+VER*   >>   *+VER=1.0.0,MY-BT701*   >>   *OK*

2.2.4 AT+ADDR

Description: Read Bluetooth module MAC address
Format: AT+ADDR
Response: +ADDR=param
Eg: *<<   AT+ADDR* *>>   +ADDR= AB0B01020304* *>>   OK*

2.2.5 AT+NAME

Description: Read, Setting Bluetooth Name Default name:**MY-BT701**
Format: AT+NAME {=param1{, param2}}

param1: Device Name (Length1~25 Bytes ASCII)
param2:(0~2)
  (0) Disable MAC address suffix
  (1) Device name + last 4 digits of MAC address
  (2) Device name + last 6 digits of MAC address

Response: +NAME=param
Eg1. Read Bluetooth Name *<<   AT+NAME* *>>   +NAME=MY-BT701* *>>   OK*

Eg2: Setting Bluetooth Name: AABBCCDDEEFF (Changes take effect immediately)

<<   *AT+NAME=AABBCCDDEEFF*

>>   *OK*

Eg3: Device name + last 4 digits of MAC address (Changes take effect immediately)

<<   *AT+NAME=AABBCCDDEEFF,1*

>>   *OK*

Eg4: Device name + last 6 digits of MAC address (Changes take effect immediately)

<<   *AT+NAME=AABBCCDDEEFF,2*

>>   *OK*

2.2.6 AT+BAUD

Description: Read, Setting Bluetooth UART Baud rate, default: 115200

Format: AT+BAUD {=param}

param: Baud rate,
support:
1200/2400/4800/9600/14400/19200/38400/57600/115200/230400/460800/921600/1000000

Response: +BAUD=param

Eg1: Read

<<   *AT+BAUD*

>>   *+BAUD=115200*

>>   *OK*

Eg2: Setting Baud rate: 921600 (Changes take effect immediately)

<<   *AT+BAUD=921600*

>>   *OK*

2.2.7 AT+FLOWCTL

Description: Read, Setting Bluetooth flow control, default:0

Format: AT+FLOWCTL{=param}

param: (0,1)
0: turn off flow control
1: turn on flow control (CTS, RTS cannot be left floating)

Response: +FLOWCTL=param

Eg1: Read

<<   *AT+FLOWCTL*

>>   *+FLOWCTL=0*

>>   *OK*

Eg2: Setting Baud rate: 921600 (Changes take effect immediately)

<<   *AT+BAUD=921600*

>>   *OK*

2.2.8 AT+TPMODE

Description: Read / Setting Command and Throughput mode; Default: 1

Format: AT+TPMODE {=param}

param:(0~1)
(0) It is command mode in any state, including Bluetooth connection and Bluetooth disconnection.

In command mode, any data received by UART will be analyzed for commands. In connection state, data can only be sent to the remote device through the AT+GATTSEND OR AT+SPPSEND command. (1) SPP/GATT transparent transmission. When Bluetooth is disconnected, it is in command mode. You can use AT commands to change relevant parameters. When Bluetooth is connected, it is in Bluetooth throughput mode. AT commands are disabled. Any data received by UART will be sent to remote device

Response: +TPMODE=param

Eg1: Read Mode
<<   *AT+TPMODE*

>>   *+TPMODE=1*

>>   *OK*

Eg2: Setting Command Mode (Changes take effect immediately)
<<   *AT+TPMODE=0*

>>   *OK*

2.2.9 AT+COD

Description: Read/Setting device type, default: 240404

Format: AT+COD {=param}

param:(6 bytes ASCII)

Response: +COD=param

Eg1: Read Bluetooth type
<<   *AT+COD*

>>   *+COD=240404*

>>   *OK*

2.2.10AT+SSP

Description: Read and setting the simple pairing mode, default: 1
Format: AT+SSP{=param}
Param (0~1) 0: Turn off simple pairing mode 1: Turn on simple pairing mode
Response: +SSP=param
Eg: Read *<<   AT+SSP* *>>   +SSP=1* *>>   OK*

2.2.11 AT+REBOOT

Description: Software reset, system restart
Format: AT+REBOOT
Response: OK
Eg: *<<   AT+ REBOOT* *>>   OK*

2.2.12 AT+RESTORE

Description: All Bluetooth parameters are restored to factory settings and the system is restarted
Format: AT+RESTORE
Response: OK
Eg1: Read *<<   AT+RESTORE* *>>   OK*

2.2.13 AT+PIN

Description: Read/Setting Connection PIN Code; default: 0000
Format: AT+PIN{=param}
param: Pin code (4~15 Bytes ASCII)
Response: +PIN=param
Eg1: Read *<<   AT+PIN* *>>   +PIN=000000* *>>   OK*
Eg2: Setting PIN Code: 1234 (Changes take effect immediately) *<<   AT+PIN=1234* *>>   OK*

2.2.14 AT+PLIST

Description: Read and clear pairing records
Format: AT+PLIST{=param}
Param (0/1~5) 0: Clear all pairing records 1~5: Clear the pairing records of the specified index
Response: +PLIST=param1,param2 Param 1: Index number Param 2: Pairing Bluetooth Mac address
Eg: Read Pairing records *<<   AT+PLIST* *>>   +LIST=1,000000000000* *>>   OK*

2.2.15 AT+BTEN

Description: Read and set Bluetooth working mode, default: 1
Format: AT+BTEN{=param}
param1:(0~1) (0) Disconnect all connections and disable discoverable/connectable mode (1) Enable discoverable/connectable mode
Response: +BTEN=param
Eg1: Read Bluetooth working mode *<<   AT+BTEN* *>>   +BTEN=1* *>>   OK*

Eg2: disable discoverable/connectable mode (Changes take effect immediately)

>> *AT+BTEN=0*

>> *OK*

2.2.16 AT+CLOSEAC

Description: Turn off air command mode (Only be used in command mode)

Format: AT+CLOSEAC

Response: AirCommandClosed

Eg:
<< *AT+CLOSEAC*

>> *AirCommandClosed*

2.2.17 AT+GPIOCFG

Description: Control the input function switch of two IOs, default is (0,0)

Format: AT+GPIOCFG{=param1{,param2}}

param1:(0~1)
(0) Disable command/ throughput mode switching function

(1) Enable command/ throughput mode switching function

param2:(0~1)

(0) Disable Bluetooth disconnection function

(1) Enable Bluetooth disconnection function

Response: +GPIOCFG=param

Eg1: Read Bluetooth GPIO Status
<<   *AT+GPIOCFG*

>>   *+GPIOCFG=0,0*

>>   *OK*

Eg2: Enable the command/ throughput mode switching function; disable the Bluetooth disconnect function. (Changes take effect after reboot)
>>   *AT+GPIOCFG=1,0*

>>   *OK*

Eg3: Disable the command/ throughput mode switching function; disable the Bluetooth disconnect function. (Changes take effect after reboot)

>>   *AT+GPIOCFG=0,1*

>>   *OK*

2.2.18 AT+DISCA

Description: Disconnect all Bluetooth connections (only command mode)

Format: AT+DISCA

Response: OK

Eg: Disconnect all Bluetooth connections
<<   *AT+DISCA*

>>   *OK*

2.2.19 AT+SCAN

Description: Scan as a host to obtain the broadcast information of the slave

Format: AT+SCAN=param1{,param2{,param3}}

param1(0~1)

(0) Stop scanning

(1) Scan the surrounding SPP devices to obtain MAC type, MAC, rssi, name len, name and other information. Use the default time to scan for 10 seconds to automatically end the scan. By default, only 10 pieces of information of different SPP devices can be stored and printed.

param2: (100~10000, unit ms), scanning time

param3: Scan the device with the specified Bluetooth name

Response: +SCAN=param1,param2,param3,param4,param5,param6

param1: serial number, Param2:MAC type, param3:MAC address, param4：RSSI value, param5: length of device name, param6: device name

Eg1: Scan device name using default time
<<　　 *AT+SCAN=1*

Eg2: Scan device name with 1000ms

<<　　 *AT+SCAN=1,1000*

Eg3: Scan the device name, set the scanning time to 1000ms, and only scan the device named MY-BT701

<<　　 *AT+SCAN=1,1000,MY-BT701*

2.2.20 AT+AUTOCONN

Description: Turn on/off the Master mode automatic connection function. The default value is 0.

After setting it to 1, the module will record the information of the host's last connection to the device, and will automatically reconnect after restarting or disconnecting.

Format: AT+AUTOCONN{=param}

param1(0~1)

(0) Turn off the Master mode automatic connection function

(1) Turn on the Master mode automatic connection function

Response: *OK*

Eg1: Read Master mode automatic connection function Status

<<   AT+AUTOCONN

>>   +AUTOCONN=0

>>   OK

Eg2: Turn on the Master mode automatic connection function(Changes take effect immediately)

<<   AT+AUTOCONN=1

>>   OK

2.2.21AT+LINKCFG

Description: Turn on or off Master mode automatic scanning connection function. After setting it to 1, the device will automatically search for a device with the same name as itself when it is turned on or disconnected. The default value is 0.

Format: AT+ LINKCFG{=param}

param1(0~1)

(0) Turn off the Master mode automatic scanning connection function

(1) Turn on the Master mode automatic scanning connection function

Response: *OK*

Eg1: Read Master mode automatic connection function Status

<<   *AT+ LINKCFG*

>>   *+ LINKCFG=0*

>>   *OK*

Eg2: Turn on the Master mode automatic scanning connection function (Changes take effect immediately)

<<   *AT+ LINKCFG=1*

>>   *OK*

2.3 SPP Command

2.3.1 AT+SPPSTAT

Description: Check Bluetooth SPP connection State

Format: AT+ SPPSTAT

Response: + SPPSTAT=param

param1(0~3): 1. Not connected, 2 Connecting, 3 Connected

Eg: Check Bluetooth connection State

<<   AT+ SPPSTAT

>>   +SPPSTAT=3

>>   OK

2.3.2 AT+ SPPDISC

Description: Disconnect Bluetooth SPP connection

Format: AT+ SPPDISC

Eg:
<<   AT+SPPDISC

>>   OK

2.3.3 AT+ SPPSEND

Description: Send data to the other BT device (only in command mode)

Format: AT+SPPSEND =param1, param2

Param1: Data length (1~128)

Param2: Data (1~128Bytes)

Response: OK

Eg: Send data 0123456789 to other Bluetooth device

<< AT+SPPSEND=10,0123456789
>> OK

2.3.4 AT+ SPPCONN

Description: Connect other Bluetooth devices
Format: AT+CONN=param1
param: BT device MAC address
Response: OK
Eg1: The master device the connection (specifies the MAC address) <<   AT+ SPPCONN=112233445566 >>   OK

3. Notes

SPP is a master-slave combination by default. When SPP is not connected, it can be searched and connected by other master devices as a slave. When connecting a slave as a host, the pairing method and pairing PIN code of the master and slave devices must be set to the same before connecting. AT+SSP queries whether simple pairing is turned on. If simple pairing is turned off, set the pairing code to the same, and AT+PIN queries the pairing code.

Master device using ways and commands:

AT+SCAN: Scan slave device, read the device name and MAC address

AT+SPPCONN: Connect to the specified slave address

AT+AUTOCONN: After enabling, the AT+SPPCONN command will save the set address, and the slave device will automatically connect according to the set address when the device is powered on or disconnected.

AT+LINKCFG: After enabling, the device will automatically find a slave device with the same name as itself and initiate a connection when it is turned on or disconnected (AT+SCAN command is invalid).

AT+LINKCFG has a higher priority than AT+AUTOCONN.