

MuYu

MY-BT102/BT202/BT103 Commands Guide

Version 1.8

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1. Introduction

1.1 Overview

MUYU serial communication command is the communication protocol between the Bluetooth module MY-BT102/BT202 and the MCU. It contains all the protocols included in the Bluetooth function such as data commands, control commands, and transmission commands. These commands may not necessarily follow the requirements. The Bluetooth module commands are consistent, but they are included. You only need to find out the corresponding required commands when you use them. If there is no response to the sending command or the return "ERROR" is normal, use the commands with the corresponding firmware. That is, the default baud rate of the Bluetooth serial port is 115200.

1.2 Command Format

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

- All command start with "AT", end with <CR><LF>
- <CR> stand for "carriage return", corresponding hex is 0x0D
- <LF> stands for "line feed", corresponding hex is 0x0A
- If command has parameter, parameter keep behind "="
- If command has multiple parameter, parameter must be separated by ","
- If command has response, response start with <CR><LF>, end with <CR><LF>
- Module will always report command's execution result using "OK" for success or "ERROR" for failure
- Module UART default baud rate 115200
- All module instructions are in uppercase letters
- Data: 8
- Parity: none
- Stop bit 1
- C->S Host send COMMAND to the module
- C<-S Module send COMMAND to host
- R: stand for read data
- W: stand for write data

2. General Command

2.1 UART Communication Test

Command Explain
Format: AT Response: OK Description: UART communication testing between HOST and Module
Example
C->S AT C<-S OK

2.2 Read Firmware Version: AT+VER

Command Explain
Format: AT+VER Response: +VER=Param Description: Param: firmware version
Example
C->S AT+VER C<-S +VER=1.0.0,MY-BT102 C<-S OK

2.3 Read Baud Rate: AT+BAUD

Command Explain
Format: AT+BAUD Response: +BAUD=Param Description: Current Baud Rate
Example
C->S AT+BAUD C<-S +BAUD=115200 C<-S OK

2.4 Change Baudrate: AT+BAUD=Param

Command Explain
Format: AT+BAUD=Param Response: +BAUD=Param Description: Write Baudrate (1200-921600)
Example
C->S AT+BAUD=115200 C<-S +BAUD=115200 C<-S OK

2.5 Read BR/EDR MAC Address: AT+ADDR

Command Explain
Format: AT+ADDR Response: +ADDR=Param Description: BR/EDR MAC address (12 Bytes ASCII)
Example
C->S AT+ADDR C<-S +ADDR=DD0D305AF263 C<-S OK

2.6 Read BLE MAC Address: AT+LEADDR

Command Explain
Format: AT+LEADDR Response: +LEADDR= Param Description: BLE MAC Address (12 Bytes ASCII)
Example
C->S AT+LEADDR C<-S +LEADDR=DD0D305AF262 C<-S OK

2.7 Read BR/EDR MAC Bluetooth Name: AT+NAME

Command Explain
Format: AT+NAME Response: +NAME=Param Description: BR/EDR Bluetooth Name (1~31 Bytes ASCII)
Example
C->S AT+NAME C<-S +NAME=MY-102 C<-S OK

2.8 Write BR/EDR Bluetooth Name: AT+NAME=PARAM1,PARAM2

Command Explain
Format: AT+NAME=Param1,Param2 Response: OK Description: Param1: BR/EDR Bluetooth Name (1~27/31 Bytes ASCII) Param2: Add the last four digits of the Bluetooth MAC address, 0: not adding, 1 means adding
Example
C->S AT+NAME=MY-401,1 C<-S OK

2.9 Read BLE Name: AT+LENAME

Command Explain
Format: AT+LENAME Response: +LENAME=Param Description: BLE Name (1~29 Bytes ASCII)
Example
C->S AT+LENAME C<-S +LENAME=MY-BT401LE C<-S OK

2.10 Write BLE Name: AT+LENAME=PARAM1,PARAM2

Command Explain
Format: AT+LENAME=Param1,Param2 Response: OK Description: Param1: BLE Name (1~25/29 Bytes ASCII) Param2: Add the last four digits of the Bluetooth MAC address, 0: not adding, 1 means adding
Example
C->S AT+LENAME=MY-BT401LE,1 C<-S OK

2.11 Read PIN Code: AT+PIN

Command Explain
Format: AT+PIN Response: +PIN=Param Description: PIN Code, (4~15 Bytes ASCII), Default PIN Code: 0000
Example
C->S AT+PIN C<-S +PIN=0000 C<-S OK

2.12 Write PIN Code: AT+PIN=PARAM

Format: AT+PIN=Param Response: +PIN=Param Description: PIN Code (4~15 Bytes ASCII)
Example
C->S AT+PIN=1234 C<-S OK

2.13 Read SSP (Secure Simple Pairing) Status: AT+SSP

Command Explain
Format: AT+SSP

Response: +SSP=Param(0~1) Description: Param=0(turn off SSP), 1(turn on SSP)
Example
C->S AT+SSP C<-S +SSP=0 C<-S OK

2.14 Write SSP (Secure Simple Pairing) Status: AT+SSP=PARAM

Command Explain
Format: AT+SSP=Param(0~1) Response: +SSP=Param Description: Param=0(turn off SSP), 1(turn on SSP)
Example
C->S AT+SSP=1 C<-S OK

2.15 Read Bluetooth Icon: AT+COD

Command Explain
Format: AT+COD Response: +COD=Param Description: Param=Bluetooth Icon, Used to display on the device, such as headset form, keyboard form, mouse form, etc.
Example
C->S AT+COD C<-S +COD=240404 C<-S OK

2.16 Write Bluetooth Icon: AT+COD=Param

Command Explain
Format: AT+COD=Param Response: +COD=Param OK Description: Param=Bluetooth Icon, Used to display on the device, such as headset form, keyboard form, mouse form, etc.
Example
C->S AT+COD=240204 C<-S +COD=240404 C<-S OK

2.17 Read Run Mode: AT+MODE

Command Explain
Format: AT+MODE Response: +MODE=Param(1~4) Description: 1: SPP 2: BLE 3: HID 4: SPP+BLE

Example
C->S AT+MODE C<-S +MODE=3 C<-S OK

2.18 Read Run Mode: AT+MODE=PARAM

Command Explain
Format: AT+MODE=Param(1~4) Response: +MODE=Param Description: 1: SPP 2: BLE 3: HID 4: SPP+BLE
Example
C->S AT+MODE=3 C<-S +MODE=3 C<-S OK

2.19 Read Paired Record: AT+PLIST

Format: AT+PLIST Response: +PLIST={ +PLIST=Param1,Param2 +PLIST=} Description: Param1= Number of paired records and sorting (1~4) Param2=Bluetooth MAC address
Example
C->S AT+PLIST C<-S +PLIST={ +PLIST=1,D89B3B9EAE9F +PLIST=} C<-S OK

2.20 Clear Paired Record: AT+PLIST=Param

Command Explain
Format: AT+PLIST=Param Response: OK Description: Param=0 Clear all paired record Param=1~4, Clear the corresponding pairing record according to the index of 1~4 Param=MAC address, clear specific paired record with MAC address
Example
C->S AT+PLIST=0 C<-S OK

2.21 Read Low Power Mode: AT+LPM

Command Explain
Format: AT+LPM Response: +LPM=Param(0~1)

Description: 0: turn off Low Power Mode 1: turn on Low Power Mode
Example
C->S AT+LPM C<-S +LPM=1 C<-S OK

2.22 Write Low Power Mode: AT+LPM=PARAM

Command Explain
Format: AT+LPM=Param(0~1) Response: +LPM=Param Description: 0: turn off Low Power Mode 1: turn on Low Power Mode
Example
C->S AT+LPM=1 C<-S +LPM=1 C<-S OK

2.23 Read Power On Auto Reconnect: AT+AUTOCONN

Command Explain
Format: AT+AUTOCONN Response: +AUTOCONN=Param(0~1) Description 0: turn off Power On Auto Reconnect 1: turn on Power On Auto Reconnect
Example
C->S AT+AUTOCONN C<-S +AUTOCONN=1 C<-S OK

2.24 Turn On/Off Power On Auto Reconnect: AT+AUTOCONN=PARAM

Command Explain
Format: AT+AUTOCONN=Param(0~1) Response: +AUTOCONN=Param Description 0: turn off Power On Auto Reconnect 1: turn on Power On Auto Reconnect
Example
C->S AT+AUTOCONN=1 C<-S +AUTOCONN=1 C<-S OK

2.25 Disconnect the connected device: AT+DISC

Command Explain
Format: AT+DISC Response: OK Description: Disconnect the connected devices
Example

C->S AT+DISC C<-S OK

2.26 Disconnect all connected devices: AT+DISCA

Command Explain
Format: AT+DISCA Response: OK Description: Disconnect all connected devices
Example
C->S AT+DISCA C<-S OK

2.27 Restart the device: AT+REBOOT

Command Explain
Format: AT+REBOOT Response: OK Description: Restart the device
Example
C->S AT+REBOOT C<-S OK

2.28 Restore: AT+RESTORE(NEED REBOOT)

Command Explain
Format: AT+RESTORE Format: OK Description: Restore the settings to the initial state
Example
C->S AT+RESTOER C<-S OK

2.29 Connect Bluetooth Device: AT+CONN=PARAM

Command Explain
Format: AT+CONN=PARAM Response: + CONN = PARAM OK Description: PARAM: MAC address + address type, a total of 13 characters. The address type can be viewed through the AT+SCAN result
Example
C->S AT+ CONN=1122334455660 C<-S OK

2.30 Scan all Bluetooth devices: AT+SCAN

Command Explain	
Format: AT+SCAN	
Response: +SCAN=Param1,Param2,Param3,Param4,Param5,Param6 OK	
Description:	
Param1	Index(1~8)
Param2	Address type(0~2) 0:LE shared address 1:LE random address 2:BR/EDR address
Param3	MAC address (12 Bytes ASCII)
Param4	RSSI(-255~0)
Param5	Lenth of Param6
Param6	BR/EDR device name or broadcast data for LE devices
Example	
C->S AT+SCAN	
C<-S +SCAN=1,0,3C610529F63E,-80,9,MY-BT	
C<-S +SCAN=2,1,3C610529FFFE,-10,8,MY-BT	
C<-S OK	

2.31 Stop Scanning Bluetooth Device: AT+SCAN=0

Command Explain	
Format: AT+SCAN=0	
Response: OK	
Description: 2.29 Stop Scanning Bluetooth Device	
Example	
C->S AT+SCAN=0	
C<-S OK	

2.32 Scan BR/EDR Bluetooth Device: AT+SCAN=1

Command Explain	
Format: AT+SCAN=1	
Response: +SCAN=Param1,Param2,Param3,Param4,Param5,Param6	
Decription:	
Param1	Index(1~8)
Param2	Address type(0~2) 0:LE shared address 1:LE random address 2:BR/EDR address
Param3	MAC address (12 Bytes ASCII)
Param4	RSSI(-255~0)
Param5	Lenth of Param6
Param6	BR/EDR device name
Example	
C->S AT+SCAN=1	
C<-S +SCAN=1,0,3C610529F63E,-80,9,MY-BT	
C<-S +SCAN=2,1,3C610529FFFE,-10,8,MY-BT	
C<-S OK	

2.33 Scan BLE Device: AT+SCAN=2

Command Explain	
Format: AT+SCAN=2	
Response: +SCAN=Param1,Param2,Param3,Param4,Param5,Param6	
Description:	
Param1	Index(1~8)
Param2	Address type(0~2) 0:LE shared address 1:LE random address 2:BR/EDR address
Param3	MAC address (12 Bytes ASCII)
Param4	RSSI(-255~0)
Param5	Lenth of Param6
Param6	broadcast data for LE devices
Example	
C->S AT+SCAN=2	
C<-S +SCAN=1,0,3C610529F63E,-80,9,MY-BT	
C<-S +SCAN=2,1,3C610529FFFE,-10,8,MY-BT	
C<-S OK	

2.34 Scan Time: AT+SCANTIME=PARAM

Command Explain	
Format: AT+SCAN=2	
Response: +SCAN=Param	
Description: Unit: second	
Example	
C->S AT+SCANTIME=2	
C<-S OK	

2.35 Read currently connected device: AT+LINK

Command Explain	
Format: AT+LINK	
Response: +LINK=Param1,Param2,Param3	
Description:	
Param1	Index
Param2	Mater or Slave
Param3	MAC address (12 Bytes ASCII)
Example	
C->S AT+LINK	
C<-S +LINK=1,S,3C610529F63E	
C<-S +LINK=2,S,3C610529FFFE	
C<-S OK	

2.36 Connect devices according to scan index AT+LINK=PARAM

Command Explain

Format: AT+LINK=PARAM Response: + LINK= PARAM Description: PARAM: the index of the AT+SCAN scan result -1。
Exmaple
C->S AT+LINK=0 C<-S +LINK=0 C<-S OK

2.37 Automatic connection based on scan results:

AT+SCANAC=PARAM(MASTER ONLY)

Command Explain
Format: AT+SCANAC=Param Response: + SCANAC =Param Description: Whether to automatically connect to the device after scanning for surrounding devices. It only works when the filter configuration condition AT+FILTER=param is configured.
Example
C->S AT+SCANAC =1 C<-S + SCANAC =1 C<-S OK

2.38 Set scanning filter conditions: AT+FILTER= PARAM

Command Explain										
Format: AT+FILTER=Param Response: + FILTER =Param Description: Configure the filtering conditions for scan results. After configuration, the scan results will only display devices that meet the filter criteria.										
<table border="1"> <tr> <td>0</td> <td>No Filter</td> </tr> <tr> <td>1</td> <td>Filter according name of scan result</td> </tr> <tr> <td>2</td> <td>Filter according mac address of scan result</td> </tr> <tr> <td>3</td> <td>Filter according rssi of scan result</td> </tr> <tr> <td>4</td> <td>Filter according ADV of scan result</td> </tr> </table>	0	No Filter	1	Filter according name of scan result	2	Filter according mac address of scan result	3	Filter according rssi of scan result	4	Filter according ADV of scan result
0	No Filter									
1	Filter according name of scan result									
2	Filter according mac address of scan result									
3	Filter according rssi of scan result									
4	Filter according ADV of scan result									
Example										
C->S AT+FILTER =1 C<-S + FILTER =1 C<-S OK										

2.39 Read scanning filter conditions: AT+FILTER

Command Explain								
Format: AT+FILTER Response: + FILTER =Param Description:								
<table border="1"> <tr> <td>0</td> <td>No Filter</td> </tr> <tr> <td>1</td> <td>Filter according name of scan result</td> </tr> <tr> <td>2</td> <td>Filter according mac address of scan result</td> </tr> <tr> <td>3</td> <td>Filter according rssi of scan result</td> </tr> </table>	0	No Filter	1	Filter according name of scan result	2	Filter according mac address of scan result	3	Filter according rssi of scan result
0	No Filter							
1	Filter according name of scan result							
2	Filter according mac address of scan result							
3	Filter according rssi of scan result							

4	Filter according ADV of scan result
Example	
C->S AT+FILTER C<-S + FILTER =1 C<-S OK	

2.40 Filter scanned Bluetooth names: AT+FILTERTNAME= PARAM

C
Format: AT+FILTERTNAME=Param Response: + FILTERTNAME =Param Description: The maximum value of the Param length is the same as the maximum value of the Bluetooth name, and the set BLE Bluetooth name filter length range (1~29 characters)
Example
C->S AT+FILTERTNAME=MY-BT C<-S + FILTERTNAME =MY-BT C<-S OK

2.41 Filter scanned Bluetooth addresses: AT+FILTERRADDR= PARAM

Command Explain
Format: AT+FILTERRADDR=Param Response: + FILTERRADDR =Param Description: The maximum value of the Param length is the same as the maximum value of the Bluetooth address, and the set filter range (1~12) characters
Example
C->S AT+FILTERRADDR =112233 C<-S + FILTERRADDR =112233 C<-S OK

2.42 Filter scanned Bluetooth RSSI value: AT+FILTERRSSI= PARAM

Command Explain
Format: AT+FILTERRSSI=Param Response: + FILTERRSSI =Param Description: Param: RSSI value. Only the values within this range can be scanned, and those exceeding this value cannot be scanned.
Example
C->S AT+FILTERRSSI =70 C<-S + FILTERRSSI =70 C<-S OK

2.43 Filter scanned broadcast content: AT+FILTERRADV= PARAM

Command Explain

Format: AT+FILTERADV=Param
 Response: + FILTERADV =Param
 Description: The maximum value of Param is the maximum value of Bluetooth broadcast, and the setting filter range is (1~31).

Example

C->S AT+FILTERADV =0201020C09
 C<-S + FILTERADV =0201020C09
 C<-S OK

3.Data commands

3.1 Read PIO function configuration: AT+PIOCFG

Command Explain

Format: AT+PIOCFG
 Response: +PIOCFG=Param1,Param2
 Description:
 Param1: 0: disable command/transmission mode switching function 1: enable command/transmission switching function
 Param2: 0:disable bluetooth disconnect function 1:enable bluetooth disconnect function

Example

C->S AT+PIOCFG
 C<-S +PIOCFG=1,1

3.2 Write PIO function configuration AT+PIOCFG=PARAM1,PARAM2

Command Explain

Format: AT+PIOCFG=Param1,Param2
 Response: +OK
 Description:
 Param1: 0: disable command/transmission mode switching function 1: enable command/transmission switching function
 Param2: 0:disable bluetooth disconnect function 1:enable bluetooth disconnect function

Example

C->S AT+PIOCFG=1,1
 C<-S +OK

3.3 Read Throughput mode: AT+TPMODE

Command Explain

Format: AT+TPMODE
 Response: +TPMODE=Param(0~1)
 OK
 Description: 0:turn off Throughput mode 1: turn on Throughput mode

Example

C->S AT+TPMODE
 C<-S +TPMODE=1

C<-S OK

3.4 Set Throughput mode: AT+TPMODE=PARAM

Command Explain
Format: AT+TPMODE=Param(0~1) Response: +TPMODE=Param OK Description: 0:turn off Throughput mode 1: turn on Throughput mode
Example
C->S AT+TPMODE=1 C<-S +TPMODE=1 C<-S OK

3.5 Read Hardware Flow Control: AT+FLOWCTL

Command Explain
Format: AT+FLOWCTL Response: +FLOWCTL=Param(0~1) OK Description: 0:turn off 1: turn on
Example
C->S AT+FLOWCTL C<-S +FLOWCTL=1 C<-S OK

3.6 Turn On/Off Hardware Flow Control: AT+FLOWCTL=PARAM

Command Explain
Format: AT+FLOWCTL=Param(0~1) Response: +FLOWCTL=Param OK Description: 0:turn off 1: turn on
Example
C->S AT+FLOWCTL=1 C<-S +FLOWCTL=1 C<-S OK

3.7 Read BLE status: AT+LECFG

Command Explain
Format: AT+LECFG Response: +LECFG=Param(0~1) Description: 0:turn off BLE 1: turn on BLE
Example
C->S AT+LECFG C<-S +LECFG=1 C<-S OK

3.8 Turn on/off BLE status: AT+LECFG=PARAM

Command Explain
Format: AT+LECFG=Param(0~1) Response: +OK Description: 0:turn off BLE 1: turn on BLE
Example
C->S AT+LECFG=1 C<-S +LECFG=1 C<-S OK

3.9 Send data via SPP: AT+SPPSEND=PARAM1,PARAM2

Command Explain
Format: AT+SPPSEND=Param1,Param2 Response: +OK Description: Param1:Lenth(1~236) Param2:Data(1~236 Bytes UTF8)
Example
C->S AT+SPPSEND=5,12345 C<-S +OK

3.10 Multiple connections send data via SPP: AT+SPPSEND=PARAM1,PARAM2,PARAM3

Command Explain
Format: AT+SPPSEND=Param1,Param2,Param3 Response: +OK Description: Param1: Link index, query through AT+LINK; Param1:Lenth(1~236); Param2:Data(1~236 Bytes UTF8)
Example
C->S AT+SPPSEND=1,,5,12345 C<-S +OK

3.11 Send Data via GATT: AT+GATSEND=PARAM1,PARAM2

Command Explain
Format: AT+GATSEND=Param1,Param2 Response: +OK Description: Param1:Lenth(1~100) Param2:Data(1~100 Bytes UTF8)
Example
C->S AT+GATSEND=5,12345 C<-S +OK

3.12 Multiple connections send data via GATT:

AT+GATTSEND=PARAM1,PARAM2,PARAM3

Command Explain
Format: AT+GATTSEND=Param1,Param2,Param3 Response: +OK Description: Param1: Link index, query through AT+LINK; Param1:Lenth(1~100); Param2:Data(1~100 Bytes UTF8)
Example
C->S AT+GATTSEND=1,,5,12345 C<-S +OK

4. BLE Data Command

4.1 Read BLE Peripheral/Central Mode: AT+ROLE

Command Explain
Format: AT+ROLE Response: +ROLE=Param(0~1) Description: 0: Peripheral Mode 1:Central Mode
Example
C->S AT+ROLE C<-S +ROLE=0 C<-S OK

1.1 Change BLE Peripheral/Central Mode: AT+ROLE=Param

Command Explain
Format: AT+ROLE= Param(0~1) Response: +OK Description: 0: Peripheral Mode 1:Central Mode
Example
C->S AT+ROLE=1 C<-S OK

4.2 Establish BLE Connection AT+LECONN (Central Mode Only)

Command Explain
Format: AT+LECONN=Param1,Param2,Param3,Param4 Response: +SCAN=Param1,Param2,Param3,Param4 Description: Param1: MAC Address, Param2: Service-UUID, Param3: Wire-UUID, Param4: Notify-UUID
Example
C->S AT+LECONN=3C610529F63E,FFF0,FFF2,FFFF1 C<-S OK

4.3 BLE Send Data: AT+LESEND BLE

Command Explain
Format: AT+LESEND=Param1,Param2 Response: OK Description: Description: Param1: Payload Data Length Param2: Payload Data
Example
C->S AT+LESEND=10,1234567890 C<-S OK

4.4 Set BLE UUID: AT+SETUUID

Command Explain
Format: AT+SETUUID=Param1, Param2, Param3 Description: Param1: Service-UUID, Param2: Write-UUID, Param3: Notify-UUID Support 16bit/128bit
Example
C->S AT+SETUUID=FFF0,FFF2,FFFF1 C<-S +UUID=FFF0,FFF2,FFFF1 C<-S OK

5. General instructions

5.1 Device Status: +DEVSTAT

Command Explain															
Format: +DEVSTAT=Param Description:															
<table border="1"> <tr> <td>BIT0</td> <td>switch status</td> <td>0: Turn off 1: Turn on</td> </tr> <tr> <td>BIT1</td> <td>BR/EDR discover</td> <td>0: Enable 1: Disable</td> </tr> <tr> <td>BIT2</td> <td>BLE Broadcast</td> <td>0: Turn off 1: Turn on</td> </tr> <tr> <td>BIT3</td> <td>BR/EDR Scan</td> <td>0: Turn off 1: Scanning</td> </tr> <tr> <td>BIT4</td> <td>BLE Scan</td> <td>0: Disable 1: Scanning</td> </tr> </table>	BIT0	switch status	0: Turn off 1: Turn on	BIT1	BR/EDR discover	0: Enable 1: Disable	BIT2	BLE Broadcast	0: Turn off 1: Turn on	BIT3	BR/EDR Scan	0: Turn off 1: Scanning	BIT4	BLE Scan	0: Disable 1: Scanning
BIT0	switch status	0: Turn off 1: Turn on													
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BIT3	BR/EDR Scan	0: Turn off 1: Scanning													
BIT4	BLE Scan	0: Disable 1: Scanning													
Example															
C<-S + DEVSTAT =7															

5.2 Scan Results: +SCAN

Command Explain				
Format: +SCAN=Param1,Param2,Param3,Param4,Param5,Param6 Description:				
<table border="1"> <tr> <td>Param1</td> <td>Index(1~8)</td> </tr> <tr> <td>Param2</td> <td>Address type(0~2) 0:LE shared address 1:LE random address 2:BR/EDR address</td> </tr> </table>	Param1	Index(1~8)	Param2	Address type(0~2) 0:LE shared address 1:LE random address 2:BR/EDR address
Param1	Index(1~8)			
Param2	Address type(0~2) 0:LE shared address 1:LE random address 2:BR/EDR address			

Param3	MAC address (12 Bytes ASCII)
Param4	RSSI(-255~0)
Param5	Length of Param6
Param6	broadcast data for LE devices
Example	
C<-S + SCAN=1,2,112233445566,-55,8,MY-BT401	
C<-S + SCAN=2,2,778899AABBCC,-88,8,MY-BT201	
C<-S +SCAN=3,2,DDEEFF001122,-99,8,MY-BT301	

5.3 Successful Pairing: +PAIRED

Command Explain
Format: +PAIRED=Param Description: The MAC address of the paired device (12 Bytes ASCII)
Example
C<-S +PAIRED=112233445566

5.4 SPP Status: +SPPSTAT

Command Explain
Format: +SPPSTAT=Param(0~3) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected

5.5 SPP Device Information: +SPPDEV

Command Explain
Format: +SPPDEV=Param Description: MAC address of the remote device connected by SPP (12 Bytes ASCII)

5.6 SPP Receive Data: +SPPDATA

Command Explain
Format: +SPPDATA=Param1,Param2 Description: Param1: effective data length Param2: valid data content (If Throughput Mode is enabled, only Param2 exists)

5.7 LE PERIPHERAL Status: +GATTSTAT

Command Explain
Format: +GATTSTAT=Param(0~3) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected

5.8 GATT Device Information: +GATTDEV

Command Explain
Format: +GATTDEV=Param Description: The MAC address of the remote device connected to GATT (12 Bytes ASCII)

5.9 GATT Receive Data: +GATTDATA

Command Explain
Format: +GATTDATA=Param1,Param2 Description: Param1: effective data length Param2: valid data content (If Throughput Mode is enabled, only Param2 exists)

5.10 LE CENTRAL Status: +LESTAT

Command Explain
Format: +LESTAT=Param(0~3) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected

5.11 HID Status: +HIDSTAT

Command Explain
Format: +HIDSTAT=Param(0~3) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected

5.12 HID Mode: +HIDMODE

Command Explain	
Format: +HIDMODE=Param(0~10) Description:	
0	HID key-value pattern
1	British keyboard
2	American keyboard
3	Turkish keyboard
4	Spanish keyboard
5	Portuguese keyboard
6	French keyboard
7	German keyboard
8	Italian keyboard
9	Czech keyboard
10	Japanese keyboard

5.13 HID Send: +HIDSEND

Command Explain
Format: +HIDSEND Description: Indication of successful data transmission in HID mode

5.14 GATT Receive Data: +GATTDATA

Command Explain
Format: +GATTDATA=Param1,Param2 Description: Param1: effective data length Param2: valid data content
Example
C<-S AT+GATTDATA=5,12345