

Bluetooth Module Commands

BT102/BT401/BC204/BT301 Programming User Guide

Version 1.1

Contact Us

Shenzhen Huayang Xinke Electronics Co., Ltd

Email: Info@hyxkiot.com

Zipcode: 518000

Web: www.hyxkiot.com

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1 Introduction

1.1 Overview

HYXK serial communication command is the communication protocol between the Bluetooth module HY-BT102/BT401/ BC204/BT301 and the MCU. It contains all the protocols included in the Bluetooth function such as data commands, audio command, 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-BT401 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+LENAM

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

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

Command Explain
Format: AT+LENAM=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+LENAM=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

Command Explain	
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 AT+PLIST Read Paired Record: AT+PLIST

Command Explain

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+LPW

Command Explain

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

2.22 Write Low Power Mode: AT+LPW=PARAM

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

2.26 Restart the device: AT+REBOOT

Command Explain
Format: AT+REBOOT
Response: OK

Description: Restart the device
Example
C->S AT+REBOOT
C<-S OK

2.27 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

2.28 Scan all Bluetooth devices: AT+SCAN

Command Explain												
Format: AT+SCAN												
Response: +SCAN=Param1,Param2,Param3,Param4,Param5,Param6 OK												
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> <tr> <td>Param3</td> <td>MAC address (12 Bytes ASCII)</td> </tr> <tr> <td>Param4</td> <td>RSSI(-255~0)</td> </tr> <tr> <td>Param5</td> <td>Length of Param6</td> </tr> <tr> <td>Param6</td> <td>BR/EDR device name or broadcast data for LE devices</td> </tr> </table>	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	BR/EDR device name or broadcast data for LE devices
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	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												

2.29 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

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

Command Explain								
Format: AT+SCAN=1								
Response: +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> <tr> <td>Param3</td> <td>MAC address (12 Bytes ASCII)</td> </tr> <tr> <td>Param4</td> <td>RSSI(-255~0)</td> </tr> </table>	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)
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)							

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Param5	Length 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
```

2.31 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	Length 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
```

3 Audio Command

3.1 Read Bluetooth PROFILE: AT+PROFILE

Command Explain	
Format: AT+PROFILE	
Description: Default:171(Decimal)	
BIT0	SPP (Serial Port Profile)
BIT1	GATT Server (Generic Attribute Profile)
BIT2	GATT Client (Generic Attribute Profile)
BIT3	HFP Sink (Hands-Free Profile)
BIT4	HFP Source (Hands-Free Profile)
BIT5	A2DP Sink (Advance Audio Distribution Profile)
BIT6	A2DP Source (Advance Audio Distribution Profile)
BIT7	AVRCP Controller (Audio/Video Remote Controller Profile)
BIT8	AVRCP Target (Audio/Video Remote Controller Profile)
BIT9	HID Keyboard (Human Interface Profile)
BIT10	PBAP Server (Phonebook Access Profile)

Example:

```
D->S AT+PROFILE
C<-S +PROFILE=171
```

3.2 Configure PROFILE: AT+PROFILE=PARAM

Command Explain

Format: AT+PROFILE =Param	
Description: Default:171(Decimal)	
BIT0	SPP (Serial Port Profile)
BIT1	GATT Server (Generic Attribute Profile)
BIT2	GATT Client (Generic Attribute Profile)
BIT3	HFP Sink (Hands-Free Profile)
BIT4	HFP Source (Hands-Free Profile)
BIT5	A2DP Sink (Advance Audio Distribution Profile)
BIT6	A2DP Source (Advance Audio Distribution Profile)
BIT7	AVRCP Controller (Audio/Video Remote Controller Profile)
BIT8	AVRCP Target (Audio/Video Remote Controller Profile)
BIT9	HID Keyboard (Human Interface Profile)
BIT10	PBAP Server (Phonebook Access Profile)
Example: Open A2DP Sink , HFP Sink, close other functions	
E->S	AT+PROFILE=160
C<-S	OK

3.3 Read Volume: AT+SPKVOL

Command Explain	
Format: AT+SPKVOL	
Response: +SPKVOL=Param	
Description: current volume level	
Example	
C->S	AT+SPKVOL
C<-S	+SPKVOL=10
C<-S	OK

3.4 Increase Speaker Volume: AT+SPKVOL=+

Command Explain	
Format: AT+SPKVOL=+	
Response: OK	
Description: Each time, the volume increases by one until the maximum volume is reached.	
Example	
C->S	AT+SPKVOL=+
C<-S	OK

3.5 Speaker Volume Down: AT+SPKVOL=-

Command Explain	
Format: AT+SPKVOL=-	
Response: OK	
Description: Each time the volume is decremented by one, until the minimum volume	
Example	
C->S	AT+SPKVOL=-
C<-S	OK

3.6 Read MIC Volume: AT+MICGAIN(A2DP/HSP SOURCE ONLY)

Command Explain	
Format: AT+MICGAIN	
Response: +MICGAIN =Param	
Description: Current volume level	
Example	
C->S	AT+MICGAIN

```
C<-S +MICGAIN =10
C<-S OK
```

3.7 Increase MIC Volume: AT+MICGAIN=+

Command Explain	
Format:	AT+MICGAIN =+
Response:	OK
Description:	Each time, the volume increases by one until the maximum volume is reached.
Example	
C->S	AT+MICGAIN =+
C<-S	OK

3.8 Reduce MIC Volume: AT+MICGAIN=-

Command Explain	
Format:	AT+MICGAIN =-
Response:	OK
Description:	Each time the volume is decremented by one, until the minimum volume
Example	
C->S	AT+MICGAIN =-
C<-S	OK

3.9 Read Audio Input Mode: AT+AUXCFG

Command Explain	
Format:	AT+AUXCFG
Response:	+AUXCFG =Param(0~3)
Description:	0: BT Module 1: Line In Mode 2: SPDIF Mode 3: I ² S Mode
Example	
C->S	AT+AUXCFG
C<-S	+AUXCFG=1
C<-S	OK

3.10 Change Audio Input Mode: AT+AUXCFG=PARAM

Command Explain	
Format:	AT+AUXCFG = Param(0~3)
Response:	+AUXCFG = Param(0~3)
Description:	0: BT Module 1: Line In Mode 2: SPDIF Mode 3: I ² S Mode
Example	
C->S	AT+AUXCFG=1
C<-S	OK

3.11 Read I²S: AT+I2SCFG

Command Explain	
Format:	AT+I2SCFG
Response:	+I2SCFG=Param
Description:	
BIT0	Function disable/enable 0: Disable 1: Enable
BIT1	Work mode 0: Master 1: Slave
BIT2	Sample rate 0:48khz 1:44.1khz
BIT3~4	Format 00: Philips 01: Right justified 10: Left justified
BIT5~6	Bit mode 00:16-bit 01:24-bit 10:32-bit
Eg: I ² S Master Mode, 44.1K Sample Rate, Philips Format, the binary array of 24-bit data is: 1010001, Decimal is 81, at this time Param=81	

Example	
C->S	AT+I2SCFG
C<-S	+I2SCFG=81
C<-S	OK

3.12 Change I²S : AT+I2SCFG=PARAM (NEED REBOOT)

Command Explain	
Format: AT+I2SCFG=Param	
Response: +I2SCFG=Param	
Description:	
BIT0	Function disable/enable 0: Disable 1: Enable
BIT1	Work mode 0: Master 1: Slave
BIT2	Sample rate 0:48khz 1:44.1khz
BIT3~4	Format 00: Philips 01: Right justified 10: Left justified
BIT5~6	Bit mode 00:16-bit 01:24-bit 10:32-bit
Eg: I ² S Master Mode, 44.1K Sample Rate, Philips Format, the binary array of 24-bit data is: 1010001, Decimal is 81, at this time Param=81	
Note: Restart after setting is valid.	
Example	
C->S	AT+I2SCFG=81
C<-S	OK

3.13 Read SPDIF: AT+SPDIFCFG

Command Explain	
Format: AT+SPDIFCFG	
Response: +SPDIFCFG=Param	
Description: 0: disable 1: enable	
Example	
C->S	AT+SPDIFCFG
C<-S	+SPDIFCFG =1
C<-S	OK

3.14 Change SPDIF: AT+SPDIFCFG=PARAM (NEED REBOOT)

Command Explain	
Format: AT+SPDIFCFG=Param	
Response: +SPDIFCFG =Param	
Description: 0:disable 1:enable (Restart after setting is valid.)	
Example	
C->S	AT+SPDIFCFG =1
C<-S	OK

3.15 Turn On/Off BT: AT+BTEN=PARAM

Command Explain	
Format: AT+BTEN=Param	
Response: +BTEN=Param	
Description: 0: Turn off BT 1: Turn on BT	
Example	
C->S	AT+BTEN=1
C<-S	+BTEN=1
C<-S	OK

3.16 Change Paired Mode: AT+PAIR=PARAM

Command Explain
Format: AT+PAIR=Param(0~1) Response: +PAIR=Param Description: 0: Turn off Paired Mode 1: Turn on paired mode
Example
C->S AT+PAIR=1 C<-S +PAIR=1 C<-S OK

3.17 Read Paired Mode: AT+PAIR

Command Explain
Format: AT+PAIR Response: +PAIR=Param(0~1) Description: 0: Not Paired Mode 1: Paired Mode
Example
C->S AT+PAIR=1 C<-S +PAIR=1 C<-S OK

3.18 Read Serial Debugging Print Mode: AT+PRINT

Command Explain
Format: AT+PRINT Response: +PRINT=Param(0~1) Description: 0: Turn off 1: Turn On
Example
C->S AT+PRINT C<-S +PRINT=1 C<-S OK

3.19 Turn On/Off Serial Debugging Print Mode: AT+PRINT=PARAM

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

3.20 Read Delay Control MUTE Time: AT+MUTEDELAY

Command Explain
Format: AT+MUTEDELAY Response: +MUTEDELAY=Param Description: Delay time, in milliseconds.
Example
C->S AT+MUTEDELAY C<-S +MUTEDELAY=50 C<-S OK

3.21 Change Delay Control MUTE Time: AT+MUTEDELAY=PARAM

Command Explain

Format: AT+MUTEDELAY=Param
 Response: +MUTEDELAY=Param
 Description: Delay time, in milliseconds.

Example

```
C->S AT+MUTEDELAY=50
C<-S +MUTEDELAY=50
C<-S OK
```

3.22 Read LINE IN: AT+LINECFG**Command Explain**

Format: AT+LINECFG
 Response: +LINECFG=Param(0~1)
 Description: 0 : Turn off LINE IN 1: Turn on LINE IN

Example

```
C->S AT+LINECFG
C<-S +LINECFG=0
C<-S OK
```

3.23 Turn On/Off LINE IN: AT+LINECFG=PARAM**Command Explain**

Format: AT+LINECFG=Param(0~1)
 Response: +LINECFG=Param
 Description: 0 : Turn off LINE IN 1 : Turn on LINE IN

Example

```
C->S AT+LINECFG=1
C<-S +LINECFG=1
C<-S OK
```

3.24 Read HFP Status: AT+HFPSTAT**Command Explain**

Format: AT+HFPSTAT
 Response: +HFPSTAT=Param
 Description:
 0: Not initialized 1: Not connected 2: Connected 3: Connected 4: Outgoing 5: Incoming call 6: Calling

Example

```
C<-S +HFPSTAT=1
```

3.25 Read HFP Connect Status: AT+HFPCONN**Command Explain**

Format: AT+HFPCONN
 Response: +HFPCONN=Param
 Description: currently connected Bluetooth address

Example

```
C->S AT+HFPCONN
C<-S +HFPCONN=1234567890
C<-S OK
```

3.26 HFP connects to the specified MAC address device: AT+HFPCONN=MAC**Command Explain**

Format: AT+HFPCONN=Param
Response: +HFPCONN=Param
Description: connects to the specified MAC address device
Example
C->S AT+HFPCONN=12345657890
C<-S +HFPCONN=12345657890
C<-S OK

3.27 HFP Disconnect: AT+HFPDISC

Command Explain
Format: AT+HFPDISC
Response: OK
Description: Disconnect connected HFP channel
Example
C->S AT+HFPDISC
C<-S OK

3.28 Redial: AT+HFPDIAL

Command Explain
Format: AT+HFPDIAL
Response: +HFPDIAL=07556687359 OK
Description: phone number dialed
Example
C->S AT+HFPDIAL
C<-S +HFPCONN=07556697359
C<-S OK

3.29 Dial: AT+HFPDIAL=PARAM

Command Explain
Format: AT+HFPDIAL=Param
Response: +HFPDIAL= Param OK
Description: phone number dial
Example
C->S AT+HFPDIAL=07556697359
C<-S +HFPCONN=07556697359
C<-S OK

3.30 Answer Calls: AT+HFPANSW

Command Explain
Format: AT+HFPANSW
Response: OK
Description: Answer Calls
Example
C->S AT+HFPANSW
C<-S OK

3.31 Hang Up: AT+HFPCHUP

Command Explain

Format: AT+HFPCHUP
Response: OK
Description: hang up
Example
C->S AT+HFPACHUP
C<-S OK

3.32 Voice Switch: AT+HFPADTS=PARAM

Command Explain
Format: AT+HFPADTS=Param(0~1)
Response: OK
Description: 0: Audio output from the module 1: Audio output from the phone
Example
C->S AT+HFPADTS=0
C<-S OK

3.33 Voice Assistant: AT+HFPVR=PARAM

Command Explain
Format: AT+HFPVR=Param(0~1)
Response: OK
Description: 0: stop speech recognition 1: start speech recognition
Example
C->S AT+HFPVR=0
C<-S OK

3.34 Establish/Disconnect Voice Audio: AT+HFPAUDIO=PARAM (HFP SOURCE ONLY)

Command Explain
Format: AT+HFPAUDIO=Param(0~1)
Response: OK
Description: 0: Disconnect voice audio 1: Establish voice audio
Example
C->S AT+ HFPAUDIO =0
C<-S OK

3.35 Read MIC Status: AT+MUTEMIC

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

3.36 Turn On/Off MIC AT+MUTEMIC=PARAM

Command Explain
Format: AT+MUTEMIC=Param(0~1)
Response: +MUTEMIC=Param OK
Description: 0: Turn off MIC 1:Turn on MIC

Example	
C->S	AT+MUTEMIC=1
C<-S	+MUTEMIC=1
C<-S	OK

3.37 Read A2DP Status: AT+A2DPSTAT

Command Explain	
Format:	AT+A2DPSTAT
Response:	+A2DPSTAT=Param(0~4)
Description:	0: Not initialized 1: Not connected 2: Connecting 3: Connected 4: Playing
Example	
C->S	AT+A2DPSTAT
C<-S	+A2DPSTAT =1

3.38 Reconnect A2DP: AT+A2DPCONN

Command Explain	
Format:	AT+A2DPCONN
Response:	+OK
Description:	A2DP to connect to the last paired device
Example	
C->S	AT+A2DPCONN
C<-S	+OK

3.39 Connect to the specified A2DP device: AT+A2DPCONN=PARAM

Command Explain	
Format:	AT+A2DPCONN=Param
Response:	+OK
Description:	Connect the device with the specified MAC address (12bytes ASCII)
Example	
C->S	AT+A2DPCONN=112233445566
C<-S	+OK

3.40 Disconnect A2DP: AT+A2DPDISC

Command Explain	
Format:	AT+A2DPDISC
Response:	+OK
Description:	Disconnect A2DP connection
Example	
C->S	AT+A2DPDISC
C<-S	+OK

3.41 Read AVRCP Status: AT+AVRCPSTAT

Command Explain	
Format:	AT+AVRCPSTAT
Response:	+AVRCPSTAT=Param(0~3)
Description:	0: Not initialized 1: Not connected 2: Connecting 3: Connected
Example	
C->S	AT+AVRCPSTAT
C<-S	+AVRCPSTAT=3

3.42 Read AVRCP Configuration: AT+AVRCPCFG

Command Explain	
Format: AT+AVRCPCFG	
Response: +AVRCPCFG=Param	
Description:	
BIT0	Automatically get ID3 information (title, artist, album) default is 1
BIT1~3	If it is greater than 0, automatically obtain the music status (playing progress) in seconds
Example	
C->S AT+AVRCPCFG	
C<-S +AVRCPCFG =3	

3.43 Configure AVRCP: AT+AVRCPCFG=PARAM

Command Explain	
Format: AT+AVRCPCFG= Param	
Response: +OK	
Description:	
BIT0	Automatically get ID3 information (title, artist, album) default is 1
BIT1~3	If it is greater than 0, automatically obtain the music status (playing progress) in seconds
Example	
C->S AT+AVRCPCFG=7	
C<-S +OK	

3.44 Audio Play: AT+PLAY

Command Explain	
Format: AT+PLAY	
Response: +OK	
Description:	
Example	
C->S AT+PLAY	
C<-S +OK	

3.45 Audio Pause: AT+PAUSE

Command Explain	
Format: AT+PAUSE	
Response: +OK	
Description:	
Example	
C->S AT+PAUSE	
C<-S +OK	

3.46 Play/Pause Exchange: AT+PLAYPAUSE

Command Explain	
Format: AT+PLAYPAUSE	
Response: +OK	
Description:	
Example	
C->S AT+PLAYPAUSE	
C<-S +OK	

3.47 Stop: AT+STOP

Command Explain
Format: AT+STOP Response: +OK Description:
Example
C->S AT+STOP C<-S +OK

3.48 Next Song: AT+FORWARD

Command Explain
Format: AT+FORWARD Response: +OK Description:
Example
C->S AT+FORWARD C<-S +OK

3.49 Previous Song AT+BACKWARD

Command Explain
Format: AT+BACKWARD Response: +OK Description:
Example
C->S AT+BACKWARD C<-S +OK

3.50 Fast-forward: AT+FFDW

Command Explain
Format: AT+FFDW Response: +OK Description:
Example
C->S AT+FFDW C<-S +OK

3.51 Backward: AT+RWD

Command Explain
Format: AT+RWD Response: +OK Description:
Example
C->S AT+RWD C<-S +OK

3.52 Establish/Disconnect A2DP Connect: AT+A2DPAUDIO(A2DP SOURCE ONLY)

Command Explain
Format: AT+A2DPAUDIO=Param(0~1) Response: +OK Description:

0: Disconnect A2DP with the remote receiver 1: Establish A2DP with the remote receiver
Example
C->S AT+ A2DPAUDIO=1 C<-S +OK

3.53 Read A2DP configure: AT+A2DPCFG

Command Explain			
Format: AT+A2DCFG			
Response: +A2DCFG=Param			
Description:			
BIT0	AAC	0:Disable	1:Enable
BIT1	APTX	0:Disable	1:Enable
BIT2	APTX-LL	0:Disable	1:Enable
BIT3	APTX-HD	0:Disable	1:Enable
BIT4	APTX-AD	0:Disable	1:Enable
BIT5	LDAC	0:Disable	1:Enable
Example			
C->S AT+A2DCFG C<-S +A2DCFG=1			

3.54 Configure A2DP: AT+A2DPCFG=PARAM

Command Explain			
Format: AT+A2DCFG= Param			
Response: +OK			
Description:			
BIT0	AAC	0:Disable	1:Enable
BIT1	APTX	0:Disable	1:Enable
BIT2	APTX-LL	0:Disable	1:Enable
BIT3	APTX-HD	0:Disable	1:Enable
BIT4	APTX-AD	0:Disable	1:Enable
BIT5	LDAC	0:Disable	1:Enable
Example			
C->S AT+ A2DCFG =1 C<-S +OK			

3.55 Read PBAP Status: AT+PBSTAT

Command Explain			
Format: AT+PBSTAT			
Response: +PBSTAT=Param(0~4)			
Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected 4: Downloading			
Example			
C->S AT+PBSTAT C<-S +PBSTAT=4			

3.56 Download all phonebooks: AT+PBDOWN=PARAM1

Command Explain			
Format: AT+PBDOWN=Param1			
Response: +PBCNT= Param2 +PBDATA= Param3,Param4,Param5,Param6 +PBDATA=E			

<p>Description: Param1: PhoneBook type (0~5) 0: Phonebook (SIM Storage) 1:Phonebook(Phone Storage) 2:Received call log 3:Dialed call log 4:Missed call log 5:All call log Param2: Returns the total number of records Param3: The type of the returned record is the same as Param1 Param4: Returns the name of the record (UTF8) Param5: Returns the number of records (ASCII) Param6: Returns the recorded Call Time (15 Bytes ASCII) , Not all mobile phones support。 Year(4Bytes)Moth(2Bytes)Day(2Bytes)T(1Byte)Hour(2Bytes)Minute(2Bytes)Second(2Bytes)</p>
Example
<pre>C->S AT+PBDOWN=3 C<-S +PBCNT=100 C<-S +PBDATA=3,China Mobile,10086,20210101T010101 +PBDATA=E</pre>

3.57 Download part of the phone book: AT+PBDOWN=PARAM1, PARAM2

Command Explain
<p>Format: AT+PBDOWN=Param1,Param2 Response: +PBDATA= Param3,Param4,Param5,Param6 +PBDATA=E Description: Param1:PhoneBook type(0~5) 0:Phonebook(SIM Storage) 1:Phonebook(Phone Storage) 2:Received call log 3:Dialed call log 4:Missed call log 5:All call log Param2: Max items(1~65536,default:3000 forphonebook,50 for call log) Param3: The type of the returned record is the same as Param1 Param4: Returns the name of the record (UTF8) Param5: Returns the number of records (ASCII) Param6: Returns the recorded Call Time (15 Bytes ASCII) , Not all mobile phones support。 Year(4Bytes)Moth(2Bytes)Day(2Bytes)T(1Byte)Hour(2Bytes)Minute(2Bytes)Second(2Bytes)</p>
Example
<pre>C->S AT+ PBDOWN=3,2 C<-S + PBDATA=3,China Mobile,10086,20210101T100101 + PBDATA=3,Jack,18695938878,20210201T100201 +PBDATA=E</pre>

3.58 Read SPP Status: AT+SPPSTAT

Command Explain
<p>Format: AT+SPPSTAT Response: +SPPSTAT=Param(0~3) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected</p>
Example
<pre>C->S AT+SPPSTAT C<-S +SPPSTAT =3</pre>

3.59 Establish SPP connection: AT+SPPCONN=PARAM

Command Explain
<p>Format: AT+SPPCONN=Param Response: +OK Description: Device MAC address (12Bytes ASII) If target device is a phone , RFCOMM service must be initialized.</p>
Example

```
C->S AT+SPPCONN=112233445566
C<-S +OK
```

3.60 Disconnect SPP Connection AT+SPPDISC

Command Explain

Format: AT+SPPDISC
 Response: +OK
 Description: Disconnect SPP from Bluetooth device

Example

```
C->S AT+SPPDISC
C<-S +OK
```

3.61 Read GATT Status: AT+GATTSTAT

Command Explain

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

Example

```
C->S AT+GATTSTAT
C<-S +GATTSTAT =3
```

3.62 Disconnect GATT Connection: AT+GATTDISC

Command Explain

Format: AT+GATTDISC
 Response: +OK
 Description: Disconnect GATT from Bluetooth device

Example

```
C->S AT+GATTDISC
C<-S +OK
```

4 Data commands

4.1 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
```

4.2 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

4.3 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

4.4 Write 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

4.5 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

4.6 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

4.7 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

4.8 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

4.9 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

4.10 Send Data via GATT: AT+GATTSEND=PARAM1,PARAM2

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

5 BLE Data Command

5.1 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

5.2 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

5.3 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

5.4 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

5.5 Modify 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

6 General instructions

6.1 Device Status: +DEVSTAT

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

6.2 Scan Results +SCAN

Command Explain	
Format: +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	+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

6.3 Successful pairing: +PAIRED

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

6.4 SPP Status: +SPPSTAT

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

6.5 SPP Device Information: +SPPDEV

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

6.6 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)	

6.7 LE PERIPHERAL Status: +GATTSTAT

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

6.8 GATT Device Information: +GATTDEV

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

6.9 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)

6.10 LE CENTRAL Status: +LESTAT

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

6.11 HID Status: +HIDSTAT

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

6.12 HID Mode: +HIDMODE

Command Explain																						
Format: +HIDMODE=Param(0~10) Description:																						
<table border="1"> <tbody> <tr><td>0</td><td>HID key-value pattern</td></tr> <tr><td>1</td><td>British keyboard</td></tr> <tr><td>2</td><td>American keyboard</td></tr> <tr><td>3</td><td>Turkish keyboard</td></tr> <tr><td>4</td><td>Spanish keyboard</td></tr> <tr><td>5</td><td>Portuguese keyboard</td></tr> <tr><td>6</td><td>French keyboard</td></tr> <tr><td>7</td><td>German keyboard</td></tr> <tr><td>8</td><td>Italian keyboard</td></tr> <tr><td>9</td><td>Czech keyboard</td></tr> <tr><td>10</td><td>Japanese keyboard</td></tr> </tbody> </table>	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
0	HID key-value pattern																					
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9	Czech keyboard																					
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6.13 HID Send: +HIDSEND

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

6.14 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

6.15 HFP Status: +HFPSTAT

Command Explain
Format: +HFPSTAT=Param(0~6) Description: 0: Not initialized 1: Not connected 2: Connected 3: Connected 4: Outgoing 5: Incoming call 6: Calling

6.16 HFP Device Info: +HFPDEV

Command Explain
Format: +HFPDEV=Param1,Param2 Description: Param1: The MAC address of the connected HFP device (12 Bytes ASCII) Param2: The name of the connected HFP device (UTF8)
Example
C<-S +HFPDEV=112233445566,iPhone

6.17 Incoming/Outgoing Numbers +HFPCID

Command Explain
Format: +HFPCID=Param Description: Phone number(1~25 Bytes ASCII)
Example
C<-S +HFPSTAT=5 +HFPCID=18695938878 +HFPCIE=Gella +HFPAUDIO=1

6.18 Incoming/Outgoing Name +HFPCIE

Command Explain
Format: +HFPCIE=Param Description: Phone Name (UTF8), Not all mobile phones support.

6.19 HFP Audio Status: +HFPAUDIO

Command Explain
Format: +HFPAUDIO=Param(0~1) Description: 0: HFP voice audio disconnected, audio input and output to mobile device 1: HFP voice audio is connected, audio input and output to the module

6.20 HFP Device Network Signal Strength: +HFPSIG

Command Explain
Format: +HFPSIG=Param(0~5) Description: The network signal strength of the mobile device

6.21 HFP Equipment Network Operators: +HFPNET

Command Explain
Format: +HFPNET=Param Description: The network operator of the mobile device (UTF8)

6.22 HFP Device Roaming Status: +HFPROAM

Command Explain
Format: +HFPROAM=Param(0~1) Description: 0: The mobile device is in a non-roaming state 1: The mobile device is in a roaming state

6.23 HFP Device Battery Level: +HFPBATT

Command Explain
Format: +HFPBATT=Param(0~5) Description: The battery level of the mobile device

6.24 A2DP Status: +A2DPSTAT

Command Explain
Format: +A2DPSTAT=Param(0~4) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected 4: Playing

6.25 A2DP Device Info: +A2DPDEV

Command Explain
Format: +A2DPDEV=Param1,Param2 Description: Param1: The MAC address of the connected A2DP remote device (12 Bytes ASCII) Param2: The name of the connected A2DP remote device (UTF8)
Example
C<-S +A2DPDEV=112233445566,iphone

6.26 AVRCP Status: +AVRCPSTAT

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

6.27 Media Player Playback Status: +PLAYSTAT

Command Explain

Format: +PLAYSTAT=Param(0~4) Description: 0: Stop 1: Play 2: Pause 3: Fast forward 4: Rewind

6.28 Media Player Playing Progress: +TRACKSTAT

Command Explain
Format: +TRACKSTAT=Param1,Param2,Param3 Description: Param1: Media playback status, (0~4) Param2: The current music playing time, (Decimal ASCII), in milliseconds Param3: The total time of the current music, (Decimal ASCII), in milliseconds
Example
C->S AT+AVRCPCFG=7 C<-S +OK C<-S +TRACKSTAT=1,66000,368000 C<-S +TRACKSTAT=1,69000,368000 C<-S +TRACKSTAT=1,71000,368000

6.29 Media Music Information: +TRACKINFO

Command Explain
Format: +TRACKINFO=Param1,Param2,Param3 Description: Param1:Title Param2: Author Param3: Album
Example
C<-S +TRACKINFO =My Love,Westlife,Coast To Coast

6.30 PBAP Status: +PBSTAT

Command Explain
Format: +PBSTAT=Param(0~4) Description: 0: Not initialized 1: Not connected 2: Connecting 3: Connected 4: Downloading

6.31 Phonebook +PBCNT

Command Explain
Format: +PBCNT=Param(0~65535) Description: Mobile Phonebook