



FSC-BT1058 AT Command Set

Feasycom

2.0

Table of contents

1	Introduction	2
1.1	Release Note	2
1.2	Description	3
1.3	Module Default Settings	3
2	Hardware description	4
2.1	Pin diagram	4
2.2	Pin description	5
2.3	Hardware design notes	6
3	Functional Notes	7
3.1	Profiles & Features	7
3.2	GATT Service	8
4	Command Description	9
4.1	Terms	9
4.2	Command Format	9
4.3	Event Format	10
5	Commands table	11
5.1	General Commands	11
5.1.1	AT+HELP - List firmware information and all support command . . .	11
5.1.2	AT+VER - Get firmware version information	11
5.1.3	AT+BAUD - Get/Set uart baudrate	12
5.1.4	AT+MODCFG - Set Device Source-Sink Mode	12
5.1.5	AT+I2SCFG - Get/Set I2S Configuration	13
5.1.6	AT+SPDIFCFG - SPDIF Format Configuration (Valid for audio sink) .	14
5.1.7	AT+SPKVOL - Set Speaker Volume (Valid for audio sink)	14
5.1.8	AT+MICGAIN - Get/Set input gain (Valid for audio source)	15
5.1.9	AT+REBOOT - Soft reboot	15

5.1.10	AT+RESTORE - Restore factory settings	15
5.1.11	AT+BTEN - Get/Set bluetooth state	16
5.1.12	AT+LECFG - Get/Set random BLE address state	16
5.1.13	AT+PROFILE - Get/Set Bluetooth profile	17
5.1.14	AT+AUTOCONN - Get/Set the count of auto-reconnection on power-on	18
5.1.15	AT+STAT - Get all state	18
5.1.16	AT+DEVSTAT - Get device state	18
5.1.17	AT+ADDR - Get BR/EDR MAC address	19
5.1.18	AT+LEADDR - Get BLE MAC address	19
5.1.19	AT+NAME - Get/Set BR/EDR name	19
5.1.20	AT+LENAM - Get/Set BLE name	20
5.1.21	AT+SSP - Read/Write BR/EDR Pairing Mode (Valid for sink)	20
5.1.22	AT+COD - Get/Set class of device	21
5.1.23	AT+PAIR - Get/Set Bluetooth Discoverability	21
5.1.24	AT+SCAN - Scan Nearby Devices	22
5.1.25	AT+PLIST - Get/Delete paired list	23
5.1.26	AT+DSCA - Release all connections	23
5.1.27	AT+TPMODE - Get/Set throughput mode	24
5.1.28	AT+AUXCFG - Get/Set audio input mode	24
5.1.29	AT+LINKKEY - Get remote device link key	25
5.1.30	AT+RSSI - Get remote device rssi	25
5.1.31	AT+LINKCFG - Get/Set Auto Scan and Connection (Valid for source)	25
5.1.32	AT+AUDMODE - Get/Set Bluetooth Audio Mode (Valid for source)	26
5.1.33	AT+PRINT - Get/Set report mode	26
5.1.34	AT+MICMUTE - Mute MIC (Valid for sink)	26
5.1.35	AT+SPKMUTE - Mute Speaker (Valid for sink)	27
5.2	HFP Commands	27
5.2.1	AT+HFPSTAT - Get HFP state	27
5.2.2	AT+HFPCONN - Establish HFP connection	27
5.2.3	AT+HFPDISC - Release HFP connection	27
5.2.4	AT+HFPRING - Simulate incoming call (Valid for source)	28
5.2.5	AT+HFPANSW - Pick up incoming call	28
5.2.6	AT+HFPCHUP - Reject/Hung up call	28
5.2.7	AT+HFPAUDIO - Establish/Release voice audio(Valid for source)	28
5.2.8	AT+HFPWBS - Get/Set HFP codec negotiation(Valid for source)	29
5.2.9	AT+HFPNREC - Get/Set HFP CVC	29

5.2.10	AT+HFPDIAL - Redial/Dial Phone Number (Valid for sink)	29
5.2.11	AT+HFPDTMF - Send DTMF (Valid for sink)	30
5.2.12	AT+HFPADTS - Voice Switch (Valid for sink)	30
5.2.13	AT+HFPVR - Start/Stop Voice Recognition of Remote Device (Valid for sink)	30
5.2.14	AT+HFPSCO - SCO Configuration (Valid for sink)	31
5.2.15	AT+HFPBATT - Send Device Battery Level (Valid for sink)	31
5.3	A2DP/AVRCP Commands	31
5.3.1	AT+A2DPSTAT - Get A2DP state	31
5.3.2	AT+A2DPCONN - Establish A2DP connection	31
5.3.3	AT+A2DPDISC - Release A2DP connection	32
5.3.4	AT+A2DPCFG - Get/Set A2DP configuration	33
5.3.5	AT+A2DPENC - Get the current encoding method used by A2DP (Valid for source)	34
5.3.6	AT+A2DPDEC - Read A2DP decoding (Valid for sink)	34
5.3.7	AT+A2DPRES - Set Resampling Enable (Valid for sink)	35
5.3.8	AT+A2DPAUDIO - Establish/Release A2DP audio connection(Valid for source)	35
5.3.9	AT+AVRCPSTAT - Get AVRCP state	35
5.3.10	AT+AVRCPCONN - Establish AVRCP connection	36
5.3.11	AT+AVRCPDISC - Release AVRCP connection	36
5.3.12	AT+AVRCPCFG - Get/Set AVRCP Configuration (Valid for sink)	36
5.3.13	AT+PLAYPAUSE - Play/Pause (Valid for sink)	37
5.3.14	AT+PLAY - Play (Valid for sink)	37
5.3.15	AT+PAUSE - Pause (Valid for sink)	37
5.3.16	AT+FORWARD - Next Track (Valid for sink)	37
5.3.17	AT+BACKWARD - Previous Track (Valid for sink)	37
5.3.18	AT+FFWD - Fast Forward (Valid for sink)	38
5.3.19	AT+RWD - Rewind (Valid for sink)	38
5.4	GATT Commands	38
5.4.1	AT+GATTSTAT - Get GATT state	38
5.4.2	AT+GATTSEND - Send data via GATT	38
5.5	SPP Commands	39
5.5.1	AT+SPPSTAT - Get SPP state	39
5.5.2	AT+SPPDISC - Release SPP connection	39
5.5.3	AT+SPPSEND - Send data via SPP	39
5.6	LE Audio Commands	39

5.6.1	AT+BISSTAT - Get Le Audio state	39
5.6.2	AT+BISADD - BIS Add Synchronized Broadcast Source (Valid for sink)	40
5.6.3	AT+BISREMOVE - BIS Remove Added Synchronized Broadcast Source (Valid for sink)	40
5.6.4	AT+BISPLAY - BIS Play (Valid for sink)	40
5.6.5	AT+BISPAUSE - BIS Pause (Valid for sink)	40
5.6.6	AT+CISDISC - Release Le Audio Unicast connection	41
5.6.7	AT+CISCONN - Establish Le Audio Unicast connection	41
6	Events table	42
6.1	General Events	42
6.1.1	+VER - Frmware version information	42
6.1.2	+DEVMOD - Device Mode Information	42
6.1.3	+DEVSTAT - Device state	43
6.1.4	+SCAN - Scan result	44
6.1.5	+BIS - Broadcast Source Scan Result	44
6.1.6	+PAIRED - Pair result	45
6.1.7	+I2SSR - I2S sample rate	45
6.2	HFP Events	45
6.2.1	+HFPSTAT - HFP state	45
6.2.2	+HFPDEV - HFP remote device information	45
6.2.3	+HFPCID - Incoming/Outgoing Call Phone Number	46
6.2.4	+HFPCIE - Incoming/Outgoing Call Name	46
6.2.5	+HFPCONN - HFP connecting	46
6.2.6	+HFPAUDIO - HFP voice audio State	47
6.2.7	+HFPSIG - HFP Remote Device Network Signal Strength	47
6.2.8	+HFPROAM - HFP Remote Device Roaming Status	47
6.2.9	+HFPBATT - HFP Remote Device Battery Level	47
6.2.10	+HFPNET - HFP Remote Device Network Operator	47
6.2.11	+HFPMANU - HFP Remote Device Manufacturer	48
6.2.12	+HFPIBR - HFP Remote Device Supports Incoming Call Ringtone	48
6.2.13	+HFPNUM - HFP Remote Device Own Phone Number	48
6.2.14	+HFPSR - HFP sample rate	48
6.2.15	+HFPHUNG - HFP remote device reject an incoming call or end an ongoing call	48
6.2.16	+HFPVGS - HFP remote device spker gian	49

6.2.17	+HFPVGM - HFP remote device microphone gain	49
6.3	A2DP/AVRCP Events	49
6.3.1	+A2DPSTAT - A2DP State	49
6.3.2	+A2DPENC - A2DP Encoder	50
6.3.3	+A2DPDEV - A2DP remote device information	50
6.3.4	+A2DPCONN - A2DP connecting	50
6.3.5	+A2DPSR - A2DP codec sample rate	50
6.3.6	+AVRCPSTAT - AVRCP state	51
6.3.7	+PLAYSTAT - Media Player Playback Status	51
6.3.8	+TRACKSTAT - Media Player Playback Progress	51
6.3.9	+TRACKINFO - Media Music Information	52
6.3.10	+AVRCPCONN - AVRCP connecting	52
6.3.11	+SPKVOL - Remote speaker volume change	52
6.3.12	+CTVOLUP - volume up	52
6.3.13	+CTVOLDN - volume down	52
6.3.14	+CTPLAY - Track play	53
6.3.15	+CTPAUSE - Track pause	53
6.3.16	+CTSTOP - Track stop	53
6.3.17	+CTFWD - Track forward	53
6.3.18	+CTBACK - Track backward	53
6.4	LE Audio Events	53
6.4.1	+BISSTAT - LE Audio Broadcast state	54
6.4.2	+CISSTAT - LE Audio Unicast state	54
6.4.3	+LEASR - LE Audio sample rate	54
6.5	GATT Events	54
6.5.1	+GATTSTAT - GATT state	55
6.5.2	+GATTDATA - GATT received incoming data	55
6.6	SPP Events	55
6.6.1	+SPPSTAT - SPP state	55
6.6.2	+SPPDATA - SPP received incoming data	56
6.6.3	+SPPDEV - SPP remote device information	56
7	Application Scenarios	57
7.1	Profile Initialization and Set Device Name	57
7.2	A2DP/HFP Examples (Valid for audio source)	59
7.3	BR/EDR Bluetooth Receive Mode Connection (Valid for audio sink)	60
7.4	LE Audio Broadcast Mode(Valid for audio source)	61

7.5	Le Audio Unicast Mode(Valid for audio source)	62
7.6	LE Audio Broadcast Scan and Connect(Valid for audio sink)	63
7.7	SPP Data Transfer	64
7.8	GATT Data Transfer	65
8	Contact Information	66
9	Appendix	67
9.1	PDF Download	67

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Chapter 1

Introduction

1.1 Release Note

序号	版本	日期	说明
1	V1.0.0	2024/05/23	1. Initial version
2	V1.0.1	2024/07/09	1. Added some LE Audio related commands and Events 2. Added some GATTs related commands and Events 3. Fix known issues
3	V1.0.2	2025/01/07	1. Fix known issues 2. Added some commands and events
4	V2.0.0	2026/01/08	1. Added audio source-sink integrated mode 2. Added some commands and events

1.2 Description

This design guide is suitable for engineers to develop FSC-BT1058 series bluetooth modules

1.3 Module Default Settings

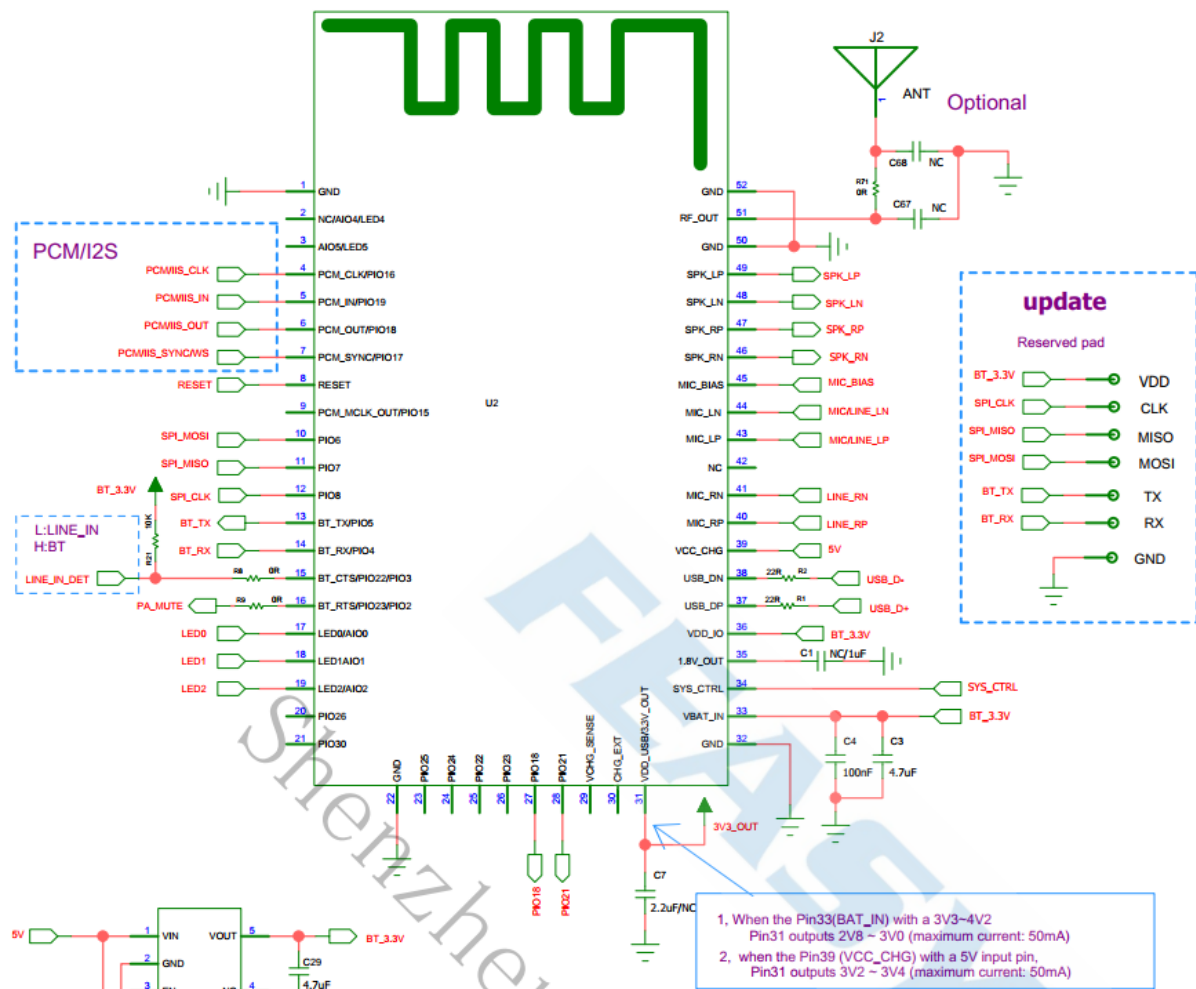
BR/EDR Name	FSC-BT1058
BLE Name	FSC-BT1058-LE
UART configuration	115200/8/N/1

Chapter 2

Hardware description

2.1 Pin diagram

FSC-BT1058 as an example:



2.2 Pin description

PIN	Name	Type	Descriptions
4	I2S_CLK	I/O	I2S BCLK
5	I2S_IN	I	I2S DATA IN
6	I2S_OUT	O	I2S DATA OUT
7	I2S_WS	I/O	I2S SYNC
8	RESET	I	Low-level reset
13	UART_TX	O	UART_TX
14	UART_RX	I	UART_RX
15	SPDIF_OUT	I/O	SPDIF audio output
16	UART_RTS	I/O	UART flow control pin (default PA)
17	LED0	I/O	Outputs square wave in pairing mode, Outputs high level when Bluetooth is connected
18	LED1	I/O	Outputs low level when BLE is disconnected, Outputs high level when connected
32	GND	GND	GND
33	VDD	VDD	3.3V power supply, LDO power supply is recommended
34	VREG_IN	I	Power on/off pin
36	VDD_IO	I	Pio supply
43	MIC_LP	Au- dio	MIC0/Line_IN differential L input, positive
44	MIC_LN	Au- dio	MIC0/Line_IN differential L input, negative
45	MIC_BIAS	Au- dio	MIC Power Supplies
46	SPK_RN	Au- dio	Headphone/speaker differential R output, negative
47	SPK_RP	Au- dio	Headphone/speaker differential R output, positive
48	SPK_LN	Au- dio	Headphone/speaker differential L output, negative

2.3 Hardware design notes

- The simple test of the module only needs to connect VDD/VDD_IO/VBUS/GND/UART_RX/UART_TX to use
- After drawing, please send it to feasy.com for review so as not to have the best bluetooth distance

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Chapter 3

Functional Notes

3.1 Profiles & Features

- SPP (Serial Port Profile)
- GATTs (Generic Attribute Profile LE-Peripheral)
- GATTC (Generic Attribute Profile LE-Central)
- HFP-HF (Hands-Free Profile)
- HFP-AG (Hands-Free-AG Profile)
- A2DP-SINK (Advanced Audio Distribution Profile, Sink)
- A2DP-SOURCE (Advanced Audio Distribution Profile, Source)
- AVRCP-CONTROLLER (Audio/Video Remote Control Profile, Controller)
- AVRCP-TARGET (Audio/Video Remote Control Profile, Target)
- HID-DEVICE (Human Interface Profile)
- PBAP (Phonebook Access Profile)
- LE-AUDIO (Le Audio Profile)

3.2 GATT Service

Type	UUID	Characteristic	Description
Service	0xFFFF0		Throughout Service
Write	0xFFFF2	Write, Write Without Response	From APP to Module
Notify	0xFFFF1	Notify	From Module to APP

Chapter 4

Command Description

4.1 Terms

Applicable to the entire document.

- {}: Content within {...} is optional.
- «: COMMAND sent from the Host to the Module.
- »: RESPONSE/EVENT replied from the Module to the Host.

4.2 Command Format

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

- All commands start with AT+, end with <CR><LF>
- <CR> means "carriage return", corresponds to hex value 0x0D
- <LF> means "line feed", corresponds to hex value 0x0A
- If command has param, param follows behind =
- If command has multiple params, param must be separated by ,
- If command has response, response starts with <CR><LF>, ends with <CR><LF>
- Module will always report command's execution result by using OK for success or ERROR for failure

Example: Read module's BR/EDR name

« AT+NAME
» +NAME=FSC-BT1058
» OK

Example: Pick up an incoming call when no call incoming actually

« AT+HFPANSW
» ERROR

4.3 Event Format

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

- All events start with <CR><LF>, end with <CR><LF>
- If event has param, param follow behind =
- If event has multiple params, param must be separated by ,

Example: Received "1234567890" from mobile phone via SPP profile

» +SPPDATA=10,1234567890

Chapter 5

Commands table

5.1 General Commands

5.1.1 AT+HELP - List firmware information and all support command

Command	AT+HELP
Response	<COMMAND SUMMARY:DESCRIPTION:PROFILE CATEGORY>

5.1.2 AT+VER - Get firmware version information

Command	AT+VER
Response	+VER=Param1,Param2,Param3
Description	<i>+VER - Frmware version information</i>

5.1.3 AT+BAUD - Get/Set uart baudrate

Command	AT+BAUD{=Param}
Param	9600/ 19200/ 38400/ 57600/ 115200/ 230400/ 460800 500000/ 921600/ 1000000/ 1382400/ 1500000/ 2000000
Response	+BAUD=Param
Param	Current baudrate
Description	It takes effect immediately and does not need to be restarted

5.1.4 AT+MODCFG - Set Device Source-Sink Mode

Command	AT+MODCFG{=Param}
Param	0-Sink mode for audio reception 1-Source mode for audio transmission
Description	<i>+DEVMOD - Device Mode Information</i>

5.1.5 AT+I2SCFG - Get/Set I2S Configuration

Command	AT+I2SCFG{=Param}
Param	A base-10 representation of a bit field, for each bit
Bit [0]	0: Disable 1: Enable
Bit [1]	0: Master mode 1: Slave mode
Bit [2]	0: 48000Hz sampling rate 1: 44100Hz sampling rate
Bit [3]	0: Data left-aligned 1: Data right-aligned
Bit [4]	0: Data delayed by 1 bit 1: No data delay
Bit [6-5]	00: 16-bit sampling depth 01: 24-bit sampling depth
Response	+I2SCFG=Param
Param	Current I2S configuration, formatted as above
Description	Takes effect after restart

5.1.6 AT+SPDIFCFG - SPDIF Format Configuration (Valid for audio sink)

Command	AT+SPDIFCFG{=Param}
Param	0-Disable audio output in SPDIF format 1-Enable audio output in SPDIF format
Description	If audio output is SPDIF, the I2S configuration will be invalid.

5.1.7 AT+SPKVOL - Set Speaker Volume (Valid for audio sink)

Command	AT+SPKVOL{=Param}
Param	Volume ('+' / '-' / 0-15, default:15)
Description	Adjust output volume, Adjust A2DP volume during music playback, Adjust HFP volume during calls, And also support volume adjustment in LEA mode.

5.1.8 AT+MICGAIN - Get/Set input gain (Valid for audio source)

Command	AT+MICGAIN{=Param}
Param	0 ~ 10: Set target value +: Increase gain -: Decrease gain
Response	+MICGAIN=Param
Param	Current input gain
Description	In USB input mode, the param only be +/-, and get the param is invalid In I2S/SPDIF input mode, this command is invalid

5.1.9 AT+REBOOT - Soft reboot

Command	AT+REBOOT
Description	Module will disconnect all profiles then reboot

5.1.10 AT+RESTORE - Restore factory settings

Command	AT+RESTORE
Description	Module restore all factory settings then reboot

5.1.11 AT+BTEN - Get/Set bluetooth state

Command	AT+BTEN{=Param}
Param	0: Bluetooth off 1: Bluetooth on
Response	+BTEN=Param
Param	Current bluetooth state

5.1.12 AT+LECFG - Get/Set random BLE address state

Command	AT+LECFG{=Param}
Param	0: Disable 1: Enable
Response	+LECFG=Param
Param	Current state

5.1.13 AT+PROFILE - Get/Set Bluetooth profile

Command	AT+PROFILE{=Param}
Param	A base-10 representation of a bit field, for each bit:
BIT[0]	SPP (Serial Port Profile)
BIT[1]	GATT Server (Generic Attribute Profile)
BIT[2]	GATT Client (Generic Attribute Profile)
BIT[3]	HFP-HF (Hands-Free Profile Handsfree)
BIT[4]	HFP-AG (Hands-Free Profile Audio Gateway)
BIT[5]	A2DP Sink (Advanced Audio Distribution Profile)
BIT[6]	A2DP Source (Advanced Audio Distribution Profile)
BIT[7]	AVRCP Controller (Audio/Video remote controller Profile)
BIT[8]	AVRCP Target (Audio/Video remote controller Profile)
BIT[9]	HID-DEVICE (Human Interface Device Profile)
BIT[10]	PBAP (Phonebook Access Profile)
BIT[11]	MAP (Message Access Profile)
BIT[12]	LE AUDIO BIS-SINK (Low Energy Audio Broadcast Isochronous Stream Sink)
BIT[13]	LE AUDIO BIS-SOURCE (Low Energy Audio Broadcast Isochronous Stream Source)
BIT[14]	LE AUDIO CIS-SINK (Low Energy Audio Connected Isochronous Stream Sink)
BIT[15]	LE AUDIO CIS-SOURCE (Low Energy Audio Connected Isochronous Stream Source)
Response	+PROFILE=Param
Param	Currently used profiles
Description	Modify the configuration, the module restarts automatically Audio sink uses configurations: SPP, GATTS, HFP-HF, A2DP-SINK, AVRCP, BIS-SINK, LE AUDIO CIS-SINK Audio source uses configurations: SPP, GATTS, GATTC, HFP-AG, A2DP-SOURCE, BIS-SOURCE, LE AUDIO CIS-SOURCE HID, PBAP, MAP are currently reserved and their functions are not yet implemented

5.1.14 AT+AUTOCONN - Get/Set the count of auto-reconnection on power-on

Command	AT+AUTOCONN{=Param}
Param	0: Disable 1 ~ 15: Reconnect times
Response	+AUTOCONN=Param
Param	Current auto reconnect configuration
Description	In Le Audio, the setting will be invalidated

5.1.15 AT+STAT - Get all state

Command	AT+STAT
Response	+STAT=Param1,Param2,Param3,Param4,Param5,Param6,Param7,Param8
Param1	<i>+DEVSTAT - Device state</i>
Param2	<i>+SPPSTAT - SPP state</i>
Param3	<i>+GATTSTAT - GATT state</i>
Param4	<i>+HFPSTAT - HFP state</i>
Param5	<i>+A2DPSTAT - A2DP State</i>
Param6	<i>+AVRCPSTAT - AVRCP state</i>
Param7	<i>+BISSTAT - Le Audio Broadcast state</i>
Param8	<i>+CISSTAT - Le Audio Unicast state</i>

5.1.16 AT+DEVSTAT - Get device state

Command	AT+DEVSTAT
Response	+DEVSTAT=Param
Param	<i>+DEVSTAT - Device state</i>

5.1.17 AT+ADDR - Get BR/EDR MAC address

Command	AT+ADDR
Response	+ADDR=Param
Param	Module's BR/EDR MAC address(12 bytes ASCII)

5.1.18 AT+LEADDR - Get BLE MAC address

Command	AT+LEADDR
Response	+LEADDR=Param
Param	Module's LE MAC address(12 bytes ASCII)

5.1.19 AT+NAME - Get/Set BR/EDR name

Command	AT+NAME{=Param1{,Param2}}
Param1	BR/EDR name
Param2	0: Disable suffix 1: Enable suffix "XXXX" (lower 4 bytes of MAC address) after name
Response	+NAME=Param
Param	BR/EDR name
Description	The configured name shall not exceed 31 bytes in maximum.

5.1.20 AT+LENNAME - Get/Set BLE name

Command	AT+LENNAME{=Param1{,Param2}}
Param1	BLE name
Param2	0: Disable suffix 1: Enable suffix “XXXX” (lower 4 bytes of MAC address) after name
Response	+LENNAME=Param
Param	BLE name
Description	The configured name shall not exceed 31 bytes in maximum.

5.1.21 AT+SSP - Read/Write BR/EDR Pairing Mode (Valid for sink)

Command	AT+SSP{=Param}
Param	Pairing mode (0~2, default:1) (0) Legacy pairing, use pin code for pairing (1) Secure simple pairing, auto pairing (2) Secure simple pairing, display yes/no in pairing
Description	BT1058 features Bluetooth 5.4 + LEA. BT1038 & BT1058 series do not support SSP=0 parameter.
Response	+SSP=Param
Description	Need reboot.

5.1.22 AT+COD - Get/Set class of device

Command	AT+COD=Param
Param	Class of device(6 bytes ASCII)
Response	+COD=Param
Param	Current class of device
Description	Class of device reference COD

5.1.23 AT+PAIR - Get/Set Bluetooth Discoverability

Command	AT+PAIR=Param
Param	0: Exit BR/EDR discoverable mode 1: Enter BR/EDR discoverable mode
Response	+PAIR=Param
Param	Current Bluetooth Discoverability

5.1.24 AT+SCAN - Scan Nearby Devices

Command	AT+SCAN=Param1{,Param2}{,Param3}
Param1	0: Stop scanning 1: Scan BR/EDR devices 2: Scan LE devices 3: Scan Le Audio Broadcast audio
Param2	Scanning time, maximum 255 (Unit: second)
Param3	When Param1 is 2 and 3: 0: LE report format is the same as BR/EDR When Param1 is 2 and 3: 1: LE reports original broadcast data When Param1 is 2 and 3: 2: Only report devices that support Le Audio When Parameter1 is 1: Parameter3 is the filtered scanned device name
Description	<i>+SCAN - Scan result</i>

5.1.25 AT+PLIST - Get/Delete paired list

Command	AT+PLIST{=Param}
Param	0: Clear all paired record 1 ~ 8: Clear specific paired record with index MAC(12 bytes ASCII): Clear specific paired record with MAC address
Response1	+PLIST=Param1, Param2{,Param3}
Param1	Paired device's index
Param2	Paired device's MAC address
Param3	Paired device's name(UTF8)
Response2	+PLIST=E
Description	If param not exist then list all paired devices

5.1.26 AT+DSCA - Release all connections

Command	AT+DSCA
Description	This command only initiates a disconnect request The actual status depends on the query

5.1.27 AT+TPMODE - Get/Set throughput mode

Command	AT+TPMODE{=Param}
Param	0: Disable 1: Enable
Response	+TPMODE=Param
Param	Current throughput mode
Description	When SPP/GATT profile connected and throughput mode is on The command will be de-active, every byte received via physical UART will be sent to air

5.1.28 AT+AUXCFG - Get/Set audio input mode

Command	AT+AUXCFG{=Param}
Param	0: USB 1: Analog 2: SPDIF 3: I2S
Response	+AUXCFG=Param
Param	Current audio input mode
Description	It takes effect after the restart In le audio only support usb and analog

5.1.29 AT+LINKKEY - Get remote device link key

Command	AT+LINKKEY=Param
Param	MAC address of target device(12 bytes ASCII)
Response	+LINKKEY=Param1,Param2
Param1	MAC address of target device(12 bytes ASCII)
Param2	Target device's link key(32 bytes ASCII)

5.1.30 AT+RSSI - Get remote device rssi

Command	AT+RSSI=Param
Param	MAC address of target device(12 bytes ASCII)
Response	+RSSI=Param1,Param2
Param1	MAC address of target device(12 bytes ASCII)
Param2	Target device's RSSI
Description	If 0 is response, the acquisition failed

5.1.31 AT+LINKCFG - Get/Set Auto Scan and Connection (Valid for source)

Command	AT+LINKCFG{=Param1{,Param2}}
Param1	0: Disable 1: Enable
Param2	0: Scan all devices 1: Only scan devices with audio as the primary service

5.1.32 AT+AUDMODE - Get/Set Bluetooth Audio Mode (Valid for source)

Command	AT+AUDMODE{=Param}
Param	0: BR/EDR mode 1: Le Audio Broadcast mode 2: Le Audio Unicast mode
Description	Change this setting module will reboot

5.1.33 AT+PRINT - Get/Set report mode

Command	AT+PRINT{=Param}
Param	0: Disable 1: Enable
Description	On/Off module actively report a message

5.1.34 AT+MICMUTE - Mute MIC (Valid for sink)

Command	AT+MICMUTE=Param
Param	0-Unmute 1-Mute
Description	Mute the local mic during a call

5.1.35 AT+SPKMUTE - Mute Speaker (Valid for sink)

Command	AT+SPKMUTE=Param
Param	0-Unmute 1-Mute

5.2 HFP Commands

5.2.1 AT+HFPSTAT - Get HFP state

Command	AT+HFPSTAT
Response	+HFPSTAT=Param
Param	<i>+HFPSTAT - HFP state</i>

5.2.2 AT+HFPCONN - Establish HFP connection

Command	AT+HFPCONN{=Param}
Param	MAC address of target device(12 bytes ASCII)
Description	Reconnect to last HFP device if param not exist

5.2.3 AT+HFPPDISC - Release HFP connection

Command	AT+HFPPDISC
Description	This command only initiates a disconnect request The actual status depends on the query

5.2.4 AT+HFPRING - Simulate incoming call (Valid for source)

Command	AT+HFPRING{=Param}
Param	Phone number(ASCII)
Description	The phone number contains a maximum of 15 bytes Dial specific number if parameter exist, otherwise redial

5.2.5 AT+HFPANSW - Pick up incoming call

Command	AT+HFPANSW
---------	------------

5.2.6 AT+HFPCHUP - Reject/Hung up call

Command	AT+HFPCHUP
---------	------------

5.2.7 AT+HFPAUDIO - Establish/Release voice audio(Valid for source)

Command	AT+HFPAUDIO=Param
Param	0: Release voice audio connection with remote hfp sink device 1: Establish voice audio connection with remote hfp sink device

5.2.8 AT+HFPWBS - Get/Set HFP codec negotiation(Valid for source)

Command	AT+HFPWBS{=Param}
Param	0: Disable HFP codec negotiation 1: Enable HFP codec negotiation
Response	+HFPWBS=Param
Param	Current state

5.2.9 AT+HFPNREC - Get/Set HFP CVC

Command	AT+HFPNREC{=Param}
Param	0: Disable HFP CVC 1: Enable HFP CVC
Response	+HFPNREC=Param
Param	Current state

5.2.10 AT+HFPDIAL - Redial/Dial Phone Number (Valid for sink)

Command	AT+HFPDIAL{=Param}
Param	Phone number (1~25 Bytes ASCII)
Description	If the parameter exists, dial the specified number, otherwise, redial.

Example: Redial

« AT+HFPDIAL

» OK

Example: Dial the number "075527924639"

« AT+HFPDIAL=075527924639

» OK

5.2.11 AT+HFPDTMF - Send DTMF (Valid for sink)

Command	AT+HFPDTMF{=Param}
Param	DTMF (0~9/#/*)

Example: Send DTMF ”#” during a call

« AT+HFPDTMF=#

» OK

5.2.12 AT+HFPADTS - Voice Switch (Valid for sink)

Command	AT+HFPADTS=Param
Param	0: Transfer voice audio from the module to the remote device 1: Transfer voice audio from the remote device to the module
Description	If the parameter is omitted, switch alternately

5.2.13 AT+HFPVR - Start/Stop Voice Recognition of Remote Device (Valid for sink)

Command	AT+HFPVR=Param
Param	0-Stop 1-Start
Description	Start/Stop voice recognition of the remote device (e.g., Siri on iOS devices)

5.2.14 AT+HFPSCO - SCO Configuration (Valid for sink)

Command	AT+HFPSCO=Param
Param	0-default 1-always to HF 2-always to AG

5.2.15 AT+HFPBATT - Send Device Battery Level (Valid for sink)

Command	AT+HFPBATT=Param
Param	level(0-9)

5.3 A2DP/AVRCP Commands

5.3.1 AT+A2DPSTAT - Get A2DP state

Command	AT+A2DPSTAT
Response	+A2DPSTAT=Param
Param	<i>+A2DPSTAT - A2DP State</i>

5.3.2 AT+A2DPCONN - Establish A2DP connection

Command	AT+A2DPCONN{=Param}
Param	MAC address of target device(12 bytes ASCII)
Description	Reconnect to last A2DP device if parameter not exist

5.3.3 AT+A2DPDISC - Release A2DP connection

Command	AT+A2DPDISC
Description	This command only initiates a disconnect request The actual status depends on the query

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5.3.4 AT+A2DPCFG - Get/Set A2DP configuration

Command	AT+A2DPCFG{=Param}
Param	A base-10 representation of a bit field, for each bit
BIT[0]	0: Disable AAC 1: Enable AAC
BIT[1]	0: Disable APTX 1: Enable APTX
BIT[2]	0: Disable APTX-LL 1: Enable APTX-LL
BIT[3]	0: Disable APTX-HD 1: Enable APTX-HD
BIT[4]	0: Disable APTX-AD 1: Enable APTX-AD
BIT[5]	0: Disable LDAC 1: Enable LDAC
Response	Current A2DP configuration
Description	BT1058 only support AAC,SBC,APTX, APTX-AD, APTX-HD,LDAC Audio sink supports decoding, while the source does not support encoding

5.3.5 AT+A2DPENC - Get the current encoding method used by A2DP (Valid for source)

Command	AT+A2DPENC
Response	+A2DPENC=Param
Param	<i>+A2DPENC - A2DP Encoder</i>

5.3.6 AT+A2DPDEC - Read A2DP decoding (Valid for sink)

Command	AT+A2DPDEC
Response	+A2DPDEC=Param
Parameter	1:SBC 2:AAC 3:LDAC 4:APTX 5:APTX-HD 6:APTX-AD

5.3.7 AT+A2DPRES - Set Resampling Enable (Valid for sink)

Command	AT+A2DPRES
Response	+A2DPRES=Param
Param	0:Disable resampling 1:Enable resampling
Description	This command is used to set the I2S audio output to fix LRCLK at 44.1K or 48K output Enabled by default

5.3.8 AT+A2DPAUDIO - Establish/Release A2DP audio connection(Valid for source)

Command	AT+A2DPAUDIO=Param
Param	0: Release A2DP audio connection with remote a2dp sink device 1: Establish A2DP audio connection with remote a2dp sink device

5.3.9 AT+AVRCPSTAT - Get AVRCP state

Command	AT+AVRCPSTAT
Response	+AVRCPSTAT=Param
Param	<i>+AVRCPSTAT - AVRCP state</i>

5.3.10 AT+AVRCPCONN - Establish AVRCP connection

Command	AT+AVRCPCONN{=Param}
Param	MAC address of target device(12 bytes ASCII)
Description	Reconnect to last device if parameter not exist

5.3.11 AT+AVRCPDISC - Release AVRCP connection

Command	AT+AVRCPDISC
Description	This command only initiates a disconnect request The actual status depends on the query

5.3.12 AT+AVRCPCFG - Get/Set AVRCP Configuration (Valid for sink)

Command	AT+AVRCPCFG{=Param}
Parameter	Represented as a decimal bit field, default:9, each bit indicates:
BIT[0]	Automatically obtain music ID3 information (Title, Artist, Album). Default:1
BIT[1-4]	If greater than 0, automatically obtain music status (playback progress). Default:5(second)
BIT[5]	Enable volume synchronization setting. Default:1

Example: Get AVRCP Configuration

« AT+AVRCPCFG

» +AVRCPCFG=1

OK

Example: Set to report playback progress every 1 second

« AT+AVRCPCFG=3

» OK

5.3.13 AT+PLAYPAUSE - Play/Pause (Valid for sink)

Command	AT+PLAYPAUSE
Description	Send play or pause command to the remote media player according to the current playback status

5.3.14 AT+PLAY - Play (Valid for sink)

Command	AT+PLAY
Description	Send play command to the remote media player

5.3.15 AT+PAUSE - Pause (Valid for sink)

Command	AT+PAUSE
Description	Send pause command to the remote media player

5.3.16 AT+FORWARD - Next Track (Valid for sink)

Command	AT+FORWARD
Description	Send next track command to the remote media player

5.3.17 AT+BACKWARD - Previous Track (Valid for sink)

Command	AT+BACKWARD
Description	Send previous track command to the remote media player

5.3.18 AT+FFWD - Fast Forward (Valid for sink)

Command	AT+FFWD=Param
Param	0-Send release fast forward command 1-Send press fast forward command
Description	Send fast forward command to the remote media player

5.3.19 AT+RWD - Rewind (Valid for sink)

Command	AT+RWD=Param
Param	0-Send release rewind command 1-Send press rewind command
Description	Send rewind command to the remote media player

5.4 GATT Commands

5.4.1 AT+GATTSTAT - Get GATT state

Command	AT+GATTSTAT
Response	+GATTSTAT=Param
Param	<i>+GATTSTAT - GATT state</i>

5.4.2 AT+GATTSEND - Send data via GATT

Command	AT+GATTSEND=Param1,Param2
Param1	Payload length(1 ~ 236)
Param2	Payload(1~236 bytes)
Description	If throughput mode is on, this command is de-active

5.5 SPP Commands

5.5.1 AT+SPPSTAT - Get SPP state

Command	AT+SPPSTAT
Response	+SPPSTAT=Param
Param	<i>+SPPSTAT - SPP state</i>

5.5.2 AT+SPPDISC - Release SPP connection

Command	AT+SPPDISC
Description	This command only initiates a disconnect request The actual status depends on the query

5.5.3 AT+SPPSEND - Send data via SPP

Command	AT+SPPSEND=Param1,Param2
Param1	Payload length(1 ~ 236)
Param2	Payload(1~236 bytes)
Description	If throughput mode is on, this command is de-active

5.6 LE Audio Commands

5.6.1 AT+BISSTAT - Get Le Audio state

Command	AT+BISSTAT
Response	+BISSTAT=Param
Param	<i>+BISSTAT - Le Audio Broadcast state</i>

5.6.2 AT+BISADD - BIS Add Synchronized Broadcast Source (Valid for sink)

Command	AT+BISADD=Param1,Param2
Param1	Broadcast advertising_sid
Param2	Broadcast broadcast_id

Example: Add the synchronized and discovered BIS broadcast source via

AT+BISADD=15,62640

+BISADD=15,62640

OK

5.6.3 AT+BISREMOVE - BIS Remove Added Synchronized Broadcast Source (Valid for sink)

Command	AT+BISREMOVE
Param	NULL (No parameter)

5.6.4 AT+BISPLAY - BIS Play (Valid for sink)

Command	AT+BISPLAY=Param
Param	NULL (No parameter)

5.6.5 AT+BISPAUSE - BIS Pause (Valid for sink)

Command	AT+BISPAUSE=Param
Param	NULL (No parameter)

5.6.6 AT+CISDISC - Release Le Audio Unicast connection

Command	AT+CISDISC
Description	This command only initiates a disconnect request The actual status depends on the query Only In Le Audio unicast mode support

5.6.7 AT+CISCONN - Establish Le Audio Unicast connection

Command	AT+CISCONN=Param1,Param2
Param1	Address type 0:public address 1:random address
Param2	MAC address of target device(12 bytes ASCII)
Description	Only In Le Audio Unicast mode support

Chapter 6

Events table

6.1 General Events

6.1.1 +VER - Frmware version information

Event	+VER=Param1,Param2,Param3
Param1	Module type
Param2	Firmware version
Param3	Firmware compile time

6.1.2 +DEVMOD - Device Mode Information

Event	+DEVMOD=Param
Param	Sick: Audio Reception Source: Audio Transmission

6.1.3 +DEVSTAT - Device state

Event	+DEVSTAT=Param
Param	A base-10 representation of a bit field, for each bit:
BIT[0]	0: Power off 1: Power on
BIT[1]	0: BR/EDR not discoverable 1: BR/EDR discoverable
BIT[2]	0: BLE not advertising 1: BLE advertising
BIT[3]	0: BR/EDR not scanning 1: BR/EDR scanning
BIT[4]	0: BLE not scanning 1: BLE scanning

6.1.4 +SCAN - Scan result

Event1	+SCAN =Param1,Param2,Param3,Param4,Param5{,Param6{,Param7}}
Param1	Index
Param2	0: LE public address 1: LE random address 2: BR/EDR address
Param3	MAC address(12 bytes ASCII)
Param4	RSSI(-127 ~ -1)
Param5	Size of Param6 if exist
Param6	Device name for BR/EDR devices or advertising data for LE devices
Param7	Class of device
Event2	+SCAN=E
Description	Scan finish

6.1.5 +BIS - Broadcast Source Scan Result

Event 1	+BIS =Param1,Param2,Param3, Param4,Param5{,Param6}
Param1	Sequence number
Param2	Signal strength
Param3	Broadcast SID
Param4	Broadcast Broadcast
Param5	Broadcast address
Param6	Device name/Broadcast data
Event 2	+SCAN=E
Description	Scan completed

6.1.6 +PAIRED - Pair result

Event	+PAIRED=Param
Param	MAC address(12 bytes ASCII) of current pairing device

6.1.7 +I2SSR - I2S sample rate

Event	+I2SSR=Param
Param	I2S sample rate

6.2 HFP Events

6.2.1 +HFPSTAT - HFP state

Event	+HFPSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected 4: Outgoing call 5: Incoming call 6: Active call

6.2.2 +HFPDEV - HFP remote device information

Event	+HFPDEV=Param1{,Param2}
Param1	Remote MAC address(12 bytes ASCII) of current HFP connection
Param2	Remote device name(UTF8) of current HFP connection

6.2.3 +HFPCID - Incoming/Outgoing Call Phone Number

Event	+HFPCID=Param
Param	(1~25 Bytes ASCII), Phone number

Example: Dial 10086

« AT+HFPDIAL=10086

» +HFPSTAT=4

» +HFPCID=10086

» +HFPCIE=China Mobile

» +HFPAUDIO=1

Example: Incoming call number 13265463800

» +HFPSTAT=5

» +HFPCID=13265463800

» +HFPCIE=Jerry

» +HFPAUDIO=1

6.2.4 +HFPCIE - Incoming/Outgoing Call Name

Event	+HFPCIE=Param
Param	(UTF8), Phone name
Description	This event is supported by Apple phones, while most Android phones do not support it

6.2.5 +HFPCONN - HFP connecting

Event	+HFPCONN=Param
Param	Remote MAC address(12 bytes ASCII) of current HFP connecting

6.2.6 +HFPAUDIO - HFP voice audio State

Event	+HFPAUDIO=Param
Param	0: HFP voice audio disconnected, audio input/output routed to remote device 1: HFP voice audio connected, audio input/output routed to module

6.2.7 +HFPSIG - HFP Remote Device Network Signal Strength

Event	+HFPSIG=Param
Param	(0~5) Network signal strength of the remote device

6.2.8 +HFPROAM - HFP Remote Device Roaming Status

Event	+HFPROAM=Param
Param	(0/1) Roaming status of the remote device

6.2.9 +HFPBATT - HFP Remote Device Battery Level

Event	+HFPBATT=Param
Param	(0~5) Battery level of the remote device

6.2.10 +HFPNET - HFP Remote Device Network Operator

Event	+HFPNET=Param
Param	(UTF8) Network operator selection of the remote device

6.2.11 +HFPMANU - HFP Remote Device Manufacturer

Event	+HFPMANU=Param
Param	(UTF8) Remote device manufacturer

6.2.12 +HFPIBR - HFP Remote Device Supports Incoming Call Ringtone

Event	+HFPIBR=Param
Param	0-Not supported 1-Supported
Description	Indicates whether the currently connected mobile phone supports incoming call ringtones

6.2.13 +HFPPNUM - HFP Remote Device Own Phone Number

Event	+HFPPNUM=Param
Param	(ASCII) Own phone number of the remote device

6.2.14 +HFPPSR - HFP sample rate

Event	+HFPPSR=Param
Param	Sample rate

6.2.15 +HFPHUNG - HFP remote device reject an incoming call or end an ongoing call

Event	+HFPHUNG
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6.2.16 +HFPVGS - HFP remote device speaker gain

Event	+HFPVGS=Param
Param	Remote device speaker gain

6.2.17 +HFPVGM - HFP remote device microphone gain

Event	+HFPVGM=Param
Param	Remote device microphone gain

6.3 A2DP/AVRCP Events

6.3.1 +A2DPSTAT - A2DP State

Event	+A2DPSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected 4: Streaming 5: Paused

6.3.2 +A2DPENC - A2DP Encoder

Event	+A2DPENC=Param
Param	1:SBC 2:APTX 3:APTX-HD 4:APTX-AD

6.3.3 +A2DPDEV - A2DP remote device information

Event	+A2DPDEV=Param1{,Param2}
Param1	Remote device's MAC address(12 bytes ASCII) of current A2DP connection
Param2	Remote device's name(UTF8) of current A2DP connection

6.3.4 +A2DPCONN - A2DP connecting

Event	+A2DPCONN=Param
Param	Remote MAC address(12 bytes ASCII) of current A2DP connecting

6.3.5 +A2DPSR - A2DP codec sample rate

Event	+A2DPSR=Param
Param	A2DP codec sample rate

6.3.6 +AVRCPSTAT - AVRCP state

Event	+AVRCPSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected

6.3.7 +PLAYSTAT - Media Player Playback Status

Event	+PLAYSTAT=Param
Param	(0) Stopped (1) Playing (2) Paused (3) Fast Forwarding (4) Fast Rewinding

6.3.8 +TRACKSTAT - Media Player Playback Progress

Event	+TRACKSTAT=Param1,Param2,Param3
Param1	(0~4), Media player status
Param2	(Decimal ASCII), Current music playback time (milliseconds)
Param3	(Decimal ASCII), Total duration of the current music (milliseconds)

6.3.9 +TRACKINFO - Media Music Information

Event	+TRACKINFO=Param1,Param2,Param3
Param1	Title
Param2	Artist
Param3	Album

Example: Mobile phone plays the song "Creep-Radio Head"

» +TRACKINFO=Creep , Radiohead , Pablo Honey

6.3.10 +AVRCPCONN - AVRCP connecting

Event	+AVRCPCONN=Param
Param	Remote MAC address(12 bytes ASCII) of current AVRCP connecting

6.3.11 +SPKVOL - Remote spker volume change

Event	+SPKVOL=Param
Param	Remote spker volume

6.3.12 +CTVOLUP - volume up

Event	+CTVOLUP
Description	Receive volume up command

6.3.13 +CTVOLDN - volume down

Event	+CTVOLDN
Description	Receive volume down command

6.3.14 +CTPLAY - Track play

Event	+CTPLAY
Description	Receive play command

6.3.15 +CTPAUSE - Track pause

Event	+CTPAUSE
Description	Receive pause command

6.3.16 +CTSTOP - Track stop

Event	+CTSTOP
Description	Receive stop command

6.3.17 +CTFWD - Track forward

Event	+CTFWD
Description	Receive forward command

6.3.18 +CTBACK - Track backward

Event	+CTBACK
Description	Receive backward command

6.4 LE Audio Events

6.4.1 +BISSTAT - Le Audio Broadcast state

Event	+BISSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected 4: Streaming 5: Pause

6.4.2 +CISSTAT - Le Audio Unicast state

Event	+CISSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected 4: Streaming 5: Pause

6.4.3 +LEASR - LE Audio sample rate

Event	+LEASR=Param
Param	Sample rate

6.5 GATT Events

6.5.1 +GATTSTAT - GATT state

Event	+GATTSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected

6.5.2 +GATTDATA - GATT received incoming data

Event	+GATTDATA=Param1,Param2
Param1	Payload length
Param2	Payload

6.6 SPP Events

6.6.1 +SPPSTAT - SPP state

Event	+SPPSTAT=Param
Param	0: Unsupported 1: Standby 2: Connecting 3: Connected

6.6.2 +SPPDATA - SPP received incoming data

Event	+SPPDATA=Param1,Param2
Param1	Payload length
Param2	Payload

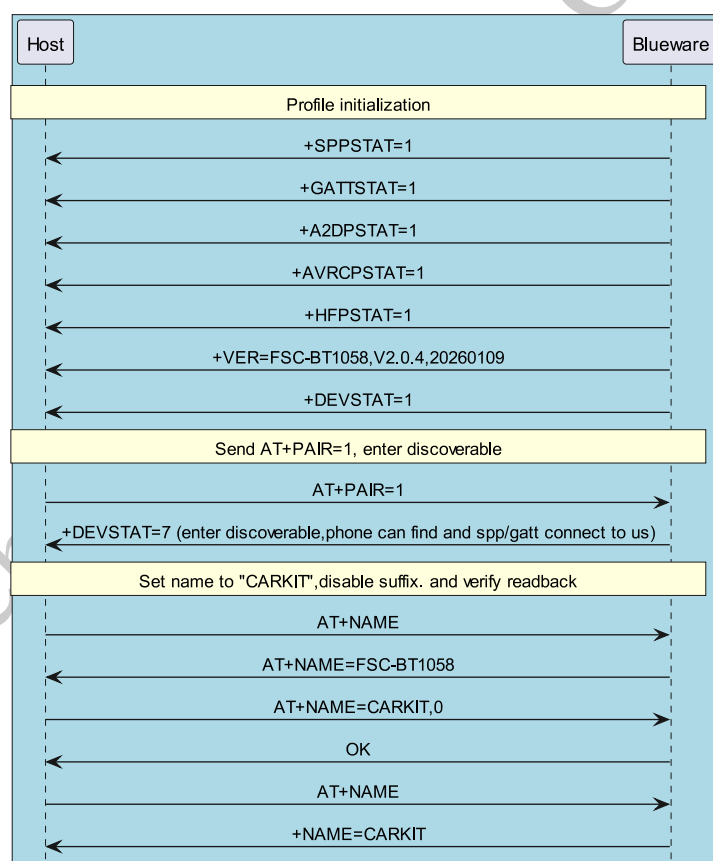
6.6.3 +SPPDEV - SPP remote device information

Event	+SPPDEV=Param1
Param1	Remote device's MAC address(12 bytes ASCII) of current SPP connection

Chapter 7

Application Scenarios

7.1 Profile Initialization and Set Device Name



MCU change device name CARKIT reference code:

```
1 void change_name(void)
2 {
```

(续下页)

(接上页)

```

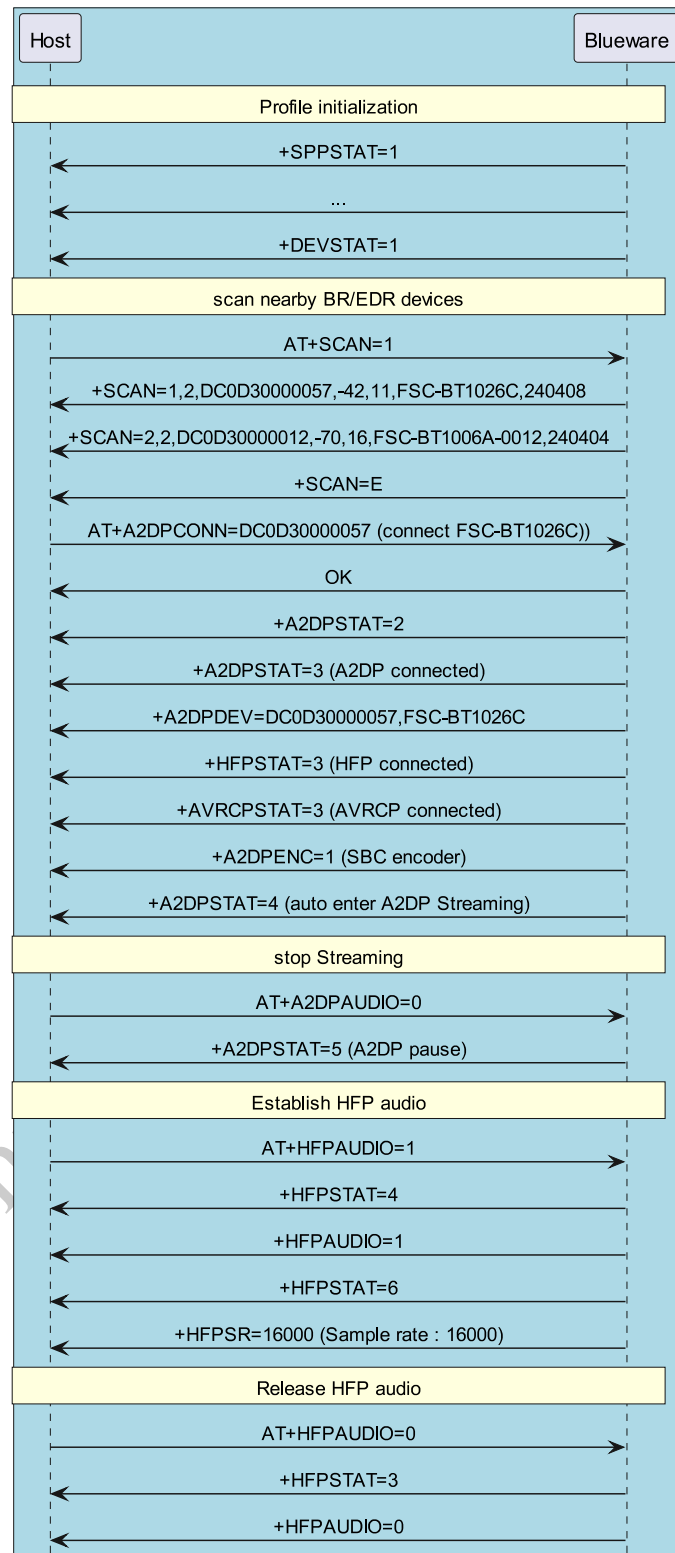
3  uart_send("AT+NAME\r\n");
4  if(uart_read("+NAME",name_buf))
5  {
6      if(memcmp(name_buf,"CARKIT",6))
7      {
8          uart_send("AT+NAME=CARKIT,0\r\n"); // disable MAC address_
↪suffix
9          uart_send("AT+NAME\r\n"); // read bt name
10         if(uart_read("+NAME",name_buf))
11         {
12             if(memcmp(name_buf,"CARKIT",6))
13             {
14                 //change name fail
15             }
16             else
17             {
18                 //change name success
19             }
20         }
21     }
22 }
23 }

```

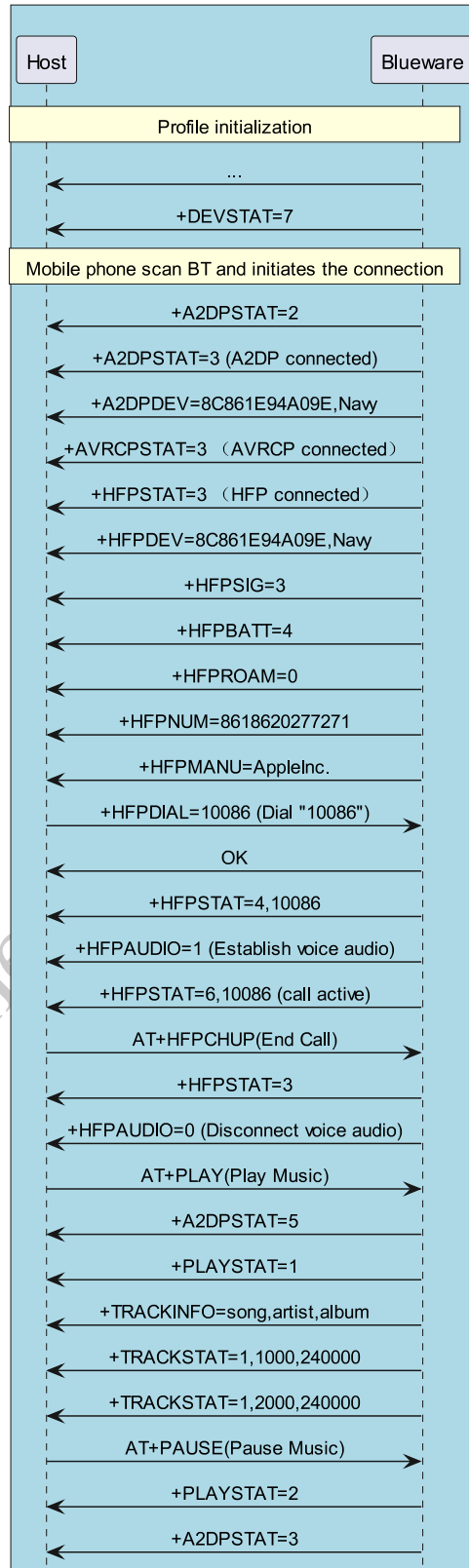
i 备注

modify any parameters, it is recommended to query first and then modify the final verification

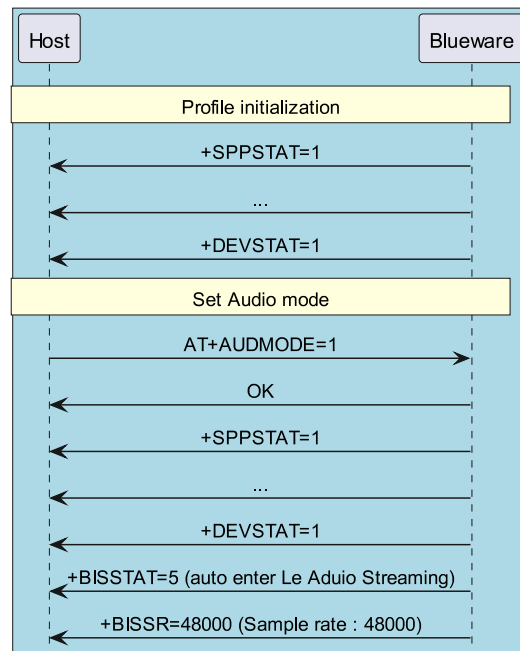
7.2 A2DP/HFP Examples (Valid for audio source)



7.3 BR/EDR Bluetooth Receive Mode Connection (Valid for audio sink)



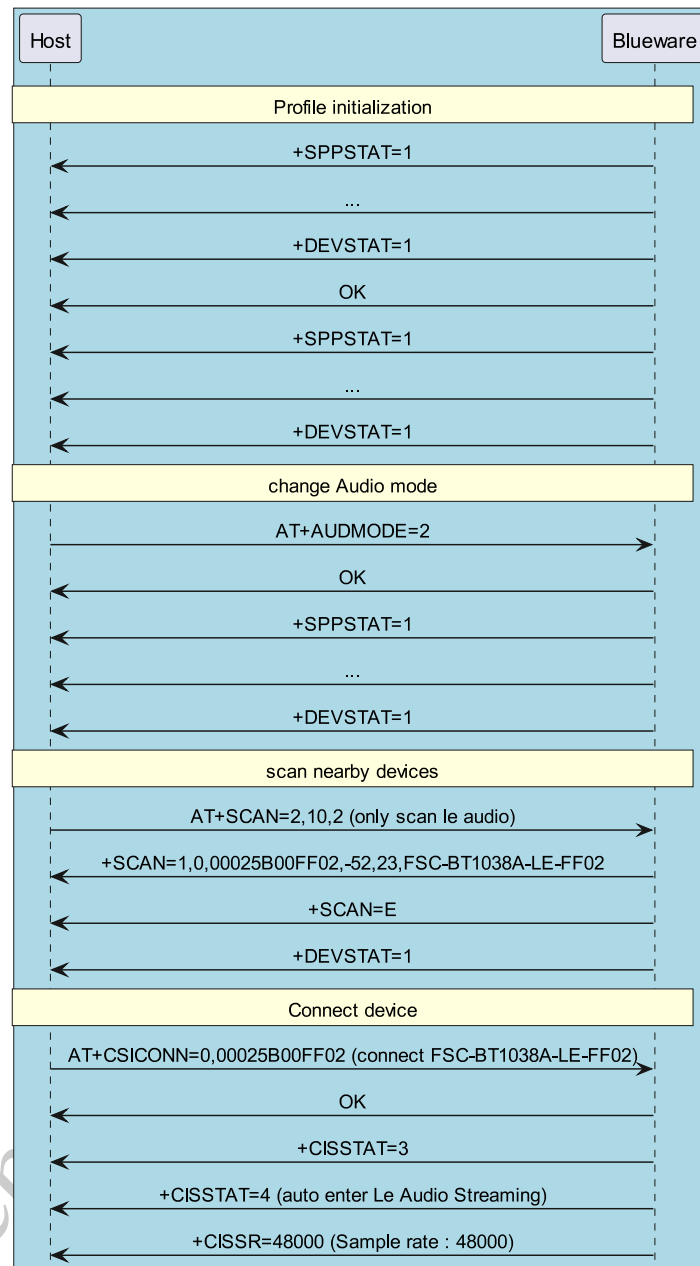
7.4 Le Audio Broadcast Mode(Valid for audio source)



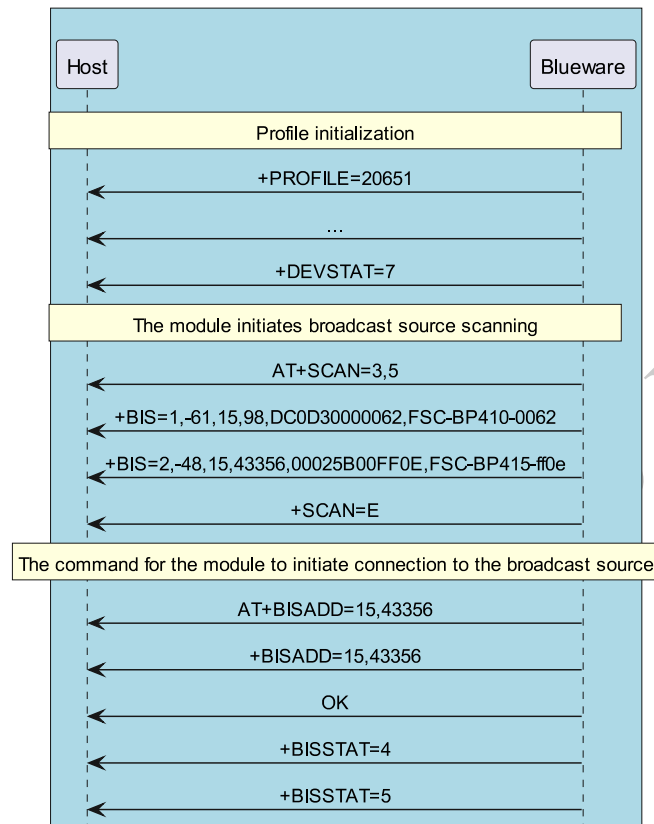
备注

Now scan broadcast data using other sink devices that support le audio, such as FSC-BT1038A

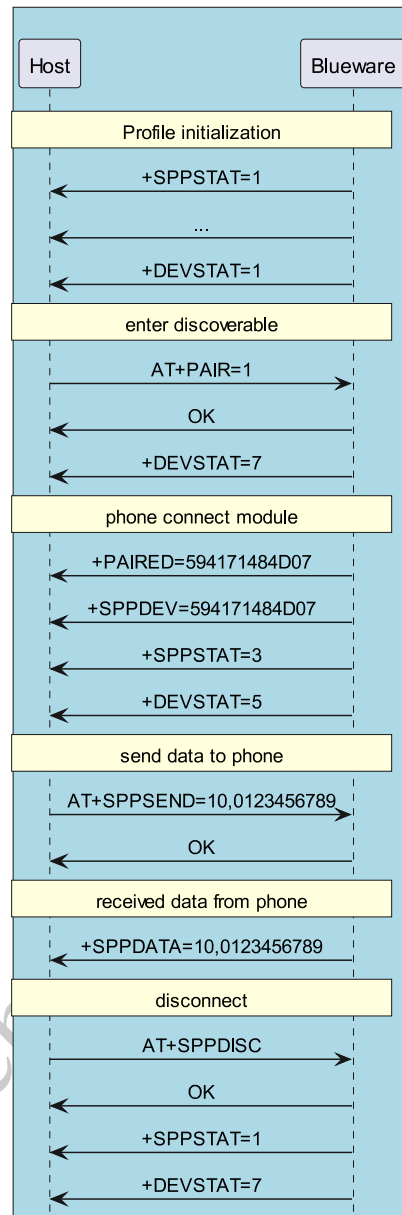
7.5 Le Audio Unicast Mode(Valid for audio source)



7.6 LE Audio Broadcast Scan and Connect(Valid for audio sink)



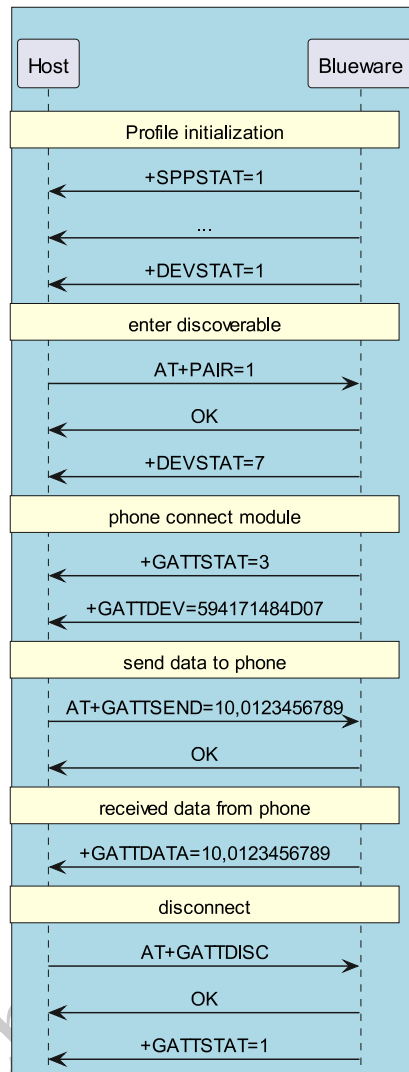
7.7 SPP Data Transfer



备注

SPP connect is not supported iphone

7.8 GATT Data Transfer



Chapter 8

Contact Information

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Chapter 9

Appendix

9.1 PDF Download

PDF Download

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