



FSC-BT986 Programming User Guide

Release 1.0.0

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Chapter 1

Introduction

1.1 Description

This instruction manual is provided for engineers to develop FSC-BT986 series Bluetooth modules, which are also suitable for BT982 and BT981 series modules

1.2 Module default configuration

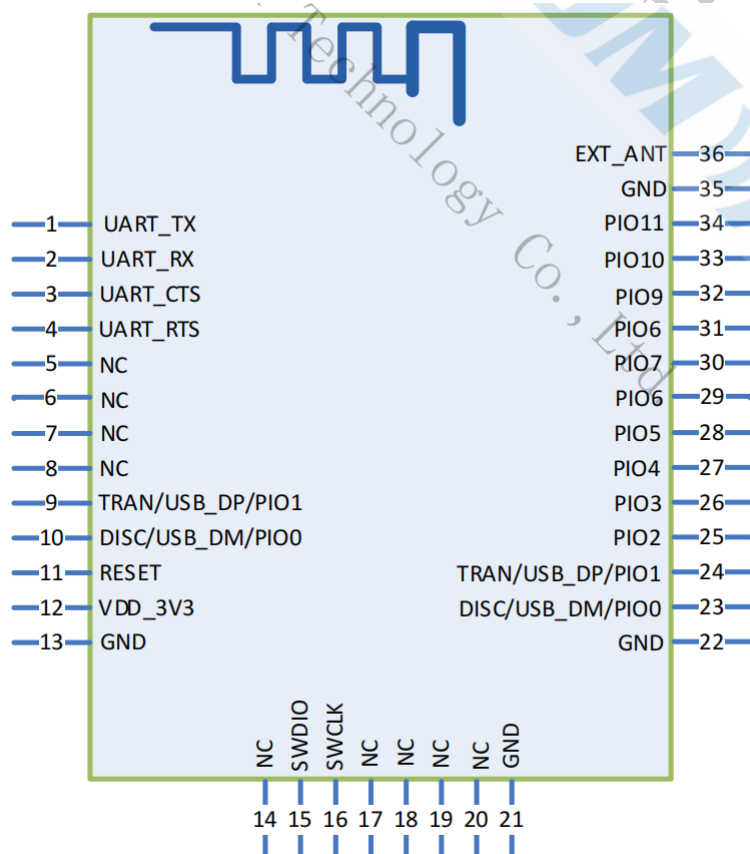
Name	FSC-BT986
LE-Name	FSC-BT986-LE
Pin Code	0000
Secure Simple Pairing Mode	On
Service UUID	FFF0
Write UUID	FFF2
Notify UUID	FFF1
UART Baudrate	115200/8/N/1

Chapter 2

Hardware Interface

2.1 Application Schematic

FSC-BT986 for example:



2.2 PIN Definition Descriptions

Pin	Pin Name	Type	Pin Descriptions
1	UART_TX	O	Serial Transmitter Data
2	UART_RX	I	Serial Receiver Data
3	UART_CTS	I/O	UART Clear to Send(no connection request)
4	UART_RTS	I/O	UART Request to Send(no connection request)
24	Tran/USB_DP/P1001	I/O	UART mode control pin, H=command mode ,L=throughput mode
23	Disc/USB_DM/P1000	I/O	Disconnect the connecting pin
11	RESET	I	Active-low reset input
12	VDD	Power	Power supply voltage 3.3V, LDO power supply preferred
13	GND	GND	GND
15	ICE	I/O	Writing firmware pin
32	LED	O	Bluetooth not connected to output square wave, Bluetooth connected to output high level
33	STATUS	O	Connection state, output. H=Connected , L=No connection
36	EXT_ANT	ANT	Changing the 0 ohm resistance near the antenna, it is possible to connect a Bluetooth antenna externally

Note: To use the 23 and 24 pin control modules *AT+PIOCFG* command is required to enable the function

2.3 Physical Interface

- The module only needs to be connected to VDD/GND/UART_RX/UART_TX ready to use.
- If the MCU needs to obtain the connection status of the Bluetooth module, it needs to be connected to the STATUS pin.
- After drawing the schematic diagram, please send it to Feasycom for review to avoid Bluetooth distance not achieving the best effect.

Chapter 3

Function Description

3.1 GPIO Indications

Connection status PIN 24

State	Description
Low level	Throughput mode
High level	AT command mode

Connection status PIN 23

State	Description
Low level	/
High level	disconnected

LED PIN 32

State	Description
1Hz square wave	disconnected
High level	connected

Connection status PIN 33

State	Description
Low level	disconnected
High level	connected

3.2 Working mode

Throughput mode	Bluetooth is not connected, and the data received by the serial port is parsed according to AT instructions; After Bluetooth connection, all data received from the serial port is sent to the remote Bluetooth as is.
AT command mode	Bluetooth is not connected, and the data received by the serial port is parsed according to AT instructions; After Bluetooth connection, the data received by the serial port is still parsed according to the AT command. When sending data to the remote end, send the AT+SPPSEND command.

3.3 GATT Throughput Service

Type	UUID	Service	Description
Service	0xFFFF0		Transparent transmission service
Write	0xFFFF2	Write, Write Without Response	APP sent to module
Notify	0xFFFF1	Notify	Module sent to APP

Chapter 4

AT Command Description

4.1 Specification Description

Applicable to the entire document

- {} : Including content in {...} is optional
- << : **COMMAND** sent by the host to the module
- >> : Module responds to the host' s****RESPONSE****

4.2 Command

Command are control commands that the host actively sends to the module, and the module needs to reply <CR><LF>**OK**<CR><LF> as a response after receiving the instructions.

4.3 Command Format

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

- All instructions start with****AT****, and end with****<CR><LF>****
- <CR> represents carriage return, corresponding to HEX as 0x0D
- <LF> represents a line break, corresponding to HEX as 0x0A

- If the instruction contains parameters, the parameters should be separated by ****=****
- If the instruction contains multiple parameters, the parameters should be separated by ****,****
- If the instruction returns a response, the response starts with **<CR><LF>**, ends with ****<CR><LF>****
- The module should always return the result of instruction execution (success returns **OK**, failure returns **ERROR**)

Example:

Read module Bluetooth name

<< AT+VER

>> +VER=1.0.0,FSC-BT986

>> OK

Write unsupported baud rate

<< AT+BAUD=0

>> ERROR

4.4 Indication

Notification is the data that the module actively sends to the host. Generally used to indicate changes in status or received data.

4.5 Indication

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

- All notifications start with **<CR><LF>**, and end with **<CR><LF>**
- If the notification contains parameters, the parameters should be placed after **'='**

- If the notification contains multiple parameters, the parameters should be separated by ‘,’

Example:

Return to current connection status in command mode

>> +SPPSTAT=3

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Chapter 5

Command Table

5.1 General Commands

5.1.1 AT+HELP - Query firmware functions and command

Command	AT+HELP
Response	<MODULE DEFAULT PARAMETER> <COMMAND SUMMARY: DESCRIPTION: PROFILE CATEGORY>
Description	Using the help command to obtain basic summary information

Note: If you need to upgrade to the latest version, please refer to [OTA instructions](#)

5.1.2 AT - UART Communication Test

Command	AT
Response	OK
Description	Test the UART communication between HOST and Module after power on, baudrate changed, etc.

Example:

<< AT

>> OK

5.1.3 AT+REBOOT - Soft Reboot

Command	AT+REBOOT
Response	OK
Description	Module release all Bluetooth connections with remote device then re-boot.

Example:

<< AT+REBOOT

>> OK

5.1.4 AT+RESTORE - Restore Factory Settings

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

Example:

<< AT+RESTORE

>> OK

5.1.5 AT+BTEN - Disable/Enable Module

Command	AT+BTEN{=Param1}
Param	Disable/Enable Module(0/1,default:0) 0: Bluetooth disable 1: Bluetooth enable
Response	+BTEN=Param
Description	Disable/Enable Module

5.1.6 AT+NAME - Read/Write BR/EDR Local Name

Command	AT+NAME{=Param1{,Param2}}
Param1	BR/EDR Local Name(1~31 Bytes ASCII)
Param2	Enable MAC address suffix (0~2,default:0) 0: Disable suffix 1: Enable suffix "-XXXX" (lower 4 bytes of MAC address) 2: Enable suffix "-XXXX" (lower 6 bytes of MAC address)
Response	+NAME=Param
Param	BR/EDR local name
Description	Write local name if parameter existence, otherwise read current local name

Example:

Read current BR/EDR local name

```
<< AT+NAME
```

```
>> +NAME=FSC-BT986-XXXX
```

```
>> OK
```

Change module' s BR/EDR local name and disable suffix

```
<< AT+NAME=ABC,0
```

```
>> OK
```

Change module' s BR/EDR local name to “ABC” and enable suffix

```
<< AT+NAME=ABC,1
```

```
>> OK
```

5.1.7 AT+LENAM - Read/Write BLE Local Name

Command	AT+LENAM{=Param1{,Param2}}
Param1	BLE local name(1~31 Bytes ASCII)
Param2	MAC address suffix(0~2,default:0) 0: Disable suffix 1: Disable suffix “-XXXX” (lower 4 bytes of MAC address after local name) 2: Enable suffix “-XXXX” (lower 6 bytes of MAC address after local name)
Response	+LENAM=Param
Param	BLE local name
Description	Write local BLE local name if parameter existence, otherwise read current local name

5.1.8 AT+PIN - Read/Write Pin Code

Command	AT+PIN{=Param}
Param	Pin code(4~15 Bytes ASCII, default:0000)
Response	+PIN=Param
Description	When+SSP=0, the pairing password is valid

Example:

Read module' s pin code

<< AT+PIN

>> +PIN=0000

>> OK

Change module' s pin code to '1234'

<< AT+PIN=1234

>> OK

5.1.9 AT+PLIST - Read/Clear Paired Record

Command	AT+PLIST{=Param}
Param	(0 / 1~8) (0) Clear all paired record (1~8) Clear specific paired record with index
Response1	+PLIST=Param1, Param2
Param1	(1~8) Paired device' s index
Param2	(MAC) Paired device' s MAC address
Response2	+PLIST= Pairing record query completed

Example:Read module' s paired record

<< AT+PLIST

>> +PLIST=1,1C5CF226D773

+PLIST=2,A0BC30075421

>> OK

Example:Clear module' s paired record

<< AT+PLIST=0

>> OK

5.1.10 AT+BAUD - Read/Write UART Baudrate

Command	AT+BAUD{=Param}
Param	Baudrate(4800/9600/19200/38400/57600/115200/ 230400/460800/921600,256000,512000,1000000, default:115200)
Response	+BAUD=Param
Param	Baudrate
Description	Module' s baudrate will be changed immediately after received this command

Example:

Read UART Baudrate

<< AT+BAUD

>> +BAUD=115200

>> OK

Write UART Baudrate

<< AT+BAUD=9600

>> OK

5.1.11 AT+LPM - Turn On/Off Low Power Mode

Command	AT+LPM{=Param}
Param	Low Power Mode (0/1, default: 0) 0: Turn Off 1: Turn On
Response	+LPM=Param
Param	Low Power Mode
Description	Read and configure Low Power Mode

Example:

Read Low Power Mode

<< AT+LPM

>> +LPM=0

>> OK

Turn on Low Power Mode

<< AT+LPM=1

>> OK

5.1.12 AT+VER - Read Firmware Version

Command	AT+VER
Response	+VER=Param
Param	Firmware version
Description	Read module's firmware version

Example:

<< AT+VER

```
>> +VER=1.0.0,FSC-BT986
```

```
>> OK
```

5.1.13 AT+ADDR - Read BR/EDR MAC Address

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

Example:

```
<< AT+ADDR
```

```
>> +ADDR=DC0D30010203
```

```
>> OK
```

5.1.14 AT+LEADDR - Read BLE MAC Address

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

5.1.15 AT+COD: Read/Write Class Of Device

Command	AT+COD=Param
Param	Class of device(6 bytes ASCII, default:240404 Handsfree device)
Response	+COD=Param

Related configurations refer to [COD](#).

5.1.16 AT+TPMODE - Turn On/Off Throughput Mode

Command	AT+TPMODE{=Param}
Param	Mode (0~1, default: 0) 0: AT command mode 1: Throughput mode
Response	+TPMODE=Param
Description	When SPP/HID/GATT profile connected and throughput mode is on, the AT command will be de-active, every byte received via physical UART will be sent to air, vice visa.

5.1.17 AT+FLOWCTL - Turn On/Off Hardware Flow Control

Command	AT+FLOWCTL{=Param1}
Param1	Option (0~1, default0) 0: Turn Off 1: Turn On
Response	+FLOWCTL=Param
Description	Turn On/Off Hardware Flow Control

5.1.18 AT+SSP - Turn On/Off Secure Simple Pairing

Command	AT+SSP{=Param}
Param	PROFILE mode (0~1, default:0) 0: Turn off SSP 1: Turn on SSP
Response	+SSP=Param
Note	Pin code input will be bypassed if simple pairing is on in pairing procedure<need reboot>

5.1.19 AT+MODE - Read/Write Bluetooth Mode

Command	AT+MODE{=Param}
Param	Pairing mode (0~4, default:0) (0) NONE PROFILE (1) SPP PROFILE (2) HID PROFILE (3) BLE PROFILE (4) ALL PROFILE
Response	+SSP=Param

5.1.20 AT+AUTOCONN - Turn On/Off Power On Auto Reconnect<need reboot>

Command	AT+AUTOCONN{=Param}
Param	0: Turn off 1: Turn on
Response	+AUTOCONN=Param
Description	Module will attempt to connect last device after power on if set

5.1.21 AT+PIOCFG - PIO Function Configuration

Command	AT+PIOCFG{=Param,Param1}
Param	0: Disable Command/Transmission mode switch function 1: Enable Command/Transmission mode switch function
Param1	0: Disable Bluetooth disconnect function 1: Enable Bluetooth disconnect function
Response	+PIOCFG=Param
Description	

5.1.22 AT+DSCA - Release All Connections

Command	AT+DSCA
Description	Module release all Bluetooth connections with remote device

5.1.23 AT+SCAN - Scan Nearby Devices

Command	AT+SCAN=Param1{,Param2{,Param3}}
Param1	Scan type (0~2) 0: Stop scan 1: Scan nearby BR/EDR devices 2: Scan nearby BLE devices (some firmware do not support) 3: Scan nearby BR/EDR/BLE devices (some firmware do not support)
Param2	(1~48)Scan period. unit:1.28s, default:12.8s
Param3	(1~25 Bytes ASCII)Scan period.
Description	Format description refer to: +SCAN - Scan Result

5.1.24 AT+SECURITY - Turn on/off security verification

Command	AT+SECURITY{=Param1}
Param1	mode (0~1, default:0) 0: turn off 1: turn on
Response	+SECURITY=Param
Description	Turn on/off security verification

Example:

Turn on security verification

```
<< AT+SECURITY=1
```

```
>> OK
```

Read security verification mode

```
<< AT+SECURITY
```

```
>> +SECURITY=1
```

```
OK
```


5.1.25 AT+TXPOWER - Read/Write TX power

Command	AT+TXPOWER{=Param}
Param	TX power (0~2) 0: 0db 1: 3db 2: 5db
Response	+TXPOWER=Param
Param	TX power
Description	Read/Write TX power

Example:

Read TX power

```
<< AT+TXPOWER
```

```
>> +TXPOWER=2
```

```
>> OK
```

Write TX power 0dbm

```
<< AT+TXPOWER=0
```

```
>> OK
```

5.1.26 AT+UARTCFG - Read/Write Serial Port Configuration

Command	AT+UARTCFG{=Param}
Param	mode (0~5) bit0: 0 - 1-bit stop bit 1 - 2-bit stop bit bit2~bit1: 00 - None 01 - Odd 10 - Even
Response	+UARTCFG=Param
Param	Mode (0~5)
Description	Modifying Serial Port Configuration(Stop bit and check bit)

Example:

Configure None 1-bit stop bit

```
<< AT+UARTCFG=0
```

```
>> OK
```

Configure Odd 1-bit stop bit

```
<< AT+UARTCFG=2
```

```
>> OK
```

5.1.27 AT+LINKCFG - Automatic Search Link Configuration

Command	AT+LINKCFG{=Param}
Param	mode (0~2) 0:Turn off automatic search link 1:Turn on SPP automatic search link 2:Turn on BLE automatic search link
Description	If this command is configured, the module will automatically search for links based on the configuration

5.1.28 AT+RSSICFG - Read/Write RSSI Configuration

Command	AT+RSSICFG{=Param,Param1}
Param	High RSSI signal strength
Param1	Low RSSI signal strength
Description	PIN34 pin pulled low when signal strength is greater than Param PIN34 pin pulled up when signal strength is less than Param1 PIN34 level remains unchanged when the signal strength is between Param ~ Param1

Example: Configure PIN34 output a high level when the signal strength is less than -60, maintain the previous level between -30 and -60, and output a low level when the signal strength is greater than -30

```
<< AT+RSSICFG=30,60
```

```
>> OK
```

5.2 Bluetooth Serial Commands (BR/EDR SPP)

5.2.1 AT+SPPSTAT - Read SPP State

Command	AT+SPPSTAT
Response	+SPPATAT=Param
Description	Format description refer to:ref:REF107

5.2.2 AT+SPPCFG - Read/Write SPP Configuration

Command	AT+SPPCFG{=Param}
Param	mode(0,1) 0:Turn off spp dynamic registration 0:Turn on spp dynamic registration
Response	+SPPCFG=Param
Description	After enabling dynamic registration, the module will register the SPP service when connecting,unregister SPP service when disconnected

5.2.3 AT+SPPCONN - Establish SPP Connection

Command	AT+SPPCONN{=Param}
Param	MAC address of target device(12 Bytes ASCII)

5.2.4 AT+SPPDISC - Release SPP Connection

Command	AT+SPPDISC
Description	Release current SPP connection with remote device

5.2.5 AT+SPPSEND - Send Data Via SPP

Command	AT+SPPSEND=Param1,Param2
Param1	Payload length (1~236)
Param2	Payload (1~236 Bytes UTF8)
Description	If throughput mode is on, this command is de-active

Example: Send data “1234567890” to remote device via SPP

```
<< AT+SPPSEND=10,1234567890
```

```
>> OK
```

5.3 Bluetooth Serial Commands (LE Peripheral)

5.3.1 AT+GATTSTAT - Read LE Peripheral State

Command	AT+GATTSTAT
Response	+GATTATAT=Param
Description	Format description refer to: <i>+GATTSTAT - LE Peripheral State (as slave module)</i>

5.3.2 AT+ADVADDR - Turn on/off broadcast address

Command	AT+ADVADDR{=ram}
Param	mode (0~1, default: 1) 0: turn off broadcast address 1: turn on broadcast address
Response	+ADVADDR=Param
Description	Turn on/off broadcast address

5.3.3 AT+IBEACON - Turn on/off ibeacon broadcast

Command	AT+IBEACON{=Param}
Param	mode (0~1, default: 0) 0: Turn off ibeacon broadcast 1: Turn on ibeacon broadcast
Response	+IBEACON=Param
Description	Turn on/off ibeacon broadcast

5.3.4 AT+ADVDATA - Read/Write BLE Broadcast 0xFF Data

Command	AT+ADVDATA{=Param}
Param	Manufacturer defined broadcast data (data length not exceeding 27)
Response	+ADVDATA=Param
Param	Tag is broadcast data of 0xFF
Description	The manufacturer's custom broadcast data tag is 0xFF

Example:

Read the custom broadcast data content of the manufacturer, x is HEX data

```
<< AT+ADVDATA
```

```
>> +ADVDATA=\x03\x01\x02
```

```
>> OK
```

Write the custom broadcast data content of the manufacturer, x is HEX data

```
<< AT+ADVDATA=\x03\x01\x02
```

```
>> OK
```

5.3.5 AT+ADBLE - Turn on/off AndroidBLE

Command	AT+IBEAON{=Param}
Param	mode (0~1, default:1) 0: turn off AndroidBLE 1: turn on AndroidBLE
Response	+IBEAON=Param
Description	After turning on, the SPP and BLE addresses will be two different addresses when turning off, the SPP and BLE addresses will be the same address

5.3.6 AT+UIDCFG - Read/Write UUID

Command	AT+UIDCFG{=Param1,Param2,Param3}
Param1	service UUID (default: 0000)
Param2	write UUID (default: 0000)
Param3	notify UUID (default: 0000)
Response	+UIDCFG=Param1,Param2,Param3
Description	Customized data transfer reset UUID, supporting 32/128 bit UUID By default: service UUID = 0xFFF0 write UUID = 0xFFF2 notify UUID = 0xFFF1

5.3.7 AT+GATSEND - Send Data Via LE Peripheral

Command	AT+GATSEND=Param1,Param2
Param1	Payload length (1~236)
Param2	Payload (1~236 Bytes UTF8)
Description	If throughput mode is on, this command is de-active

Example: Send data '1234567890' to remote device via LE Peripheral

```
<< AT+GATTSEND=10,1234567890
```

```
>> OK
```

5.3.8 AT+LESTAT - Read LE Central State

Command	AT+LESTAT
Response	+LEATAT=Param
Description	Format description refer to: <i>+LESTAT - LE Central State (as master module)</i>

5.3.9 AT+LECONN - Establish LE Central Connection

Command	AT+LECONN{=Param1{,Param2{,Param3{,Param4{}}}}
Param1	MAC address of target device (12 Bytes ASCII) + MAC address type (1 Bytes ASCII)
Param2	Service UUID
Param3	Write UUID
Param4	Notify UUID
Response	OK
Description	Initiate a connection to the specified device, with parameters consisting of target device (12 Bytes ASCII) + MAC address type (1 Bytes ASCII) composition, usually the address type is “0” or “1” . Type acquisition method: Scan the second parameter returned using AT+SCAN, for example: +SCAN=0,0,DC0D30001ED4,-65,10,FSC-BT946 Establish LE Central Connection AT command AT+LECONN=DC0D30001ED40

Example:

Connect to the specified device, 0 is the address type

```
<< AT+LECCONN=DC0D3000039E0
```

```
>> OK
```

Initiate a connection to the specified address and communicate using FFF0, FFF2, and FFF1

```
<< AT+LECCONN=DC0D3000039E0,FFF0,FFF2,FFF1
```

```
>> OK
```

5.3.10 AT+LESEND - Send Data Via LE Central

Command	AT+LESEND=Param1,Param2
Param1	Data length
Param2	Data
Response	OK
Description	If throughput mode is on, this command is de-active

Example:

Sending data to devices with connection index 1

```
<< AT+LESEND=1,4,2022
```

```
>> OK
```

5.4 Bluetooth Serial Commands (HID)

5.4.1 AT+HIDSTAT - Read HID State

Command	AT+HIDSTAT
Response	+HIDATAT=Param
Description	Format description refer to: <i>+HIDSTAT - HID State</i>

5.4.2 AT+HIDCONN - Establish HID Connection

Command	AT+HIDCONN{=Param}
Param	MAC address of target device(12 Bytes ASCII)

5.4.3 AT+HIDDISC - Release HID Connection

Command	AT+HIDDISC
Description	Release current HID connection with remote device

5.4.4 AT+HIDOSK - IOS Device Eject Keyboard Toggle

Command	AT+HIDOSK
Description	This instruction applies only to the IOS Device

5.4.5 AT+HIDMODE - Read/Write HID Transfer Mode

Command	AT+HIDMODE{=Param}
Param	HID mode(0~1), default:1 (0) Hex key code (1) Ascii key code (English)
Note	The module can support various keyboard languages through specific firmware, such as: TURKEY SPAIN PORTUGAL FRANCE GERMANY ITALY CZECH JAPAN

5.4.6 AT+HIDDLTY - Read/Write HID Send Delay

Command	AT+HIDDLTY{=Param}
Param	HID report period in millisecond, default 10 ms

5.4.7 AT+HIDSEND - Send Data Via HID

Command	AT+HIDSEND=Param1,Param2
Param1	Report length
Param2	Report payload
Note	For special key code: 0x0D -> ENTER 0x08 -> BACKSPACE 0x09 -> TAB 0x20 -> SPACE
Description	If throughput mode is on, this command is de-active

Example: Send data 'A' to remote device (on AT+HIDMODE=1)

>> AT+HIDSEND=1,A

<< OK

Example: Send data 'A' to remote device (on AT+HIDMODE=0)

<< AT+HIDSEND=4, xA1 x01 x00 x04

>> OK

Note: HEX data, the corresponding actual data is as follows:

41 54 2B 48 49 44 53 45 4E 44 3D 34 2C A1 01 00 04 0d 0a

Where:

A1 : report start

01 : page id 1

00 : modifier

04 : key code

The module will automatically send pop-up keys

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Chapter 6

Bluetooth Serial Indications

6.1 +SPPSTAT - SPP State

Format	+SPPSTAT=Param
Param	(0) Unsupported (1) Standby (2) Connecting (3) Connected

6.2 +SCAN - Scan Result

Format1	+SCAN={ : start scanning
Format2	+SCAN =Param1,Param2,Param3, Param4,Param5,Param6
Param1	Index
Param2	Device address type (1 Bytes ASCII)
Param3	MAC address (12 Bytes ASCII)
Param4	RSSI
Param5	Size of Param6 if exist
Param6	Device Name
Format3	+SCAN=} : cease scanning

Example:

Scan nearby devices

```
<< AT+SCAN=1
```

```
>> +SCAN={
```

```
>> +SCAN=0,1,70CFC9A98840,-43,24,LE-Bose QuietControl 30
```

```
>> +SCAN=1,1,DC0D30001ED4,-65,10,FSC-BT946
```

```
>> +SCAN=}
```

6.3 +GATTSTAT - LE Peripheral State (as slave module)

Indication	+GATTSTAT=Param
Param	(0) Unsupported (1) Standby (2) Connecting (3) Connected
Description	In instruction mode, when connection status of the module changes,module will actively report it through +GATTSTAT

Example:

Connected

```
>> +GATTSTAT=3
```

6.4 +LESTAT - LE Central State (as master module)

Indication	+LESTAT=Param
Param	(0) Unsupported (1) Standby (2) Connecting (3) Connected
Description	In instruction mode, when connection status of the module changes,module will actively report it through +LESTAT

Example:

Connected

>> +LESTAT=3

6.5 +HIDSTAT - HID State

Format	+HIDSTAT=Param
Param	(0) Unsupported (1) Standby (2) Connecting (3) Connected

6.6 +DATA - Received Bluetooth data report

Indication	+DATA=Param1,Param2,Param3
Param1	Index
Param2	Data length
Param2	Data
Description	Throughput mode: Report data without +DATA prefix +DATA=12345 AT command mode: Report data without+DATA prefix +DATA=1,5,12345

Example:

Received data=1234567890

>> +DATA=1,10,1234567890

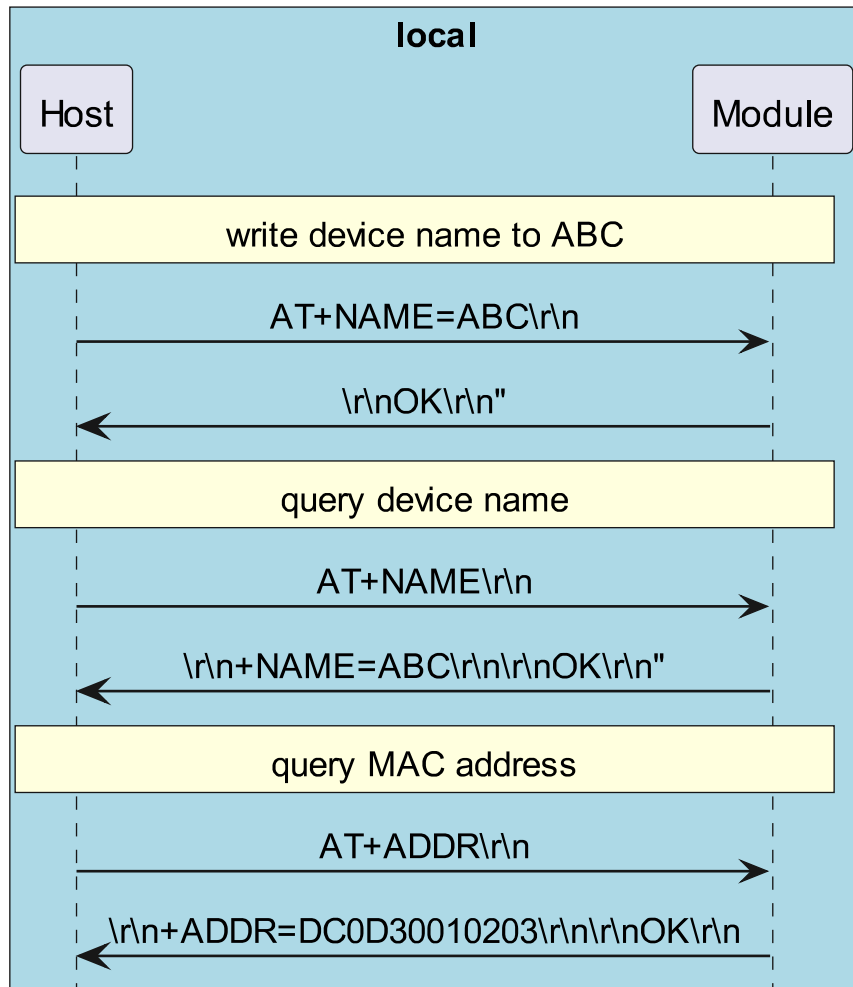
Chapter 7

Application Scenario

7.1 Read/Write Module Default Parameters

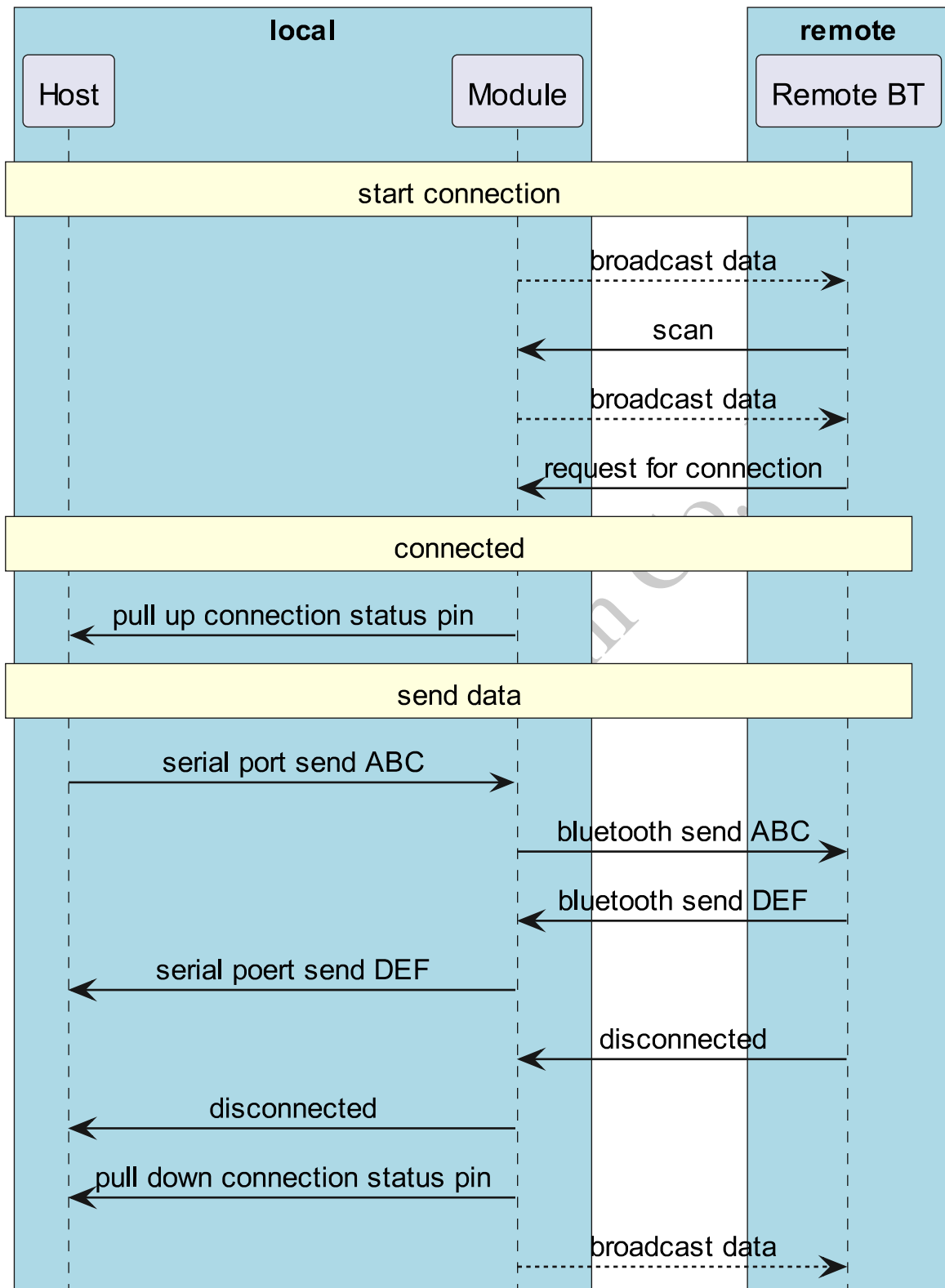
When the module is not connected to Bluetooth, it will parse the serial port data according to AT command. The host can query and modify the default parameters of the module, as shown in the following figure:

1. Change the device name to ABC
2. Query device name
3. Query Bluetooth address



7.2 The process of sending data

The module will continuously send broadcast data to the outside when powered on, and the remote Bluetooth (mobile phone) can obtain the broadcast packet through search and initiate a connection request to the module. After successful connection, the module will pull up the connection status pin to notify the host that the Bluetooth connection is successful. The host can send data to the remote Bluetooth through the Bluetooth module, and the remote Bluetooth can also send data to the host.

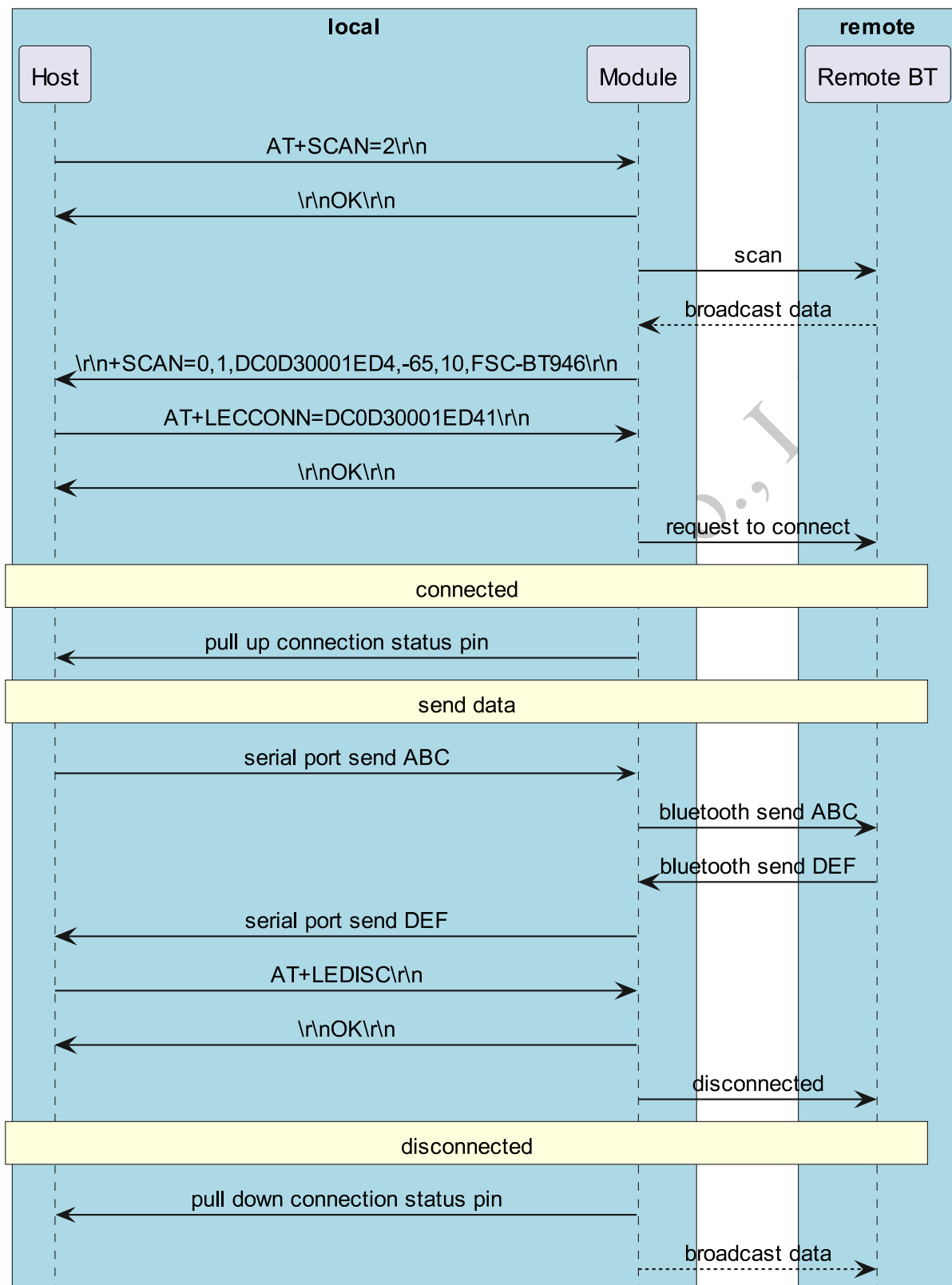


7.3 The module used as a master module to connect to remote devices

The module can serve as the master module to connect to the slave module and the master module can send instructions to control the module for scanning, connecting, and disconnecting.

The following figure shows the process of connecting to other devices:

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Chapter 8

FAQ

8.1 How can IOS phones obtain Bluetooth MAC addresses?❓

For security reasons, the IOS system converts the Bluetooth MAC address into UUID at the bottom layer

and sends it to the upper layer application. So the app cannot obtain the MAC address of the device.

FSC-BT986 will place the MAC address in the broadcast by default, and the APP can obtain the MAC address from the broadcast packet using the following method.

```
- (void)centralManager:(CBCentralManager *)central_
    didDiscoverPeripheral:(CBPeripheral *)peripheral_
    advertisementData:(NSDictionary *)advertisementData_
    RSSI:(NSNumber *)RSSI
{
    if(![self describeDictionary:advertisementData])
    {
        NSLog(@"is not fsc module");
        return;
    }
}

- (Boolean)describeDictionary: (NSDictionary *) dict
    (continues on next page)
```

(continued from previous page)

```
{
    NSArray *keys;
    id key;
    keys = [dict allKeys];
    for(int i = 0; i < [keys count]; i++)
    {
        key = [keys objectAtIndex:i];
        if([key isEqualToString:@"
↪kCBAAdvDataManufacturerData"])
        {
            NSData *tempValue = [dict objectForKey:key];
            const Byte *tempByte = [tempValue bytes];
            if([tempValue length] == 6)
            {
                // tempByte MAC address
                return true
            }
        }
        else if([key isEqualToString:@"kCBAAdvDataLocalName
↪"])
        {
            //there is name
            //NSString *szName = [dict objectForKey: key];
        }
    }
    return false;
}
```

Chapter 9

Appendix

9.1 Download PDF version

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