FSC-BT826

4.2 Dual Mode Bluetooth Module Data Sheet

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Contact Us

Shenzhen Feasycom Technology Co.,LTD

1. INTRODUCTION

FSC-BT826 is a fully integrated Bluetooth module that complies with Bluetooth 4.2 dual mode protocols(BR/EDR/BLE). It supports SPP, BLE, ANCS, iBeacon, profiles. It integrates Baseband controller in a small package（Integrated chip antenna）, so the designers can have better flexibilities for the product shapes.

FSC-BT826 can be communicated by UART port. With Feasycom's Bluetooth stack, Customers can easily transplant to their software. Please refer to Feasycom stack design guide.

1.1 Block Diagram

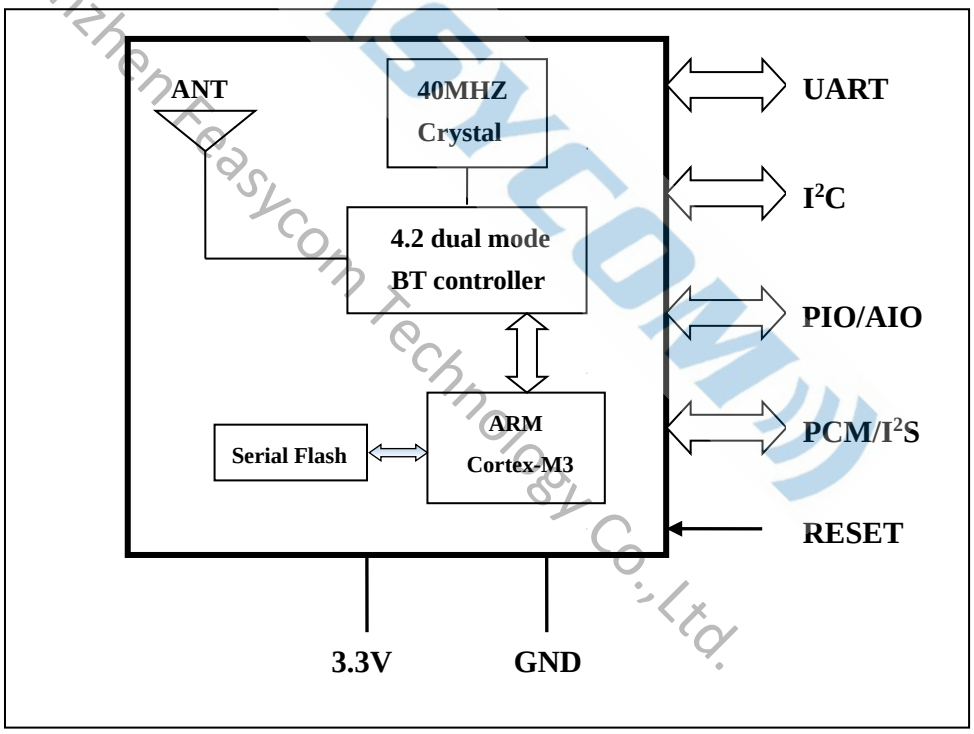


Figure 1

1.2 Feature

- Fully qualified Bluetooth 4.2/4.0/3.0/2.1/2.0/1.2/1.1
- Postage stamp sized form factor.
- Low power.
- Class 1.5 support(high output power)
- The default UART Baud rate is 115.2Kbps and can support from 1200bps up to 921Kbps,.
- UART, I^2C,PCM / I^2S data connection interfaces.
- Support the OTA upgrade.
- Bluetooth stack profiles support: SPP, HID, MAP, and all BLE protocols.
- BQB, SRRC, ROHS and Airsync Certified.
- Power Consumption In Working Mode (VDD_3V3 at 3.3 V)
  - Discoverable：18.5mA
  - BR/EDR Connection：22.4mA
  - LE Connection：17.9mA
  - BR/EDR Connection @ 115200bps：23.4mA

1.3 Application

- Smart Watch and Bluetooth Bracelet
- Health & Medical devices
- Wireless POS
- Measurement and monitoring systems
- Industrial sensors and controls
- Asset Tracking

2. GENERAL SPECIFICATION

General Specification	
Chipset	Realtek RTL8761
Product	FSC-BT826
Dimension	13mm x 26.9mm x 2mm
Bluetooth Specification	Bluetooth V4.2 (Dual Mode)
Power Supply	3.3 Volt DC
Output Power	5.5 dBm
Sensitivity	-82dBm@0.1%BER
Frequency Band	2.402GHz -2.480GHz ISM band
Modulation	FHSS,GFSK,DPSK,DQPSK
Baseband Crystal OSC	40MHz
Hopping & channels	1600hops/sec, 1MHz channel space,79 Channels(BT 4.2 to 2MHz channel space)
RF Input Impedance	50 ohms
Antenna	Integrated chip antenna
Interface	Data: UART, I²C, PCM / I²S
Profile	SPP, GATT(BLE Standard) MFI,Airsync,ANCS, iBeacon, MAP(optional),OTA(optional)
Temperature	-20ºC to +70 ºC
Humidity	10%~95% Non-Condensing
Environmental	RoHS Compliant

Table 1

3. PHYSICAL CHARACTERISTIC

FSC-BT826 dimension is 26.9mm(L)x13mm(W)x2mm(H).

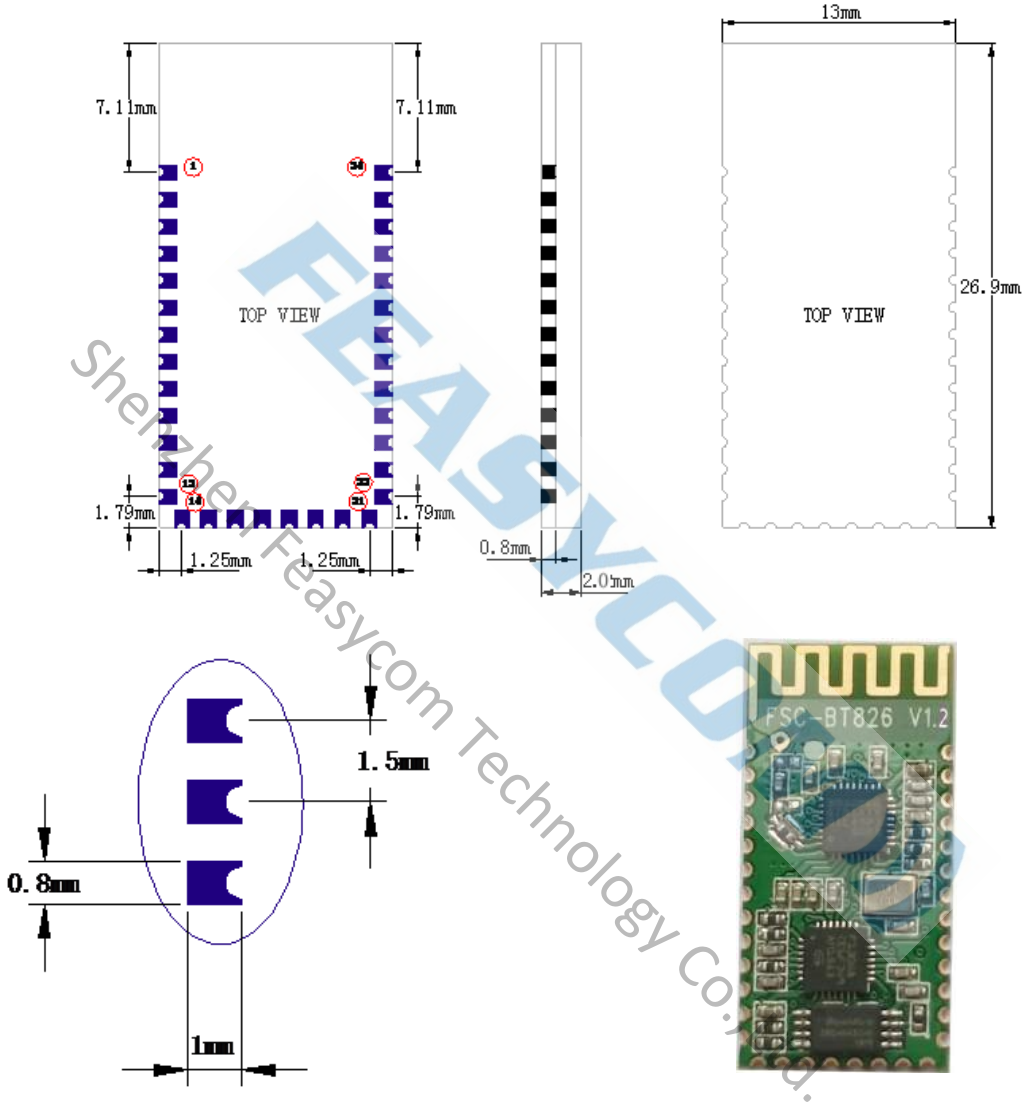


Figure 2：Package Dimensions（TOP VIEW）

4. PIN DEFINITION DESCRIPTIONS

* **Special tips:** PIO0,PIO1,PIO2,PIO3 I/O port for reuse.

When using the OTA function upgrade (air), please send the I/O mouth dangling;

If the I/O port to connect the MCU,

then set the MCU I/O ports for the input port or high impedance state.

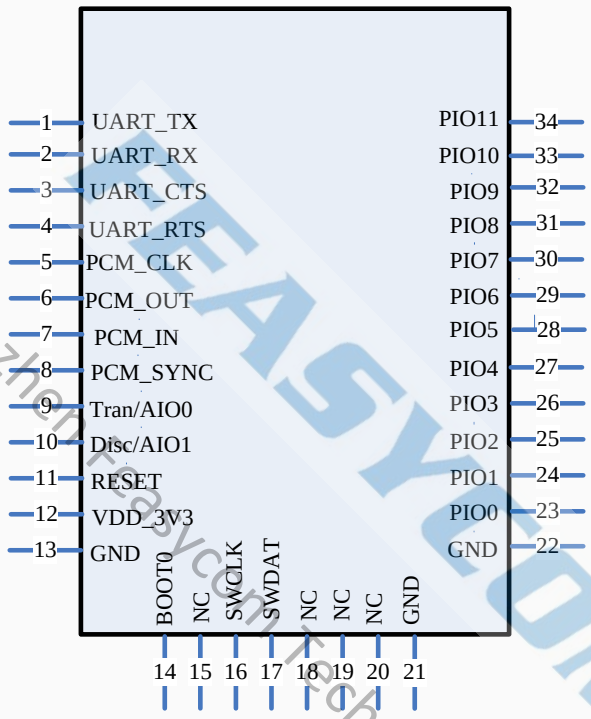


Figure 3： PIN description

Pin	Pin Name	Pad Type	Description
1	UART_TX	CMOS output	UART data output
2	UART_RX	CMOS input	UART data input
3	UART_CTS	CMOS input	UART clear to send active low Alternative Function: Programmable input/output line
4	UART_RTS	CMOS output	UART request to send active low Alternative Function: Programmable input/output line
5	PCM_CLK	Bi-directional	Synchronous data clock
6	PCM_OUT	CMOS Output	Synchronous data output
7	PCM_IN	CMOS Input	Synchronous data input

8	PCM_SYNC	Bi-directional	Synchronous data Sync
9	Tran/AIO0	I/O	Host MCU change UART transmission mode. (Default) Alternative Function: Analogue programmable I/O line.
10	Disc/AIO1	I/O	Host MCU disconnect bluetooth. (Default). Alternative Function: Analogue programmable I/O line.
11	RESET	CMOS input	Reset if low. Input debounced so must be low for >5ms to cause a reset.
12	VDD_3V3	VDD	Power supply voltage 3.3V
13	GND	VSS	Power Ground
14	BOOT0	Bi-directional	The default is low. (internal 10K resistance drop) UART DFU Mode, Enabled at startup when set to high level, Disabled by default
15	NC	NC	NC
16	SWCLK	Bi-directional	Debugging through the clk line(Default)
17	SWDIO	Bi-directional	Debugging through the data line(Default)
18	NC	NC	NC
19	NC	NC	NC
20	NC	NC	NC
21	GND	VSS	Power Ground
22	GND	VSS	Power Ground
23	**PIO0**	I/O	Programmable input/output line *** The I/O port for reuse.**
24	**PIO1**	I/O	Programmable input/output line *** The I/O port for reuse.**
25	**PIO2**	I/O	Programmable input/output line *** The I/O port for reuse.**
26	**PIO3**	I/O	Programmable input/output line *** The I/O port for reuse.**
27	PIO4	I/O	Programmable input/output line Alternative Function: BT Power Mode, low level in run mode, it will be set to high level when fall asleep.
28	**PIO5**	I/O	***With the use of the Pin 9.***
29	PIO6	I/O	Programmable input/output line Alternative Function: I^2C CLK line (Default)

30	PIO7	I/O	Programmable input/output line Alternative Function: I²C DATA line (Default)
31	**PIO8**	I/O	***With the use of the Pin 10.***
32	PIO9	I/O	Programmable input/output line Alternative Function: LED(Default)
33	PIO10	I/O	Programmable input/output line Alternative Function: BT Status(Default)
34	PIO11	I/O	Programmable input/output line

Table 2

5. Interface Characteristics

5.1 UART Interface

Four signals are used to implement the UART function. When FSC-BT826 is connected to another digital device, UART_RX and UART_TX transfer data between the two devices. The remaining two signals, UART_CTS and UART_RTS, can be used to implement RS232 hardware flow control where both are active low indicators.

The interface consists of four-line connection as described in below:

Signal name	Driving source	Description
UART-TX	FSC-BT826 module	Data from FSC-BT826 module
UART-RX	Host	Data from Host
UART-RTS	FSC-BT826 module	Request to send output of FSC-BT826 module
UART-CTS	Host	Clear to send input of FSC-BT826 module

Table 3

Default Data Format

Property	Possible Values
BCSP-Specific Hardware	Enable
Baud Rate	115. 2 Kbps
Flow Control	None
Data bit length	8bit
Parity	None
Number of Stop Bits	1

Table 4

无线电发射设备
Radio Transmission Equipment
型号核准证
Type Approval Certificate

深圳市飞易通科技有限公司：

根据《中华人民共和国无线电管理条例》，经审查，下列无线电发射设备符合中华人民共和国无线电管理规定和技术标准，其核准代码为：CMIIT ID:2019DP4046

In accordance with the provisions on the Radio Regulations of the People's Republic of China, the following radio transmission equipment, after examination, conforms to the provisions with its CMIIT ID:

有效期：五年
Validity

（发证机关）
Sealed by issuing authority
2019年 6月 4日
Year Month Date

编号：2019-4046
Number

设备名称：蓝牙模块
Equipment Name

设备型号：FSC-BT826
Equipment Type

主要功能：数据传输
Main Functions

调制方式：GFSK π/4 DQPSK 8DPSK
Modulation Mode

主要技术参数及其指标值：
Main Technical Parameters

频率范围：2400-2483.5MHz
Frequency Range

频率容限：≤20ppm
Frequency Tolerance

发射功率：≤20dBm(EIRP)
Transmitting Power

占用带宽：≤2MHz
Occupied Bandwidth

杂散发射限值：≤-30dBm
Spurious Emission Limits

（核发单位章）
Sealed by issuing authority
2019年 6月 4日
Year Month Date

AGC®

Test Report

Report No.: AGC03285190702-001 Date: Jul 26, 2019 Page1 of 7

Applicant:	Shenzhen Feasycom Technology Co.,LTD
Address:	Room 2004A,20th Floor,Huichao Technology Building,JinhaiRoad,Xixiang ,BaoanDistrict,Shenzhen, China
Test site:	1,6/F.,Building 2,No. 1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Baoan District, Shenzhen, Guangdong, China

Report on the submitted sample(s) said to be:

Sample Name:	Bluetooth Module
Sample Model:	FSC-BT826、FSC-BT826N、FSC-BT826HD、FSC-BT826HC、FSC-BT826H、FSC-BT826E、FSC-BT826EN
Sample Received Date:	Jun.22, 2019
Testing Period:	Jun.22, 2019 to Jun.26, 2019
Test Requested:	Please refer to following page(s).
Test Method:	Please refer to following page(s).
Test Result:	Please refer to following page(s).

Approved by: Lewis
Liulinwei Lewis
Technical Director

VERIFICATION
of
Conformity
WeChat AirSync

TÜVRheinland

Holder	Shenzhen Feasycom Technology co., Ltd. Room 2004-2005, 20th Floor Huichao Technology Building, Jinhai Road, Xixiang, Baoan District, Shenzhen, China
Manufacturer	Shenzhen Feasycom Technology co., Ltd. Room 2004-2005, 20th Floor Huichao Technology Building, Jinhai Road, Xixiang, Baoan District, Shenzhen, China
Product	Dual Mode Bluetooth Module
Identification [Trademark]	FSC-BT826 (Feasycom)
Software version	5.7.4
TÜV Reference No.	[illegible]

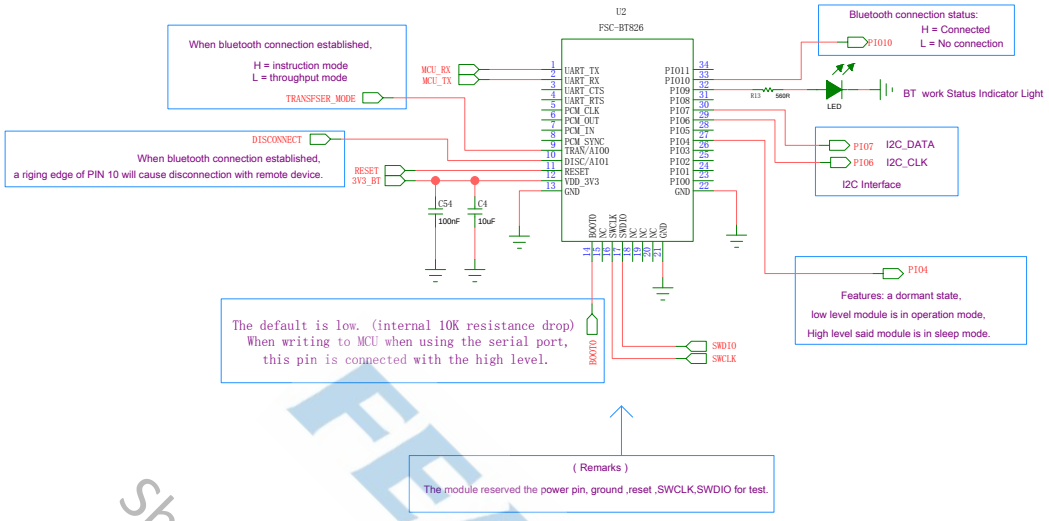
Test for Bluetooth Low Energy		Test for Traditional Bluetooth	
Test case	Result	Test case	Result
onTestHasWeChatService	Pass	onConnected	Pass
onTestHasIndicateCharacteristic	Pass	onTestRecvAuthReqWhenConnected	Pass
onTestHasWriteCharacteristic	Pass	onTestValidAuthReqPack	Pass
onTestHasReadCharacteristic	Pass	onTestSessionReqPack	Pass
onTestWriteCharacteristicPermission	Pass	onTestValidInitReqPack	Pass
onTestIndicateCharacteristicPermission	Pass	onTestValidSendDataRequest	Pass
onTestReadCharacteristicPermission	Pass	onDisConnected	Pass
onTestStartIndicating	Pass		
onConnected	Pass		
onTestRecvAuthReqWhenStartedIndicating	Pass		
onTestValidAuthReqPack	Pass		
onTestRecvInitReqPack	Pass		
onTestValidInitReqPack	Pass		
onTestValidSendDataRequest	Pass		
onDisConnected	Pass		

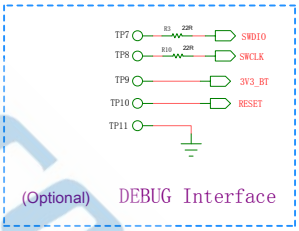
The submitted sample of the above equipment has been verified according to above test requirements used for showing compliance with the test items according to WeChat Airsync software profile.

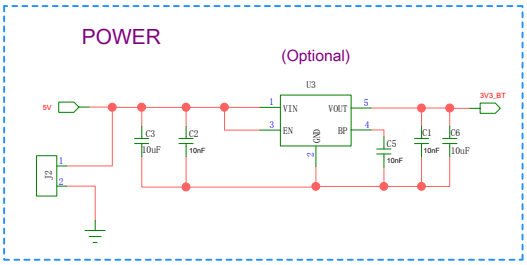
AirSync

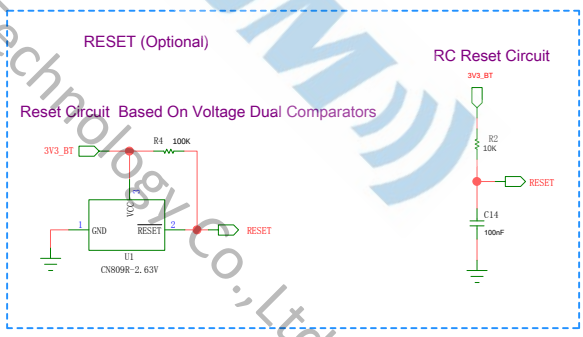
Winnie Hou
BQC (Bluetooth Qualification Consultant)
Date: 2019-08-15

10. Application Schematic









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