1. Introduction

The Bluetooth 4.0 modules F-3289 which is a high performance, cost effective, low power and compact solution.
The Bluetooth module provides a complete 2.4GHz Bluetooth system
based on CSR 8635 chip which is a single-chip radio and baseband IC for Bluetooth 2.4GHz systems including basic rate, EDR to 3Mbps and Bluetooth low energy

2. Key Features

• Fully Qualified Single-chip Bluetooth® v4.0 System
•-91dBm (typical) π/4 DQPSK receiver sensitivity
and -81dBm (typical) 8DPSK receiver sensitivity
• A2DP v1.2, multipoint A2DP support enables connection to 2 A2DP source devices for music playback
• CSR's latest CVC technology for narrowband and wideband voice connections including wind noise reduction
• AVRCP v1.4
• Wideband speech supported by HFP v1.6 and mSBC codec
•Audio interfaces: I²S and PCM
• Stereo codec with 1 microphone input
• 5-band fully configurable EQ
• SBC, MP3 and AAC decoder support
• Wired audio support
Supported sample rates of 8, 11.025, 16, 22.05, 32,44.1, 48 and 96kHz (DAC only)

■Bluetooth low energy
• Dual-mode Bluetooth low energy radio
• Support for Bluetooth basic rate / EDR and low energy connections
• 3 Bluetooth low energy connections at the same time as basic rate A2DP

• Slim module with 24.5mm x 14.1mm x 2.0mm
• RoHS Compliant

3. Applications

• Stereo speakers
• Speakerphones
• Handsfree car kits
• 1-mic stereo headset or headphones

4. Parameters

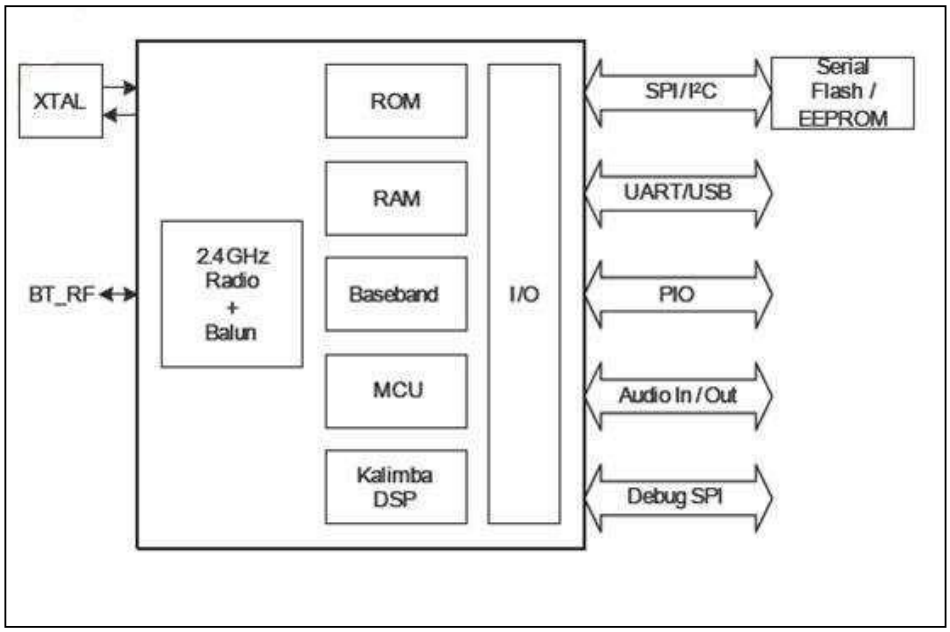
- The type of antenna : Printed antenna for PCB

- Antenna gain ：0dbi

- Modulation ：GFSK,π/4QPSK,8DPSK

- Bluetooth bandwidth ：1MHZ

4. Block Diagram

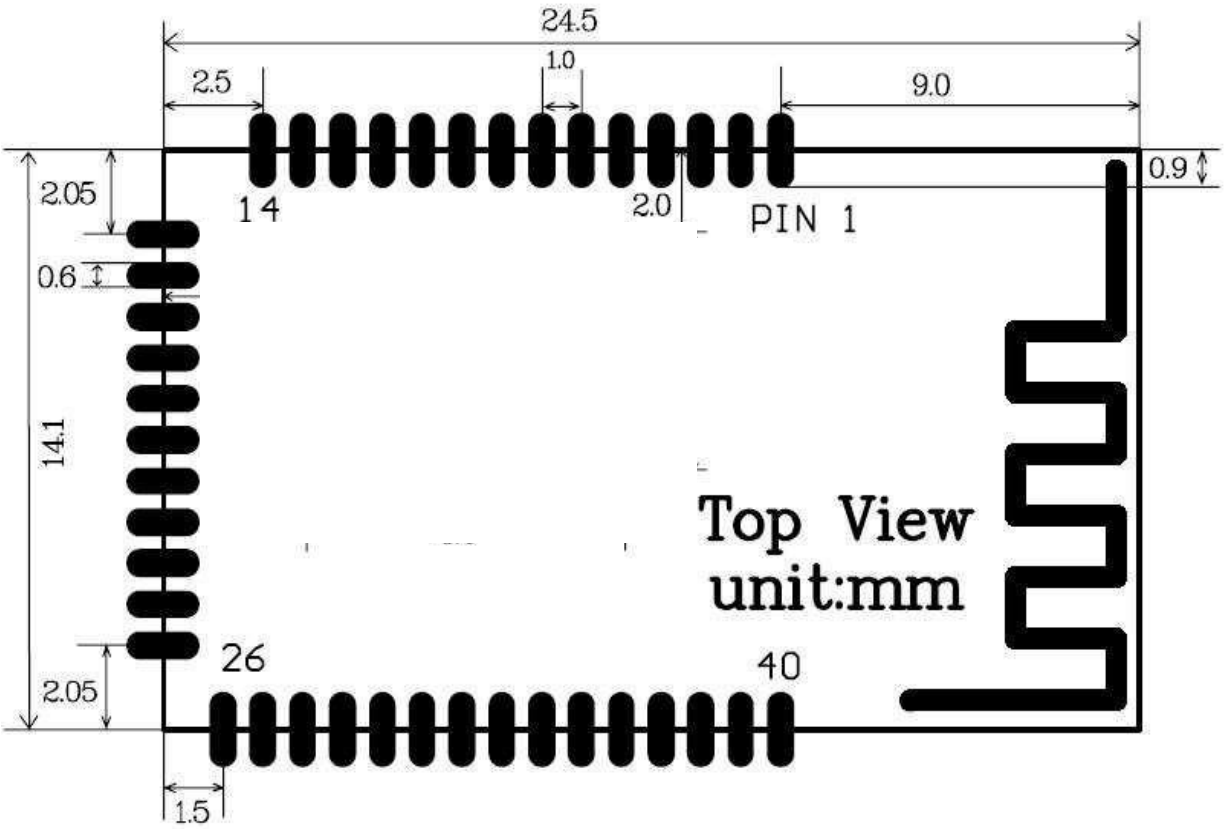


5. General specifications

Model Name	F-3289		
Bluetooth Standard	Bluetooth v4.0 Standard		
Dimension	24.5mm x 14.1mm x 2.0mm		
Electrical Characteristics RF			
Frequency Range	2402 ~ 2480MHz		
RF Transmit Power	8dBm(typ)		
Receive Sensitivity	-91dBm		
Electrical Characteristics(Absolute Maximum Ratings)			
Pin Name	Min	Max	Unit
VBAT	-0.4	4.4	V
CHARGE	-0.4	5.7	V
LED(0:1)	-0.4	4.4	V
PIO	-0.3	3.6	V
Recommended Operating Conditions			
VBAT	/	4.2	V
CHARGE	/	5	V
LED(0:1)	/	4.2	V
PIO	/	1.8	V
Operating Temperature Range	-10	70	℃
Storage Temperature	-40	85	℃

6. Module Package Information

6.1 Pinout Diagram and package dimensions



6.2 Module Pin descriptions

PIN NO.	Pin Name	Description
1	GND	Ground
2	UART_TX	UART data output for debug only / PIO15
3	UART_RX	UART data input for debug only / PIO14
4	UART_RTS	UART request to send, active low / PIO16
5	UART_CTS	UART clear to send,active low / PIO17
6	PIO	for debug only
7	PIO	for debug only
8	PIO	for debug only
9	PIO	for debug only
10	SPI_EN	SPI/PCM select input
11	PCM1_IN	PCM1 synchronous data input/SPI_MOSI

12	PCM1_CLK	PCM1 synchronous data clock/SPI_CLK
13	PCM1_OUT	PCM1 synchronous data output/SPI_MISO
14	PCM1_SYNC	PCM1 synchronous data sync/SPI_CS
15	RESET	Reset if low. Input debounced so must be low for >5ms to cause a reset
16	LED2(BLUE)	LED driver(Open drain output)
17	LED1(RED)	LED driver(Open drain output)
18	MFB/POWER	Power on/off input key indication
19	CHARGE	Internal charger input for charging(5V)
20	VBAT	Battery Power supply input for 3.0~4.2V
21	1V8	Internal 1.8V
22	GND	Ground
23	USB_N	USB data minus
24	USB_P	USB data plus with selectable internal 1.5kΩ pull-up resistor
25	PIO7	Programmable input / output line 7
26	PIO/0	Programmable input / output line 0
27	PIO6	Programmable input / output line 6
28	PIO18	Programmable input / output line 18
29	PIO21	Programmable input / output line 21
30	LED3	LED driver(Open drain output)
31	LINE/MIC_AN	LINE/MIC_AN input negative
32	LINE/MIC_AP	LINE/MIC_AP input positive
33	MIC_BIAS	Microphone bias
34	LINE_BN	LINE_BN input negative
35	LINE_BP	LINE_BP input positive
36	SPK_RN	Speaker output negative, right
37	SPK_RP	Speaker output positive, right
38	SPK_LN	Speaker output negative, left
39	SPK_LP	Speaker output positive, left
40	GND	Ground

7. Example Application Schematic