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# **Bluetooth Module Datasheet**

**Model: SJR-BTM835**

**Version: V1.4**

**2016-01-29**

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# List of Contents

<b>1 Introduction</b> .....	<b>3</b>
<b>2 Key Features</b> .....	<b>3</b>
<b>3 Applications</b> .....	<b>4</b>
<b>4 Block Diagram</b> .....	<b>4</b>
<b>5 General specifications</b> .....	<b>4</b>
<b>6 Module Package Information</b> .....	<b>5</b>
<b>6.1 Pinout Diagram and package dimensions</b> .....	<b>5</b>
<b>6.2 Module Pin descriptions</b> .....	<b>6</b>
<b>7 Electrical Characteristics</b> .....	<b>8</b>
<b>7.1 Absolute Maximum Ratings</b> .....	<b>8</b>
<b>7.2 Recommended Operating Conditions</b> .....	<b>8</b>
<b>8 Recommended reflow temperature profile</b> .....	<b>9</b>

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# 1 Introduction

**Sky Jiarun Technologies** introduces the pioneer of the Bluetooth 4.1 modules SJR-BTM835 which is a high performance, cost effective, low power and compact solution. The Bluetooth module provides a complete 2.4GHz Bluetooth system based on the BlueCore CSR8635 chipset which is a single chip radio and baseband IC for Bluetooth 2.4GHz systems,. This module is fully compliant to Bluetooth v4.1 for audio communications.

## 2 Key Features

### **Bluetooth Profiles**

- Bluetooth v4.1 specification support
- A2DP v1.2
- AVRCP v1.4
- HFP v1.6
- HSP v1.2
- DI v1.3

### **Music Enhancements**

- Configurable 5-band EQ for music playback (rock,pop, classical, jazz, dance etc)
- SBC, MP3, AAC and Faststream decoder
- Volume Boost
- Stereo Widening (S3D)

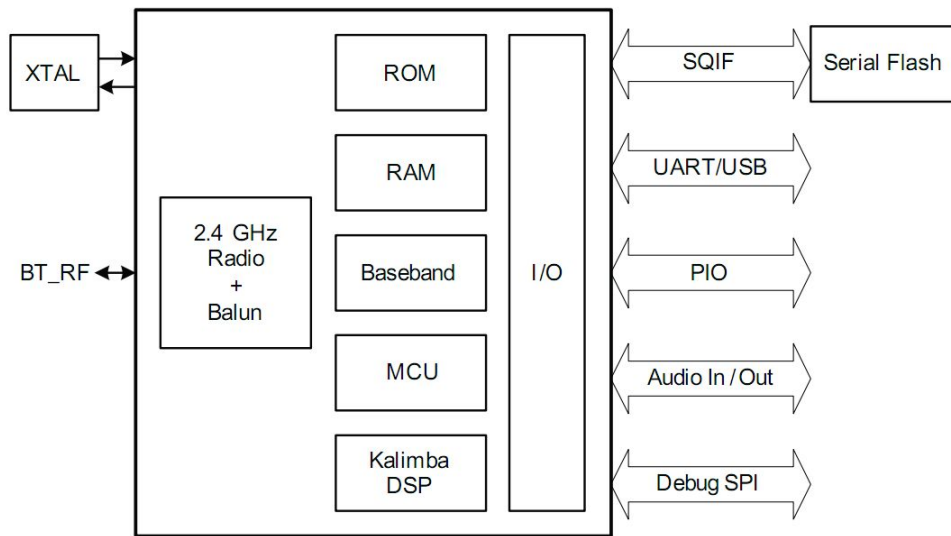
### **Additional Functionality**

- Support for multi-language programmable audio prompts
- CSR's proximity pairing and CSR's proximity connection
- Multipoint support for A2DP connection to 2 A2DP sources for music playback
- Talk-time extension
- Slim module with 28.5mm x 13mm x 2.0mm

### 3 Applications

- Stereo Headsets
- Wired Stereo headsets and headphones
- Portable Bluetooth Stereo speakers

### 4 Block Diagram



### 5 General specifications

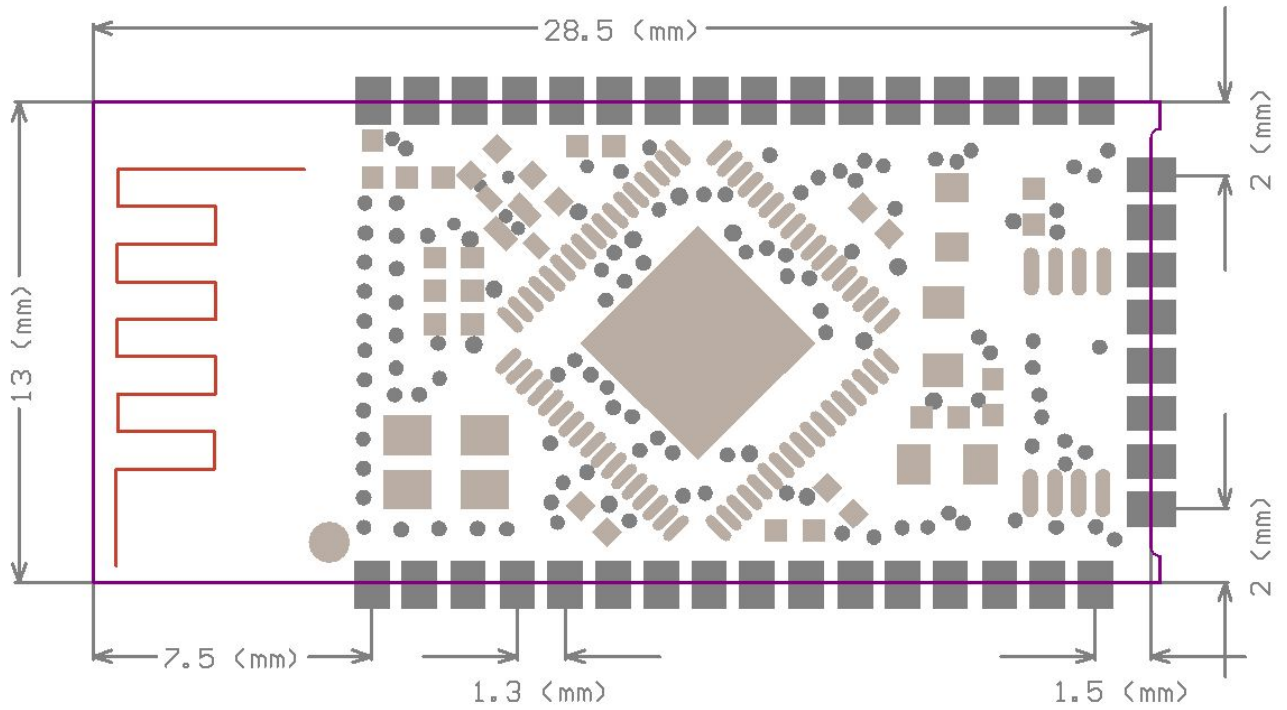
<b>Model Name</b>	<b>SJR-BTM835</b>
<b>Product Description</b>	<b>Bluetooth 4.1 Class2 Module</b>
Bluetooth Standard	Bluetooth 4.1
Chipset	CSR8635
Dimension	28.5mm x 13mm x 2.0mm
<b>Operating Conditions</b>	
Voltage	2.8~4.2V
Temperature	-10~+70°C
Storage Temperature	-40~+85°C
<b>Electrical Specifications</b>	
Frequency Range	2402~2480MHz
Maximum RF Transmit Power	4dBm
$\pi/4$ DQPSK Receive Sensitivity	-91dBm
8DPSK Receive Sensitivity	-81dBm

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## 6 Module Package Information

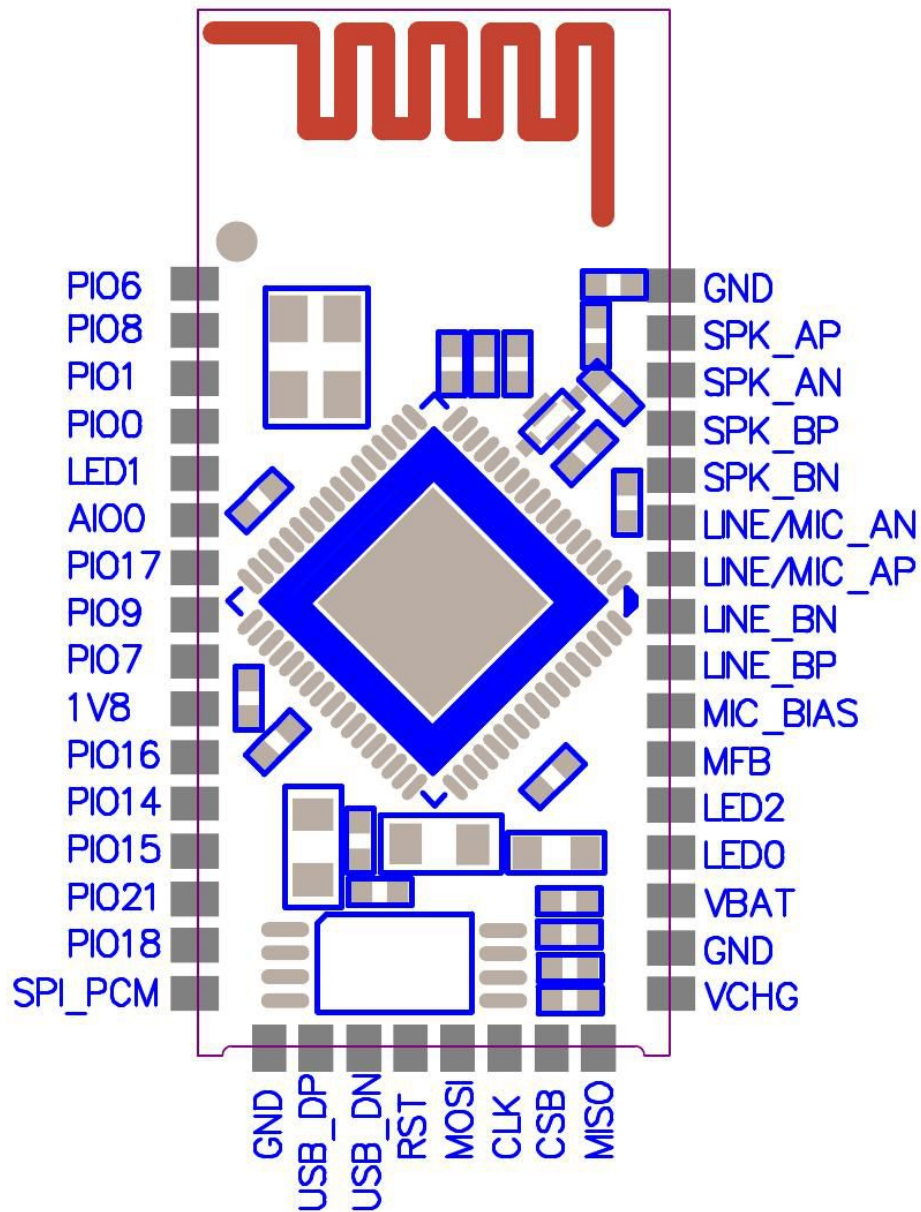
### 6.1 Pinout Diagram and package dimensions



Unit: MM

**Recommended PCB layout footprint**

## 6.2 Module Pin descriptions



Pin No.	Pin Name	Pin Type	Description
1	PIO6	Bidirectional with strong pull-down	Programmable input/output line 6
2	PIO8	Bidirectional with strong pull-up	Programmable input/output line 8
3	PIO1	Bidirectional with strong pull-up	Programmable input/output line 1
4	PIO0	Bidirectional with strong pull-up	Programmable input/output line 0
5	LED1	Bidirectional	LED driver
6	AIO0	Bidirectional	Analogue programmable input/output line
7	PIO17	Bidirectional with strong pull-down	Programmable input/output line 17
8	PIO9	Bidirectional with strong pull-down	Programmable input/output line 9

9	PIO7	Bidirectional with strong pull-down	Programmable input/output line 7
10	1V8	1.8V output	1.8V output for keys
11	PIO16	Bidirectional with strong pull-up	Programmable input/output line 16
12	PIO14	Bidirectional with strong pull-up	Programmable input/output line 14
13	PIO15	Bidirectional with strong pull-up	Programmable input/output line 15
14	PIO21	Bidirectional with weak pull-down	Programmable input/output line 21
15	PIO18	Bidirectional with weak pull-down	Programmable input/output line 18
16	SPI_PCM#	Input with weak pull-down	SPI/PCM select input: 0 = PCM/PIO interface 1 = SPI
17	GND	VSS	Ground
18	USB_P	Bidirectional	USB data plus
19	USB_N	Bidirectional	USB data minus
20	RSTn	Input with strong pull-up	Reset if low. Pull low for minimum 5ms to cause a reset.
21	SPI_MOSI	Bidirectional with weak pull-down	Programmable input / output line 2 Alternative function: SPI_MOSI: Debug SPI data input
22	SPI_CLK	Bidirectional with weak pull-down	Programmable input / output line 5 Alternative function: SPI_CLK: Debug SPI clock
23	SPI_CSB	Bidirectional with weak pull-down	Programmable input / output line 4 Alternative function: SPI_CS#: chip select for Debug
24	SPI_MISO	Bidirectional with weak pull-down	Programmable input / output line 3 Alternative function: SPI_MISO: Debug SPI data output
25	VCHG	Charger voltage input	Internal charger input for charging
26	GND	VSS	Ground
27	VBAT	Battery positive terminal	Power supply input for 2.8~4.2V
28	LED0	Bidirectional	LED driver
29	LED2	Bidirectional	LED driver
30	VREG_EN	Power on/off key input	Power on/off input key indication

31	MIC_BIAS	Analog	Microphone bias output
32	LINE_BN	Analog input	Line input negative, channel B
33	LINE_BP	Analog input	Line input positive, channel B
34	LINE/MIC_AP	Analog input	Line or microphone input positive, channel
35	LINE/MIC_AN	Analog input	Line or microphone input negative, channe
36	SPK_BN	Analog output	Speaker output negative right
37	SPK_BP	Analog output	Speaker output positive right
38	SPK_AN	Analog output	Speaker output negative left
39	SPK_AP	Analog output	Speaker output positive left
40	GND	VSS	Ground

## 7 Electrical Characteristics

### 7.1 Absolute Maximum Ratings

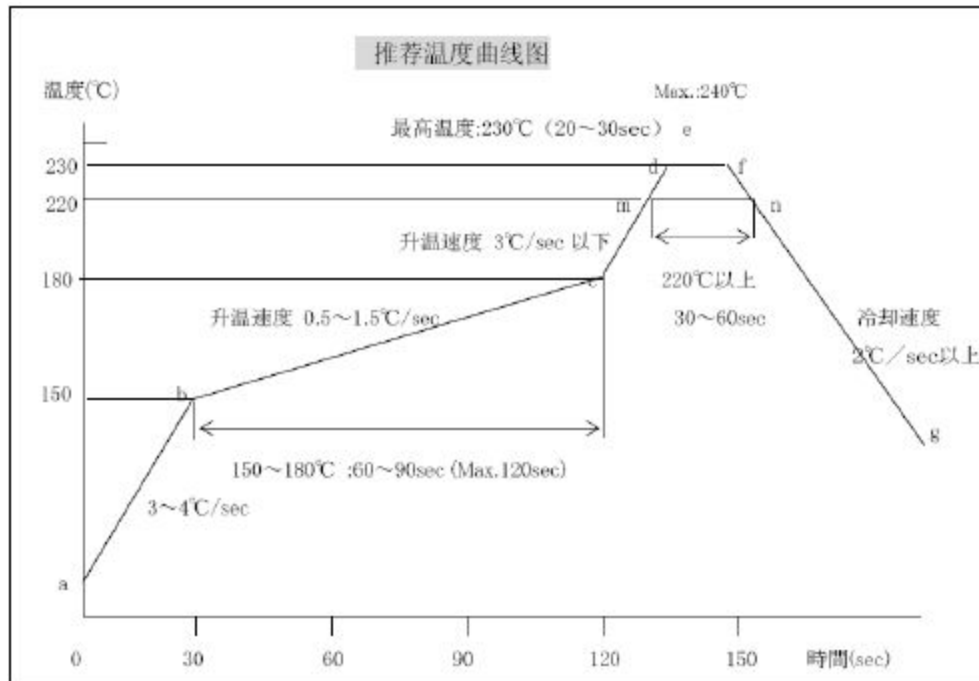
Rating	Minimum	Maximum
Storage temperature	-40°C	+85°C


### 7.2 Recommended Operating Conditions

Operating Condition	Minimum	Maximum
Operating temperature range	-10°C	+70°C
Supply voltage: VBAT	+2.8V	+4.2V



## 8 Recommended reflow temperature profile





**CAUTION**  
This bag contains  
MOISTURE-SENSITIVE DEVICES

LEVEL

3

If Blank, see adjacent  
bar code label

1. Calculated shelf life in sealed bag: 12 months at < 40 °C and < 90% relative humidity (RH)
2. Peak package body temperature: \_\_\_\_\_ 260 \_\_\_\_\_ °C  
If Blank, see adjacent bar code label
3. After bag is opened, devices that will be subjected to reflow solder or other high temperature process must
  - a) Mounted within: \_\_\_\_\_ 168 \_\_\_\_\_ hours of factory  
If Blank, see adjacent bar code label

conditions ≤ 30 °C / 60 %

  - b) stored at < 10%RH
4. Devices require bake, before mounting, if :
  - a) Humidity Indicator Card is > 10 % when read at 23 ± 5 °C
  - b) 3a or 3b not met.
5. If baking is required, devices may be baked for 48 hours at 125 ± 5 °C  
Note: If device containers cannot be subjected to high temperature or shorter bake times are desired,  
reference IPC / JEDEC J-STQ-033 for bake procedure

Bag Seal Date: \_\_\_\_\_  
If Blank, see adjacent bar code label

Note: Level and body temperature defined by IPC / JEDEC J-STQ-020

The module Must go through 125°C baking for at least 9 hours before SMT AND IR reflow process!

若拆封后未立即上线，天嘉润科技建议让下次上线前务必以 125°C烘烤 9 小时以上！

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## Record of Changes

Data	Revision	Description
2013-11-26	V1.0	Original publication of this document.
2016-01-29	V1.4	

## IMPORTANT NOTICE

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