



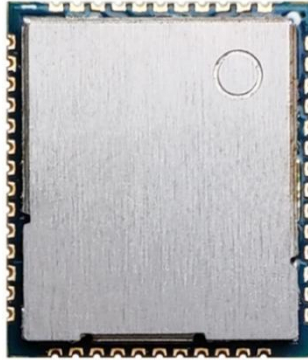
BL-M8852BS2

**802.11ax MIMO 2x2 WLAN + BT5.2
SDIO Module Specification**

SHENZHEN BILIAN ELECTRONIC CO., LTD

Add: 10~11/F, Building 1A, Huaqiang idea park, Guangming district, Shenzhen. Guangdong, China

Web: www.b-link.net.cn



(Top View)

Module Name: BL-M8852BS2	
Module Type: 802.11a/b/g/n/ac/ax MIMO 2x2 WLAN + Bluetooth 5.2 Combo SDIO Module	
Revision: V1.0	
Customer Approval:	
Company:	
Title:	
Signature:	Date:
BL-link Approval:	
Title:	
Signature:	Date:

Revision History

Revision	Summary	Release Date
0.1	Initial release	2021-10-26
1.0	official version	2022-03-17

--	--	--

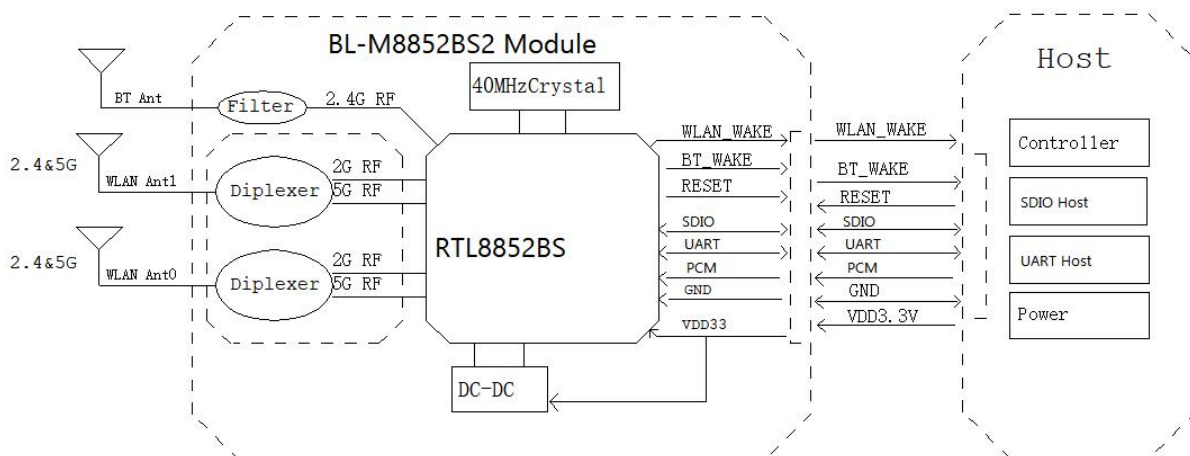
1.Introduction

The BL-M8852BS2 is a highly integrated Module that support 2-stream 802.11ax solutions with Multi-user MIMO (Multiple-input, Multiple-output) with Wireless LAN(WLAN) SDIO (SDIO1.1/2.0/3.0) interface controller with integrated Bluetooth 5 HS-UART interface controller. It combines a WLAN MAC, a 2T2R capable WLAN baseband, and RF in a Module. The BL-M8852BS2 provides a complete solution for a high-performance integrated wireless and Bluetooth device.

1.1 Features

- Operating Frequencies: 2.4~2.4835GHz or 5.15~5.85GHz
- Host Interfaces: SDIO for WLAN, UART for BT
- IEEE Standards: IEEE 802.11a/b/g/n/ac/ax
- Wireless data rate can reach up to 1201Mbps
- Power Supply: VDD3.3V±0.2V main power supply VDDIO: 3.3V or 1.8V

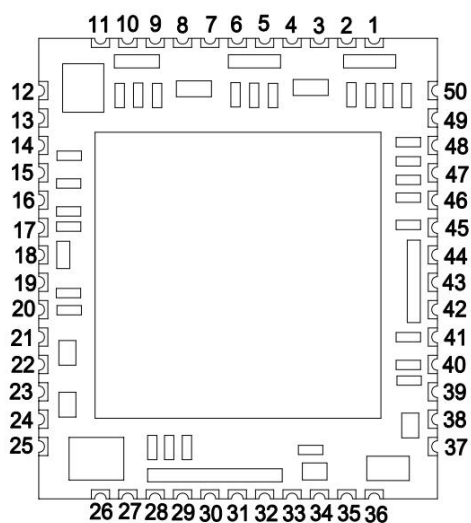
1.2 Block Diagram



1.3 General Specifications

Module Name	BL-M8852BS2
Chipset	RTL8852BS-CG
WLAN Standards	IEEE802.11a/b/g/n/ac/ax
Host Interface	WLAN: SDIO, BT: UART
Antenna	Connect to external antenna through the half hole
Dimension	15.1*13.1*2.10mm (L*W*H)
Power Supply	DC 3.3V±0.2V
Operation Temperature	-10°C to +70°C
Operation Humidity	10% to 95% RH (Non-Condensing)

2. Pin Assignments



2.1 Pin Definition

No	Pin Name	Type	Description	Supply
1	GND	P	Ground connections	
2	ANT1	RF	WLAN RF1 port2.4G/5.8G	
3	GND	P	Ground connections	

4	GND	P	Ground connections	
5	GND	P	Ground connections	
6	GND	P	Ground connections	
7	GND	P	Ground connections	
8	GND	P	Ground connections	
9	ANT0	RF	WLAN RF0 port2.4G/5.8G	
10	GND	P	Ground connections	
11	GND	P	Ground connections	
12	BT-ANT	RF	The RF pad for 2.4G BT_ANT	
13	GND	P	Ground connections	
14	GPIO5	I/O	General Purpose Input / Output Pin T GPIO_ON=500ms(Typical)	VDDIO
15	SD-RESET	I	Shared with Gpio9. This pin can externally shut down the RTL8852BS WLAN function when SD RESET is pulled low. When this pin is pulled low, SDIO interface will be disabled We suggest configuring the control pin in in platform side as open -drain	VDDIO
16	SD-WAKE		SDIO WAKE	VDDIO
17	SD_CMD	I/O	SDIO command line	VDDIO
18	SD_CLK	I	SDIO clock line	VDDIO
19	SD_D3	I/O	SDIO data line	VDDIO
20	SD_D2	I/O	SDIO data line	VDDIO
21	SD_D0	I/O	SDIO data line	VDDIO
22	SD_D1	I/O	SDIO data line	VDDIO
23	GND	P	Ground connections	
24	NC	-	NC	
25	NC	-	NC	
26	NC	-	NC	
27	PCM_SYNC	I/O	PCM sync I/O signal	VDDIO
28	PCM_IN	I	PCM data input	VDDIO
29	PCM_OUT	O	PCM Data output	VDDIO
30	PCM_CLK	I/O	PCM Clock input	VDDIO
31	NC	-	NC	
32	GND	P	Ground connections	
33	NC	-	NC	

34	VDDIO	P	1.8V±0.1V or 3.3V±0.2V power for SDIO interface and other I/Os	
35	NC	-	NC	
36	VDD33	P	3.3V Main Power Supply	
37	NC	-	NC	
38	BT-DIS	I	Shared with Gpl011 This pin can externally shut down the RTL8852BS BT function when BT DIS # is pulled Low. When this Pin is pulled low , UART interface will be also disabled, This pin can be also defined as the BT Radio-off function with host interface remaining connected	VDDIO
39	GND	P	Ground connections	
40	UART_TXD	O	Bluetooth UART interface	VDDIO
41	UART_RXD	I	Bluetooth UART interface	VDDIO
42	UART_RTS_N	/	GND	
43	UART_CTS_N	I	Bluetooth UART interface	VDDIO
44	WL-DIS	I	Shared with Gpl015 This pin can be defined as the WLAN Radio-off function with host interface remaining connected. When this pin is pulled low, WLAN Radio will be disabled	VDDIO
45	GPIO4	I/O	General Purpose Input / Output Pin T GPIO_ON=500ms(Typical) 0:Normal operation mode 1:Test/debug mode	VDDIO
46	GND	P	Ground connections	
47	SUSCLK	I	Boot from flash select for power on trap and External 32K clock input	VDDIO
48	GND	P	Ground connections	
49	BT_WAKE	O	Bluetooth device to wake up HOST	VDDIO
50	UART-WAKE	I/O	General Purpose Input / Output Pin	VDDIO

3. Electrical and Thermal Specifications

3.1 Recommended Operating Conditions

Parameters	Min	Typ	Max	Units	
Ambient Operating Temperature	-10	25	70	°C	
External Antenna VSWR	/	1.7	2	/	
Supply Voltage	VDD	3.1	3.3	3.5	V

VIO I/O Power supply	3.3V	3.1	3.3	3.5	V
	1.8V	1.7	1.8	1.9	V

3.2 Current Consumption

Conditions : VDD33=3.3V ; Ta:25°C			
Use Case	VBAT Current (average)		
	Typ	Max	Units
WiFi Load The drive (Linux Driver)	151	740	mA
2.4G WiFi Connect WIFI (Linux Driver)	153	740	mA
5G WiFi Connect WIFI (Linux Driver)	171	860	mA
2.4G WiFi TRX Throughput (Linux Driver)	302	740	mA
5G WiFi TRX Throughput (Linux Driver)	396	930	mA
2.4G 1Mbps TX (RF-Test)@ 18dBm	449	508	mA
2.4G 1Mbps RX (RF-Test)	178	204	mA
2.4G 11Mbps TX (RF-Test)@18dBm	381	508	mA
2.4G 11Mbps RX (RF-Test)	181	212	mA
2.4G 6Mbps TX (RF-Test)@17dBm	397	508	mA
2.4G 6Mbps RX (RF-Test)	181	212	mA
2.4G 54Mbps TX (RF-Test)@17dBm	272	508	mA
2.4G 54Mbps RX (RF-Test)	181	212	mA
2.4G MCS0(HT20) TX (RF-Test)@16dBm	381	500	mA
.4G MCS0(HT20) RX (RF-Test)	181	212	mA
2.4G MCS7(HT20) TX (RF-Test)@16dBm	259	486	mA
2.4G MCS7(HT20) RX (RF-Test)	181	228	mA
2.4G MCS8(HT20) TX (RF-Test)@16dBm NSSI=2	558	812	mA
2.4G MCS8(HT20) RX (RF-Test)	187	228	mA
2.4G MCS15(HT20) TX (RF-Test)@16dBm NSSI=2	338	796	mA
2.4G MCS15(HT20) RX (RF-Test)	187	228	mA
2.4G MCS0(HT40) TX (RF-Test)@16dBm	348	496	mA
2.4G MCS0(HT40) RX (RF-Test)	181	228	mA
2.4G MCS7(HT40) TX (RF-Test)@16dBm	237	496	mA
2.4G MCS7(HT40) RX (RF-Test)	181	228	mA

2.4G MCS8(HT40) TX (RF-Test)@16dBm NSSI=2	448	756	mA
2.4G MCS8(HT40) RX (RF-Test)	189	228	mA
2.4G MCS15(HT40) TX (RF-Test)@16dBm NSSI=2	294	748	mA
2.4G MCS15(HT40) RX (RF-Test)	190	228	mA
2.4G MCS0(VHT20) TX (RF-Test)@16dBm NSSI=2	519	740	mA
2.4G MCS0(VHT20) RX (RF-Test)	190	228	mA
2.4G MCS8(VHT20) TX (RF-Test)@16dBm NSSI=2	315	740	mA
2.4G MCS8(VHT20) RX (RF-Test)	190	228	mA
2.4G MCS0(VHT40) TX (RF-Test)@16dBm NSSI=2	452	740	mA
2.4G MCS0(VHT40) RX (RF-Test)	190	228	mA
2.4G MCS9(VHT40) TX (RF-Test)@16dBm NSSI=2	292	740	mA
2.4G MCS9(VHT40) RX (RF-Test)	190	228	mA
2.4G MCS0(HE40) TX (RF-Test)@15dBm NSSI=2	439	740	mA
2.4G MCS0(HE40) RX (RF-Test)	190	228	mA
2.4G MCS11(HE40) TX (RF-Test)@15dBm NSSI=2	304	748	mA
2.4G MCS11(HE40) RX (RF-Test)	190	228	mA
5G 6Mbps TX (RF-Test)@17dBm	681	860	mA
5G 6Mbps RX (RF-Test)	175	296	mA
5G 54Mbps TX (RF-Test)@17dBm	426	868	mA
5G 54Mbps RX (RF-Test)	175	296	mA
5G MCS0(HT20) TX (RF-Test)@16dBm	645	850	mA
5G MCS0(HT20) RX (RF-Test)	175	296	mA
5G MCS7(HT20) TX (RF-Test)@16dBm	397	840	mA
5G MCS7(HT20) RX (RF-Test)	175	296	mA
5G MCS8(HT20) TX (RF-Test)@16dBm NSSI=2	573	830	mA
5G MCS8(HT20) RX (RF-Test)	180	204	mA
5G MCS15(HT20) TX (RF-Test)@16dBm NSSI=2	346	824	mA
5G MCS15(HT20) RX (RF-Test)	180	204	mA
5G MCS0(HT40) TX (RF-Test)@16dBm	370	524	mA
5G MCS0(HT40) RX (RF-Test)	180	204	mA
5G MCS7(HT40) TX (RF-Test)@16dBm	245	524	mA
5G MCS7(HT40) RX (RF-Test)	180	204	mA
5G MCS8(HT40) TX (RF-Test)@16dBm NSSI=2	574	840	mA

5G MCS8(HT40) RX (RF-Test)	185	212	mA
5G MCS15(HT40) TX (RF-Test)@16dBm NSSI=2	315	828	mA
5G MCS15(HT40) RX (RF-Test)	185	212	mA
5G MCS0(VHT20) TX (RF-Test)@16dBm NSSI=2	573	820	mA
5G MCS0(VHT20) RX (RF-Test)	185	212	mA
5G MCS8(VHT20) TX (RF-Test)@16dBm NSSI=2	338	836	mA
5G MCS8(VHT20) RX (RF-Test)	185	212	mA
5G MCS0(VHT40) TX (RF-Test)@16 NSSI=2	497	828	mA
5G MCS0(VHT40) RX (RF-Test)	188	216	mA
5G MCS9(VHT40) TX (RF-Test)@16dBm NSSI=2	316	828	mA
5G MCS9VHT40) RX (RF-Test)	188	216	mA
5G MCS0(VHT80) TX (RF-Test)@16dBm NSSI=2	436	868	mA
5G MCS0(VHT80) RX (RF-Test)	200	236	mA
5G MCS9(VHT80) TX (RF-Test)@16dBm NSSI=2	312	868	mA
5G MCS9VHT80) RX (RF-Test)	200	236	mA
5G MCS0(HE80) TX (RF-Test)@15dBm NSSI=2	430	844	mA
5G MCS0(HE80) RX (RF-Test)	200	236	mA
5G MCS11(HE80) TX (RF-Test)@15dBm NSSI=2	328	868	mA
5G MCS11(HE80) RX (RF-Test)	200	236	mA
BT			
DH1 TX(RF-Test) @5dBm	240	268	mA
DH1 RX(RF-Test)	215	244	mA
2DH1 TX(RF-Test) @5dBm	240	268	mA
2DH1 RX(RF-Test)	215	244	mA
3DH1 TX(RF-Test)@ 5dBm	240	268	mA
3DH1 RX(RF-Test)	215	244	mA
LE 1M TX(RF-Test)@5dBm	229	268	mA
LE 1M RX(RF-Test)	215	246	mA
LE 2M TX(RF-Test)@5dBm	215	268	mA
LE 2M RX(RF-Test)5dBm	215	244	mA

4. WIFI & Bluetooth RF Specifications

4.1 2.4G WLAN RF Specification

Conditions : VDD33=3.3V ; Ta:25°C			
Features	Description		
WLAN Standard	IEEE 802.11b/g/n/ax, CSMA/CA		
Frequency Range	2.4~2.4835GHz (2.4GHz ISM Band)		
Channels	Ch1~Ch13 (For 20MHz Channels)		
Modulation	802.11b (DSSS): CCK, DQPSK, DBPSK; 802.11g (OFDM): BPSK, QPSK, QAM16, QAM64; 802.11n (OFDM): BPSK, QPSK, QAM16, QAM64; 802.11ax (OFDMA): BPSK, BPSK_DCM, QPSK, QPSK_DCM, QAM16, QAM16_DCM, QAM64, QAM256, QAM1024;		
Date Rate	802.11b: 1, 2, 5.5, 11Mbps; 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps; 802.11n (HT20): MCS0~MCS7(1T1R_SISO) 6.5~72.2Mbps; 802.11n (HT20): MCS8~MCS15(2T2R_MIMO) 13~144.4Mbps; 802.11n (HT40): MCS0~MCS7(1T1R) 13.5~150Mbps; 802.11n (HT40): MCS8~MCS15(2T2R) 27~300Mbps; 802.11ax (HE_MU,26~242RU): MCS0~MCS11(1T1R) 0.4~143.4Mbps; 802.11ax (HE_MU,26~242RU): MCS0~MCS11(2T2R) 0.8~286.8Mbps; 802.11ax (HE_SU, non-OFDMA 20MHz): MCS0~MCS11(1T1R) 3.6~143.4Mbps; 802.11ax (HE_SU, non-OFDMA 20MHz): MCS0~MCS11(2T2R) 7.3~286.8Mbps; 802.11ax (HE_SU, non-OFDMA 40MHz): MCS0~MCS11(1T1R) 7.3~286.8Mbps; 802.11ax (HE_SU,non-OFDMA 40MHz): MCS0~MCS11(2T2R) 14.6~573.5Mbps;		
Frequency Tolerance	≤±20ppm		
2.4G Transmitter Specifications			
TX Rate	TX Power (dBm)	TX Power Tolerance (dBm)	EVM (dB)
802.11b@1~11Mbps	18	±2	≤-15
802.11g@6Mbps	18	±2	≤-15
802.11g@54Mbps	17	±2	≤-25
802.11n@HT20_MCS0	18	±2	≤-16
802.11n@HT20_MCS7	17	±2	≤-28
802.11n@HT40_MCS0	17	±2	≤-10
802.11n@HT40_MCS7	16	±2	≤-28
802.11ax@HE_SU 20M_MCS0	16	±2	≤-15
802.11ax@HE_SU 20M_MCS11	15	±2	≤-35
802.11ax@HE_SU 40M_MCS0	16	±2	≤-15

802.11ax@HE_SU 40M_MCS11	15	±2	≤-35
2.4G Receiver Specifications			
RX Rate	Min Input Level (dBm)	Max Input Level (dBm)	PER
802.11b@1Mbps	-94	-5	< 8%
802.11b@11Mbps	-87	-5	< 8%
802.11g@6Mbps	-92	-5	< 10%
802.11g@54Mbps	-74	-5	< 10%
802.11n@HT20_MCS0	-92	-5	< 10%
802.11n@HT20_MCS7	-72	-5	< 10%
802.11n@HT40_MCS0	-89	-5	< 10%
802.11n@HT40_MCS7	-70	-5	< 10%
802.11ax@HE_SU 20M_MCS0	-86	-5	< 10%
802.11ax@HE_SU 20M_MCS11	-59	-5	< 10%
802.11ax@HE_SU 40M_MCS0	-86	-5	< 10%
802.11ax@HE_SU 40M_MCS11	-56	-5	< 10%

4.2 5G WLAN RF Specification

Conditions: VDD33=3.3V; Ta:25°C	
Features	Description
WLAN Standard	IEEE 802.11a/n/ac/ax, CSMA/CA
Frequency Range	5.15~5.25GHz; 5.25~5.35GHz; 5.47~5.73GHz; 5.735~5.835GHz (5GHz ISM Band)
Channels	Ch36, Ch40, Ch44, Ch48; Ch52~Ch64; Ch100~Ch140; Ch149~Ch165 (For 20MHz Channels)
Modulation	802.11a (OFDM): BPSK, QPSK, QAM16, QAM64; 802.11n (OFDM): BPSK, QPSK, QAM16, QAM64; 802.11ac (OFDM): BPSK, QPSK, QAM16, QAM64, QAM256; 802.11ax (OFDMA): BPSK, BPSK_DCM, QPSK, QPSK_DCM, QAM16, QAM16_DCM, QAM64, QAM256, QAM1024;
Date Rate	802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps; 802.11n (HT20): MCS0~MCS7(1T1R_SISO) 6.5~72.2Mbps; 802.11n (HT20): MCS8~MCS15(2T2R_MIMO) 13~144.4Mbps; 802.11n (HT40): MCS0~MCS7(1T1R) 13.5~150Mbps;

	<p>802.11n (HT40): MCS8~MCS15(2T2R) 27~300Mbps;</p> <p>802.11ac (VHT20): MCS0~MCS8(1T1R) 6.5~86.7Mbps;</p> <p>802.11ac (VHT20): MCS0~MCS8(2T2R) 13~173.3Mbps;</p> <p>802.11ac (VHT40): MCS0~MCS9(1T1R)13.5~200Mbps;</p> <p>802.11ac (VHT40): MCS0~MCS9(2T2R)27~400Mbps;</p> <p>802.11ac (VHT80): MCS0~MCS9(1T1R)29.3~433.3Mbps;</p> <p>802.11ac (VHT80): MCS0~MCS9(2T2R)58.5~866.7Mbps;</p> <p>802.11ax (HE_MU,26~484RU): MCS0~MCS11(1T1R) 0.4~286.8Mbps;</p> <p>802.11ax (HE_MU,26~484RU): MCS0~MCS11(2T2R) 0.8~573.5Mbps;</p> <p>802.11ax (HE_SU, non-OFDMA 20MHz): MCS0~MCS11(1T1R) 3.6~143.4Mbps;</p> <p>802.11ax (HE_SU, non-OFDMA 20MHz): MCS0~MCS11(2T2R) 7.3~286.8Mbps;</p> <p>802.11ax (HE_SU, non-OFDMA 40MHz): MCS0~MCS11(1T1R) 7.3~286.8Mbps;</p> <p>802.11ax (HE_SU,non-OFDMA 40MHz): MCS0~MCS11(2T2R) 14.6~573.5Mbps;</p> <p>802.11ax (HE_SU,non-OFDMA 80MHz): MCS0~MCS11(1T1R) 15.3~600.4Mbps;</p> <p>802.11ax (HE_SU, non-OFDMA 80MHz): MCS0~MCS11(2T2R) 30.6~1201Mbps;</p>
Frequency Tolerance	$\leq \pm 20\text{ppm}$

5G Transmitter Specifications

TX Rate	TX Power (dBm)	TX Power Tolerance (dBm)	EVM (dB)
802.11a@6Mbps	18	± 2	≤ -10
802.11a@54Mbps	17	± 2	≤ -25
802.11n@HT20_MCS0	17	± 2	≤ -13
802.11n@HT20_MCS7	16	± 2	≤ -28
802.11n@HT40_MCS0	17	± 2	≤ -13
802.11n@HT40_MCS7	16	± 2	≤ -28
802.11ac@VHT20_MCS0	17	± 2	≤ -13
802.11ac@VHT20_MCS8	16	± 2	≤ -32
802.11ac@VHT80_MCS0	17	± 2	≤ -13
802.11ac@VHT80_MCS9	16	± 2	≤ -32
802.11ax@HE_SU 20M_MCS0	16	± 2	≤ -13
802.11ax@HE_SU 20M_MCS11	15	± 2	≤ -35
802.11ax@HE_SU 80M_MCS0	16	± 2	≤ -13
802.11ax@HE_SU 80M_MCS11	15	± 2	≤ -35

5G Receiver Specifications			
RX Rate	Min Input Level (dBm)	Max Input Level (dBm)	PER
802.11a@6Mbps	-92	-5	< 10%
802.11a@54Mbps	-74	-5	< 10%
802.11n@HT20_MCS0	-92	-5	< 10%
802.11n@HT20_MCS7	-72	-5	< 10%
802.11n@HT40_MCS0	-89	-5	< 10%
802.11n@HT40_MCS7	-69	-5	< 10%
802.11ac@VHT80_MCS0	-86	-5	< 10%
802.11ac@VHT80_MCS9	-59	-5	< 10%
802.11ax@HE_SU 80M_MCS0	-86	-5	< 10%
802.11ax@HE_SU 80M_MCS11	-56	-5	< 10%

4.3 Bluetooth RF Specification

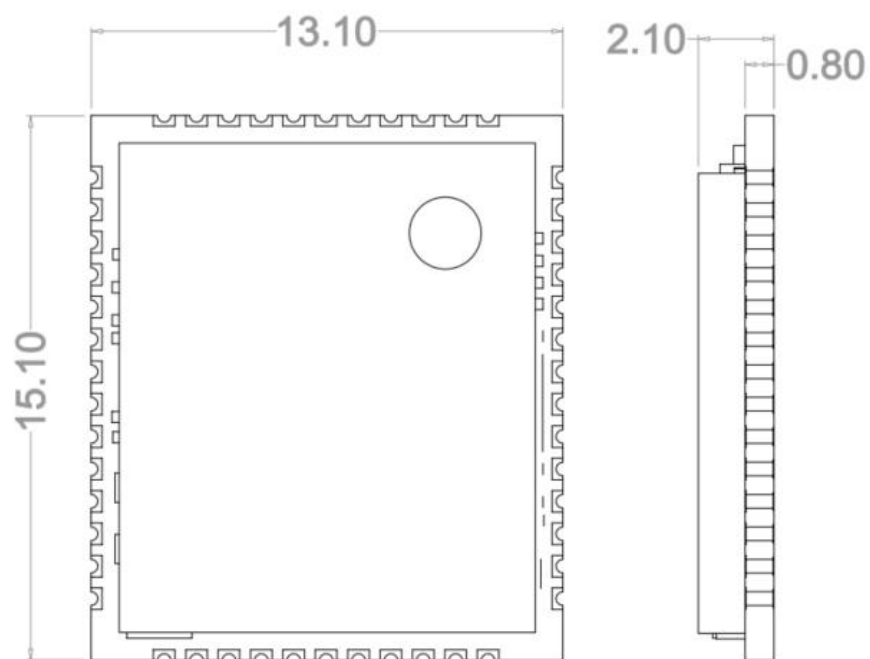
Conditions: VDD33=3.3V; Ta:25°C			
Features	Description		
Bluetooth Specification	Bluetooth Core Specification v5.2/4.2/2.1		
Frequency Range	2.4~2.4835GHz (2.4GHz ISM Band)		
Channels	Bluetooth Classic: Ch0~Ch78 (For 1MHz Channels); Bluetooth Low Energy: Ch0~Ch39 (For 2MHz Channels);		
Power Classes	Bluetooth Classic: Class1; Bluetooth Low Energy: Class1.5;		
Date Rate & Modulation	BR_1Mbps: GFSK; EDR_2Mbps: $\pi/4$ -DQPSK; EDR_3Mbps: 8DPSK; LE_125Kbps: GFSK (Coded_S=8); LE_500Kbps: GFSK (Coded_S=2); LE_1Mbps: GFSK (Uncoded); LE_2Mbps: GFSK (Uncoded);		
Bluetooth Transmitter Specifications			
Items	Min (dBm)	Typ (dBm)	Max (dBm)
TX Power			

BR_1M	0	5	10
EDR_2/3M	0	5	10
LE_125K/500K/1M/2M	0	5	10
Items	Min	Typ	Max
BR_1M (DH1) Modulation Characteristics			
Δf_{1avg}	140KHz	165.1KHz	175KHz
Δf_{2avg}	140KHz	153.1KHz	175KHz
Δf_{2max}	115KHz	159.7KHz	/
$\Delta f_{2avg}/\Delta f_{1avg}$	0.8	0.927	/
Items	Min	Typ	Max
EDR_3M(3DH5) EDR Carrier Frequency Stability and Modulation Accuracy			
ω_i	-75KHz	3.02KHz	+75KHz
$\omega_i + \omega_o$	-75KHz	3.49KHz	+75KHz
ω_o	-10KHz	0.41KHz	+10KHz
8DPSK RMS DEVM	/	0.037	0.13
8DPSK DEVM	/	0.072	0.25
Items	Min	Typ	Max
LE_1M Modulation Characteristics			
Δf_{1avg}	225KHz	252.28KHz	275KHz
Δf_{2avg}	225KHz	231.54KHz	275KHz
Δf_{2max}	185KHz	224.60KHz	/
$\Delta f_{2avg}/\Delta f_{1avg}$	0.8	0.918	/
Items	Min	Typ	Max
LE_2M Modulation Characteristics			
Δf_{1avg}	450KHz	499.73KHz	550KHz
Δf_{2avg}	450KHz	495.79KHz	550KHz
Δf_{2max}	370KHz	477.9KHz	/
$\Delta f_{2avg}/\Delta f_{1avg}$	0.8	0.992	/
Bluetooth Receiver Specifications			

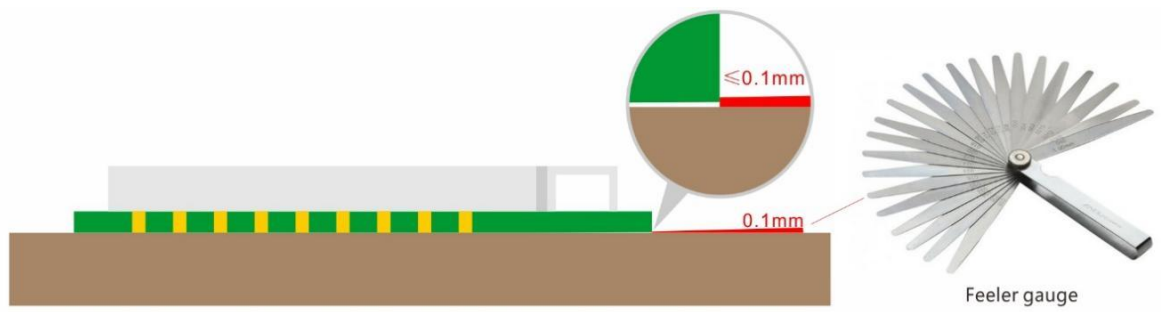
Items	Sensitivity		Maximum Input Level	
	Input Level(Typ)	BER	Input Level(Typ)	BER
BR_1M (DH1)	-90 dBm	$\leq 0.1\%$	-5 dBm	$\leq 0.1\%$
EDR_3M (3DH5)	-80 dBm	$\leq 0.01\%$	-5 dBm	$\leq 0.1\%$
	Input Level (Typ)	PER	Input Level (Typ)	PER
LE_125K	-92 dBm	$\leq 5\%$	-5 dBm	$\leq 5\%$
LE_1M	-88 dBm	$\leq 5\%$	-5 dBm	$\leq 5\%$
LE_2M	-84 dBm	$\leq 5\%$	-5 dBm	$\leq 5\%$

5. Mechanical Specifications

5.1 Module Outline Drawing

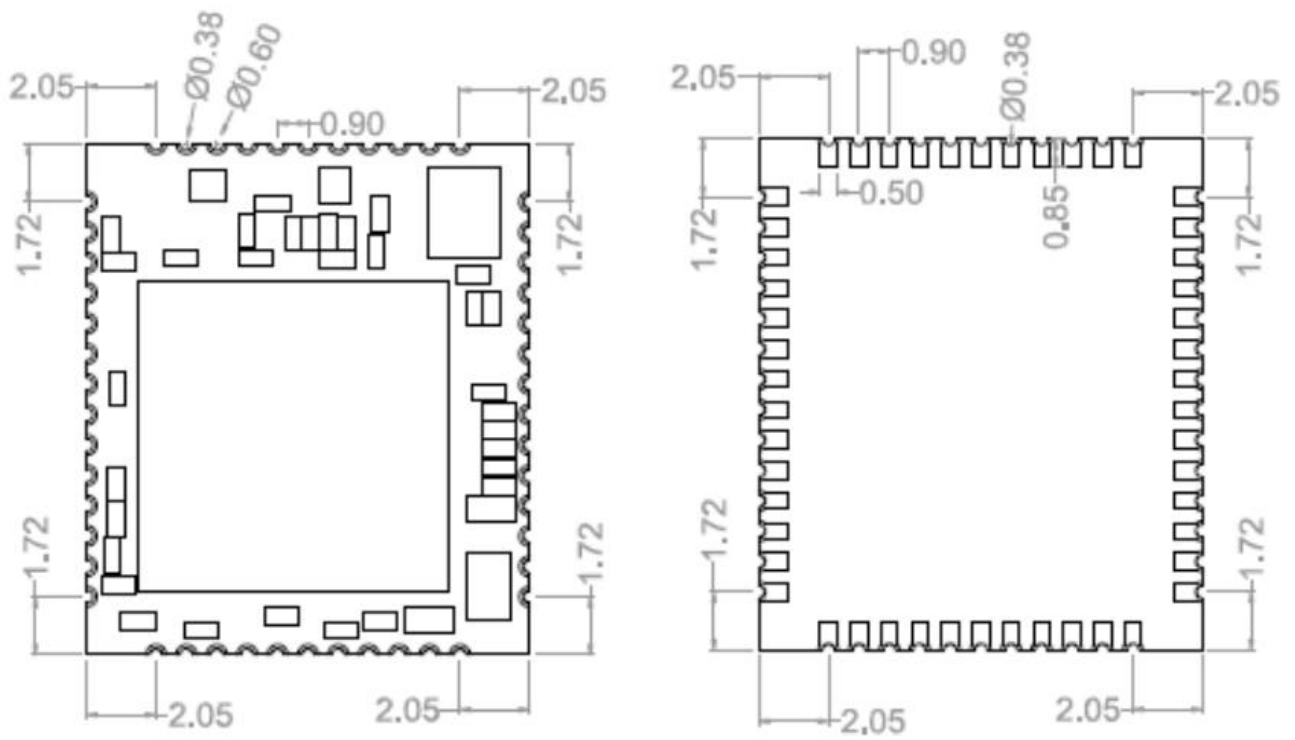


Module dimension: 15.1*13.1*2.1mm(L*W*H; Tolerance: $\pm 0.15\text{mm}$)



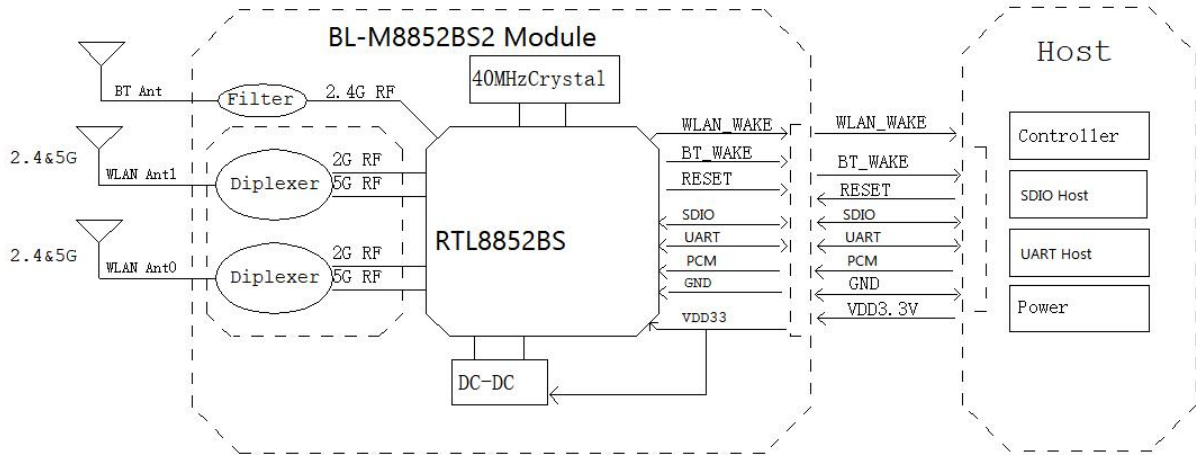
Module Bow and Twist: $\leq 0.1\text{mm}$

5.2 Mechanical Dimensions

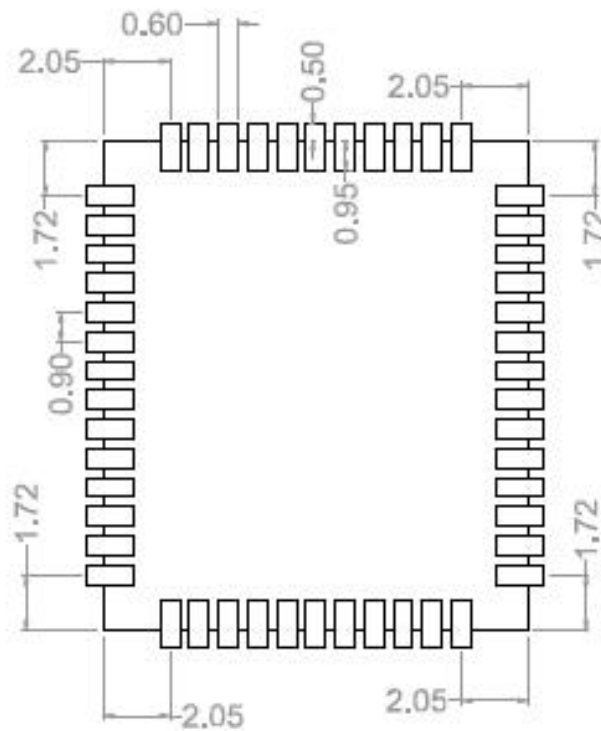


6. Application Information

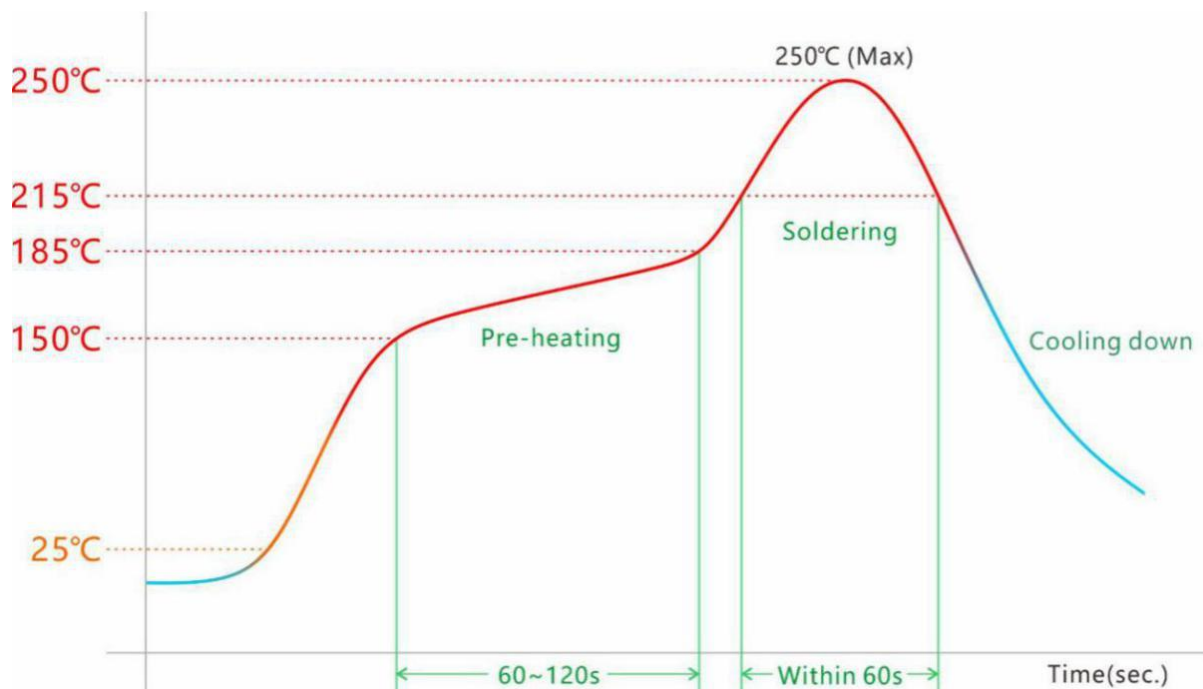
6.1 Typical Application Circuit



6.2 Recommend PCB Layout Footprint



6.3 Reflow Soldering Standard Conditions

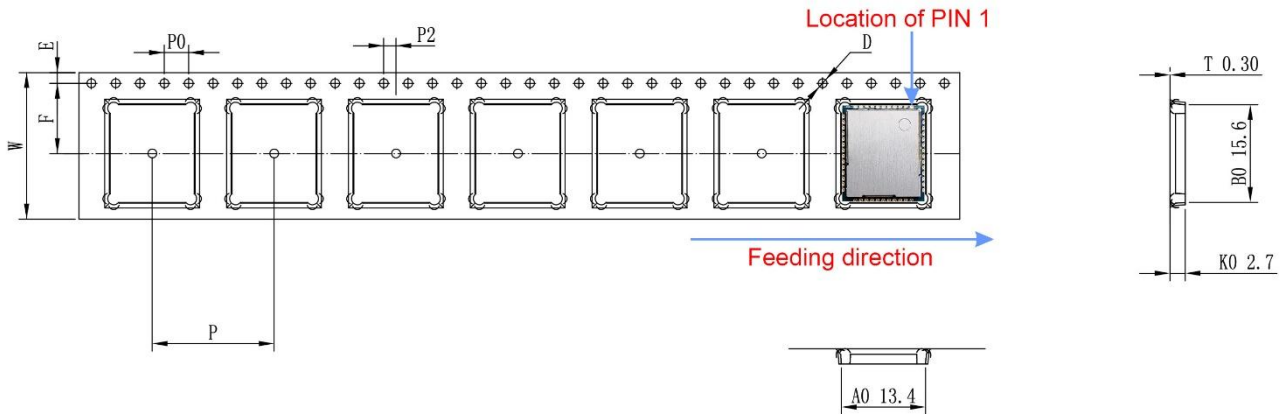


7. Key Components Of Module

No.	Parts	Specification	Manufacturer	Note
1	Chipset	RTL8852BS-CG	Realtek CO., LTD	
2	PCB	BL-M8852BS2	Shenzhen Tie Fa Technology CO. LTD	
			Guangdong KINGSHINE ELECTRONICS CO., LTD	
			MILLION SOURCE PRINTED CIRCUIT BOARD CO., LTD	
			Quzhou Sunlord Electronics CO., LTD	
3	Crystal	40MHz-12pF-10ppm-1612	HUBEI TKD ELECTRONICS CO., LTD	
			Lucki Electronics CO., LTD	
			Shenzhen Kaiyuexiang Electronics CO., LTD	
4	Diplexer	RFDIP1607L898D1T	Walsin	

8. Package and Storage Information

8.1 Package Dimensions



ITEM	W	A0	B0	K0	E	F	P	P0	P2	D	T
DIM	24.00±0.3	13.40±0.1	15.60±0.1	2.70±0.1	1.75±0.1	11.5±0.1	20.00±0.1	4.00±0.1	2.00±0.1	Ø1.5±0.1	0.30±0.05



Package specification:

- 1,000 modules per roll and 5,000 modules per box.
- Outer box size: 37.5*36*29cm.
- The diameter of the blue environment-friendly rubber plate is 13 inches, with a total thickness of 28mm (with a width of 24mm carrying belt).
- Put 1 package of dry agent (20g) and humidity card in each anti-static vacuum bag.

5. Each carton is packed with 5 boxes.

8.2 Storage Conditions

Absolute Maximum Ratings:

Storage temperature: -40°C to +85°C,

Storage humidity: 10% to 95 (Non-Condensing)

Recommended Storage Conditions:

Storage temperature: 5°C to +40°C,

Storage humidity: 20% to 90% RH

Please use this Module within 12month after vacuum-packaged.

The Module shall be stored without opening the packing.

After the packing opened, the Module shall be used within 72hours.

When the color of the humidity indicator in the packing changed,

The Module shall be baked before soldering.

Baking condition: 60°C, 24hours, 1time.

ESD Sensitivity:

ESD Protection: 2KV (HBM, Maximum rating)

The Module is a static-sensitive electronic device.

Do not operate or store near strong electrostatic fields.

Take proper ESD precautions!



ESD CAUTION