

Product Specification

Revision	V1.0		
Date	2019-07-12		
Model Name	BL-M8822CS2S		
Product Name	802.11a/b/g/n/ac 2T2R WiFi + Bluetooth 5.0 SDIO Module		
Bilian Approve Field			
Engineer	QC	Sales	
Can Zhang	Katy Lee		
Customer Approve Field			
Engineer	QC	Manufactory	Purchasing

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Revision History

Date	Document Revision	Product Revision	Description
2019/02/27	0.1	V0.1	Preliminary release
2019/07/11	1.0	V1.0	Final

1. Introduction

1.1 General Description

BL-M8822CS2S is a highly integrated module that was built in a 2*2 dual-band wireless LAN radio and Bluetooth radio. It combines a WLAN MAC, a 2T2R capable WLAN baseband, and RF in a single chip. It supports IEEE 802.11a/b/g/n/ac standard and provides the highest PHY rate up to 867Mbps, offering feature-rich wireless connectivity and reliable throughput from an extended distance. It includes Bluetooth 2.1/3.0/4.1/v4.2/5.0 LE.

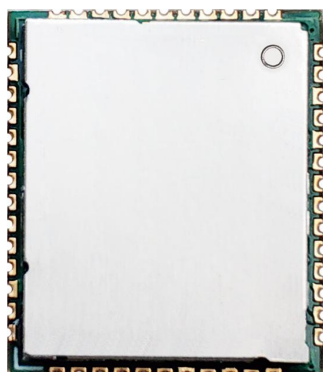


Figure 1 Top View



Figure 2 Bottom View

Note: The above pictures are for reference only

1.2 Features

- Operating Frequencies : 2.4~2.4835GHz and 5.15~5.85GHz
- Host Interface is SDIO (SDIO 1.1/2.0/3.0) and UART for BT
- IEEE Standards : IEEE 802.11a/b/g/n/ac
- Wireless data rate can reach up to 867Mbps
- Connect to external antenna through the half hole
- Power Supply: VBAT 3.3V $\pm$ 0.3V, main power supply; VDIO 3.3 $\pm$ 0.3V or 1.8 $\pm$ 0.2V, the SDIO, UART and PCM signal level range from 1.8V~3.3V.

1.3 Applications

- MID
- IP Camera
- STB
- Smart TV
- E-book
- Other devices which need to be supported by wireless network

2. Functional Block Diagram

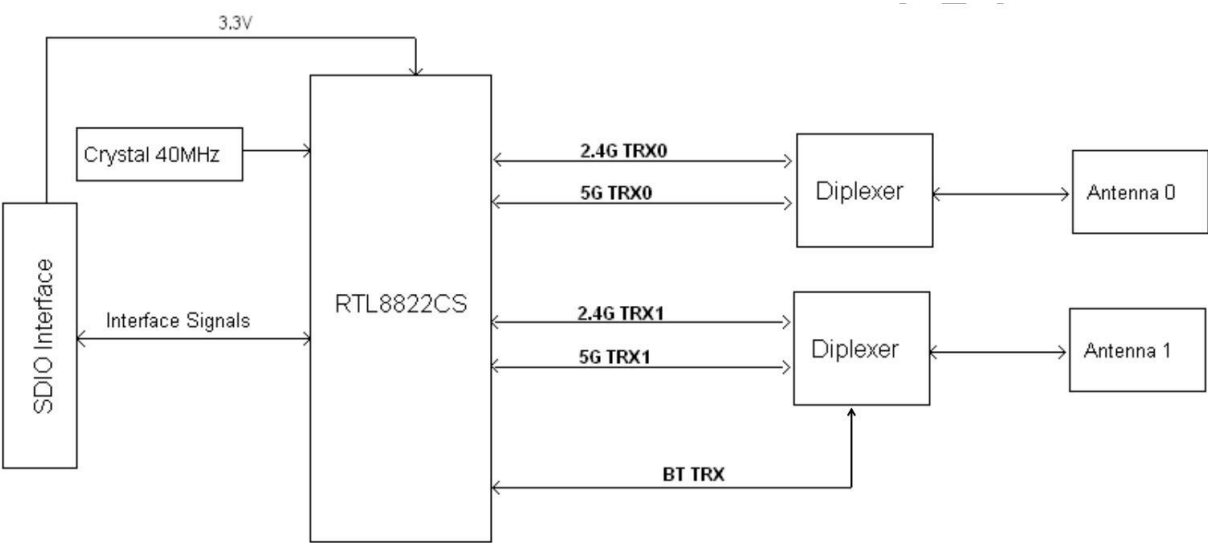


Figure 3 BL-M8822CS2S

3. Product Technical Specifications

3.1 General Specifications

Item	Description
Product Name	BL-M8822CS2S
Main Chip	RTL8822CS-VS-CG
Host Interface	SDIO for WiFi; UART for Bluetooth
IEEE Standards	IEEE 802.11a/b/g/n/ac
Operating Frequencies	2.4~2.4835GHz, 5.180~5.835 GHz
Modulation	WiFi : 802.11b DSSS: CCK,DQPSK,DBPSK 802.11g OFDM: 64-QAM,16-QAM, QPSK, BPSK 802.11n OFDM: 64-QAM,16-QAM, QPSK, BPSK 802.11ac OFDM: 256-QAM, 64-QAM,16-QAM, QPSK, BPSK

	BT : FHSS:GFSK, $\pi/4$ -DQPSK, 8PSK
Working Mode	Infrastructure, Ad-Hoc
Wireless Data Rate	WiFi: 802.11b: 1,2,5.5,11Mbps, 802.11a: 6,9,12,18,24,36,48,54Mbps, 802.11g: 6,9,12,18,24,36,48,54Mbps, 802.11n-2.4/5G HT20: MCS0~15, 6.5~144.4Mbps, 802.11n-2.4/5G HT40: MCS0~15, 13~300Mbps, 802.11ac-VHT20:MCS0~8,VHT40、80:MCS0~9,reach up to 867Mbps, BT: 1Mbps for BDR、BLE, 2、3Mbps for EDR
Rx Sensitivity	-95dBm (Min)
Antenna Type	Connect to the external antenna through half hole
Dimension(L*W*H)	15.1*13.1*2.4mm (LxWxH) Tolerance:+/-0.15mm
Clock Source	40MHz
Working Temperature	-10℃ to +70℃
Storage Temperature	-40℃ to +85℃

3.2 wifi DC Power Consumption

VDD=3.3V, Ta = 25 °C, unit: mA				
Supply current		Typ		Max
RX sense mode(No Link)		172		202
802.11b	1Mbps		11Mbps	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	395	436	347	440
RX mode	178	204	177	206
802.11g	6Mbps		54Mbps	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	455	620	311	652
RX mode	183	216	183	220
802.11n HT20	MCS0		MCS7	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	379	512	264	504
RX mode	182	216	183	216
802.11n HT20	MCS 8		MCS15	

Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	398	536	265	544
RX mode	177	208	175	212
802.11n HT40	MCS0		MCS7	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	317	432	231	428
RX mode	191	220	190	224
802.11n HT40	MCS 8		MCS15	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	357	544	246	544
RX mode	184	216	185	216
802.11a	6Mbps		54Mbps	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	412	512	279	528
RX mode	176	209	174	212
802.11n HT20(5G)	MCS0		MCS7	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	398	492	273	504
RX mode	167	196	166	192
802.11n HT20(5G)	MCS8		MCS15	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	513	704	319	712
RX mode	167	196	167	200
802.11n HT40(5G)	MCS0		MCS7	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	369	504	252	504
RX mode	176	207	175	208
802.11n HT40(5G)	MCS8		MCS15	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	448	716	293	720
RX mode	175	204	176	204
802.11acVHT80(5G)	MCS0		MCS9	
Supply current	Typ.	Max.	Typ.	Max.
Continuous TX mode	392	840	309	816
RX mode	184	212	185	212

3.3 WiFi RF Specification

EVM	WiFi-2.4G: <-18dB@11b-11Mbps <-28dB@11g-54Mbps <-28dB@11n-HT20/40-MCS7
	WiFi-5G: <-28dB@11a-54Mbps <-28dB@11n-HT20/40-MCS7 <-32dB@11ac-VHT80-MCS9
Receiver Minimum Input Sensitivity@PER	WiFi-2.4G: 11b-1Mbps: -94dBm@PER<8%; 11b-11Mbps:-86dBm@PER<8%; 11g-54Mbps:-75dBm@PER<10%; 11n-HT20-MCS7:-70dBm@PER<10%; 11n-HT40-MCS7:-68dBm@PER<10%;
	WiFi-5G: 11a-54Mbps:-75dBm@PER<10%; 11n-HT20-MCS7:-68dBm@PER<10%; 11n-HT40-MCS7:-70dBm@PER<10%; 11ac-VHT80-MCS9:-59dBm@PER<10%;



3.4 Bluetooth RF Specification

RF Characteristics for BT				
Items	Contents			
Specification	BT V5.0/4.2/4.1/V4.0+BLE/V3.0/V2.1+EDR			
Modulation	FHSS:GFSK, $\pi/4$ -DQPSK, 8DPSK			
Channel frequency	2.401~2.481 GHz			
Data rate	1Mbps,2Mbps,3Mbps			
TX Characteristics	min.	typ.	max.	Unit
Power level(BR/EDR)	0	4	8	dBm
Power level(BLE)	0	4	8	dBm
RX Characteristics	min.	typ.	max.	Unit
Minimum input level(Muti-slot packages sensitivity mode<0.1%)	-90	-85	-80	dBm

ESD CAUTION: Although this module is designed to be as robust as possible, Electrostatic Discharge (ESD) can damage this module. It must be protected from ESD at all times and handled under the protection of ESD.

4. Pin Assignments

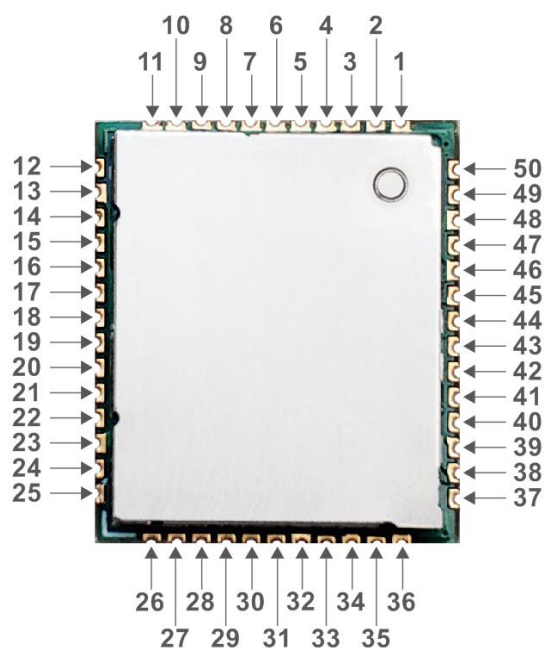


Figure 4 Top view

PIN	Function	Description
1	GND	Ground connections
2	WL_ANT1	WLAN_ANT+BT_ANT
3	GND	Ground connections
4	GND	Ground connections
5	GND	Ground connections
6	GND	Ground connections
7	GND	Ground connections
8	GND	Ground connections
9	WL_ANT0	WLAN_ANT
10	GND	Ground connections
11	GND	Ground connections
12	BT_TRX	NC
13	NC	No connection(floating)
14	NC	No connection(floating)
15	WL_REG_ON	WL disable(active low)
16	WL_WAKE	WLAN to wake up HOST
17	SDIO_CMD	SDIO command line
18	SDIO_CLK	SDIO clock line
19	SDIO_DATA3	SDIO data line 3
20	SDIO_DATA2	SDIO data line 2

21	SDIO_DATA0	SDIO data line 0
22	SDIO_DATA1	SDIO data line 1
23	GND	Ground connections
24	WL_WAKE	WLAN to wake up HOST
25	NC	No connection(floating)
26	NC	No connection(floating)
27	PCM_SYNC	PCM sync signal
28	PCM_IN	PCM data input
29	PCM_OUT	PCM data output
30	PCM_CLK	PCM clock
31	SUSCLK	External 32k or RTC clock input
32	GND	Ground connections
33	NC	No connection(floating)
34	VDIO	I/O Voltage supply input
35	NC	No connection(floating)
36	VBAT	3.3V Main Power Supply
37	NC	No connection(floating)
38	BT_REG_ON	WL disable(active low)
39	GND	Ground connections
40	UART_TXD	Bluetooth UART interface
41	UART_RXD	Bluetooth UART interface
42	UART_RTS_N	GND
43	UART_CTS_N	Bluetooth UART interface
44	SD_RESET	SDIO System reset
45	NC	No connection(floating)
46	GND	Ground connections
47	NC	No connection(floating)
48	GND	Ground connections
49	HOST_WAKE_BT	HOST wake up Bluetooth device
50	BT_WAKE_HOST	Bluetooth device to wake up HOST

5. Typical Application Circuit

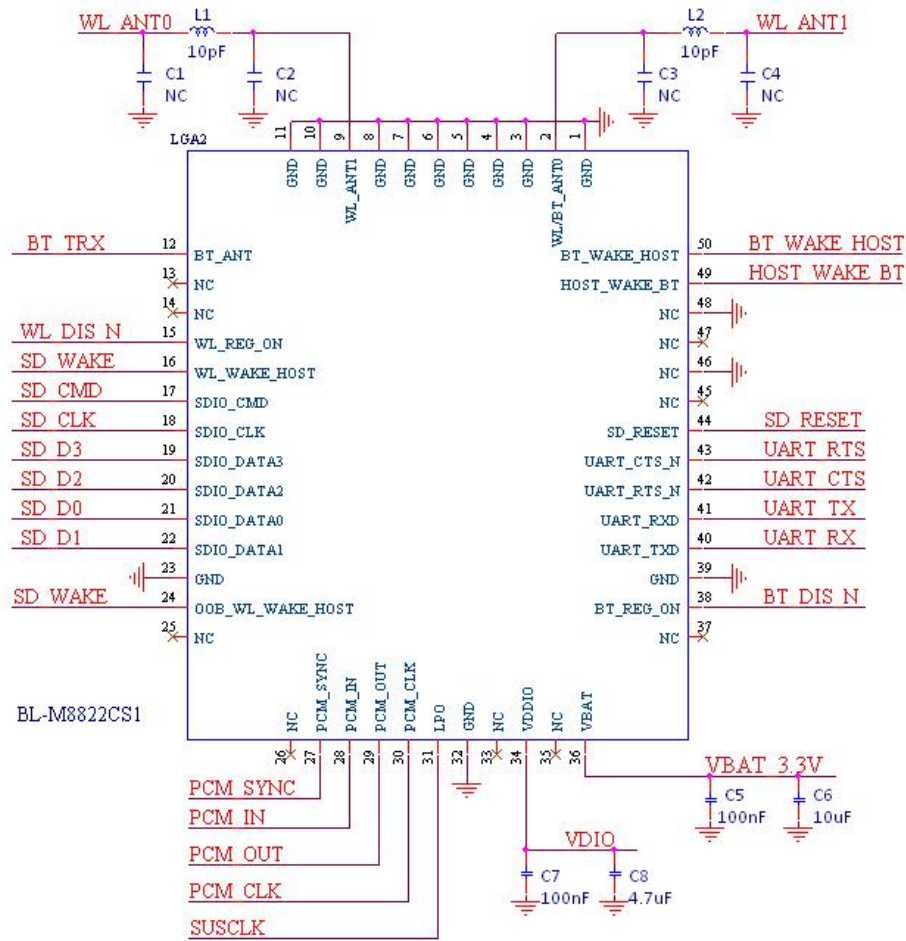


Figure 5

NOTE:

- RF traces need to keep 50 ohm impedance.
- PIN_15 activates low wlan disable, no connecting when using; the same as PIN_38.
- Module's BT UART_TX connects to reference circuit's RX, UART_RX connects to reference circuit's TX.
- VDIO 3.3V for default speed and high-speed modes, 1.8V for SDR12/SDR25/SDR50/DDR50 modes.

6. Mechanical Specifications

Module dimension: Typical (L*W * H): 15.1mm*13.1mm*2.4mm Tolerance : +/-0.15mm

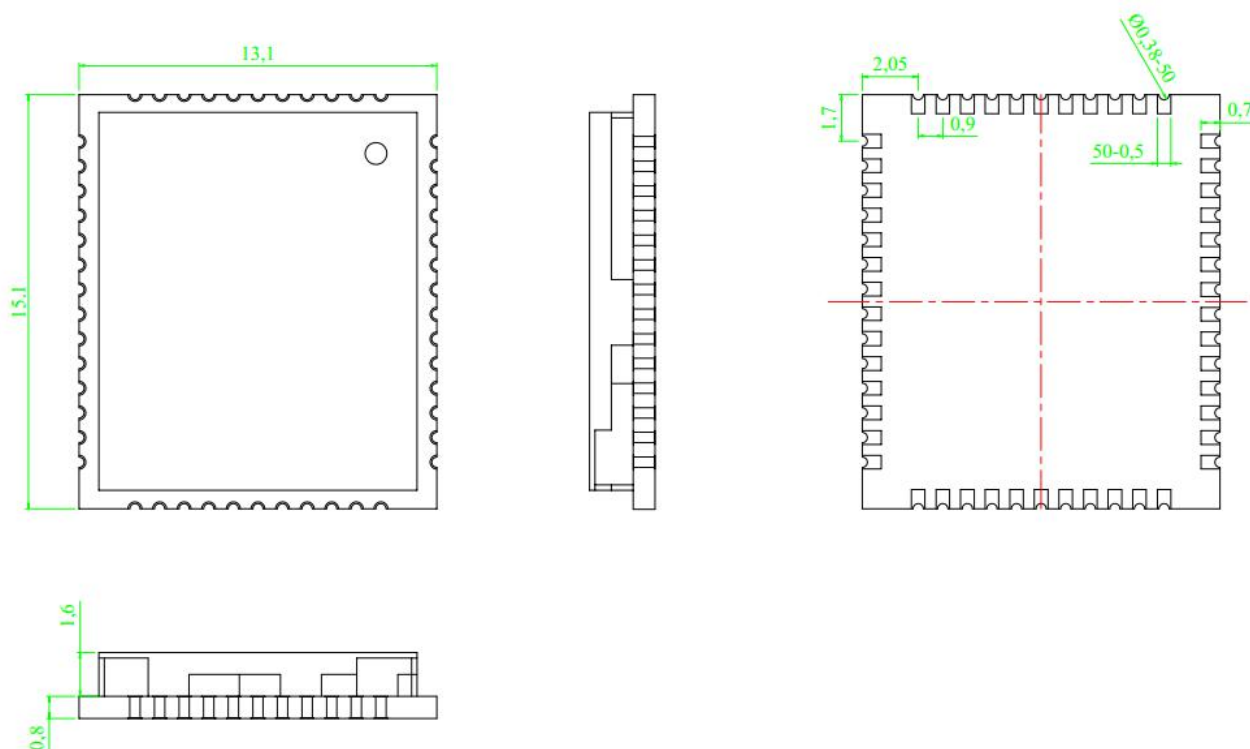


Figure 6 Module dimension

7. Others

7.1 Package Information



Figure 7 Package Information

7.2 Storage Temperature and Humidity

1. Storage Condition: Moisture barrier bag must be stored under 30°C, humidity under 85% RH.
The calculated shelf life for the dry packed product shall be a 12 months from the bag seal date.
Humidity indicator cards must be blue, <30%.
2. Products require baking before mounting if humidity indicator cards reads > 30% temp < 30°C,
humidity < 70% RH, over 96 hours.
Baking condition: 125°C, 12 hours.
Baking times: 1 time.

7.3 Recommended Reflow Profile

Reflow soldering shall be done according to the solder reflow profile, Typical Solder Reflow Profile is illustrated in Figures 15. The peak temperature is 245°C.

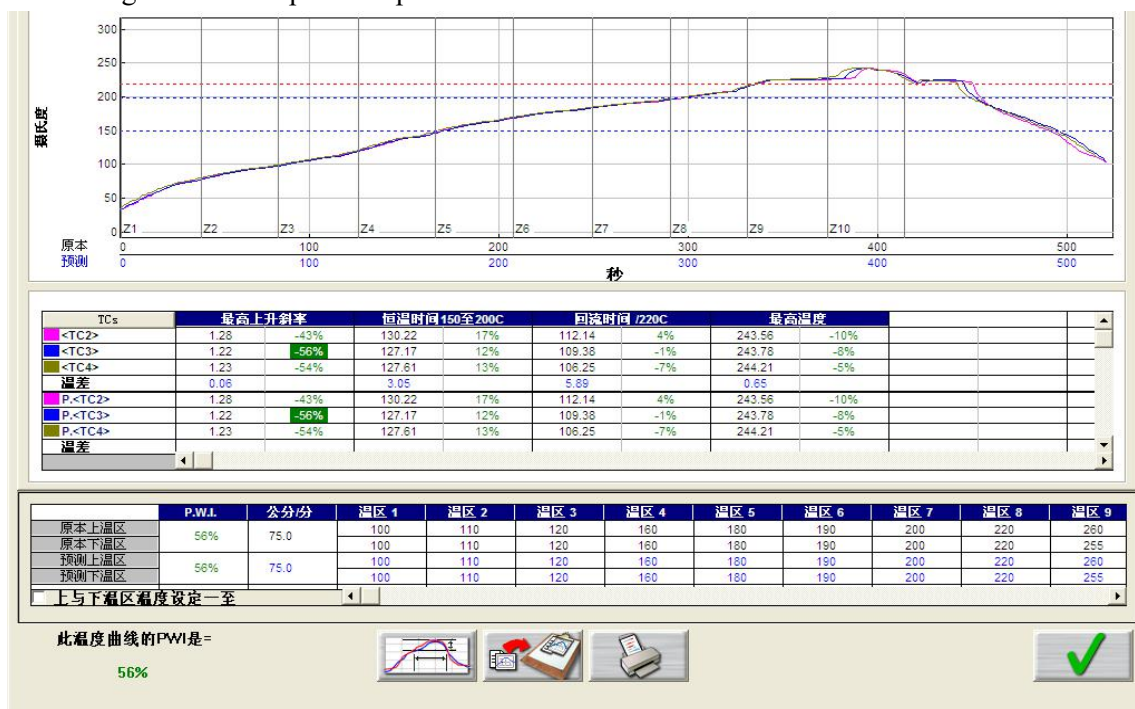


Figure 8 Typical Solder Reflow Profile

1. FCC Certification

1.1 Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01r01

2.2 List of applicable FCC rules

The BL-M8822CS2S is an 802.11a/b/g/n/ac 2T2R WiFi+Bluetooth 5.0 SDIO Module. It is within U.S. FCC part 15.247,15.407 standard

2.3 Specific operational use conditions

The EUT is a 802.11a/b/g/n/ac 2T2R WiFi+Bluetooth 5.0 SDIO Module
Operation Frequency: 2402-2480MHz for BT; 2412-2462MHz for WIFI2.4G,
5150-5250/5250MHz~5350MHz/5470MHz~5725MHz/ 5725-5850MHz/ for WIFI 5G
Modulation Type: GFSK, $\pi/4$ -DQPSK, 8-DPSK for BT, GFSK for BLE,WLAN(DSSS/OFDM)

2.4 Limited module procedures

Not applicable; Single Modular Approval Request

2.5 Trace antenna designs

The BL-M8822CS2S is an 802.11a/b/g/n/ac 2T2R WiFi+Bluetooth 5.0 SDIO Module beams signals and communicates with its antenna, which is FPC Antenna

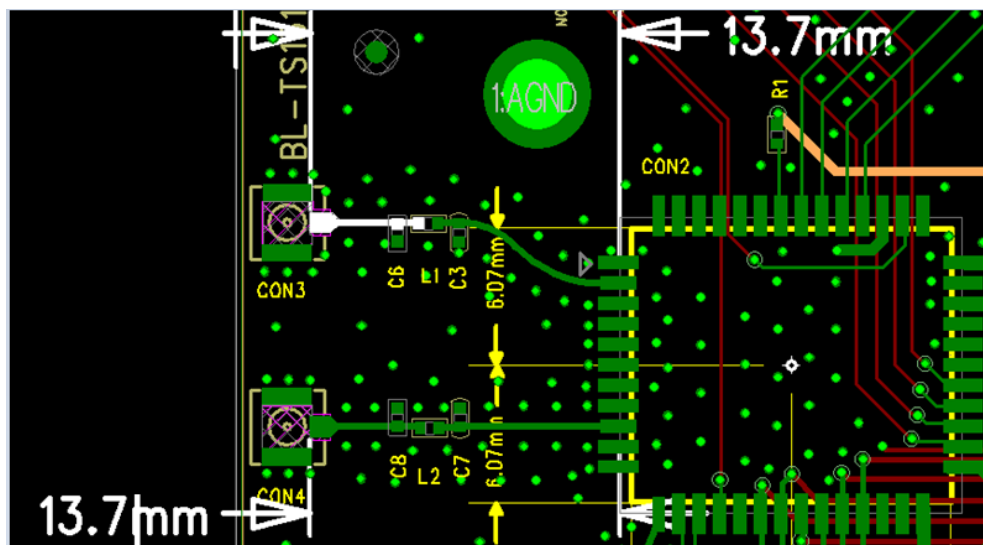
Users should connect antennas to half hole pad through FP types of RF trace and the trace impedance must be controlled in 50 Ω . recommends that the total insertion loss between the antenna pads and antennas should meet the following requirements:

Trace loss

Frequency	Loss
2400MHz-2500MHz	<0.6dB
5150MHz-5850MHz	<1.2dB

To facilitate the antenna tuning and certification test, a RF connector and an antenna matching circuit should be added. The following figure is the recommended circuit.

From CON3 and CON4 port to PCB module, the L1: 0 Ω , L2: 0 Ω , C7: NC(Normally Closed) C8: NC(Normally Closed)C6: NC(Normally Closed) and C3:NC (Normally Closed)



The module needs to be attached to the PCB board and connected to the external antenna through the solder joint of the circuit on the PCB. the internal structure is FPC. A resistance of 0R is added between the module and the antenna at L1 to ensure that the impedance of the connection between the module and the antenna reaches 50 Ω .The ANT1 position on the PCB is where the external antenna is connected.

2.6 RF exposure considerations

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance between 20cm the radiator your body: Use only the supplied antenna.

2.7 Antennas

The BL-M8822CS2S is an 802.11a/b/g/n/ac 2T2R WiFi+Bluetooth 5.0 SDIO Module beams signals and communicates with its antenna, which have two FPC Antenna

The antenna pads and antennas should meet the following requirements:

Antenna Type	Antenna model	Antenna Supplier	cable loss	cable length	Connector
Ant0: FPC	DCS-8620LH	CHANGSHU HONGBO TELECOMMUNICATION TECHNOLOGY CO.,LTD.	2.4G:0.5dB 5G: 0.8dB	79.95±3mm	IPEX1
Ant1: FPC	DCS-8620LH	CHANGSHU HONGBO TELECOMMUNICATION TECHNOLOGY CO.,LTD.	2.4G: 0.6dB 5G: 1dB	83.5±3mm	IPEX1

Antenna Designation:

2.4G: Ant0: 2.05dBi; An1: 4.62dBi

5G: Ant0: 5.06dBi; Ant1: 5.46dBi

2.8 Label and compliance information

The final end product must be label in a visible area , the Host must Contains FCC ID: RC6BL-M8822CS2S.

2.9 Information on test modes and additional testing requirements

Data transfer module demo board can control the EUT work in RF test mode at specified test channel.

2.10 Additional testing, Part 15 Subpart B disclaimer

The module without unintentional-radiator digital circuit, so the module does not required an evaluation by FCC Part 15 Subpart B. The host should be evaluated by the FCC Subpart B

2.11 OEM integration instructions:

This device is intended only for OEM integrators under the following conditions: The transmitter module may not be co-located with any other transmitter or antenna. The module shall be only used with the external antenna(s) that has been originally tested and certified with this module. As long as the conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

2.12 Validity of using the module certification:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

ATTENTION

This device is intended only for OEM integrators under the following conditions:

- 1) Theantennamustbeinstalledsuchthat5mmismaintainedbetweentheantennaandusers,and
- 2) This device and its antenna(s) must not beco-located with any other transmitters except in accordance with FCC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple transmitter(s)andmodule(s)canbeoperatedsimultaneouslywithoutC2PC.
- 3) For all products market in US, OEM has to limit the Operating Frequency: 2402-2480MHz for BT; 2412-2462MHz for WIFI 2.4G, 5150-5250 /5250MHz~5350MHz/5470MHz~5725MHz/ 5725-5850MHz for WIFI 5G by supplied firmware programming tool. OEM shall not supply any tool or info to the end - user regarding to Regulatory Domain change.

USERS MANUAL OF THE END PRODUCT:

In the user manual of the end product, the end user has to be informed to keep at least 5mm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio - frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

FCC Caution:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
 - (2) this device must accept any interference received, including interference that may cause undesired operation.
- This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The device for operation in the band 5150-5350 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems

ISED Statement

- English: This device complies with Innovation, Science and Economic Development Canada's licence - exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device. The digital apparatus complies with Canadian CAN ICES - 3 (B)/NMB - 3(B).

- French: L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This radio transmitter (ISED certification number: 3914A-BLM8822CS2S) has been approved by Industry Canada to operate with the antenna types listed with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (ISED certification number: 3914A-BLM8822CS2S) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Operation Frequency: 2402-2480MHz for BT; 2412-2462MHz for WIFI 2.4G,
5150-5250/5250MHz~5350MHz/5470-5600MHz and 5650-5725MHz / 5745-5825MHz/ for WIFI 5G

Modulation Type: GFSK for BLE, WLAN(DSSS/OFDM)

Antenna Designation:

2.4G: Ant0: 2.05dBi; Ant1: 4.62dBi

5G: Ant0: 5.06dBi; Ant1: 5.46dBi



Radiation Exposure Statement

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Déclaration d'exposition aux radiations

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20cm entre le radiateur et votre corps.

This device is intended only for OEM integrators under the following condition:

The transmitter module may not be co-located with any other transmitter or antenna.

As long as the condition above is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est destiné uniquement aux intégrateurs OEM dans les conditions suivantes : Le module émetteur ne peut pas être placé à côté d'un autre émetteur ou d'une autre antenne.

Tant que la condition ci-dessus est remplie, aucun test supplémentaire de l'émetteur ne sera nécessaire. Cependant, l'intégrateur OEM est toujours responsable de tester son produit final pour toute exigence de conformité supplémentaire requise avec ce module installé.

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

Note Importante:

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considérée comme valide et l'IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

The final end product must be labeled in a visible area with the following: Contains IC: 3914A-BLM8822CS2S.

Plaque signalétique du produit final

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: Contient des IC: 3914A-BLM8822CS2S.

Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

Manuel d'information à l'utilisateur final

L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

Caution:

- (i) The device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellitesystems;
- (ii) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall be such that the equipment still complies with the EIRP limit;
- (iii) For devices with detachable antenna(s), the maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the EIRP limits specified for point-to-point and non-point-to-point operation as appropriate; and Operations in the 5.25-5.35GHz band are restricted to indoor usage only.

Avertissement:

- (i) les dispositifs fonctionnant dans la bande de 5150 à 5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;
- (ii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant les bandes de 5250 à 5350MHz et de 5470 à 5725 MHz doit être conforme à la limite de l'ap.i.r.e.;
- (iii) pour les dispositifs munis d'antennes amovibles, le gain maximal d'antenne permis pour les dispositifs utilisant la bande de 5725 à 5850MHz doit être conforme à la limite de la p.i.r.e. spécifiée pour l'exploitation point à point et l'exploitation non point à point, selon le cas; Les opérations dans la bande de 5.25-5.35GHz sont limitées à un usage intérieur seulement.

CE Warning:

This information has to be presented in such a way that the user can readily understand it. Typically, this will necessitate translation into every local language (required by national consumer laws) of the markets where the equipment is intended to be sold. Illustrations, pictograms and using international abbreviations for country names may help reduce the need for translation.



EU Declaration of Conformity We,

Shenzhen Bilian Electronic Co.,Ltd. (Room 501, Building 3, No. 32, Dafu Road, Zhangge Community, Fucheng Street, Longhua District, Shenzhen City, China) hereby declares that this Mobile Phone is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

According to Article 10(2) of Directive 2014/53/EU, the 802.11a/b/g/n/ac 2T2R WiFi+Bluetooth 5.0 SDIO Module can be used in Europe without restriction.

The full text of the EU declaration DOC is available at the following: Visit the Web site

http: <http://www.b-link.net.cn>

Restrictions in the 5 GHz band:

According to Article 10 (10) of Directive 2014/53/EU, the packaging shows that this radio equipment will be subject to some restrictions when placed on the market in Belgium (BE), Bulgaria (BG), the Czech Republic (CZ), Denmark (DK), Germany (DE), Estonia (EE), Ireland (IE), Greece (EL), Spain (ES), France (FR), Croatia (HR), Italy (IT), Cyprus (CY), Latvia (LV), Lithuania (LT), Luxembourg (LU), Hungary (HU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Slovenia (SI), Slovakia (SK), Finland (FI), Sweden (SE), the United Kingdom (UK), Turkey (TR), Norway (NO), Switzerland (CH), Iceland (IS), and Liechtenstein (LI).

The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

	ES	LU	RO	CZ	FR	HU	SI
	DK	HR	BE	BG	DE	EE	IE
	EL	IT	Cy	LV	LT	SK	MT
	NL	AT	PL	PT	FI	SE	TR
	NO	CH	IS	LI			

Due to the the Module is too small to placed the label, the label is printed on outer packaging, please see as below

802.11a/b/g/n/ac 2T2R WiFi+Bluetooth 5.0 SDIO Module

Module: BL-M8822CS2S

FCC ID: RC6BL-M8822CS2S

IC: 3914A-BLM8822CS2S





RF Specification:

Function	Operation Frequency	Max power
BLE	2402MHz~2480MHz	<20 dBm.
BT(BR+EDR)	2402MHz~2480MHz	<20 dBm.
WIFI 802.11b/g/n(HT20)	2412~2472MHz;	<20 dBm.
Wi-Fi 5.2G(802.11a/n20/n40/)	802.11a/ n20:5180MHz~5240MHz 802.11 n40:5190MHz~5230MHz	<23 dBm.
Wi-Fi 5.3G(802.11a/n20/n40)	802.11a/ n20: 5260MHz~5320MHz 802.11 n40: 5270MHz~5310MHz	<20dBm.
Wi-Fi 5.6G(802.11a/n20/n40/)	802.11a/ n20: 5500MHz~5700MHz 802.11 n40: 5510MHz~5670MHz	<20 dBm.
Wi-Fi5.8G(802.11a/n20/n40/)	802.11a/ n20:5745MHz~5825MHz 802.11 n40:5755MHz~5795MHz	<13.98 dBm.