BL-R8801MS1

Product Specification

IEEE 802.11b/g/n WLAN SDIO Module

Version: 1.0

Customer			
Date			
Model Name	**BL-R8801MS1**		
Part NO.			
Blink Approve Field			
ENGINEER	**QC**	**SALES**	
Customer Approve Field			
ENGINEER	**QC**	**MANUFACTORY**	**PURCHASING**

Content

0. Revision History

Date	Document revision	Product revision	Change Description
2015/05/11	1.0	V1.0	Draft initial release

1. General Description

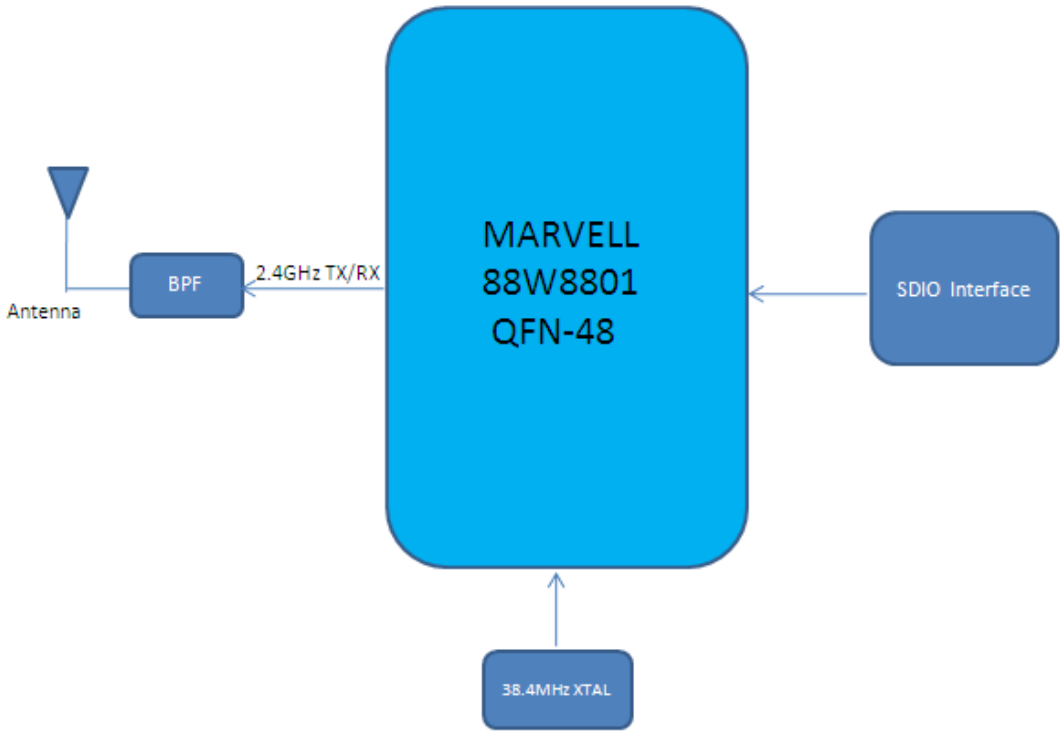
BL-R8801MS1 product is designed base on MARVELL 88W8801 chipset .It is a highly integrated single-band (2.4GHz) IEEE 802.11n 1X1 System-on-Chip (SoC), specifically designed to support High Throughput data rates for next generation WLAN products. It supports IEEE802.11i safety protocol, along with IEEE 802.11e standard service quality. It supports the new data encryption on 64/128 bit WEP and safety mechanism on WPA-PSK/WPA2-PSK, WPA/WPA2. It can implement the wireless network function on the laptop/desktop/MID and other wireless devices easily .

2. The range of applying

MID, networking camera, STB GPS, E-book, Hard disk player, Network Radios, PSP and other device which need be supported by wireless networking.

3. Product Specification

3.1 Function Block diagram



3.2 Electrical and Performance Specification

Item	Description
Product Name	BL-R8801MS1
Major Chipset	MARVELL 88W8801
Host Interface	SDIO
Standard	IEEE 802.11b, IEEE 802.11g,IEEE 802.11n,
Frequency Range	2412MHz~2462MHz
Modulation Type	802.11b: CCK, DQPSK, DBPSK 802.11g: 64-QAM,16-QAM, QPSK, BPSK 802.11n: 64-QAM,16-QAM, QPSK, BPSK
Working Mode	Infrastructure, Ad-Hoc
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,and maximum of 72.2Mbps
Spread Spectrum	IEEE 802.11b: DSSS (Direct Sequence Spread Spectrum) IEEE 802.11g/n:OFDM (Orthogonal Frequency Division Multiplexing)
Sensitivity @PER	1M: -92dBm@8%PER

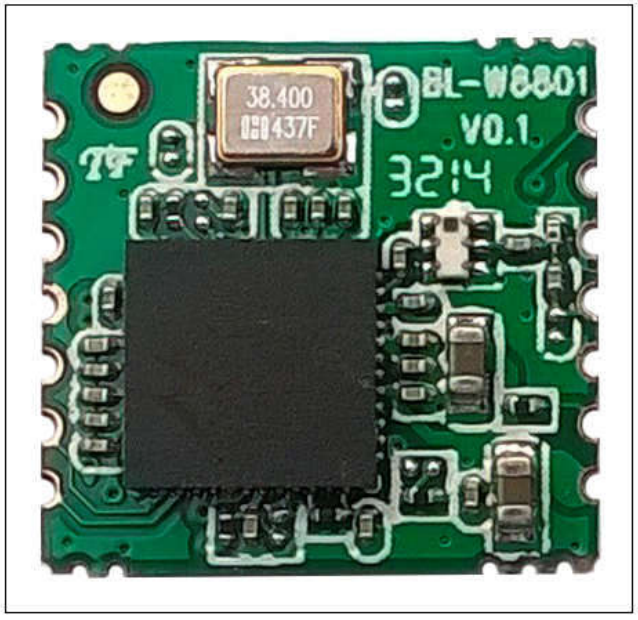
	6M: -88dBm@10%PER 11M:-86dBm@8%PER 54M:-72dBm@10%PER 72.2M:- 68dBm@10%PER
RF Power	15dBm @802.11b/g/n
Antenna type	Internal Antenna
Antenna Gain	2.11dBi
Dimension(L*W*H)	13 x 13.5 x 1.46mm (LxWxH) ;Tolerance: +-0.15mm
Power supply	3.3V +/-0.2V
Power Consumption	standby mode 70mA@3.3V , TX mode 150mA@3.3V
Clock source	38.4MHz
Working Temperature	-20°C to +70°C
Storage temperature	-40°C ~ +105°C

3.3 Product Photo

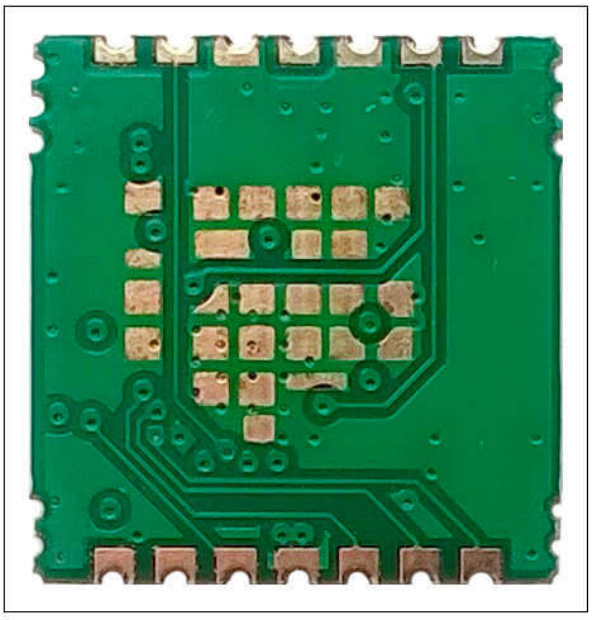
TOP

BOTTOM

Module TOP

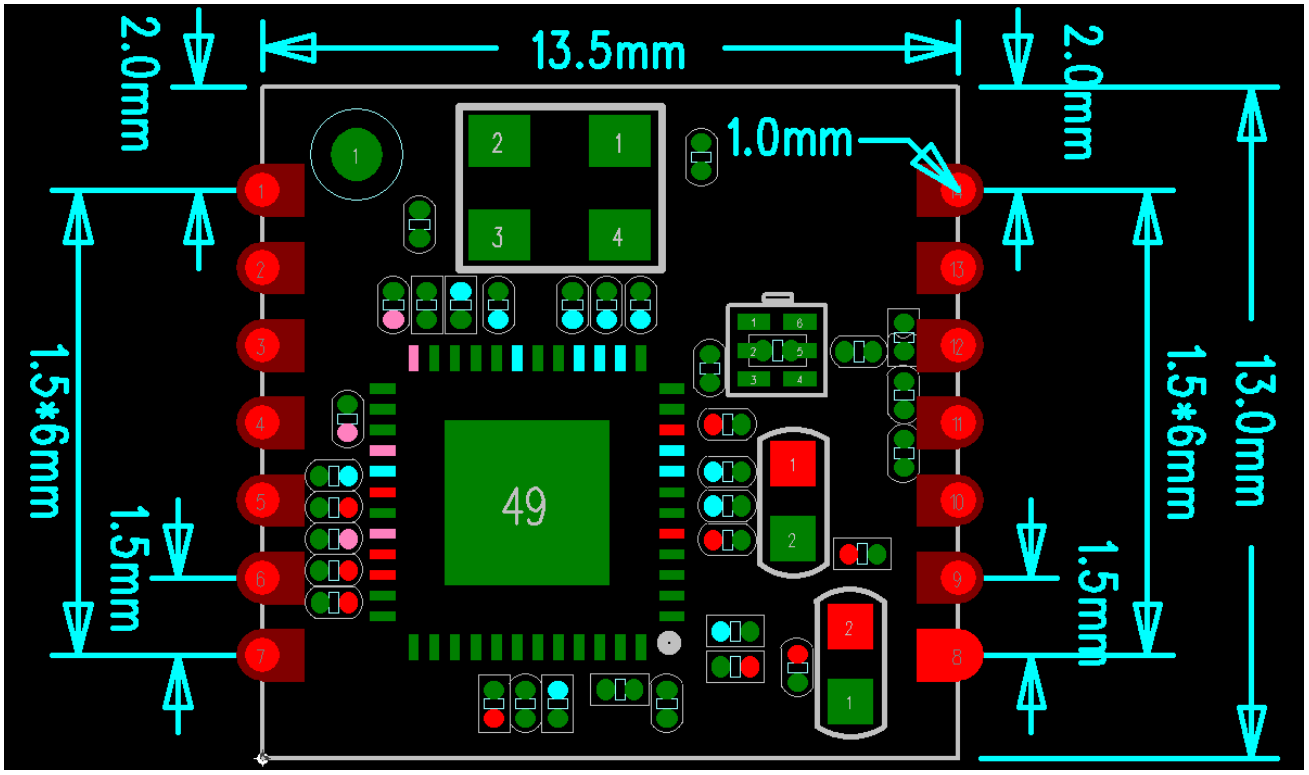


Module BOTTOM

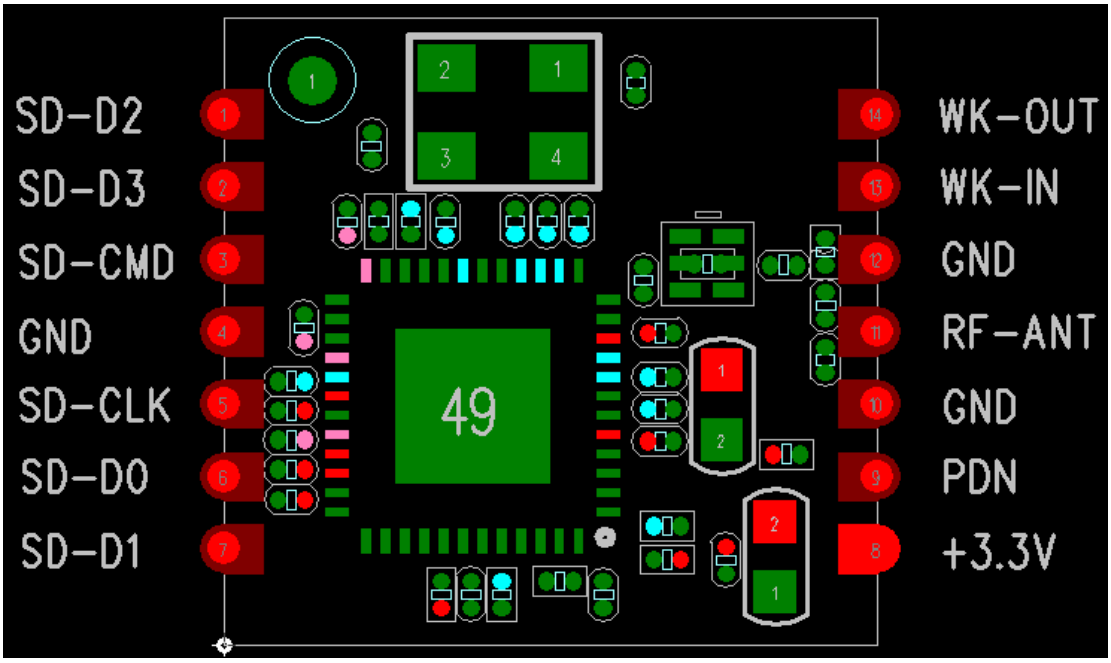


3.4 Mechanical Specification

Module dimension: Typical (W x L x H): 13mmx13.5mmx1.46mm Tolerance : +/-0.15mm



3.5 Product Pin Definition



Function	Description	
SD _2	SDIO data 2	1
SD _3	SDIO data 3 /GSPI chip select	2
SD _CMD	SDIO command/GSPI data input	3
GND	Ground	4
SD _CLK	SDIO clock /GSPI clock	5
SD _D0	SDIO data 0 /GSPI data output	6
SD _D1	SDIO data 1 /GSPI data out	7
VCC3	3.3V power supply	8
PD_n	Power down (active low)	9
GND	Ground	10
ANT_RF	WLAN RF pad	11
GND	Ground	12
WK_IN	Wake/Suspend input control	13
WK_OUT	Wake/Suspend output control	14

4. Supported platform

Support Linux platform.

4.1 DC characteristics

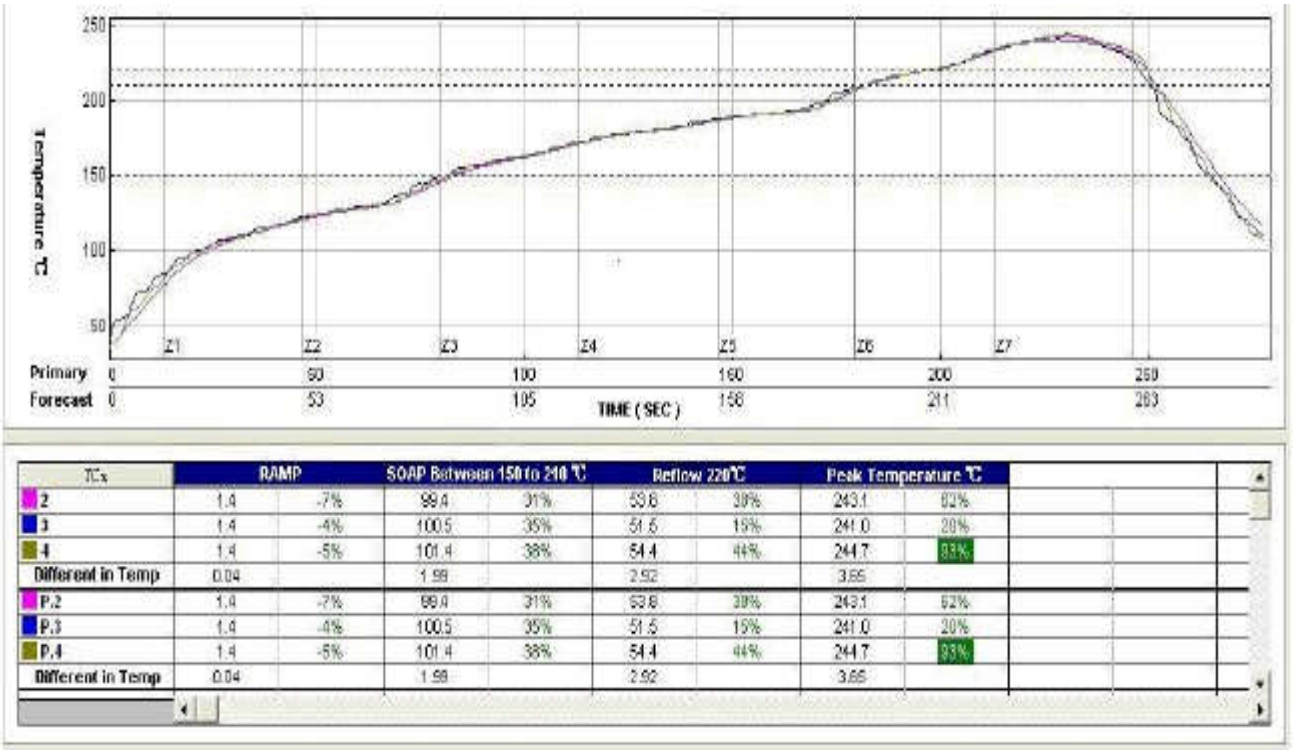
Terms	Contents			
Specification : IEEE802.11b				
Mode	DSSS / CCK			
Frequency	2412MHz - 2462MHz			
Data rate	1, 2, 5.5, 11Mbps			
DC Characteristics	min	Typ.	max.	unit
TX mode	140	151	160	mA
Rx mode	70	72	75	mA
Sleep mode	65	66	68	mA
Specification : IEEE802.11g				
Mode	OFDM			
Frequency	2412MHz - 2462MHz			
Data rate	6, 9, 12, 18, 24, 36, 48, 54Mbps			
DC Characteristics	min	Typ.	max.	unit

TX mode	90	95	150	mA
Rx mode	72	73	75	mA
Sleep mode	65	66	68	mA
Specification : IEEE802.11n				
Mode	OFDM			
Frequency	2412MHz - 2462MHz			
Data rate	6.5, 13, 19.5, 26, 39, 52, 58.5, 72.2Mbps			
DC Characteristics	min	Typ.	max.	unit
TX mode	72	75	140	mA
Rx mode	70	73	78	mA
Sleep mode	65	66	68	mA

4.2 RF Characteristic

Mode	Rate(Mbps)	Power(dBm)			EVM(dB)			Sensitivity(dBm)		
		CH1	CH7	CH13	CH1	CH7	CH13	CH1	CH7	CH13
11b	1	17.02	17.37	16.85	-39.37	-37.29	-38.79	-93	-93	-93
	11	16.98	17.41	16.61	-39.49	-39.06	-39.57	-88	-88	-88
11g	6	15.97	16.04	15.71	-23.36	-20.66	-20.34	-89	-89	-89
	54	15.28	15.07	14.49	-32.51	-31.98	-32.75	-73	-73	-73
11n HT20	MCS0	13.88	13.68	13.16	-26.61	-24.31	-24.90	-86	-86	-86
	MCS7	13.65	14.00	13.38	-34.66	-31.8	-32.96	-70	-70	-70

5. Typical Solder Reflow Profile



TCs	RAMP		SOAK Between 150 to 240 ℃		Reflow 220℃		Peak Temperature ℃	
2	1.4	-7%	99.4	31%	53.6	38%	243.1	82%
3	1.4	-4%	100.5	35%	51.5	15%	241.0	20%
4	1.4	-5%	101.4	38%	54.4	44%	244.7	93%
Different in Temp	0.04		1.99		2.92		3.65	
P.2	1.4	-7%	99.4	31%	53.6	38%	243.1	82%
P.3	1.4	-4%	100.5	35%	51.5	15%	241.0	20%
P.4	1.4	-5%	101.4	38%	54.4	44%	244.7	93%
Different in Temp	0.04		1.99		2.92		3.65	

6. Precautions for use

1. Pls handle the module under ESD protection.
2. Reflow soldering shall be done according to the solder reflow profile. Peak temperature 245℃.
3. Products require baking before mounting if humidity indicator cards reads >30% temp <30 degree C, humidity < 70% RH, over 96 hours.
   Baking condition: 125 degree C, 12 hours
   Baking times: 1 time
4. Storage Condition: Moisture barrier bag must be stored under 30 degree 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%.

FCC Statement:

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.

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.

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

The device complies with RF specifications when the device used at 20cm form your body.