LW100 User Manual

Content

Set up the Module

LW100 is a Wi-Fi module which supports IEEE802.11a/b/g/n. The typical application is to integrate it into the loud speaker or related home audio entertainment products. The module can provide Wi-Fi connection with various Wi-Fi sound sources.

Please follow below steps to setup the module:

1. Power up the Wi-Fi modulewith 3.8V.

2. Connect the module with EVK main board provided by supplier.

3.Connect Wi-Fi with audio resource, such as iphone.

4. Then you can hear music from loudspeaker or earphone.

Any more questions, please contact the supplier for more help.

FCCStatement

CAUTION:

(1) Any changes or modifications not expressly approved by the grantee of this devicecould void the user's authority to operate the equipment.

(2) The modules FCC ID and IC ID are not visible when installed in the host, or

(3) If the host is marketed so that end users do not have straight forward commonlyused methods for access to remove the module so that the FCC ID and IC ID of themodule is visible; then an additional permanent label referring to the enclosedmodule: Contains Transmitter Module FCC ID: Y2SLW100; IC ID: 9452A-LW100or Contains FCC ID: Y2SLW100; IC ID: 9452A-LW100 must be used.

This device complies with part 15 of the FCC Rules. Operation issubject to the following two conditions: (1) This device may notcause harmful interference, and (2) this device must accept anyinterference received, including interference that may causeundesired operation.

NOTE: This equipment has been tested and found to comply with thelimits for a Class B digital device, pursuant to Part 15 of the FCCRules. These limits are designed to provide reasonable protectionagainst harmful interference in a residential installation. Thisequipment generates, uses and can radiate radio frequency energyand, 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 particularinstallation. If this equipment does cause harmful interference toradio or television reception, which can be determined by turningthe equipment off and on, the user is encouraged to try to correctthe interference by one or more of the followingmeasures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment andreceiver.

-- Connect the equipment into an outlet on a circuitdifferent fromthat to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement:

The modular can be installed or integrated in mobile or fixdevicesonly. This modular cannot be installed in any portable device, forexample, USB dongle like transmitters is forbidden.

This modular complies with FCC RF radiation exposure limitssetforth for an uncontrolled environment. This transmitter must not beco-located or operating in conjunction with any other antenna ortransmitter.

The devices must be installed and used in strict accordancewith themanufacturer's instructions as described in the user documentationthat comes with the product.

IC Statement

This device complies with Industry Canada 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.

Le présent appareilestconforme auxCNR d'Industrie Canada applicables auxappareils radio exempts de licence.L'exploitation estautorisée aux deuxconditions suivantes : (1) l'appareil nedoit pas produire de brouillage, et (2)l'utilisateur de l'appareildoit acceptertout brouillage radioélectriquesubi,même si le brouillageest susceptibled'encompromettre le fonctionnement.

This radio transmitter (9452A-LW100) has been approved by Industry Canada to operate with the antenna types listed below 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 (9452A-LW100) 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.

The user manual for LE-LAN devices shall contain instructions related to the restrictions mentioned in the above sections, namely that:

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 satellite systems;

ii. 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 e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate; and

Le manuel de l'utilisateur sur les dispositifs de RL-EL doit inclure des instructions sur les restrictions susmentionnées, notamment :

i. les dispositifs fonctionnant dans la bande de 5 150 à 5 250 MHz 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 la bande de 5 725 à 5 850 MHz) 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;

General Information

Product Name	Wi-Fi Module
Product Model	LW100
Major Chipset	88W8782-xx-NAP2C005-P123
Standard	IEEE802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n
Data TransferRate	802.11b 1,2, 5.5,11Mbps; 802.11a/g 6,9,12,18,24,36,48,54Mbps; 802.11n MCS1 to MCS7, maximum data rate is up to 72Mbps (20MHz channel) and 150Mbps (40MHz channel)
FrequencyBand	2.4GHz, 5GHz
Working Voltage	3.3 V ±10% I/O supply voltage 3.8V±10% powersupply
Dimension	52.0 x 26.0 x 3.25mm (L*W*H) +/-0.2mm
Hardware Support	Flash:MT29F1G08ABAEAWP:E, 128MHz DDR:EM68B16CWQH-25H, 64MHz*2
AmbientTemperatureRange	-20 ~ 70 °C

Storage Conditions:

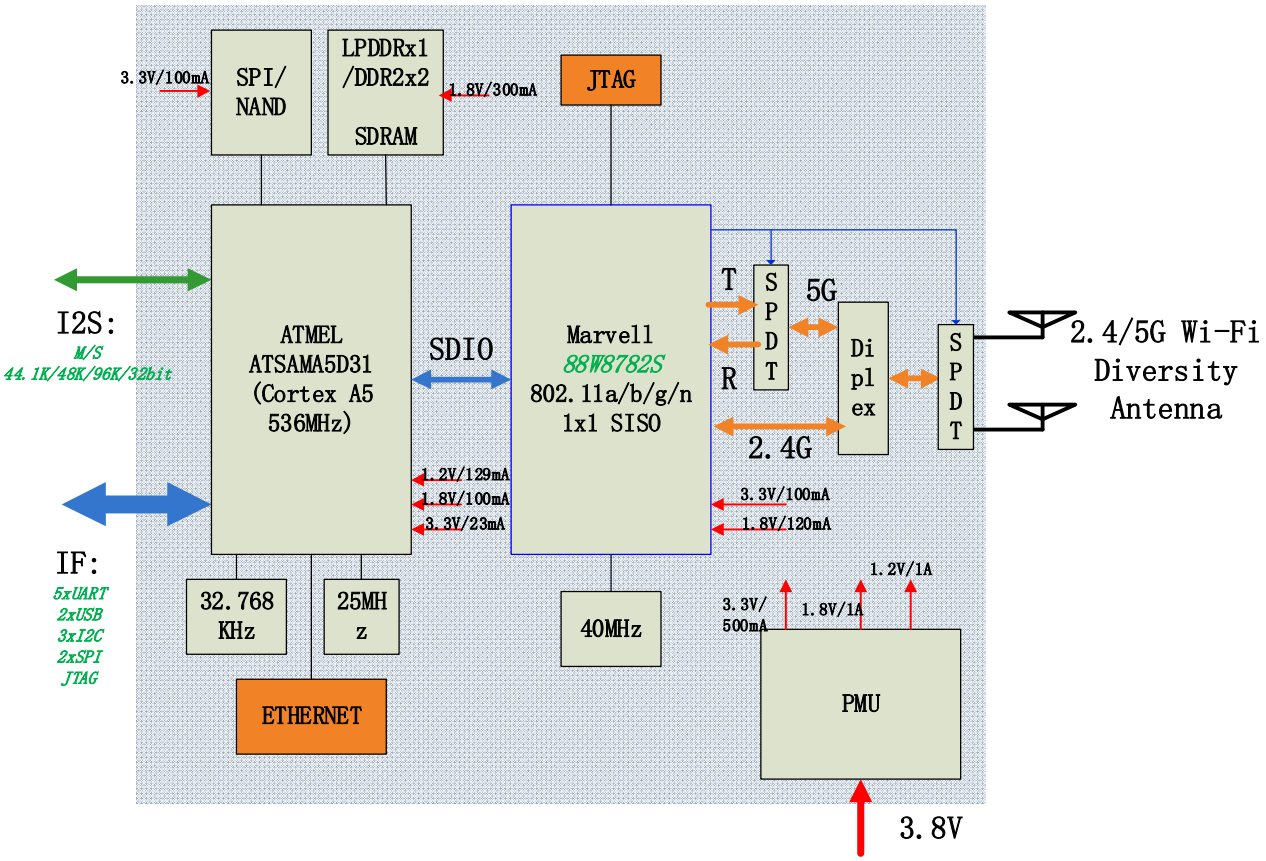
The calculated shelf life in a sealed bag is 12 months if stored between 0 °C and40°C at less than 90% relative humidity (RH). After the bag is opened, devices thatare subjected to solder reflow or other high temperature processes must be handled inthe following manner:

Mounted within 168 hours of factory conditions, i.e. < 30 °C at 60% RH.

Storage humidity needs to be maintained at < 10% RH.

Baking is necessary if the customer exposes the component to air for over 168hrs, baking conditions: 125°Cfor 8 hrs.

Block Diagram



Electrical Specification

1. DC characteristics

Voltage	3.8V
Current Consumption (linking)	265mA

2. RF Characteristics for IEEE802.11b (11Mbps mode unless otherwise specified)

Items	**Contents**
Specification	IEEE802.11b
Mode	DSSS/CCK 11 Mbps
RX (per)	-87dBm
Frequent Limit	+/-13PPM
TX Characteristics	$EVM_{Typical}$=-28dB

3. RF Characteristics for IEEE802.11a/g(54Mbps mode unless otherwise specified)

Items	**Contents**
Specification	IEEE802.11g
Mode	OFDM 54 Mbps
RX (per)	-71dBm/-75dBm
FREQ ERRLIMIT	+/-13PPM
TX Characteristics	$EVM_{Typical}$=-27dB

4. RF Characteristics for IEEE802.11n(HT20_MCS7)

Items	**Contents**
Specification	IEEE802.11n (HT20_MCS7)
Mode	HT20_MCS7 65 Mbps

RX (per)	-67dBm
FREQ ERRLIMIT	+/-13PPM
TX Characteristics	$EVM_{Typical}$= - 27dB

5. RF Characteristics for IEEE802.11n (HT40_MCS7)

Items	**Contents**
Specification	IEEE802.11n (HT40_MCS7)
Mode	HT40_MCS7 135 Mbps
RX (per)	-65dBm
FREQ ERRLIMIT	+/-13PPM
TX Characteristics	$EVM_{Typical}$= - 27dB

Pin Assignment

Pin	Function	Description
1	3.8VD	Power supply
2	GND	Ground
3	I2C_SCL	I2C_SCL
4	I2C_SDA	I2C_SDA
5	3V3	ACP POWER
6	PORST_n	Power on reset pin， low active
7	UART_TXD1	UART_TXD1
8	UART_RXD1	UART_RXD1
9	UART_CTS1	UART_CTS1
10	UART_RTS1	UART_RTS1
11	UART_TXD2	UART_TXD2
12	UART_RXD2	UART_RXD2
13	GND	Ground
14	I2S_MCLK	I2S_MCLK
15	I2S_SDI	I2S_SDI
16	I2S_SDO	I2S_SDO
17	I2S_WS	I2S_WS
18	I2S_SCLK	I2S_SCLK
19	GND	Ground
20	GPIO24	GPIO24
21	WLAN_ACT_LED	WLAN Activity LED
22	GPIO25	GPIO25
23	GPIO26	GPIO26
24	GND	Ground

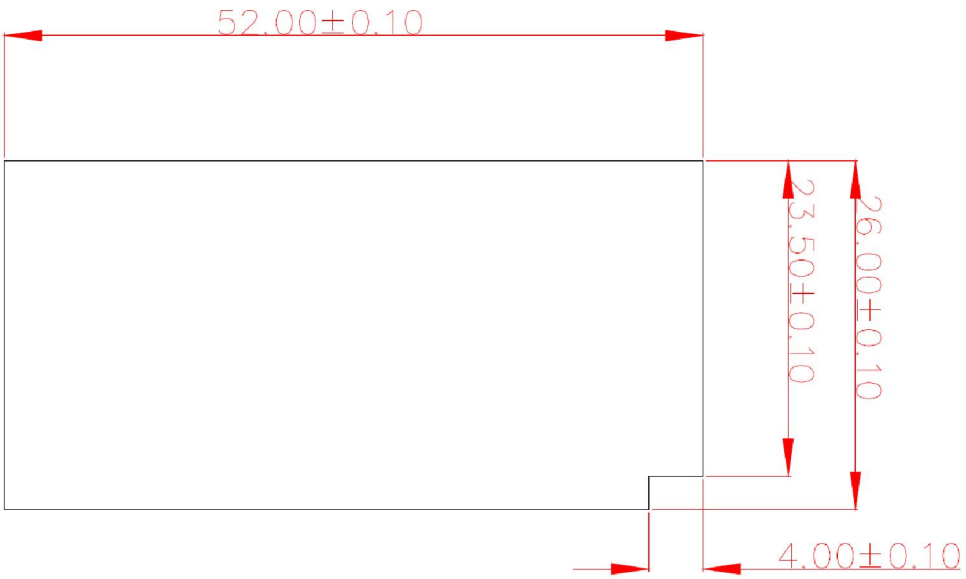
25	USB_D-	USB_D-
26	USB_D+	USB_D+
27	GND	Ground
28	BT_WACT	GPIO
29	BT_AUX	GPIO
30	BT_STAT	GPIO
31	3.8VD	Power supply
32	3.8VD	Power supply
33	GND	Ground
34	SPI_SPCLK	SPI_SPCLK
35	SPI_MOSI	SPI_MOSI
36	SPI_MISO	SPI_MISO
37	SPI_CS0	SPI_CS0
38	GPIO27	GPIO27
39	GND	Ground
40	NC	NC
41	NC	NC
42	NC	NC
43	NC	NC
44	GND	Ground
45	SD_WP	SD_WP
46	SD_CD	SD_CD
47	SD_D3	SD_D3
48	SD_D2	SD_D2
49	SD_D1	SD_D1
50	SD_D0	SD_D0
51	SD_CMD	SD_CMD

52	SD_CLK	SD_CLK
53	GND	Ground
54	CON_GPIO28	CON_GPIO28
55	NC	NC
56	CON_GPIO23	CON_GPIO23
57	CON_GPIO29	CON_GPIO29
58	BT_ACT	GPIO
59	GND	Ground
60	BT_ANT/GPIO59	BT_ANT/GPIO59

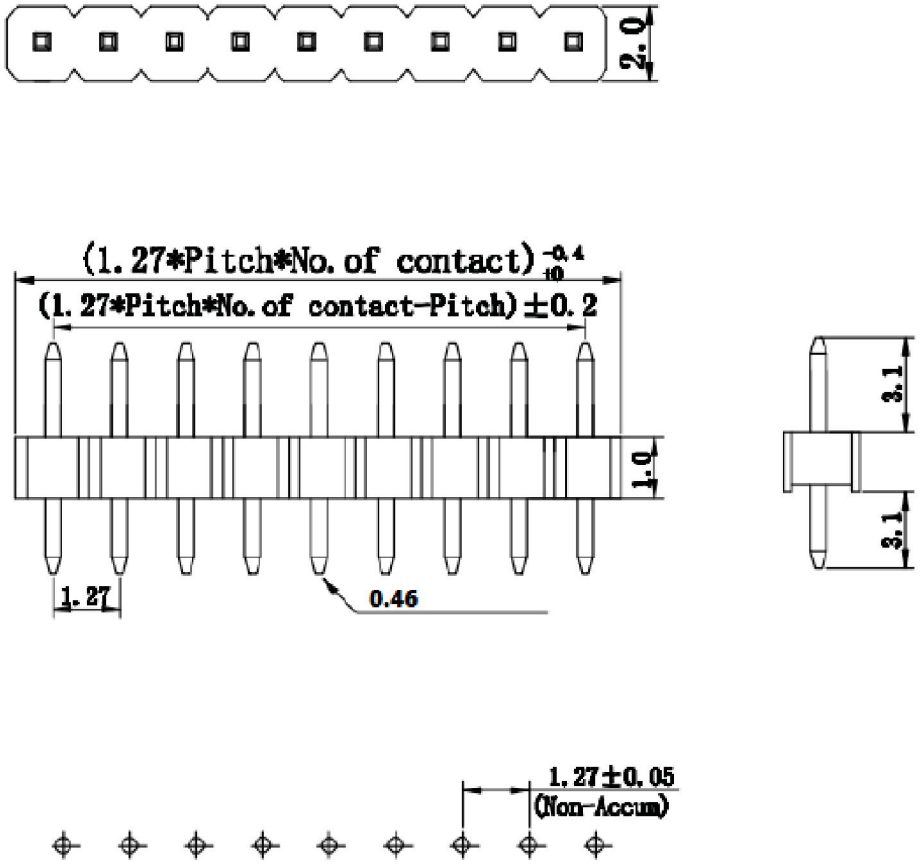
Mechanical Specification

1. Dimension

Dimensions (mm)	Length	Width	Height
	52.0±0.2	26.0±0.2	3.25±0.2



2. Pin Header


2.0
(1.27*Pitch*No. of contact) -0.4 +0
(1.27*Pitch*No. of contact-Pitch) ±0.2
1.0
3.1
3.1
1.27
0.46
1.27±0.05
(Non-Accum)