四川爱联

WIFI-2-R812USA2

IEEE 802.11a/ b/g/n/ac 2T2R USB2.0 WiFi Module

特性 Features：

- **接收制式 Reserving System**
  IEEE Std. 802.11a
  IEEE Std. 802.11b
  IEEE Std. 802.11g
  IEEE Std. 802.11n
  IEEE Std. 802.11ac
- **双波段 Dual Band**
  2.4G&5.8G
- **结构大小 Size**
  27.00mm x 17.80mm x 3.7mm

四川爱联科技有限公司

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公司：四川爱联科技有限公司

Factory： Sichuan iLink Technology Co.,Ltd.

批准 Approved	审核 Checked	拟制 Designed	产品 Product	WIFI 模组 WIFI MODULE
			型号 Model	WIFI-2-R812USA2
			日期 Date	2017-8-18

更改记录 Record of Modification

序号 No	更改日期 Date of modification	主要更改内容 Main content of modification	更改原因 Reason of modification	更改通知编号 Serial number of modification	确认 Confirm
1	2016-5-27	初版			覃达开
2	2016-6-30	1、刷新产品图片	标签更改为高温		覃达开
3	2016-9-15	1、刷新产品图片	刷新标签格式		覃达开
4	2017-2-6	1、刷新产品包装	1、增加真空要求 2、删除外箱图案		覃达开
5	2017-8-12	1、 更改标签 2、 刷新标签二维码格式	1、产品增加认证号 2、提高识别率		覃达开
6	2017-8-18	增加 FCC NOTE	产品进行 FCC 认证		覃达开

1. Introduction

WIFI-2-R812USA2 is based on realtek RTL8812AU, is a WLAN 11ac Dual Band module, which fully supports the features and functional compliance of IEEE 802.11 a/b/g/n/ac standards. This documentation describes the engineering requirements specification.

1.1 RF module Overview

The general HW architecture for the module is shown in Figure 1. This WLAN Module design is based on Realtek RTL8812AU. It is a highly integrated single-chip MIMO(Multiple In Multiple Out) Wireless LAN (WLAN) USB2.0 network interface controller complying with the 802.11ac specification. It combines a MAC, a 2T2R capable baseband, and RF in a single chip. The RTL8812AU provides a complete solution for a high throughput performance wireless client.

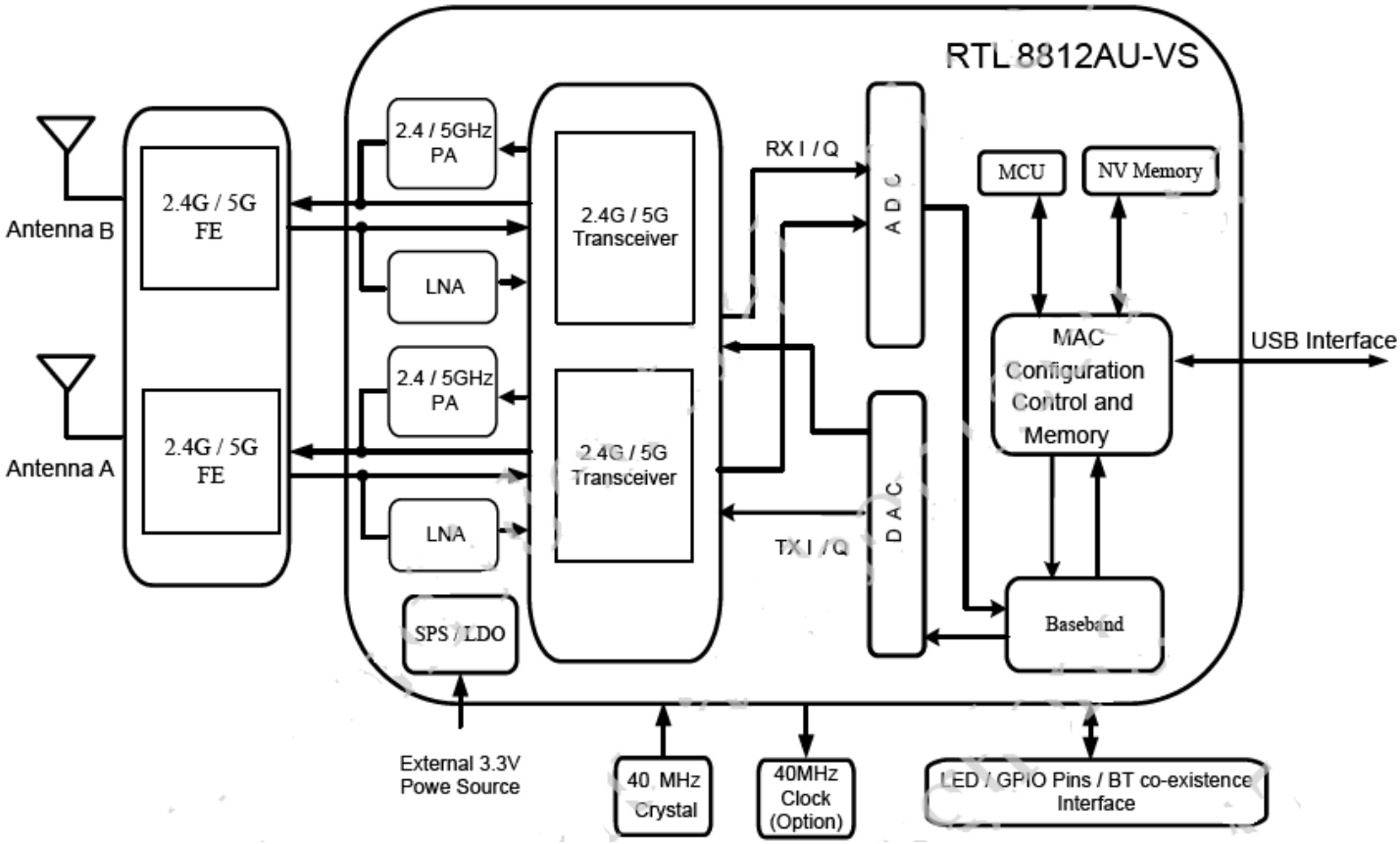


Figure 1 Module Block Diagram

1.2 Specification reference

This specification is based on additional references listed below.

_ IEEE Std. 802.11a
_ IEEE Std. 802.11b
_ IEEE Std. 802.11g
_ IEEE Std. 802.11n
_ IEEE Std. 802.11ac

1.3 System Functions

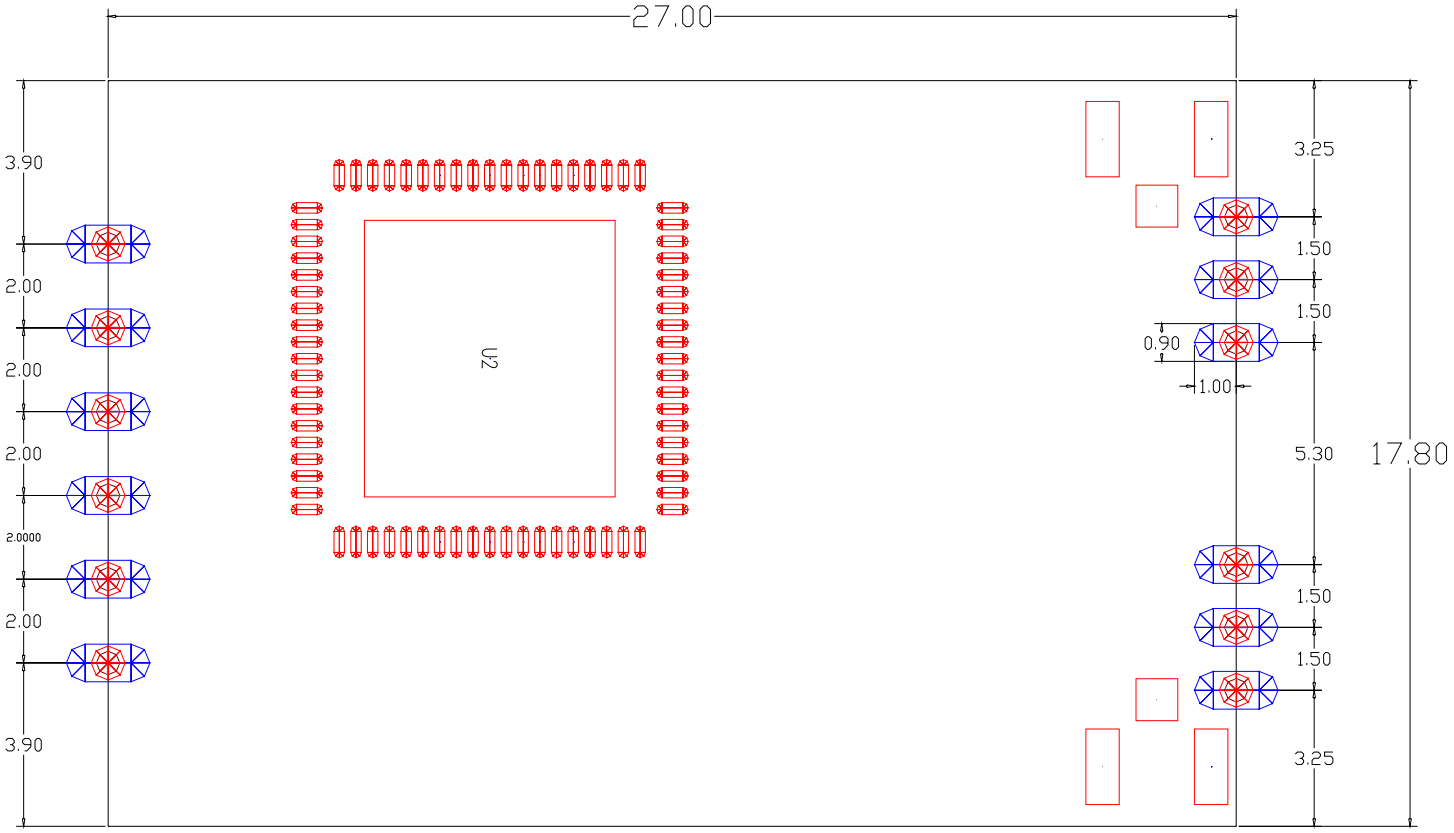
Table1: General Specification as below:

Main Chipset	Realtek RTL8812AU-VS
Operating Frequency	2.4GHz & 5GHz
Wi-Fi Standard	802.11a/b/g/n/ac
Modulation	11b: DBPSK, DQPSK and CCK and DSSS 11a/g: BPSK, QPSK, 16QAM, 64QAM and OFDM 11n: BPSK, QPSK, 16QAM, 64QAM and OFDM 11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM and OFDM
Data rates	up to 867Mbps
Host Interface	USB2.0
PCB Stack	4-layers design
Dimension	Typical，27.00mm x 17.80mm x 3.7mm
Operation Temperature	0℃ to +60℃
Storage Temperature	-25℃ to +85℃
Operation Voltage	3.3V +/-10%

2. Mechanical Specification

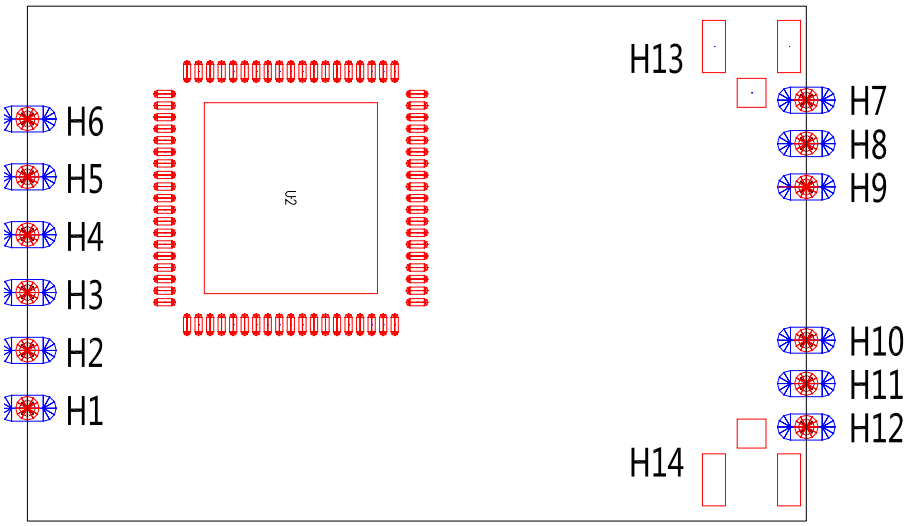
2.1 Mechanical Outline Drawing

Typical Dimension (L x W x H): 27.00 x17.8 x3.7mm



NOTE1:General tolerance ±0.15mm unless otherwise stated

2.2Pin definition



Pin #	Name	Pin #	Name	Pin #	Name
1	PDN	6	LED	11	ANT1
2	VDD(3.3V)	7	GND	12	GND
3	DM-	8	ANT0		
4	DP+	9	GND	13	NC
5	GND	10	GND	14	NC

3. Electrical Specification

This Specification is based-on conductive DVT testing result. The extreme condition include overall temperature (0℃,+25℃,+60℃) and overall voltage (3.0V,3.3V,3.6V).

3.1 IEEE 802.11a Section:

Items	Contents				
Specification	IEEE802.11a				
Mode	OFDM				
Channel	CH36 to CH165				
Data rate	6, 9, 12, 18, 24, 36, 48, 54Mbps				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 13dBm Target (For Each antenna port)	11	13	15	dBm	
2. Spectrum Mask @ Target Power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-40	dBr	
3. Constellation Error(EVM) @ Target Power					
1) 6Mbps	-	-	-5	dB	
2) 9Mbps	-	-	-8	dB	
3) 12Mbps	-	-	-10	dB	
4) 18Mbps	-	-	-13	dB	
5) 24Mbps	-	-	-16	dB	
6) 36Mbps	-	-	-19	dB	
7) 48Mbps	-	-	-22	dB	
8) 54Mbps	-	-30	-25	dB	
4. Frequency Error	-20		20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) 6Mbps (PER ≦10%)	-	-85	-82	dBm	
2) 9Mbps (PER ≦10%)	-	-84	-81	dBm	
3) 12Mbps (PER ≦10%)	-	-82	-79	dBm	
4) 18Mbps (PER ≦10%)	-	-80	-77	dBm	
5) 24Mbps (PER ≦10%)	-	-77	-74	dBm	
6) 36Mbps (PER ≦10%)	-	-73	-70	dBm	
7) 48Mbps (PER ≦10%)	-	-69	-66	dBm	
8) 54Mbps (PER ≦10%)	-	-68	-65	dBm	
6. Maximum Input Level (PER ≦10%)	-30	-	-	dBm	

3.2 IEEE 802.11b Section:

Items	Contents				
Specification	IEEE802.11b				
Mode	DSSS / CCK				
Channel	CH1 to CH13				
Data rate	1, 2, 5.5, 11Mbps				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 17dBm Target (For Each antenna port)	15	17	19	dBm	
2. Spectrum Mask @ Target Power					
1) fc +/-11MHz to +/-22MHz	-	-	-30	dBr	
2) fc > +/-22MHz	-	-	-50	dBr	
3. Constellation Error(EVM) @ Target Power					
1) 1Mbps	-	-	-10	dB	
2) 2Mbps	-	-	-10	dB	
3) 5.5Mbps	-	-	-10	dB	
4) 11Mbps	-	-20	-10	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) 1Mbps (FER ≦8%)	-	-83	-76	dBm	
2) 2Mbps (FER ≦8%)	-	-80	-76	dBm	
3) 5.5Mbps (FER ≦8%)	-	-79	-76	dBm	
4) 11Mbps (FER ≦8%)	-	-76	-76	dBm	
6. Maximum Input Level (FER ≦8%)	-10	-	-	dBm	

3.3 IEEE 802.11g Section:

Items	Contents				
Specification	IEEE802.11g				
Mode	OFDM				
Channel	CH1 to CH13				
Data rate	6, 9, 12, 18, 24, 36, 48, 54Mbps				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
2. Power Levels					
1) 15dBm Target (For Each antenna port)	13	15	17	dBm	
3. Spectrum Mask @ Target Power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-40	dBr	
4. Constellation Error(EVM) @ Target Power					
1) 6Mbps	-	-	-5	dB	
2) 9Mbps	-	-	-8	dB	
3) 12Mbps	-	-	-10	dB	
4) 18Mbps	-	-	-13	dB	
5) 24Mbps	-	-	-16	dB	
6) 36Mbps	-	-	-19	dB	
7) 48Mbps	-	-	-22	dB	
8) 54Mbps	-	-30	-25	dB	
5. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
6 Minimum Input Level Sensitivity(each chain)					
1) 6Mbps (PER ≦10%)	-	-85	-80	dBm	
2) 9Mbps (PER ≦10%)	-	-84	-79	dBm	
3) 12Mbps (PER ≦10%)	-	-82	-77	dBm	
4) 18Mbps (PER ≦10%)	-	-80	-75	dBm	
5) 24Mbps (PER ≦10%)	-	-77	-72	dBm	
6) 36Mbps (PER ≦10%)	-	-73	-68	dBm	
7) 48Mbps (PER ≦10%)	-	-69	-64	dBm	
8) 54Mbps (PER ≦10%)	-	-68	-63	dBm	
6. Maximum Input Level (PER ≦10%)	-20	-	-	dBm	

3.4 IEEE 802.11n HT20 (2.4G) Section:

Items	Contents				
Specification	IEEE802.11n HT20 @ 2.4GHz				
Mode	OFDM				
Channel	CH1 to CH13				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 14dBm Target (For Each antenna port)	12	14	16	dBm	
2. Spectrum Mask @ Target Power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-45	dBr	
3. Constellation Error(EVM) @ Target Power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-31	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) MCS0 (PER ≦10%)	-	-85	-82	dBm	
2) MCS1 (PER ≦10%)	-	-84	-79	dBm	
3) MCS2 (PER ≦10%)	-	-82	-77	dBm	
4) MCS3 (PER ≦10%)	-	-80	-74	dBm	
5) MCS4 (PER ≦10%)	-	-76	-70	dBm	
6) MCS5 (PER ≦10%)	-	-72	-66	dBm	
7) MCS6 (PER ≦10%)	-	-70	-65	dBm	
8) MCS7 (PER ≦10%)	-	-69	-64	dBm	
6. Maximum Input Level (PER ≦10%)	-20	-	-	dBm	

3.5 IEEE 802.11n HT20 (5G) Section:

Items	Contents				
Specification	IEEE802.11n HT20 @ 5GHz				
Mode	OFDM				
Channel	CH36 to CH165				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 12dBm Target (For Each antenna port)	10	12	14	dBm	
2. Spectrum Mask @ Target Power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-45	dBr	
3. Constellation Error(EVM) @ Target Power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-31	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) MCS0 (PER ≦10%)	-	-85	-82	dBm	
2) MCS1 (PER ≦10%)	-	-84	-79	dBm	
3) MCS2 (PER ≦10%)	-	-82	-77	dBm	
4) MCS3 (PER ≦10%)	-	-80	-74	dBm	
5) MCS4 (PER ≦10%)	-	-76	-70	dBm	
6) MCS5 (PER ≦10%)	-	-72	-66	dBm	
7) MCS6 (PER ≦10%)	-	-70	-65	dBm	
8) MCS7 (PER ≦10%)	-	-69	-64	dBm	
6. Maximum Input Level (PER ≦10%)	-30	-	-	dBm	

3.6 IEEE 802.11n HT40 (2.4G) Section:

Items	Contents				
Specification	IEEE802.11n HT40 @ 2.4GHz				
Mode	OFDM				
Channel	CH3 to CH11				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 14dBm Target (For Each antenna port)	12	14	16	dBm	
2. Spectrum Mask @ Target Power					
1) at fc +/-21MHz	-	-	-20	dBr	
2) at fc +/-40MHz	-	-	-28	dBr	
3) at fc > +/-60MHz	-	-	-45	dBr	
3. Constellation Error(EVM) @ Target Power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-31	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) MCS0 (PER ≦10%)		-85	-79	dBm	
2) MCS1 (PER ≦10%)		-82	-76	dBm	
3) MCS2 (PER ≦10%)		-79	-74	dBm	
4) MCS3 (PER ≦10%)		-77	-71	dBm	
5) MCS4 (PER ≦10%)		-72	-67	dBm	
6) MCS5 (PER ≦10%)		-69	-63	dBm	
7) MCS6 (PER ≦10%)		-68	-62	dBm	
8) MCS7 (PER ≦10%)	-	-66	-61	dBm	
6. Maximum Input Level(PER ≦10%)	-20	-	-	dBm	

3.7 IEEE 802.11n HT40 (5G) Section:

Items	Contents				
Specification	IEEE802.11n HT40 @ 5GHz				
Mode	OFDM				
Channel	CH38 to CH163				
Data rate (MCS index)	MCS0/1/2/3/4/5/6/7/8/9/10/11/12/13/14/15				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 12dBm Target (For Each antenna port)	10	12	14	dBm	
2. Spectrum Mask @ Target Power					
1) at fc +/-21MHz	-	-	-20	dBr	
2) at fc +/-40MHz	-	-	-28	dBr	
3) at fc > +/-60MHz	-	-	-45	dBr	
3. Constellation Error(EVM) @ Target Power					
1) MCS0	-	-	-5	dB	
2) MCS1	-	-	-10	dB	
3) MCS2	-	-	-13	dB	
4) MCS3	-	-	-16	dB	
5) MCS4	-	-	-19	dB	
6) MCS5	-	-	-22	dB	
7) MCS6	-	-	-25	dB	
8) MCS7	-	-31	-28	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) MCS0 (PER ≦10%)		-85	-79	dBm	
2) MCS1 (PER ≦10%)		-82	-76	dBm	
3) MCS2 (PER ≦10%)		-79	-74	dBm	
4) MCS3 (PER ≦10%)		-77	-71	dBm	
5) MCS4 (PER ≦10%)		-72	-67	dBm	
6) MCS5 (PER ≦10%)		-69	-63	dBm	
7) MCS6 (PER ≦10%)		-68	-62	dBm	
8) MCS7 (PER ≦10%)	-	-66	-61	dBm	
6. Maximum Input Level(PER ≦10%)	-30	-	-	dBm	

3.8 IEEE 802.11ac HT20 Section:

Items	Contents				
Specification	IEEE802.11ac HT20 @ 5GHz				
Mode	OFDM				
Channel	CH36 to CH165				
Data rate (MCS index)	Nss1 MCS0/1/2/3/4/5/6/7/8 Nss2 MCS0/1/2/3/4/5/6/7/8				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 11dBm Target (For Each antenna port)	9	11	13	dBm	mcs8
2. Spectrum Mask @ Target Power					
1) at fc +/-11MHz	-	-	-20	dBr	
2) at fc +/-20MHz	-	-	-28	dBr	
3) at fc > +/-30MHz	-	-	-40	dBr	
3. Constellation Error(EVM) @ Target Power					
1) Nss1 MCS0	-	-	-5	dB	
2) Nss1 MCS1	-	-	-10	dB	
3) Nss1 MCS2	-	-	-13	dB	
4) Nss1 MCS3	-	-	-16	dB	
5) Nss1 MCS4	-	-	-19	dB	
6) Nss1 MCS5	-	-	-22	dB	
7) Nss1 MCS6	-	-	-25	dB	
8) Nss1 MCS7	-	-	-27	dB	
9) Nss1 MCS8	-	-34	-30	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) Nss1 MCS0 (PER ≦10%)	-	-85	-82	dBm	
2) Nss1 MCS1 (PER ≦10%)	-	-82	-79	dBm	
3) Nss1 MCS2 (PER ≦10%)	-	-80	-77	dBm	
4) Nss1 MCS3 (PER ≦10%)	-	-77	-74	dBm	
5) Nss1 MCS4 (PER ≦10%)	-	-73	-70	dBm	
6) Nss1 MCS5 (PER ≦10%)	-	-69	-66	dBm	
7) Nss1 MCS6 (PER ≦10%)	-	-68	-65	dBm	
8) Nss1 MCS7 (PER ≦10%)	-	-67	-64	dBm	
9) Nss1 MCS8 (PER ≦10%)		-62	-59	dBm	
6. Maximum Input Level (PER ≦10%)	-30	-	-	dBm	

3.9 IEEE 802.11ac HT40 Section:

Items	Contents				
Specification	IEEE802.11ac HT40 @ 5GHz				
Mode	OFDM				
Channel	CH38 to CH159				
Data rate (MCS index)	Nss1 MCS0/1/2/3/4/5/6/7/8/9 Nss2 MCS0/1/2/3/4/5/6/7/8/9				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 10dBm Target (For Each antenna port)	8	10	12	dBm	mcs9
2. Spectrum Mask @ Target Power					
1) at fc +/-21MHz	-	-	-20	dBr	
2) at fc +/-40MHz	-	-	-28	dBr	
3) at fc > +/-60MHz	-	-	-40	dBr	
3. Constellation Error(EVM) @ Target Power					
1) Nss1 MCS0	-	-	-5	dB	
2) Nss1 MCS1	-	-	-10	dB	
3) Nss1 MCS2	-	-	-13	dB	
4) Nss1 MCS3	-	-	-16	dB	
5) Nss1 MCS4	-	-	-19	dB	
6) Nss1 MCS5	-	-	-22	dB	
7) Nss1 MCS6	-	-	-25	dB	
8) Nss1 MCS7	-	-	-27	dB	
9) Nss1 MCS8	-	-	-30	dB	
10) Nss1 MCS9	-	-35	-32	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) Nss1 MCS0	-	-82	-79	dBm	
2) Nss1 MCS1	-	-79	-76	dBm	
3) Nss1 MCS2	-	-77	-74	dBm	
4) Nss1 MCS3	-	-74	-71	dBm	
5) Nss1 MCS4	-	-70	-67	dBm	
6) Nss1 MCS5	-	-66	-63	dBm	
7) Nss1 MCS6	-	-65	-62	dBm	
8) Nss1 MCS7	-	-64	-61	dBm	
9) Nss1 MCS8	-	-59	-56	dBm	
10) Nss1 MCS9	-	-57	-54	dBm	
6. Maximum Input Level (PER ≦10%)	-30	-	-	dBm	

3.10 IEEE 802.11ac HT80 Section:

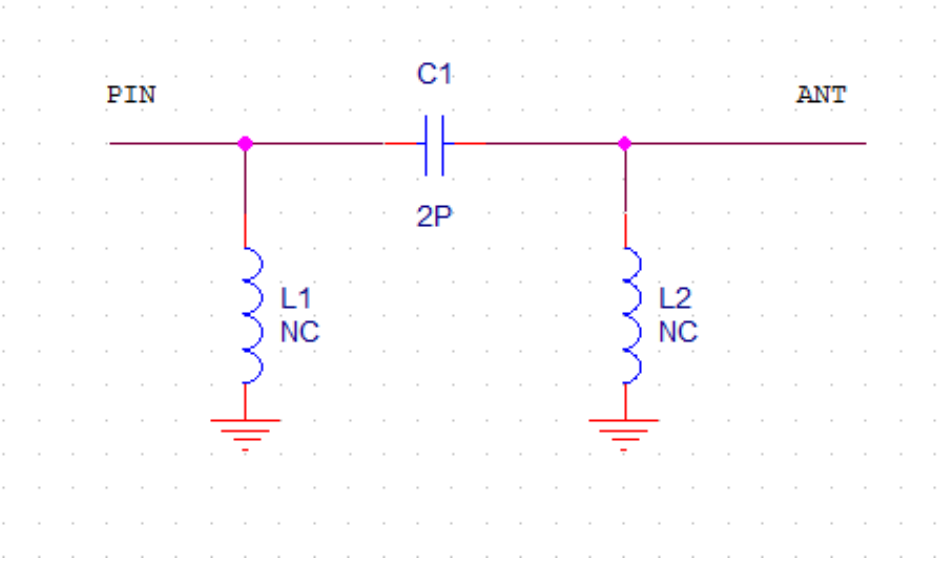
Items	Contents				
Specification	IEEE802.11ac HT80 @ 5GHz				
Mode	OFDM				
Channel	CH42 to CH155				
Data rate (MCS index)	Nss1 MCS0/1/2/3/4/5/6/7/8/9 Nss2 MCS0/1/2/3/4/5/6/7/8/9				
TX Characteristics	Min.	Typ.	Max.	Unit	Remark
1. Power Levels					
1) 10dBm Target (For Each antenna port)	8	10	12	dBm	mcs9
2. Spectrum Mask @ Target Power					
1) at fc +/-41MHz	-	-	-20	dBr	
2) at fc +/-80MHz	-	-	-28	dBr	
3) at fc > +/-120MHz	-	-	-40	dBr	
3. Constellation Error(EVM) @ Target Power					
1) Nss1 MCS0	-	-	-5	dB	
2) Nss1 MCS1	-	-	-10	dB	
3) Nss1 MCS2	-	-	-13	dB	
4) Nss1 MCS3	-	-	-16	dB	
5) Nss1 MCS4	-	-	-19	dB	
6) Nss1 MCS5	-	-	-22	dB	
7) Nss1 MCS6	-	-	-25	dB	
8) Nss1 MCS7	-	-	-27	dB	
9) Nss1 MCS8	-	-	-30	dB	
10) Nss1 MCS9	-	-35	-32	dB	
4. Frequency Error	-20	-	20	ppm	
RX Characteristics	Min.	Typ.	Max.	Unit	
5. Minimum Input Level Sensitivity(each chain)					
1) Nss1 MCS0	-	-79	-76	dBm	
2) Nss1 MCS1	-	-76	-73	dBm	
3) Nss1 MCS2	-	-74	-71	dBm	
4) Nss1 MCS3	-	-71	-68	dBm	
5) Nss1 MCS4	-	-67	-64	dBm	
6) Nss1 MCS5	-	-63	-60	dBm	
7) Nss1 MCS6	-	-62	-59	dBm	
8) Nss1 MCS7	-	-61	-58	dBm	
9) Nss1 MCS8	-	-56	-53	dBm	
10) Nss1 MCS9	-	-54	-51	dBm	
6. Maximum Input Level (PER ≦10%)	-30	-	-	dBm	

4 Software Requirements

The driver supports the following operating systems: Linux and Win OS.

5 Antenna matching

The 8th&11th Pin connect to antenna, please refer to design demand

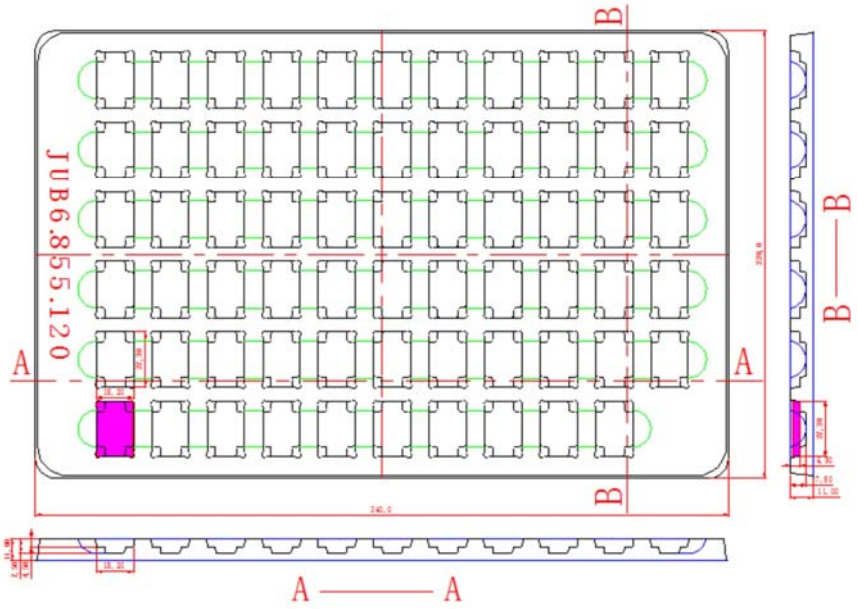


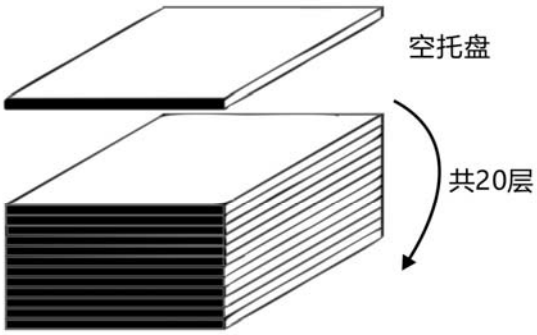
a). 模块和天线要求远离干扰源，模块地和天线地要求为一个整体。

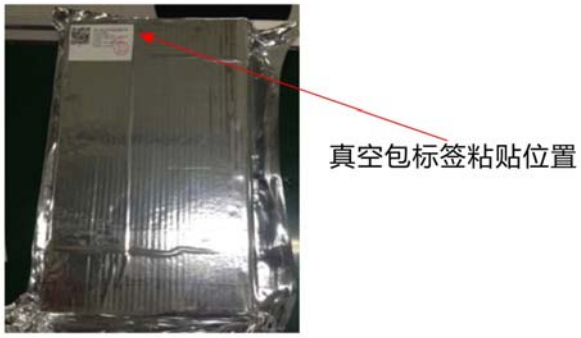
b). PIN8 PIN11为WIFI模组的RF接口，与天线之间布线要求共面阻抗为50Ω，建议使用弧线和直线，长度尽可能短。

c). L1, L2, C1组成π型匹配网络并靠近天线接口设计，具体根据天线推荐及排版设计的实测效果进行调整。

6. Package Information







装箱清单示意图

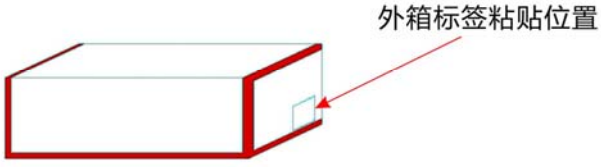
R-WIFI模组合格证

型　号：

批次号：

数　量：

重　量：　　Kg/件



包装说明:

1.产品放入吸塑盘内，每层65只，产品数量共1300只/箱，最上层加一个空吸塑盘;

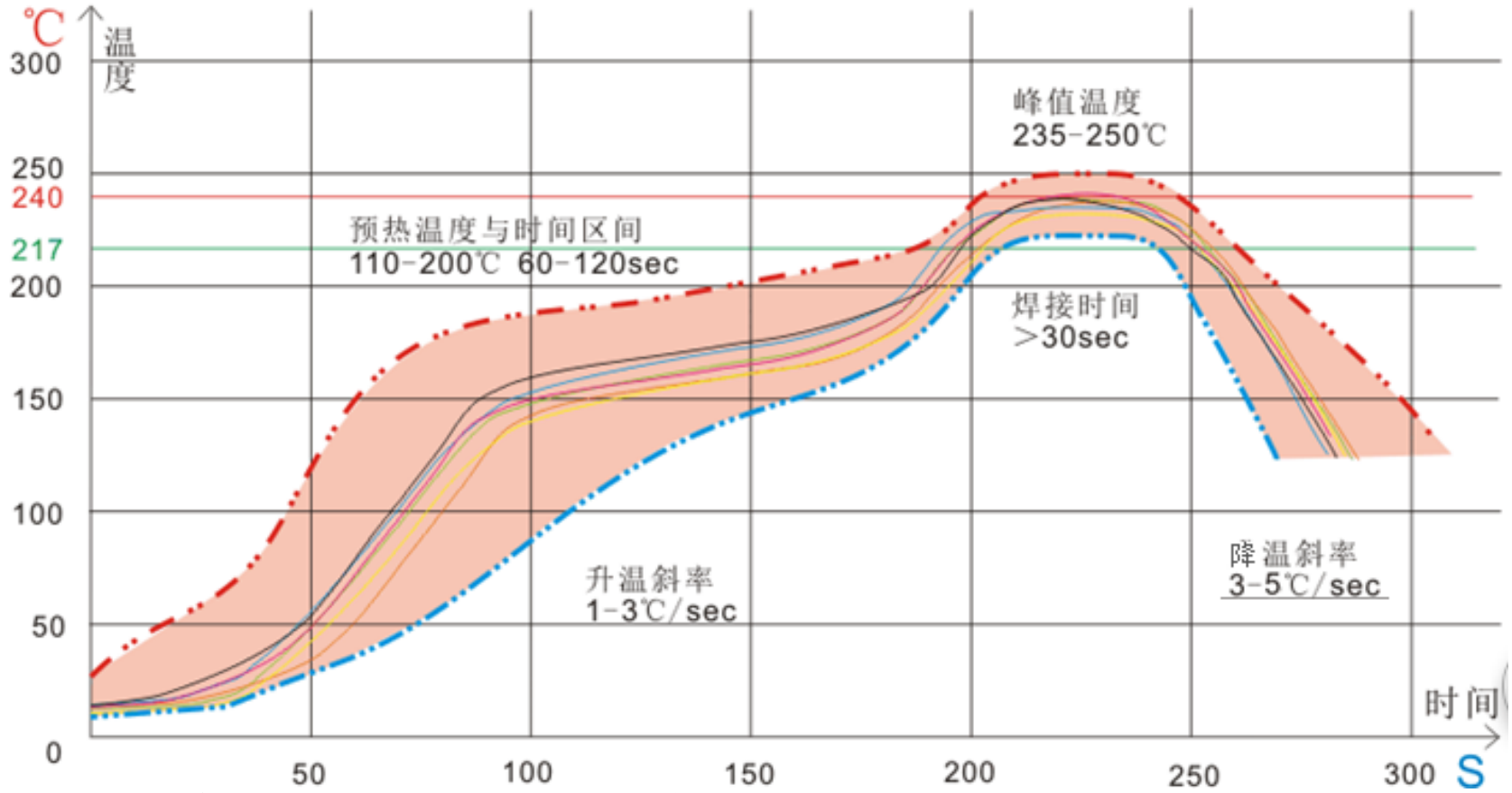
2.将叠好的托盘，用透明缠绕膜，在左右两端缠绕两圈固定；

3.将固定后的吸塑盘套上锡箔纸，并抽真空，在真空包内放置2g干燥剂2袋，6色湿度卡1张

4.外箱尺寸：385mm*240mm*140mm;

5.最小包装、外箱、尾箱用同款标签纸打印。

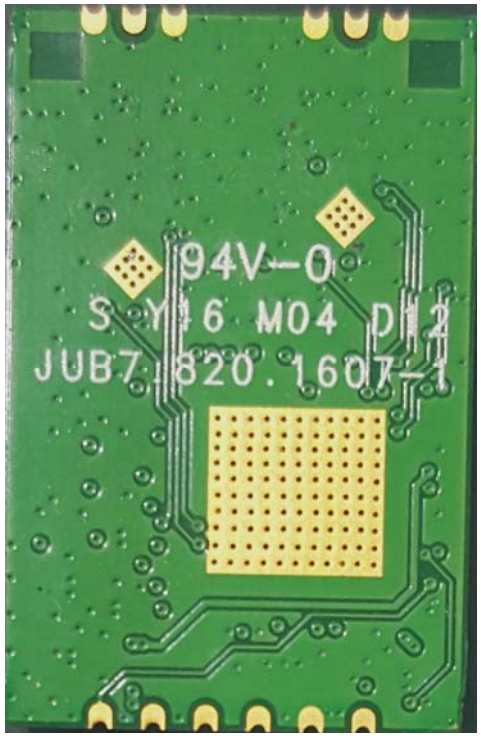
7、Refelow Standard Condition



升　温　区：温度：**<150**℃，时间：**60～90** 秒之间，斜率控制在 **1～3**℃**/S** 之间。
预热恒温区：温度：**150**℃～**200**℃，时间：**60-120** 秒之间，斜率在 **0.3-0.8** 之间。
回流焊接区：峰值温度 **235**℃**~250**℃**(**建议峰值温度＜**245**℃），时间 **30-70** 秒。
冷　却　区：温度：**217**℃**~170**℃，斜率在 **3～5**℃**/S** 之间。
焊料为锡银铜合金无铅焊料**/ Sn&Ag&Cu Lead-free solder(SAC305)**。
注意：产品可承受极限温度 **255** 度 **5** 秒，为保证产品质量，回流曲线应该在保证焊点质量时不损害 **PCB** 和元器件之间寻求平衡，并在以上曲线区间内进行为宜.

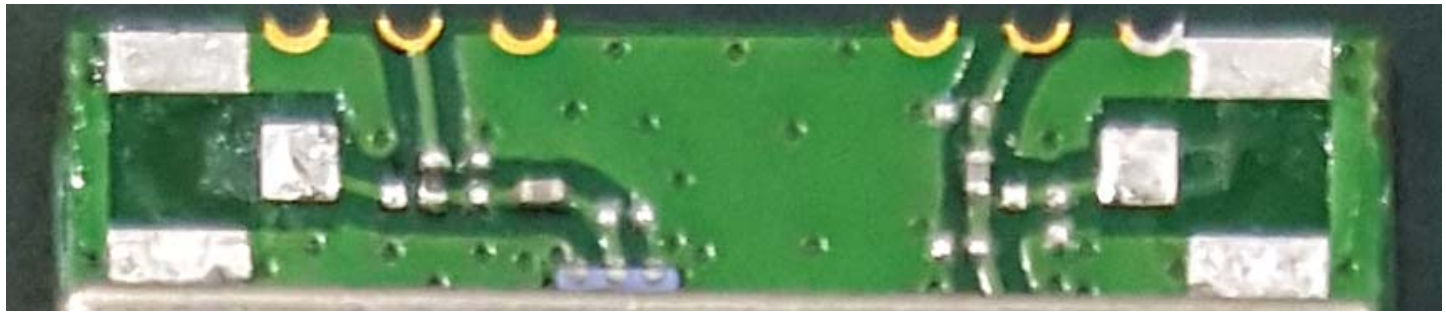
8、Product Picture

TOP VIEW



BOTTOM VIEW

Detail



备注：图片仅供参考，背面字符中供应商标示、批次号等信息会稍有不同。

FCC Statement

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.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
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.
- Reorient or relocate the receiving antenna.
- Reorient or relocate the receiving antenna.
- Consult the dealer or an experienced radio/TV technician for help important announcement

Important Note:

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
Country Code selection feature to be disabled for products marketed to the US/Canada.
This device is intended only for OEM integrators under the following conditions:

1. The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2. The transmitter module may not be co-located with any other transmitter or antenna,

Important Note:

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID 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.
Any company of the host device which install this modular with limit modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C:15.247 and 15.209 requirement, Only if the test result comply with FCC part 15.247 and 15.209 requirement, then the host can be sold legally.

End Product Labeling

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: Contains Transmitter Module FCC ID: 2AFG6-R812USA2.

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.
When the module is installed inside another device, the user manual of this device must contain below warning statements;

1. 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.
   (2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.
Custom design antennas may be used, however the OEM installer must following the FCC 15.21 requirements and verify if new FCC approval will be necessary.