

FRX-R8800DU2-A

802.11ax 287Mbps WLAN + BT v5.4

USB Module Specification



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Module Name: FRX-R8800DU2-A

Module Type: 802.11a/b/g/n/ac/ax 287Mbps WLAN + Bluetooth v5.4 USB Module

Revision: V1.0

Customer Approval:

Company:

Title:

Signature:

Date:

FRX Approval:

Title:

Signature:

Date:

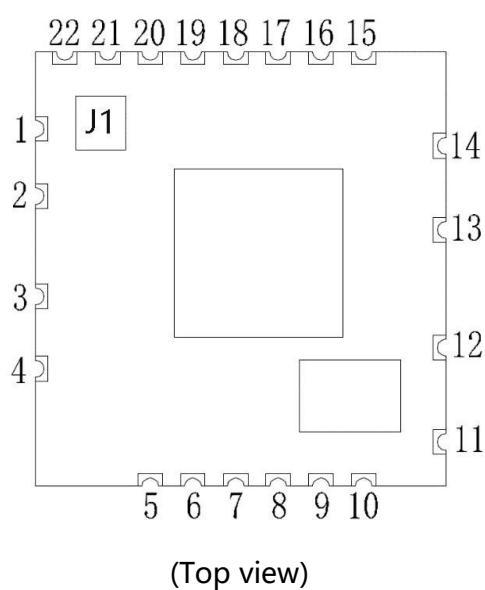
Revision History

Revision	Summary	Release Date	Revised By
V1.0	Official release	2024-03-25	Xhg

1.3 General Specifications

Module Name	FRX-R8800DU2-A
Chipset	AIC8800D
WLAN Standards	IEEE802.11a/b/g/n/ac/ax
BT Specification	Bluetooth Core Specification v5.4/v4.2/v2.1
Host Interface	USB2.0 for WLAN & Bluetooth
Antenna	Connect to the external antenna through half hole pad
Dimension	12.9*12.2*1.8mm (L*W*H; Tolerance: $\pm 0.3\text{mm}_L/W$, $\pm 0.2\text{mm}_H$)
Power Supply	3.3V $\pm 0.2\text{V}$ main power supply @700mA (Max)
Operation Temperature	-20°C to +70°C
Operation Humidity	10% to 95% RH (Non-Condensing)

2. Pin Assignments



2.1 Pin Definition

No	Pin Name	Type	I/O Level	Module Pin Description
1	GND	RF	/	RF Ground connections
2	WLAN_ANT	RF	/	RF Pad for 2.4G WLAN/5G WLAN

3	BT ANT	RF	/	BT_RF PAD for BT ANT
4	GND	RF	/	RF Ground for BT
5	PCM_IN	I	VDD33	1. General Purpose Input / Output Pin GPIOA2 2. PCM serial data signal input
6	PCM_OUT	O	VDD33	1. General Purpose Input / Output Pin GPIOA3 2. PCM serial data signal output
7	PCM_SYNC	I/O	VDD33	1. General Purpose Input / Output Pin GPIOA0 2. PCM frame sync signal
8	PCM_CLK	I/O	VDD33	1. General Purpose Input / Output Pin GPIOA1 2. PCM clock signal
9	HOST_WAKE_BT	I/O	VDD33	1. General Purpose Input / Output Pin GPIOB3 2. Host to wake-up this Bluetooth device output
10	BT_WAKE_HOST	I/O	VDD33	1. General Purpose Input / Output Pin GPIOB2 2. Bluetooth device to wake-up Host output
11	VDD33	P	/	3.3V main power supply
12	USB_DM	A I/O	/	USB 2.0 Device High Speed Interface differential pair
13	USB_DP	A I/O	/	USB 2.0 Device High Speed Interface differential pair
14	GND	P	/	Ground
15	NC	NC	/	NC
16	NC	NC	/	NC
17	NC	NC	/	NC
18	PWR_RST	I	VDD33	Enable signal input, it can externally shut down the module by pulled low. When VDD33 are ready, PWR_WF goes to high level exceeds 1.1V and lasts for 6mS, the module starts up, then the level of PWR_WF must be maintained at VDD33. (Internal pull up to VDD33 by 47K and pull down to GND by 200K resistors.)
19	GPIOB0	I/O	VDD33	1. General Purpose Input / Output Pin GPIOB0 2. Host to wake-up this WLAN device input
20	WL_WAKE_HOST	I/O	VDD33	1. General Purpose Input / Output Pin GPIOB1 2. WLAN device to wake-up Host output
21	UART0_TX	I	VDD33	High-Speed UART Data Out (Debug pin)
22	UART0_RX	O	VDD33	High-Speed UART Data In (Debug pin)
J1	NC	RF	/	NC(Reserved IPEX , 2.4G WLAN/5G WLAN to ANT)

P: Power or Ground; I/O: In/Output; I: Input; O :Output; A I/O: Analog In/Output;
 AI: Analog Input; AO: Analog Output; RF: Analog RF Port or RF Ground

3. Electrical and Thermal Specifications

3.1 Recommended Operating Conditions

Parameters		Min	Typ	Max	Units
Ambient Operating Temperature		-20	25	70	°C
External Antenna VSWR			1.7	2.1	/
Supply Voltage	VDD33	3.1	3.3	3.5	V

3.2 DC Electrical Specification (Recommended Operation Conditions)

Symbol	Description	Min	Typ	Max	Units
VIL	CMOS Low Level Input Voltage	0	--	0.3*VDD33	V
VIH	CMOS High Level Input Voltage	0.7*VDD33	--	VDD33	V
VTH	CMOS Threshold Voltage	--	0.5*VDD33	--	V

3.3 Current Consumption

Conditions : USB,VDD33=3.3V; Ta:25°C;			
Use Case	VDD33 Current		
	Typ(I _{RMS})	Max(I _{Peak})	Units
WLAN & BT Unassociated (Linux USB Driver)	82	89	mA
2.4G WLAN throughput 180Mbps (Linux USB Driver)	183	340	mA
5G WLAN throughput 180Mbps (Linux USB Driver)	240	540	mA
2.4G 11b 1Mbps TX@18dBm (TX RF test)	90	296	mA
2.4G 11g 6Mbps TX@18dBm (TX RF test)	114	345	mA
2.4G 11n HT20_MCS0 TX@17dBm (TX RF test)	108	337	mA
2.4G 11ax HE_SU 40M_MCS0 TX@15dBm (TX RF test)	82	305	mA
2.4G 11ax HE_SU 40M_MCS11 TX@13dBm (TX RF test)	64	281	mA
2.4G 11ax HE_SU 40M_MCS11 RX (RX RF test)	70	85	mA
5G 11a 6Mbps TX@17dBm (TX RF test)	169	521	mA

5G 11n HT20_MCS0 TX@17dBm (TX RF test)	165	528	mA
5G 11ax HE_SU 40M_MCS11 TX@13dBm (TX RF test)	83	384	mA
5G 11ax HE_SU 40M_MCS11 RX (RX RF test)	83	98	mA
BT BR_1M TX@6dBm (BT RF test, WLAN disable)	39	51	mA
BT EDR_3M TX@3dBm (BT RF test, WLAN disable)	35	46	mA
BT LE_1M TX@6dBm (BT RF test, WLAN disable)	42	54	mA
BT LE_1M RX Active (BT RF test, WLAN disable)	27	35	mA

4. WLAN & Bluetooth RF Specifications

4.1 2.4G RF Specification

Conditions : VDD33=3.3V ; Ta:25°C	
Features	Description
WLAN Standard	IEEE 802.11b/g/n/ax
Frequency Range	2.4~2.4835GHz (2.4GHz ISM Band)
Channels	Ch1~Ch11 (For 20MHz Channels)
Modulation	802.11b (DSSS): DBPSK, DQPSK, CCK; 802.11g (OFDM): BPSK, QPSK, 16QAM, 64QAM; 802.11n (OFDM): BPSK, QPSK, 16QAM, 64QAM; 802.11ax (OFDMA): BPSK, BPSK_DCM, QPSK, QPSK_DCM, QAM16, QAM16_DCM, QAM64, QAM256, QAM1024;
Data 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 (HT40): MCS0~MCS7(1T1R_SISO) 13.5~150Mbps; 802.11ax (HE_MU,OFDMA 26~242RU): MCS0~MCS11(1T1R) 0.4~143.4Mbps; 802.11ax (HE_SU, non-OFDMA 20MHz): MCS0~MCS11(1T1R) 3.6~143.4Mbps; 802.11ax (HE_SU, non-OFDMA 40MHz): MCS0~MCS11(1T1R) 7.3~286.8Mbps;
Frequency Tolerance	$\leq \pm 20\text{ppm}$

2.4G Receiver Specifications

RX Rate	Min Input Level (Typ. dBm)	Max Input Level (Typ. dBm)	PER
802.11b@1Mbps	-96	-5	< 8%
802.11b@11Mbps	-88	-5	< 8%
802.11g@6Mbps	-92	-5	< 10%
802.11g@54Mbps	-75	-5	< 10%
802.11n@HT20_MCS0	-92	-5	< 10%
802.11n@HT20_MCS7	-73	-5	< 10%
802.11n@HT40_MCS0	-89	-5	< 10%
802.11n@HT40_MCS7	-71	-5	< 10%
802.11ax@HE_SU 40M_MCS0	-88	-5	< 10%
802.11ax@HE_SU 40M_MCS11	-60	-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
Frequency Range	5.15~5.25GHz; 5.735~5.835GHz (5GHz ISM Band)
Channels	Ch36, Ch40, Ch44, Ch48; 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;
Data Rate	802.11a: 6, 9, 12, 18, 24, 36, 48, 54Mbps; 802.11n (HT20): MCS0~MCS7 6.5~72.2Mbps; 802.11n (HT40): MCS0~MCS7 13.5~150Mbps; 802.11ac (VHT20): MCS0~MCS8(1T1R) 6.5~86.7Mbps; 802.11ac (VHT40): MCS0~MCS9(1T1R) 13.5~200Mbps; 802.11ax (HE_MU,OFDMA 26~242RU): MCS0~MCS11(1T1R) 0.4~143.4Mbps; 802.11ax (HE_SU, non-OFDMA 20MHz): MCS0~MCS11(1T1R) 3.6~143.4Mbps; 802.11ax (HE_SU, non-OFDMA 40MHz): MCS0~MCS11(1T1R) 7.3~286.8Mbps;
Frequency Tolerance	$\leq \pm 20\text{ppm}$

5G Receiver Specifications			
RX Rate	Min Input Level (Typ. dBm)	Max Input Level (Typ. dBm)	PER
802.11a@6Mbps	-90	-5	< 10%

802.11a@54Mbps	-74	-5	< 10%
802.11n@HT20_MCS0	-90	-5	< 10%
802.11n@HT20_MCS7	-71	-5	< 10%
802.11n@HT40_MCS0	-88	-5	< 10%
802.11n@HT40_MCS7	-68	-5	< 10%
802.11ac@VHT_40M_MCS0	-87	-5	< 10%
802.11ac@VHT_40M_MCS9	-62	-5	< 10%
802.11ax@HE_SU 40M_MCS0	-87	-5	< 10%
802.11ax@HE_SU 40M_MCS11	-59	-5	< 10%

4.3 Bluetooth RF Specification

Conditions: VDD33 = 3.3V; Ta:25°C	
Features	Description
Bluetooth Specification	Bluetooth Core Specification v5.0/4.2/2.1
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;
Data Rate & Modulation	BR_1Mbps: GFSK; EDR_2Mbps: $\pi/4$ -DQPSK; EDR_3Mbps: 8DPSK; LE_1Mbps: GFSK (Uncoded);

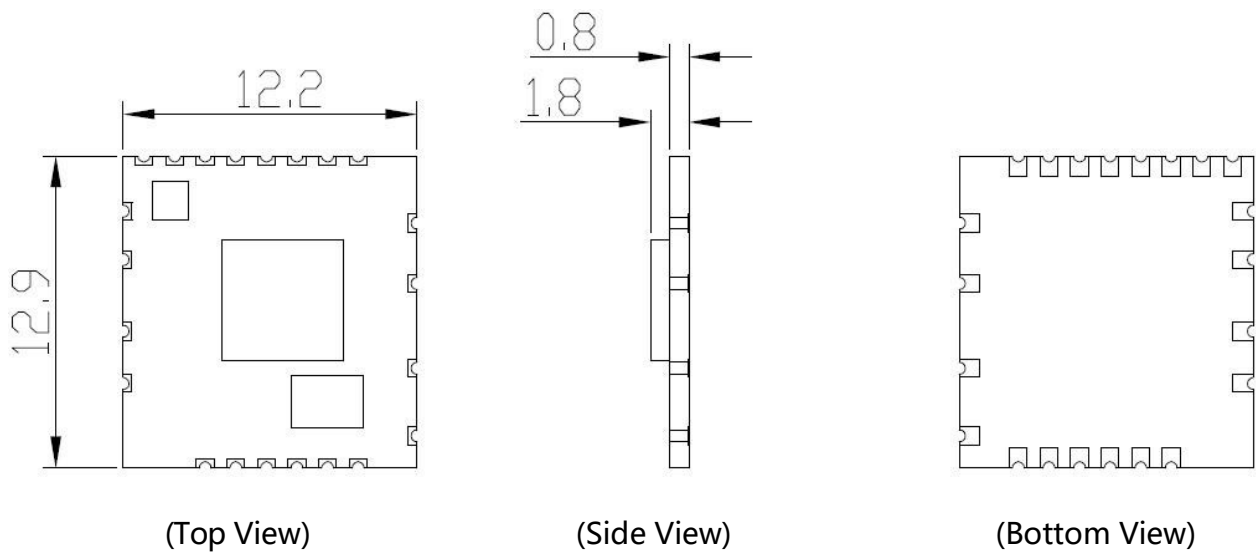
BR_1M (DH1) Modulation Characteristics			
Δf_{1avg}	140KHz	153.5KHz	175KHz
Δf_{2avg}	115KHz	153.2KHz	175KHz
Δf_{2max}	115KHz	165.5KHz	/
$\Delta f_{2avg}/\Delta f_{1avg}$	0.8	1	/
BR_1M (DH1) Initial Carrier Frequency Tolerance			
Init Freq Error	-75kHz	-4.3kHz	+75kHz
EDR_3M(3DH5) EDR Carrier Frequency Stability and Modulation Accuracy			
ω_i	-75KHz	-5.3KHz	+75KHz
$\omega_i + \omega_o$	-75KHz	-5.4KHz	+75KHz
ω_o	-10KHz	0.8KHz	+10KHz
8DPSK RMS DEVM	/	0.06	0.13
8DPSK Peak DEVM	/	0.12	0.25
LE_1M Modulation Characteristics			
Δf_{1avg}	225KHz	250.7KHz	275KHz
Δf_{2avg}	185KHz	252.9KHz	275KHz
Δf_{2max}	185KHz	245.5KHz	/
$\Delta f_{2avg}/\Delta f_{1avg}$	0.8	0.98	/

Bluetooth Receiver Specifications				
Items	Sensitivity		Maximum Input Level	
	Input Level (Typ. dBm)	BER	Input Level (Typ. dBm)	BER
BR_1M	-90	$\leq 0.1\%$	-5	$\leq 0.1\%$

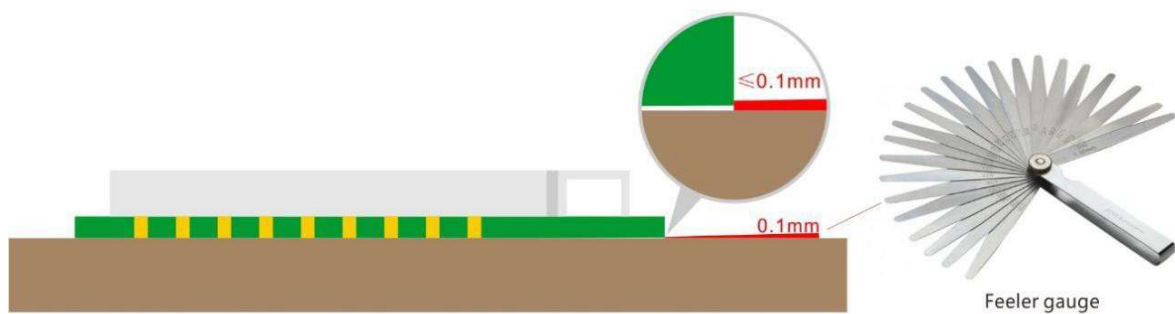
EDR_3M	-80	$\leq 0.01\%$	-5	$\leq 0.1\%$
	Input Level (Typ. dBm)	PER	Input Level (Typ. dBm)	PER
LE_1M	-90	$\leq 5\%$	-5	$\leq 5\%$

5. Mechanical Specifications

5.1 Module Outline Drawing (units:mm)

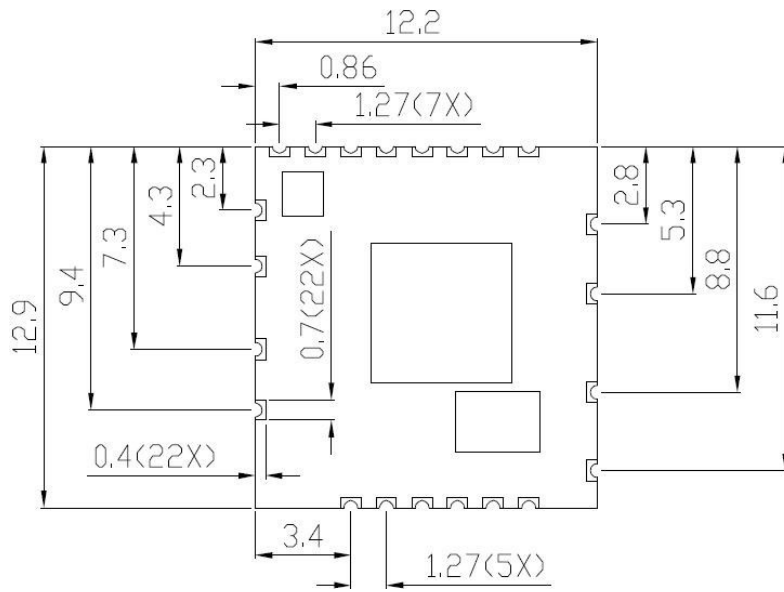


Module dimension: 12.9*12.2*1.8mm (L*W*H; Tolerance: $\pm 0.3\text{mm}_L/W$, $\pm 0.2\text{mm}_H$)

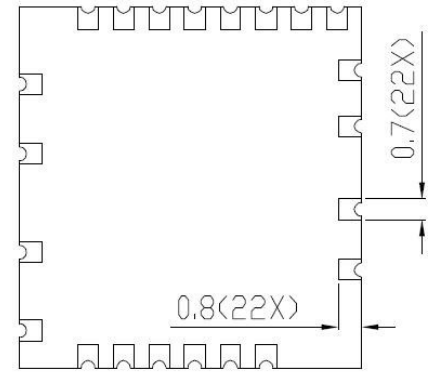


Module Bow and Twist: $\leq 0.1\text{mm}$

5.2 Mechanical Dimensions (units:mm)



(Top View)



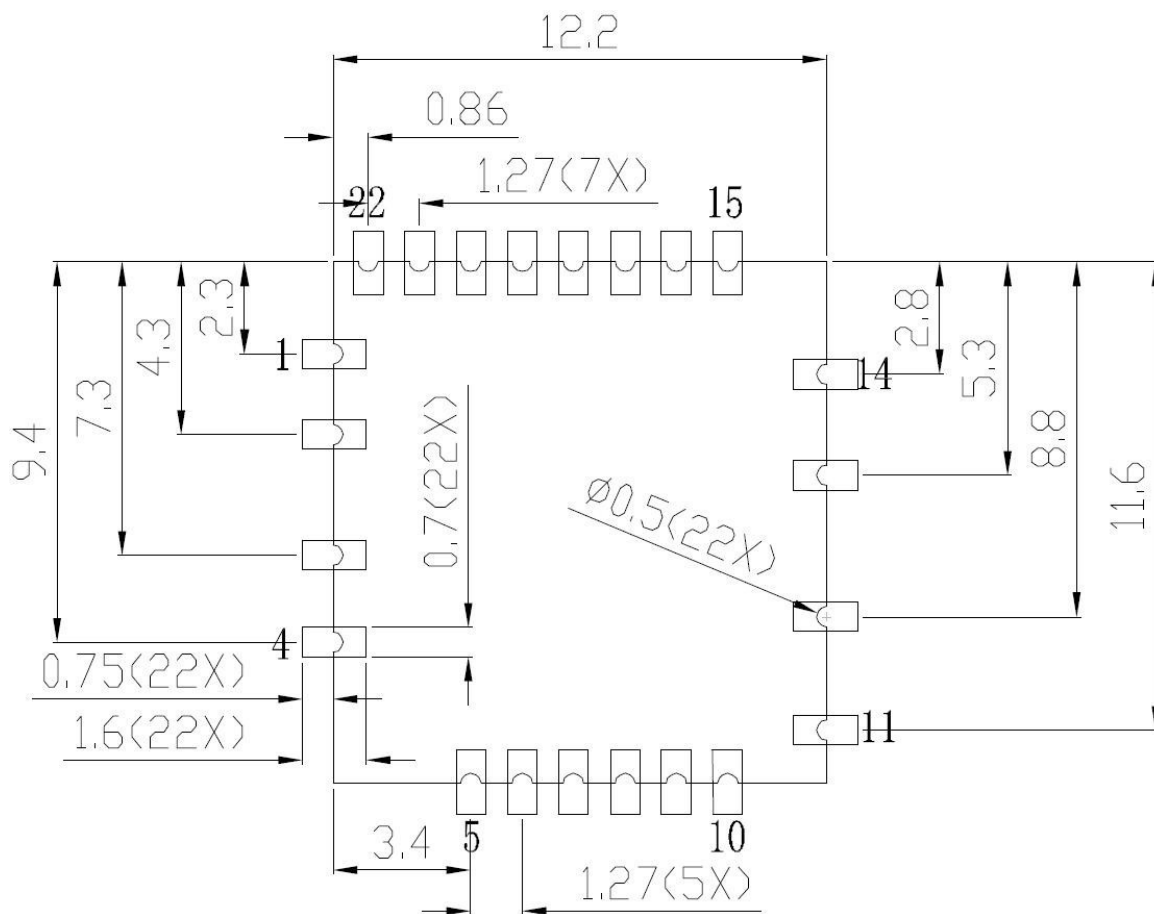
(Bottom View)

6. Application Information

6.2 HW Application Note

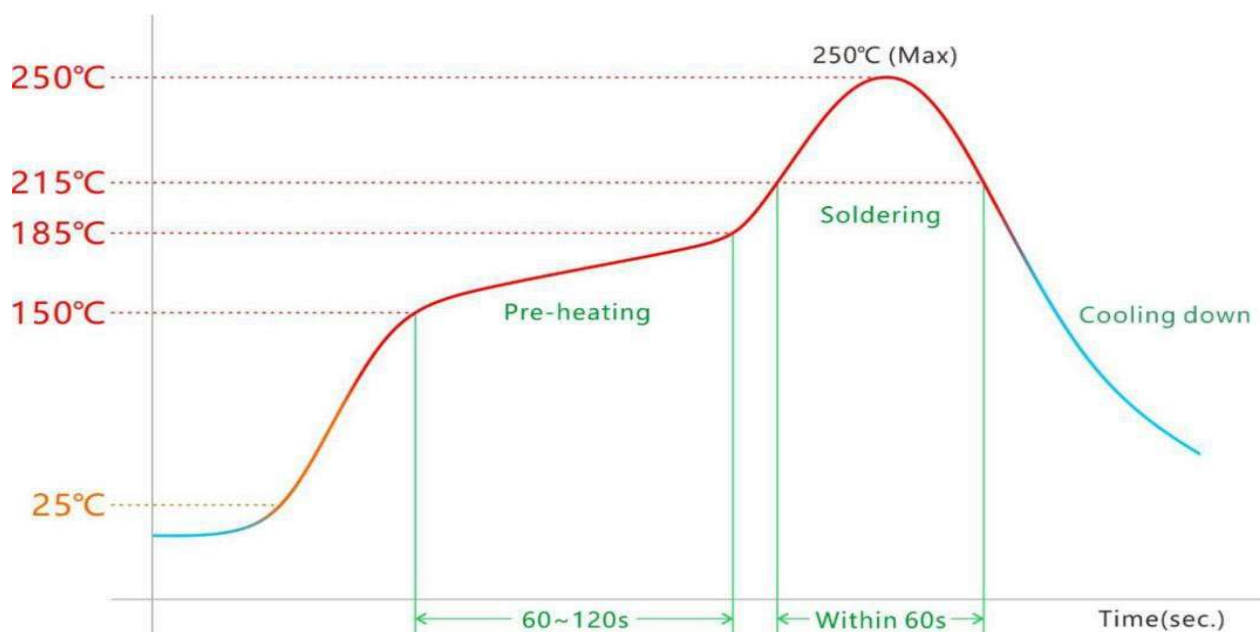
- a. RF path needs to maintain 50 ohm impedance.
- b. Main power supply voltage: DC 3.1 ~ 3.5V, ripple voltage <80mV
- c. Maximum RMS current $\geq 500\text{mA}$ and maximum peak current $\geq 700\text{mA}$
- d. For fast transient response, a current mode buck converter is recommended.
- e. The USB high speed differential pair should be maintain $90\Omega \pm 5\Omega$ differential impedance.
- f. USB signal pairs as short as possible, avoid interference from Power and other signals.

6.3 Recommend PCB Layout Footprint(units:mm)



(Design Unit: mm)

6.4 Reflow Soldering Standard Conditions



Please use the reflow within 2 times.

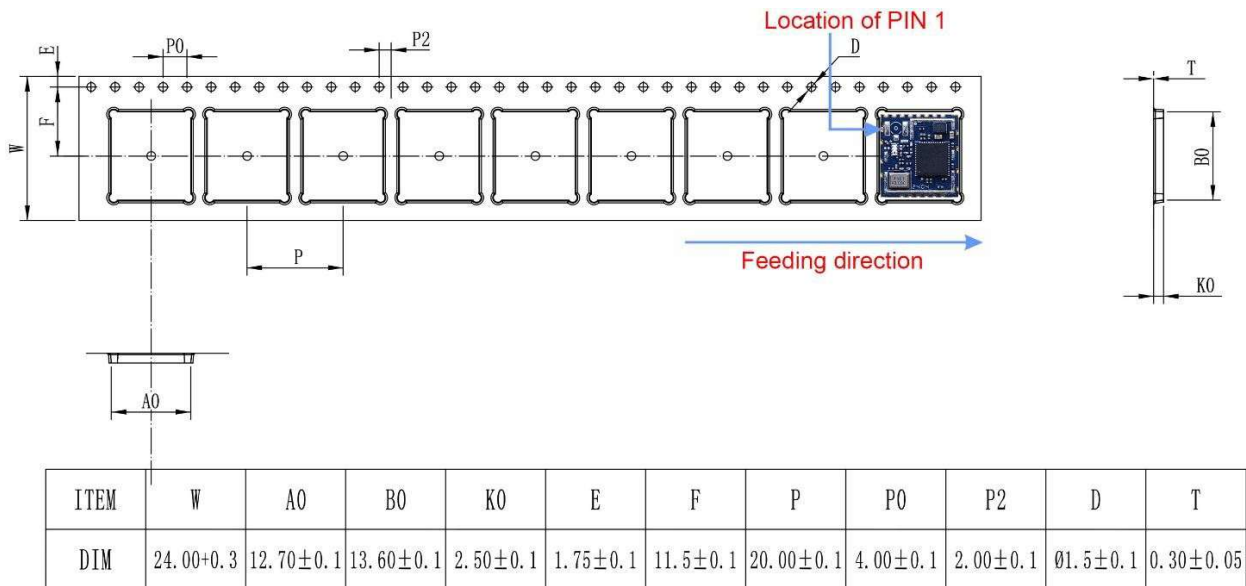
Set up the highest temperature within 250°C.

7. Key Components Of Module

No.	Parts	Specification	Manufacturer	Note
1	Chipset	AIC8800D	AIC Semiconductor (Shanghai) CO.,LTD	
2	PCB	FRX-R8800DU 2-A	SHEN ZHEN QILI ELECTRON CO.,LTD	
			Quzhou Sunlord Electronics Co.,Ltd	
			ShenZhen Tie Fa Technology Limited	
3	Crystal	40MHz-3225	LUCKI CM ELECTRONICS CO.,LTD	
			Chengde oscillator Electronic Technology CO.,LTD	
			JinHua East Crystal Electronic CO.,LTD	
			HUBEI TKD CRYSTAL ELECTRONIC SCIENCE AND TECHNOLOGY CO.,LTD	
4	Diplexer	DIP1608	Shenzhen Sunlord Electronics Co.,Ltd	
			Dongguan Hekang Electronics Co.,LTD	
			Shenzhen FTR Technologies CO., LTD	
			Walsin Technology Corporation	

8. Package and Storage Information

8.1 Package Dimensions



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 1 humidity card in each anti-static vacuum bag.
- 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% RH (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

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.

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 modular has been tested and found to comply with part 15 requirements for Modular Approval.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiated Exposure Statement

Radiated Exposure Statement

This device 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 & your body. The antenna used for this transmitter must not transmit simultaneously with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures. Users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance. The OEM integrator is still responsible for testing their end-user end-product for any additional compliance requirements required with this modular installed.

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

2.2 List of applicable FCC rules

CFR 47 FCC Part 15 Subpart C and Subpart E has been investigated. It is applicable to the modular transmitter

2.3 Specific Operational Use Conditions - Antenna Placement Within the Host Platform

The module is tested for standalone mobile RF exposure use condition.

The antenna must be installed such that 20cm is maintained between the antenna and users,

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

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.

2.4 Limited Module Procedures

This module is not shielded and is a limited single module. When the module is integrated into the host, it can be used only after being approved by the module applicant through the C2PC process.

2.5 Trace Antenna Designs

Not applicable

2.6 RF Exposure Considerations

This equipment meets the SAR threshold exclusion set forth in KDB 447498 and therefore can be used in mobile configurations.

2.7 Antenna Type and Gain

The following antennas have been certified for use with this module.

Only antennas of the same type with equal or lower gain may also be used with this module.

Other types of antennas and/or higher gain antennas may require the additional authorization for operation.

Antenna Specification list below:

Model	Type	Connector	Peak gain (dBi)				
			2400-2483.5 MHz	5150-5250 MHz	5250-5350 MHz	5470-5725 MHz	5725-5850 MHz
/	External Antenna	/	3.00dBi	3.00dBi	/	/	3.00dBi

2.8 End Product Labelling Compliance Information

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: "Contains FCC ID: **2AVEDFRX-R8800DU2A**". The FCC ID can be used only when all FCC compliance requirements are met.

2.9 Information on Test Modes and Additional Testing Requirements

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitter(s) class II permissive change re-evaluation or new FCC authorization.

Host manufacturer installed this modular with single modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C, FCC part 15E, 15.209 requirement, only if the test result comply with FCC part 15C, FCC part 15E, 15.209 requirement, then the host can be sold legally. This module is not shielded and is a limited single module.

When the module is integrated into the host, it can be used only after being approved by the module applicant through the C2PC process.

2.10 Additional testing, Part 15 Subpart B Disclaimer

This transmitter modular is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B rules requirement applicable to the final host. The final host will still need to be reassessed for compliance to this portion of rules requirements if applicable.

As long as all 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 modular installed.

2.11 Note EMI Considerations

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 host integrator must follow the integration instructions provided in this document and ensure that the composite system end product complies with the requirements by a technical assessment or evaluation to the rules and to KDB Publication 996369.

The host integrator installing this module into their product must ensure that the final composite product complies with the requirements by a technical assessment or evaluation to the rules, including the transmitter operation and should refer to guidance in KDB Publication 996369.

OEM/Host Manufacturer Responsibilities

OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and RF Exposure essential requirements of the FCC rules.

2.12 How to Make Changes - 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.

Class II Permissive Change (C2PC) Test Plan for Host Devices

Test plan for Class II Permissive Changes (C2PC) on FCC ID: 2AVEDFRX-R8800DU2A.

For BT(2402-2480MHz):

- 1) AC Conducted Emission. (FCC Part 15.207)
- 2) Radiated Emission (FCC Part 15.205&209, FCC Part 15.247(d))
- 3) Host cannot change the RF Exposure use conditions. If use conditions is changed the separate approval shall be required.

Note:

1. These tests be based on C63.10 and FCC Part 15.247 as guidance, according to the operating frequency High, mid and low channel test.
2. For these tests, all modes (GFSK, $\pi/4$ -DQPSK, 8DPSK) need to be tested.

For BLE(2402-2480MHz):

- 1) AC Conducted Emission. (FCC Part 15.207)
- 2) Radiated Emission (FCC Part 15.205&209, FCC Part 15.247(d))
- 3) Host cannot change the RF Exposure use conditions. If use conditions is changed the separate approval shall be required.

Note:

1. These tests be based on C63.10 and FCC Part 15.247 as guidance, according to the operating frequency High, mid and low channel test.
2. For these tests, all modes (GFSK) need to be tested.

For 2.4GWIFI(2412-2462MHz):

- 1) AC Conducted Emission. (FCC Part 15.207)
- 2) Radiated Emission (FCC Part 15.205&209, FCC Part 15.247(d))
- 3) Host cannot change the RF Exposure use conditions. If use conditions is changed the separate approval shall be required.

Note:

1. These tests be based on C63.10 and FCC Part 15.247 as guidance, according to the operating frequency High, mid and low channel test.
2. For these tests, all modes (802.11b,802.11g,802.11HT20,802.11HT40,802.11ax20,802.11ax40) need to be tested.

For 5.2GWIFI(5180-5240MHz):

- 1) AC Conducted Emission. (FCC Part 15.207)
- 2) Radiated Emission (FCC Part 15.205&209, FCC Part 15.407(b))
- 3) Host cannot change the RF Exposure use conditions. If use conditions is changed the separate approval shall be required.

Note:

1. These tests be based on C63.10, FCC Part 15.407, KDB 789033 D02 as guidance, according to the operating frequency High, mid and low channel test.
2. For these tests, all modes (IEEE 802.11a, IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20, IEEE 802.11 ac VHT 40 ,IEEE 802.11ax HE20, IEEE 802.11ax HE40) need to be tested.

For 5.8GWIFI(5745-5825MHz):

- 1) AC Conducted Emission. (FCC Part 15.207)
- 2) Radiated Emission (FCC Part 15.205&209, FCC Part 15.407(b))
- 3) Host cannot change the RF Exposure use conditions. If use conditions is changed the separate approval shall be required.

Note:

1. These tests be based on C63.10, FCC Part 15.407, KDB 789033 D02 as guidance, according to the operating frequency High, mid and low channel test.
2. For these tests, all modes (IEEE 802.11a, IEEE 802.11n HT20, IEEE 802.11n HT40, IEEE 802.11ac VHT20, IEEE 802.11 ac VHT 40 ,IEEE 802.11ax HE20, IEEE 802.11ax HE40) need to be tested.

The above is the test plan for each band.

This module does not contain a shield and therefore is limited, requiring the Grantee to file a Class II permissive change for each specific host per the test plan defined in the module integration instructions.