6222D-UUC

Wi-Fi Dual-band 2X2 11ac +Bluetooth 5.0

Combo Module Datasheet

6222D-UUC Module Datasheet

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Customer Approval :

_____ Company

_____ Title

_____ Signature

_____ Date

_____ Fn-Link

Revision History

Version	Date	Revision Content	Draft	Approved
1.0	2020/04/22	New version	LYJ	SZS
1.1	2020/06/09	Update Pin assignments, reference design and ordering information for share antenna version	LYJ	SZS
1.2	2020/08/04	Update Power on sequence	LYJ	SZS
1.3	2020/08/19	Update ordering information	LYJ	SZS
1.4	2020/08/26	Update 2.4G RF Specification	LYJ	SZS
1.5	2020/9/1	Update Module Picture and Marking Description	LYJ	SZS
2.0	2021/3/16	Add -W4 info	LGP	SZS
2.1	2021/08/31	added package PAD dimension	LXY	QJP
2.2	2021/09/26	Updated ipex spec.	LXY	QJP

CONTENTS

1 Overview

1.1 Introduction

Fn-Link Technology would like to announce a low-cost and low-power consumption module which has all of the Wi-Fi and Bluetooth functionalities. The highly integrated module makes the possibilities of web browsing, VoIP, Bluetooth headsets applications. With seamless roaming capabilities and advanced security, also could interact with different vendors' 802.11a/b/g/n/ac 2x2 Access Points in the wireless LAN.

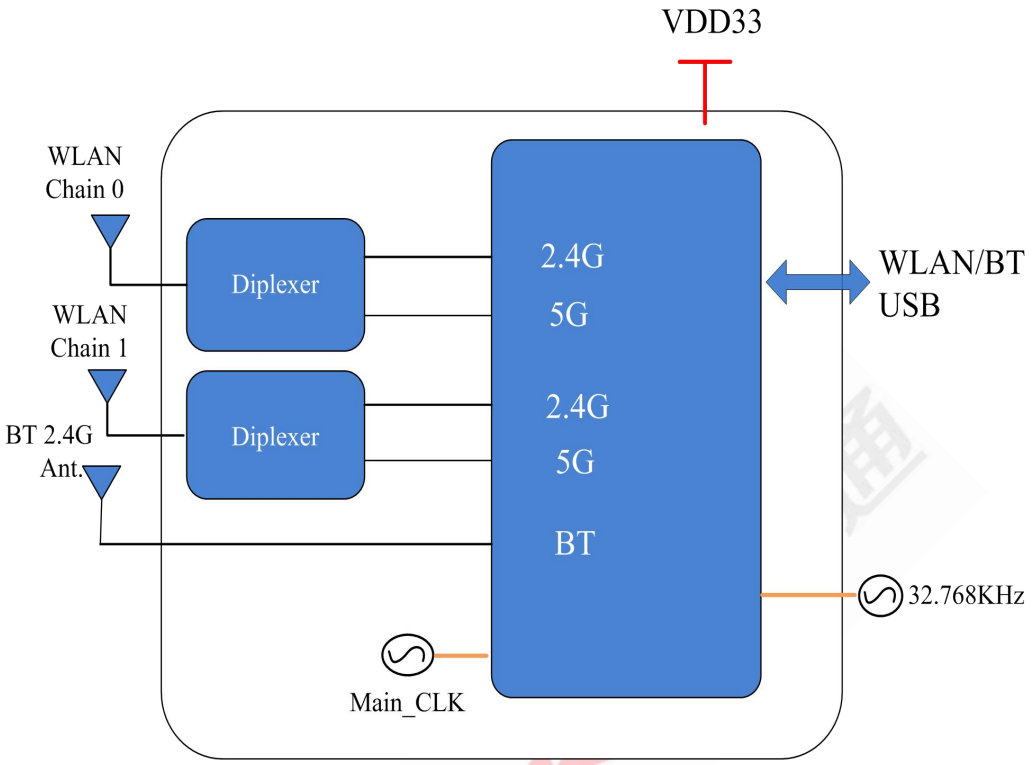
The wireless module complies with IEEE 802.11 a/b/g/n/ac 2x2 MIMO standard and it can achieve up to a speed of 867Mbps with dual stream in 802.11n to connect the wireless LAN. The integrated module provides USB2.0 interface for Wi-Fi and Bluetooth.

This compact module is a total solution for a combination of Wi-Fi + BT technologies. The module is specifically developed for Smart TV and OTT Box application.

1.2 Features

- Highly integrated wireless local area network(WLAN) system-on-chip (SOC) for 5 GHZ 802.11ac, or 2.4G/5G 802.11n WLAN applications.
- Dual-stream spatial multiplexing up to 867 Mbps data rate.
- Supports 20/40MHz at 2.4GHz and supports 20/40/80MHz at 5GHz
- Supports USB interface for WLAN and Bluetooth.
- Complies with USB2.0 for WLAN and BT controller.
- Supports Bluetooth V5.0+HS, BLE and be backwards compatible with Bluetooth 1.2, 2.X+ enhance data rate.
- Supports Bluetooth for class1 , class2 and class3 power level transmissions.

Block Diagram:



Note: The module has share antenna and non-share antenna version, please refer to the ordering information or contact us for detail.

1.3 General Specification

Model Name	6222D-UUC
Product Description	Support Wi-Fi/Bluetooth
Dimension	L x W x H: 27 x 18 x 2.03 mm
Wi-Fi Interface	USB 2.0
BT Interface	USB 2.0
Operating temperature	0°C [1] to 70°C
Storage temperature	-40°C to 85°C
Humidity	Operating Humidity 10% to 95% Non-Condensing
RoHS	All hardware components are fully compliant with EU RoHS directive

1. Operating temperature actually passed at -20°C.

1.4 Recommended Operating Rating

		Min.	Typ.	Max.	Unit
Operating Temperature		0	25	70	deg.C
VCC33		3.15	3.3	3.45	V
VDDIO		-	3.3	-	V
Power Consumption		VCC33 = 3.3V(Unit:mA)			
	Wi-Fi on Mode	130			
	TX (2.4G HT20)	459			
	RX (2.4G HT20)	210			
	TX (5G HT80)	510			
	RX (5G HT80)	210			
	BT on	32			

※1.5 EEPROM Information

WI-FI

Vendor ID	0BDAh
Product ID	C82Ch

2 Wi-Fi RF Specification

2.1 2.4GHz RF Specification

Feature	Description			
WLAN Standard	IEEE 802.11b/g/n Wi-Fi compliant			
Frequency Range	2.400 GHz ~ 2.497 GHz (2.4 GHz ISM Band)			
Number of Channels	2.4GHz：Ch1 ~ Ch14			
Output Power	802.11b /11Mbps : 17 dBm ± 1.5 dB @ EVM ≤ -9dB			
	802.11g /54Mbps : 15 dBm ± 1.5 dB @ EVM ≤ -25dB			
	802.11n /MCS7 : 14 dBm ± 1.5 dB @ EVM ≤ -28dB			
Spectrum Mask	Min. b/g/n	Typ. b/g/n	Max. b/g/n	Unit b/g/n
1st side lobes(to fc ± 11MHZ)	-	-40/-30/-40	-	dBr
2st side lobes(to fc ± 22MHZ)	-	-51/-33/-58	-	dBr
Freq. Tolerance	-20/-20/-20	-	20/20/20	ppm

Test Items	Test Value		Standard Value
SISO Receive Sensitivity (11b,20MHz) @8% PER	- 1Mbps	PER @ -92 dBm, typical	≤-83
	- 2Mbps	PER @ -90 dBm, typical	≤-80
	- 5.5Mbps	PER @ -87 dBm, typical	≤-79
	- 11Mbps	PER @ -85 dBm, typical	≤-76
SISO Receive Sensitivity (11g,20MHz) @10% PER	- 6Mbps	PER @ -89 dBm, typical	≤-85
	- 9Mbps	PER @ -88 dBm, typical	≤-84
	- 12Mbps	PER @ -87 dBm, typical	≤-82
	- 18Mbps	PER @ -84 dBm, typical	≤-80
	- 24Mbps	PER @ -81 dBm, typical	≤-77
	- 36Mbps	PER @ -78 dBm, typical	≤-73
	- 48Mbps	PER @ -73 dBm, typical	≤-69
	- 54Mbps	PER @ -71 dBm, typical	≤-68
SISO Receive Sensitivity (11n,20MHz) @10% PER	- MCS=0	PER @ -89 dBm, typical	≤-85
	- MCS=1	PER @ -86 dBm, typical	≤-82
	- MCS=2	PER @ -84 dBm, typical	≤-80
	- MCS=3	PER @ -80 dBm, typical	≤-77
	- MCS=4	PER @ -77 dBm, typical	≤-73
	- MCS=5	PER @ -72 dBm, typical	≤-69
	- MCS=6	PER @ -71 dBm, typical	≤-68

	- MCS=7	PER @ -69 dBm, typical	≤-67
SISO Receive Sensitivity (11n,40MHz) @10% PER	- MCS=0	PER @ -88 dBm, typical	≤-82
	- MCS=1	PER @ -85 dBm, typical	≤-79
	- MCS=2	PER @ -83 dBm, typical	≤-77
	- MCS=3	PER @ -79 dBm, typical	≤-74
	- MCS=4	PER @ -76 dBm, typical	≤-70
	- MCS=5	PER @ -71 dBm, typical	≤-66
	- MCS=6	PER @ -70 dBm, typical	≤-65
	- MCS=7	PER @ -68 dBm, typical	≤-64
MIMO Receive Sensitivity (11n ,20MHz) @10% PER	- MCS=0	PER @ -89 dBm, typical	≤-85
	- MCS=1	PER @ -86 dBm, typical	≤-82
	- MCS=2	PER @ -84 dBm, typical	≤-80
	- MCS=3	PER @ -80 dBm, typical	≤-77
	- MCS=4	PER @ -77 dBm, typical	≤-73
	- MCS=5	PER @ -72 dBm, typical	≤-69
	- MCS=6	PER @ -71 dBm, typical	≤-68
	- MCS=7	PER @ -69 dBm, typical	≤-67
	- MCS=8,	PER @ -89 dBm, typical	≤-85
	- MCS=15,	PER @ -69 dBm, typical	≤-67
MIMO Receive Sensitivity (11n,40MHz) @10% PER	- MCS=0	PER @ -88 dBm, typical	≤-82
	- MCS=1	PER @ -85 dBm, typical	≤-79
	- MCS=2	PER @ -83 dBm, typical	≤-77
	- MCS=3	PER @ -79 dBm, typical	≤-74
	- MCS=4	PER @ -76 dBm, typical	≤-70
	- MCS=5	PER @ -71 dBm, typical	≤-66
	- MCS=6	PER @ -70 dBm, typical	≤-65
	- MCS=7	PER @ -68 dBm, typical	≤-64
	- MCS=8,	PER @ -88 dBm, typical	≤-82
	- MCS=15,	PER @ -68 dBm, typical	≤-64
Maximum Input Level	802.11b : -10 dBm		
	802.11g/n : -20 dBm		
Antenna Reference	Small antennas with 0~2 dBi peak gain		

2.2 5GHz RF Specification

Feature	Description	
WLAN Standard	IEEE 802.11a/n/ac 2x2, Wi-Fi compliant	
Frequency Range	4.900 GHz ~ 5.845 GHz (5.0 GHz ISM Band)	
Number of Channels	5.0GHz：Please see the table[1]	
Output Power	802.11a /54Mbps : 15 dBm ± 1.5 dB @ EVM ≤ -25dB	
	802.11n /MCS7 : 14 dBm ± 1.5 dB @ EVM ≤ -28dB	
	802.11ac /MCS9 : 13 dBm ± 1.5 dB @ EVM ≤ -32dB	
Test Items	**Test Value**	**Standard Value**
SISO Receive Sensitivity (11a,20MHz) @10% PER	- 6Mbps PER @ -88 dBm	≤-85
	- 9Mbps PER @ -87 dBm	≤-84
	- 12Mbps PER @ -86 dBm	≤-82
	- 18Mbps PER @ -83 dBm	≤-80
	- 24Mbps PER @ -80 dBm	≤-77
	- 36Mbps PER @ -77 dBm	≤-73
	- 48Mbps PER @ -72 dBm	≤-69
	- 54Mbps PER @ -70 dBm	≤-68
SISO Receive Sensitivity (11n,20MHz) @10% PER	- MCS=0 PER @ -88 dBm	≤-85
	- MCS=1 PER @ -85 dBm	≤-82
	- MCS=2 PER @ -83 dBm	≤-80
	- MCS=3 PER @ -80 dBm	≤-77
	- MCS=4 PER @ -76 dBm	≤-73
	- MCS=5 PER @ -71 dBm	≤-69
	- MCS=6 PER @ -70 dBm	≤-68
	- MCS=7 PER @ -68 dBm	≤-67
MIMO Receive Sensitivity (11n,20MHz) @10% PER	- MCS=0 PER @ -89 dBm	≤-82
	- MCS=1 PER @ -88 dBm	≤-80
	- MCS=2 PER @ -86 dBm	≤-79
	- MCS=3 PER @ -83 dBm	≤-78
	- MCS=4 PER @ -79 dBm	≤-74
	- MCS=5 PER @ -74 dBm	≤-68
	- MCS=6 PER @ -73 dBm	≤-66
	- MCS=7 PER @ -71 dBm	≤-64
	- MCS=8 PER @ -89 dBm	≤-84
	- MCS=15 PER @ -68 dBm	≤-63

SISO Receive Sensitivity (11n,40MHz) @10% PER	- MCS=0 PER @ -85 dBm	≤-82
	- MCS=1 PER @ -82 dBm	≤-79
	- MCS=2 PER @ -80 dBm	≤-77
	- MCS=3 PER @ -77 dBm	≤-74
	- MCS=4 PER @ -73 dBm	≤-70
	- MCS=5 PER @ -69 dBm	≤-66
	- MCS=6 PER @ -67 dBm	≤-65
	- MCS=7 PER @ -66 dBm	≤-64
MIMO Receive Sensitivity (11n,40MHz) @10% PER	- MCS=0 PER @ -87 dBm	≤-79
	- MCS=1 PER @ -85 dBm	≤-76
	- MCS=2 PER @ -83 dBm	≤-74
	- MCS=3 PER @ -80 dBm	≤-71
	- MCS=4 PER @ -76 dBm	≤-67
	- MCS=5 PER @ -72 dBm	≤-63
	- MCS=6 PER @ -70 dBm	≤-62
	- MCS=7 PER @ -69 dBm	≤-63
	- MCS=8 PER @ -85 dBm	≤-79
	- MCS=15 PER @ -66 dBm	≤-61
SISO Receive Sensitivity (11ac,20MHz) @10% PER	- MCS=0, NSS1 PER @ -86 dBm	≤-82
	- MCS=1, NSS1 PER @ -84 dBm	≤-80
	- MCS=2, NSS1 PER @ -82 dBm	≤-77
	- MCS=3, NSS1 PER @ -79 dBm	≤-73
	- MCS=4, NSS1 PER @ -75 dBm	≤-69
	- MCS=5, NSS1 PER @ -70 dBm	≤-68
	- MCS=6, NSS1 PER @ -69 dBm	≤-67
	- MCS=7, NSS1 PER @ -68 dBm	≤-62
	- MCS=8, NSS1 PER @ -64 dBm	≤-60
MIMO Receive Sensitivity (11ac,20MHz) @10% PER	- MCS=0, NSS1 PER @ -88 dBm	≤-79
	- MCS=1, NSS1 PER @ -87 dBm	≤-77
	- MCS=2, NSS1 PER @ -85 dBm	≤-74
	- MCS=3, NSS1 PER @ -82 dBm	≤-71
	- MCS=4, NSS1 PER @ -78 dBm	≤-66
	- MCS=5, NSS1 PER @ -73 dBm	≤-65
	- MCS=6, NSS1 PER @ -72 dBm	≤-64
	- MCS=7, NSS1 PER @ -71 dBm	≤-59
	- MCS=8, NSS1 PER @ -67 dBm	≤-57

SISO Receive Sensitivity (11ac,40MHz) @10% PER	- MCS=0, NSS1 PER @ -84 dBm	≤-79
	- MCS=1, NSS1 PER @ -81 dBm	≤-77
	- MCS=2, NSS1 PER @ -79 dBm	≤-74
	- MCS=3, NSS1 PER @ -76 dBm	≤-70
	- MCS=4, NSS1 PER @ -73 dBm	≤-66
	- MCS=5, NSS1 PER @ -68 dBm	≤-65
	- MCS=6, NSS1 PER @ -67 dBm	≤-64
	- MCS=7, NSS1 PER @ -66 dBm	≤-59
	- MCS=8, NSS1 PER @ -61 dBm	≤-57
	- MCS=9, NSS1 PER @ -60 dBm	≤-55
MIMO Receive Sensitivity (11ac,40MHz) @10% PER	- MCS=0, NSS1 PER @ -86 dBm	≤-79
	- MCS=1, NSS1 PER @ -84 dBm	≤-76
	- MCS=2, NSS1 PER @ -82 dBm	≤-74
	- MCS=3, NSS1 PER @ -79 dBm	≤-72
	- MCS=4, NSS1 PER @ -76 dBm	≤-67
	- MCS=5, NSS1 PER @ -71 dBm	≤-63
	- MCS=6, NSS1 PER @ -70 dBm	≤-62
	- MCS=7, NSS1 PER @ -69 dBm	≤-61
	- MCS=8, NSS1 PER @ -64 dBm	≤-56
	- MCS=9, NSS1 PER @ -63 dBm	≤-54
SISO Receive Sensitivity (11ac,80MHz) @10% PER	- MCS=0, NSS1 PER @ -81 dBm	≤-79
	- MCS=1, NSS1 PER @ -78 dBm	≤-76
	- MCS=2, NSS1 PER @ -76 dBm	≤-74
	- MCS=3, NSS1 PER @ -72 dBm	≤-71
	- MCS=4, NSS1 PER @ -69 dBm	≤-67
	- MCS=5, NSS1 PER @ -66 dBm	≤-63
	- MCS=6, NSS1 PER @ -64 dBm	≤-62
	- MCS=7, NSS1 PER @ -62 dBm	≤-61
	- MCS=8, NSS1 PER @ -58 dBm	≤-56
	- MCS=9, NSS1 PER @ -56 dBm	≤-54
MIMO Receive Sensitivity (11ac,80MHz) @10% PER	- MCS=0, NSS1 PER @ -82 dBm	≤-76
	- MCS=1, NSS1 PER @ -81 dBm	≤-73
	- MCS=2, NSS1 PER @ -79 dBm	≤-71
	- MCS=3, NSS1 PER @ -75 dBm	≤-68
	- MCS=4, NSS1 PER @ -72 dBm	≤-64
	- MCS=5, NSS1 PER @ -69 dBm	≤-60

	- MCS=6, NSS1 PER @ -67 dBm	≤-59
	- MCS=7, NSS1 PER @ -65 dBm	≤-58
	- MCS=8, NSS1 PER @ -61 dBm	≤-53
	- MCS=9, NSS1 PER @ -60 dBm	≤-51
Maximum Input Level	802.11a/n : -30 dBm	
Antenna Reference	Small antennas with 0~2 dBi peak gain	

[1]5GHz(20MHz) Channel table

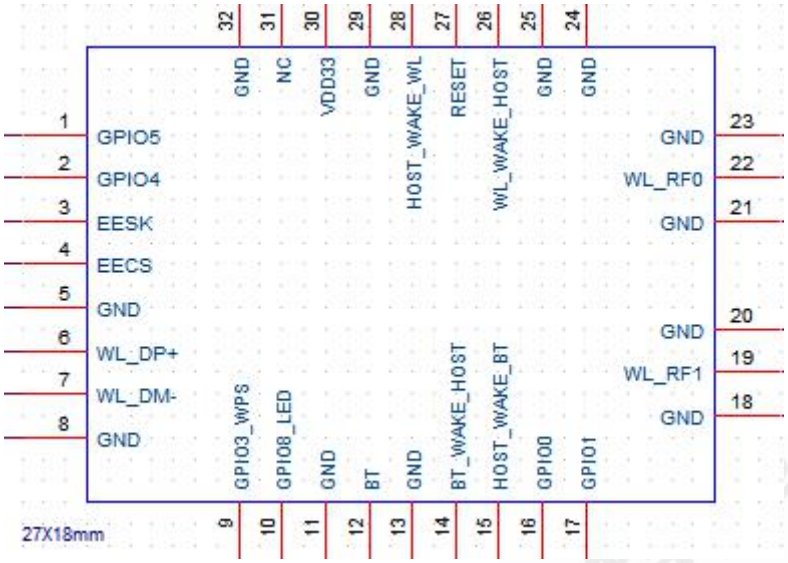
Band range	Operating Channel Numbers	Channel center frequencies(MHz)
5180MHz~5240MHz	36	5180
	40	5200
	44	5220
	48	5240
5260MHz~5320MHz	52	5260
	56	5280
	60	5300
	64	5320
5550MHz~5700MHz	100	5500
	104	5520
	108	5540
	112	5560
	116	5580
	120	5600
	124	5620
	128	5640
	132	5660
	136	5680
	140	5700
5745MHz~5825MHz	149	5745
	153	5765
	157	5785
	161	5805
	165	5825

3 Bluetooth Specification

3.1 Bluetooth Specification

Feature	Description		
General Specification			
Bluetooth Standard	Bluetooth V5.0 of 1, 2 and 3 Mbps.		
Host Interface	USB2.0		
Antenna Reference	Small antennas with 0~2 dBi peak gain		
Frequency Band	2402 MHz ~ 2480 MHz		
Number of Channels	79 channels		
Modulation	GFSK, π/4-DQPSK,8DPSK		
RF Specification			
	Min.	**Typical.**	**Max.**
Output Power (Class 1.5)	4 dBm	5.4 dBm	10 dBm
Sensitivity @ BER=0.1% for GFSK (1Mbps)	-92 dBm	-82 dBm	-70 dBm
Sensitivity @ BER=0.01% for π/4-DQPSK (2Mbps)	-92 dBm	-80 dBm	-70 dBm
Sensitivity @ BER=0.01% for 8DPSK (3Mbps)	-85 dBm	-80 dBm	-70 dBm
Maximum Input Level	GFSK (1Mbps):-20dBm		
	π/4-DQPSK (2Mbps) :-20dBm		
	8DPSK (3Mbps) :-20dBm		

4 Pin Assignments

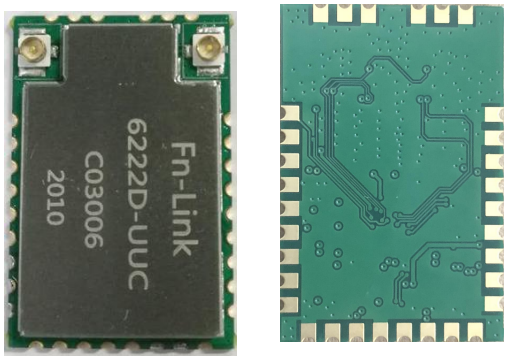


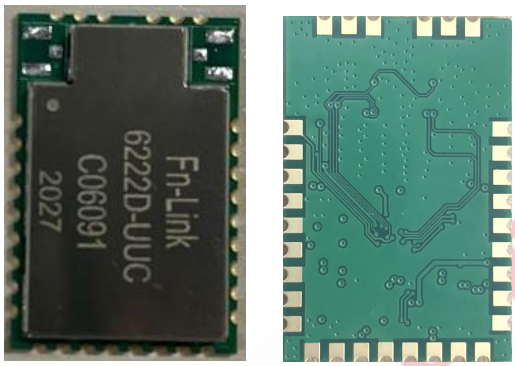
NO.	Name	Type	Description	Voltage
1	GPIO5	I/O	IC GPIO5 (sFlash MISO PIN)	
2	GPIO4	I/O	IC GPIO4 (sFlash MOSI PIN)	
3	EESK	I/O	External Serial Flash clock (sFlash for dongle application)	
4	EECS	I/O	External 32K or RTC clock input (sFlash CS PIN)	
5	GND	—	Ground connections	
6	WL_DP+	I/O	USB data+ (USB2.0)	
7	WL_DM-	I/O	USB data- (USB2.0)	
8	GND	—	Ground connections	
9	GPIO3_WPS	—	IC GPIO3(WLAN WPS)	
10	GPIO8_LED	—	IC GPIO8(WLAN LED low active)	
11	GND	—	Ground connections	
12	BT_RF	I/O	BT RF port	
13	GND	—	Ground connections	
14	BT_WAKE_HOST	O	BT wake up HOST	3.3V
15	HOST_WAKE_BT	I	HOST Wake up BT	3.3V
16	GPIO0	—	IC GPIO0	
17	GPIO1	—	IC GPIO1	

18	GND	—	Ground connections	
19	WL_RF1	I/O	2.4G/5G Wi-Fi RF port1 / BT Combo (Option)	
20	GND	—	Ground connections	
21	GND	—	Ground connections	
22	WL_RF0	I/O	2.4G/5G Wi-Fi RF port0 (Option)	
23	GND	—	Ground connections	
24	GND	—	Ground connections	
25	GND	—	Ground connections	
26	WL_WAKE_HOST	O	WLAN wake up HOST (Shared with IC GPIO6)	3.3V
27	RESET	I	Enable pin for device ON: pull high ; OFF: pull low	3.3V
28	HOST_WAKE_WL	I	HOST_WAKE_WLAN (Shared with IC GPIO7)	3.3V
29	GND	—	Ground connections	
30	VDD33	P	3.3V Voltage input	3.3V
31	NC	—	No connection (Floating)	
32	GND	—	Ground connections	

5 Dimensions

5.1 Module Picture

<table>
<tr>
<td>L x W: 27x 18(+0.3-0.1) mm
FG6222DUUC-W0/W2/W3
 

FG6222DUUC-W1/W4
 
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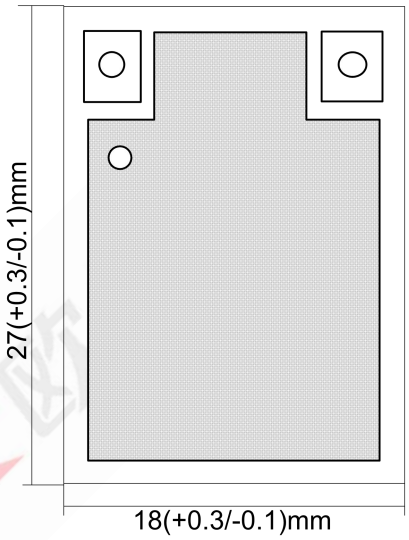
<td> 
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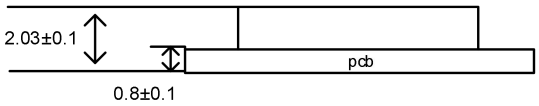
<td>H: 2.03(±0.1) mm</td>
<td> 
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<td>Weight</td>
<td>1.58(±0.1)g</td>
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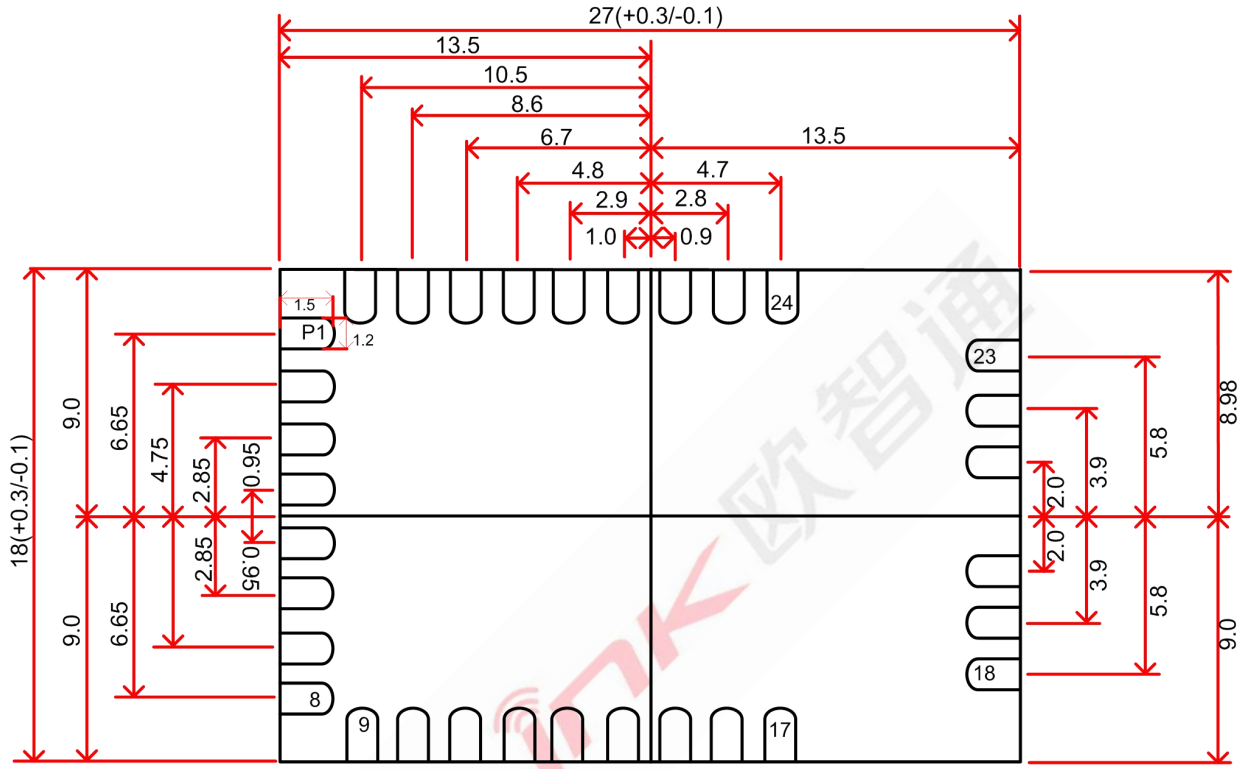
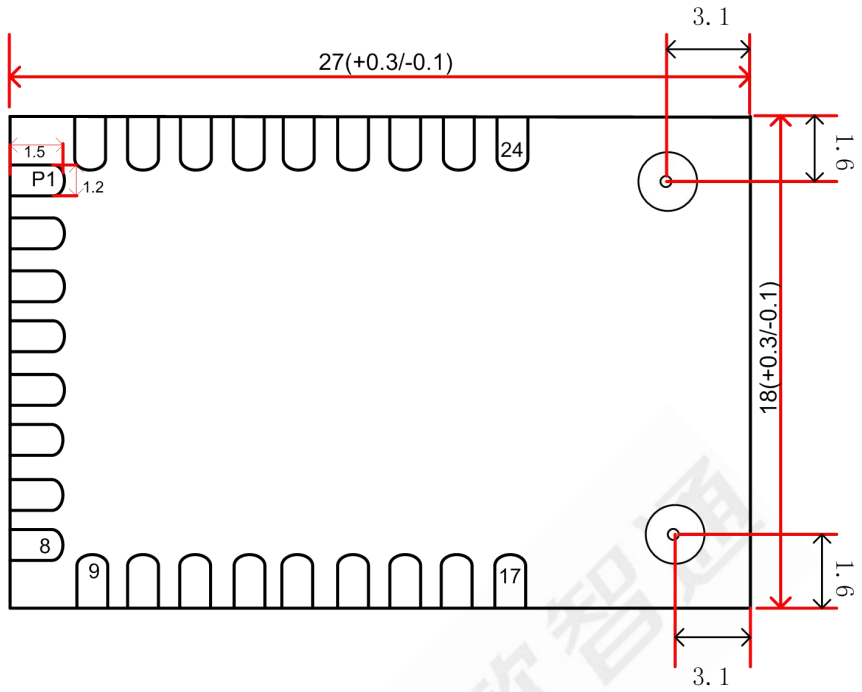
5.2 Physical Outline

(Unit: mm)

< TOP VIEW >





5.3 Marking Description

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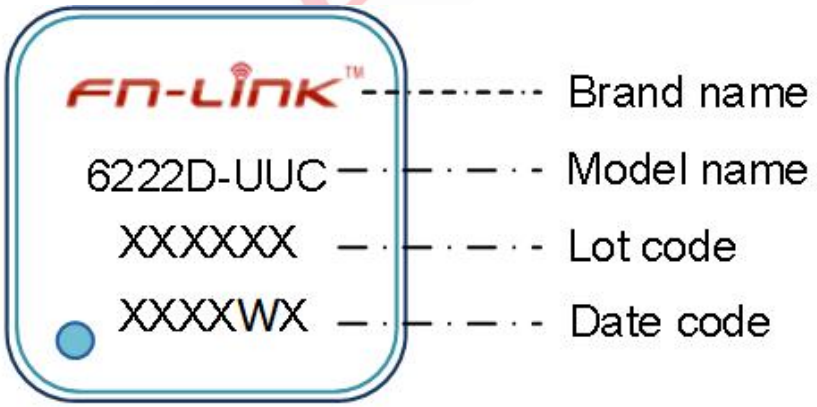

5.4 Layout Recommendation

(Unit: mm)

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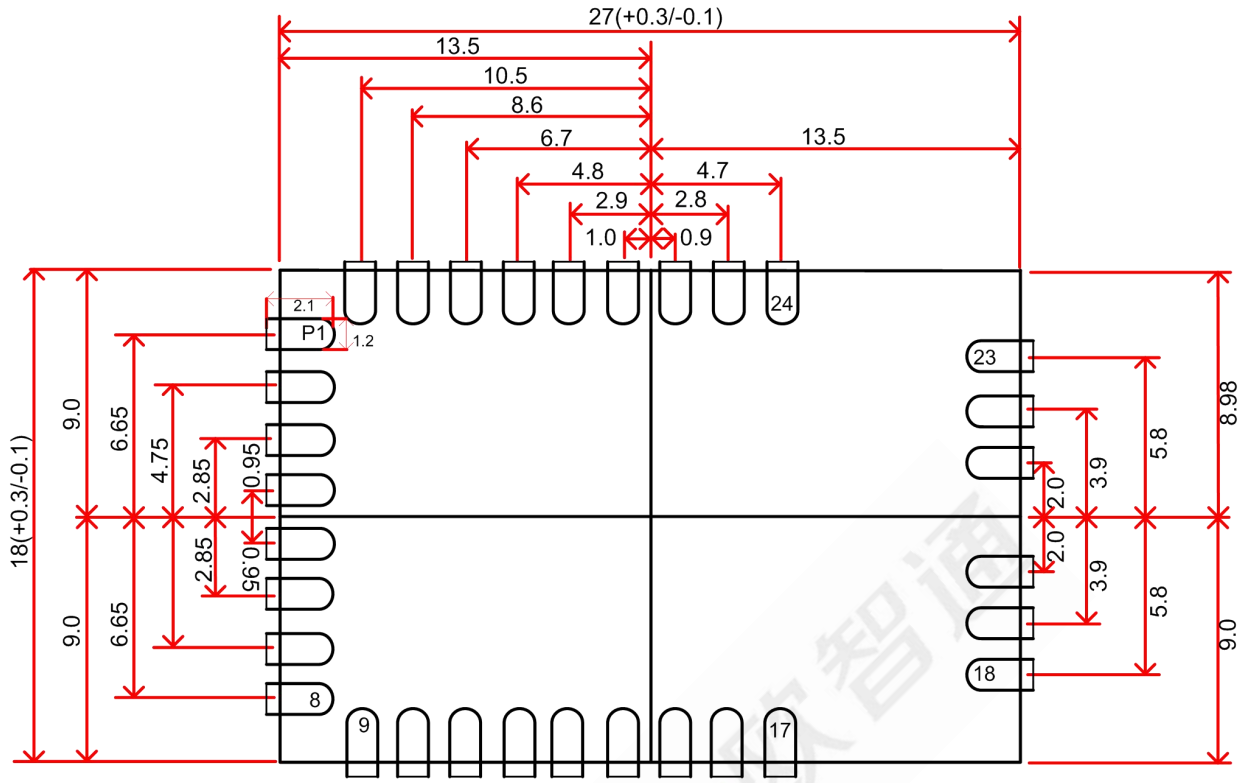
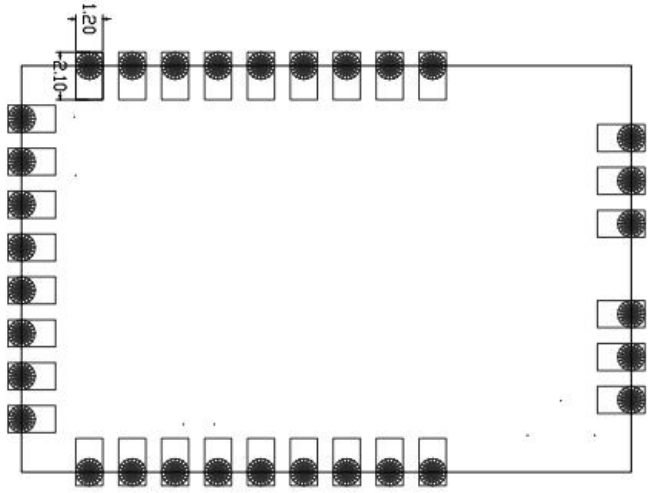
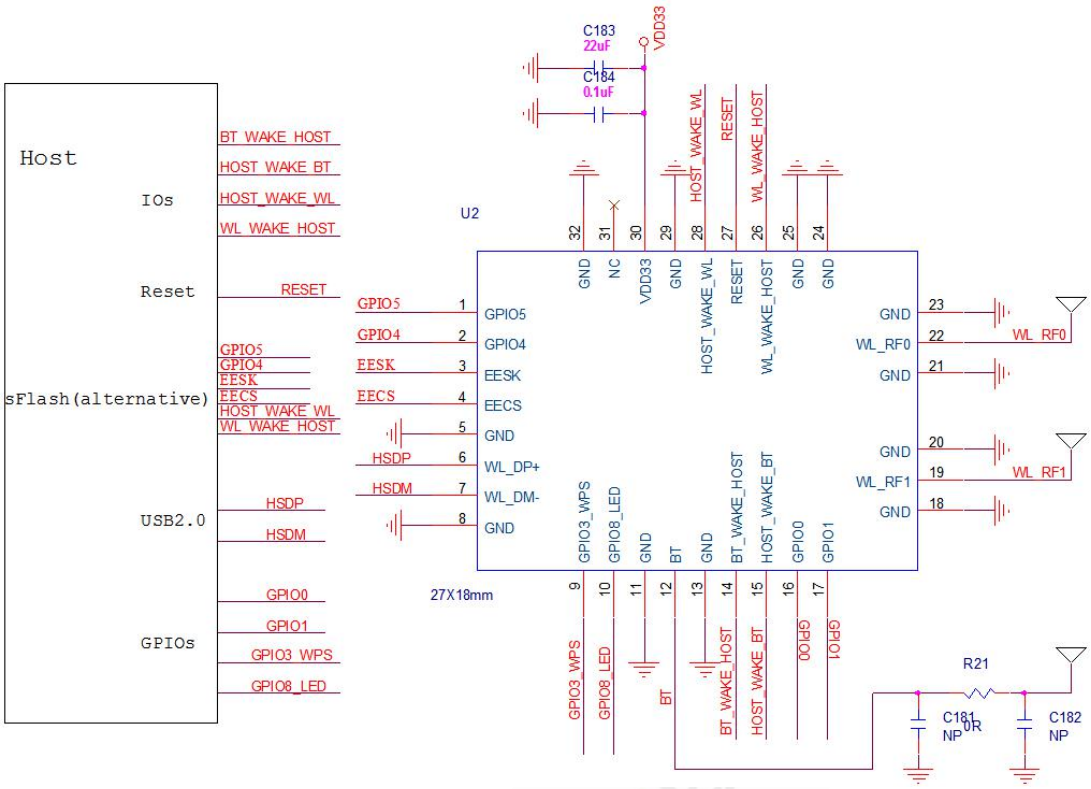


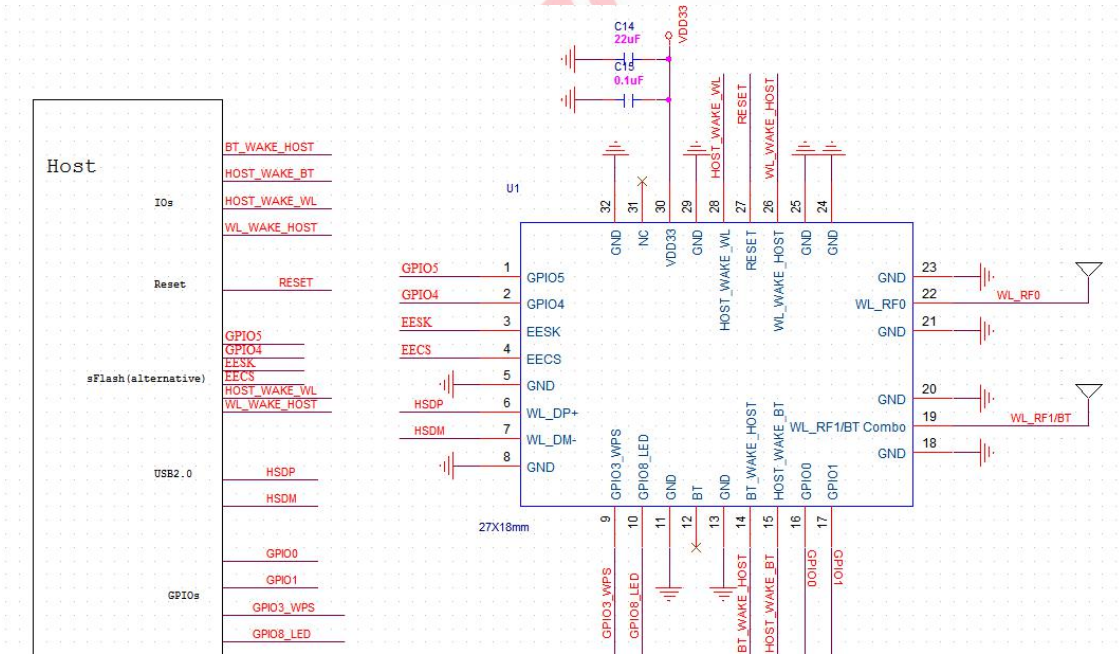


6 Reference Design

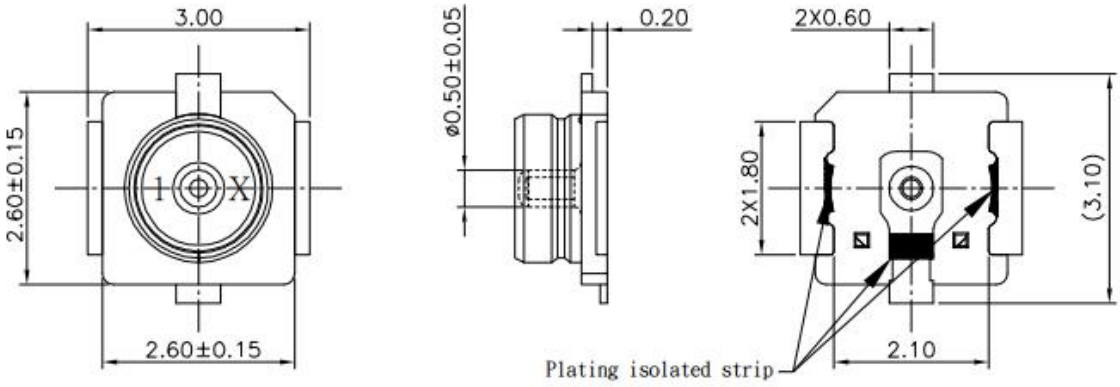
No Share BT Antenna:

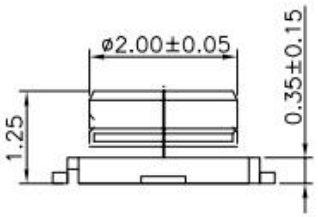


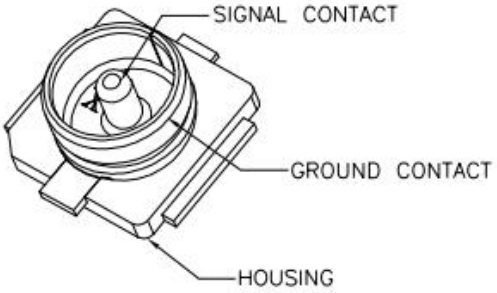
Share BT Antenna:



IPEX connetor spec







7 Power on Sequence

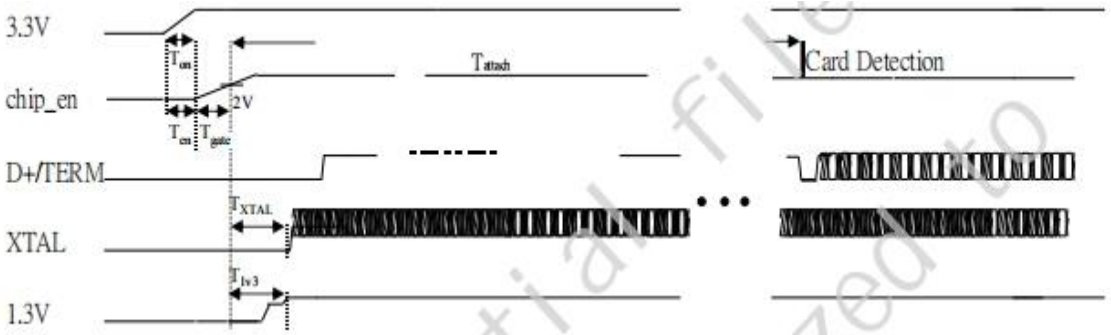


Figure 3. RTL8822CU USB Bus Power on Sequence

T_{on}: The main power ramp up duration

T_{en}: Interval between the rising point of 3.3V and chip_en

T_{gate}: Interval of 3.3V to be gated when chip_en voltage level < 2V

T_{attach}: USB attach state. The duration from resistor attached to USB host starting card detection procedure

T_{xtal}: XTAL starts

Power on Flow Description

After the main 3.3V ramp up, the internal power on reset is released by the power ready detection circuit and the power management unit is enabled. The power management unit enables the internal regulator and clock circuits.

The power management unit also enables the USB circuits.

USB analog circuits attach resisters to indicate the insertion of the USB device.

Table 14. Typical Timing Range

	Unit	Min.	Typical	Max.
T_{on}	ms	-	1.5	5
T_{en}	ms	0	0	5
T_{gate}	ms	0	1.5	8
T_{attach}	ms	100	250	-
T_{xtal}	ms	-	1.5	8

8 Ordering Information

Part No.	Description
FG6222DUUC-W0	RTL8822CU-CG,802.11a/b/g/n/ac+BLE5.0,2T2R+BT ANT,18.0*27.0,USB2.0，带天线座，双天线

FG6222DUUC-W1	RTL8822CU-CG,802.11a/b/g/n/ac+BLE5.0,2T2R+BT ANT,18.0*27.0,USB2.0,不带天线座，三天线
FG6222DUUC-W2	RTL8822CU-CG,a/b/g/n/ac,Wi-Fi+BLE5.0,2T2R+BT ANT,18X27mm,USB2.0,带天线座，三天线
FG6222DUUC-W3	RTL8822CU-CG,802.11a/b/g/n/ac+BLE5.0,2T2R+BT ANT,18.0*27.0,USB2.0,带天线座，三天线(12dbm)
FG6222DUUC-W4	RTL8822CU-CG,802.11a/b/g/n/ac+BLE5.0,2T2R+BT ANT,18.0*27.0,USB2.0，不带天线座，双天线

9 The Key Material List

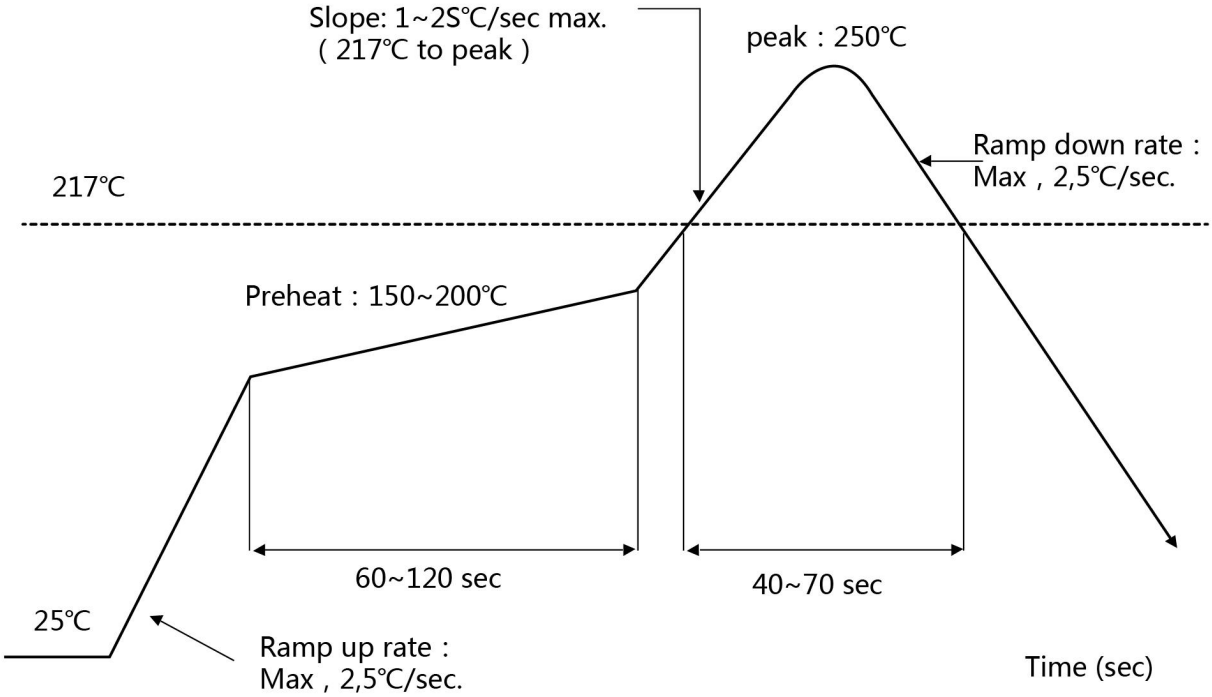
Item	Part Name	Description	Manufacturer
1	Inductor	2016　2.2uH,±20%	Cenker, Sunlord, Ceaiya
2	Diplexer	1608 Dual-band, dual-mode 2.4GHz/5GHz WLAN	Glead, Walsin, ACX, Murata, MAG.LAYERS
3	Crystal	3225 40MHz -40~110℃	ECEC, TKD, Hosonic, JWT, TXC
4	Chipset	RTL8822CU-CG	Realtek
5	PCB	FR4, 4 LAYER, GREEN	XY-PCB, GDKX, Sunlord, SLPCB
6	IPEX	1 代 UFLR-MINIPCL,MRF IRECEPTACLE .(19.002A7-0001 R0) (CD-ARF013-P02AW)	BonWorld,LOTCONN

10 Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature: <250°C

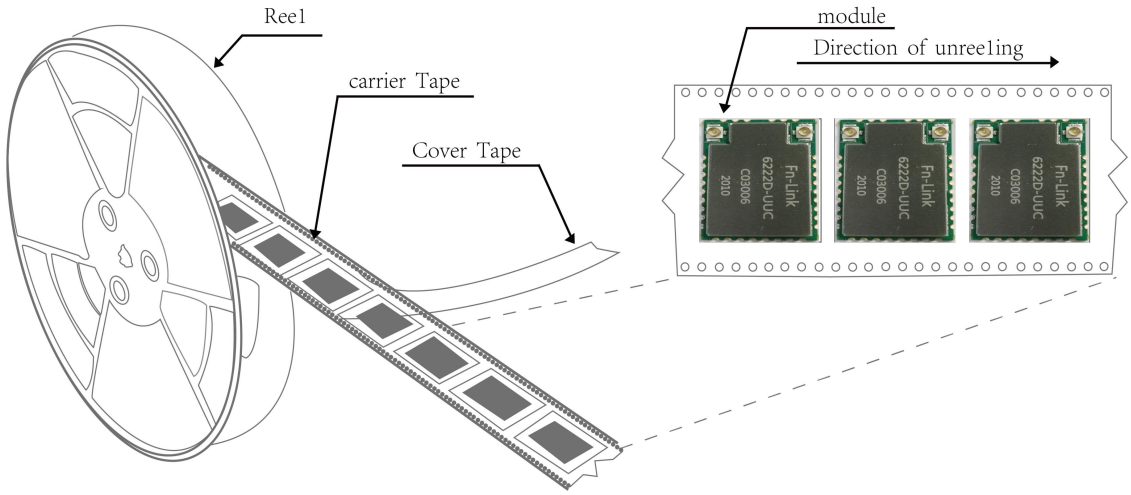
Number of Times: ≤2 times



11 Package Information

11.1 Reel

A roll of 800pcs



11.2 Packaging Detail

the take-up package

Using self-adhesive tape

Size of black tape:24mm*32.6m the cover tape :2.13mm*32.6m

Color of plastic disc:blue

A roll of 800pcs

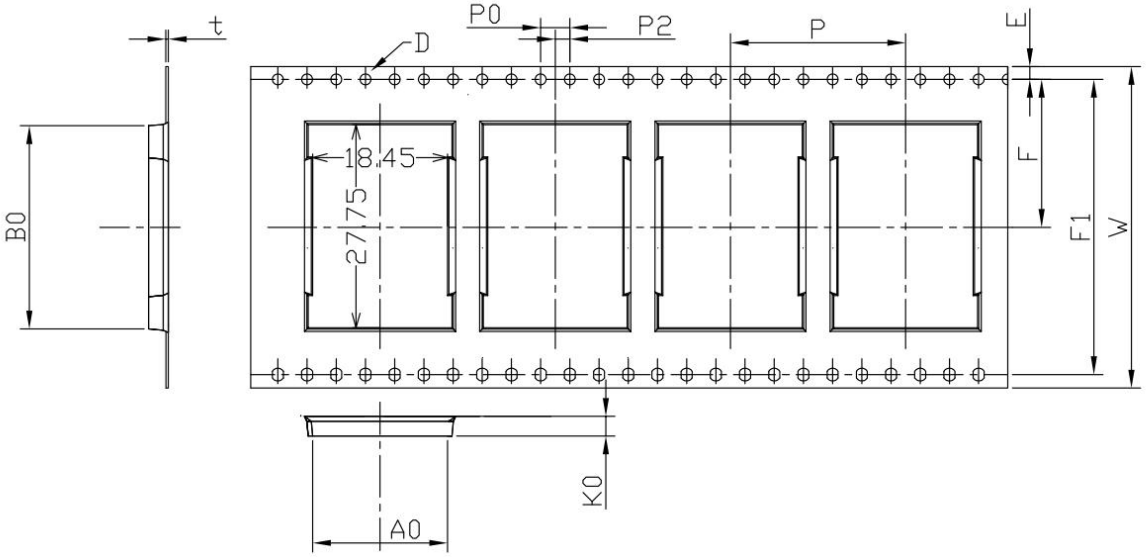
NY bag size:460mm*385mm

size ： 350*350*35mm

The packing case size:350*210*370mm

10.3 Carrier Tape Detail

ITEM	W	A0	B0	D	E	F	F1	K0	P0	P2	P	T
DIM	44	18.45	27.75	1.5	1.75	20.2	40.4	2.80	4.0	2.0	24.0	0.30
TOLE	+0.3 −0.3	±0.15	±0.15	+0.1 −0.0	±0.1	±0.15	±0.10	±0.10	±0.1	±0.15	±0.1	±0.05



10.4 Moisture sensitivity

The Modules is a Moisture Sensitive Device level 3, in according with standard IPC/JEDEC J-STD-020, take care
all the relatives requirements for using this kind of components.
Moreover, the customer has to take care of the following conditions:
a) Calculated shelf life in sealed bag: 12 months at <40°C and <90% relative humidity (RH)
b) Environmental condition during the production: 30°C / 60% RH according to IPC/JEDEC J-STD-033A paragraph 5
c) The maximum time between the opening of the sealed bag and the reflow process must be 168 hours if condition
b) “IPC/JEDEC J-STD-033A paragraph 5.2” is respected
d) Baking is required if conditions b) or c) are not respected
e) Baking is required if the humidity indicator inside the bag indicates 10% RH or more