



# 6222B-SRC

**Wi-Fi Dual-band 2X2 11ac +Bluetooth 4.2  
Combo Module Datasheet**



## 6222B-SRC Module Datasheet

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Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

Fn-Link \_\_\_\_\_

## Revision History

Version	Date	Revision Content	Draft	Approved
1.0	2019/06/25	New version	LXY	SZS
1.1	2019/08/07	Update reference SCH	LXY	SZS

Fn-link

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# 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 functionalities. It is a highly-integrated IEEE 802.11 a/b/g/n/ac MAC/Baseband/RF WLAN single chip. For Wireless LAN operation. The integrated module provides SDIO interface for Wi-Fi . The module provides simple legacy and 20MHz/40MHz/80MHz co-existence mechanism to ensure backward and network compatibility

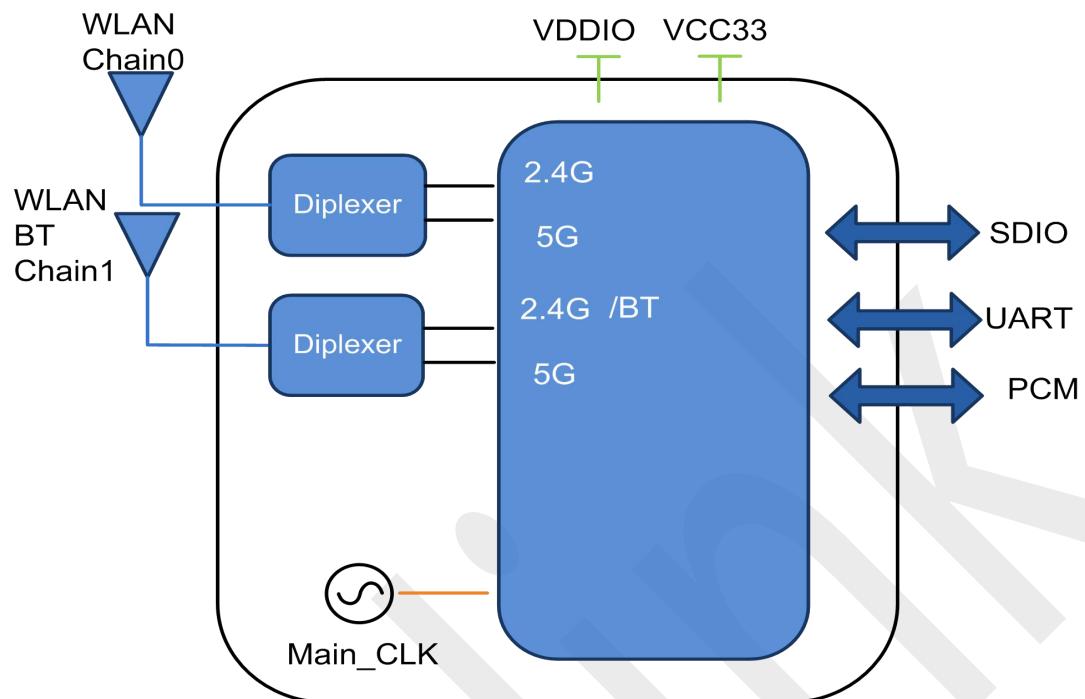
The wireless module complies with IEEE 802.11 a/b/g/n/ac 2x2 MIMO standard and the speed can achieve up to 867Mbps with dual stream in 802.11n. The integrated module provides SDIO interface for Wi-Fi, UART / PCM interface for Bluetooth.

This combo module is a total solution for a combination of Wi-Fi and Bluetooth V4.2 technologies. The module is specifically developed for all portable devices.

## 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 low power SDIO3.0 interface for WLAN and UART/PCM interface for Bluetooth.
- Supports Bluetooth V4.2 system.
- Supports WLAN-Bluetooth coexistence.
- Supports Bluetooth for class1 and class2 power level transmissions without requiring an external PA.
- BT host digital interface:
  - HCI UART (up to 4 Mbps)
  - PCM for audio data
- Module have 2 antenna port, BT port combine with WLAN1.

## Block Diagram:



## 1.3 General Specification

Model Name	6222B-SRC
Product Description	Support Wi-Fi/Bluetooth functionalities
Dimension	L x W x H: 15 x 13 x 2.15 mm (typical)
Wi-Fi Interface	Support SDIO V3.0
BT Interface	UART / PCM
Operating temperature	0°C to 70°C
Storage temperature	-40°C to 125°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	1.7	1.8 or 3.3	3.45	V

## ※1.5 EEPROM Information

WI-FI

ID	8129
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## 2 Wi-Fi RF Specification

### 2.1 2.4GHz RF Specification

Feature	Description			
WLAN Standard	IEEE 802.11 b/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			
Spectrum Mask	Min. b/g/n	Typ. b/g/n	Max. b/g/n	Unit b/g/n
1st side lobes(to fc ± 11MHz)	-	-43/-30/-40	-	dBr
2st side lobes(to fc ± 22MHz)	-	-52/-33/-58	-	dBr
Freq. Tolerance	-20/-20/-20	-	20/20/20	ppm
Test Items	Typical Value			EVM
Output Power	802.11b /11Mbps : 17dBm ± 1.5 dB			EVM ≤ -9dB
	802.11g /54Mbps : 15dBm ± 1.5 dB			EVM ≤ -25dB
	802.11n /MCS7 : 14dBm ± 1.5 dB			EVM ≤ -28dB
Test Items	TYP Test Value			Standard Value
SISO Receive Sensitivity (11b,20MHz) @8% PER	- 1Mbps	PER @ -92 dBm	≤-83	
	- 2Mbps	PER @ -90 dBm	≤-80	
	- 5.5Mbps	PER @ -87 dBm	≤-79	
	- 11Mbps	PER @ -85 dBm	≤-76	
SISO Receive Sensitivity (11g,20MHz) @10% PER	- 6Mbps	PER @ -89 dBm	≤-85	
	- 9Mbps	PER @ -88 dBm	≤-84	
	- 12Mbps	PER @ -87 dBm	≤-82	
	- 18Mbps	PER @ -84 dBm	≤-80	
	- 24Mbps	PER @ -81 dBm	≤-77	

	- 36Mbps	PER @ -78 dBm	≤-73
	- 48Mbps	PER @ -73 dBm	≤-69
	- 54Mbps	PER @ -71 dBm	≤-68
SISO Receive Sensitivity (11n,20MHz) @10% PER	- MCS=0	PER @ -89 dBm	≤-85
	- MCS=1	PER @ -86 dBm	≤-82
	- MCS=2	PER @ -84 dBm	≤-80
	- MCS=3	PER @ -80 dBm	≤-77
	- MCS=4	PER @ -77 dBm	≤-73
	- MCS=5	PER @ -72 dBm	≤-69
	- MCS=6	PER @ -71 dBm	≤-68
	- MCS=7	PER @ -69 dBm	≤-67
SISO Receive Sensitivity (11n ,40MHz) @10% PER	- MCS=0,	PER @ -88 dBm	≤-82
	- MCS=1,	PER @ -85 dBm	≤-79
	- MCS=2,	PER @ -83 dBm	≤-77
	- MCS=3,	PER @ -79 dBm	≤-74
	- MCS=4,	PER @ -76 dBm	≤-70
	- MCS=5,	PER @ -71 dBm	≤-66
	- MCS=6,	PER @ -70 dBm	≤-65
	- MCS=7,	PER @ -68 dBm	≤-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

Conditions : VBAT=3.3V ; VDDIO=3.3V ; Temp:25°C

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 <sup>1</sup>	
Test Items	Typical Value	EVM
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	- 6Mbps	PER @ -88 dBm
		≤-85

(11a,20MHz) @10% PER	- 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 @ -69 dBm	≤-67
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 @ -68 dBm	≤-65
	- MCS=7	PER @ -67 dBm	≤-64
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 @ -65 dBm	≤-60
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 @ -65 dBm	≤-57
	- MCS=9, NSS1 PER @ -64 dBm	≤-55
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 @ -60 dBm	≤-54
Maximum Input Level	802.11a/n : -30 dBm	
Antenna Reference	Small antennas with 0~2 dBi peak gain	

#### **15GHz(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

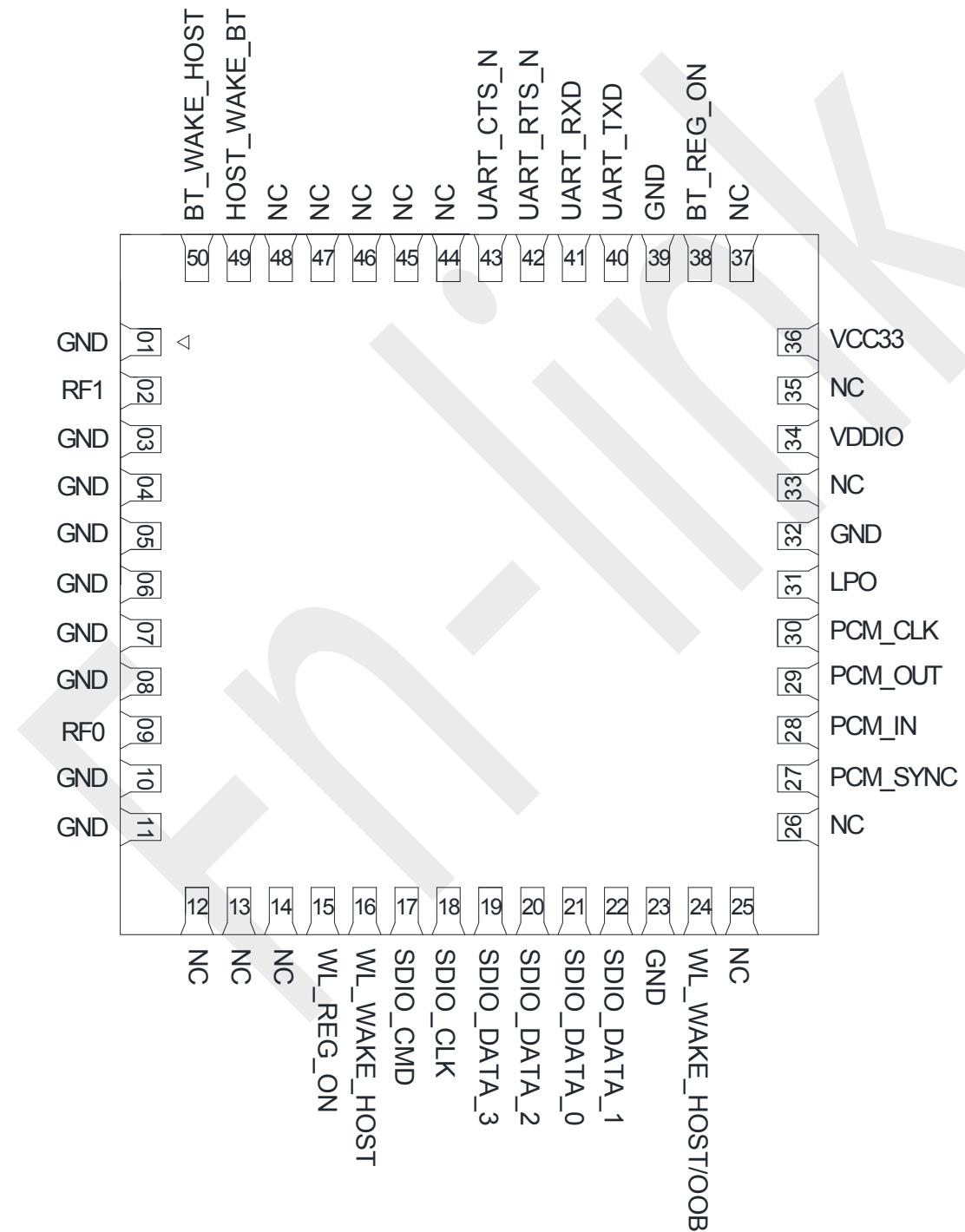
Feature	Description		
<b><i>General Specification</i></b>			
Bluetooth Standard	Bluetooth V4.2		
Host Interface	UART		
Antenna Reference	Small antennas with 0~2 dBi peak gain		
Frequency Band	2402 MHz ~ 2480 MHz		
Number of Channels	79 channels		
Modulation	GFSK, π/4-DQPSK,8DPSK		
<b><i>RF Specification</i></b>			
	Min.	Typical.	Max.
Output Power (Class 1)	0 dBm	7 dBm	15 dBm
Output Power (Class 2)	-6 dBm		4 dBm
Sensitivity @ BER=0.1% for GFSK (1Mbps)		-92 dBm	
Sensitivity @ BER=0.01% for π/4-DQPSK (2Mbps)		-86 dBm	
Sensitivity @ BER=0.01% for 8DPSK (3Mbps)		-85 dBm	
Maximum Input Level	GFSK (1Mbps):-20dBm		
	π/4-DQPSK (2Mbps) :-20dBm		

	8DPSK (3Mbps) :-20dBm
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## 4 Pin Assignments

### 4.1 Pin Outline

< TOP VIEW >



## 4.2 Pin Definition

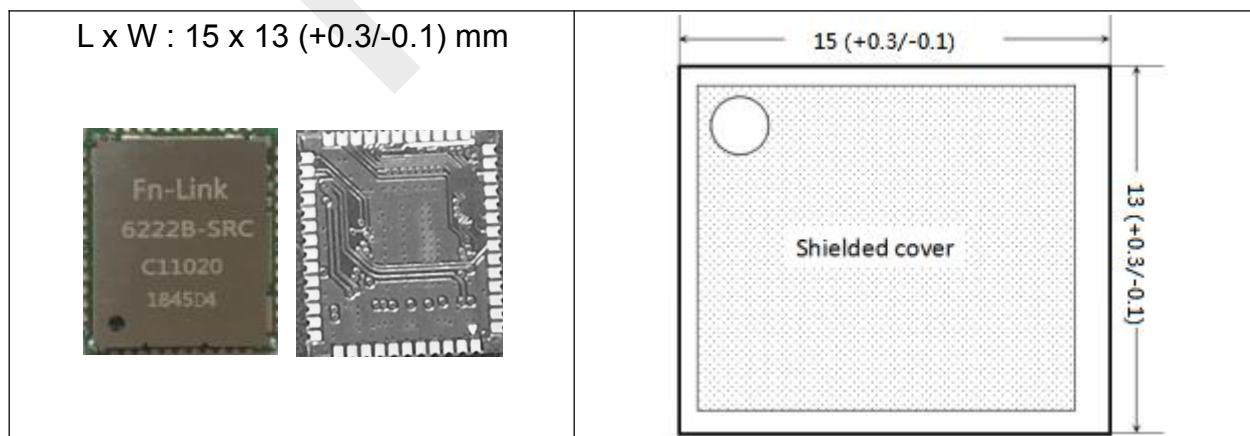
NO	Name	Type	Description	Voltage
1	GND	—	Ground connections	
2	RF1	I/O	RF I/O port chain1and BT	
3	GND	—	Ground connections	
4	GND	—	Ground connections	
5	GND	—	Ground connections	
6	GND	—	Ground connections	
7	GND	—	Ground connections	
8	GND	—	Ground connections	
9	RF0	I/O	RF I/O port chain0	
10	GND	—	Ground connections	
11	GND	—	Ground connections	
12	NC	I/O	No connect	
13	NC	—	No connect	
14	NC	—	No connect	
15	WL_REG_ON	I	Enable pin for WLAN device ON: pull high ; OFF: pull low External pull low to shut down WL	VDDIO
16	WL_WAKE_HOST	O	WLAN to wake-up HOST	VDDIO
17	SDIO_CMD	I/O	SDIO command line	1.8V or 3.3V
18	SDIO_CLK	I/O	SDIO clock line	1.8V or 3.3V
19	SDIO_DATA_3	I/O	SDIO data line 3	1.8V or 3.3V
20	SDIO_DATA_2	I/O	SDIO data line 2	1.8V or 3.3V
21	SDIO_DATA_0	I/O	SDIO data line 0	1.8V or 3.3V
22	SDIO_DATA_1	I/O	SDIO data line 1	1.8V or 3.3V
23	GND	—	Ground connections	
24	OOB/ WL_WAKE_HOST	O	SDIO interrupt	VDDIO
25	NC	—	No connect	
26	NC	—	No connect	
27	PCM_SYNC	I/O	PCM sync signal	VDDIO
28	PCM_IN	I	PCM data input	VDDIO
29	PCM_OUT	O	PCM Data output	VDDIO
30	PCM_CLK	I/O	PCM clock	VDDIO
31	LPO	I	External Low Power Clock input	

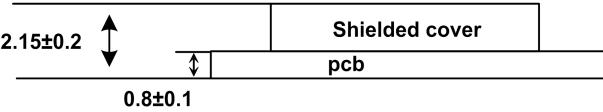
			(32.768KHz) If not used keep NC	
<b>32</b>	GND	—	Ground connections	
<b>33</b>	NC	—	No connect	
<b>34</b>	VDDIO	P	I/O Voltage supply input	1.8V or 3.3V
<b>35</b>	NC	—	No connect	
<b>36</b>	VCC33	P	Main power voltage source input	3.3V
<b>37</b>	NC	—	No connect	
<b>38</b>	BT_REG_ON	I	Enable pin for Bluetooth device ON: pull high ; OFF: pull low External pull low to shut down BT	VDDIO
<b>39</b>	GND	—	Ground connections	
<b>40</b>	UART_TXD	O	Bluetooth UART interface	1.8V or 3.3V
<b>41</b>	UART_RXD	I	Bluetooth UART interface	1.8V or 3.3V
<b>42</b>	UART_RTS_N	O	Bluetooth UART interface	1.8V or 3.3V
<b>43</b>	UART_CTS_N	I	Bluetooth UART interface	1.8V or 3.3V
<b>44</b>	NC	—	No connect	
<b>45</b>	NC	—	No connect	
<b>46</b>	NC	—	No connect	
<b>47</b>	NC	—	No connect	
<b>48</b>	NC	—	No connect	
<b>49</b>	HOST_WAKE_BT	I	HOST wake-up Bluetooth device	VDDIO
<b>50</b>	BT_WAKE_HOST	O	Bluetooth device to wake-up HOST	VDDIO

P:POWER I:INPUT O:OUTPUT VDDIO:1.8V or 3.3V

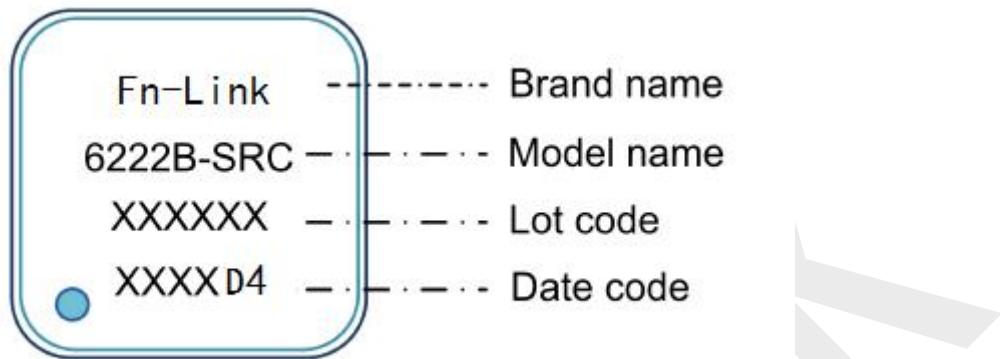
## 5 Dimensions

### 5.1 Module Picture



H: 2.15 ( $\pm 0.2$ ) mm	
Weight	0.84g

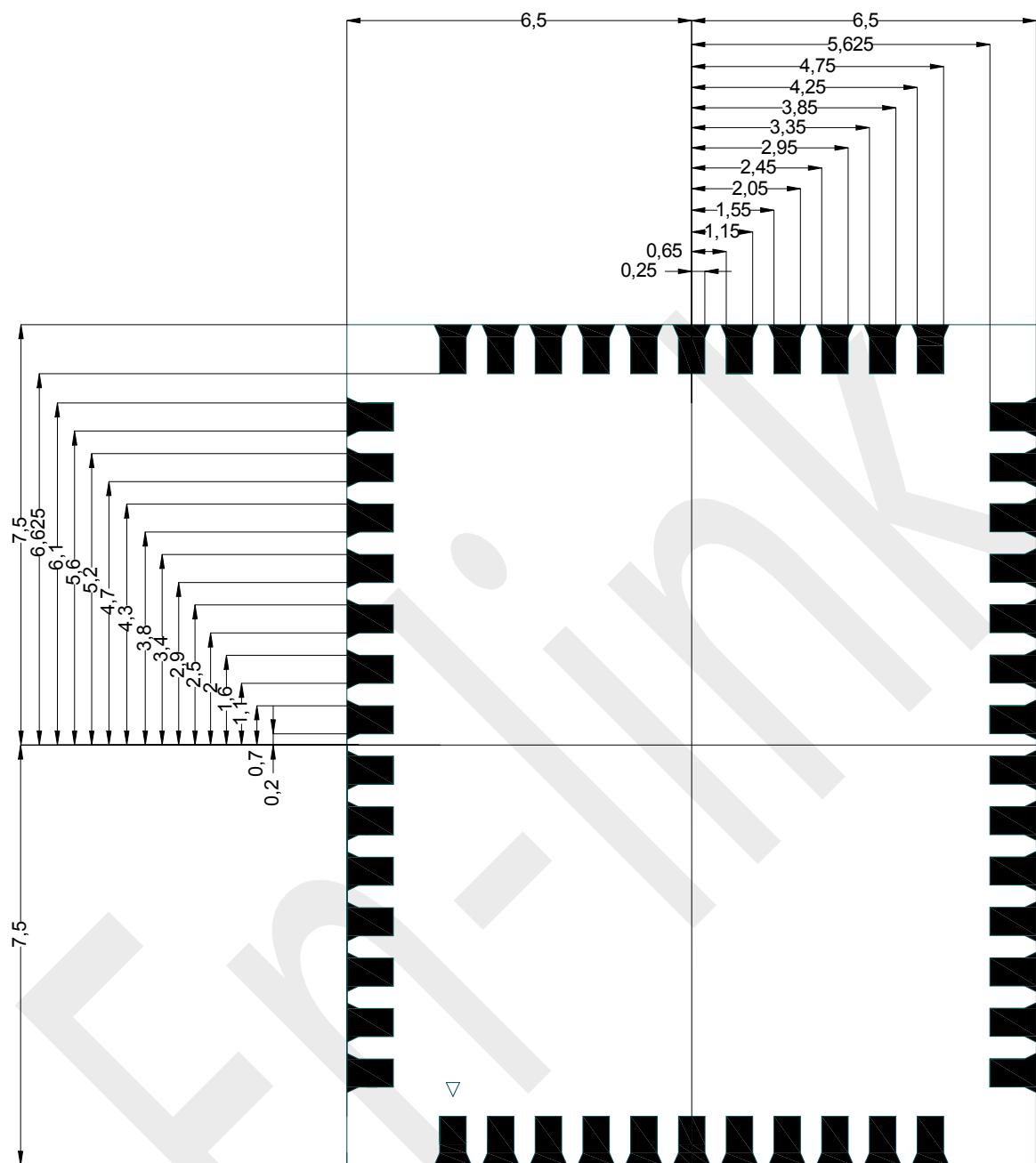
## 5.2 Marking Description



## 5.3 Module Physical Dimensions

(Unit: mm)

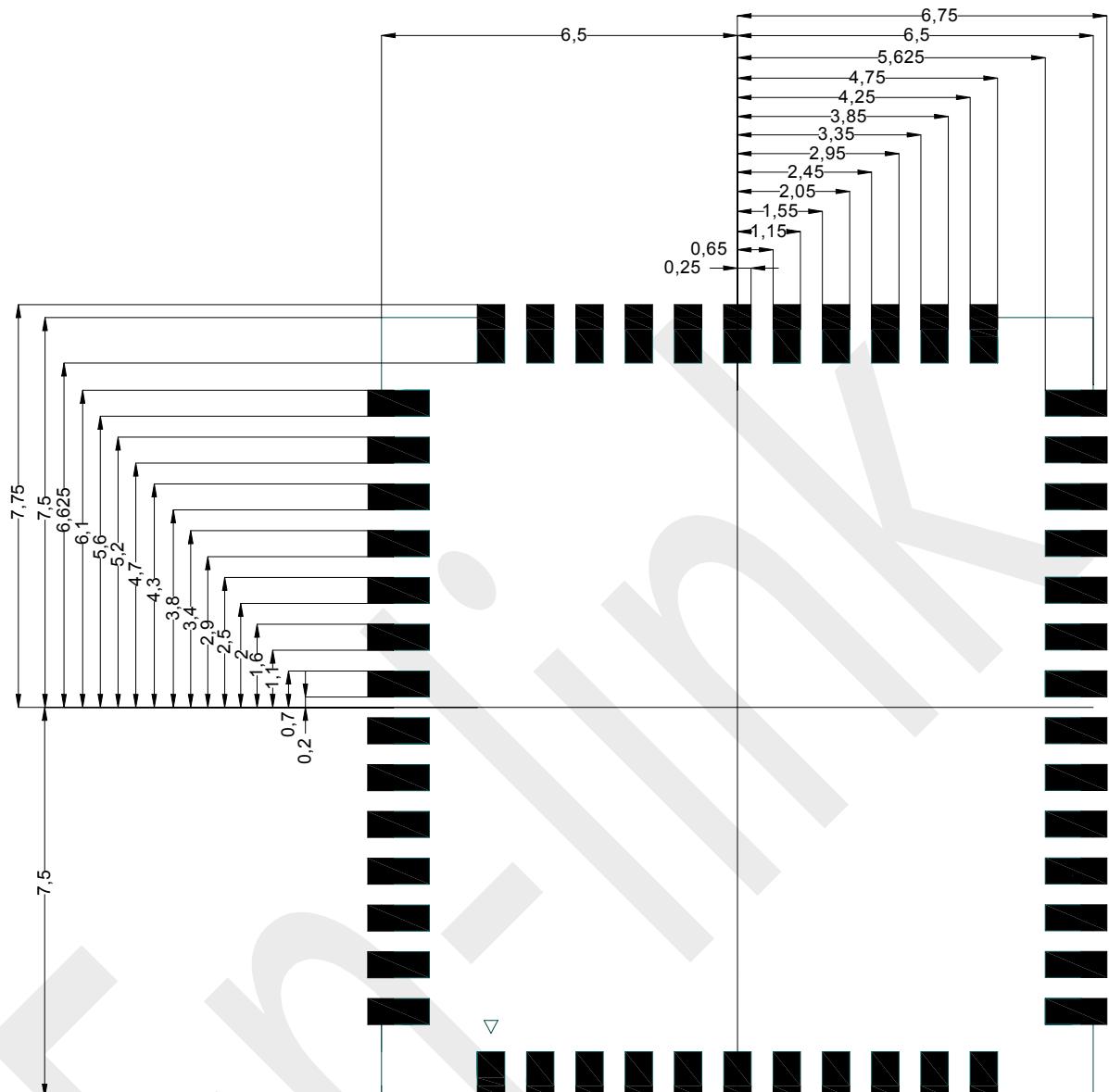
< TOP VIEW >



## 5.4 Layout Recommendation

(Unit: mm)

< TOP VIEW >



## 6 Host Interface Timing Diagram

### 6.1 SDIO Pin Description

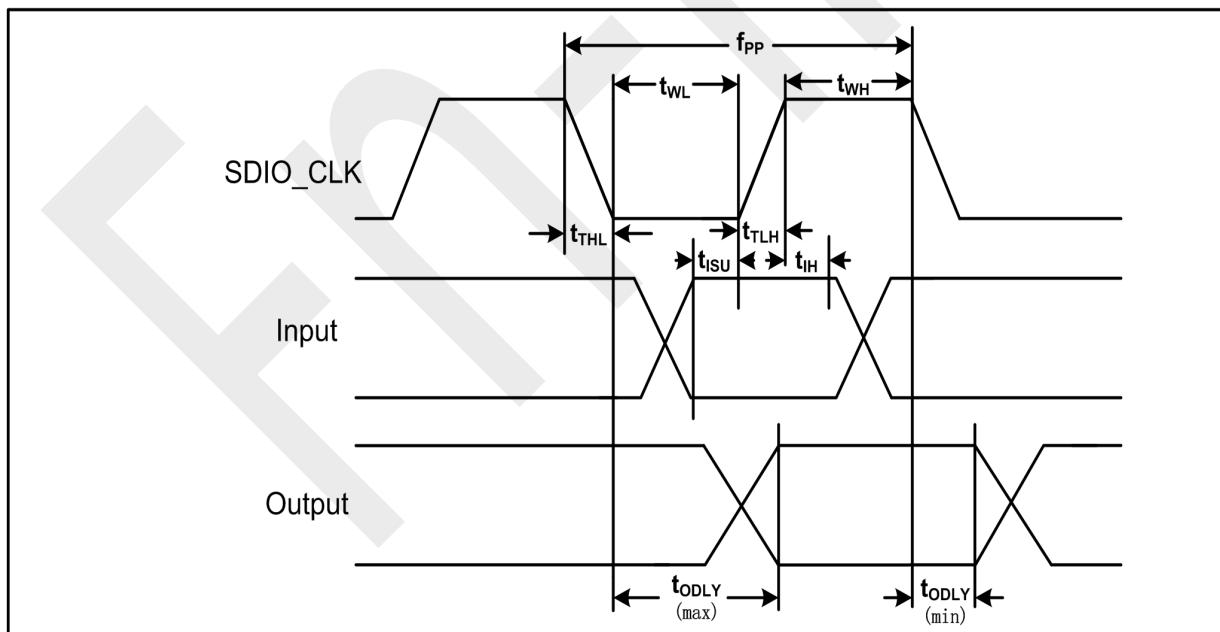
The module supports SDIO version 3.0 for all 1.8V 4-bit UHSI speeds: SDR50(100 Mbps), SDR104(208MHz) and DDR50(50MHz, dual rates) in addition to the 3.3V default

speed(25MHz) and high speed (50 MHz). It has the ability to stop the SDIO clock and map the interrupt signal into a GPIO pin. This ‘out-of-band’ interrupt signal notifies the host when the WLAN device wants to turn on the SDIO interface. The ability to force the control of the gated clocks from within the WLAN chip is also provided.

### SDIO Pin Description

SD 4-Bit Mode	
DATA0	Data Line 0
DATA1	Data Line 1 or Interrupt
DATA2	Data Line 2 or Read Wait
DATA3	Data Line 3
CLK	Clock
CMD	Command Line

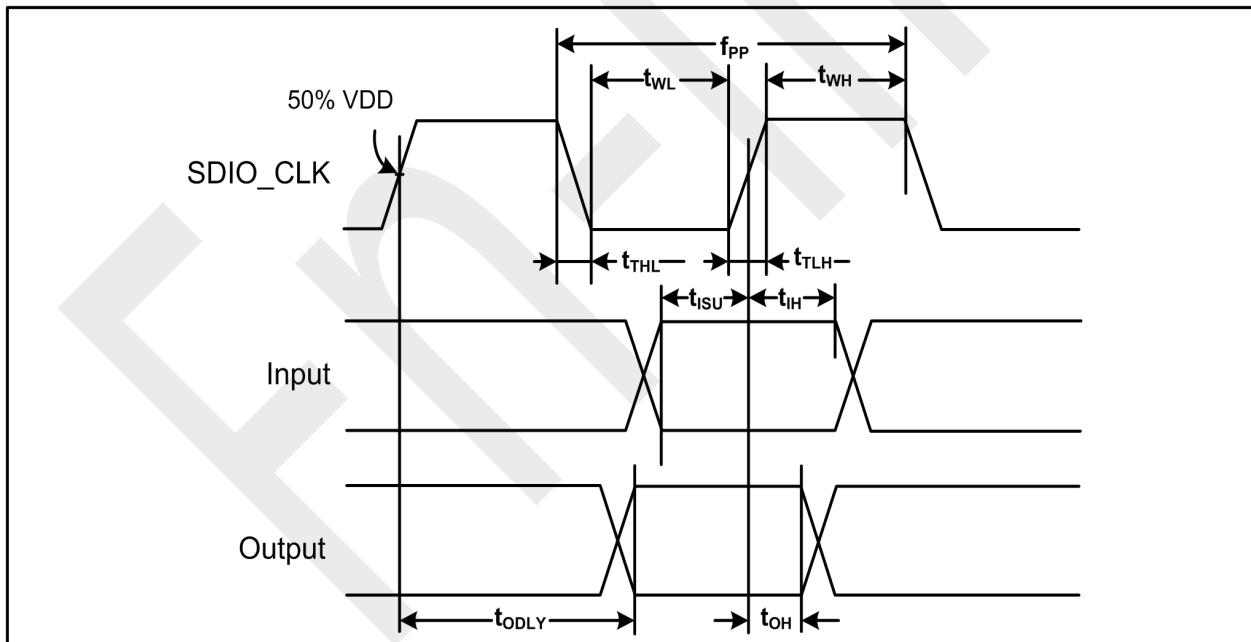
## 6.2 SDIO Default Mode Timing Diagram



Parameter	Symbol	Minimum	Typical	Maximum	Unit
<b>SDIO CLK(All values are referred to minimum VIH and maximum VIL<sup>b</sup>)</b>					
Frequency - Data Transfer mode	$f_{PP}$	0	-	25	MHz

Frequency - Identification mode	fOD	0	-	400	kHz
Clock low time	tWL	10	-	-	ns
Clock high time	tWH	10	-	-	ns
Clock rise time	tTLH	-	-	10	ns
Clock low time	tTHL	-	-	10	ns
<b>Inputs:CMD, DAT(referenced to CLK)</b>					
Input setup time	tISU	5	-	-	ns
Input hold time	tIH	5	-	-	ns
<b>Outputs:CMD, DAT(referenced to CLK)</b>					
Output delay time - Data Transfer mode	tODLY	0	-	14	ns
Output delay time - Identification mode	tODLY	0	-	50	ns

- a. Timing is based on CL ≤ 40 pF load on CMD and Data.
- b. Min(Vih) = 0.7 × VDDIO and max(Vil) = 0.2 × VDDIO.



### 6.3 SDIO High Speed Mode Timing Diagram

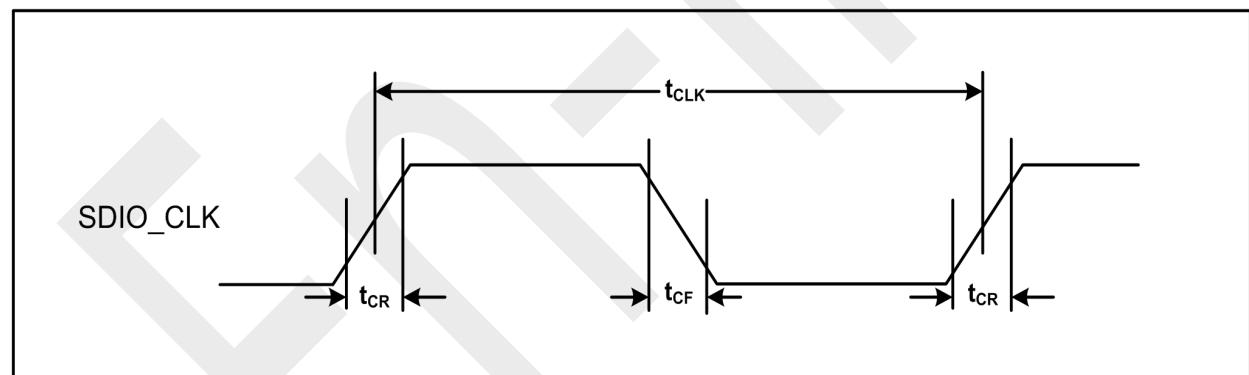
Parameter	Symbol	Minimum	Typical	Maximum	Unit
<b>SDIO CLK(all values are referred to minimum VIH and maximum VIL<sup>b</sup>)</b>					
Frequency - Data Transfer mode	fPP	0	-	50	MHz
Frequency - Identification mode	fOD	0	-	400	kHz
Clock low time	tWL	7	-	-	ns

Clock high time	tWH	7	-	-	ns
Clock rise time	tTLH	-	-	3	ns
Clock low time	tTHL	-	-	3	ns
<b>Inputs:CMD, DAT(referenced to CLK)</b>					
Input setup time	tISU	6	-	-	ns
Input hold time	tIH	2	-	-	ns
<b>Outputs:CMD, DAT(referenced to CLK)</b>					
Output delay time - Data Transfer mode	tODLY	-	-	14	ns
Output delay time - Identification mode	tODLY	2.5	-	-	ns
Total system capacitance(each line)	CL	-	-	40	pF

- a. Timing is based on CL ≤ 40 pF load on CMD and Data.
- b. Min(Vih) = 0.7 × VDDIO and max(Vil) = 0.2 × VDDIO.

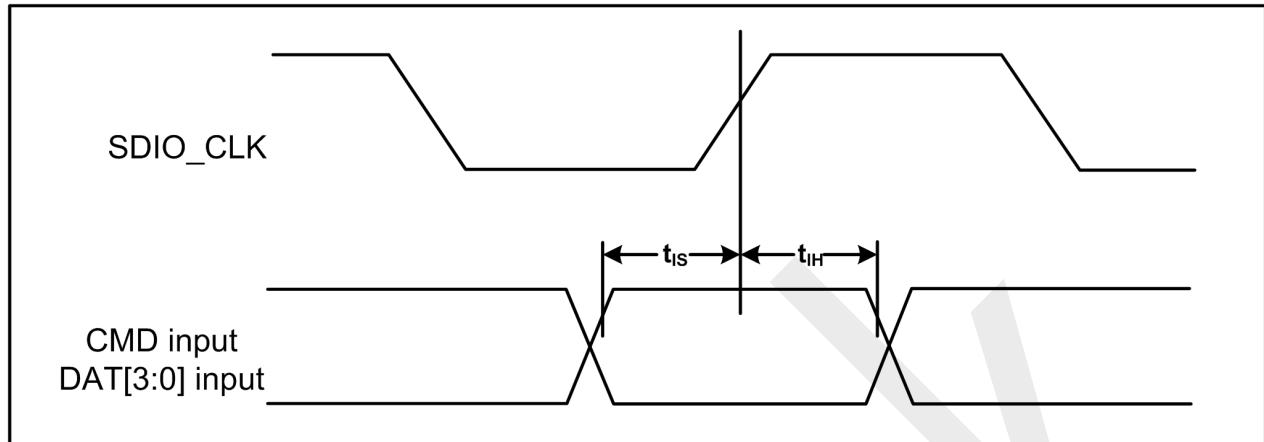
## 6.4 SDIO Bus Timing Specifications in SDR Modes

Clock timing(SDR Modes)



Parameter	Symbol	Minimum	Maximum	Unit	Comments
-	tCLK	40	-	ns	SDR12 mode
		20	-	ns	SDR25 mode
		10	-	ns	SDR50 mode
		4.8	-	ns	SDR104 mode
-	tCR, tCF	-	0.2 × tCLK	ns	tCR, tCF < 2.00 ns (max)@100 MHz, C <sub>CARD</sub> = 10 pF tCR, tCF < 0.96 ns (max)@208 MHz, C <sub>CARD</sub> = 10 pF
Clock duty	-	30	70	%	-

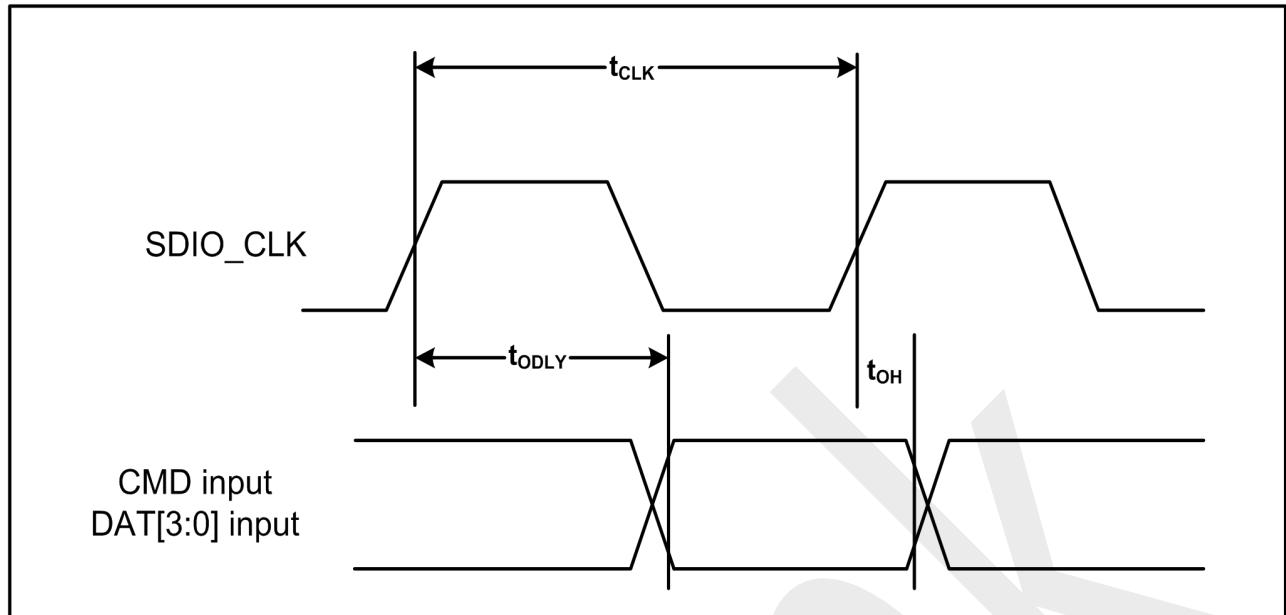
### Card Input timing (SDR Modes)



<b>Symbol</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Unit</b>	<b>Comments</b>
<b>SDR104 Mode</b>				
$t_{IS}$	1.70 <sup>a</sup>	-	ns	$C_{CARD} = 10\text{pF}$ , VCT = 0.975V
$t_{IH}$	0.80	-	ns	$C_{CARD} = 5\text{pF}$ , VCT = 0.975V
<b>SDR50 Mode</b>				
$t_{IS}$	3.00	-	ns	$C_{CARD} = 10\text{pF}$ , VCT = 0.975V
$t_{IH}$	0.80	-	ns	$C_{CARD} = 5\text{pF}$ , VCT = 0.975V

a. SDIO 3.0 specification value is 1.40 ns.

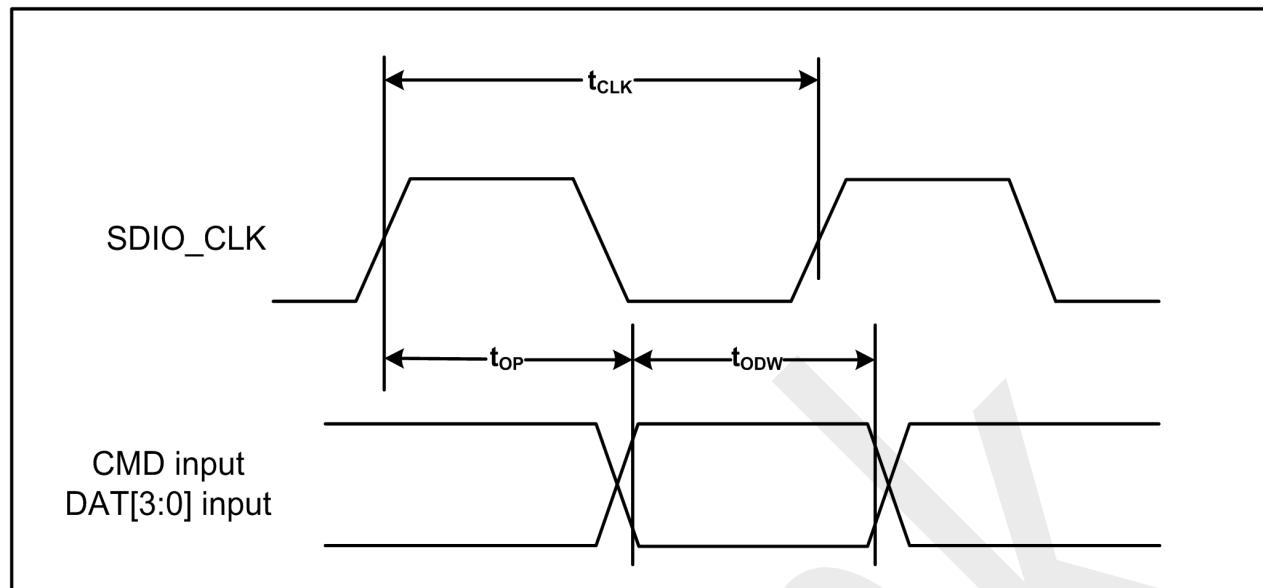
### Card output timing (SDR Modes up to 100MHz)



<b>Symbol</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Unit</b>	<b>Comments</b>
$t_{ODLY}$	-	7.85 <sup>a</sup>	ns	$t_{CLK} \geq 10$ ns $C_L = 30$ pF using driver type B for SDR50
$t_{ODLY}$	-	14.0	ns	$t_{CLK} \geq 20$ ns $C_L = 40$ pF using for SDR12, SDR25
$t_{OH}$	1.5	-	ns	Hold time at the $t_{ODLY}(\min)$ $CL = 15$ pF

a. SDIO 3.0 specification value is 7.5 ns.

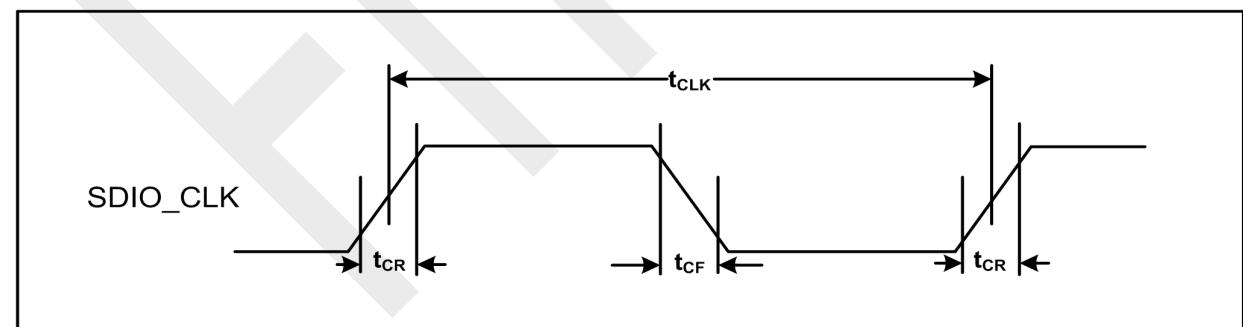
Card output timing (SDR Modes 100MHz to 208MHz)



Symbol	Minimum	Maximum	Unit	Comments
$t_{OP}$	0	2	UI	Card output phase
$\Delta t_{OP}$	-350	+1550	ps	Delay variation due to temp change after tuning
$t_{ODW}$	0.6	-	UI	$t_{ODW} = 2.88 \text{ ns} @ 208 \text{ MHz}$

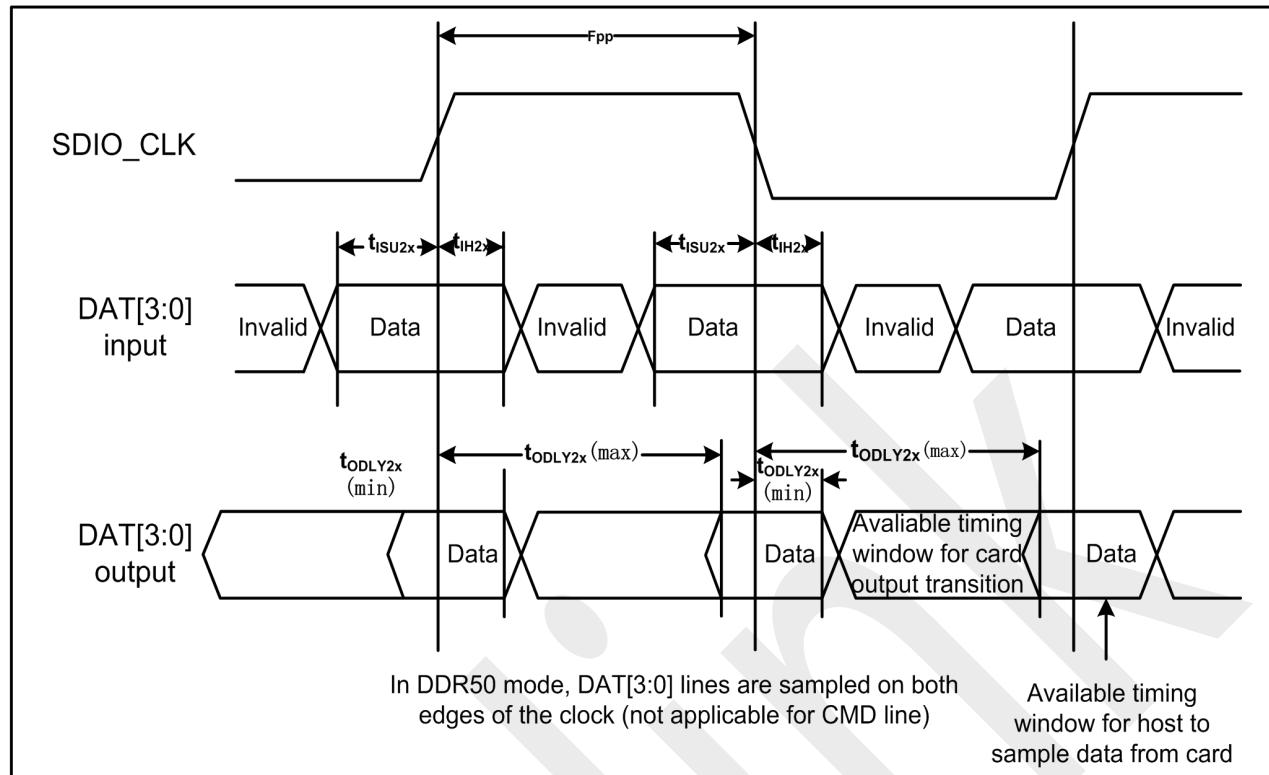
- $\Delta t_{OP} = +1550 \text{ ps}$  for junction temperature of  $\Delta t_{OP} = 90 \text{ degrees}$  during operation
- $\Delta t_{OP} = -350 \text{ ps}$  for junction temperature of  $\Delta t_{OP} = -20 \text{ degrees}$  during operation
- $\Delta t_{OP} = +2600 \text{ ps}$  for junction temperature of  $\Delta t_{OP} = -20 \text{ to } +125 \text{ degrees}$  during operation

## 6.5 SDIO Bus Timing Specifications in DDR50 Mode



parameter	Symbol	Minimum	Maximum	Unit	Comments
-	$t_{CLK}$	20	-	ns	DDR50 mode
-	$t_{CR}, t_{CF}$	-	$0.2 \times t_{CLK}$	ns	$t_{CR}, t_{CF} < 4.00 \text{ ns (max)} @ 50 \text{ MHz}$ , $C_{CARD} = 10 \text{ pF}$
Clock duty	-	45	55	%	-

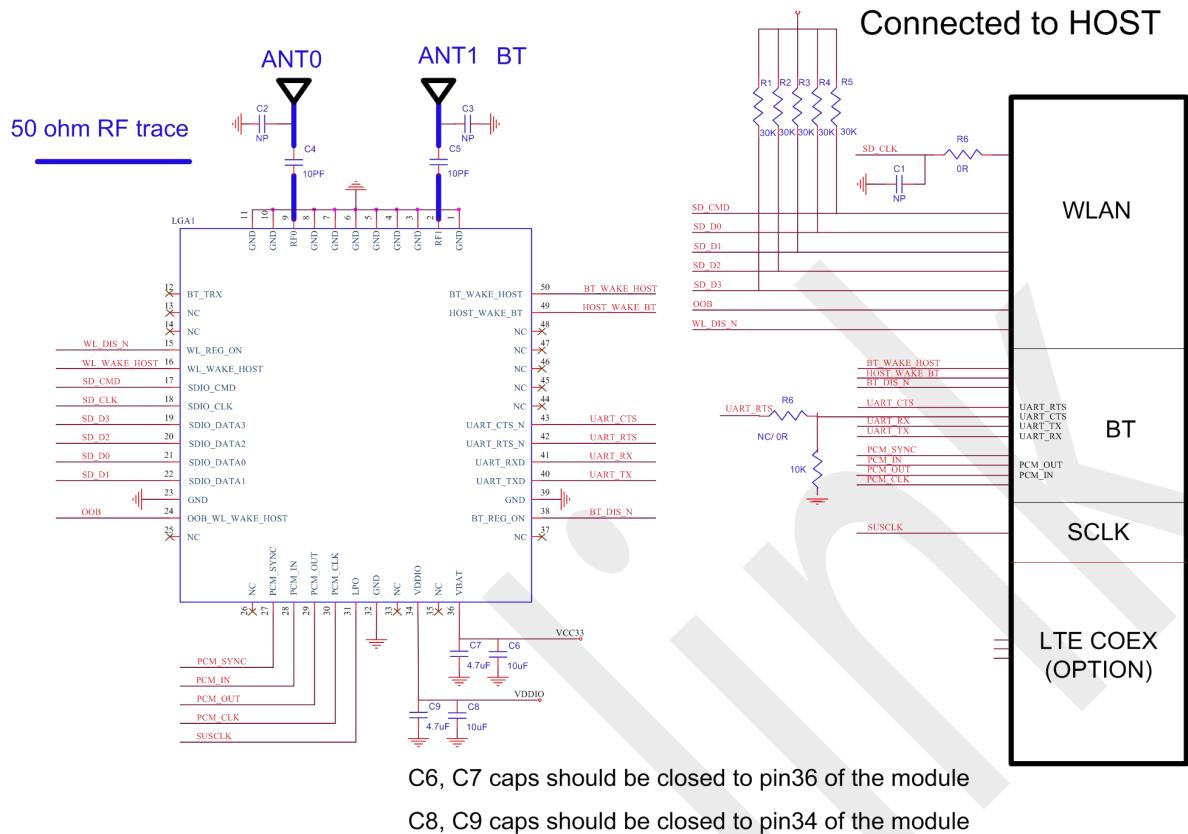
Data Timing



parameter	Symbol	Minimum	Maximum	Unit	Comments
<b><i>Input CMD</i></b>					
Input setup time	$t_{ISU}$	6	-	ns	$C_{CARD} < 10 \text{ pF}$ (1 Card)
Input hold time	$t_{IH}$	0.8	-	ns	$C_{CARD} < 10 \text{ pF}$ (1 Card)
<b><i>Output CMD</i></b>					
Output delay time	$t_{ODLY}$	-	13.7	ns	$C_{CARD} < 30 \text{ pF}$ (1 Card)
Output hold time	$t_{OH}$	1.5	-	ns	$C_{CARD} < 15 \text{ pF}$ (1 Card)
<b><i>Input DAT</i></b>					
Input setup time	$t_{ISU2x}$	3	-	ns	$C_{CARD} < 10 \text{ pF}$ (1 Card)
Input hold time	$t_{IH2x}$	0.8	-	ns	$C_{CARD} < 10 \text{ pF}$ (1 Card)
<b><i>Output CMD</i></b>					
Output delay time	$t_{ODLY2x}$	-	7.85 <sup>a</sup>	ns	$C_{CARD} < 25 \text{ pF}$ (1 Card)
Output hold time	$t_{ODLY2x}$	1.5	-	ns	$C_{CARD} < 15 \text{ pF}$ (1 Card)

a. SDIO 3.0 specification value is 7.0 ns

## 7 Reference Design



## 8 Ordering Information

Part No.	Description
FG6222BSRC-02	RTL8822CS-VL-CG,a/b/g/n/ac,Wi-Fi+BT4.2,2T2R,SDIO+UART, PCB V2.0, 2 Antenna version.

## 9 The Key Material List

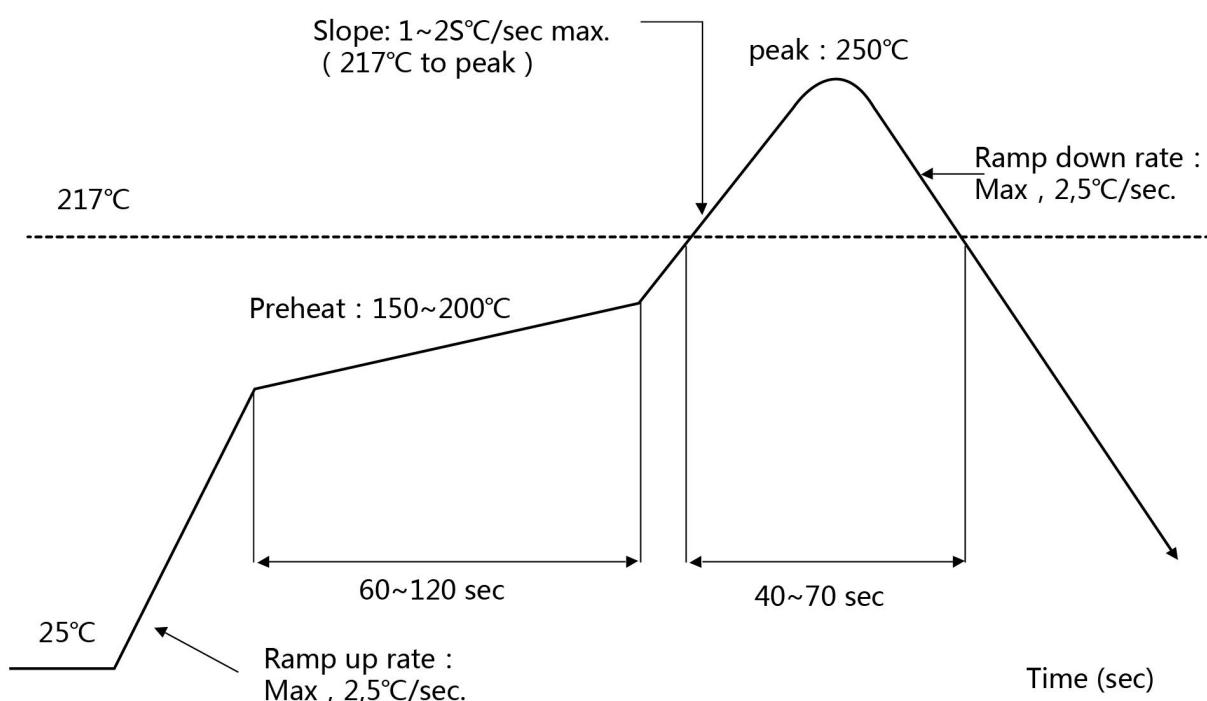
Main	Inductor	2012 1uH, ±20%, 0.8A, LQM21PN1R0MC0 (MURATA)
Main	Diplexer	RFDIP160806BLM6T25
Alt	Diplexer	DPX166000DT-8093A1,1.6*0.8mm,6PIN (TDK)
Alt	Diplexer	LD18D2450LAN-D40/M (GLEAD)
Main	Shielding cover	RTL8822CS Copper, without positioning foot
Main	Crystal	2520 40MHz 10ppm 12pF E2SB40.0000F12G11RE (HOSONIC)
Main	Chipset	RTL8822CS-VL-CG 9X9mm

## 10 Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : <250°C

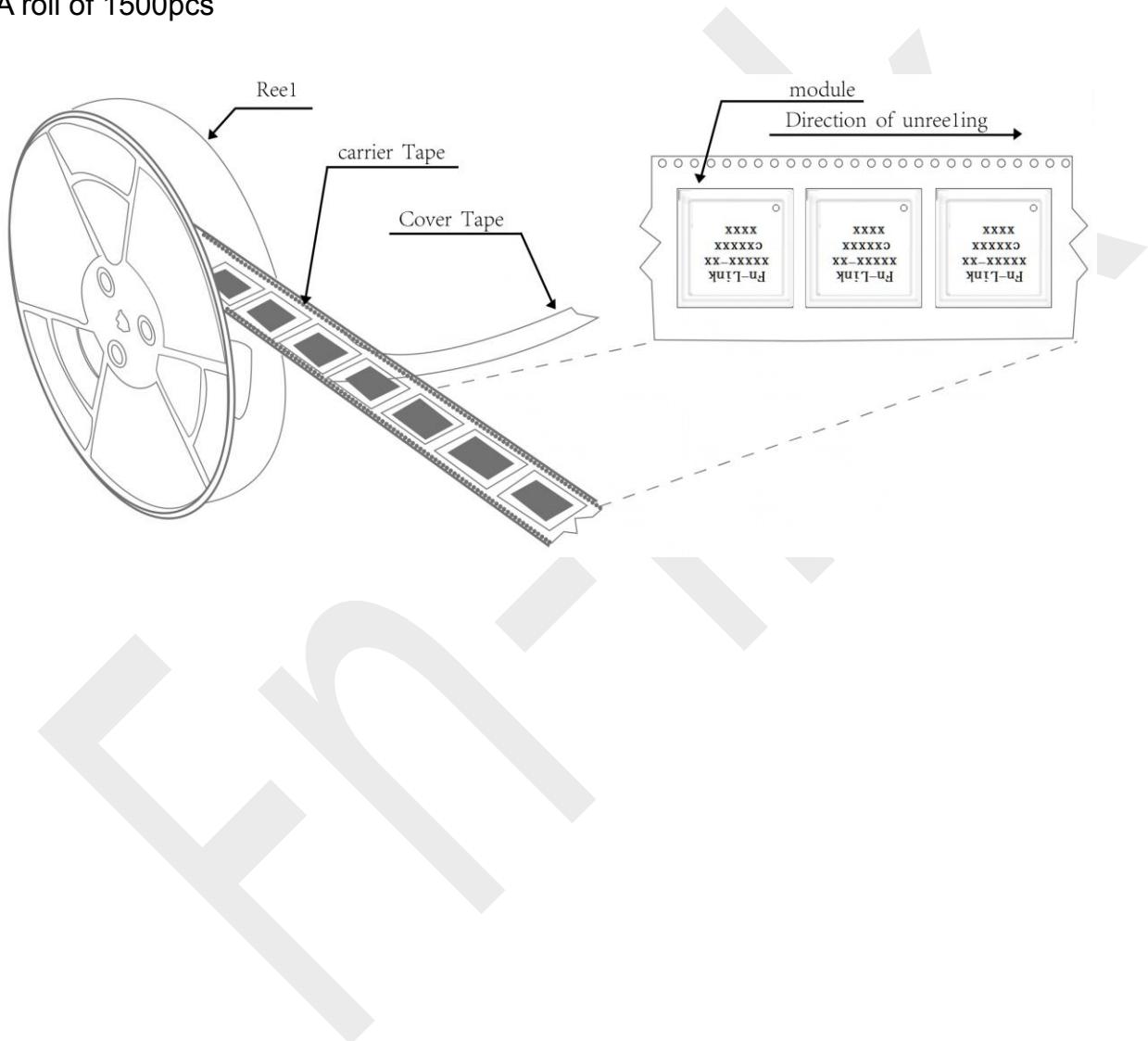
Number of Times : ≤2 times



# 11 Package Information

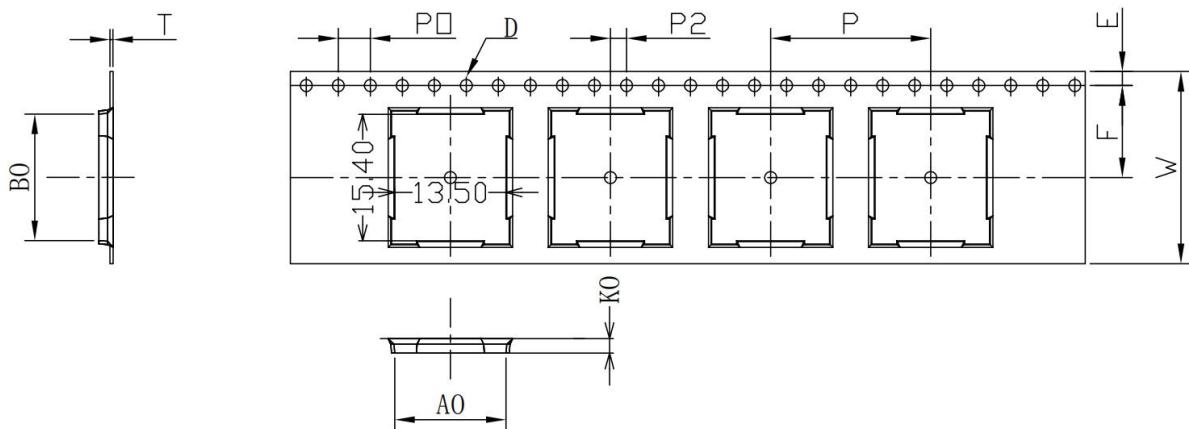
## 11.1 Reel

A roll of 1500pcs

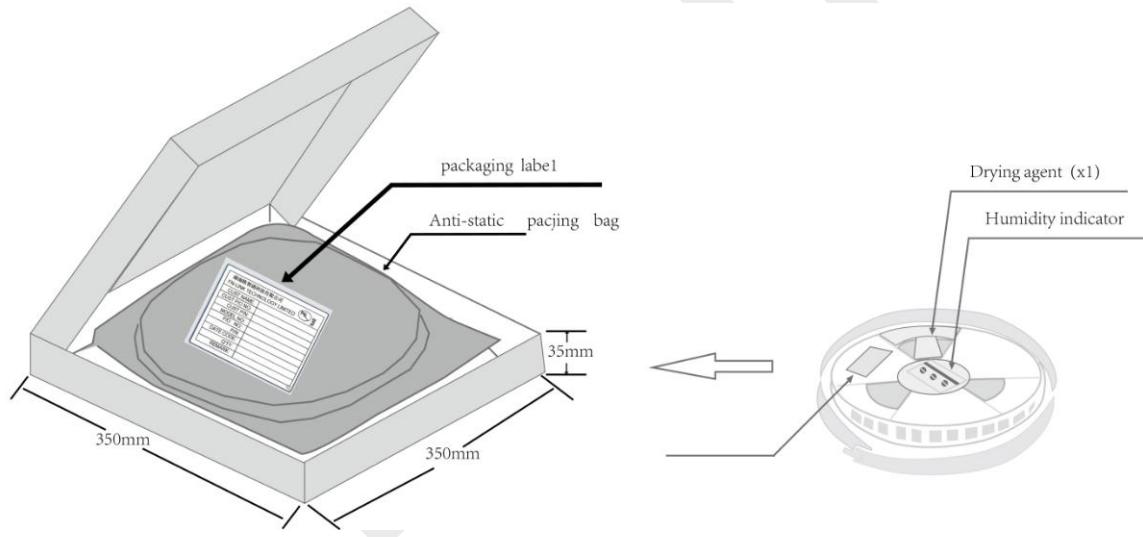


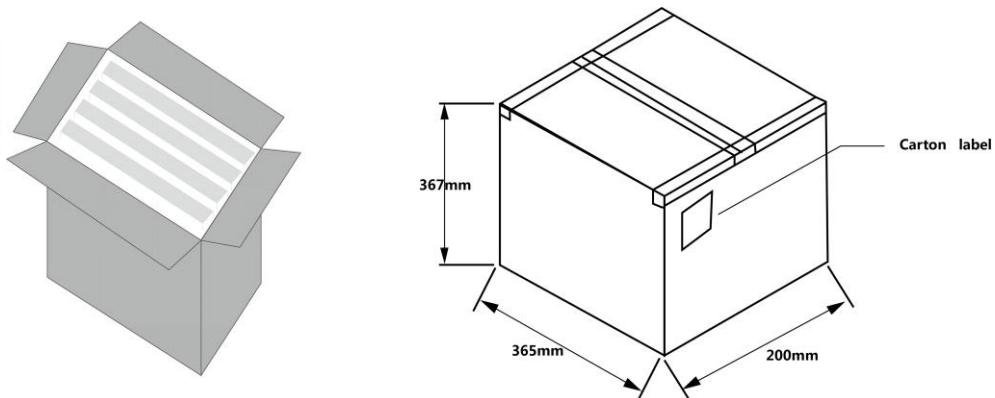
## 11.2 Carrier Tape Detail

ITEM	W	A0	B0	D	F	E	K0	P0	P2	P	T
DIM	24	13.50	15.40	1.50	11.5	1.75	1.80	4.0	2.0	20.0	0.30
TOLE	+0.3 -0.3	±0.15	±0.15	+0.1 -0.0	+0.1 -0.1	±0.1	±0.10	±0.1	±0.1	±0.1	±0.05



## 11.3 Packaging Detail





## 11.4 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