

**A. MAXIMUM RATING:**

1. Input power : 29dBm (Ta=+50deg C,50000h,CW )
2. Maximum DC Voltage: +/-5 V
3. Operating temperature range: -30 °C to +85 °C
4. Storage temperature range: -30 °C to +85 °C
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD 100V(MM) 200V(HBM)

RoHS Compliant  
Lead free  
Lead-free soldering

Electrostatic Sensitive Device (ESD)

**B. ELECTRICAL CHARACTERISTICS:**

Terminating impedance(Tx Port): 50 Ω (Single-ended)

Terminating impedance(Rx Port): 50 Ω (Single-ended)

Terminating impedance(Ant Port): 50//10nH Ω (Single-ended)

**Tx to ANT**

Parameters Description		Unit	Minimum	Typical	Maximum	Note
Insertion Loss		832.25~ 861.75 MHz	dB(*1)	-	1.8	2.5
Ripple		832~ 862 MHz	dB	-	1.0	1.8
VSWR	ANT	832~ 862 MHz	-	-	1.6	2.0
	Tx		-	-	1.7	2.0
<b>Attenuation:</b>						
791.25 ~ 820.75 MHz		dB	45	54	-	-
1565 ~ 1606 MHz		dB	45	57	-	-
1664 ~ 1724 MHz		dB	40	55	-	-
2400 ~ 2586 MHz		dB	35	44	-	-

### ANT to Rx

Parameters Description		Unit	Minimum	Typical	Maximum	Note
Insertion Loss	791.25 ~ 820.75 MHz	dB(*1)	-	1.8	3.0	
Ripple)	791~ 821 MHz	dB	-	0.9	2.3	
VSWR	ANT	791~ 821 MHz	-	1.7	2.3	
	Rx		-	1.8	2.2	
<b>Attenuation:</b>						
<b>832.25 ~ 861.75 MHz</b>		dB	45	53	-	-
<b>1623 ~ 1683 MHz</b>		dB	35	47	-	-
<b>2400 ~ 2545 MHz</b>		dB	30	43		

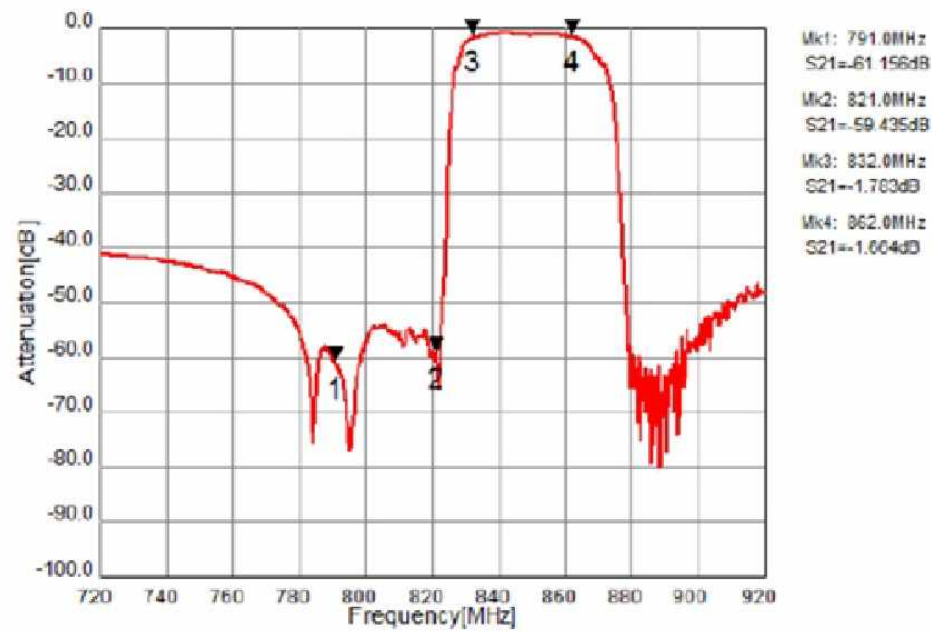
### Tx to Rx

<b>Isolation</b>	832.25 ~ 861.75 MHz	dB	50	55	-	
	791.25 ~ 820.75 MHz	dB	53	56	-	

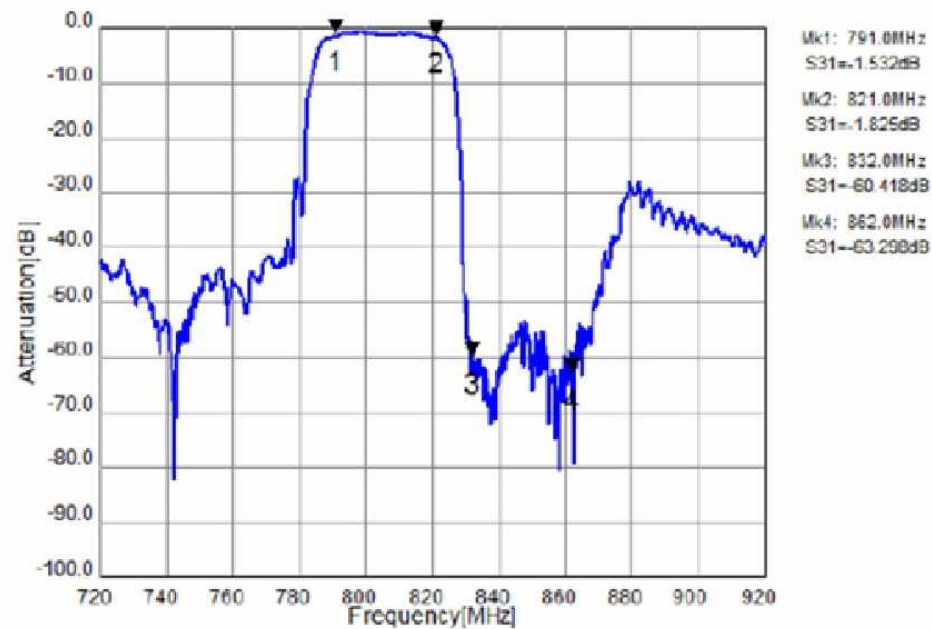
(\*1) Specification of insertion loss excludes loss that comes from the test board.

### C. Frequency Characteristics:

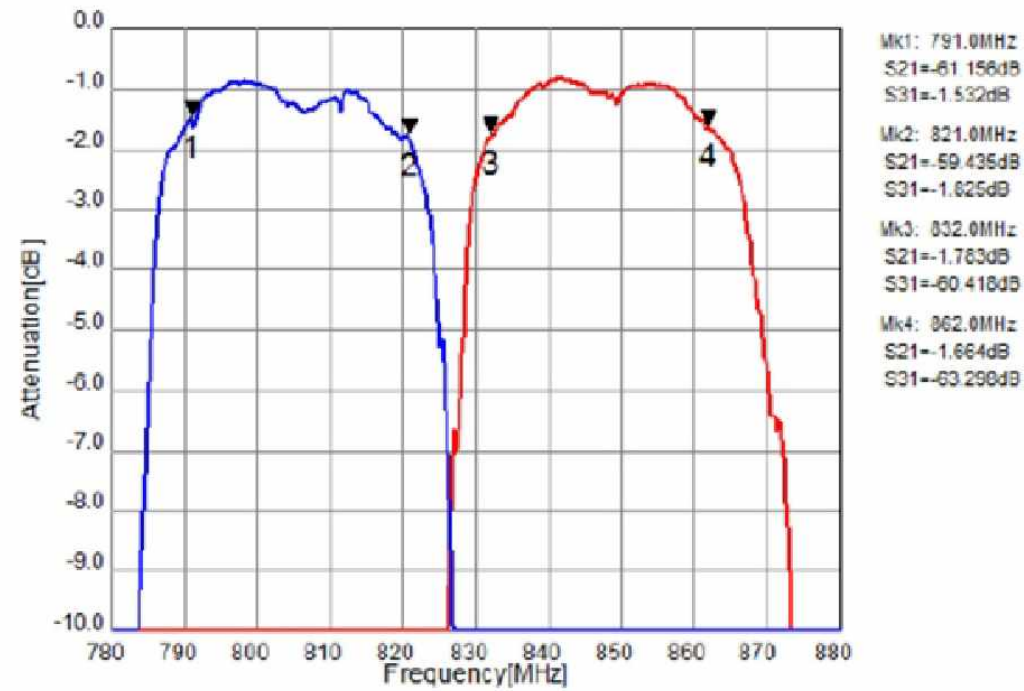
#### Tx to Ant



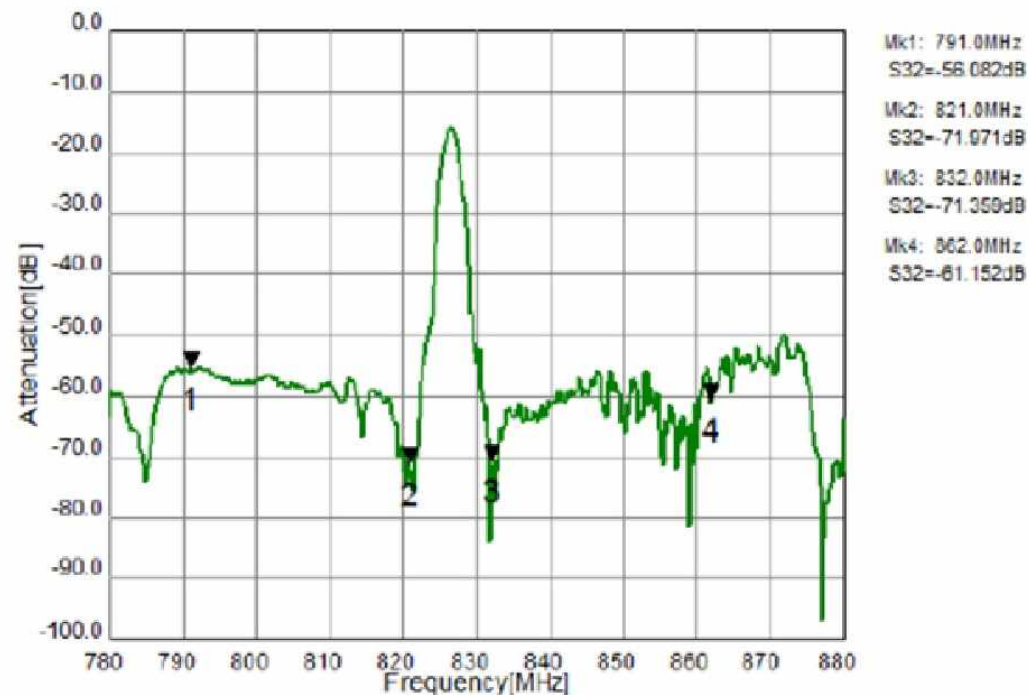
#### Ant to Rx



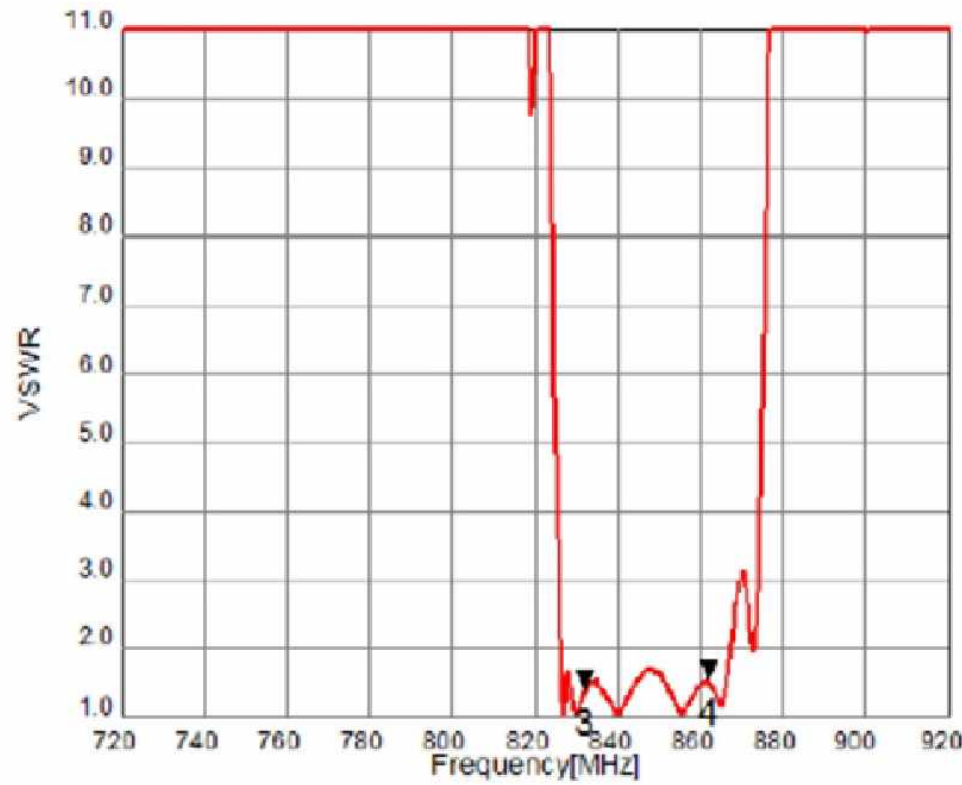
## Ant to Rx, Tx to Ant



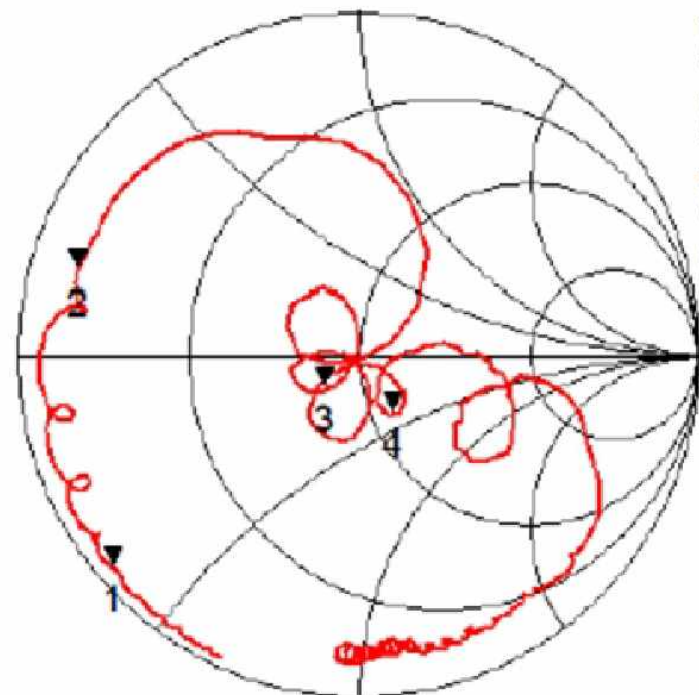
## Tx to Rx Isolation



# Tx Port



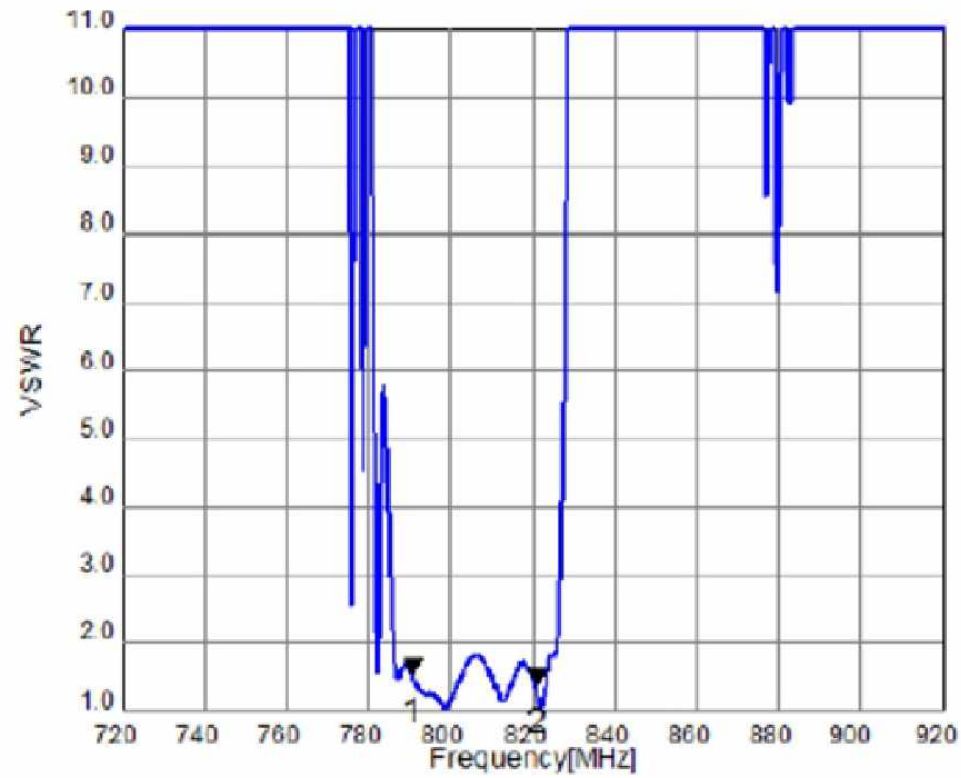
Mk1: 791.0MHz  
VSWR2=42.548  
Mk2: 821.0MHz  
VSWR2=13.596  
Mk3: 832.0MHz  
VSWR2= 1.337  
Mk4: 862.0MHz  
VSWR2= 1.400



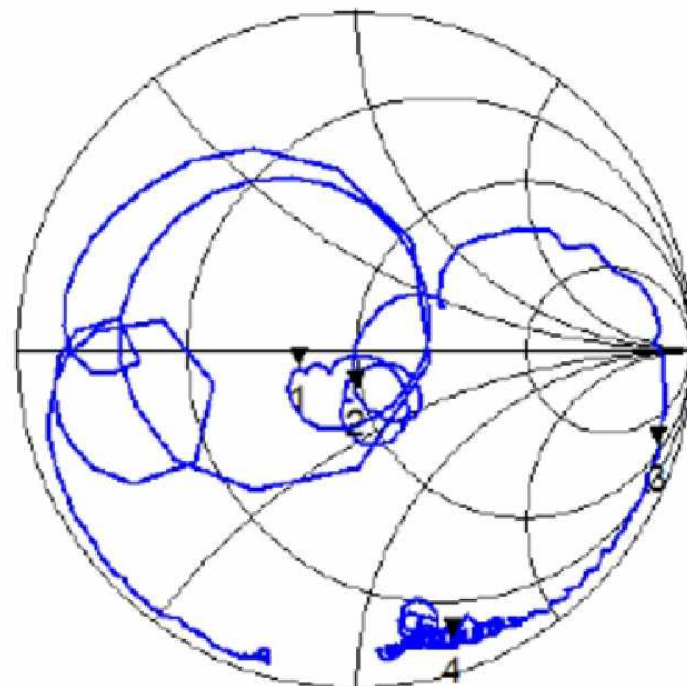
Mk1: 791.0  
S22= 0.027 - j0.371  
Mk2: 821.0  
S22= 0.075 + j0.144  
Mk3: 832.0  
S22= 0.795 - j0.159  
Mk4: 862.0  
S22= 1.148 - j0.411



## Rx Port

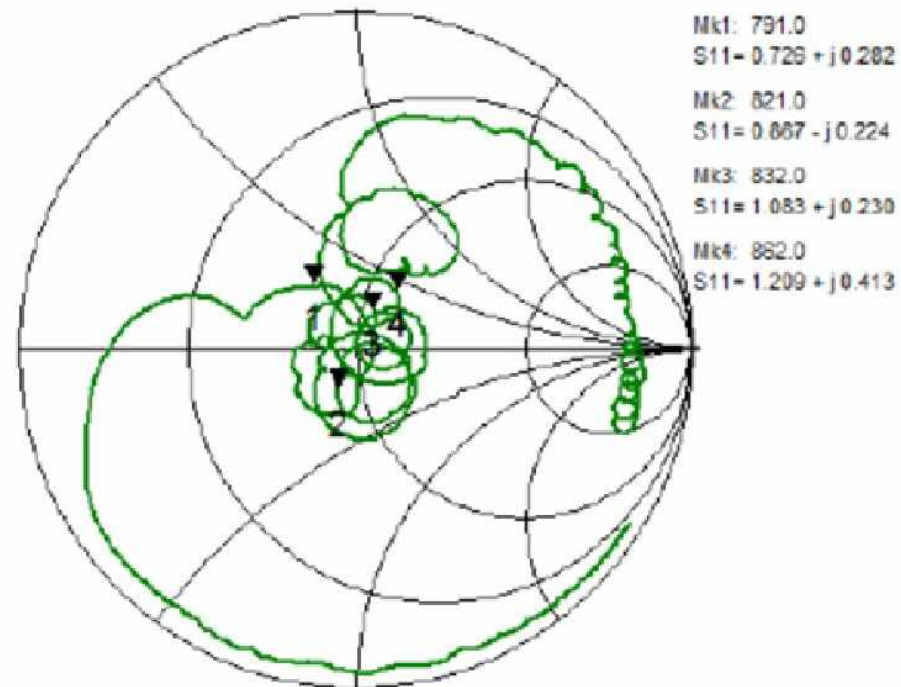
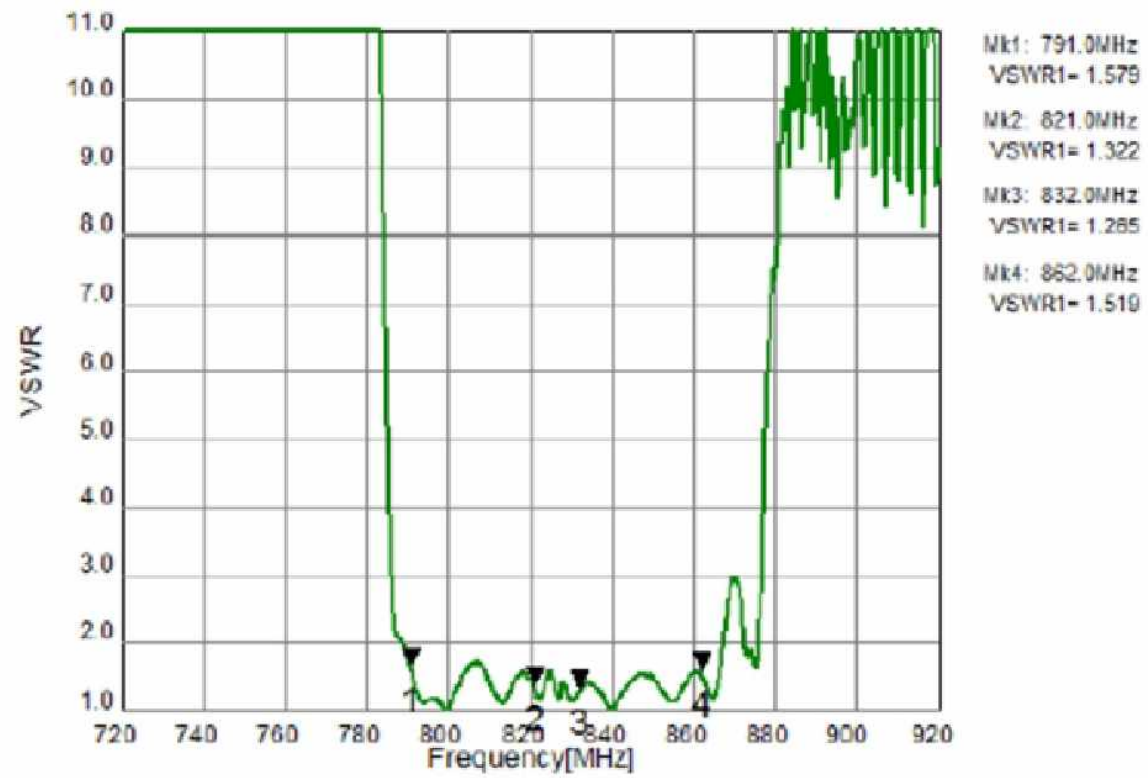


Mk1: 791.0MHz  
VSWR3= 1.434  
Mk2: 821.0MHz  
VSWR3= 1.291  
Mk3: 832.0MHz  
VSWR3=33.569  
Mk4: 862.0MHz  
VSWR3=20.314

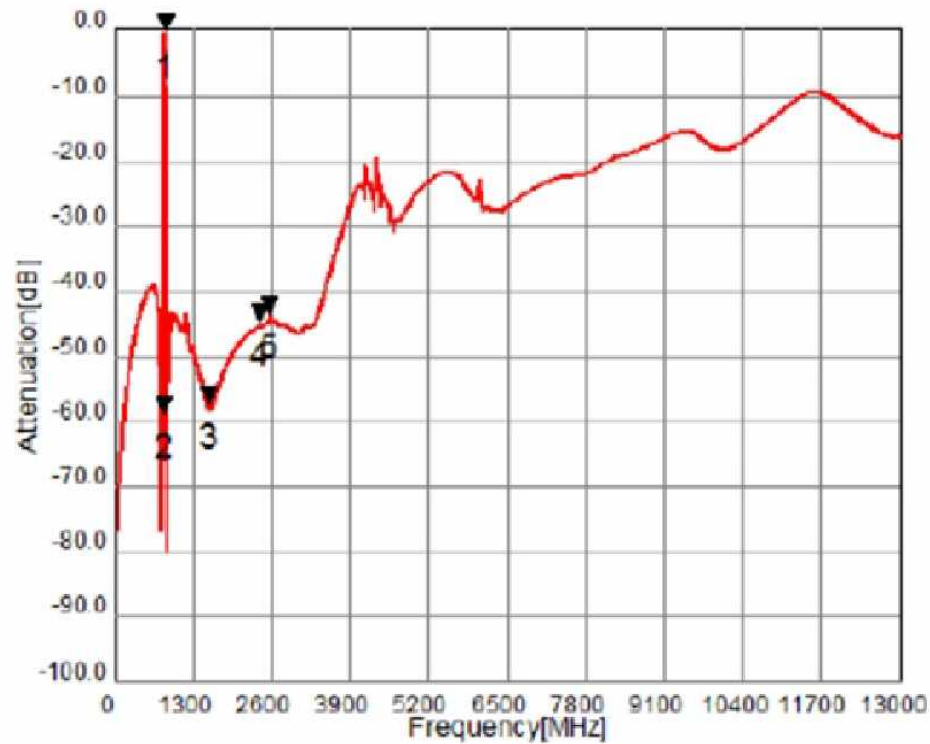


Mk1: 791.0  
S33= 0.706 -j0.079  
Mk2: 821.0  
S33= 0.979 -j0.252  
Mk3: 832.0  
S33= 1.164 -j6.063  
Mk4: 862.0  
S33= 0.144 -j1.379

# Ant Port

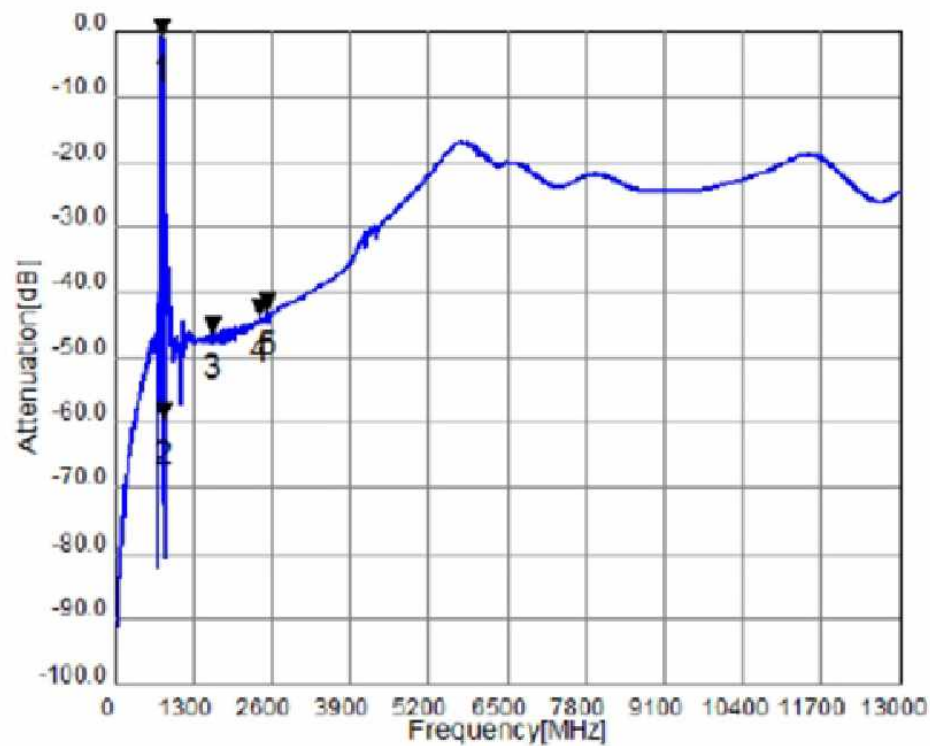


## Tx to Ant (Wide span)



Mk1: 647.0MHz
M1 S21=-1.076dB
Mk2: 821.0MHz
M1 S21=-59.435dB
Mk3: 1575.0MHz
M1 S21=-57.995dB
Mk4: 2400.0MHz
M1 S21=-45.450dB
Mk5: 2586.0MHz
M1 S21=-44.238dB

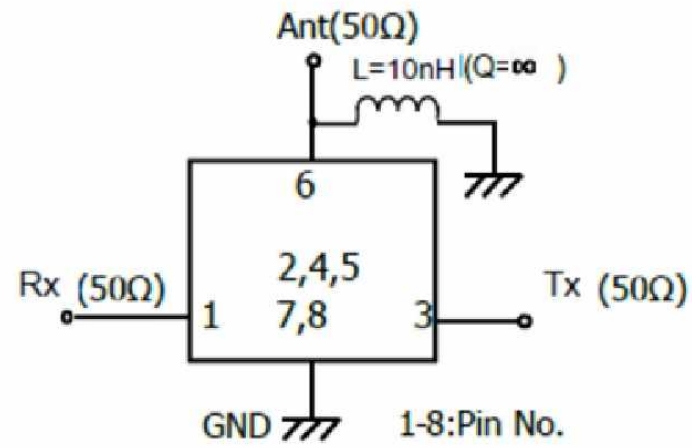
## Ant to Rx (Wide span)



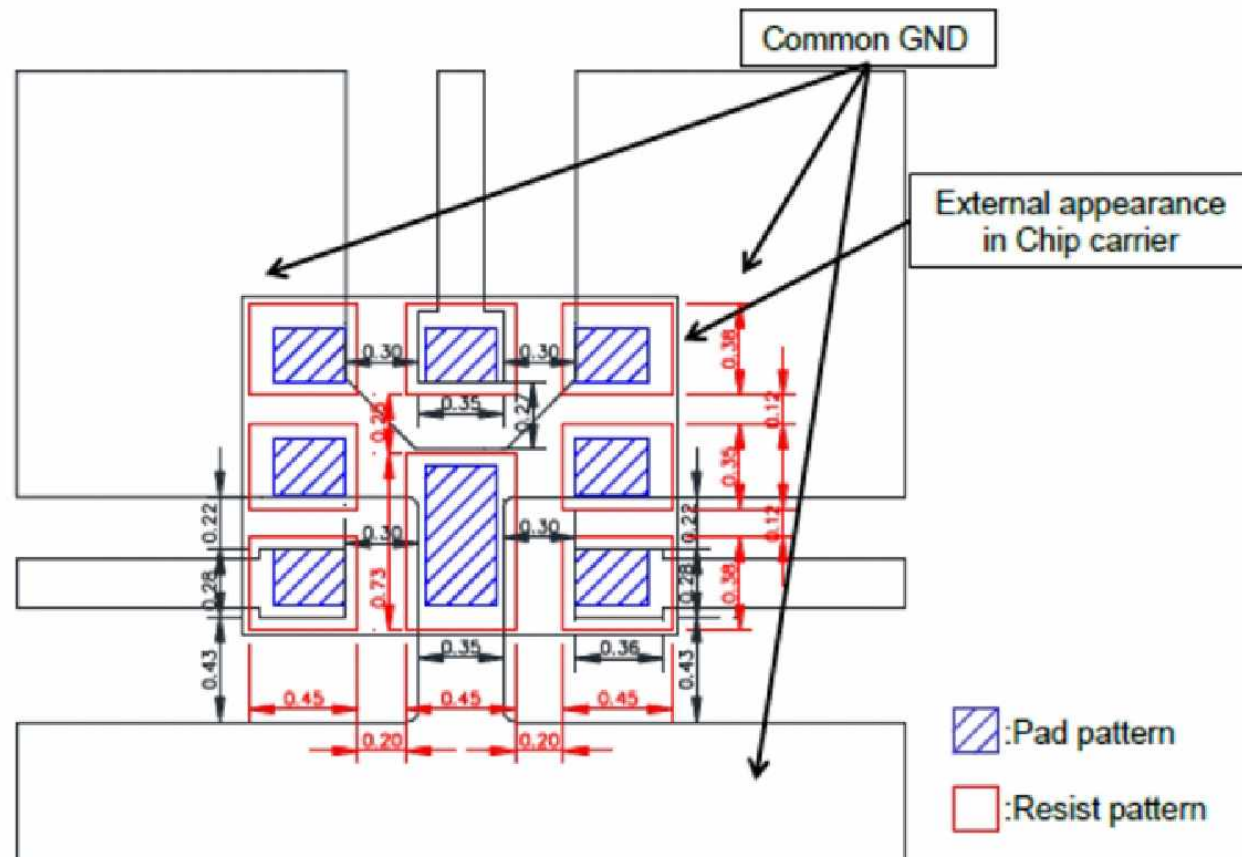
Mk1: 806.0MHz
M1 S31=-1.349dB
Mk2: 832.0MHz
M1 S31=-60.416dB
Mk3: 1623.0MHz
M1 S31=-47.054dB
Mk4: 2400.0MHz
M1 S31=-44.588dB
Mk5: 2545.0MHz
M1 S31=-43.394dB



**D. MEASUREMENT CIRCUIT:**

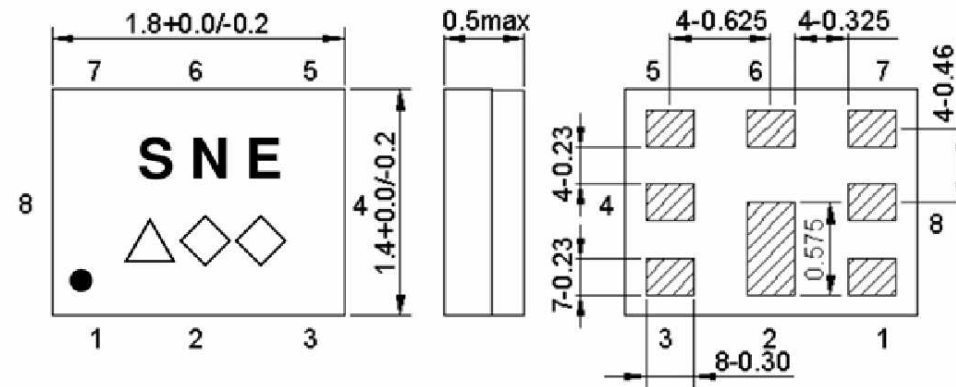


**Recommended foot print pattern**



**Figure 2. Recommended foot print pattern**

**E.OUTLINE DRAWING: (Mass Production)**



Marking name : NE

△: Date code( 2016 May → s ,....., 2019 Dec→m.)

◇◇: Lot Code.

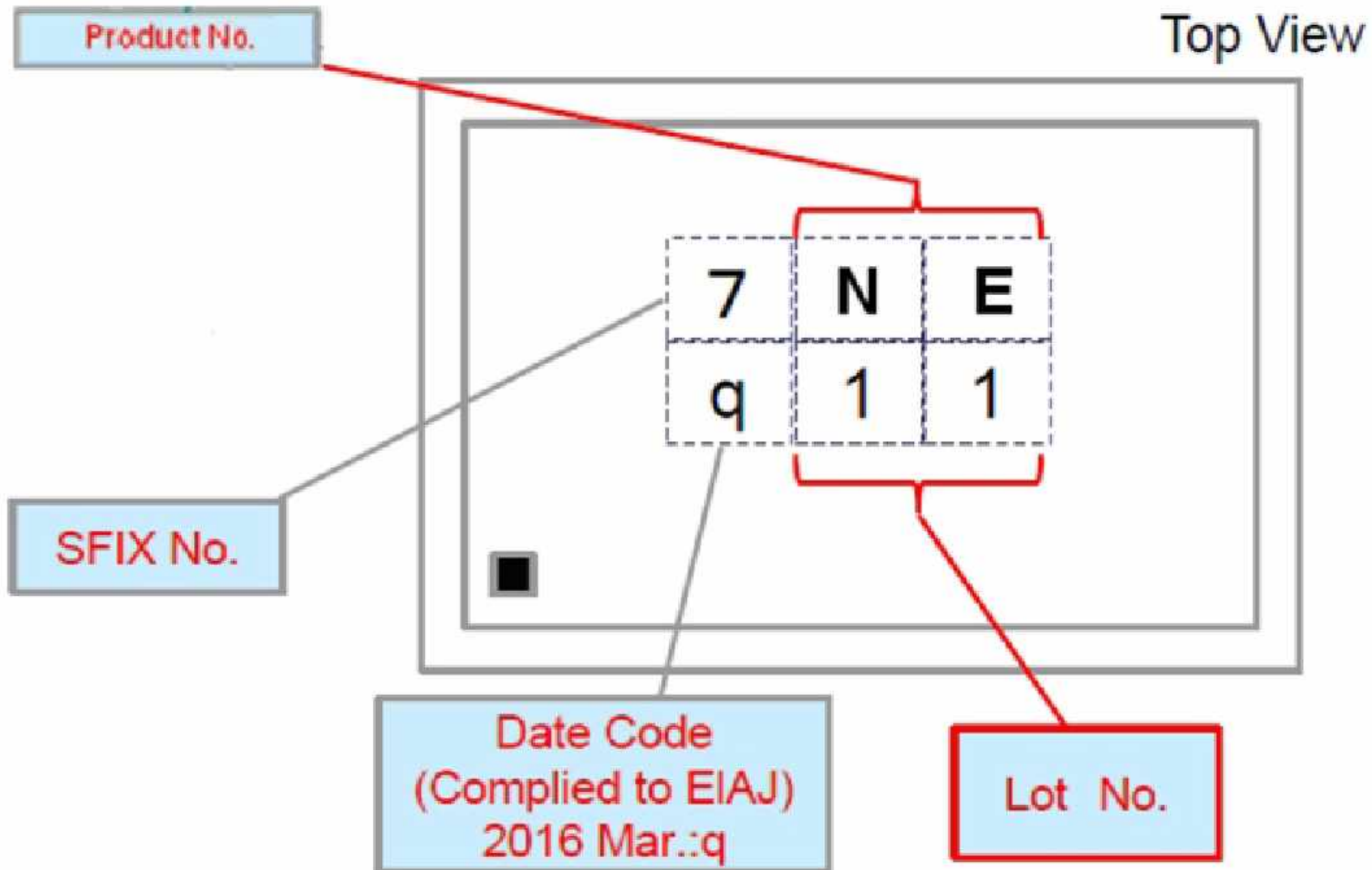
Product Date Code. Follow below table.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	j	k	l	m

**Pin Configuration**

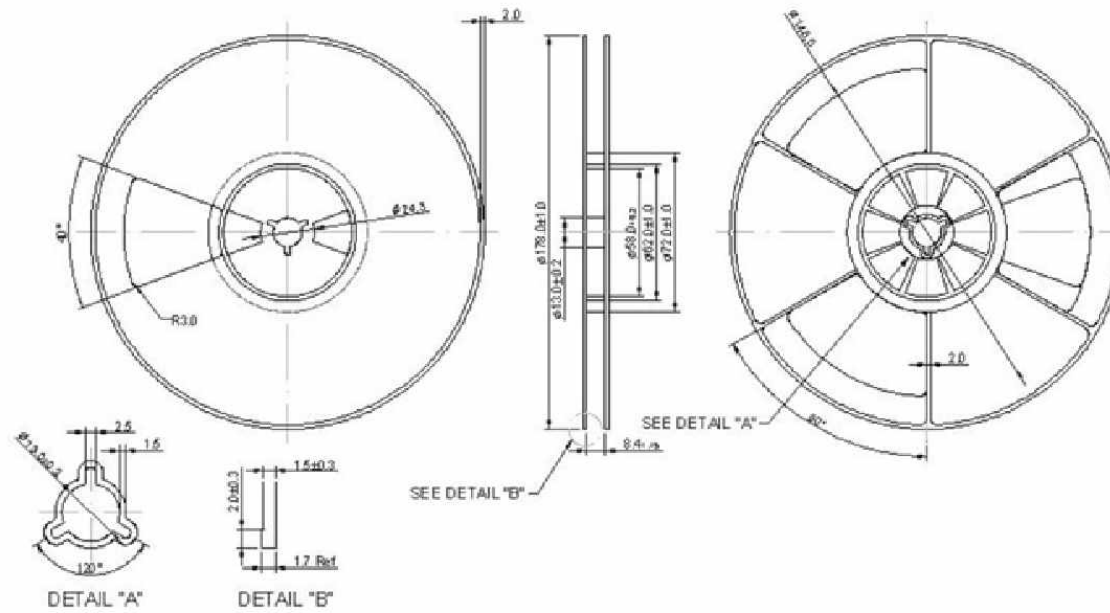
Pin No.	Pin name	Description
1	Rx	Receiver Pin
2	GND	Ground Pin
3	Tx	Transmitter Pin
4	GND	Ground Pin
5	GND	Ground Pin
6	ANT	Antenna Pin
7	GND	Ground Pin
8	GND	Ground Pin

Top View (Sample Production):

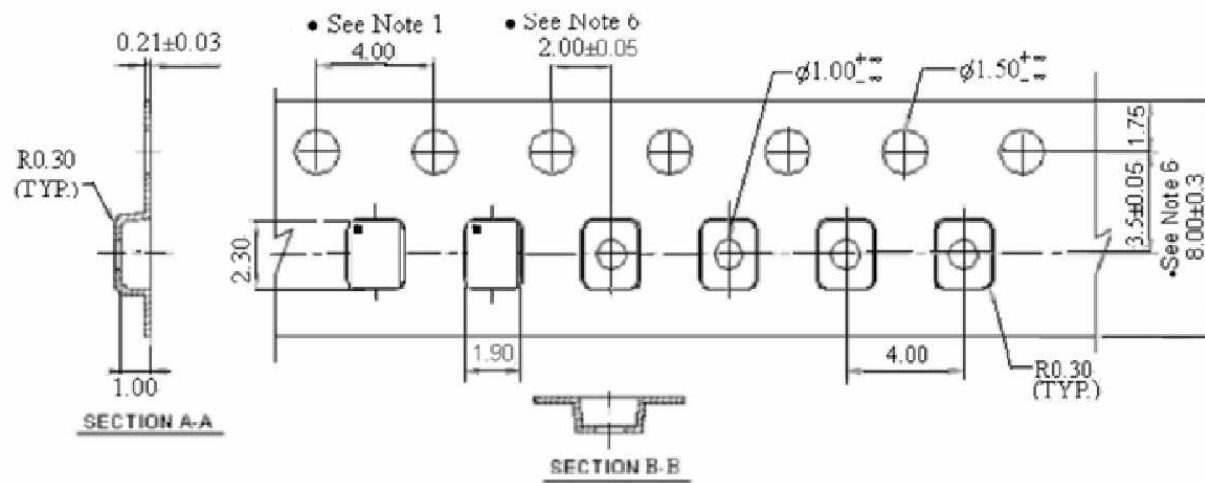


Lot No. is indicated by Arabic numerals 0 to 9 or characters A to Z and a to z (However, except I, O, l, l and o).

(Please refer to FR-75D10 for packing quantity)



## 2. TAPE DIMENSION



## G. RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (20~40sec).
4. Time: 2 times.

