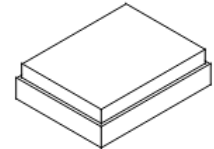


MAXIMUM RATING:

- Operating temperature range: -30 °C to +85 °C
- Storage temperature range: -30 °C to +85 °C
- Input power : 29dBm (0.8W)(Ta=+50°C,>50000h,CW)
- Maximum DC Voltage: +/-3 V
- Moisture Sensitivity Level: Level 1
- ESD 50V(MM) 100V(HBM)

**1950/2140 MHz
Filter Duplexer**



SM1814

ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50//22nH Ω (Single-ended)

Terminating impedance (Rx Port): 100//8.2nH Ω (Balanced)

Terminating impedance (Ant Port): 50//2.7nH Ω (Single-ended)

Tx to ANT (f_{T0}=1950 MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	1950~1980MHz	dB(*1)	-	1.7	2.2	
Amplitude ripple	1950~1980MHz	dB	-	0.8	1.2	
VSWR	ANT	-	-	1.6	2.0	
	Tx	-	-	1.4	2.0	
Attenuation:						
1574~1577 MHz		dB	32	39		
1805~1880 MHz		dB	15	40		
2010~2025 MHz		dB	10	26		Ta=+15~85 °C
2110~2170 MHz		dB	40	49		
2400~2500 MHz		dB	30	50		
3840~3960 MHz		dB	30	38		



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

ANT to Rx ($f_{T0}=2140$ MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss	2110~2170 MHz	dB(*1)	-	1.8	2.2	
Amplitude ripple	2110~2170 MHz	dB	-	0.7	1.2	
Phase balance	2110~2170 MHz	Deg	-12	-8/+1	+12	
Amplitude balance	2110~2170 MHz	dB	-1.2	-0.2/+0.7	+1.2	
VSWR	ANT	2110~2170 MHz	-	1.4	2.0	
	Rx		-	1.7	2.1	

Attenuation:

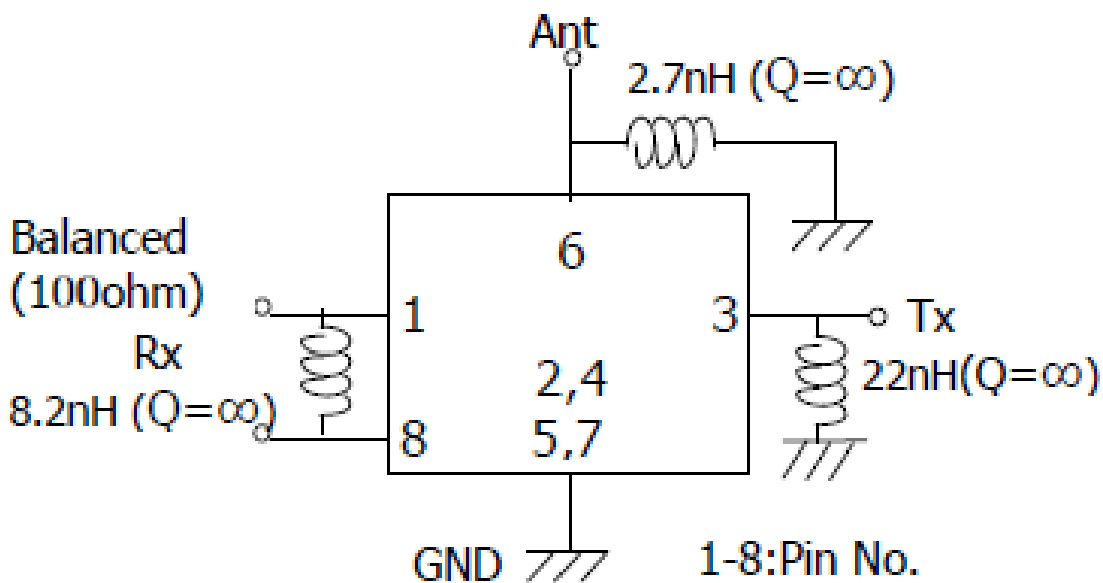
1920~1980 MHz	dB	45	49	-	
1980~2025 MHz	dB	20	41	-	
2400~2500 MHz	dB	30	40		

Tx to Rx

Isolation	1920~1980MHz	dB	53	57	-	
	2110~2170MHz	dB	47	51	-	

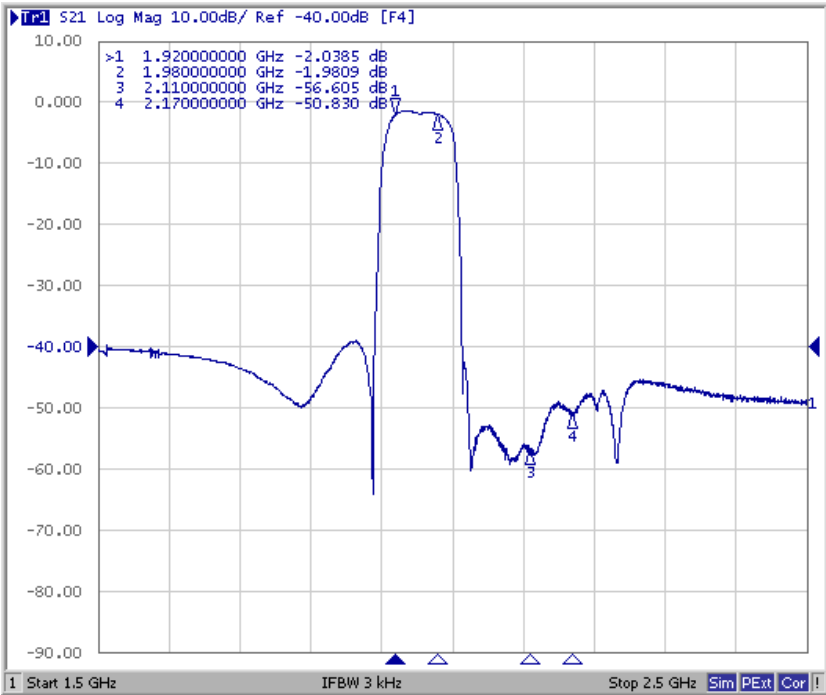
(*1) Specification of insertion loss excludes loss that comes from the test board

Evaluation Circuit

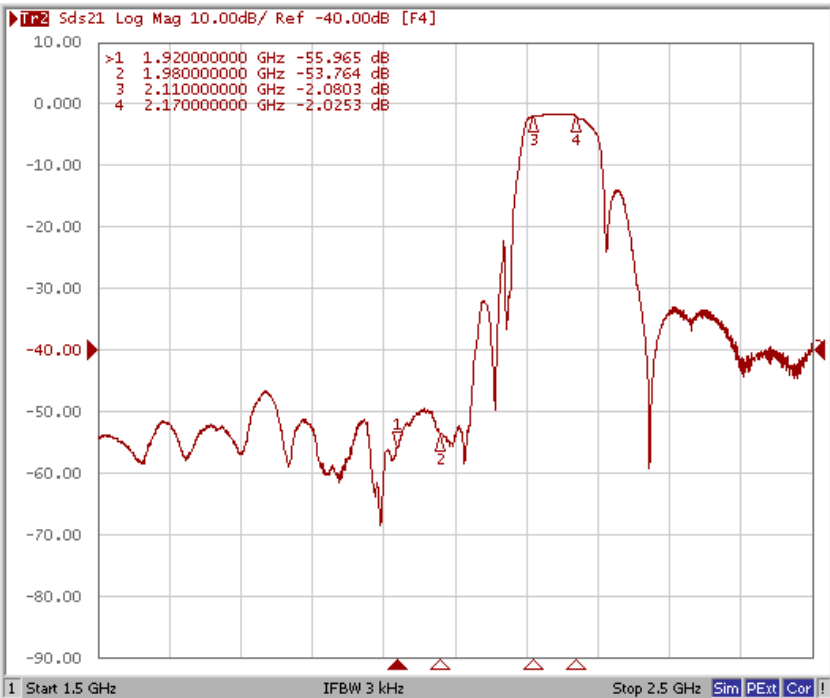


FREQUENCY CHARACTERISTICS:

Tx to Ant

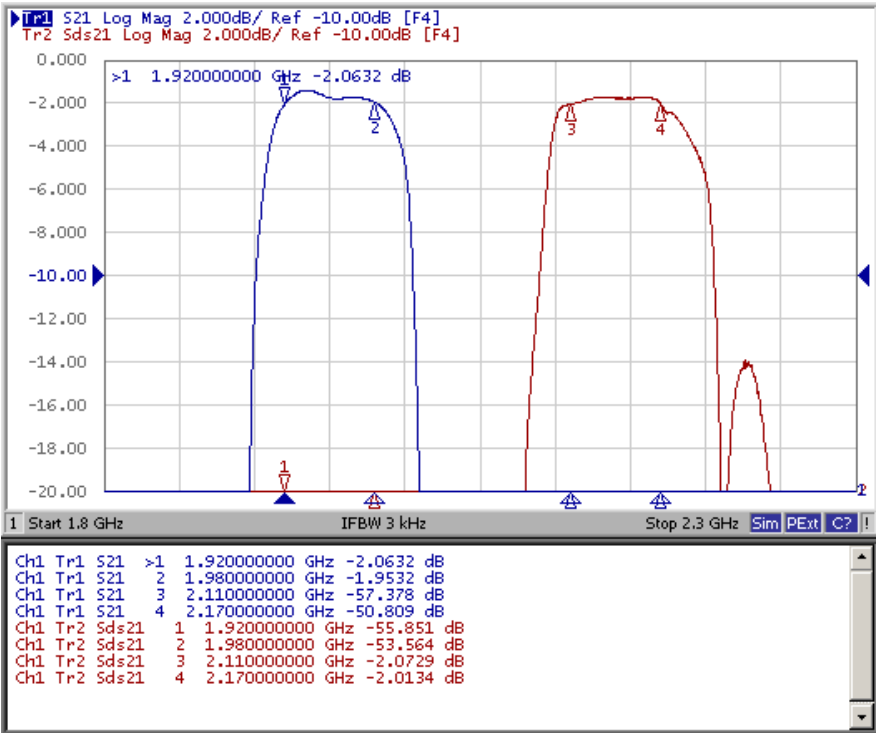


Ant to Rx

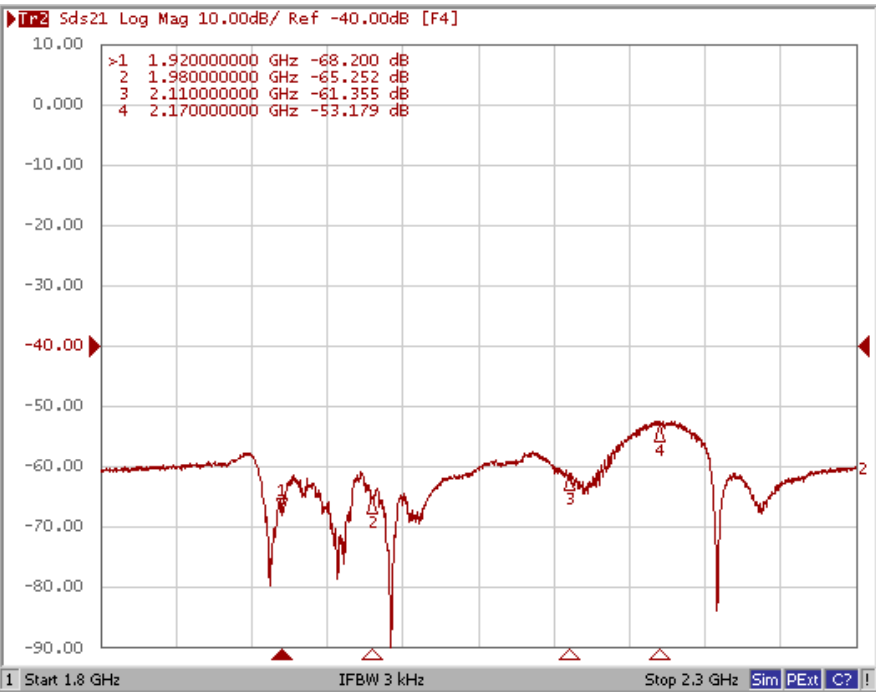


These data exclude loss that comes from the test board.

Tx to Ant ,Ant to Rx

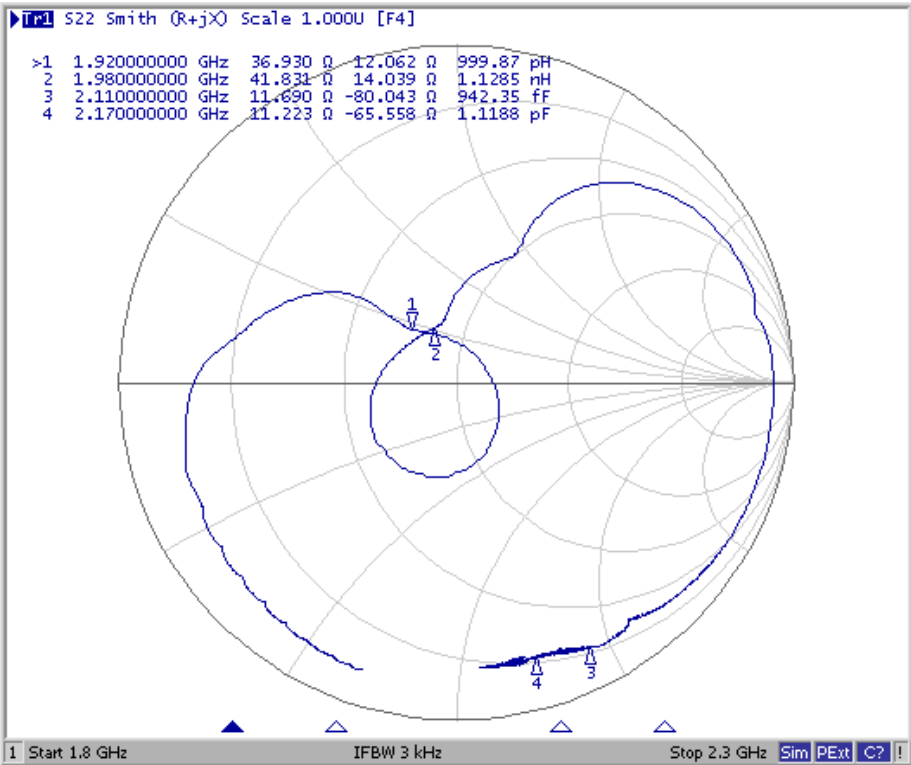
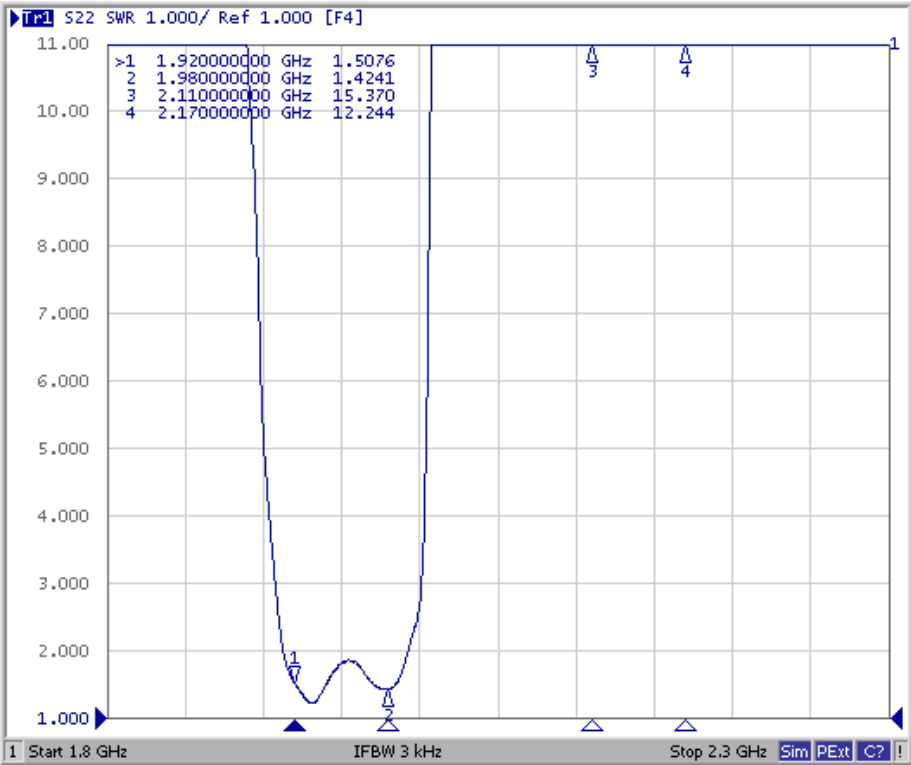


Tx to Rx Isolation

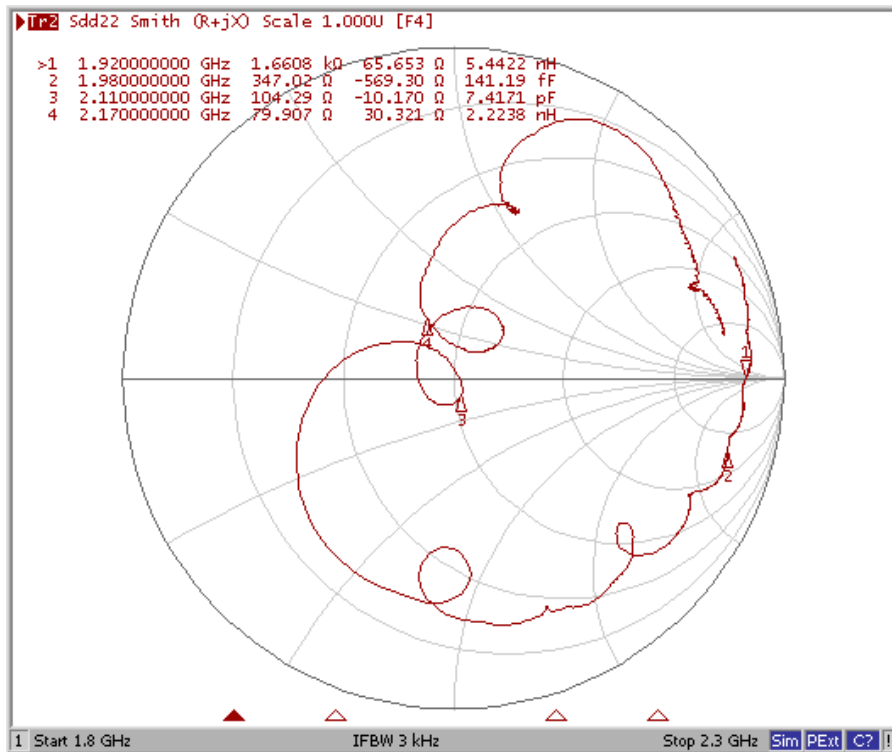
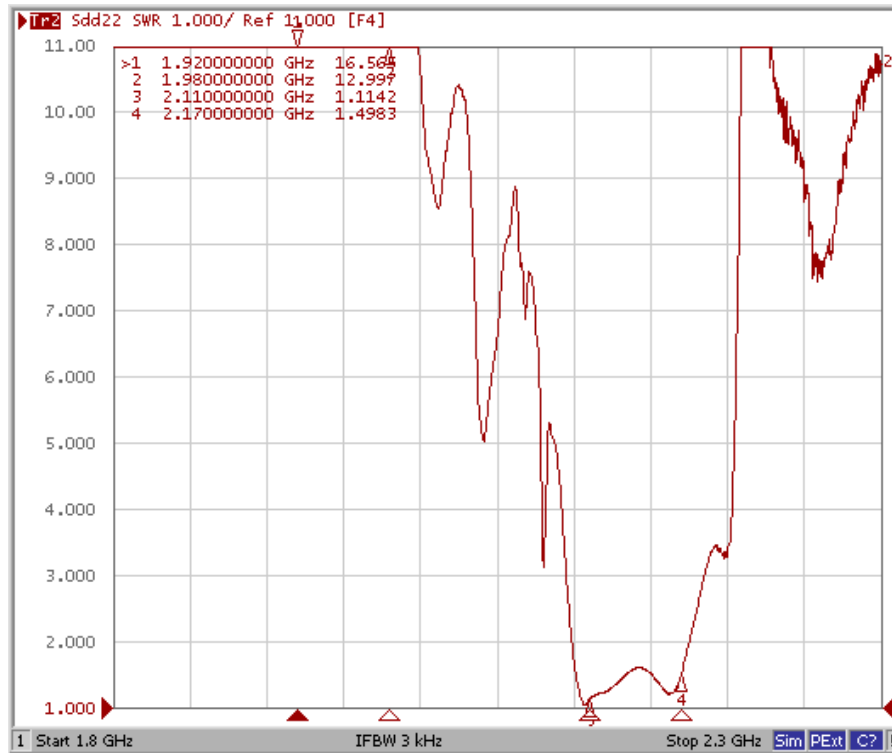


These data exclude loss that comes from the test board.

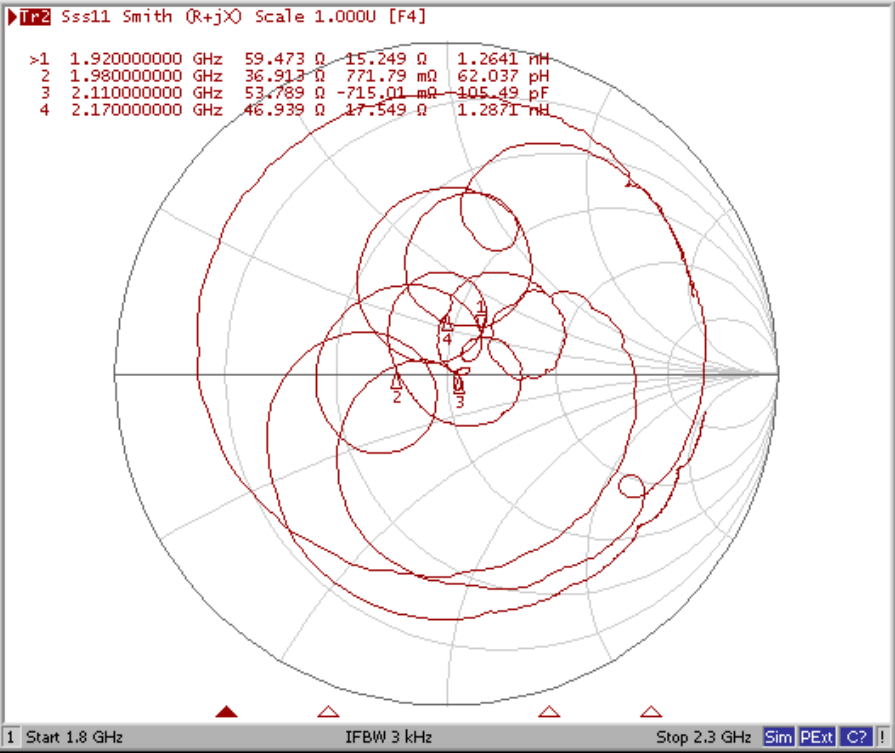
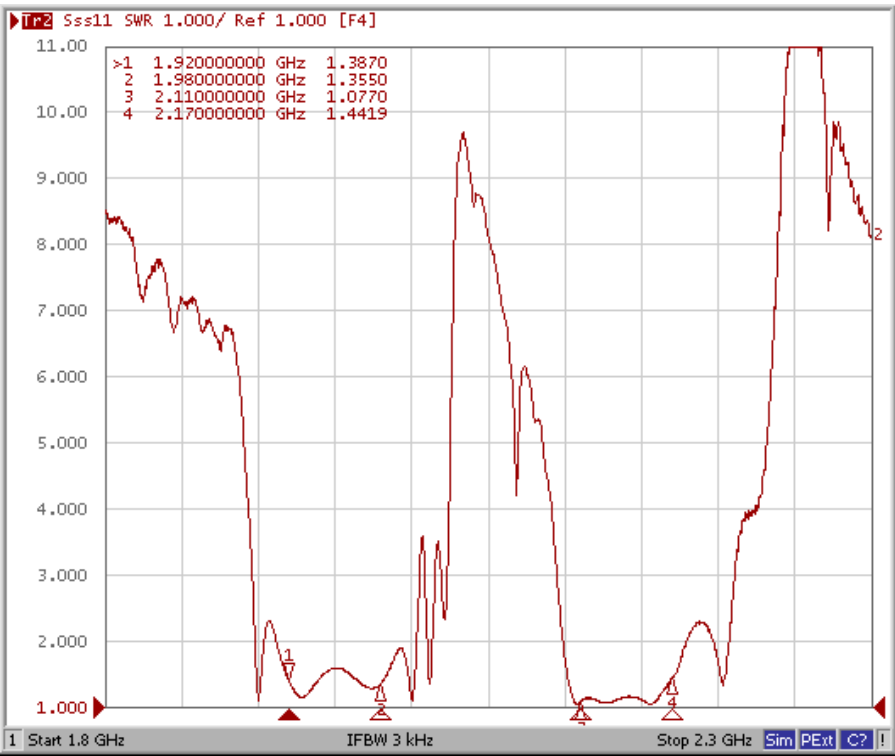
Tx Port



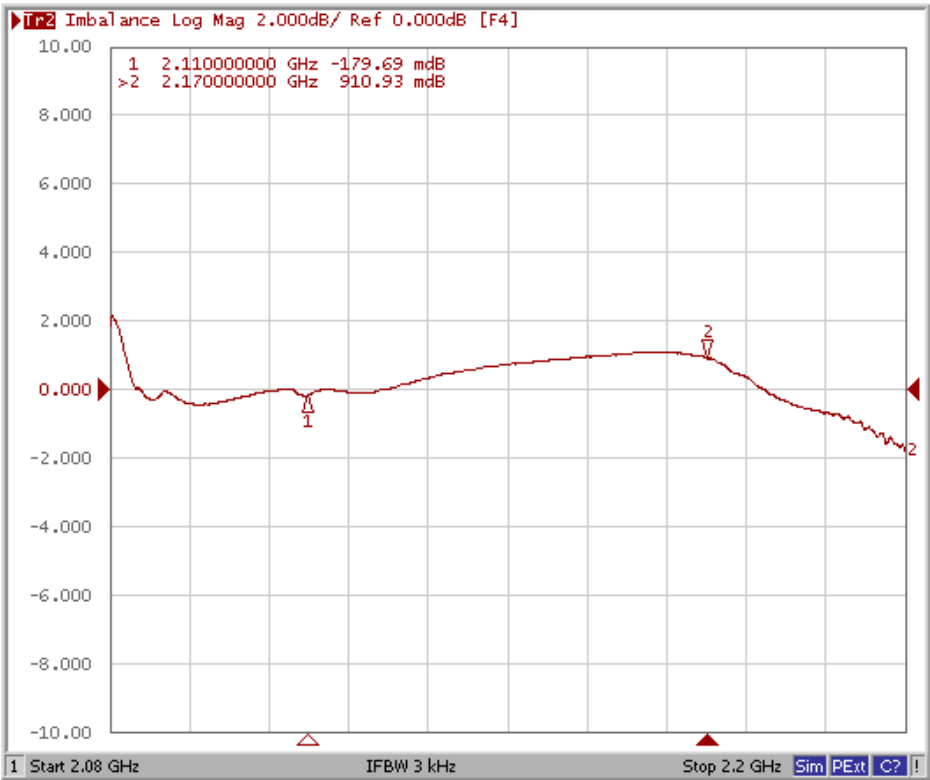
Rx Port



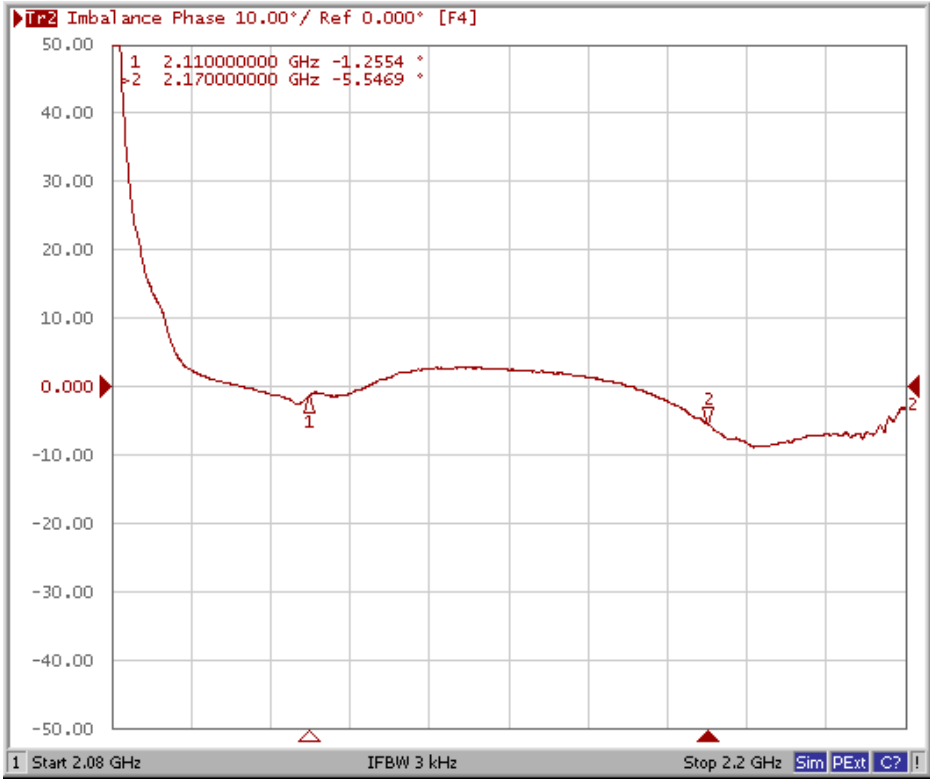
Ant Port



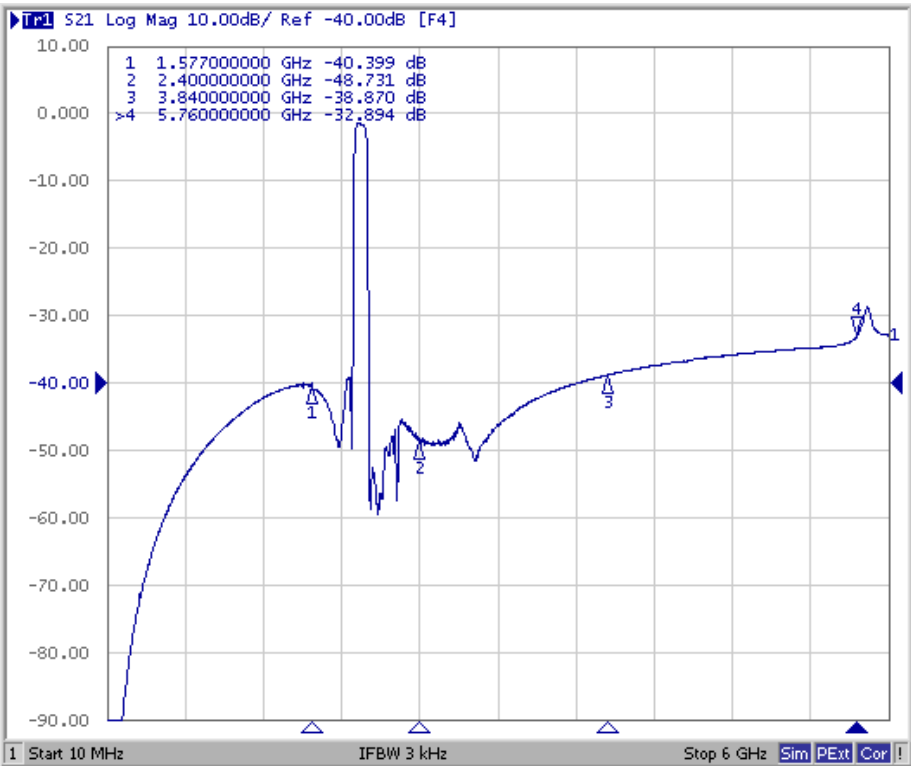
Ant to Rx (Amplitude balance)



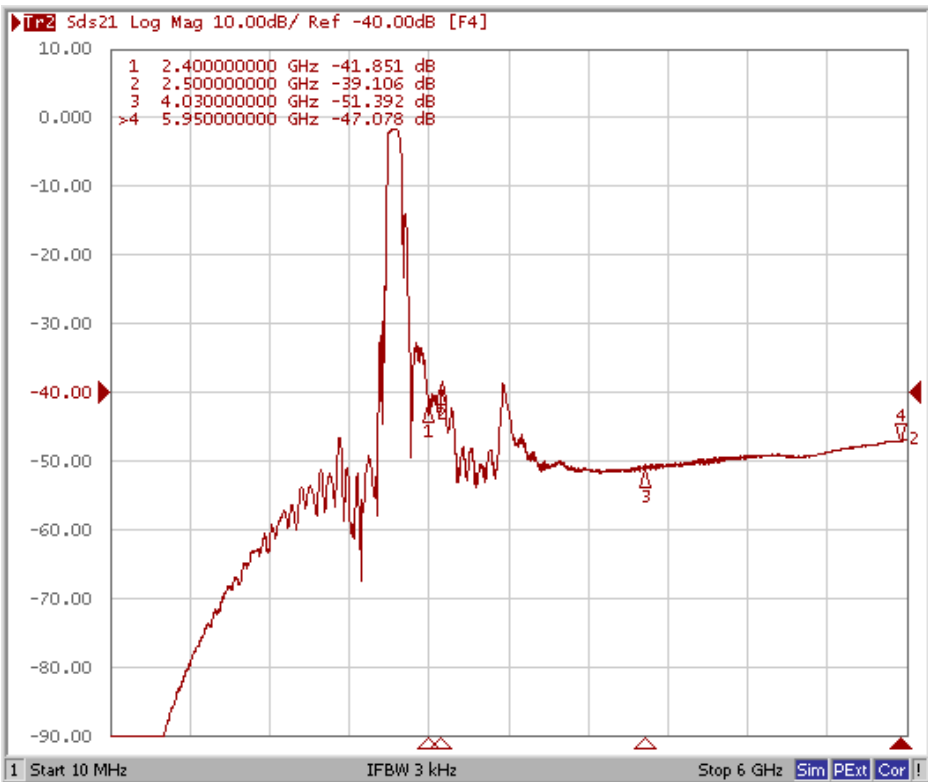
Ant to Rx (Phase balance)



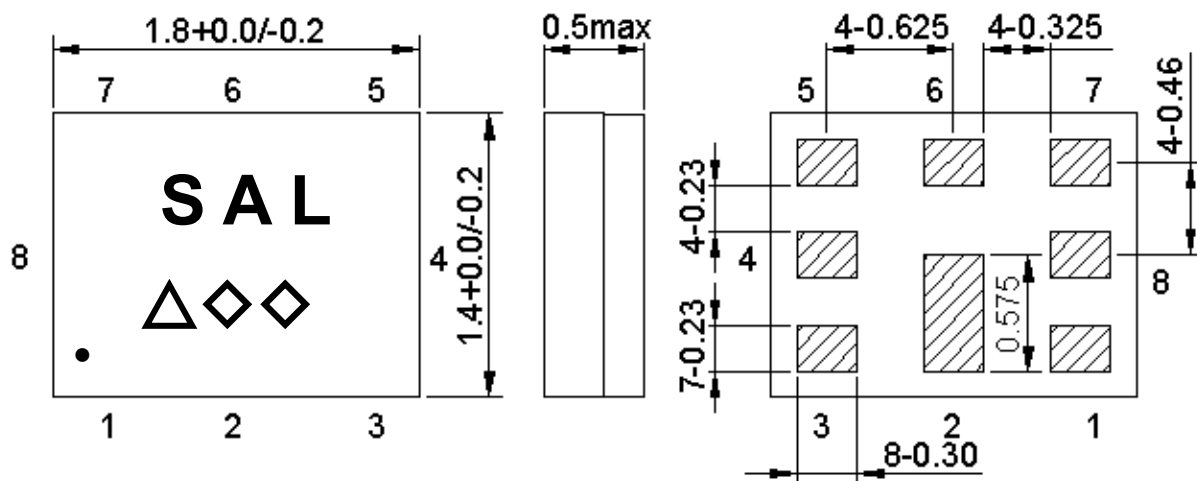
Tx to Ant (Wide span)



Ant to Rx (Wide span)



OUTLINE DRAWING:



Marking name : **SAL**

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

◇◇: Lot Code.

Product Date Code. Follow below table.

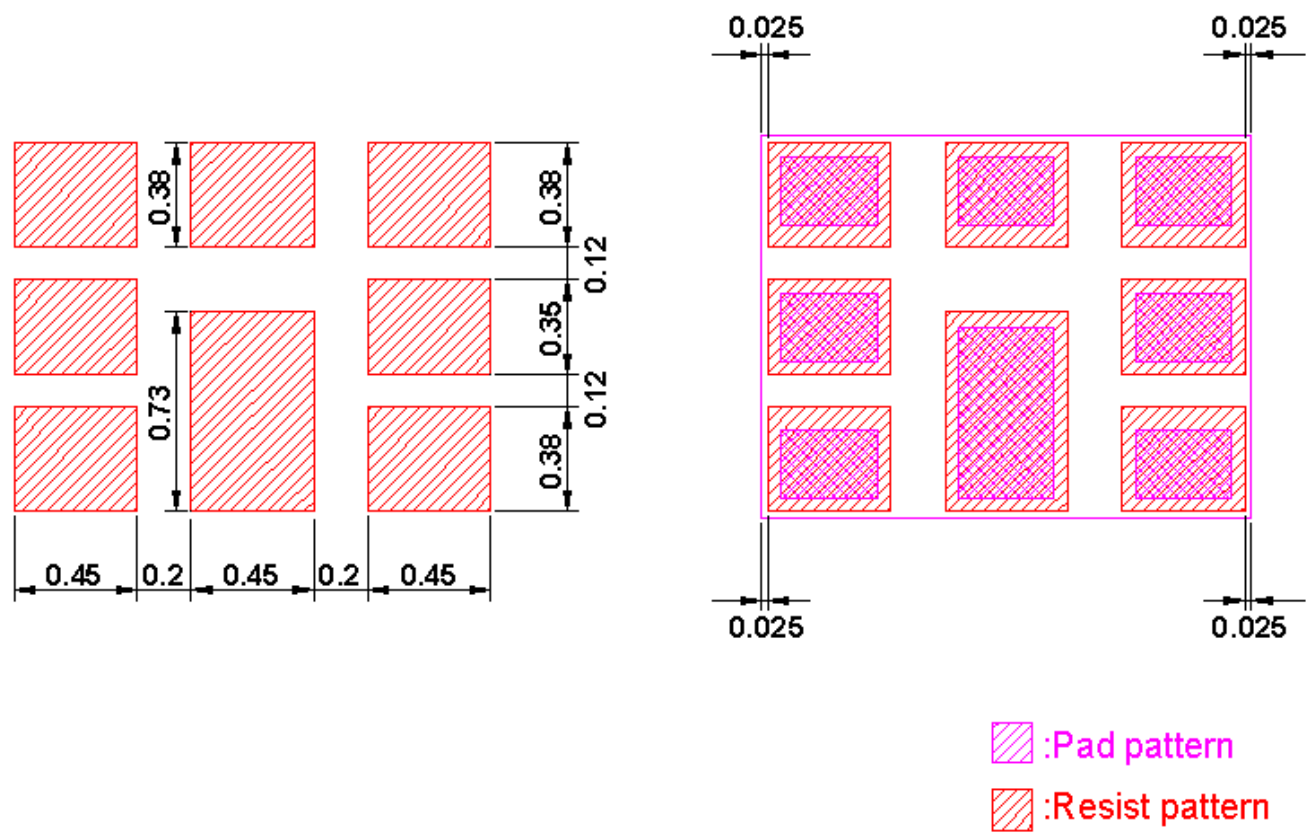
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	j	k	l	m

Pin Configuration

Pin No.	Pin name	Description
1	Rx	Receiver Pin (balanced)
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	Rx	Receiver Pin (balanced)

Figure 1. Dimensions and Pin assignment

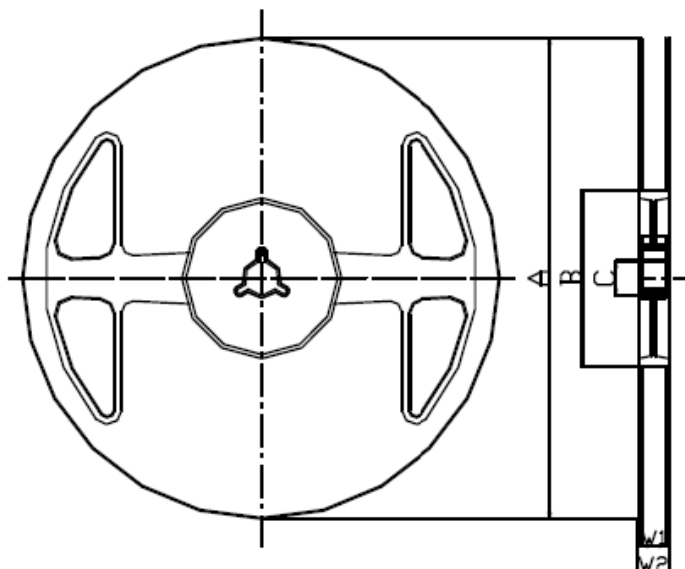
FOOTPRINT:



PACKING:

REEL DIMENSION

Reel Count:
7" = 3000
13" = 10,000



Materials of Reel

Material : Polystyrene + Carbon

Characteristics : Conforms to EIAJ-ET-7200A

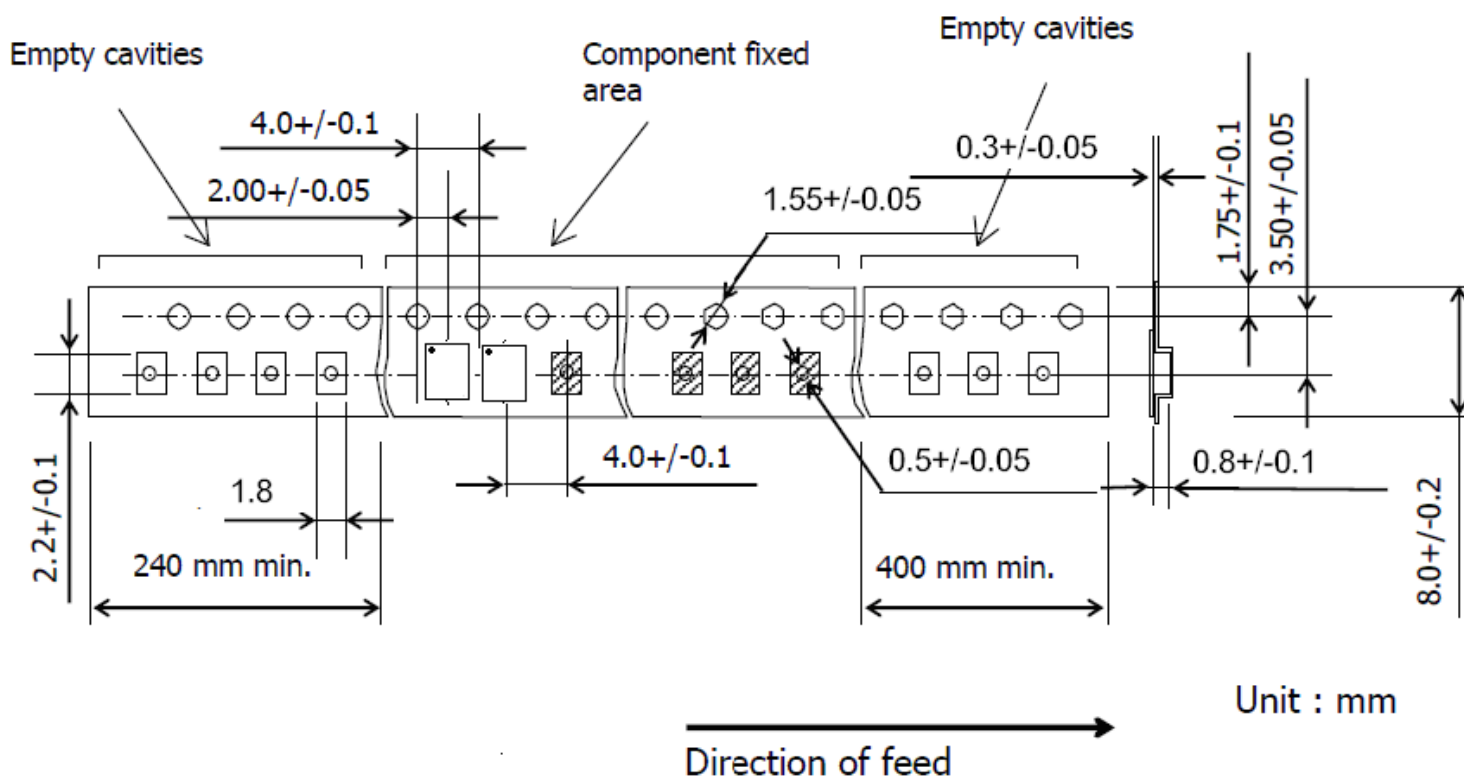
Color : Black

Surface resistance (reference value) : $10^9\Omega/\text{sq}$ Max.

Unit : mm

Code	Quantity	A	B	C	W1	W2
Z	3,000 pcs	$\phi 180.0 +0.0/-1.5$	$\phi 66.0 \pm 0.5$	$\phi 13.0 \pm 0.2$	$9.0 +1.0/-0.0$	11.4 ± 1.0

TAPE DIMENSION



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 245~260°C peak (min. 10sec).
4. Time : 2 times.

