



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

TEL: 886-3-4690038 FAX: 886-3-4697532

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## Product Specifications Approval Sheet


Product Description: SAW DPX 1733/2133 MHz LTE Band 4 SMD 1814

TST Part No.: TF0128A

Customer Part No.: \_\_\_\_\_

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: \_\_\_\_\_ Anne Chen 

Approved by: \_\_\_\_\_ Bob Chau 

Date: \_\_\_\_\_ 2017, 04, 10

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the change



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## SAW DPX 1733/2133 MHz LTE Band 4 SMD 1814(45 MHz BW)

MODEL NO.:TF0128A

REV.No.:2

### A. MAXIMUM RATING:

1. Operating temperature range: -20 °C to +85 °C
2. Storage temperature range: -20 °C to +85 °C
3. Input power : 29dBm (Ta=+50°C,10kh,CW )
4. Maximum DC Voltage: +/-3 V
5. Moisture Sensitivity Level: Level 1
6. ESD 50V(MM) 100V(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): 100//12nH Ω (Balanced)

Terminating impedance (Ant Port): 50//3.5nH Ω (Single-ended)

#### Tx to ANT (f<sub>T0</sub>=1733 MHz)

Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss(*1)	1710~1755 MHz	dB	-	1.6	2.2	
Amplitude ripple	1710~1755 MHz	dB	-	0.5	1.3	
VSWR	ANT	-	-	1.5	2.0	
	Tx	-	-	1.5	2.0	
<b>Attenuation:</b>						
1559~1563 MHz		dB	45	50	-	Compass
1565.42~1573.374 MHz		dB	45	50	-	Wideband GPS, lower side-lobe
1573.374~1577.466 MHz		dB	45	50	-	Regular GPS, main-lobe
1577.466~1585.42 MHz		dB	45	50	-	Wideband GPS, upper side-lobe
1597.5515~1605.886 MHz		dB	40	46	-	GLONASS
2110~2155 MHz		dB	45	52		Rx
3420~3520 MHz		dB	30	37		2fo
5130~5265 MHz		dB	20	28		3fo

**ANT to Rx (f<sub>T0</sub>=2133 MHz)**

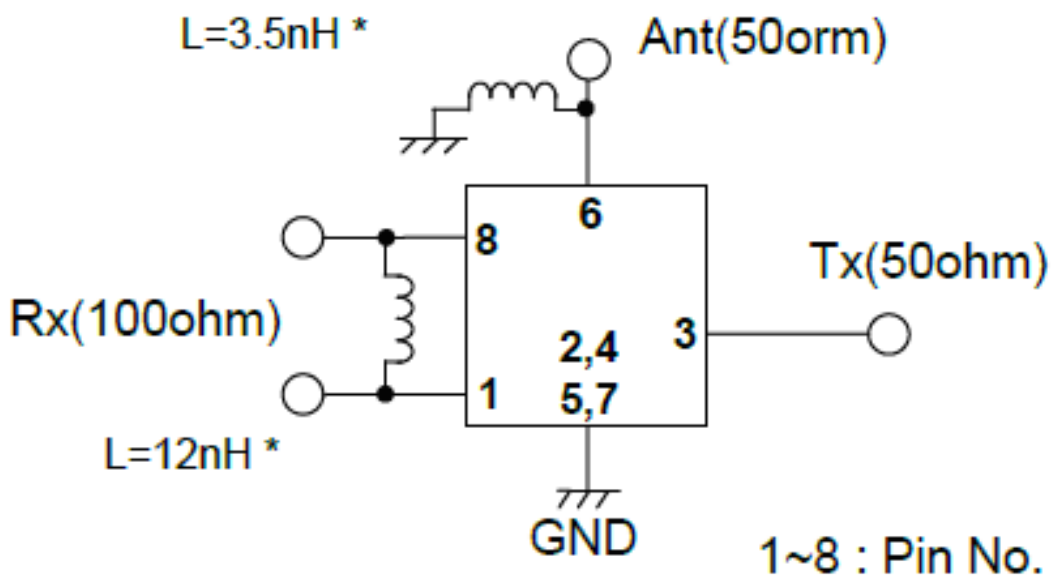
Parameters Description		Unit	Min	Typ	Max	Remarks
Insertion Loss(*1)	2110~2155MHz	dB		1.8	2.3	
Amplitude ripple	2110~2155MHz	dB		0.5	0.7	
Phase balance	2110~2155MHz	Deg	-10	-3/+1	+10	
Amplitude balance	2110~2155MHz	dB	-1.0	-0.4/0	+1.0	
VSWR	ANT			1.5	2.0	
	Rx			1.4	2.0	
<b>Attenuation:</b>						
1~1710 MHz		dB	45	59		
1710~1755 MHz		dB	45	63		Tx
2400~2500 MHz		dB	43	48		IMS 2.4G
4220~4310 MHz		dB	45	54		2x LO
6330~6465 MHz		dB	45	54		3x LO

**Tx to Rx**

Isolation	1710~1755 MHz	dB	55	62	-	
	2110~2155 MHz	dB	50	54	-	

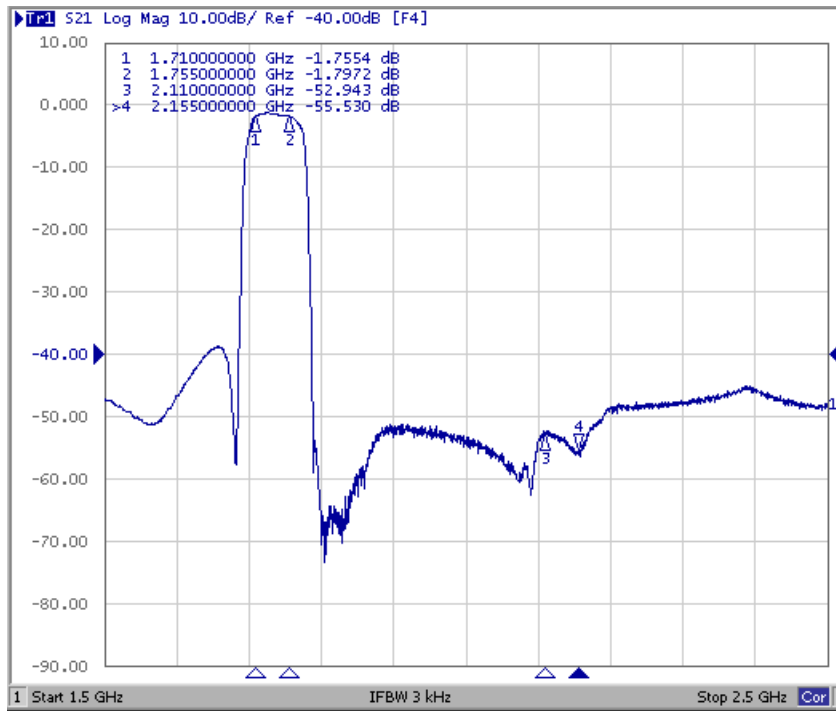
(\*1) Specification of insertion loss excludes loss that comes from the test board.

**C.Evaluation Circuit**

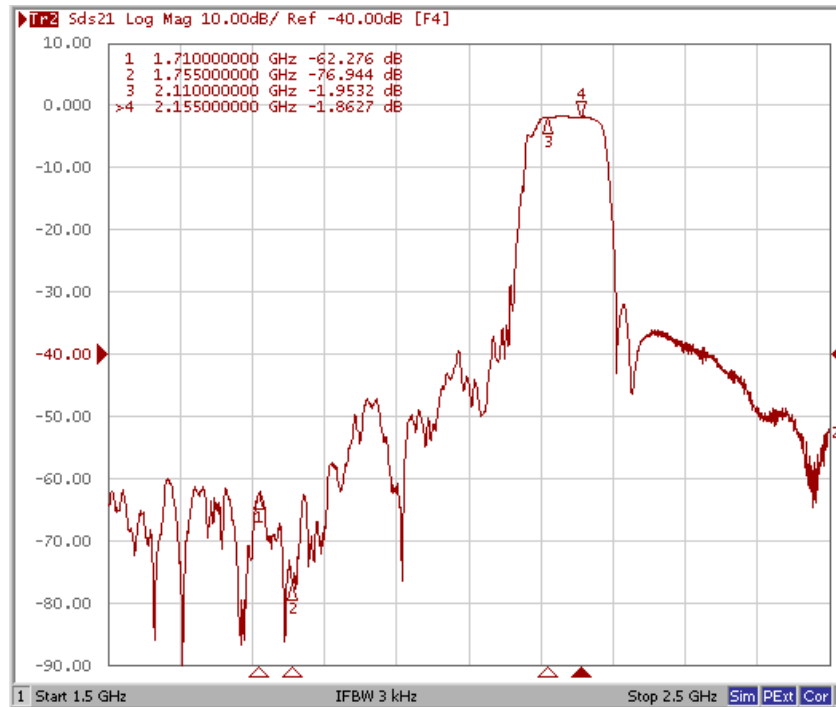


## D. FREQUENCY CHARACTERISTICS:

### Tx to Ant

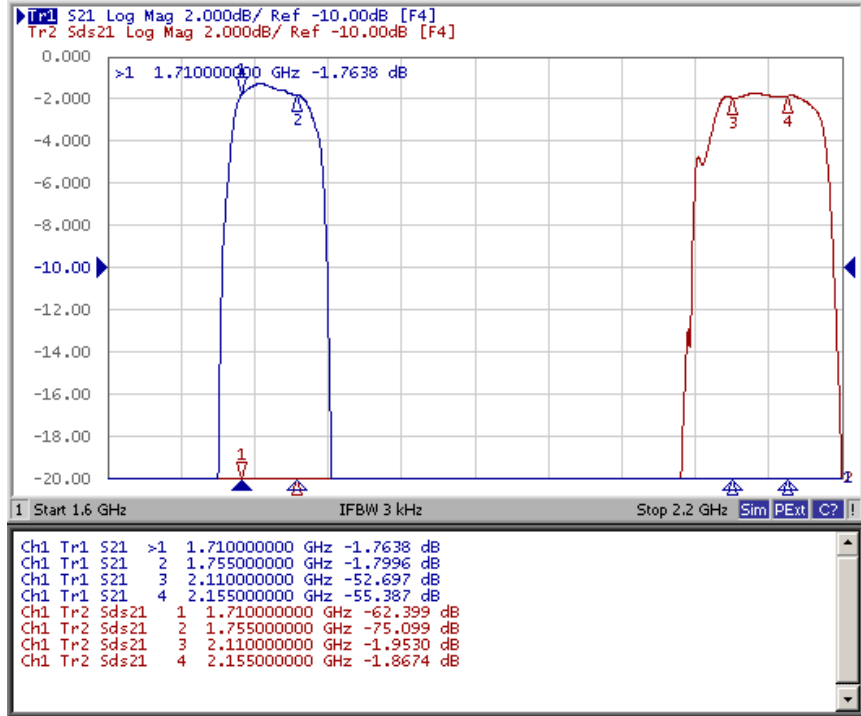


### Ant to Rx

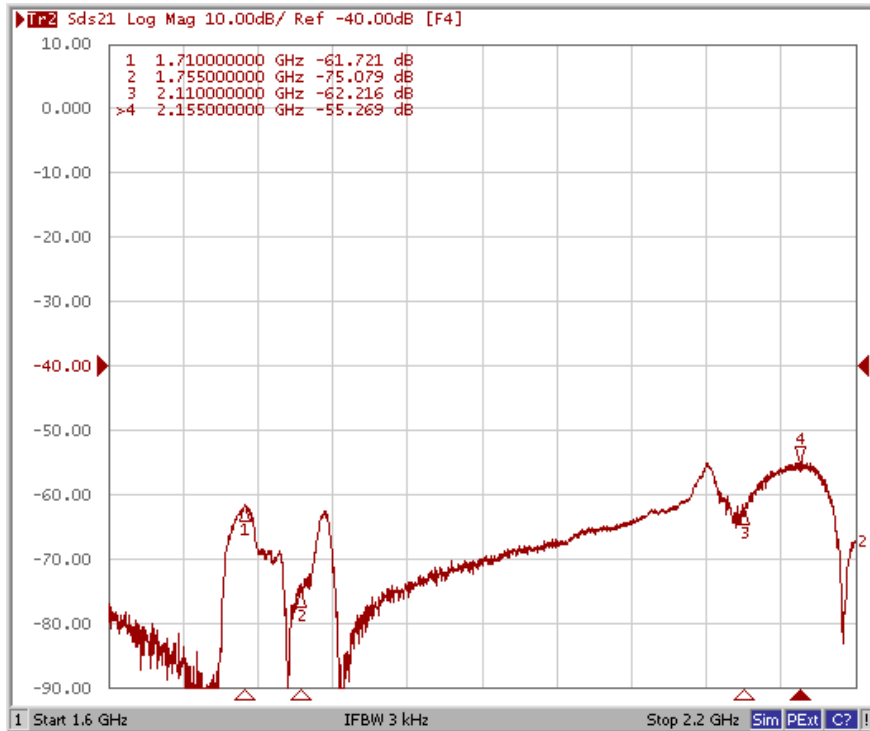


These data exclude loss that comes from the test board.

## Tx to Ant ,Ant to Rx

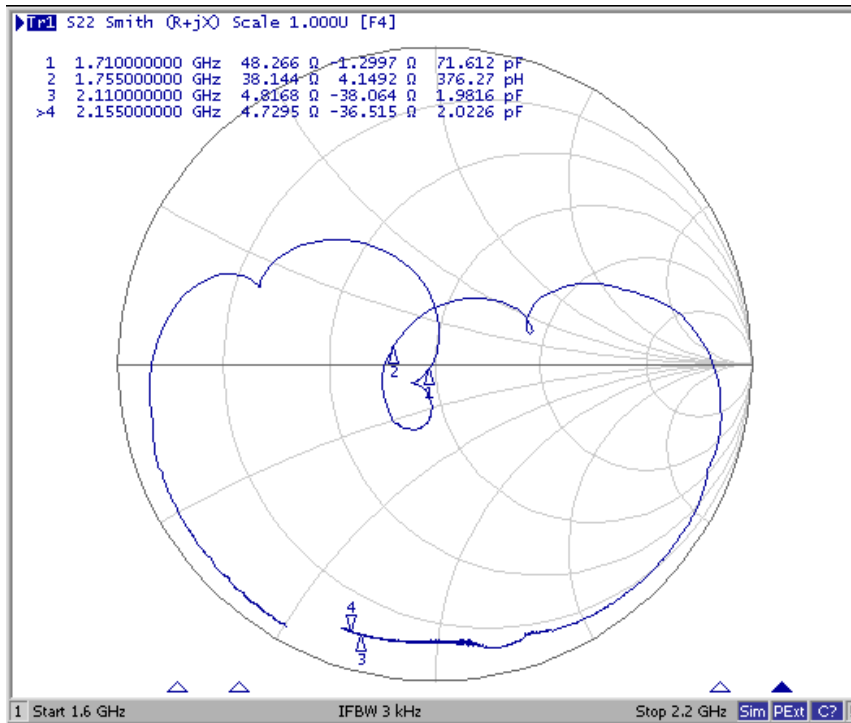
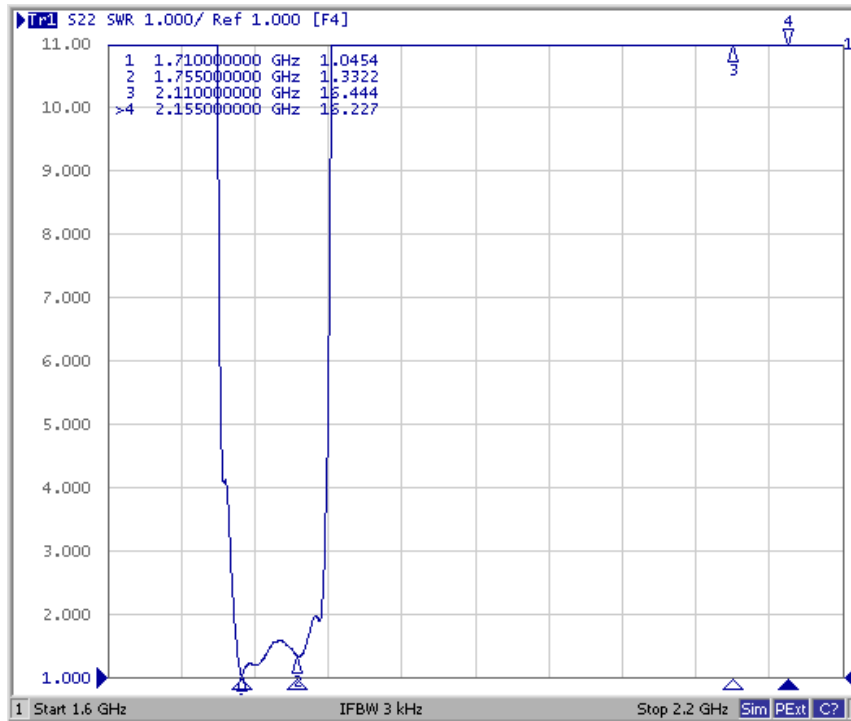


## Tx to Rx Isolation

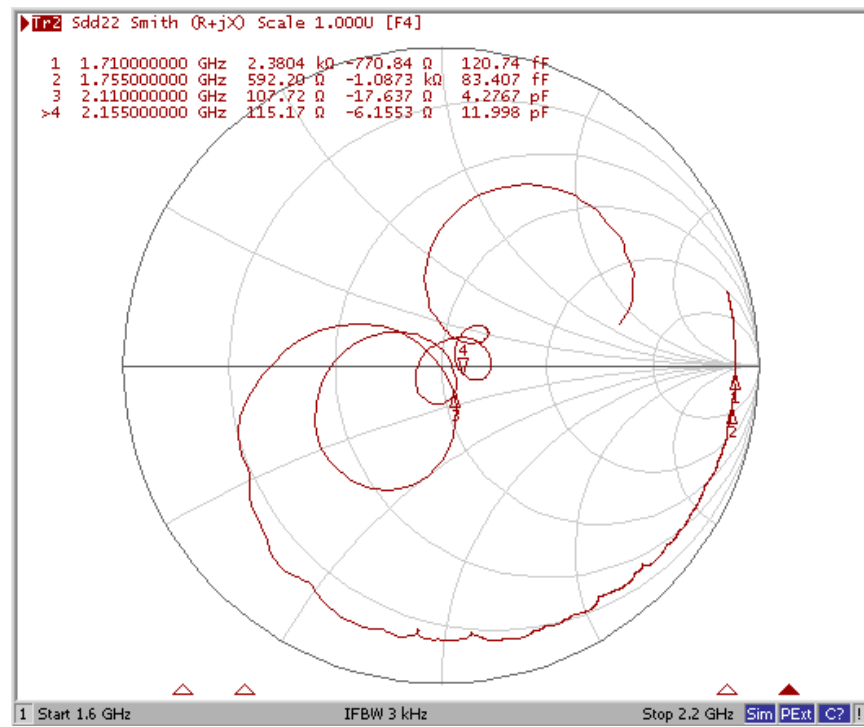
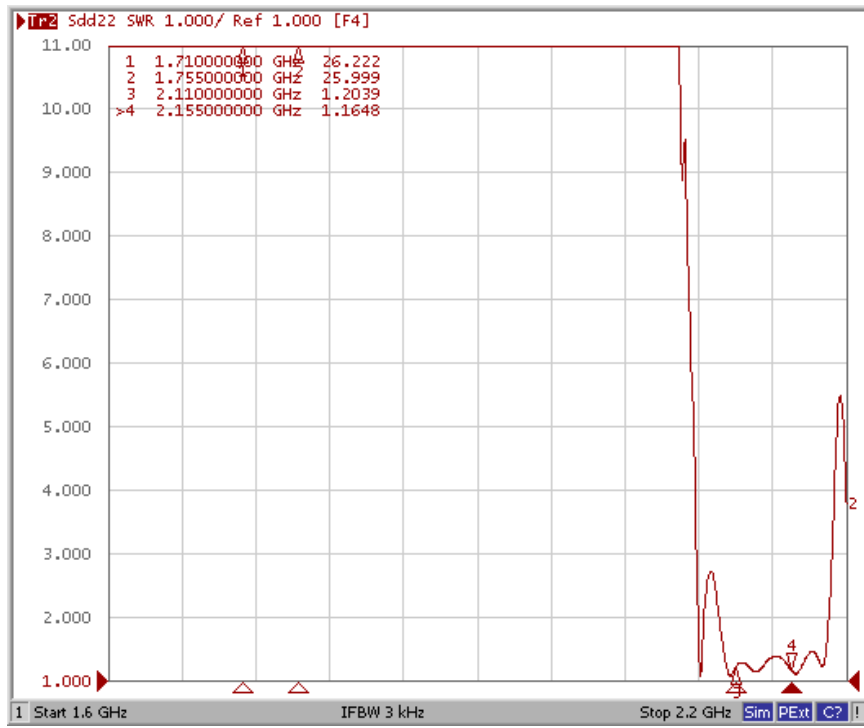


These data exclude loss that comes from the test board

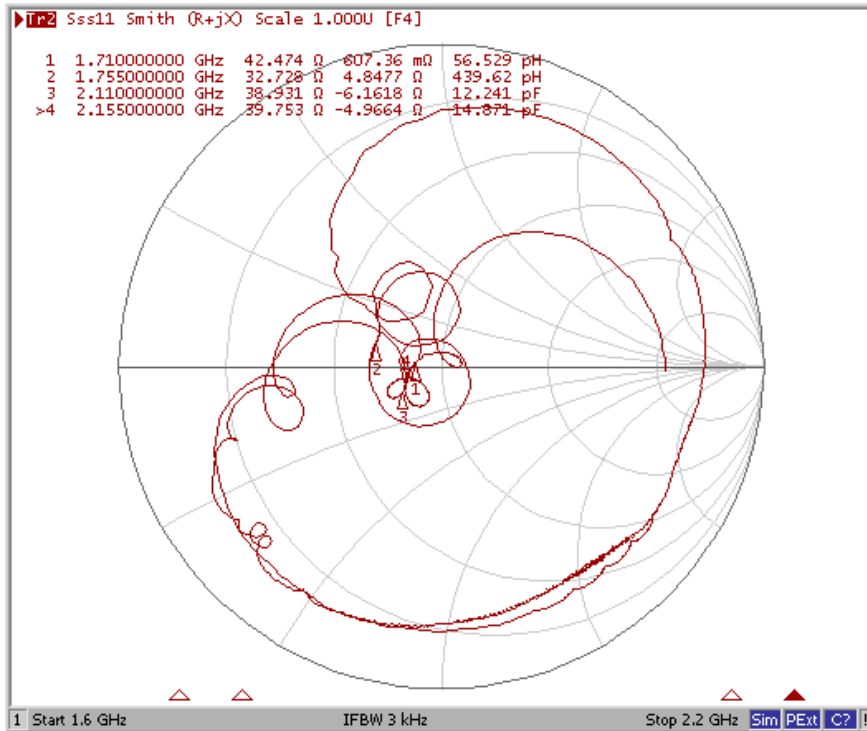
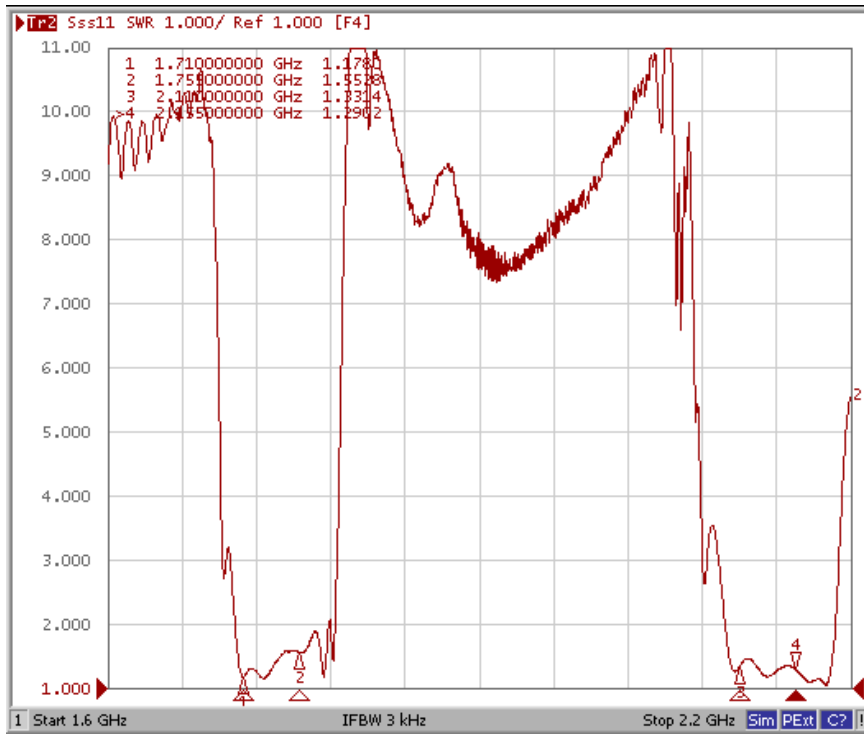
# Tx Port



# Rx Port

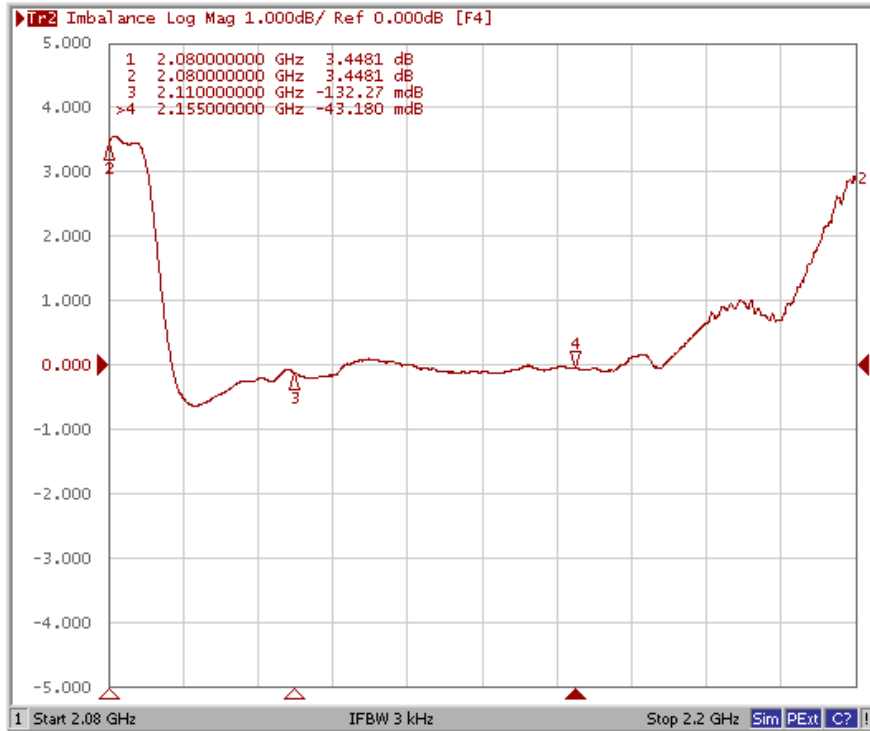


# Ant Port

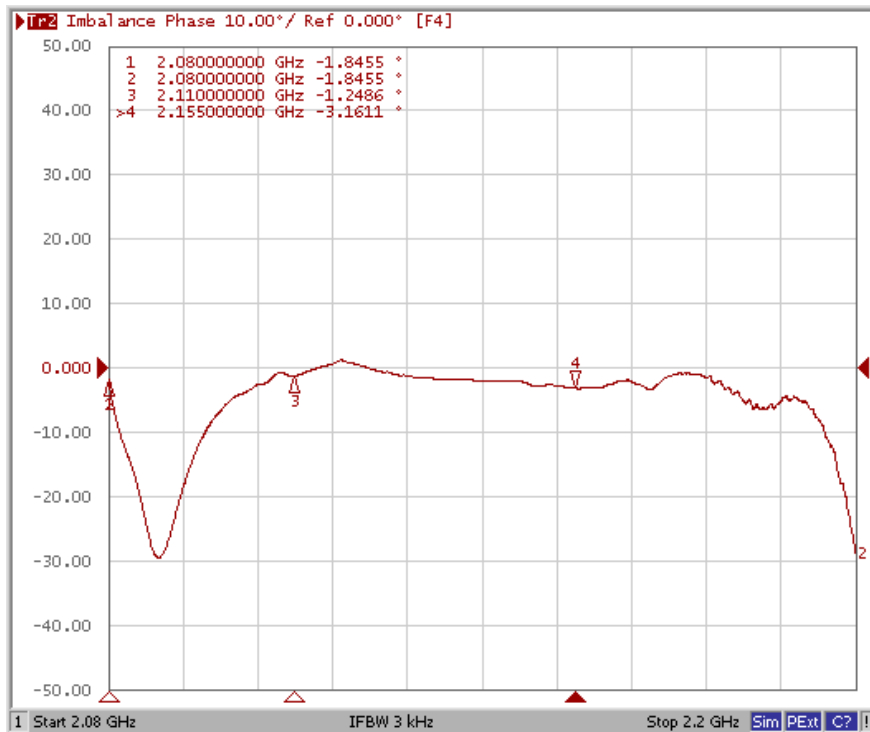




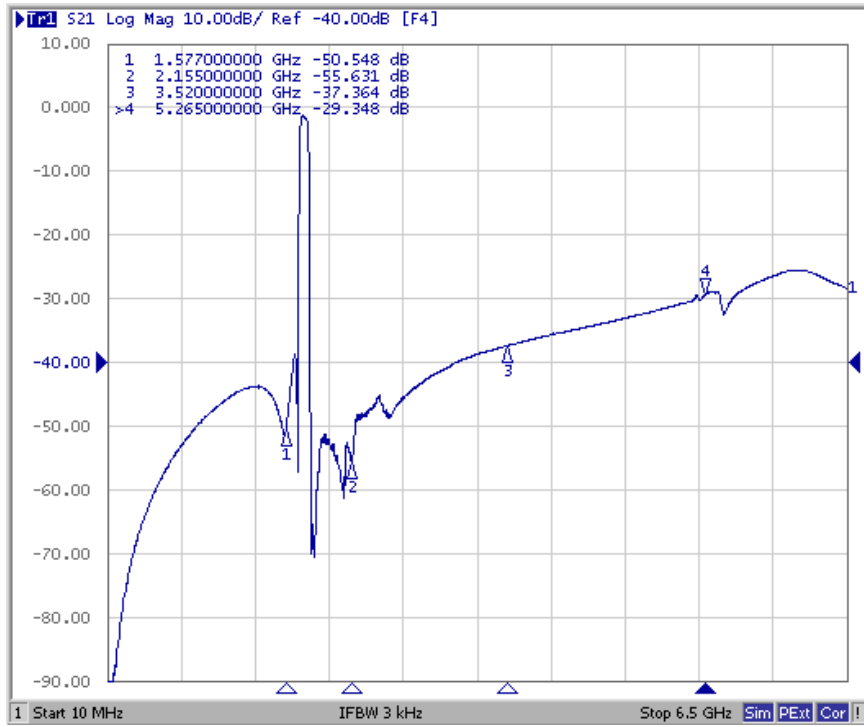
## Ant to Rx (Amplitude balance)



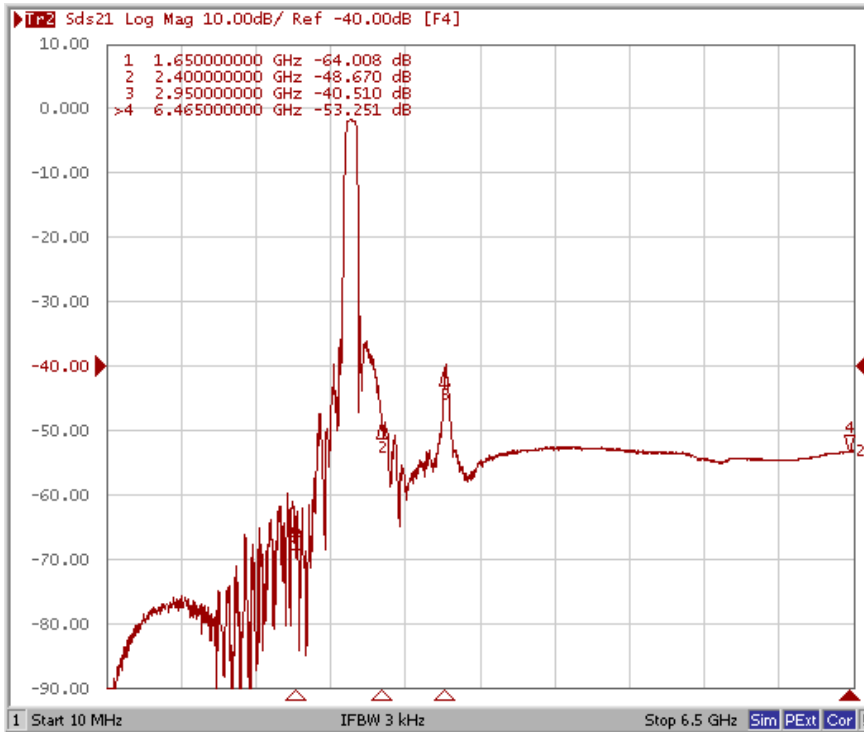
## Ant to Rx (Phase balance)



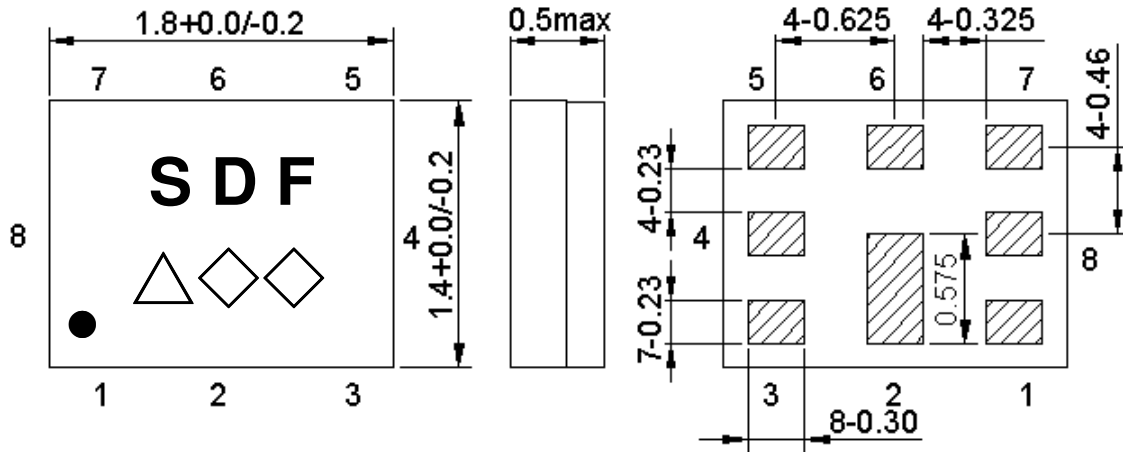
## Tx to Ant (Wide span)



## Ant to Rx (Wide span)



**E. OUTLINE DRAWIN:**



Marking name : **SDF**

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

◇◇: Lot Code.

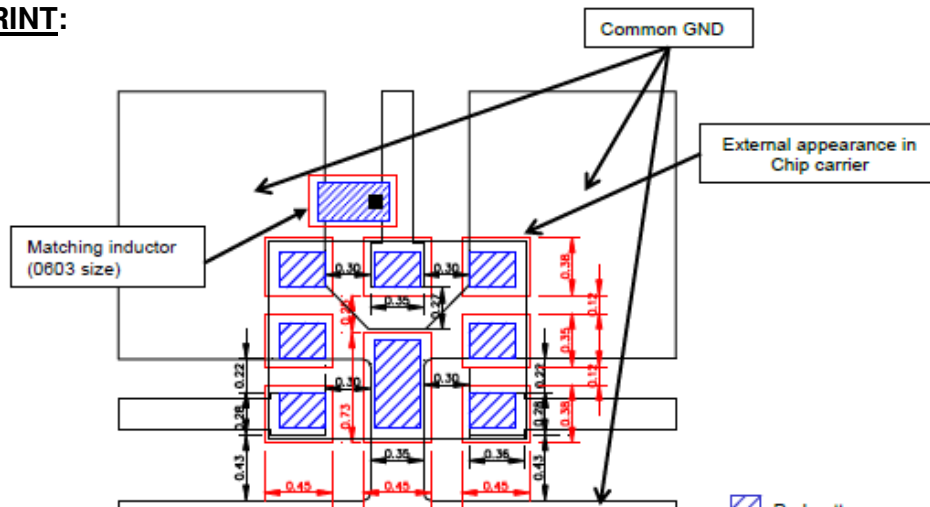
Product Date Code. Follow below table.

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:**

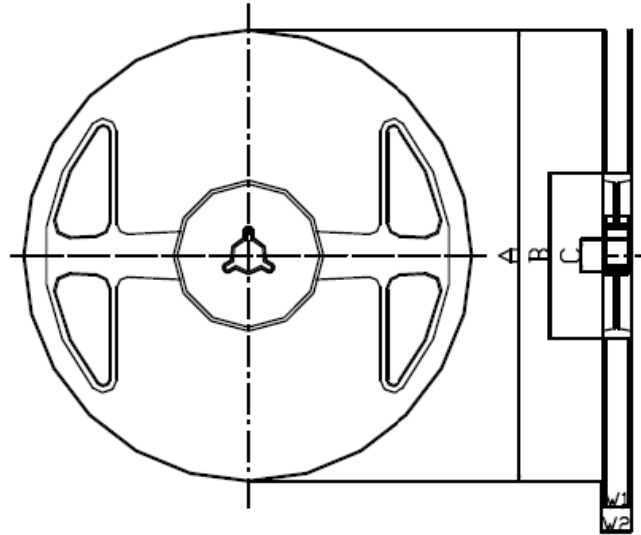
Pin No.	Pin Name	Description
1	Rx	Receive Pin
2	GND	Ground Pin
3	Tx	Transmitter Pin
4	GND	Ground Pin
5	GND	Ground Pin
6	ANT	Antenna Pin
7	GND	Ground Pin
8	GND	Ground Pin

**F. FOOTPRINT:**



**G. PACKING:**

**1. REEL DIMENSION**



**Materials of Reel**

Material : Polystyrene + Carbon

Characteristics : Conforms to EIAJ-ET-7200A

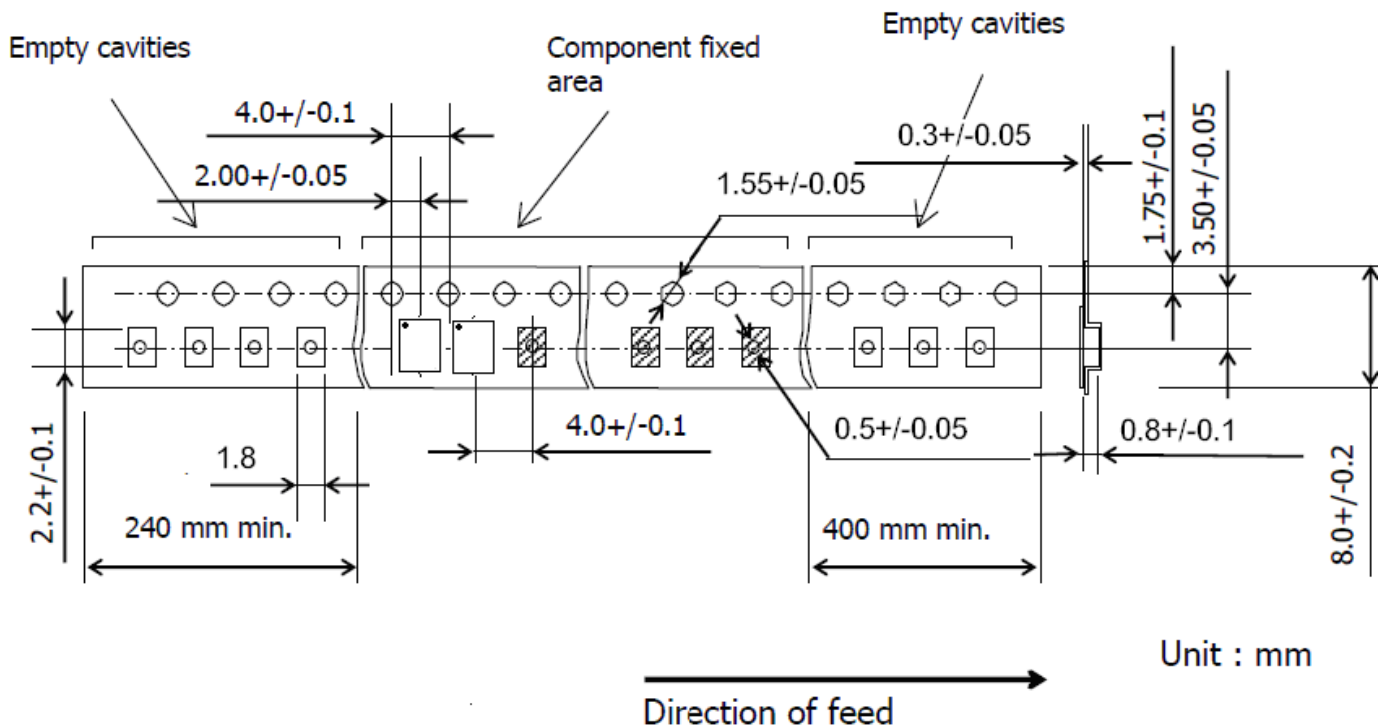
Color : Black

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

Unit : mm

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

**2. TAPE DIMENSION**



Unit : mm

## H. 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.

