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
E-mail: tstsales@mail.taisaw.com Web: www.taisaw.com

Product Specifications Approval Sheet

Product Description: SAW DPX 1950/2140 MHz LTE Band 1 SMD 1.8X1.4 mm (BW=59.04 MHz)

TST Part No.: TF0214A

Customer Part No.:_____

Customer signature required

Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by:_____ Anne Chen

Approved by:_____ Andy Yu

Date:_____ 05, 21, 2020

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 1950/2140 MHz Band 1 SMD 1.8X1.4 mm (BW=59.04 MHz)

MODEL NO.:TF0214A REV.2.0

A. MAXIMUM RATING:

1. Operating temperature range: -20 ℃ to +85 ℃
2. Storage temperature range: -40 ℃ to +100 ℃
3. Input power : 29dBm (Ta=+50deg C,10kh,CW)
4. Maximum DC Voltage: +/-5 V
5. Moisture Sensitivity Level: Level 1
6. ESD 50V(MM) 100V(HBM)

RoHS Compliant

Lead-free soldering

Electrostatic **S**ensitive **D**evice (**ESD**)

B. ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50//15nH Ω (Single-ended)
Terminating impedance (Rx Port): 50 Ω (Single-ended)
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		1920.48~1979.52MHz	dB(*1)	-	1.6	2.2	
Amplitude ripple		1920.48~1979.52MHz	dB	-	0.7	1.4	
VSWR	Tx	1920.48~1979.52MHz	-	-	1.6	2.1	
	ANT		-	-	1.4	2.0	
Attenuation:							
1559~1563 MHz			dB	37	41	-	
1565~1606 MHz			dB	37	40	-	
1805~1880 MHz			dB	10	25	-	
2010~2025 MHz			dB	16	22		
2110~2170 MHz			dB	44	58	-	
2400~2500 MHz			dB	33	38	-	
3840~3960 MHz			dB	25	34	-	

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

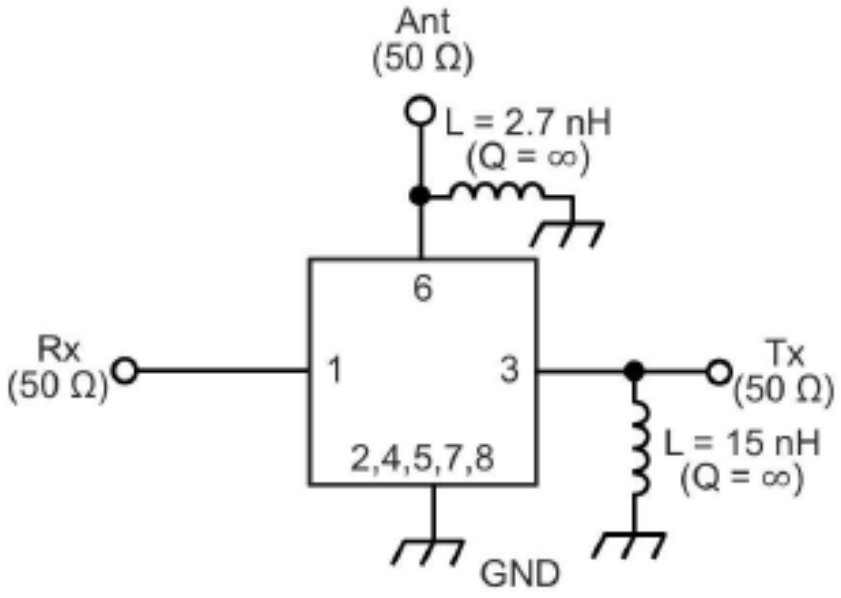
Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		2110.48~2169.52MHz	dB(*1)	-	1.7	2.2	
Amplitude ripple		2110.48~2169.52MHz	dB	-	0.6	1.4	
VSWR	ANT	2110.48~2169.52MHz	-		1.6	2.0	
	Rx		-		1.7	2.2	
Attenuation:							
1730~1790 MHz			dB	40	46	-	
1920~1980 MHz			dB	45	55	-	
1980~2015 MHz			dB	15	50	-	
2015~2075 MHz			dB	18	26	-	
2400~2500 MHz			dB	35	44		
4030~4150 MHz			dB	40	51		
5950~6130 MHz			dB	33	41		

Tx to Rx

Isolation	1920.48~1979.52 MHz	dB	54	58	-	
	2110.48~2169.52 MHz	dB	55	59	-	

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

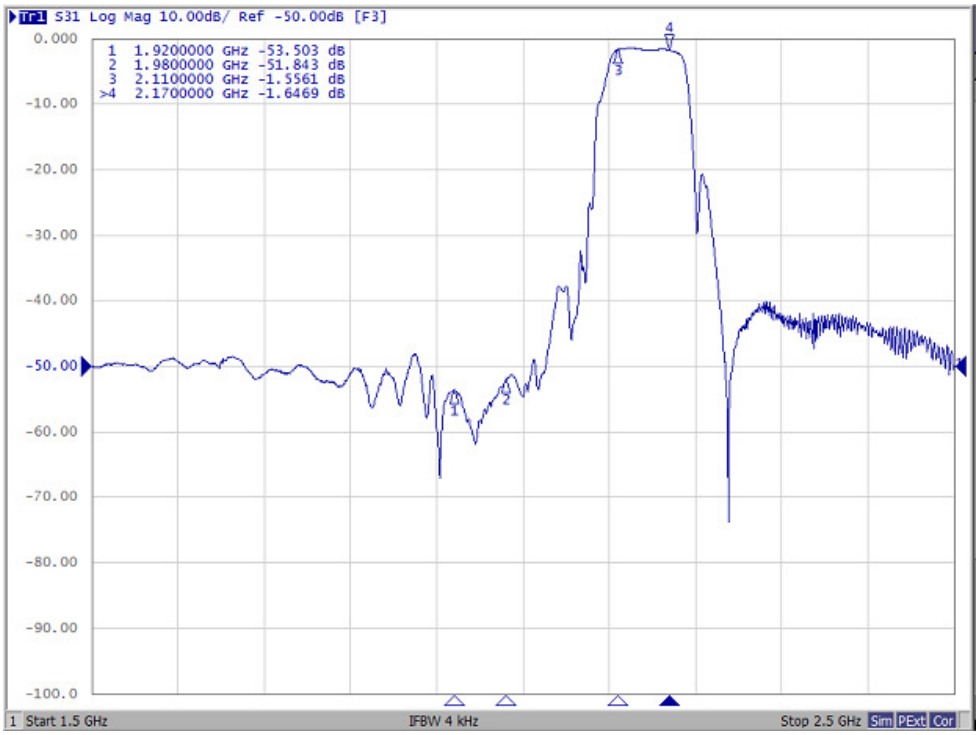
C.Evaluation Circuit



D. <u>FREQUENCY CHARACTERISTICS</u>:

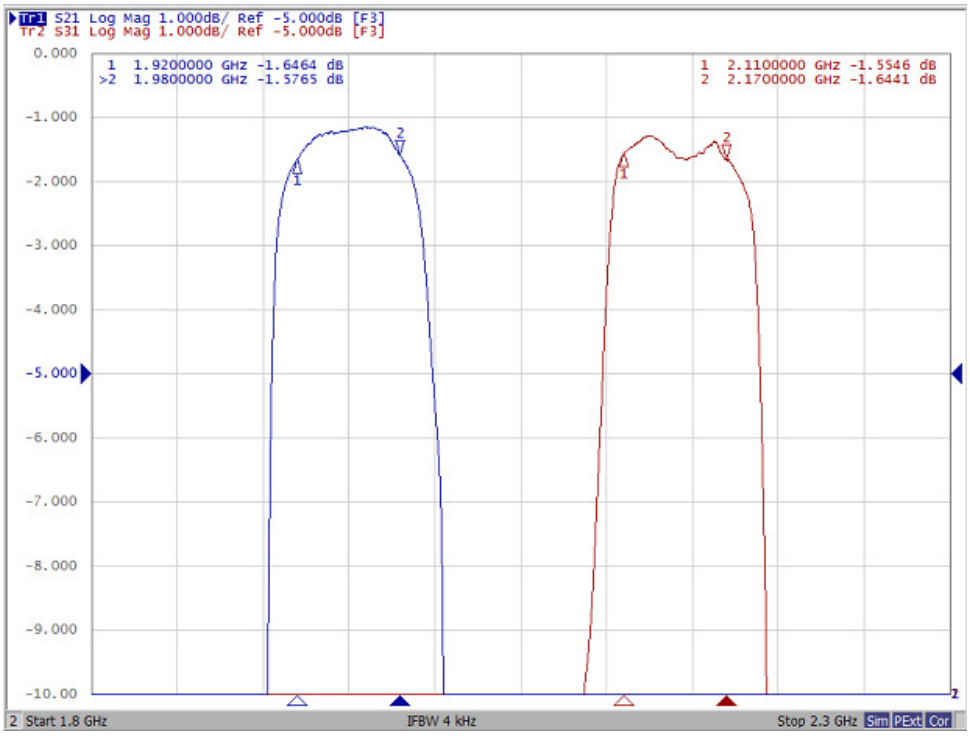
Tx to Ant

Ant to Rx

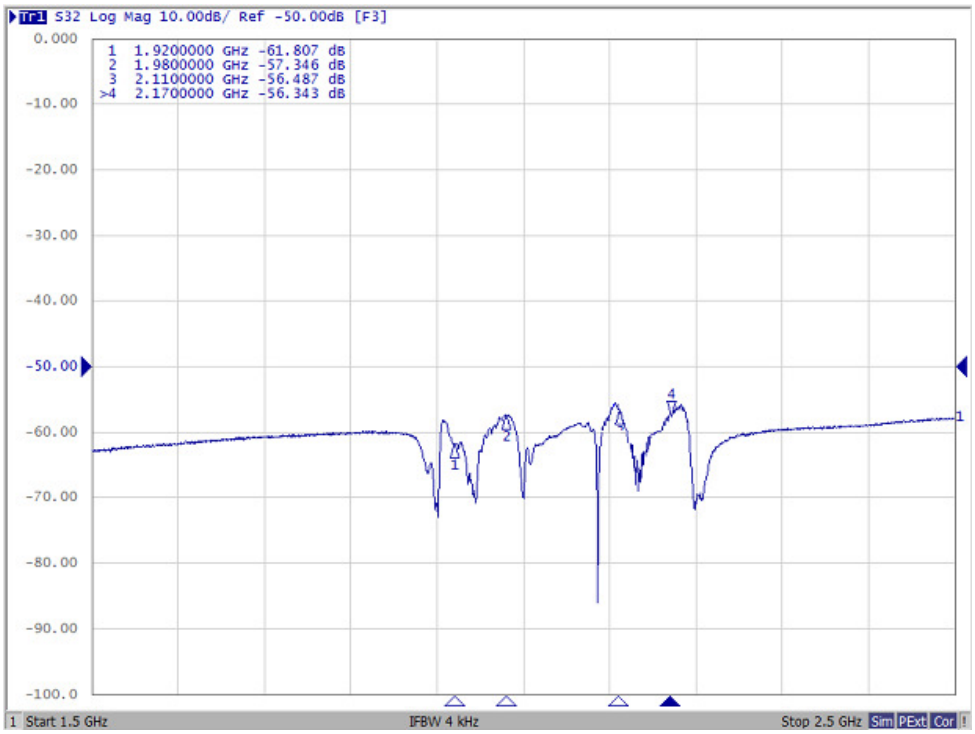


These data **exclude** loss that comes from the test board.

Tx to Ant ,Ant to Rx

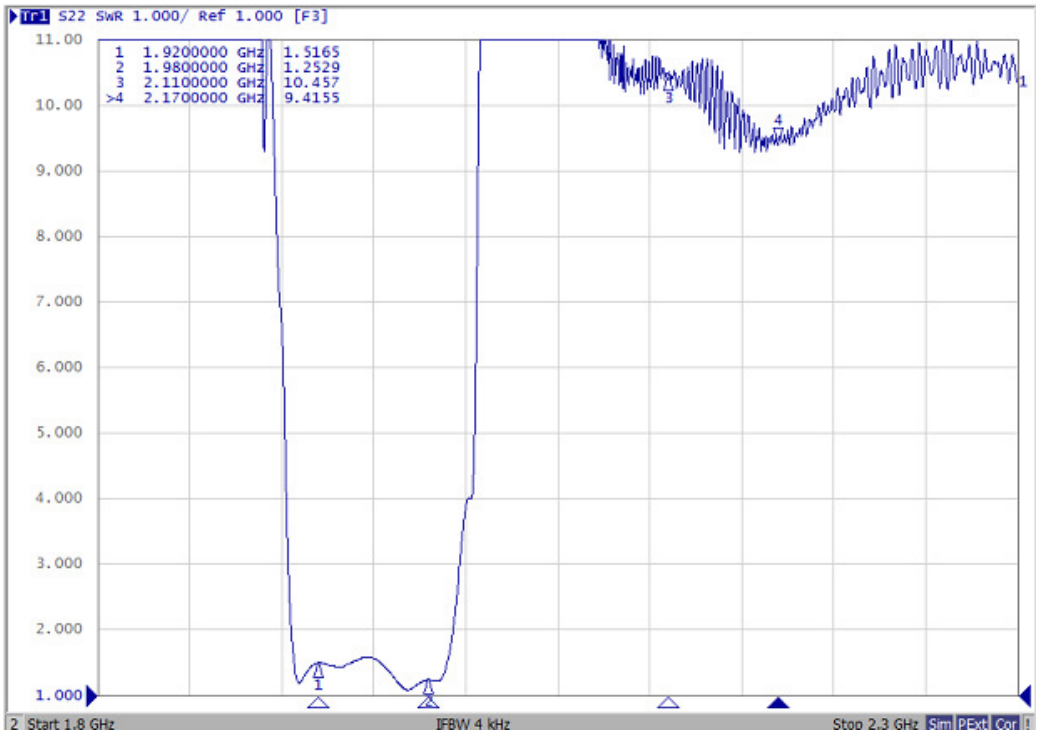


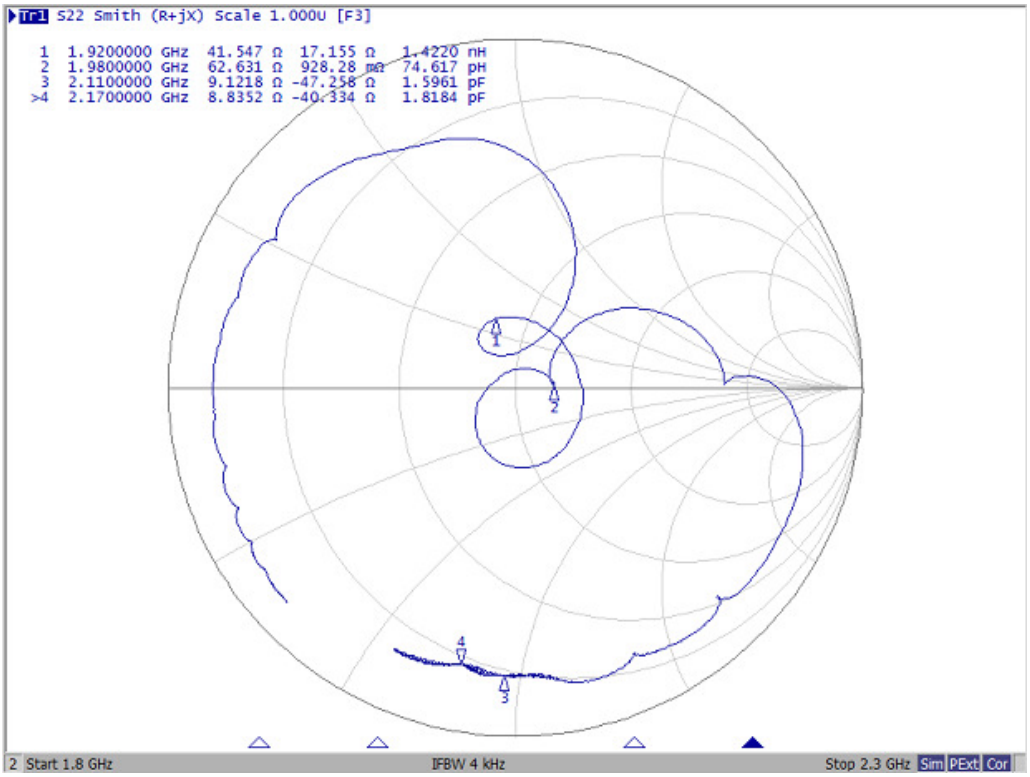
Tx to Rx Isolation



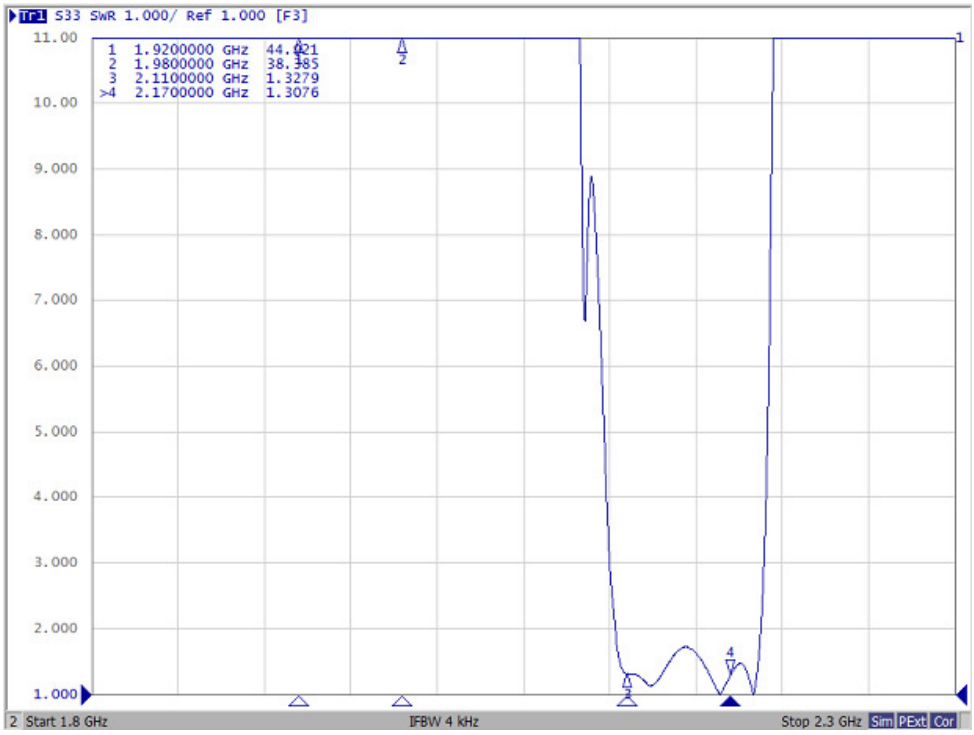
These data **exclude** loss that comes from the test board.

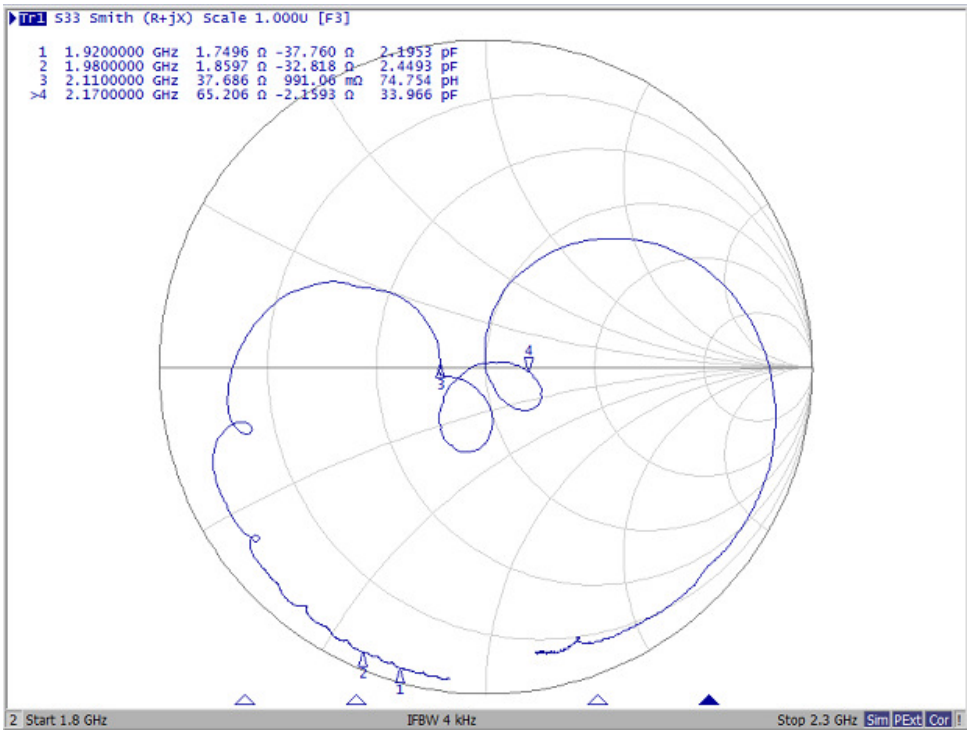
Tx Port


Tr1 S22 SWR 1.000/ Ref 1.000 [F3]
1 1.9200000 GHz 1.5165
2 1.9800000 GHz 1.2529
3 2.1100000 GHz 10.457
>4 2.1700000 GHz 9.4155
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 1.8 GHz
IFBW 4 kHz
Stop 2.3 GHz
Sim PExt Cor

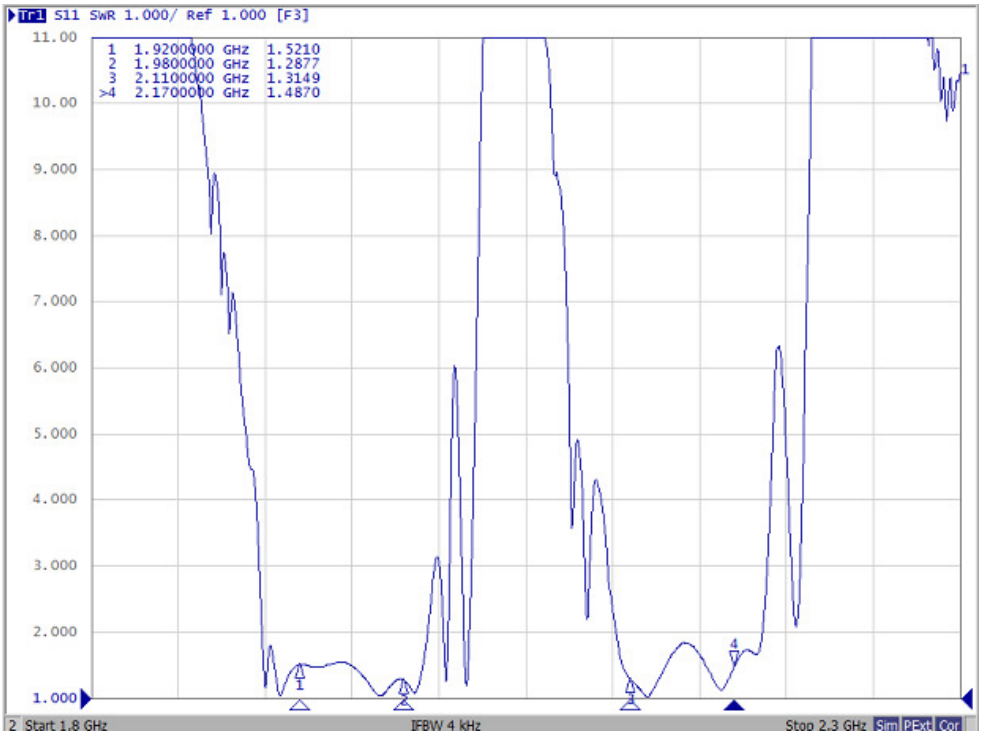

Tr1 S22 Smith (R+jX) Scale 1.000U [F3]
1 1.9200000 GHz 41.547 Ω 17.155 Ω 1.4220 nH
2 1.9800000 GHz 62.631 Ω 928.28 mΩ 74.617 pH
3 2.1100000 GHz 9.1218 Ω -47.258 Ω 1.5961 pF
>4 2.1700000 GHz 8.8352 Ω -40.334 Ω 1.8184 pF
2 Start 1.8 GHz
IFBW 4 kHz
Stop 2.3 GHz
Sim PExt Cor

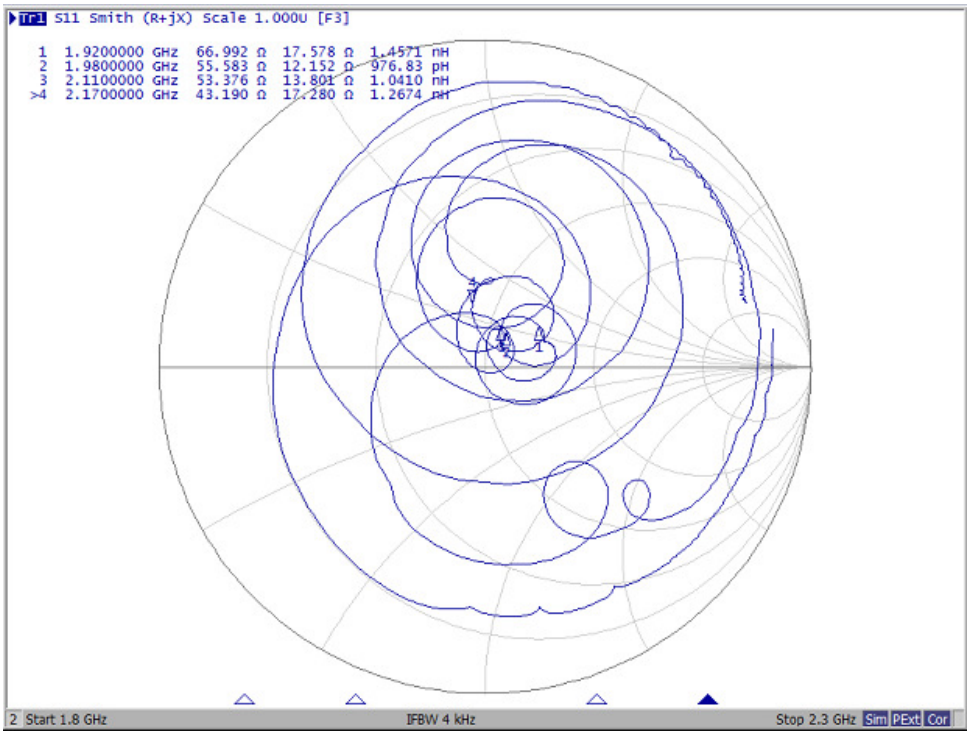
Rx Port


Tr1 S33 SWR 1.000/ Ref 1.000 [F3]
1 1.9200000 GHz 44.021
2 1.9800000 GHz 38.385
3 2.1100000 GHz 1.3279
>4 2.1700000 GHz 1.3076
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 1.8 GHz
IFBW 4 kHz
Stop 2.3 GHz
Sim PExt Cor

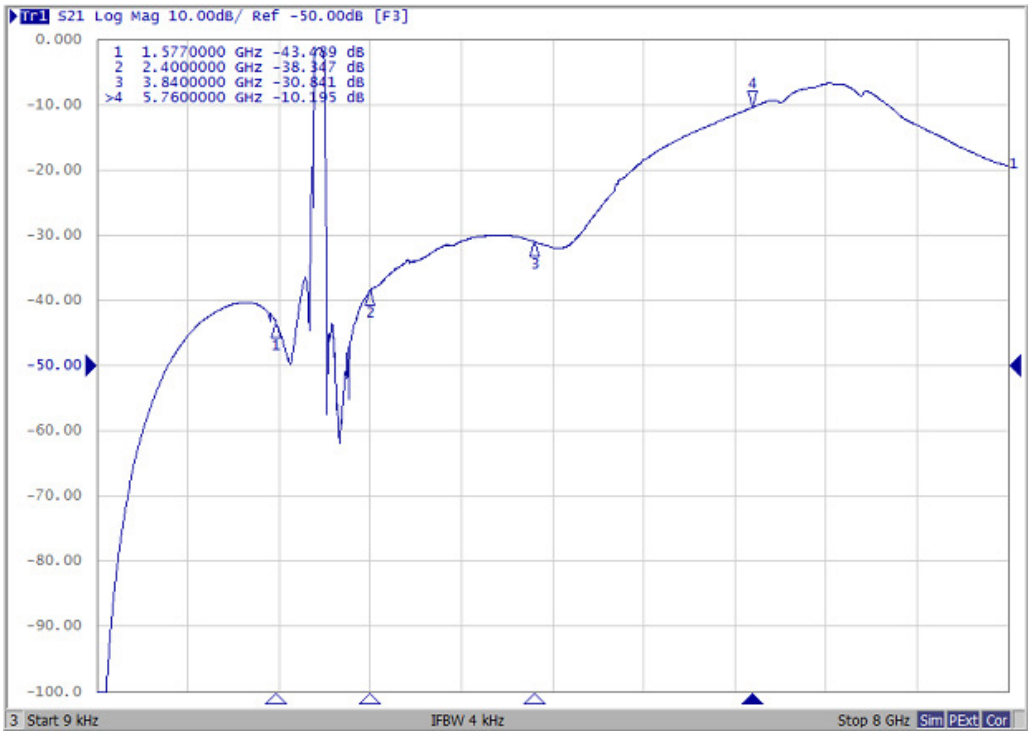

Tr1 S33 Smith (R+jX) Scale 1.000U [F3]
1 1.9200000 GHz 1.7496 Ω -37.760 Ω 2.1953 pF
2 1.9800000 GHz 1.8597 Ω -32.818 Ω 2.4493 pF
3 2.1100000 GHz 37.686 Ω 991.06 mΩ 74.754 pH
>4 2.1700000 GHz 65.206 Ω -2.1593 Ω 33.966 pF
2 Start 1.8 GHz
IFBW 4 kHz
Stop 2.3 GHz
Sim PExt Cor

Ant Port

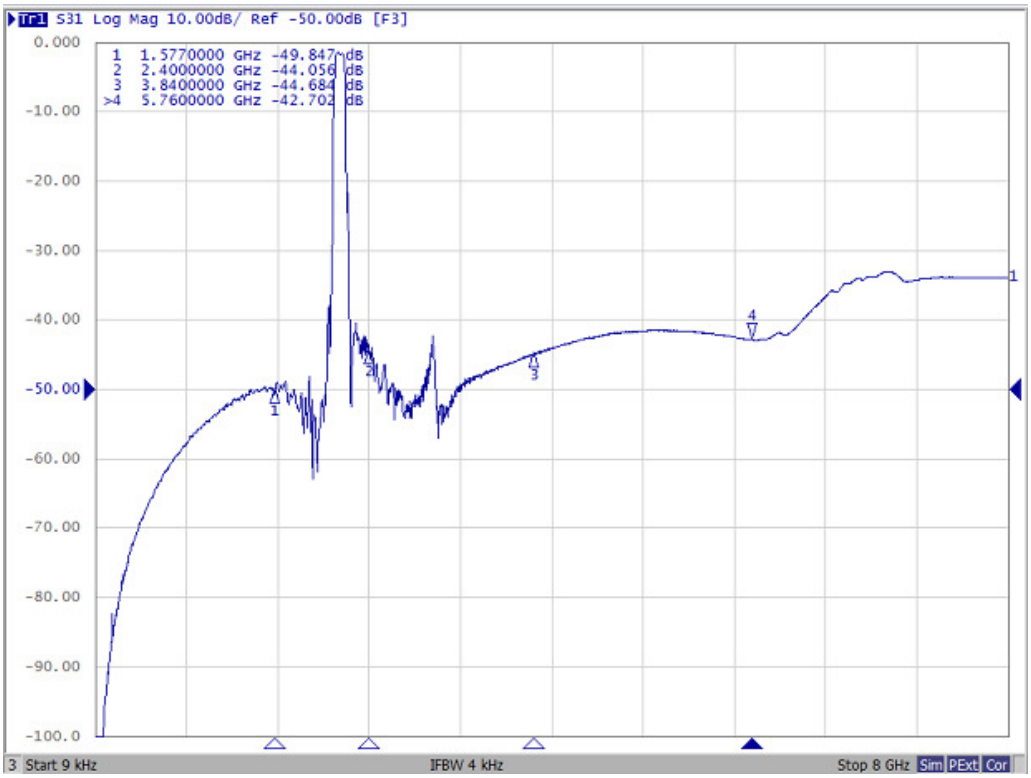

Tr1 S11 SWR 1.000/ Ref 1.000 [F3]
1 1.9200000 GHz 1.5210
2 1.9800000 GHz 1.2877
3 2.1100000 GHz 1.3149
>4 2.1700000 GHz 1.4870
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
2 Start 1.8 GHz
IFBW 4 kHz
Stop 2.3 GHz
Sim PExt Cor


Tr1 S11 Smith (R+jX) Scale 1.000U [F3]
1 1.9200000 GHz 66.992 Ω 17.578 Ω 1.4571 nH
2 1.9800000 GHz 55.583 Ω 12.152 Ω 976.83 pH
3 2.1100000 GHz 53.376 Ω 13.801 Ω 1.0410 nH
>4 2.1700000 GHz 43.190 Ω 17.280 Ω 1.2674 nH
2 Start 1.8 GHz
IFBW 4 kHz
Stop 2.3 GHz
Sim PExt Cor

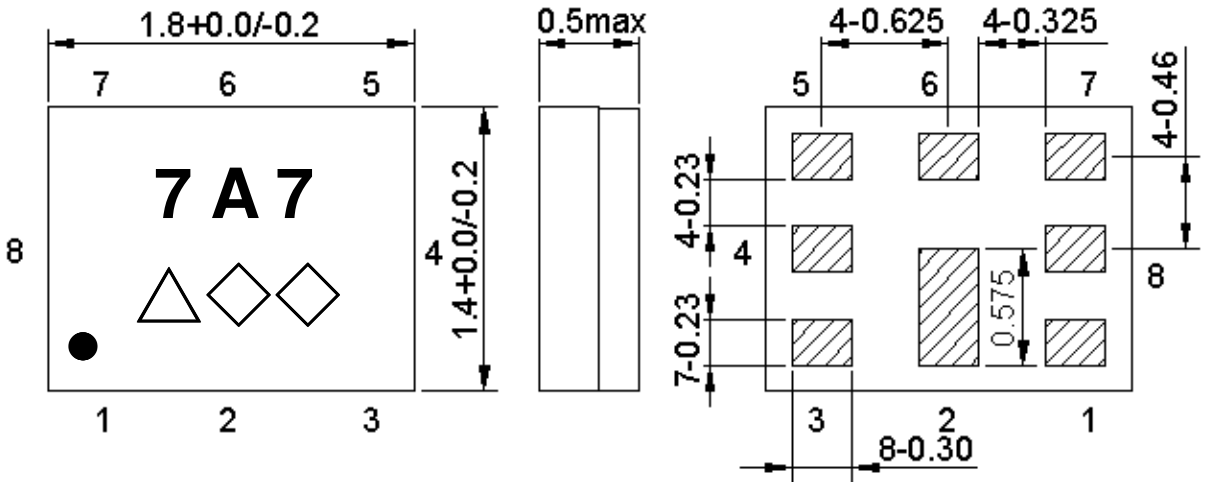
Tx to Ant (Wide span)



Ant to Rx (Wide span)



E.OUTLINE DRAWIN:



Not Specified Tolerance : +/-0.1 mm
Unit : mm

Marking name : **7A7**

△: Date code(2020 May → s ,…….., 2013 Dec→m.)

◇◇: Lot Code.

Product Date Code. Follow below table. (4-year cycle)

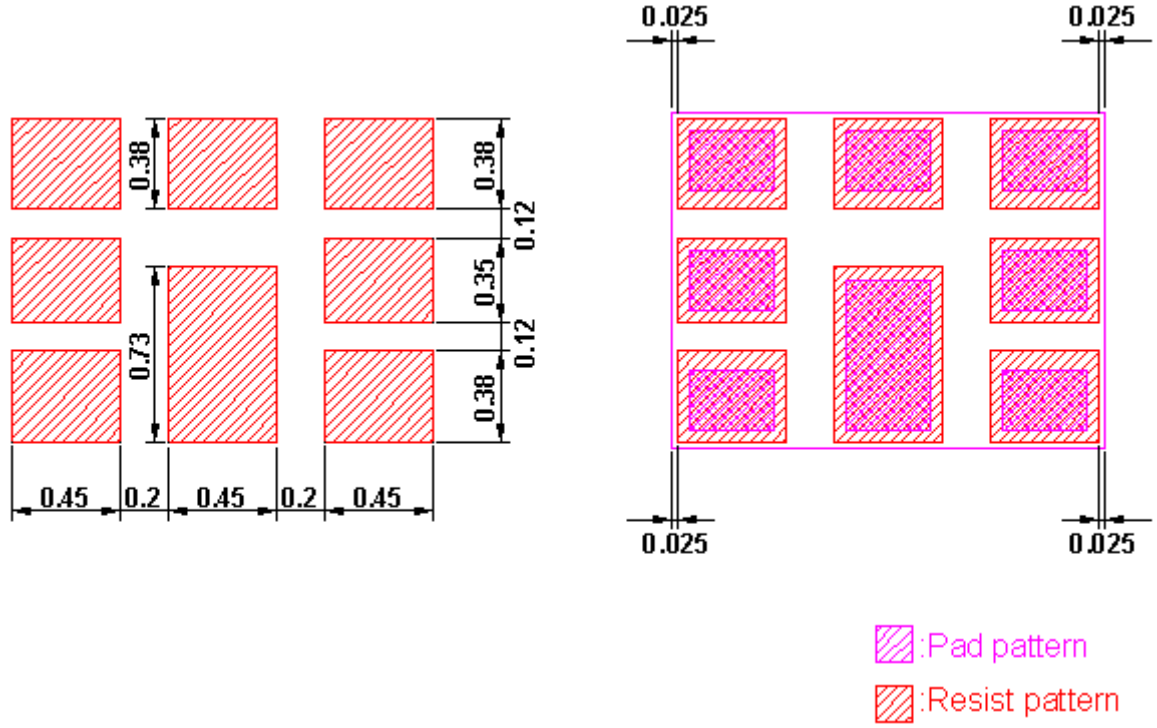
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020	n	p	q	r	s	t	u	v	w	x	y	z
2021	A	B	C	D	E	F	G	H	J	K	L	M
2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2023	a	b	c	d	e	f	g	h	j	k	l	m

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

Figure 1. Dimensions and Pin assignment

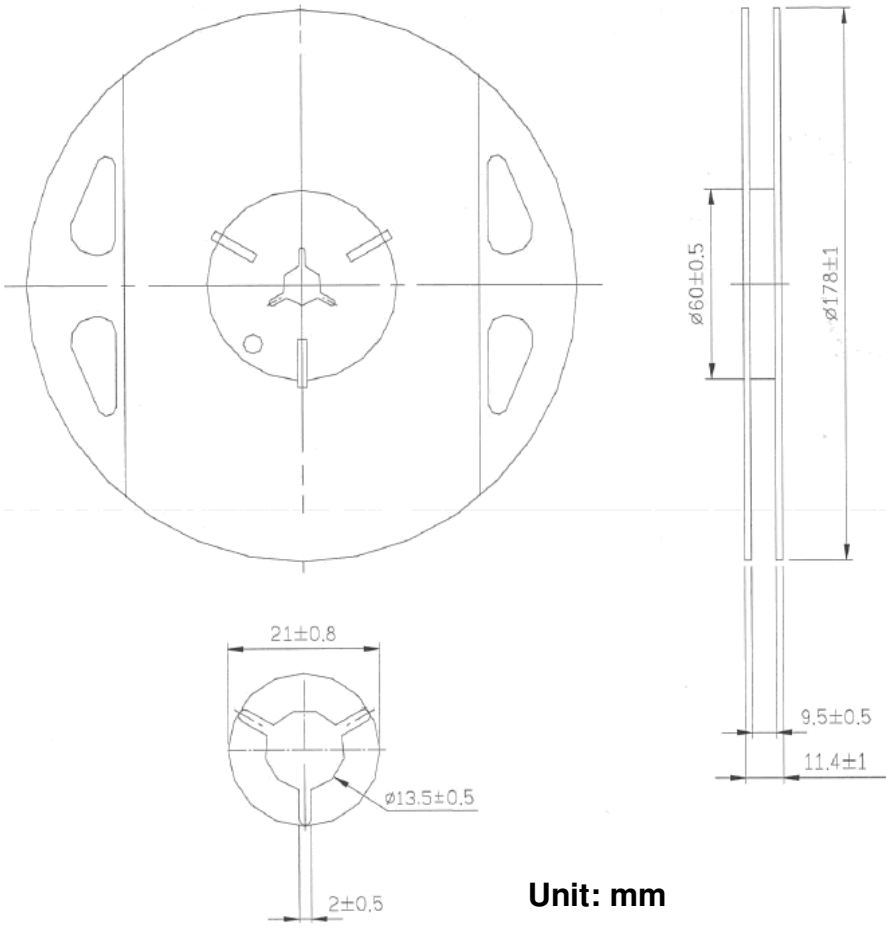
F. FOOTPRINT:


0.38
0.38
0.12
0.35
0.12
0.73
0.38
0.45
0.2
0.45
0.2
0.45
0.025
0.025
0.025
0.025
:Pad pattern
:Resist pattern

G. PACKING:

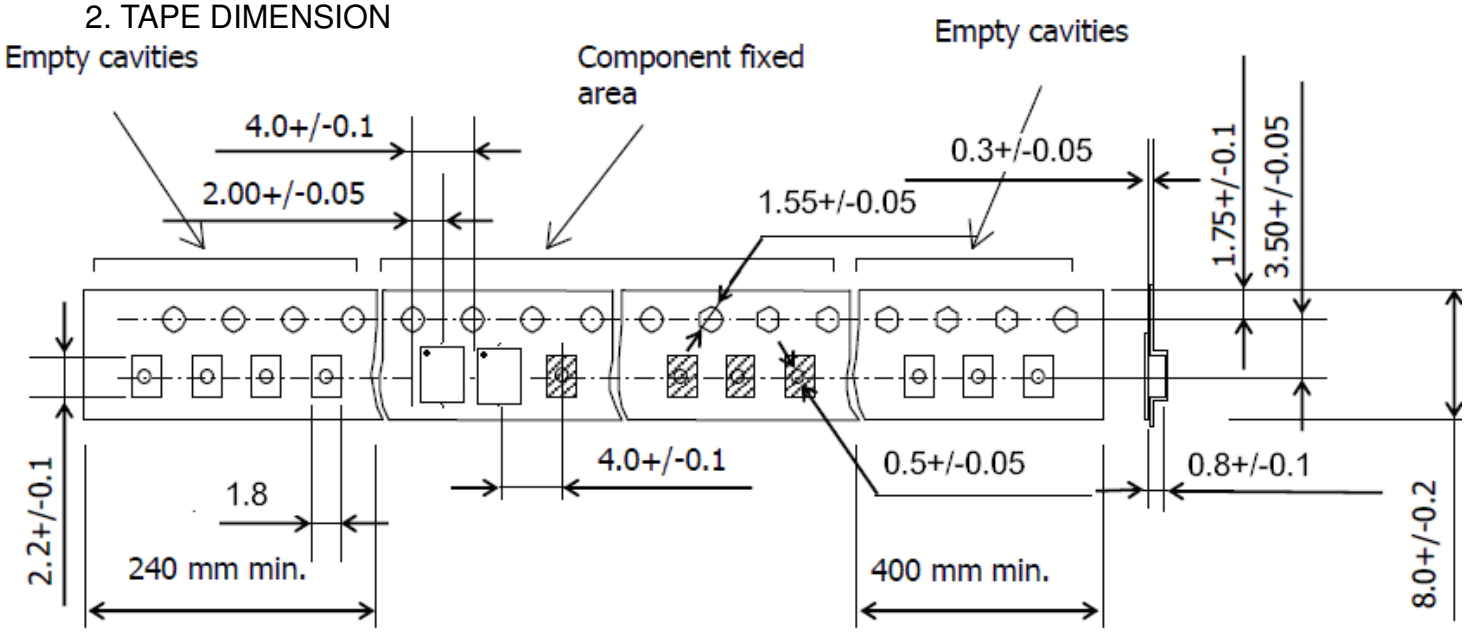
1. REEL DIMENSION

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



Unit: mm

2. TAPE DIMENSION



H. RECOMMENDED REFLOW PROFILE :

1. Preheating shall be fixed at 150~180℃ for 60~90 seconds.
2. Ascending time to preheating temperature 150℃ shall be 30 seconds min.
3. Heating shall be fixed at 220℃ for 50~80 seconds and at 245~260℃ peak (min. 10sec).
4. Time : 2 times.