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 897.5/942.5 MHz LTE Band 8 SMD 1.8X1.4 mm(BW=34.52MHz)

TST Part No.: TF0209A

Customer Part No.:_____

Customer signature required

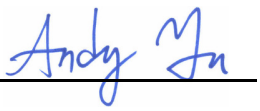
Company:_____

Division:_____

Approved by :_____

Date:_____

Checked by:_____ Anne Chen 

Approved by:_____ Andy Yu 

Date:_____ 2020 . 02 . 08

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 897.5/942.5 MHz Band 8 SMD 1.8X1.4 mm (BW=34.52 MHz)

MODEL NO.:TF0209A REV.1.0

A. MAXIMUM RATING:

1. Maximum DC Voltage: 5 V
2. Operating temperature range: -30 ℃ to +85 ℃
3. Storage temperature range: -40 ℃ to +100 ℃
4. Input power : 29dBm (Ta=+50℃,10000h,LTE 5MHz modulation)
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6.ESD 100V(MM) 200V(HBM)

RoHS Compliant

Lead-free soldering

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

B. ELECTRICAL CHARACTERISTICS:

Terminating impedance (Tx Port): 50//22nH Ω(Single-ended)
Terminating impedance (Rx Port): 50 Ω (Single-ended)
Terminating impedance (Ant Port): 50//8.2nH Ω (Single-ended)

Tx to ANT (f_{T0}=897.5 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
Insertion Loss		882.4~912.6MHz	dB(*2)	-	1.3	2.4	-20~+85℃
		880.24~914.76MHz	dB	-	-	3.6	-30~ -20℃
			dB	-	1.6	3.2	-20~+85℃
Amplitude ripple		880.24~914.76MHz	dB	-	1.0	3.2	-
VSWR	ANT	880.24~914.76MHz	-	-	1.4	2.1	-
	Tx	880.24~914.76MHz	-	-	1.4	2.1	-
Attenuation:							
927.4 ~ 957.6 MHz			dB(*2)	48	54	-	-20~+85℃
925.24 ~ 959.76 MHz			dB	37	-	-	-30~ -20℃
			dB	42	-	-	-20~ 0℃
			dB	48	54	-	0~+85℃
1565 ~ 1606 MHz			dB	40	43	-	
1760 ~ 1830 MHz			dB	40	48	-	
2640 ~ 2745 MHz			dB	28	37	-	

(*1)Specification of insertion loss excludes loss that comes from the test board.
(*2)Integrated over +/-1.92MHz around the WCDMA channel center frequency.

ANT to Rx (f_{T0}=942.5 MHz)

Parameters Description			Unit	Min	Typ	Max	Remarks
InsertionLoss(*1)		927.4~957.6 MHz	dB(*2)	-	1.5	2.5	-20~+85℃
InsertionLoss(*1)		925.24~959.76 MHz	dB	-	-	3.5	-30~ -20℃
InsertionLoss(*1)			dB	-	1.8	3.0	-20~+85℃
Amplitude ripple		925.24~959.76 MHz	dB	-	1.1	2.9	
VSWR	ANT	925.24~959.76 MHz	-	-	1.8	2.1	
	Rx		-	-	1.7	2.1	
Attenuation:							
880.24 ~ 914.76 MHz			dB	45	54	-	
1805 ~ 1875 MHz			dB	40	52	-	
2400 ~ 2500 MHz			dB	40	49	-	
2685 ~ 2790 MHz			dB	40	48	-	

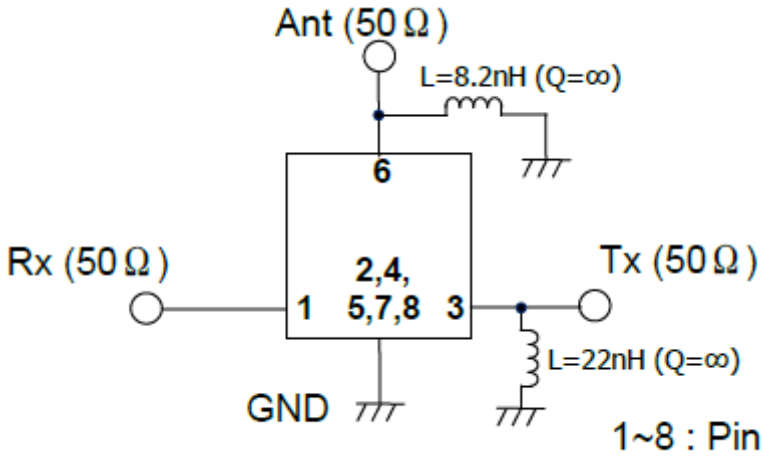
(*1)Specification of insertion loss excludes loss that comes from the test board.
(*2)Integrated over +/-1.92MHz around the WCDMA channel center frequency.

Tx to Rx

Isolation	882.4~912.6MHz	dB(*2)	55	58	-	-20~+85℃
	880.24~914.76 MHz	dB	48	-	-	
		dB	55	58	-	-30~ +25℃
	927.4~957.6MHz	dB(*2)	55	58	-	-20~+85℃
	925.24~959.76 MHz	dB	40	-	-	-30~ -20℃
		dB	45	-	-	-20~ 0℃
		dB	53	56	-	0~ +85℃

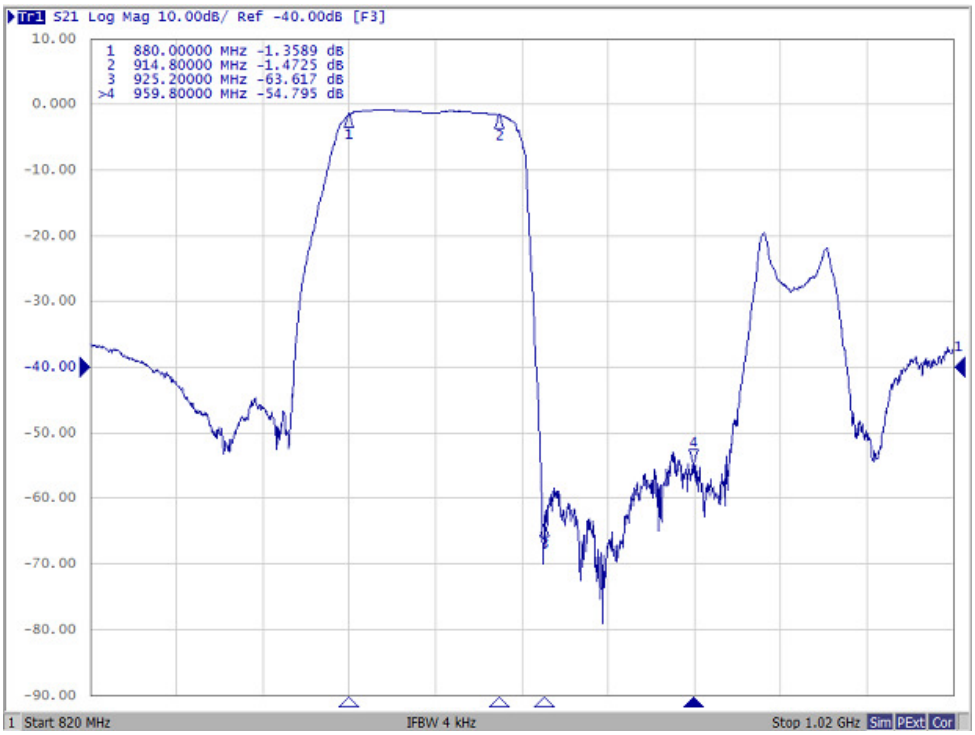
(*2) Integrated over +/-1.92MHz around the WCDMA channel center frequency

C.Evaluation Circuit

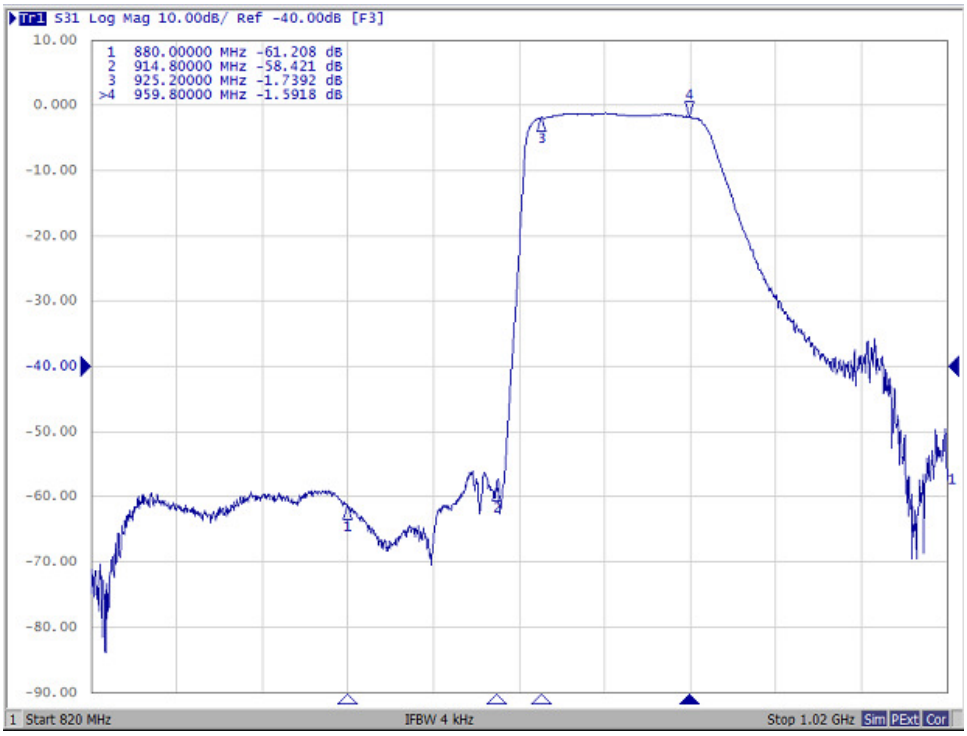


D. <u>FREQUENCY CHARACTERISTICS</u>:

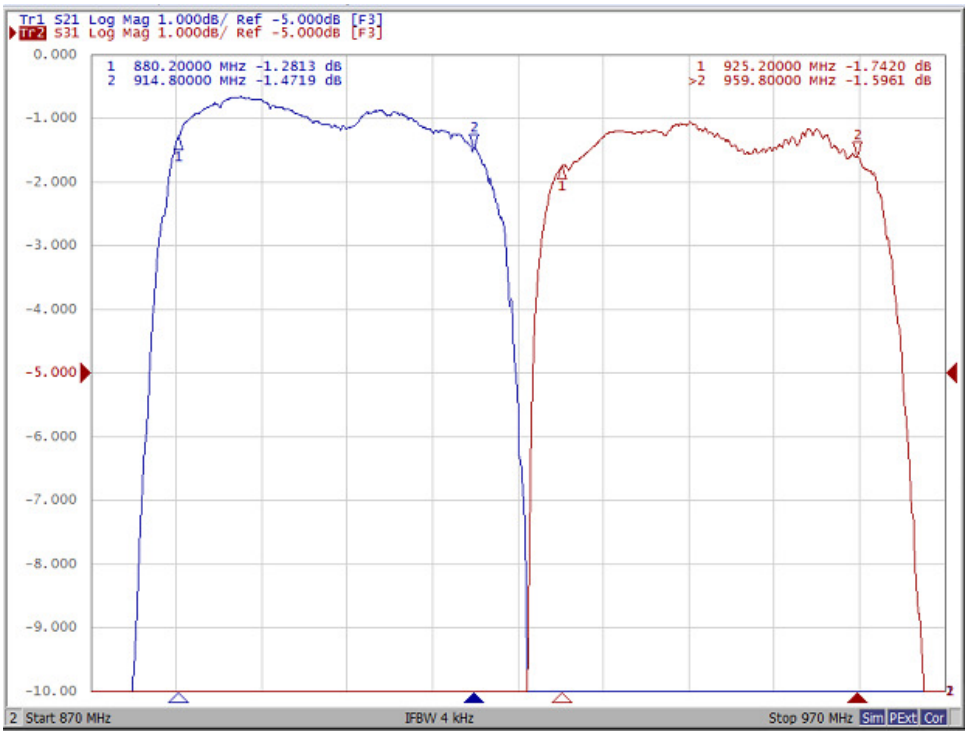
Tx to Ant



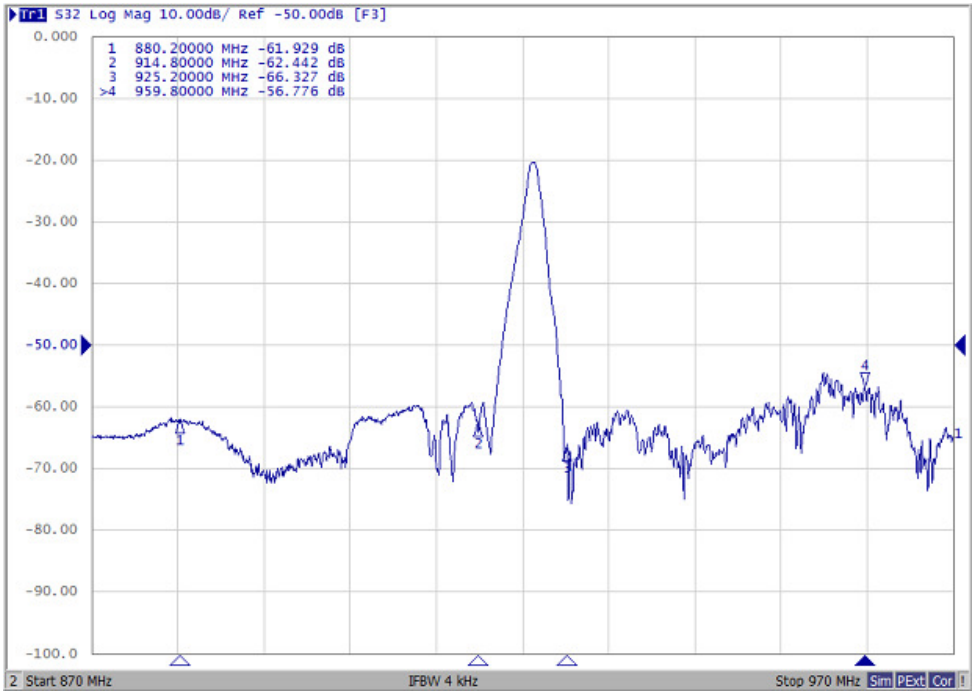
Ant to Rx



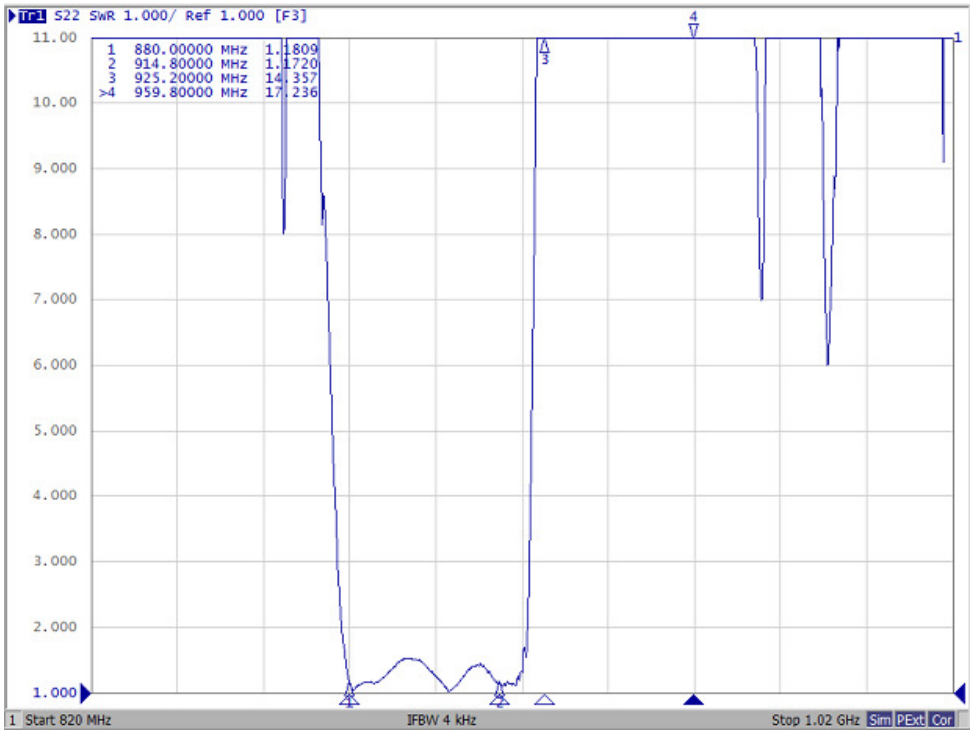
Tx to Ant ,Ant to Rx

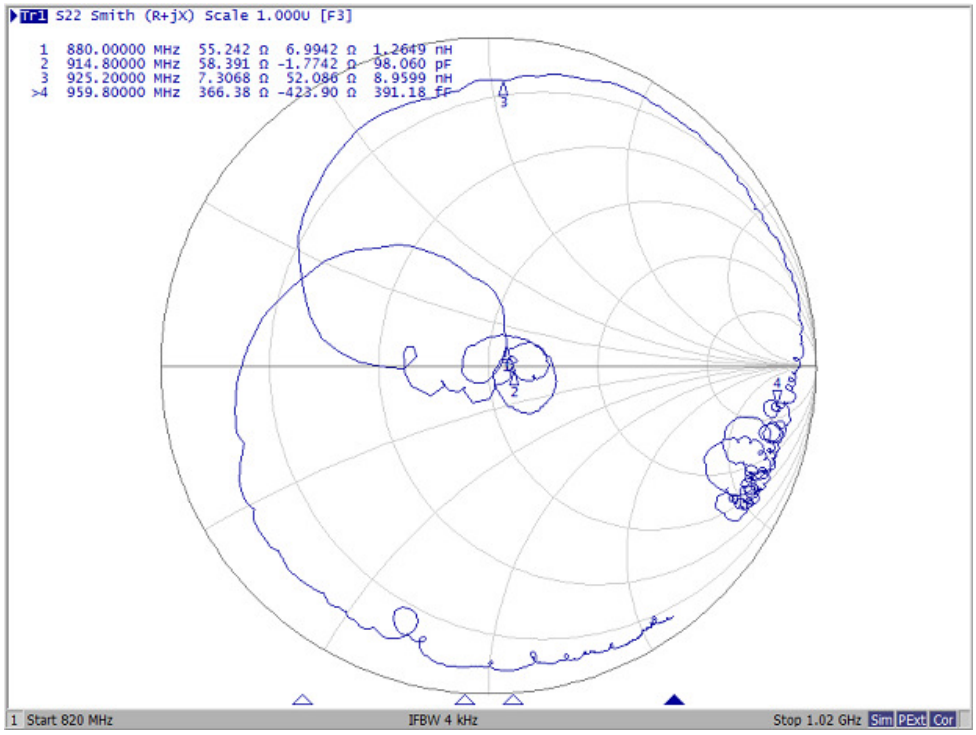


Tx to Rx Isolation

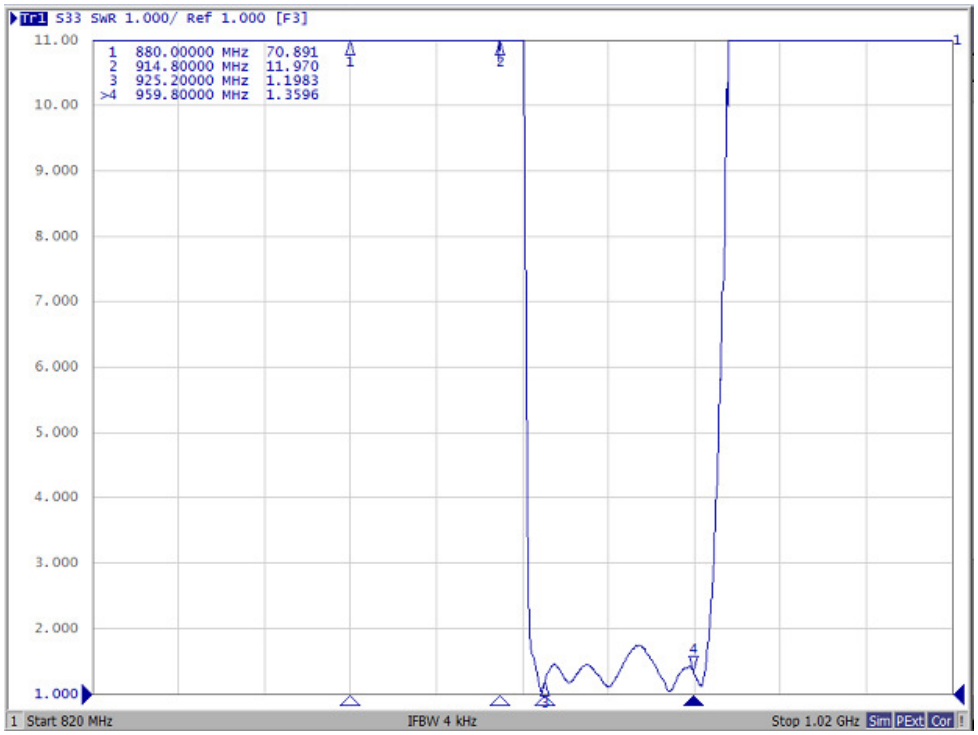


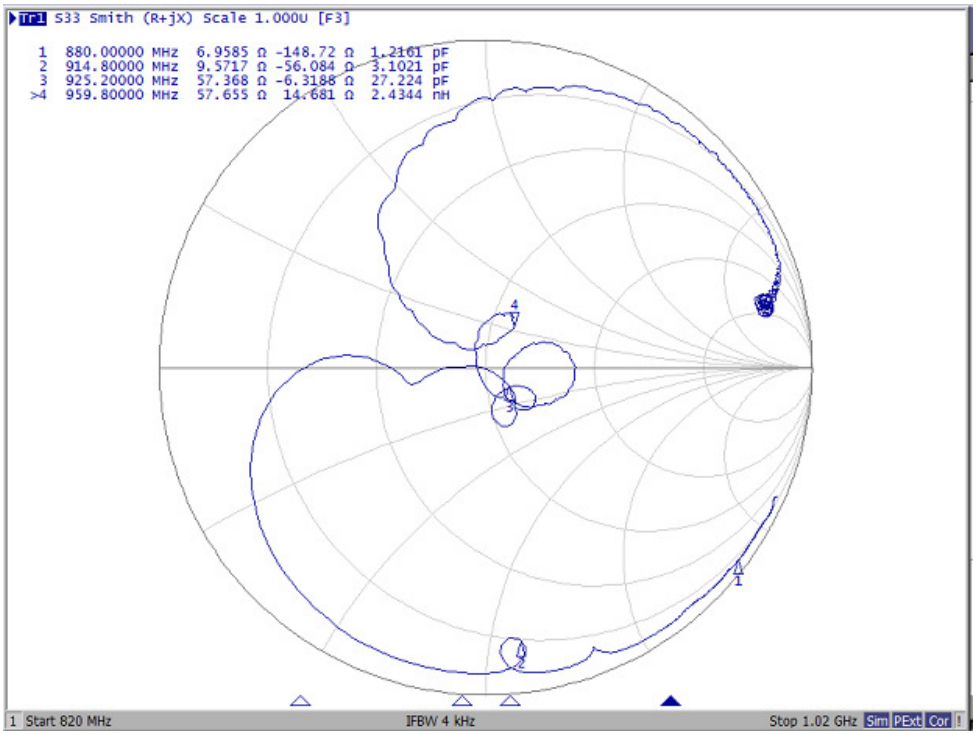
Tx Port


Tr1 S22 SWR 1.000/ Ref 1.000 [F3]
1 880.00000 MHz 1.1809
2 914.80000 MHz 1.1720
3 925.20000 MHz 14.357
>4 959.80000 MHz 17.236
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 820 MHz
IFBW 4 kHz
Stop 1.02 GHz
Sim PExt Cor

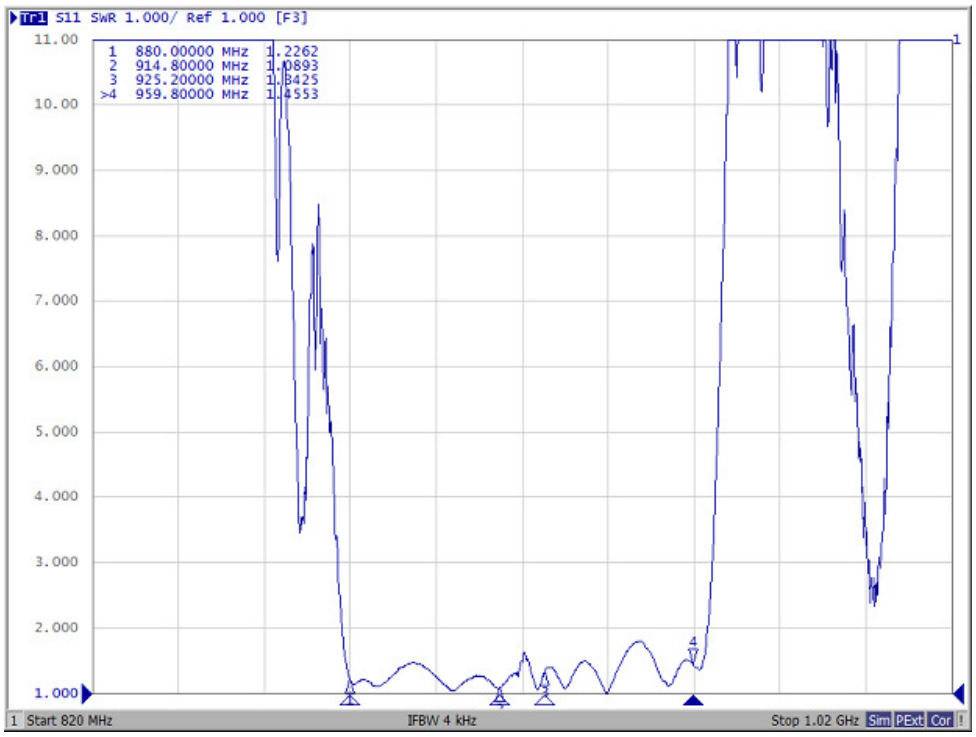

Tr1 S22 Smith (R+jX) Scale 1.000U [F3]
1 880.00000 MHz 55.242 Ω 6.9942 Ω 1.2649 nH
2 914.80000 MHz 58.391 Ω -1.7742 Ω 98.060 pF
3 925.20000 MHz 7.3068 Ω 52.086 Ω 8.9599 nH
>4 959.80000 MHz 366.38 Ω -423.90 Ω 391.18 fF
1 Start 820 MHz
IFBW 4 kHz
Stop 1.02 GHz
Sim PExt Cor

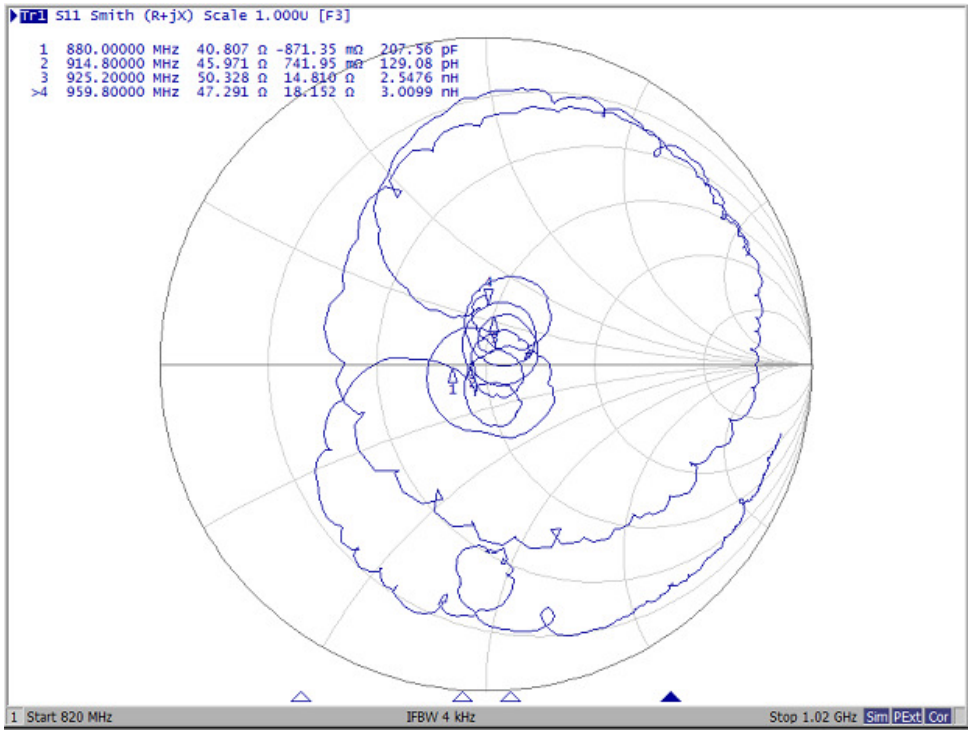
Rx Port


Tr1 S33 SWR 1.000/ Ref 1.000 [F3]
1 880.00000 MHz 70.891
2 914.80000 MHz 11.970
3 925.20000 MHz 1.1983
>4 959.80000 MHz 1.3596
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 820 MHz
IFBW 4 kHz
Stop 1.02 GHz
Sim PExt Cor

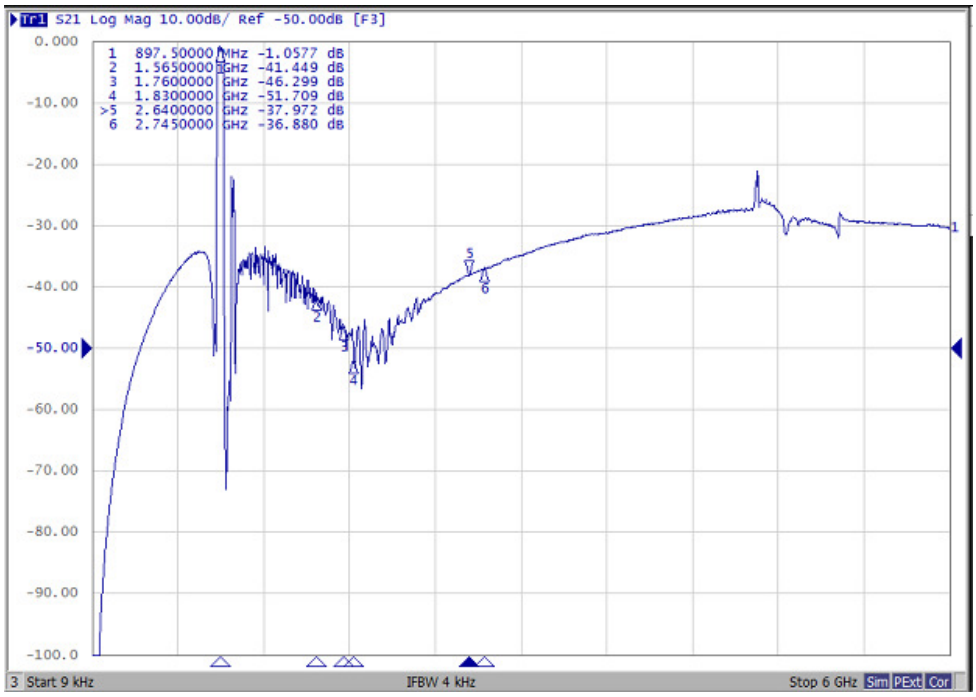

Tr1 S33 Smith (R+jX) Scale 1.000U [F3]
1 880.00000 MHz 6.9585 Ω -148.72 Ω 1.2161 pF
2 914.80000 MHz 9.5717 Ω -56.084 Ω 3.1021 pF
3 925.20000 MHz 57.368 Ω -6.3188 Ω 27.224 pF
>4 959.80000 MHz 57.655 Ω 14.681 Ω 2.4344 nH
1 Start 820 MHz
IFBW 4 kHz
Stop 1.02 GHz
Sim PExt Cor

Ant Port

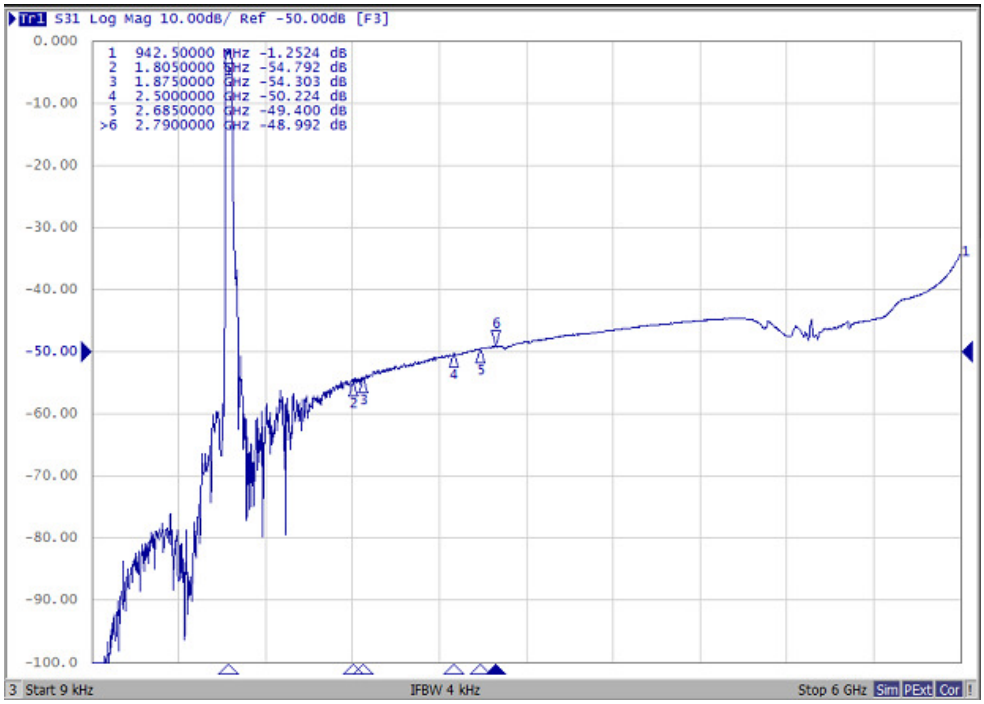

Tr1 S11 SWR 1.000/ Ref 1.000 [F3]
1 880.00000 MHz 1.2262
2 914.80000 MHz 1.0893
3 925.20000 MHz 1.3425
>4 959.80000 MHz 1.4553
11.00
10.00
9.000
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
1 Start 820 MHz
IFBW 4 kHz
Stop 1.02 GHz
Sim PExt Cor


Tr1 S11 Smith (R+jX) Scale 1.000U [F3]
1 880.00000 MHz 40.807 Ω -871.35 mΩ 207.56 pF
2 914.80000 MHz 45.971 Ω 741.95 mΩ 129.08 pH
3 925.20000 MHz 50.328 Ω 14.810 Ω 2.5476 nH
>4 959.80000 MHz 47.291 Ω 18.152 Ω 3.0099 nH
1 Start 820 MHz
IFBW 4 kHz
Stop 1.02 GHz
Sim PExt Cor

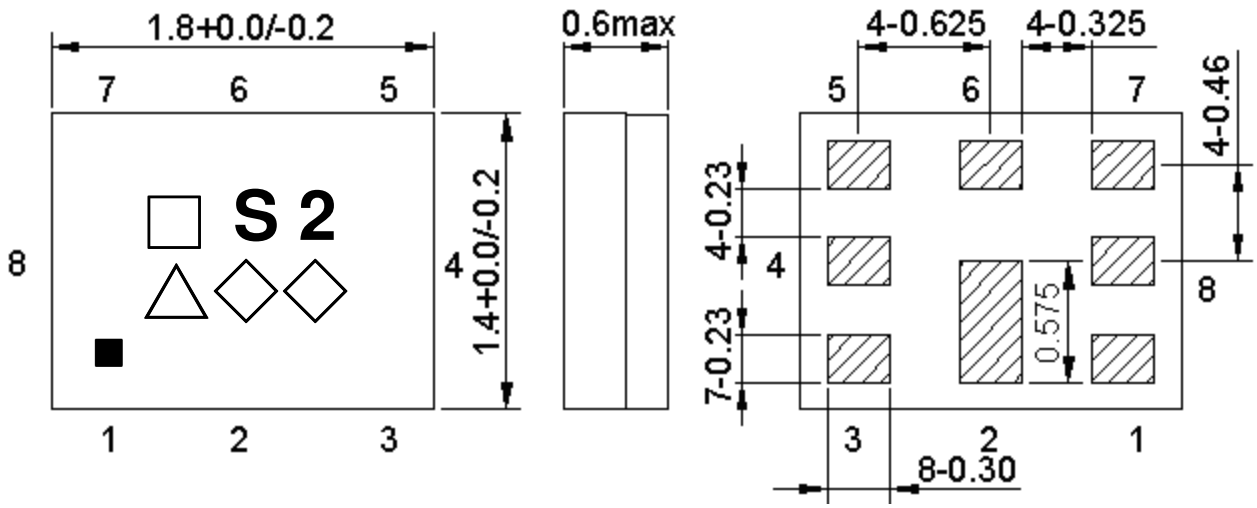
Tx to Ant (Wide span)



Ant to Rx (Wide span)



E.OUTLINE DRAWIN:



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

Traceability code (□ : S or 7)
Marking name : **S2**
△: Date code(2020 May → s ,……., 2023 Dec→m.)
◇◇: Lot Code.
Product Date Code. Follow below table. (4-year cycle)

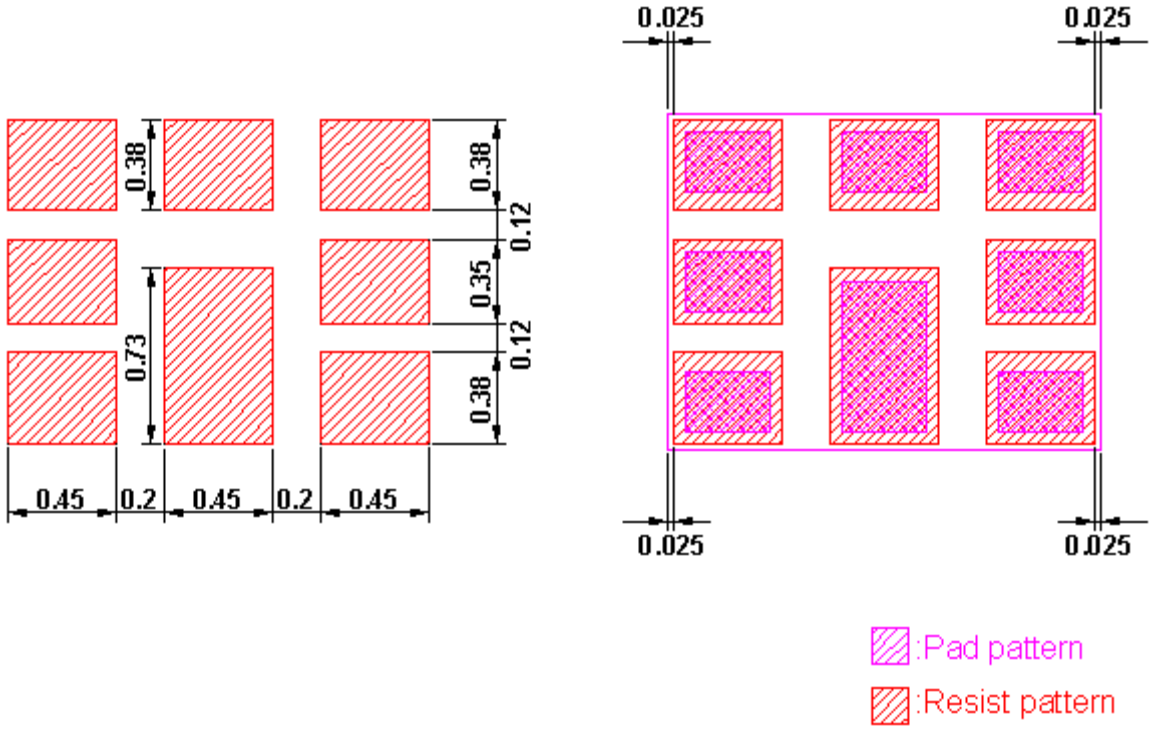
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2020	n	p	q	r	s	t	u	v	w	x	y	z
2021	A	B	C	D	E	F	G	H	J	K	L	M
2022	N	P	Q	R	S	T	U	∇	W	X	Y	Z
2023	a	b	c	d	e	f	g	h	j	k	l	m

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

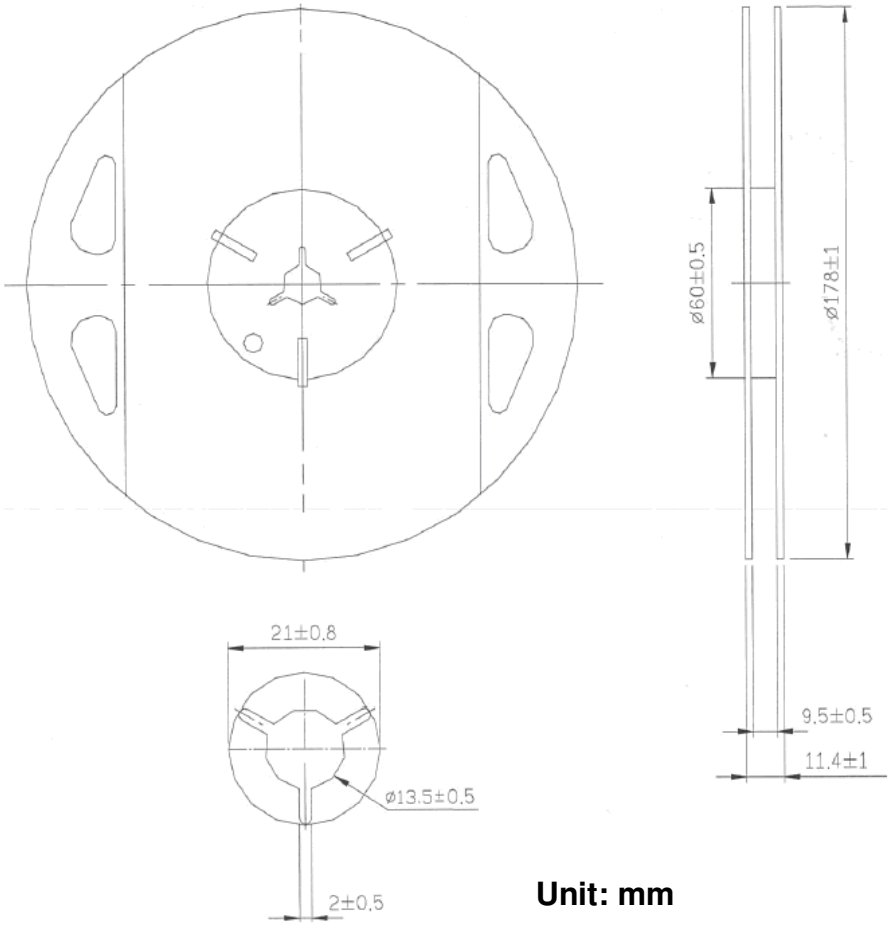
F. FOOTPRINT:


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:

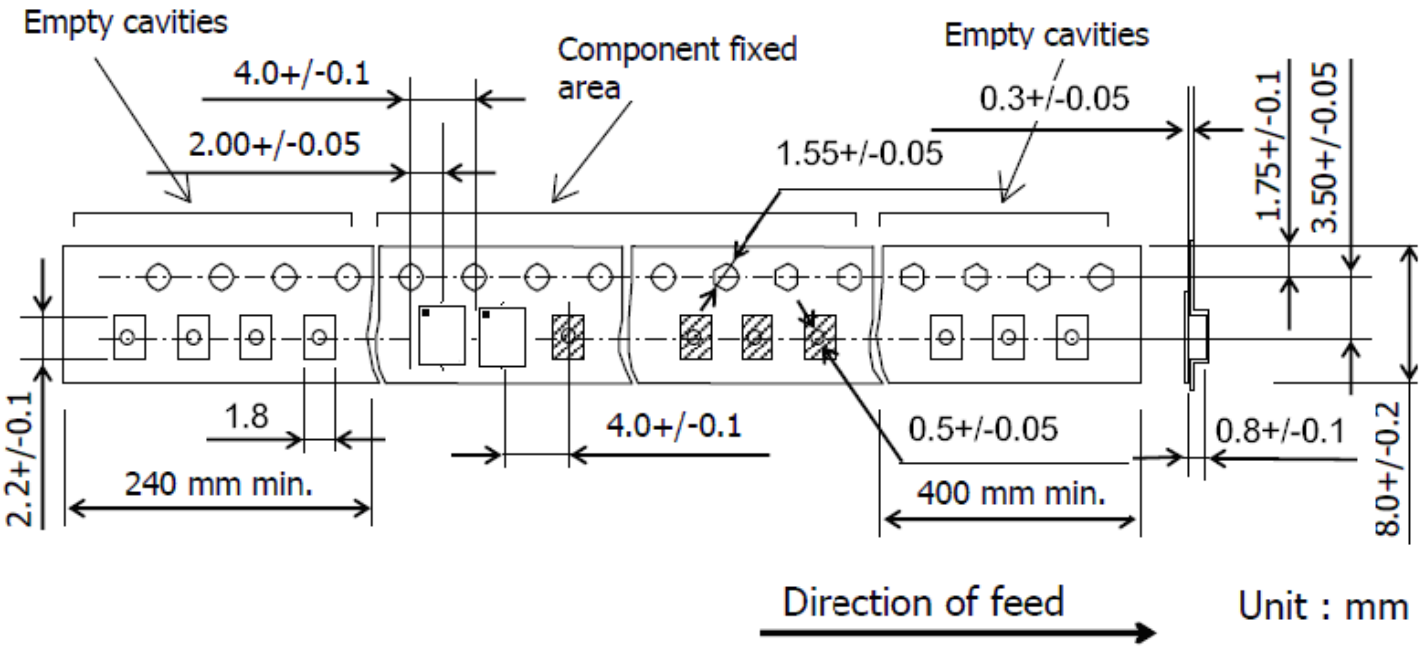
1. REEL DIMENSION

(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.