



TAI-SAW TECHNOLOGY CO., LTD.

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Product Specifications Approval Sheet

Product Description: SAW Quadplexer 1747.5/1842.5/1950/2140MHz Band1Band3

Size 2.5x2.0 mm BW 75/75/60/60 MHz

TST Part No.: TF0233AA2722

Customer Part No.: _____

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

Checked by: _____ Nina Chen *Nina Chen*

Approved by: _____ Kazuma Lee *Kazuma Lee*

Date: _____ 2023/04/28

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 Quadplexer 1747.5/1842.5/1950/2140MHz Band1 Band3 Size 2.5x2.0 mm BW 75/75/60/60 MHz

MODEL NO.: TF0233AA2722

REV.1.0

A. Maximum Rating:

1. Input power to Tx Ports : 30dBm max
2. DC Voltage: 0V, Pin1 (Ant to GND)
5V, Pins 2,3,4,5 to GND
3. Operating temperature range: -30 °C to +85 °C
4. Storage temperature range: -65 °C to +125 °C
5. Moisture Sensitivity Level: Level 3 (MSL 3)

RoHS Compliant
Lead free
Lead-free soldering

Electrostatic Sensitive Device (ESD)

B. Electrical Characteristics:

*Electrical Specifications is defined at 25°C

*Insertion loss included PCB loss

B1 Tx to ANT

Parameter		Unit	Min	Typ	Max	
Insertion Loss		1920~1980 MHz	dB	-	2.3	2.5
Amplitude Ripple		1920~1980 MHz	dB	-	0.4	-
VSWR	B1 Tx	1920~1980 MHz	-	-	1.0	2.0
	ANT	1920~1980 MHz	-	-	1.3	2.0
Attenuation	10~1574 MHz		dB	30	44	-
	1475~1511 MHz		dB	40	44	-
	1559~1608 MHz		dB	40	43	-
	1607~1710 MHz		dB	33	44	-
	1710~1785 MHz		dB	33	48	-
	2110~2170 MHz		dB	48	59	-
	1805~1880 MHz		dB	45	54	-
	2010~2025 MHz		dB	17	20	-
	2400~2500 MHz		dB	40	51	-
	2500~2690 MHz		dB	45	49	-
	3640~3960 MHz		dB	-	39	-
4900~5740 MHz		dB	20	28	-	
5740~5950 MHz		dB	25	28	-	

B1 ANT to Rx

Parameter		Unit	Min	Typ	Max	
Insertion Loss	2110~2170 MHz	dB	-	2.1	2.5	
Amplitude Ripple	2110~2170 MHz	dB	-	0.4	-	
VSWR	B1 Rx	2110~2170 MHz	-	-	1.2	2.0
	ANT	2110~2170 MHz	-	-	1.4	2.0
Attenuation	10~1920 MHz	dB	37	45	-	
	718~748 MHz	dB	50	58	-	
	814~915 MHz	dB	40	55	-	
	1427~1447 MHz	dB	40	49	-	
	1448~1463 MHz	dB	45	49	-	
	1710.2~1784.8 MHz	dB	48	61	-	
	1920~1980 MHz	dB	48	56	-	
	1710~1785 MHz	dB	48	61	-	
	1980~2015 MHz	dB	15	39	-	
	2015~2050 MHz	dB	30	36	-	
	2050~2075 MHz	dB	10	14	-	
	2255~2690 MHz	dB	40	43	-	
	4220~4340 MHz	dB	23	47	-	
4900~5900 MHz	dB	-	45	-		

B3 Tx to ANT

Parameter		Unit	Min	Typ	Max	
Insertion Loss	1710~1785 MHz	dB	-	2.2	3.5	
Amplitude Ripple	1710~1785 MHz	dB	-	1.4	-	
VSWR	B3 Tx	1710~1785 MHz	dB	-	1.5	2.0
	ANT	1710~1785 MHz	dB	-	1.6	2.0
Attenuation	1~1565 MHz	dB	23	41	-	
	1559~1607 MHz	dB	42	46	-	
	1805~1880 MHz	dB	45	58	-	
	2110~2170 MHz	dB	45	57	-	
	2400~2690 MHz	dB	33	45	-	
	3420~3570 MHz	dB	28	30	-	
	4900~5950 MHz	dB	28	39	-	
	5130~5355 MHz	dB	-	46	-	

B3 ANT to Rx

Parameter		Unit	Min	Typ	Max
Insertion Loss	1805~1880MHz	dB	-	2.5	3.5
Amplitude Ripple	1805~1880MHz	dB	-	2.1	-
VSWR	B3 Rx	dB	-	1.5	2.0
	ANT	dB	-	1.3	2.0
Attenuation	1~1710 MHz	dB	35	63	-
	1710 - 1785 MHz	dB	45	61	-
	1920 - 1980 MHz	dB	40	58	-
	1980~2400 MHz	dB	35	58	-
	2400~2500 MHz	dB	-	54	-
	2500~2570 MHz	dB	-	52	-
	2570~3515 MHz	dB	38	42	-
	3515~3665 MHz	dB	38	40	-
	3610~3760 MHz	dB	-	41	-
	3760~4900 MHz	dB	30	49	-
4900~5950 MHz	dB	30	43	-	

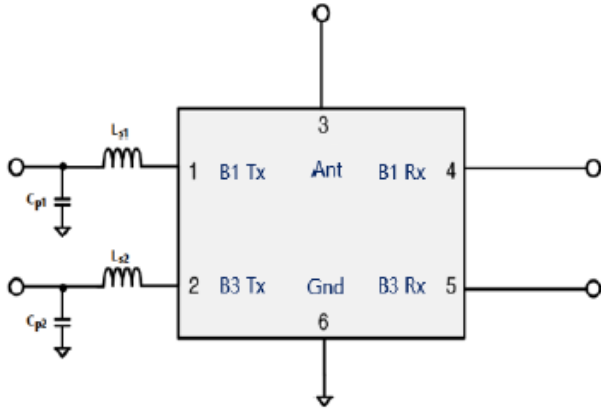
Parameter		Unit	Min	Typ	Max
Isolation Band 1	1920~1980 MHz	dB	53	56	-
	2110~2170 MHz	dB	55	58	-

Parameter		Unit	Min	Typ	Max
Isolation Band 3	1710~1782 MHz	dB	49	57	-
	1782~1785 MHz	dB	-	60	-
	1805~1880 MHz	dB	55	61	-

Parameter		Unit	Min	Typ	Max
Isolation B1Tx to B3Rx	1805~1880 MHz	dB	30	58	-
	1920~1980 MHz	dB	30	66	-

Parameter		Unit	Min	Typ	Max
Isolation B3Tx to B1Rx	1710~1785 MHz	dB	30	62	-
	2110~2170 MHz	dB	30	58	-

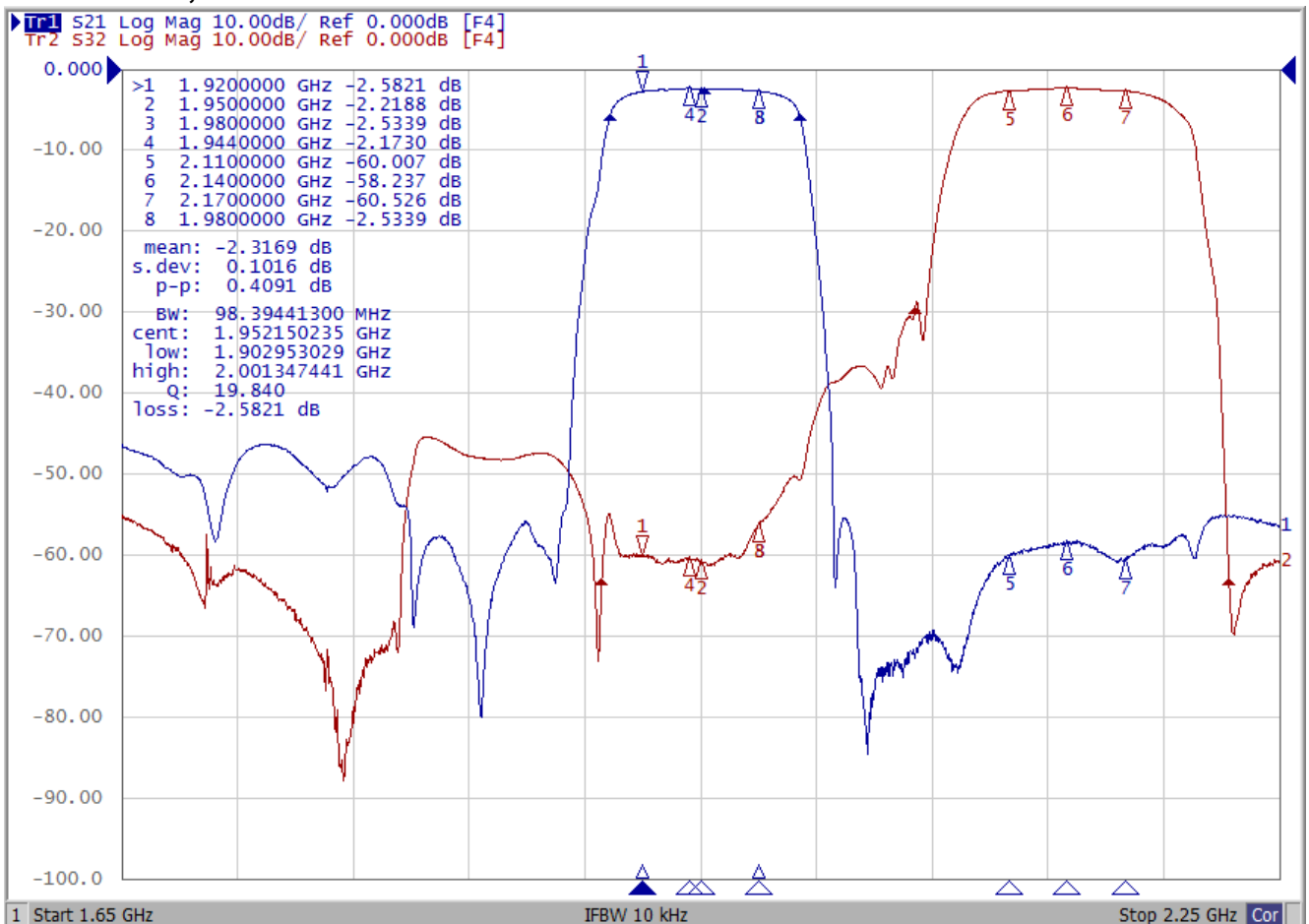
C. Measurement Circuit:

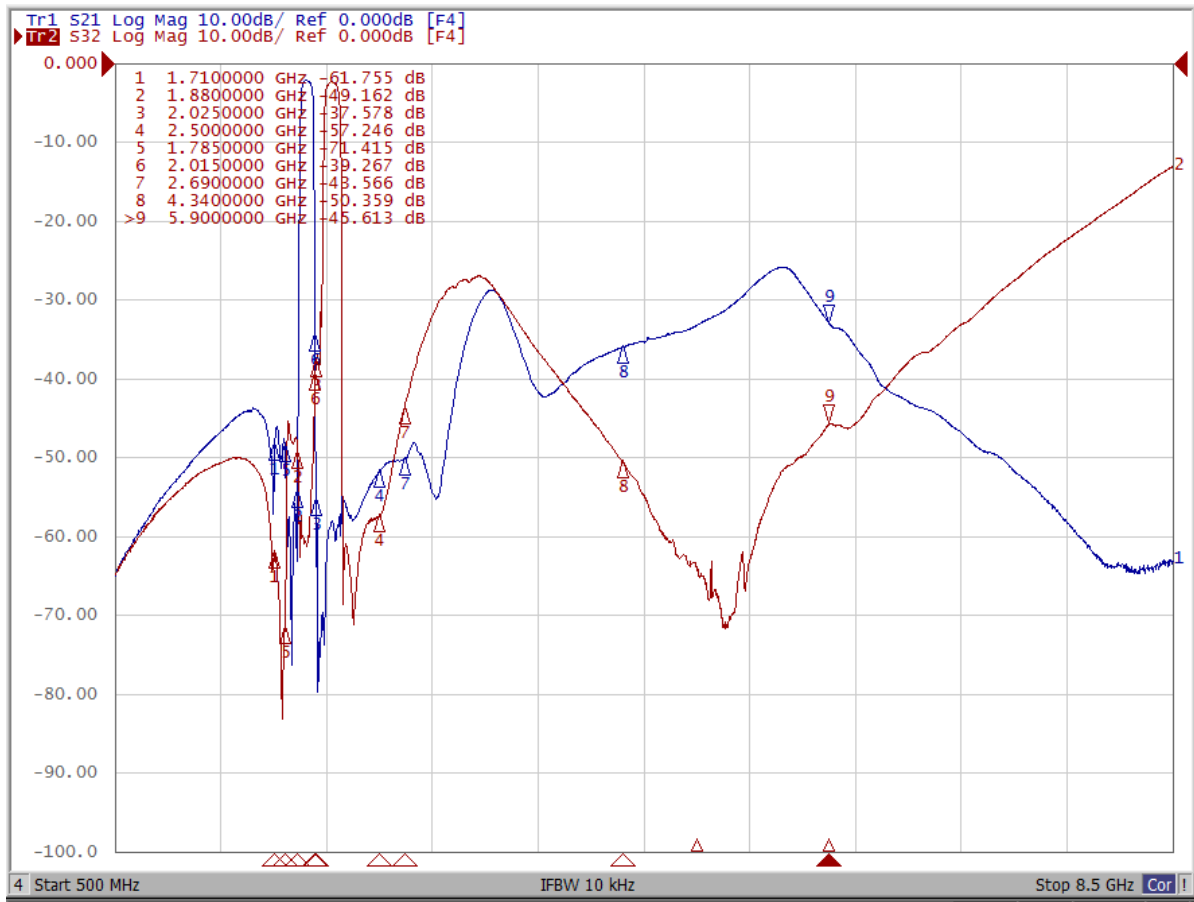


Port	Matching Component ¹
Port 1	Ls1: 2.0 nH
	Cp1 : 0.4pF
Port 2	Ls2: 1.8 nH
	Cp2: No stuff

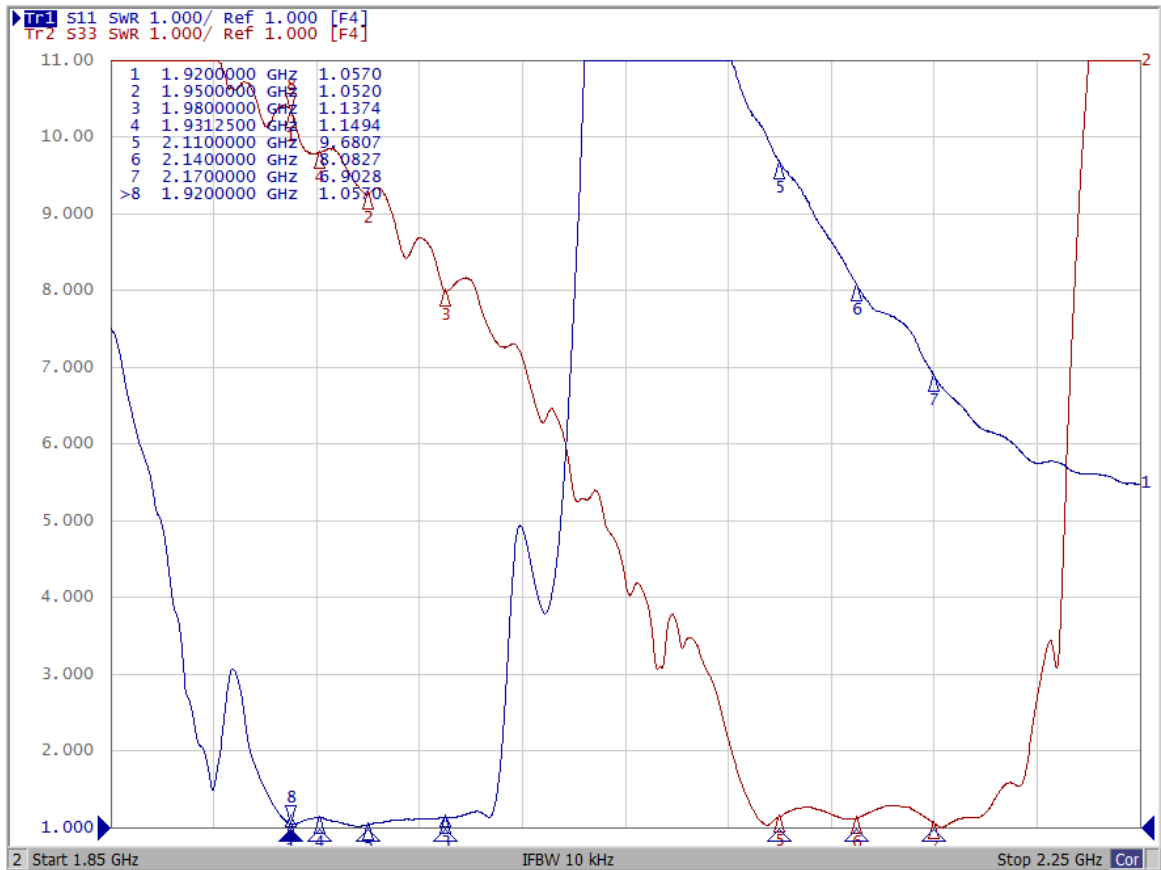
D. Frequency Characteristics:

TxB1 -> Ant , Ant -> RxB1

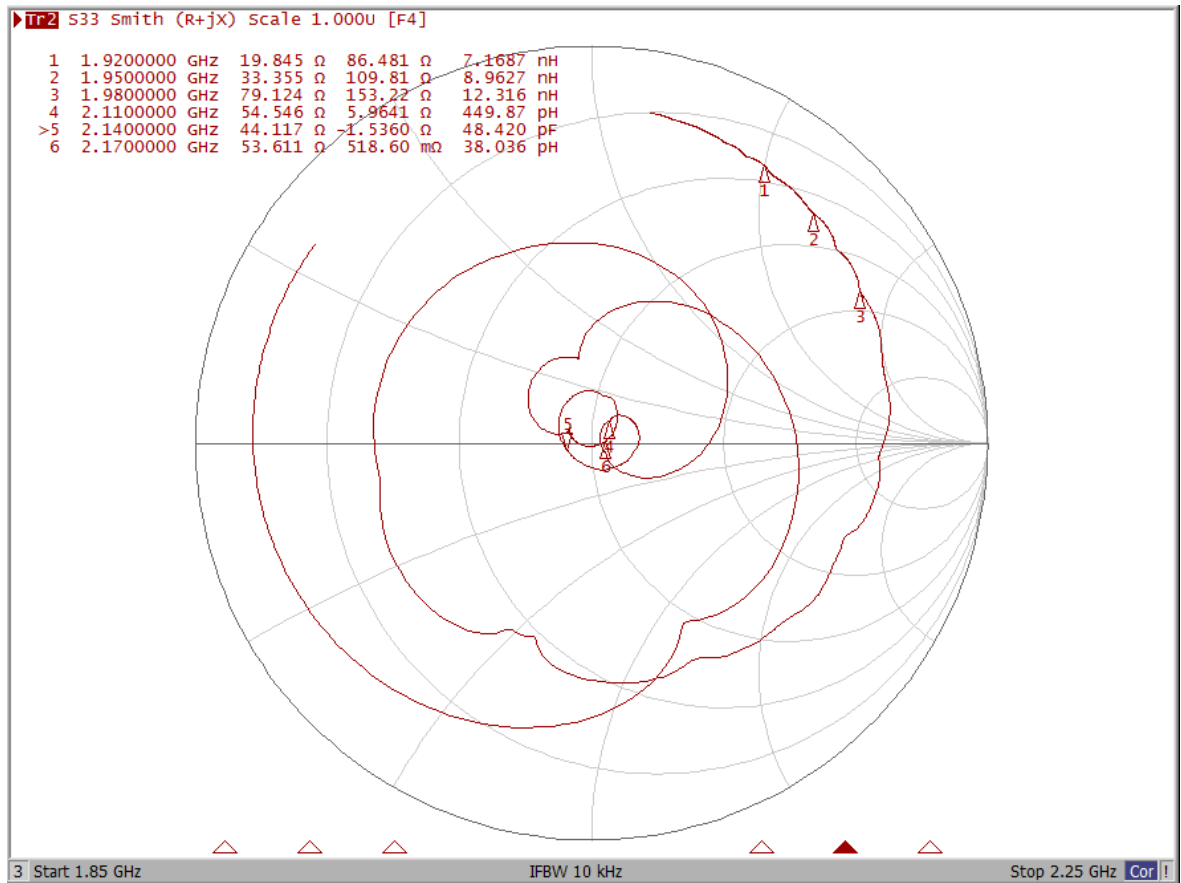
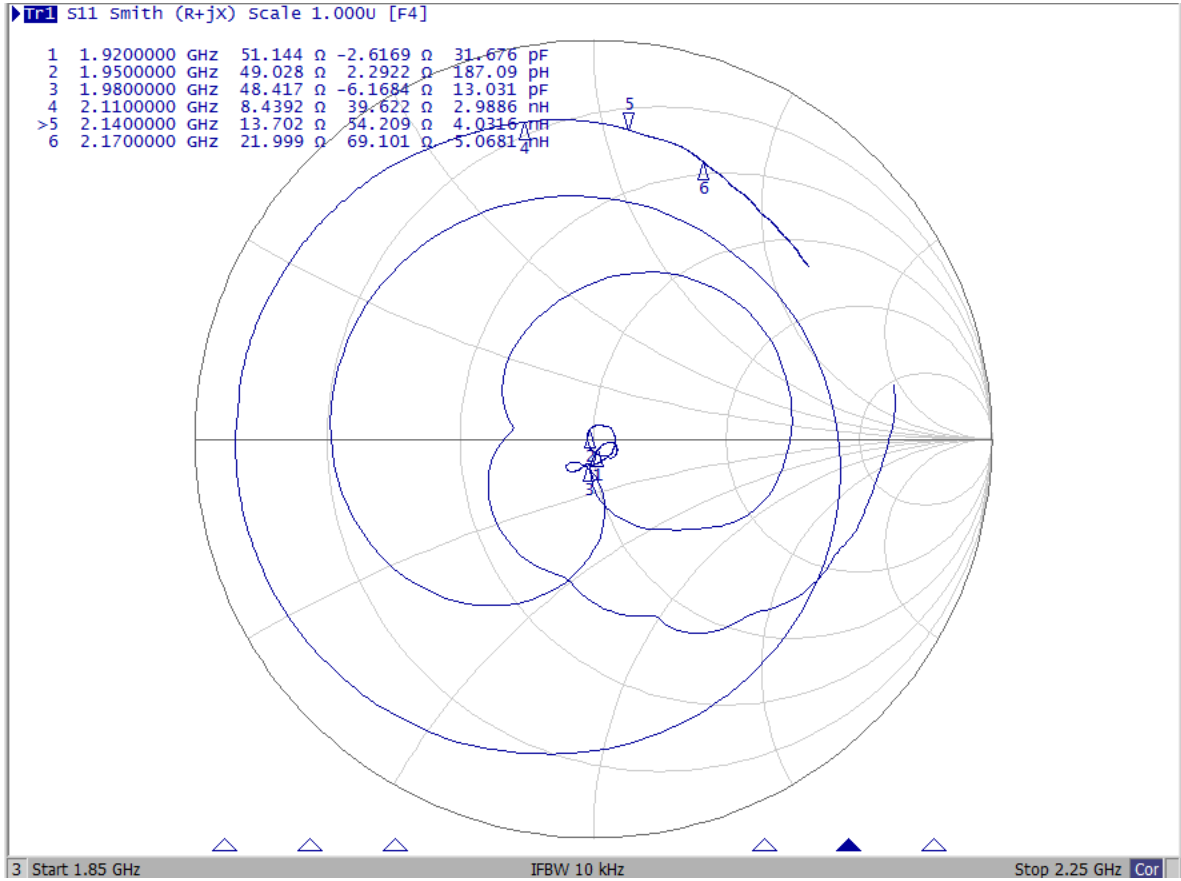




VSWR

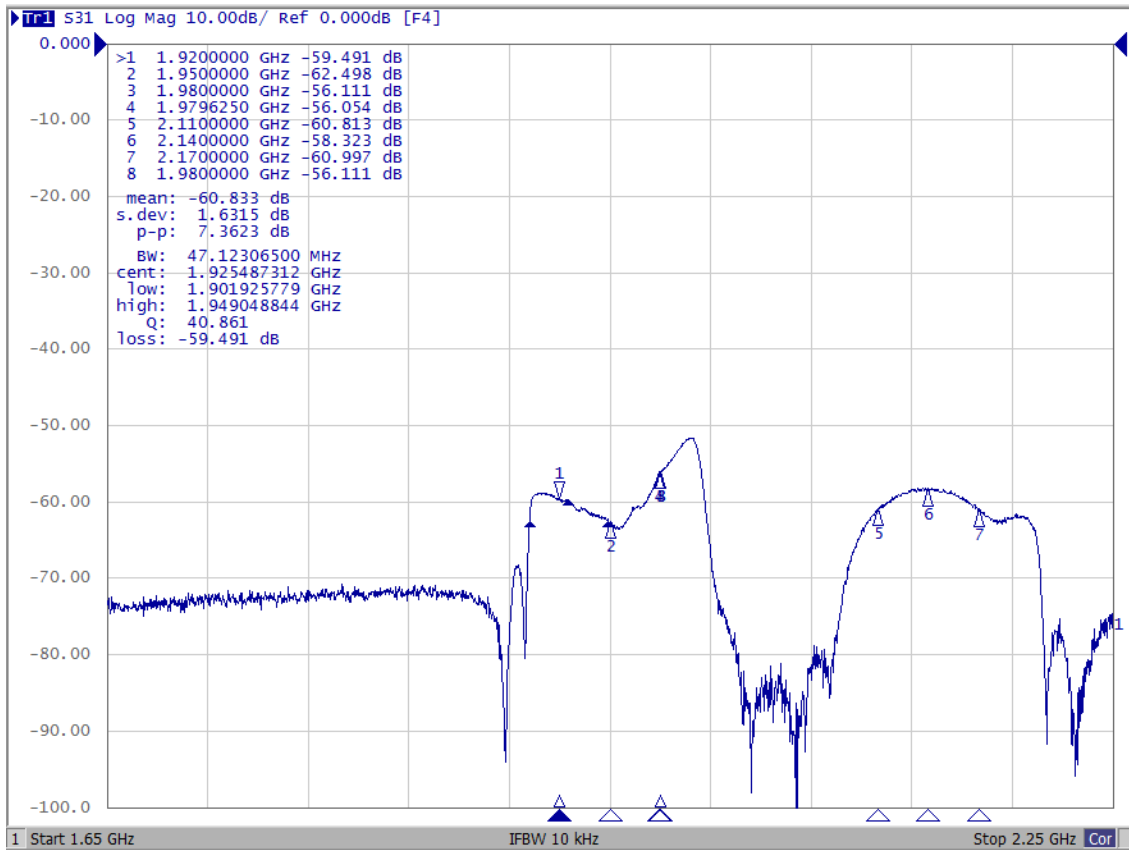


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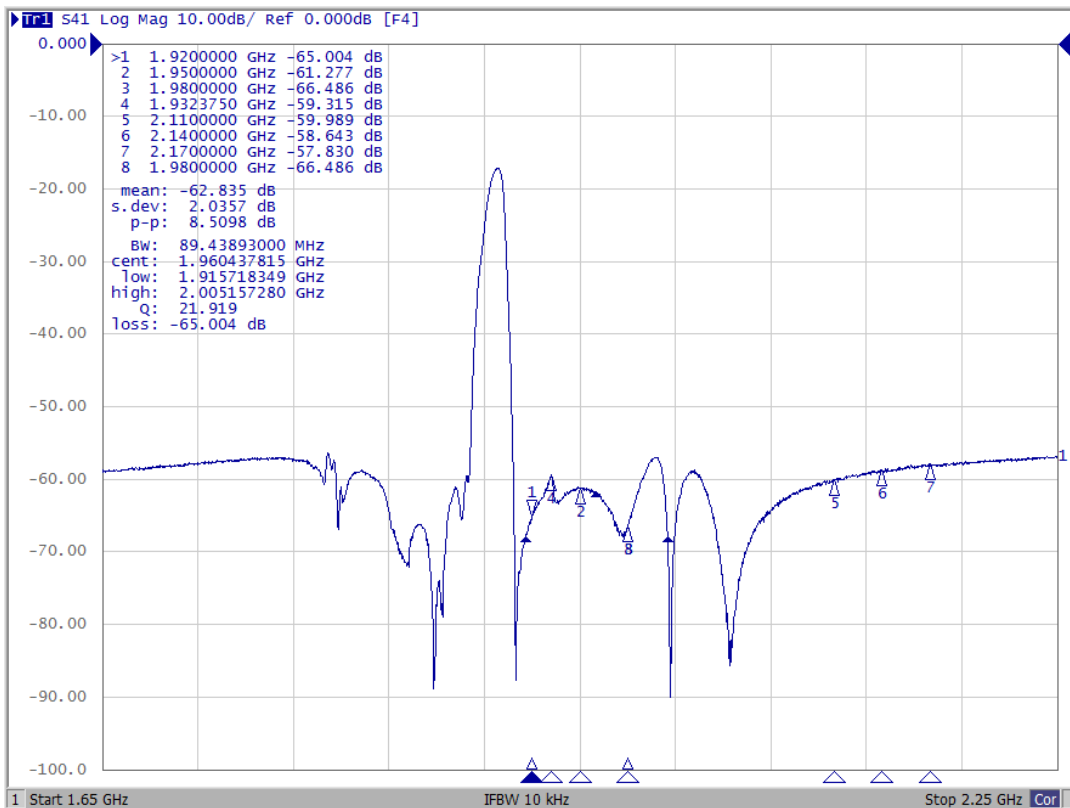


Isolation

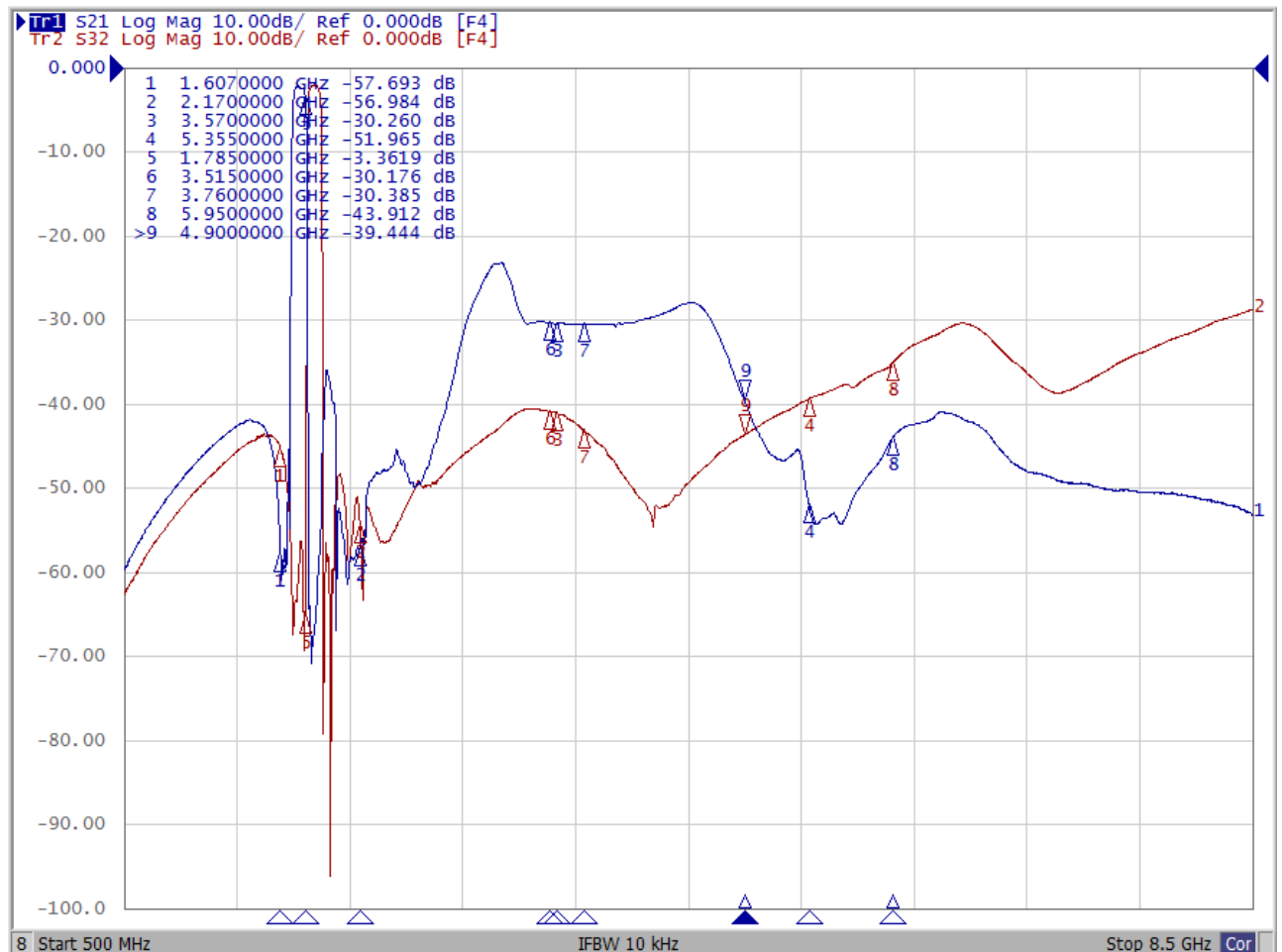
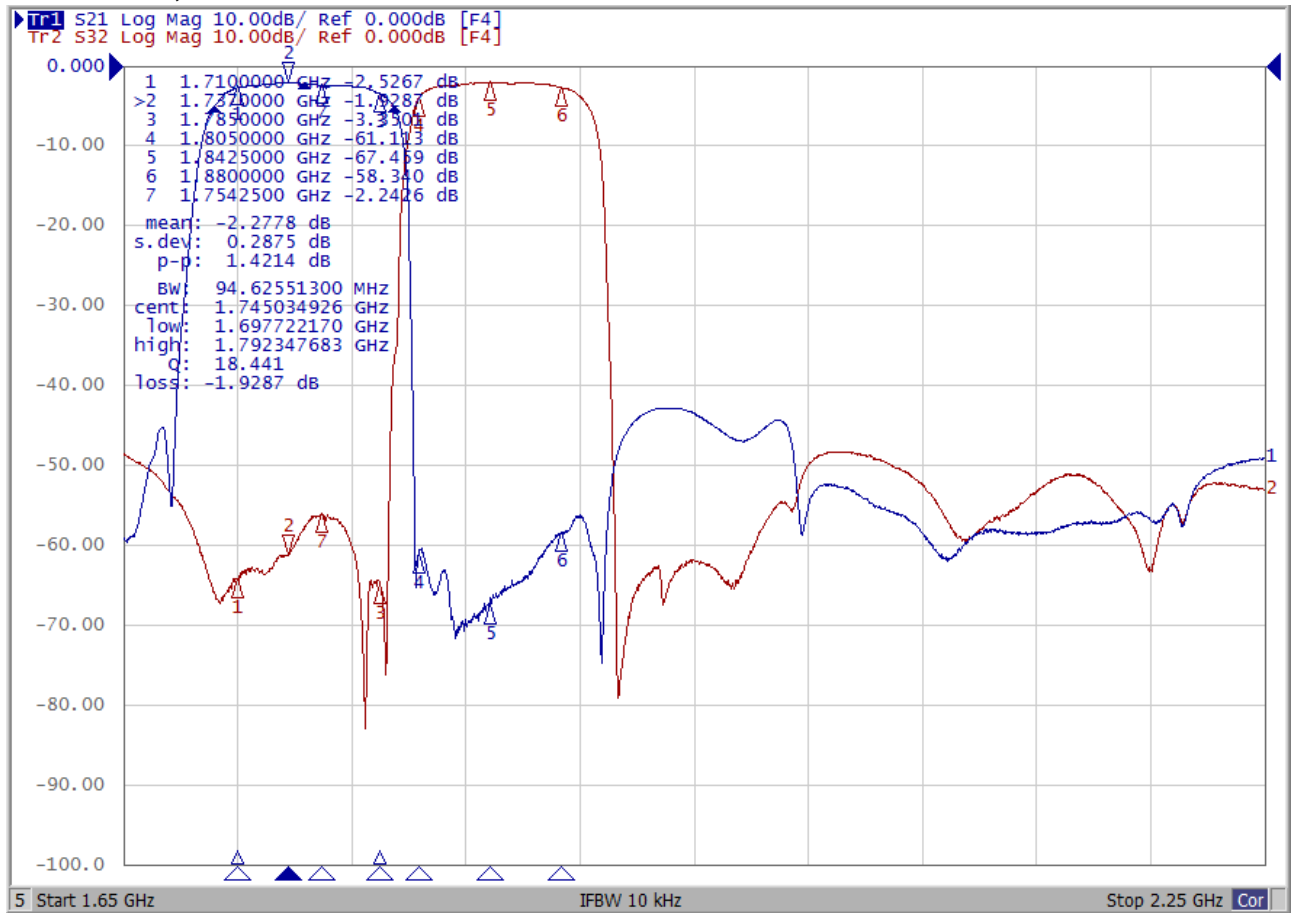
B1_Tx to B1_Rx



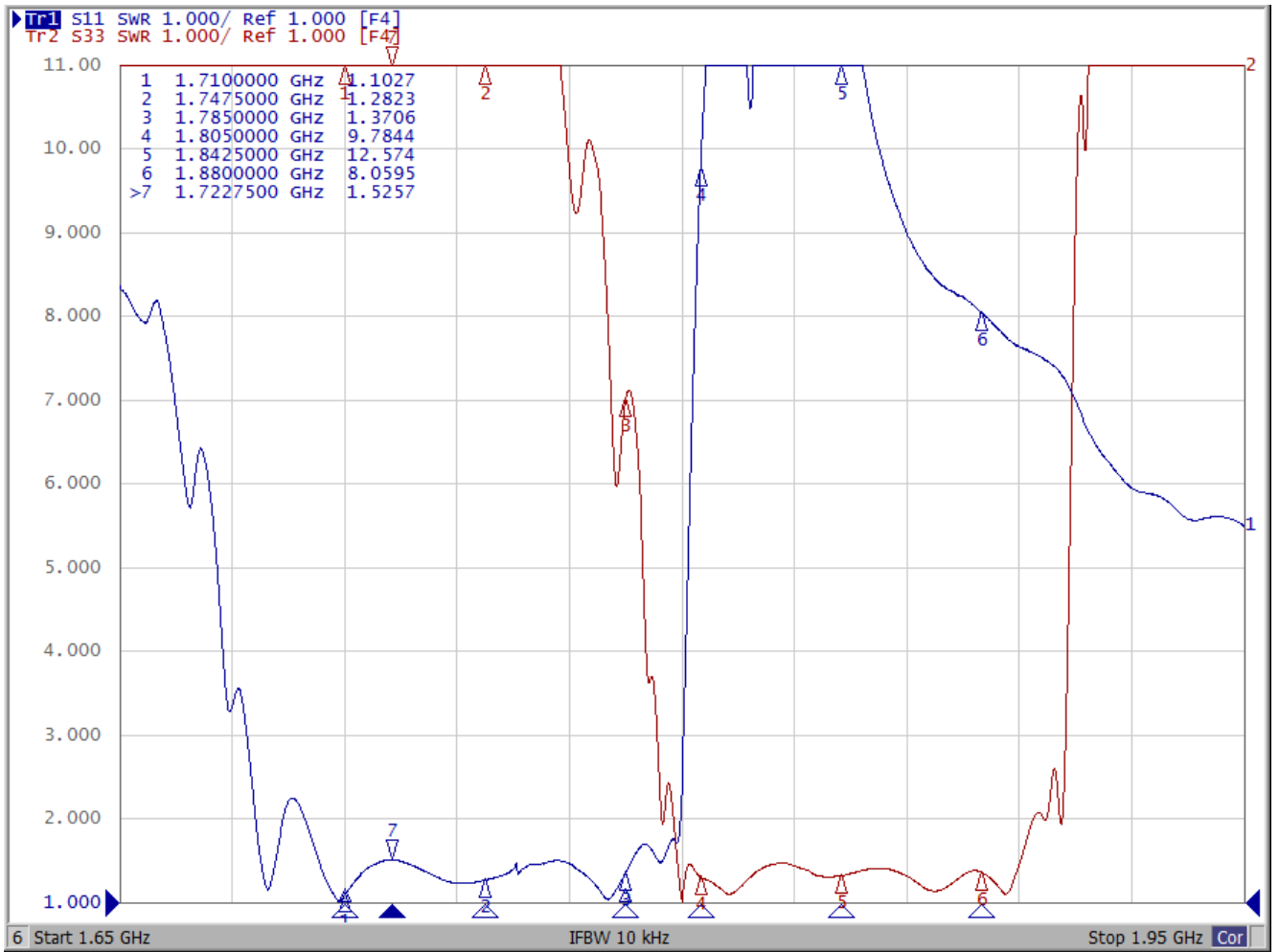
B1_Tx to B3_Rx



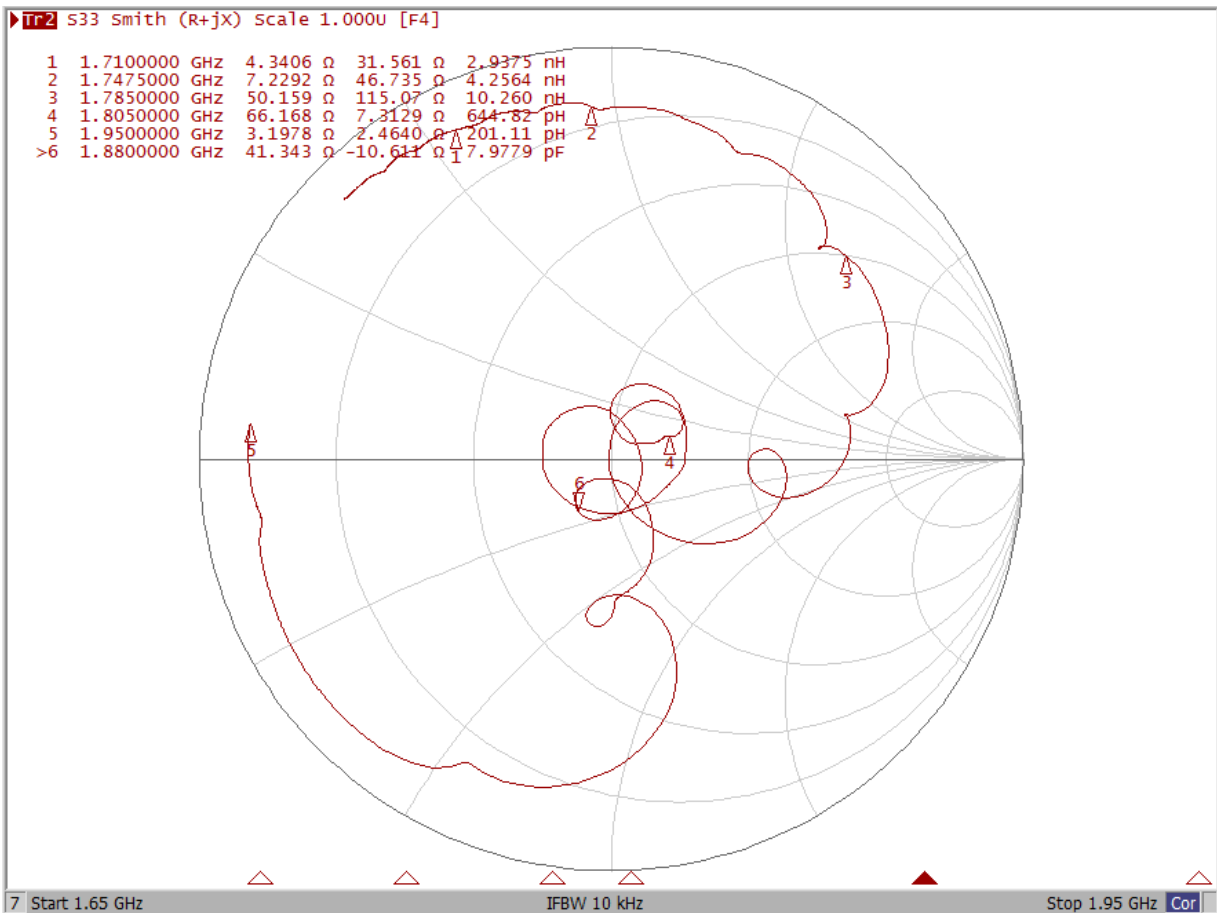
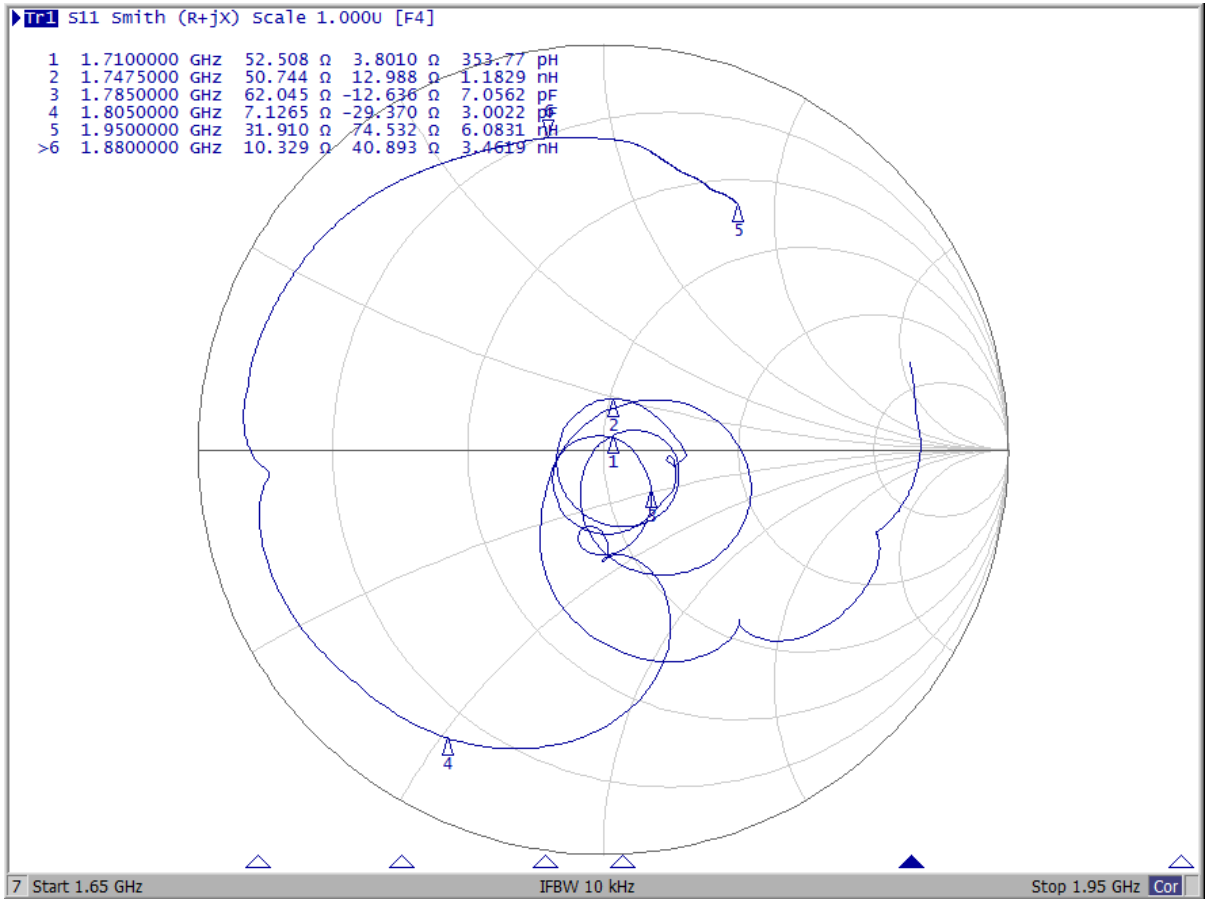
TxB3 -> Ant , Ant -> RxB3



VSWR

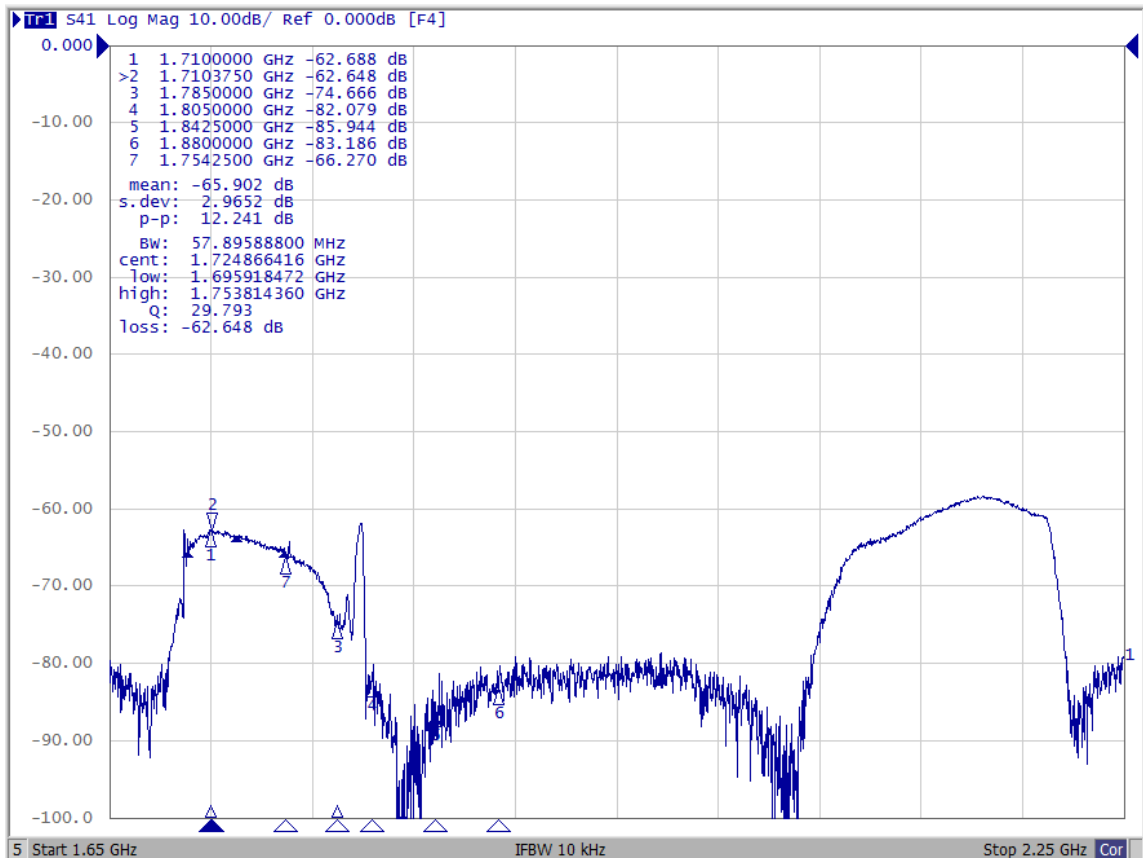


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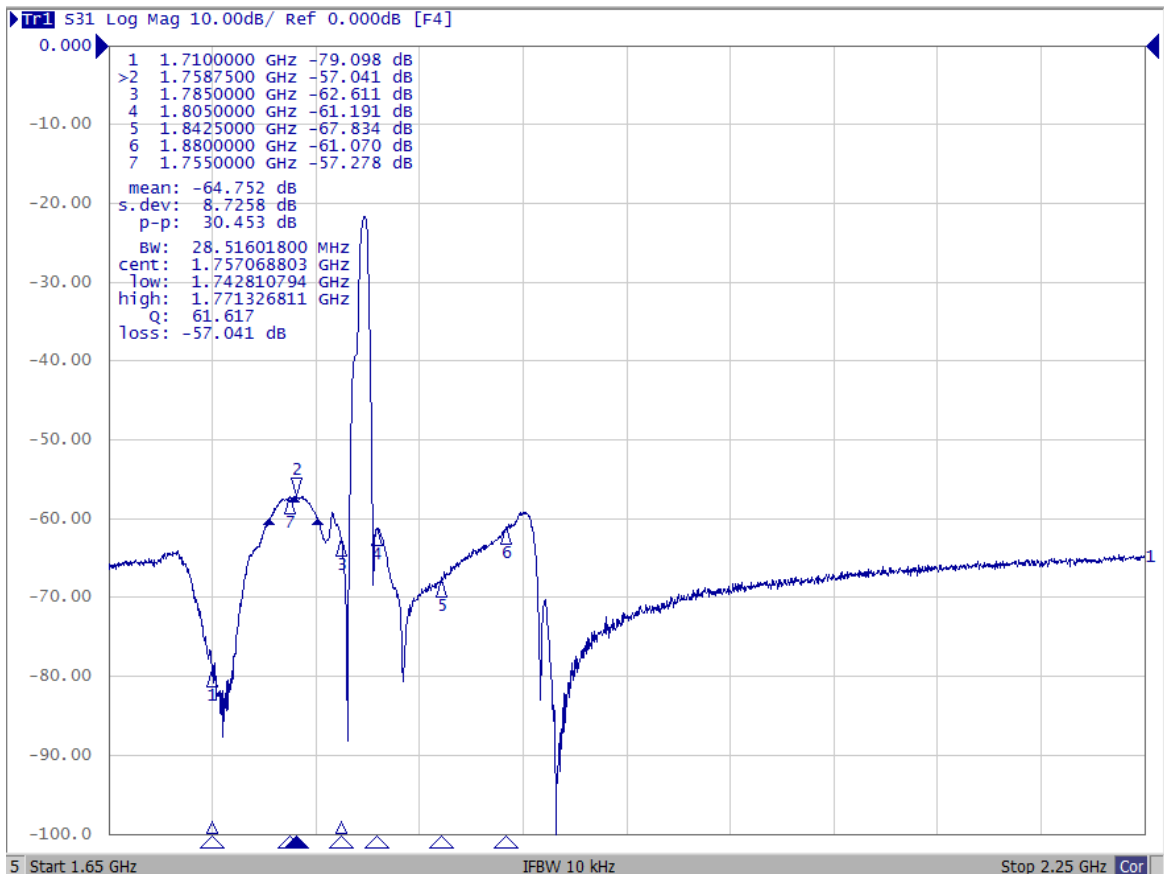


Isolation

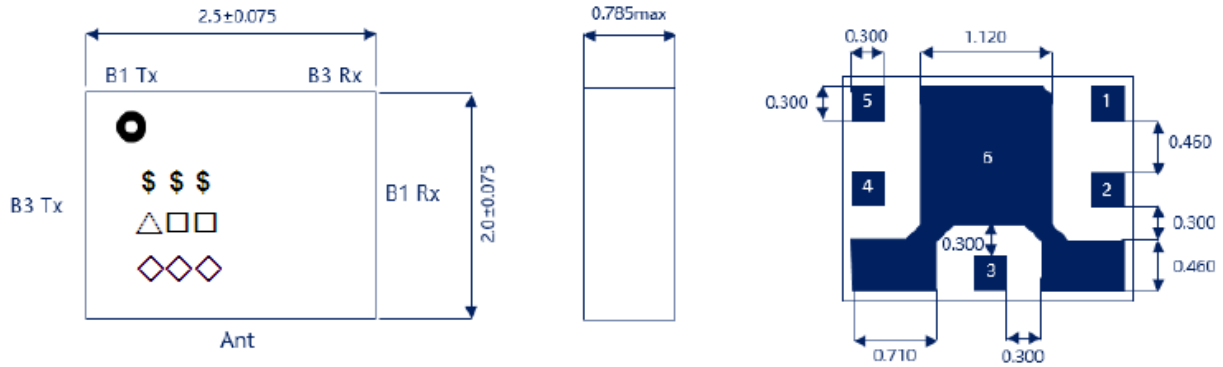
B3_Tx to B1_Rx



B3_Tx to B3_Rx



E. Outline Drawing:



1. All dimensions are in millimeters. Angles are in degrees.
2. Tolerance: X.XXX±0.025mm

Pin Configuration	
1	B1 Tx
2	B3 Tx
4	B1 Rx
5	B3 Rx
6	Gnd

\$\$\$: MXA or SPT (Product Name)

△ : Year Code (2020→0, 2021→1,...2029→9.)

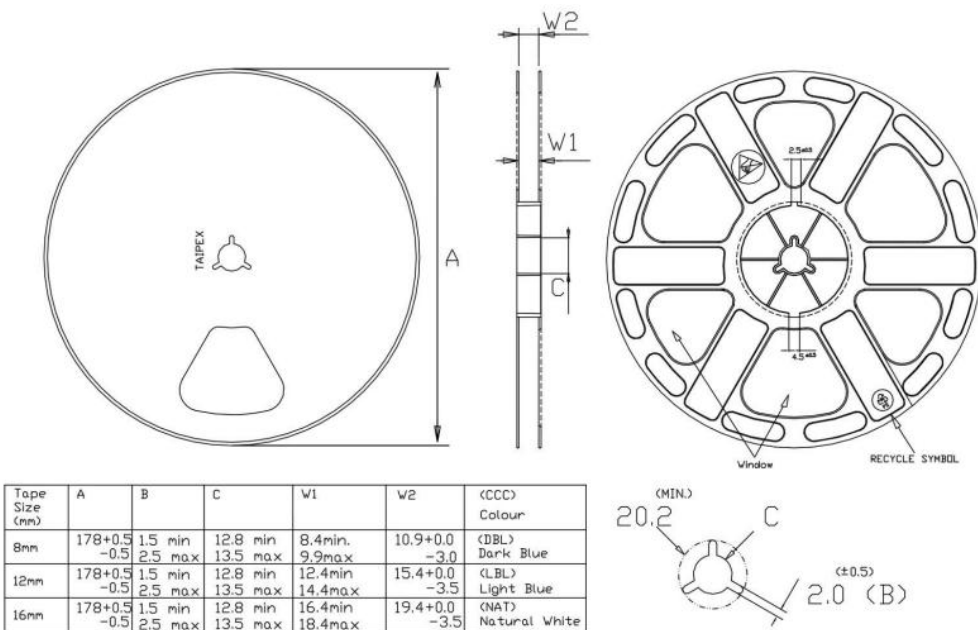
□ □ : Week Code. (WK01→01, WK02→02,...WK52→52.)

◇◇◇ : Lot No.

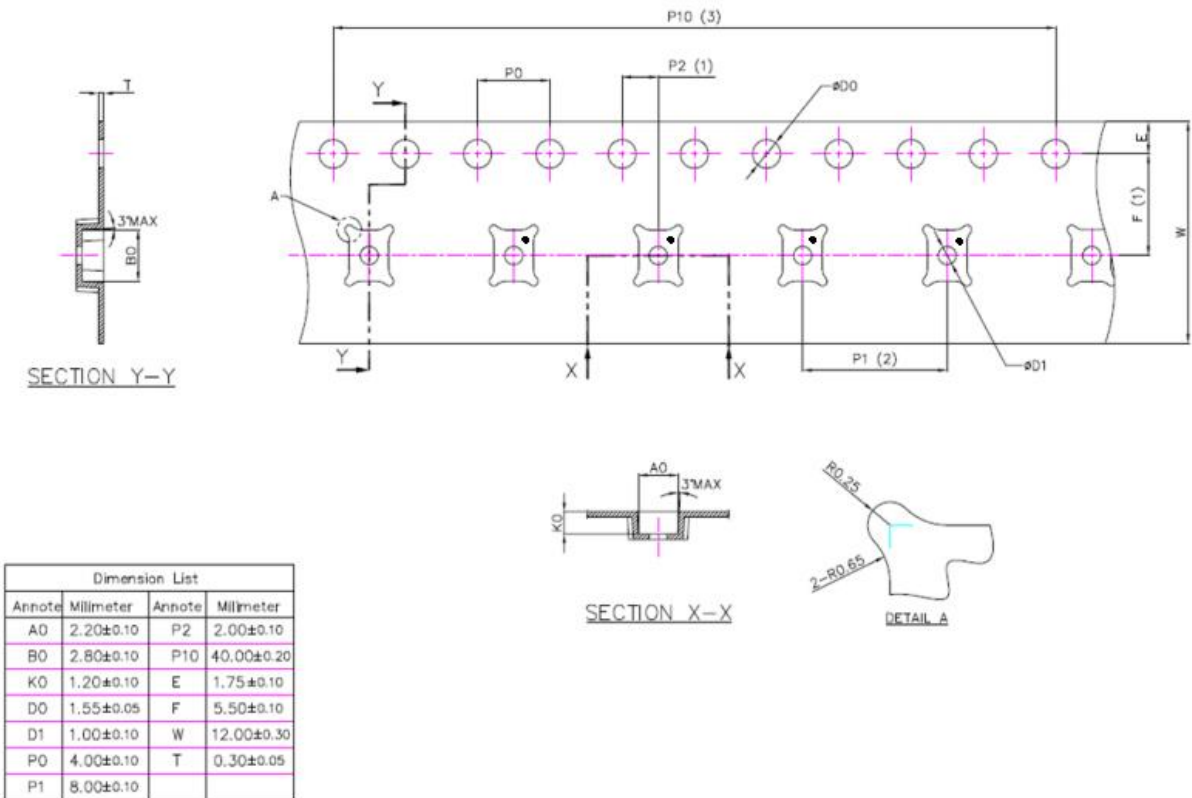
F. Packing:

1. Reel Dimension

3000pcs/reel



2. Tape Dimension



G. Recommended Solder 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.

