



Total Solution Provider in Saw Device

SD-1960T1-C45

Band 2, Rx Balanced SAW Duplexer
Revision 0: September 2015



- Electrical Characteristics
 - Package Dimensions
 - Testing Environment
 - Frequency Characteristics
-

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**Electrical Characteristics****Maximum Ratings**

Parameters Description	Unit	Minimum	Typical	Maximum
Operation Temperature Range	°C	-30	-	+85
Storage Temperature Range	°C	-40	-	+85
Maximum DC Voltage	V	0		
Input Power at Tx Port	dBm	29dBm, Ta=+50°C, 50kh, CW		
Antenna Impedance(Unbalanced) ⁽¹⁾	Ω	50//4.3nH		
Tx Impedance(Unbalanced) ⁽¹⁾	Ω	50		
Rx Impedance(Balanced) ⁽¹⁾	Ω	100 +2.2nH x 2		
Package type		C45		
Length x Width	mm ²	2.0 x 1.6		
Height	mm	0.57		

Electrical Specification

Tx to Ant		Specifications				Remarks
Parameters Description	Condition [MHz]	Unit	Minimum	Typical	Maximum	
Insertion Loss	1850.48 ~ 1909.52	dB	-	2.0	3.0	-20 to +85°C
	1850.6 ~ 1909.4	dB	-	2.0	3.0	
Ripple	1850.48 ~ 1909.52	dB _{p-p}	-	1.0	2.0	
VSWR of Ant Port	1850.48 ~ 1909.52	-	-	1.5	2.0	
VSWR of Tx Port	1850.48 ~ 1909.52	-	-	1.7	2.0	
Absolute Attenuation	1570.0 ~ 1580.0	dB	40	43	-	
	1930.48 ~ 1989.52	dB	44	54	-	-20 to +85°C
	1930.6 ~ 1989.4	dB	42	54	-	
	3700.0 ~ 3820.0	dB	22	33	-	
	5550.0 ~ 5730.0	dB	20	27	-	



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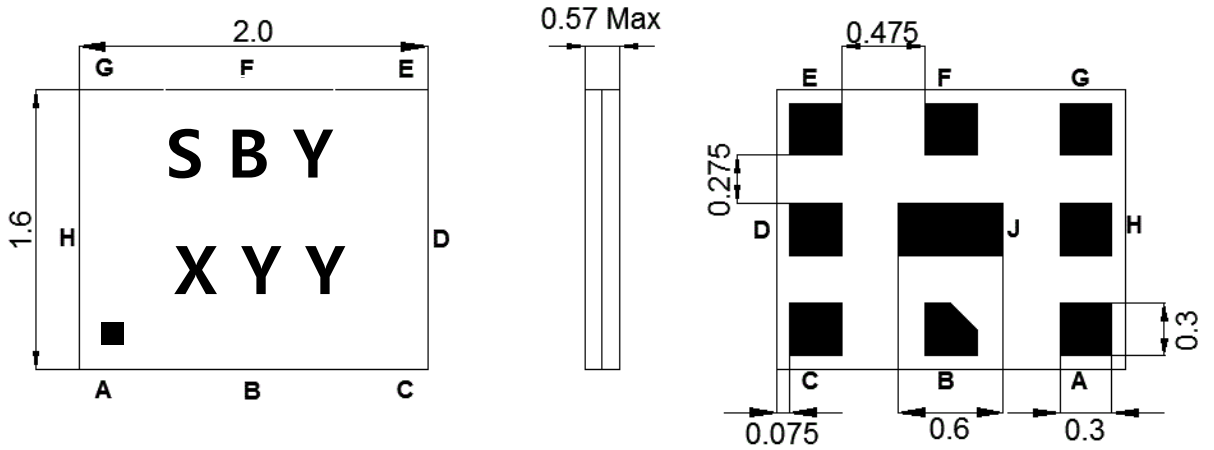
Band 2, Rx Balanced SAW Duplexer

Ant to Rx	Specifications					Remarks
Parameters Description	Condition [MHz]	Unit	Minimum	Typical	Maximum	
Insertion Loss	1930.48 ~ 1989.52	dB	-	3.1	3.5	-20 to +85°C
	1930.6 ~ 1989.4	dB	-	3.1	3.5	
Ripple	1930.48 ~ 1989.52	dB _{p-p}	-	1.6	2.2	
Phase Balance	1930.48 ~ 1989.52	deg	-12	-4/+3	+12	
Amplitude Balance	1930.48 ~ 1989.52	dB	-1.4	-0.4/+0.4	+1.4	
VSWR of Ant Port	1930.48 ~ 1989.52	-	-	1.6	2.0	
VSWR of Rx Port	1930.48 ~ 1989.52	-	-	1.7	2.0	
Absolute Attenuation	1850.48 ~ 1909.52	dB	46	53	-	-20 to +85°C
	1850.6 ~ 1909.4	dB	46	53	-	

Tx to Rx	Specifications					Remarks
Parameters Description	Condition [MHz]	Unit	Minimum	Typical	Maximum	
Isolation	1850.48 ~ 1909.52	dB	53	57	-	-20 to +85°C
	1850.6 ~ 1909.4	dB	53	57	-	
	1930.48 ~ 1989.52	dB	49	53	-	-20 to +85°C
	1930.6 ~ 1989.4	dB	47	53	-	

Notes : (1) With Matching Network

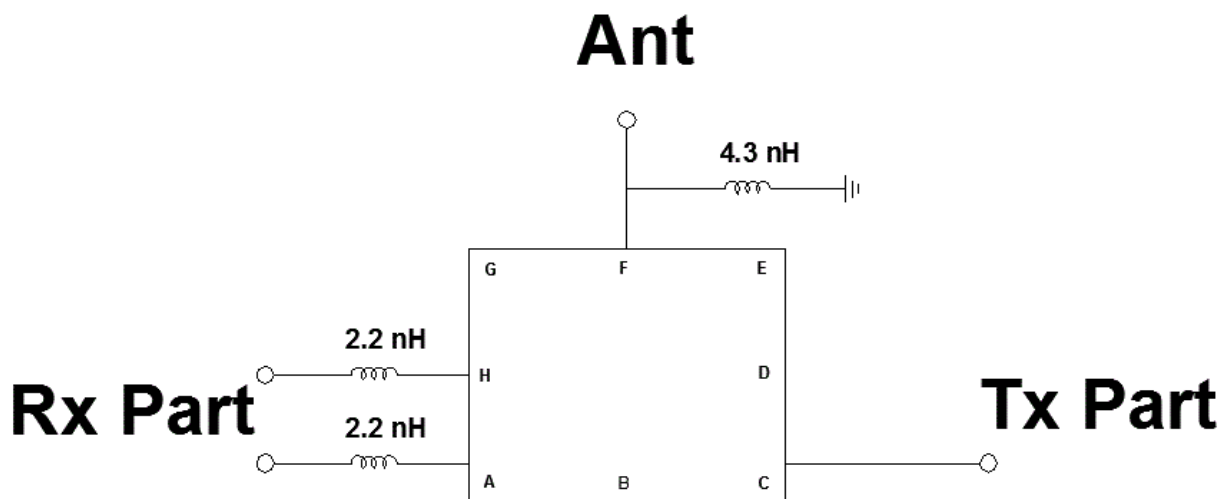
Package Dimensions



Marking Descriptions	
S	SAWNICS
BY	Series Number
X	Date Code(Year+Month)
YY	Lot No

Pin Description	
B,D,E,G,J	Ground
F	Ant
C	Tx (1880.0MHz)
A, H	Rx (1960.0MHz)

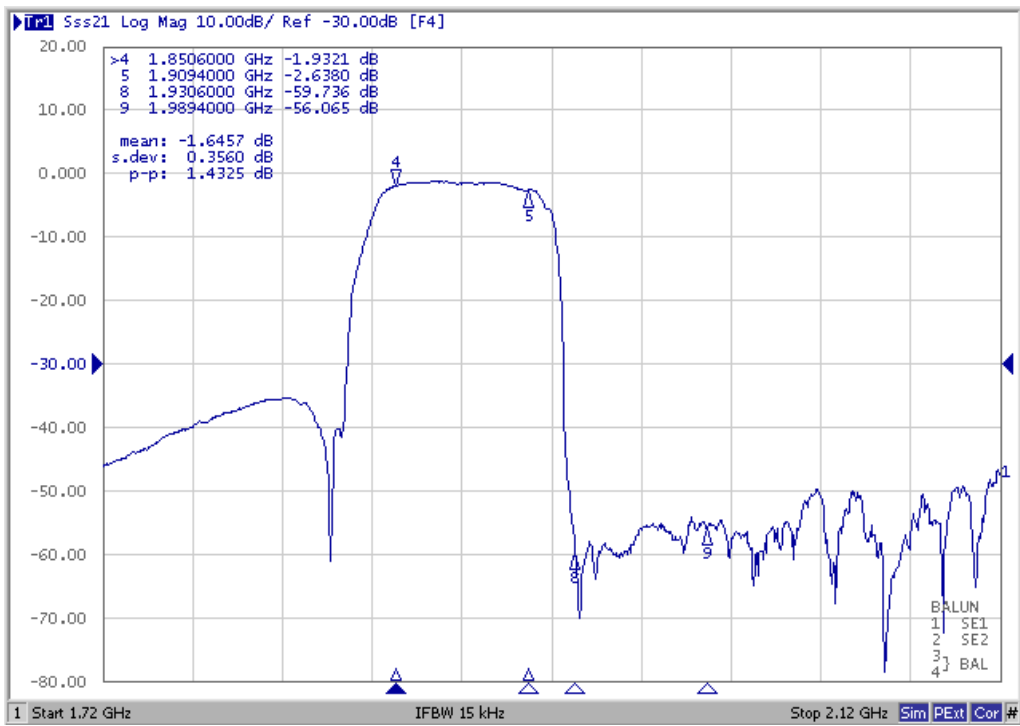
Testing Environment



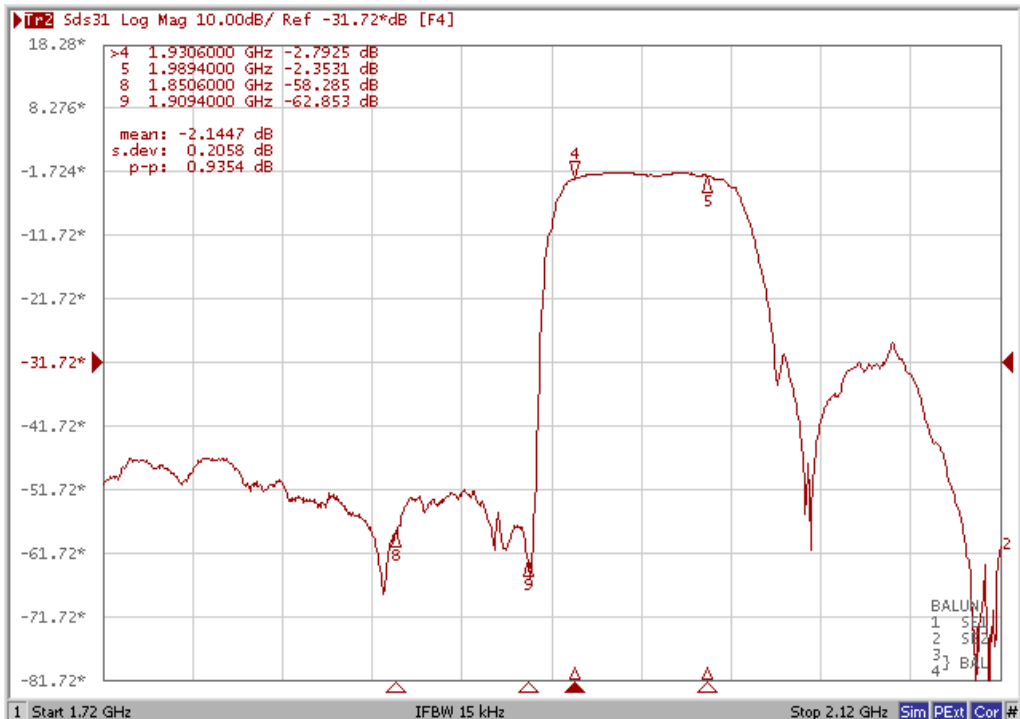


Frequency Characteristics

Tx to Ant



Ant to Rx

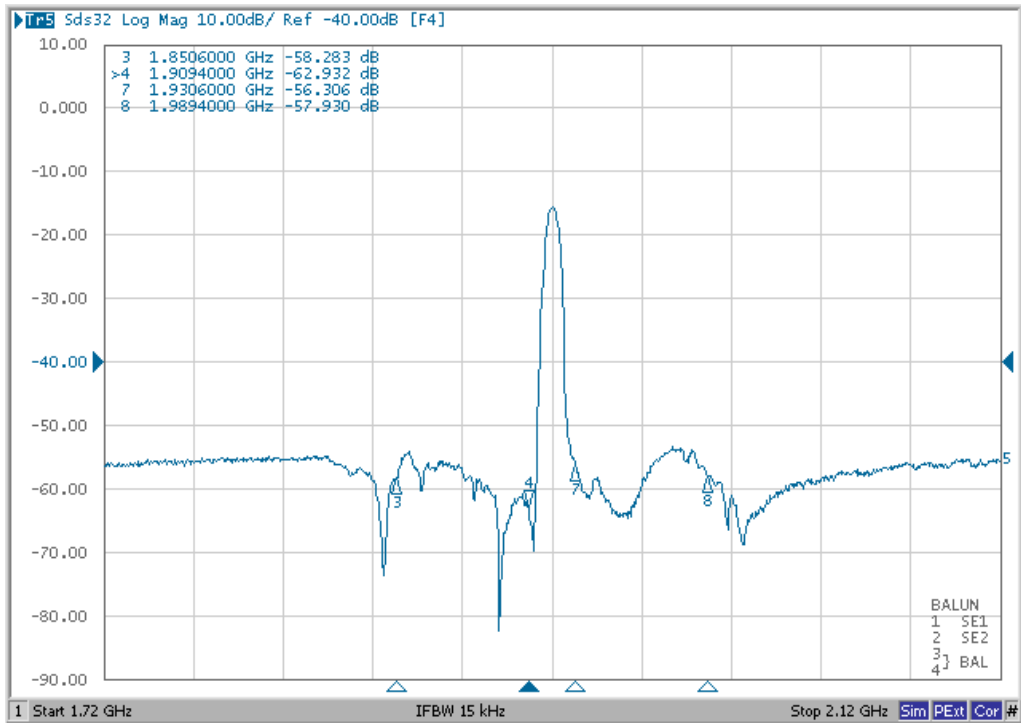




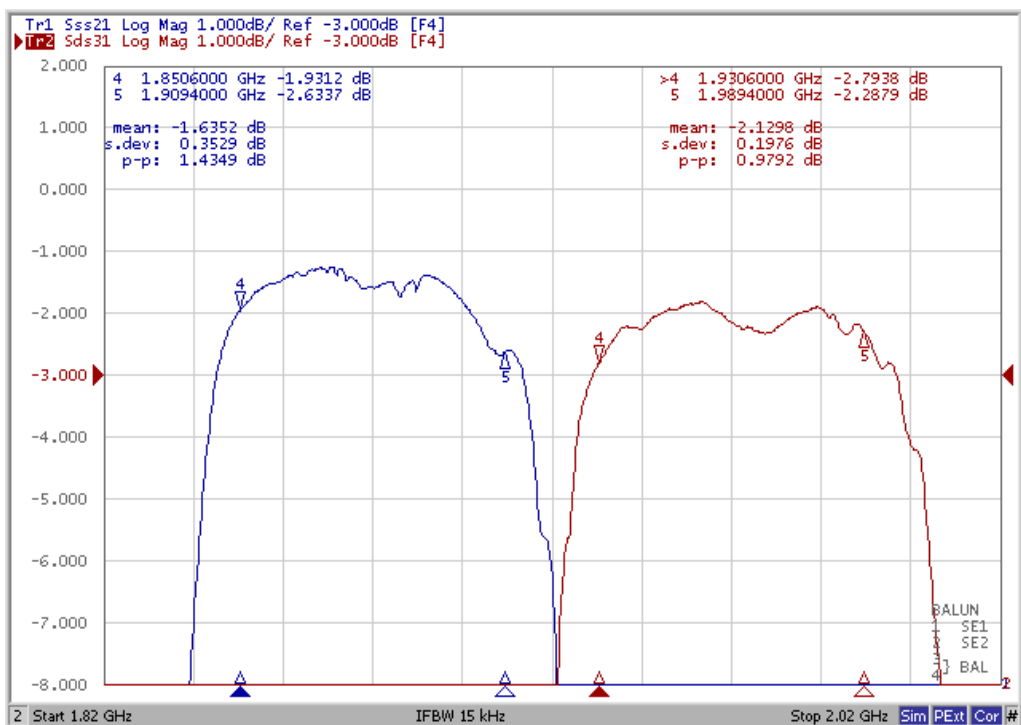
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Isolation

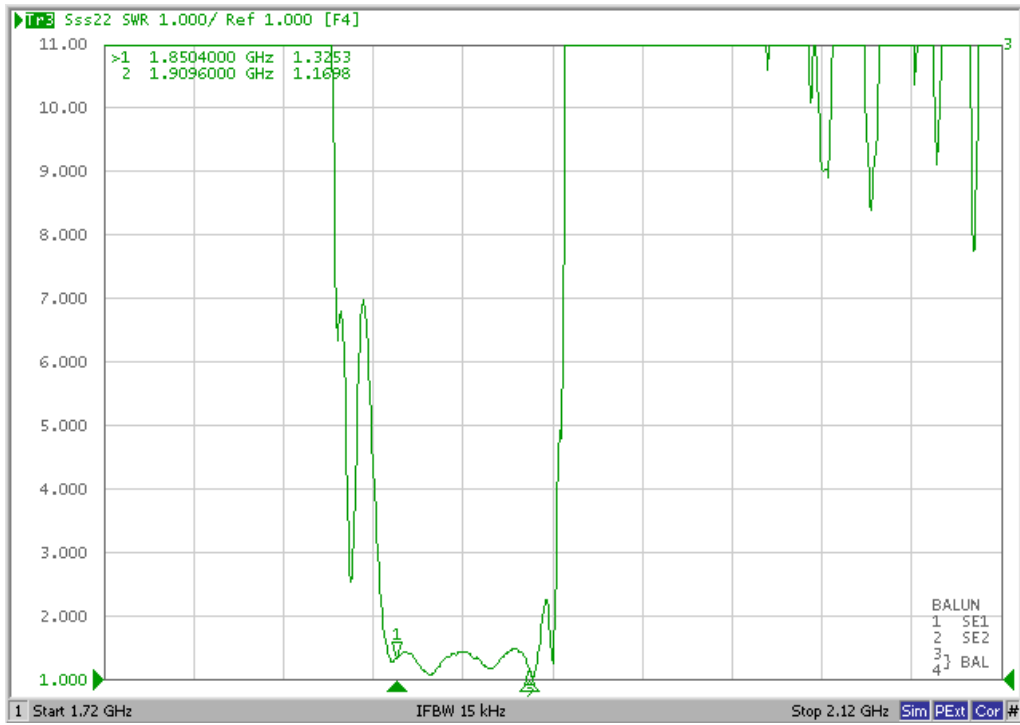


Ripple

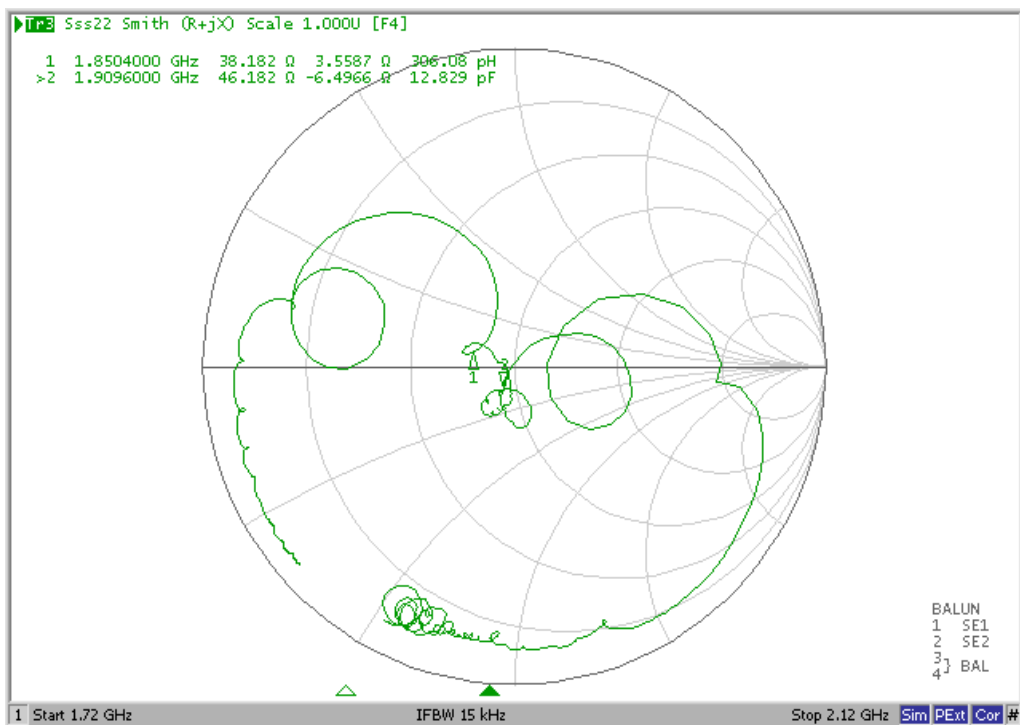




VSWR (Tx Port)



Smith Chart (Tx Port)





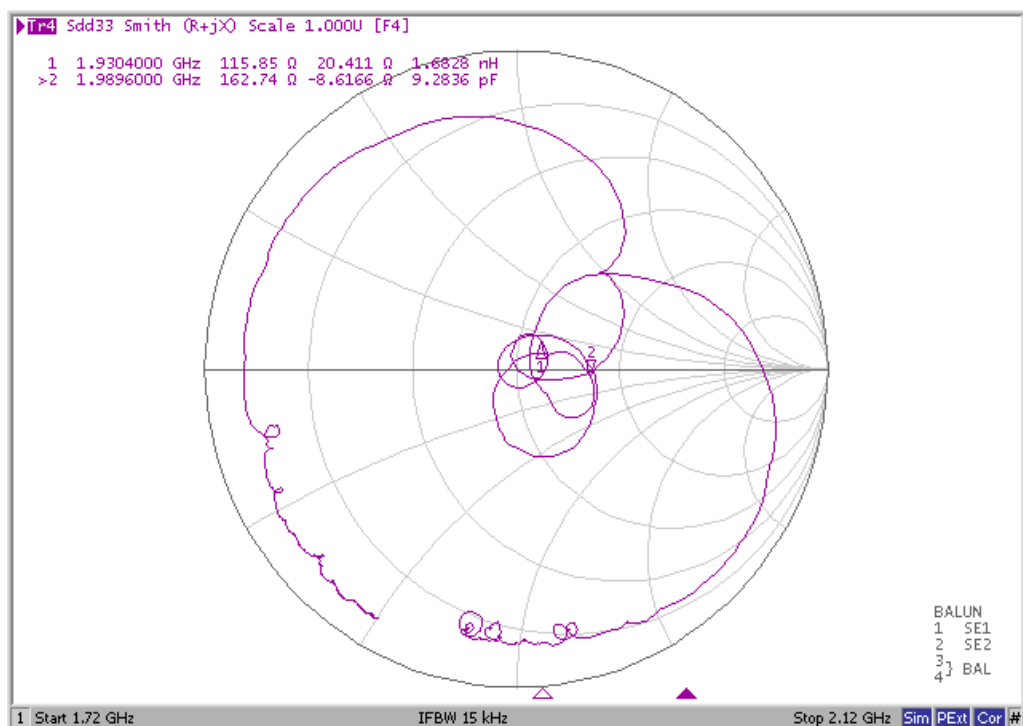
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VSWR (Rx Port)



Smith Chart (Rx Port)

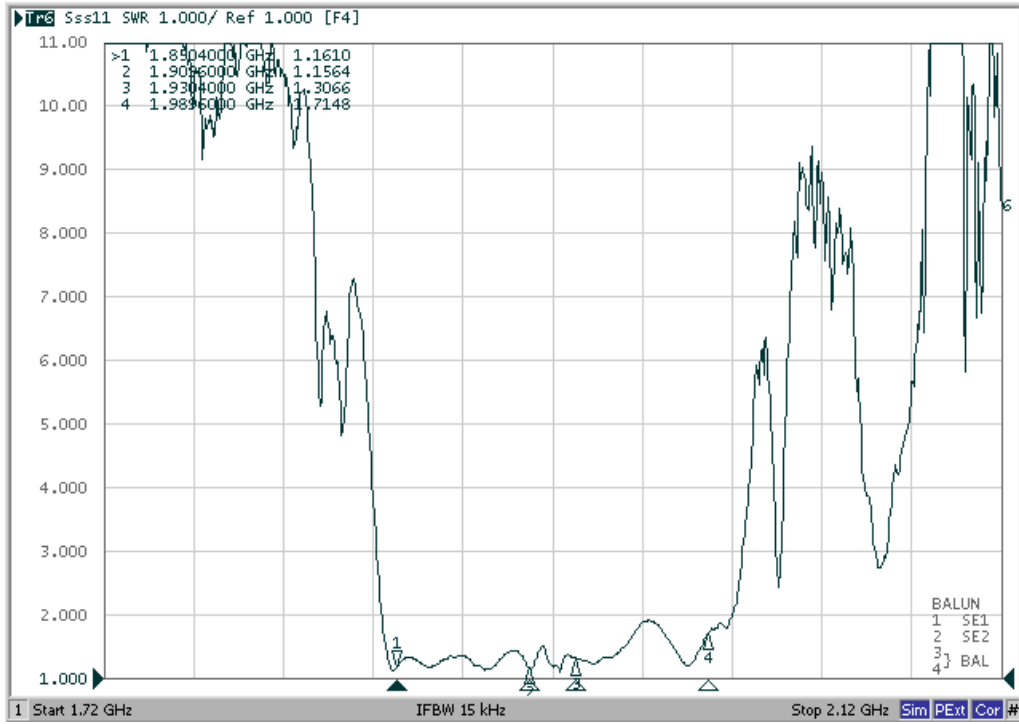




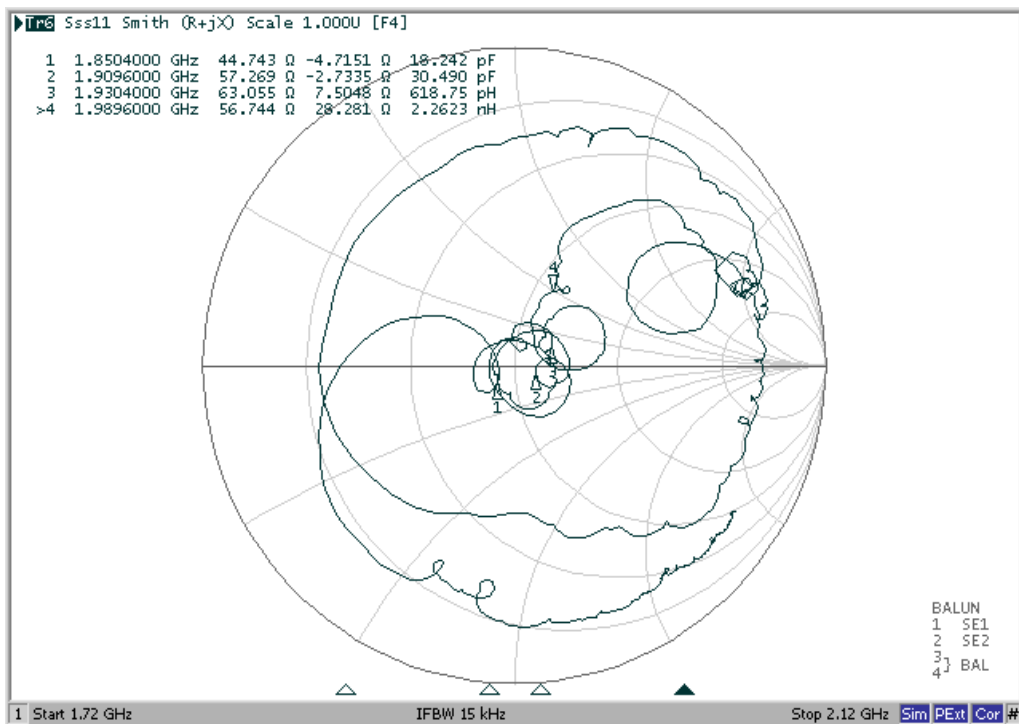
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Band 2, Rx Balanced SAW Duplexer

VSWR (ANT Port)



Smith Chart (ANT Port)

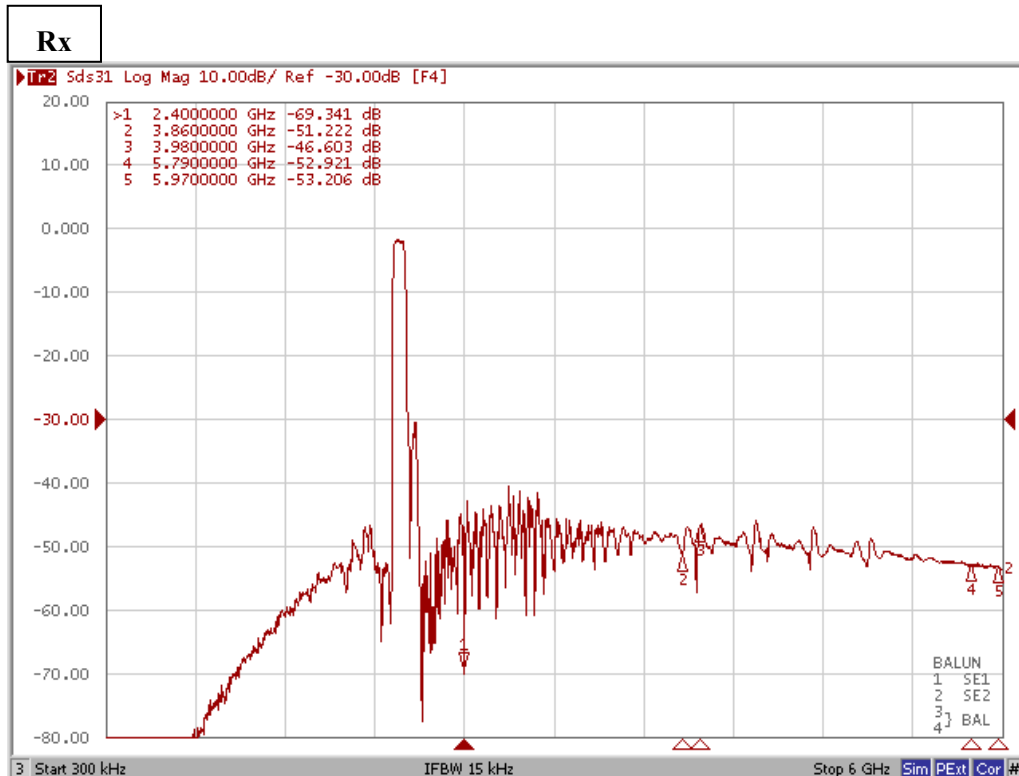
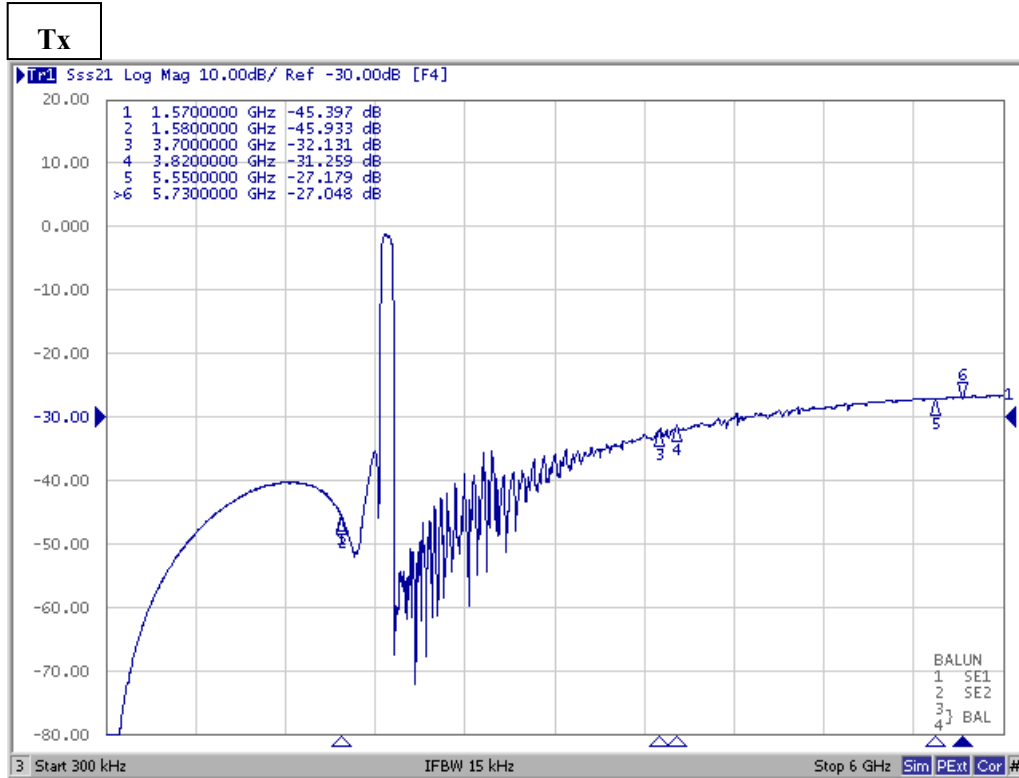




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Wide Span





Amplitude balance of Ant to Rx+/Rx-



Phase balance of Ant to Rx+/Rx-

