



Oscilent Corporation

PRODUCT SPECIFICATION

REV A January 2011

Oscilent Controlled Document

Ordering Code / Part Number	Product Description
813-SL70.0M-13A	70.0 MHz IF SAW Filter 13.96 MHz Bandwidth

Specification Contents

- o Mechanical Dimensions
- o Test Circuit
- o Maximum Ratings
- o Electrical Specification
- o Frequency Response
- o Smith Chart
- o VSWR

Notes

- o Electrostatic Sensitive Device (ESD) 
- o Avoid excessive ultrasonic exposure
- o Solderability compatible with JEDEC J-STD-020C Pb-free process, 260°C peak reflow temperature
- o This product complies with EU directive 2002/95/EC (RoHS compliance)





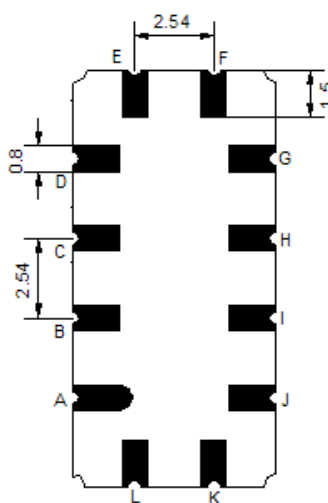
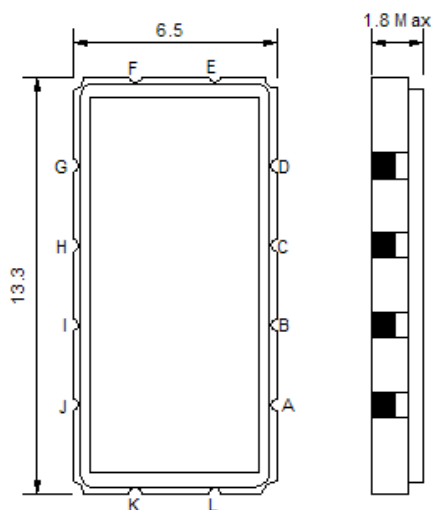
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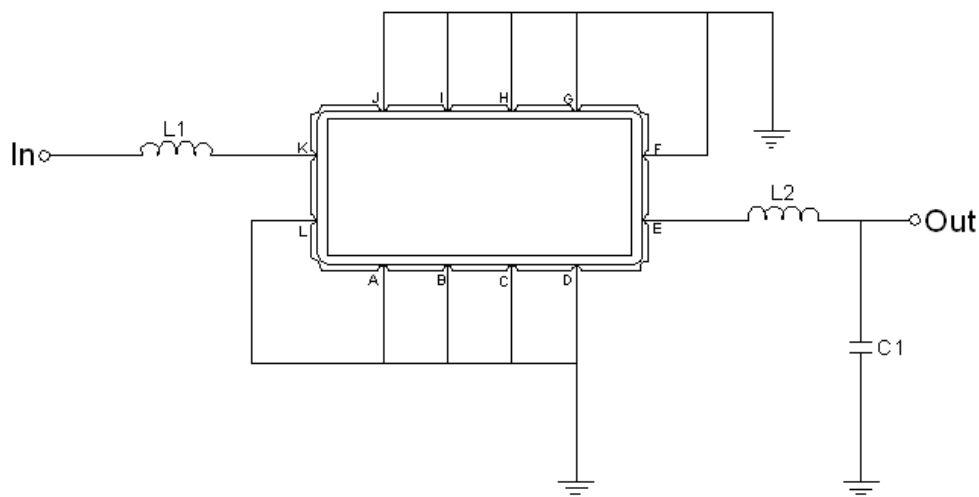
Mechanical Dimensions (mm)



Pin Description

A, B, C, D, F, G, H, I, J, L	Ground
K	Input
E	Output

Test Circuit



Test Fixture & Values

Input	L1 = 82 nH
Output	L2 = 180 nH, C1 = 43 pF
Source/Load Impedance	50 Ω

**Maximum Ratings**

Parameters Description	Unit	Minimum	Typical	Maximum
Operating Temperature Range	°C	-40	-	85
Storage Temperature Range	°C	-40	-	85
Maximum DC Voltage	V	-	-	10
Maximum Input Power	dBm	-	-	10
Source Impedance (single ended) ⁽¹⁾	Ω	-	50	-
Load Impedance (single ended) ⁽¹⁾	Ω	-	50	-

Notes: With Matching Network (Ref. Testing Environment Circuit as shown above).

Those impedances could be modified with different impedance values and/or structures, if necessary.

Electrical Specification

Parameters Description	Unit	Minimum	Typical	Maximum
Center Frequency (Fo)	MHz	69.5	70.00	70.5
Insertion Loss at Fo	dB	-	11.7	13.5
Group Delay Variation (Fo±5.75MHz)	nsec	-	26	80
Absolute Delay at Fo	usec	-	0.85	-
Passband Ripple Variation (Fo±5.75MHz)	dB	-	0.4	0.8
Phase Linearity (Fo±5.75MHz)	deg	-	3.7	50
Bandwidth at -1dB	MHz	13.60	13.96	-
Bandwidth at -3dB	MHz	14.40	14.75	-
Bandwidth at -40dB	MHz	-	18.30	19.80
Relative Attenuation				
At 0.1 to 55.0 MHz	dB	50	55	-
At 55.0 to 60.0 MHz	dB	40	44	-
At 63.35 to 76.65 MHz	dB	-	1.0	3.0
At 80.0 to 85.0 MHz	dB	40	45	-
At 85.0 to 110.0 MHz	dB	50	52	-
Temperature Coefficient	ppm/°C	-	-86	-

**Maximum Ratings**

Parameters Description	Unit	Minimum	Typical	Maximum
Operating Temperature Range	°C	-	25	-
Storage Temperature Range	°C	-40	-	85
Maximum DC Voltage	V	-	-	10
Maximum Input Power	dBm	-	-	10
Source Impedance (single ended) ⁽¹⁾	Ω	-	50	-
Load Impedance (single ended) ⁽¹⁾	Ω	-	50	-

Notes: With Matching Network (Ref. Testing Environment Circuit as shown above).

Those impedances could be modified with different impedance values and/or structures, if necessary.

Electrical Specification

Parameters Description	Unit	Minimum	Typical	Maximum
Center Frequency (Fo)	MHz	69.85	70.00	70.15
Insertion Loss at Fo	dB	-	11.7	12.7
Group Delay Variation (Fo±6.1MHz)	nsec	-	30	80
Absolute Delay at Fo	usec	-	0.85	-
Passband Ripple Variation (Fo±6.1MHz)	dB	-	0.4	0.6
Phase Linearity (Fo±6.1MHz)	deg	-	5.4	15
Bandwidth at -1dB	MHz	13.60	13.96	-
Bandwidth at -3dB	MHz	14.40	14.75	-
Bandwidth at -40dB	MHz	-	18.30	19.80
Relative Attenuation				
At 0.1 to 55.0 MHz	dB	50	55	-
At 55.0 to 60.35 MHz	dB	40	44	-
At 63.0 to 77.0 MHz	dB	-	1.5	3.0
At 79.65 to 85.0 MHz	dB	40	45	-
At 85.0 to 110.0 MHz	dB	50	55	-
Temperature Coefficient	ppm/°C	-	-86	-



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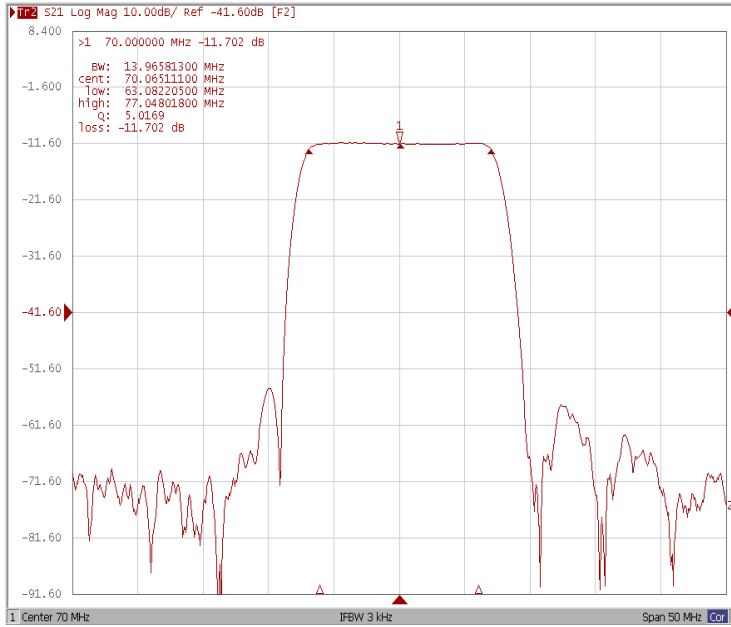
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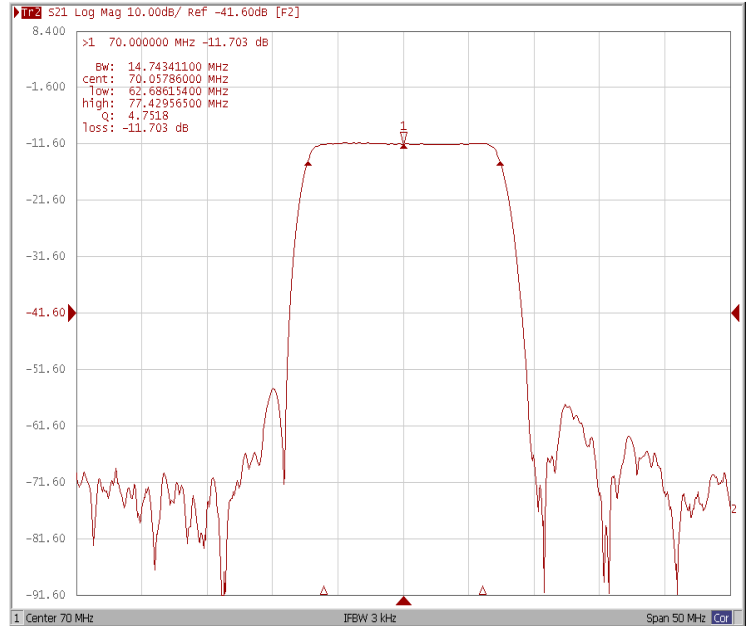
70.0 MHz IF SAW Filter 13.96 MHz Bandwidth

Frequency Response

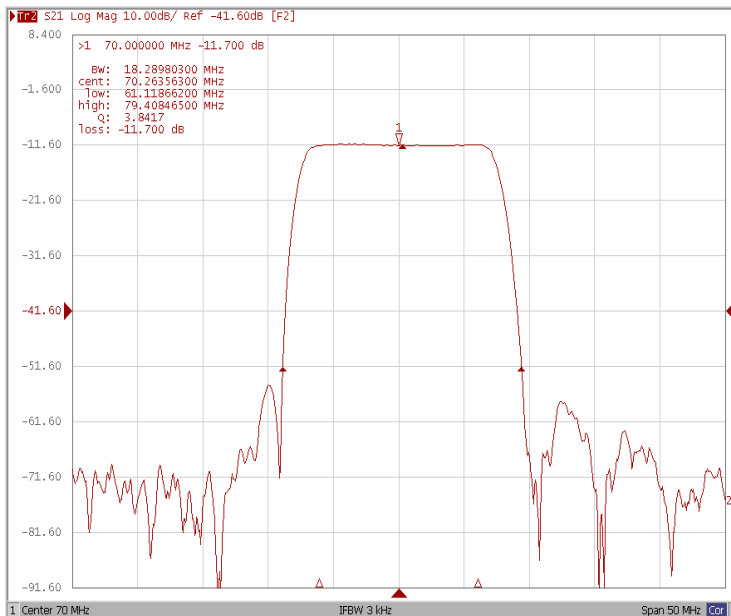
Bandwidth at -1.0 dB



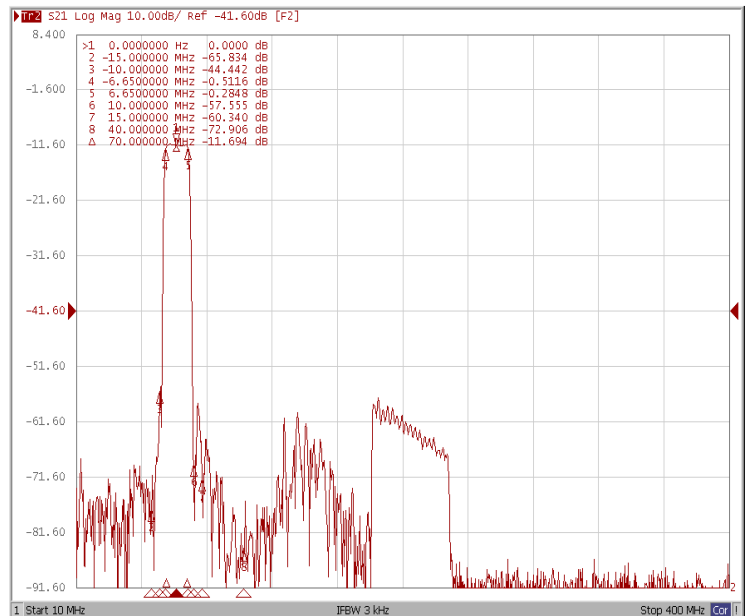
Bandwidth at -3.0 dB



Bandwidth at -40.0 dB



Wide Attenuation





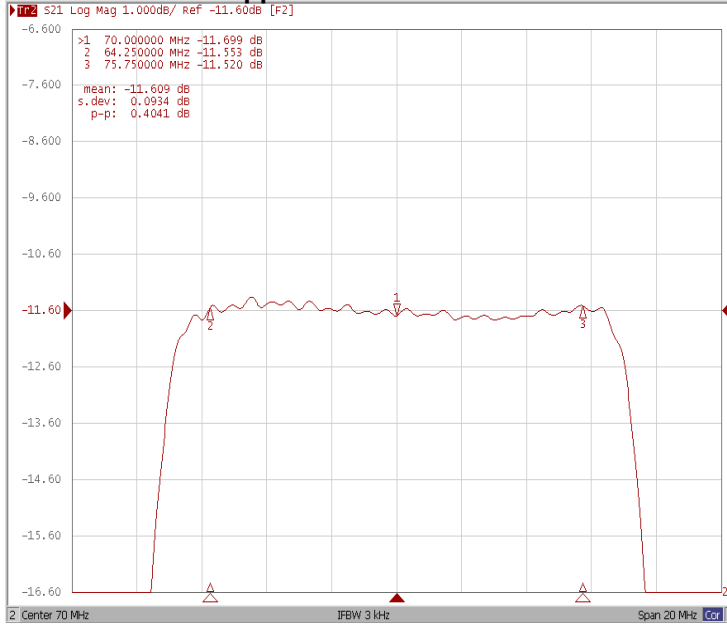
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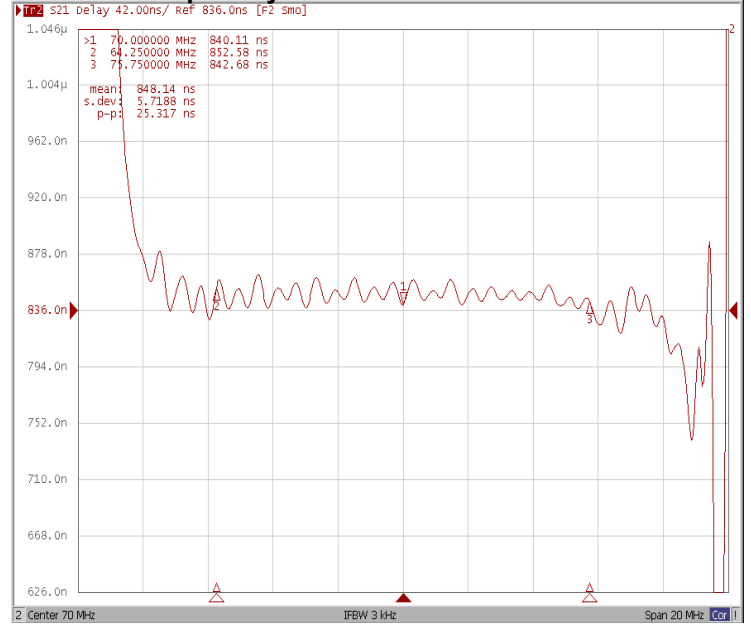
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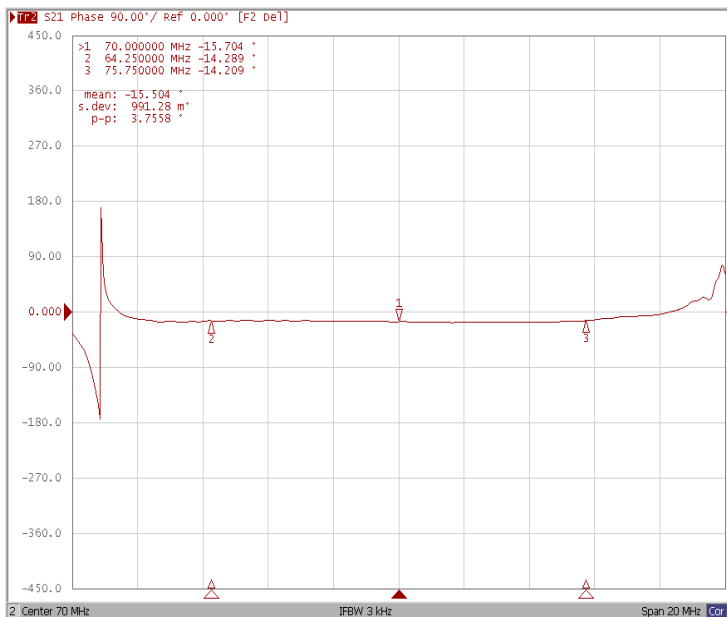
Ripple Variation $F_o \pm 5.75\text{MHz}$



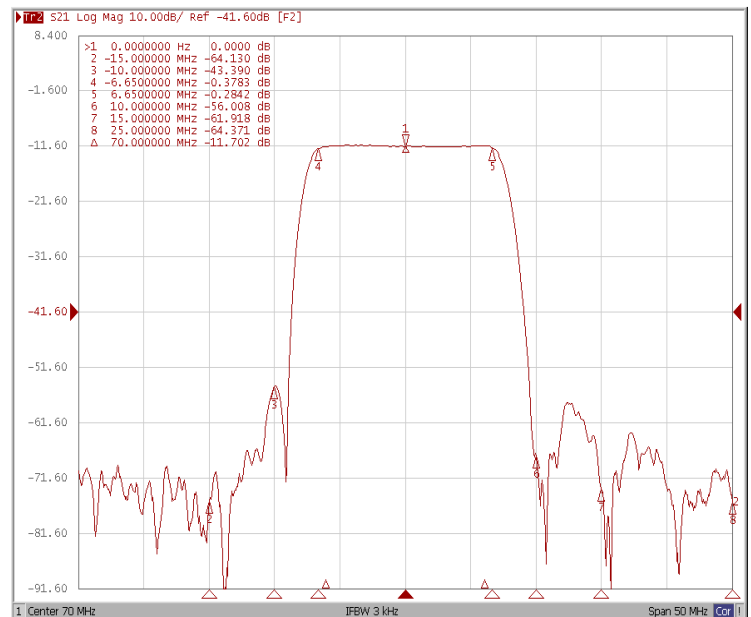
Group Delay Variation $F_o \pm 5.75\text{MHz}$



Phase Linearity $F_o \pm 5.75\text{MHz}$



Relative Attenuation





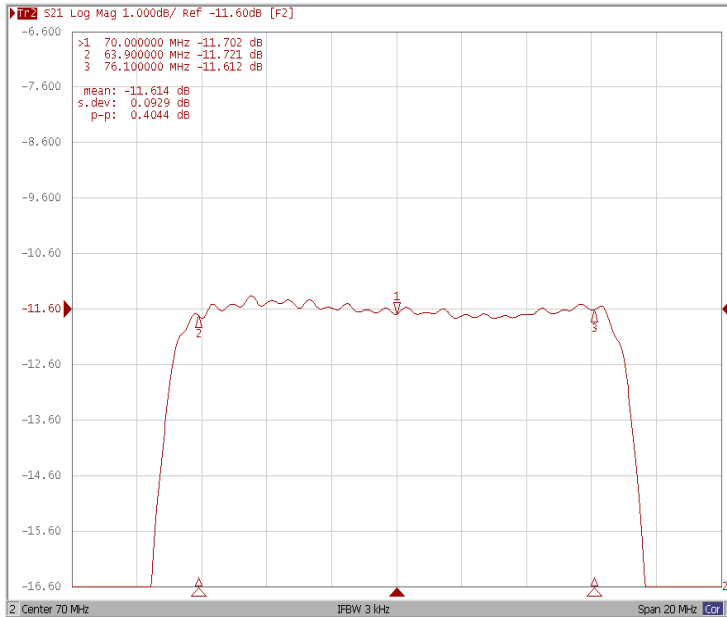
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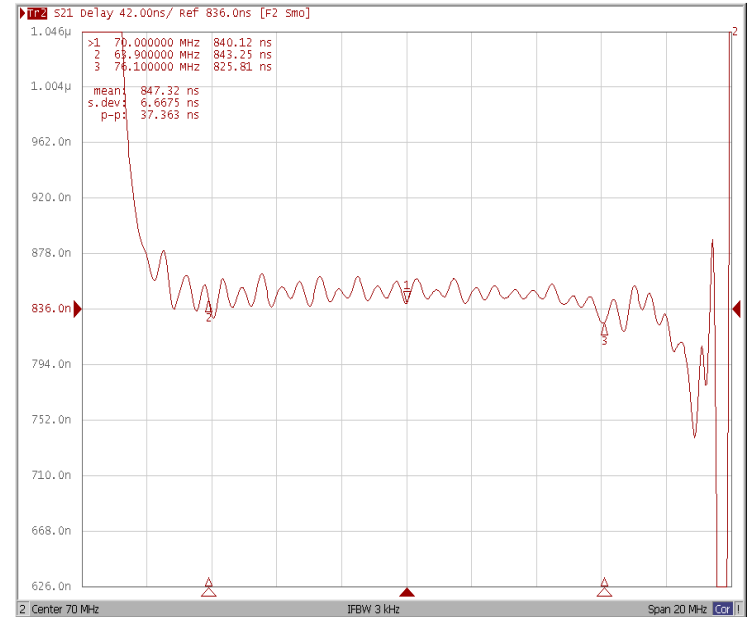
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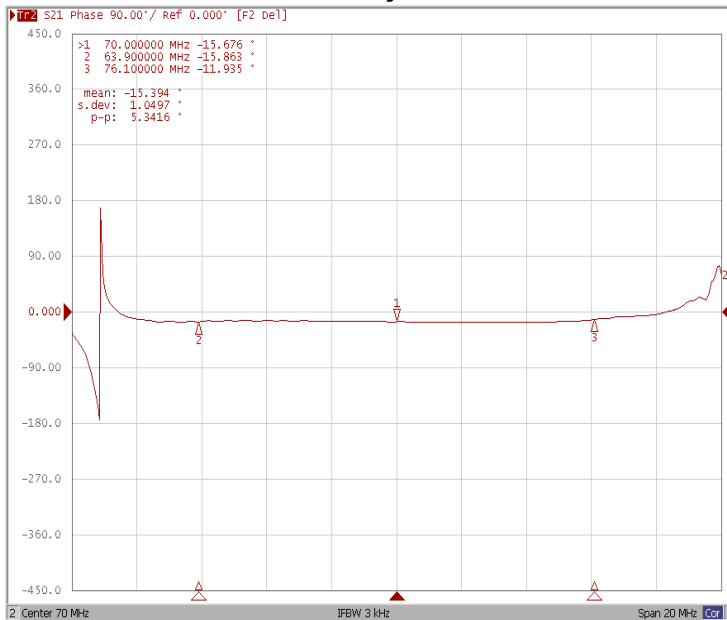
Ripple Variation Fo±6.1MHz



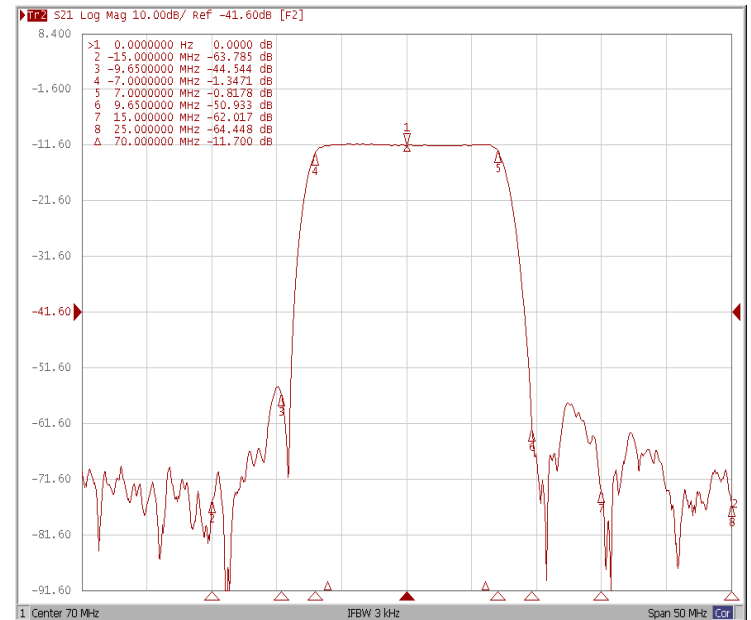
Group Delay Variation Fo±6.1MHz



Phase Linearity Fo±6.1MHz



Relative Attenuation





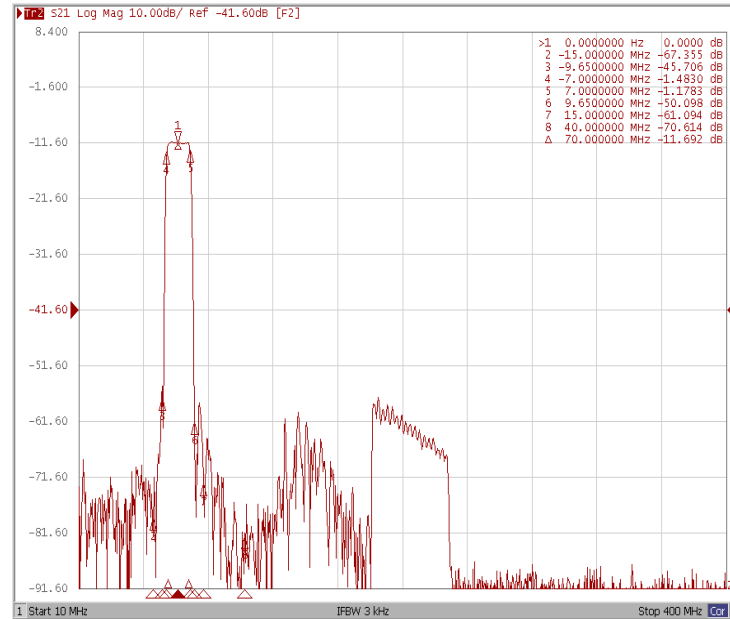
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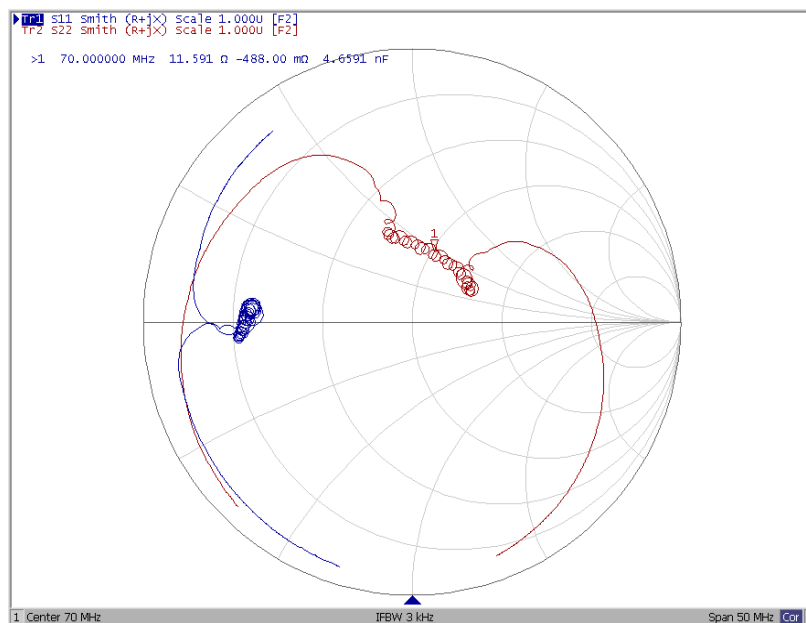
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Wide Attenuation



Smith Chart





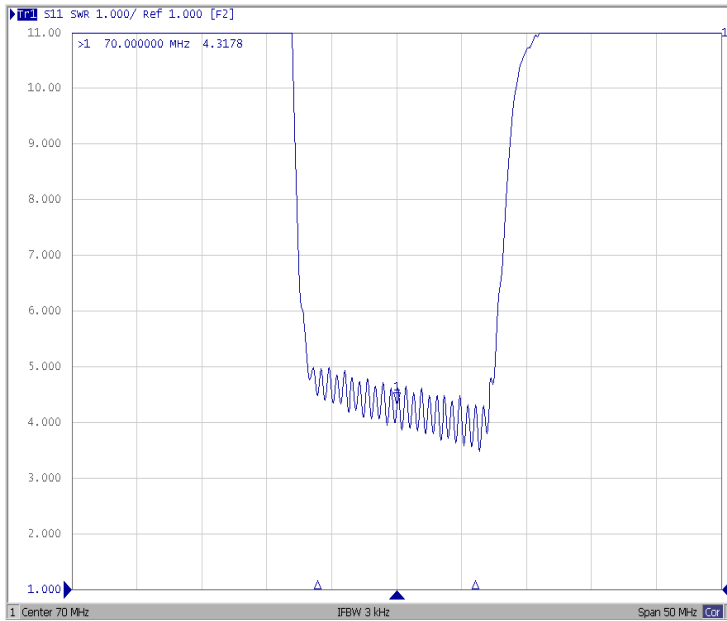
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VSWR

S11



S22

