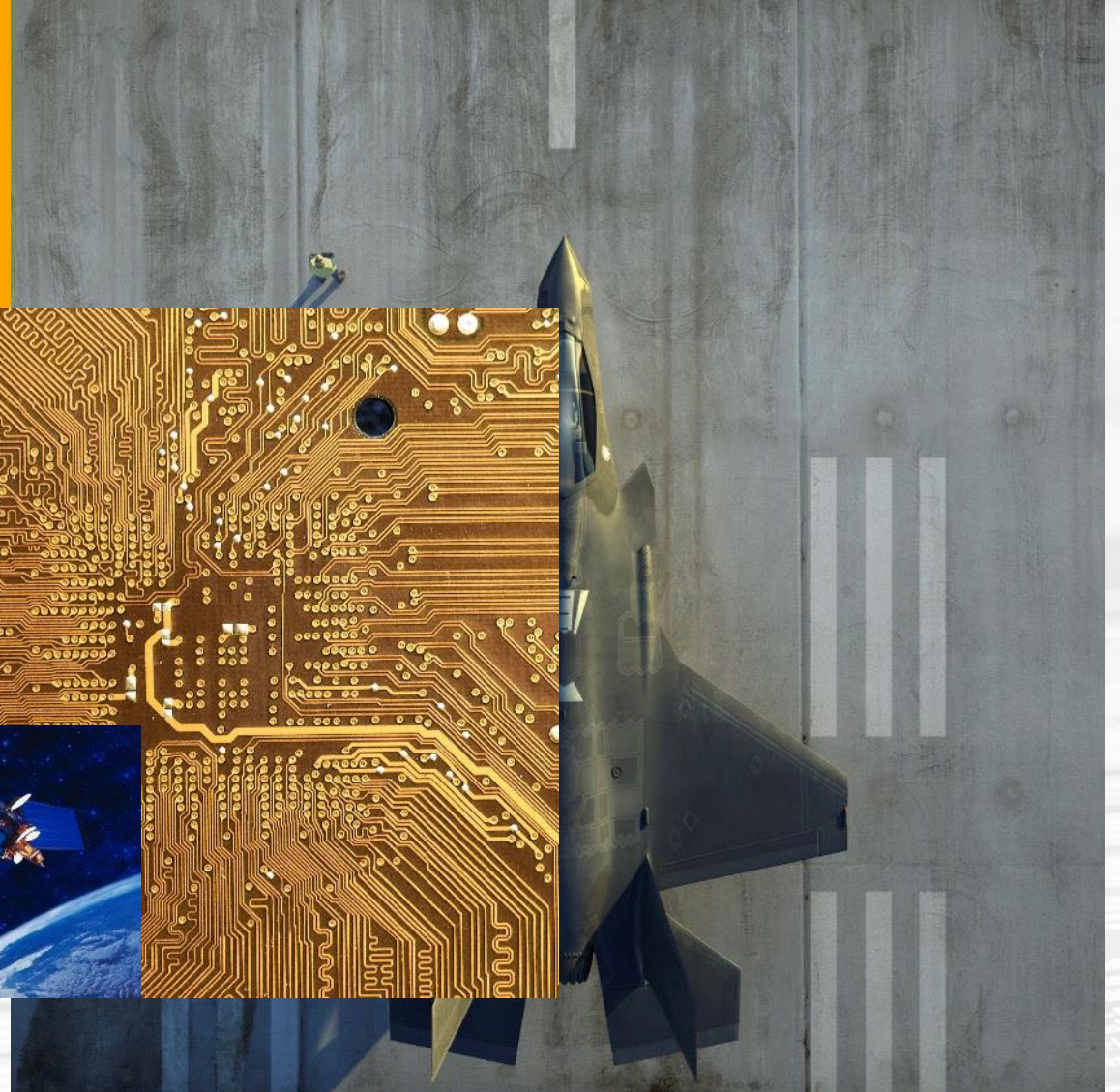
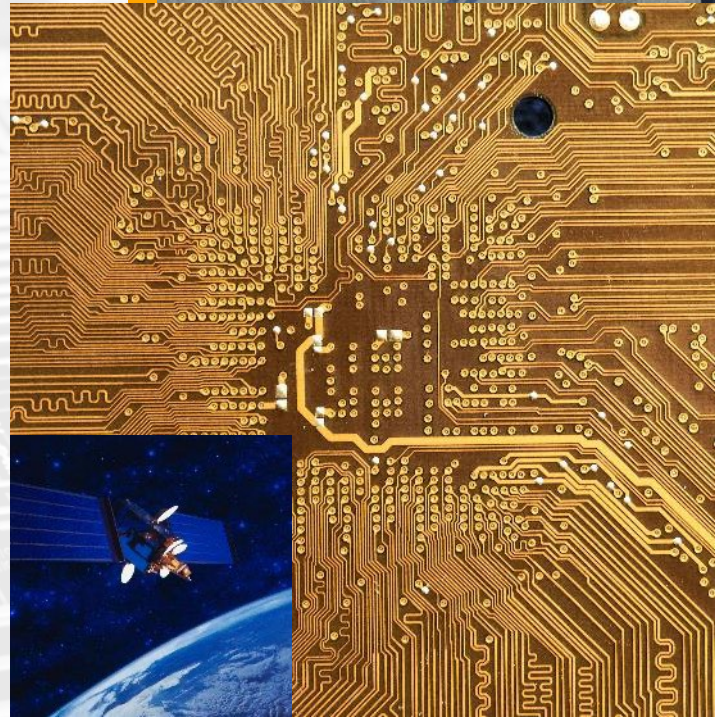


Research & Development - RF & Microwave Filters & Switch Filter Banks

May 15th, 2024

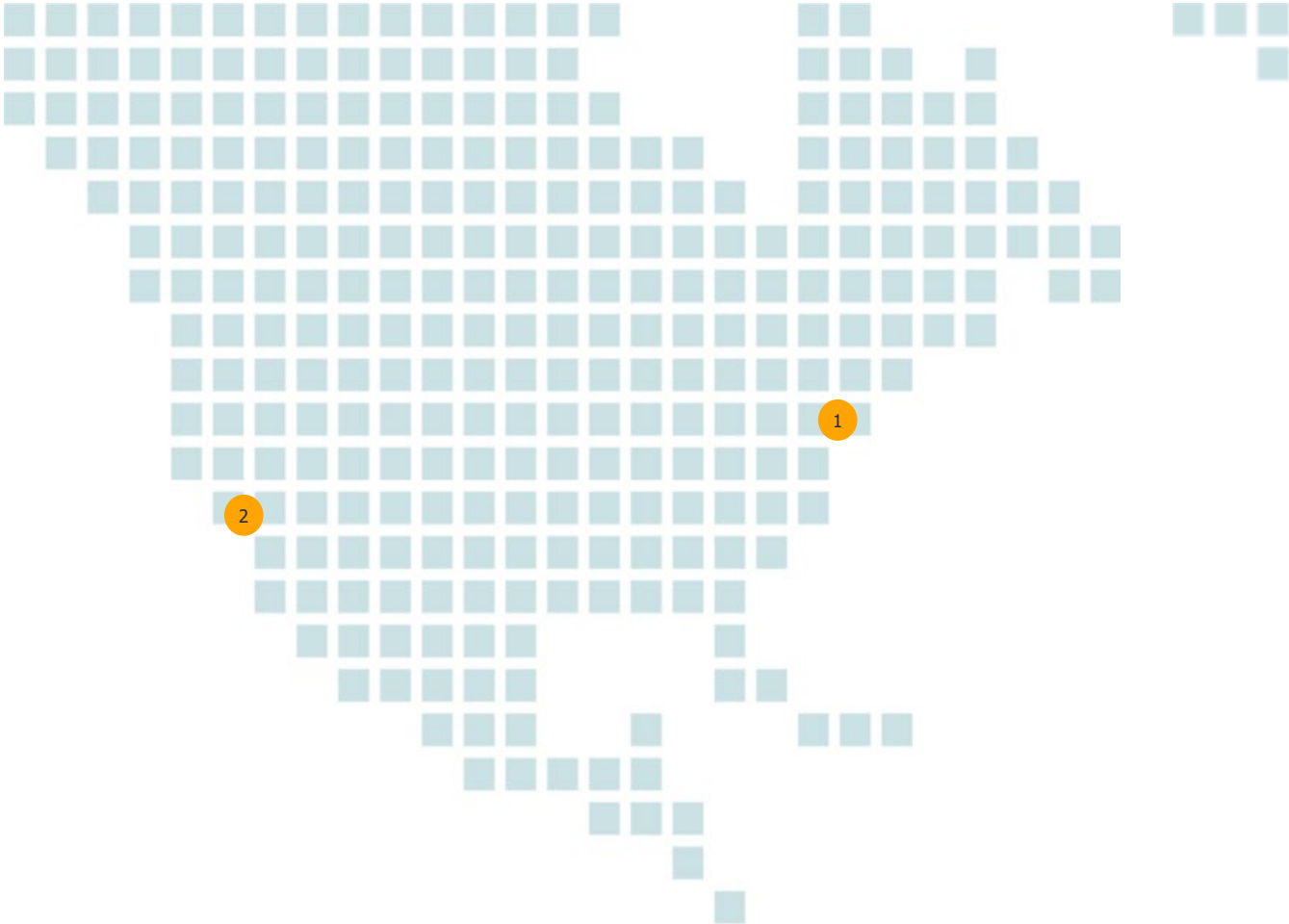


Quantic PMI Overview

Global leader within military, space and commercial markets

- > Design & manufacture of Quality RF & Microwave Components & Integrated Module Assemblies
- > Offers more than 4000 commercial off-the-shelf models with test results, S-parameters, 3D models and detailed specs available.
- > Every product is built to rigorous MIL-STD specs
- > ITAR & ISO-9001 Certifications
- > Industry-leading sales and applications support, leading to lower costs and faster lead times than competitive options.

Design and Manufacturing Locations



RF & Microwave

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Fax: 301.662.1731

- 2 Quantic PMI – EL Dorado Hills, California
West Coast Operation
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FAX: 916.265.2597

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Research & Development

Filters & Switch Filter Banks
for industrial & military applications!

- > [Switch Filter Banks](#)

- > [Low Pass & High Pass Filters](#)

- > [Bandpass Filters \(Suspended Substrate & Cavity\)](#)

- > [Band Reject & Lumped Element Filters](#)

- > [Diplexers, Triplexers, Multiplexers, Quadraplexers](#)

- > [Form, Fit, Function Products & Services](#)

Quality switch filter banks, filter assemblies, for industrial and military applications!

Standard or Custom Designed Models

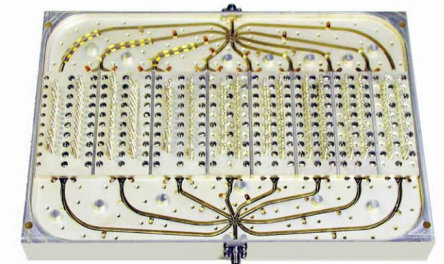
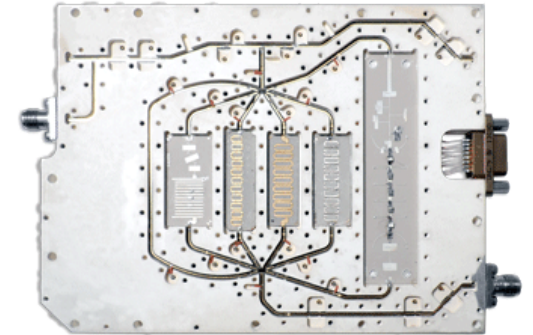
> Features

- 2 to 32 multichannel configurations
- Frequency coverage up to 70 GHz
- Quantic PMI's proprietary Solid-state Switch designs
- High speed and improved performance
- Low profile packaging
- High channel to channel isolation

> Options

- Hermetic Sealing
- Custom Packages
- Connector options
- Design and built to meet your specifications
- Military or Space Screening

> Form, Fit & Function Products & Services



Switch Filter Banks

Standard Off-the-Shelf Models...



2 CH Switch Filter Bank



2 CH Switch Filter Bank



2 CH Switch Filter Bank



3 CH Switch Filter Bank



4 CH Switch Filter Bank



5 CH Switch Filter Bank



6 CH Switch Filter Bank



6 CH Switch Filter Bank



6 CH Switch Filter Bank



Integrated Dual 6 CH
Filter Bank Module



7 CH Switch Filter Bank



8 CH Switch Filter Bank



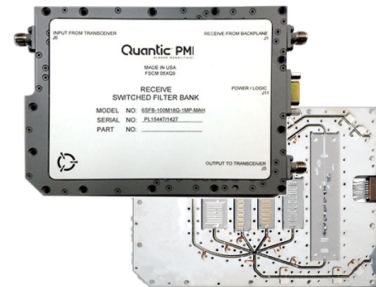
8 CH Switch Filter Bank



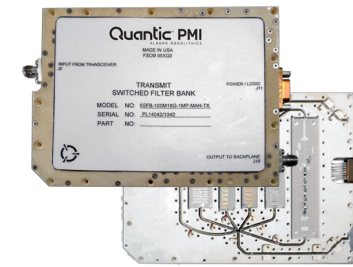
8 CH Switch Filter Bank



10 CH Switch Filter Bank



Receive Switched Filter Bank



Transmit Switched Filter Bank



16 CH Switch Filter Bank

2 Ch Switch Filter Bank, SFB-6G18G-2CH-6DB-500NS-SFF



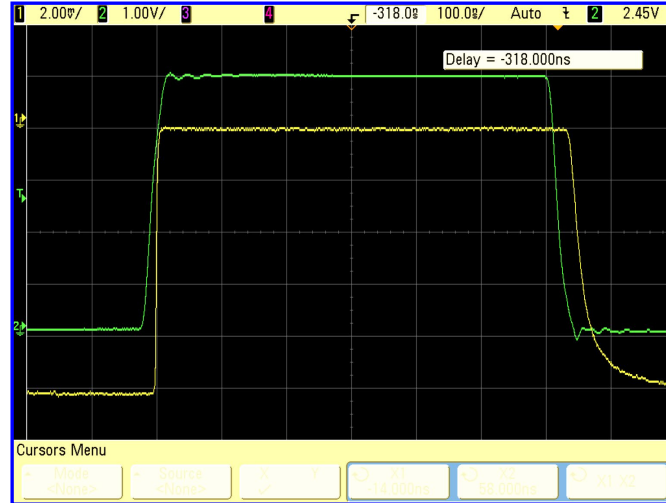
- > 2 Channel: 6 to 10.4 GHz and at 10.4 to 18 GHz.
- > Both channels have a 6 dB insertion loss, a VSWR of 2.0:1 max, and greater than 60 dBc isolation
- > Max switching speed is 500 ns and video leakage is <100 mV
- > Physical size 3.00" x 2.00" x 0.75", Painted Blue finish, Bottom Side Unpainted (Gold Plated)
- > SMA female connector

PARAMETERS	SPECIFICATIONS
Frequency CH1	6 to 10.4 GHz
Frequency CH2	10.4 to 18 GHz
Insertion Loss CH1 & CH2	6 dB
Input VSWR CH1 & CH2	2.0:1 Max
Output VSWR CH1 & CH2	2.0:1 Max
Isolation	60 dBc min
CH1 Rejection	50 dBc @ 12 to 18 GHz
Switching Speed	500 ns max.
Second Harmonic	60 dBc @ +27 dBm
Input Power	+27 dBm
Video Leakage	100 mV Max (In 100 MHz Bandwidth)
Power Supply	+5 VDC @ 100 mA Max -15 VDC @ 100 mA Max

2 Ch Switch Filter Bank, 2SFB-8G26G-CD-SFF Rev C



FULL PULSE
Green Trace: TTL Signal
Yellow Trace: RF Signal



- > Lowpass filter that passes 8.62 to 8.7 GHz with a rejection band of 17.24 to 17.4 GHz
- > In bypass mode the unit passes signals from 8 to 26.5 GHz
- > This unit is powered by a +5 V single supply and the control logic is TTL/CMOS +5V compatible
- > Unit size 1.5" x 0.8" x 0.5" with SMA connectors

PARAMETERS	SPECIFICATIONS
Pass-Band	
Frequency Range	8.62 to 8.7 GHz
Insertion Loss	5.5 dB Max
Flatness	1 dB Max Peak-Peak
Isolation of RF Input from Power and Control Outputs	50 dB Min (Between 8 and 26.5 GHz)
VSWR	2.0:1 Max across frequency range
Group Delay	1 ns Max
Reject Band	
Frequency Range	17.24 to 17.4 GHz
Rejection	20 dB Min
Bypass	
Frequency Range	8 to 26.5 GHz
Insertion Loss	5 dB Max within ± 2 dB of Max passband insertion loss
Flatness	1 dB Max P-P over each 0.1 GHz segment
VSWR	2.0:1 Max across frequency range
Input RF Power Level (No Damage)	+20 dBm CW Max (powered & unpowered)
Input IP3 (pin = -10 dBm, $\Delta F = 2$ MHz)	+27 dBm Max, +32 dBm Typ
Switching Speed	100 ns Max

2 CH Switch Filter Bank, 2SFB3000-6G-CD-SFF



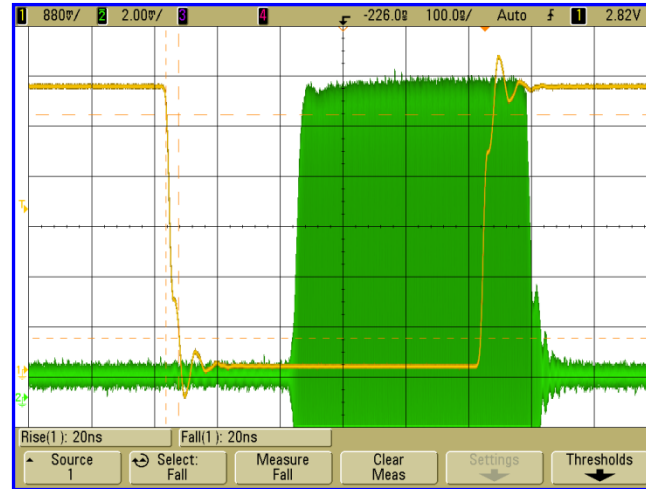
- > 2 CH channel switch filter bank:
Channel 1 centered at 1.9 GHz with a 0.064 GHz bandwidth
Channel 2 centered at 1.1 GHz with a bandwidth of 0.064 GHz
- > Switching speeds of <50 ms
- > Unit size 2.7" x 4.4" x 0.44" with SMA connectors

PARAMETERS	SPECIFICATIONS
Channel 1 Specifications	
Center Frequency	1.9 GHz
Passband	1.868 to 1.932 GHz
Rejection	-60 dB Min @ 2.015 to 6 GHz -60 dB Min @ DC to 1.785 GHz
Channel 2 Specifications	
Center Frequency	1.1 GHz
Passband	1068 to 1132 MHz
Rejection	-60 dB Min @ 1215 to 6 GHz -60 dB Min @ DC to 0.985 GHz
Common Specifications	
Insertion Loss	7.0 dB Max
Isolation	60 dB Min
VSWR	2.0:1 Max
Switching Speed	50 ms
Control	TTL Logic "0" = Channel 1 Logic "1" = Channel 2
RF Power Rating	+30 dBm CW Max
Power Supply	+5 VDC @ 70 mA -5 VDC @ 70 mA

3 CH Switch Filter Bank, 3SFB-0R52R0-CD-SFF



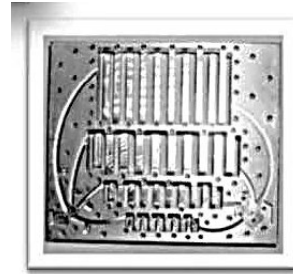
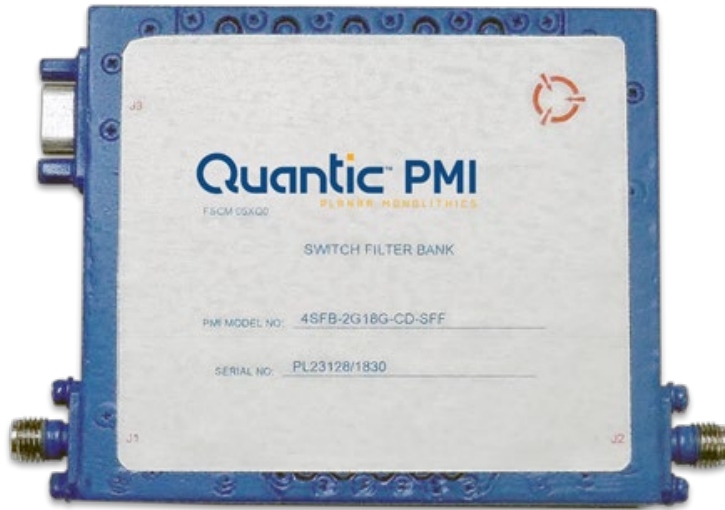
Switching Speed
On/Off Delay – 100 ns per Div.
Green Trace: RF Signal
Yellow Trace: TTL Signal



- > Operates over the 0.5 to 2 GHz frequency range.
- > Includes an integral TTL driver and offers fast switching speeds of <200 ns.
- > Unit size 2.75" x 1.75" x 0.75" with SMA connectors

Channel 1 Specifications	
Center Frequency	0.65 GHz
Passband	0.5 to 0.8 GHz
Rejection	-50 dBc Min @ DC to 0.2 GHz, 1.0 to 1.6 GHz
Channel 2 Specifications	
Center Frequency	1.05 GHz
Passband	0.8 to 1.3 GHz
Rejection	-50 dBc Min @ DC to 0.4 GHz, 1.6 to 4 GHz
Channel 3 Specifications	
Center Frequency	1.65 GHz
Passband	1.3 to 2 GHz
Rejection	-50 dBc Min @ DC to 0.4 GHz, & 2.8 to 5 GHz
Common Specifications	
Insertion Loss	4.0 dB, 5 dB Max
Isolation	60 dBc Min
Passband VSWR	2.0:1 Max
Impedance	50 Ω nominal
Switching Speed	200 ns Max (From 50% TTL to 90%/10% RF)
Passband Overlap	0.01 GHz Min, 0.05 GHz Max
Video Feed Thru	-64 dBm Max @ 1 MHz BW, 0.4 to 2 GHz

4 CH Switch Filter Bank, 4SFB-2G18G-CD-SFF



Using Interdigital Filters, machined in a single block of aluminum for ideal performance.

- > Operates over the 2 to 18 GHz frequency range
- > Includes an integral TTL driver
- > Offers fast switching speeds of less than 300 ns
- > Low Harmonic Distortion
- > 0.5 W RF Power Handling
- > Unit size 3.0" x 2.6" x 0.75" with SMA connectors

PARAMETERS	SPECIFICATIONS
Channel 1 Specifications	
Center Frequency	2.75 GHz
Passband	2 to 3.5 GHz
Rejection	-50 dBc Min @ DC to 0.4 GHz, 4 to 7 GHz
Channel 2 Specifications	
Center Frequency	4.75 GHz
Passband	3.5 to 6 GHz
Rejection	-50 dBc Min @ DC to 0.4 GHz, 7 to 12 GHz
Channel 3 Specifications	
Center Frequency	8.2 GHz
Passband	6.0 to 10.4 GHz
Rejection	-50 dBc Min @ DC to 0.4 GHz, 12 to 18 GHz
Channel 4 Specifications	
Center Frequency	14.2 GHz
Passband	10.4 to 18 GHz
Rejection	-50 dBc Min @ DC to 0.4 GHz, 12 to 18 GHz
Common Specifications	
Insertion Loss	7.0 dB Max
Isolation	60 dB Min
Low Side Filter Rejection	24 dB/ Octave in all four channels
VSWR	2.0:1 Max
Switching Speed	500 ns Max

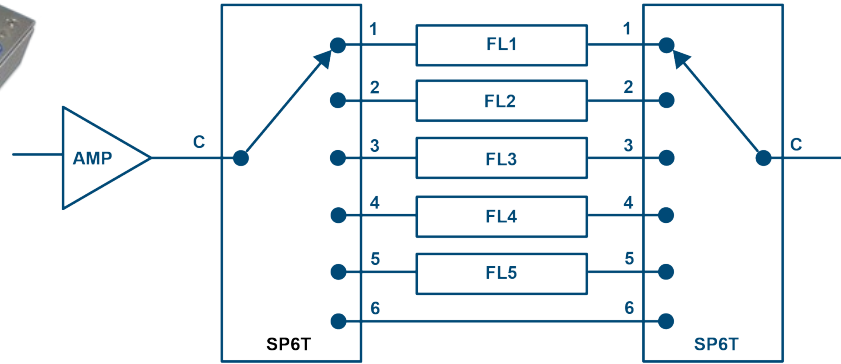
5 CH Switch filter Bank, 5SFB-DC26G-CD-SFF



- > Operates over the 0.1 GHz to 26 GHz frequency range
- > This model offers fast switching speeds of less than 500 ns while maintaining a maximum insertion loss of 10 dB
- > Physical size is 2.70" x 3.00" x 0.75" with removable SMA (F) connectors

PARAMETERS	SPECIFICATIONS
No of Filter Channels:	5
Frequency Range:	0.1 to 26 GHz
Frequency Max:	26.0 GHz
Insertion Loss:	10 dB
Switching Speed:	500 ns
Control Type:	TTL
Isolation:	60 dB Min
VSWR:	1.5:1, 2.5:1 Max
RF Power Rating:	+20 dBm Max

6 CH Switch filter Bank, 6SFB-1G20G-LP-AMP-SFF



- > 6-Channel Switch Filter Bank (SFB) preceded by an amplifier that operates over the 1 to 20 GHz frequency range
- > Offers fast switching speeds of less than 200 ns, while maintaining a gain of 20 dB and a typical P1dB of 20 dBm
- > Provides high harmonic rejection ideal for improved dynamic range in test and measurement applications built to withstand Military environments
- > Physical size 5.50" x 3.00" x 0.75" with SMA connectors & DB9, SUB-D Control Connector

PARAMETERS	SPECIFICATIONS
Frequency Range:	1 to 20 GHz
Insertion Loss:	20 to 25 dB Gain
Switching Speed:	200 ns Typ (From 50% TTL to 90%/10% RF)
Control Type:	TTL Compatible, 3 Bits Decoded
VSWR:	2.0:1 Max
Gain:	20 dB Min, 25 dB Typ
Output 2nd Harmonic:	45 dBc @ 0 dBm Output Power (Filter passband must be selected for maximum harmonic attenuation. Thru path 2nd harmonic value 15 dBc Typ)
Power Handling:	+15 dBm Max
Output P1dB:	+10 dBm Min
Logic Input:	TTL Compatible, 3 Bit Decoded TTL High = 2 V Min TTL Low = 0.8 V Max

6 CH Switched Filter Bank, 6SFB-55185-SMA



PARAMETERS	SPECIFICATIONS
Frequency Range:	5.5 to 18.5 GHz
Insertion Loss:	4.0 dB
Switching Speed:	200 ns Max
Control Type:	TTL
DC Voltage:	+5 VDC @ 550 mA Max -5 VDC @ 100 mA Max
Impedance:	50 Ω
Input Power:	1 W Max

- > Operates over the frequency range of 5.5 to 18.5 GHz
- > Typical VSWR of 1.7:1, a maximum switching speed of 200 ns, and a typical insertion loss of 4.0 dB
- > SMA female connectors and is 3.55" x 3.15" x 1.10"

6 CH Switched Filter Bank, 6SFB-30M600M-CD-SFF

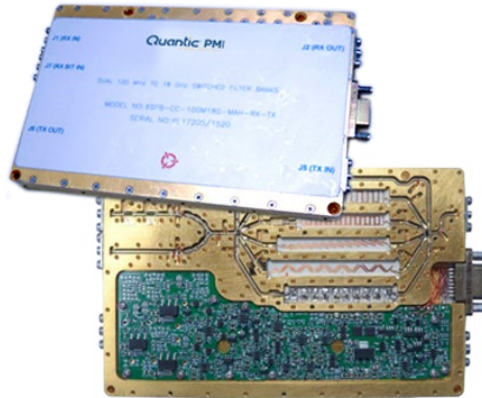


- > Frequency range of 30 MHz to 0.6 GHz
- > Insertion loss of 4.5 dB, a VSWR of 1.3:1, a minimum isolation of 40 dB, an input power of 1 W, and a switching speed of 500 ns
- > Unit has SMA female connectors, and housing size is 3.43" x 3.15" x 0.55"

PARAMETERS	SPECIFICATIONS
Frequency Range	0.03 to 0.6 GHz
Insertion Loss:	4.0 dB Typ, 4.5 dB Max
Switching Speed:	500 ns Typ
Control Type:	TTL, "0" = On, "1" = Off
DC Voltage:	+15 V / -15 V
DC Current (mA):	300 mA Typ / 50 mA Typ
Isolation:	40 dB Min
VSWR:	1.5:1 Max
Finish:	Painted Blue
Impedance:	50 Ohm
Input Power:	1 W Max
Power Supply:	+15 V @ 300 mA Typ -15 V @ 50 mA Typ

6 CH Switched Filter Bank, 6SFB-CC-100M18G-MAH-RX-TX

Integrated double sided design

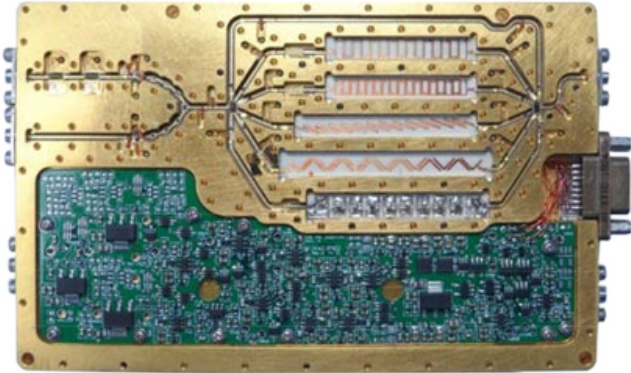


- Integrated module containing two 6-channel switched filter banks covering 0.1 to 18 GHz.
- A receive switched filter bank has 2 inputs, one with 18 dB gain and one with 10 dB insertion loss. The absorptive input switch has 100 dB isolation between the 2 inputs.
- A transmit switched filter bank has 32 dB typical gain while allowing 1 of 6 filter paths to be chosen. Both filter banks can be used simultaneously in different bands.
- The unit is gold plated, measures only 4.80" x 3.08" x 0.365" with SMPM female connectors.

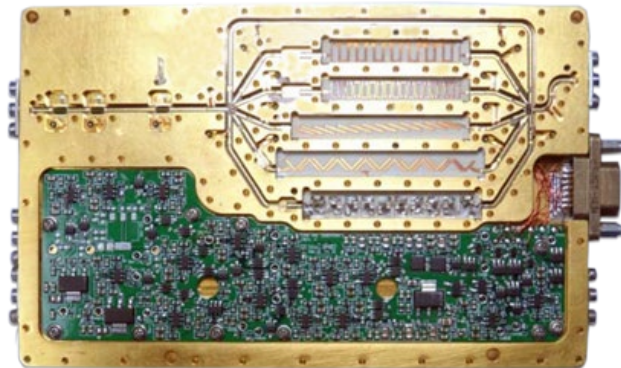
PARAMETERS	SPECIFICATIONS
Frequency Range	100 MHz to 18.0 GHz
Inputs	J1, J5, J7
J1 Input:	RF Receive Input 0.1 to 18 GHz -80 to -10 dBm Typ
J5 Input	RF Transmit Input 0.1 to 18 GHz -52 to -22 dBm Typ
J7 Input	RF Built-In-Test Receive Input 0.1 to 18 GHz -15 to -20 dBm Typ
Outputs	J2, J6
J2 Output:	RF Receive Output 0.1 to 18 GHz -62 to +8 dBm Typ
J6 Output:	RF Transmit Output 0.1 to 18 GHz 0 to +10 dBm Typ
Receive Switched Filter Bank	
J1 Path Gain	18 dB Typ
J7 Path Insertion Loss	10 db Typ
Isolation	J1, J7 100 dB
Transmit Switched Filter Bank	
Gain	32 dB Typ

6 CH Switched Filter Bank, 6SFB-CC-100M18G-MAH-RX-TX

Receive & Transmit Switched Filter Banks



Transceiver - Receive Side
Switch Filter Bank



Transceiver - Transmit Side
Switch Filter Bank

PARAMETERS	SPECIFICATIONS
VSWR Over 90% Passband	2.0:1 Typ
Switching Speed	100 ns Typ
Thru Channel Passband	0.1 to 18 GHz
Channel 1 Center Frequency	3.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ, 0.1 to 2 GHz, -30 dBc Min -40 dBc Typ, 4.8 to 18 GHz, -30 dBc Min
Channel 2 Center Frequency	5.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ, 0.1 to 4 GHz, -30 dBc Min -40 dBc Typ, 6.8 to 18 GHz, -30 dBc Min
Channel 3 Center Frequency	7.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ, 0.1 to 6 GHz, -30 dBc Min -40 dBc Typ, 8.8 to 18 GHz, 30 dBc Min
Channel 4 Center Frequency	9.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ, 0.1 to 8 GHz, -30 dBc Min -40 dBc Typ, 10.8 to 18 GHz, -30 dBc Min
Channel 5 Center Frequency	11.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ, 0.1 to 10 GHz, -30 dBc Min -40 dBc Typ, 12.8 to 18 GHz, -30 dBc Min

7 CH Switch Filter Bank, 7SFB9500-18G-CD-SFF



PARAMETERS	SPECIFICATIONS
Frequency Range	0.5 to 18.5 GHz
No. of Channels	7
Insertion Loss (1 dB Passband)	7 dB
VSWR	2.2:1 Max
Amplitude Ripple (Passband)	2 dB Max
Switching Speed	500 ns Max
Video Transients	500mV Peak-to-Peak

- > 7 filter channels that cover the frequency range of 0.5 to 18.5 GHz
- > Offers fast switching speeds of less than 500 ns with an insertion loss of 6.5 dB and amplitude ripple of 1.7 dB
- > Includes an internal TTL driver, SMA female connectors and a housing size 0.80" x 3.50" x 0.61".

PARAMETERS	SPECIFICATIONS
Channel 1 Specifications	
Passband Frequency	0.5 to 0.85 GHz
Rejection	6 Pole Response
Channel 2 Specifications	
Passband Frequency	0.7 to 1.3 GHz
Rejection	6 Pole Response
Channel 3 Specifications	
Passband Frequency	1.2 to 2 GHz
Rejection	6 Pole Response
Channel 4 Specifications	
Passband Frequency	2 to 3.5 GHz
Rejection	6 Pole Response
Channel 5 Specifications	
Passband Frequency	3.4 to 6 GHz
Rejection	6 Pole Response
Channel 6 Specifications	
Passband Frequency	5.9 to 10.4 GHz
Low Side Rejection	6 Pole Response
Channel 7 Specifications	
Passband Frequency	10.3 to 18.5 GHz
Low Side Rejection	6 Pole Response

8 CH Switch Filter Bank, 7SFB-950M18G-CD-SFF



PARAMETERS	SPECIFICATIONS
Frequency Range	0.95 to 18.05 GHz
No. of Channels	8
Insertion Loss	9.0 dB Typ (All passbands equalized to within 3 dB)
VSWR	2.0:1 Max
Impedance	50 Ohms
Switching Speed	60 ns Typ, 100 ns Max

- Covers passband frequencies of 0.95 to 18.05 GHz
- Offers 7 different passbands throughout the operating frequency which can be selected via a 3-Bit decoded TTL signal
- The 8th channel serves as a by-pass which will pass 0.95 to 18.05 GHz from the input to the output
- All passband channel losses are equalized to be within 2 dB of one another
- Housing measures 4.33" x 5.1" x 0.98".

Channel 8 Thru Path



PARAMETERS	SPECIFICATIONS
Channel 1 Specifications	
Passband Frequency	0.95 to 6.05 GHz
High Side Rejection	-55 dB @ 6.9 to 18 GHz
Channel 2 Specifications	
Passband Frequency	5.15 to 8.25 GHz
Low Side Rejection	-55 dB @ DC to 4.3 GHz
High Side Rejection	-55 dB @ 9.0 to 18 GHz
Channel 3 Specifications	
Passband Frequency	7.35 to 10.75
Low Side Rejection	-55 dB @ DC to 6.5 GHz
High Side Rejection	-45 dB @ 11.3 GHz -55 dB @ 12.5 to 18 GHz
Channel 4 Specifications	
Passband Frequency	9.85 to 13.15 GHz
Low Side Rejection	-55 dB @ DC to 9.2 GHz
High Side Rejection	-55 dB @ 13.8 to 18 GHz
Channel 5 Specifications	
Passband Frequency	12.25 to 15.65 GHz
Low Side Rejection	-55 dB @ DC to 11.5 GHz
High Side Rejection	-55 dB @ 16.2 to 18.0 GHz
Channel 6 Specifications	
Passband Frequency	14.75 to 16.45 GHz
Low Side Rejection	-55 dB @ DC to 14.0 GHz
High Side Rejection	-55 dB @ 16.8 to 18.0 GHz
Channel 7 Specifications	
Passband Frequency	15.55 to 18.05 GHz
Low Side Rejection	-55 dB @ DC to 14 GHz
High Side Rejection	Not Specified
Channel 8 Specifications	
Passband Frequency	Pass Through - 0.95 to 18.05 GHz

8 CH Switched Filter Bank, 8SFB-7R0G7R8G-CD-12-SFF



- > 8 Channel Switched Filter Bank offering ultra-fast switching speed and high rejection with low loss
- > Operating frequency range of 7 to 7.8 GHz
- > Physical size is 3.54" x 3.94" x 0.59" and has SMA female connectors

PARAMETERS	SPECIFICATIONS
Frequency Range	7.0 to 7.8 GHz
No of Filter Channels:	8
Insertion Loss:	9 dB Max @ center frequencies 12 dB Max @ center frequencies ± 0.025 GHz
Switching Speed:	200 ns
Gain Flatness:	± 2.5 dB
Impedance:	50 Ohm
VSWR:	2.0:1 Max
Input Power:	1 W CW Max

8 CH Switch Filter Bank, 8SFB-2G18G-SFF

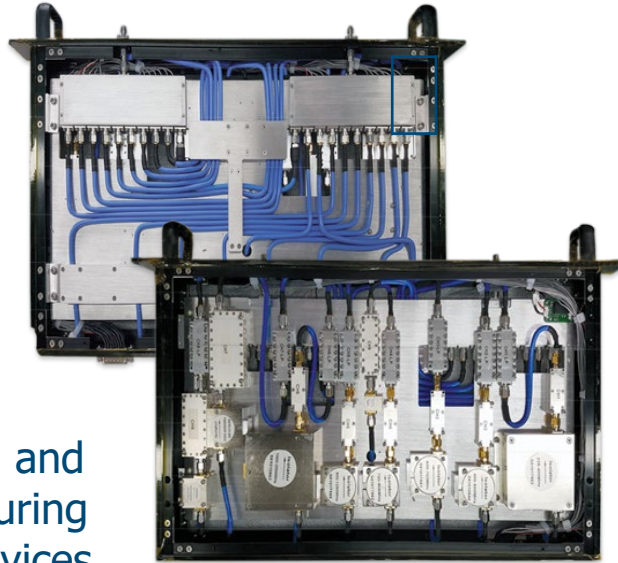


- > Operating frequency range of 2 to 18 GHz
- > Offers insertion loss of 8 dB typical, a VSWR of 2.0:1, a passband ripple of ± 0.5 dB, a rejection of 82.8 dB, a switching speed of 200 ns, and an input power of 15 dBm
- > SMA female connectors and a 9 Pin Micro-D female connector and physical size is 5.00" x 4.13" x 1.00"

PARAMETERS	SPECIFICATIONS
No of Filter Channels:	8
Full Operating Frequency:	2 to 18 GHz
Insertion Loss:	8 dB Typ, 10 dB Max
Switching Speed:	200 ns Max
VSWR:	2.0:1 Max
Impedance:	50 Ohm
Input Power:	15 dBm Max
Passband Ripple:	± 0.5 dB Typ, ± 1.0 dB Max

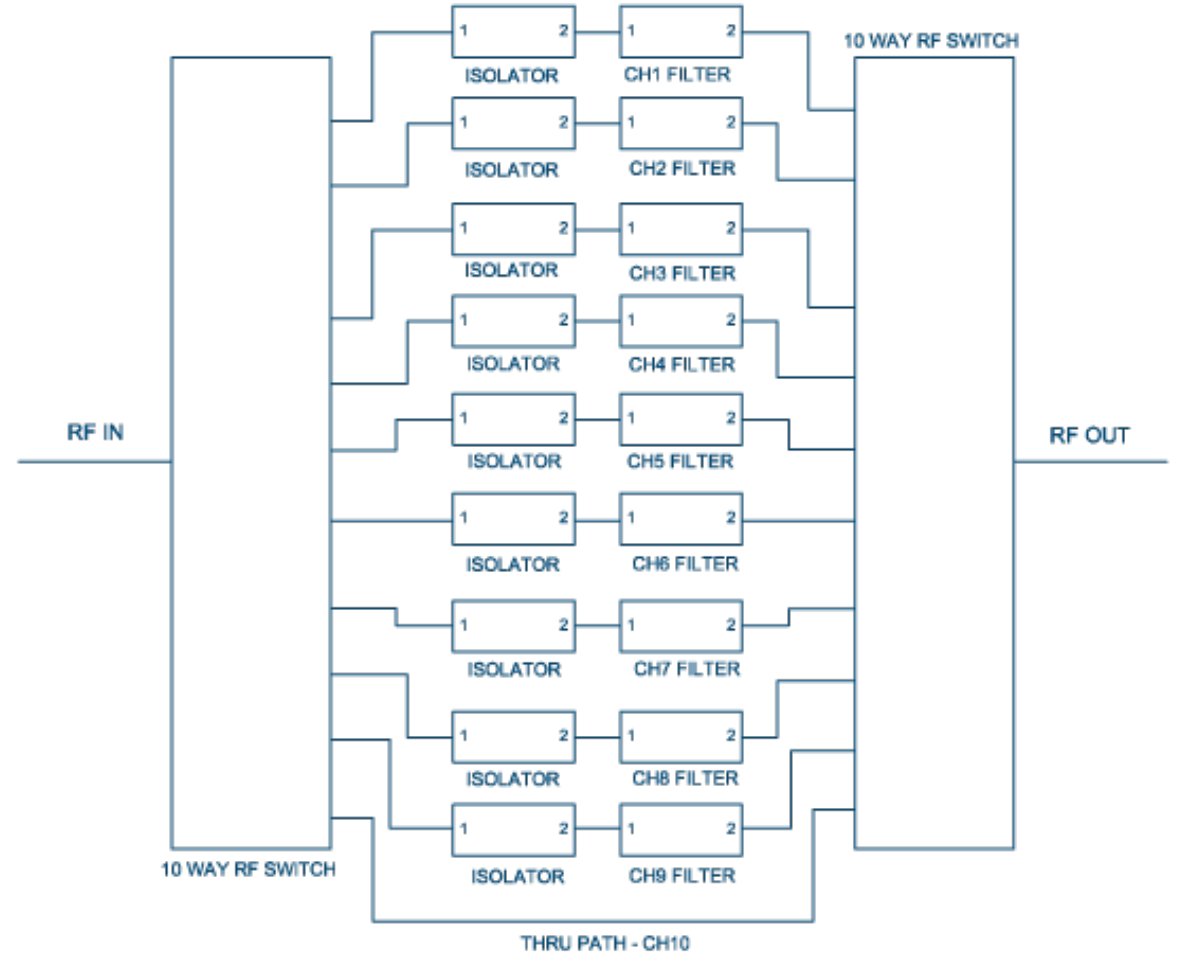
10-Channel Switched Filter Bank, 8SFB-250M20G-CD-SFF

Ultrafast switch speed, high rejection with low loss



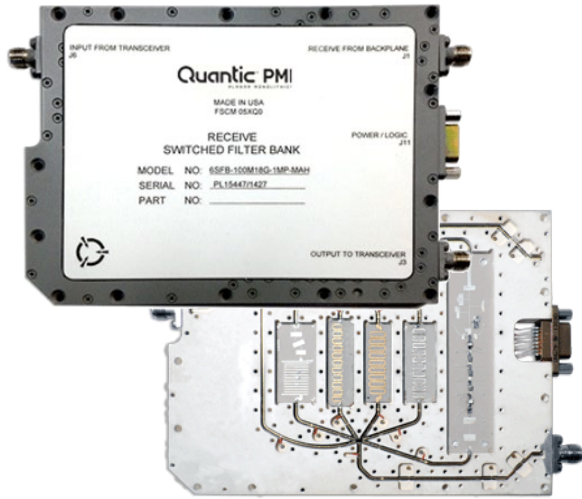
- > Each filter path includes a narrow band isolator to increase reverse isolation.
- > Ideal for harmonic rejection and improving dynamic range during linearity testing of active devices.
- > Unit is 1U & fits standard 19"

PARAMETERS	SPECIFICATIONS
Frequency Range	0.25 to 20 GHz
Number of Channels	10
Insertion Loss	8 dB Max
Switching Speed	100 ns
RF Power Handling	+20 dBm
VSWR	2.0:1



Internal Block Diagram

Receive Switched Filter Bank, 6SFB-100M18G-1MP-MAH

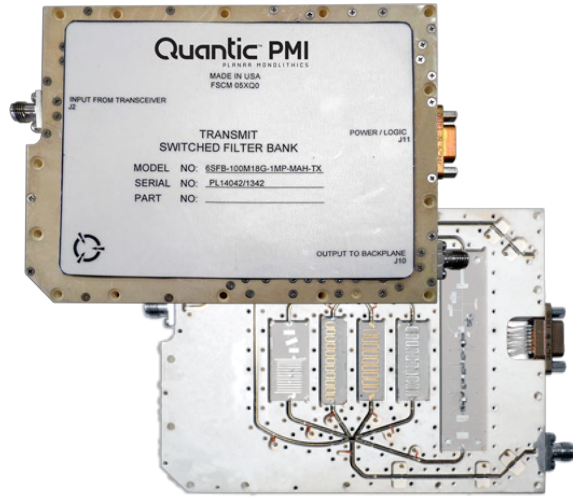


PARAMETERS	SPECIFICATIONS
Frequency Range	100 MHz to 18.0 GHz
Number of Channels	5
Gain	18 dB Typ
Isolation	J1, J6 100 dB
Switching Speed	100 ns
Operating Temperature	-40 °C to +85 °C

- > Incorporates a 2-Way, absorptive switch to select an input along with two 6-Way switches allowing one of the six filter paths to be chosen
- > Provides 6 dB of gain with an output of P1dB of +15 dBm.
- > Switching speed is better than 100 ns and the filters are easily customizable to meet any other requirements
- > Other gain requirements can be offered, and the unit will accept 3.3 V or 5 V TTL controls. The +3.3 V supply is optional
- > Housing measures 4.925" x 3.68" x 0.35" with SMA connectors

PARAMETERS	SPECIFICATIONS
Inputs	J1, J6
J1 Input:	Input from Backplane
Frequency	0.1 to 18 GHz
Power Level	-80 to -10 dBm
J6 Input	Output to Transceiver
Frequency	0.1 to 18 GHz
Power Level	-52 to -22 dBm
Outputs	J3
J3 Output:	Output to Transceiver
Frequency	0.1 to 18 GHz
Power Level	-74 to -4 dBm Typ
Thru Channel Passband	0.1 to 18 GHz
Ch 1 Center Frequency	3.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc, Typ (0.1 to 2 GHz), -30 dBc Min -40 dBc Typ (4.8 to 8.5 GHz), -30 dBc Min
Ch 2 Center Frequency	5.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 4 GHz), -30 dBc Min -40 dBc Typ (6.8 to 13.5 GHz), -30 dBc Min
Ch 3 Center Frequency	7.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 6 GHz), -30 dBc Min -40 dBc Typ (8.8 to 18 GHz), -30 dBc Min
Ch 4 Center Frequency	9.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 8 GHz), -30 dBc Min -40 dBc Typ (10.8 to 18 GHz), -30 dBc Min
Ch 5 Center Frequency	11.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 10 GHz), -30 dBc Min -40 dBc Typ (12.8 to 18 GHz), -30 dBc Min

Transmit Switched Filter Bank, 6SFB-100M18G-1MP-MAH

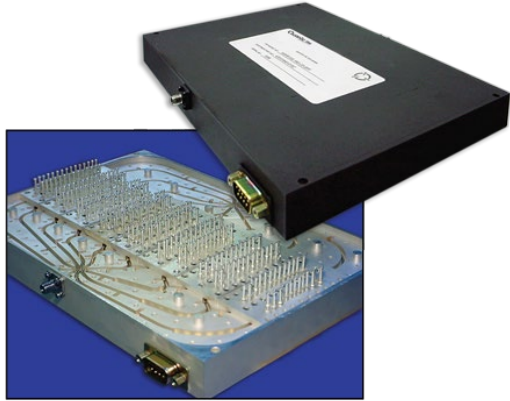


PARAMETERS	SPECIFICATIONS
Frequency Range	100 MHz to 18.0 GHz
Number of Channels	5 + Thru Path
Gain	18 dB Typ
Isolation	J1, J6 100 dB
Switching Speed	100 ns
Operating Temperature	-40 °C to +85 °C

- > Incorporates two 6-Way switches allowing one of the six filter paths to be chosen
- > Provides 35 dB of gain with an output of P1dB of +15 dBm.
- > Switching speed is better than 100 ns and the filters are easily customizable to meet any other requirements
- > Other gain requirements can be offered, and the unit will accept 3.3 V or 5 V TTL controls. The +3.3 V supply is optional
- > Housing measures 4.925" x 3.68" x 0.35" with SMA connectors

PARAMETERS	SPECIFICATIONS
Inputs	J2
J2 Input:	Input from Transceiver
Frequency	0.1 to 18 GHz
Power Level	-58 to -28 dBm
Outputs	J10
J10 Output:	Output to Backplane
Frequency	0.1 to 18 GHz
Power Level	0 to +10 dBm Typ (when Input is -28 dBm)
Thru Channel Passband	0.1 to 18 GHz
Ch 1 Center Frequency	3.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 2 GHz) -40 dBc Typ (4.8 to 8.5 GHz)
Ch 2 Center Frequency	5.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 4 GHz) -40 dBc Typ (6.8 to 13.5 GHz)
Ch 3 Center Frequency	7.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 6 GHz) -40 dBc Typ (8.8 to 18 GHz)
Ch 4 Center Frequency	9.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 8 GHz) -40 dBc Typ (10.8 to 18 GHz)
Ch 5 Center Frequency	11.4 GHz
3 dB Bandwidth	2 GHz
Rejection	-40 dBc Typ (0.1 to 10 GHz) -40 dBc Typ (12.8 to 18 GHz)

16 Ch Switch Filter Bank, 16SFB10G-16G-CD-SFF



PARAMETERS	SPECIFICATIONS
Frequency Range	2 to 18 GHz
No. of Channels	16
Insertion Loss	Channels 1 thru 6: 7 dB Max Channels 7 thru 16: 13.5 dB Max
Isolation	60 dB Min
VSWR	2.0:1 Max
Switching Speed	2 μ s Max
Impedance	50 Ohm
Amplitude Match	\pm 1.5 dB
Power Handling	+30 dBm CW Max

CHANNEL #	PASSBAND	REJECTION
Channel 1	1.9 to 3.1 GHz	-65 dB @ 3.65 GHz & 4.85 GHz
Channel 2	2.9 to 4.1 GHz	-65 dB @ 4.65 GHz & 5.85 GHz
Channel 3	3.9 to 5.1 GHz	-65 dB @ 5.65 GHz & 6.85 GHz
Channel 4	4.9 to 6.1 GHz	-65 dB @ 6.65 GHz & 7.85 GHz
Channel 5	5.9 to 7.1 GHz	-65 dB @ 7.65 GHz & 8.85 GHz
Channel 6	6.9 to 8.1 GHz	-65 dB @ 8.65 GHz & 9.85 GHz
Channel 7	7.9 to 9.1 GHz	-65 dB @ 9.65 GHz & 10.85 GHz
Channel 8	8.9 to 10.1 GHz	-65 dB @ 10.65 GHz & 11.85 GHz
Channel 9	9.9 to 11.1 GHz	-65 dB @ 11.65 GHz & 12.85 GHz
Channel 10	10.9 to 12.1 GHz	-65 dB @ 12.65 GHz & 13.85 GHz
Channel 11	11.9 to 13.1 GHz	-65 dB @ 13.65 GHz & 14.85 GHz
Channel 12	12.9 to 14.1 GHz	-65 dB @ 14.65 GHz & 15.85 GHz
Channel 13	13.9 to 15.1 GHz	-65 dB @ 15.65 GHz & 16.85 GHz
Channel 14	14.9 to 16.1 GHz	-65 dB @ 16.65 GHz & 17.85 GHz
Channel 15	15.9 to 17.1 GHz	-65 dB @ 14.15 GHz & 15.35 GHz
Channel 16	16.9 to 18.1 GHz	-65 dB @ 15.15 GHz & 16.35 GHz

- > 16 filter channels that cover the frequency range of 2 to 18 GHz
- > Includes an integral TTL driver and offers fast switching speeds of less than 2 μ s.
- > Handles input power levels up to +30 dBm
- > Physical size is 8.6" x 6.0" x 0.9" with SMA female connectors

Designs offering the broadest frequency coverage available on the market!

Standard or Custom Designed Models

> Low Pass Filters

- High Q with broadband performance with low loss
- Ideal for eliminating broadband harmonics
- Many standard models in frequency bands up to 26.5 GHz
- Design and build to meet your specifications
- Military or Aerospace Screening available
- Connector Options

> High Pass Filters

- Passband bandwidths covering the 0.5 to 60 GHz frequency range
- Design and build to meet your specifications
- Military or Aerospace Screening available
- Connector Options

> Form, Fit & Function Products & Services



Low Pass Filters

Standard Model Examples



Passband DC to 2 GHz
Lowpass Filter
Dual Use Component



Passband DC to 2.4 GHz
Low Pass Filter



Passband DC to 2.4 GHz
Low Pass Filter



Passband DC to 6 GHz
Suspended Substrate Lowpass Filter



Passband DC to 10 GHz
Microstrip, Lowpass Filter



Passband DC to 11 GHz
Microstrip, Lowpass Filter



Passband DC to 26.5 GHz
Low Pass Filter



RF Filter / Detector

Low Pass Filters, QSM-LP-1800, QSM-LP-1900, QSM-LP-2000



PARAMETERS	SPECIFICATIONS		
Model No.	QSM-LP-1800-SFF	QSM-LP-1900-SFF	QSM-LP-2000-SFF
Passband:	DC to 1.8 GHz	DC to 1.9 GHz	DC to 2 GHz
Cut-Off Frequency:	(3 dB) 1.8 GHz Min	(3 dB) 1.9 GHz Min	(3 dB) 20 GHz Min
Passband Insertion Loss:	3 dB Max	3 dB Max	3 dB Max
Passband VSWR:	2.0:1 Max	2.0:1 Max	2.0:1 Max
Rejection @ 6 GHz:	-40 dBc Min	-40 dBc Min	-40 dBc Min

- > Models with Passband of DC to 1.8 GHz, DC 1.9 GHz, DC to 2 GHz
- > Passband insertion loss of 3 dB; -3 dB; Rejection of -40 dBc Min; passband VSWR of 2.0:1
- > Package size of 0.69" x 0.70" x 0.29" with SMA Female (removable)
- > Dual Use component – surface mount or connectorized

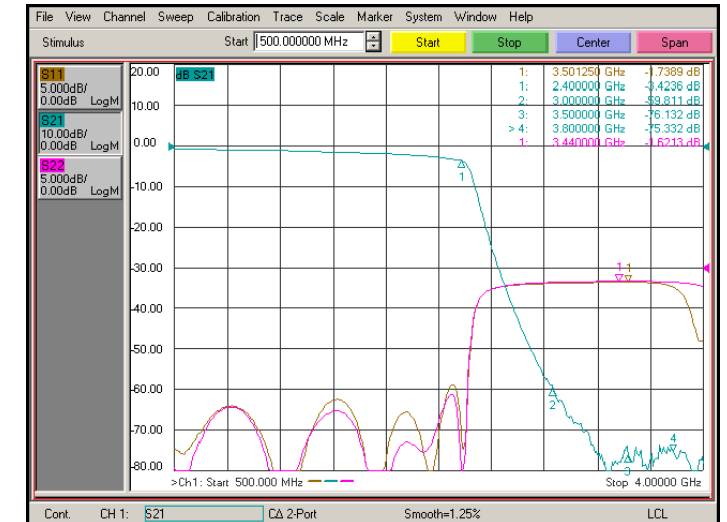
Low Pass Filter, LP2400-3G-SFF



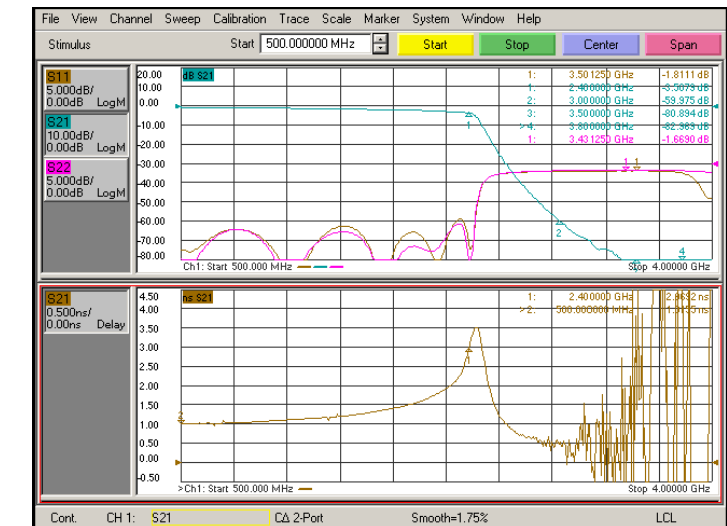
PARAMETERS	SPECIFICATIONS
Passband	DC to 2.4 GHz
Cutoff Frequency	2.4 GHz
Return Loss	10 dB Typ
Insertion Loss (Passband)	3.5 dB Typ
Rejection	13 dB Typ @ 3 GHz, 51 dB Typ @ 3.5 GHz, 60 dB Typ @ 3.8 GHz, 40 dB Typ up to 18 GHz

- Offers extremely high Q with broadband performance & typical insertion loss of 3.5 dB
- Ideal for eliminating broadband harmonics and spurs
- Cutoff frequency of 2400 MHz and a typical return loss of 10 dB
- SMA female connectors and a size of 2.00" x 1.00" x 0.50"

Insertion Loss, Return loss and Rejection



Insertion Loss, Return Loss, Rejection & Group Delay



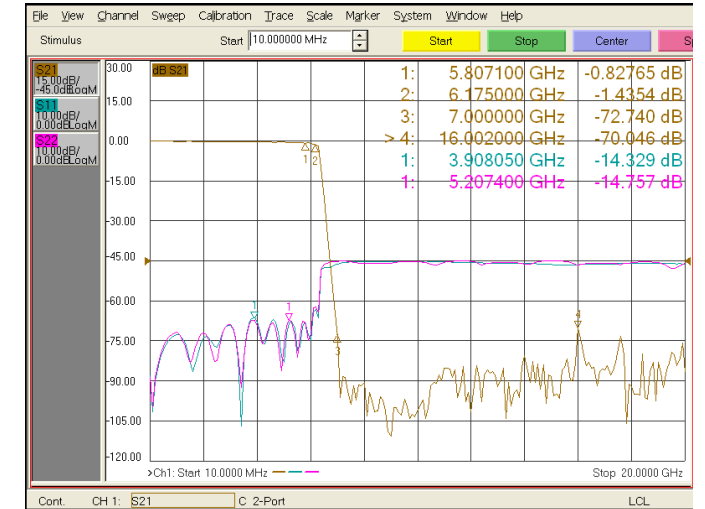
Suspended Substrate Low Pass Filter, 7LP6G-6175-CD-TNC



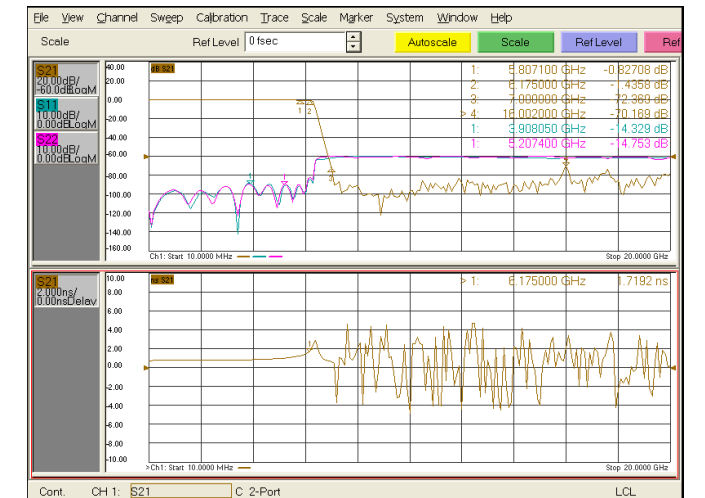
PARAMETERS	SPECIFICATIONS
Passband	DC to 6 GHz
3 dB Bandwidth	6.175 GHz Nom
VSWR in the Passband	1.5:1 Max
Insertion Loss (Passband)	0.7 dB Nom
Rejection @ 7.0 GHz	70 dB Min
Rejection from 9.0 to 20.0 GHz	60 dB Min

- Passband of DC to 6 GHz
- TNC female connectors in/out.
- Offers very high Q with broadband performance
- Low loss and is ideal for eliminating broadband harmonics
- Silver-plated CNC machined housing measuring 1.08" x 0.50" x 0.75"

Passband & Return loss



Passband & Group Delay



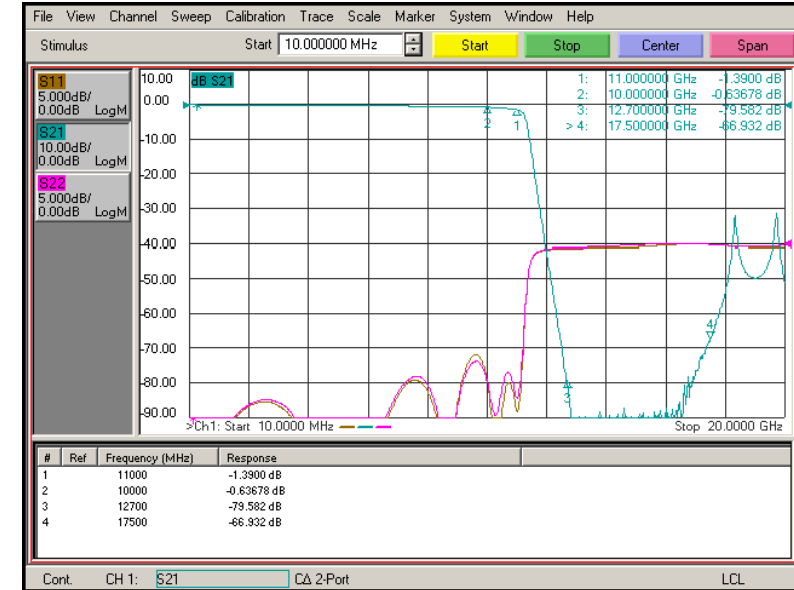
Microstrip Low Pass Filter, LP11G-12D7G-CD-SFF



PARAMETERS	SPECIFICATIONS
Passband	DC to 10 GHz
3 dB Bandwidth	11 GHz
VSWR in the Passband	1.7:1 Max
Insertion Loss (Passband)	1.0 dB Max
Rejection @ 55 dB	12.7 to 17.5 GHz
Phase Linearity	$\pm 1^\circ$ @ 4.4 to 10 GHz over every 10 MHz
Ripple	+/- 0.2 dB Max @ 4.4 to 10 GHz over every 10 MHz
Average Power	15 Watts

- Offers very high Q with broadband performance
- Extremely low loss and is ideal for eliminating broadband harmonics
- Silver-plated CNC machined housing measuring 1.094" x 0.5" x 0.5"
- SMA female connectors

Passband & Return loss



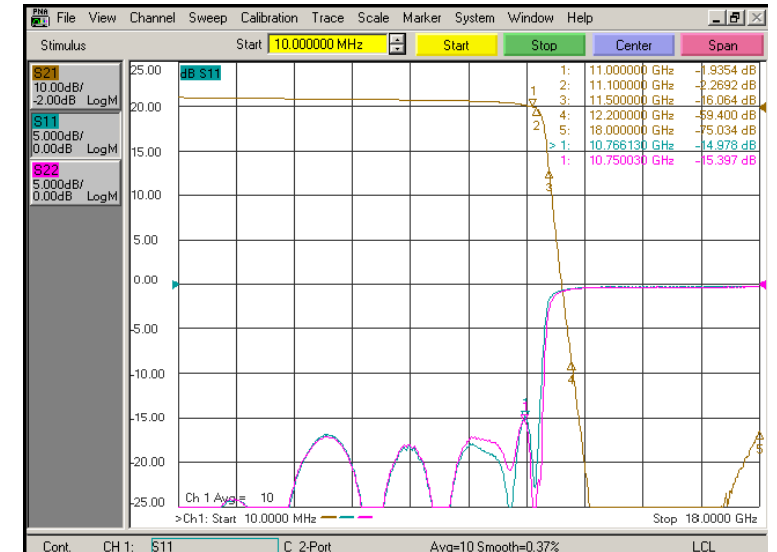
Microstrip Low Pass Filter, 8LP11G-11D5G-CD-SFF



PARAMETERS	SPECIFICATIONS
Passband:	DC to 11 GHz
3dB Bandwidth:	11.1 GHz Typ
Cut-Off Frequency:	11 GHz
Passband Insertion Loss:	2.0 dB Typ
Rejection:	11.5 GHz: -15 dB Min 12.2 GHz: -50 dB Min 18.0 GHz: -70 dB Min
Passband VSWR:	1.5:1 Max

- > Passband of 11 GHz and a typical bandwidth of 11.1 GHz
- > Offers very high Q with broadband performance
- > Extremely low loss and is ideal for eliminating broadband harmonics
- > Silver-plated CNC machined housing measuring 1.094" x 0.50" x 0.50"
- > SMA female connectors

Insertion Loss, Rejection & Return loss



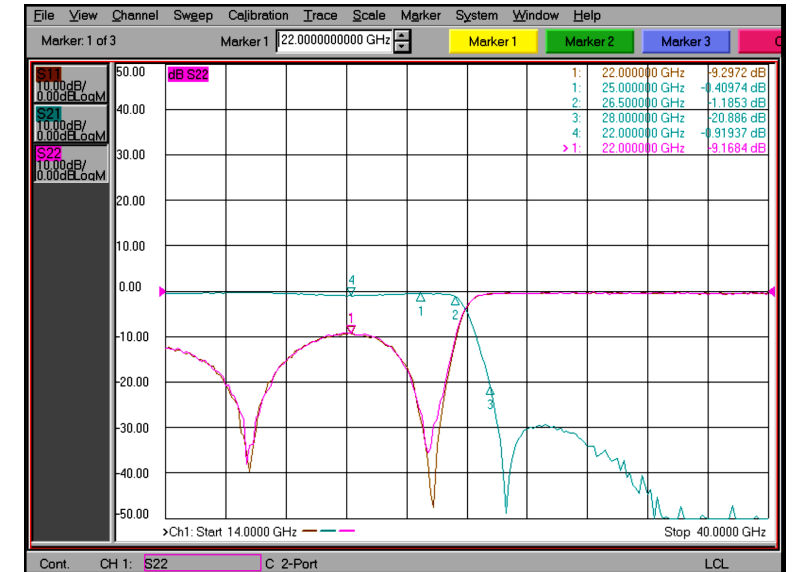
Low Pass Filter, LPF26R5-28R5G40G



PARAMETERS	SPECIFICATIONS
Passband:	DC to 26.5 GHz
Cut-Off Frequency:	26.5 GHz
Passband Insertion Loss:	1.5 dB Max
Rejection:	25 dB (28.5 to 40 GHz)
Ripple:	± 0.75 dB
Passband VSWR:	2.2:1 Max

- > Passband frequency range of DC to 26.5 GHz
- > Offers >25 dB rejection from 28.5 to 40 GHz
- > Rugged housing, physical size 0.45" x 0.38" x 0.50"
- > 2.92mm female connectors

INSERTION LOSS, VSWR & REJECTION



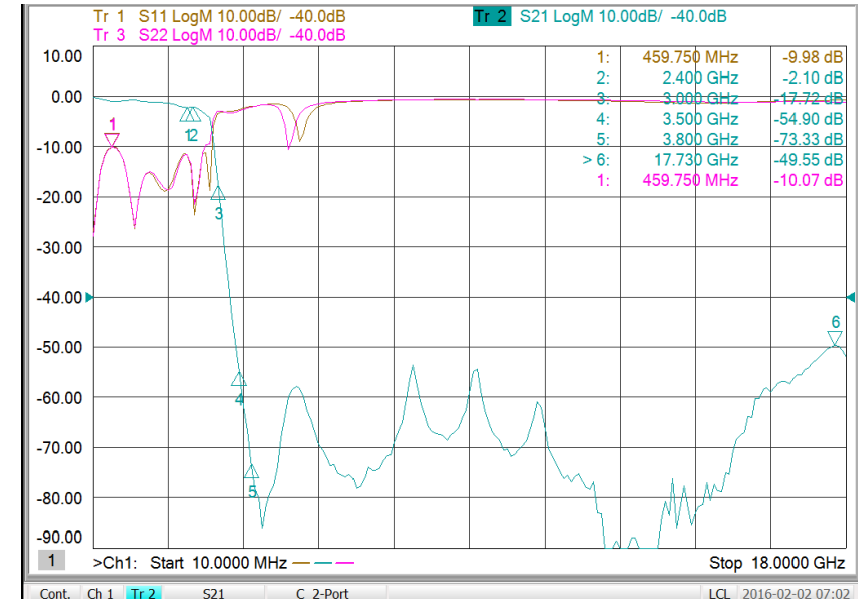
Low Pass Filter, LP2400-3G-MAH-SFF



PARAMETERS	SPECIFICATIONS
Passband	DC to 2.4 GHz
Cutoff Frequency	2.4 GHz
Return Loss	10 dB Typ
Insertion Loss (Passband)	3.5 dB Typ
Rejection	13 dB Typ @ 3 GHz, 51 dB Typ @ 3.5 GHz, 60 dB Typ @ 3.8 GHz, 40 dB Typ up to 18.0 GHz

- Offers extremely high Q with broadband performance & typical insertion loss
- Ideal for eliminating broadband harmonics and spurs
- Cutoff frequency of 2.4 GHz and a return loss of 10 dB
- SMA female connectors and a size of 1.25" x 0.31" x 0.31"

Insertion Loss, Return loss and Rejection



RF Filter / Detector, RFFD-618-730049



PARAMETERS	SPECIFICATIONS
Frequency Range	6 to 18 GHz
Return Loss	-10 dB
Max Input Power	7 dBm Operational 20 dBm Survival
Filter Rejection	23 dB Min (20 to 26 GHz)
Voltage Sensitivity	80 to 140 mV
Barrier Potential	225 to 270 mV with 100 μ s bias to +25 °C
Operating Dynamic Range	-23 to +7 dBm
Frequency Flatness	\pm 0.8 dB with 1 to 2 dB Typ slope
Diode Voltage Protection	1.0 V Max at 30 mA
Tracking Detector-Balance	\pm 20 mV Max over operating temperature

- > 6 to 18 GHz frequency coverage
- > Integrated design with Lowpass Filter combined with a Schottky biased detector including a reverse voltage protection diode, a duplicate detector and protection diode is included for dc offset voltage compensation.
- > Physical size is 1.60" x 1.59" x 0.6" with SMA connectors

High Pass Filters

Standard Designs



Passband 0.13 to 0.55 GHz
High Power High Pass Filter



Passband 0.3 to 18 GHz
High Pass Filter



Passband 0.8 to 10 GHz
High Pass Filter



Passband 0.8 to 22 GHz
High Pass Filter



Passband 0.8 to 22 GHz
High Pass Filter



Passband 2 to 18 GHz
High Pass Filter



Passband 3.55 to 18 GHz
High Pass Filter



Passband 18 to 26.5 GHz
Ultra-Small High Pass Filter



Passband 19 to 40 GHz
High Pass Filter



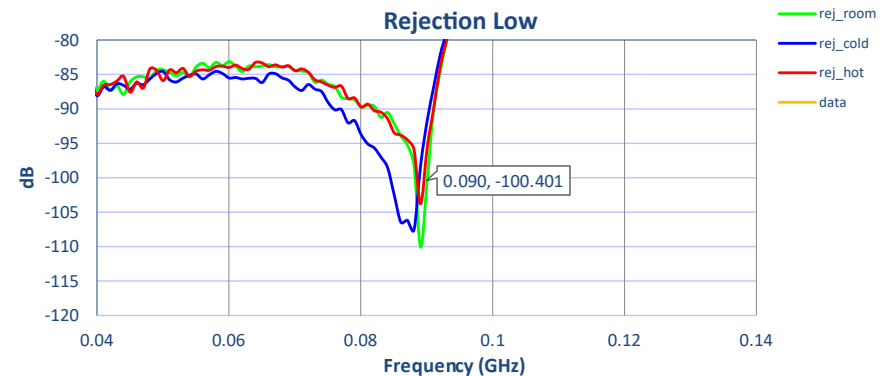
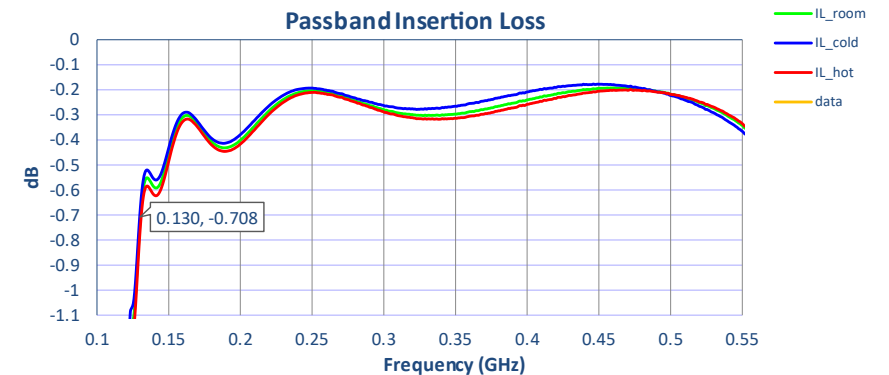
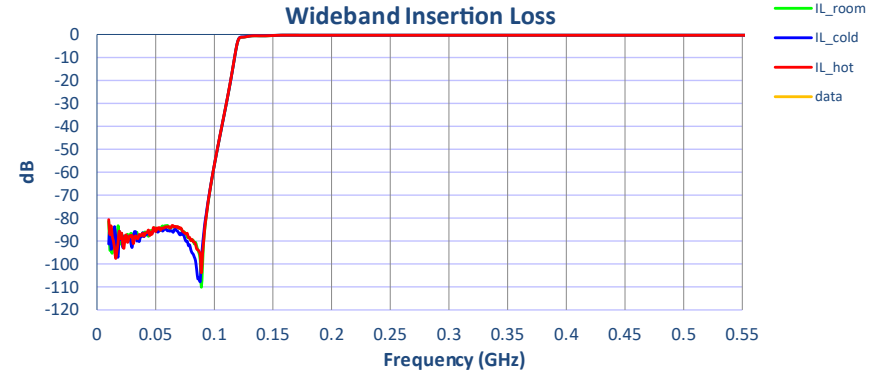
Passband 20 to 40 GHz
High Pass Filter

High Power High Pass Filter, HPF130-140-NFF-50W

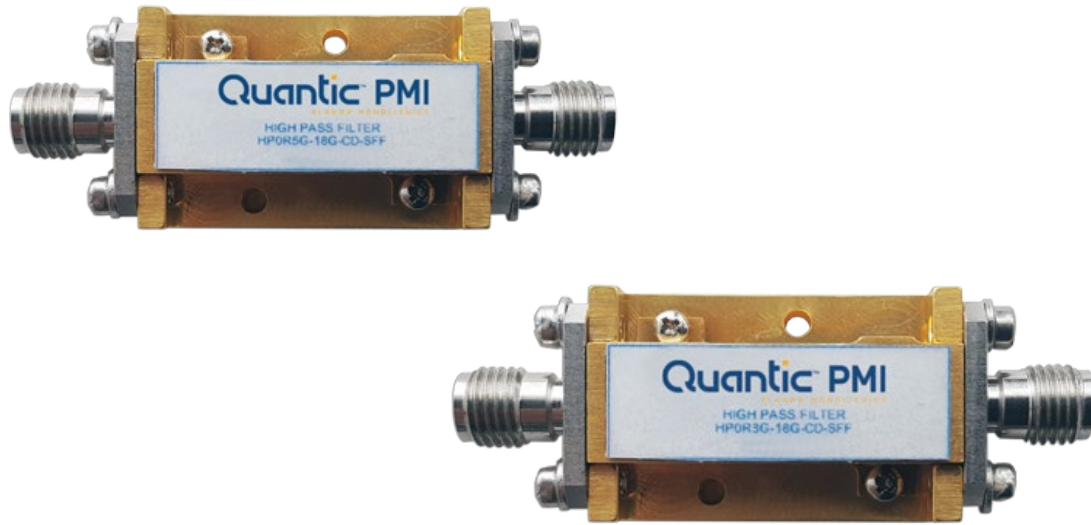


PARAMETERS	SPECIFICATIONS
Passband:	0.13 to 0.55 GHz
Cut-Off Frequency:	0.13 GHz
Passband Insertion Loss:	1.0 dB
Passband VSWR:	2.0:1
Rejection:	-80 dBc @ 0.09 GHz
Operating Input Power:	50 W CW Max
Impedance:	50 Ω

- Upper passband of 0.55 GHz
- Offers low insertion loss of 1 dB maximum and over 80 dB of rejection at 0.09 GHz
- Designed for 50 Ω impedance and can handle input power levels up to 50 W CW
- Package size is 6.0" x 2.0" x 1.5" with Type N female connectors



High Pass Filter, HP0R3G-18G-CD-SFF & HP0R5G-18G-CD-SFF



PARAMETERS	SPECIFICATIONS	
Model	HP0R5G-18G-CD-SFF	HP0R3G-18G-CD-SFF
Passband:	0.5 to 18 GHz	0.3 to 18 GHz
Cut-Off Frequency:	0.5 GHz	0.3 GHz
Passband Insertion Loss:	0.5 GHz: 5 dB Max 1 to 16 GHz: 2 dB Max 18 to 16 GHz: 3 dB Max	2 dB Typ
Passband VSWR:	2.0:1 Max	2.0:1 Max
Rejection:	40 dB Min @ 0.3 GHz	45 dB Typ @ 0.01 GHz

- > Passband of 0.3 to 18 GHz or 0.5 to 18 GHz
- > Cut-Off Frequency is 0.3 or 0.5 GHz with a passband insertion loss of 2.0 dB
- > Package size is 1.00" x 0.71" x 0.32" and contains SMA (F) Removable connectors.
- > Dual use component - can be used in surface mount or connectorized applications.
- > RoHs compliant designs

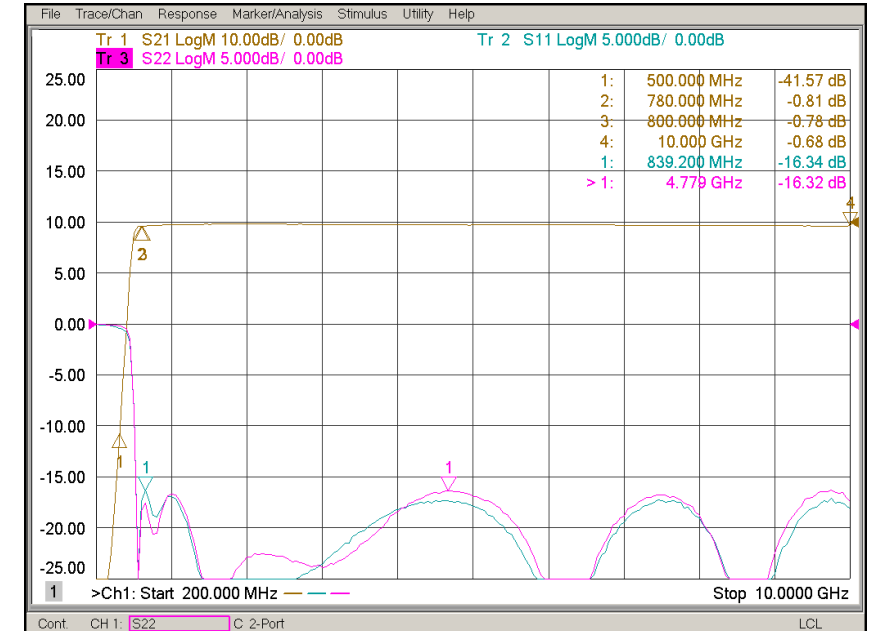
High Pass Filter, 7HP-800-600-3A-SMF



PARAMETERS	SPECIFICATIONS
Passband	0.8 to 10 GHz
Cut-off Frequency	780 MHz
Passband Insertion Loss	1.0 dB
Passband VSWR	2.0:1
Rejection	-40 dBc @ 0.5 GHz

- > Passband of 0.8 to 10 GHz
- > Over 40 dB of rejection from DC to 0.5 GHz
- > Unit size is 1.5" x 0.31" x 0.31" and uses SMA (M/F) connectors

Insertion Loss, Return Loss & Rejection



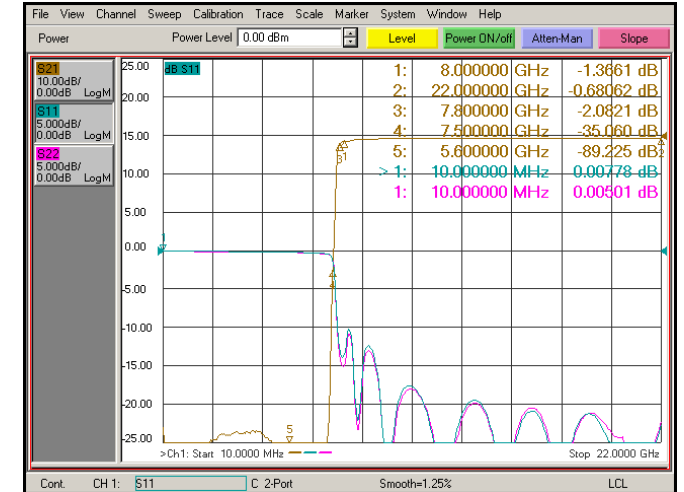
Highpass Filter, HP8G-7D8G-CD-SFF



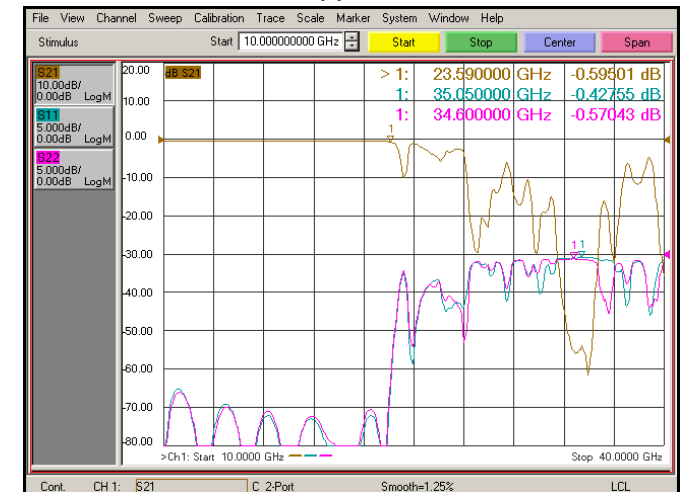
PARAMETERS	SPECIFICATIONS
Passband	8.0 to 22.0 GHz
3dB Cutoff	7.8 GHz
VSWR in the Passband	2.0:1 Max
Insertion Loss (Passband)	1.5 dB Max
Rejection	-35 dB Typ @ 7500 MHz -50 dB Min @ 5600 MHz

- > Suspended substrate high pass filter with a passband of 8 to 22 GHz
- > Cut-Off Frequency is 7.8 GHz with a passband insertion loss of 1.5 dB
- > Provides over -35 dB of rejection at 7.5 GHz
- > Package size is 1.15" x 0.70" x 0.50" with SMA female connectors
- > Machined and silver plated to provide the highest possible Q

Typical Insertion Loss, Return Loss



Broadband Upper Performance



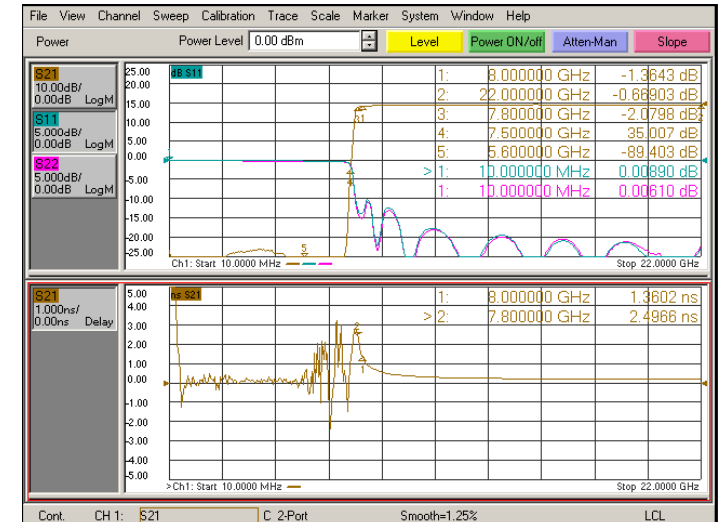
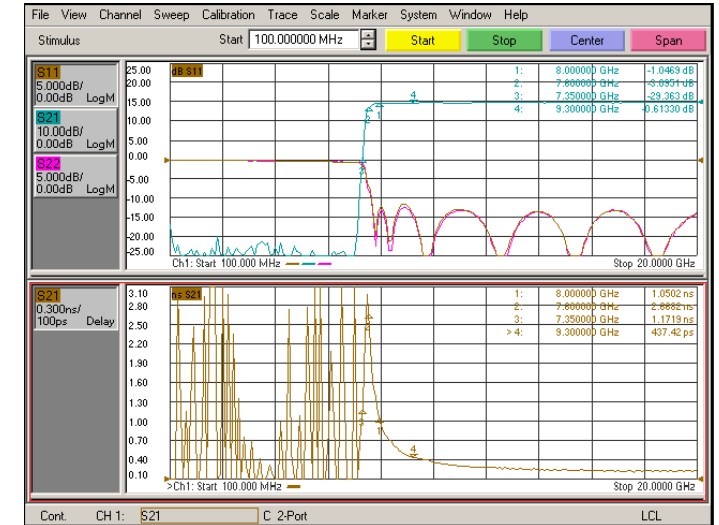
Highpass Filter, HP8G-7D8G-CD-SMF



PARAMETERS	SPECIFICATIONS
Passband:	8 to 22 GHz
Cut-Off Frequency:	7.8 GHz @ 3 dB
Passband Insertion Loss:	1.5 dB Max
Passband VSWR:	2.0:1 Max
Impedance:	50 Ohm In/Out
Input Power:	5 W Typ, 10 W Max
Passband Ripple:	0.5 dB Peak to Peak Max
Rejection:	-35 dB Typ @ 7.5 GHz -50 dB Min @ 5.6 GHz

- Passband of 8 to 22 GHz
- Compact 1.15" x 0.70" x 0.50" Housing is outfitted with SMA Connectors (Male Input, Female Output)
- Silver Plated to provide the highest possible Q

Insertion Loss, Return Loss & Rejection



High Pass Filter, HP2G-1780-CD-SS



PARAMETERS	SPECIFICATIONS
Passband	2 to 18 GHz
Cut-off Frequency	1.78 GHz
Passband Insertion Loss	0.5 dB
Passband VSWR	1.5:1
Rejection	-80 dBc @ 0.87 GHz
Connectors	SMA (F)
Size	0.75" x 0.75" x 0.50"

- > Passband of 2 to 18 GHz
- > Cut-Off Frequency is 1.78 GHz with a typical passband insertion loss of 0.5 dB
- > Provides 80 dB typical rejection at 0.87 GHz
- > Package size is 0.75" x 0.75" x 0.50" and contains SMA (F) connectors

Insertion Loss & Return Loss (IN/OUT)

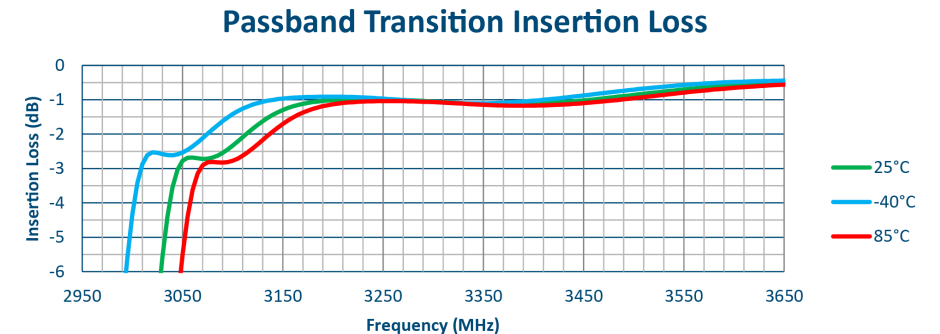
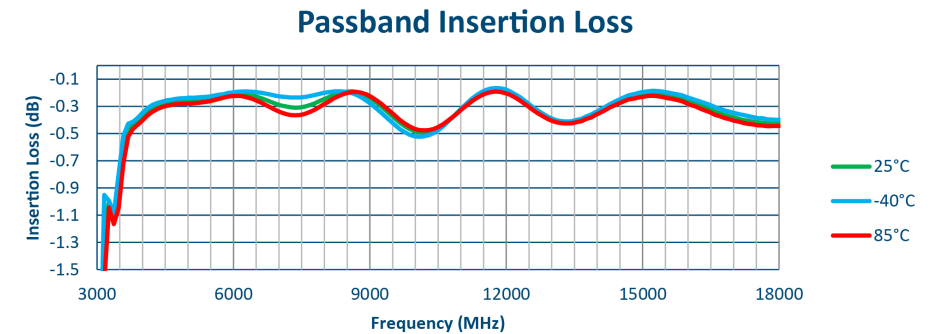
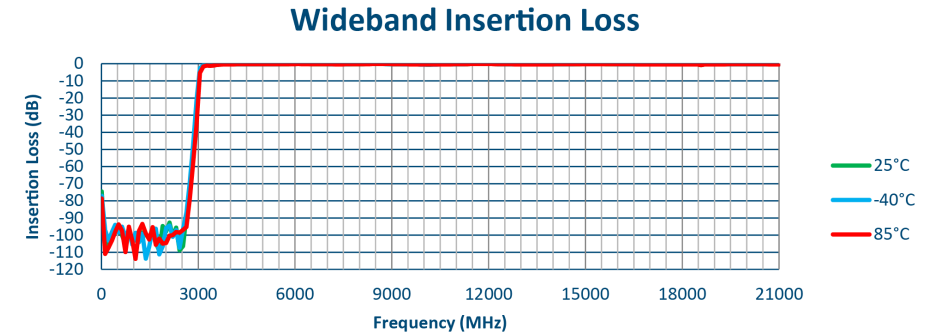


High Pass Filter, HP3G55M18G-SMA



PARAMETERS	SPECIFICATIONS
Passband:	3.55 to 18 GHz
Cut-Off Frequency:	3.55 GHz
Passband Insertion Loss:	1.5 dB Max
Rejection:	55 dB Min at DC to 2.8 GHz
Impedance:	50 Ohm
Insertion Loss:	1.5 dB Max
VSWR:	2.0:1 Max
Input Power:	10 W Max

- Operates over the frequency range of 3.55 to 18 GHz
- Maximum insertion loss of 1.5 dB and VSWR of 2.0:1
- Contains SMA female connectors in a housing measuring 1.26" x 0.71" x 0.39".



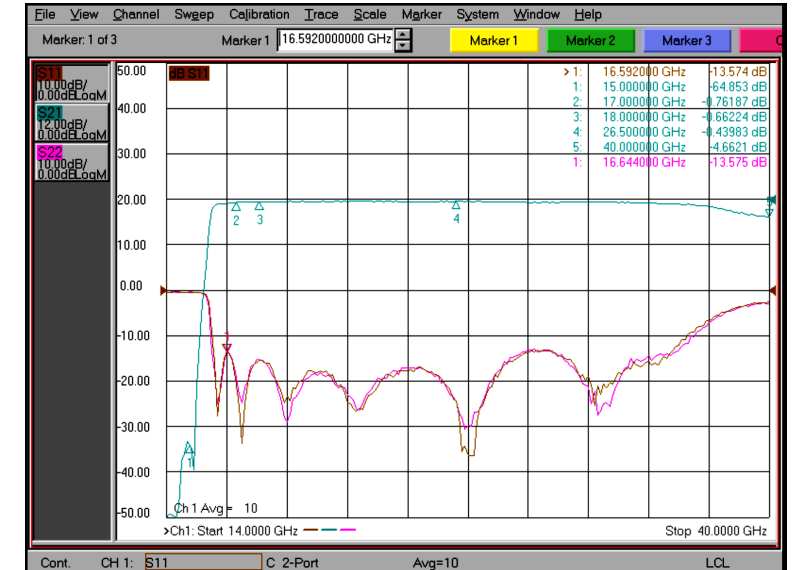
Ultra-Small High Pass Filter, HPF18G-DC15G



PARAMETERS	SPECIFICATIONS
Passband:	18 to 26.5 GHz
Cut-Off Frequency:	18 GHz
Passband Insertion Loss:	1.5 dB Max
Passband VSWR:	2.0:1 Max
Rejection:	60 dB
Input Power:	10 W CW Max

- Low loss ultra-small high pass filter with a passband frequency range of 18 to 26.5 GHz
- >60 dB rejection from DC to 15 GHz
- Package size is 0.64" x 0.58" x 0.38" and contains 2.92mm connectors

Insertion Loss, VSWR & Rejection



Highpass Filter, HP19G40G-292FF



PARAMETERS	SPECIFICATIONS
Frequency Range	19 to 40 GHz
Insertion Loss	2.0 dB Typ., 2.5 dB Max
VSWR	2.0:1 Max
Rejection	50 dB Min @ DC to 17 GHz 35 dB Min., 40 dB Typ @ 17.0 to 18 GHz
Input Power	5 W Max
Impedance	50 Ω Typ

- > Passband of 19 to 40 GHz with a cut-off frequency of 19 GHz
- > Package size 0.79" x 0.51" x 0.39" with 2.92mm Female connectors

Insertion Loss, Rejection & Return Loss



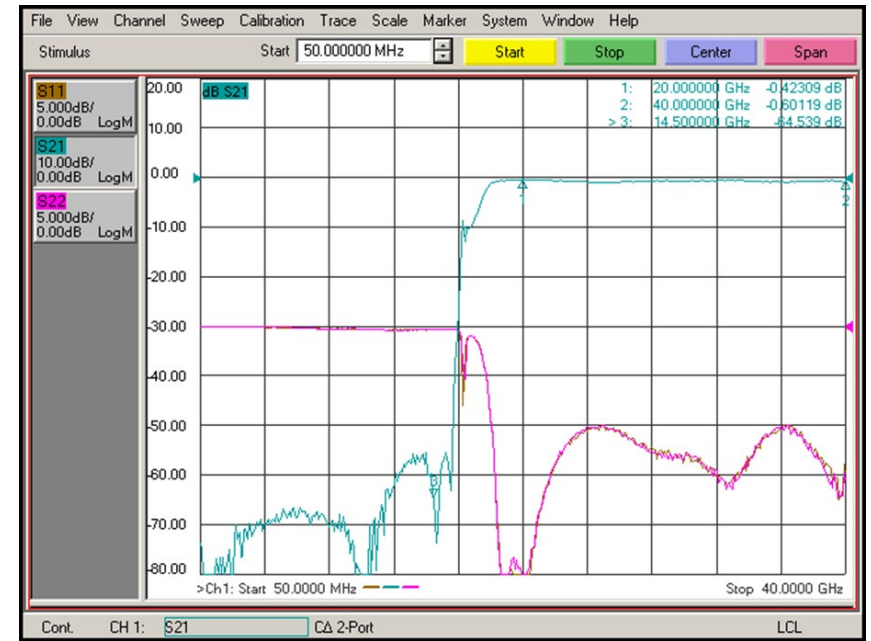
High Pass Filter, HP20G-19D5G-CD-292FF



PARAMETERS	SPECIFICATIONS
Passband:	20 to 40 GHz
Cut-Off Frequency:	20 GHz @ 1 dB
Passband Insertion Loss:	1.5 dB
Passband VSWR:	2.0:1
Rejection:	-54 dBc @ 14.5 GHz
Operating Input Power:	10 W CW

- > Passband of 20 to 40 GHz
- > Cut-Off Frequency is 20 GHz with a typical passband insertion loss of 1.5 dB
- > Provides -54 dBc typical rejection at 14.5 GHz
- > Package size is 0.614" x 0.50" x 0.56" and contains 2.92mm (F) connectors

Insertion Loss, Rejection & Return Loss



Diverse range of bandpass filters that cater to various RF & microwave applications!

Standard or Custom Designed Models

> Suspended Substrate Bandpass Filters

- State-of-the-art performance featuring unique passband, stopband characteristics & excellent reliability
- Ideal for applications such as instrument systems, ultra-broadband receivers, laboratory testing, 5G and many other wideband communications systems.
- Design and build to meet your specifications
- Military or Aerospace Screening available
- Connector Options
-

> Bandpass Cavity Filters

- Combine and Interdigital filter designs
- Frequency coverage up to 40 GHz
- Outstanding selectivity (high Q), for precise filtering of desired frequencies
- Design and build to meet your specifications
- Military or Aerospace Screening available
- Connector Options

> Form, Fit & Function Products & Services



Bandpass Filter Overview

Standard Model Examples



Passband 1 to 18 GHz,
Wide Passband Filter



Passband 8 to 18 GHz,
Suspended Substrate
Passband Filter



Passband 15 GHz,
Suspended Substrate
Bandpass Filter



Center Frequency 0.16 GHz,
Bandpass Cavity Filter



Center Frequency 1.8 GHz,
Bandpass Cavity Filter



Passband 3.25 to 3.75 GHz,
Bandpass Cavity Filter



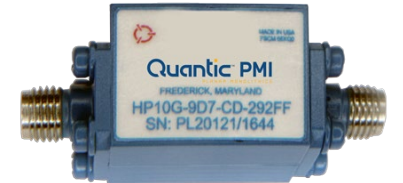
Center Frequency 1.8 GHz,
Bandpass Cavity Filter



Passband 7.7 to 12.3 GHz,
Bandpass Cavity Filter



Passband 7.8 to 11.2 GHz,
Bandpass Cavity Filter



Passband 10 to 27 GHz,
Bandpass Cavity Filter



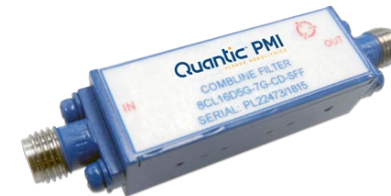
Center Frequency 11.825 GHz,
Lumped Element Filter



Center Frequency 14.125 GHz,
Lumped Element Filter



Passband Frequency 16 to 18 GHz,
Combine Bandpass Filter



Center Frequency 16.5 GHz,
Bandpass Cavity Filter



Center Frequency 24 to 40 GHz,
Bandpass Cavity Filter

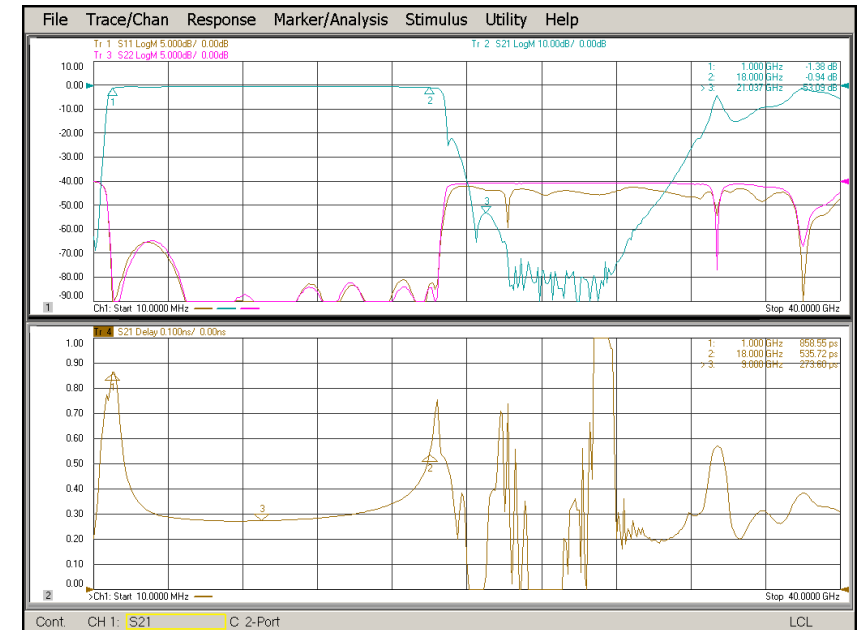
Bandpass Filter, BP-1G18G-CD-SFF



PARAMETERS	SPECIFICATIONS
Passband Frequency	1 to 18 GHz
Insertion Loss	2.0 dB Max
VSWR	2.0:1 Max
Rejection	DC to 0.1 GHz: 50 dB Min 21 to 28 GHz: 40 dB Min
3 dB Bandwidth	1 to 18 GHz

- Offers a wide passband of 1 to 18 GHz
- Low insertion loss of 1.5 dB typically & passband VSWR of 2.0:1
- Package size is 1.50" x 0.62" x 0.5" with SMA Female connectors

Broadband Performance from 10 MHz to 40 GHz
Insertion Loss, Return Loss & Group Delay



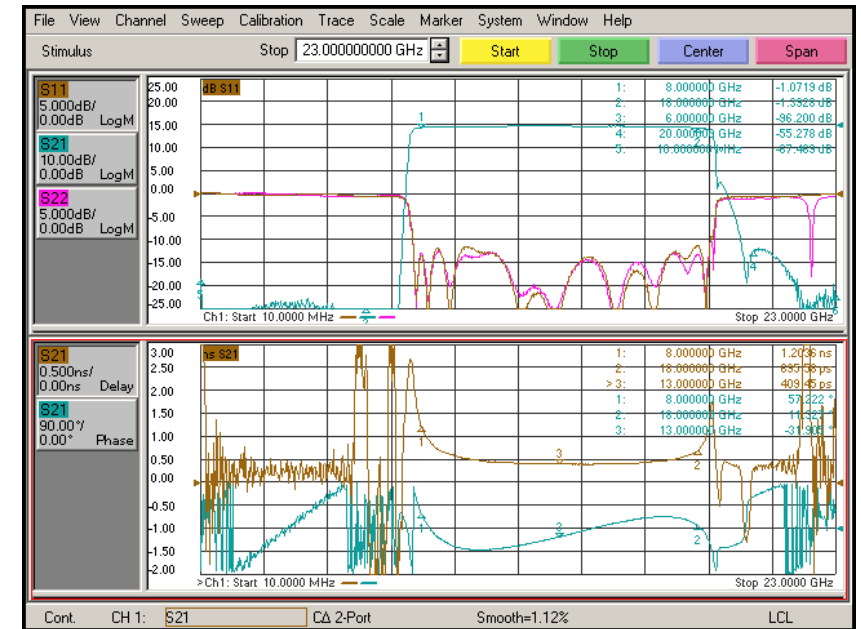
Suspended Substrate, Bandpass Filter, BP13G-10G-CD-SFF



PARAMETERS	SPECIFICATIONS
Passband Frequency	8 to 18 GHz
Passband Insertion Loss	1.5 dB Typ, 2.5 dB Max
Passband VSWR	2.0:1 Max
Rejection	70 dB Typ at DC to 6 GHz 60 dB Typ at 20 to 23 GHz
3 dB Bandwidth	10.0 GHz

- Offers a wide passband of 8 to 18 GHz
- Low insertion loss of 1.5 dB typically & passband VSWR of 2.0:1
- Stopband rejection of 70 dB typically is provided from DC to 6 GHz and from 20 to 23 GHz
- Removable SMA connectors; can be used in connectorized or drop-in module applications
- Package size is 1.94" x 0.76" x 0.5", Gold Plated

Insertion Loss / Return Loss / Group Delay & Phase Linearity



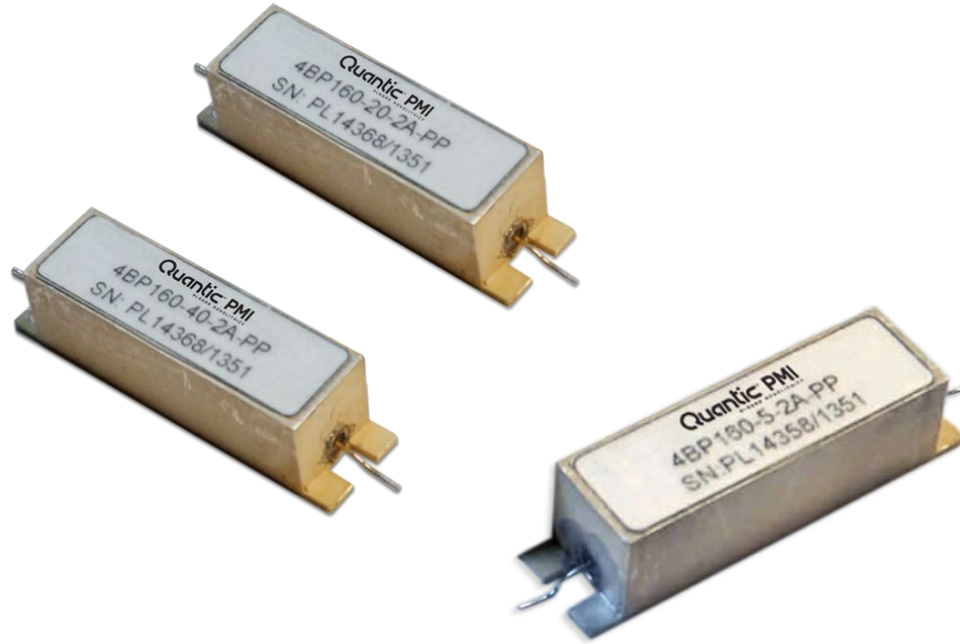
Bandpass Filter, CL15G-6G-CD-SS



- > Offers passband of 15 GHz
- > Passband insertion loss of -1 dB & VSWR of 1.2:1
- > Stopband rejection of -40 dB typically is provided from 2 to 10 GHz
- > Removable SMA connectors; can be used in connectorized or drop-in module applications
- > Package size is 1.5" x 0.4" x 0.5"

PARAMETERS	SPECIFICATIONS
Center Frequency:	15.0 GHz
Rejection:	-40 dB Max (2.0 to 10.0 GHz) -20 dB Max (19.0 GHz)
Insertion Loss (Passband):	-1 dB
3 dB Bandwidth:	6.75 GHz
1 dB Passband:	6.5 GHz
Input VSWR:	1.2:1
Impedance:	50 Ohm
Input Power:	5 W
Passband Ripple:	-1 dB

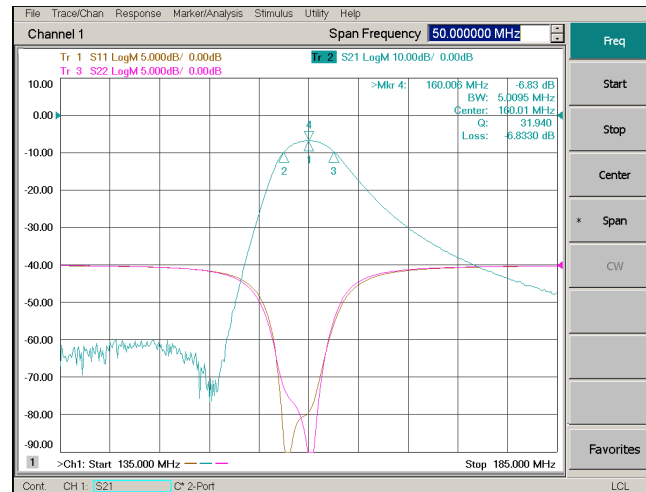
LC Bandpass Filters, 4BP160-X-2A-PP



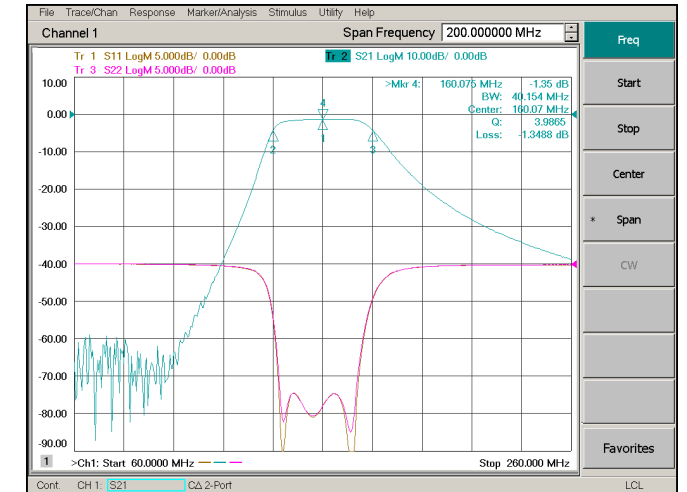
- > LC Bandpass filter centered at 0.16 GHz
- > Available in 5, 20 & 40 MHz bandwidths
- > Package size of 1.2" x 0.31" x 0.31" with PC Pins in and out

PARAMETERS	SPECIFICATIONS		
Model No.	4BP160-5-2A-PP	4BP160-20-2A-PP	4BP160-40-2A-PP
Center Frequency	0.16 GHz	0.16 GHz	0.16 GHz
3dB Bandwidth	5 MHz, $\pm 5\%$	20 MHz, $\pm 5\%$	20 MHz, $\pm 5\%$
VSWR in the Pass Band	1.5:1 Max	1.5:1 Max	1.5:1 Max
Pass Band Insertion Loss	3 dB Nom	3 dB Nom	3 dB Nom
Rejection	4 Section Response	4 Section Response	4 Section Response

S- Parameter Passband Insertion Loss & Return Loss



4BP160-5-2A-PP



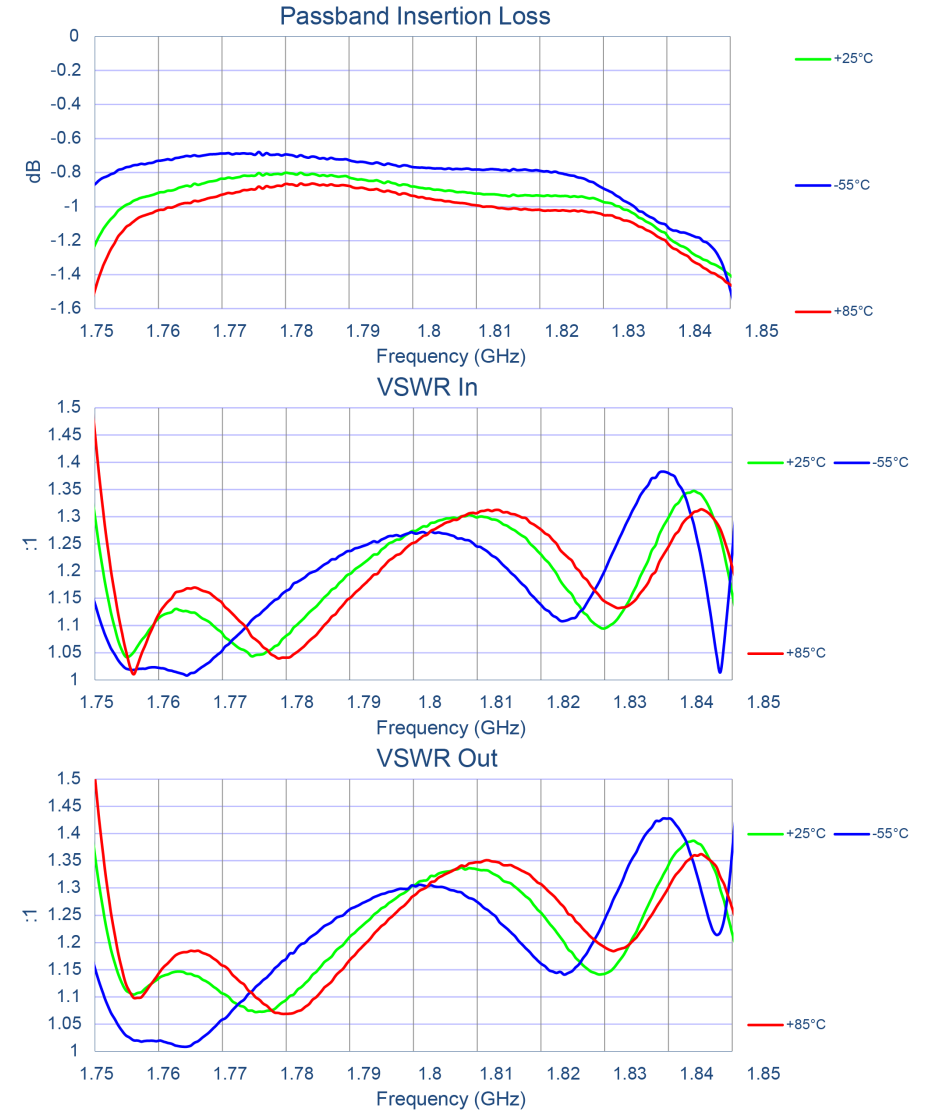
4BP160-40-2A-PP

Bandpass Cavity Filter, 8CL1800-100-CD-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	1.8 GHz
Insertion Loss:	1.5 dB
Bandwidth:	0.1 GHz
VSWR:	1.5:1 Max
Rejection:	-60 dBc @ 1.64 and 2 GHz

- Center frequency at 1.8 GHz; nominal bandwidth is 0.1 GHz
- Band rejection of -60 dBc @ 1.64 and 2 GHz
- Housing size is 1.30" x 1.20" x 0.50" with SMA female connectors

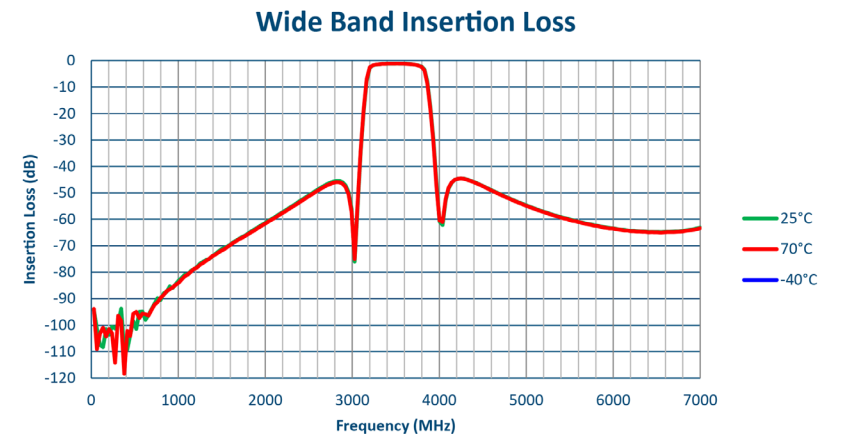
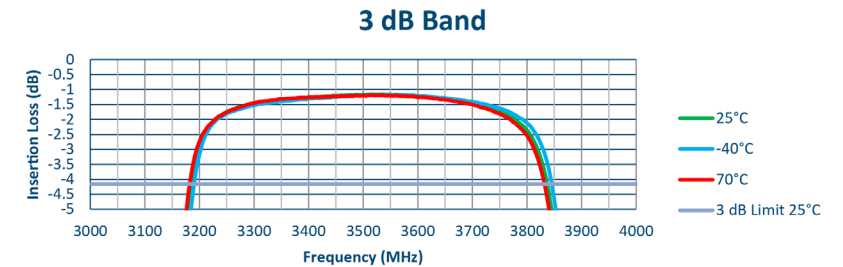
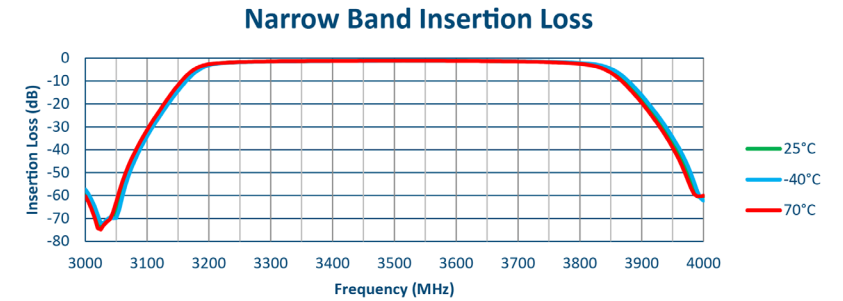


Bandpass Cavity Filter, BPF-3G500M-500-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	3.5 GHz Nom
Insertion Loss:	2 dB Max
Bandwidth:	0.5 GHz Typ
Passband Frequency:	3.25 to 3.75 GHz
Input Power:	1 W
VSWR:	1.5:1 Max
Rejection:	40 dB Min

- Passband frequency 3.25 to 3.75 GHz
- Machined housing and silver plated to provide the highest possible Q
- Package size is 1.38" x 0.47" x 0.39" with SMA female connectors

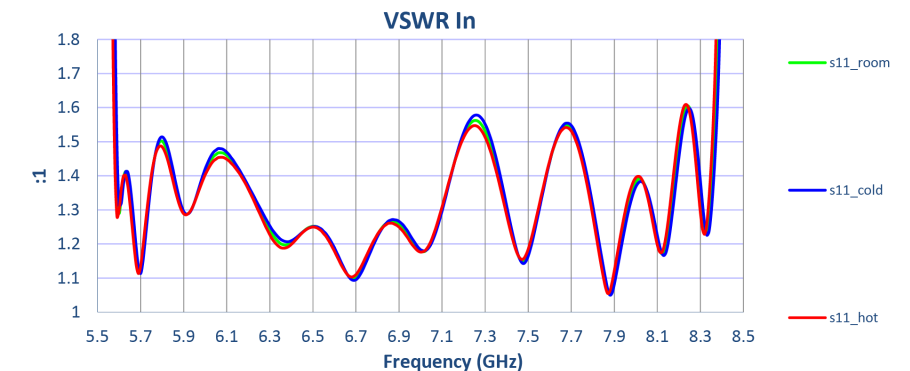
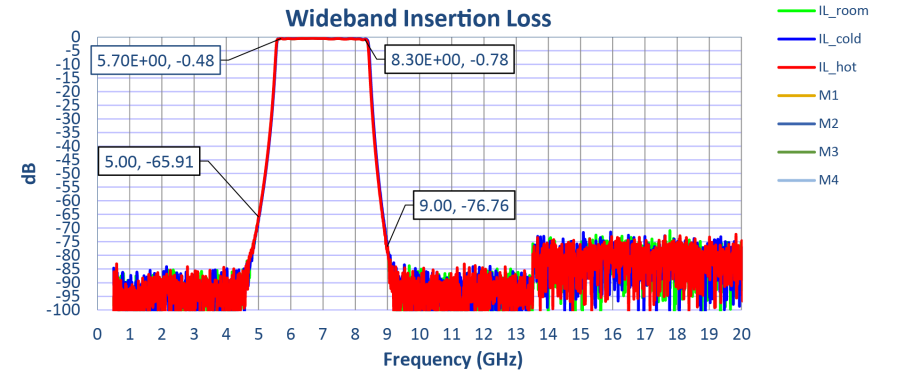
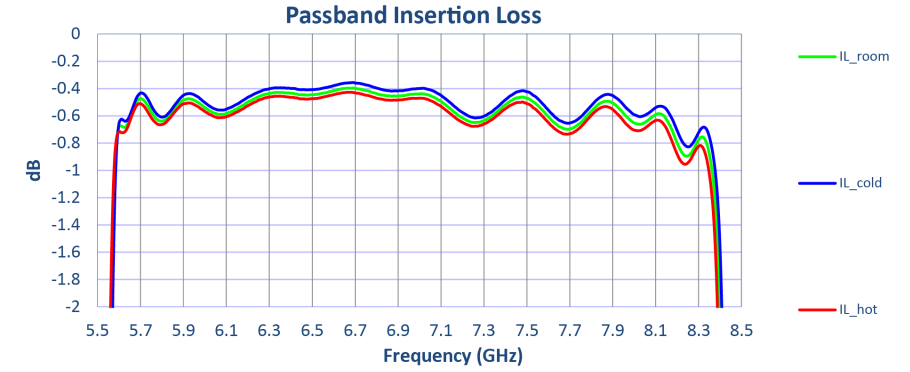


Bandpass Cavity Filter, BPF-5G70R8G30R-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	7 GHz
Insertion Loss:	2 dB Max
Bandwidth:	2.6 GHz
Input Power:	10 W Typ
VSWR:	1.8:1 Max
Passband Ripple:	1 dB Max
Impedance:	50 Ohm
REJECTION @ 0.5 to 5 GHz & 9 to 20 GHz:	50 dB Min

- > Center frequency of 7 GHz; Bandwidth of 2.6 GHz
- > Maximum insertion loss of 2 dB and a maximum VSWR of 1.8:1
- > Package size is 3.51" x 0.95" x 0.39" with SMA female connectors

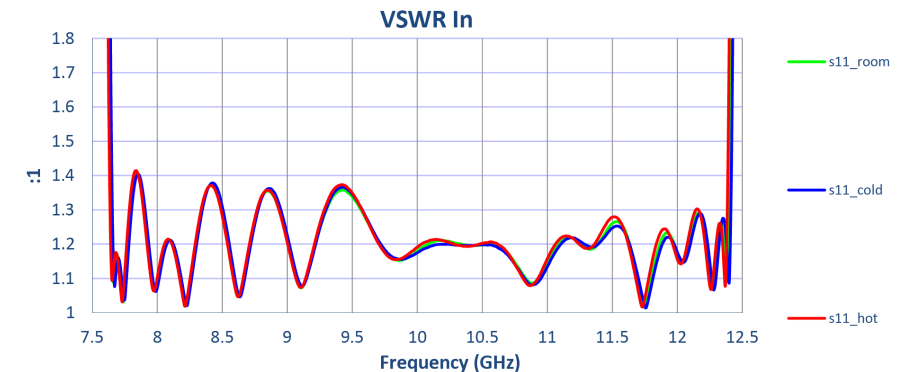
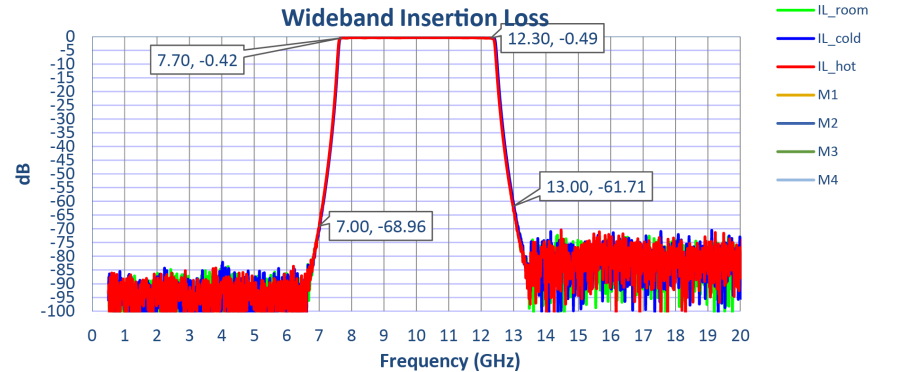
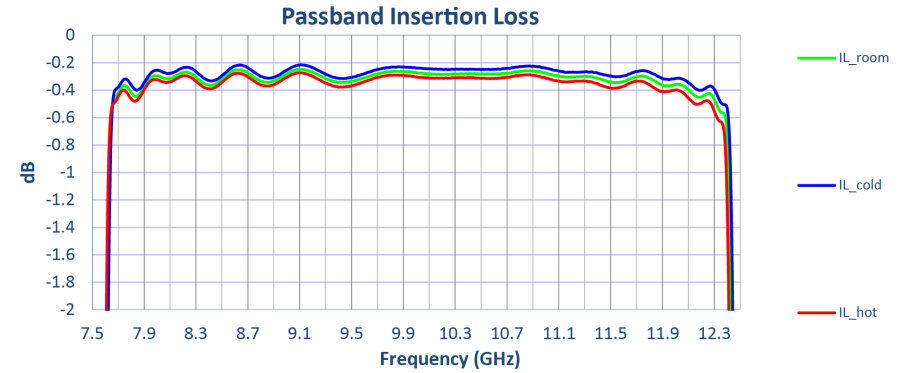


Bandpass Cavity Filter, BPF-7G70R12G30R-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	10 GHz
Insertion Loss:	2.0 dB Max
Bandwidth:	4.6 GHz
Passband Frequency:	7.7 to 12.3 GHz
Input Power:	10 W Typ
VSWR:	1.8:1 Max
Passband Ripple:	1 dB Max
Impedance:	50 Ω
REJECTION @ 0.5 to 7 GHz & 13 to 20 GHz:	50 dB Min

- > Bandpass frequency 7.7 to 12.3 GHz; center frequency of 10 GHz
- > Max insertion loss of 2 dB and a maximum VSWR of 1.8:1
- > Package size 2.99" x 0.55" x 0.39" with SMA female connectors

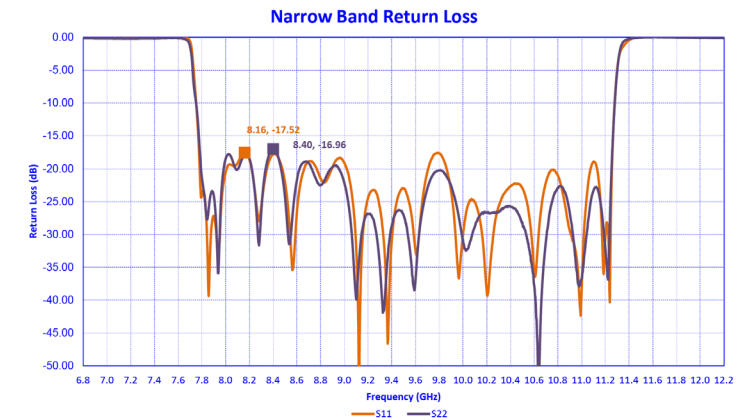
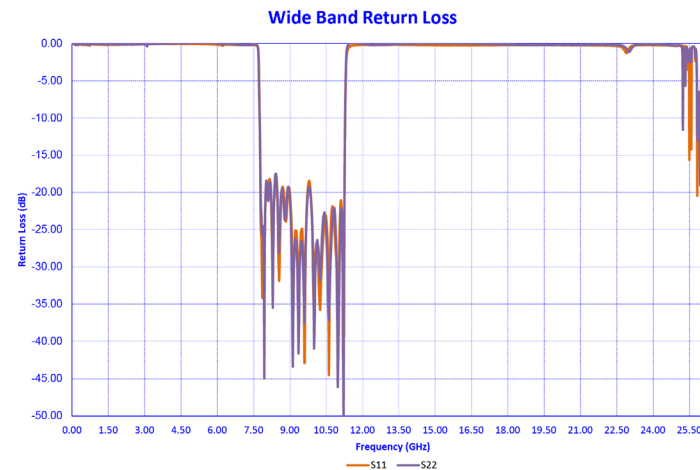
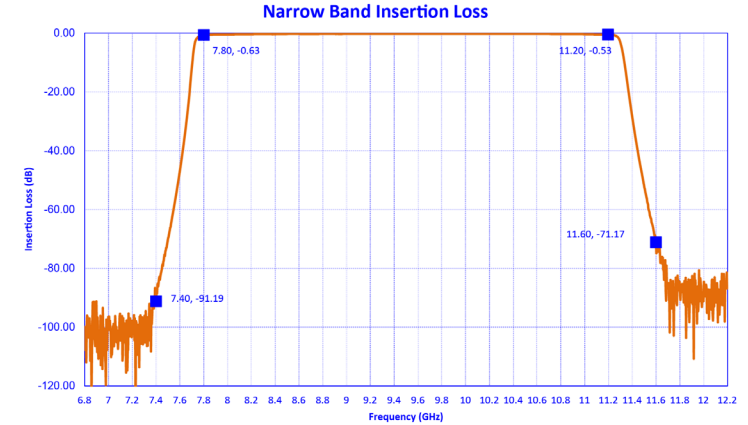
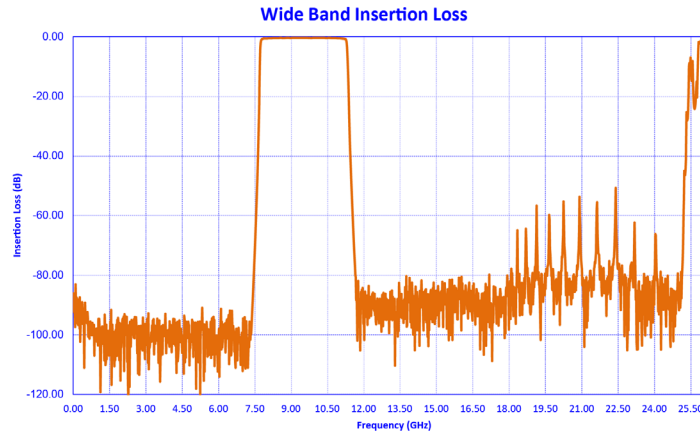


Bandpass Cavity Filter, BPF-7D8G11D2G-3400-SFF

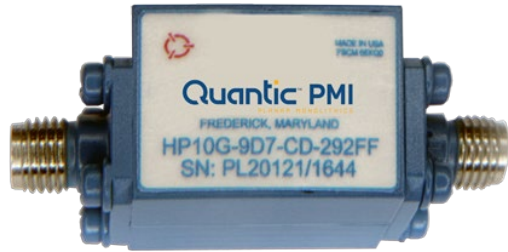


- > 3 dB bandwidth of 3.4 GHz minimum covering 11.2 to 14.6 GHz
- > Package size is 4.29" x 0.76" x 0.35" with SMA female connectors

PARAMETERS	SPECIFICATIONS
Center Frequency:	9.5 GHz
Frequency Range (-3 dB Bandwidth):	7.8 to 11.2 GHz
Insertion Loss:	2 dB Max
Bandwidth:	3.4 GHz Min
VSWR:	2.0:1 Max
Rejection:	-60 dBc @ 0.1 - 7.4 GHz, -60 dBc @ 11.6 - 18 GHz

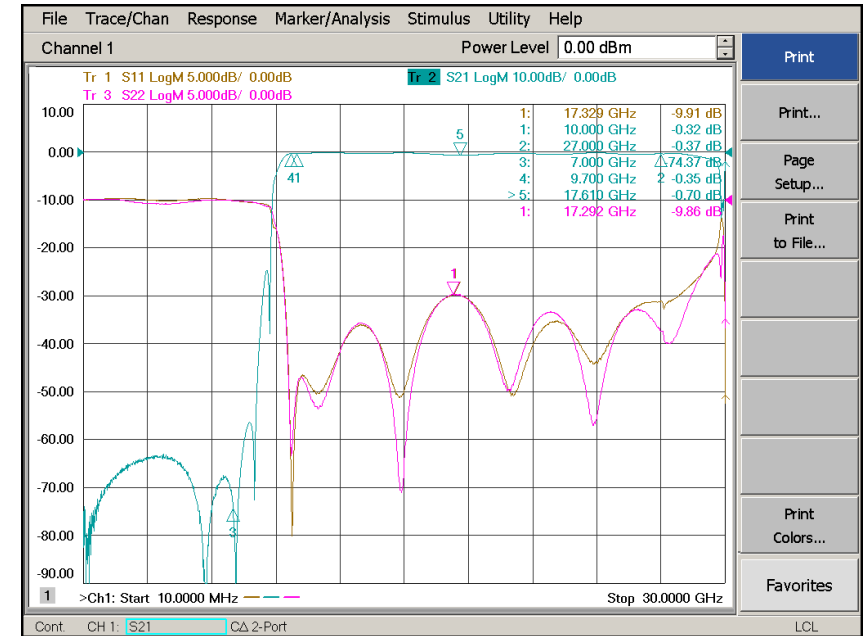


Bandpass Cavity Filter, HP10G-9D7-CD-292FF



PARAMETERS	SPECIFICATIONS
Passband	10.0 to 27.0 GHz
Cut-off Frequency	9.7 Hz
Passband Insertion Loss	1.5 dB Max
Passband VSWR	2.0:1 Max
Rejection	-40 dBc @ 7.0 GHz

S- PARAMETER PASSBAND INSERTION LOSS & RETURN LOSS



- Passband frequency range of 10.0 to 27.0 GHz
- Cut-Off Frequency is 9.7 GHz with a maximum passband insertion loss of 1.5 dB
- Provides -40 dBc rejection at 7 GHz.
- Package size is 0.65" x 0.65" x 0.50", has 2.92mm (F) connectors

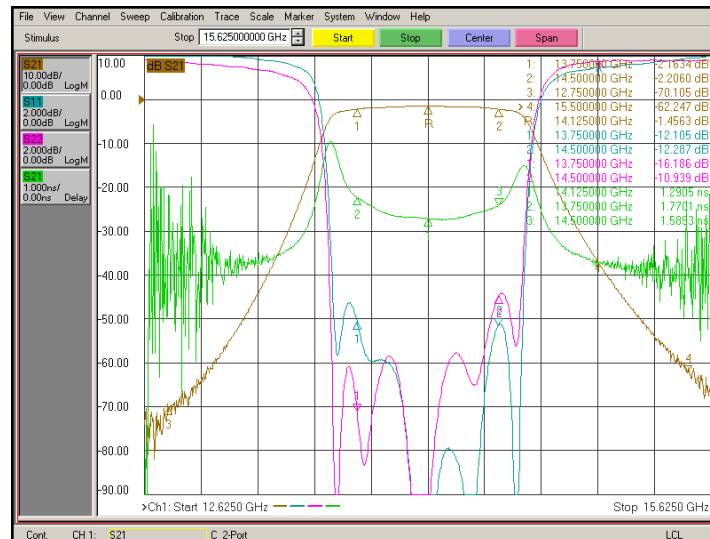
Lumped Element Filter, BPF-11D825D-1D85G-60DB-SFF



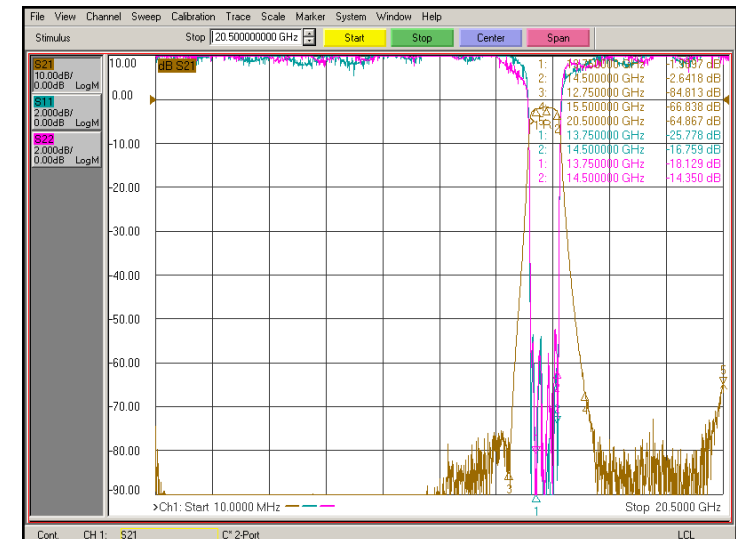
- › Center Frequency @ 11.825 GHz, 1 dB bandwidth is 1.85 GHz
- › Package size is 1.27" x 0.28" x 0.32" with SMPM (M) connectors

PARAMETERS	SPECIFICATIONS
Center Frequency	11.825 GHz
1 dB Bandwidth	1.85 GHz
VSWR over 90% of the Passband	2.0:1 Max
1 dB Passband Insertion Loss	3 dB Max
Rejection	-60 dBc Min @ 9.15 to 9.9 GHz -60 dBc Min @ 13.75 to 14.5 GHz

Narrow Band Responses



Wide Band Responses



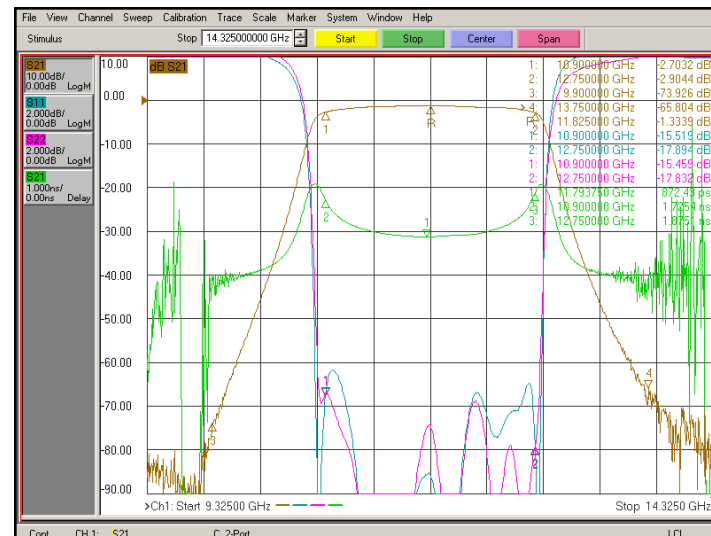
Lumped Element Filter, BPF-14D125G-750M-50DB-SFF



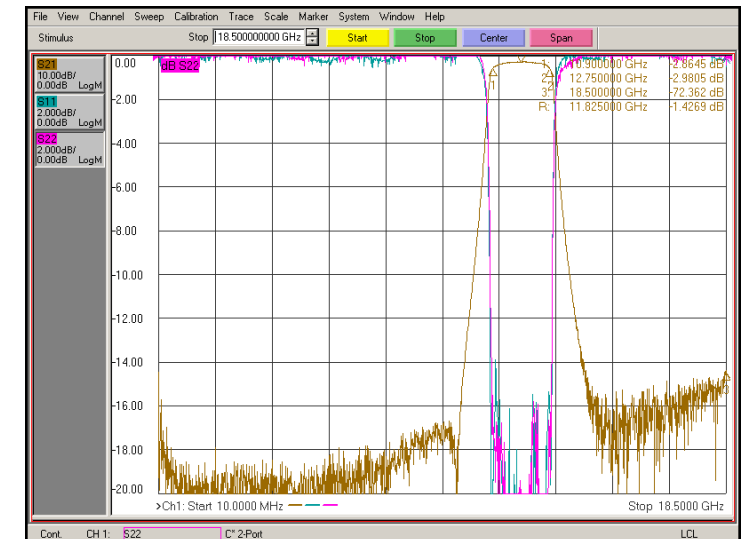
- › Center Frequency @ 14.125 GHz, 1 dB bandwidth is 750 MHz
- › Package size is 1.74" x 0.28" x 0.32" with SMPM (M) connectors

PARAMETERS	SPECIFICATIONS
Center Frequency	14.125 GHz
1 dB Bandwidth	750 MHz
VSWR over 90% of the Passband	2.0:1 Max
1 dB Passband Insertion Loss	3 dB Max
Rejection	-50 dBc Min. @ 10.9 to 12.75 GHz -50 dBc Min. @ 15.5 to 17.35 GHz
Input Power	+40 dBm CW Max

Narrow Band Responses



Wide Band Responses



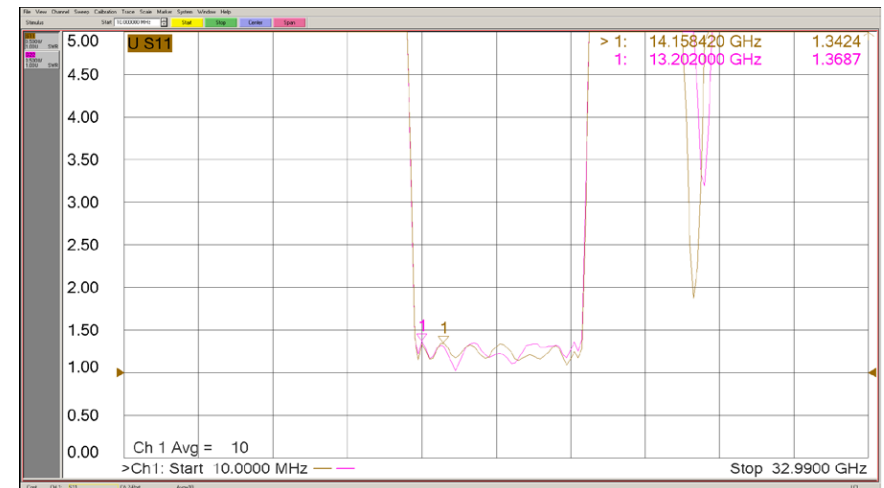
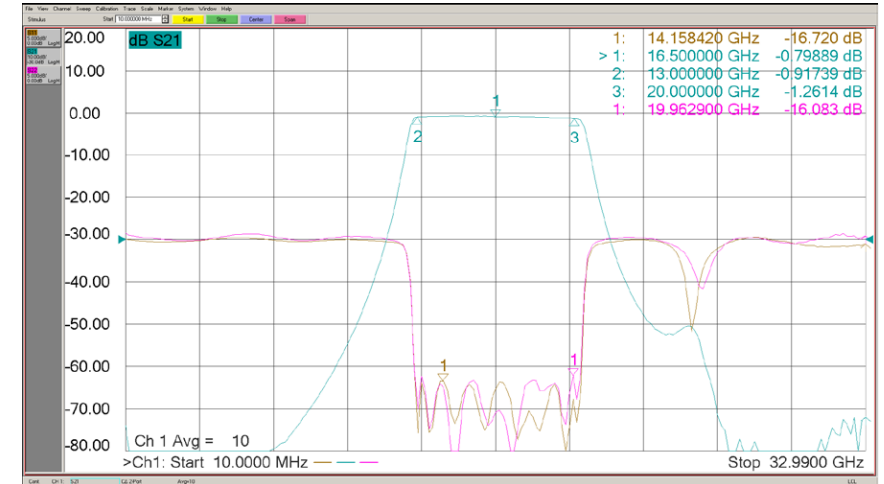
Bandpass Cavity Filter, 8CL16D5G-7G-CD-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	16.5 GHz
Insertion Loss:	1.5 dB
Bandwidth:	7 GHz
VSWR:	1.5:1
Rejection:	8 Pole Response

- > Bandpass filter centered at 16.5 GHz; nominal bandwidth is 7 GHz
- > Package size is 1.4" x 0.4" x 0.5" with SMA female connectors

Insertion Loss & Return Loss

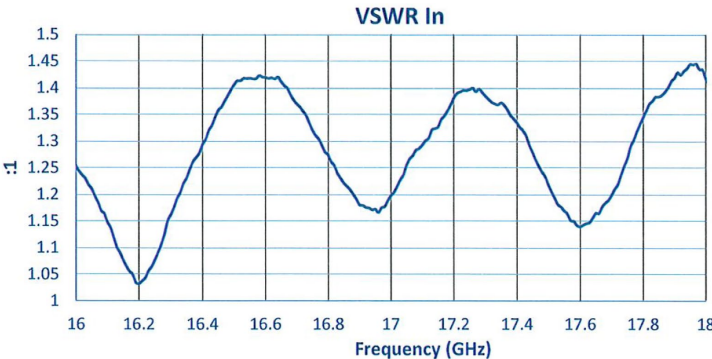
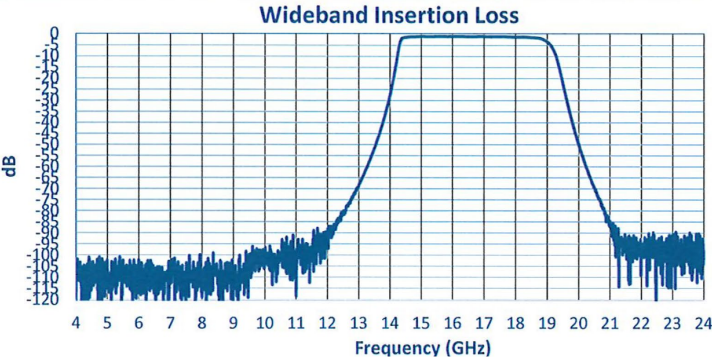
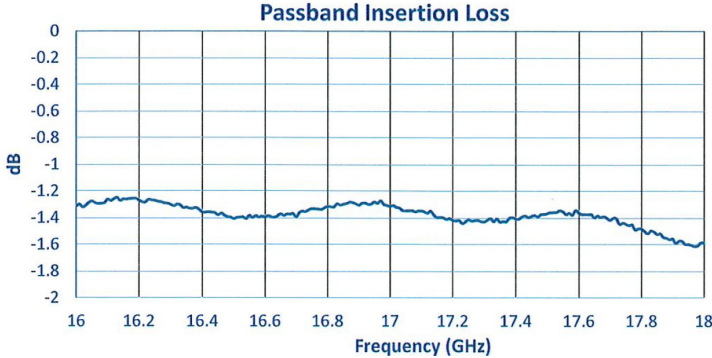


Comblin Bandpass Filter, 11CL16G18G-CD-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	17 GHz
Insertion Loss:	2 dB
Bandwidth:	2 GHz
Passband Frequency	16 to 18 GHz
VSWR:	1.5:1
Rejection:	4 to 12 GHz: 70 dBc

- > Passband frequency of 16 to 18 GHz; center frequency of 17 GHz
- > Max insertion loss of 2.0 dB and a maximum VSWR of 1.5:1
- > Package size is 2.050" x 0.625" x 0.400" with SMA female connectors.

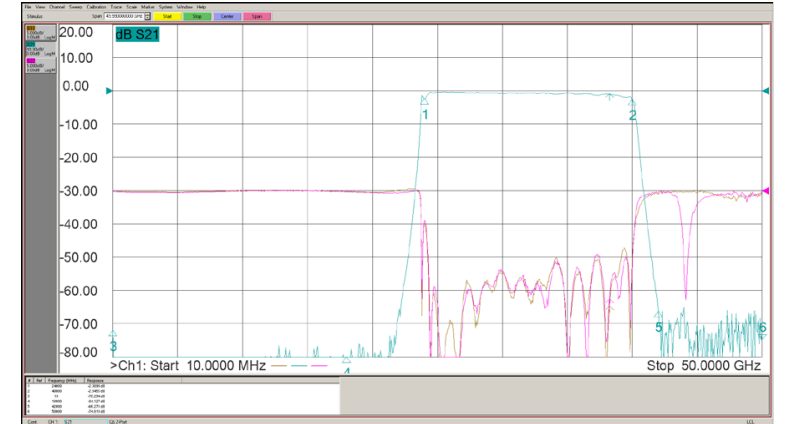


Bandpass Cavity Filter, 15CL32G-16G-292FF

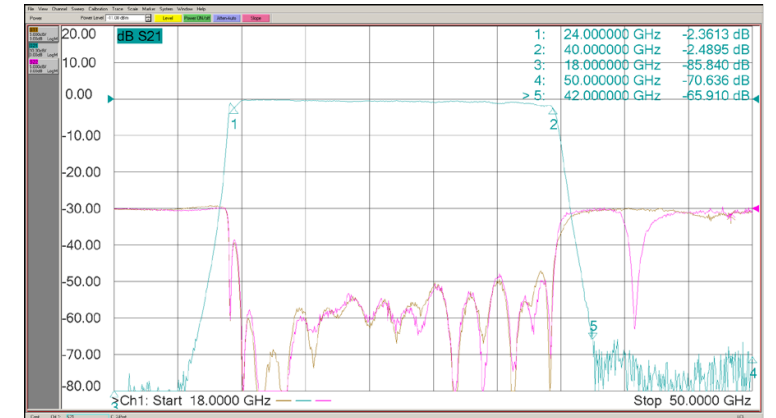


PARAMETERS	SPECIFICATIONS
Center Frequency:	24 to 40 GHz
Insertion Loss:	3 dB Max - Measured 2.48 dB
Bandwidth:	DC to 50 GHz
Ripple:	1 dB Max - Measured <1 dB
Rejection:	DC to 18 GHz: 60 dB - Measured >60 dB, 42 to 50 GHz: 40 dB - Measured >40 dB

Swept Plot (0.1 to 50 GHz)



Swept Plot (18 to 50 GHz)



- Center frequency of 24 to 40 GHz
- Machined housing and silver plated to provide the highest possible Q
- Unit size is 1.281" x 0.60" x 0.35" and 2.92mm female connectors and are removable for surface mount applications

Manage signal bandwidth, reduce interference, & improve signal quality!

Standard & Custom Designs

> Band Reject Notch Filters

- State-of-the-art performance featuring unique passband, stopband characteristics & excellent reliability
- Ideal for applications such as instrument systems, ultra-broadband receivers, laboratory testing, 5G and many other wideband communications systems.
- Design and build to meet your specifications
- Military or Aerospace Screening available
- Connector Options

> Lumped Element Bandpass Filters

- Ideal for use in communication, transceivers, satellite, radar, test & measurement system applications
- Design and build to meet your specifications
- Military or Aerospace Screening available
- Connector Options

> Form, Fit & Function Products & Services



Band Reject Notch Filters Overview

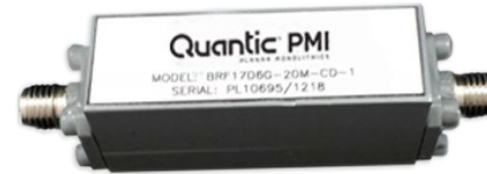
Standard Model Examples



Center Frequency 1.37 GHz,
Band Reject Notch Filter



Center Frequency 1.37 GHz,
Band Reject Notch Filter



Center Frequency
8.735 GHz, 18.885 GHz,
Band Reject Notch Filter



Center Frequency 1.085 GHz,
TNC Band Reject Filter



Center Frequency 6 GHz,
Band Reject Filter



Center Frequency 1.085 GHz,
Ultra-Band Reject Filter



Center Frequency 0.052 GHz,
BNC Band Reject Filter



Center Frequency
11.992 & 39.5 GHz,
2.4mm Band Reject Filter

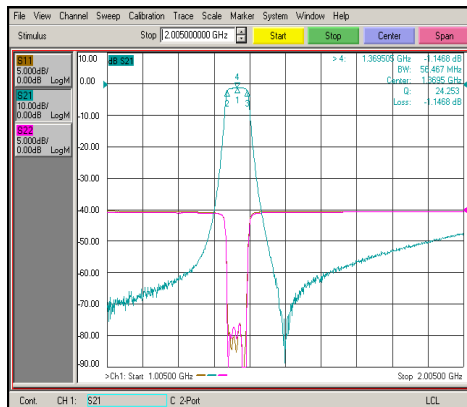
Band Reject Filter, BRF1370-50-CD-TNCFF-LK



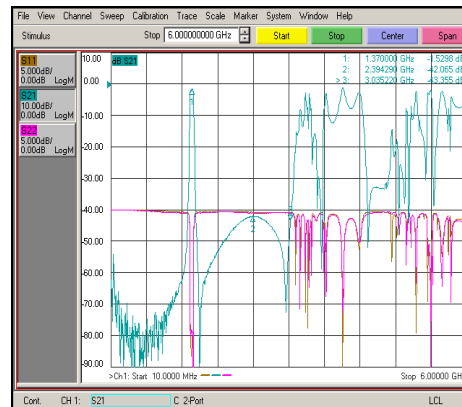
PARAMETERS	SPECIFICATIONS
Center Frequency	1.37 GHz
Notch Bandwidth	0.06 GHz
Notch Depth	50 dB
Insertion Loss	Less than 2.5 dB
Lower Passband	0.8 to 1.2 GHz
Upper Passband	1.45 to 1.9 GHz
RF Power	10 W Max

- Center frequency of 1.37 GHz; a notch bandwidth of 0.060 GHz with a notch depth is 50 dB
- Rated to handle 10 W CW
- Supplied with TNC connectors
- Package measures 3.25" x 0.77" x 1.0"

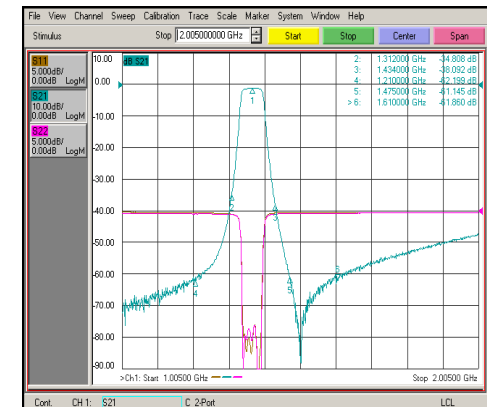
1 dB BANDWIDTH



UPPER REJECTION



REJECTION



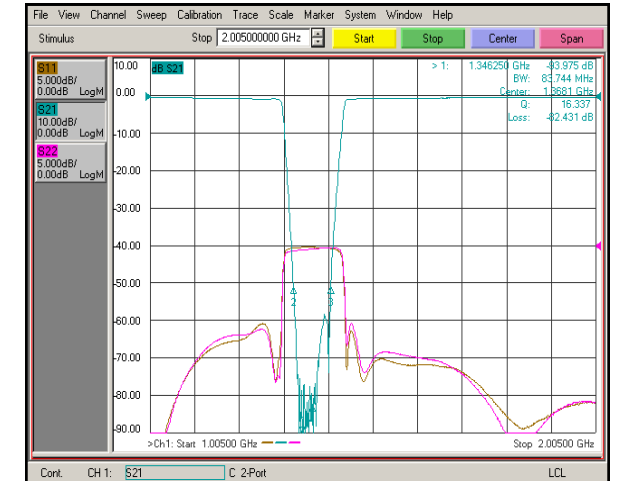
Band Reject Filter, BRF1370-50-CD-TNCFF-BL



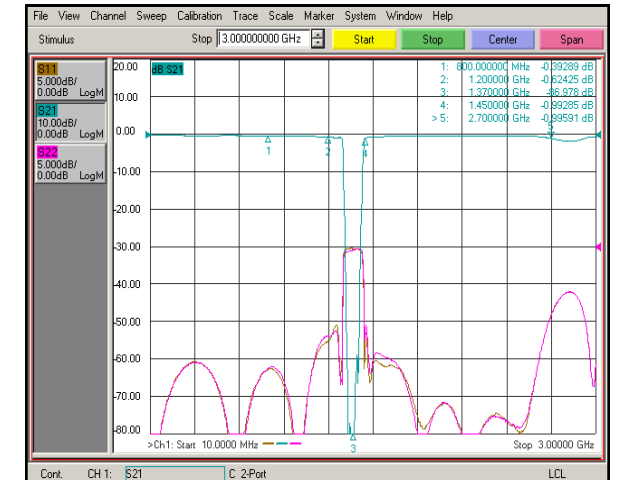
PARAMETERS	SPECIFICATIONS
Center Frequency	1.37 GHz
Notch Bandwidth	0.06 GHz
Notch Depth	50 dB
Insertion Loss	<1.5 dB
Lower Passband	0.8 to 1.2 GHz
Upper Passband	1.45 to 2.7 GHz
RF Power	10 W CW Max

- Center frequency of 1.37 GHz; a notch bandwidth of 0.060 GHz with a notch depth is 50 dB
- Rated to handle 10 W CW
- Supplied with TNC connectors
- Package measures 6.69" x 3.15" x 0.79"

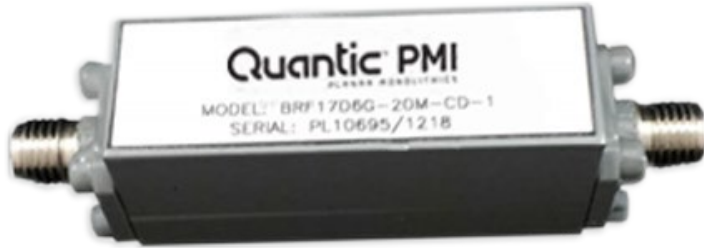
Notch Bandwidth



Passband Insertion Loss



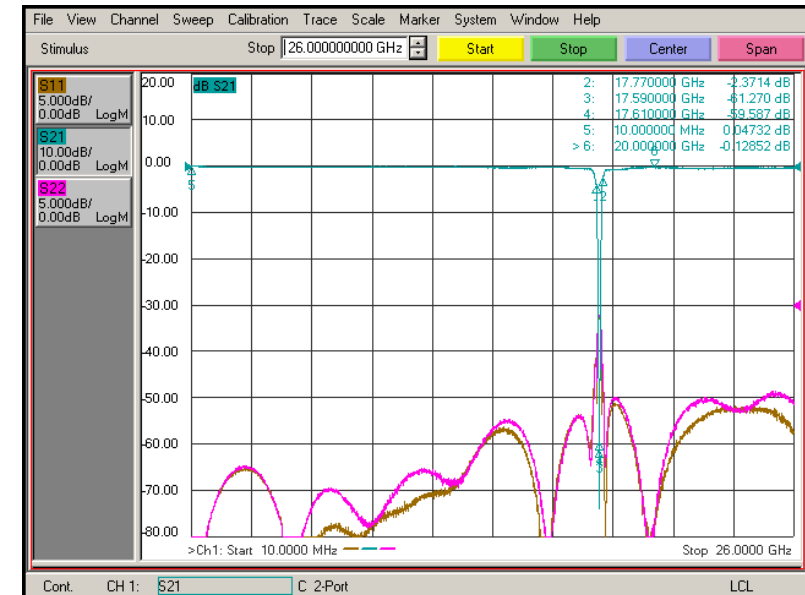
Band Reject Filter, BRF17D6G-20M-CD-1



PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	8.735 GHz, 18.885 GHz
Passband Insertion Loss:	5 dB Typ
Lower Passband:	DC to 17.47 GHz
Upper Passband:	17.77 to 20 GHz
Passband VSWR:	2.0:1
Rejection:	-40 dBc Min @ 17.59 to 17.61 GHz

- > Passband of DC to 17.47 GHz and 17.77 to 20 GHz and over 40 dB of rejection at 17.59 to 17.61 GHz
- > Insertion loss in the passband is <5 dB; VSWR is better than 2.0:1
- > Supplied with SMA Female connectors
- > Package size is 1.5" x 0.5" x 0.68"

Insertion Loss & Return Loss up to 26 GHz

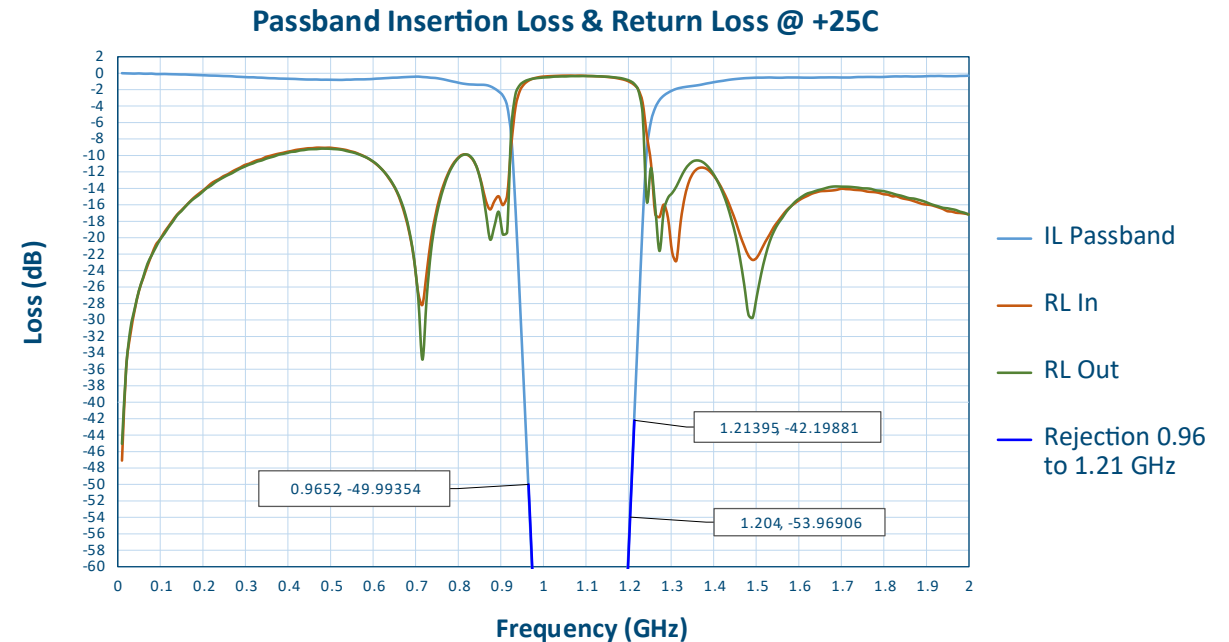


Ultra-small Band Reject Filter, JTIDS-0001-SFM



PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	1.085 GHz
Notch Bandwidth:	0.25 GHz
Passband Insertion Loss:	6 dB
Rejection:	-40 dBc @ 0.96 to 1.21 GHz
Passband VSWR:	2.0:1

- > Centered frequency at 1.085 GHz, rejects frequencies from 0.96 to 1.21 GHz
- > Specifically designed for Military JDITS applications
- > Package size is 1.4" x 0.5" x 0.5" with SMA (F/M) connectors. Also available with TC Connectors



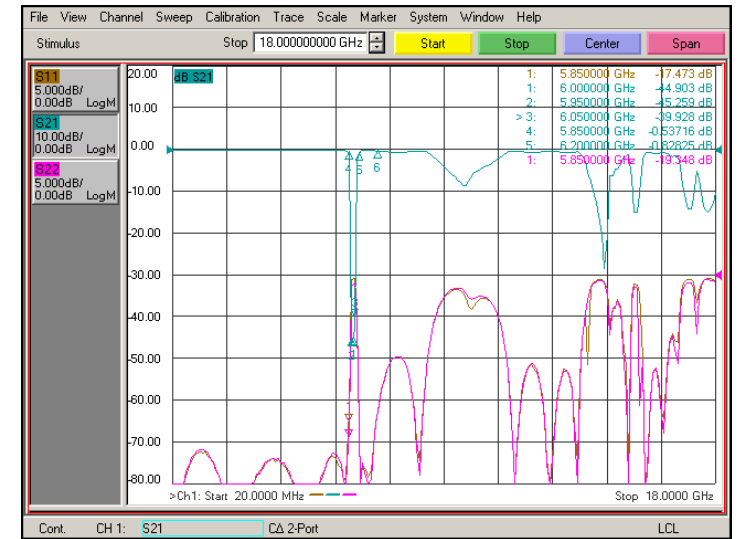
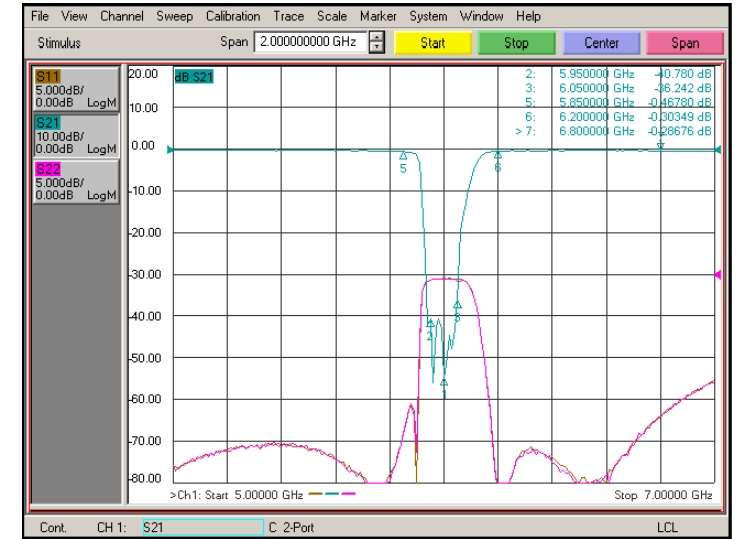
Band Reject Filter, BR6000-100-CD-SS



PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	6 GHz
Notch Bandwidth:	0.1 GHz (5.95 to 6.05 GHz)
Passband Insertion Loss:	1 dB Typ
Passband Frequency:	DC to 5.85 GHz / 6.2 to 6.8 GHz
RF Input Power:	100 W CW
Passband VSWR:	1.5:1
Rejection:	-30 dB ± 0.09 GHz -65 dB @ 0 to 0.3 GHz -65 @ 0.3 to 1 GHz

- > Center frequency of 6 GHz, notch bandwidth of 0.1 GHz @ 3 dB, with a VSWR of 2.0:1
- > Precision machined housing and silver plated to provide the highest possible Q
- > Package size is 2.90" x 0.65" x 0.75" with SMA female connectors in and out.

Passband Insertion Loss @ 25 °C



Band Reject Filter, BRF-26D6G-800M-CD-1



- > Center frequency of 11.995 and 39.5 GHz and notch bandwidth of 26.2 to 27 GHz, with a VSWR of 2.0:1
- > Precision machined housing and silver plated to provide the highest possible Q.
- > Package size is 1.50" x 0.75" x 0.40" with 24mm female connectors in and out.

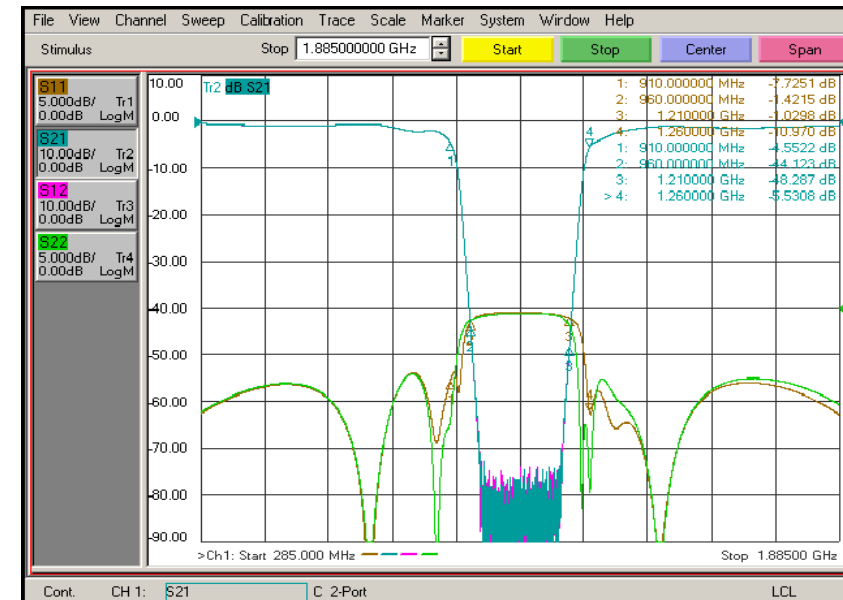
PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	11.995 GHz, 39.5 GHz
Notch Bandwidth:	26.2 to 27 GHz
Passband Insertion Loss:	Band 1: 4 dB Typ Band 2: 4 dB Typ
Notch:	-70 dB Typ from 26.2 to 27 GHz
Power Handling of Notch Signal:	10 W (+40 dBm) for 26.2 to 27 GHz
Passbands:	Band 1: 10 MHz to 24 GHz Band 2: 31 to 48 GHz
Passband Return Loss:	Band 1: 2.5:1 Typ Band 2: 2.5:1 Typ
Power Handling of Passbands:	+10 dBm Max

Ultra-small Band Reject Filter, JTIDS-0001-TNC



PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	1.085 GHz
Notch Bandwidth:	0.25 GHz
Passband Insertion Loss:	6 dB
Rejection:	-40 dBc @ 0.96 to 1.21 GHz
Passband VSWR:	2.0:1

Passband Insertion Loss and Return Loss



- > Centered frequency at 1.085 GHz, rejects frequencies from 0.96 to 1.21 GHz
- > Specifically designed for Military JDITS applications
- > Package size is 1.5" x 0.5" x 0.5" with TNC (F) connectors. Also available with SMA Connectors

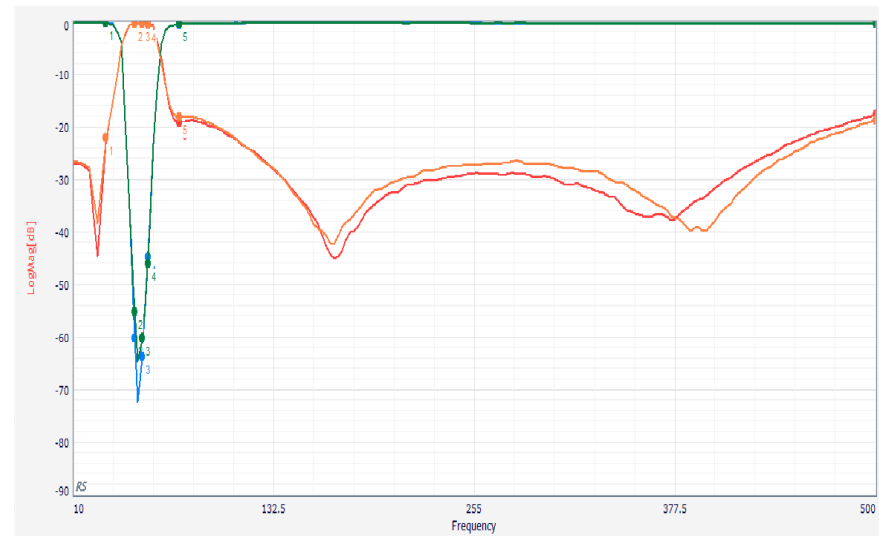
Band Reject Filter, BR65-10-B/B



PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	0.052 GHz
Notch Bandwidth:	0.009 GHz
Passband Insertion Loss:	1.5 dB
Lower Passband:	DC to 0.03 GHz
Upper Passband:	0.075 to 0.5 GHz
RF Input Power:	5 W CW
Rejection:	-30 dBc @ 0.0476 to 0.0556 GHz

- Centered at 0.052 GHz and rejects frequencies from 0.0476 to 0.0556 GHz with a VSWR of 2.0:1.
- Precision machined housing and silver plated to provide the highest possible Q.
- Package size is 2.5" x 1.25" x 1.25" with BNC female connectors in and out.

Insertion Loss and Return Loss



Lumped Element Bandpass Filters Overview

Standard Model Examples



Center frequency 3.975 GHz
LC Bandpass Filter



Center frequency 0.16 GHz
Lumped Element Bandpass Filter



Center frequency 0.75 GHz
Lumped Element Bandpass Filter



Center frequency 2.04 GHz
Lumped Element Bandpass Filter



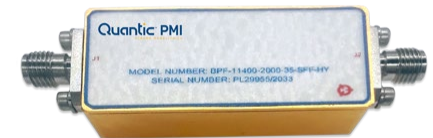
Center frequency 3.343 GHz
Lumped Element Bandpass Filter
Dual Use Component



Center frequency 3.975 GHz
Lumped Element Bandpass Filter



Center frequency 7.4 GHz
Lumped Element Bandpass Filter



Center frequency 11.4 GHz
Lumped Element Bandpass Filter

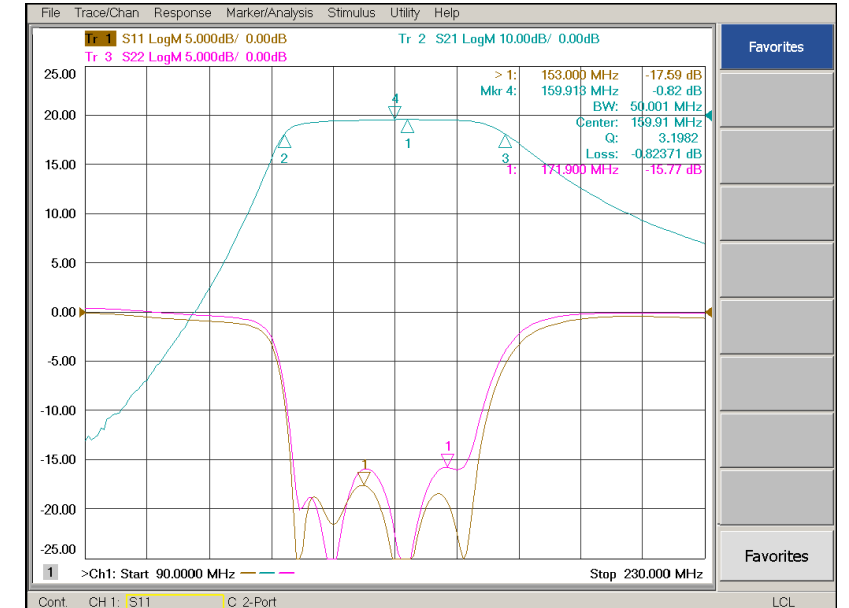
LC Bandpass Filter, 5BP60-2-3B-SFF



PARAMETERS	SPECIFICATIONS
Center Frequency:	0.06 GHz
Insertion Loss:	4 dB Max
Bandwidth:	0.0036 GHz @ 3 dB
VSWR:	1.5:1
Rejection:	5 Section Response
VSWR:	1.5:1

- Centered at 0.06 GHz with a nominal bandwidth is 0.0036 GHz
- Maximum insertion loss of 4 dB
- Small 1.50" x 0.50" x 0.50" package with SMA female connectors
- Other frequencies available

Passband Insertion Loss and Return Loss



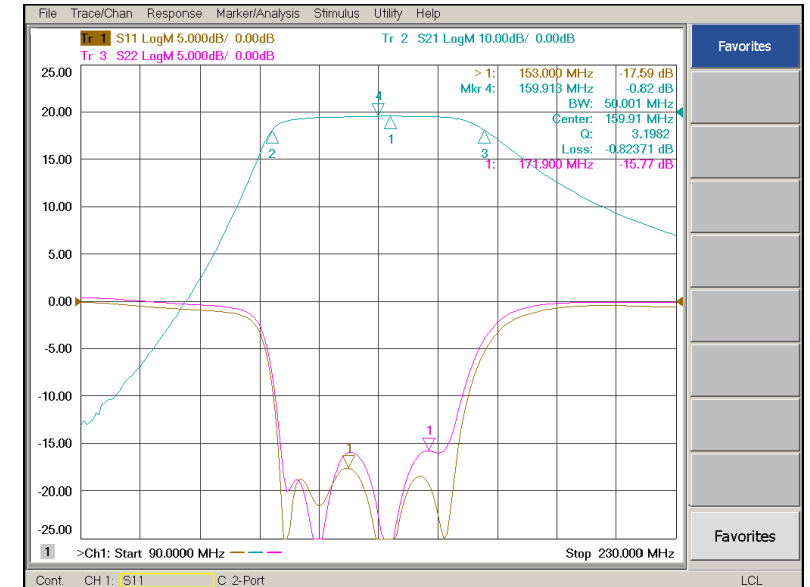
Lumped Element Bandpass Filter, 4BP160-50-2A-PP



PARAMETERS	SPECIFICATIONS
Center Frequency:	0.16 GHz
Insertion Loss:	3 dB
Bandwidth:	0.05 GHz \pm 5%
Rejection:	4 Section Response
VSWR:	1.5:1 Max

- > Centered at 0.16 GHz with a nominal bandwidth of 0.05 GHz
- > Maximum insertion loss of 4 dB
- > Small 1.20" x 0.31" x 0.31" package outfitted with PC pins

Passband Insertion Loss and Return Loss



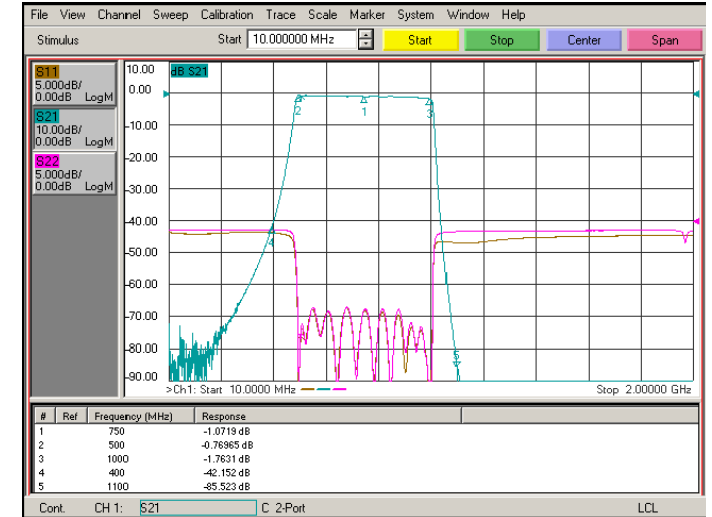
Lumped Element Bandpass Filter, 8BP750M-CD-SFM



PARAMETERS	SPECIFICATIONS
Center Frequency:	0.75 GHz
Insertion Loss:	2 dB Max
Bandwidth:	0.5 GHz
Rejection:	40 dBc from 8 to 12.5 GHz 40 dBc @ 1.1 GHz 40 dBc @ 0.4 GHz
Passband VSWR:	1.5:1

- Centered at 0.75 GHz with a nominal bandwidth of 0.5 GHz
- Housing is precision machined and silver plated to provide highest possible Q
- Package size is 7.0" x 2.0" x 1.6" with SMA male/female connectors

Passband Insertion Loss and Return Loss



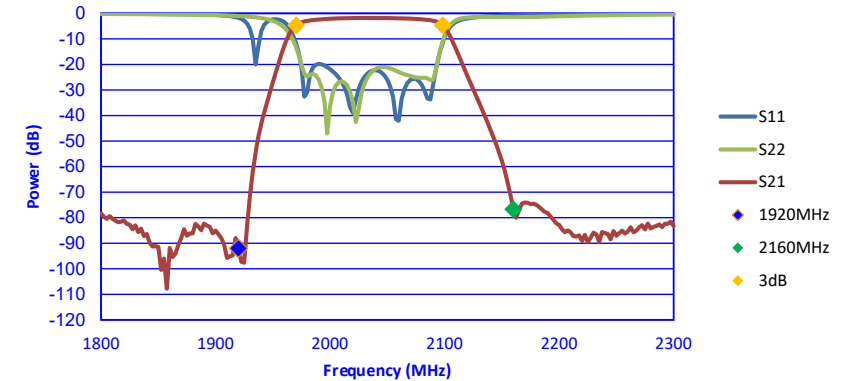
Lumped Element Bandpass Filter 10BP2040-87D6-CD-SFF



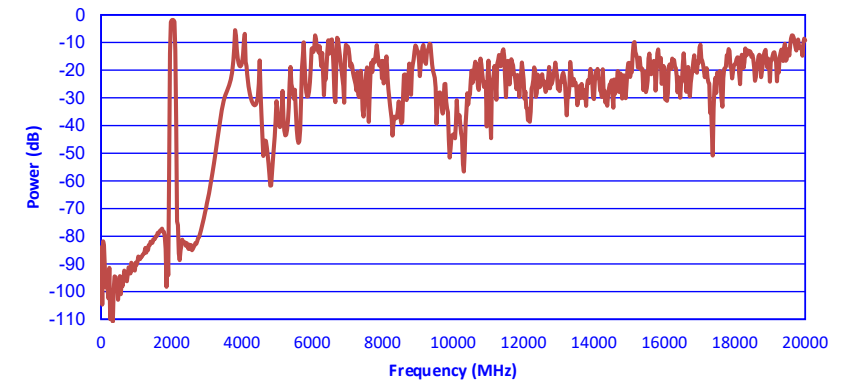
PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	2.04 GHz
Passband Insertion Loss:	3 dB Typ
Bandwidth:	0.0876 GHz
Rejection:	10 Pole Response
Passband VSWR:	1.5:1 Over 80% BW

- > Center Frequency of 2.04 with a Bandwidth of 0.0876 GHz
- > Passband insertion loss of 3 dB typical, a VSWR of 1.5:1, and a power handling of +30 dBm.
- > Housing is precision machined, and silver plated to provide the highest possible Q.
- > Package size of 2.00" x 0.50" x 0.50" with SMA (F) Connectors

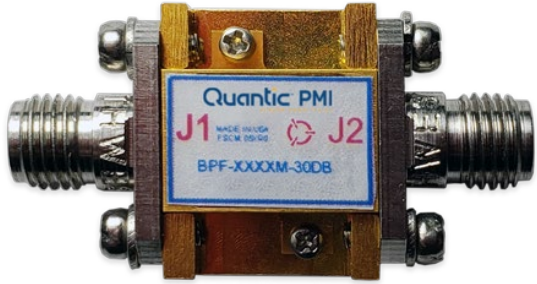
Plot of Power (dB) vs Frequency (MHz)
For S11, S22, and S21



Wideband Plot of Power (dB) vs Frequency (MHz)
For S21



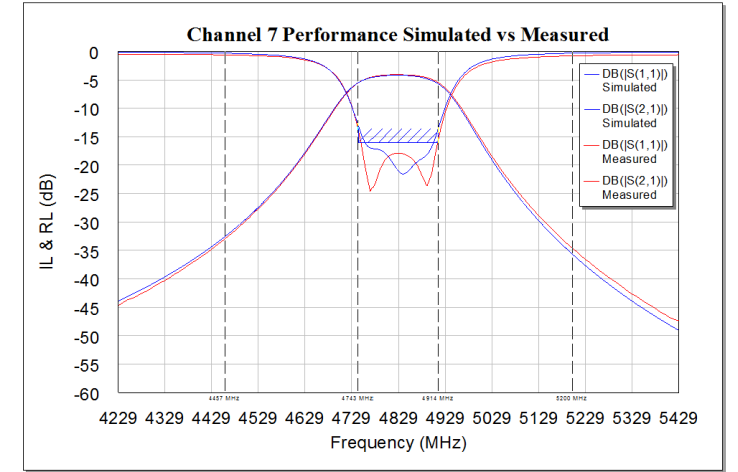
Lumped Element Bandpass Filter, BPF-3343M-30DB



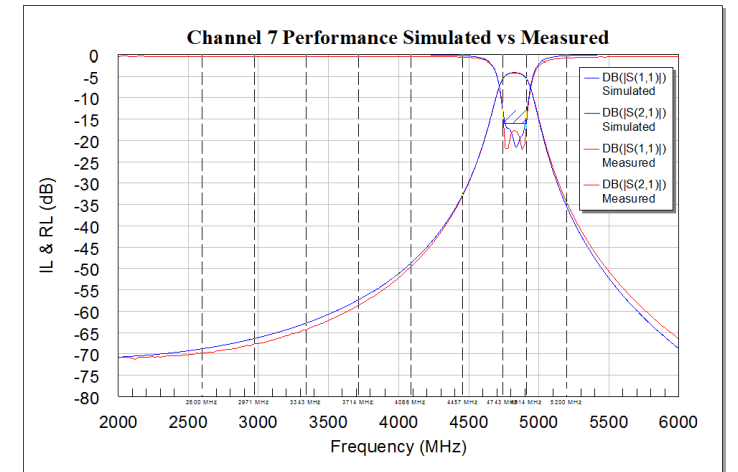
PARAMETERS	SPECIFICATIONS
Center Frequency:	3.343 GHz
Insertion Loss:	8 dB Max (passband)
Bandwidth:	0.15 GHz
3 dB Bandwidth:	0.15 GHz Typ
Rejection:	-30 dBc Min @ <3.043 GHz & >3.643 GHz
VSWR:	2.0:1 Max (Over 90% of the Passband)

- > Offers great rejection with a center frequency of 3.343 GHz; bandwidth of 0.15 GHz
- > Passband insertion loss of 8 dB maximum & VSWR of 2.0:1
- > Small package size is 0.53" x 0.70" x 0.29" with removable SMA female connectors
- > Dual Use Component... Connectorized or Surface Mount

Comparison Between Simulation & Measurement Of Narrow Band Filter Response



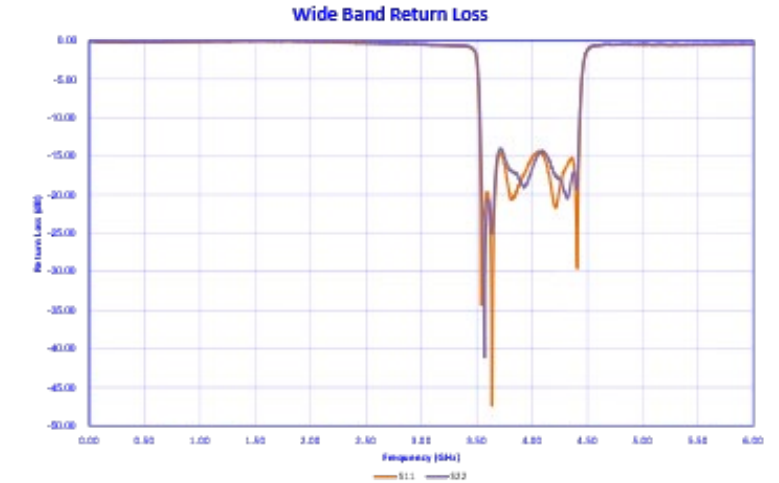
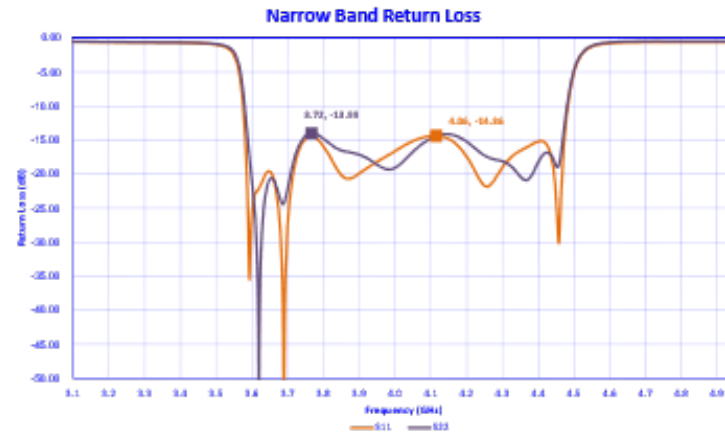
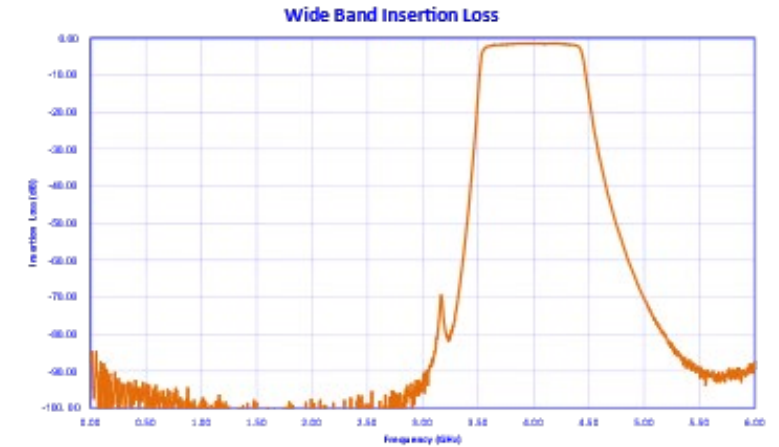
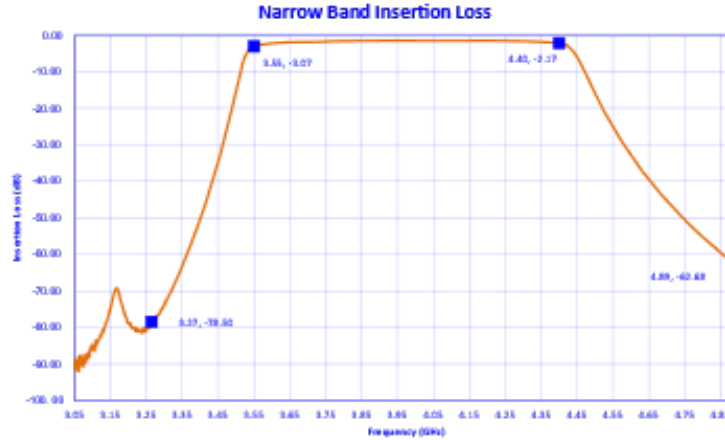
Comparison Between Simulation & Measurement Of Wideband Band Filter Response



Lumped Element Bandpass Filter, BPF-3D55G4D4G-850M-SM-2



- > Center frequency 3.975 with a 3.4 dB bandwidth of 3.55 to 4.4 GHz
- > Built in a surface mount package measuring 1.75" x 0.35" x 0.32" ideal for use in integrated modules.



PARAMETERS	SPECIFICATIONS
Center Frequency, Fo:	3.975 GHz
Passband Insertion Loss:	3.4 dB Max
Lower Passband:	3.55 to 4.4 GHz
Passband VSWR:	1.5:1 Typ, 2.0:1 Max
Rejection:	-60 dBc @ 0.1 to 3.265 GHz -60 dBc @ 4.89 to 6 GHz

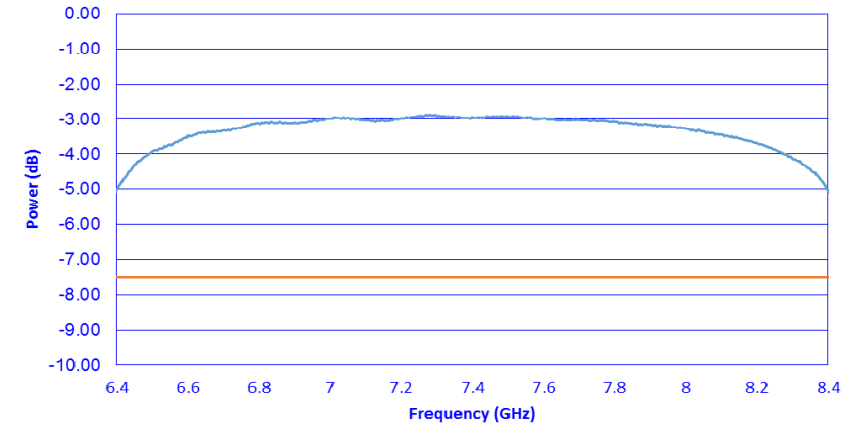
Lumped Element Bandpass Filter, BPF-7400-2000-35-SFF-TB



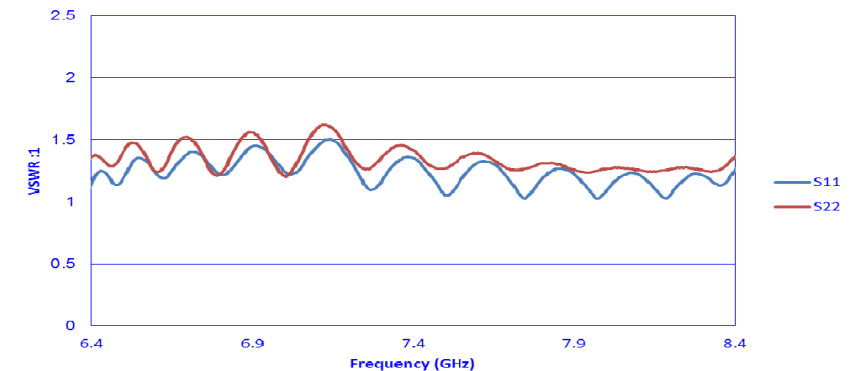
PARAMETERS	SPECIFICATIONS
Center Frequency:	7.4 GHz
Insertion Loss:	5.5 dB Max
Bandwidth:	2 GHz Min (-3 dB)
Passband Frequency:	6.4 to 8.4 GHz
Rejection:	-35 dBc Min (0.1 to 6 GHz) -35 dBc Min (8.8 to 12 GHz)
VSWR:	2.0:1 Max Over 90% of Passband

- Center frequency of 7.4 GHz with a passband frequency from 6.4 to 8.4 GHz
- Package size is 1.42" x 0.80" x 0.40" with SMA female connectors

Insertion Loss in the Passband



VSWR in the Passband



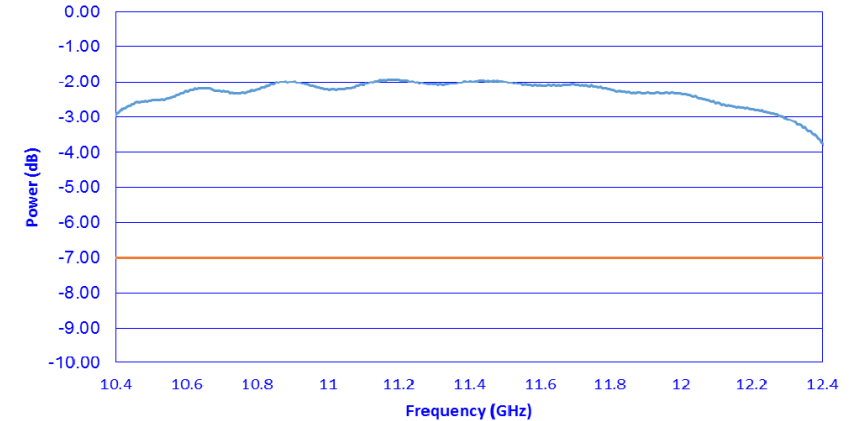
Lumped Element Bandpass Filter, BPF-11400-2000-35-SFF-HY



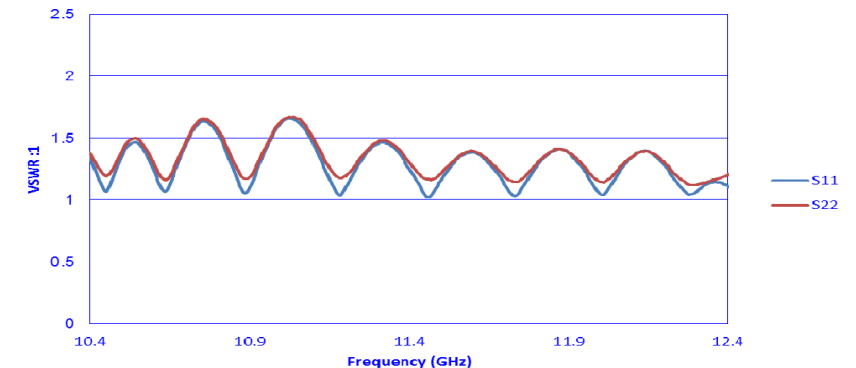
PARAMETERS	SPECIFICATIONS
Center Frequency:	11.4 GHz
Insertion Loss:	(-1 dB) 5 dB Max
Bandwidth:	2 GHz Min
Rejection:	-35 dBc Min (0.1 to 1 GHz) -35 dBc Min (12.8 to 18 GHz)
VSWR:	2.0:1 Max Over 90% of Passband

- > Center frequency with a passband from 10.4 to 12.4 GHz
- > Package size is 1.67" x 0.80" x 0.40" with field replaceable SMA female connectors

Insertion Loss in the Passband



VSWR in the Passband



Diplexers, Triplexers, Quadraplexers Overview

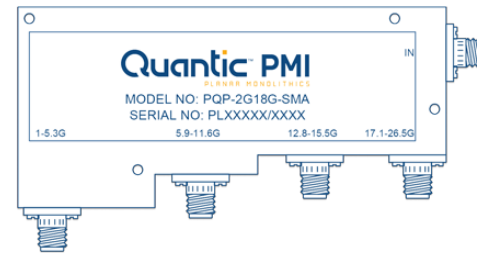
High performance & quality designs for your mission-critical applications!

Standard & Custom Designs

> Features

- Ideal for a wide range of satellite communication, radar communication, varied microwave trans-receivers and broadband communication systems
- Passbands covering DC to 70 GHz
- Low port isolation & insertion loss
- Rugged construction with connector type options
- Design and build to meet your specifications

> Form, Fit & Function Products & Services



Diplexers, Triplexers, Quadraplexers Overview

Standard Model Examples



18 to 40 GHz, Ultra-Small
Low Loss Diplexer



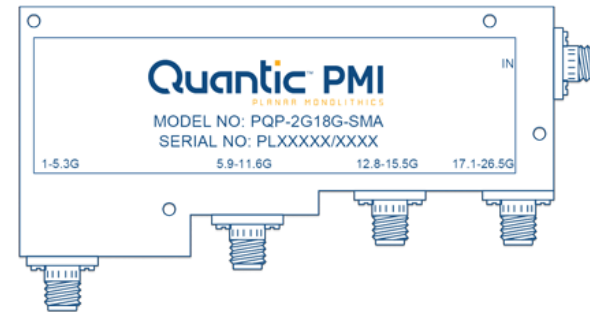
Low (10.75 to 12.25 GHz) /
High (15.75 to 17.25 GHz)
Diplexer



Low (5.7 to 6.5 GHz) /
High (13.75 to 14.5 GHz)
Passband Diplexer



18 to 40 GHz, Ultra-Small
Low Loss Diplexer



1 to 26.5 GHz
Quadraplexer

Diplexer with Low/High Passband, DP-5700M-6500M-CD-SFF



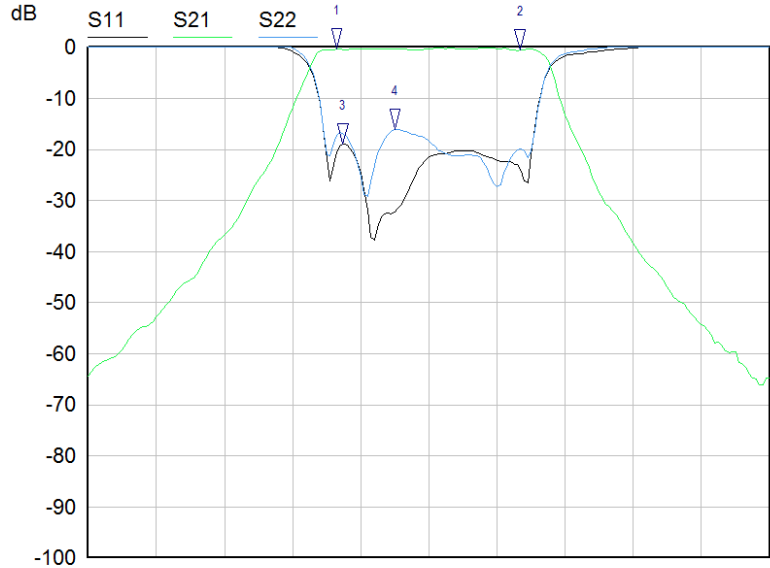
- > Low passband of 5.7 to 6.5 MHz & High passband of 13.75 to 14.5 GHz
- > Power handling of 20 W,
- > Channel-to-channel isolation of > 70 dB
- > Passband insertion loss of <1 dB
- > Package size of 2.50" x 1.00" x 0.60" with SMA female connectors

PARAMETERS	SPECIFICATIONS
Center Frequencies, Fo:	CH 1 - 6.1 GHz CH 2 - 14.125 GHz
Low Passband:	5.7 to 6.5 GHz
High Passband:	13.75 to 14.5 GHz
VSWR (J1):	2.0:1
Insertion Loss (J1):	≤1 dB @ Low Passband - Measured 0.57 dB, ≤2 dB @ High Passband - Measured 1.32 dB
VSWR (J2):	2.0:1 @ Passbands - measured 1.37 dB
CH to CH Isolation:	≥70 dB - Measured 83.19 dB
Power Handling:	20 W

Diplexer with Low/High Passband, DP-5700M-6500M-CD-SFF

Performance

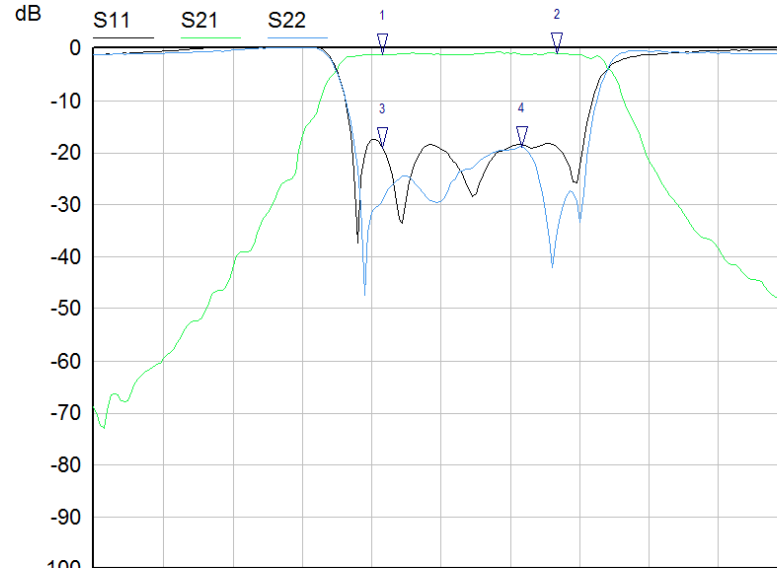
Low Passband (BPF1)



Start: 4.6000 GHz Stop: 7.6000 GHz
12/28/2015 11:51:51 AM 8720C

Mkr	Trace	X-Axis	Value	Notes
1	S21	5.6950 GHz	-0.37 dB	
2	S21	6.5000 GHz	-0.57 dB	
3	S11	5.7200 GHz	-19.03 dB	
4	S22	5.9500 GHz	-16.20 dB	

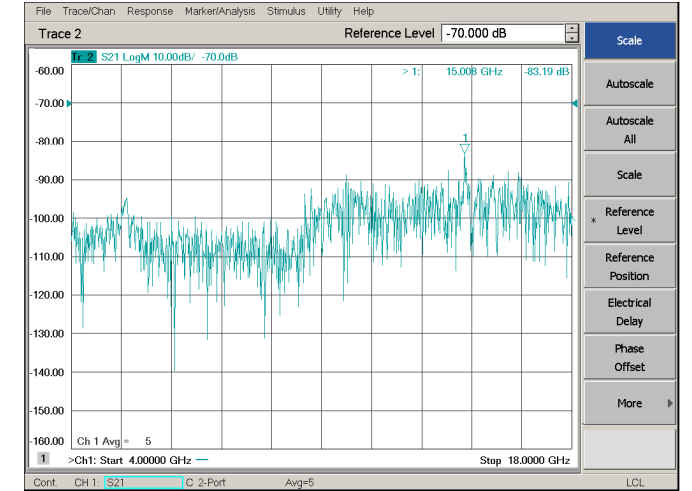
High Passband (BPF2)



Start: 12.5000 GHz Stop: 15.5000 GHz
12/28/2015 11:54:25 AM 8720C

Mkr	Trace	X-Axis	Value	Notes
1	S21	13.7500 GHz	-1.32 dB	
2	S21	14.5000 GHz	-1.00 dB	
3	S11	13.7500 GHz	-19.12 dB	
4	S22	14.3500 GHz	-18.96 dB	

Channel-to-Channel Isolation



Ultra-Small Low Loss Diplexer, DPX-18G26R5G40G



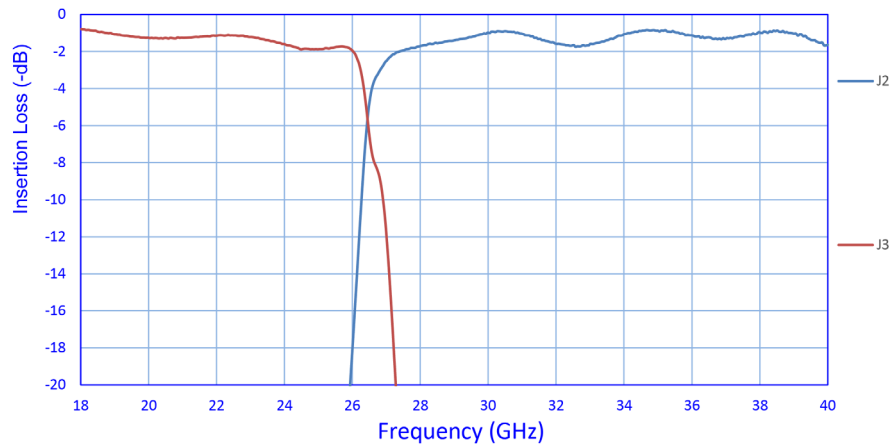
- > Ultra small, low loss for use over the frequency range of 18 to 40 GHz
- > Designed to have a crossover frequency at 26.5 GHz & >60 dB of rejection
- > Package size 0.80" x 0.60" x 0.38" with 2.92mm female connectors

PARAMETERS	SPECIFICATIONS
Insertion Loss (Passband)	2 dB Max
VSWR (Passband)	2.5:1 Max
Diplexer K Band 1dB Passband	18 GHz, Min, 25 GHz Max
Diplexer Ka Band 1dB Passband	28 GHz Min, 40 GHz Max
Crossover Band	25 GHz Min, 28 GHz Max
Crossover Excess Attenuation	5 dB Typ
Stopband Attenuation	60 dB
K Band (Stopband)	32 GHz - 46 GHz
Ka Band (Stopband)	DC - 22 GHz

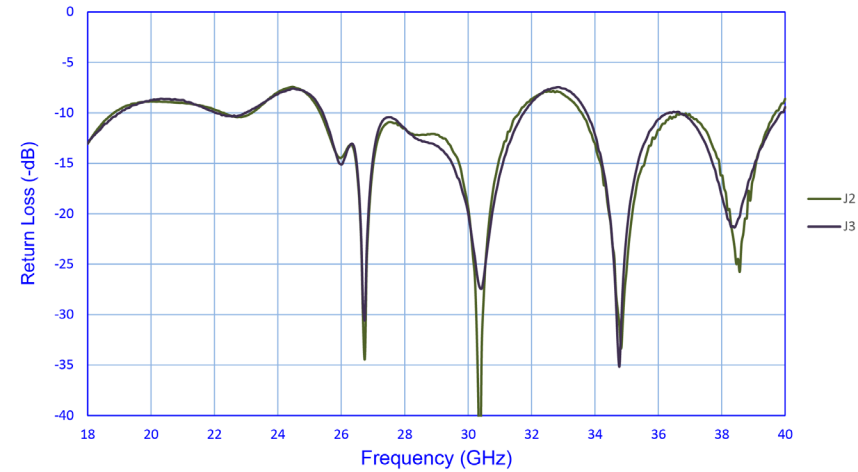
Ultra-Small Low Loss Diplexer, DPX-18G26R5G40G

Performance

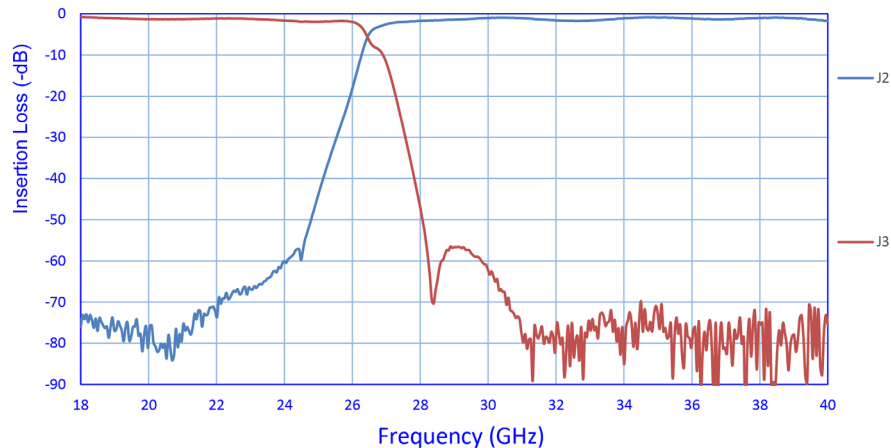
Insertion Loss vs Frequency (18 to 40 GHz)



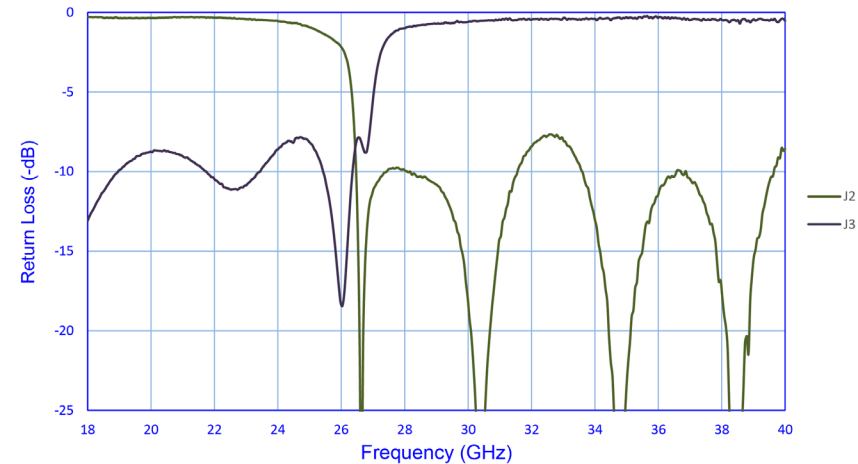
Input Return Loss vs Frequency (18 to 40 GHz)



Insertion Loss vs Frequency (18 to 40 GHz)



Output Return Loss vs Frequency (18 to 40 GHz)



Diplexer, 11DP-11R5/16R5-CD-SFF-1



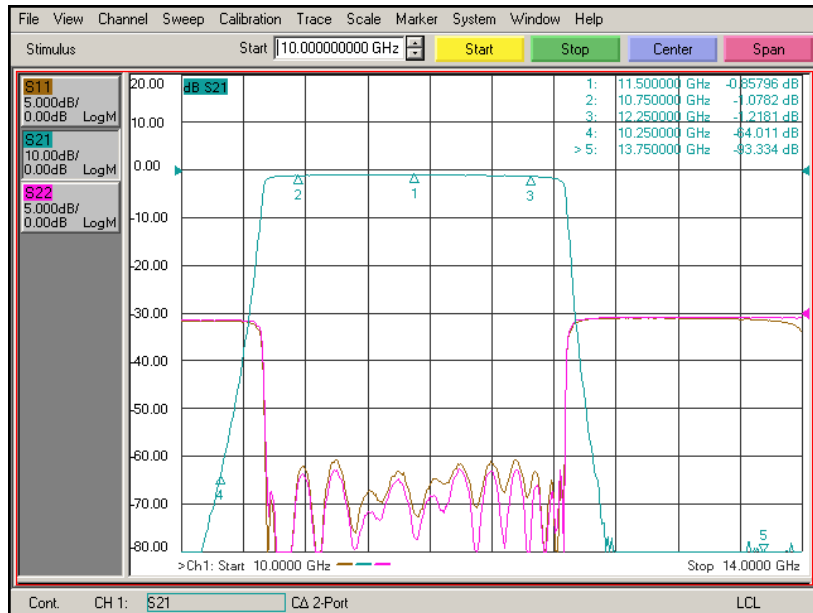
- > Offers passbands at 10.75 to 12.25 GHz & 15.75 to 17.25 GHz
- > Insertion loss is <3 dB & the VSWR is 1.5:1 maximum
- > Bandpass Rejection...
 - BPF1: -50 dBc of rejection at 10.25 GHz & -75 dBc of rejection at 13.75 GHz
 - BPF2: -50 dBc of rejection at 17.75 GHz & -75 dBc of rejection at 14.25 GHz
- > Insertion loss flatness of +/-0.3 dB Max across the passband is achieved with fine tuning and silver-plated metal
- > Housing measures 3.5" x 1.4" x 0.5" and is offered with field removable SMA female connectors

PARAMETERS	SPECIFICATIONS
Center Frequencies, Fo	BPF1: 11.5 GHz BPF2: 16.5 GHz
Passband Frequencies	BPF1: 10.75 to 12.25 GHz BPF2: 15.75 to 17.25 GHz
Passband Insertion Loss	3 dB Max
Passband VSWR	1.5:1 Max
Rejections	BPF1: -50 dBc @ 10.25 GHz & -75 dBc @ 13.75 GHz BPF2: -50 dBc @ 17.75 GHz & -75 dBc @ 14.25 GHz
Center Frequencies, Fo	BPF1: 11.5 GHz BPF2: 16.5 GHz
Passband Frequencies	BPF1: 10.75 to 12.25 GHz BPF2: 15.75 to 17.25 GHz
Passband Insertion Loss	3 dB Max

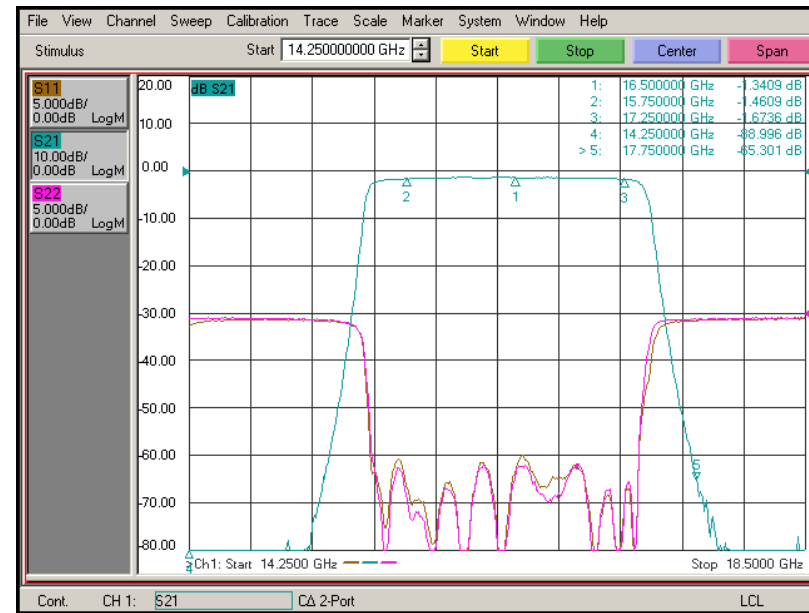
Diplexer, 11DP-11R5/16R5-CD-SFF-1

Performance

Band Pass Filter #1 Narrow-band Plot



Band Pass Filter #2 Narrow-band Plot



Triplexer, PTP-1G18G-2G8G-55-S4F

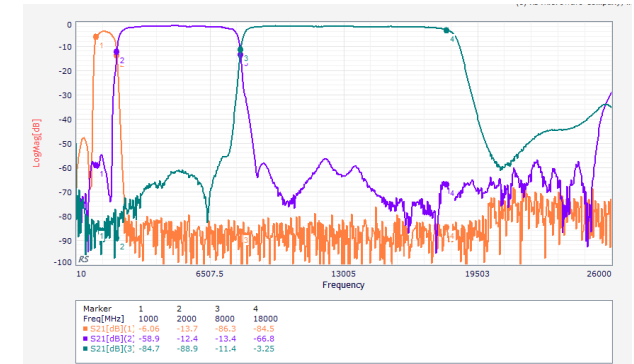


PARAMETERS	SPECIFICATIONS
Insertion Loss J1 to J2 J1 to J3 J1 to J4	6.0 dB Typ. @ 1 to 1.9 GHz 3.0 dB Typ. @ 2.1 to 7.6 GHz 2.5 dB Typ. @ 8.4 to 18 GHz
Out of Band Rejection J1 to J2 J1 to J3 J1 to J4	50 dB Min. @ DC to 0.75 GHz 50 dB Min. @ 2.3 to 18 GHz 55 dB Min. @ DC to 1.7 GHz 55 dB Min @ 9.2 to 18.0 GHz 50 dB Min @ DC to 6.8 GHz 40 dB Min @ 20.5 to 26 GHz
Crossover J2/J3 J3/J4	10.0 dB Typ. @ 1.98 to 2.02 GHz 10.0 dB Typ. @ 7.92 to 8.08 GHz
VSWR	2.0:1 Max. @ 1 to 18 GHz (Except Crossover)
Maximum Input Power	+20 dBm CW

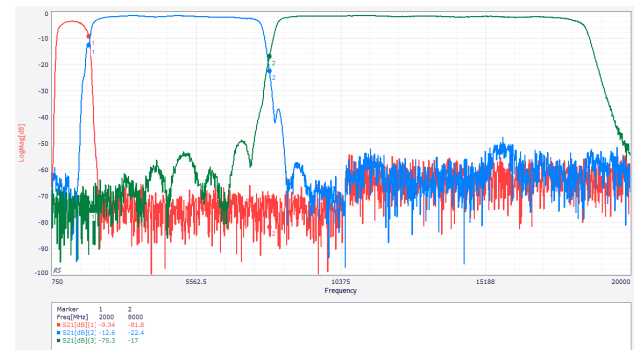
- > Offers 3 passbands at 1 to 1.9 GHz (J1), 2.1 to 7.6 GHz (J2) & 8.4 to 18 GHz (J3)
- > Power handling of +20 dBm CW
- > Insertion loss of 6 dB, 3 dB, 2.5 dB
- > Package size of 4.17" x 1.39" x 0.33" with SMA female connectors

Crossover Points (2 Sample Units)
(J1-J2, J1-J3 And J1-J4)

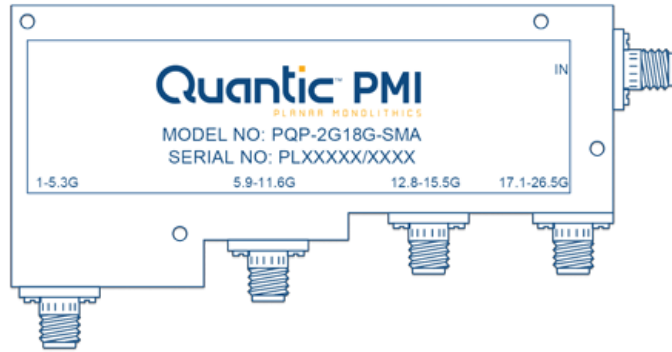
Unit 1



Unit 2



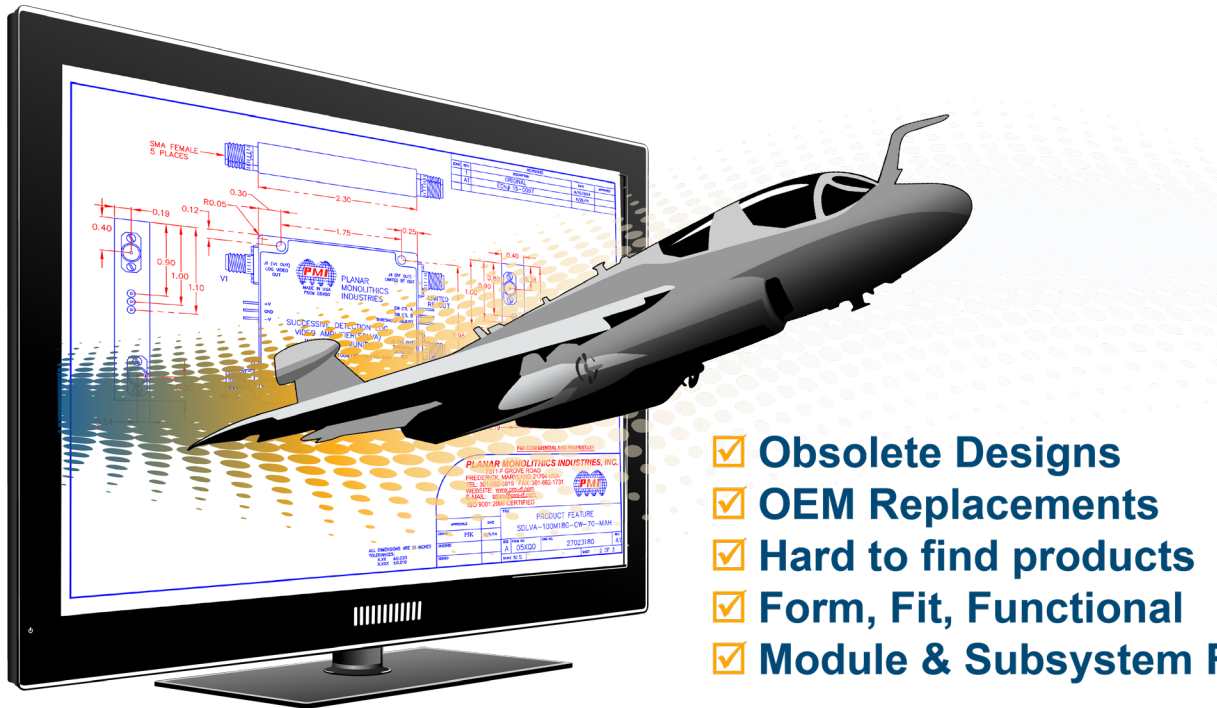
Quadraplexer, PQP-3D15-8D75-14D15-21D8-S5F



- > Center frequencies of 3.15 GHz @ CH1, 8.75 GHz @ CH2, 14.15 GHz @ CH3, and 21.8 GHz @ CH4
- > VSWR of 2.0:1 and a maximum input power of 1 W
- > Package size is 3.65" x 1.46" x 0.5" with SMA female connectors

PARAMETERS	SPECIFICATIONS
Center Frequency	CH 1: 3.15 GHz Typ CH 2: 8.75 GHz Typ CH 3: 14.15 GHz Typ CH 4: 21.8 GHz Typ
Bandwidth	CH 1: 1 to 5.3 GHz @ -1 dB CH 2: 5.9 to 11.6 GHz @ -1 dB CH 3: 12.8 to 15.5 GHz @ -1 dB CH 4: 17.1 to 26.5 GHz @ -1 dB
Insertion Loss	Up to 16.3 GHz: 1.8 dB Max 16.3 to 26.5 GHz: 2.5 dB Max
Rejection	CH 1: 50 dB Min CH 2: 50 dB Min CH 3: 50 dB Min CH 4: 50 dB Min
Crossover J2/J3 J3/J4	10.0 dB Typ. @ 1.98 to 2.02 GHz 10.0 dB Typ. @ 7.92 to 8.08 GHz
VSWR	2.0:1
Input Power	1 W

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