



Typical Applications

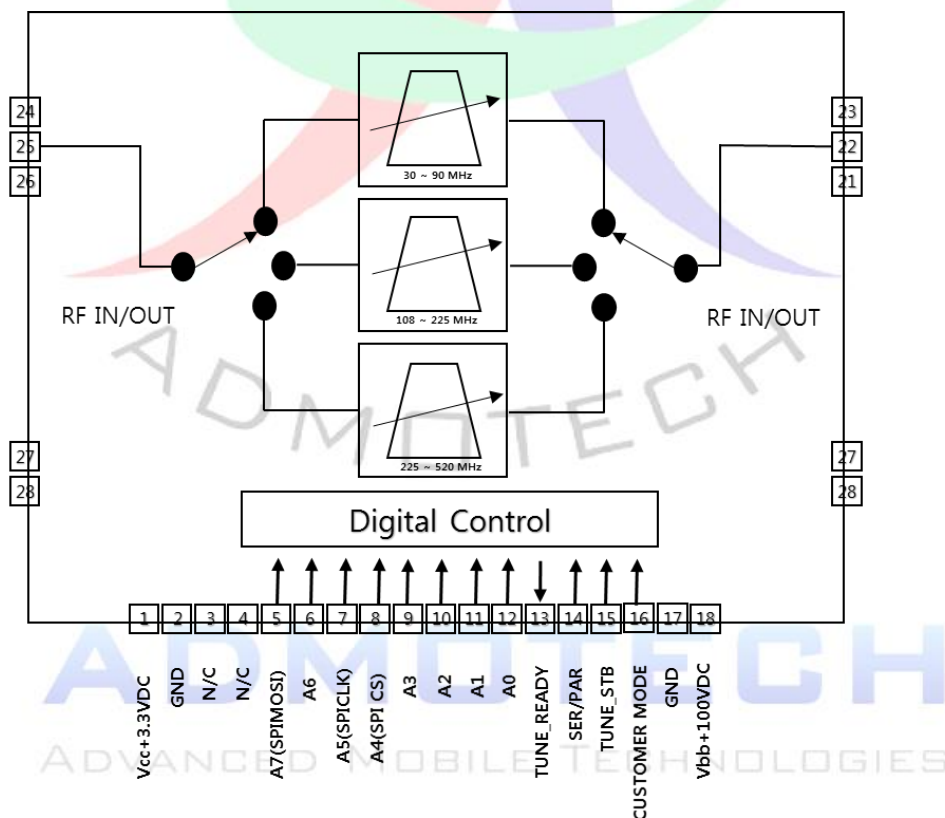
- Military Tactical Radios
- Military Radar
- Test and Measurement Equipment
- Industrial and Medical Equipment

Features

- 1 Watt CW power handling
- 22 dB selectivity @ +/- 10%, (4, 7% filter)
- Low Insertion Loss 5.5 dB typ. (3dB BW 4%)



Functional Diagram

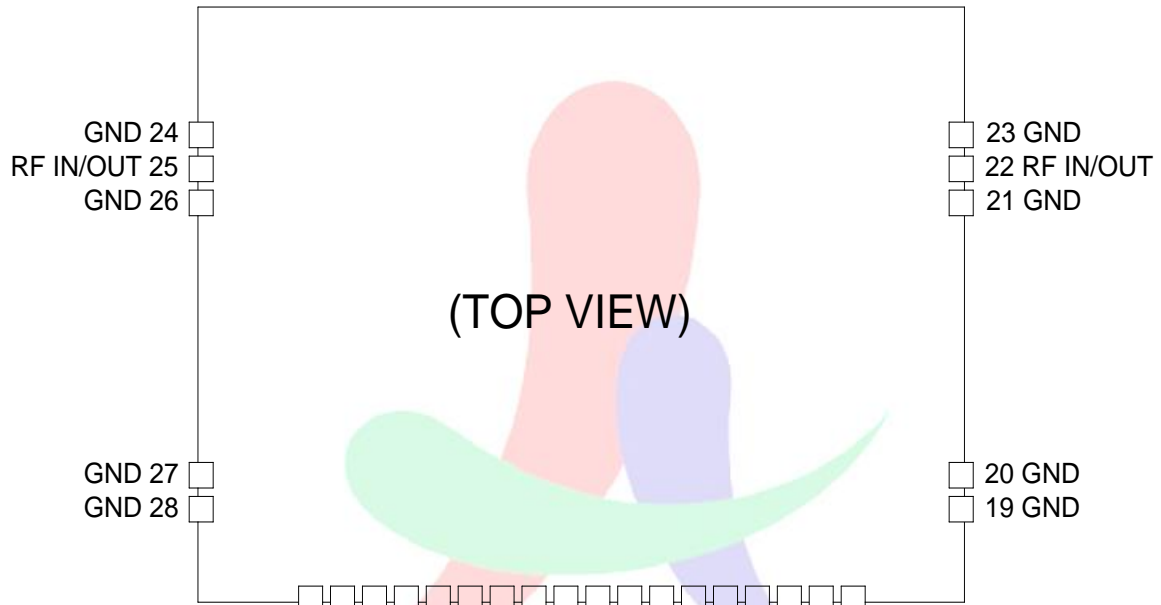


Discription

- ADTFp 30/520-XS is a low-cost, miniature, high performance tunable band pass filter. The ADTFp uses PIN diodes to deliver high filter performance and parallel interface is available to tune the frequency. All ADTFp tunable filters are fully tuned and tested by ADMOTEC for convenience and ease of use.

1.0 Pinout and Functional Information

1.1 Pin out



1.2 Pin Description

Pin Number	Label	Description
1	Vcc	Supply Voltage Input: $3.135V \leq V_{cc} \leq 3.6V$.
2,17,19,20,21,23, 24,26,27,28	GND	Digital and Analog Ground.
3, 4	NC	No Connect.
22, 25	RF IN/OUT	RF Signal Input or Output.
5	A7	Parallel Data A7(MSB).
	MOSI	Serial Tune Interface Master Output Slave Input.
6	A6	Parallel Data A6.
7	A5	Parallel Data A5.
	SCLK	Serial Tune Interface Clock.
8	A4	Parallel Data A4
	CS	Serial Tune Interface Chip Select.
9	A3	Parallel Data A3.
10	A2	Parallel Data A2.
11	A1	Parallel Data A1.
12	A0	Parallel Data A0.
13	TUNE READY	Tune Ready Indicator.
14	SER/PAR	Serial/Parallel Command Interface Selection.
15	STB	In Serial Interface mode.
16	TUNE MODE	Leave this pin floating or pull to Vcc to enable legacy tune mode.
18	V _{BB}	High Bias Supply Voltage input: +100 VDC for optimum performance.

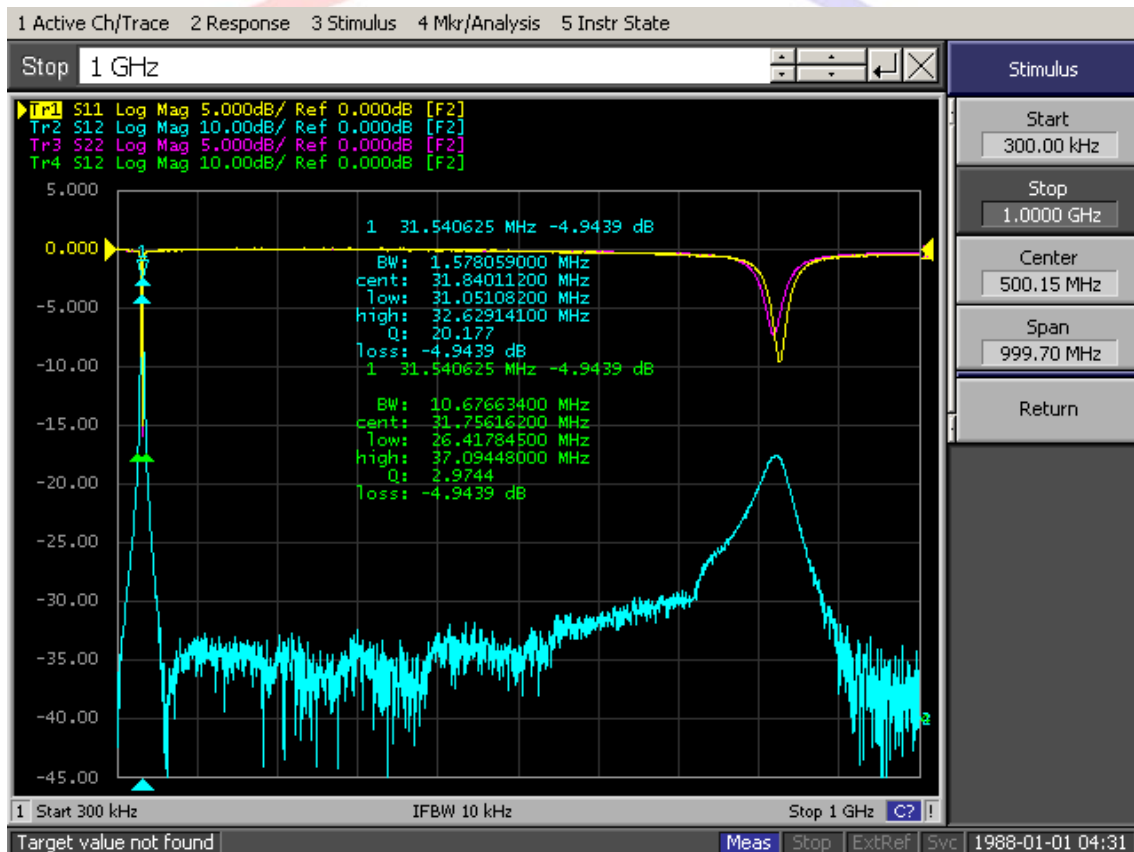
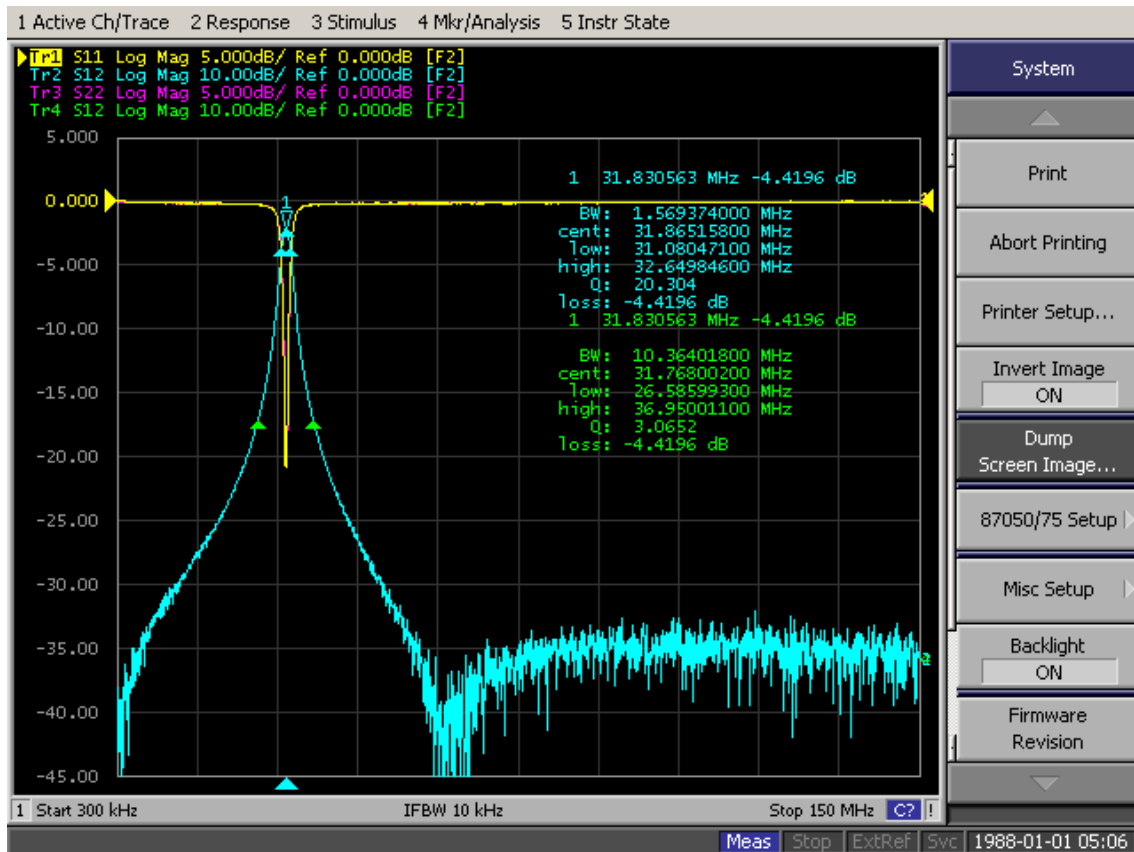
2.0 Specifications

2.1 Electrical Specifications

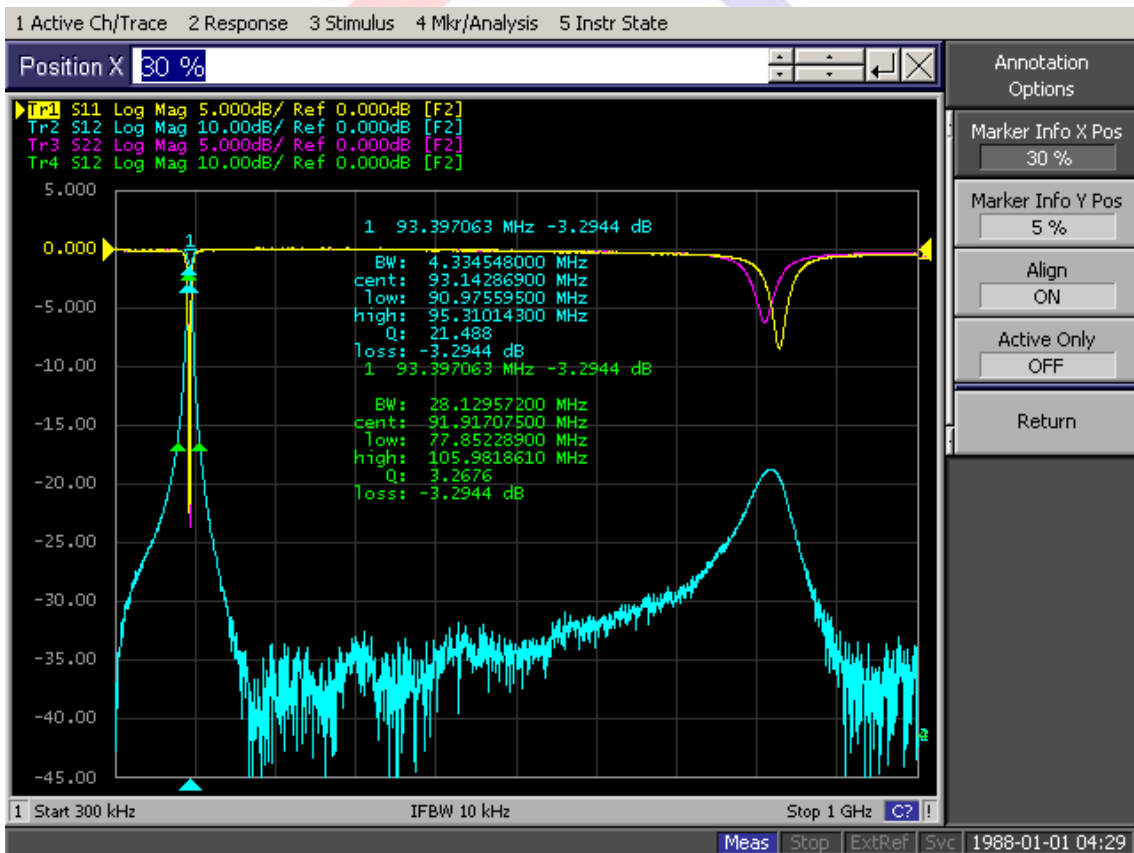
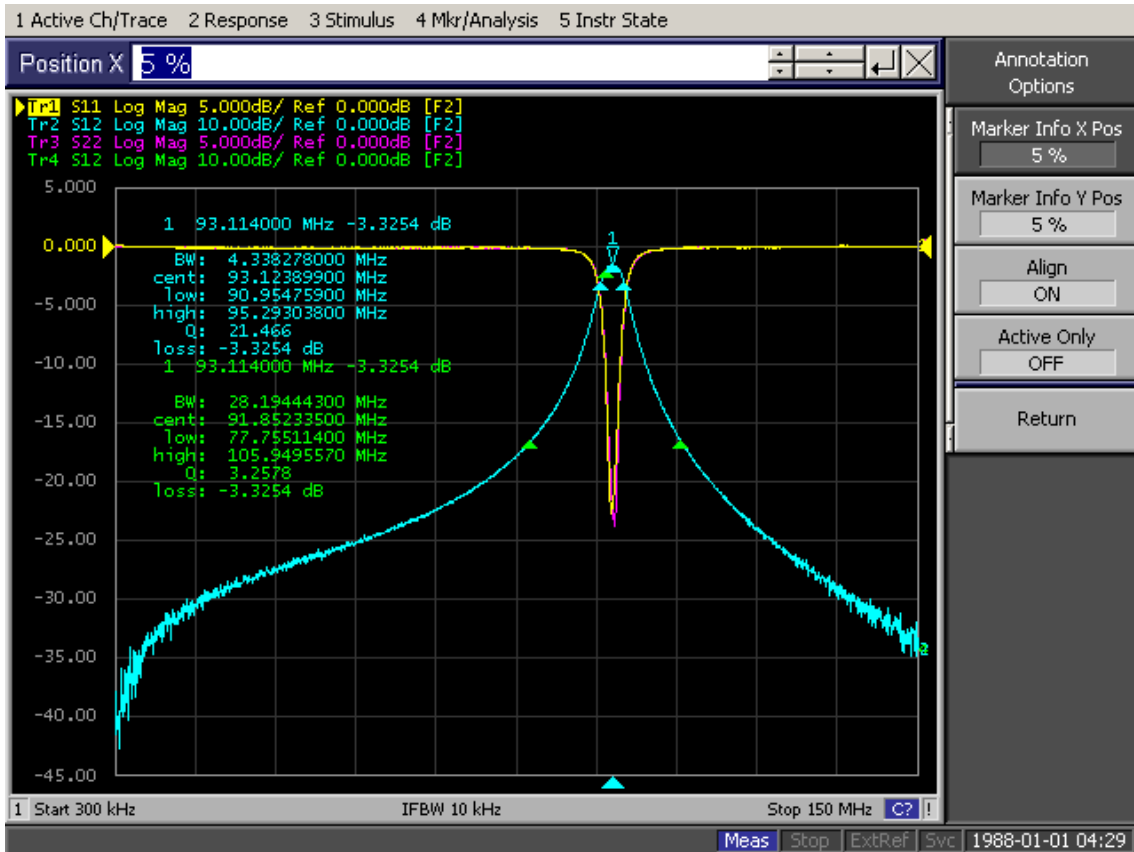
Frequency Coverage	30 – 520 MHz	
Input/Output Impedance	50 Ω	
Inband Input/Output VSWR	1.5:1 typ. 2.2:1 max	
Insertion Loss	ADTFp30/520-4S	ADTFp30/520-7S
	5.2 dB Typ. 7.0 dB Max.	3.5 dB Typ. 5.0 dB Max.
3 dB Bandwidth	4.7 % Typ. 4.9 % Max.	6.0 % Typ. 7.0 % Max.
Selectivity 10%	19.0 dBc Min. 22.0 dBc Typ.	14.0 dBc Min. 16.0 dBc Typ.
Ultimate selectivity (2xfo)	65.0 dBc Typ.	
Maximum RF input Power for linear operation	30 dBm	
Out of Band RF Power Handling	33 dBm	
DC Power (Static)	+3.3 V _{CC} @ 290 mA max +100 V _{BB} @ 17.5 mA max	
Operating Temperature Range	-40 to +85 °C	

2.1 Typical Characteristics

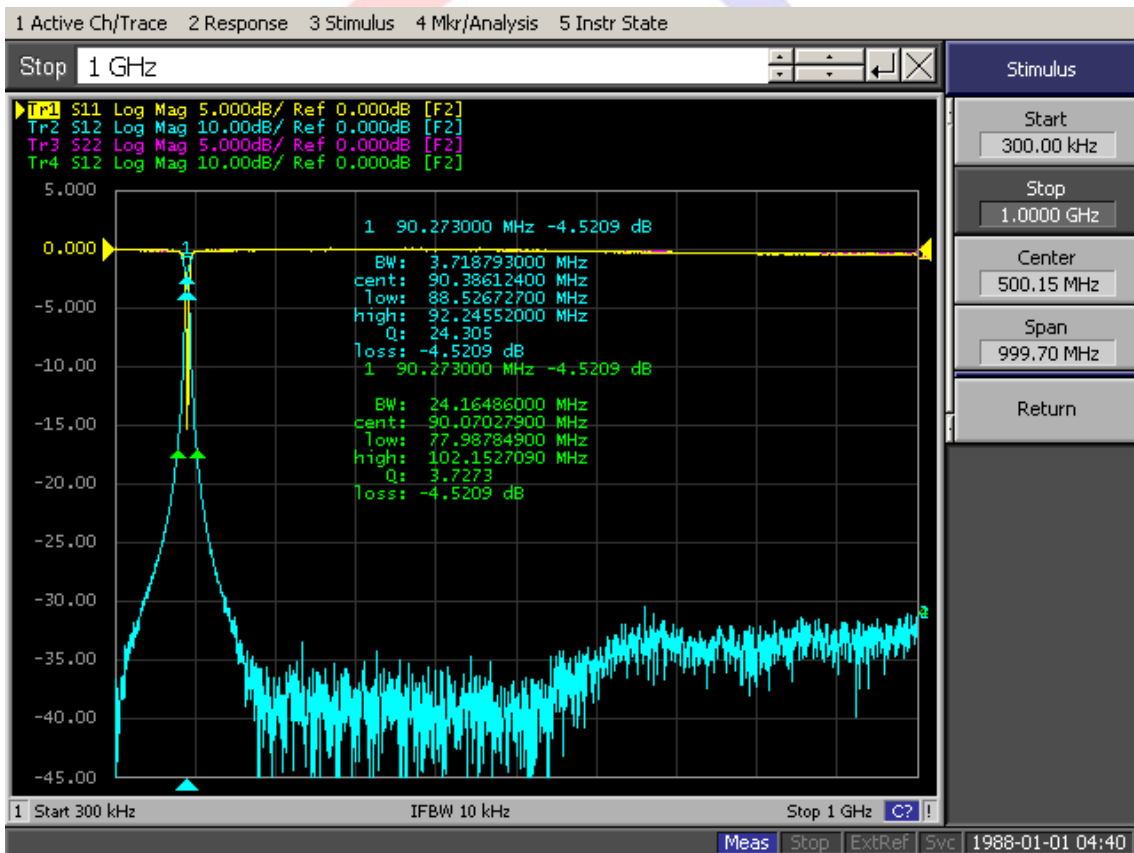
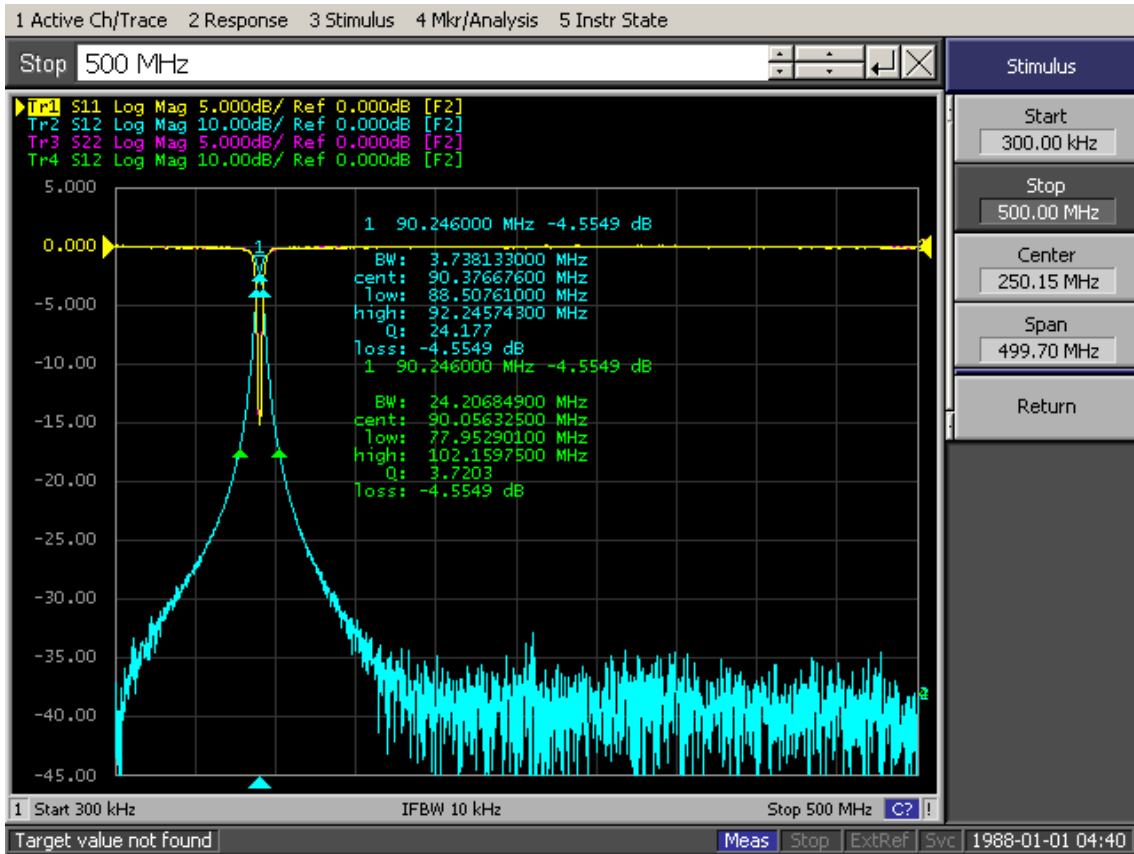
fo : 30 MHz-1BAND (4%)



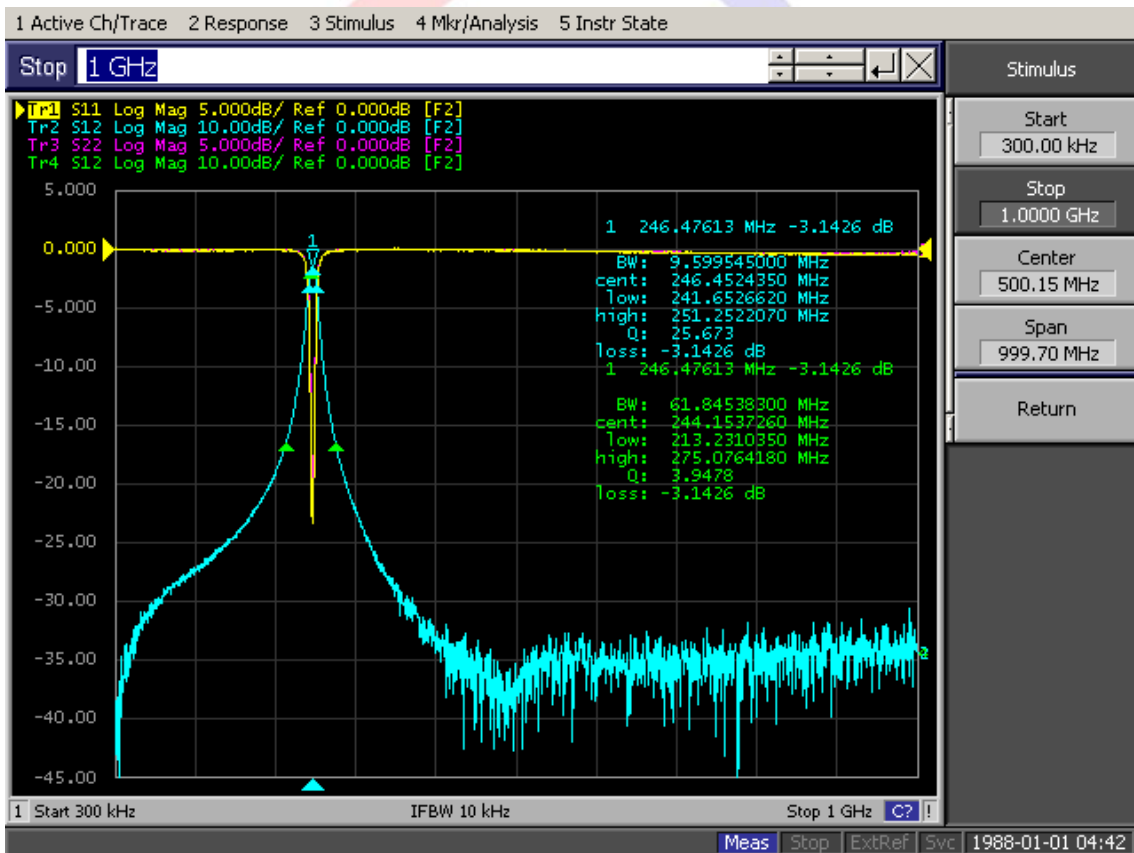
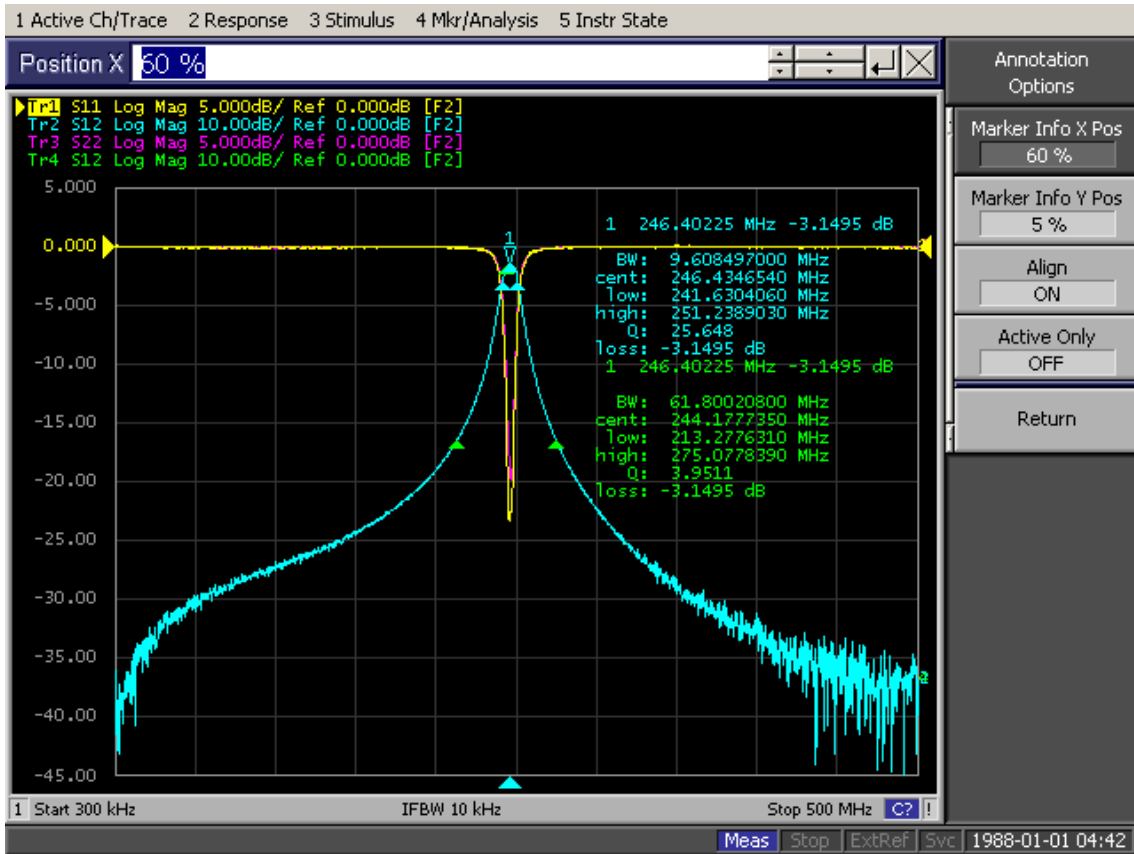
fo : 90 MHz-1BAND (4%)



fo : 90 MHz -2BAND (4%)



fo : 244 MHz -2BAND (4%)



Annotation Options

Marker Info X Pos: 60 %

Marker Info Y Pos: 5 %

Align: ON

Active Only: OFF

Return

Stimulus

Start: 300.00 kHz

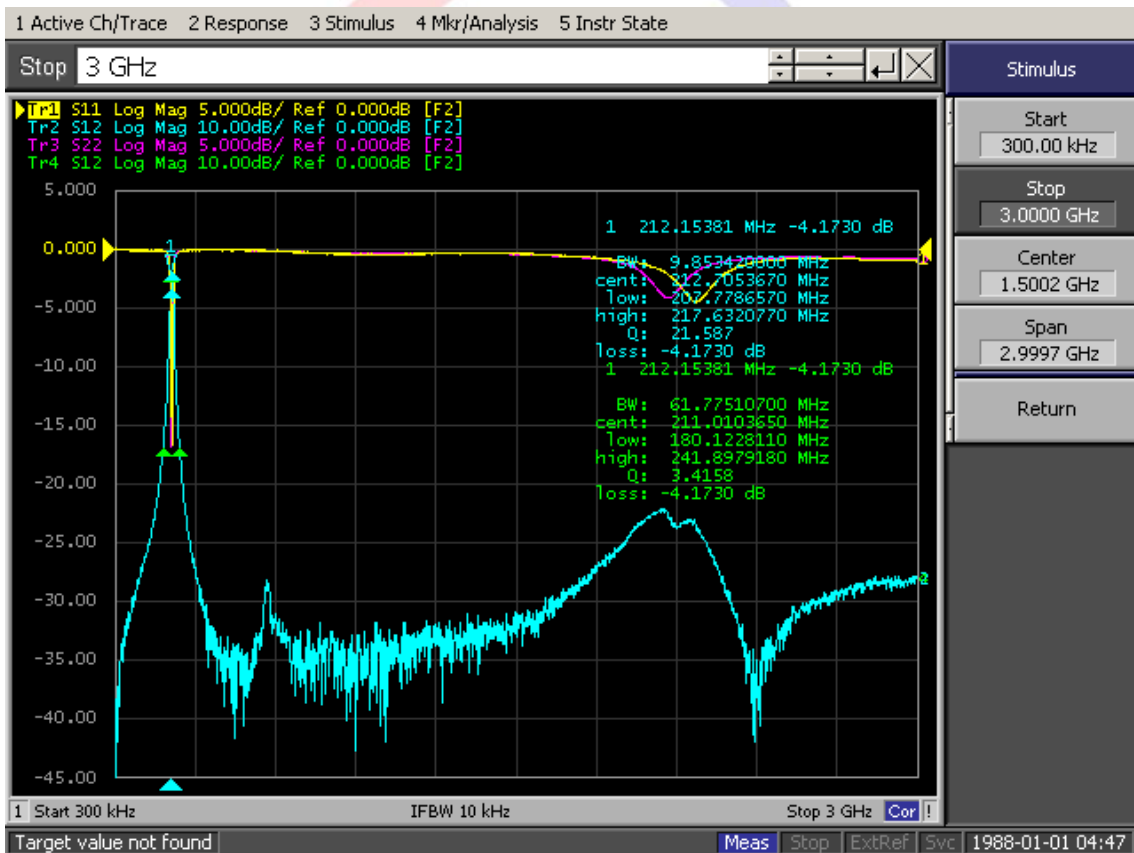
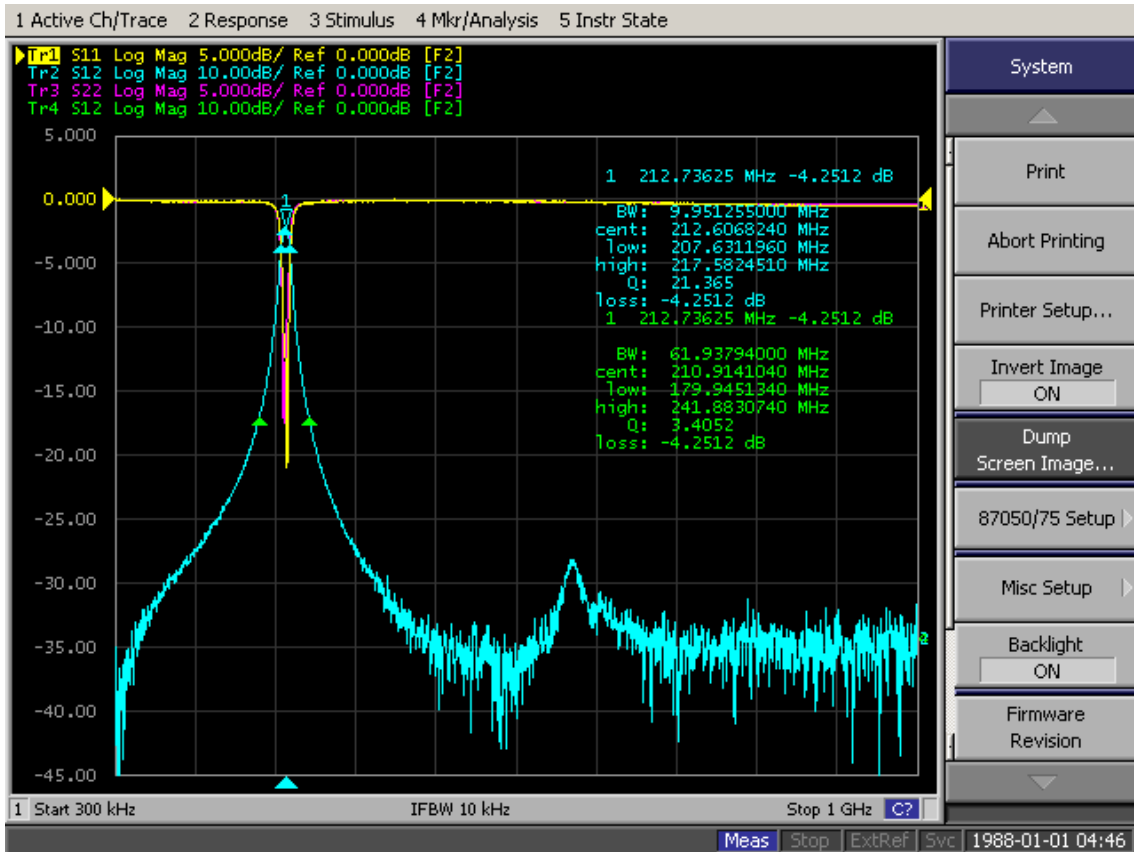
Stop: 1.0000 GHz

Center: 500.15 MHz

Span: 999.70 MHz

Return

fo : 212 MHz -3BAND (4%)



System

Print

Abort Printing

Printer Setup...

Invert Image
ON

Dump Screen Image...

87050/75 Setup

Misc Setup

Backlight
ON

Firmware Revision

Stimulus

Start
300.00 kHz

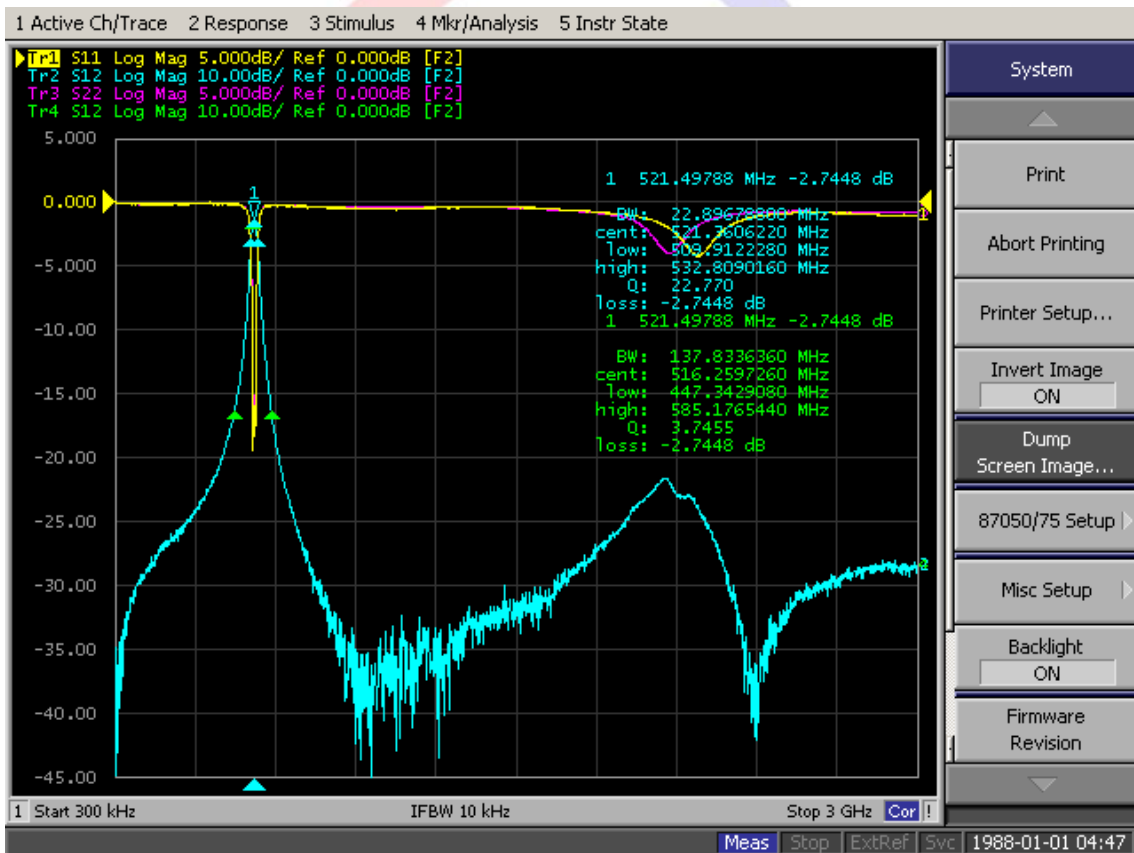
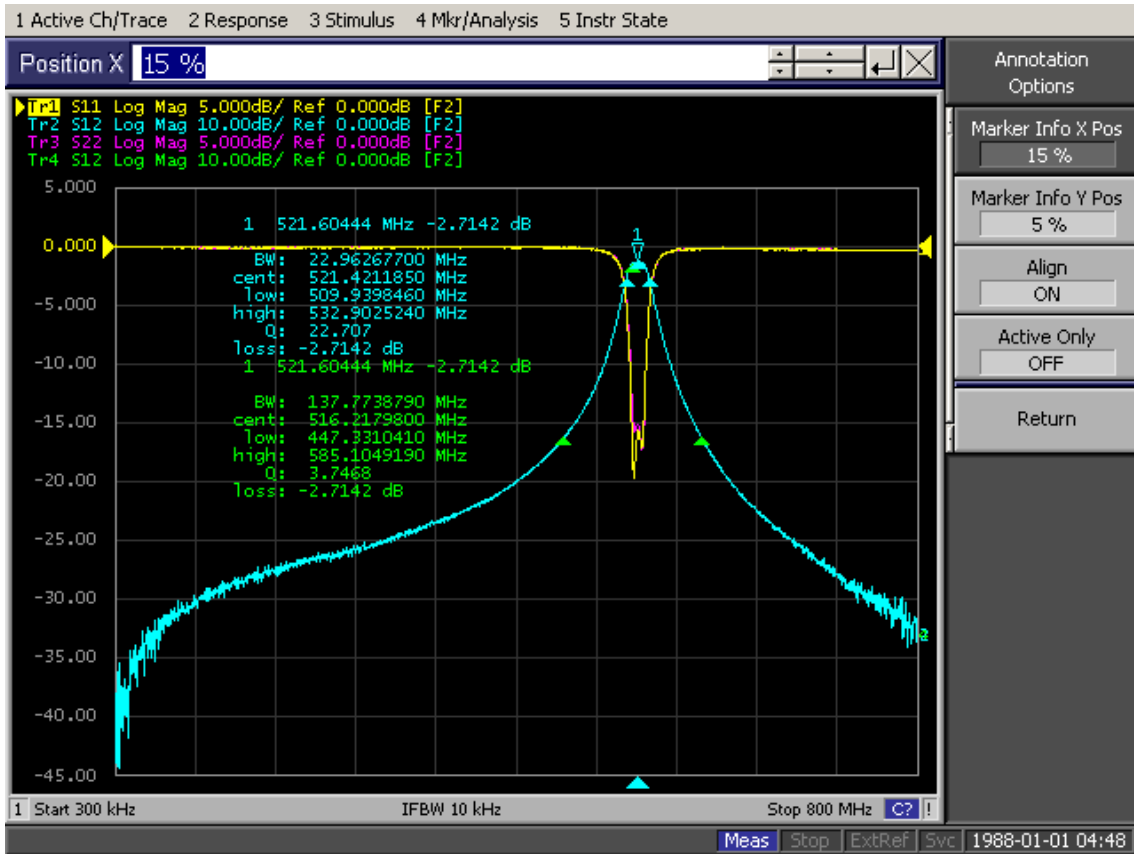
Stop
3.0000 GHz

Center
1.5002 GHz

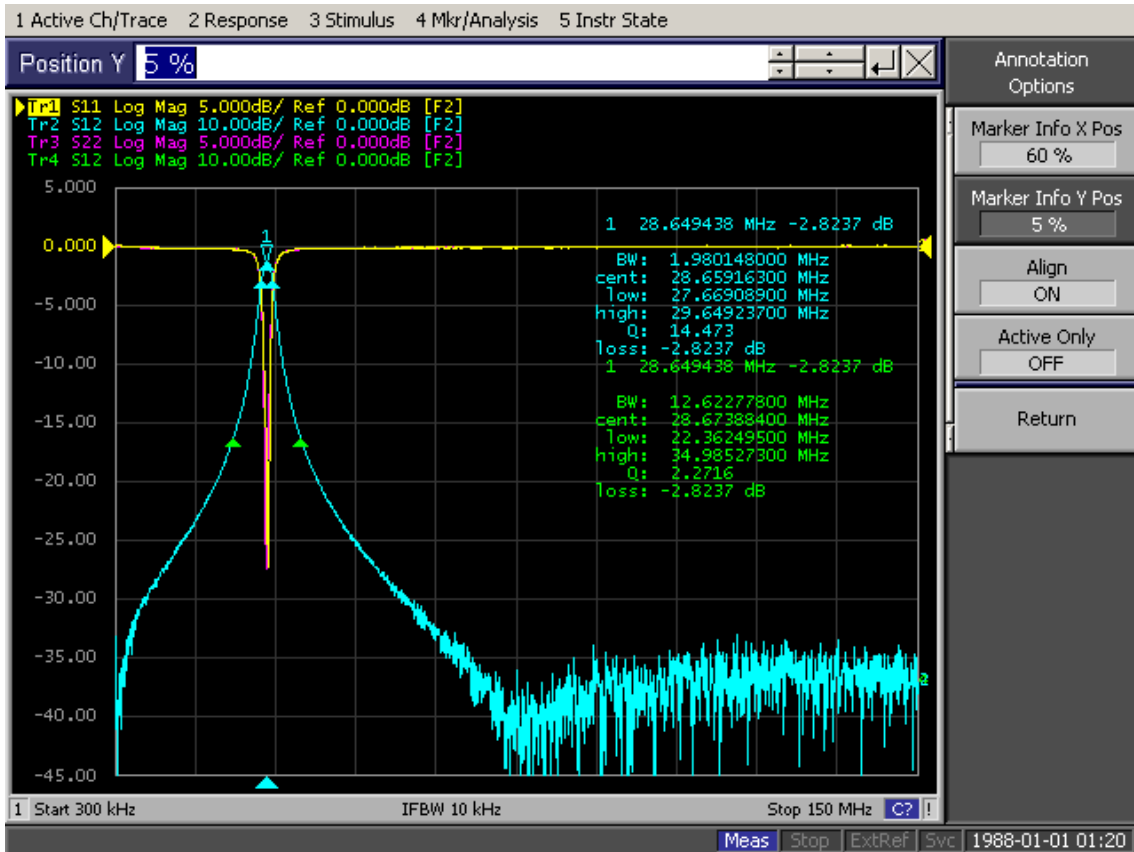
Span
2.9997 GHz

Return

fo : 520 MHz -3BAND (4%)



fo : 30 MHz -1BAND (7%)



Annotation Options

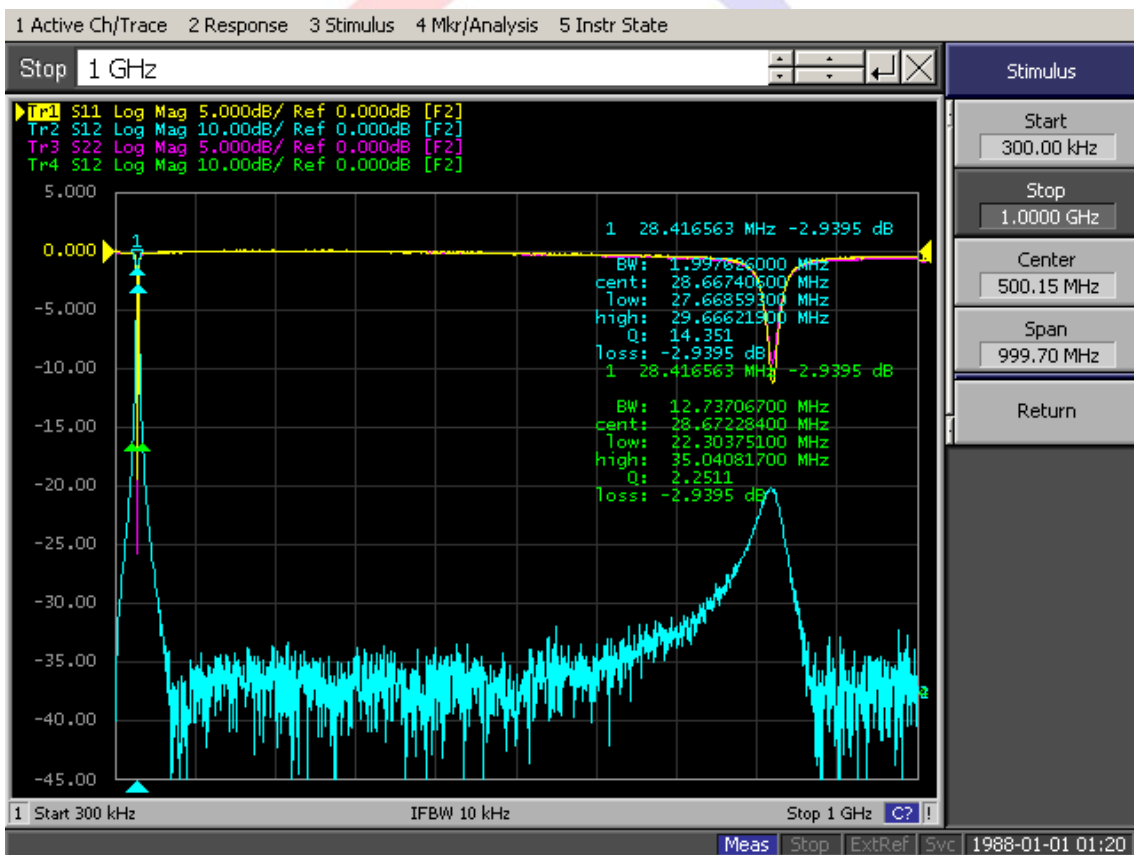
Marker Info X Pos: 60 %

Marker Info Y Pos: 5 %

Align: ON

Active Only: OFF

Return



Stimulus

Start: 300.00 kHz

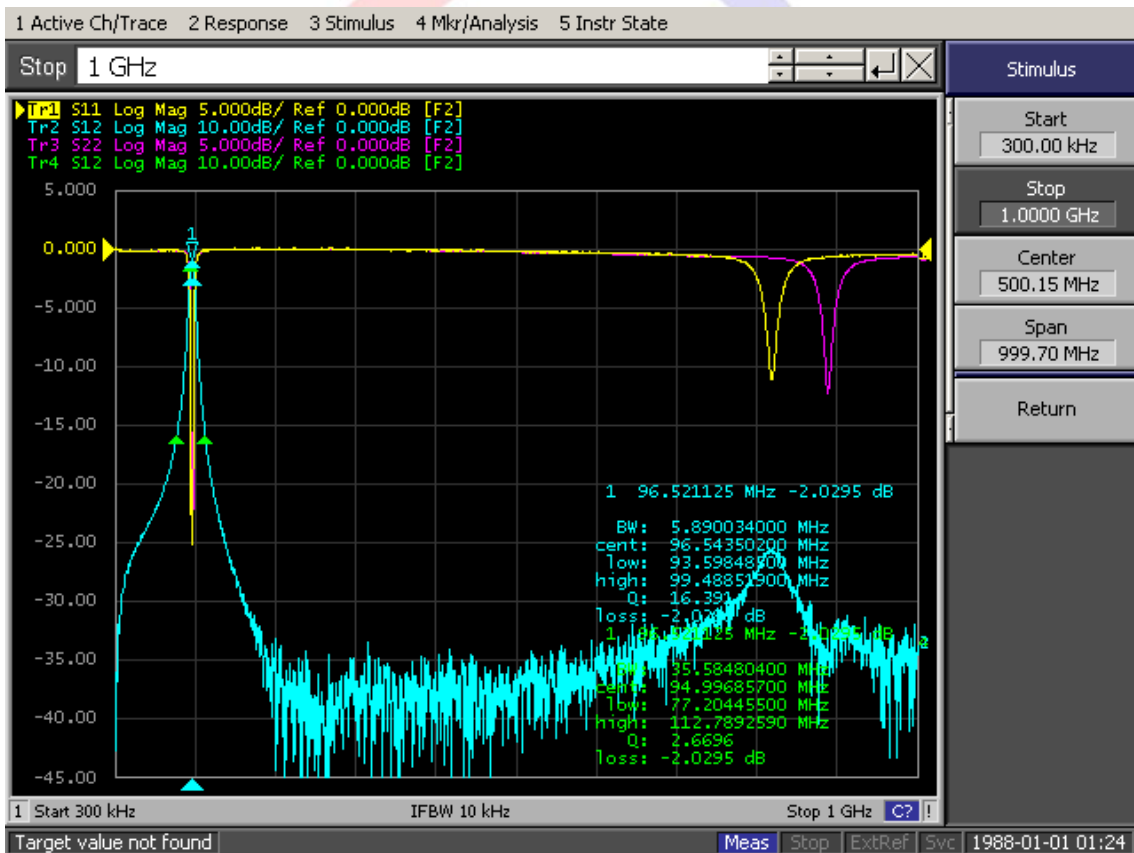
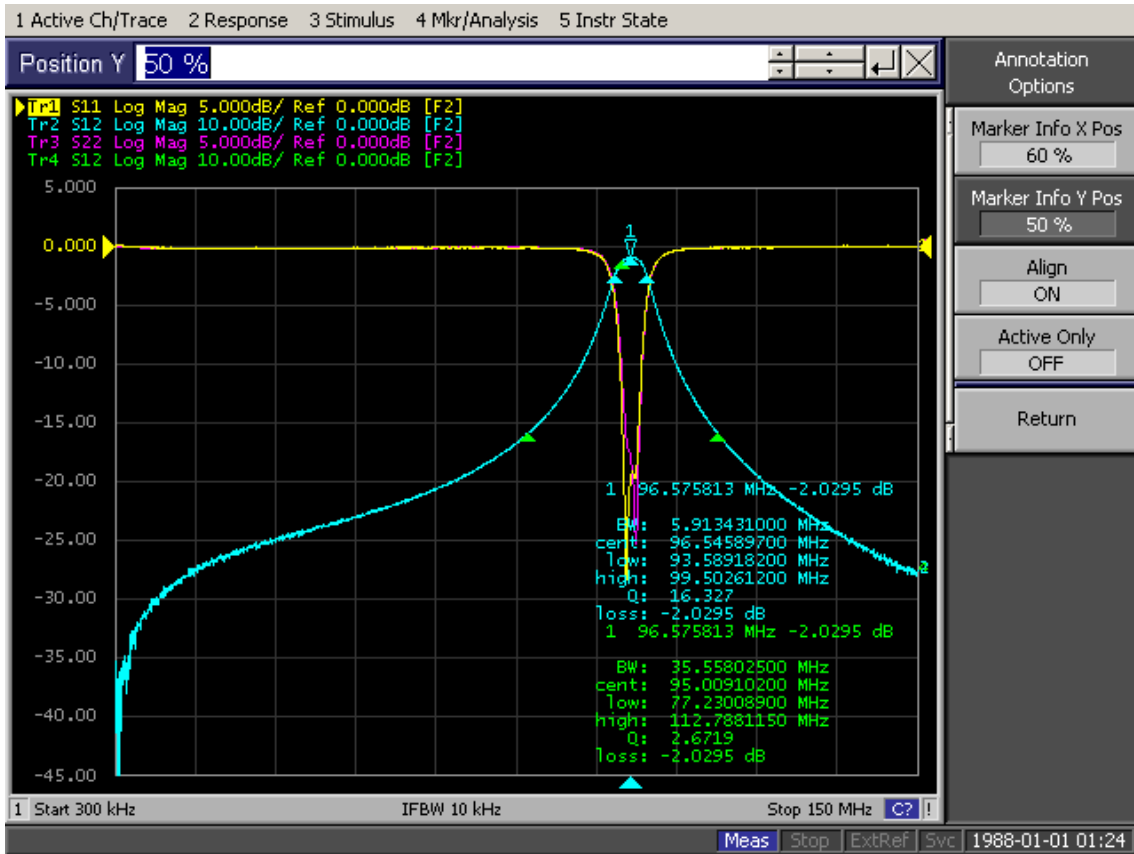
Stop: 1.0000 GHz

Center: 500.15 MHz

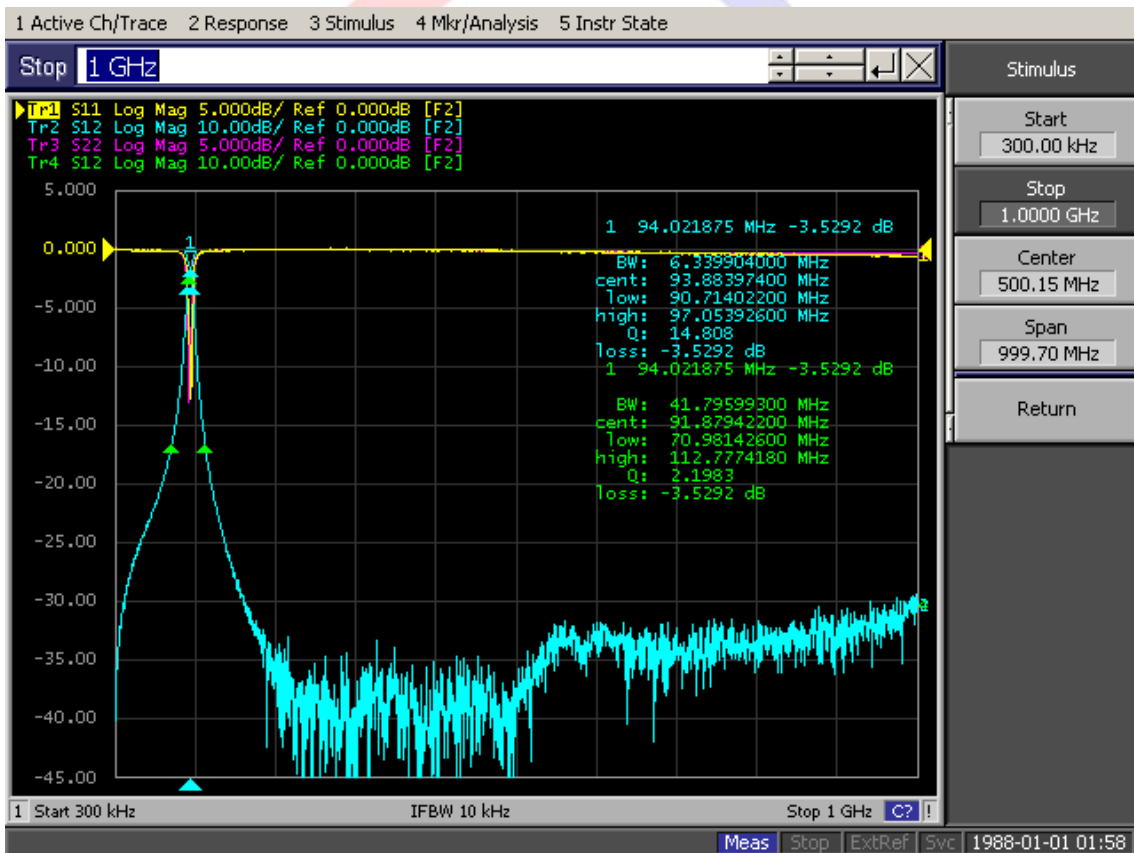
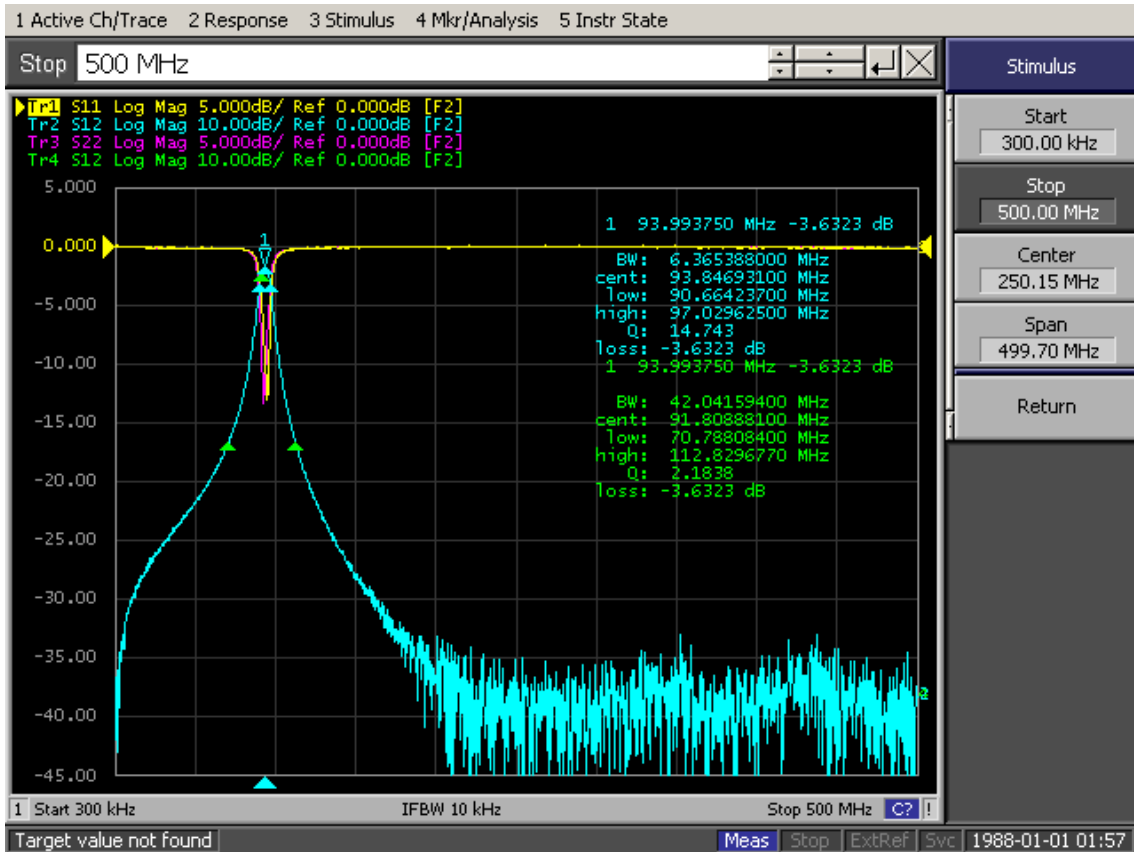
Span: 999.70 MHz

Return

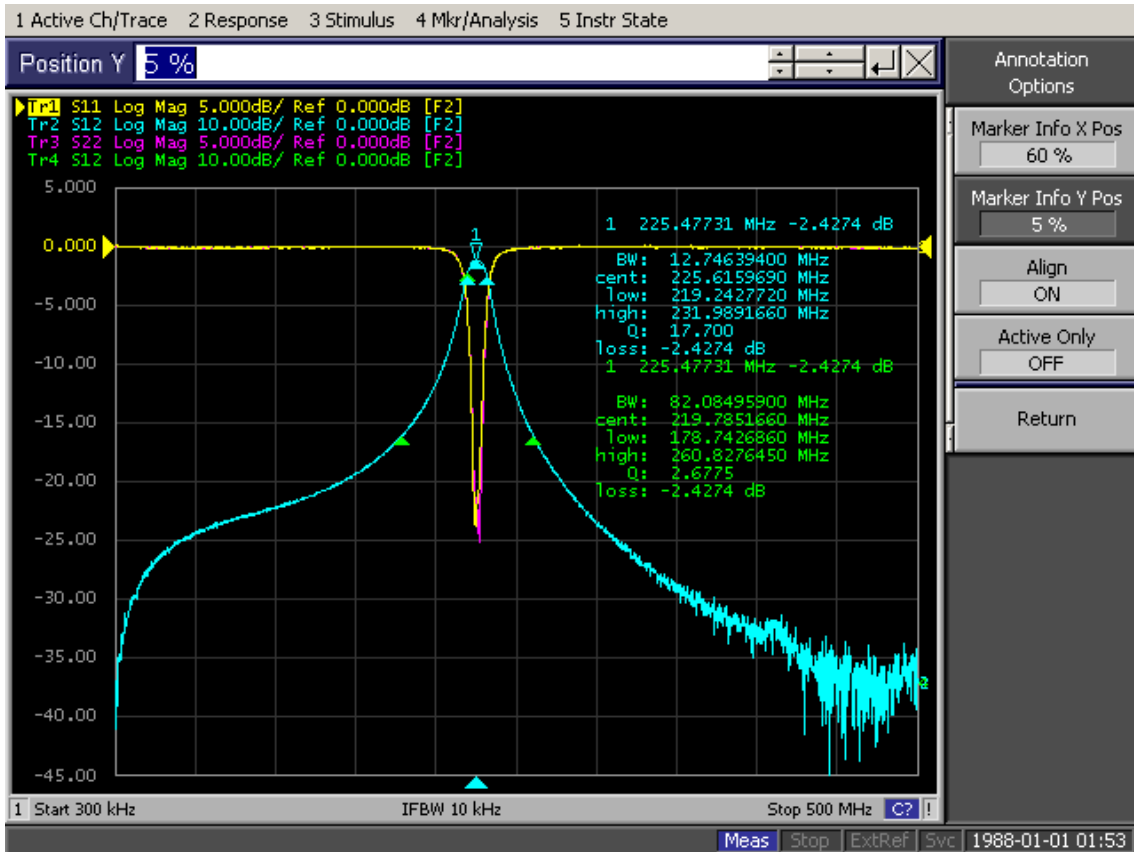
fo : 96 MHz -1BAND (7%)



fo : 93 MHz -2BAND (7%)



fo : 225 MHz -2BAND (7%)



Annotation Options

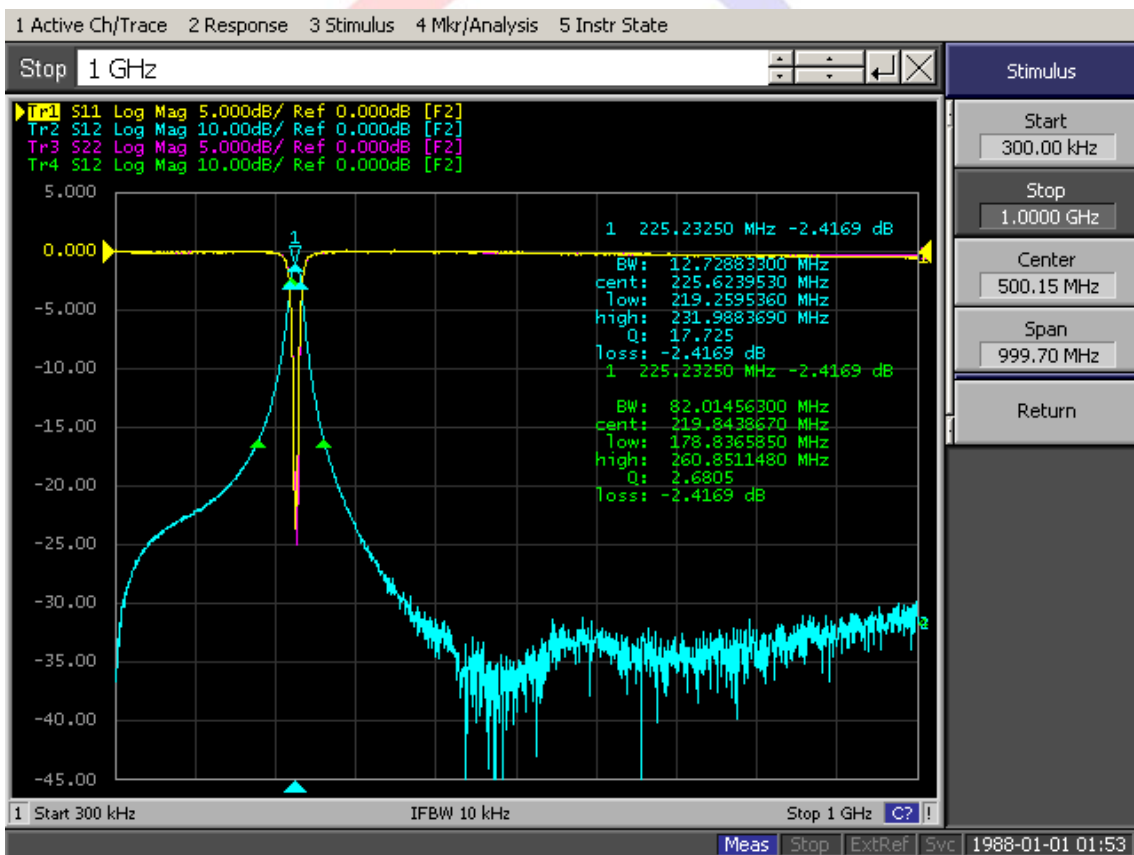
Marker Info X Pos
60 %

Marker Info Y Pos
5 %

Align
ON

Active Only
OFF

Return



Stimulus

Start
300.00 kHz

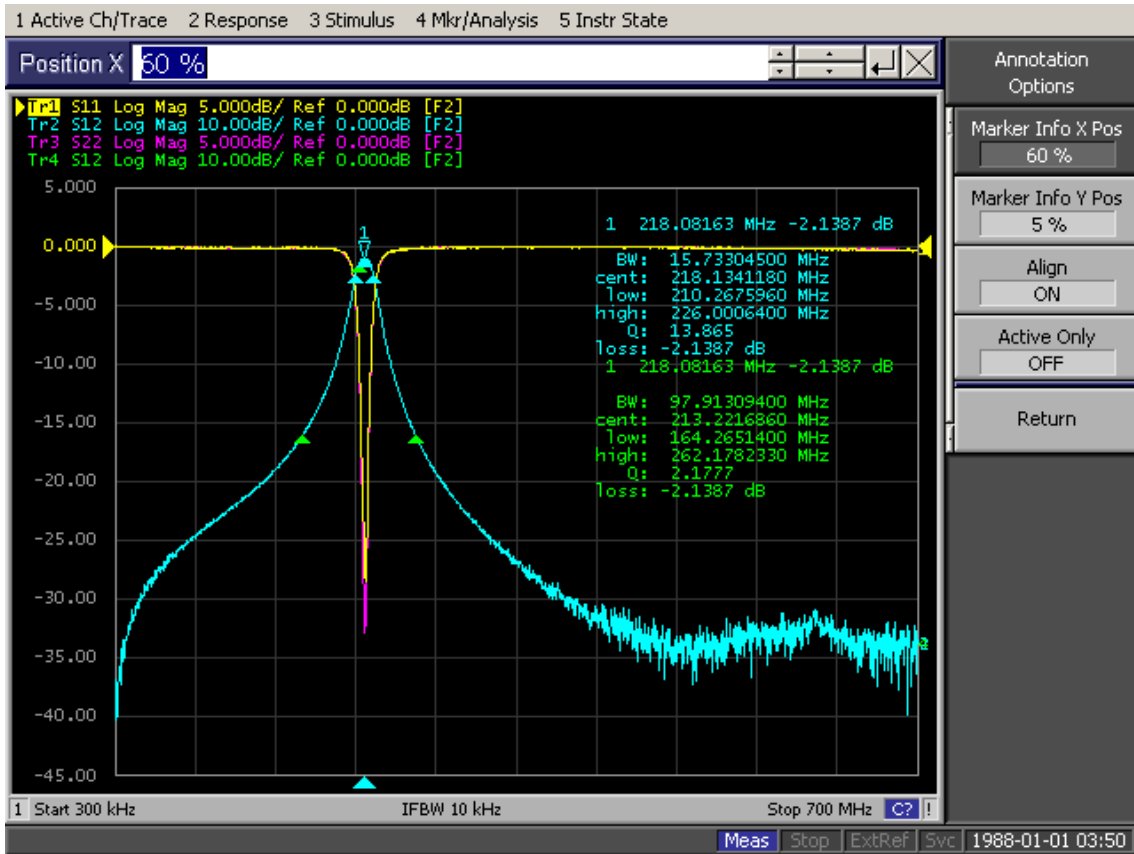
Stop
1.0000 GHz

Center
500.15 MHz

Span
999.70 MHz

Return

fo : 218 MHz -3BAND (7%)



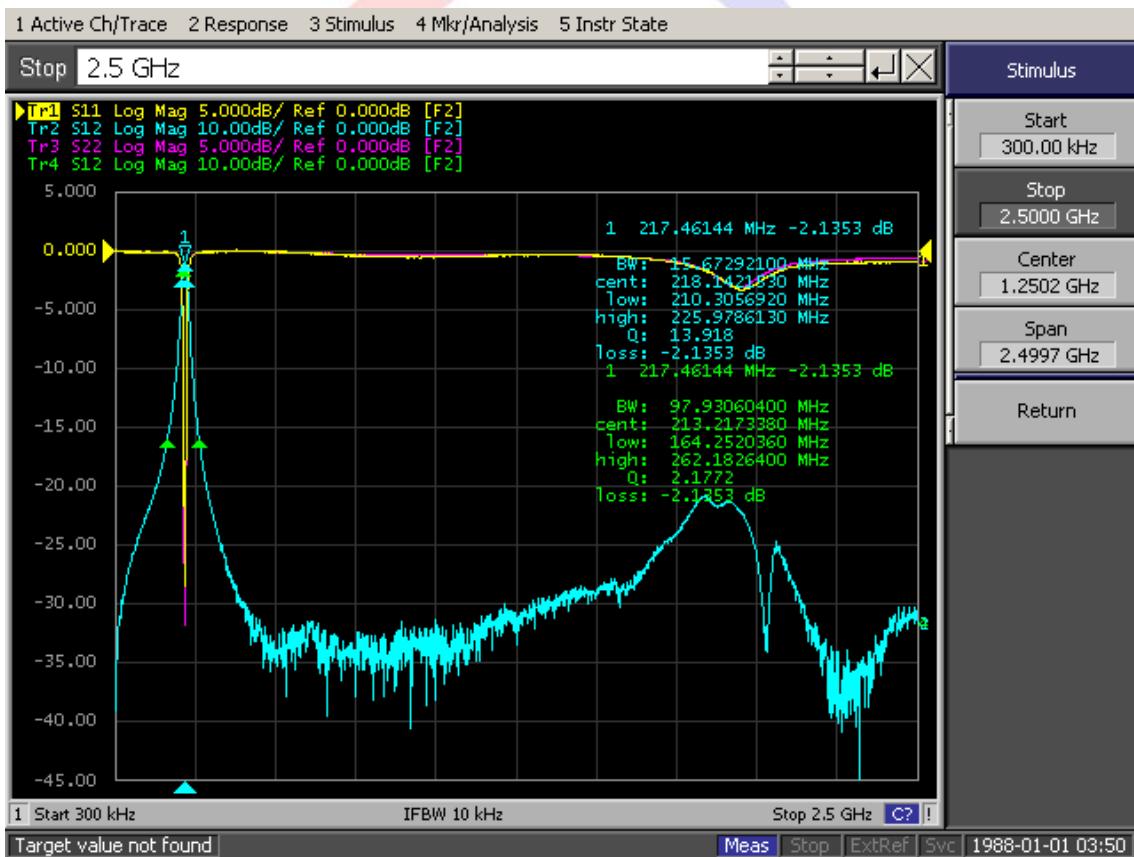
Annotation Options

Marker Info X Pos

Marker Info Y Pos

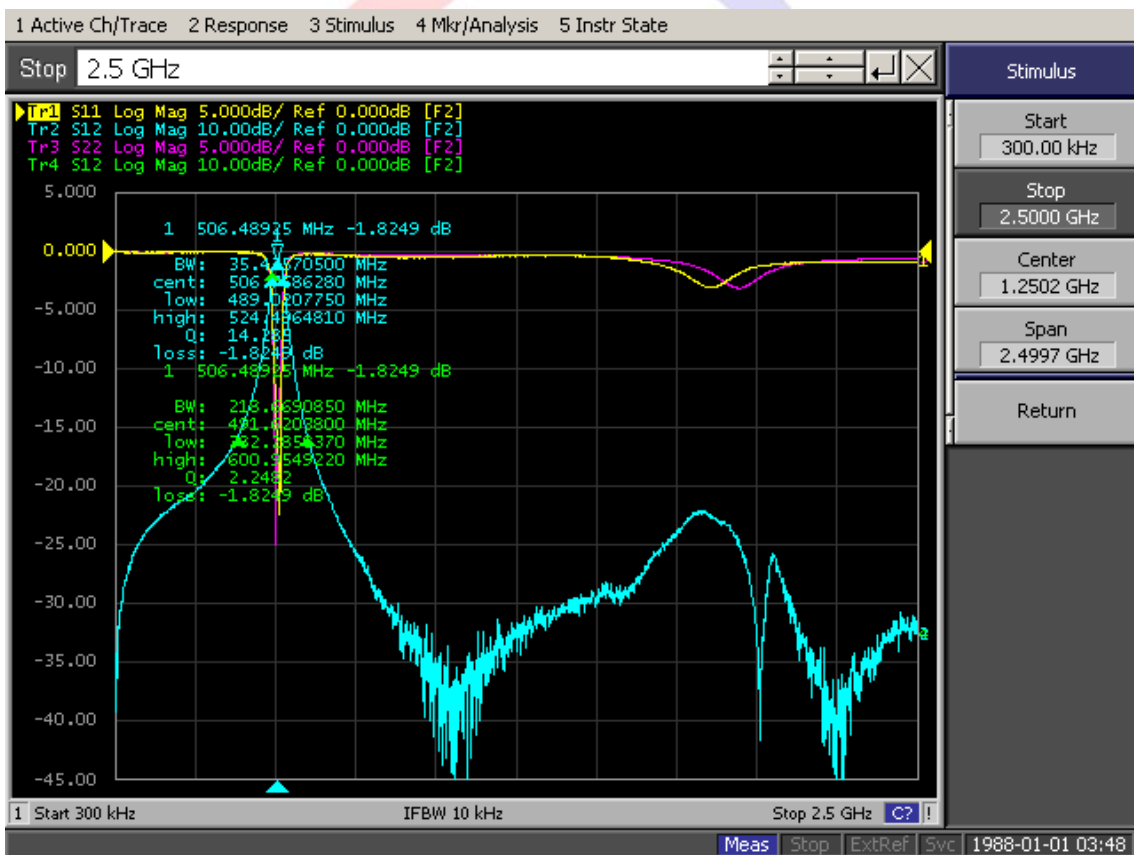
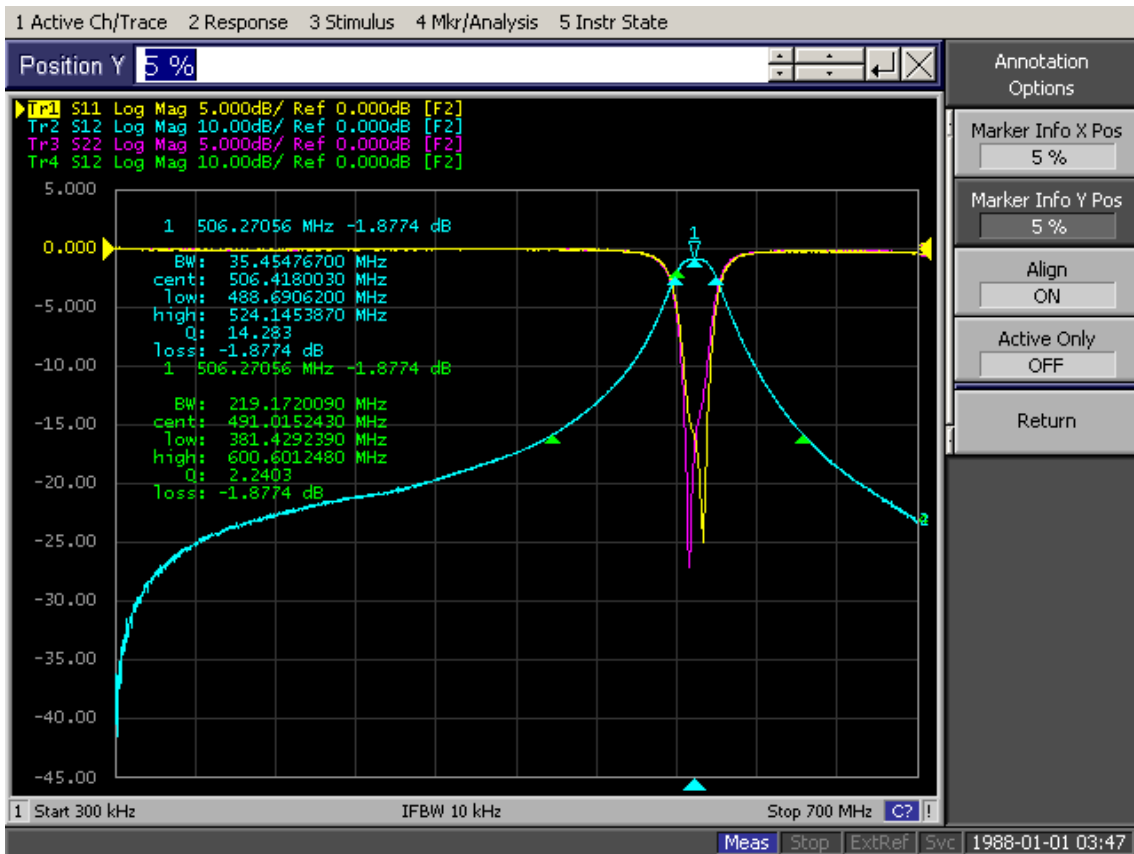
Align

Active Only



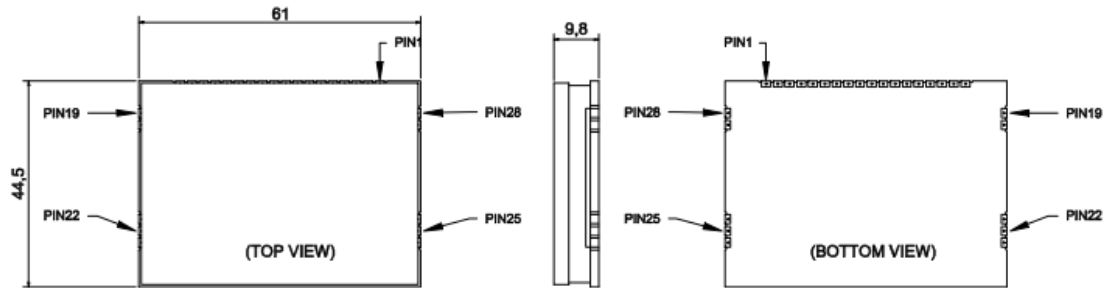
Stimulus

fo : 506 MHz -3BAND (7%)



2.3 Mechanical Drawings

2.3.1. Dimension (unit:mm)



2.3.2. Recommended Pad Layout (unit:mm)

