

Bandpass Filter / Amplifier Assemblies for TFD Efficiency Measurements.

Two performance matched bandpass filter/amplifiers were fabricated for use in determining a TFD element efficiency at several frequencies between 15 and 32 MHz.

The bandpass filter comprised a Chebychev 34 MHz low pass filter and a 14 MHz Cauer high pass filter.

Attenuation of the LPF at 100 MHz is close to 90 dB while the Cauer attenuation below 10 MHz exceeds 43 dB and exceeds 70 dB below 5 MHz.

The amplifiers are Mini Circuits AMP-77s with a nominal gain of 16 dB and a noise figure of 3.3 dB.

Two filter/amp assemblies were fabricated, #1, and #2.

The filters alone were measured as seen in table 1 below.

Frequency (MHz)	#1 Attenuation in dB	#2 Attenuation in dB
10	-43.5	-49.8
14	-0.61	-0.50
15	-0.51	-0.42
20	-0.38	-0.43
25	-0.31	-0.30
30	-0.49	-0.53
32	-0.56	-0.60
35	-1.44	-1.76

Table 1 Filter pair alone

The filters plus their amplifier were measured as seen in Table 2 below..

Frequency (MHz)	#1 Gain in dB	#2 Gain in dB
10	-29.1	-35.2
14	16.09	16.25
15	16.27	16.32
20	16.34	16.26
25	16.46	16.48
30	16.31	16.23
32	16.20	16.08
35	14.79	15.56

Figure 2 Filter pair and amplifier.