Simple Mask Test Data - Part 74.794 of the Rules states:

(i) Simple mask. At the channel edges, emissions must be attenuated no less than 46 dB. More than 6 MHz from the channel edges, emissions must be attenuated no less than 71 dB. At any frequency between 0 and 6 MHz from the channel edges, emissions must be attenuated no less than the value determined by the following formula: A (dB) = 46 + (Df2 /1.44)
(3) The attenuation values for the simple and stringent emission masks are based on a measurement bandwidth of 500 kHz. Other measurement bandwidths may be used and converted to the reference 500 kHz value by the following formula: A(dB) = Aalternate + 10 log (BWalternate / 500) where A(dB) is the measured or calculated attenuation value for the reference 500 kHz bandwidth, and Aalternate is the measured or calculated attenuation for a bandwidth BWalternate. Emissions include sidebands, spurious emissions and radio harmonics. Attenuation is to be measured at the output terminals of the transmitter (including any filters that may be employed). In the event of interference caused to any service by out-of-channel emissions, greater attenuation may be required.

Mask data was measured for the filter with results plotted at 10 kHz steps. In the first 500 kHz adjacent to the channel edge, the out of band power must be 46 dB below the total channel power. To determine the out of band power, the amplifier IMD measured at the final amplifier output before the mask filter was added to the filter response and the power was summed over 500 kHz to give the total out of band power in that band.

The total channel power can be found by multiplying the power in 10 kHz by the number of 10 kHz subsections in the occupied bandwidth. The ratio of the out of band to in band power is then calculated. Please refer to filter data tables on page 4-11.
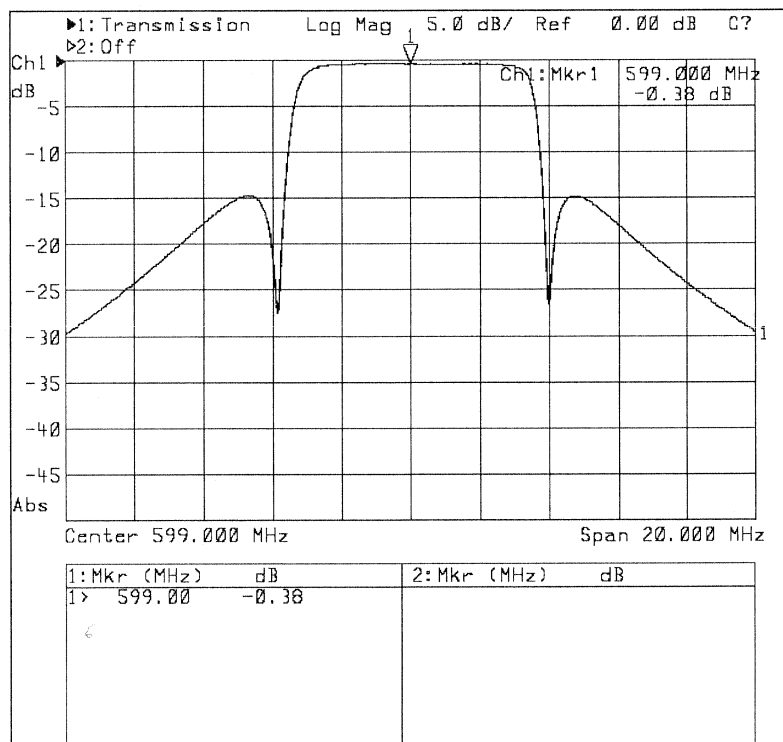

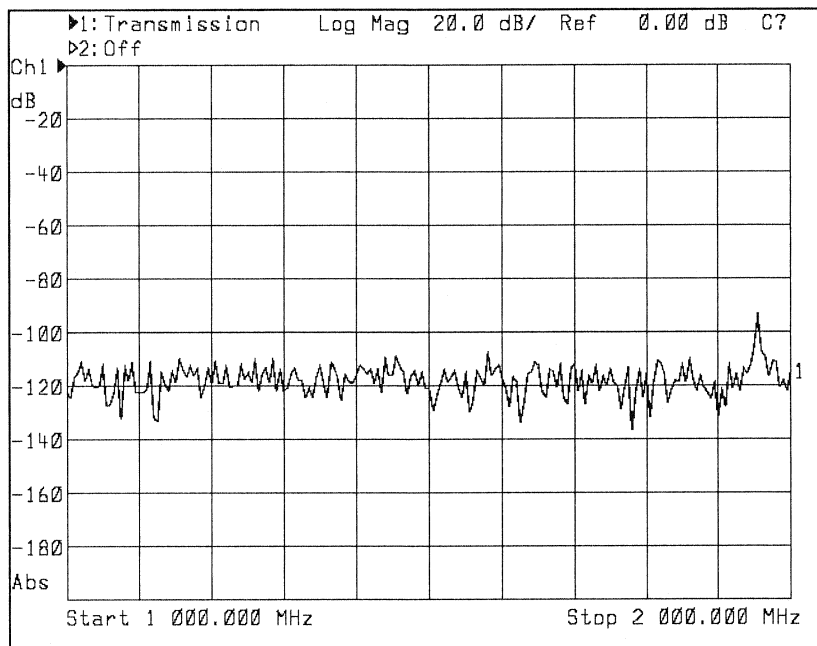Figure 4-8B. Simple Mask Filter Response

Figure 4-8C. Simple Mask Filter Harmonic Rejection

Stringent Mask Test Data - Part 74.794 of the Rules states:

(ii) *Stringent mask. In the first 500 kHz from the channel edges, emissions must be attenuated no less than 47 dB. More than 3 MHz from the channel edges, emissions must be attenuated no less than 76 dB. At any frequency between 0.5 and 3 MHz from the channel edges, emissions must be attenuated no less than the value determined by the following formula: A(dB) = 47 + 11.5 (Df-0.5).*

3) The attenuation values for the simple and stringent emission masks are based on a measurement bandwidth of 500 kHz. Other measurement bandwidths may be used and converted to the reference 500 kHz value by the following formula:

A(dB) = Aalternate + 10 log (BWalternate / 500)

where A(dB) is the measured or calculated attenuation value for the reference 500 kHz bandwidth, and Aalternate is the measured or calculated attenuation for a bandwidth BWalternate. Emissions include sidebands, spurious emissions and radio harmonics. Attenuation is to be measured at the output terminals of the transmitter (including any filters that may be employed). In the event of interference caused to any service by out-of-channel emissions, greater attenuation may be required.
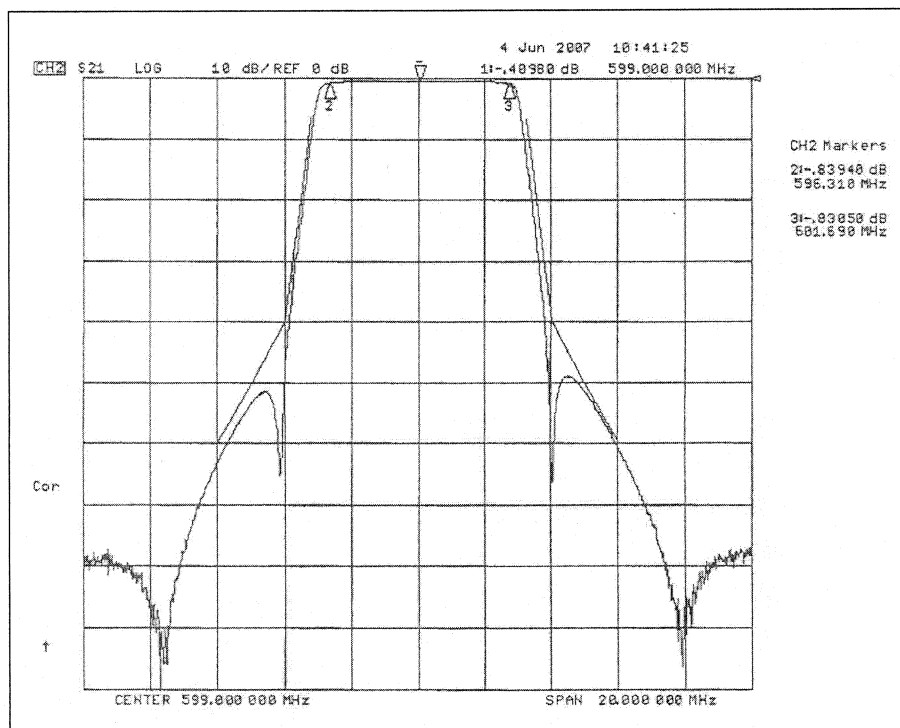
Figure 4-8D. Bandpass Filter Response (Stringent Mask)

Calculating energy in first 500 kHz and comparing it to in channel power by converting out of band energy from dB to linear power and summing:

Upper Sideband:

Frequency (MHz)	Filter (dB)	Transmitter IMD (dB)	Transmitter IMD + Filter (dB)	Linear	Total Attenuation (dB)
602.17	-0.86	-40	-40.86	8.2E-05	
602.18	-0.88	-40	-40.88	8.17E-05	
602.19	-0.89	-40	-40.89	8.15E-05	
602.2	-0.93	-40	-40.93	8.07E-05	
602.21	-0.95	-40	-40.95	8.04E-05	
602.22	-0.98	-40	-40.98	7.98E-05	
602.23	-1	-40	-41	7.94E-05	
602.24	-1.03	-40	-41.03	7.89E-05	
602.25	-1.05	-40	-41.05	7.85E-05	
602.26	-1.1	-40	-41.1	7.76E-05	
602.27	-1.12	-40	-41.12	7.73E-05	
602.28	-1.14	-40	-41.14	7.69E-05	
602.29	-1.22	-40	-41.22	7.55E-05	
602.3	-1.24	-40	-41.24	7.52E-05	
602.31	-1.29	-40	-41.29	7.43E-05	
602.32	-1.32	40	-41.32	7.38E-05	
602.33	-1.35	-40	-41.35	7.33E-05	
602.34	-1.41	-40	-41.41	7.23E-05	