

Exhibit 11

SPURIOUS, IM AND HARMONIC MEASUREMENTS ON THE K283BW and K243BJ COMBINED OPERATION

1. The purpose of this report is to demonstrate compliance with FCC rule 73.317, paragraphs b, c, and d.
2. All measurements were made with both stations operating into an ERI model 935 band pass/955 constant impedance combiner.
3. K283BW operates with a TPO of 147 watts and an ERP of 250 watts.
4. K243BJ operates with a TPO of 72 watts and an ERP of 120 Watts
5. Measurements were made on August 13, 2013 by Randall Mullinax.

SYSTEM DESCRIPTION

K283BW and K243BJ currently have CP's to operate utilizing an ERI model 935 band pass/955 constant impedance combiner feeding 1054 ft of transmission line into an ERI model SHPX-8AC-SP 8 bay, half wave spaced, omnidirectional antenna.

The ERI combiner is a 4 station combiner designed to immediately accommodate K283BW and K243BJ. The 2 additional input ports are for future use. (See Exhibit #A)

ERI was selected as the vendor due to their considerable experience with combined FM systems.

Measurements were made to determine if there were any harmonic, spurious or IM mixes that exceed the limits of FCC Rule 73.317.

MEASUREMENTS +/- 600 KHz FROM CARRIER

A Coaxial Dynamics 87004 X-Tractor was inserted into the 3 inch Coaxial Dynamics line section line section located at the combined output. The X-Tractor coupler was used as the RF sample for measurements. See Exhibit #B for equipment configuration.

The coupler was connected to the input of an IFR A7550 spectrum analyzer. The appropriate station was tuned. Input gain to the spectrum analyzer was adjusted until the unmodulated carrier was displayed at the top graticule. The bottom graticule indicated a level -80 dB below the carrier level. The noise floor on the analyzer was -70 dB. This allows measurement of a signal greater than -70 dB below the carrier to be measured. This is sufficient range for measuring the emissions +/- 600 KHz from the carrier. The occupied bandwidth was observed and all emissions between 120 kHz and 240 kHz are more than the required -25 dB below the unmodulated carrier level.

Using the test setup above, all emissions between 240 kHz and 600 kHz are more than the required -35 dB below the unmodulated carrier level. Both K283BW and K243BJ are in compliance with FCC rule 73.317-paragraph c.

Using the formula, $43 + 10\text{Log of power in watts}$ (which is the lesser attenuation as specified in 73.317) results in maximum attenuation level of – 63.8 dB for K243BJ and 67 dB for K283BW,

Both K243BJ (See Exhibit #C) and K283BW (see Exhibit #D) are in compliance with FCC rule 73.317.

MEASUREMENTS BEYOND +/- 600 KHz, POSSIBLE IM PRODUCTS AND HARMONICS

K283BW operates with a TPO of 147 watts providing an ERP of 250 Watts. K243BJ operates with a TPO of 72 watts providing an ERP of 120 Watts. The difference in TPO levels is 3.09 dB. This level difference is noted during calibration and measurement of the combined operation and is used to correct measured levels where appropriate.

If intermodulation products exist, the most likely mixes can be predicted by $2(F1)-F2$ and $2(F2)-F1$. Using 96.5 MHz and 104.5 MHz as F1 and F2, the most likely IM products would be located at 88.5 MHz and 112.5 MHz. The second and third harmonics are also of interest.

The IFR A7550 spectrum analyzer was connected to the combined output using the X-Tractor coupler. A 20 dB pad was inserted between the coupler and the IFR A7550 spectrum analyzer. The input gain was adjusted to place the K283BW carrier level at the top graticule. The 20 dB pad was removed making the bottom graticule --100 dB. There was 10 dB of noise or grass at the bottom graticule resulting in a detectable signal level -90 below the K283BW carrier level. During normal operation the K243BJ carrier is -3.09 dB below the K283BW level. This 3 dB level difference was used to correct any measured IM level, spurious emissions or harmonics, if detected, relative to the K243BJ carrier.

To prevent IM mixing in the front end of the spectrum analyzer by the K243BJ and K283BW fundamental signals and to prevent overload with high input gain (which could result in internal analyzer IM) two Eagle Filter Co. TNF-2 tunable notch filters were inserted between the coupler and the spectrum analyzer input. One filter was tuned to notch 96.5 MHz and the second to notch 104.5 MHz. The measured signal levels were corrected to compensate for the notch filters insertion loss. See Exhibit #E for system setup and Exhibit #F for filter loss and response.

The second and third harmonics were measured, if detectable, and noted. The detected levels were then corrected to compensate for the insertion loss of the notch filters. The actual level and corrected levels are listed. The possible IM frequencies were also tuned and measured, if detectable. Their level was also corrected to compensate for the notch filter insertion loss. The ERI band pass cavities for K283BW and K243BJ provide excellent filtering and no harmonics were detectable that exceeded the measurement capabilities of -90 dB below the K283BW carrier and -87 below the K2432BJ carrier.

Measurement relative to the K283BW carrier.

88.5 MHz is a possible IM frequency and the operation of local radio station KZTH on that frequency makes measurement impossible. KZTH cooperated by momentarily turning off their carrier to allow a valid measurement. No IM product was observed. (See exhibit #G) The IM frequency of 112.5 was tuned and no signal was observed. (See Exhibit #H)

Frequency	Displayed Level	Corrected Level
88.5 (IM)	Not detectable	
193.0 (96.5 2 ND)	Not detectable	
112.5 (IM)	Not detectable	
209.0 (104.5 2 ND)	Not detectable	
289.5 (96.5 3 rd)	Not detectable	
313.5 (104.5 3 rd)	Not detectable	

Measurement relative to the K243BJ carrier.

During normal operation, the K243BJ carrier is -3.09 dB below the K283BW level. Since the analyzer was calibrated to place the more powerful K283BW carrier at the top graticule, anything relative to K243BJ carrier must be corrected by 3 dB. For K243BJ, the actual level will be the displayed level displayed level + Notch loss + 3 dB. For example, if the displayed level of the second harmonic was -90 dB, the actual level would be -90 dB + 1 dB notch loss + 3 dB carrier difference at calibration = -86 dB below carrier level.

Frequency	Displayed Level	Corrected Level
88.5 (IM)	Not detectable	
193.0 (96.5 2 ND)	Not detectable	
112.5 (IM)	Not detectable	
209.0 (104.5 2 ND)	Not detectable	
289.5 (96.5 3 rd)	Not detectable	
313.5 (104.5 3 rd)	Not detectable	

The band of frequencies from 50 to 500 MHz was scanned and no other detectable IM mix products were seen. Several signals were noted at levels greater -90 db below the carrier level. These signals were still present when both transmitters were momentarily turned off indicating they were not being generated by either transmitter.

As a result of these measurements, it appears there is no interaction in the combined operation of K238BW and K243BJ that produce emissions in violation of FCC 73.317.

Randall Mullinax

Exhibit #B

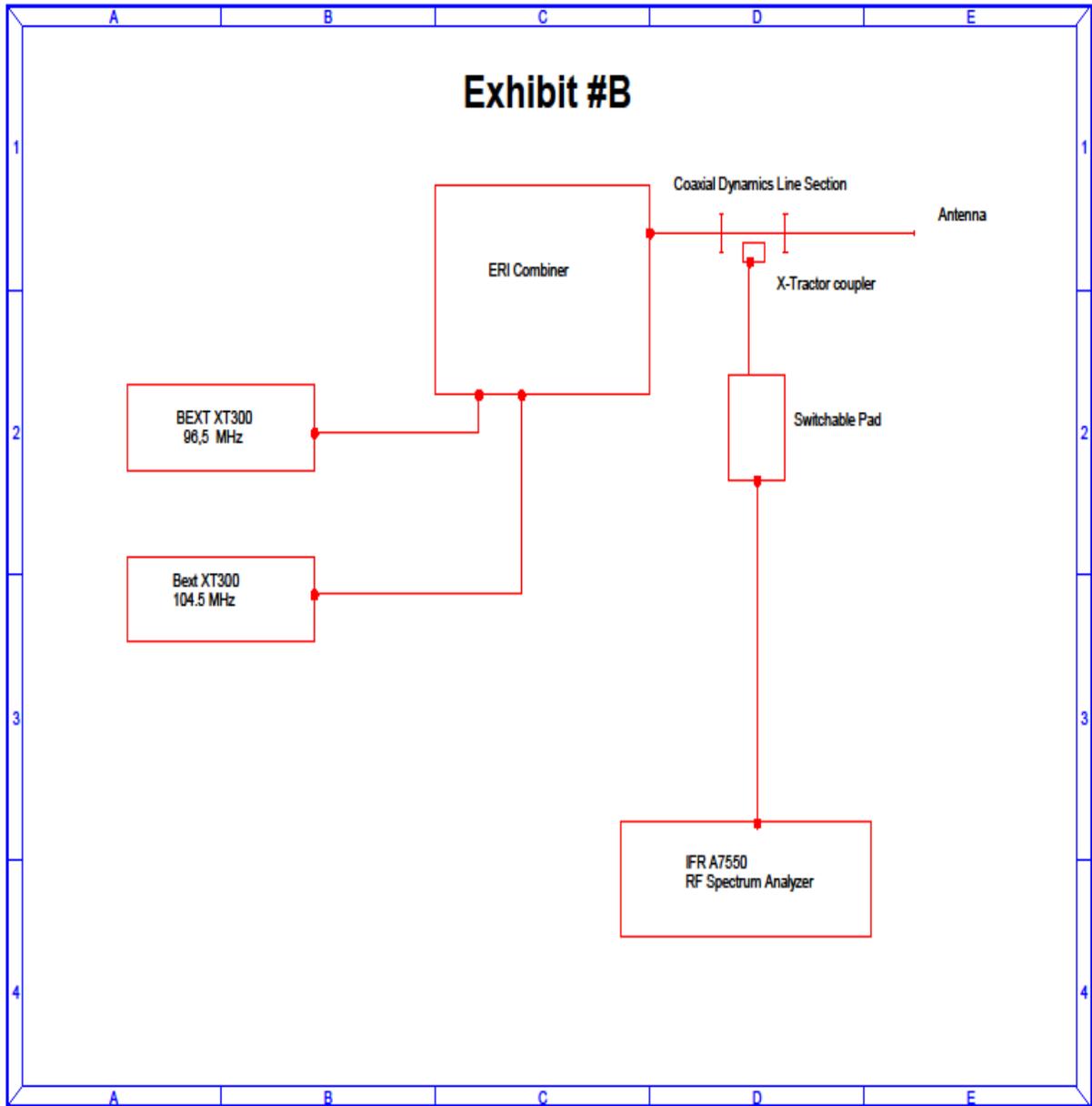
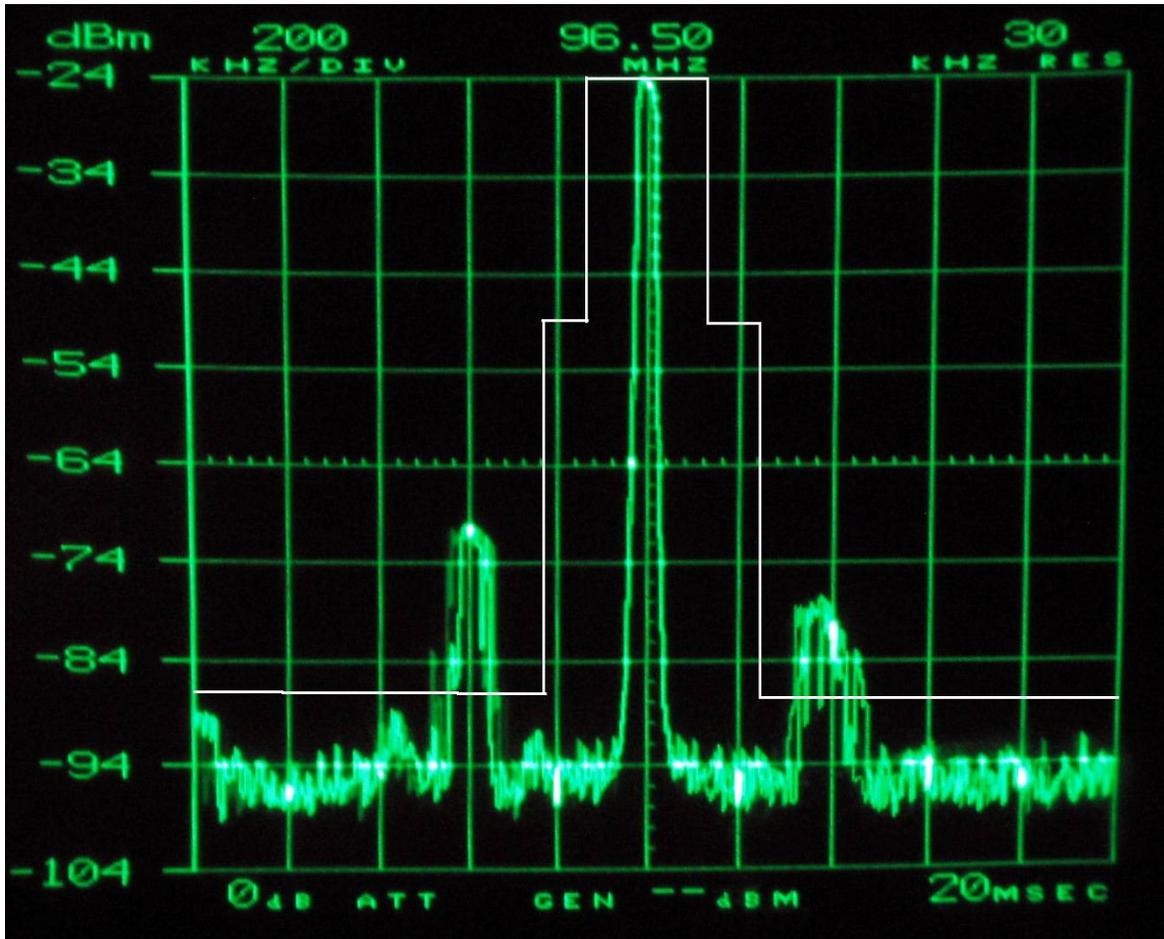
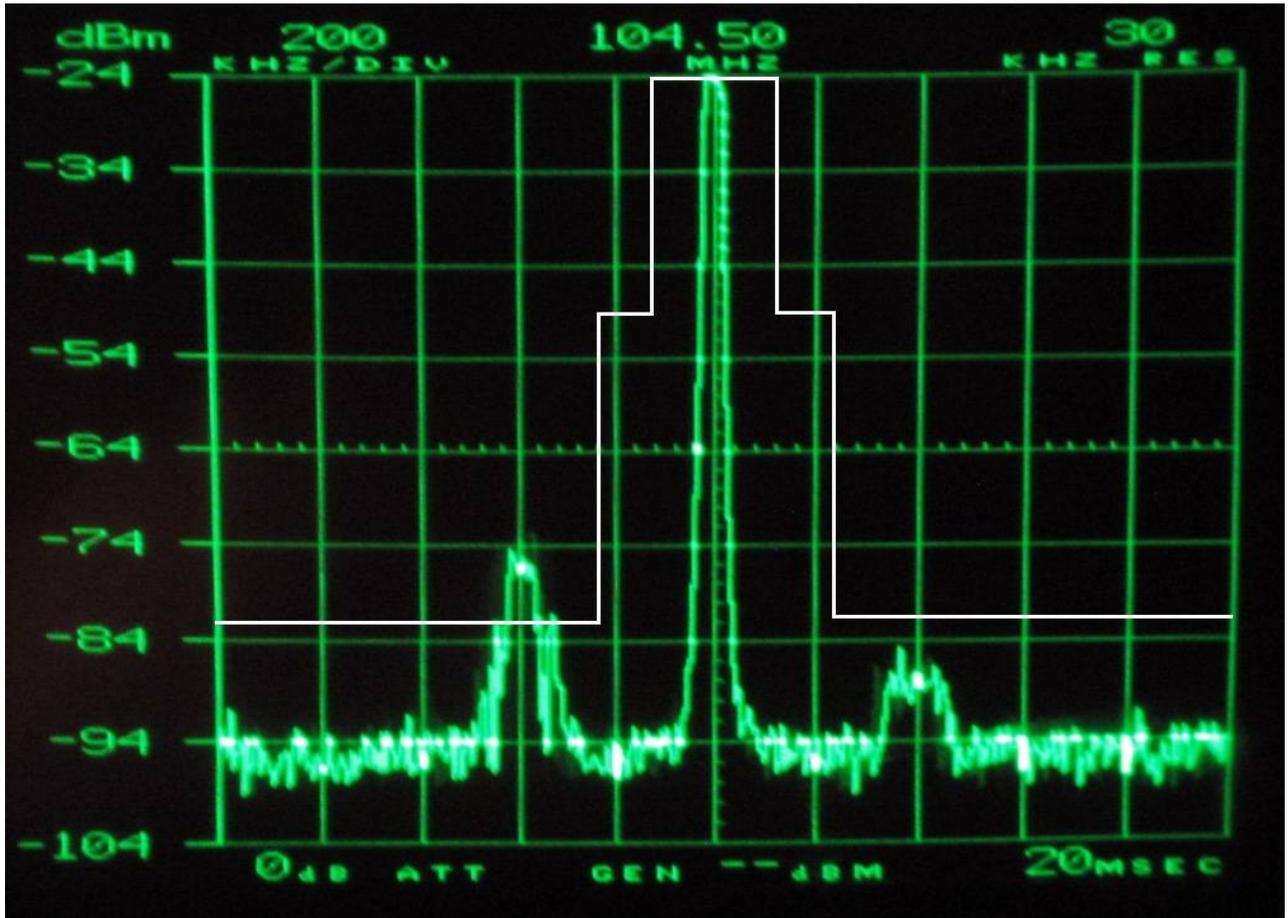


Exhibit #C



KXXY K243BJ KQOB

Exhibit #D



KMGL K283BW KKWD

Exhibit #E

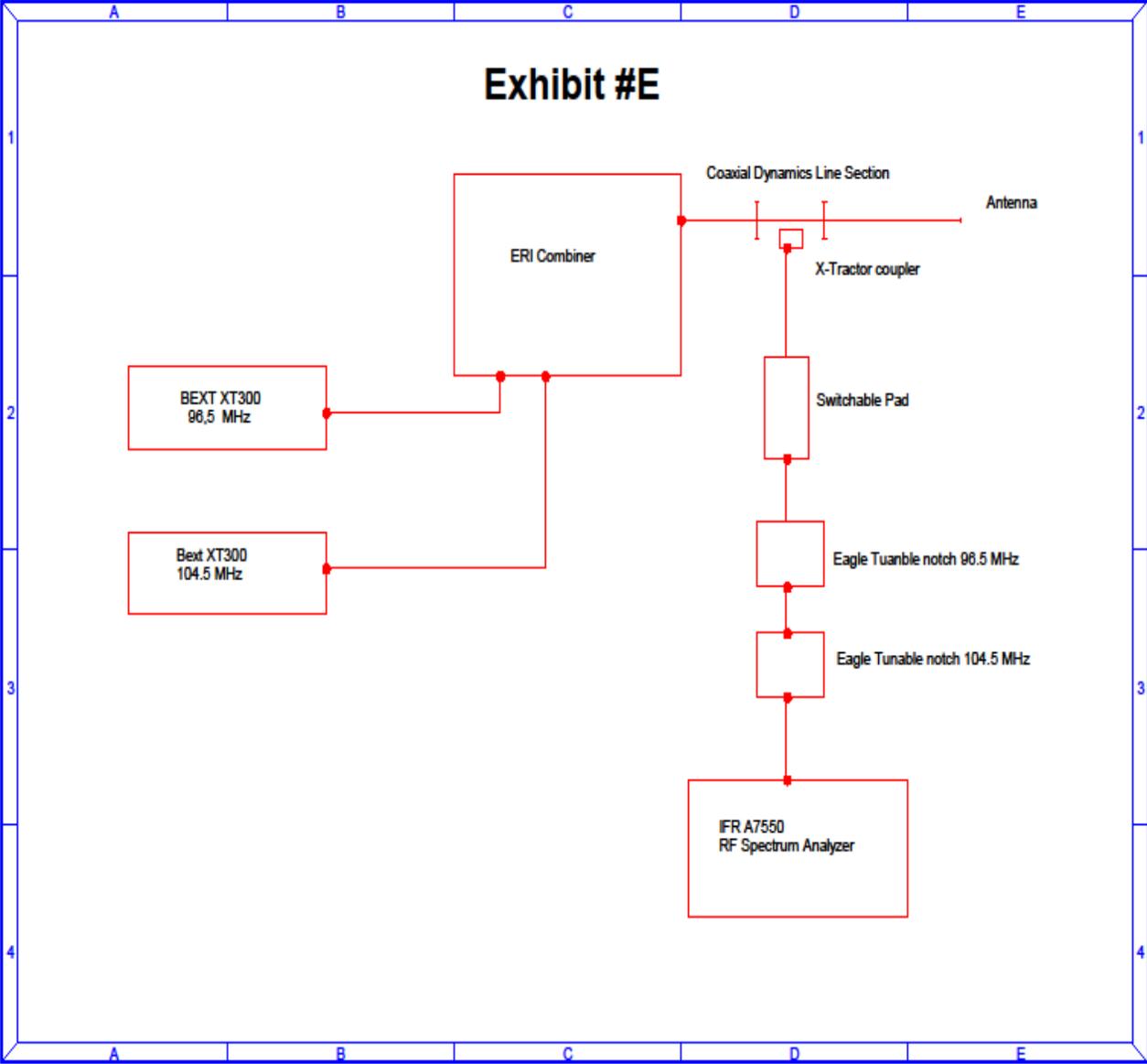
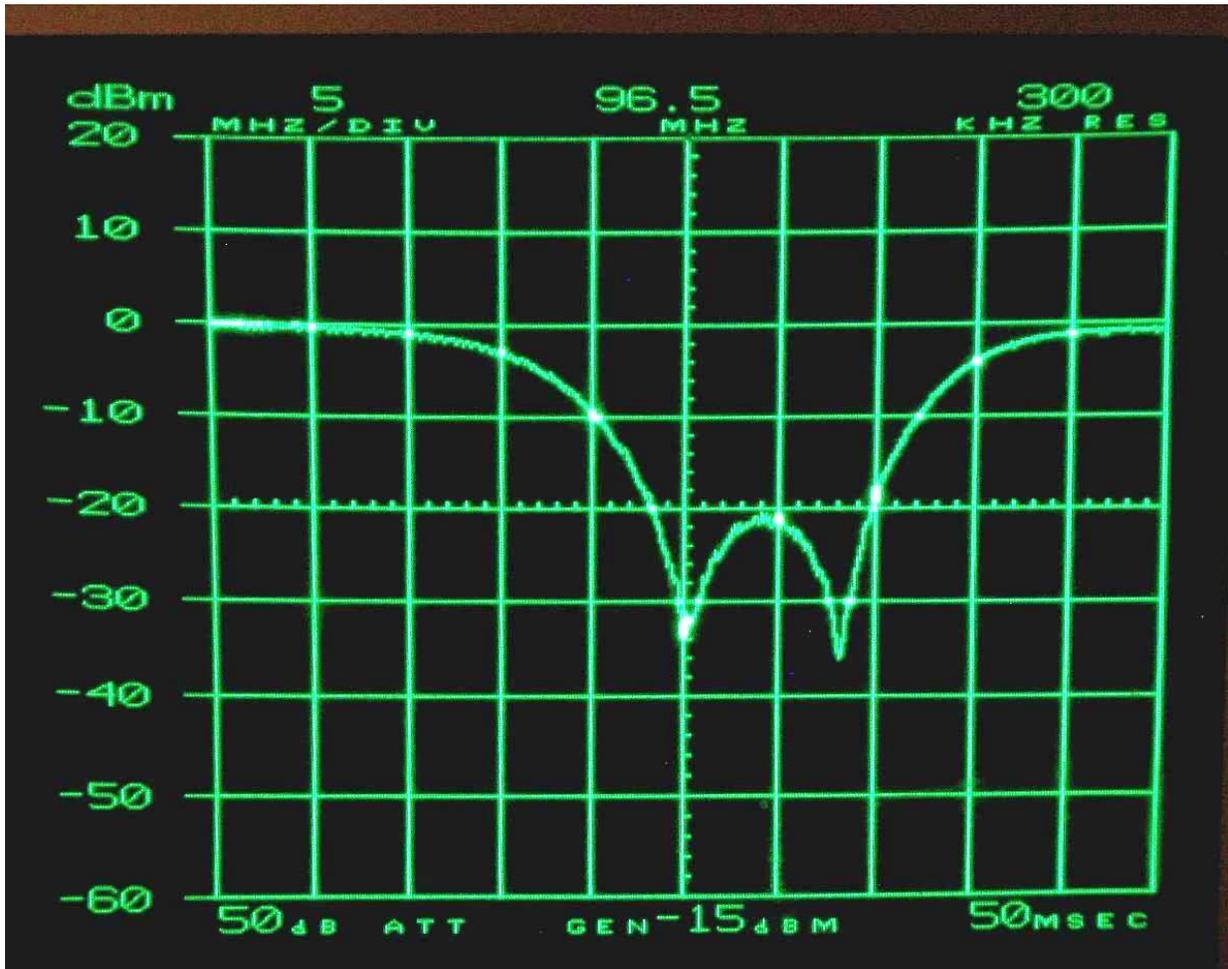


Exhibit #F

Filter loss and response

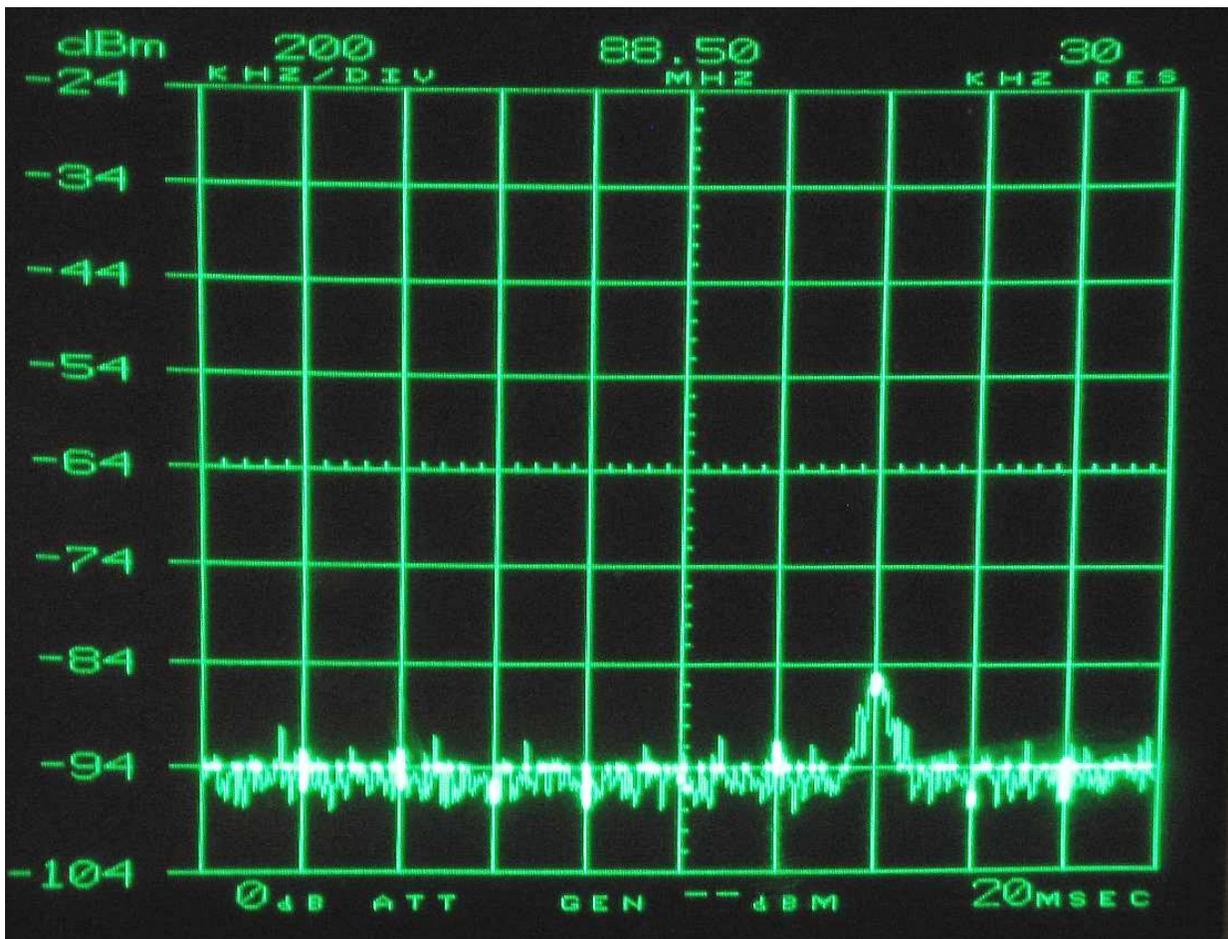


96.5 MHz 104.5 MHz

Exhibit #G

88.5 IM measurement

- 94 Graticule, shown below, is -90 dB below the K283BW carrier and -87 dB below the K243BJ carrier.



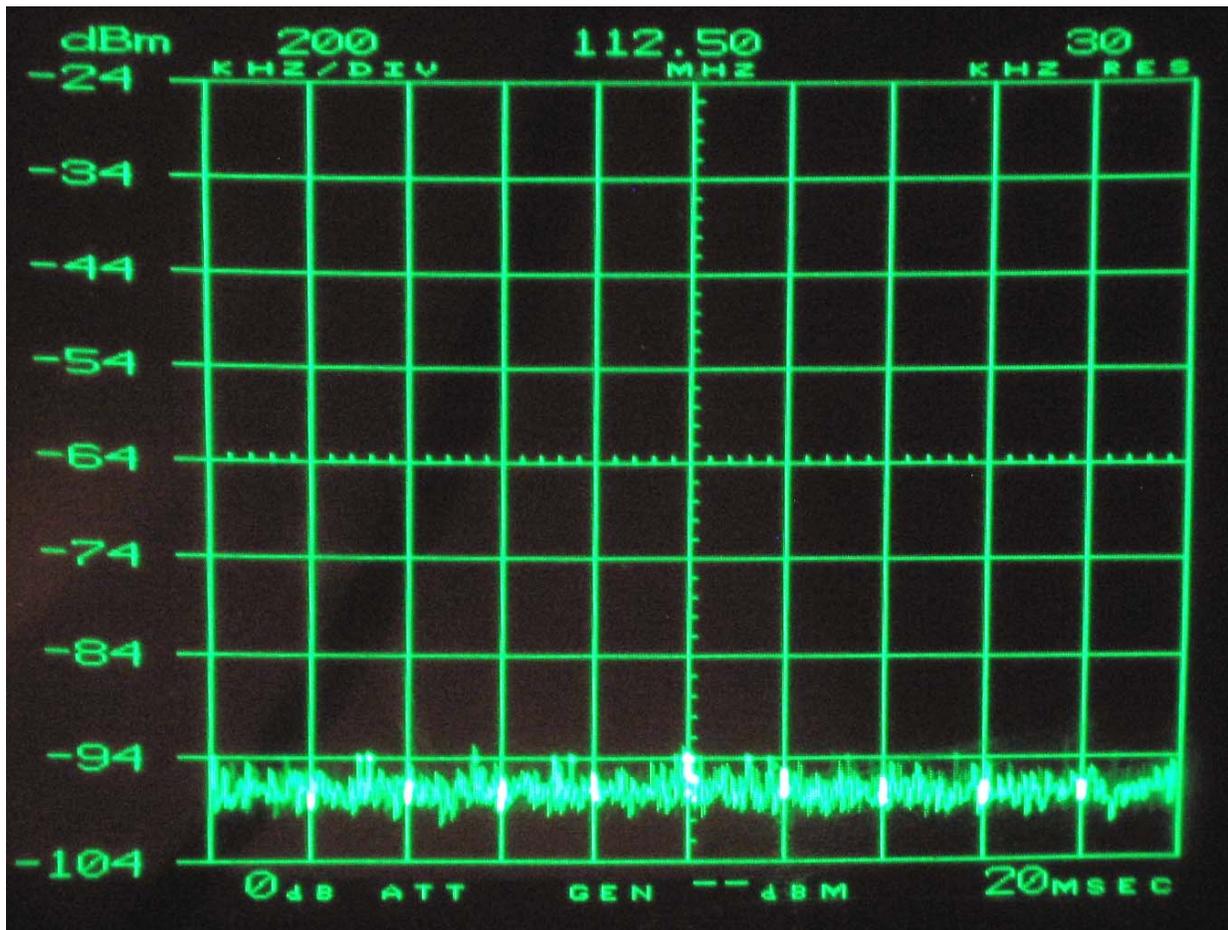
88.5 MHz

KYLV
88.9 MHz

Exhibit #H

112.5 IM measurement

- 94 Graticule, shown below, is -90 dB below the K283BW carrier and -87 dB below the K243BJ carrier



112.5 MHz