FM SPURIOUS & HARMONIC EMISSIONS MEASUREMENTS (SEC 73.317)

Technician: Dave Allen **Date:** 9/20/2008 **Time:** 9:00 PM

Call Letters: KSEL-FM **Location:** Portales, NM **Frequency:** 105.9

RF Bandwidth Measurement:

Equipment Used: Tektronix 2712

Serial Number: B010972

Date of Calibration: 3/11/2008

Transmitter: Make: BEI Model: FM30T Serial Number: 108504003

TPO: 21.40 KW

Results:

	Reading	dB down	
Unmodulated Carrier	14.2		dBm UMC
120 kHz-240 kHz	-26.8	-41	(Min -25dB below UMC)
240 kHz-600 kHz	-52.4	-66.6	(Min -35dB below UMC)
Above 600 kHz	-91.5	-105.7	(Min -80 dB below UMC)

Active Subcarriers: Frequency 1) na Injection 1) %

Frequency 2) na Injection 2) %

Notes:

Sec. 73.317 FM Transmission System Requirements

(a) FM broadcast stations employing transmitters authorized after January 1, 1960, must maintain the bandwidth occupied by their emissions in accordance with the specification detailed below. FM broadcast stations employing transmitters installed or type accepted before January 1, 1960, must achieve the highest degree of compliance with these specifications practicable with their existing equipment. In either case, should harmful interference to other authorized stations occur, the licensee shall correct the problem promptly or cease operation.

(b) Any emission appearing on a frequency removed from the carrier by between 120 kHz and 240 kHz inclusive must be attenuated at least 25 dB below the level of the unmodulated carrier. Compliance with this requirement will be deemed to show the occupied bandwidth to be 240 kHz or less.

(c) Any emission appearing on a frequency removed from the carrier by more than 240 kHz and up to and including 600 kHz must be attenuated at least 35 dB below the level of the unmodulated carrier.

(d) Any emission appearing on a frequency removed from the carrier by more than 600 kHz must be attenuated at least 43+10 Log10 (Power, in watts) dB below the level 1 of the unmodulated carrier, or 80 dB, whichever is the lesser attenuation.

FM SPURIOUS & HARMONIC EMISSIONS MEASUREMENTS (SEC 73.317)

Technician: Dave Allen **Date:** 9/20/2008 **Time:** 9:03 PM

Call Letters: KRMQ **Location:** Portales, NM **Frequency:** 101.5

RF Bandwidth Measurement:

Equipment Used: Tektronix 2712

Serial Number: B010972

Date of Calibration: 3/11/2008

Transmitter: Make: BEI Model: FM30T Serial Number: 75864001

TPO: 21.40 KW

Results:

	Reading	dB down	
Unmodulated Carrier	14.2		dBm UMC
120 kHz-240 kHz	-21.1	-35.3	(Min -25dB below UMC)
240 kHz-600 kHz	-53.8	-68	(Min -35dB below UMC)
Above 600 kHz	-91.5	-105.7	(Min -80 dB below UMC)

Active Subcarriers: Frequency 1) na Injection 1) %

Frequency 2) na Injection 2) %

Notes:

Sec. 73.317 FM Transmission System Requirements

(a) FM broadcast stations employing transmitters authorized after January 1, 1960, must maintain the bandwidth occupied by their emissions in accordance with the specification detailed below. FM broadcast stations employing transmitters installed or type accepted before January 1, 1960, must achieve the highest degree of compliance with these specifications practicable with their existing equipment. In either case, should harmful interference to other authorized stations occur, the licensee shall correct the problem promptly or cease operation.

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(c) Any emission appearing on a frequency removed from the carrier by more than 240 kHz and up to and including 600 kHz must be attenuated at least 35 dB below the level of the unmodulated carrier.

(d) Any emission appearing on a frequency removed from the carrier by more than 600 kHz must be attenuated at least 43+10 Log10 (Power, in watts) dB below the level 1 of the unmodulated carrier, or 80 dB, whichever is the lesser attenuation.

KRMQ & KSEL Spurious Measurements

(Revised 09-18-08)

Broadcast Works Inc.
(903)-509-2470

Located at: **Portales, NM**

FM 2-STATION MIXING2.xls
091808dra

	Subject Frequency (Mhz) Class	Call	Freq	TPO KW	Transmitter Model and serial	Notch Attenuation (dB)	Unmodulated Carrier Level (dB)
F1	C1	KRMQ	101.5	21.4	BE FM30T 75864001	16.7	12.9
F2	C1	KSEL	105.9	21.4	BE FM30T 108504003	25.4	12.6

Frequency Combination (Mhz)	Calculated Spur (Mhz)	Measured Spur (dB)	KRMQ dB down	KSEL dB down
2F2-F1	110.3	-87.9	100.8	100.5
2F1-F2	97.1	-87.6	100.5	100.2
3F2-F1	216.2	-87.6	100.5	100.2
2F2	211.8	-87.9	100.8	100.5
2F1	203.0	-87.6	100.5	100.2
3F1-F2	198.6	-87.9	100.8	100.5
4F2-F1	322.1	-88.3	101.2	100.9
3F2	317.7	-87.6	100.5	100.2
2F2+F1	313.3	-87.9	100.8	100.5
2F1+F2	308.9	-87.3	100.2	99.9
3F1	304.5	-87.9	100.8	100.5
4F1-F2	300.1	-87.9	100.8	100.5
4F2	423.6	-87.9	100.8	100.5
3F2+F1	419.2	-87.6	100.5	100.2
3F1+F2	304.5	-87.6	100.5	100.2
4F1	406.0	-87.6	100.5	100.2
5F2	529.5	-78.6	91.5	91.2
4F2+F1	525.1	-87	99.9	99.6
4F1+F2	511.9	-87.3	100.2	99.9
5F1	507.5	-87.3	100.2	99.9
6F2	635.4	-87.6	100.5	100.2
6F1	609.0	-87.6	100.5	100.2
7F2	741.3	-87	99.9	99.6
7F1	710.5	-84.6	97.5	97.2
8F2	847.2	-86.7	99.6	99.3
8F1	812.0	-86.7	99.6	99.3
9F2	953.1	-85.5	98.4	98.1
9F1	913.5	-86.4	99.3	99.0
10F2	1059.0	-80.4	93.3	93.0
10F1	1015.0	-86.1	99.0	98.7
not related	471.1	-67.9	80.8	80.5
not related	581.4	-63.3	76.2	75.9
not related	805.2	-59.3	72.2	71.9
not related	1073.6	-62.3	75.2	74.9

Noise Floor (dB): -87.6 **Engineer:** Dave Allen **Date:** 9/20/2008

The signals were sampled at the output of the antenna combiner system at its nominal RF output. The measurements were made using a Techtronix 2712 Spectrum Analyzer, Ser #B010972 calibrated 7/30/01. Each fundamental frequency was attenuated using Microwave Filter Company model 6367 cavity notch filters tuned to each fundamental. Measured intermodulation products of the shared antenna system were at least 80 dB below the unmodulated carriers of the two stations.

Based on these measurements it is believed the stations are in compliance with 73.317 of the Commission's rules.