



Occupied Bandwidth Study

And Spurious Emissions Measurements

KRBB (FM) – 97.9 MHz
Wichita, KS – Facility ID No. 39902
and
KZSN (FM) – 102.1 MHz
Hutchinson, KS – Facility ID No. 61364

Prepared for:

Capstar Tx Limited Partnership

To Demonstrate Compliance with §73.317(b) and §73.317(d) of the
FCC Rules and Regulations

May 1, 2006

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Exhibit 5-A

Engineering Statement of Purpose

This firm has been retained by Capstar Tx Limited Partnership (Capstar), to prepare this Occupied Bandwidth Study for KRBB (FM), Wichita, KS and KZSN (FM), Hutchinson, KS.

Measurements were conducted to demonstrate that KRBB (FM), Wichita, KS and KZSN (FM), Hutchinson, KS operating into a combined antenna system, comply with §73.317(b) through §73.317(d) of the FCC Rules and Regulations. William H. Nolan conducted the measurements on May 1st, 2006, with both stations simultaneously utilizing the shared antenna as specified in "Special operating conditions or restrictions 3" of the KRBB (FM) Construction Permit BPH-20040615ACF and KZSN (FM) Construction Permit BPH-20040615ACD. The spectrum analyzer used for the measurements was an Anritsu model MT8220A, S/N 524160. A sample of the KRBB (FM) and KZSN (FM) signals was derived from the main transmission line at the output of the combiner and was coupled to the analyzer using a short length of RG-223 50Ω double-shielded coaxial cable. A 30 db attenuator was inserted ahead of the analyzer to avoid overload and to provide isolation.

The measured unmodulated carrier level of KRBB (FM) was -13.4 dBm and the unmodulated carrier level of KZSN (FM) was -20.2 dBm. Attenuation was trimmed via the analyzer internal pad to ensure no overload occurred. Scaling of the analyzer (reference offset) was then adjusted to present a reference level of 0 db for convenience. All measurements were conducted with the transmitters and associated equipment adjusted as used in normal program operation.

For all occupied bandwidth measurements, the spectrum analyzer was placed in the peak hold mode for at least 10 minutes per measurement before the waveforms were observed. As shown in Exhibit 1-C and Exhibit 1-D , both transmitters were observed to be in full compliance with §73.317(b) of the FCC Rules with emissions appearing on frequencies removed from the carrier frequencies by between 120 kHz and 240 kHz attenuated by at least 25 dB below



the unmodulated carrier level indicating the occupied bandwidth of each transmitter to be 240 kHz or less. Both transmitters were also observed to be in full compliance with §73.317(c) of the FCC Rules with emissions appearing on frequencies removed from the carrier frequencies by between 240 kHz and 600 kHz attenuated by at least 35 dB.

Extensive measurement were also conducted to insure that emissions appearing on frequencies removed from the carrier frequencies by more than 600 kHz were attenuated by at least 80 dB as required by §73.317(d) of the FCC Rules. To facilitate these measurements, a notch filter was placed between the 30 dB attenuator and the analyzer so that the analyzer gain could be increased by 20 dB. The filter was necessary to avoid the possible generation of false spurious or intermodulation products in the analyzer. The attenuation of the notch filter was 41.2 dB at 102.1 MHz.

All harmonic and intermodulation frequencies in the range of frequencies between 5 MHz and 500 MHz through the 3rd order that could be produced by the combined operation of KRBB (FM) and KZSN (FM) were calculated and the results of the measurements at these frequencies are listed in Exhibit 1-E.

While special attention was given to the “product” frequencies listed in Table 1, measurements were conducted covering the entire range of frequencies between 5 MHz and 500 MHz. The only signals detected at levels attenuated by less than 80 dB below the unmodulated carrier levels and appearing on frequencies removed from the KRBB (FM) and KZSN (FM) carrier frequencies by more than 600 kHz were the carriers of nearby FM and Television stations. In each case, these these signals were observed to be at a level greater than -81 dBm (80 dB below the unmodulated carrier level of KRBB (FM). Both the KRBB (FM) and KZSN (FM) transmitters were turned off while the amplitude of the signal was observed to be unchanged, indicating that the signal was not the result of the combined operation of KRBB (FM) and KZSN (FM).

The results of these measurements confirm that the combined operations of KRBB (FM) and KZSN (FM) into the shared antenna are in full compliance with §73.317(b) through §73.317(d) of the FCC Rules and Regulations.



Exhibit 5-B

Engineer's Certification

I, William H. Nolan, with offices at 1632 S. Maize Road, Wichita, KS, have been retained for the purpose of preparing the technical data forming this report.

My work is a matter of record before the Federal Communications Commission. I have filed numerous applications that have been subsequently granted by the Commission, including the 301-FM application for the KXLS (FM) construction permit. I have spent 24 years in the broadcast industry, and have designed and constructed numerous radio stations in that time, including AM and FM facilities.

I declare under penalty of perjury that the contents of this report are true and accurate to the best of my knowledge and belief.

Signed:  Date: 05/01/2006

William H. Nolan
Managing Member
Broadcast Technical Associates, LLC



Exhibit 1-C

KRBB-FM Occupied Bandwidth

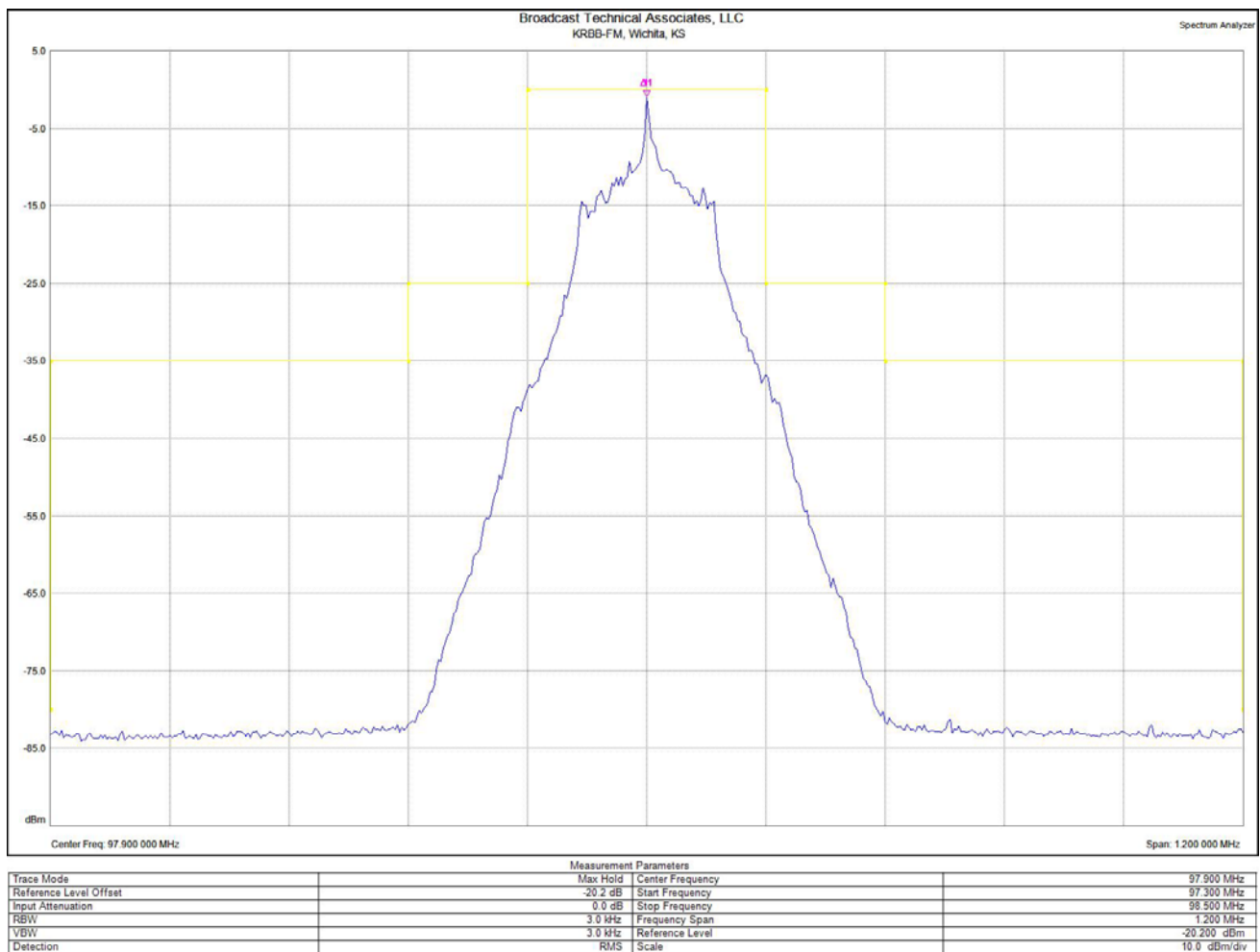




Exhibit 1-D

KZSN-FM Occupied Bandwidth

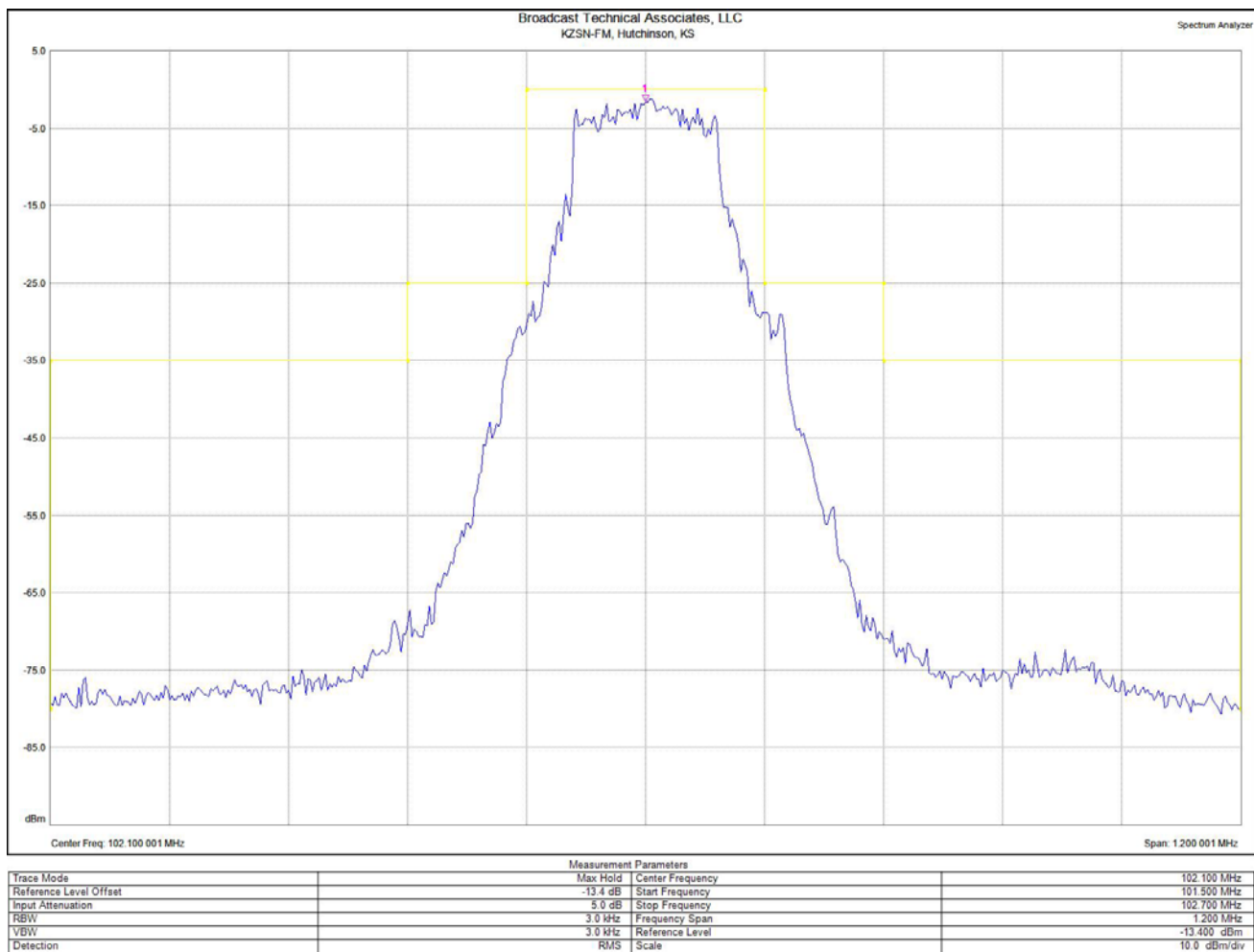




Exhibit 1-E

Mixing and Intermod Products

Description	Frequency	Attenuation
102.1 + 97.9	200.0	>80 dB
102.1 + (2 X 97.9)	297.9	>80 dB
97.9 + (2 X 102.1)	302.1	>80 dB
102.1 + (3 X 97.9)	395.8	>80 dB
97.9 + (3 X 102.1)	404.2	>80 dB
2 X 102.1	204.2	>80 dB
(2 X 102.1) – 97.9	106.3	>80 dB
2 X 97.9	195.8	>80 dB
(2 X 97.9) – 102.1	93.7	>80 dB
(2 X 102.1) + (2 X 97.9)	400.0	>80 dB
(2 X 102.1) – (2 X 97.9)	8.4	>80 dB
(2 X 102.1) + (3 X 97.9)	497.9	>80 dB
(2 X 97.9) + (3 X 102.1)	502.1	>80 dB
3 X 102.1	306.3	>80 dB
(3 X 102.1) – 97.9	208.4	>80 dB
3 X 97.9	293.7	>80 dB
(3 X 97.9) – 102.1	191.6	>80 dB
(3 X 102.1) – (2 X 97.9)	110.5	>80 dB
(3 X 97.9) – (2 X 102.1)	89.5	>80 dB
(3 X 102.1) – (3 X 97.9)	12.6	>80 dB
4 X 102.1	408.4	>80 dB
4 X 97.9	391.6	>80 dB
5 X 102.1	510.5	>80 dB
5 X 97.9	489.5	>80 dB