Report of Intermodulation Product Findings To Demonstrate Compliance with Section 73.317(b) through 73.317(d) of the FCC Rules and Regulations

for

Citicasters Licenses Inc.
KYYY (FM) – 92.9 MHz
Bismarck, ND (Facility ID No: 41424)

CC Licenses, LLC
KSSS (FM) – 101.5 MHz
Bismarck, ND (Facility ID No: 2210)

May 24, 2010

Engineering Exhibit

KYYY (FM) – 92.9 MHz

Construction Permit: BPH-20080612AAF

100kW ERP – 22.7kW TPO

Bismarck, ND (Facility ID No: 41424)

KSSS (FM) – 101.5 MHz

Authorization: BLH-19940810KE

100kW ERP – 23.8kW TPO

Bismarck, ND (Facility ID No: 2210)

Introduction: Measurements were conducted to demonstrate that KYYY (FM) and KSSS (FM) when operated as authorized by license (KSSS) and construction permit (KYYY) listed above comply with section 73.317(b) through 73.317(d) of the FCC Rules and Regulations.

The Multiplexed System: The multiplexed system is fundamentally comprised of a common antenna, feed line and multiplexer unit. An ERI SHPX-10C-SP 10-bay circularly polarized, omni-directional broadband antenna and corresponding 2-port branch combiner system was designed specifically for this application. This system was fitted with an ERI -45dB directional sampling coupler fitted into the output line section of the combining system and was used to facilitate spurious emissions measurements.

Spurious Emissions Measurements: Prior to recording measurements, both stations were confirmed to be operating at the full permitted power level. All measurements were made utilizing the above-mentioned directional coupler using an Agilent N9340B spectrum analyzer connected to the directional coupler sample port with a shielded coaxial cable. External attenuation is typically employed to ensure an adequate signal level for measurements without overloading the measurement equipment, in this case 20dB of external attenuation was utilized for the carrier reference measurements. The relative output signal of each stations forward carrier was recorded. The resulting signal levels of these measurements will be used as the reference level for each carrier and to confirm that no significant levels of spurious energy, referenced to each carrier, are present from any transmitter operating in the multiplexed system. For measurement of spurious products appearing on frequencies removed from the carrier frequencies by more than 600 kHz, double-cavity notch filters, model 6367-2 manufactured by the Microwave Filter Company, one tuned for each station's carrier, were inserted in series into the line between the coupler and the analyzer with no additional external attenuation. The filters provide a reduction of the fundamental carrier level thereby increasing the dynamic range on the analyzer. The fundamental signal levels reduced by these filters while passing all other channels to be measured with no appreciable attenuation are shown in Table 1. All possible harmonic and the most probable intermodulation products through the 3rd order that could be produced by the combined operation of KYYY (FM) and KSSS (FM) were calculated and observed. Products that were found to be measurable are listed in Table 2. In addition, a thorough sweep was made of other frequencies in the 80 to 1200 MHz range with the analyzer and no harmonic emissions or spurious products at levels less than -80dBc below the carrier fundamental frequencies were observed. A block diagram of the measurement methodology can be found on Page 10 of this report.

Conclusion: The results of these measurements confirm that the combined operations of KYYY (FM) and KSSN (FM) are in full compliance with section 73.317(b) through 73.317(d) of the FCC Rules and Regulations.

Table 1

Notch Filter Carrier Reduction:

Carrier (MHz)	Measured Value (dB)
KYYY (FM) 92.9	-44.4
KSSS (FM) 101.5	-49.3

Table 2

Peak Carrier Reference Levels:

Carrier (MHz)	Measured Value (dBm)	Adjusted Level (dBm)
KYYY (FM) 92.9	-7.5	12.5
KSSS (FM) 101.5	-7.0	13.6

Mult	x	Freq. MHz	Sum/Diff	Mult	x	Freq. MHz	=	Product MHz	Amplitude dBc	Amplitude Limit	Measured Amplitude
1	x	92.9	+	1	x	101.5	=	**194.4**		-80	>-80
1	x	101.5	+	1	x	92.9	=	**194.4**		-80	>-80
1	x	92.9	+	2	x	101.5	=	**295.9**		-80	>-80
1	x	101.5	+	2	x	92.9	=	**287.3**		-80	>-80
1	x	92.9	+	3	x	101.5	=	**397.4**		-80	>-80
1	x	101.5	+	3	x	92.9	=	**380.2**		-80	>-80
2	x	92.9	=				=	**185.8**		-80	>-80
2	x	92.9	+	1	x	101.5	=	**287.3**		-80	>-80
2	x	101.5	=				=	**203**		-80	>-80
2	x	101.5	+	1	x	92.9	=	**295.9**		-80	>-80
2	x	101.5	-	1	x	92.9	=	**110.1**		-80	>-80
2	x	92.9	+	2	x	101.5	=	**388.8**		-80	>-80
2	x	101.5	+	2	x	92.9	=	**388.8**		-80	>-80
2	x	92.9	+	3	x	101.5	=	**490.3**		-80	>-80
2	x	101.5	+	3	x	92.9	=	**481.7**		-80	>-80
3	x	92.9	=				=	**278.7**		-80	>-80
3	x	92.9	+	1	x	101.5	=	**380.2**		-80	>-80
3	x	92.9	-	1	x	101.5	=	**177.2**		-80	>-80
3	x	101.5	=				=	**304.5**		-80	>-80
3	x	101.5	+	1	x	92.9	=	**397.4**		-80	>-80
3	x	101.5	-	1	x	92.9	=	**211.6**		-80	>-80
3	x	92.9	+	2	x	101.5	=	**481.7**		-80	>-80
3	x	101.5	+	2	x	92.9	=	**490.3**		-80	>-80
3	x	101.5	-	2	x	92.9	=	**118.7**		-80	>-80
3	x	92.9	+	3	x	101.5	=	**583.2**		-80	>-80
3	x	101.5	+	3	x	92.9	=	583.2		-80	>-80

Note: Measurements made out beyond 3rd order do not exceed -80dBc; in the interest of brevity have been excluded from this table.

Equipment Block Diagram