Occupied Bandwidth and Spurious Emissions Measurements

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

Capstar TX Limited Partnership
WFMF(FM) – 102.5 MHz
Baton Rouge, LA (Facility ID No: 4053)
WYNK-FM – 101.5 MHz
Baton Rouge, LA (Facility ID No: 47402)
Guaranty Broadcasting Company of Baton Rouge, LLC
WYPY(FM) – 100.7 MHz
Baton Rouge, LA (Facility ID No: 70022)

January 20, 2004

Measurements were conducted to demonstrate that WFMF(FM), Baton Rouge, LA, WYNK-FM, Baton Rouge, LA and WYPY(FM), Baton Rouge, LA operating into a combined antenna system comply with section 73.317(b) through 73.317(d) of the FCC Rules and Regulations. The measurements were conducted on January 20, 2004 by Randall L. Mullinax, with all three stations simultaneously utilizing the shared antenna as specified in "Special operating conditions or restrictions 1." of WFMF(FM) Construction Permit BPH-20020108ABW. The spectrum analyzer used for the measurements was an Agilent Technologies model E4402B, S/N MY41441731. A sample of the WFMF(FM), WYNK-FM and WYPY(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. Two 6 dB pads (Bird model 5-A-MFN-06) were inserted ahead of the analyzer to avoid overload and to provide isolation.

The unmodulated carrier level of all three stations was +18 dBm and was used as the reference for all harmonic, spurious and intermoduation measurements. 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. All three transmitters were observed to be in full compliance with section 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. All three transmitters were also observed to be in full compliance with section 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 section 73.317(d) of the FCC Rules. To facilitate these measurements, notch filters were placed between the two 6 dB pads so that the spectrum analyzer gain could be increased by 20 dB. The filters were necessary to avoid the possible generation of false spurious or intermodulation products in the analyzer. The attenuation of the notch filters was 21.9 dB at 102.5 MHz, 39.4 dB at 101.5 MHz and 39.5 dB at 100.7 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 WFMF(FM), WYNK-FM and WYPY(FM) were calculated and the results of the measurements at these frequencies are listed in Table 1.

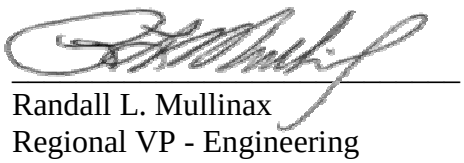
TABLE 1

DESCRIPTION	FREQ. MHz	ATTENUATION dB	DESCRIPTION	FREQ. MHz	ATTENUATION dB
100.7 + 101.5	202.2	>100	(3 X 100.7) – (2 X 101.5)	99.1	>100
100.7 + 102.5	203.2	>100	(3 X 100.7) – (2 X 102.5)	97.1	>100
101.5 + 102.5	204	>100	(3 X 101.5) – (2 X 100.7)	103.1	>100
100.7 + (2 X 101.5)	303.7	>100	(3 X 101.5) – (2 X 102.5)	99.5	>100
100.7 + (2 X 102.5)	305.7	>100	(3 X 102.5) – (2 X 100.7)	106.1	>100
101.5 + (2 X 100.7)	302.9	>100	(3 X 102.5) – (2 X 101.5)	104.5	>100
101.5 + (2 X 102.5)	306.5	>100	(3 X 102.5) – (3 X 100.7)	5.4	>100
102.5 + (2 X 100.7)	303.9	>100	100.7 + 101.5 – 102.5	99.7	>100
102.5 + (2 X 101.5)	305.5	>100	100.7 + 102.5 – 101.5	101.7	>100
100.7 + (3 X 101.5)	405.2	>100	101.5 + 102.5 – 100.7	103.3	>100
100.7 + (3 X 102.5)	408.2	>100	100.7 + (2 X 101.5) – 102.5	201.2	>100
101.5 + (3 X 100.7)	403.6	>100	100.7 + (2 X 102.5) – 101.5	204.2	>100
101.5 + (3 X 102.5)	409	>100	101.5 + (2 X 100.7) – 102.5	200.4	>100
102.5 + (3 X 100.7)	404.6	>100	101.5 + (2 X 102.5) – 100.7	205.8	>100
102.5 + (3 X 101.5)	407	>100	102.5 + (2 X 100.7) – 101.5	202.4	>100
2 X 100.7	201.4	>100	102.5 + (2 X 101.5) – 100.7	204.8	>100
(2 X 100.7) – 101.5	99.9	>100	100.7 + (2 X 101.5) – (2 X 102.5)	98.7	>100
(2 X 100.7) – 102.5	98.9	>100	100.7 + (2 X 102.5) – (2 X 101.5)	102.7	>100
2 X 101.5	203	>100	101.5 + (2 X 100.7) – (2 X 102.5)	97.9	>100
(2 X 101.5) – 100.7	102.3	>100	101.5 + (2 X 102.5) – (2 X 100.7)	105.1	>100
(2 X 101.5) – 102.5	100.5	>100	102.5 + (2 X 100.7) – (2 X 101.5)	100.9	>100
2 X 102.5	205	>100	102.5 + (2 X 101.5) – (2 X 100.7)	104.1	>100
(2 X 102.5) – 100.7	104.3	>100	100.7 + (3 X 101.5) – 102.5	302.7	>100
(2 X 102.5) – 101.5	103.5	>100	100.7 + (3 X 102.5) – 101.5	306.7	>100
(2 X 100.7) + (2 X 101.5)	404.4	>100	101.5 + (3 X 100.7) – 102.5	301.1	>100
(2 X 100.7) + (2 X 102.5)	406.4	>100	101.5 + (3 X 102.5) – 100.7	308.3	>100
(2 X 101.5) + (2 X 102.5)	408	>100	102.5 + (3 X 100.7) – 101.5	303.1	>100
3 X 100.7	302.1	>100	102.5 + (3 X 101.5) – 100.7	306.3	>100
(3 X 100.7) – 101.5	200.6	>100	100.7 + (3 X 101.5) – (2 X 102.5)	200.2	>100
(3 X 100.7) – 102.5	199.6	>100	100.7 + (3 X 102.5) – (2 X 101.5)	205.2	>100
3 X 101.5	304.5	>100	101.5 + (3 X 100.7) – (2 X 102.5)	198.6	>100
(3 X 101.5) – 100.7	203.8	>100	101.5 + (3 X 102.5) – (2 X 100.7)	207.6	>100
(3 X 101.5) – 102.5	202	>100	102.5 + (3 X 100.7) – (2 X 101.5)	201.6	>100
3 X 102.5	307.5	>100	102.5 + (3 X 101.5) – (2 X 100.7)	205.6	>100
(3 X 102.5) – 100.7	206.8	>100	100.7 + (3 X 101.5) – (3 X 102.5)	97.7	>100
(3 X 102.5) – 101.5	206	>100	100.7 + (3 X 102.5) – (3 X 101.5)	103.7	>100

DESCRIPTION	FREQ. MHz	ATTENUATION dB	DESCRIPTION	FREQ. MHz	ATTENUATION dB
101.5 + (3 X 100.7) – (3 X 102.5)	96.1	>100	(2 X 100.7) + (3 X 102.5) – (2 X 101.5)	305.9	>100
101.5 + (3 X 102.5) – (3 X 100.7)	106.9	>100	(2 X 101.5) + (3 X 100.7) – (2 X 102.5)	300.1	>100
102.5 + (3 X 100.7) – (3 X 101.5)	100.1	>100	(2 X 101.5) + (3 X 102.5) – (2 X 100.7)	309.1	>100
102.5 + (3 X 101.5) – (3 X 100.7)	104.8	>100	(2 X 102.5) + (3 X 100.7) – (2 X 101.5)	304.1	>100
(2 X 100.7) + (2 X 101.5) – 102.5	301.9	>100	(2 X 102.5) + (3 X 101.5) – (2 X 100.7)	308.1	>100
(2 X 100.7) + (2 X 102.5) – 101.5	304.9	>100	(2 X 100.7) + (3 X 101.5) – (3 X 102.5)	198.4	>100
(2 X 101.5) + (2 X 102.5) – 100.7	307.3	97	(2 X 100.7) + (3 X 102.5) – (3 X 101.5)	204.4	>100
(2 X 100.7) + (2 X 101.5) – (2 X 102.5)	199.4	>100	(2 X 101.5) + (3 X 100.7) – (3 X 102.5)	197.6	>100
(2 X 100.7) + (2 X 102.5) – (2 X 101.5)	203.4	>100	(2 X 101.5) + (3 X 102.5) – (3 X 100.7)	208.4	>100
(2 X 101.5) + (2 X 102.5) – (2 X 100.7)	206.6	>100	(2 X 102.5) + (3 X 100.7) – (3 X 101.5)	202.6	>100
(2 X 100.7) + (2 X 101.5) – (3 X 102.5)	96.9	>100	(2 X 102.5) + (3 X 101.5) – (3 X 100.7)	207.4	>100
(2 X 100.7) + (2 X 102.5) – (3 X 101.5)	101.9	>100	(3 X 100.7) + (3 X 101.5) – (2 X 102.5)	401.6	>100
(2 X 101.5) + (2 X 102.5) – (3 X 100.7)	105.9	>100	(3 X 100.7) + (3 X 102.5) – (2 X 101.5)	406.6	>100
(2 X 100.7) + (3 X 101.5) – 102.5	403.4	>100	(3 X 101.5) + (3 X 102.5) – (2 X 100.7)	410.6	>100
(2 X 100.7) + (3 X 102.5) – 101.5	407.4	>100	(3 X 100.7) + (3 X 101.5) – (3 X 102.5)	299.1	>100
(2 X 101.5) + (3 X 100.7) – 102.5	402.6	>100	(3 X 100.7) + (3 X 102.5) – (3 X 101.5)	305.1	>100
(2 X 101.5) + (3 X 102.5) – 100.7	409.8	>100	(3 X 101.5) + (3 X 102.5) – (3 X 100.7)	309.9	>100
(2 X 102.5) + (3 X 100.7) – 101.5	405.6	>100	4 X 100.7	402.8	>100
(2 X 102.5) + (3 X 101.5) – 100.7	409.8	>100	4 X 101.5	406	>100
(2 X 100.7) + (3 X 101.5) – (2 X 102.5)	300.9	>100	4 X 102.5	410	>100

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 WFMF(FM), WYNK-FM and WYPY(FM) carrier frequencies by more than 600 kHz were the carriers of nearby FM and Television stations. In each case where these signals were observed to be at a level greater than –62 dBm (80 dB below the unmodulated carrier level which was +18 dBm), the WFMF(FM), WYNK-FM and WYPY(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 WFMM(FM), WYNK-FM and WYPY(FM).

The results of these measurements confirm that the combined operations of WFMF(FM), WYNK-FM and WYPY(FM) into a shared antenna are in full compliance with section 73.317(b) through 73.317(d) of the FCC Rules and Regulations.



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