

MINOR CHANGE APPLICATION
CUMULUS LICENSING LLC
W280BA FM TRANSLATOR STATION
CH 280D - 103.9 MHZ - 0.099 kW
MADISON, ALABAMA
June 2017

EXHIBIT B

Interference Study for W280BA
Using Licensed/Proposed Site as Reference

The proposed W280BA, operating with an effective radiated power of 0.099 kilowatt, will not cause interference to any existing, applied for or proposed facility. As noted on Exhibit B1, the proposed W280BA is within the predicted 60 dBu contour of second adjacent stations WZYP, Channel 282C, Athens, Alabama and WHVK, Channel 278C3, New Hope, Alabama. Due to the relationship between the proposed W280BA and WZYP and WHVK, a 40 db ratio of the protected and interfering contours applies.

Proposed W280BA vs WZYP

The WZYP contour at the W280BA antenna site is in excess of 100 dBu (50/50). The corresponding interfering contour for W280BA is 140 dBu (50/10) (Exhibit B2). As shown in the tabulation of desired to undesired contours (Exhibit B3), the W280BA interfering contour (140 dBu, FCC 50/10) will not reach ground level. Since the W280BA antenna will be mounted 180.0 meters (590.6 feet) above ground and there are no structures of comparable height in the vicinity of the proposed W280BA antenna, this contour never reaches any potentially occupied space. As such, WZYP will not receive interference from the proposed translator.

Proposed W280BA vs WHVK

The WHVK contour at the W280BA antenna site is in excess of 63.8 dBu (50/50). The corresponding interfering contour for W280BA is 103.8 dBu (50/10) (Exhibit B2). As shown in the tabulation of desired to undesired contours (Exhibit B4), the W280BA interfering contour (103.8 dBu, FCC 50/10) will not reach ground level. Since the W280BA antenna will be mounted 180.0 meters (590.6 feet) above ground and there are no structures of comparable height in the vicinity of the proposed W280BA antenna, this contour never reaches any potentially occupied space. As such, WHVK will not receive interference from the proposed translator.

Based on the foregoing, it is believed that the proposed W280BA is in compliance with §74.1204(d) of the Commission's rules. If a waiver of the rule is needed to address WZYP or WHVK, one is respectfully requested.

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EXHIBIT B1

Interference Study for W280BA
Using Licensed/Proposed Site as Reference

REFERENCE	CH# 280D - 103.9 MHZ, Pwr= 0.099 kW, HAAT= 325.8 M, COR= 561 M	DISPLAY DATES
34 49 06.0 N.	Average Protected F(50-50)= 18.7 km	DATA 06-15-17
86 44 16.0 W.	Omni-directional	SEARCH 06-16-17

CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr (kW) HAAT (M)	INT (km) COR (M)	PRO (km) LICENSEE	*IN* (Overlap in km)	*OUT*
282C Athens	WZYP	LIC	CX AL	0.0 0.0	0.00 BMLH20081022ACH	34 49 06.0 86 44 16.0	100.000 340	10.4 576	73.8 Cumulus Licensing Llc	-28.5*	-74.5*
280D Madison	W280BA!	LIC	DC AL	0.0 0.0	0.00 BLFT20081028ACS	34 49 06.0 86 44 16.0	0.099 326	22.5 561	6.3 Cumulus Licensing Llc	-40.6	-63.8
278C3 New Hope	WHVK	LIC	ZCX AL	134.3 314.5	28.91 BLED20161114ACO	34 38 11.0 86 30 42.0	0.900 463	1.8 690	36.9 Educational Media Foundati	8.0	-8.7*
280D Florence	W280DA	LIC	C AL	266.1 85.6	86.38 BLFT20120523ACA	34 45 45.0 87 40 53.0	0.055 60	22.6 221	6.7 Bible Broadcasting Network	44.8	19.0
279C1 Trussville	WQEN	LIC	CX AL	184.9 4.8	153.36 BLH20050715ABB	33 26 38.0 86 52 47.0	100.000 285	105.3 466	72.6 Capstar Tx, Llc	29.0	52.7
280L1 Fort Payne	WFTP-LP	LIC		113.1 293.6	101.35 BLL20150209AAI	34 27 25.0 85 43 14.0	0.096 31			63.8	34.7
280D Gadsden	W280ER	LIC	DC AL	144.3 324.8	116.16 BLFT20150826ABE	33 58 02.0 86 00 12.0	0.250	58.3 394	18.5 The Jeff Beck Broadcasting	38.8	36.3
279C3 Walden	AL2132	RSV-A		68.9 249.6	133.02 RM10053	35 14 32.0 85 22 17.0	25.000 100	76.5 545	51.7	38.2	54.1
280C2 Okolona	WWKZ	LIC	CX MS	249.8 68.6	191.99 BLH20050715ABX	34 12 18.0 88 41 49.0	50.000 120	131.2 211	45.4 Citicasters Licenses, Inc.	41.6	85.2

Terrain database is FCC NGDC 30 Sec, R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM

In & Out distances between contours are shown at closest points. Reference Zone= East Zone, Co to 3rd adjacent.

All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.

Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)

**affixed to 'IN' or 'OUT' values = site inside restricted contour.

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EXHIBIT B3

Proposed W280BA vs WZYP Interference Contour Tabulation

W280BA Madison, AL
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.099
 Translator or LPFM Antenna Height AG = 561 Meters
 W280BA Antenna Model = ERI 100A-2-HW -- -2-HW

Protected Station's Contour = 100.0 dBu
 Translator's or LPFM's full Interference contour 140.0

Review Azimuth = 0 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.099 kW
 Distance between stations = 25.7 km
 Protected Station= WHVK, .29 kW, 674 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kW)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0990	551.3306	551.3306	561.000
05.00	0.987	1.0	0.0964	544.1633	542.0926	513.573
10.00	0.949	1.0	0.0892	523.2127	515.2640	470.145
15.00	0.889	1.0	0.0782	490.1329	473.4320	434.144
20.00	0.81	1.0	0.0650	446.5778	419.6459	408.261
25.00	0.718	1.0	0.0510	395.8554	358.7668	393.704
30.00	0.617	1.0	0.0377	340.1710	294.5967	390.915
35.00	0.514	1.0	0.0262	283.3839	232.1345	398.458
40.00	0.414	1.0	0.0170	228.2509	174.8503	414.283
45.00	0.32	1.0	0.0101	176.4258	124.7519	436.248
50.00	0.237	1.0	0.0056	130.6654	083.9901	460.905
55.00	0.166	1.0	0.0027	091.5209	052.4942	486.030
60.00	0.109	1.0	0.0012	060.0950	030.0475	508.956
65.00	0.066	1.0	0.0004	036.3878	015.3782	528.021
70.00	0.035	1.0	0.0001	019.2966	006.5998	542.867
75.00	0.016	1.0	0.0000	008.8213	002.2831	552.479
80.00	0.005	1.0	0.0000	002.7567	000.4787	558.285
85.00	0.001	1.0	0.0000	000.5513	000.0481	560.451
90.00	0.0	1.0	0.0000	000.0276	000.0000	560.972

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EXHIBIT B4

Proposed W280BA vs WHVK Interference Contour Tabulation

W280BA Madison, AL
 74.1204(d) Showing
 Translator or LPFM Maximum Licensed ERP = 0.099
 Translator or LPFM Antenna Height AG = 180 Meters
 W280BA Antenna Model = ERI 100A-2-HW -- -2-HW

Protected Station's Contour = 63.80736 dBu
 Translator's or LPFM's full Interference contour 103.80736

Review Azimuth = 0 Degrees True
 Relative Field on the horizon at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizon at Review Azimuth = 0.099 kW
 Distance between stations = 28.9 km
 Protected Station= WHVK.C, .8 kW, 690 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.0990	450.2457	450.2457	180.000
05.00	0.987	1.0	0.0964	444.3925	442.7015	141.269
10.00	0.949	1.0	0.0892	427.2832	420.7918	105.803
15.00	0.889	1.0	0.0782	400.2684	386.6296	076.403
20.00	0.81	1.0	0.0650	364.6990	342.7050	055.266
25.00	0.718	1.0	0.0510	323.2764	292.9879	043.377
30.00	0.617	1.0	0.0377	277.8016	240.5832	041.099
35.00	0.514	1.0	0.0262	231.4263	189.5733	047.259
40.00	0.414	1.0	0.0170	186.4017	142.7920	060.183
45.00	0.32	1.0	0.0101	144.0786	101.8790	078.121
50.00	0.237	1.0	0.0056	106.7082	068.5907	098.257
55.00	0.166	1.0	0.0027	074.7408	042.8696	118.776
60.00	0.109	1.0	0.0012	049.0768	024.5384	137.498
65.00	0.066	1.0	0.0004	029.7162	012.5586	153.068
70.00	0.035	1.0	0.0001	015.7586	005.3898	165.192
75.00	0.016	1.0	0.0000	007.2039	001.8645	173.042
80.00	0.005	1.0	0.0000	002.2512	000.3909	177.783
85.00	0.001	1.0	0.0000	000.4502	000.0392	179.551
90.00	0.0	1.0	0.0000	000.0225	000.0000	179.977

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EXHIBIT B5

N. Lat. = 34 49 06.0 - Predicted Protected and Interfering Contours
W. Lng. = 86 44 16.0 - W280BA FM Translator, Madison, Alabama

HAAT and Distance to Contour - FCC 30 second terrain database											
Azi.	AV EL	HAAT	ERP kW	dBk	Field	60-F5	40-F1	54-F1	100-F1	103.8-F1	140-F1
000	256.7	304.3	0.0990	-10.04	1.000	18.10	57.55	26.80	0.70	0.45	0.01
010	261.1	299.9	0.0990	-10.04	1.000	17.96	57.17	26.62	0.70	0.45	0.01
020	253.8	307.2	0.0990	-10.04	1.000	18.19	57.80	26.92	0.70	0.45	0.01
030	247.0	314.0	0.0990	-10.04	1.000	18.39	58.39	27.21	0.70	0.45	0.01
040	243.1	317.9	0.0990	-10.04	1.000	18.51	58.74	27.37	0.70	0.45	0.01
050	246.6	314.4	0.0990	-10.04	1.000	18.41	58.43	27.22	0.70	0.45	0.01
060	244.3	316.7	0.0990	-10.04	1.000	18.47	58.63	27.32	0.70	0.45	0.01
070	252.1	308.9	0.0990	-10.04	1.000	18.24	57.95	26.99	0.70	0.45	0.01
080	245.6	315.4	0.0990	-10.04	1.000	18.44	58.52	27.27	0.70	0.45	0.01
090	264.9	296.1	0.0990	-10.04	1.000	17.84	56.85	26.45	0.70	0.45	0.01
100	249.9	311.1	0.0990	-10.04	1.000	18.31	58.13	27.08	0.70	0.45	0.01
110	238.9	322.1	0.0990	-10.04	1.000	18.63	59.12	27.55	0.70	0.45	0.01
120	227.6	333.4	0.0990	-10.04	1.000	18.94	60.15	28.04	0.70	0.45	0.01
130	223.8	337.2	0.0990	-10.04	1.000	19.05	60.50	28.21	0.70	0.45	0.01
140	215.6	345.4	0.0990	-10.04	1.000	19.26	61.25	28.57	0.70	0.45	0.01
150	217.9	343.1	0.0990	-10.04	1.000	19.20	61.05	28.47	0.70	0.45	0.01
160	212.1	348.9	0.0990	-10.04	1.000	19.35	61.57	28.72	0.70	0.45	0.01
170	223.9	337.1	0.0990	-10.04	1.000	19.04	60.49	28.20	0.70	0.45	0.01
180	229.7	331.3	0.0990	-10.04	1.000	18.89	59.96	27.95	0.70	0.45	0.01
190	220.8	340.2	0.0990	-10.04	1.000	19.12	60.77	28.34	0.70	0.45	0.01
200	220.5	340.5	0.0990	-10.04	1.000	19.13	60.81	28.35	0.70	0.45	0.01
210	214.6	346.4	0.0990	-10.04	1.000	19.29	61.34	28.61	0.70	0.45	0.01
220	211.0	350.0	0.0990	-10.04	1.000	19.38	61.67	28.77	0.70	0.45	0.01
230	208.5	352.5	0.0990	-10.04	1.000	19.44	61.90	28.88	0.70	0.45	0.01
240	214.3	346.7	0.0990	-10.04	1.000	19.29	61.37	28.62	0.70	0.45	0.01
250	219.1	341.9	0.0990	-10.04	1.000	19.17	60.93	28.41	0.70	0.45	0.01
260	218.3	342.7	0.0990	-10.04	1.000	19.19	61.00	28.45	0.70	0.45	0.01
270	226.4	334.6	0.0990	-10.04	1.000	18.98	60.26	28.09	0.70	0.45	0.01
280	229.2	331.8	0.0990	-10.04	1.000	18.90	60.00	27.97	0.70	0.45	0.01
290	232.7	328.3	0.0990	-10.04	1.000	18.80	59.68	27.82	0.70	0.45	0.01
300	236.9	324.1	0.0990	-10.04	1.000	18.69	59.30	27.64	0.70	0.45	0.01
310	243.9	317.1	0.0990	-10.04	1.000	18.48	58.66	27.34	0.70	0.45	0.01
320	246.7	314.3	0.0990	-10.04	1.000	18.40	58.42	27.22	0.70	0.45	0.01
330	241.9	319.1	0.0990	-10.04	1.000	18.54	58.85	27.42	0.70	0.45	0.01
340	246.2	314.8	0.0990	-10.04	1.000	18.42	58.47	27.24	0.70	0.45	0.01
350	254.9	306.1	0.0990	-10.04	1.000	18.16	57.71	26.88	0.70	0.45	0.01

AMSL = 561.0 M