



ENGINEERING STUDY

LMS MINOR LICENSE MODIFICATION

W266BW, 0000186272

TECHNICAL STATEMENT

This technical statement and attached exhibits were prepared on behalf of Davis Broadcasting of Atlanta, L.L.C. ("Davis"), licensee of W266BW, Facility ID 147273. This License Modification is being filed to modify the licensed antenna pattern to reflect the antenna pattern being used at this facility. The antenna is a "Kathrein/ Scala 3X-CL-FM/SRM/SV Array." This antenna consists of three CL-FM log periodic antennas vertically stacked 0.87 wavelength center to center. The elements were originally installed skewed with equal power at 60°, 140°, and 220° T. To provide better protection toward WLJA, the antenna will be rotated as a unit by ten degrees clockwise so the CL-FM elements will be oriented at 70°, 150°, and 230° T. The elements are slant-polarized to produce 50% H and 50% V power distribution.

Facilities Requested

Location (NAD27) (no change)	33° 48' 26.4" N Latitude, 84° 20' 21.5" W Longitude
Channel	266D (101.1MHz)
Tower Overall AGL Height-	360.3m
Tower ASR	1223132
Proposed Antenna	Scala 3X-CL-FM/SRM/SV- 45DEG SLANT
Antenna AGL Height-	290.7m
Site AMSL Height-	264.3m
ERP	250 Watts- (directional, Exhibit A)

COMPLIANCE WITH 74.1204(a) [contour overlap]

The translator on channel 266D remains fully compliant with 74.1204(a). The current license uses a generic “custom” antenna pattern which does not reflect the actual antenna. The proposed free-space antenna pattern is shown in Exhibit A. A comparison of licensed and proposed antenna patterns as well as an allocation map are shown in Exhibit B. It is noted that the proposed antenna pattern is within the composite pattern of the licensed pattern.

Because of interference complaints filed by WLJA and due to a request from the FCC to provide a proof of performance for the antenna being used, while the antenna pattern attached is the free-space antenna pattern normally provided in translator applications, before licensing at full power, a full FCC Antenna Proof of Performance will be conducted on the antenna which includes the antenna and effects of the twelve-foot face tower that the antenna is mounted on and the results delivered to the Commission. There will also be a report filed with the Proof certifying that the antenna is mounted to the tower exactly as instructed by the antenna manufacturer and consistent with the application, mounted on the 169-degree leg of the tower, and, as with full-power stations, a surveyor will verify that the antenna elements are oriented in the correct azimuths.

COMPLIANCE WITH 74.1204(d)

The translator on 266D remains compliant with 74.1204(d). As shown in Exhibit C, there will be no location at ground level where the signal from W266BW will be more than 40dB above WKHX-FM (268C0) or WNNX (263C2).

COMPLIANCE WITH 74.1201(g)

Exhibit D demonstrates that the proposed translator 60dBu contour remains entirely contained within 25 miles of the transmitter site for primary station WJZA (AM), 1100 kHz, Hapeville, GA, Facility ID 71603.

The facility is not within 320km of the common border between the US and Canada or Mexico.

COMPLIANCE WITH 74.1233 [Minor Change]

Because the proposed translator is at the same location as the existing licensed location, this is considered a minor modification from the original proposal.

ENVIRONMENTAL EXHIBIT

The proposed translator facility utilizes a directional antenna located on an existing tower. The attachment of the proposed translator antenna does alter the existing structure significantly for purposes of the Nationwide Programmatic Agreement and the NHPA Section 106.

The proposed 266D facility utilizes a 3-element (3x CL-FM) skewed mount log-periodic located at 291m AGL. Based on the FCC “FM Model for Windows”¹ program using a worst-case ring-stub antenna, the proposed 266D operation will produce .12 $\mu\text{W}/\text{cm}^2$ at a distance of 78m from the base of the tower at ground level or 0.06% of the MPE level. There are multiple non-excluded antennas on the tower. Because the projected MPE is well under 5%, this translator can be considered independently of other RF sources on the tower.

Based upon the information above, it is calculated that the facility will comply with FCC guidelines and is excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307.

¹ <https://www.fcc.gov/general/fm-model>

The proposed FM translator along with other users at the site maintains an occupational safety policy and agrees to reduce power or cease operation during periods of maintenance to avoid potentially harmful exposure of personnel to non-ionizing RF radiation.

Respectfully Submitted

A handwritten signature in cursive script that reads "Bert Goldman". The signature is written in black ink and has a fluid, connected style.

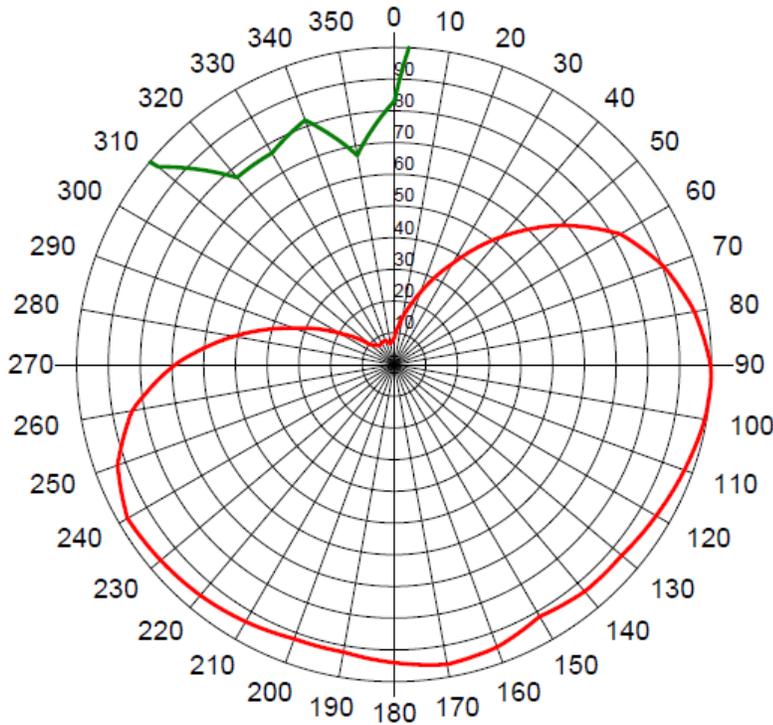
Bert Goldman

Technical Consultant

EXHIBIT A- ANTENNA PATTERN (Free-Space theoretical pattern)

Proof of Performance results may supersede this pattern.

W266BW Proposed Pattern (3/24)



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	0.147	-22.67	0.005	-16.65	180	0.920	-6.74	0.212	-0.72
10	0.240	-18.42	0.014	-12.40	190	0.920	-6.74	0.212	-0.72
20	0.367	-14.73	0.034	-8.71	200	0.936	-6.60	0.219	-0.57
30	0.526	-11.60	0.069	-5.58	210	0.950	-6.47	0.226	-0.45
40	0.683	-9.33	0.117	-3.31	220	0.960	-6.38	0.230	-0.35
50	0.823	-7.71	0.169	-1.69	230	0.970	-6.29	0.235	-0.26
60	0.904	-6.90	0.204	-0.88	240	0.927	-6.68	0.215	-0.66
70	0.961	-6.37	0.231	-0.35	250	0.838	-7.56	0.176	-1.54
80	0.997	-6.05	0.249	-0.03	260	0.690	-9.24	0.119	-3.22
90	0.994	-6.07	0.247	-0.05	270	0.512	-11.84	0.066	-5.81
100	0.973	-6.26	0.237	-0.24	280	0.336	-15.49	0.028	-9.47
110	0.953	-6.44	0.227	-0.42	290	0.196	-20.18	0.010	-14.15
120	0.936	-6.60	0.219	-0.57	300	0.097	-26.29	0.002	-20.26
130	0.934	-6.61	0.218	-0.59	310	0.077	-28.29	0.001	-22.27
140	0.917	-6.77	0.210	-0.75	320	0.077	-28.29	0.001	-22.27
150	0.948	-6.48	0.225	-0.46	330	0.082	-27.74	0.002	-21.72
160	0.960	-6.38	0.230	-0.35	340	0.067	-29.50	0.001	-23.48
170	0.940	-6.56	0.221	-0.54	350	0.083	-27.64	0.002	-21.62

Rotation Angle = 10

EXHIBIT B Pertinent Protection Contours, 74.1204(a) Compliance

Comparison of Contours, Licensed (dotted line) with proposed (solid line)

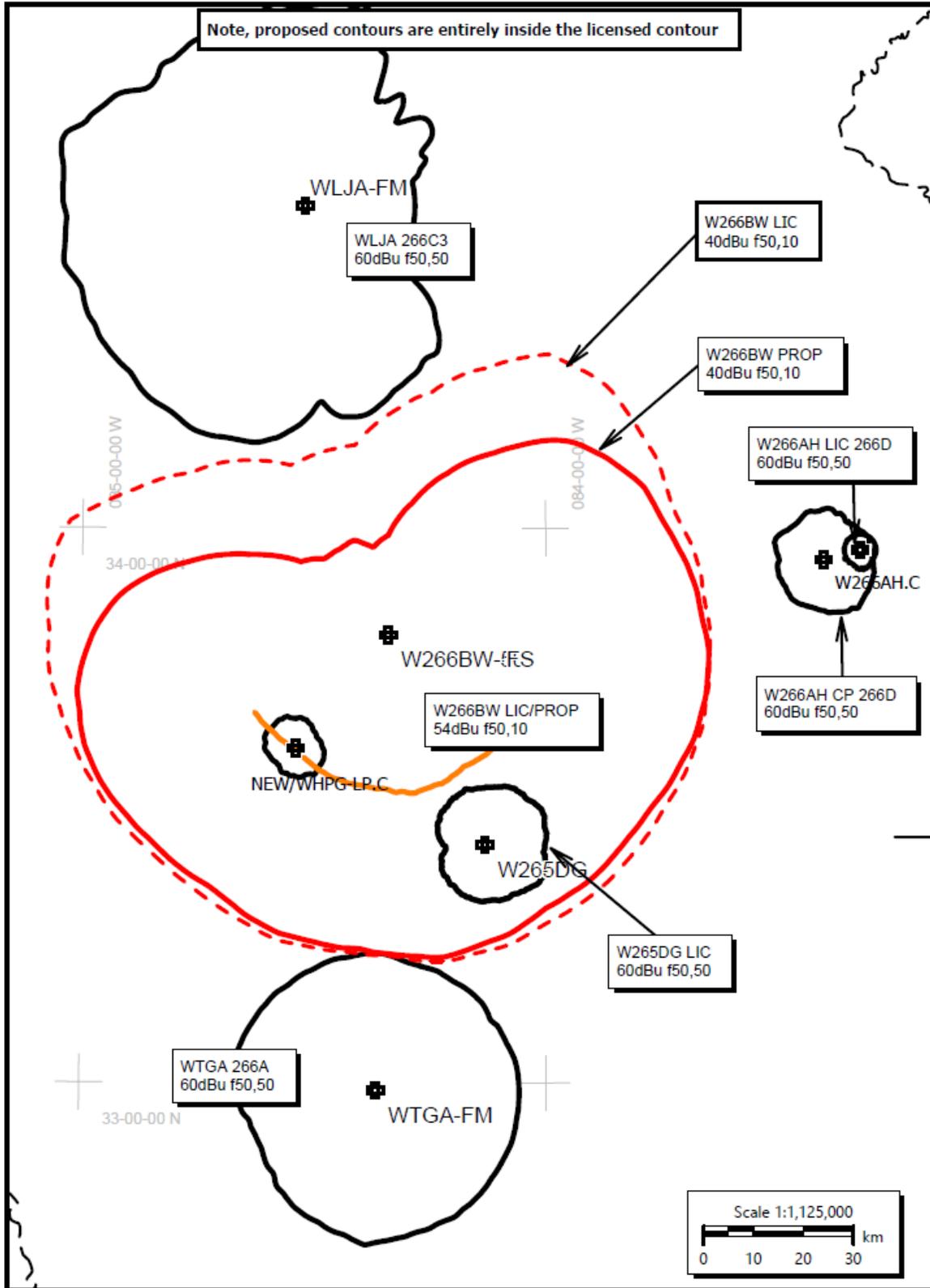


EXHIBIT C- 74.1204(d) Compliance

Compliance to WKHX-FM

Because WKHX, 268C0 (100kW ERP) is collocated with W255BW, there will be no locations where W266BW could develop a signal level 40dB or more above WKHX

Compliance to WNNX (FM) 263C2

266BW Winder, GA, Showing Protection to WNNX
 Geographic Coordinates: N. 33 4 8 26.0 W. 84 2 0 22.0
 74.1204(d) Study - Using NED 03 SEC Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.25
 Translator or LPFM Antenna Height AG = 291 Meters
 W266BW Antenna Model = CL-FM_0098-MHZ_VPOL_000DT

Protected Station's Contour = 96.67504 dBu
 Translator's or LPFM's full Interference contour 136.67504

Review Azimuth = 0 Degrees True- Analysis as non-directional antenna
 Horizontal Relative Field at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW
 Distance between stations = 7.0 km
 Protected Station= WNNX, 13.5 kW, 576 M Meters COR AMSL

Depression Angle From Degree(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	0.2500	016.2636	016.2636	291.000
05.00	0.98	1.0	0.2401	015.9384	015.8777	289.611
10.00	0.95	1.0	0.2256	015.4505	015.2157	288.317
15.00	0.895	1.0	0.2003	014.5560	014.0600	287.233
20.00	0.82	1.0	0.1681	013.3362	012.5319	286.439
25.00	0.735	1.0	0.1351	011.9538	010.8338	285.948
30.00	0.645	1.0	0.1040	010.4901	009.0847	285.755
35.00	0.563	1.0	0.0791	009.1483	007.4939	285.753
40.00	0.47	1.0	0.0552	007.6439	005.8556	286.087
45.00	0.36	1.0	0.0324	005.8549	004.1400	286.860
50.00	0.25	1.0	0.0156	004.0659	002.6135	287.885
55.00	0.155	1.0	0.0060	002.5209	001.4459	288.935
60.00	0.085	1.0	0.0018	001.3824	000.6912	289.803
65.00	0.045	1.0	0.0005	000.7319	000.3093	290.337
70.00	0.02	1.0	0.0001	000.3253	000.1112	290.694
75.00	0.01	1.0	0.0000	000.1626	000.0421	290.843
80.00	0.01	1.0	0.0000	000.1626	000.0282	290.840
85.00	0.01	1.0	0.0000	000.1626	000.0142	290.838
90.00	0.01	1.0	0.0000	000.1626	000.0000	290.837

EXHIBIT D- 74.1233 COMPLIANCE

PROP W266BW 74.1233 Compliance

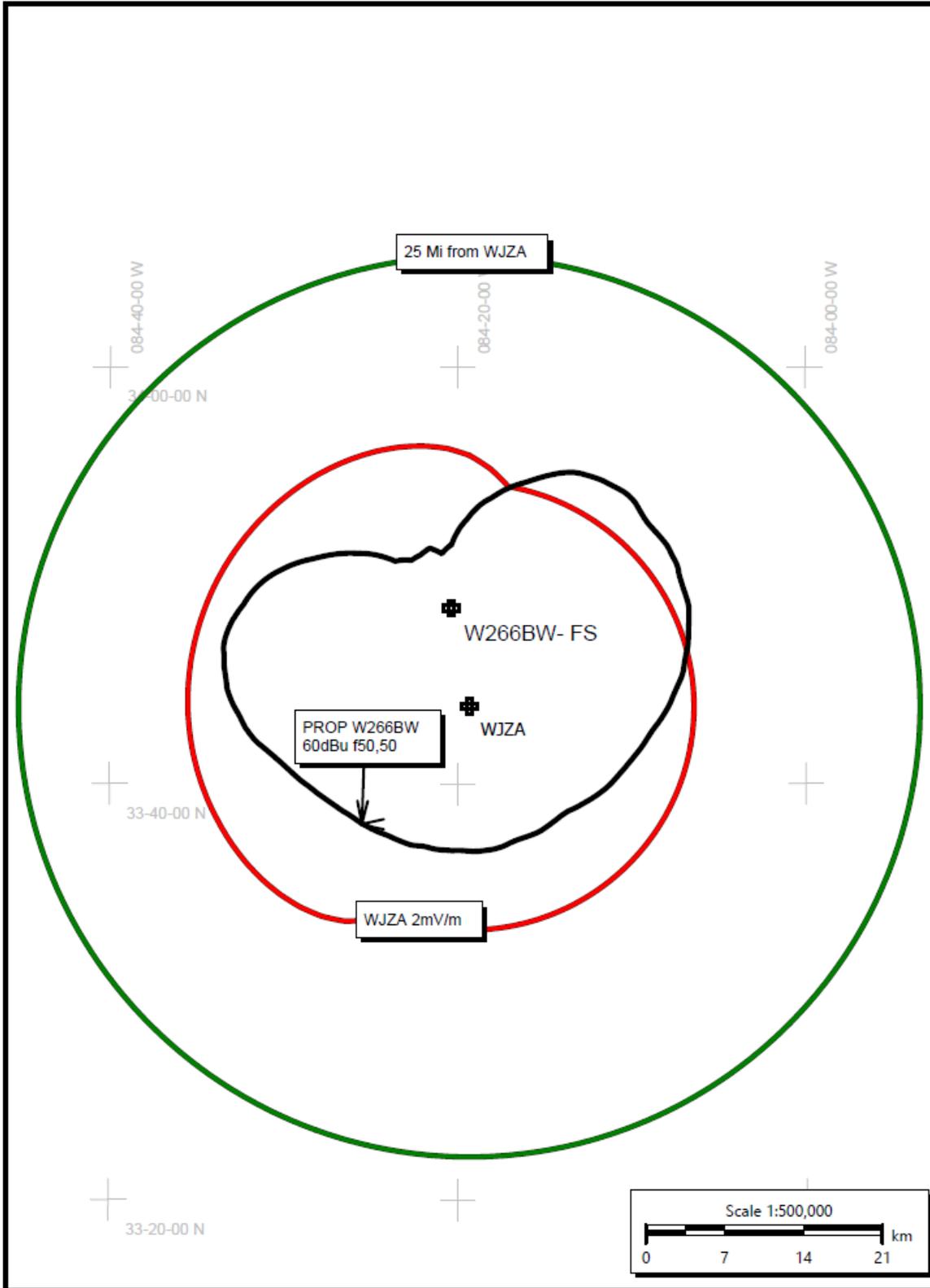


EXHIBIT E- ANTENNA DETAILS

Kathrein-BCA (Scala) 3X-CL-FM/SRM/SV- 45DEG SLANT
CL-FM elements at 70deg, 150deg, 230deg

EXAMPLE OF SINGLE ELEMENT MOUNTED
(ACTUAL ANTENNA USES 3 ELEMENTS, STACKED, 0.87 Wavelength Spaced)

