



ENGINEERING STUDY

MINOR LICENSE MODIFICATION

W295CG, Lake Bluff, IL (Arlington Heights, IL)

TECHNICAL STATEMENT

This technical statement and attached exhibits were prepared on behalf of MB Capital Management, licensee of W295CG, Facility ID 141545. The previous CP expired on 8/20/2022. The modification was refiled however was MX to an application filed by Polnet to modify W296DA. Polnet filed a petition against the MB filing and although MB modified the application to avoid impermissible interference TO the proposed W296DA translator, it did not resolve interference FROM the W296DA. In order to resolve this situation, MB dismissed the MX W295CG application which clears the MX condition and makes the Polnet petition moot. The instant application is now being filed by MB which will eliminate any potential interference to W236DA. Because this is being filed AFTER the W236DA application, MB may accept potential interference from W236DA per FCC rules. The proposed facility will continue to rebroadcast WPPN (FM), facility ID 25053.

Facilities Requested

Location (NAD83) (no change)	42° 08' 13.7" N Latitude, 87° 58' 57.2" W Longitude
Channel	296D (107.1MHz)
Tower Overall AGL Height-	134.1m
Tower ASR	1054552
Proposed Antenna	2X Scala CLFM ¼ wave phased offset
Antenna AGL Height-	116m
Site AMSL Height-	216.1m
ERP	220 Watts- (directional, Exhibit A)

COMPLIANCE WITH 74.1204(a) [contour overlap]

The translator on channel 296D will be fully compliant with 74.1204(a). A table showing the allocation is attached as Exhibit B and a map depicting the closest pertinent facilities is attached as Exhibit C.

COMPLIANCE WITH 74.1204(d)

The proposed translator on 296D will be compliant with 74.1204(d). As shown in Exhibit D, there will be no location at ground level where the signal from W295CG (on 296D) will be more than 40dB above WPPN (FM) (294B) or WGCI (FM) (298B).

COMPLIANCE WITH 74.1201(g)

Exhibit E demonstrates that the proposed translator remains entirely contained within the 60dBu contour of WPPN (FM), Facility ID 25053, Des Plaines, IL.

The facility is within 320km of the common border between the US and Canada, however, no Canadian allotments are affected.

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.

ENVIRONMENTAL EXHIBIT

The proposed translator facility will utilize a directional antenna located on an existing tower. The attachment of the proposed translator antenna will not alter the existing structure significantly for purposes of the Nationwide Programmatic Agreement and the NHPA Section 106.

The proposed 296D facility will utilize a two-level, vertically spaced Kathrein/ Scala CLFM dual log-periodic antenna. The lower antenna will be offset by $\frac{1}{4}$ wavelength to minimize any

potential interference to W96DA, located at 116m AGL, Based upon the FCC “FM Model for Windows”¹ program using a worst-case ring-stub antenna, the proposed 296D operation will produce .072 $\mu\text{W}/\text{cm}^2$ at a distance of 22m from the base of the tower at ground level or 0.04% 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 be in compliance with FCC guidelines and is excluded from further Environmental Assessment under 47CFR 1.1306 and 1.1307.

The proposed FM translator along with other users at the site maintain 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 black ink that reads "Bert Goldman". The signature is written in a cursive, flowing style.

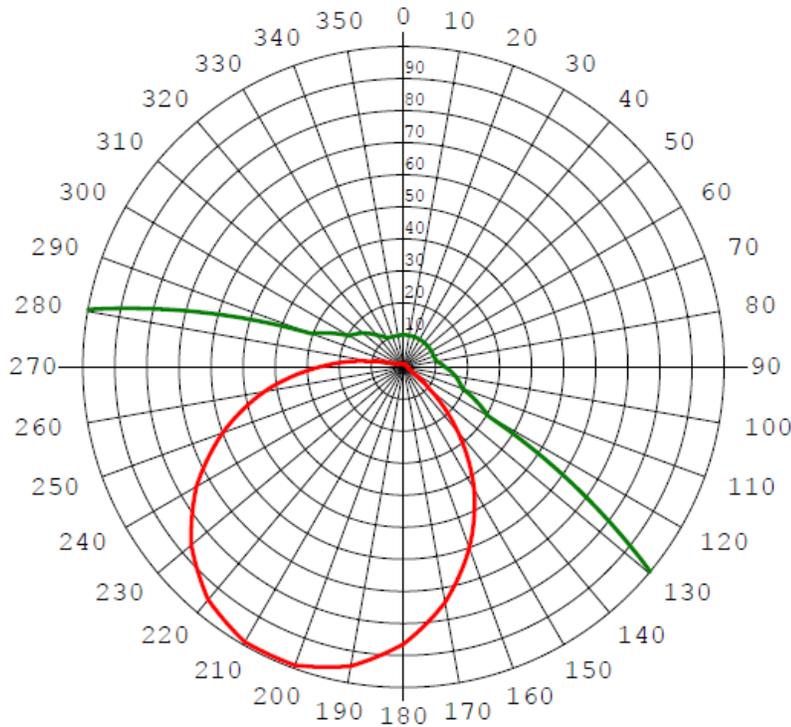
Bert Goldman

Technical Consultant

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

EXHIBIT A- ANTENNA PATTERN

Prop W295CG pattern 5-17-23



Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
0	0.010	-46.02	0.000	-40.00	180	0.864	-7.29	0.187	-1.27
10	0.010	-46.02	0.000	-40.00	190	0.948	-6.49	0.224	-0.47
20	0.010	-46.02	0.000	-40.00	200	0.990	-6.11	0.245	-0.09
30	0.010	-46.02	0.000	-40.00	210	0.990	-6.11	0.245	-0.09
40	0.010	-46.02	0.000	-40.00	220	0.948	-6.49	0.224	-0.47
50	0.010	-46.02	0.000	-40.00	230	0.864	-7.29	0.187	-1.27
60	0.010	-46.02	0.000	-40.00	240	0.746	-8.57	0.139	-2.55
70	0.010	-46.02	0.000	-40.00	250	0.600	-10.46	0.090	-4.44
80	0.011	-45.60	0.000	-39.58	260	0.441	-13.13	0.049	-7.11
90	0.013	-43.74	0.000	-37.72	270	0.263	-17.64	0.017	-11.62
100	0.017	-41.67	0.000	-35.65	280	0.102	-25.81	0.003	-19.79
110	0.020	-40.22	0.000	-34.20	290	0.031	-36.33	0.000	-30.31
120	0.031	-36.33	0.000	-30.31	300	0.020	-40.22	0.000	-34.20
130	0.103	-25.81	0.003	-19.79	310	0.017	-41.67	0.000	-35.65
140	0.263	-17.64	0.017	-11.62	320	0.013	-43.74	0.000	-37.72
150	0.441	-13.13	0.049	-7.11	330	0.011	-45.60	0.000	-39.58
160	0.600	-10.46	0.090	-4.44	340	0.010	-46.02	0.000	-40.00
170	0.746	-8.57	0.139	-2.55	350	0.010	-46.02	0.000	-40.00

Rotation Angle = 0

EXHIBIT B- ALLOCATION STUDY

ComStudy 2.2 search of channel 296 (107.1 MHz Class D) at 42-08-13.7 N, 87-58-57.2 W.

CALL	CITY	ST CHN CL	DIST	SEP	BRNG	CLEARANCE
WPPN	DES PLAINES	IL 294 B	0.01	0.00	349.3	-89.91 dB Exhibit D
WGCI-FM	CHICAGO	IL 298 B	40.60	0.00	134.9	-11.41 dB Exhibit D
W296DA LIC	VERNON HILLS	IL 296 D	28.07	0.00	297.7	0.79 dB Exhibit C
W296DA APP	VERNON HILLS	IL 296 D	29.36	0.00	341.8	12.42 dB Exhibit C
W296EP	CHICAGO	IL 296 D	40.61	0.00	134.9	0.06 dB Exhibit C
WSPY-FM	PLANO	IL 296 A	71.92	0.00	223.3	0.17 dB Exhibit C
WBBM-FM	CHICAGO	IL 242 B	29.26	15.00	139.1	14.3 IF OK
WVCY-FM	MILWAUKEE	WI 299 B	92.02	0.00	355.4	14.15 dB
WSJY	FORT ATKINSON	WI 297 B	114.90	0.00	310.4	16.33 dB
WCXP-LP	CHICAGO	IL 296 LP100	32.29	24.00	123.0	18.65 dB
WZVN	LOWELL	IN 296 A	104.34	0.00	149.9	19.09 dB
WBBM-FM	CHICAGO	IL 242 B	40.60	15.00	134.9	25.6
WBBM-FM	CHICAGO	IL 242 B	40.57	15.00	135.0	25.6
W297BY	FRANKLIN	WI 297 D	80.61	0.00	8.0	26.28 dB
WSWT	PEORIA	IL 295 B	202.48	0.00	219.5	31.78 dB
WWQC	CLIFTON	IL 297 A	132.70	0.00	187.2	33.45 dB

LMS as of 5/17/2023

EXHIBIT C Pertinent Contours, 74.1204(a) Compliance

Proposed W295CG (296D) 74.1204(a) Compliance

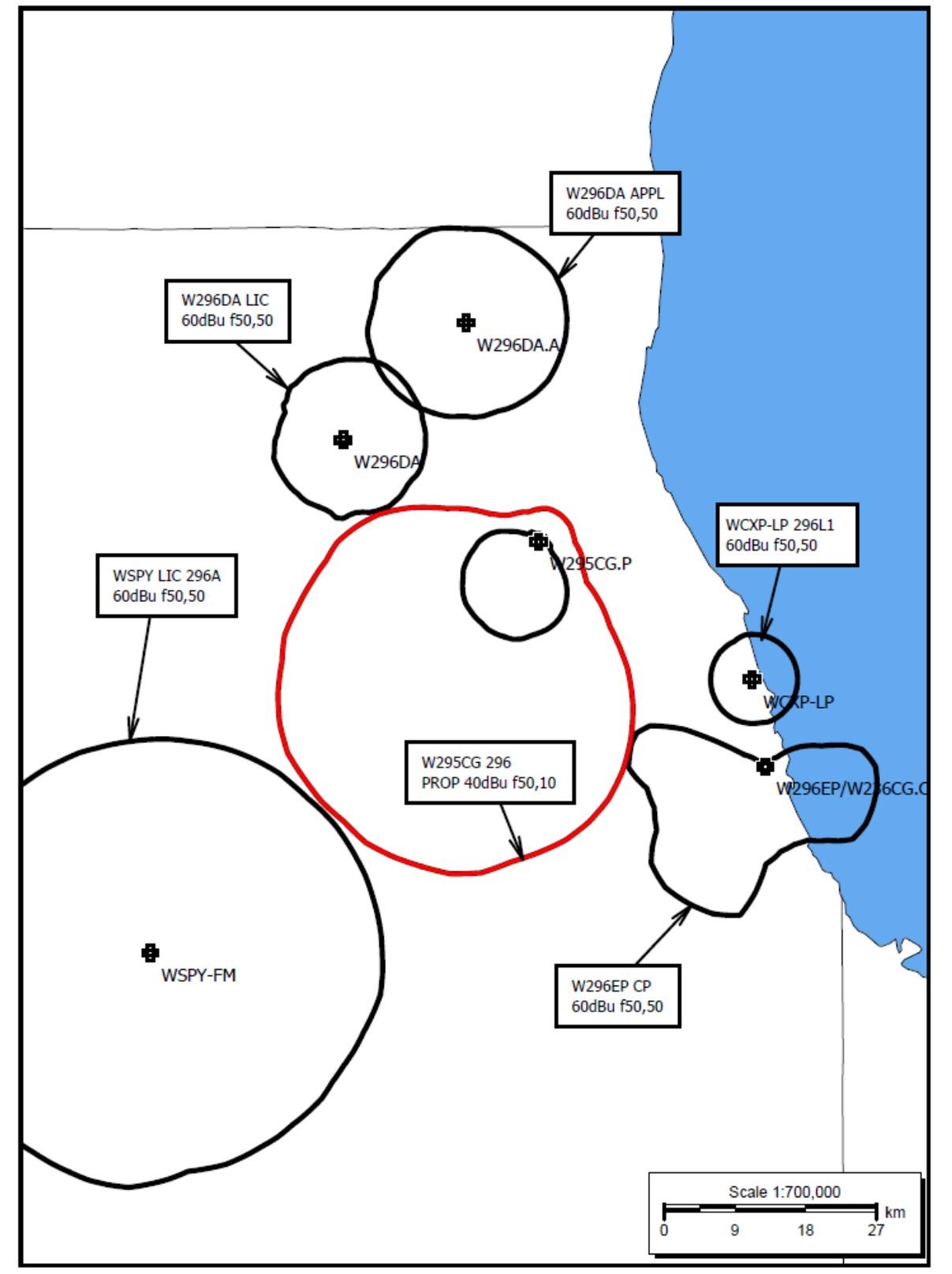


EXHIBIT D- 74.1204(d) Compliance

Compliance to WPPN (FM)

Because WPPN, 294B (50kW ERP) is collocated with W295CG (proposed, 296D, 250 watts), there will be no locations where the proposed translator could develop a signal level 40dB or more above WPPN.

Compliance to WGCI (FM) 298B

295CG.C Lake Bluff, IL, Showing Protection to WGCI-FM , Channel: 298
 Geographic Coordinates: N. 42 08 14.10 W. 87 58 57.30
 74.1204(d) Study - Using NED 03 SEC Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.22 kW, Channel: 296
 Translator or LPFM Antenna Height AG = 116 meters
 W295CG.C Antenna Azimuth Model = Vertical Model Name = 2-CL-FM V STACK 0PT94 WL SPC

Protected Station's Contour = 64.83604 dBu
 Translator's or LPFM's full Interference contour 104.83604

Review Azimuth = 0 Degrees True
 Horizontal Relative Field at Review Azimuth = 1.000
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.22 kW
 Distance between stations = 40.6 km
 Protected Station= WGCI-FM, 3.7 kW, 653 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	0.2200	596.2238	596.2238	116.000
05.00	0.914	1.0	0.1838	544.9486	542.8749	068.505
10.00	0.828	1.0	0.1508	493.6733	486.1733	030.275
15.00	0.632	1.0	0.0879	376.8135	363.9738	018.474
20.00	0.436	1.0	0.0418	259.9536	244.2765	027.091
25.00	0.249	1.0	0.0136	148.1616	134.2800	053.384
30.00	0.061	1.0	0.0008	036.3696	031.4970	097.815
35.00	0.063	1.0	0.0009	037.2640	030.5249	094.626
40.00	0.15	1.0	0.0050	089.4336	068.5101	058.513
45.00	0.178	1.0	0.0070	106.1278	075.0437	040.956
50.00	0.159	1.0	0.0056	094.7996	060.9360	043.379
55.00	0.116	1.0	0.0030	069.1620	039.6697	059.346
60.00	0.071	1.0	0.0011	042.3319	021.1659	079.340
65.00	0.045	1.0	0.0004	026.8301	011.3389	091.684
70.00	0.019	1.0	0.0001	011.3283	003.8745	105.355
75.00	0.015	1.0	0.0000	008.6452	002.2376	107.649
80.00	0.01	1.0	0.0000	005.9622	001.0353	110.128
85.00	0.01	1.0	0.0000	005.9622	000.5196	110.060
90.00	0.01	1.0	0.0000	005.9622	000.0000	110.038

EXHIBIT E- 74.1233 COMPLIANCE

PROP W295CG (296D) 74.1233 COMPLIANCE

