

ENGINEERING REPORT

FM Translator Minor Change Application

for

**W227BY – Jackson, MI
Facility ID: 144069**

as a fill-in FM Translator for
WJKN(AM) – Jackson, MI

February 2024

MUNN-REESE

Broadcast Engineering Consultants
Coldwater, MI 49036

Discussion

This firm has been retained to prepare the required engineering report in support of a Construction Permit Application for an FM Translator W227BY. This translator is currently authorized to operate with an AMSL of 405.9 meters and an ERP of 0.18 kW (H&V) on CH227D. Proposed operation is with an AMSL of 400.6 meters with an ERP of 0.196 kW (H&V). The Translator will continue to rebroadcast Primary Station WJKN(AM) – East Lansing, MI.

The present and proposed service contours and as a fill-in translator for WJKN are shown in **Exhibit 1.0**

It has been determined the Translator may be used in the area without interference to any existing FM broadcast station or facility. The proposed allocation is included in **Exhibit 2.0**.

The distances to 34 dBu FCC(50:10) contour are less than 60 km as shown in **Exhibit 3.0**.

The NED 03 second terrain database was utilized for terrain-based showings contained here-in.

Exhibit 1.0 W227BY- Present and Proposed Service Contours as a fill-in station for WJKN(AM)

Munn-Reese.com

W227BY

0000204340
Latitude: 42-13-16.87 N
Longitude: 084-26-04.35 W
ERP: 0.18 kW
Channel: 227
Frequency: 93.3 MHz
AMSL Height: 405.9 m
Elevation: 299.9 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

W227BY.P

Proposed Operation
Latitude: 42-13-16.87 N
Longitude: 084-26-04.35 W
ERP: 0.196 kW
Channel: 227
Frequency: 93.3 MHz
AMSL Height: 400.6 m
Elevation: 299.9 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

- WJKN.L
- W227BY.P (227)
- W227BY (227)

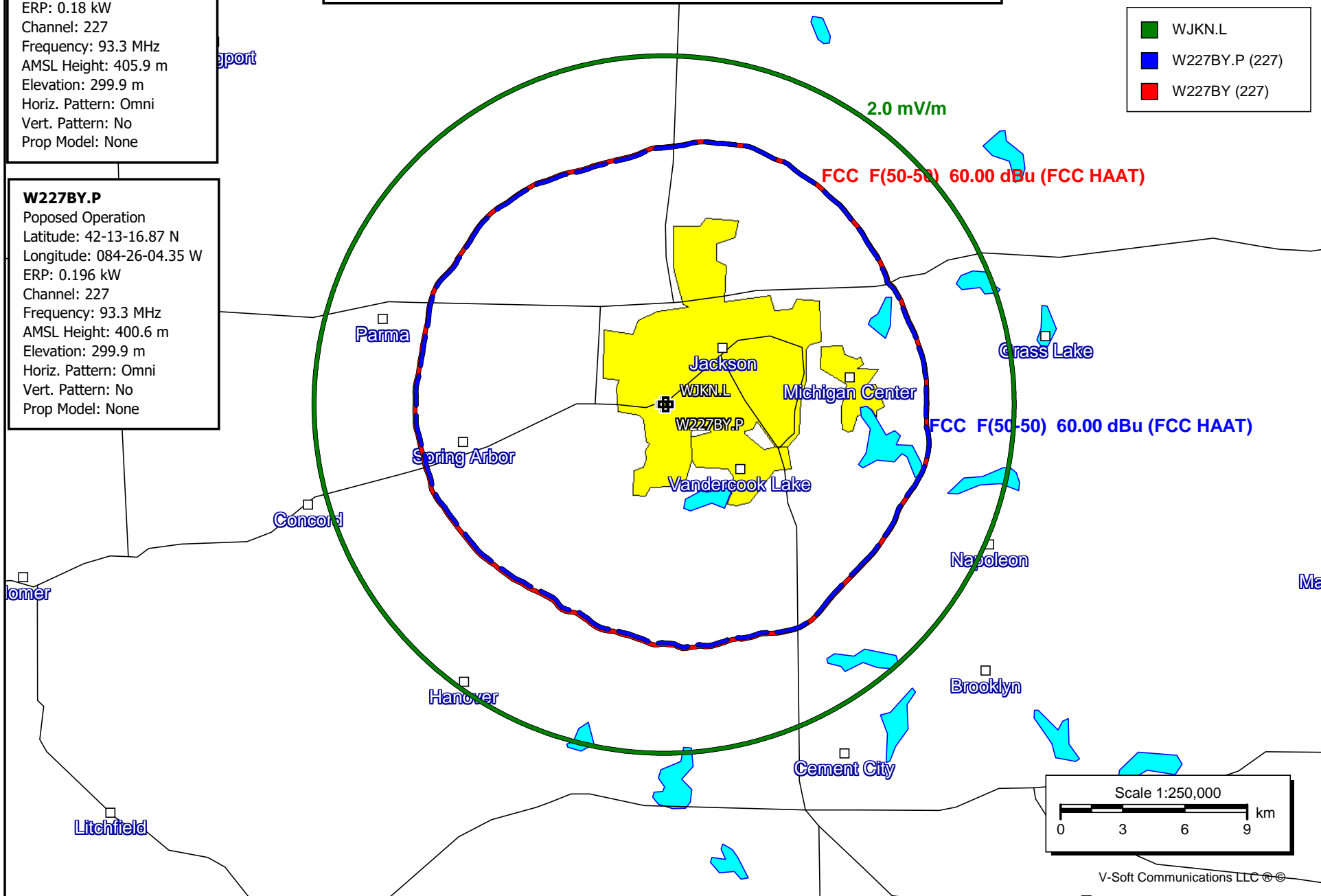


Exhibit 2.0 - Proposed Allocation Jackson Lansing Catholic Radi											
REFERENCE		CH# 227D - 93.3 MHz, Pwr= 0.196 kw, HAAT= 100.3 M, COR= 400.6 M							DISPLAY DATES		
42 13 17.00 N.		Average Protected F(50-50)= 12.15 km							DATA 02-11-24		
84 26 04.20 W.		Omni-directional							SEARCH 02-16-24		
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*
CITY		STATE		<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(Overlap	in km)
227D	W227BY	LIC _CN		0.0	0.00	42 13 17.00	0.180		---Reference---		
Jackson		MI		0.0	0000204340	84 26 04.20	19	406	Jackson Lansing Catholic R		
227B1	WBTU	LIC _CN		209.4	109.58	41 21 38.60	25.000	101.4	29.0	-2.8	36.0
Kendallville		IN		29.0	0000235014	85 04 43.90	46	317	Adams Radio Of Fort Wayne		
227D	W227DO	LIC _CN		349.1	53.23	42 41 29.10	0.125	36.5	10.7	4.6	1.0
Lansing		MI		169.0	0000118424	84 33 28.90		372	The Macdonald Broadcasting		
228A	WHMI-FM	LIC _CN		39.4	63.71	42 39 47.10	5.200	44.5	28.9	6.4	15.6
Howell		MI		219.7	BLH19980911KF	83 56 22.80	108	388	Krol Communications Inc.		
229B	WBCT	LIC _CN		297.1	101.41	42 37 56.10	320.000	11.4	90.7	77.5	9.1
Grand Rapids		MI		116.4	BLH19800616AK	85 32 16.10	238	486	Ihm Licenses, LLC		
226L1	WMLY-LP	LIC _CN		277.3	36.09	42 15 42.10	0.090			16.3	12.9
Marshall		MI		97.0	BLL20041118ABM	84 52 10.90	31	323	Marshall Christian Radio		
226B	WUFL	LIC DCN		74.3	105.14	42 28 16.10	26.500	77.3	65.1	15.4	13.4
Detroit		MI		255.1	0000217091	83 12 01.00	204	412	Intentional Life Media		
227L1	NEW	CP _CN		279.9	64.33	42 19 04.60	0.068			33.8	17.6
Springfield		MI		99.3	0000232402	85 12 19.90	37	311	Fruitfulmedia, Inc.		
224D	W224ED	LIC DCN		76.4	34.03	42 17 33.10	0.250	0.6	7.9	20.9	25.2
Ann Arbor		MI		256.7	BLFT20190327AAS	84 01 55.80		371	Coolarity A2, LLC		
225A	WLMI	LIC _CN		350.3	57.69	42 43 58.10	5.400	2.6	27.1	43.0	29.6
Grand Ledge		MI		170.2	BLH20071119AEL	84 33 12.90	105	365	Midwest Communications, In		
227C2	WKQZ	LIC _CN		8.6	182.76	43 50 46.10	39.000	135.4	52.8	34.6	86.2
Midland		MI		188.9	BLH19881027KB	84 05 32.00	169	369	Radio License Holding Cbc,		
230C1	CKLW	LIC DCN		92.2	119.31	42 10 15.10	100.000	8.4	78.2	98.5	39.5
Windsor		ON		273.2		82 59 28.70	200	385			
280A	WLEN	LIC _CN		133.6	51.21	41 54 11.10	3.000	169.8	84.6	9.5R	41.7M
Adrian		MI		313.9	BLH7244	83 59 12.70	91	325	Lenawee Broadcasting Compa		
228B1	WRQN	LIC NCN		142.6	106.44	41 27 28.20	7.000	48.8	37.3	45.3	47.1
Bowling Green		OH		323.1	BLH20061002BGR	83 39 32.80	121	315	Cumulus Licensing LLC		
227L1	NEW	APP _CN		275.0	94.78	42 17 21.90	0.100			64.1	47.7
Kalamazoo		MI		94.2	0000232624	85 34 57.40	7	270	Public Media Network		
224D	W224BY	LIC _CN		218.1	76.21	41 40 51.20	0.250	1.1	12.7	64.1	62.5
Angola		IN		37.8	BLFT20091124AHZ	85 00 04.90	112	418	Swick Broadcasting Company		
227L1	WTPP-LP	LIC _CN		280.0	119.14	42 23 52.10	0.068			90.6	73.0
Gobles		MI		99.0	0000121211	85 51 50.00	36	264	New Creation Station, Inc.		
228D	W228CJ	LIC DCN		75.9	106.69	42 26 52.10	0.099	17.4	12.0	76.8	76.1
Detroit		MI		256.8	BLFT20190410AAG	83 10 22.70		498	Beasley Media Group Licens		
225D	W225AM	LIC _CN		132.7	93.73	41 38 49.20	0.144	0.8	12.0	80.6	80.7
Toledo		OH		313.2	BLFT20160728ACT	83 36 17.80		313	Educational Media Foundati		
280A	WRSR	LIC _CN		22.6	93.35	42 59 45.10	2.850	169.8	84.6	9.5R	83.9M
Owosso		MI		202.9	BMLH20180117ABC	83 59 33.90	147	378	Krol Communications Inc.		
224A	WDZZ-FM	LIC _CN		33.5	109.59	43 02 29.10	3.000	2.3	23.9	94.4	84.7
Flint		MI		214.0	BLH20090513AEU	83 41 27.80	100	332	Cumulus Licensing LLC		
281B	WVGR	LIC DCN		298.6	101.98	42 39 17.10	96.000	169.8	84.6	14.5R	87.5M
Grand Rapids		MI		117.9	BMLD20080306ABQ	85 31 38.10	221	469	Regents Of The University		
224D	W224CC	LIC DCN		75.9	106.69	42 26 52.10	0.099	0.7	17.5	93.5	88.2
Detroit		MI		256.8	BLFT20170524ABH	83 10 22.70		481	Salem Communications Holdi		
224D	W224BZ	LIC _CN		328.7	102.07	43 00 16.10	0.250	1.1	10.7	88.6	90.4
Ionia		MI		148.3	BLFT20181226AAM	85 05 09.00		302	Packer Radio Wion, LLC		
226L1	DWDLP-LP	LIC _CN		331.7	118.72	43 09 34.10	0.100			97.6	94.4
Belting		MI		151.2	BLL20160722ABB	85 07 43.00	30	287	Montcalm Public Radio, Inc		

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
230B1 Columbus Grove	WBKS	LIC _CN OH		169.8 350.0	142.83 BMLH20050201BMF	40 57 24.20 84 07 55.80	14.000 133	4.0 356	44.9 Ihm Licenses, LLC	127.1	96.6
225B South Bend	WNDV-FM	LIC _CN IN		245.6 64.5	162.27 BLH19980727KB	41 36 20.20 86 12 46.00	12.000 268	5.1 507	62.8 Sound Management, LLC	145.4	97.8

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference zone= East Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
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.
« = Station meets FCC minimum distance spacing for its class.
Reference station has protected zone issue: AM tower

Distance to Contour Report

Type of contour: FCC
Location Variability: 50.0 %
Time Variability: 10.0 %
of Radials Calculated: 360
FCC Matching HAAT Calculation Used
Field Strength: 34.00 dBuV/m

Primary Terrain: V-Soft 3 Second US Terrain

----- Transmitter Information:

Call Letters: W227BY.P
File Number: Poposed Operation
Latitude: 42-13-16.87 N
Longitude: 084-26-04.35 W
ERP: 0.196 kW
Channel: 227
Frequency: 93.3 MHz
AMSL Height: 400.6 m
Elevation: 299.9 m
Horiz. Antenna Pattern: Omni
Vert. Elevation Pattern: No

Azimuth (deg)	Distance (km)	HAAT (m)
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0.0	57.99	104.2
10.0	59.32	112.0
20.0	59.95	115.9
30.0	59.45	112.7
40.0	59.10	110.6
50.0	58.36	106.3
60.0	57.61	102.0
70.0	57.86	103.4
80.0	58.58	107.5
90.0	58.52	107.2
100.0	59.41	112.5
110.0	58.25	105.6
120.0	57.81	103.1
130.0	57.32	100.4
140.0	57.54	101.6
150.0	58.24	105.6
160.0	56.43	95.7
170.0	56.10	94.0
180.0	55.08	89.0
190.0	54.02	84.0
200.0	53.22	80.6
210.0	52.48	77.5
220.0	53.46	81.6
230.0	54.70	87.2
240.0	55.46	90.8
250.0	56.66	96.9
260.0	56.57	96.4

270.0	56.90	98.1
280.0	56.72	97.2
290.0	57.29	100.3
300.0	57.81	103.1
310.0	57.69	102.4
320.0	58.10	104.8
330.0	57.72	102.6
340.0	56.69	97.1
350.0	56.75	97.4

Average HAAT for radials shown: 99.6 m