

ENGINEERING REPORT
Minor Modification to Construction
Permit Application

for

K236CS
Facility ID: 143973

as an AM Fill-In Translator for
WSDZ(AM) – Belleville, IL

August 2022

MUNN-REESE

Broadcast Engineering Consultants
Coldwater, MI 49036

Discussion

This firm has been retained to prepare the required engineering report in support of a Minor Modification to Construction Permit Application for an FM Translator K236CS. Currently this translator is licensed to operate with an AMSL of 275 meters and an ERP of 0.099 kW (H&V). This proposal requests an AMSL of 370 meters and an ERP of 0.099 kW (H&V) from a new tower site. The Fill-In Translator will rebroadcast Class D Primary Station WSDZ(AM) – Belleville, IL.

The Translator as proposed will be mounted on a tower bearing Antenna Structure Registration Number 1002991.

The proposed 60 dB μ contour of the Fill-In Translator lies wholly inside the greater of the AM primary daytime 2.0 mV/m contour and a 25 mile radius around the AM site. A map of the present and proposed service area has been included 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. General allocation details are found in **Exhibit 2.0**. It is believed sufficient clearance exists precluding the need for additional contour protection showings.

Compliance with §74.1204(d) Second/Third Adjacent Channel Given Interference is shown in **Exhibit 2.1**. Protection has been based on the worst case calculated 113 dB μ F(50:10) Interference Contour, corresponding to the worst case 73 dB μ F(50:50) Protected Contour.

Exhibit 1.0 - K236CS Present and Proposed

Munn-Reese.Com

WSDZ.L

Latitude: 38-27-31 N
Longitude: 089-57-41 W
ERP: 0.10 kW
Channel: 201
Frequency: 1.26 MHz
AMSL Height: 0.0 m
Elevation: 0.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K236CS

BMLFT20170915ACA
Latitude: 38-36-47.01 N
Longitude: 090-20-08.98 W
ERP: 0.099 kW
Channel: 236
Frequency: 95.1 MHz
AMSL Height: 275.0 m
Elevation: 141.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K236CS.P

BMLFT20170915ACA
Latitude: 38-32-07 N
Longitude: 090-22-23 W
ERP: 0.099 kW
Channel: 236
Frequency: 95.1 MHz
AMSL Height: 366.0 m
Elevation: 182.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

- K236CS (236)
- K236CS.P (236)
- WSDZ.L

FCC 7(5)-50 60.00 dBu (FCC)

K236CS

K236CS.P

WSDZ.L

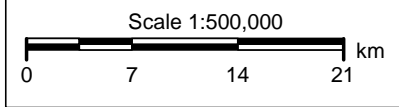


Exhibit 2.0
Relevant Radio, Inc.

REFERENCE
38 32 07.00 N.
90 22 23.00 W.

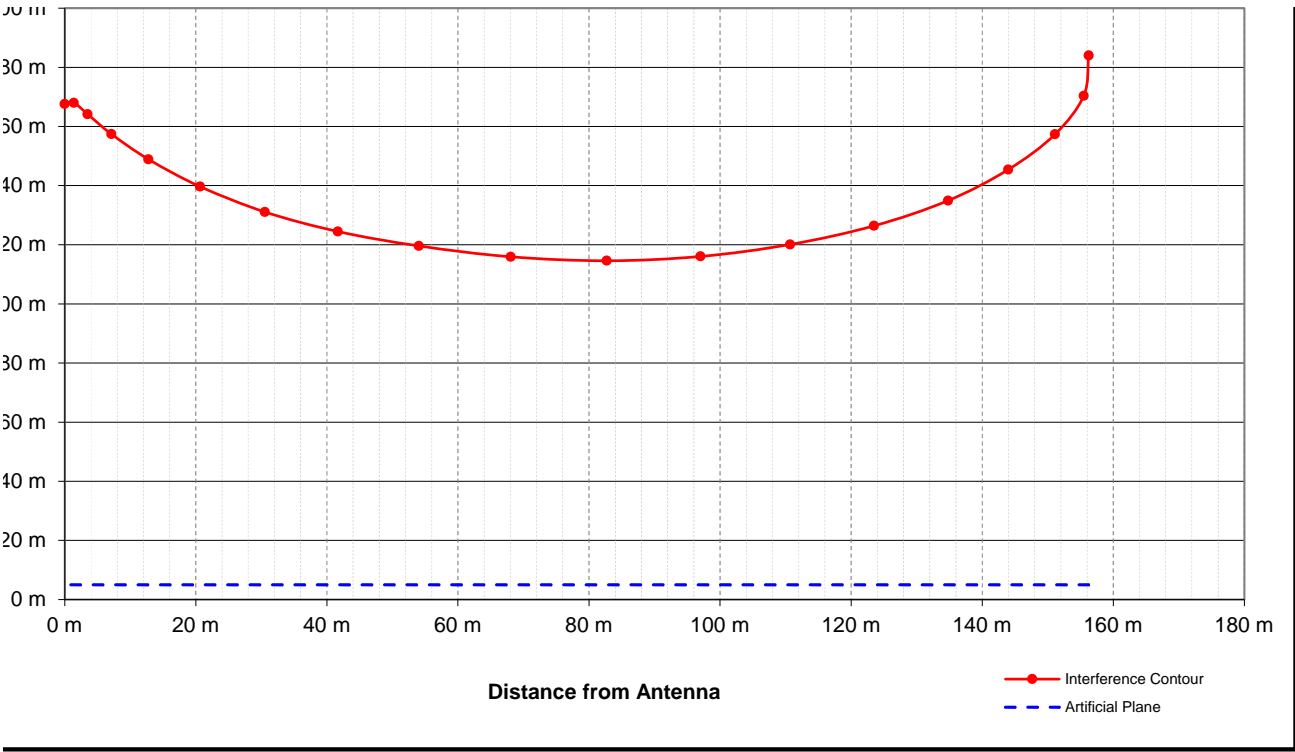
CH# 236D - 95.1 MHz, Pwr= 0.099 kW, HAAT= 209.9 M, COR= 370 M
Average Protected F(50-50)= 14.84 km
Omni-directional

DISPLAY DATES
DATA 09-21-21
SEARCH 09-27-21

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*
234C0 Crestwood	KSHE	LIC _CN MO		43.5 223.5	6.00 BLH20150227ACE	38 34 27.90 90 19 31.90	100.000 309	10.2 462	72.6 St. Louis FCC License Sub,	-19.3*<	-67.3*<
236D St. Louis	K236CS	LIC _CN MO		20.4 200.5	9.23 BMLFT20170915ACA	38 36 47.20 90 20 09.40	0.099	275	---Reference--- Relevant Radio, Inc.		
238C3 Bethalto	KXBS	LIC ZCN IL		30.6 210.7	15.12 BLH20121203AQQ	38 39 08.20 90 17 03.40	10.500 155	3.1 312	32.9 Gateway Creative Broadcast	-2.9<	-18.4*<
236D Warrenton	K236CK	LIC _CN MO		300.3 119.9	67.33 BLFT20160718ACE	38 50 19.20 91 02 40.50	0.250	50.8 349	15.4 Kaspar Broadcasting Co. Of	2.1	4.4
236B1 Carterville	WUEZ	LIC _CN IL		132.3 313.0	132.79 BLH20010117ABF	37 43 31.20 89 15 25.30	17.600 119	110.3 253	45.9 Mrr License LLC	7.1	28.8
237C2 Owensville	KXMO-FM	LIC _CN MO		243.9 63.3	99.98 BMLH20140926AJJ	38 08 08.20 91 24 00.50	37.000 172	78.0 445	52.8 Kttr-Kznn, Inc.	7.7	25.6
236B Decatur	WDZQ	LIC _CN IL		42.1 223.0	164.89 BLH20000509AAO	39 37 40.10 89 04 51.30	50.000 150	138.2 341	65.6 Neuhoff Media Decatur, LLC	11.5	33.8
237A Centralia	WRXX	LIC NCN IL		88.1 269.0	119.47 BLH20030512ACN	38 33 46.20 88 59 58.20	5.500 100	46.0 263	29.9 Wrxx, LLC	57.8	65.8
236C1 Mammoth Spring	KAMS	LIC _CN AR		203.2 22.5	239.88 BLH19881108KC	36 32 49.20 91 25 47.40	100.000 198	161.4 418	63.5 E-Communications, LLC	63.7	127.8
236C3 Versailles	KTKS	LIC NCN MO		266.9 85.4	208.39 BLH20000630ADB	38 24 32.10 92 45 42.70	12.500 141	105.1 410	38.7 Benne Broadcasting Of Vers	88.4	120.7
239C Mexico	KWWR	LIC NCN MO		298.5 117.4	172.63 BLH20000530ACL	39 15 49.10 92 08 06.60	100.000 360	11.0 608	76.5 Kxeo Radio, Inc.	147.1	95.5

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= West 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.
< = Contour Overlap

Exhibit 2.1 - Downward Radiation Study



<div>Proposed Antenna: Opposed V Dipole</div> <div>Proposed Power: 0.099 kW</div> <div>Antenna Height AGL: 184 meters</div> <div>Interference Contour: 113 dBu f(50:10)</div> <div>ial Ground Plane Height: 5 meters</div> <div>3 (Free Space) Equation: =(10^((106.92-[desired dBu]+[ERP in dBk])/20))*1000</div> <div>Strength (dBu) Equation "=106.92-(20*(LOG10[DistMeters]/1000)))+[ERP in dBk]</div>							
Antenna			Distance		Field Strength	Distance	Field Strength
Relative	ERP	ERP	from Ant.	Distance	in dBu @	from Ant.	in dBu @
Field	in kW	in dBk	to Interference	from Ant. to	Artificial Plane	to Ground Level	Ground Level
1.000	0.099	-10.04	156.25 m	infinite	---	---	---
0.999	0.099	-10.05	156.09 m	2053.79 m	90.62 dBu	2111.16 m	90.38 dBu
0.982	0.095	-10.20	153.44 m	1030.82 m	96.45 dBu	1059.61 m	96.22 dBu
0.954	0.090	-10.45	149.06 m	691.60 m	99.67 dBu	710.92 m	99.43 dBu
0.918	0.083	-10.79	143.44 m	523.36 m	101.76 dBu	537.98 m	101.52 dBu
0.872	0.075	-11.23	136.25 m	423.55 m	103.15 dBu	435.38 m	102.91 dBu
0.818	0.066	-11.79	127.81 m	358.00 m	104.05 dBu	368.00 m	103.81 dBu
0.758	0.057	-12.45	118.44 m	312.08 m	104.58 dBu	320.79 m	104.35 dBu
0.691	0.047	-13.25	107.97 m	278.47 m	104.77 dBu	286.25 m	104.53 dBu
0.616	0.038	-14.25	96.25 m	253.14 m	104.60 dBu	260.22 m	104.36 dBu
0.538	0.029	-15.43	84.06 m	233.67 m	104.12 dBu	240.19 m	103.88 dBu
0.465	0.021	-16.69	72.66 m	218.52 m	103.44 dBu	224.62 m	103.20 dBu
0.391	0.015	-18.20	61.09 m	206.69 m	102.41 dBu	212.46 m	102.17 dBu
0.313	0.010	-20.13	48.91 m	197.50 m	100.88 dBu	203.02 m	100.64 dBu
0.239	0.006	-22.48	37.34 m	190.49 m	98.85 dBu	195.81 m	98.61 dBu
0.176	0.003	-25.13	27.50 m	185.31 m	96.43 dBu	190.49 m	96.19 dBu
0.129	0.002	-27.83	20.16 m	181.76 m	93.90 dBu	186.84 m	93.66 dBu
0.103	0.001	-29.79	16.09 m	179.68 m	92.04 dBu	184.70 m	91.80 dBu
0.105	0.001	-29.62	16.41 m	179.00 m	92.24 dBu	184.00 m	#NAME?