

W291CS MINOR MODIFICATION OF CP

This application proposes to modify FM translator construction permit W291CS by changing the site, radiation center height, antenna and primary station. The translator will serve as a fill in for station WILO(AM) (facility ID#33468) at Frankfort, IN. Note that a change in the primary station for W231CB from WILO(AM) to WSHW has also been filed.

Allocation discussion:

All exhibits were developed utilizing the USGS 3 second terrain database.

Allocation exhibits are provided as follows:


- E1 Channel study
- E1A WCDQ plot
- E1B DA
- E2 Contours
- E3 ASR and NADCON calculation

A channel study is included as E1 demonstrating compliance with 74.1204. A plot of the proposed 60 dBu contour is provided as E2 showing that it is entirely contained within the primary station WILO's 2 mV/m and 40 km radius. The proposed 60 dBu also overlaps the W252CX long form construction permit 60 dBu contour.

RF Exposure Calculation:

The RF contribution of the proposed translator was calculated using a worst case F factor of 1.0 for a three bay Bext TFC-2K full wavelength antenna mounted at 75 meters AGL and the formula provided below to be 3.13 $\mu\text{Watts}/\text{cm}^2$ or 1.6% of the maximum permissible 200 $\mu\text{Watts}/\text{cm}^2$ exposure for general population/uncontrolled exposure, and less than the 5% requiring consideration.

$$S \text{ (RF in } \mu\text{Watts}/\text{cm}^2) = \frac{33.4 (F^2 - \text{Vert Factor}) \times (\text{H ERP} + \text{V ERP in Watts})}{R^2 \text{ (distance to radiation center in meters} - 2 \text{ m)}}$$


Charles M. Anderson August 27, 2014

E1 CHANNEL STUDY

Kaspar Broadcasting Co., Inc.

REFERENCE CH# 291D - 106.1 MHz, Pwr= 0.25 kW DA, HAAT= 75.6 M, COR= 331 M
 40 18 12.0 N. Average Protected F(50-50)= 11.39 km
 86 31 40.0 W. Standard Directional

DISPLAY DATES
 DATA 08-27-14
 SEARCH 08-28-14

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*
291D Frankfort	W291CS	CP IN	178.6 358.6	1.94 BNPFT20130822AEU	40 17 09.0 86 31 38.0	0.250 27	26.8 283	8.0 Kaspar Broadcasting Co, In	-35.1*	-40.3*
291A Fowler	WTGB	CP IN	291.1 110.5	83.85 BNPED20100226AAI	40 34 18.0 87 27 14.0	6.000 87	82.8 316	25.3 Harvest Chapel Attica, Inc	-10.8	18.0
292A Crawfordsville	WCDQ	LIC IN	231.4 51.1	44.07 BMLH19991129AAG	40 03 19.0 86 55 57.0	3.400 134	43.5 374	28.3 C.v.l. Broadcasting, Inc.	-9.8	0.5
290D Lafayette	W290CM	CP IN	288.8 108.5	30.13 BNPFT20130823AAU	40 23 24.0 86 51 53.0	0.250 77	15.2 276	10.5 Kaspar Broadcasting Co, In	3.3	2.2
291D Kokomo	W291AM	LIC IN	62.3 242.5	37.74 BLFT19991102ABR	40 27 38.0 86 07 58.0	0.170 23	21.5 275	6.4 The Trustees Of Indiana Un	7.8	3.2
291B North Vernon	WWVY	LIC IN	152.5 333.1	154.49 BLH19850905KC	39 04 02.0 85 42 10.0	50.000 148	137.0 355	64.3 White River Broadcasting C	8.2	46.7
289B Indianapolis	WYXB	LIC IN	143.0 323.3	74.44 BLH20030403AAC	39 46 03.0 86 00 12.0	50.000 150	5.9 398	64.6 Emmis Radio License, LLC	59.9	8.3
292D Lafayette	W292EM	CP IN	292.9 112.7	32.88 BNPFT20130827AEV	40 25 05.0 86 53 08.0	0.003 28	3.3 223	2.4 Csn International	17.7	13.2
294A West Lafayette	WKHL	LIC IN	302.4 122.2	45.54 BMLED20080228ABS	40 31 20.0 86 58 57.0	6.000 100	2.9 307	30.5 Educational Media Foundati	30.5	14.0
293D Lebanon	W293CF	CP IN	164.6 344.7	27.67 BNPFT20130916AAC	40 03 48.1 86 26 29.0	0.027 80	0.4 362	6.8 Hoosier Broadcasting Corpo	17.5	20.0
290A Wabash	WJOT-FM	LIC IN	45.7 226.1	84.41 BLH19930811KC	40 49 54.0 85 48 36.0	6.000 97	46.9 329	30.0 Dream Weaver Marketing, LL	28.3	41.5
237A Brookston	WBPE	LIC IN	314.9 134.7	38.39 BLH19920702KC	40 32 48.0 86 50 59.0	2.300 154	67.6 351	22.4 Artistic Media Partners, I	10.0R	28.4M
292L1 Noblesville	NEW	CP IN	123.5 303.8	52.40 BNPL20131021AAI	40 02 31.0 86 00 52.0	0.022 62	311	Enduring Communications In	38.3	36.8
294A Greenwood	WTLC-FM	LIC IN	153.6 333.8	73.38 BLH20070504AAL	39 42 42.0 86 08 45.0	6.000 99	2.9 331	29.8 Radio One Of Indiana, LLC	61.2	42.8

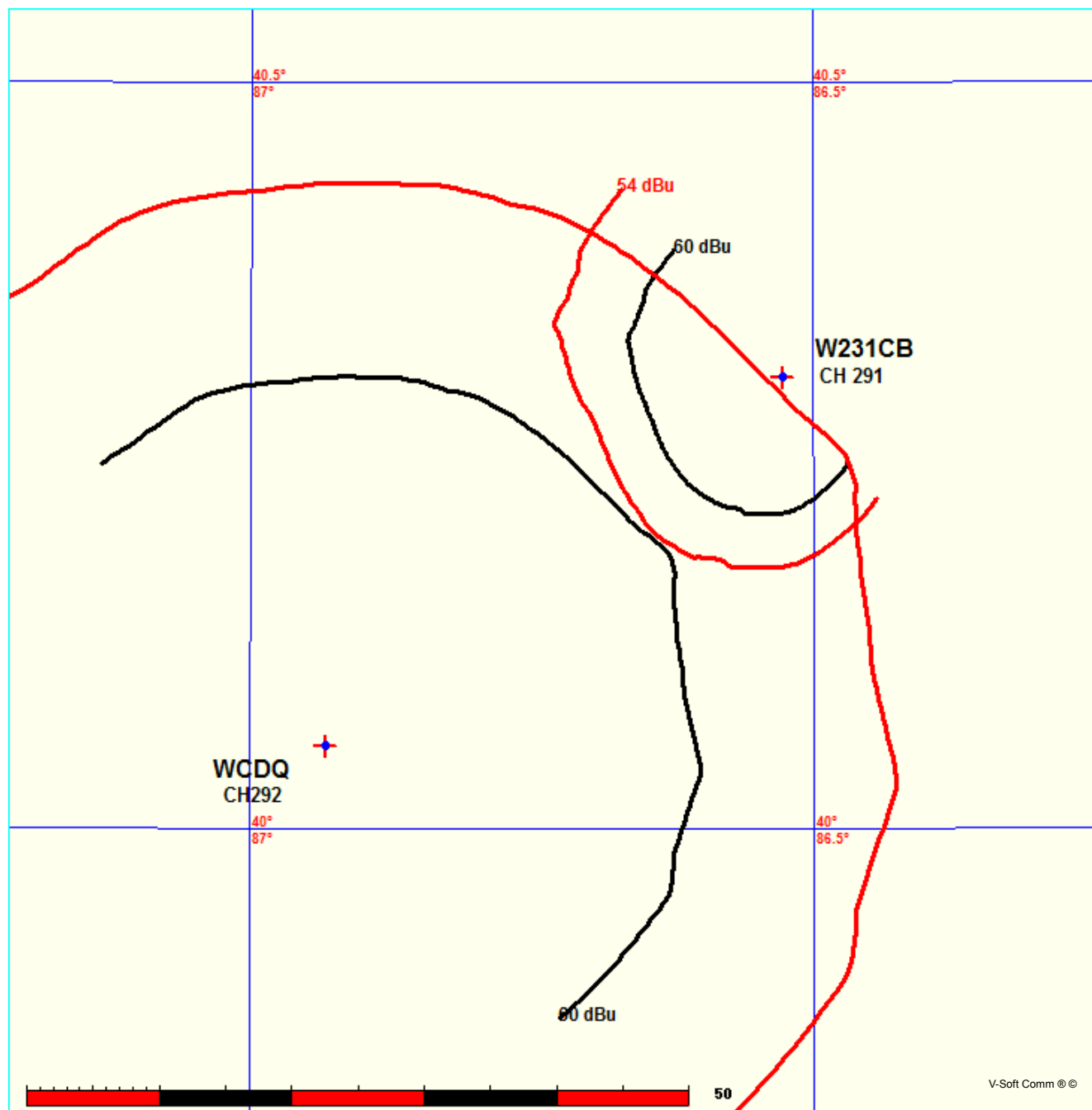
Terrain database is USGS 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.
 Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
 "*"affixed to 'IN' or 'OUT' values = site inside protected contour.

E1A INTERFERENCE PLOT TO WCDQ
Kaspar Broadcasting Co., Inc.

FMCommander Single Allocation Study - 08-28-2014 - USGS 03 SEC
W231CB's Overlaps (In= -9.85 km, Out= 0.48 km)

W291CS CH 291 D DA
Lat= 40 18 12.0, Lng= 86 31 40.0
0.25 kW 75.6 M HAAT, 331 M COR
Prot.= 60 dBu, Intef.= 54 dBu

WCDQ CH 292 A BMLH19991129AAG
Lat= 40 03 19.0, Lng= 86 55 57.0
3.4 kW 134 M HAAT, 374 M COR
Prot.= 60 dBu, Intef.= 54 dBu



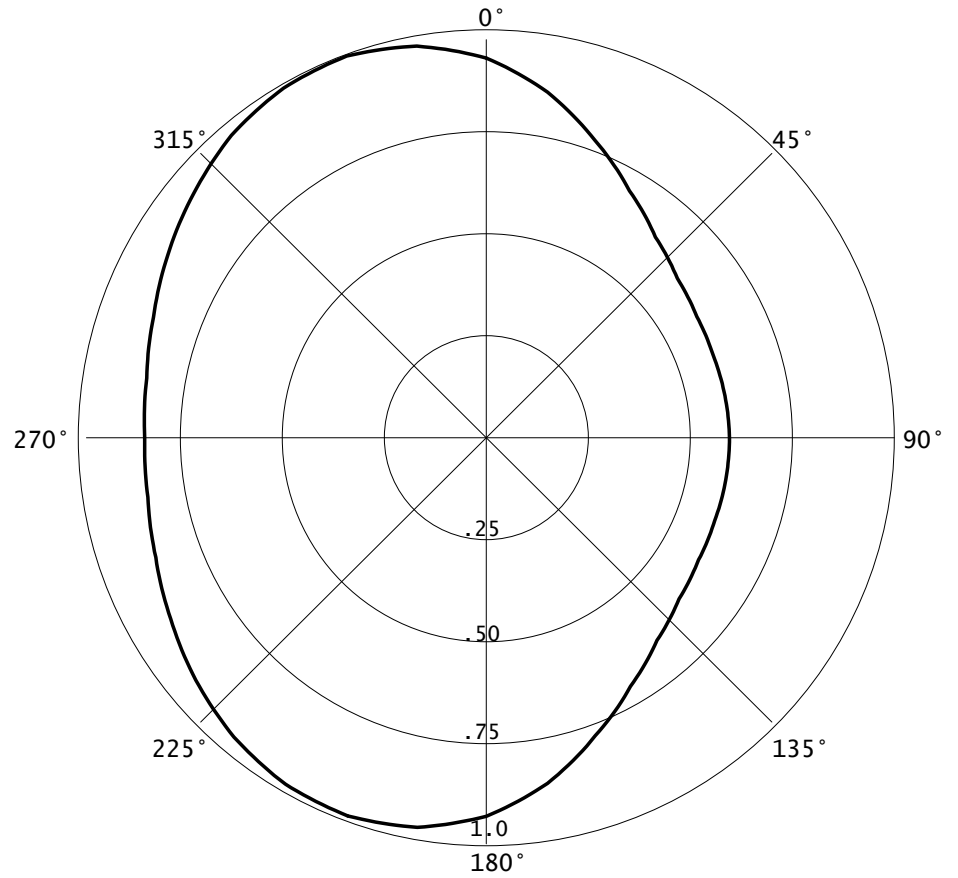
E1B W231CB

08-28-2014

RMS(V)= .82

Graph is Relative Field

Azi	Field	dBk	kw
000	0.935	-06.604	0.219
010	0.864	-07.290	0.187
020	0.779	-08.190	0.152
030	0.702	-09.094	0.123
040	0.645	-09.829	0.104
050	0.611	-10.300	0.093
060	0.596	-10.516	0.089
070	0.592	-10.574	0.088
080	0.594	-10.545	0.088
090	0.596	-10.516	0.089
100	0.596	-10.516	0.089
110	0.596	-10.516	0.089
120	0.601	-10.443	0.090
130	0.617	-10.215	0.095
140	0.651	-09.749	0.106
150	0.707	-09.032	0.125
160	0.781	-08.168	0.152
170	0.864	-07.290	0.187
180	0.932	-06.632	0.217
190	0.974	-06.249	0.237
200	0.991	-06.099	0.246
210	0.985	-06.152	0.243
220	0.962	-06.357	0.231
230	0.929	-06.660	0.216
240	0.893	-07.004	0.199
250	0.862	-07.310	0.186
260	0.842	-07.514	0.177
270	0.837	-07.566	0.175
280	0.845	-07.483	0.179
290	0.868	-07.250	0.188
300	0.901	-06.926	0.203
310	0.936	-06.595	0.219
320	0.972	-06.267	0.236
330	0.994	-06.073	0.247
340	1.000	-06.021	0.250
350	0.979	-06.205	0.240



W291CSX

Latitude: 40-18-12 N
Longitude: 086-31-40 W
ERP: 0.25 kW
Channel: 291
Frequency: 106.1 MHz
AMSL Height: 331.0 m
Elevation: 256.0 m
Horiz. Pattern: Directional

WILO 40 KM RADIUS

EXHIBIT E2

WILO 2MV

W291CS PROPOSED 60 DBU

W291CS CP 60 DBU

W291CSX

W291CS.C

WILO

Frankfort

Scale 1:400,000

0 5 10 15 km

E3 Registration 1219859

 [Map Registration](#)

Registration Detail

Reg Number	1219859	Status	Constructed
File Number	A0817967	Constructed	12/17/2002
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

Location (in NAD83 Coordinates)

Lat/Long	40-18-12.5 N 086-31-40.3 W	Address	US-421 (South Fork #93637)
City, State	Frankfort , IN		
Zip	46041	County	CLINTON
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
255.7	78.6
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
334.3	76.5

Painting and Lighting Specifications

FAA Chapters 4, 8, 12
Paint and Light in Accordance with FAA Circular Number 70/7460-1K

FAA Notification

FAA Study	2007-AGL-987-OE	FAA Issue Date	04/23/2007
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Owner & Contact Information

FRN	0011498342	Owner Entity Type	Limited Liability Company
Assignor FRN	0005885231	Assignor ID	L00008376

Owner

American Towers, LLC. Attention To: Regulatory Compliance FAA FCC 10 Presidential Way Woburn , MA 01801	P: (678)265-6730 F: E: faa-fcc@americantower.com
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Contact

Attention To: FAA FCC 10 Presidential Way Woburn , MA 01801	P: (678)265-6730 F: E: faa-fcc@americantower.com
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Last Action Status

Status	Constructed	Received	01/15/2013
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Output from NADCON for station W231CB

North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

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Transformation #: 1 Region: Conus

	Latitude	Longitude
NAD 27 datum values:	40 18 12.36905	86 31 40.29301
NAD 83 datum values:	40 18 12.50000	86 31 40.30000
NAD 27 - NAD 83 shift values:	-0.13095	-0.00699(secs.)
	-4.039	-0.165 (meters)
Magnitude of total shift:		4.043(meters)



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