

## **TECHNICAL NARRATIVE**

**Modify K268CT FM Translator Station  
CH268D - 101.5 MHz - 0.080 kW  
St. Peters, MO  
to  
K268CT Proposed CH268D – 101.5 MHz – 0.099 kW  
St. Louis, MO**

**February 18, 2020**

This Technical Narrative and attached exhibits were prepared on behalf of Kaspar Broadcasting of Missouri (“Kaspar”), licensee of FM translator K268CT, Facility ID No. 155886, Channel 268D, St. Peters, MO. Kaspar herein proposes a minor change application to modify K268CT to specify operation at a different transmit location. The proposed site is an existing tower is 319.7 meters (1048.6 ft.) in overall height, is located at 38° 32' 07" North, 90° 22' 23" West (NAD 83) and is associated with Antenna Registration Structure system “ASR” number 1002991.

The proposed K268CT facility will be used as a fill-in translator for KLJY-HD3, Channel 256C0, Facility No. 65924, licensed to Clayton, MO. Kaspar has received written consent to retransmit KLJY from Gateway Creative Broadcasting, Inc. licensee of KLJY. An exhibit demonstrates compliance with FCC Section 74.1201(g) Fill-In Translator. The proposed K268CT FCC F(50,50) 60 dBu contours is contained within the KLJY FCC F(50,50) 60 dBu contour. Therefore it is believed that this application is in compliance with Section 74.1201(g) of the Commission’s rules.

An exhibit demonstrates compliance with Section 74.1233(a) "Common Overlap". There is an area of common overlap between the current K268CT licensed facility and the proposed K268CT facility.

A channel study was included as an exhibit. It assumes a Class A 6 kW facility operating on channel 268 and is provided as a courtesy to help identify potential contour overlap issues. Section 74.1204 contour protection exhibits have been included for second adjacent full power FM station WXOS, Channel 266C1, East St. Louis, IL, second adjacent FM translator K270BW, Bellefontaine, MO and co-channel full power FM station WCIL-FM, Channel 268B, Carbondale, IL.

Studies has been undertaken to show the proposed K268CT facility is in compliance with the Commission's radio frequency emission limits and have been included as exhibits.

**K268CT Mod**

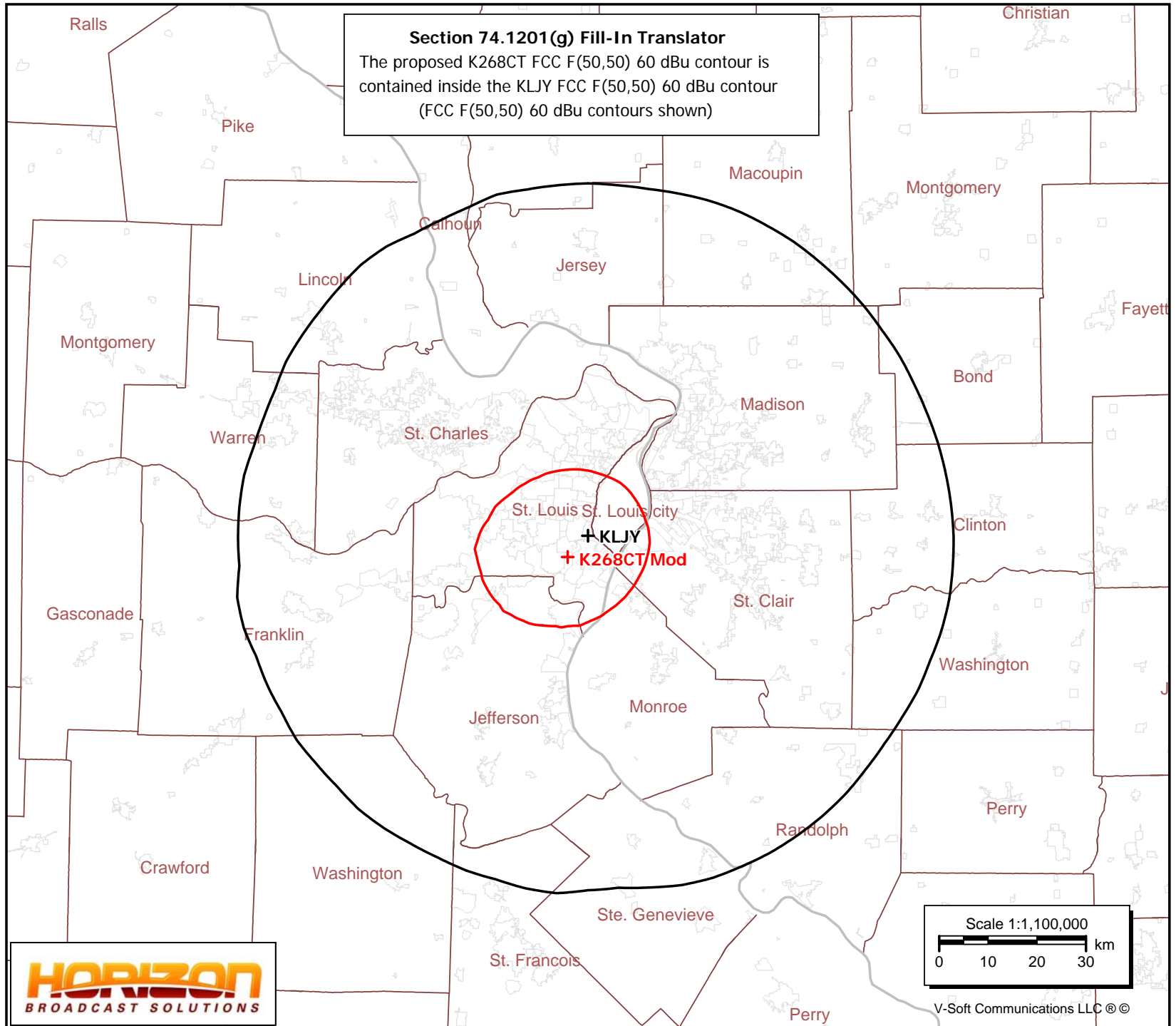
St. Louis, MO  
Latitude: 38-32-07 N  
Longitude: 090-22-23 W  
ERP: 0.099 kW  
HAAT: 313.19 m  
Channel: 268  
Frequency: 101.5 MHz  
AMSL Height: 472.9 m  
Elevation: 182.9 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**KLJY**

Clayton, MO  
BLH20111116AHE  
Latitude: 38-34-27.71 N  
Longitude: 090-19-31.48 W  
ERP: 100.00 kW  
HAAT: 309.0 m  
Channel: 256  
Frequency: 99.1 MHz  
AMSL Height: 462.2 m  
Elevation: 137.2 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**Section 74.1201(g) Fill-In Translator**

The proposed K268CT FCC F(50,50) 60 dBu contour is contained inside the KLJY FCC F(50,50) 60 dBu contour (FCC F(50,50) 60 dBu contours shown)



# K268CT Class A FM Channel Study

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REFERENCE                                     DISPLAY DATES
38 32 07.0 N.                                CLASS = A          DATA 02-04-20
90 22 23.0 W.                                Current Spacings to 3rd Adj. SEARCH 02-18-20
----- Channel 268 - 101.5 MHz -----
Call      Channel  Location      Azi      Dist      FCC      Margin
      Lat.      Lng.      Ant      Power      HAAT
-----
K268CT    LIC    268D    Saint Peters    MO  351.6    15.9    84.5    -68.6
38 40 37.2    90 23 59.4    0.008 kW    0 M
      Kaspar Broadcasting Co. Of    BLFT20160302AAF

WXOS      LIC    266C1    East St. Louis    IL  200.4    6.3    74.5    -68.2
38 28 56.2    90 23 53.4    100.000 kW    300 M
      St. Louis FCC License Sub,    BLH20080630ACL
Note: See Section 74.1204 Contour Protection Exhibit - WXOS & K270BW

WCIL-FM   LIC-N 268B    Carbondale    IL  136.3    127.6    177.5    -49.9
37 42 04.2    89 22 18.3    N    28.500 kW    199 M
      Mrr License LLC    BLH20031010ABX
Note: See Section 74.1204 Contour Protection Exhibit - WCIL-FM

KPLA      LIC-N 268C1    Columbia    MO  288.5    173.7    199.5    -25.8
39 00 52.1    92 16 32.7    N    42.000 kW    324 M
      Cumulus Licensing LLC    BLH19980306KB

K270BW    LIC    270D    Bellefontaine    MO  43.5    6.0    25.5    -19.5
38 34 28.2    90 19 31.4    0.250 kW    197 M
      Educational Media Foundati    BLFT20130923ADC
Note: See Section 74.1204 Contour Protection Exhibit - WXOS & K270BW

KWMU      LIC    214C1    St. Louis    MO  37.0    6.3    21.5    -15.2
38 34 50.2    90 19 45.4    100.000 kW    289 M
      The Curators Of The Univer    BLED20010706AAR
Note: The K268CT ERP is limited to 99 watts due to IF spacing to KWMU.

KWUL      LIC-N 269A    Elsberry    MO  328.4    74.1    71.5    2.6
39 06 09.1    90 49 23.4    N    3.100 kW    142 M
      Dennis Wallace, Court-Appo    BLH20080318ACV

WGEL      LIC-D 269A    Greenville    IL  71.2    94.0    71.5    22.5
38 48 11.2    89 20 56.3    D    6.000 kW    90 M
      Bond Broadcasting Inc.    BLH20090717ADL

KQXQ      LIC-N 269A    Cuba    MO  239.6    105.8    71.5    34.3
38 02 57.9    91 24 48.6    N    0.440 kW    36 M
      Dennis Wallace, Court-Appo    BLH20110307ABL

KTUI-FM   LIC    271A    Sullivan    MO  242.2    80.5    30.5    50.0
38 11 42.2    91 11 12.5    6.000 kW    84 M
      Fidelity Broadcasting, Inc    BLH20080321ABQ
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**Section 74.1204 Contour Protection**  
**WXOS Channel 266C1 East St. Louis, IL**  
**K270BW Channel 270D Bellefontaine, MO**

This comprehensive exhibit has been prepared to demonstrate that the proposed modification to FM translator K269CT will not cause prohibited interference to second adjacent full power FM station WXOS, Channel 268C1, East St. Louis, IL and second adjacent FM translator K270BW, Channel 270D, Bellefontaine, MO. This statement demonstrates that a lack of population and/or other factors allow this proposal to be compliant with Section 74.1204. The process commonly called "Living Way," allows for the use of U/D Analysis, also known as "signal strength ratio methodology." In this instant case the facilities to be protected are second adjacent and are to be afforded protection from signals 40 dB stronger than they present in the location of the proposed antenna location.

The WXOS F(50,50) protected contour at the proposed K268CT application site is 107.0 dBu. Therefore, the proposed K268CT F(50,10) interfering contour with respect to WXOS is the 147.0 dBu contour. The K270BW F(50,50) protected contour at the proposed K268CT application site is 78.7 dBu. Therefore, the proposed K268CT FCC F(50,10) interfering contour with respect to K270BW is the 118.7 dBu contour. Therefore the proposed K268CT facility will cause greater interference to K270BW. Using the FCC's FM propagation curves program (see attached), the 118.7 dBu contour was calculated to extend 81 meters from the antenna. The proposed K268CT antenna center of radiation is 290 meters above ground level. Therefore the interfering contour with respect to K270BW will only come to approximately 209 meters of ground level.

K268CT will not cause prohibited interference to K270BW because the interfering contour does not reach the ground. Therefore, this application is in compliance with 47 C.F.R. § 74.1204 with respect to K270BW.

**K268CT Mod**

St. Louis, MO

Latitude: 38-32-07 N

Longitude: 090-22-23 W

ERP: 0.099 kW

HAAT: 313.19 m

Channel: 268

Frequency: 101.5 MHz

AMSL Height: 472.9 m

Elevation: 182.9 m

Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model: FCC Model

Loc. Variability: 50.0%

Time Variability: 50.0%

HAAT Mthd: FCC

**K270BW**

Bellefontaine, MO

BLFT20130923ADC

Latitude: 38-34-28.01 N

Longitude: 090-19-30.98 W

ERP: 0.25 kW

HAAT: 196.9 m

Channel: 270

Frequency: 101.9 MHz

AMSL Height: 351.0 m

Elevation: 137.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: FCC Model

Loc. Variability: 50.0%

Time Variability: 50.0%

HAAT Mthd: FCC

**Section 74.1204 Contour Protection**  
K270BW Channel 270D Bellefontaine, MO

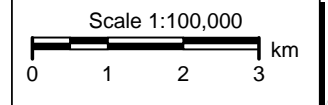
FCC F(50,50) 78.7 dBu contour

St. Louis

St. Louis city

+ K270BW

+ K268CT Mod

**HORIZON**  
BROADCAST SOLUTIONS

V-Soft Communications LLC ©

Select Contour Type:	<div>F(50,50) Service Contour -- FM and NTSC (analog) TV F(50,10) Interfering Contour F(50,90) Digital TV Service Contour</div>
Select Channel Range: (not TV Virtual Channel)	<div>FM Radio or TV Transmit Channels 2-6 TV Transmit Channels 7-13 TV Transmit Channels 14-69</div>
Find This:	<div>Field Strength, given a Distance (in km) Distance, Given a Field Strength (in dBu) FM ERP, given Distance and Field Strength [F(50,50) Service Contour]</div>
<div>0.099 ERP (kW)</div>	<div>Distance (km)</div>
<div>313 HAAT (meters)</div>	<div>118.7 Field (dBu)</div>
<div>Find Result</div> <div>Clear Form</div>	
Results:	
<div>Calculated Distance = 0.081 km</div> <div>Free Space equation used to compute distance.</div>	

This function uses the FCC's CURVES program to make calculations of the F(50,50) FM and NTSC (analog) TV service curves, the F(50,10) interfering signal curves, and the F(50,90) digital TV service curves. Printable copies of these propagation curves are available at [FM and TV Propagation Curves Graphs \(/media/radio/fm-and-tv-propagation-curves-graphs\)](https://www.fcc.gov/media/radio/fm-and-tv-propagation-curves-graphs).

**K268CT Mod**

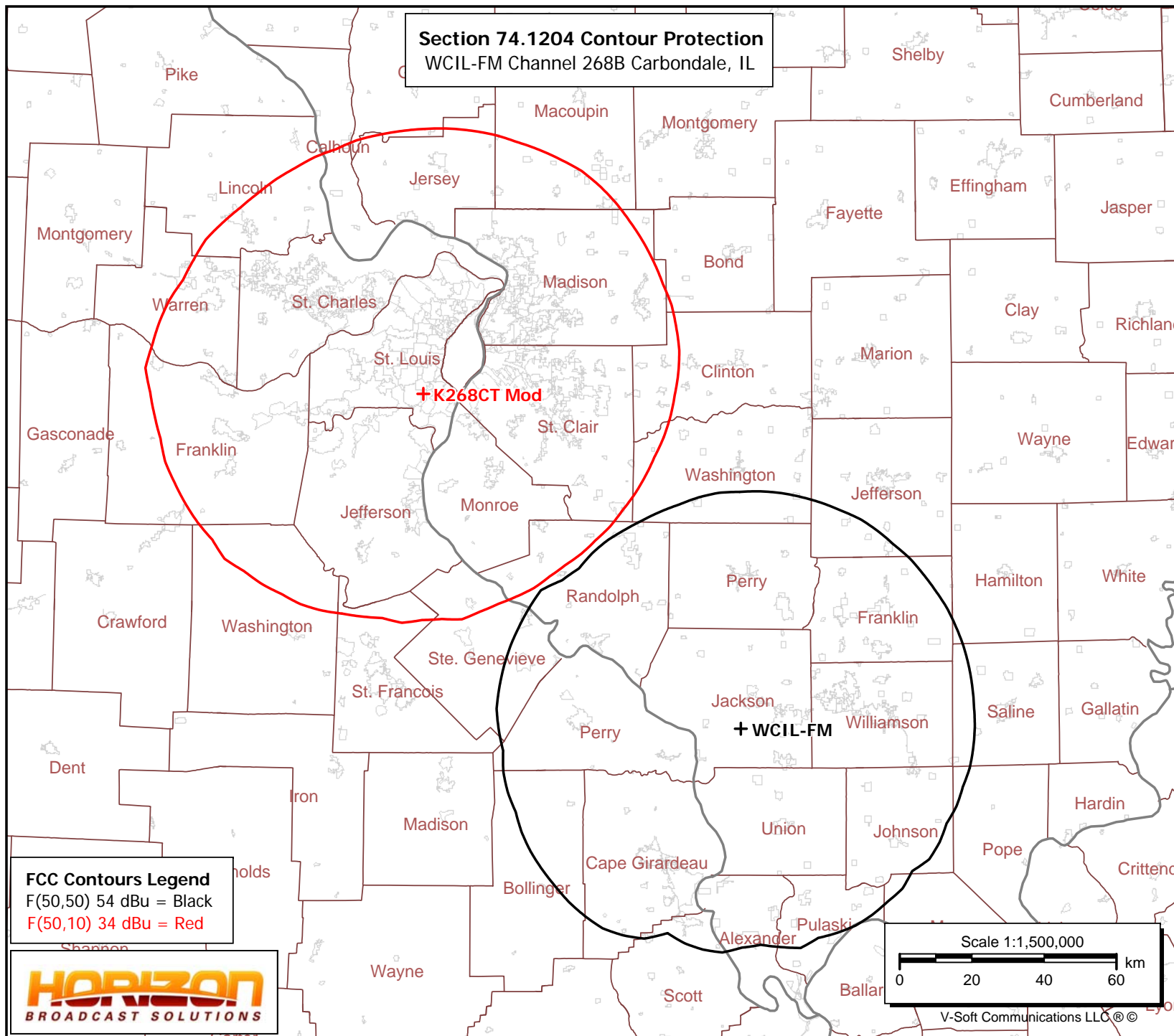
St. Louis, MO  
Latitude: 38-32-07 N  
Longitude: 090-22-23 W  
ERP: 0.099 kW  
HAAT: 313.19 m  
Channel: 268  
Frequency: 101.5 MHz  
AMSL Height: 472.9 m  
Elevation: 182.9 m  
Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**WCIL-FM**

Carbondale, IL  
BLH20031010ABX  
Latitude: 37-42-04.02 N  
Longitude: 089-22-17.97 W  
ERP: 28.50 kW  
HAAT: 199.0 m  
Channel: 268  
Frequency: 101.5 MHz  
AMSL Height: 338.0 m  
Elevation: 192.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**Section 74.1204 Contour Protection**

WCIL-FM Channel 268B Carbondale, IL

**FCC Contours Legend**

F(50,50) 54 dBu = Black  
F(50,10) 34 dBu = Red

**HORIZON**  
BROADCAST SOLUTIONS

Scale 1:1,500,000

0 20 40 60 km

V-Soft Communications LLC ©



**K268CT Mod**

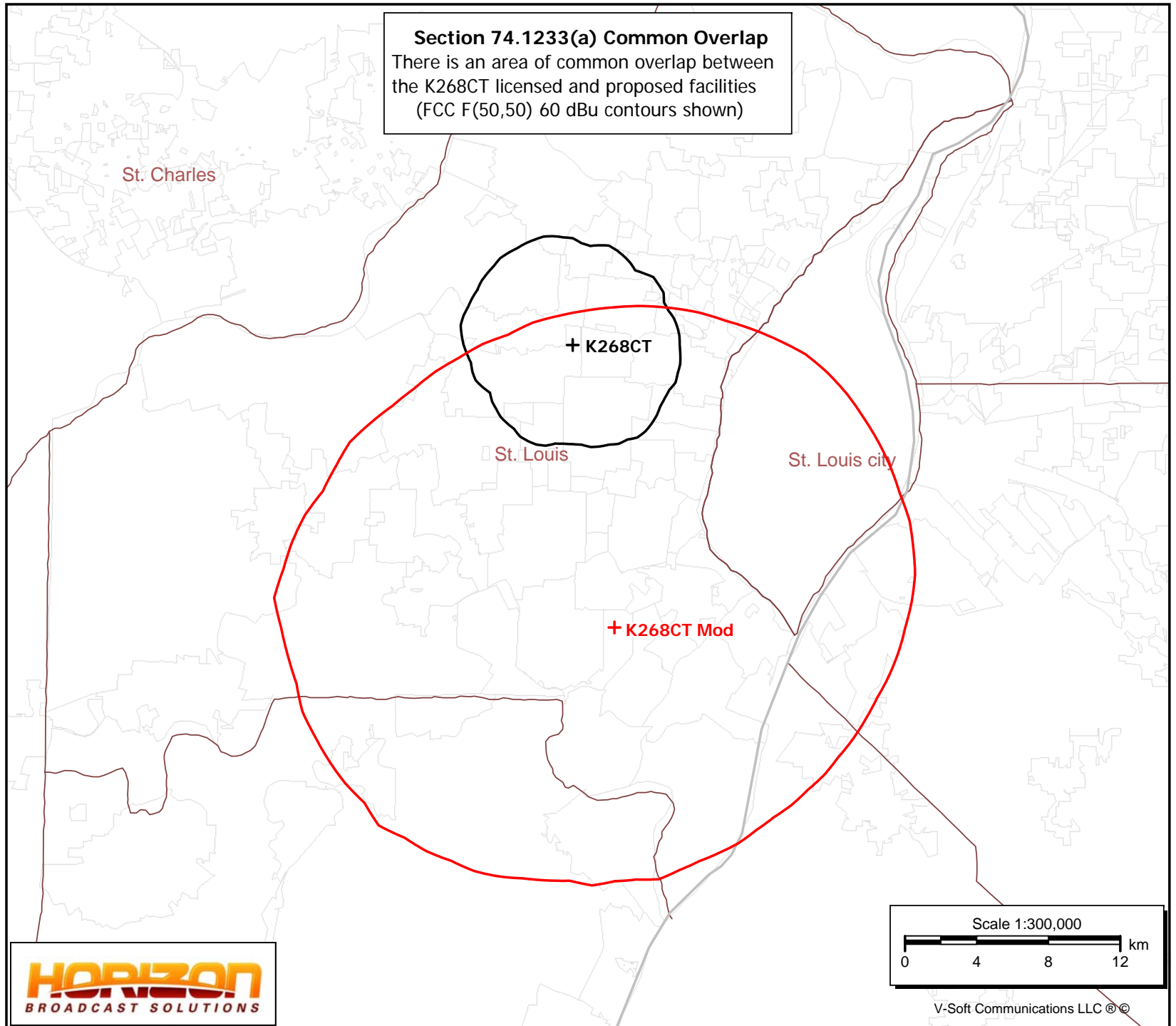
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Horiz. Pattern: Directional  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**K268CT**

Saint Peters, MO  
BLFT20160302AAF  
Latitude: 38-40-37.01 N  
Longitude: 090-23-58.98 W  
ERP: 0.008 kW  
HAAT: 0.0 m  
Channel: 268  
Frequency: 101.5 MHz  
AMSL Height: 280.0 m  
Elevation: 210.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: FCC Model  
Loc. Variability: 50.0%  
Time Variability: 50.0%  
HAAT Mthd: FCC

**Section 74.1233(a) Common Overlap**

There is an area of common overlap between the K268CT licensed and proposed facilities (FCC F(50,50) 60 dBu contours shown)



**Human Exposure to Radiofrequency Electromagnetic Field  
&  
Section 106 Compliance  
(Environmental)**

A study has been made to determine whether this proposal is in compliance with 47 C.F.R. 1.1307 of the Commission's rules and with OET Bulletin #65, dated August 1997, regarding human exposure to radio frequency radiation in the vicinity of broadcast towers. Kaspar Broadcasting of Missouri, seeks to change the transmit location of FM translator station K268CT, Channel 268D (101.5 MHz) Facility ID No. 155886, St. Peters, MO. Kaspar here proposes to modify K268CT to operate from a different transmitter location in Sappington, MO. The new site is an existing tower 319.7 meters (1,048.6 ft.) in overall height and is associated with Antenna Registration Structure system "ASR" number 1002991. The coordinates are 38° 32' 07" North, 90° 22' 23" West (NAD 83) The proposed transmit antenna is a side mounted Nicom Model BKG77 one bay broadband circularly polarized directional antenna with a center of radiation of 290 meters AGL. The antenna will be oriented at 330 degrees true azimuth. K268CT will operate with 99 watts ERP at 313 meters HAAT. The use of existing transmitting locations has been characterized as being environmentally preferable by the Commission, according to Note 1 of § 1.1306 of the FCC Rules. Because K268CT proposes to operate from an existing tower and no modifications are being made to the tower, is believed to be exempt from a Section 106 review by the SHPO/THPO.

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. The Nicom antenna is included in the revised OET FM Model Program under Type 2, Opposed "V" dipole. Using this antenna, the maximum calculated signal density near the tower at two meters above ground level attributable to the proposed K268CT facility is 0.0219  $\mu\text{W}/\text{cm}$  at 294.4 meters, which is 0.0108 percent of the general population/uncontrolled maximum permitted exposure limit.

This is well below the five percent threshold limit described in 1.1307(b) regarding sites with multiple emitters, which excludes applicant from responsibility for taking any corrective action in areas where the proposal's contribution is less than five percent.

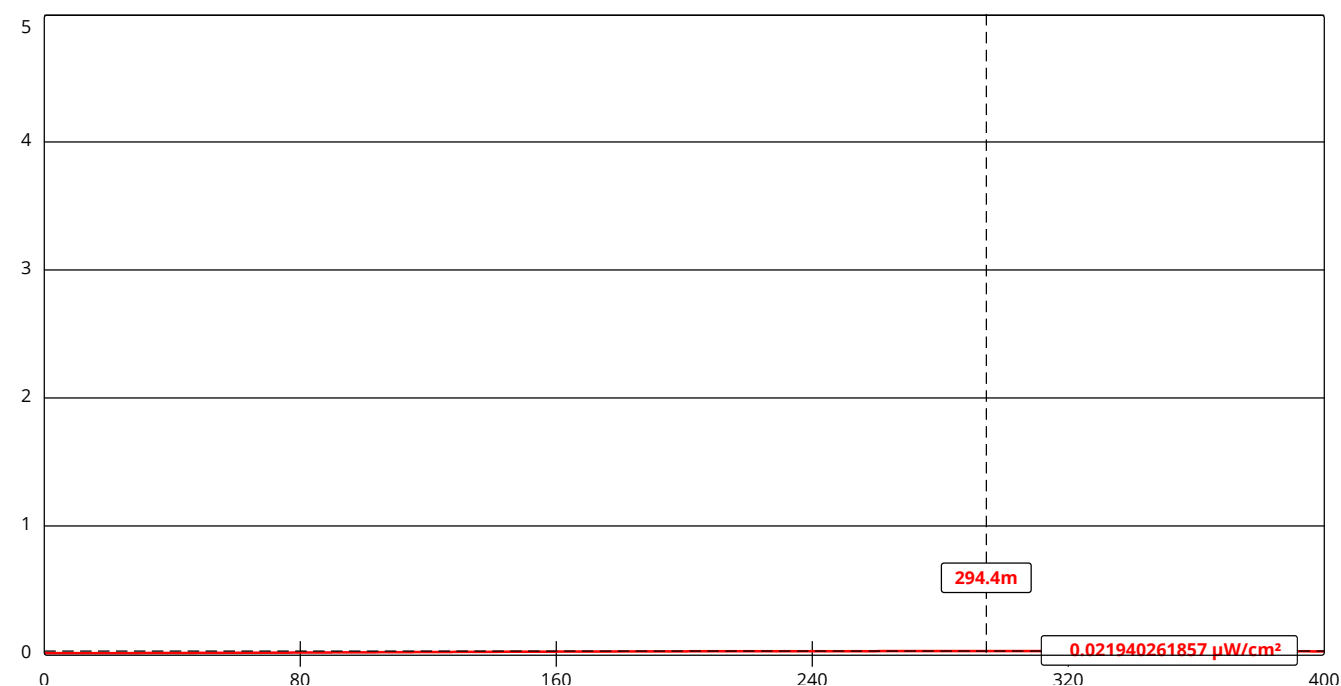
The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.



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# FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](#) (<http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Tx\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>). [▼ Show More.....](#)



Channel Selection	Channel 268 (101.5 MHz) ▼		
Antenna Type +	EPA Type 2: Opposed V Dipole ▼		
Height (m)	290	Distance (m)	400
ERP-H (W)	99	ERP-V (W)	99
Num of Elements	1	Element Spacing (λ)	1
Num of Points	500	Apply	

\* To Print - On your browser, please select Shrink to Fit under the Scale tab from Print Preview