Technical Narrative
September 15, 2022

This Technical Statement and attached exhibits were prepared on behalf of Waterloo Media Group, L.P. ("Waterloo"), licensee of FM translator K259AJ, Facility ID No. 82261, Channel 259D, Austin, Texas. Waterloo is proposing a minor modification to K259AJ by locating to an existing broadband antenna from the same tower it currently operates from. The modified K259AJ will continue to be used as a fill-in translator for Class B AM station KLBJ, 590 kHz, Facility ID Number 65791, licensed to Austin, Texas.

Waterloo is proposing to implement this change at an existing tower site. The existing tower, 284.4 meters in overall height is registered with Antenna Structure Registration ("ASR") number 1063584. The transmitting site is an existing tower 284.4 meters in overall height. This tower is registered with the FCC's Antenna Structure Registration (ASR) No. 1063584. The tower is located at 30° 19' 21.0" N Latitude ~ 97° 48' 04.0" W Longitude (NAD 83). The proposed antenna is a side mounted ERI Model SHP-8AC eight bay full wave circularly polarized broadband antenna. The K259AJ proposed facility would operate with 250 watts ERP at 238.4 meters above ground level and 252.59 meters HAAT.

An Exhibit included with this application demonstrates compliance with FCC Section 74.1201(g) for use as a Fill-In Translator. The proposed K259AJ FCC F(50,50) 60 dBu contour is contained within the KLBJ 2.0 mV/M daytime contour. Therefore, it is believed this application is in compliance with Section 74.1201(g) of the Commission's rules as a fill-in translator.

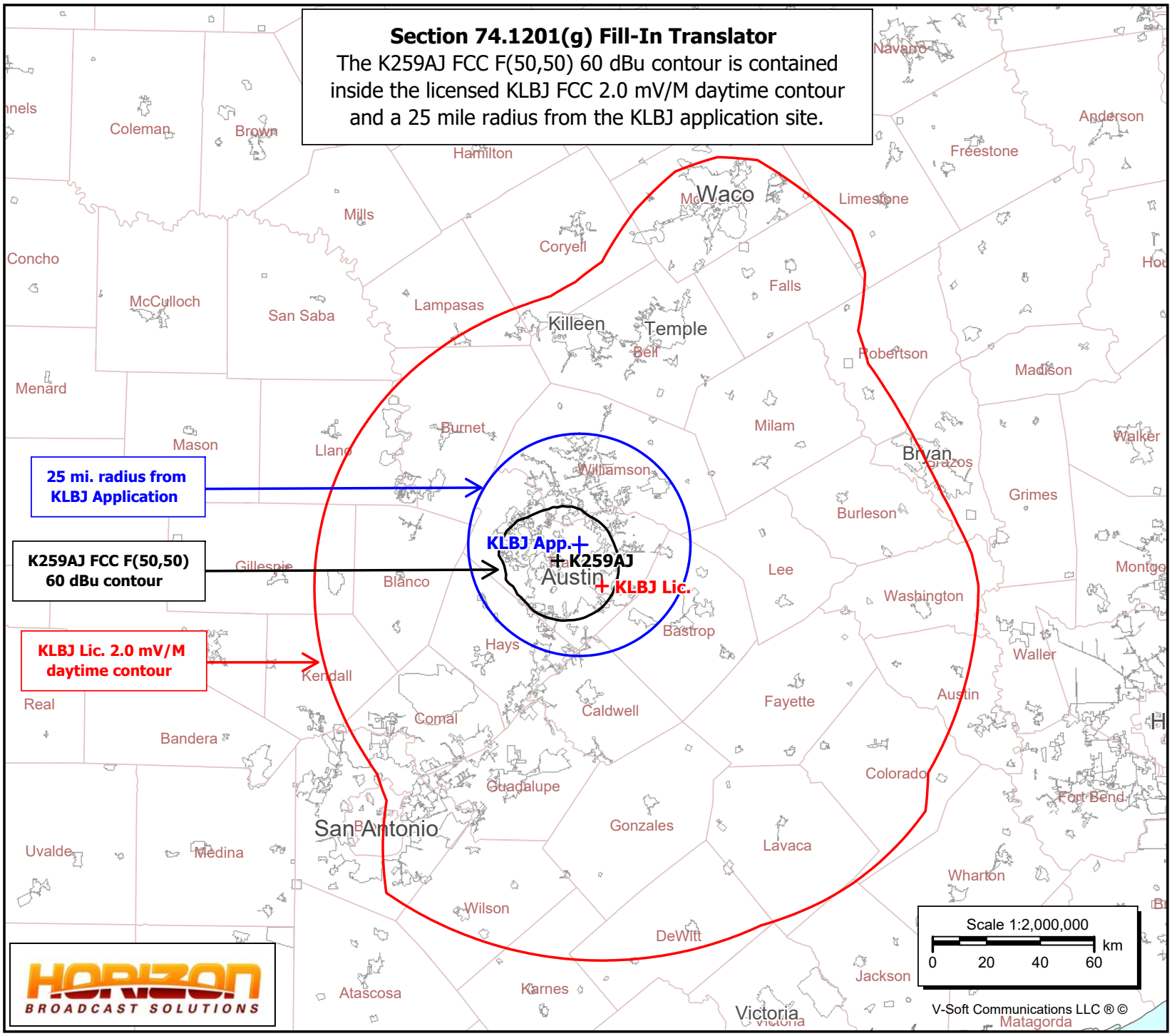
The Class A FM Channel Study uses Section 73.207 spacing for Class A FM stations. The study is provided as a convenience to FCC staff. Exhibits demonstrate Section 74.1204 contour protection to first adjacent full power FM stations WACO-FM, Channel 260C, Waco, Texas and KISS-FM, Channel 258C0, San Antonio, Texas, second adjacent FM translator K261DW, Austin, Texas, and first adjacent FM translator K260CB, San Marcos, Texas. An exhibit demonstrating compliance with Section 74.1233(a) "Common Overlap" is included.

Studies were undertaken to show the proposed K259AJ facility is in compliance with the Commission's radio frequency emission limits and are attached as Exhibits.

K259AJ
Austin, TX
BLFT20110607ABI
Latitude: 30-19-20 N
Longitude: 097-48-03 W
ERP: 0.25 kW
HAAT: 272 m
Channel: 259
Frequency: 99.7 MHz
AMSL Height: 490.0 m
Elevation: 238.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KLBJ Lic.
Austin, TX
Type: AM
Frequencyl: 590
Power: 5.0 kW Day
Latitude: 30-14-16 N
Longitude: 097-37-47 W

KLBJ App.
Austin, TX
Type: AM
Frequency: 590 kHz
Power: 5.0 kW Day
Latitude: 30-22-31.70 N
Longitude: 097-43-02 W



K259AJ Class A FM Channel Study

REFERENCE — DISPLAY DATES
30 19 21.0 N. — CLASS = A Int = AA — DATA 09-04-22
97 48 04.0 W. — Current Spacings to 3rd Adj. — SEARCH 09-14-22

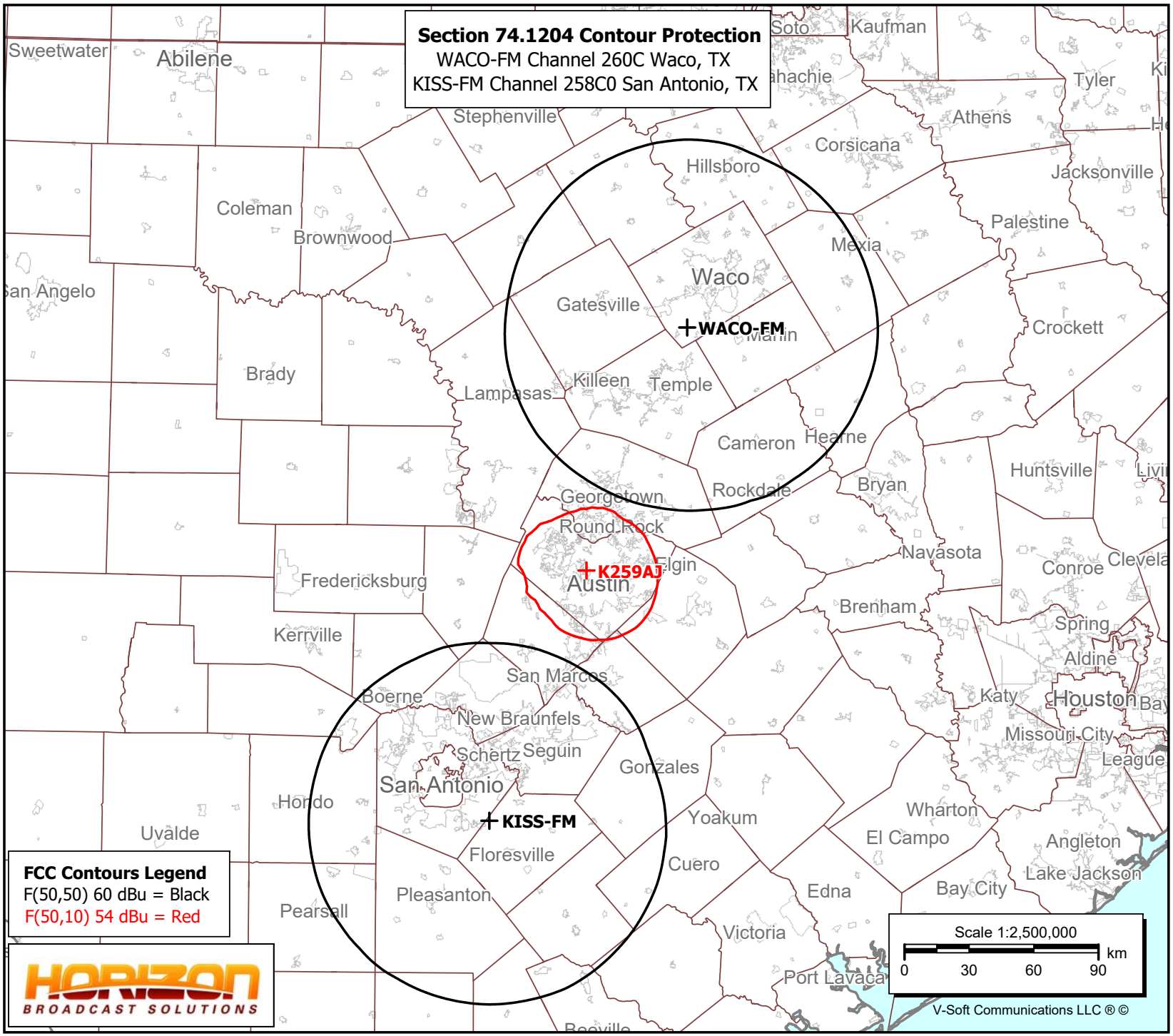
Channel 259 - 99.7 MHz

Call	Channel	Location	Azi	Dist	FCC	Margin
Lat.	Lng.	Ant	Power	HAAT		
K259AJ	LIC	259D Austin	TX 180.0	0.0	84.5	-84.5
30 19 20.7	97 48 04.0	CN	0.250 kW 0 M			
Waterloo Media Group, L.P.			BLFT20170928ADF			
WACO-FM	LIC-N	260C Waco	TX 22.4	121.9	164.5	-42.6
31 20 15.6	97 18 38.0	NCN	90.000 kW	506 M		
Ihm Licenses, LLC			BLH19901116KD			
Note: See Section 74.1204 Contour Protection - WACO-FM & KISS-FM						
KISS-FM	LIC	258C0 San Antonio	TX 201.1	124.5	151.5	-27.0
29 16 29.9	98 15 53.0	CN	100.000 kW	453 M		
Cmg Ny/texas Radio, LLC			BLH20060427AFE			
Note: See Section 74.1204 Contour Protection - WACO-FM & KISS-FM						
K261DW	LIC	261D Austin	TX 58.0	0.2	25.5	-25.3
30 19 23.7	97 47 59.0	CN	0.099 kW	374 M		
Township Media, LLC			0000086543			
Note: See Section 74.1204 Contour Protection - K261DW						
KJZX-LP	LIC	206L1 Austin	TX 101.5	10.7	5.5	5.2
30 18 11.5	97 41 30.4	CN	0.100 kW 8 M			
Jazz Atx			0000156614			
K262DG	LIC	262D Georgetown	TX 21.3	32.1	25.5	6.6
30 35 30.7	97 40 45.0	CN	0.057 kW 0 M			
American Broadcasting Of T			BLFT20180608ABA			
K260CB	LIC	260D San Marcos	TX 191.1	41.6	33.5	8.1
29 57 15.8	97 53 05.0	CN	0.250 kW	47 M		
Township Media, LLC			BLFT20161214ABY			
Note: See Section 74.1204 Contour Protection - K260CB						
KOKE-FM	LIC-N	257C3 Thorndale	TX 68.7	51.7	41.5	10.2
30 29 24.0	97 17 57.0	NCN	24.000 kW	100 M		
Genuine Austin Radio, Lp			BLH20131030AID			
KCYY	LIC	262C0 San Antonio	TX 225.3	125.6	85.5	40.1
29 31 25.8	98 43 26.1	CN	100.000 kW	300 M		
Cmg Ny/texas Radio, LLC			BMLH20001010ACO			
KLKV	LIC-N	260C3 Hunt	TX 262.2	138.0	88.5	49.5
30 08 51.7	99 13 15.2	NCN	11.000 kW	129 M		
Educational Media Foundati			BMLED20130422AAJ			
K259AH	LIC	259D Brenham	TX 98.4	136.5	84.5	52.0
30 08 11.8	96 23 57.9	CN	0.115 kW	123 M		
Hope Media Group			BMLFT20130905AAD			
KTXM	LIC-N	260A Hallettsville	TX 138.6	126.8	71.5	55.3
29 27 45.9	96 56 04.9	NCN	3.400 kW	106 M		
Kremling Enterprises, Inc.			BLH19980615KC			

K259AJ
Austin, TX
Latitude: 30-19-21 N
Longitude: 097-48-04 W
ERP: 0.25 kW
HAAT: 252.59
Channel: 259
Frequency: 99.7 MHz
AMSL Height: 476.2 m
Elevation: 237.8 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

WACO-FM
Waco, TX
BLH19901116KD
Latitude: 31-20-15.60 N
Longitude: 097-18-38 W
ERP: 90.00 kW
HAAT: 506.0
Channel: 260
Frequency: 99.9 MHz
AMSL Height: 710.0 m
Elevation: 244.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

KISS-FM
San Antonio, TX
BLH20060427AFE
Latitude: 29-16-29.90 N
Longitude: 098-15-53 W
ERP: 100.00 kW
HAAT: 453.0
Channel: 258
Frequency: 99.5 MHz
AMSL Height: 611.0 m
Elevation: 163.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

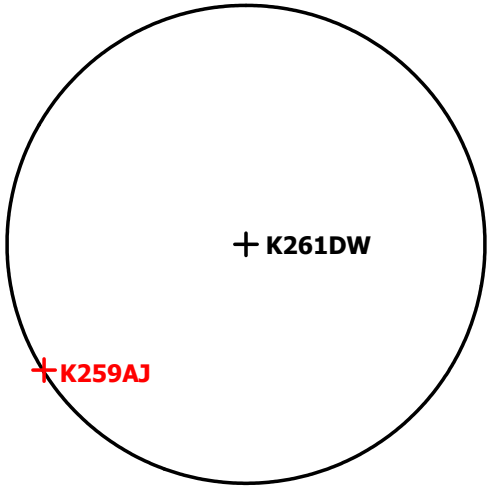


K259AJ
Austin, TX
Latitude: 30-19-21 N
Longitude: 097-48-04 W
ERP: 0.25 kW
HAAT: 252.59
Channel: 259
Frequency: 99.7 MHz
AMSL Height: 476.2 m
Elevation: 238.4 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K261DW
Austin, TX
0000086543
Latitude: 30-19-23.70 N
Longitude: 097-47-59 W
ERP: 0.099 kW
HAAT: 373.8
Channel: 261
Frequency: 100.1 MHz
AMSL Height: 593.0 m
Elevation: 249.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

Section 74.1204 Contour Protection
K261DW Channel 261D Austin, TX

FCC F(50,50) 112.9 dBu Contour



See the attached FM & TV Propagation Curves.
The K259AJ F(50,10) 152.9 dBu contour
extends 3 meters from the antenna.
The antenna is mounted 238.4 meters AGL.
K259AJ will not cause interference to
K261DW because the contour does not reach
the ground.

HORIZON BROADCAST SOLUTIONS

Scale 1:5,000
0 0.07 0.13 0.2 km

FM and TV Propagation Curves

Databases & Searches

AM Query

Antenna Height Above Average Terrain (HAAT) Calculator

Antenna Structure Registration (ASRN) Records Within A Radius

Broadcast Station Mailing Address Search

CDBS Database Public Files

Children's Educational Television Reporting - Form 2100, Schedule H

Children's Programming Query

COLORIT HTML Color Generator

Degrees Minutes Seconds to/from Decimal Degrees

Distance and Azimuths Between Two Sets of Coodinates

Electioneering Communications Database

EEO Filing Search

Filing Systems and Databases

Find Community Coordinates

Find Terminal Coordinates

This Javascript calculator uses the FM or TV propagation curves to find the distance to a service or interfering contour, or the corresponding field strength at a given contour distance. More after the form.

Select Contour Type:
- F(50,50) Service Contour -- FM and NTSC (analog) TV
- F(50,10) Interfering Contour
- F(50,90) Digital TV Service Contour

Select Channel Range:
(not TV Virtual Channel)
- FM Radio or TV Transmit Channels 2-6
- TV Transmit Channels 7-13
- TV Transmit Channels 14-69

Find This:
- 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]

.25
ERP (kW)

Distance (km)

252.79
HAAT (meters)

152.9
Field (dBu)

Find Result Clear Form

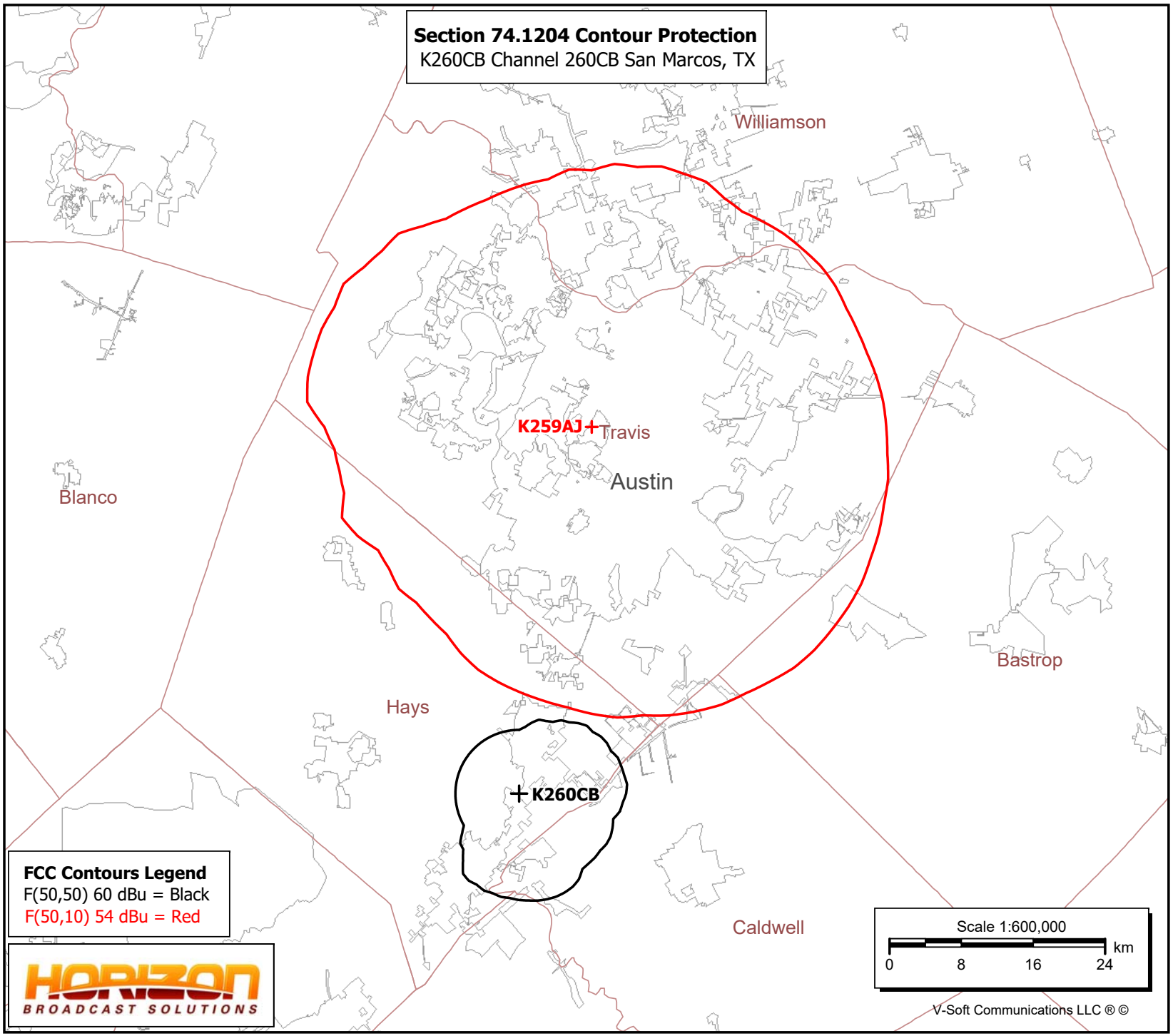
Results:

Calculated Distance = **0.003 km**

Free Space equation used to compute distance.

K259AJ
Austin, TX
BLFT20110607ABI
Latitude: 30-19-20 N
Longitude: 097-48-03 W
ERP: 0.25 kW
HAAT: 252.55
Channel: 259
Frequency: 99.7 MHz
AMSL Height: 476.2 m
Elevation: 237.8 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K260CB
San Marcos, TX
BLFT20161214ABY
Latitude: 29-57-15.02 N
Longitude: 097-53-03.98 W
ERP: 0.25 kW
HAAT: 46.8
Channel: 260
Frequency: 99.9 MHz
AMSL Height: 262.0 m
Elevation: 202.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None



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. Waterloo Media Group, L.P. ("Waterloo") is the licensee of K259AJ, Channel 259D, Facility ID No. 82261, licensed to Austin, Texas. Waterloo seeks to modify K259AJ by changing the transmit location. The proposed transmitting site is an existing tower 284.4 meters in overall height. This tower is registered with the FCC's Antenna Structure Registration (ASR) No. 1063584. The tower is located at 30° 19' 21.0" N Latitude ~ 97° 48' 04.0" W Longitude (NAD 83). Because K259AJ would operate from an existing tower and antenna and no changes are being made to the tower, it is believed to be exempt from a Section 106 review by the SHPO/THPO.

The proposed antenna is a side mounted ERI Model SHP-AC8 eight bay full wave circularly polarized broadband antenna. The K259AJ facility would operate with 250 watts ERP at 238.4 meters above ground level and 252.59 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. The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number 65. The ERI antenna is included in the Antenna Types in the OET's updated FM Model Program under Type 3 Opposed "U" dipole. Using the Commission's FM Model Program, the maximum calculated signal density near the tower at two meters above ground level attributable to the proposed facility is 0.017 $\mu W/cm^2$ at 64.2 meters, which is 0.0085 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 ERI Model SHP-AC8 broadband antenna is also the transmit antenna for KROX-FM main license BLH-20110830AEH, Channel 268C2, Buda Texas, auxiliary license 0000147264 for KLBJ-FM, Channel 229C, Facility ID No. 65792, Austin, Texas and auxiliary license 0000150494 for KBPA, Channel 278C1, Facility ID No. 41213, Austin, Texas. Waterloo is also filing a minor modification for FM translator K274AX, Channel 274D, Facility ID No. 139278, Austin, TX to operate from this antenna. Waterloo will conduct a spurious emissions report and include it with the K259AJ license application.

The applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. 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.

FM Model

Radio Frequency Safety

FCC Policy on Human Exposure

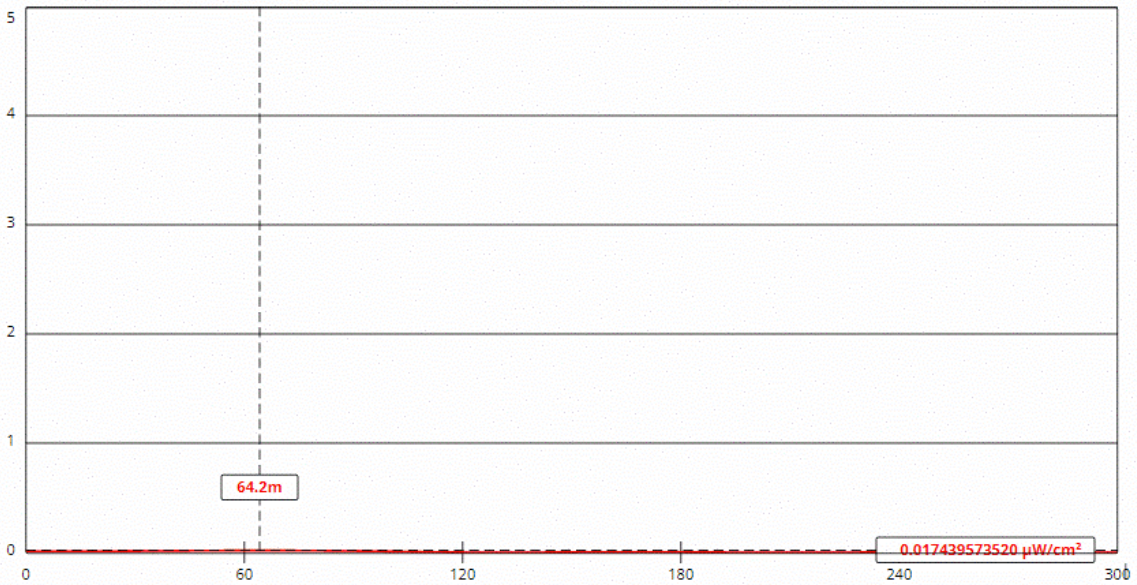
RF Safety FAQ

Body Tissue Dielectric Parameters

RF Safety Highlighted Releases

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. Show More....



View Tabular Results +

Channel Selection	Channel 259 (99.7 MHz)		
Antenna Type +	EPA Type 3: Opposed U Dipole		
Height (m)	238.4	Distance (m)	300
ERP-H (W)	250	ERP-V (W)	250
Num of Elements	8	λ	1
Num of Points	500	Apply	