

ENGINEERING EXHIBIT

Application for Low Power Television Digital Flashcut Construction Permit

prepared for

California Broadcasting, Inc.

K46HI Redding, CA

Facility ID 129800

Ch. 46 (digital) 15 kW

California Broadcasting, Inc. ("CBI") is the licensee of Low Power Television ("LPTV") station K46HI, analog Channel 46, Redding, CA, Facility ID 129800 (BLTTL-20040329ABN). *CBI* proposes herein to flashcut K46HI to digital operation using its presently licensed antenna.

The K46HI transmitting antenna is located on a tower structure which is not presently registered with the FCC, as it is less than 61 meters overall height above ground level and there are no known landing areas within 8 km according to the FCC's "TOWAIR" slope test program. No change to the structure's overall height is proposed. FAA notification and commensurate FCC registration are not necessary. A geographic coordinate correction of one second longitude is specified herein.

The transmitting antenna is a Jampro model JA/LS-TB-4(CP) having circular polarization. As digital, the maximum effective radiated power will be 15 kW utilizing a "simple" out of channel emission mask.

Figure 1 provides a plot of the directional antenna's azimuthal pattern. Figure 2 depicts the 51 dB μ coverage contour of the proposed digital facility along with the 74 dB μ coverage contour of the licensed analog facility. The use of the same site and corresponding service area overlap demonstrate compliance with §73.3572 for a minor change.

Interference study per OET Bulletin 69¹ shows that the proposal complies with the FCC's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

The nearest FCC monitoring station is 326 km distant at Livermore, CA. This exceeds by a large margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. The site is not located within the areas requiring coordination with "quiet" zones specified in §73.1030(a) and (b). There are no authorized AM stations within 3.0 km of the site. The site is beyond the border areas requiring international coordination.

Human Exposure to Radiofrequency Electromagnetic Field

The proposed transmitting location is atop South Fork Mountain overlooking Redding. There are numerous other LPTV, TV, and FM transmitting facilities at this site area situated on various antenna supporting structures. The applicant considers access to the site area to be controlled by the existence of warning signs and locked gates which serve to restrict access to authorized persons that are aware of the potential for exposure. Further, the remote location and steep terrain also aid to discourage and restrict casual access. *CBI* participates in a radiofrequency ("RF") electromagnetic field exposure safety program along with other broadcasters and FCC licensees that utilize the South Fork Mountain site area. Following construction of the proposed facility, *CBI* will conduct RF exposure measurements (and/or detailed calculations) to evaluate the level of RF exposure resulting from the proposed facility. As necessary, based on these results and considering all emitters, appropriate exposure abatement procedures will be established and followed, in order to comply with the FCC's

¹FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). The implementation of OET-69 for this study followed the guidelines of OET-69 as specified therein. The default cell size of 1 km was employed. Comparisons of various results of this computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

exposure limits. Such abatement procedures may involve the restriction of access to certain areas and/or facility modifications to reduce RF levels.

Considering the post-construction measurement and an appropriate abatement program, the general public and workers will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will be posted as needed. With respect to worker safety, authorized personnel will be trained and/or supervised as necessary for access to any "controlled" areas. *CBI* will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The proposed facility involves use of an existing transmitting antenna and no tower work is required at implementation.

List of Attachments

Figure 1	Antenna Azimuthal Pattern
Figure 2	Coverage Contour Comparison
Table 1	Interference Analysis Results Summary
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	May 25, 2016	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600

**Azimuth Pattern - Relative Field
(True North)**

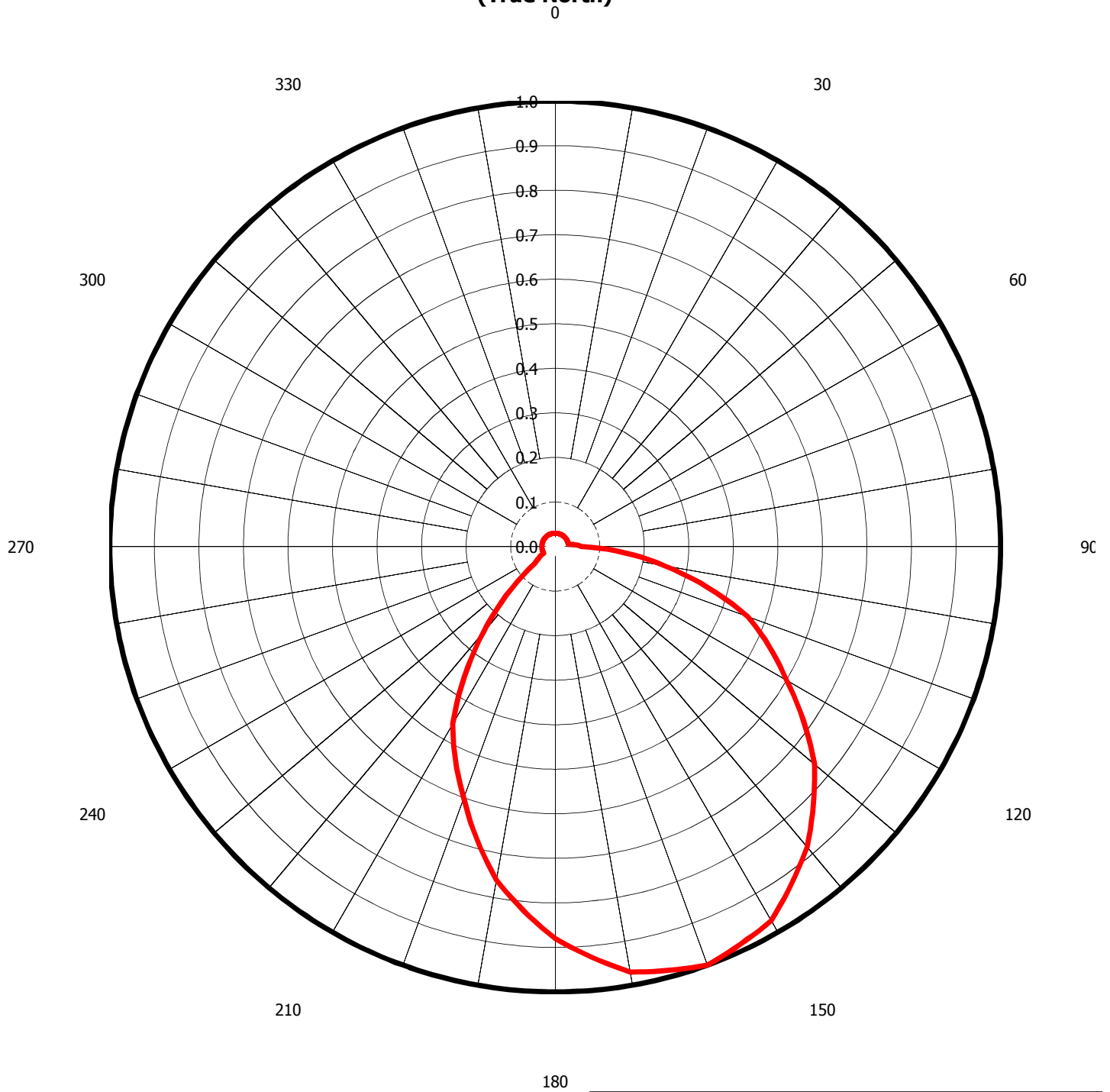
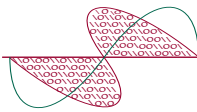


Figure 1
Antenna Azimuthal Pattern
K46HI Redding, CA
Facility ID 129800
Ch. 46 (digital) 15 kW

prepared for
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May, 2016



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 2
Coverage Contour Comparison
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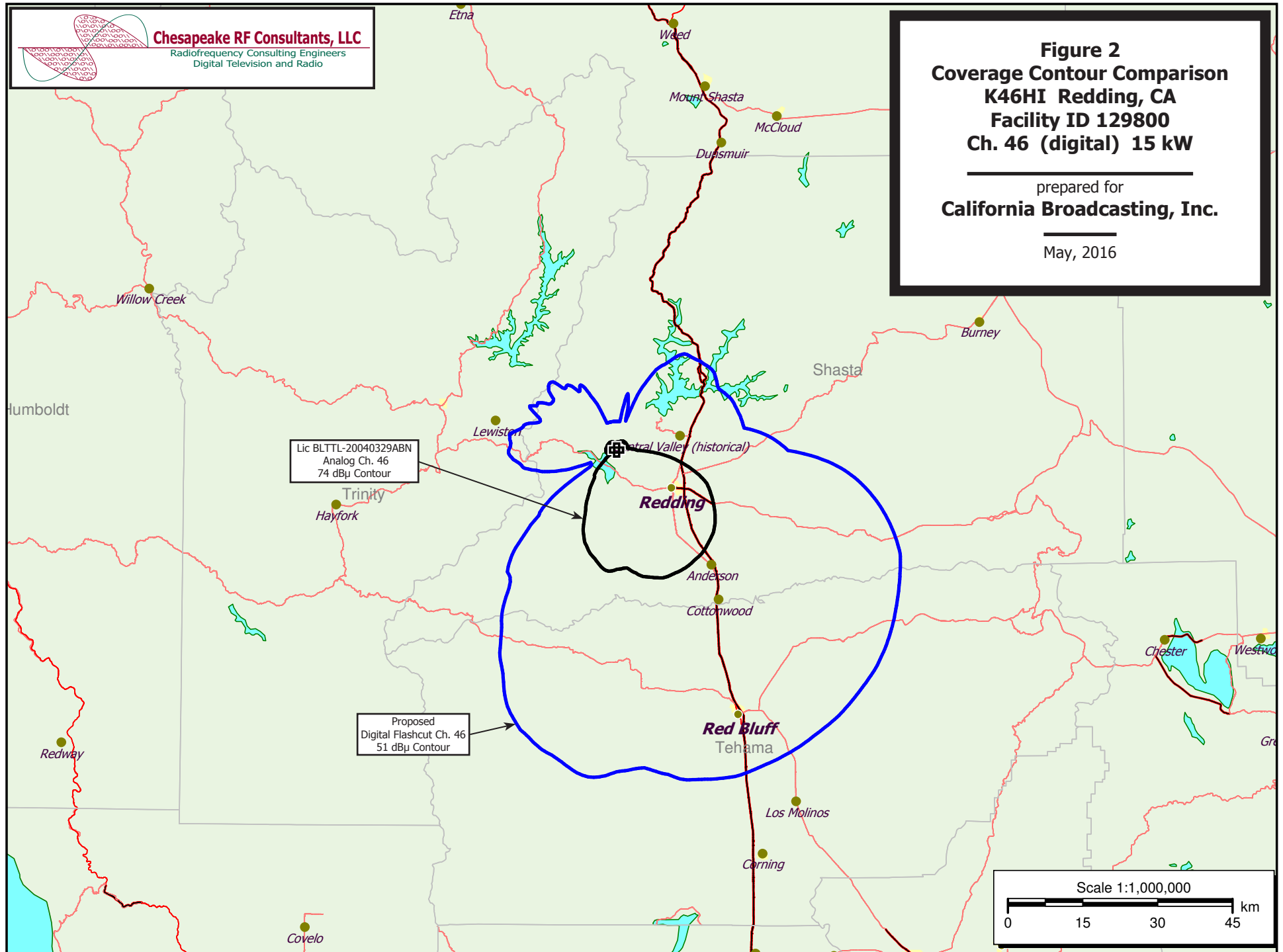
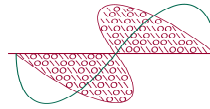


Table 1

Interference Analysis Results Summary

prepared for

California Broadcasting, Inc.**K46HI Redding, CA****Chesapeake RF Consultants, LLC**Radiofrequency Consulting Engineers
Digital Television and Radio

K46HI-D	USERRECORD-01	REDDING	CA US
Channel 46	ERP 15.	kW HAAT 455. m	RCAMSL 00984 m SIMPLE MASK
Latitude 040-39-15	Longitude 0122-31-11		
Dir Antenna Make CDB	Model 00000000017689	Beam tilt N	Ref Azimuth 160.

The LMS application requires NAD-83 coordinates. FCC internal systems then convert to NAD-27 and port over to CDBS for processing. This interference analysis utilizes truncated NAD-27 coordinates to replicate FCC processing.

Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
31	KEUV-LP	EUREKA CA	122.8	LIC	BLTTL-20050729AMX	---	none
38	K38FQ	ANDERSON/CENTRAL VAL CA	0.1	LIC	BLTTL-20000710AAX	---	none
42	KQSX-LP	CAL - OREGON CA	73.2	LIC	BLTTL-20090819AHE	---	none
45	NEW	CHICO CA	101.3	APP	BNPDTL-20090825AOS	---	none
45	K45DS-D	FRESHWATER, ETC. CA	137.3	LIC	BLDTL-20120209ACU	---	none
45	NEW	PARADISE CA	124.9	APP	BNPDTL-20090825BDZ	---	none
45	K45AH	UKIAH CA	177.7	LIC	BLTT-19830125IK	---	none
45	K45KX-D	WEED CA	87.4	LIC	BLDTL-20140221ACO	---	none
45	K45KE-D	JACKSONVILLE OR	190.4	LIC	BLDTT-20091118ACA	---	none
46	K46LG-D	MONTEREY CA	404.9	CP	BPDTL-20120131AGJ	---	none
46	KQCA	STOCKTON CA	279.9	LIC	BLCDD-20060623AAM	4,724,477	212 (0.00%)
46	K46HL-D	SUSANVILLE, ETC CA	184.1	LIC	BLDTT-20110822AAD	---	none
46	KRNS-CD	RENO NV	269.5	LIC	BLDTA-20111101AKP	---	none
46	K46CC-D	SHURZ NV	362.2	LIC	BLDTT-20110609AAP	---	none
46	K15KF-D	COOS BAY OR	332.4	LIC	BLTT-19980911JB	---	none
46	K46IP-D	COTTAGE GROVE OR	349.9	LIC	BLDTT-20090330AAN	---	none
46	NEW	EUGENE OR	375.3	APP	BNPDTL-20090825AXF	---	none
46	K46CH-D	GOLD HILL OR	201.2	LIC	BLDTT-20120130AJR	---	none
46	K46KS-D	ROSEBURG OR	292.1	LIC	BLDTT-20110218ABJ	---	none
47	K47OB-D	CHICO CA	119.1	CP	BNPDTL-20101004ADA	---	none
47	K47OI-D	ORLAND CA	114.9	CP	BNPDTL-20100514AAK	---	none
47	K47DV-D	SOUTH YREKA CA	119.4	LIC	BLDTL-20100204ABF	---	none
47	K47AL	UKIAH CA	177.7	LIC	BLTTL-19830223IB	---	none
47	K47GI-D	GRANTS PASS OR	202.1	LIC	BLANK-1252	---	none
47	K47LD-D	PHOENIX, TALENT OR	183.7	LIC	BLDTT-20131101AGC	---	none
48	K48KB	CHICO CA	108.5	LIC	BLTTL-20090406AJP	---	none
50	K50GP	REDDING CA	12.8	LIC	BLTT-20010910AAB	---	none

Channel and Facility Information

Section	Question	Response
Proposed Community of License	Facility ID	129800
	State	California
	City	REDDING
	LPD Channel	46

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	No
	ASR Number	
Coordinates (NAD83)	Latitude	40° 39' 15.1" N+
	Longitude	122° 31' 15.7" W-
	Structure Type	LTOWER-Lattice Tower
	Overall Structure Height	30.5 meters
	Support Structure Height	30.5 meters
	Ground Elevation (AMSL)	963.5 meters
Antenna Data	Height of Radiation Center Above Ground Level	20 meters
	Height of Radiation Center Above Mean Sea Level	983.5 m
	Effective Radiated Power	15 kW

Antenna
Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	JAM
	Model	JA/LS-TB-4(CP)
	Rotation	160 degrees
	Electrical Beam Tilt	5.9
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Circular
Elevation Radiation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	
	Out-of-Channel Emission Mask:	Simple

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)
0	1	90	0.03	180	0.03	270	0.03
10	0.97	100	0.03	190	0.03	280	0.03
20	0.88	110	0.03	200	0.03	290	0.06
30	0.76	120	0.03	210	0.03	300	0.25
40	0.6	130	0.03	220	0.03	310	0.46
50	0.46	140	0.03	230	0.03	320	0.6
60	0.25	150	0.03	240	0.03	330	0.76
70	0.06	160	0.03	250	0.03	340	0.88
80	0.03	170	0.03	260	0.03	350	0.97

Additional Azimuths

Degree	V _A
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