

## **ENGINEERING EXHIBIT**

### **Application for Television Translator Digital Flash-Cut Construction Permit**

prepared for

#### **Bluestone License Holdings Inc.**

K04EZ Big Bend, Etc., CA

Facility ID 28552

Ch. 4 (digital) 0.275 kW

*Bluestone License Holdings Inc.* (“*Bluestone*”) is the licensee of television translator station K04EZ, analog Channel 4, Big Bend, Etc., CA, Facility ID 28852 (BLTTV-1168). *Bluestone* herein proposes herein to flash-cut K04EZ to digital operation.

The proposed facility will operate on the current K04EZ Channel 4 as digital at 0.275 kW effective radiated power (“ERP”) using a “simple” out of channel emission mask. Corrected site coordinates and elevation data are provided herein. Figure 1 depicts the coverage contour of the proposed facility as well as that of the K04EZ licensed analog facility. The use of the same transmitter site and the service area overlap shown demonstrate compliance with §73.3572 for a minor change.

The proposed digital facility will employ the existing transmitting antenna (Jerrold model J55 array) associated with the licensed analog operation. The antenna supporting structure does not have an FCC Antenna Structure Registration number since its overall height is less than 60 meters and there are no known landing areas within 8 km of the site. No change to the overall structure height is proposed.

A detailed interference study per OET Bulletin 69<sup>1</sup> shows that the proposal complies with the Commission’s interference protection requirements toward all digital television, television

---

<sup>1</sup>FCC 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

translator, low power television, and Class A television stations. The results, summarized in Table 1, show that any new interference does not exceed the Commission's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations).

The nearest FCC monitoring station is 366 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 3.2 kilometers of the site. The site location is beyond the border zones that would require international coordination.

### **Human Exposure to Radiofrequency Electromagnetic Field**

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the Commission's OET Bulletin Number. 65. Based on OET-65 equation (10) and considering the antenna's theoretical elevation pattern, the maximum calculated signal density near the antenna structure at two meters above ground level attributable to the proposed facility is  $160 \mu\text{W}/\text{cm}^2$ , which is 80 percent of the general population/uncontrolled maximum permitted exposure limit. The only other authorized TV, FM, or AM facility located within 5 km of the site is FM translator station K217AS (Big Bend & Bush Bar, CA, BLFT-19860721TZ). K217AS is licensed to operate at 43 Watts ERP at a location 1.95 km distant from the proposed K04EZ. The K217AS facility's worst-case calculated signal density at the proposed K04EZ site is less than 0.01 percent of the general population/uncontrolled MPE limit.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. The applicant will coordinate exposure procedures with any pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, mast or antenna from RF electromagnetic field exposure in excess of FCC guidelines.

---

guidelines of OET-69 as specified therein. A 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.

This exhibit is limited to the evaluation of exposure to RF electromagnetic field. The K04EZ transmitting antenna is mounted on an antenna support structure which was constructed prior to March 16, 2001. No tower work or change in structure height is proposed.

### **Certification**

The undersigned hereby certifies that the foregoing statement and associated attachments were prepared by him or under his direction, and that they are true and correct to the best of his knowledge and belief.



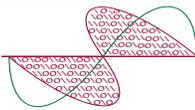
Joseph M. Davis, P.E.  
August 11, 2011

**Chesapeake RF Consultants, LLC**  
207 Old Dominion Road  
Yorktown, VA 23692  
703-650-9600

### List of Attachments

Figure 1	Coverage Contour Comparison
Table 1	Interference Analysis Results Summary
Form 346	Saved Version of Engineering Sections from FCC Form at Time of Upload

*This material was entered August 11, 2011 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's account number and password, and electronic data may otherwise be altered in an unauthorized fashion, we cannot be responsible for changes made subsequent to our entry of this data and related attachments.*

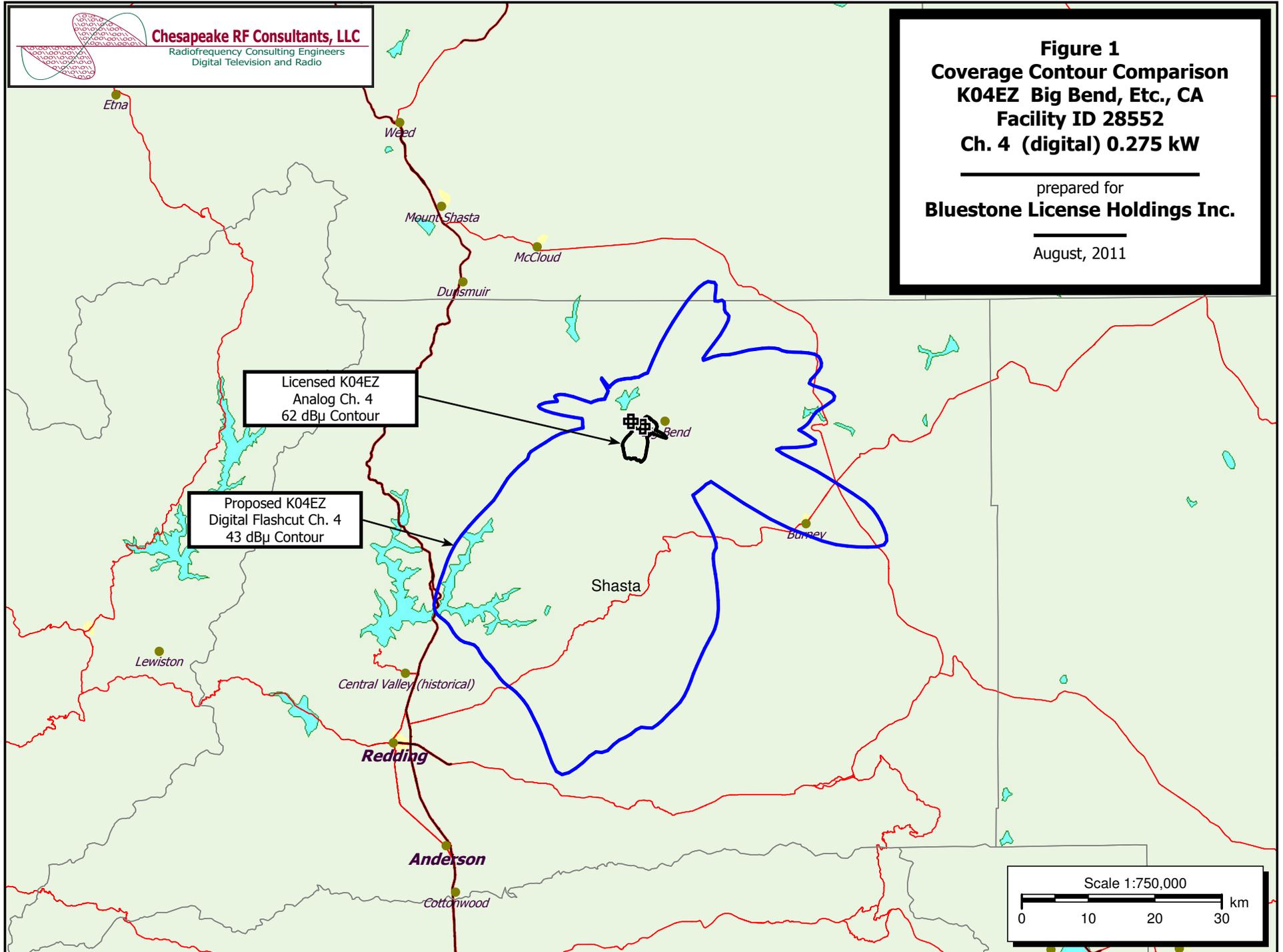


**Chesapeake RF Consultants, LLC**  
Radiofrequency Consulting Engineers  
Digital Television and Radio

**Figure 1**  
**Coverage Contour Comparison**  
**K04EZ Big Bend, Etc., CA**  
**Facility ID 28552**  
**Ch. 4 (digital) 0.275 kW**

prepared for  
**Bluestone License Holdings Inc.**

August, 2011



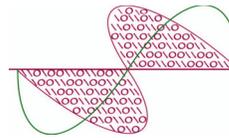
**Table 1**

**Interference Analysis Results Summary**

prepared for

**Bluestone License Holdings Inc.**

**K04EZ Big Bend, Etc., CA**



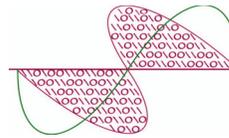
**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
Digital Television and Radio

K04EZ-D USERRECORD-01 BIG BEND, ETC. CA US  
 Channel 04 ERP 0.275 kW HAAT 106. m RCAMSL 01023 m SIMPLE MASK  
 Latitude 041-01-16 Longitude 0121-58-16  
 Dir Antenna Make CDB Model 00000000019702 Beam tilt N Ref Azimuth 0.

Ch.	Call	City/State	Dist (km)	Status	Application Ref. No.	---Population (2000 Census)---	
						Baseline	New Interference
3	K03HX-D	ETNA CA	94.0	LIC	BLDTV-20081001ACJ	---	none
3	KIEM-TV	EUREKA CA	169.6	CP	BPCDT-20080617ADN	---	none
3	K03CT	LEWISTON, ETC. CA	81.1	LIC	BLTTV-4961	---	none
3	K03FU	MOUNTAIN GATE, ETC. CA	40.7	LIC	BLTTV-19810713IN	---	none
3	K03BZ	ROGUE RIVER OR	188.1	LIC	BLTTV-4263	---	none
3	K03EI	TOLO, ETC. OR	167.4	LIC	BLTTV-20070503AAQ	---	none
4	K04QR-D	ESPARTO CA	274.1	LIC	BLDVL-20100714ABU	---	none
4	K04EQ	FORT JONES, ETC. CA	94.0	LIC	BLTTV-3876	---	none
4	K04NX	GARBERVILLE, ETC. CA	186.0	LIC	BLTTV-19900518IC	---	none
4	K04FL	LAKESHORE, ETC. CA	41.5	LIC	BLTTV-4744	---	none
4	K04QC	PALERMO CA	176.4	LIC	BLTVL-20050114ADZ	---	none
4	KTVJ-LP	PETALUMA CA	347.7	APP	BMPDVL-20091104AAF	---	none
4	KTVJ-LP	PETALUMA CA	347.7	CP	BDISDVL-20090108ADX	---	none
4	KVFR-LP	REDDING CA	57.1	LIC	BLTVL-20071228ABV	3,576	0 (0.00%)
4	K04NY	RIO DELL CA	191.1	LIC	BLTTV-19901121IG	---	none
4	K04NU	SEIAD VALLEY CA	139.5	LIC	BLTTV-19891211IC	---	none
4	K04RC-D	TURLOCK CA	403.6	CP	BNPDVL-20090825BNR	---	none
4	K04DD-D	WEAVERVILLE CA	91.1	LIC	BLDTV-20090608AAF	---	none
4	K04HE	YREKA, ETC. CA	101.2	LIC	BLTTV-19950612IG	---	none
4	K04GA	KINGS RIVER NV	331.6	LIC	BLTTV-19931227IO	---	none
4	K04QY-D	RENO NV	243.8	CP	BNPDVL-20090825ANJ	---	none
4	K04ER	APPLEGATE VALLEY OR	159.8	LIC	BLTTV-1797	---	none
4	K04EO	ASHLAND, ETC. OR	155.7	LIC	BLTTV-4907	---	none
4	K04HK	BLACK BUTTE RANCH OR	370.9	LIC	BLTTV-19800404IA	---	none
4	K04JQ	BUTTE FALLS OR	179.5	LIC	BLTTV-19800702IC	---	none
4	K04CX	CASCADIA OR	376.5	LIC	BLTTV-1253	---	none
4	K04GR	DORENA, ETC. OR	308.4	LIC	BLTTV-3627	---	none
4	K04JZ	GOLD HILL OR	178.2	LIC	BLTTV-19810526ID	---	none
4	K04EY	GRANTS PASS, ETC. OR	188.9	LIC	BLTTV-19790222IC	---	none
4	K04EY	GRANTS PASS, ETC. OR	189.0	CP	BDFCDTV-20091109ABH	---	none
4	K04BJ-D	LA PINE OR	296.1	LIC	BLDTV-20090821ABK	---	none

Table 1  
**Interference Analysis Results Summary**  
 (page 2 of 2)



**Chesapeake RF Consultants, LLC**

Radiofrequency Consulting Engineers  
 Digital Television and Radio

<u>Ch.</u>	<u>Call</u>	<u>City/State</u>	<u>Dist</u> <u>(km)</u>	<u>Status</u>	<u>Application Ref. No.</u>	<u>---Population (2000 Census)---</u>	
						<u>Baseline</u>	<u>New Interference</u>
4	K04PK	PAISLEY OR	202.2	LIC	BLTTV-20060106ABT	---	none
4	K04OS-D	REEDSPORT OR	347.2	LIC	BLDTV-20100210AAB	---	none
4	K04MG-D	WEDDERBURN, ETC. OR	250.6	LIC	BLDTV-20110610AAE	---	none
4	K04JP	WILLIAMS OR	168.5	LIC	BLTTV-19800702IB	---	none

**SECTION III - ENGINEERING DATA (Digital)**

**TECHNICAL SPECIFICATIONS**  
 Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

**TECH BOX**

1. Channel Number:  
4

2. Translator Input Channel No. : 7

3. Primary station proposed to be rebroadcast:

Facility Identifier	Call Sign	City	State	Channel
8291	KRCR-TV	REDDING	VA	7

4. Antenna Location Coordinates: (NAD 27)  
 Latitude:  
 Degrees 41 Minutes 01 Seconds 16  North  South  
 Longitude:  
 Degrees 121 Minutes 58 Seconds 16  West  East

5. Antenna Structure Registration Number:  
 Not Applicable [Exhibit 10]  Notification filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: 1018 meters

7. Overall Tower Height Above Ground Level: 5 meters

8. Height of Radiation Center Above Ground Level: 5 meters

9. Maximum Effective Radiated Power (ERP): 0.275 kW

10. Transmitter Output Power: 0.1 kW

11. a. Transmitting Antenna:  
 Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under [CDBS Public Access](http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm) (http://licensing.fcc.gov/prod/cdbs/pubacc/prod/cdbs\_pa.htm). Make sure that the Standard Pattern is marked Yes and that the relative field values shown match your values. Enter the Manufacturer (Make) and Model exactly as displayed in the Antenna Search.  
 Nondirectional  Directional "Off-the-shelf"  Directional composite  
 Manufacturer JER Model J55 (ARRAY OF 2)

b. Electrical Beam Tilt: degrees  Not Applicable

c. Directional Antenna Relative Field Values:  N/A (Nondirectional or Directional "Off-the-shelf")  
 Rotation (Degrees):  No Rotation

Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value
0	0.11	10	0.12	20	0.16	30	0.22	40	0.37	50	0.5
60	0.64	70	0.8	80	0.94	90	1	100	0.94	110	0.8
120	0.66	130	0.58	140	0.56	150	0.58	160	0.67	170	0.81
180	0.95	190	1	200	0.94	210	0.84	220	0.71	230	0.55
240	0.27	250	0.17	260	0.14	270	0.14	280	0.15	290	0.13
300	0.1	310	0.07	320	0.08	330	0.1	340	0.11	350	0.11
Additional Azimuths											

[Relative Field Polar Plot](#)

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

12. Out-of-channel Emission Mask:  Simple  Stringent

**CERTIFICATION**

13. **Interference** : The proposed facility complies with all of the following applicable rule sections. 47.C.F.R Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030.  Yes  No  
 See Explanation in [Exhibit 11]

14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47. C.F.R. Section 1.1306 (i.e., The facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance, an **Exhibit is required.**  Yes  No  
 See Explanation in [Exhibit 12]  
 By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

15. **Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:

The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.

Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.

16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licenses of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.

Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreements(s) with 700 MHz public safety regional planning committee(s) and state administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.

Pursuant to Section 74.786(e), the applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.

**PREPARERS CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**

**SECTION III PREPARER'S CERTIFICATION**

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name JOSEPH M. DAVIS, P.E.		Relationship to Applicant (e.g., Consulting Engineer) CONSULTING ENGINEER	
Signature		Date 8/11/2011	
Mailing Address CHESAPEAKE RF CONSULTANTS, LLC 207 OLD DOMINION ROAD			
City YORKTOWN		State or Country (if foreign address) VA	Zip Code 23692 -
Telephone Number (include area code) 7036509600		E-Mail Address (if available) JOSEPH.DAVIS@RF-CONSULTANTS.COM	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

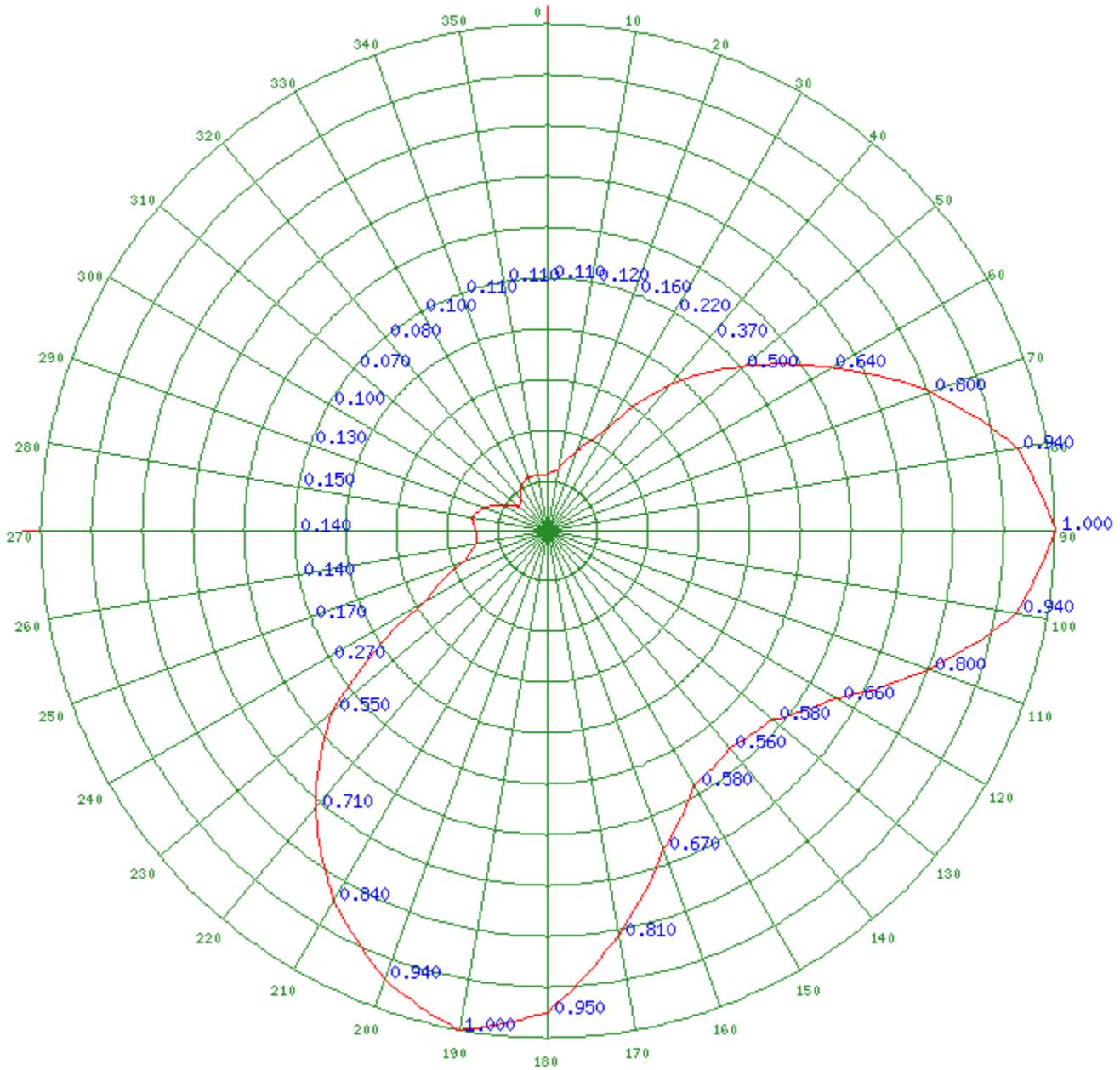
**Exhibits**

**Exhibit 10**  
**Description:** SEE ENGINEERING EXHIBIT

**Attachment 10**

Any specified rotation has already been applied to the plotted pattern.  
Field strength values shown on a rotated pattern may differ from the listed values  
because intermediate azimuths are interpolated between entered azimuths.

Close Window



[FM Query](#) [FCC](#) [TV Query](#)