

## **ENGINEERING EXHIBIT**

### **Application for Class A Television Station Digital Flash-Cut Construction Permit**

prepared for

#### **Centex Television Limited Partnership**

KRHD-LP Bryan, TX

Facility ID 68538

Ch. 40 (digital) 15 kW

*Centex Television Limited Partnership* (“Centex”) is the licensee of Class A Television station KRHD-LP, analog Channel 40, Bryan, TX, Facility ID 68538 (BLTTA-20071220AAZ). *Centex* herein proposes herein to flash-cut KRHD-LP to digital operation.

The proposed facility will operate on the current KRHD-LP Channel 40 as digital using a “stringent” out of channel emission mask. **Figure 1** depicts the 51 dBμ coverage contours of the proposed facility, as well as that of the KRHD-LP licensed analog Channel 40 facility. The use of the same transmitter site and the service area overlap shown demonstrates compliance with §73.3572 for a minor change.

The proposed Channel 40 antenna system will be side-mounted on the existing KRHD-LP antenna support structure, in place of the current analog antenna (FCC Antenna Structure Registration number 1044896)<sup>1</sup>. The antenna for digital operation will have a different directional pattern than the licensed analog antenna. No change to the overall structure height will result from this proposal.

A detailed interference study per OET Bulletin 69<sup>2</sup> shows that the proposal complies with the Commission’s interference protection requirements toward all DTV, television translator, LPTV,

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<sup>1</sup>The geographic coordinates specified herein differ from the KRHD-LP license by 9 seconds latitude and 4 seconds longitude. The coordinate change is necessary to correspond to current Antenna Structure Registration data, which was modified by the structure owner in February 2008. No change in actual site location is proposed.

<sup>2</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 guidelines of OET-69 as specified therein. A cell size of 1 km was employed. Comparisons of various results of this

and Class A 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 392 km distant at Kingsville, TX. 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 AM stations within 3.2 kilometers of the site, based on information contained within the Commission's database. The site is beyond the border areas requiring international coordination.

### **Human Exposure to Radiofrequency Electromagnetic Field (Environmental)**

The proposal will involve use of a replacement side-mounted transmitting antenna, with no change to overall structure height. 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. Therefore, it is believed that this application may be categorically excluded from environmental processing pursuant to §1.1306 of the Commission's rules.

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 25 percent antenna relative field in downward elevations, the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is  $2.0 \mu\text{W}/\text{cm}^2$ , which is 0.5 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent. When the antenna's vertical plane pattern is considered, the calculated signal density will be even lower.


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computer program (run on a Sun Sparc processor) to the Commission's implementation of OET-69 show excellent correlation.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant 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.

### **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.  
September 16, 2009

**Chesapeake RF Consultants, LLC**  
11993 Kahns Road  
Manassas, VA 20112  
703-650-9600

### List of Attachments

Figure 1      Coverage Contour Comparison  
Table 1      Interference Analysis Results Summary  
Form 301-CA   Saved Version of Engineering Sections from FCC Form at Time of Upload

*This material was entered September 16, 2009 for filing electronically. Since the FCC's electronic filing system may be accessed by anyone with the applicant's name 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.*

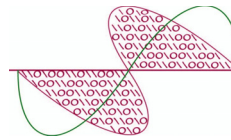
Table 1

**Interference Analysis Results Summary**

prepared for

**Centex Television Limited Partnership**

KRHD-LP Bryan, TX

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

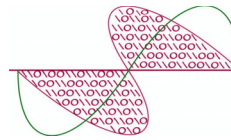
KRHD-DC	USERRECORD-01	BRYAN	TX US
Channel 40	ERP 15.	kW HAAT 143. m	RCAMSL 00240 m STRINGENT MASK
Latitude 030-45-26	Longitude 0096-28-04		
Dir Antenna Make	usr Model DIE TLP-B	Beam tilt N	Ref Azimuth 172.

Ch.	Call	City/State	Dist	Status	Application Ref. No.	---Population (2000 Census)----	
			(km)			Baseline	New Interference
32	KGBS-CA	AUSTIN TX	136.7	LIC	BLTTA-20081106ACW	---	none
32	KGBS-CA	AUSTIN TX	136.7	APP	BSTA-20060803AGH	---	none
38	KWKO-LP	WACO TX	104.4	LIC	BLTT-20001229AAB	---	none
39	KHPG-LD	GIDDINGS TX	78.0	CP	BDCCDTL-20061025ADI	---	none
39	KLDT	LAKE DALLAS TX	203.9	PLN	DTVPLN-DTVP1416	---	none
39	NEW	LUFKIN TX	181.4	APP	BNPTTL-20000830BMT	---	none
39	NEW	LUFKIN TX	171.7	APP	BNPTTL-20000807AGR	---	none
39	K26GA	TYLER TX	181.6	APP	BDISDTA-20090803AEQ	---	none
40	KADO-LP	SHREVEPORT LA	320.4	CP	BDISDTA-20080804AEG	---	none
40	NEW	SHREVEPORT LA	320.4	APP	BDCCDTL-20061030ALG	---	none
40	KTES-LP	ABILENE TX	349.7	LIC	BLTTL-20000505AAN	---	none
40	KXLK-CA	AUSTIN TX	136.5	LIC	BLTTA-20030424ABA	---	none
40	NEW	CENTERVILLE TX	92.5	APP	BNPDTL-20090825BPZ	44,558	329 (0.74%)
40	K40KH	CORPUS CHRISTI TX	360.6	CP	BNPTTL-20000829AEH	---	none
40	KXTX-TV	DALLAS TX	208.6	LIC	BLCDT-20021106ABR	5,462,653	89 (0.00%)
40	KXTX-TV	DALLAS TX	208.6	PLN	DTVPLN-DTVP1450	5,462,653	89 (0.00%)
40	KHPL-CA	LA GRANGE TX	101.9	CP	BDFCDTA-20060329AIQ	---	none
40	KHPL-CA	LA GRANGE TX	101.9	LIC	BLTTA-20020405ABH	---	none
40	KZHO-LD	LAKE JACKSON TX	191.4	LIC	BLDTL-20090826ADV	---	none
40	K40EX	MATHIS TX	318.0	APP	BMAPTTL-20000807AHH	---	none
40	K10PY-D	MISSOURI CITY TX	161.6	APP	BDISDTL-20090526AFA	---	none
40	KBTB-TV	PORT ARTHUR TX	247.0	CP MOD	BMPCDT-20081211ACJ	---	none
40	KBTB-TV	PORT ARTHUR TX	247.0	PLN	DTVPLN-DTVP1452	---	none
40	KAEM-LP	SAN ANGELO TX	397.5	CP	BNPTTL-20000830BBJ	---	none
40	KISA-LP	SAN ANTONIO TX	244.6	APP	BDFCDTL-20081203AEE	---	none
40	KISA-LP	SAN ANTONIO TX	244.6	LIC	BLTTL-20050323AGF	---	none
40	KHPM-CA	SAN MARCOS TX	171.6	CP	BDFCDTA-20060329AMA	---	none
40	KHPM-CA	SAN MARCOS TX	171.6	LIC	BLTTA-20060515ADT	---	none
40	KUVM-LD	VICTORIA TX	161.6	CP	BDCCDTL-20061010AKT	---	none
40	KCPV-LD	VICTORIA TX	223.4	CP	BDCCDTL-20070405AAY	---	none
40	K40HZ	WICHITA FALLS TX	399.7	LIC	BLTTL-20070208ABL	---	none

Table 1

**Interference Analysis Results Summary**

(page 2 of 2)



**Chesapeake RF Consultants, LLC**

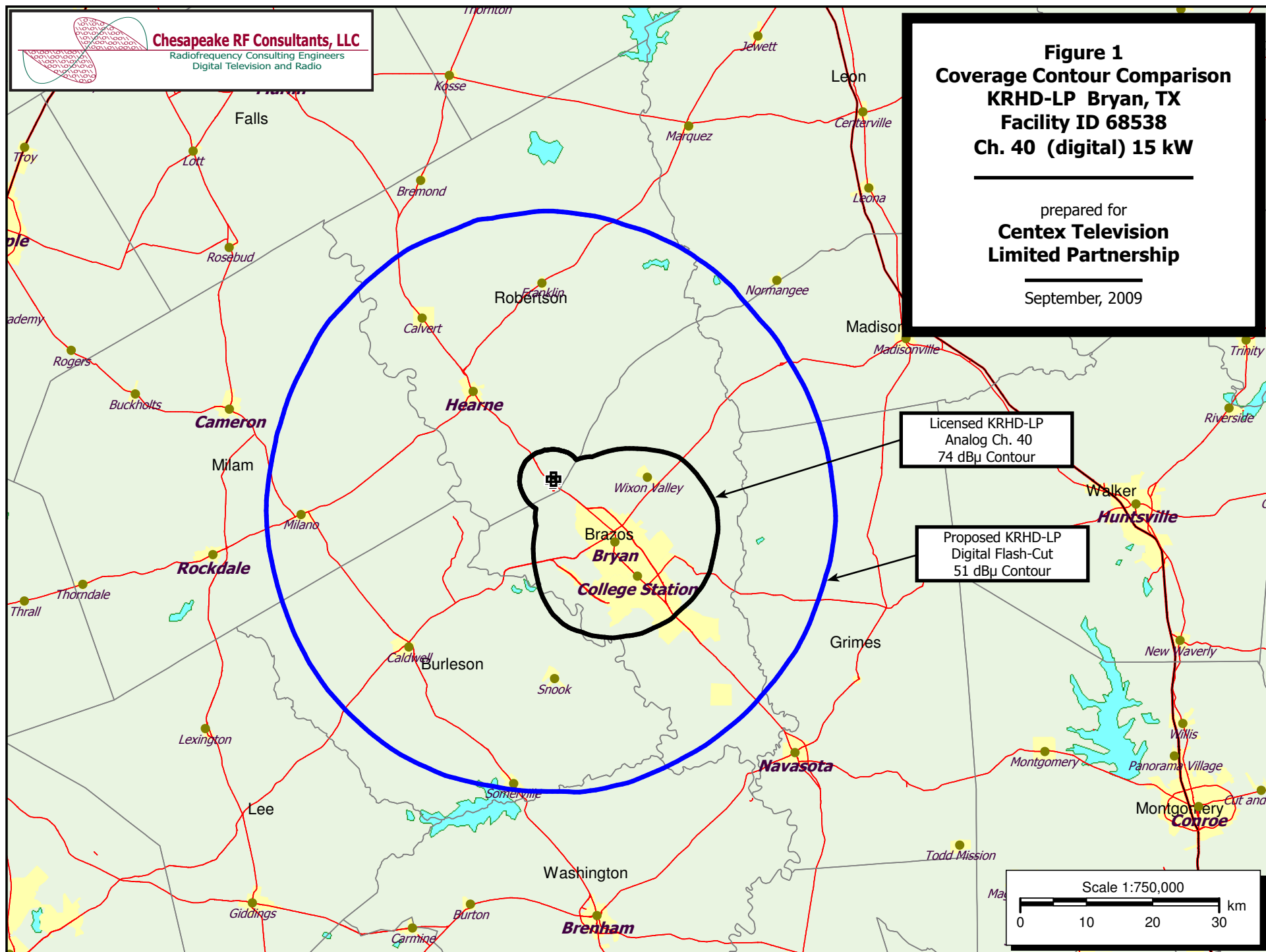
Radiofrequency Consulting Engineers  
Digital Television and Radio

<u>Ch.</u>	<u>Call</u>	<u>City/State</u>	<u>Dist</u>	<u>Status</u>	<u>Application Ref. No.</u>	<u>---Population (2000 Census)---</u>	
			<u>(km)</u>			<u>Baseline</u>	<u>New Interference</u>
40	K40HZ	WICHITA FALLS TX	399.7	CP	BPTTL-20070328AGP	---	none
41	KAZH	BAYTOWN TX	160.8	LIC	BLCDT-20081016ACF	4,827,122	163 (0.00%)
41	KAZH	BAYTOWN TX	160.8	PLN	DTVPLN-DTVP1484	4,831,231	74 (0.00%)
41	NEW	COLLEGE STATION TX	22.4	APP	BNPDTL-20090825AVX	166,637	1,671 (1.00%)
41	KHPX-LD	GEORGETOWN TX	115.2	CP	BDCCDTL-20061025ADH	---	none
41	NEW	LUFKIN TX	186.3	APP	BNPDTL-20090825ATP	---	none
47	K47ED	COLLEGE STATION TX	16.4	LIC	BLTT-19930505IG	---	none
47	KTXU-LP	WEST LAKE HILLS TX	136.3	LIC	BLTTL-20050124ADH	---	none

**Figure 1**  
**Coverage Contour Comparison**  
**KRHD-LP Bryan, TX**  
**Facility ID 68538**  
**Ch. 40 (digital) 15 kW**

prepared for  
**Centex Television  
Limited Partnership**

September, 2009



## 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 9/16/2009	
Mailing Address CHESAPEAKE RF CONSULTANTS LLC 11993 KAHNS ROAD		
City MANASSAS	State or Country (if foreign address) VA	Zip Code 20112-
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).

## SECTION III - Engineering (Digital)

## TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. All items must be completed. The response "on file" is not acceptable.

**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.

## TECH BOX

1.	Channel Number: 40																																																																																				
2.	Antenna Location Coordinates: (NAD 27) Latitude: Degrees 30 Minutes 45 Seconds 26 <input checked="" type="radio"/> North <input type="radio"/> South  Longitude: Degrees 96 Minutes 28 Seconds 4 <input checked="" type="radio"/> West <input type="radio"/> East																																																																																				
3.	Antenna Structure Registration Number: 1044896 <input type="checkbox"/> Not Applicable [Exhibit 8] <input type="checkbox"/> Notification filed with FAA																																																																																				
4.	Antenna Location Site Elevation Above Mean Sea Level: 112.5 meters																																																																																				
5.	Overall Tower Height Above Ground Level: 152 meters																																																																																				
6.	Height of Radiation Center Above Ground Level: 127.7 meters																																																																																				
7.	Maximum Effective Radiated Power (ERP): 15 kW																																																																																				
8.	Transmitter Output Power: 1.76 kW																																																																																				
9.	a. Transmitting Antenna: Before selecting Directional "Off-the-Shelf", refer to "Search for Antenna Information" under <a href="http://fjallfoss.fcc.gov/prod/cdbs/pubacc/prod/cdbs_pa.htm">CDBS Public Access</a> (http://fjallfoss.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. <input type="radio"/> Nondirectional <input type="radio"/> Directional "Off-the-shelf" <input checked="" type="radio"/> Directional composite  Manufacturer DIE Model TLP-8B  b. Electrical Beam Tilt: 1 degrees <input type="checkbox"/> Not Applicable  c. Directional Antenna Relative Field Values: <input type="checkbox"/> N/A (Nondirectional or Directional "Off-the-shelf") Rotation (Degrees): 172 <input type="checkbox"/> No Rotation <table><thead><tr><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th><th>Degrees</th><th>Value</th></tr></thead><tbody><tr><td>0</td><td>1</td><td>10</td><td>0.996</td><td>20</td><td>0.981</td><td>30</td><td>0.955</td><td>40</td><td>0.92</td><td>50</td><td>0.876</td></tr><tr><td>60</td><td>0.826</td><td>70</td><td>0.771</td><td>80</td><td>0.714</td><td>90</td><td>0.661</td><td>100</td><td>0.615</td><td>110</td><td>0.583</td></tr><tr><td>120</td><td>0.569</td><td>130</td><td>0.571</td><td>140</td><td>0.586</td><td>150</td><td>0.607</td><td>160</td><td>0.627</td><td>170</td><td>0.64</td></tr><tr><td>180</td><td>0.645</td><td>190</td><td>0.641</td><td>200</td><td>0.631</td><td>210</td><td>0.613</td><td>220</td><td>0.592</td><td>230</td><td>0.579</td></tr><tr><td>240</td><td>0.57</td><td>250</td><td>0.579</td><td>260</td><td>0.61</td><td>270</td><td>0.65</td><td>280</td><td>0.699</td><td>290</td><td>0.759</td></tr><tr><td>300</td><td>0.817</td><td>310</td><td>0.869</td><td>320</td><td>0.914</td><td>330</td><td>0.951</td><td>340</td><td>0.975</td><td>350</td><td>0.993</td></tr></tbody></table> Additional Azimuths	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	0	1	10	0.996	20	0.981	30	0.955	40	0.92	50	0.876	60	0.826	70	0.771	80	0.714	90	0.661	100	0.615	110	0.583	120	0.569	130	0.571	140	0.586	150	0.607	160	0.627	170	0.64	180	0.645	190	0.641	200	0.631	210	0.613	220	0.592	230	0.579	240	0.57	250	0.579	260	0.61	270	0.65	280	0.699	290	0.759	300	0.817	310	0.869	320	0.914	330	0.951	340	0.975	350	0.993
Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value	Degrees	Value																																																																										
0	1	10	0.996	20	0.981	30	0.955	40	0.92	50	0.876																																																																										
60	0.826	70	0.771	80	0.714	90	0.661	100	0.615	110	0.583																																																																										
120	0.569	130	0.571	140	0.586	150	0.607	160	0.627	170	0.64																																																																										
180	0.645	190	0.641	200	0.631	210	0.613	220	0.592	230	0.579																																																																										
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300	0.817	310	0.869	320	0.914	330	0.951	340	0.975	350	0.993																																																																										

[Relative Field Polar Plot](#)

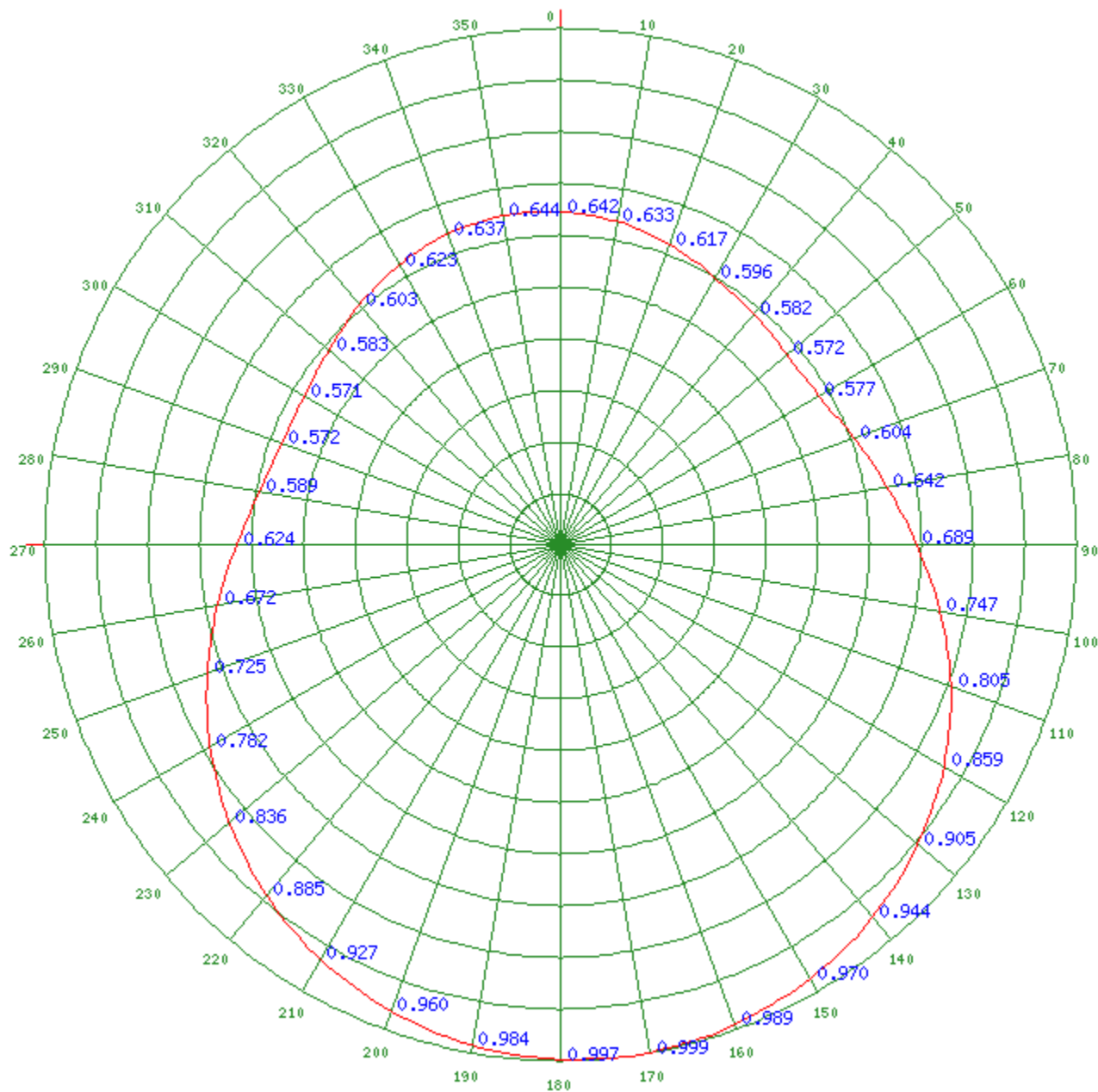
**NOTE:** In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question

for which a "No" response is provided.	
10.	<b>Out-of-channel Emission Mask:</b> <input type="radio"/> Simple <input checked="" type="radio"/> Stringent
<b>CERTIFICATION</b>	
11.	<p><b>Interference.</b> The proposed facility complies with all of the following applicable rule sections. 47.C.F.R Sections 73.6016, 73.6017, 73.6018, 73.6019, 73.6020, 73.6027 and 74.794(b).</p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 9]</p>
12.	<p><b>Environmental Protection Act.</b> 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 <b>Exhibit is required.</b></p> <p><input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>See Explanation in [Exhibit 10]</p> <p>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.</p>
13.	<p><b>Channels 52-59.</b> If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:</p> <p><input type="checkbox"/> The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.</p> <p><input type="checkbox"/> 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.</p>



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.

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