

ENGINEERING EXHIBIT

Digital Television Station Application for Minor Modification of Licensed Facility

prepared for

Gray Television Licensee, LLC

KEYU(DT) Borger, TX

Facility ID 83715

Ch. 31 700 kW 430 m

Gray Television Licensee, LLC (“*Gray*”) is the licensee of digital television station KEYU(DT), Channel 31, Facility ID 83715, Borger TX. KEYU is licensed (file# BLCDT-20130815AAW) to operate with 700 kW effective radiated power (“ERP”) with a directional antenna at 305 meters height above average terrain (“HAAT”). *Gray* herein seeks a minor modification Construction Permit to relocate KEYU 5.9 km from the licensed site and to increase antenna height to 430 meters HAAT. No changes to the ERP or directional antenna pattern are proposed.

The change in site location would co-locate KEYU with *Gray’s* station KFDA-TV (Facility ID 51466, Ch. 10, Amarillo TX). The proposed KEYU antenna will be side-mounted on the KFDA-TV tower structure, which is owned by *Gray*. The subject tower structure is associated with FCC Antenna Structure Registration (“ASR”) number 1052115 and no change to the overall structure height will result.

The proposed antenna is an elliptically polarized directional Dielectric model TFU-26EST/VP-R 4C150 (30 percent vertical polarization). The maximum horizontally polarized ERP is 700 kW and the maximum vertically polarized ERP is 210 kW. The vertically polarized component will not exceed the horizontally polarized component at any azimuth. The directional antenna’s azimuthal patterns are depicted in Figures 1 and 1A for horizontal and vertical polarization, respectively. The antenna’s elevation pattern is provided in Figure 2.

Figure 3 supplies a map that demonstrates compliance with §73.625(a)(1) regarding coverage of the entire principal community. The proposed facility's predicted population exceeds 95 percent of the baseline facility's population as described in the *Incentive Auction Closing and Channel Reassignment Public Notice* ("CCRPN", DA 17-317, released April 13, 2017).

The proposed facility expands the KEYU service contour beyond that established by the CCRPN. Interference study per FCC OET Bulletin 69¹ shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby full service and Class A television stations as required by §73.616. The interference study output report is provided as Table 1.

Figure 4 provides a comparison of the KEYU licensed and proposed NLSC. Since the proposed NLSC encompasses the licensed KEYU NLSC, no area of service loss will be created.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10), and considering 10 percent antenna relative field in downward elevations (pattern data shows less than 10 percent relative field at angles 10 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $1.8 \mu\text{W}/\text{cm}^2$, which is 0.5 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, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

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

¹FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 2 km cell size, and 1.0 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.

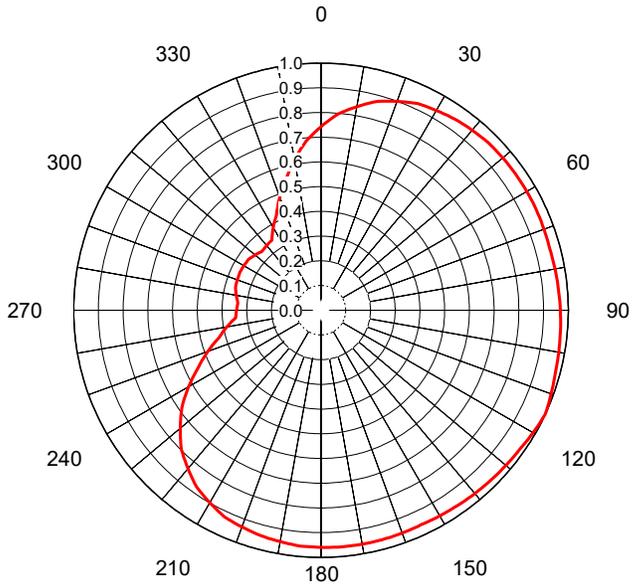
will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

List of Attachments

Figure 1, 1A Antenna Azimuthal Pattern
Figure 2 Antenna Elevation Pattern
Figure 3 Proposed Coverage Contours
Figure 4 Coverage Contour Comparison
Table 1 TVStudy Analysis of Proposal
Form 2100 Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E. December 7, 2022
207 Old Dominion Road Yorktown, VA 23692 703-650-9600



AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71869-3**
 Date **15-Jun-22**
 Call Letters **KEYU**
 Channel **31**
 Frequency **575 MHz**
 Antenna Type **TFU-26EST/VP-R 4C150**
 Gain **1.56 (1.93dB)**
 Calculated

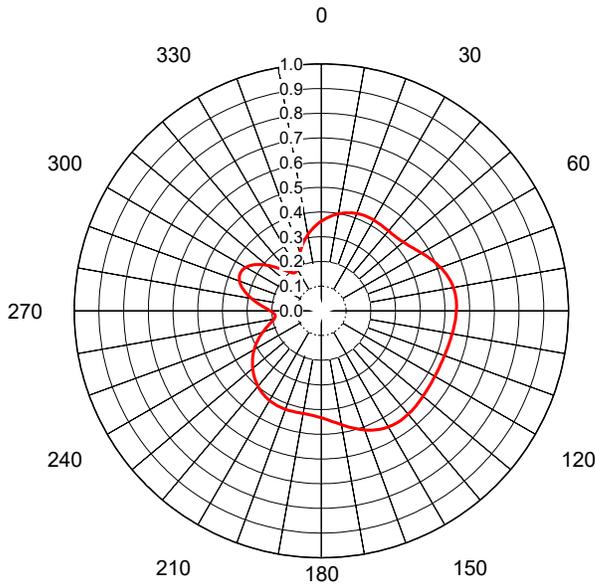
Deg	Value																		
0	0.743	36	0.945	72	0.959	108	0.987	144	0.965	180	0.960	216	0.867	252	0.462	288	0.359	324	0.345
1	0.754	37	0.947	73	0.959	109	0.989	145	0.964	181	0.959	217	0.860	253	0.450	289	0.360	325	0.346
2	0.765	38	0.948	74	0.958	110	0.990	146	0.963	182	0.959	218	0.852	254	0.438	290	0.360	326	0.354
3	0.776	39	0.950	75	0.958	111	0.992	147	0.963	183	0.959	219	0.844	255	0.426	291	0.360	327	0.362
4	0.787	40	0.951	76	0.959	112	0.994	148	0.962	184	0.958	220	0.836	256	0.418	292	0.361	328	0.370
5	0.798	41	0.952	77	0.959	113	0.996	149	0.962	185	0.958	221	0.829	257	0.410	293	0.361	329	0.378
6	0.806	42	0.954	78	0.960	114	0.998	150	0.961	186	0.957	222	0.821	258	0.402	294	0.362	330	0.386
7	0.813	43	0.955	79	0.960	115	1.000	151	0.960	187	0.955	223	0.813	259	0.394	295	0.362	331	0.394
8	0.821	44	0.957	80	0.961	116	0.998	152	0.960	188	0.954	224	0.806	260	0.386	296	0.362	332	0.402
9	0.829	45	0.958	81	0.962	117	0.996	153	0.959	189	0.952	225	0.798	261	0.378	297	0.361	333	0.410
10	0.836	46	0.958	82	0.962	118	0.994	154	0.959	190	0.951	226	0.787	262	0.370	298	0.361	334	0.418
11	0.844	47	0.959	83	0.963	119	0.992	155	0.958	191	0.950	227	0.776	263	0.362	299	0.360	335	0.426
12	0.852	48	0.959	84	0.963	120	0.990	156	0.958	192	0.948	228	0.765	264	0.354	300	0.360	336	0.438
13	0.860	49	0.959	85	0.964	121	0.989	157	0.959	193	0.947	229	0.754	265	0.346	301	0.360	337	0.450
14	0.867	50	0.960	86	0.965	122	0.987	158	0.959	194	0.945	230	0.743	266	0.345	302	0.359	338	0.462
15	0.875	51	0.960	87	0.966	123	0.985	159	0.959	195	0.944	231	0.731	267	0.344	303	0.359	339	0.474
16	0.880	52	0.960	88	0.966	124	0.983	160	0.960	196	0.942	232	0.720	268	0.343	304	0.358	340	0.486
17	0.885	53	0.960	89	0.967	125	0.981	161	0.960	197	0.940	233	0.709	269	0.342	305	0.358	341	0.499
18	0.889	54	0.961	90	0.968	126	0.980	162	0.960	198	0.938	234	0.698	270	0.342	306	0.356	342	0.511
19	0.894	55	0.961	91	0.969	127	0.979	163	0.960	199	0.936	235	0.687	271	0.341	307	0.354	343	0.523
20	0.899	56	0.961	92	0.970	128	0.978	164	0.961	200	0.933	236	0.673	272	0.340	308	0.352	344	0.535
21	0.904	57	0.961	93	0.970	129	0.977	165	0.961	201	0.931	237	0.659	273	0.339	309	0.350	345	0.547
22	0.909	58	0.961	94	0.971	130	0.976	166	0.961	202	0.929	238	0.645	274	0.338	310	0.347	346	0.561
23	0.913	59	0.961	95	0.972	131	0.976	167	0.961	203	0.927	239	0.631	275	0.337	311	0.345	347	0.575
24	0.918	60	0.961	96	0.973	132	0.975	168	0.961	204	0.925	240	0.617	276	0.339	312	0.343	348	0.589
25	0.923	61	0.961	97	0.974	133	0.974	169	0.961	205	0.923	241	0.603	277	0.341	313	0.341	349	0.603
26	0.925	62	0.961	98	0.975	134	0.973	170	0.961	206	0.918	242	0.589	278	0.343	314	0.339	350	0.617
27	0.927	63	0.961	99	0.976	135	0.972	171	0.961	207	0.913	243	0.575	279	0.345	315	0.337	351	0.631
28	0.929	64	0.961	100	0.976	136	0.971	172	0.961	208	0.909	244	0.561	280	0.347	316	0.338	352	0.645
29	0.931	65	0.961	101	0.977	137	0.970	173	0.961	209	0.904	245	0.547	281	0.350	317	0.339	353	0.659
30	0.933	66	0.961	102	0.978	138	0.970	174	0.961	210	0.899	246	0.535	282	0.352	318	0.340	354	0.673
31	0.936	67	0.960	103	0.979	139	0.969	175	0.961	211	0.894	247	0.523	283	0.354	319	0.341	355	0.687
32	0.938	68	0.960	104	0.980	140	0.968	176	0.961	212	0.889	248	0.511	284	0.356	320	0.342	356	0.698
33	0.940	69	0.960	105	0.981	141	0.967	177	0.960	213	0.885	249	0.499	285	0.358	321	0.342	357	0.709
34	0.942	70	0.960	106	0.983	142	0.966	178	0.960	214	0.880	250	0.486	286	0.358	322	0.343	358	0.720
35	0.944	71	0.959	107	0.985	143	0.966	179	0.960	215	0.875	251	0.474	287	0.359	323	0.344	359	0.731



Figure 1
Antenna Azimuthal Pattern
Horizontal Polarization
KEYU(DT) Borger, TX
Facility ID 83715
Ch. 31 700 kW 430 m

prepared for
Gray Television Licensee, LLC

December, 2022



AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-71869-3**
 Date **15-Jun-22**
 Call Letters **KEYU**
 Channel **31**
 Frequency **575 MHz**
 Antenna Type **TFU-26EST/VP-R 4C150**
 Gain **1.74 (2.4dB)**
 Calculated

Deg	Value																		
0	0.363	36	0.423	72	0.521	108	0.531	144	0.548	180	0.433	216	0.409	252	0.239	288	0.344	324	0.190
1	0.367	37	0.423	73	0.525	109	0.531	145	0.547	181	0.431	217	0.407	253	0.232	289	0.348	325	0.188
2	0.371	38	0.422	74	0.528	110	0.530	146	0.547	182	0.429	218	0.404	254	0.226	290	0.352	326	0.188
3	0.375	39	0.422	75	0.531	111	0.530	147	0.546	183	0.427	219	0.401	255	0.220	291	0.356	327	0.188
4	0.379	40	0.422	76	0.534	112	0.530	148	0.545	184	0.426	220	0.399	256	0.214	292	0.358	328	0.190
5	0.382	41	0.422	77	0.537	113	0.529	149	0.544	185	0.425	221	0.396	257	0.208	293	0.360	329	0.192
6	0.386	42	0.423	78	0.539	114	0.529	150	0.543	186	0.424	222	0.393	258	0.203	294	0.361	330	0.195
7	0.389	43	0.423	79	0.541	115	0.529	151	0.541	187	0.423	223	0.389	259	0.199	295	0.362	331	0.199
8	0.393	44	0.424	80	0.543	116	0.529	152	0.539	188	0.423	224	0.386	260	0.195	296	0.361	332	0.203
9	0.396	45	0.425	81	0.544	117	0.529	153	0.537	189	0.422	225	0.382	261	0.192	297	0.360	333	0.208
10	0.399	46	0.426	82	0.545	118	0.530	154	0.534	190	0.422	226	0.379	262	0.190	298	0.358	334	0.214
11	0.401	47	0.427	83	0.546	119	0.530	155	0.531	191	0.422	227	0.375	263	0.188	299	0.356	335	0.220
12	0.404	48	0.429	84	0.547	120	0.530	156	0.528	192	0.422	228	0.371	264	0.188	300	0.352	336	0.226
13	0.407	49	0.431	85	0.547	121	0.531	157	0.525	193	0.423	229	0.367	265	0.188	301	0.348	337	0.232
14	0.409	50	0.433	86	0.548	122	0.531	158	0.521	194	0.423	230	0.363	266	0.190	302	0.344	338	0.239
15	0.411	51	0.435	87	0.548	123	0.532	159	0.517	195	0.423	231	0.358	267	0.193	303	0.338	339	0.245
16	0.413	52	0.438	88	0.548	124	0.532	160	0.513	196	0.423	232	0.354	268	0.196	304	0.332	340	0.252
17	0.415	53	0.441	89	0.547	125	0.533	161	0.509	197	0.424	233	0.349	269	0.201	305	0.326	341	0.258
18	0.417	54	0.444	90	0.547	126	0.534	162	0.505	198	0.424	234	0.345	270	0.207	306	0.319	342	0.265
19	0.418	55	0.448	91	0.546	127	0.535	163	0.500	199	0.424	235	0.340	271	0.213	307	0.312	343	0.271
20	0.419	56	0.452	92	0.545	128	0.536	164	0.496	200	0.424	236	0.335	272	0.220	308	0.304	344	0.278
21	0.420	57	0.455	93	0.545	129	0.536	165	0.491	201	0.424	237	0.330	273	0.227	309	0.296	345	0.284
22	0.421	58	0.460	94	0.544	130	0.537	166	0.487	202	0.424	238	0.325	274	0.235	310	0.287	346	0.290
23	0.422	59	0.464	95	0.543	131	0.538	167	0.482	203	0.424	239	0.319	275	0.244	311	0.279	347	0.296
24	0.423	60	0.468	96	0.542	132	0.540	168	0.477	204	0.424	240	0.314	276	0.252	312	0.270	348	0.302
25	0.423	61	0.473	97	0.541	133	0.541	169	0.473	205	0.423	241	0.308	277	0.261	313	0.261	349	0.308
26	0.424	62	0.477	98	0.540	134	0.542	170	0.468	206	0.423	242	0.302	278	0.270	314	0.252	350	0.314
27	0.424	63	0.482	99	0.538	135	0.543	171	0.464	207	0.422	243	0.296	279	0.279	315	0.244	351	0.319
28	0.424	64	0.487	100	0.537	136	0.544	172	0.460	208	0.421	244	0.290	280	0.287	316	0.235	352	0.325
29	0.424	65	0.491	101	0.536	137	0.545	173	0.455	209	0.420	245	0.284	281	0.296	317	0.227	353	0.330
30	0.424	66	0.496	102	0.536	138	0.545	174	0.452	210	0.419	246	0.278	282	0.304	318	0.220	354	0.335
31	0.424	67	0.500	103	0.535	139	0.546	175	0.448	211	0.418	247	0.271	283	0.312	319	0.213	355	0.340
32	0.424	68	0.505	104	0.534	140	0.547	176	0.444	212	0.417	248	0.265	284	0.319	320	0.207	356	0.345
33	0.424	69	0.509	105	0.533	141	0.547	177	0.441	213	0.415	249	0.258	285	0.326	321	0.201	357	0.349
34	0.423	70	0.513	106	0.532	142	0.548	178	0.438	214	0.413	250	0.252	286	0.332	322	0.196	358	0.354
35	0.423	71	0.517	107	0.532	143	0.548	179	0.435	215	0.411	251	0.245	287	0.338	323	0.193	359	0.358



Figure 1A
Antenna Azimuthal Pattern
Vertical Polarization
KEYU(DT) Borger, TX
Facility ID 83715
Ch. 31 700 kW 430 m

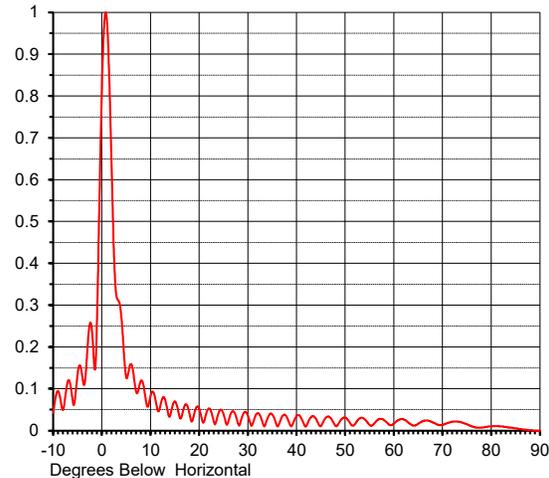
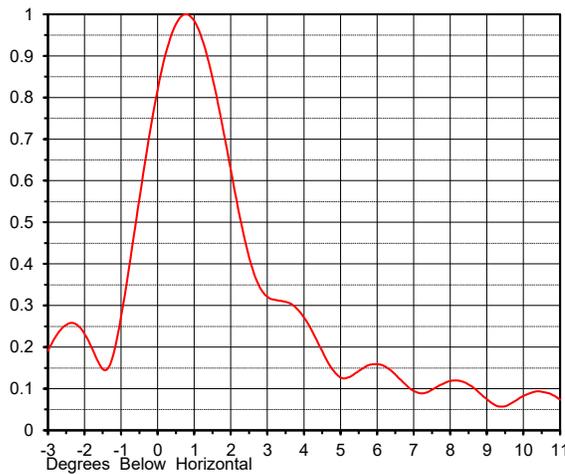
prepared for
Gray Television Licensee, LLC

December, 2022

ELEVATION PATTERN

Proposal No. **C-71869-3**
 Date **15-Jun-22**
 Call Letters **KEYU**
 Channel **31**
 Frequency **575 MHz**
 Antenna Type **TFU-26EST/VP-R 4C150**

RMS Directivity at Main Lobe **25.0 (13.98 dB)**
 RMS Directivity at Horizontal **16.9 (12.28 dB)**
 Beam Tilt **0.75 deg**
 Pattern Number **26E250075**
Calculated



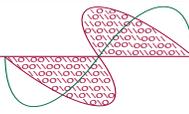
Angle	Field								
-10.0	0.043	10.0	0.083	30.0	0.036	50.0	0.031	70.0	0.014
-9.0	0.095	11.0	0.074	31.0	0.017	51.0	0.018	71.0	0.018
-8.0	0.049	12.0	0.059	32.0	0.042	52.0	0.016	72.0	0.021
-7.0	0.118	13.0	0.074	33.0	0.020	53.0	0.029	73.0	0.022
-6.0	0.071	14.0	0.035	34.0	0.028	54.0	0.027	74.0	0.019
-5.0	0.135	15.0	0.070	35.0	0.039	55.0	0.014	75.0	0.015
-4.0	0.126	16.0	0.031	36.0	0.011	56.0	0.018	76.0	0.010
-3.0	0.192	17.0	0.059	37.0	0.033	57.0	0.028	77.0	0.007
-2.0	0.232	18.0	0.040	38.0	0.032	58.0	0.025	78.0	0.007
-1.0	0.274	19.0	0.042	39.0	0.011	59.0	0.015	79.0	0.009
0.0	0.821	20.0	0.052	40.0	0.035	60.0	0.017	80.0	0.010
1.0	0.984	21.0	0.022	41.0	0.029	61.0	0.026	81.0	0.011
2.0	0.625	22.0	0.053	42.0	0.011	62.0	0.027	82.0	0.010
3.0	0.321	23.0	0.021	43.0	0.033	63.0	0.019	83.0	0.009
4.0	0.271	24.0	0.043	44.0	0.028	64.0	0.012	84.0	0.007
5.0	0.127	25.0	0.039	45.0	0.011	65.0	0.017	85.0	0.005
6.0	0.159	26.0	0.023	46.0	0.031	66.0	0.023	86.0	0.004
7.0	0.095	27.0	0.046	47.0	0.030	67.0	0.024	87.0	0.002
8.0	0.119	28.0	0.016	48.0	0.011	68.0	0.020	88.0	0.001
9.0	0.075	29.0	0.039	49.0	0.024	69.0	0.014	89.0	0.000
								90.0	0.000



Figure 2
Antenna Elevation Pattern
KEYU(DT) Borger, TX
Facility ID 83715
Ch. 31 700 kW 430 m

 prepared for
Gray Television Licensee, LLC

 December, 2022

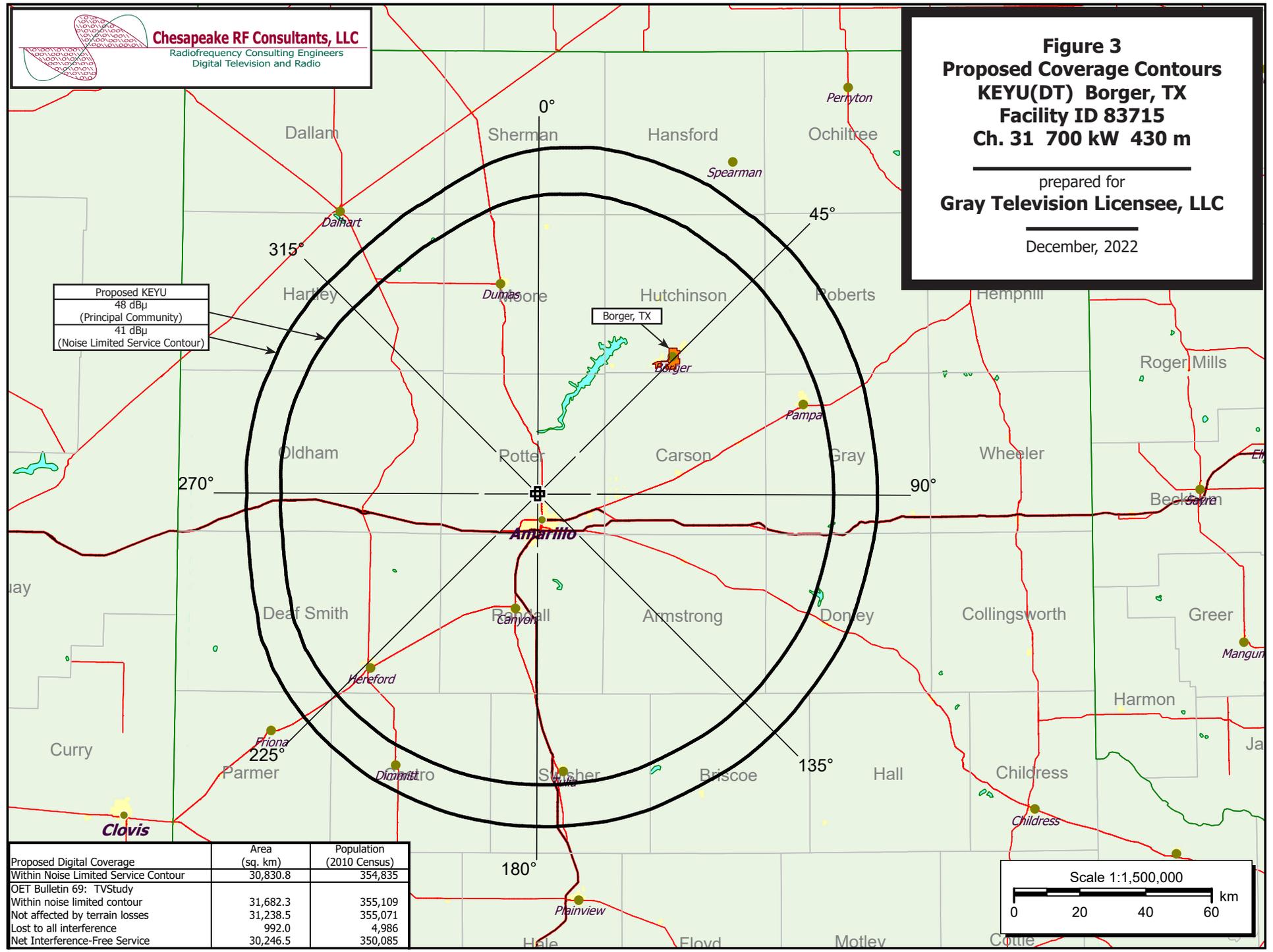


Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 3
Proposed Coverage Contours
KEYU(DT) Borger, TX
Facility ID 83715
Ch. 31 700 kW 430 m

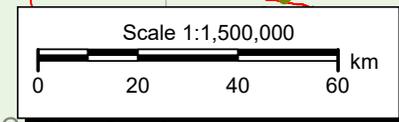
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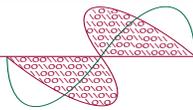
December, 2022



Proposed KEYU
48 dBμ
(Principal Community)
41 dBμ
(Noise Limited Service Contour)

Proposed Digital Coverage	Area (sq. km)	Population (2010 Census)
Within Noise Limited Service Contour	30,830.8	354,835
OET Bulletin 69: TVStudy		
Within noise limited contour	31,682.3	355,109
Not affected by terrain losses	31,238.5	355,071
Lost to all interference	992.0	4,986
Net Interference-Free Service	30,246.5	350,085





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

Figure 4
Coverage Contour Comparison
KEYU(DT) Borger, TX
Facility ID 83715
Ch. 31 700 kW 430 m

prepared for
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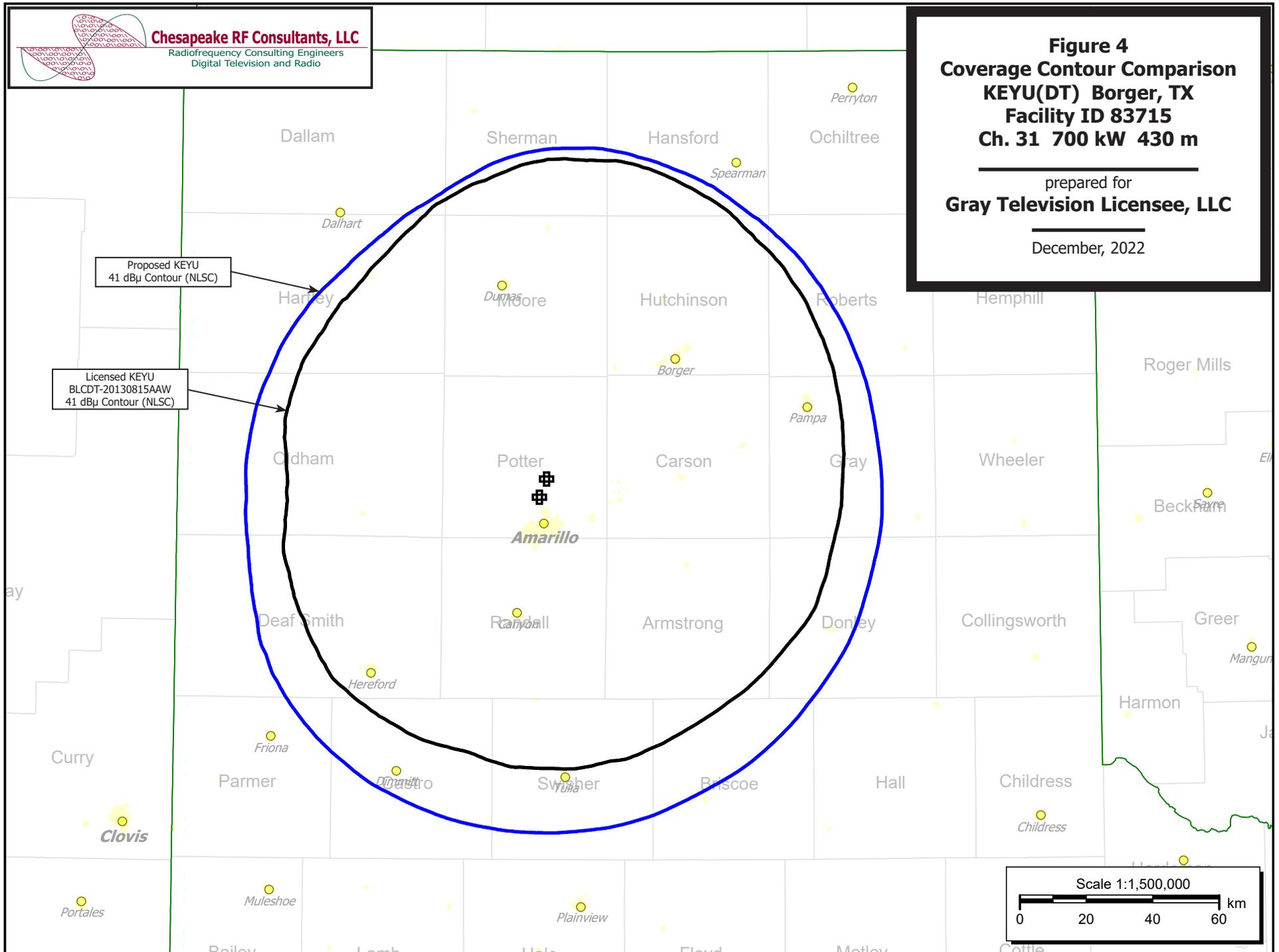


Table 1 KEYU TV Study Analysis of Proposal
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tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: KEYU 1052115 C-71869-3, Model: Longley-Rice
Start: 2022.12.06 17:22:52

Study created: 2022.12.06 17:22:52

Study build station data: LMS TV 2022-12-06

Proposal: KEYU D31 DT APP BORGER, TX
File number: KEYU 1052115 C-71869-3
Facility ID: 83715
Station data: User record
Record ID: 4779
Country: U.S.
Zone: II

Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KDCU-DT	D31	DT	LIC	DERBY, KS	BLANK0000158553	475.8 km
No	KOHC-CD	D31	DC	LIC	OKLAHOMA CITY, OK	BLANK0000071619	398.7
Yes	KLBK-TV	D31	DT	LIC	LUBBOCK, TX	BLANK0000078650	196.4
No	KOSA-TV	D31	DT	APP	ODESSA, TX	BLANK0000176845	387.1
No	KENW	D32	DT	LIC	PORTALES, NM	BLEDT20030219ADP	172.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D31
Latitude: 35 17 34.00 N (NAD83)
Longitude: 101 50 44.00 W
Height AMSL: 1489.7 m
HAAT: 429.7 m
Peak ERP: 700 kW
Antenna: KEYU C-71869-3 0.0 deg
Elev Pattn: Generic
Elec Tilt: 0.75

40.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	386 kW	487.5 m	105.6 km
45.0	639	450.5	107.5
90.0	656	410.1	104.2
135.0	661	394.2	102.9
180.0	645	383.1	101.8
225.0	436	393.5	99.1
270.0	81.9	442.8	89.2
315.0	83.1	476.9	91.3

Distance to Canadian border: 1523.5 km

Distance to Mexican border: 577.2 km

Conditions at FCC monitoring station: Grand Island NE
Bearing: 24.5 degrees Distance: 693.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 332.0 degrees Distance: 613.0 km

Study cell size: 2.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Table 1 KEYU TVStudy Analysis of Proposal
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 Interference to BLANK0000078650 LIC scenario 1

Desired:	Call KLBK-TV	Chan D31	Svc DT	Status LIC	City, State LUBBOCK, TX	File Number BLANK0000078650	Distance
Undesireds:	KEYU	D31	DT	BL	BORGER, TX	DTVBL83715	201.9 km
	KEYU	D31	DT	APP	BORGER, TX	KEYU 1052115 C-71869-3	196.4
	KOSA-TV	D31	DT	APP	ODESSA, TX	BLANK0000176845	196.3
	Service area	Terrain-limited	IX-free, before		IX-free, after		Percent New IX
	22482.0	387,783	22322.1	387,743	22073.6	387,679	21806.0 386,349 1.21 0.34
Undesired			Total IX	Unique IX, before		Unique IX, after	
KEYU D31 DT BL		104.1	17	64.1	13		
KEYU D31 DT APP		383.8	1,347			331.8	1,343
KOSA-TV D31 DT APP		184.3	51	144.3	47	132.3	47

 Interference to proposal scenario 1
 1.40% interference received

Desired:	Call KEYU	Chan D31	Svc DT	Status APP	City, State BORGER, TX	File Number KEYU 1052115 C-71869-3	Distance
Undesireds:	KLBK-TV	D31	DT	LIC	LUBBOCK, TX	BLANK0000078650	196.4 km
	Service area	Terrain-limited	IX-free		Percent IX		
	31682.3	355,109	31238.5	355,071	30246.5	350,085	3.18 1.40
Undesired			Total IX	Unique IX		Prcnt Unique IX	
KLBK-TV D31 DT LIC		992.0	4,986	992.0	4,986	3.18	1.40

**Channel and
Facility
Information**

Section	Question	Response
Proposed Community of License	Facility ID	83715
	State	Texas
	City	BORGER
	DTV Channel	31
	Designated Market Area	Amarillo
Facility Type	Facility Type	Commercial
	Station Type	Main
Zone	Zone	2

**Antenna Location
Data**

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1052115
Coordinates (NAD83)	Latitude	35° 17' 34.0" N+
	Longitude	101° 50' 44.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	456.0 meters
	Support Structure Height	427.0 meters
	Ground Elevation (AMSL)	1082.3 meters
Antenna Data	Height of Radiation Center Above Ground Level	407.4 meters
	Height of Radiation Center Above Average Terrain	429.7 meters
	Height of Radiation Center Above Mean Sea Level	1489.7 meters
	Effective Radiated Power	700 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:	Dielectric
	Model	TFU-26EST/VP-R 4C150
	Rotation	0 degrees
	Electrical Beam Tilt	0.75
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Elliptical
DTV and DTS: Elevation 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	

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	0.743	90	0.968	180	0.960	270	0.342
10	0.836	100	0.976	190	0.951	280	0.347
20	0.899	110	0.990	200	0.933	290	0.360
30	0.933	120	0.990	210	0.899	300	0.360
40	0.951	130	0.976	220	0.836	310	0.347
50	0.960	140	0.968	230	0.743	320	0.342
60	0.961	150	0.961	240	0.617	330	0.386
70	0.960	160	0.960	250	0.486	340	0.486
80	0.961	170	0.961	260	0.386	350	0.617

Additional Azimuths

Degree	V _A
115	1.000