



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION FOR  
POST-TRANSITION CONSTRUCTION PERMIT  
KBSI - CAPE GIRARDEAU, MISSOURI  
DTV - CH. 22 - 705 kW - 543 m HAAT**

Prepared for: KBSI LICENSEE, L. P.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

**GENERAL**

This office has been authorized by KBSI LICENSEE, L. P., licensee of KBSI, channel 22, licensed to Cape Girardeau, Missouri, to prepare this statement, FCC Form 301, Sections III and III-D, and the associated exhibits in support of an application for a post-transition construction permit. It is proposed herein only to increase KBSI's Effective Radiated Power (ERP) from 435 kW to 705 kW. No other changes are proposed.

**EXISTING DIRECTIONAL ANTENNA**

The applicant proposes to utilize KBSI's existing antenna, a Dielectric model TFU-26GTH-R 3S220 DC horizontally polarized directional transmitting antenna with its center of radiation located at a height above ground of 468.6 meters, and a height above average terrain of 543 meters. A vertical plan antenna sketch, showing the position of the antenna on the tower is included as exhibit 1. The antenna manufacturer's horizontal plane azimuth

pattern is shown in exhibit 2 and tabulated in exhibit 3. The antenna's vertical plane elevation pattern is shown in exhibits 4A and 4B, and is tabulated in exhibit 5.

### **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 6 shows the predicted Noise Limited (41 dBu) contour, and the principal community (48 dBu) contour. The 48 dBu contour completely encompasses the principal community of license, Cape Girardeau, Missouri.

### **ALLOCATION CONSIDERATIONS**

#### **DTV Allocation Considerations**

A study was performed, using the Commission's application processing software, tv\_process, to determine if the instant application is predicted to cause any level of new impermissible interference to any post-transition domestic DTV stations, expansion construction permits, or pending applications. The results of the study indicate that the instant application to increase KBSI's ERP to 705 kW is predicted to cause no impermissible level of new interference, in excess of 0.5%, to the populations to be served

by any post-transition domestic DTV station, expansion construction permit, or pending DTV application.

**Class A Television Allocation Considerations**

As required in Section 73.616(f) of the FCC's Rules, a study was performed, using the FCC's application processing software. The study revealed no predicted contour overlap, with any Class A LPTV station. The instant application is, therefore, considered to be in compliance with Section 73.616(f).

**LARGEST STATION IN THE MARKET**

Section 73.622(f)(5) permits a DTV station to increase its technical facilities up to those which will provide a geographic coverage area as large as, but not exceeding, that area served by the "largest station in the market", which, in the Paducah, Kentucky-Cape Girardeau, Missouri-Harrisburg, Illinois DMA (80) appears to be KFVS-TV, channel 12, in Cape Girardeau, MO. As shown in exhibit 7, KFVS-TV's currently authorized facility, BLCDT-20090622AAR, 6.8 kW ERP @ 609 meters HAAT, Non-DA, is predicted to provide a service area encompassing 37,619 square kilometers, encompassing a population of 794, 001 persons. The KBSI modified technical facility proposed herein, 705 kW ERP @ 543 meters HAAT, using its existing 3S220 DC antenna pattern, is predicted to provide a service area of 33,488 square kilometers, encompassing a population of 712,685 persons. Therefore, KFVS-TV's predicted service area exceeds KBSI's proposed modified service area by 4,131 square kilometers and 81,316 persons.

KBSI's current authorization, 435 kW ERP @ 543 meters HAAT, BLCDT-20041213ABC, has a predicted service area of 30,882 square kilometers, encompassing

a population of 657,026 persons. The proposed KBSI modification is predicted to increase the area served by 2,606 square kilometers, and the population served by 55,659 persons.

### **BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are co-located with, as well as located within 10 km of the KBSI antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

### **RADIO FREQUENCY IMPACT**

Effective October 15, 1997 the FCC adopted new guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions. The guidelines are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or "controlled" situations that apply in cases that affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated transmitting facilities, operations or devices comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The FCC's Maximum Permitted Exposure (MPE) level for "uncontrolled" environments is 0.2 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) when applied to broadcast facilities operating between 30 MHz and 300 MHz, and for broadcast facilities operating between 300 MHz and 1500 MHz, primarily UHF TV stations, is derived from the formula, (frequency MHz/1500). The MPE level for "controlled" environments is 1.0 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) for operations between 30 MHz and 300 MHz, and for broadcast stations operating between 300 MHz and 1500 MHz is derived from the formula, (frequency MHz/300).

The predicted emissions of KBSI operating on channel 22 must be considered, along with the predicted emissions from other proposed and existing stations at the site. For KBSI, which operates on television Channel 22 (518-524 MHz), the MPE is 0.347 milliwatts per centimeter squared ( $\text{mW}/\text{cm}^2$ ) in an "uncontrolled" environment and 1.74  $\text{mW}/\text{cm}^2$  in a "controlled" environment. The proposed KBSI facility will operate with a maximum ERP of 705 kW from a horizontally polarized directional transmitting antenna with a centerline height of 468.6 meters above ground level (AGL). Considering a very conservative vertical plane relative field factor of 0.3, the KBSI facility is predicted to produce a power density at two meters above ground level of 0.00973  $\text{mW}/\text{cm}^2$ , which is 2.80% of the FCC guideline value for an "uncontrolled" environment, and 0.56% of the FCC's guideline value for "controlled" environments (see Appendix A). KBSI is the only post-transition DTV station, along with one FM radio station, that are located within the relevant proximity of 315 meters. The total percentage of the ANSI value at the proposed site, including the cumulative radiation from the FM radio station and KBSI, within relevant

proximity is 74.02% of the limit for “uncontrolled” environments, and is 14.80% of the limit for “controlled” environments.

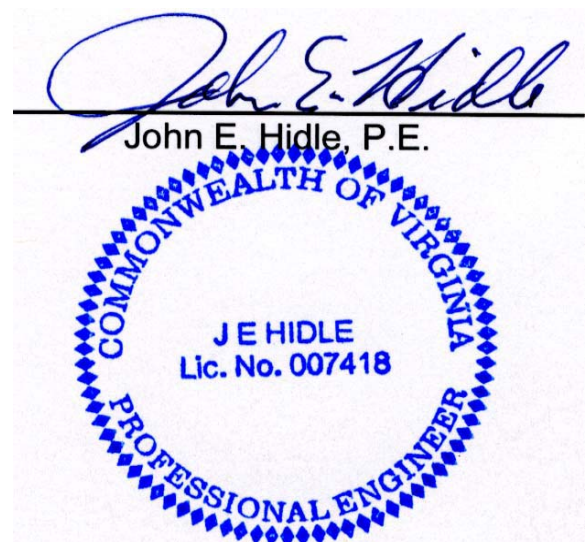
### **OCCUPATIONAL SAFETY**

The licensee of KBSI is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KBSI antenna, and is committed to reducing power and/or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

### **SUMMARY**

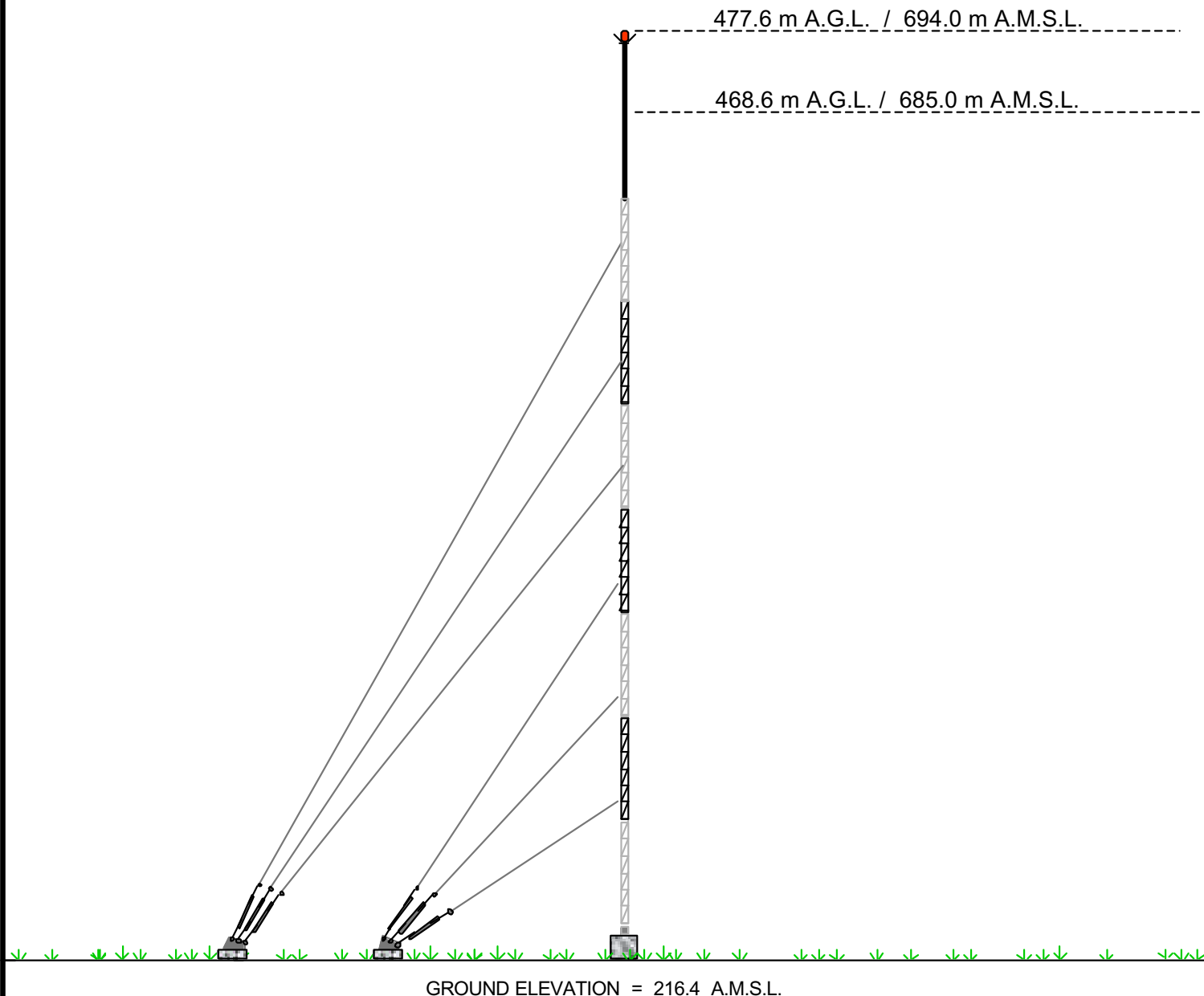
It is submitted that the instant application for construction permit to increase KBSI’s ERP from 435 kW to 705 kW, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 301, Sections III and III-D, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: January 5, 2011



COORDINATES NAD-27

NORTH LATITUDE: 47° 24' 23"  
WEST LONGITUDE: 89° 33' 44"

**VERTICAL PLAN ANTENNA SKETCH**

KBSI - CAPE GIRARDEAU, MISSOURI  
Ch. 22 - 705 kW ERP - 543 m HAAT  
DIRECTIONAL ANTENNA  
JANUARY, 2011

**CARL T. JONES**  
CORPORATION

NOTE : NOT DRAWN TO SCALE



Proposal Number

**DCA-10196**

Exhibit 2

Date

**30-Apr-03**

Call Letters

**KBSI-DT**

Channel

**22**

Location

**Cape Girardeau, MO**

Customer

Antenna Type

**TFU-26GTH-R 3S220 DC**

## AZIMUTH PATTERN

Gain

**2.20**

**( 3.42 dB)**

Frequency

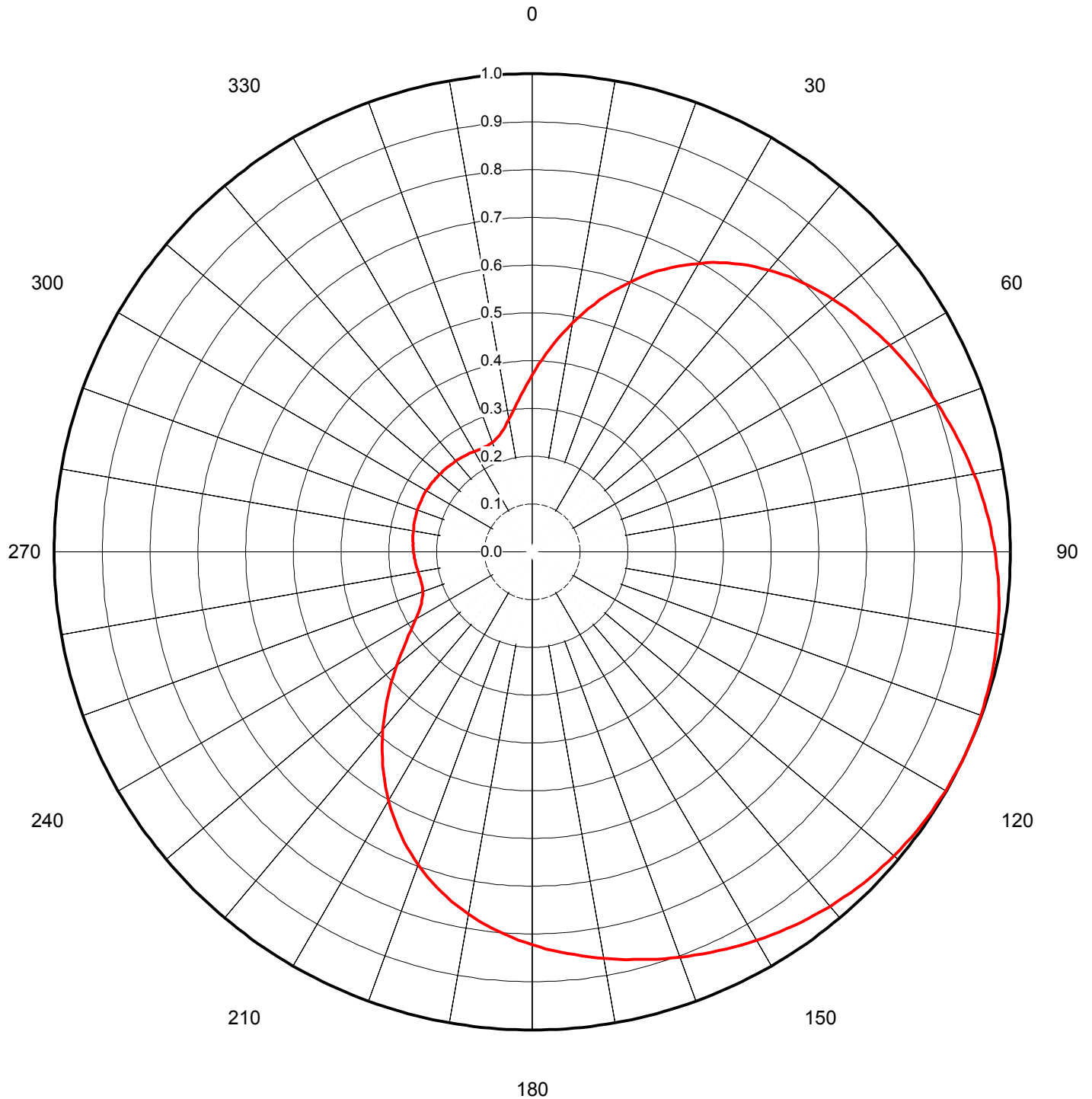
**521.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**TFU-3S220-23-22**







Proposal Number **DCA-10196** Exhibit 3  
 Date **30-Apr-03**  
 Call Letters **KBSI-DT** Channel **22**  
 Location **Cape Girardeau, MO**  
 Customer  
 Antenna Type **TFU-26GTH-R 3S220 DC**

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-3S220-23-22**

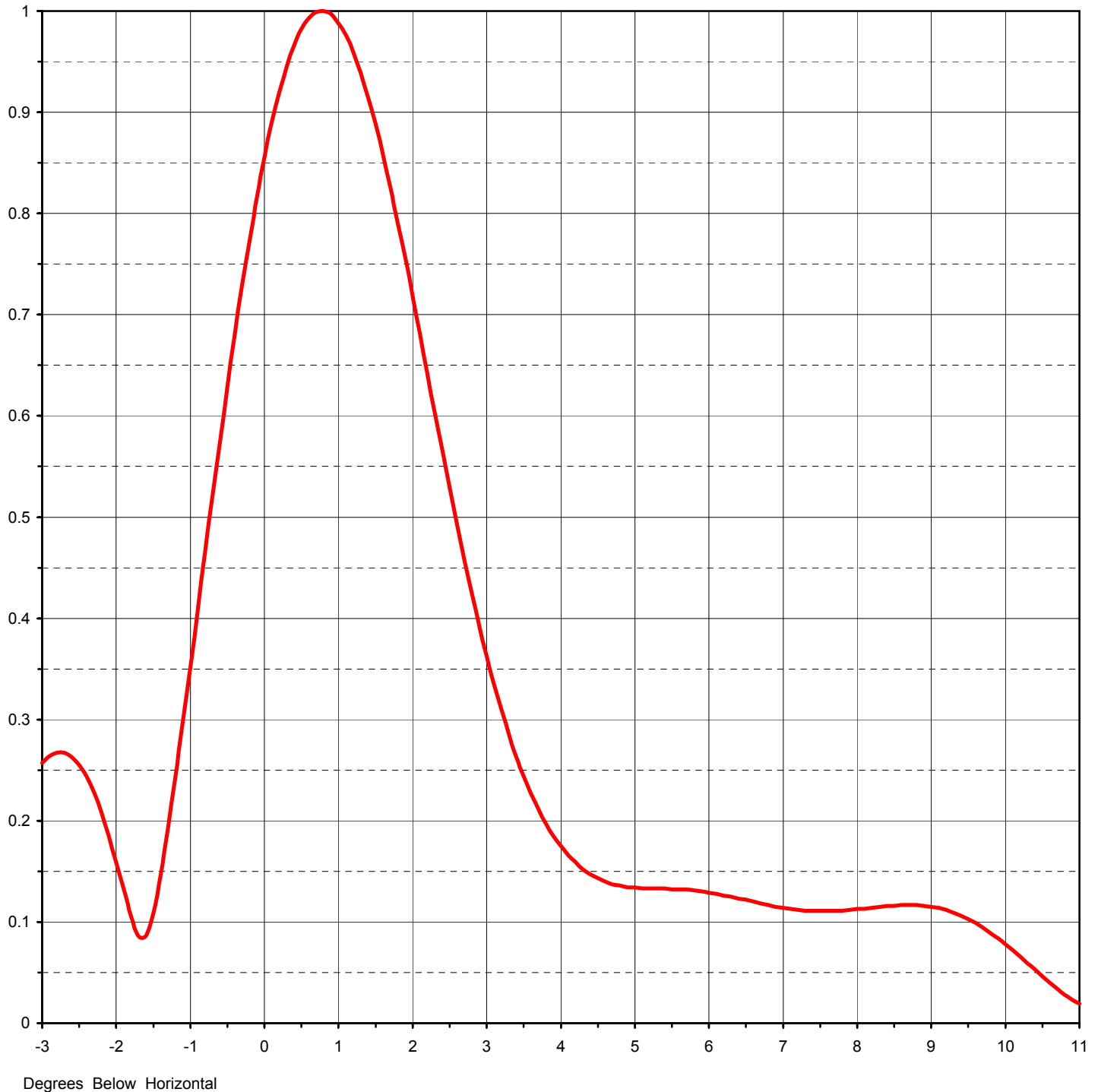
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.370	45	0.797	90	0.968	135	0.979	180	0.821	225	0.427	270	0.248	315	0.250
1	0.381	46	0.802	91	0.970	136	0.977	181	0.817	226	0.415	271	0.249	316	0.250
2	0.392	47	0.807	92	0.973	137	0.975	182	0.812	227	0.403	272	0.249	317	0.250
3	0.403	48	0.812	93	0.975	138	0.973	183	0.807	228	0.392	273	0.250	318	0.249
4	0.415	49	0.817	94	0.977	139	0.970	184	0.802	229	0.381	274	0.250	319	0.249
5	0.427	50	0.821	95	0.979	140	0.968	185	0.797	230	0.370	275	0.250	320	0.248
6	0.438	51	0.826	96	0.981	141	0.965	186	0.792	231	0.359	276	0.251	321	0.248
7	0.450	52	0.830	97	0.983	142	0.963	187	0.787	232	0.349	277	0.251	322	0.247
8	0.462	53	0.835	98	0.985	143	0.960	188	0.781	233	0.339	278	0.252	323	0.247
9	0.474	54	0.839	99	0.987	144	0.957	189	0.775	234	0.329	279	0.252	324	0.246
10	0.486	55	0.843	100	0.988	145	0.954	190	0.769	235	0.320	280	0.252	325	0.245
11	0.498	56	0.847	101	0.990	146	0.951	191	0.763	236	0.311	281	0.253	326	0.245
12	0.510	57	0.851	102	0.991	147	0.948	192	0.756	237	0.303	282	0.253	327	0.244
13	0.522	58	0.855	103	0.993	148	0.945	193	0.750	238	0.295	283	0.254	328	0.244
14	0.533	59	0.859	104	0.994	149	0.942	194	0.743	239	0.288	284	0.254	329	0.243
15	0.545	60	0.863	105	0.995	150	0.938	195	0.736	240	0.281	285	0.254	330	0.242
16	0.556	61	0.867	106	0.996	151	0.935	196	0.728	241	0.275	286	0.255	331	0.242
17	0.568	62	0.871	107	0.997	152	0.931	197	0.721	242	0.270	287	0.255	332	0.241
18	0.579	63	0.875	108	0.997	153	0.928	198	0.713	243	0.264	288	0.255	333	0.241
19	0.590	64	0.879	109	0.998	154	0.924	199	0.705	244	0.260	289	0.256	334	0.241
20	0.601	65	0.883	110	0.999	155	0.921	200	0.697	245	0.256	290	0.256	335	0.241
21	0.611	66	0.887	111	0.999	156	0.917	201	0.688	246	0.253	291	0.256	336	0.241
22	0.622	67	0.891	112	0.999	157	0.913	202	0.679	247	0.249	292	0.256	337	0.241
23	0.632	68	0.895	113	1.000	158	0.910	203	0.670	248	0.247	293	0.256	338	0.242
24	0.642	69	0.898	114	1.000	159	0.906	204	0.661	249	0.245	294	0.256	339	0.242
25	0.652	70	0.902	115	1.000	160	0.902	205	0.652	250	0.244	295	0.256	340	0.244
26	0.661	71	0.906	116	1.000	161	0.898	206	0.642	251	0.242	296	0.256	341	0.245
27	0.670	72	0.910	117	1.000	162	0.895	207	0.632	252	0.242	297	0.256	342	0.247
28	0.679	73	0.913	118	0.999	163	0.891	208	0.622	253	0.241	298	0.256	343	0.249
29	0.688	74	0.917	119	0.999	164	0.887	209	0.611	254	0.241	299	0.256	344	0.253
30	0.697	75	0.921	120	0.999	165	0.883	210	0.601	255	0.241	300	0.256	345	0.256
31	0.705	76	0.924	121	0.998	166	0.879	211	0.590	256	0.241	301	0.256	346	0.260
32	0.713	77	0.928	122	0.997	167	0.875	212	0.579	257	0.241	302	0.255	347	0.264
33	0.721	78	0.931	123	0.997	168	0.871	213	0.568	258	0.241	303	0.255	348	0.270
34	0.728	79	0.935	124	0.996	169	0.867	214	0.556	259	0.242	304	0.255	349	0.275
35	0.736	80	0.938	125	0.995	170	0.863	215	0.545	260	0.242	305	0.254	350	0.281
36	0.743	81	0.942	126	0.994	171	0.859	216	0.533	261	0.243	306	0.254	351	0.288
37	0.750	82	0.945	127	0.993	172	0.855	217	0.522	262	0.244	307	0.254	352	0.295
38	0.756	83	0.948	128	0.991	173	0.851	218	0.510	263	0.244	308	0.253	353	0.303
39	0.763	84	0.951	129	0.990	174	0.847	219	0.498	264	0.245	309	0.253	354	0.311
40	0.769	85	0.954	130	0.988	175	0.843	220	0.486	265	0.245	310	0.252	355	0.320
41	0.775	86	0.957	131	0.987	176	0.839	221	0.474	266	0.246	311	0.252	356	0.329
42	0.781	87	0.960	132	0.985	177	0.835	222	0.462	267	0.247	312	0.252	357	0.339
43	0.787	88	0.963	133	0.983	178	0.830	223	0.450	268	0.247	313	0.251	358	0.349
44	0.792	89	0.965	134	0.981	179	0.826	224	0.438	269	0.248	314	0.251	359	0.359



Proposal Number	<b>DCA-10196</b>	Exhibit 4A
Date	<b>30-Apr-03</b>	
Call Letters	<b>KBSI-DT</b>	Channel <b>22</b>
Location	<b>Cape Girardeau, MO</b>	
Customer		
Antenna Type	<b>TFU-26GTH-R 3S220 DC</b>	

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>20.50 ( 13.12 dB )</b>	Beam Tilt	<b>0.75 deg</b>
RMS Gain at Horizontal	<b>15.00 ( 11.76 dB )</b>	Frequency	<b>521.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>26G205075D</b>



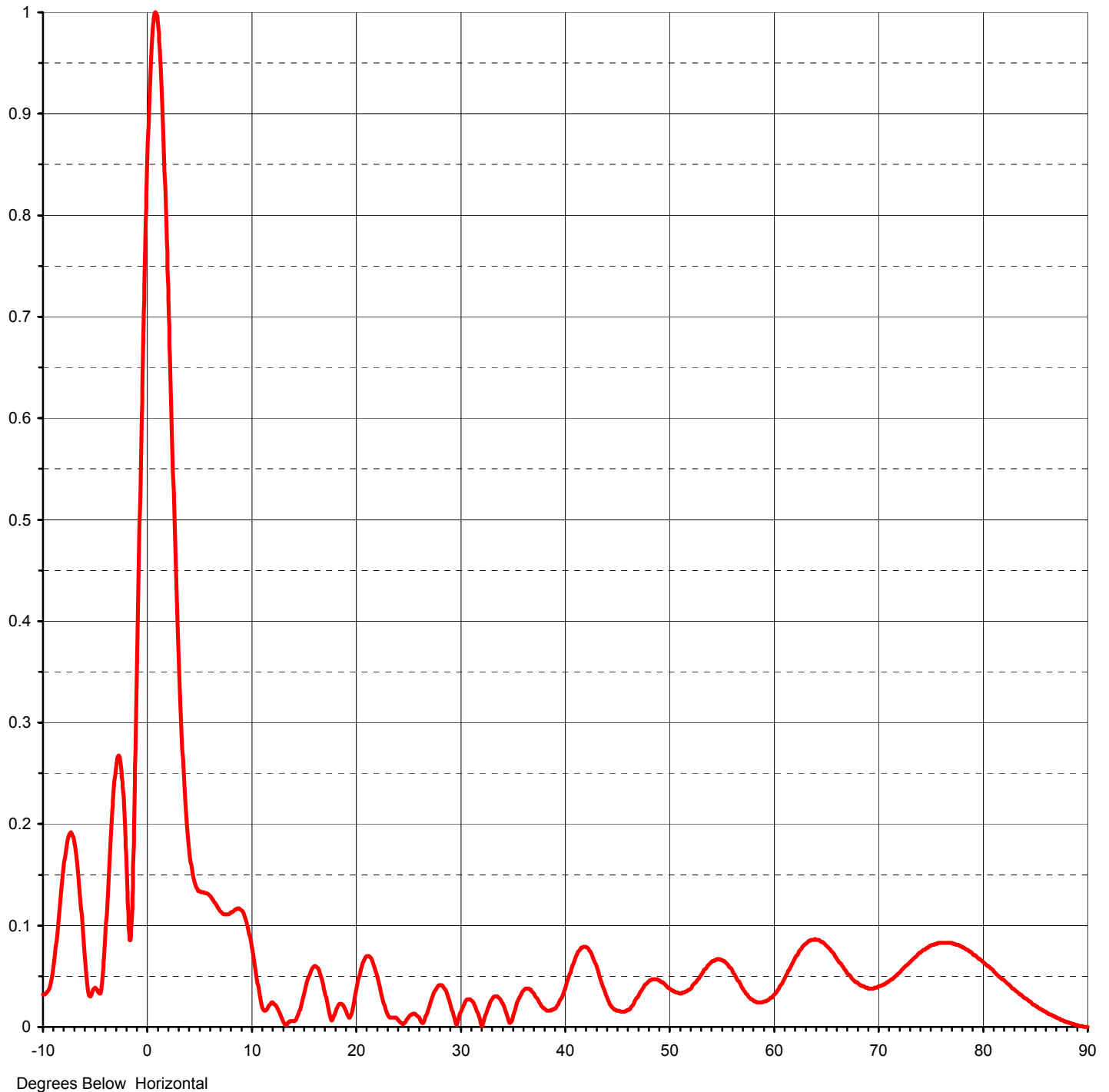


Proposal Number	<b>DCA-10196</b>	Exhibit 4B
Date	<b>30-Apr-03</b>	
Call Letters	<b>KBSI-DT</b>	Channel <b>22</b>
Location	<b>Cape Girardeau, MO</b>	
Customer		
Antenna Type	<b>TFU-26GTH-R 3S220 DC</b>	

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>20.50 ( 13.12 dB )</b>
RMS Gain at Horizontal	<b>15.00 ( 11.76 dB )</b>
Calculated / Measured	<b>Calculated</b>

Beam Tilt	<b>0.75 deg</b>
Frequency	<b>521.00 MHz</b>
Drawing #	<b>26G205075D-90</b>





Proposal Number **DCA-10196**

Exhibit 5

Date **30-Apr-03**

Call Letters **KBSI-DT** Channel **22**

Location **Cape Girardeau, MO**

Customer

Antenna Type **TFU-26GTH-R 3S220 DC**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **26G205075D-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.032	2.4	0.566	10.6	0.046	30.5	0.024	51.0	0.033	71.5	0.049
-9.5	0.036	2.6	0.493	10.8	0.034	31.0	0.027	51.5	0.034	72.0	0.054
-9.0	0.058	2.8	0.424	11.0	0.023	31.5	0.020	52.0	0.037	72.5	0.059
-8.5	0.106	3.0	0.363	11.5	0.017	32.0	0.004	52.5	0.043	73.0	0.064
-8.0	0.158	3.2	0.309	12.0	0.024	32.5	0.013	53.0	0.050	73.5	0.069
-7.5	0.189	3.4	0.263	12.5	0.019	33.0	0.026	53.5	0.057	74.0	0.073
-7.0	0.182	3.6	0.226	13.0	0.008	33.5	0.030	54.0	0.063	74.5	0.077
-6.5	0.136	3.8	0.197	13.5	0.003	34.0	0.025	54.5	0.066	75.0	0.080
-6.0	0.070	4.0	0.175	14.0	0.006	34.5	0.012	55.0	0.066	75.5	0.082
-5.5	0.030	4.2	0.159	14.5	0.011	35.0	0.007	55.5	0.063	76.0	0.083
-5.0	0.039	4.4	0.147	15.0	0.029	35.5	0.024	56.0	0.057	76.5	0.083
-4.5	0.033	4.6	0.140	15.5	0.048	36.0	0.035	56.5	0.048	77.0	0.083
-4.0	0.093	4.8	0.136	16.0	0.059	36.5	0.038	57.0	0.039	77.5	0.081
-3.5	0.188	5.0	0.134	16.5	0.056	37.0	0.034	57.5	0.032	78.0	0.079
-3.0	0.257	5.2	0.133	17.0	0.038	37.5	0.026	58.0	0.027	78.5	0.076
-2.8	0.267	5.4	0.133	17.5	0.014	38.0	0.019	58.5	0.024	79.0	0.072
-2.6	0.263	5.6	0.132	18.0	0.012	38.5	0.016	59.0	0.024	79.5	0.068
-2.4	0.244	5.8	0.131	18.5	0.023	39.0	0.018	59.5	0.026	80.0	0.064
-2.2	0.208	6.0	0.129	19.0	0.018	39.5	0.024	60.0	0.031	80.5	0.060
-2.0	0.159	6.2	0.126	19.5	0.009	40.0	0.036	60.5	0.037	81.0	0.055
-1.8	0.105	6.4	0.123	20.0	0.032	40.5	0.051	61.0	0.046	81.5	0.050
-1.6	0.086	6.6	0.120	20.5	0.056	41.0	0.066	61.5	0.056	82.0	0.046
-1.4	0.147	6.8	0.117	21.0	0.069	41.5	0.076	62.0	0.066	82.5	0.041
-1.2	0.243	7.0	0.114	21.5	0.068	42.0	0.079	62.5	0.075	83.0	0.037
-1.0	0.352	7.2	0.112	22.0	0.053	42.5	0.074	63.0	0.081	83.5	0.032
-0.8	0.465	7.4	0.111	22.5	0.032	43.0	0.062	63.5	0.085	84.0	0.028
-0.6	0.575	7.6	0.111	23.0	0.014	43.5	0.046	64.0	0.087	84.5	0.025
-0.4	0.680	7.8	0.111	23.5	0.009	44.0	0.031	64.5	0.084	85.0	0.021
-0.2	0.774	8.0	0.113	24.0	0.008	44.5	0.021	65.0	0.080	85.5	0.018
0.0	0.855	8.2	0.114	24.5	0.003	45.0	0.016	65.5	0.074	86.0	0.015
0.2	0.920	8.4	0.116	25.0	0.008	45.5	0.015	66.0	0.067	86.5	0.012
0.4	0.966	8.6	0.117	25.5	0.013	46.0	0.016	66.5	0.060	87.0	0.009
0.6	0.993	8.8	0.117	26.0	0.010	46.5	0.021	67.0	0.053	87.5	0.007
0.8	1.000	9.0	0.115	26.5	0.004	47.0	0.029	67.5	0.047	88.0	0.005
1.0	0.988	9.2	0.112	27.0	0.018	47.5	0.038	68.0	0.043	88.5	0.003
1.2	0.959	9.4	0.106	27.5	0.033	48.0	0.044	68.5	0.040	89.0	0.002
1.4	0.915	9.6	0.099	28.0	0.041	48.5	0.047	69.0	0.038	89.5	0.001
1.6	0.858	9.8	0.094	28.5	0.038	49.0	0.046	69.5	0.038	90.0	0.000
1.8	0.791	10.0	0.084	29.0	0.026	49.5	0.043	70.0	0.040		
2.0	0.718	10.2	0.072	29.5	0.008	50.0	0.039	70.5	0.042		
2.2	0.642	10.4	0.059	30.0	0.012	50.5	0.035	71.0	0.045		



## PREDICTED COVERAGE CONTOURS

**KBSI, CAPE GIRARDEAU, MISSOURI**

**DTV - CH. 22 - 705 kW - 543 m HAAT**

**Predicted Principal Community Contour**

**F(50,90) - 48 dBu**

**Area = 25,404 sq km**

**Population = 577,082**

**Predicted Noise Limited Contour**

**F(50,90) - 41 dBu**

**Area = 33,488 sq km**

**Population = 712,685**

**JANUARY 2011**

**CARL T. JONES  
CORPORATION**



## PREDICTED COVERAGE CONTOURS COMPARISON BETWEEN KBSI & KFVS-TV "LARGEST STATION IN THE MARKET"

### KFVS-TV, CAPE GIRARDEAU, MISSOURI

DTV - CH. 12 - 6.8 kW - 609 m HAAT

Predicted Noise Limited Contour

F(50,90) - 36 dBu

Area = 37,619 sq km

Population = 794,001

### KBSI, CAPE GIRARDEAU, MISSOURI

DTV - CH. 22 - 705 kW - 543 m HAAT

Predicted Noise Limited Contour

F(50,90) - 41 dBu

Area = 33,488 sq km

Population = 712,685

JANUARY 2011

**CARL T. JONES**  
CORPORATION

**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**  
KBSI, CAPE GIRARDEAU, MISSOURI  
CHANNEL 22, 705 kW ERP, 543 m HAAT  
JANUARY, 2011

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLARIZATION</u>	<u>ANTENNA HEIGHT ** mAGL</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>PREDICTED POWER DENSITY (mW/cm<sup>2</sup>)</u>	<u>FCC UNCONTROLLED LIMIT (mW/cm<sup>2</sup>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
KBSI	DT	22	521	H	466.6	705.000	0.300	0.00973	0.347	2.80%
KEZS-FM	FM	275	102.9	H & V	216.6	100.000	1.000	0.14243	0.200	71.21%

**TOTAL PERCENTAGE OF ANSI VALUE= 74.02%**

*\*\* The antenna heights indicated above are 2 meters less than the actual antenna heights*

*so that the predicted power densities consider the 2 meter human height allowance.*

*This evaluation includes facilities collocated at the site, and facilities located within 315 meters.*

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