



ENGINEERING STATEMENT

In support of a request for

Minor Modification to a Digital TV Translator or LPTV Station

K22MT-D CH22

Idabel, Oklahoma

Facility ID: 50174

PURPOSE

Intelligent Design and Services, Inc. ("iDSi") has been retained by the Oklahoma Educational Television Authority (OETA), the "Applicant", to prepare this engineering statement in support of a request for a Minor Modification. The Applicant has an existing license, LMS 0000059597, for K22MT-D CH22 Digital TV Translator, Facility ID 50174. The Applicant proposes to move the transmitting antenna location with no change in frequency, and the resulting protected contour would overlap a portion of the protected contour of the authorized facilities of the existing station.

DISCUSSION

The owner of the tower, Antenna Structure Registration Number (ASR) 1010991, where the K22MT-D facility is located will not renew the station's lease and plans to dismantle the tower later this year. The Applicant proposes to relocate to a multi-use tower, ASR 1313116, approximately 12 miles away. This structure is much shorter than the one at the existing site resulting in a decrease in height as well as a change in location. To maintain a noise-limited contour over the City of License, Idabel, OK, and avoid interference to others from the proposed new location and height, the Applicant proposes to use a directional antenna pattern.

A summary of the proposed technical specifications follows:

Location: 34° 02' 57.3" Latitude

94° 44' 10.2" Longitude (NAD83)

ASR 1313116



Height: 81 m Radiation Center Above Ground
ERP: 9.5 kW
Antenna: Directional (rotation: 225° True North)

An interference study was performed using the proposed location, height, antenna pattern, and ERP utilizing the FCC TVStudy v2.2.5 software. The study result for this proposal indicates no unacceptable interference to others and is included as **Exhibit 1**.

FCC OET Bulletin No. 65 "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, and has been found to comply with the limits set forth in Section 1.1310 of the Rules as shown in **Exhibit 2**. The total exposure as defined by the ANSI standard computations for occupational/controlled area is 0.028 % of the maximum. The total exposure as defined by the ANSI standard computations for general population/uncontrolled area is 0.138 % of the maximum.

The proposed coverage contour shown in **Exhibit 3**.

The proposed antenna technical information is shown in **Exhibit 4**.

CONCLUSION

It is respectfully requested that the Commission grant this request for Minor Modification for the facility as specified herein.



DECLARATION

David Sanderford, E.I.T., declares and states that he is a graduate Electrical Engineer with a Bachelor of Science Degree in Electrical Engineering from the Georgia Institute of Technology, and his qualifications are known to the Federal Communications Commission. He is President of Intelligent Design and Services, Inc., a Registered Professional Engineering Firm in the State of Texas, and that firm has been retained by OETA, to perform the engineering support as contained in this report.

All facts contained herein are true of his own knowledge except where stated to be on information or belief provided by others, and as to those facts, he believes them to be true.

I declare under penalty of perjury that the foregoing is true and correct.

David Sanderford
President - iDSi

Executed this 23rd day of May, 2023



EXHIBIT 1

tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: K22MT_ODOT_9.5 #17, Model: Longley-Rice
Start: 2023.05.19 00:40:32

Study created: 2023.05.19 00:40:32

Study build station data: LMS TV 2023-05-17

Proposal: K22MT-D D22 LD LIC IDABEL, OK
File number: K22MT_ODOT_9.5
Facility ID: 50174
Station data: User record
Record ID: 18
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KTEV-LD	N19+	TX	LIC	TEXARKANA, AR	BLTTL20061211AAB	90.7 km
Yes	KHBS	D21	DT	LIC	FORT SMITH, AR	BLCDT20031121AMR	113.7
No	KKYK-CD	D21	DC	LIC	LITTLE ROCK, AR	BLANK0000062774	221.7
No	KVPO-LD	D21-	LD	LIC	SHREVEPORT, LA	BLANK0000160538	176.9
No	KVPO-LD	D21	LD	CP	SHREVEPORT, LA	BLANK0000198683	182.5
No	KDTX-TV	D21	DT	LIC	DALLAS, TX	BLANK0000075181	263.4
No	K21PE-D	D21	LD	LIC	TYLER, TX	BLANK0000212512	173.7
No	K22HS-D	D22	LD	LIC	EUREKA SPRINGS, AR	BLDTL20110517ADA	272.1
No	K22OC-D	D22	LD	LIC	FORT SMITH, AR	BLANK0000151094	159.1
No	K22OC-D	D22	LD	CP	FORT SMITH, AR	BLANK0000213944	159.1
No	KJNE-LD	D22z	LD	LIC	JONESBORO, AR	BLANK0000055090	422.8
No	KATV	D22	DT	LIC	LITTLE ROCK, AR	BLANK0000212657	222.2
No	K22OW-D	D22	LD	APP	ALEXANDRIA, LA	BLANK0000212612	381.9
No	K22NI-D	D22	LD	LIC	LEESVILLE, LA	BLANK0000064144	344.2
No	KMCT-TV	D22	DT	LIC	WEST MONROE, LA	BLANK0000063151	295.3
No	KRBK	D22	DT	LIC	OSAGE BEACH, MO	BLANK0000171221	387.5
No	K22JQ-D	D22	LD	CP	ARDMORE, OK	BLANK0000164280	206.1
No	K22JQ-D	D22	LD	LIC	ARDMORE, OK	BLDTL20140224ACC	222.4
No	KTOU-LD	D22	LD	LIC	OKLAHOMA CITY, OK	BLANK0000193102	293.0
No	KOKI-TV	D22	DT	LIC	TULSA, OK	BLCDT20021127AGL	235.9
No	KNAV-LD	D22	LD	LIC	DALLAS, TX	BLANK0000120153	263.4
Yes	KETK-TV	D22	DT	LIC	JACKSONVILLE, TX	BMLCDT20120516ABW	227.4
No	KGSW-LD	D22	LD	LIC	KEENE, TX	BLANK0000106132	302.7
No	K22NR-D	D22	LD	LIC	STEPHENVILLE, TX	BLANK0000074737	387.3
No	KAUZ-TV	D22	DT	LIC	WICHITA FALLS, TX	BLCDT20090724ACR	350.9
No	K23OW-D	D23	LD	LIC	HOT SPRINGS, AR	BLANK0000087667	179.4
No	KSLA	D23	DT	LIC	SHREVEPORT, LA	BLANK0000192887	170.0
No	KQDA-LD	D23	LD	CP	DENISON, TX	BLANK0000001210	169.4
No	KQDA-LD	D23	LD	LIC	DENISON, TX	BLDTL20150106ABO	153.1
No	KTXD-TV	D23	DT	LIC	GREENVILLE, TX	BLANK0000080284	263.4
No	KVPO-LD	N30-	TX	LIC	SHREVEPORT, LA	BLTTL19950412IB	91.4

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D22
Mask: Full Service
Latitude: 34 2 57.30 N (NAD83)
Longitude: 94 44 10.20 W
Height AMSL: 229.7 m
HAAT: 0.0 m
Peak ERP: 9.50 kW



Antenna: DLP-C 0.0 deg
Elev Pattn: Generic
Elec Tilt: 1.00

49.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.44 kW	31.7 m	20.4 km
45.0	2.64	31.3	23.1
90.0	1.62	98.9	33.1
135.0	3.31	114.4	38.3
180.0	7.73	114.5	42.6
225.0	9.50	109.6	43.1
270.0	7.42	91.1	39.8
315.0	2.84	46.8	27.7

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 80 m

Distance to Canadian border: 1339.4 km

Distance to Mexican border: 783.0 km

Conditions at FCC monitoring station: Kingsville TX
Bearing: 203.1 degrees Distance: 793.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 309.0 degrees Distance: 1147.6 km

Study cell size: 1.00 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%

Interference to BLCDDT20031121AMR LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KHBS	D21	DT	LIC	FORT SMITH, AR	BLCDDT20031121AMR	
Undesireds:	K22MT-D	D22	LD	LIC	IDABEL, OK	K22MT_ODOT_9.5	113.7 km
	KQCW-DT	D20	DT	CP	MUSKOGEE, OK	BLANK0000211781	138.8
	KKYK-CD	D21	DC	LIC	LITTLE ROCK, AR	BLANK0000062774	201.2
	KUOT-CD	D21	DC	LIC	OKLAHOMA CITY, OK	BLANK0000069721	254.8
	KDTX-TV	D21	DT	LIC	DALLAS, TX	BLANK0000075181	347.6
	KATV	D22	DT	LIC	LITTLE ROCK, AR	BLANK0000212657	201.8
	KOKI-TV	D22	DT	LIC	TULSA, OK	BLCDDT20021127AGL	139.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX					
40307.6	632,382	35763.8	609,980	33989.6	564,299	33984.6	564,254	0.01	0.01

Undesired	Total IX	Unique IX, before	Unique IX, after	
K22MT-D D22 LD LIC	29.9	123	5.0	45
KQCW-DT D20 DT CP	941.1	33,028	120.8	3,274
KKYK-CD D21 DC LIC	176.5	2,903	166.5	2,898
KUOT-CD D21 DC LIC	1.0	0	1.0	0
KDTX-TV D21 DT LIC	475.0	944	475.0	944
KATV D22 DT LIC	12.0	5	2.0	0
KOKI-TV D22 DT LIC	998.9	38,560	178.6	8,806

Interference to BLCDDT20031121AMR LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KHBS	D21	DT	LIC	FORT SMITH, AR	BLCDDT20031121AMR	
Undesireds:	K22MT-D	D22	LD	LIC	IDABEL, OK	K22MT_ODOT_9.5	113.7 km



KQCW-DT	D20	DT	LIC	MUSKOGEE, OK	BMLCDT20130823ACR	127.0
KKYK-CD	D21	DC	LIC	LITTLE ROCK, AR	BLANK0000062774	201.2
KUOT-CD	D21	DC	LIC	OKLAHOMA CITY, OK	BLANK0000069721	254.8
KDTX-TV	D21	DT	LIC	DALLAS, TX	BLANK0000075181	347.6
KATV	D22	DT	LIC	LITTLE ROCK, AR	BLANK0000212657	201.8
KOKI-TV	D22	DT	LIC	TULSA, OK	BLCDDT20021127AGL	139.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
40307.6 632,382	35763.8 609,980	34000.1 564,930	33995.1 564,885	0.01 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
K22MT-D D22 LD LIC 29.9	123	5.0 45	
KQCW-DT D20 DT LIC 636.3	13,203	110.3 2,643	
KKYK-CD D21 DC LIC 176.5	2,903	166.5 2,898	
KUOT-CD D21 DC LIC 1.0	0	1.0 0	
KDTX-TV D21 DT LIC 475.0	944	475.0 944	
KATV D22 DT LIC 12.0	5	2.0 0	
KOKI-TV D22 DT LIC 998.9	38,560	472.9 28,000	

Interference to BMLCDT20120516ABW LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KETK-TV	D22	DT	LIC	JACKSONVILLE, TX	BMLCDT20120516ABW	
Undesireds:	K22MT-D	D22	LD	LIC	IDABEL, OK	K22MT_ODOT_9.5	227.4 km
	KDTX-TV	D21	DT	LIC	DALLAS, TX	BLANK0000075181	166.2
	KATV	D22	DT	LIC	LITTLE ROCK, AR	BLANK0000212657	401.4
	KLRU	D22	DT	LIC	AUSTIN, TX	BLEDT20040305ACK	305.6
	KTMD	D22	DT	LIC	GALVESTON, TX	BLANK0000169199	277.4
	KSLA	D23	DT	LIC	SHREVEPORT, LA	BLANK0000192887	146.5
	KTXD-TV	D23	DT	LIC	GREENVILLE, TX	BLANK0000080284	166.2

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
36492.0 1,031,357	36328.9 1,030,318	34655.4 1,004,918	34643.4 1,004,721	0.03 0.02

Undesired	Total IX	Unique IX, before	Unique IX, after
K22MT-D D22 LD LIC 21.0	208	12.0 197	
KDTX-TV D21 DT LIC 35.1	505	0.0 0	
KATV D22 DT LIC 24.0	205	7.0 43	
KLRU D22 DT LIC 114.9	481	20.3 0	
KTMD D22 DT LIC 814.6	8,687	716.9 8,181	
KSLA D23 DT LIC 715.2	14,812	695.2 14,625	
KTXD-TV D23 DT LIC 119.5	1,883	84.3 1,378	

Interference to proposal scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	K22MT-D	D22	LD	LIC	IDABEL, OK	K22MT_ODOT_9.5	
Undesireds:	K22OC-D	D22	LD	LIC	FORT SMITH, AR	BLANK0000151094	159.1 km
	KATV	D22	DT	LIC	LITTLE ROCK, AR	BLANK0000212657	222.2
	K22JQ-D	D22	LD	CP	ARDMORE, OK	BLANK0000164280	206.1
	KETK-TV	D22	DT	LIC	JACKSONVILLE, TX	BMLCDT20120516ABW	227.4

Service area	Terrain-limited	IX-free	Percent IX
3779.1 32,112	3762.0 32,112	3708.8 31,995	1.41 0.36

Undesired	Total IX	Unique IX	Prcnt Unique IX
KATV D22 DT LIC 11.9	93	7.9 72	0.21 0.22
KETK-TV D22 DT LIC 45.3	45	41.3 24	1.10 0.07



EXHIBIT 2

ENVIRONMENTAL STATEMENT

The proposed facility complies in full with the requirements of 47 C.F.R. Section 1.1306 and will have no significant environmental impact. Population is very scattered and sparse near the immediate location of the proposed site. The proposed site does not involve any of the conditions specified in Section 1.1307(a)(1) - (6) of the Rules.

The **K22MT-D** facility has been studied in accordance with the procedures set forth in the FCC OET Bulletin No. 65 "Evaluating Compliance With FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, and has been found to comply with the limits set forth in Section 1.1310 of the Rules. The total exposure attributable to this station as defined by the ANSI standard computations for occupational/controlled area is **0.03 %** of the maximum and is **0.14 %** of the maximum for general population/uncontrolled area. As this is less than the 5% limit set forth by the rules in Section 1.1307(b) for a multi-use tower site, the station is categorically excluded from taking action to bring the site into compliance should the guidelines be exceeded. The proposed facility complies with the Commission's guidelines.

Multiple Use Tower						
Location:		K22MT-D Idabel, OK			5/18/2023	
Channel Frequency Type	Call Letters	Service	ERP (W) H+V	Ant Center of Radiation AG (m)	% of ANSI/FCC Limit (6min)	% of ANSI/FCC Limit (30 min)
22	K22MT-D	LPDTV	9,500	81.00	0.028	0.138
Total %					0.028	0.138
IN COMPLIANCE						

The Oklahoma Educational Television Authority (Applicant) agrees to maintain full compliance with the safety precautions to workers on the tower (controlled) and the general public (uncontrolled) by reducing or removing radiated power during the time of construction or maintenance on or near the antenna. 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.

The Applicant is believed to be in full compliance with the Environmental Impact and Commission Rules.



EXHIBIT 3

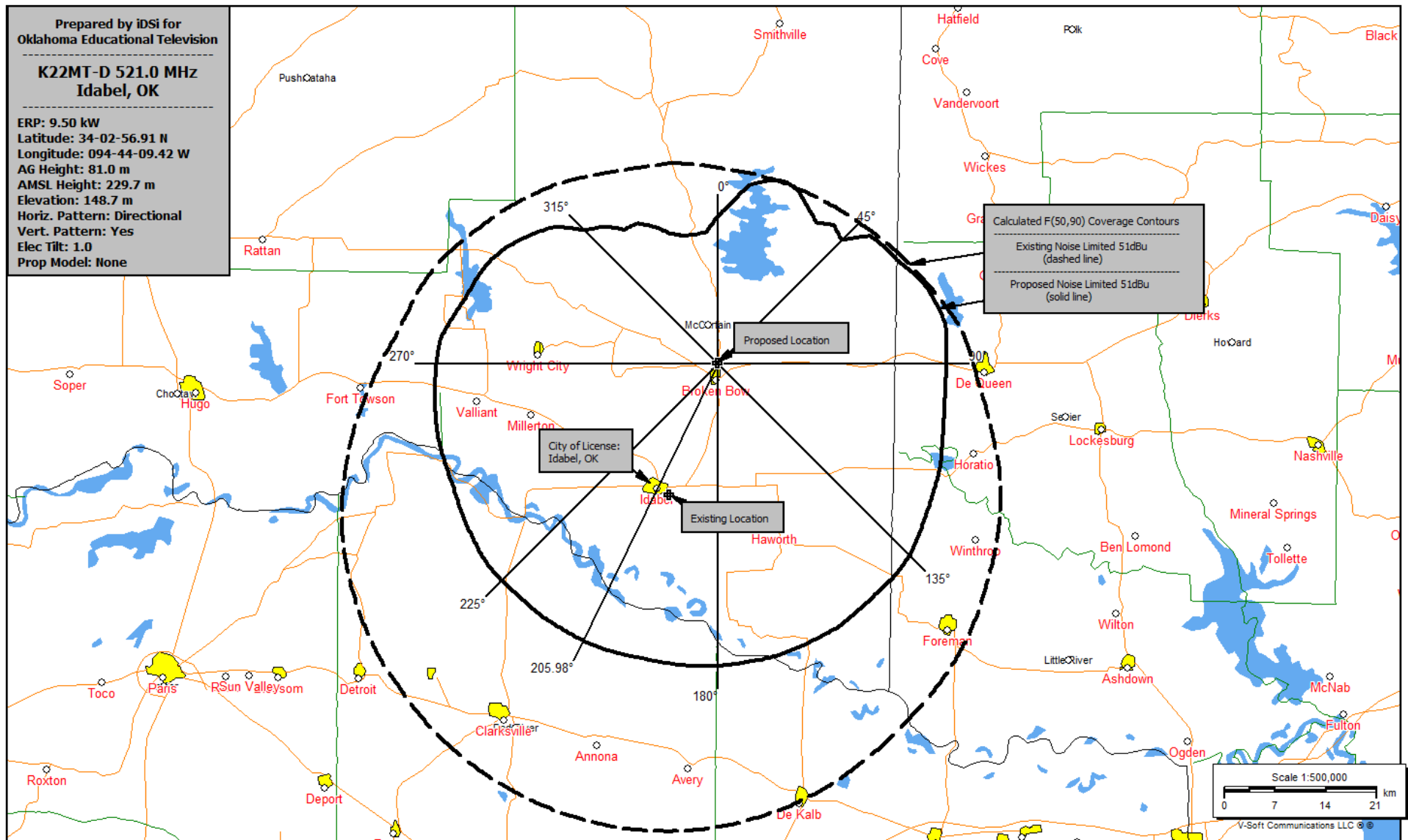


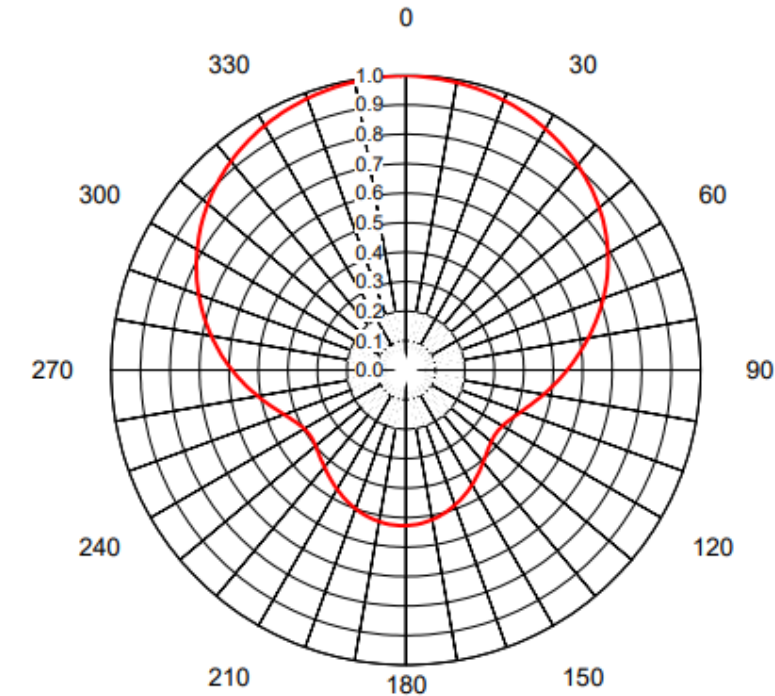


EXHIBIT 4

AZIMUTH PATTERN Horizontal Polarization

Proposal No. **DVB 23025**
Date **19-May-23**
Call Letters **K22MT-D**
Channel **22**
Frequency **521 MHz**
Antenna Type **DLP-8C**
Gain **2.09 (3.2dB)**
Calculated

Pattern Number **TLP-C-22 Hpol**



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	1.000	36	0.924	72	0.696	108	0.425	144	0.424	180	0.527	216	0.444	252	0.452	288	0.733
1	0.999	37	0.920	73	0.687	109	0.420	145	0.428	181	0.528	217	0.440	253	0.459	289	0.741
2	0.998	38	0.916	74	0.679	110	0.414	146	0.432	182	0.528	218	0.437	254	0.465	290	0.748
3	0.997	39	0.912	75	0.670	111	0.410	147	0.437	183	0.528	219	0.433	255	0.472	291	0.755
4	0.996	40	0.907	76	0.662	112	0.405	148	0.441	184	0.527	220	0.430	256	0.479	292	0.763
5	0.995	41	0.903	77	0.653	113	0.401	149	0.445	185	0.527	221	0.426	257	0.487	293	0.770
6	0.995	42	0.898	78	0.645	114	0.396	150	0.449	186	0.526	222	0.423	258	0.494	294	0.777
7	0.994	43	0.893	79	0.637	115	0.393	151	0.453	187	0.525	223	0.419	259	0.502	295	0.784
8	0.993	44	0.889	80	0.628	116	0.389	152	0.457	188	0.524	224	0.416	260	0.510	296	0.791
9	0.992	45	0.884	81	0.620	117	0.386	153	0.461	189	0.523	225	0.413	261	0.517	297	0.798
10	0.990	46	0.878	82	0.611	118	0.383	154	0.465	190	0.522	226	0.410	262	0.525	298	0.804
11	0.989	47	0.873	83	0.603	119	0.381	155	0.469	191	0.520	227	0.407	263	0.533	299	0.811
12	0.988	48	0.868	84	0.595	120	0.378	156	0.472	192	0.518	228	0.405	264	0.541	300	0.818
13	0.986	49	0.862	85	0.587	121	0.377	157	0.476	193	0.517	229	0.402	265	0.549	301	0.824
14	0.985	50	0.857	86	0.579	122	0.375	158	0.480	194	0.515	230	0.400	266	0.557	302	0.830
15	0.983	51	0.851	87	0.571	123	0.374	159	0.483	195	0.512	231	0.398	267	0.565	303	0.837
16	0.981	52	0.845	88	0.563	124	0.373	160	0.487	196	0.510	232	0.396	268	0.573	304	0.843
17	0.980	53	0.839	89	0.555	125	0.373	161	0.490	197	0.508	233	0.395	269	0.581	305	0.849
18	0.978	54	0.833	90	0.547	126	0.373	162	0.493	198	0.505	234	0.394	270	0.590	306	0.855
19	0.976	55	0.826	91	0.539	127	0.374	163	0.497	199	0.503	235	0.393	271	0.598	307	0.860
20	0.973	56	0.820	92	0.532	128	0.375	164	0.500	200	0.500	236	0.393	272	0.606	308	0.866
21	0.971	57	0.813	93	0.524	129	0.376	165	0.502	201	0.497	237	0.394	273	0.614	309	0.872
22	0.969	58	0.806	94	0.517	130	0.378	166	0.505	202	0.494	238	0.395	274	0.622	310	0.877
23	0.966	59	0.799	95	0.510	131	0.380	167	0.508	203	0.491	239	0.396	275	0.630	311	0.882
24	0.964	60	0.792	96	0.502	132	0.382	168	0.510	204	0.488	240	0.398	276	0.638	312	0.887
25	0.961	61	0.784	97	0.495	133	0.385	169	0.513	205	0.484	241	0.400	277	0.646	313	0.892
26	0.958	62	0.777	98	0.488	134	0.387	170	0.515	206	0.481	242	0.403	278	0.654	314	0.897
27	0.955	63	0.769	99	0.481	135	0.390	171	0.517	207	0.477	243	0.406	279	0.663	315	0.902
28	0.952	64	0.761	100	0.474	136	0.394	172	0.519	208	0.474	244	0.410	280	0.671	316	0.907
29	0.949	65	0.754	101	0.468	137	0.397	173	0.520	209	0.470	245	0.414	281	0.679	317	0.911
30	0.946	66	0.746	102	0.461	138	0.401	174	0.522	210	0.467	246	0.419	282	0.686	318	0.916
31	0.942	67	0.737	103	0.455	139	0.404	175	0.523	211	0.463	247	0.423	283	0.694	319	0.920
32	0.939	68	0.729	104	0.448	140	0.408	176	0.524	212	0.459	248	0.429	284	0.702	320	0.924
33	0.935	69	0.721	105	0.442	141	0.412	177	0.525	213	0.455	249	0.434	285	0.710	321	0.928
34	0.932	70	0.713	106	0.436	142	0.416	178	0.526	214	0.452	250	0.440	286	0.718	322	0.932
35	0.928	71	0.704	107	0.430	143	0.420	179	0.527	215	0.448	251	0.446	287	0.725	323	0.935

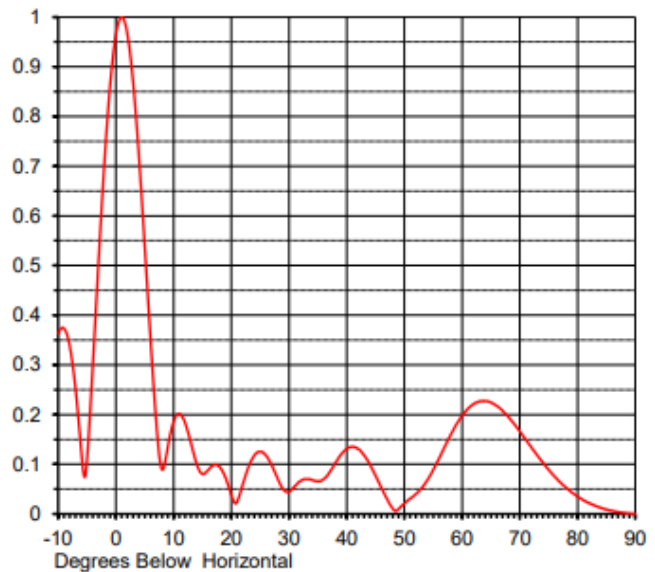
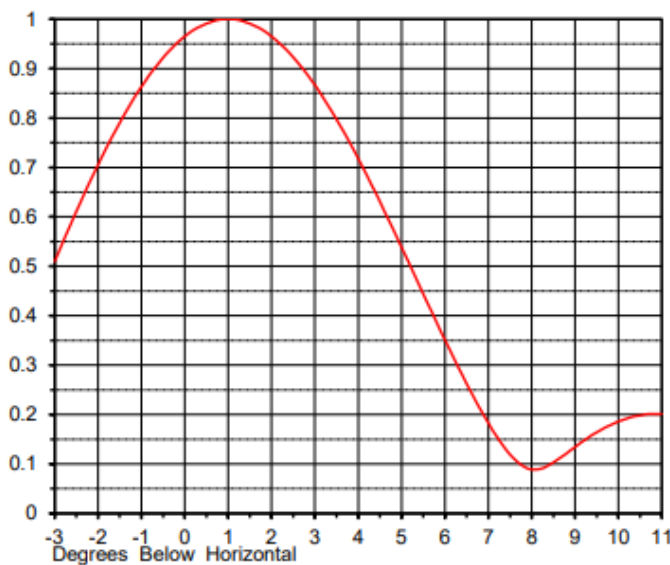


ELEVATION PATTERN

Proposal No. **DVB 23025**
 Date **19-May-23**
 Call Letters **K22MT-D**
 Channel **22**
 Frequency **521 MHz**
 Antenna Type **DLP-8C**

RMS Directivity at Main Lobe **8.1 (9.10 dB)**
 RMS Directivity at Horizontal **7.6 (8.81 dB)**
 Calculated

Beam Tilt **1.00 deg**
 Pattern Number **08L081100-22**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.363	10.0	0.186	30.0	0.045	50.0	0.021	70.0	0.166
-9.0	0.373	11.0	0.201	31.0	0.056	51.0	0.031	71.0	0.150
-8.0	0.338	12.0	0.183	32.0	0.066	52.0	0.040	72.0	0.134
-7.0	0.252	13.0	0.143	33.0	0.070	53.0	0.052	73.0	0.118
-6.0	0.125	14.0	0.101	34.0	0.068	54.0	0.068	74.0	0.103
-5.0	0.110	15.0	0.080	35.0	0.065	55.0	0.089	75.0	0.089
-4.0	0.299	16.0	0.088	36.0	0.070	56.0	0.112	76.0	0.076
-3.0	0.510	17.0	0.099	37.0	0.083	57.0	0.136	77.0	0.064
-2.0	0.705	18.0	0.094	38.0	0.102	58.0	0.159	78.0	0.053
-1.0	0.863	19.0	0.073	39.0	0.119	59.0	0.180	79.0	0.043
0.0	0.965	20.0	0.039	40.0	0.131	60.0	0.198	80.0	0.035
1.0	1.000	21.0	0.024	41.0	0.135	61.0	0.212	81.0	0.028
2.0	0.965	22.0	0.060	42.0	0.131	62.0	0.221	82.0	0.022
3.0	0.867	23.0	0.095	43.0	0.118	63.0	0.226	83.0	0.017
4.0	0.718	24.0	0.118	44.0	0.100	64.0	0.227	84.0	0.012
5.0	0.538	25.0	0.125	45.0	0.077	65.0	0.224	85.0	0.009
6.0	0.351	26.0	0.118	46.0	0.053	66.0	0.217	86.0	0.006
7.0	0.183	27.0	0.098	47.0	0.030	67.0	0.208	87.0	0.004
8.0	0.089	28.0	0.072	48.0	0.010	68.0	0.195	88.0	0.002
9.0	0.134	29.0	0.049	49.0	0.010	69.0	0.181	89.0	0.001
								90.0	0.000