



Antenna Model:

TLP-24J (C)

Proposal Number: **C-71335**
Date: **24-May-19**
Customer: **Nexstar**
Location: **Waco, TX**

Electrical Specifications

Polarization: **Horizontal**
Azimuth Pattern: **Directional**
Antenna Input: **3-1/8"** **50 Ohm** **EIA/DCA**
VSWR: **Channel** **1.10 : 1**
Bandwidth: **6 MHz**
Rated Input Power: **8 kW** **(8.75 dBk)** **Maximum Average Power**

Mechanical Specifications

Mounting: **Side Mounted**
Environmental Protection: **Slot Cover**
Height: **39.7 ft (12.1m)**
Weight: **350 lb (0.2t)** **Excludes Mounts**
Effective Projected Area: **76 ft² (7.1m²)** **TIA-222-G** **Basic Wind Speed: 90 m/h (144.8 km/h)**

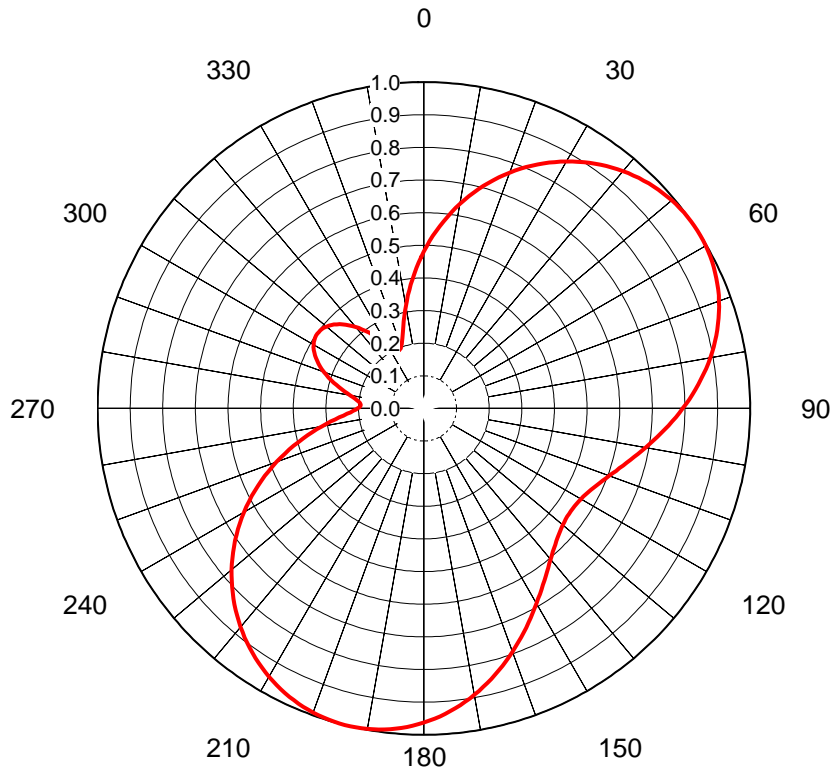
Channel Specifications

Call	CH	Freq	Hpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak at Horizontal Hpol Gain
KWKT	44	653 MHz	49.4 kW (16.94 dBk)	2.00 kW (3.01 dBk)	47.52 (16.77dB)	21.72 (13.37dB)

AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71335**
Date **24-May-19**
Call Letters **KWKT**
Channel **44**
Frequency **653 MHz**
Antenna Type **TLP-24J (C)**
Gain **2.04 (3.1dB)**
Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.481	36	0.923	72	0.951	108	0.619	144	0.635	180	0.963	216	0.908	252	0.448	288	0.307	324	0.288
1	0.497	37	0.930	73	0.945	109	0.611	145	0.644	181	0.968	217	0.900	253	0.431	289	0.317	325	0.278
2	0.513	38	0.937	74	0.938	110	0.604	146	0.653	182	0.973	218	0.891	254	0.415	290	0.326	326	0.268
3	0.529	39	0.943	75	0.931	111	0.597	147	0.662	183	0.977	219	0.883	255	0.398	291	0.335	327	0.257
4	0.545	40	0.949	76	0.924	112	0.591	148	0.671	184	0.981	220	0.874	256	0.382	292	0.343	328	0.248
5	0.561	41	0.955	77	0.916	113	0.585	149	0.681	185	0.985	221	0.865	257	0.366	293	0.351	329	0.238
6	0.576	42	0.961	78	0.908	114	0.580	150	0.690	186	0.988	222	0.855	258	0.350	294	0.358	330	0.229
7	0.592	43	0.966	79	0.900	115	0.574	151	0.700	187	0.991	223	0.846	259	0.334	295	0.365	331	0.221
8	0.607	44	0.970	80	0.891	116	0.570	152	0.710	188	0.994	224	0.835	260	0.318	296	0.371	332	0.213
9	0.622	45	0.975	81	0.882	117	0.565	153	0.721	189	0.996	225	0.825	261	0.303	297	0.377	333	0.206
10	0.636	46	0.979	82	0.873	118	0.562	154	0.731	190	0.997	226	0.814	262	0.288	298	0.382	334	0.202
11	0.651	47	0.983	83	0.864	119	0.558	155	0.741	191	0.999	227	0.804	263	0.274	299	0.386	335	0.197
12	0.665	48	0.986	84	0.854	120	0.556	156	0.752	192	0.999	228	0.792	264	0.261	300	0.390	336	0.195
13	0.679	49	0.989	85	0.845	121	0.553	157	0.762	193	1.000	229	0.781	265	0.248	301	0.393	337	0.193
14	0.693	50	0.992	86	0.835	122	0.552	158	0.773	194	1.000	230	0.769	266	0.236	302	0.395	338	0.195
15	0.706	51	0.994	87	0.825	123	0.550	159	0.783	195	1.000	231	0.757	267	0.225	303	0.397	339	0.197
16	0.719	52	0.996	88	0.814	124	0.550	160	0.794	196	0.999	232	0.745	268	0.217	304	0.398	340	0.203
17	0.732	53	0.998	89	0.804	125	0.549	161	0.804	197	0.998	233	0.732	269	0.208	305	0.399	341	0.208
18	0.745	54	0.999	90	0.794	126	0.550	162	0.814	198	0.996	234	0.719	270	0.203	306	0.398	342	0.217
19	0.757	55	1.000	91	0.783	127	0.550	163	0.825	199	0.994	235	0.706	271	0.197	307	0.397	343	0.225
20	0.769	56	1.000	92	0.773	128	0.552	164	0.835	200	0.992	236	0.693	272	0.195	308	0.395	344	0.236
21	0.781	57	1.000	93	0.762	129	0.553	165	0.845	201	0.989	237	0.679	273	0.193	309	0.393	345	0.248
22	0.792	58	0.999	94	0.752	130	0.556	166	0.854	202	0.986	238	0.665	274	0.195	310	0.390	346	0.261
23	0.804	59	0.999	95	0.741	131	0.558	167	0.864	203	0.983	239	0.651	275	0.197	311	0.386	347	0.274
24	0.814	60	0.997	96	0.731	132	0.562	168	0.873	204	0.979	240	0.636	276	0.202	312	0.382	348	0.288
25	0.825	61	0.996	97	0.721	133	0.565	169	0.882	205	0.975	241	0.622	277	0.206	313	0.377	349	0.303
26	0.835	62	0.994	98	0.710	134	0.570	170	0.891	206	0.970	242	0.607	278	0.213	314	0.371	350	0.318
27	0.846	63	0.991	99	0.700	135	0.574	171	0.900	207	0.966	243	0.592	279	0.221	315	0.365	351	0.334
28	0.855	64	0.988	100	0.690	136	0.580	172	0.908	208	0.961	244	0.576	280	0.229	316	0.358	352	0.350
29	0.865	65	0.985	101	0.681	137	0.585	173	0.916	209	0.955	245	0.561	281	0.238	317	0.351	353	0.366
30	0.874	66	0.981	102	0.671	138	0.591	174	0.924	210	0.949	246	0.545	282	0.248	318	0.343	354	0.382
31	0.883	67	0.977	103	0.662	139	0.597	175	0.931	211	0.943	247	0.529	283	0.257	319	0.335	355	0.398
32	0.891	68	0.973	104	0.653	140	0.604	176	0.938	212	0.937	248	0.513	284	0.268	320	0.326	356	0.415
33	0.900	69	0.968	105	0.644	141	0.611	177	0.945	213	0.930	249	0.497	285	0.278	321	0.317	357	0.431
34	0.908	70	0.963	106	0.635	142	0.619	178	0.951	214	0.923	250	0.481	286	0.288	322	0.307	358	0.448
35	0.916	71	0.957	107	0.627	143	0.627	179	0.957	215	0.916	251	0.464	287	0.298	323	0.298	359	0.464

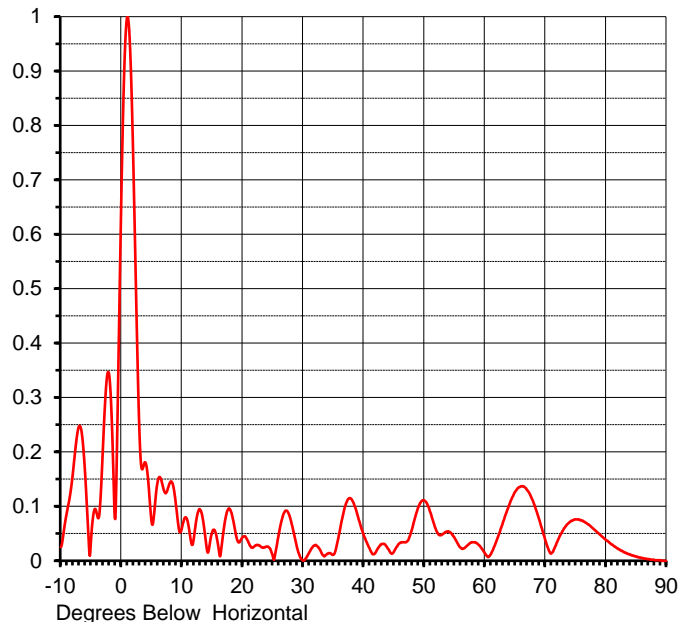
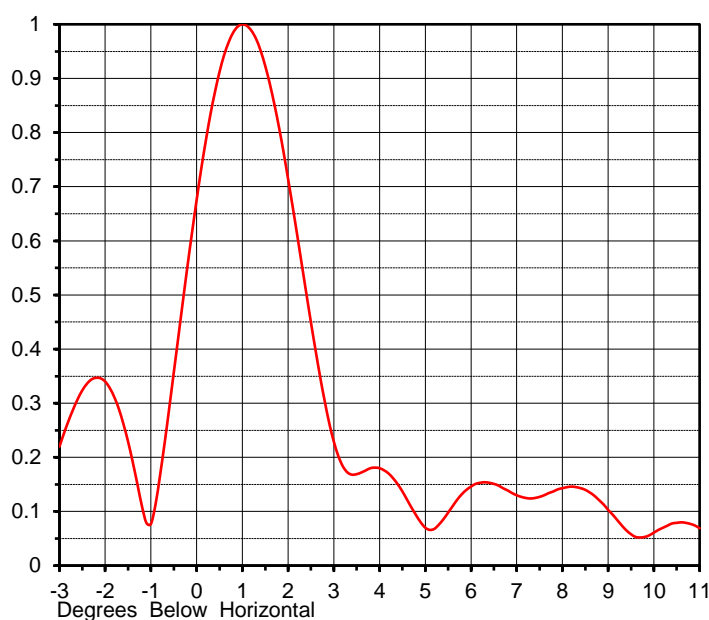
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ELEVATION PATTERN

Proposal No. **C-71335**
 Date **24-May-19**
 Call Letters **KWKT**
 Channel **44**
 Frequency **653 MHz**
 Antenna Type **TLP-24J (C)**

RMS Directivity at Main Lobe **23.3 (13.67 dB)**
 RMS Directivity at Horizontal **10.6 (10.25 dB)**
Calculated

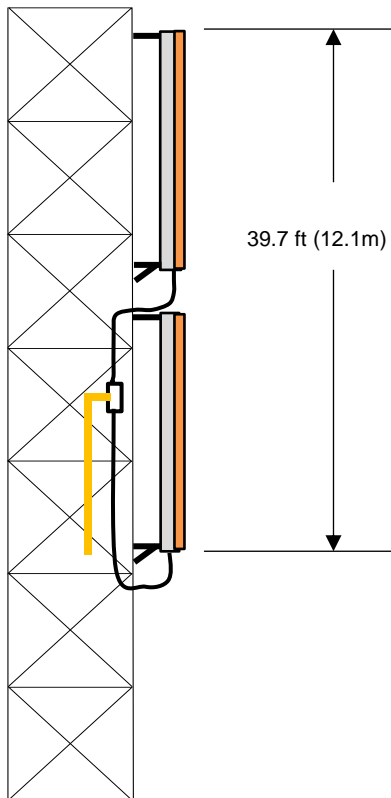
Beam Tilt **1.00 deg**
 Pattern Number **24L233100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.025	10.0	0.061	30.0	0.000	50.0	0.111	70.0	0.037
-9.0	0.089	11.0	0.069	31.0	0.015	51.0	0.089	71.0	0.014
-8.0	0.162	12.0	0.045	32.0	0.029	52.0	0.055	72.0	0.036
-7.0	0.247	13.0	0.094	33.0	0.015	53.0	0.049	73.0	0.058
-6.0	0.162	14.0	0.030	34.0	0.013	54.0	0.054	74.0	0.071
-5.0	0.041	15.0	0.053	35.0	0.011	55.0	0.042	75.0	0.076
-4.0	0.084	16.0	0.026	36.0	0.052	56.0	0.024	76.0	0.074
-3.0	0.220	17.0	0.066	37.0	0.102	57.0	0.027	77.0	0.067
-2.0	0.340	18.0	0.093	38.0	0.113	58.0	0.034	78.0	0.058
-1.0	0.077	19.0	0.043	39.0	0.083	59.0	0.029	79.0	0.048
0.0	0.676	20.0	0.043	40.0	0.047	60.0	0.014	80.0	0.038
1.0	1.000	21.0	0.033	41.0	0.022	61.0	0.012	81.0	0.030
2.0	0.714	22.0	0.027	42.0	0.016	62.0	0.039	82.0	0.022
3.0	0.229	23.0	0.026	43.0	0.031	63.0	0.071	83.0	0.016
4.0	0.180	24.0	0.026	44.0	0.022	64.0	0.102	84.0	0.011
5.0	0.070	25.0	0.008	45.0	0.017	65.0	0.127	85.0	0.008
6.0	0.146	26.0	0.050	46.0	0.033	66.0	0.137	86.0	0.005
7.0	0.130	27.0	0.091	47.0	0.034	67.0	0.130	87.0	0.003
8.0	0.143	28.0	0.073	48.0	0.059	68.0	0.108	88.0	0.001
9.0	0.103	29.0	0.024	49.0	0.098	69.0	0.075	89.0	0.001
								90.0	0.000

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MECHANICAL SPECIFICATIONS



Proposal No. **C-71335**
 Date **24-May-19**
 Call Letters **KWKT**
 Channel **44**
 Frequency **653 MHz**
 Antenna Type **TLP-24J (C)**

Preliminary Specifications

Side Mounted

With ice TIA-222-G

Height AGL(z) 1600 ft (487.7 m)
 Basic Wind Speed 90 m/h (144.8 km/h)

Structure Class II
 Exposure Category C
 Topography Category 1

Design Ice 0.5 in $t_{iz} = 1.40$ in
 Wind Speed w/Ice 40 m/h (64.4 km/h)

Mechanical Specifications

		without ice	with ice	
Height	H2	39.7 ft (12.1m)		
Height of Center of Radiation	H3	19.9 ft (6.1m)		
Effective Projected Area	(EPA) _A	76 ft ² (7.1m ²)	112.8 ft ² (10.5m ²)	Mounts Excluded
Weight	W	350 lb (0.2t)	2300 lb (1t)	Mounts Excluded

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: JBC

Date: 24-May-19

ME:

EE:

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Summary

Proposal No.	C-71335
Date	24-May-19
Call Letters	KWKT
Channel	44
Frequency	653 MHz
Antenna Type	TLP-24J (C)

Antenna

		Hpol
ERP:	49.4 kW	(16.94 dBk)
Peak Gain*	47.52	(16.77 dB)

Antenna Input Power	1.04 kW	(0.17 dBk)
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Transmission Line

Type:	Rigid	Attenuation:	(2.84 dB)
Size:	4-1/16"	Efficiency:	51.96%
Impedance:	50 Ohm		
Length:	1650 ft	502.9 m	

Transmitter Output

2.00 kW	(3.01 dBk)
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Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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