

Antenna Model: TFU-8WB-R C160

Reference Number: **20200526WTG-2**
 Date: **26-May-20**
 Customer: **NEXSTAR**
 Location: **Topeka, KANSAS**

Electrical Specifications

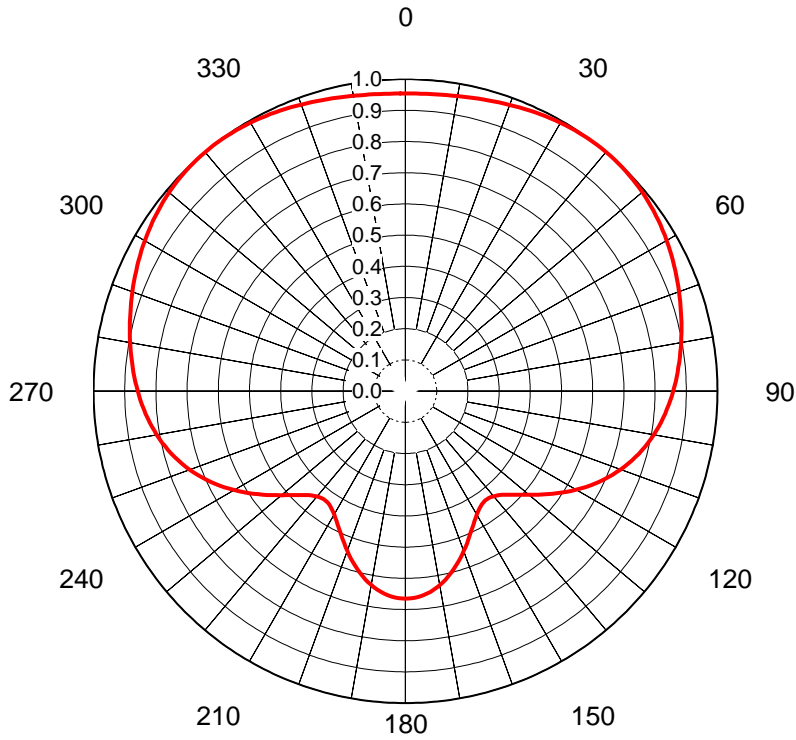
Polarization: **Horizontal**
 Azimuth Pattern: **C160**
 Antenna Input: **4-1/16 in 50 Ohm EIA/DCA**
 VSWR: **Channel 1.15:1 Band 1.15:1**
 Bandwidth: **470-698 MHz**
 Rated Input Power: **20 kW (13.01 dBk) Maximun Combined Average Power**

Mechanical Specifications

Mounting: **Side Mounted**
 Environmental Protection: **Full Radome**
 Height: **14.4 ft (4.4m)**
 Weight: **570 lb (259 kg)** mounts excluded
 Effective Projected Area: **23.9 ft² (2.2m²)**

Channel Specifications

Call	Ch	Freq	Hpol ERP	TPO	Peak Gain Main Lobe Hpol	Peak Gain at Horizontal Hpol
KTKA	16	485	9.00 kW (9.54 dBk)	1.92 kW (2.84 dBk)	11.42 (10.58dB)	10.94 (10.39dB)
KTMJ-CD	20	509	8.00 kW (9.03 dBk)	1.73 kW (2.38 dBk)	11.55 (10.63dB)	11.00 (10.42dB)



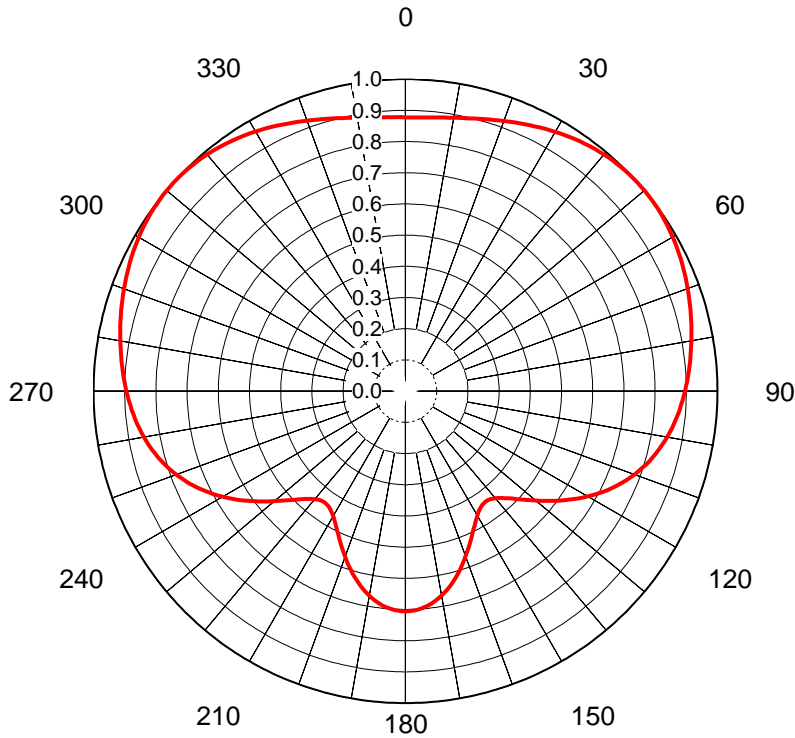
AZIMUTH PATTERN Horizontal Polarization

Proposal No. **20200526WTG-2**
 Date **26-May-20**
 Call Letters **KTKA**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-8WB-R C160**
 Gain **1.52 (1.82dB)**
 Calculated

Pattern Number **WB-C160-16 Hpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.954	36	0.999	72	0.926	108	0.751	144	0.434	180	0.665	216	0.435	252	0.753	288	0.924	324	0.999
1	0.954	37	0.999	73	0.922	109	0.743	145	0.435	181	0.665	217	0.435	253	0.761	289	0.928	325	0.998
2	0.954	38	1.000	74	0.919	110	0.734	146	0.438	182	0.664	218	0.436	254	0.769	290	0.932	326	0.998
3	0.955	39	1.000	75	0.915	111	0.725	147	0.441	183	0.662	219	0.438	255	0.776	291	0.935	327	0.997
4	0.955	40	1.000	76	0.912	112	0.716	148	0.445	184	0.660	220	0.441	256	0.784	292	0.938	328	0.996
5	0.956	41	1.000	77	0.908	113	0.706	149	0.451	185	0.656	221	0.445	257	0.790	293	0.942	329	0.995
6	0.956	42	1.000	78	0.904	114	0.696	150	0.457	186	0.653	222	0.450	258	0.797	294	0.945	330	0.994
7	0.957	43	0.999	79	0.901	115	0.686	151	0.464	187	0.648	223	0.456	259	0.803	295	0.949	331	0.992
8	0.958	44	0.998	80	0.897	116	0.676	152	0.471	188	0.643	224	0.463	260	0.809	296	0.952	332	0.991
9	0.959	45	0.998	81	0.893	117	0.665	153	0.479	189	0.638	225	0.471	261	0.815	297	0.955	333	0.989
10	0.960	46	0.997	82	0.890	118	0.654	154	0.488	190	0.631	226	0.480	262	0.821	298	0.959	334	0.988
11	0.962	47	0.995	83	0.886	119	0.643	155	0.497	191	0.625	227	0.489	263	0.826	299	0.962	335	0.986
12	0.963	48	0.994	84	0.882	120	0.632	156	0.506	192	0.617	228	0.498	264	0.831	300	0.965	336	0.985
13	0.964	49	0.993	85	0.878	121	0.620	157	0.516	193	0.609	229	0.509	265	0.836	301	0.968	337	0.983
14	0.966	50	0.991	86	0.874	122	0.609	158	0.526	194	0.601	230	0.519	266	0.841	302	0.971	338	0.981
15	0.968	51	0.989	87	0.870	123	0.597	159	0.536	195	0.593	231	0.530	267	0.846	303	0.973	339	0.979
16	0.969	52	0.987	88	0.866	124	0.586	160	0.546	196	0.584	232	0.542	268	0.850	304	0.976	340	0.977
17	0.971	53	0.985	89	0.862	125	0.574	161	0.556	197	0.574	233	0.553	269	0.854	305	0.979	341	0.976
18	0.973	54	0.983	90	0.858	126	0.562	162	0.565	198	0.565	234	0.565	270	0.858	306	0.981	342	0.974
19	0.975	55	0.980	91	0.854	127	0.551	163	0.575	199	0.555	235	0.576	271	0.863	307	0.984	343	0.972
20	0.976	56	0.978	92	0.849	128	0.539	164	0.584	200	0.545	236	0.588	272	0.867	308	0.986	344	0.970
21	0.978	57	0.975	93	0.845	129	0.528	165	0.593	201	0.535	237	0.600	273	0.870	309	0.988	345	0.969
22	0.980	58	0.972	94	0.840	130	0.517	166	0.602	202	0.526	238	0.611	274	0.874	310	0.990	346	0.967
23	0.982	59	0.969	95	0.835	131	0.507	167	0.610	203	0.516	239	0.623	275	0.878	311	0.991	347	0.965
24	0.984	60	0.966	96	0.830	132	0.497	168	0.618	204	0.506	240	0.634	276	0.882	312	0.993	348	0.964
25	0.985	61	0.963	97	0.825	133	0.487	169	0.625	205	0.497	241	0.646	277	0.885	313	0.994	349	0.962
26	0.987	62	0.960	98	0.819	134	0.478	170	0.632	206	0.488	242	0.657	278	0.889	314	0.996	350	0.961
27	0.989	63	0.957	99	0.814	135	0.469	171	0.638	207	0.479	243	0.668	279	0.893	315	0.997	351	0.960
28	0.990	64	0.954	100	0.808	136	0.462	172	0.643	208	0.471	244	0.678	280	0.896	316	0.998	352	0.959
29	0.992	65	0.950	101	0.802	137	0.455	173	0.648	209	0.464	245	0.689	281	0.900	317	0.998	353	0.958
30	0.993	66	0.947	102	0.795	138	0.449	174	0.653	210	0.457	246	0.699	282	0.903	318	0.999	354	0.957
31	0.994	67	0.944	103	0.789	139	0.444	175	0.657	211	0.451	247	0.709	283	0.907	319	0.999	355	0.956
32	0.996	68	0.940	104	0.782	140	0.440	176	0.660	212	0.446	248	0.718	284	0.910	320	1.000	356	0.955
33	0.997	69	0.937	105	0.774	141	0.437	177	0.662	213	0.441	249	0.727	285	0.914	321	1.000	357	0.955
34	0.998	70	0.933	106	0.767	142	0.435	178	0.664	214	0.438	250	0.736	286	0.917	322	1.000	358	0.954
35	0.998	71	0.930	107	0.759	143	0.434	179	0.665	215	0.436	251	0.745	287	0.921	323	0.999	359	0.954

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AZIMUTH PATTERN Horizontal Polarization

Proposal No. **20200526WTG-2**
 Date **26-May-20**
 Call Letters **KTMJ-CD**
 Channel **20**
 Frequency **509 MHz**
 Antenna Type **TFU-8WB-R C160**
 Gain **1.5 (1.76dB)**
 Calculated

Pattern Number **WB-C160-20 Hpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.878	36	0.980	72	0.956	108	0.798	144	0.438	180	0.706	216	0.441	252	0.799	288	0.954	324	0.980
1	0.878	37	0.982	73	0.953	109	0.790	145	0.438	181	0.706	217	0.442	253	0.806	289	0.957	325	0.977
2	0.878	38	0.985	74	0.950	110	0.781	146	0.440	182	0.704	218	0.444	254	0.814	290	0.960	326	0.974
3	0.879	39	0.987	75	0.947	111	0.772	147	0.443	183	0.702	219	0.447	255	0.821	291	0.963	327	0.971
4	0.879	40	0.990	76	0.943	112	0.763	148	0.448	184	0.699	220	0.452	256	0.828	292	0.966	328	0.968
5	0.881	41	0.992	77	0.940	113	0.753	149	0.454	185	0.696	221	0.458	257	0.834	293	0.969	329	0.964
6	0.882	42	0.993	78	0.937	114	0.743	150	0.460	186	0.691	222	0.465	258	0.840	294	0.972	330	0.961
7	0.883	43	0.995	79	0.934	115	0.732	151	0.468	187	0.686	223	0.473	259	0.846	295	0.975	331	0.957
8	0.885	44	0.996	80	0.930	116	0.722	152	0.477	188	0.680	224	0.482	260	0.851	296	0.978	332	0.953
9	0.887	45	0.998	81	0.927	117	0.710	153	0.486	189	0.674	225	0.491	261	0.856	297	0.980	333	0.950
10	0.890	46	0.999	82	0.924	118	0.699	154	0.496	190	0.666	226	0.502	262	0.861	298	0.983	334	0.946
11	0.892	47	0.999	83	0.920	119	0.687	155	0.506	191	0.658	227	0.513	263	0.866	299	0.985	335	0.942
12	0.895	48	1.000	84	0.917	120	0.675	156	0.517	192	0.650	228	0.525	264	0.871	300	0.987	336	0.938
13	0.897	49	1.000	85	0.914	121	0.663	157	0.529	193	0.641	229	0.537	265	0.875	301	0.989	337	0.934
14	0.900	50	1.000	86	0.910	122	0.650	158	0.540	194	0.631	230	0.549	266	0.879	302	0.991	338	0.930
15	0.904	51	1.000	87	0.907	123	0.637	159	0.552	195	0.621	231	0.562	267	0.883	303	0.993	339	0.926
16	0.907	52	0.999	88	0.903	124	0.624	160	0.564	196	0.610	232	0.575	268	0.887	304	0.994	340	0.922
17	0.910	53	0.999	89	0.900	125	0.611	161	0.575	197	0.600	233	0.588	269	0.891	305	0.996	341	0.919
18	0.914	54	0.998	90	0.896	126	0.598	162	0.587	198	0.588	234	0.601	270	0.895	306	0.997	342	0.915
19	0.917	55	0.997	91	0.892	127	0.585	163	0.598	199	0.577	235	0.614	271	0.898	307	0.998	343	0.911
20	0.921	56	0.996	92	0.888	128	0.572	164	0.609	200	0.566	236	0.627	272	0.902	308	0.999	344	0.908
21	0.925	57	0.994	93	0.884	129	0.559	165	0.620	201	0.554	237	0.640	273	0.905	309	0.999	345	0.905
22	0.929	58	0.992	94	0.880	130	0.546	166	0.630	202	0.542	238	0.652	274	0.908	310	0.999	346	0.901
23	0.933	59	0.991	95	0.876	131	0.533	167	0.640	203	0.531	239	0.665	275	0.912	311	0.999	347	0.898
24	0.937	60	0.989	96	0.871	132	0.521	168	0.649	204	0.520	240	0.677	276	0.915	312	0.999	348	0.896
25	0.941	61	0.987	97	0.867	133	0.509	169	0.657	205	0.509	241	0.689	277	0.918	313	0.999	349	0.893
26	0.944	62	0.984	98	0.862	134	0.498	170	0.665	206	0.499	242	0.701	278	0.922	314	0.998	350	0.890
27	0.948	63	0.982	99	0.857	135	0.488	171	0.673	207	0.489	243	0.712	279	0.925	315	0.998	351	0.888
28	0.952	64	0.979	100	0.851	136	0.478	172	0.680	208	0.479	244	0.723	280	0.928	316	0.996	352	0.886
29	0.956	65	0.977	101	0.846	137	0.469	173	0.686	209	0.471	245	0.734	281	0.931	317	0.995	353	0.884
30	0.960	66	0.974	102	0.840	138	0.461	174	0.691	210	0.463	246	0.745	282	0.935	318	0.994	354	0.882
31	0.963	67	0.971	103	0.834	139	0.454	175	0.695	211	0.457	247	0.754	283	0.938	319	0.992	355	0.881
32	0.967	68	0.968	104	0.827	140	0.448	176	0.699	212	0.451	248	0.764	284	0.941	320	0.990	356	0.880
33	0.970	69	0.965	105	0.820	141	0.444	177	0.702	213	0.447	249	0.773	285	0.944	321	0.988	357	0.879
34	0.973	70	0.962	106	0.813	142	0.440	178	0.704	214	0.444	250	0.782	286	0.948	322	0.985	358	0.878
35	0.977	71	0.959	107	0.806	143	0.438	179	0.705	215	0.442	251	0.791	287	0.951	323	0.983	359	0.878

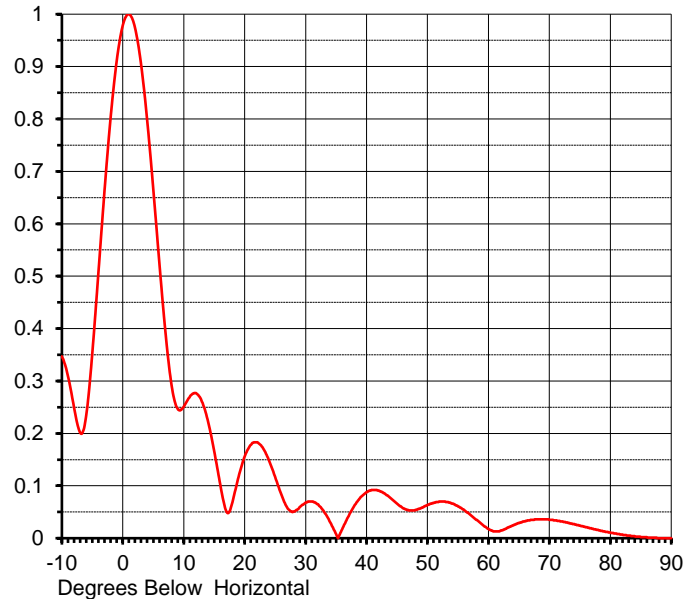
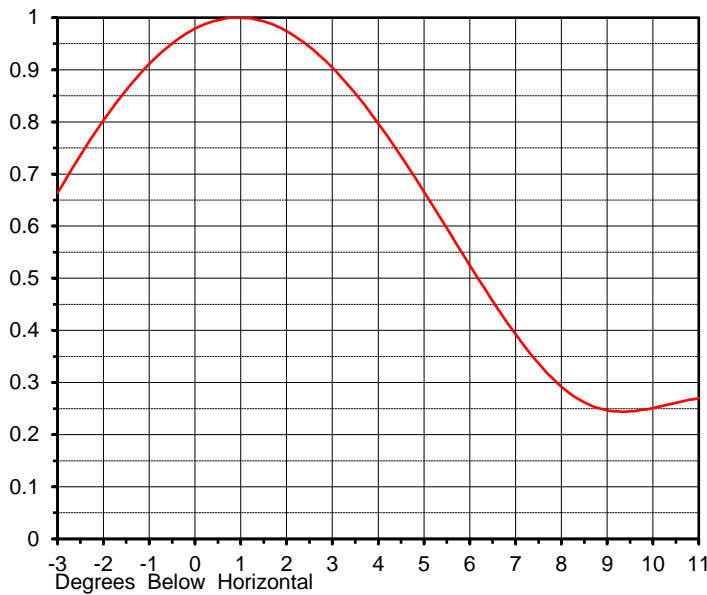
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ELEVATION PATTERN

Proposal No. **20200526WTG-2**
 Date **26-May-20**
 Call Letters **KTKA**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-8WB-R C160**

RMS Directivity at Main Lobe **7.5 (8.75 dB)**
 RMS Directivity at Horizontal **7.2 (8.57 dB)**
Calculated

Beam Tilt **1.05 deg**
 Pattern Number **08W075105-16**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.347	10.0	0.251	30.0	0.068	50.0	0.063	70.0	0.035
-9.0	0.309	11.0	0.270	31.0	0.070	51.0	0.067	71.0	0.034
-8.0	0.249	12.0	0.277	32.0	0.065	52.0	0.070	72.0	0.032
-7.0	0.201	13.0	0.260	33.0	0.051	53.0	0.069	73.0	0.030
-6.0	0.235	14.0	0.222	34.0	0.031	54.0	0.066	74.0	0.027
-5.0	0.354	15.0	0.166	35.0	0.008	55.0	0.061	75.0	0.024
-4.0	0.508	16.0	0.102	36.0	0.017	56.0	0.054	76.0	0.021
-3.0	0.664	17.0	0.051	37.0	0.041	57.0	0.045	77.0	0.018
-2.0	0.803	18.0	0.069	38.0	0.062	58.0	0.035	78.0	0.016
-1.0	0.911	19.0	0.117	39.0	0.078	59.0	0.026	79.0	0.013
0.0	0.979	20.0	0.156	40.0	0.088	60.0	0.018	80.0	0.011
1.0	1.000	21.0	0.178	41.0	0.092	61.0	0.013	81.0	0.009
2.0	0.974	22.0	0.183	42.0	0.091	62.0	0.014	82.0	0.007
3.0	0.904	23.0	0.172	43.0	0.085	63.0	0.019	83.0	0.005
4.0	0.797	24.0	0.148	44.0	0.076	64.0	0.024	84.0	0.004
5.0	0.666	25.0	0.117	45.0	0.066	65.0	0.029	85.0	0.002
6.0	0.525	26.0	0.084	46.0	0.057	66.0	0.032	86.0	0.002
7.0	0.393	27.0	0.058	47.0	0.053	67.0	0.035	87.0	0.001
8.0	0.292	28.0	0.051	48.0	0.054	68.0	0.036	88.0	0.000
9.0	0.247	29.0	0.059	49.0	0.058	69.0	0.036	89.0	0.000
								90.0	0.000

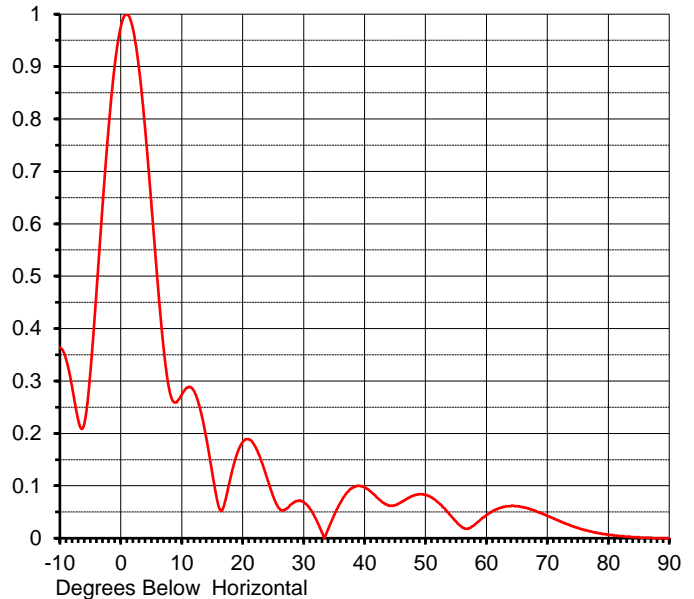
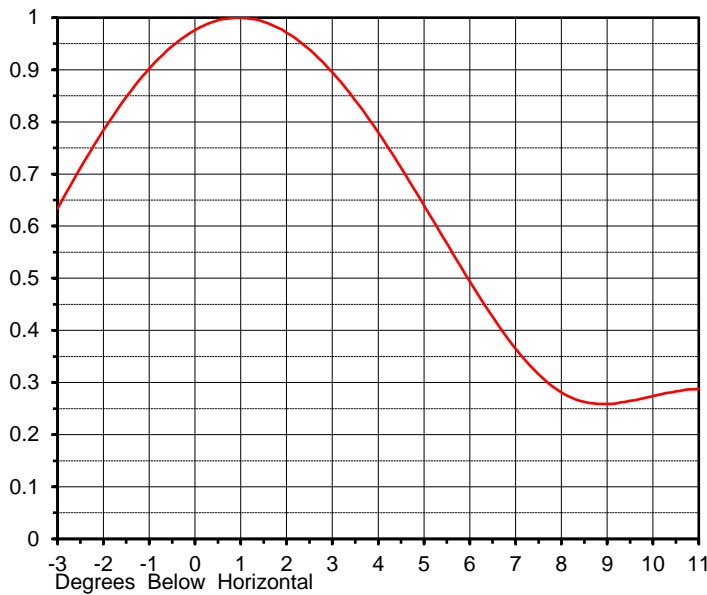
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ELEVATION PATTERN

Proposal No. **20200526WTG-2**
 Date **26-May-20**
 Call Letters **KTMJ-CD**
 Channel **20**
 Frequency **509 MHz**
 Antenna Type **TFU-8WB-R C160**

RMS Directivity at Main Lobe **7.7 (8.87 dB)**
 RMS Directivity at Horizontal **7.3 (8.63 dB)**
Calculated

Beam Tilt **1.05 deg**
 Pattern Number **08W077105-20**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.364	10.0	0.274	30.0	0.069	50.0	0.083	70.0	0.043
-9.0	0.342	11.0	0.288	31.0	0.057	51.0	0.078	71.0	0.038
-8.0	0.289	12.0	0.281	32.0	0.037	52.0	0.069	72.0	0.033
-7.0	0.226	13.0	0.248	33.0	0.011	53.0	0.058	73.0	0.028
-6.0	0.218	14.0	0.193	34.0	0.017	54.0	0.045	74.0	0.023
-5.0	0.316	15.0	0.125	35.0	0.044	55.0	0.032	75.0	0.020
-4.0	0.469	16.0	0.063	36.0	0.067	56.0	0.021	76.0	0.016
-3.0	0.634	17.0	0.065	37.0	0.085	57.0	0.018	77.0	0.013
-2.0	0.784	18.0	0.115	38.0	0.096	58.0	0.025	78.0	0.011
-1.0	0.902	19.0	0.158	39.0	0.100	59.0	0.035	79.0	0.008
0.0	0.976	20.0	0.183	40.0	0.097	60.0	0.044	80.0	0.007
1.0	1.000	21.0	0.189	41.0	0.089	61.0	0.051	81.0	0.005
2.0	0.971	22.0	0.176	42.0	0.078	62.0	0.057	82.0	0.004
3.0	0.895	23.0	0.149	43.0	0.068	63.0	0.060	83.0	0.003
4.0	0.780	24.0	0.115	44.0	0.062	64.0	0.061	84.0	0.002
5.0	0.640	25.0	0.080	45.0	0.063	65.0	0.061	85.0	0.002
6.0	0.494	26.0	0.057	46.0	0.069	66.0	0.059	86.0	0.001
7.0	0.365	27.0	0.055	47.0	0.076	67.0	0.056	87.0	0.001
8.0	0.281	28.0	0.065	48.0	0.081	68.0	0.052	88.0	0.000
9.0	0.259	29.0	0.071	49.0	0.084	69.0	0.048	89.0	0.000
								90.0	0.000

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Summary

Proposal No.	20200526WTG-2
Date	26-May-20
Call Letters	KTKA
Channel	16
Frequency	485 MHz
Antenna Type	TFU-8WB-R C160

Antenna

		Hpol
ERP:	9.00 kW	(9.54 dBk)
Peak Gain	11.42	(10.58 dBd)

Antenna Input Power	0.788 kW	-(1.03 dBk)
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Transmission Line

Type:	Flexline Air	Attenuation:	(3.56 dB)
Size:	3"	Efficiency:	44.0%
Impedance:	50 Ohm		
Length:	1000 ft	304.8 m	

Combiner Losses

Attenuation	(0.31 dB)
Efficiency	93.1%

Combiner Input

1.92 kW	(2.84 dBk)
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Transmitter filter losses not included

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Summary

Proposal No.	20200526WTG-2
Date	26-May-20
Call Letters	KTMJ-CD
Channel	20
Frequency	509 MHz
Antenna Type	TFU-8WB-R C160

Antenna

		Hpol
ERP:	8.00 kW	(9.03 dBk)
Peak Gain	11.55	(10.63 dBd)

Antenna Input Power	0.692 kW	-(1.60 dBk)
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Transmission Line

Type:	Flexline Air	Attenuation:	(3.67 dB)
Size:	3"	Efficiency:	42.9%
Impedance:	50 Ohm		
Length:	1000 ft	304.8 m	

Combiner Losses

Attenuation	(0.31 dB)
Efficiency	93.1%

Combiner Input

1.73 kW	(2.38 dBk)
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Transmitter filter losses not included

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