



Antenna Model: **TFU-16WB-R C160**

Reference Number: **20201111WTG**  
Date: **11-Nov-20**  
Customer: **TEGNA**  
Location: **San Antonio, TEXAS**

### Electrical Specifications

Polarization: **Horizontal**  
Azimuth Pattern: **C160**  
Antenna Input: **6-1/8 in 50 Ohm EIA/DCA**  
VSWR: Channel **1.15:1** Band **1.15:1**  
Bandwidth: **470-698 MHz**  
Rated Input Power: **40 kW ( 16.02 dBk ) Maximum Average Power**

### Mechanical Specifications

Mounting: **Side Mounted**  
Environmental Protection: **Full Radome**  
Height: **28.9 ft ( 8.8m)**  
Weight: **1260 lb (572 kg)** mounts excluded  
Effective Projected Area: **61.1 ft² (5.7m²)**

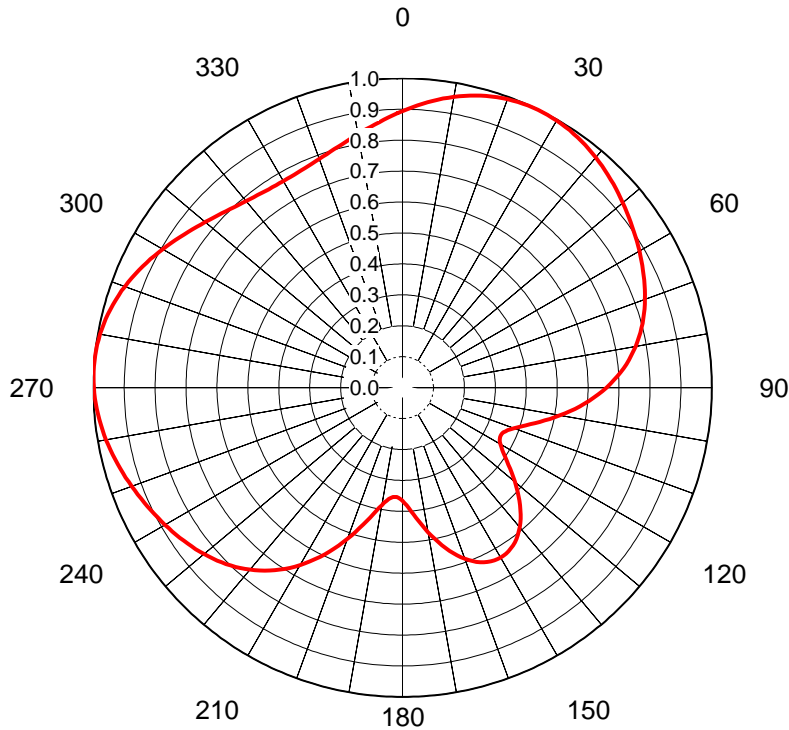
### Channel Specifications

Call	Ch	Freq	Hpol ERP	TPO	Peak Gain Main Lobe Hpol	Peak Gain at Horizontal Hpol
KENS	29	563	580 kW (27.63 dBk)	39.2 kW (15.94 dBk)	23.83 (13.77dB)	22.28 (13.48dB)

## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **20201111WTG**  
 Date **11-Nov-20**  
 Call Letters **KENS**  
 Channel **29**  
 Frequency **563 MHz**  
 Antenna Type **TFU-16WB-R C160**  
 Gain **1.64 (2.16dB)**  
 Calculated

Pattern Number **WB-C160-29 Hpol**



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.894	36	0.985	72	0.823	108	0.405	144	0.618	180	0.366	216	0.731	252	0.941	288	0.965	324	0.777
1	0.901	37	0.982	73	0.816	109	0.394	145	0.623	181	0.361	217	0.741	253	0.945	289	0.961	325	0.775
2	0.907	38	0.979	74	0.810	110	0.384	146	0.627	182	0.357	218	0.751	254	0.949	290	0.955	326	0.774
3	0.914	39	0.975	75	0.803	111	0.375	147	0.630	183	0.355	219	0.760	255	0.954	291	0.950	327	0.772
4	0.920	40	0.972	76	0.796	112	0.367	148	0.633	184	0.354	220	0.768	256	0.958	292	0.945	328	0.772
5	0.926	41	0.968	77	0.789	113	0.361	149	0.634	185	0.355	221	0.777	257	0.962	293	0.939	329	0.771
6	0.932	42	0.964	78	0.781	114	0.357	150	0.635	186	0.358	222	0.785	258	0.966	294	0.933	330	0.771
7	0.938	43	0.960	79	0.773	115	0.354	151	0.634	187	0.363	223	0.792	259	0.970	295	0.927	331	0.771
8	0.944	44	0.956	80	0.765	116	0.353	152	0.633	188	0.369	224	0.800	260	0.973	296	0.921	332	0.772
9	0.949	45	0.952	81	0.756	117	0.353	153	0.630	189	0.377	225	0.807	261	0.977	297	0.915	333	0.772
10	0.955	46	0.948	82	0.747	118	0.356	154	0.627	190	0.386	226	0.813	262	0.980	298	0.908	334	0.773
11	0.960	47	0.943	83	0.738	119	0.360	155	0.623	191	0.396	227	0.820	263	0.983	299	0.902	335	0.775
12	0.964	48	0.939	84	0.728	120	0.365	156	0.618	192	0.408	228	0.826	264	0.986	300	0.895	336	0.777
13	0.969	49	0.934	85	0.717	121	0.372	157	0.612	193	0.420	229	0.832	265	0.988	301	0.889	337	0.779
14	0.973	50	0.930	86	0.707	122	0.381	158	0.605	194	0.433	230	0.837	266	0.991	302	0.882	338	0.781
15	0.977	51	0.925	87	0.695	123	0.390	159	0.597	195	0.446	231	0.843	267	0.993	303	0.876	339	0.784
16	0.981	52	0.921	88	0.684	124	0.400	160	0.589	196	0.461	232	0.848	268	0.995	304	0.869	340	0.787
17	0.984	53	0.916	89	0.672	125	0.412	161	0.580	197	0.475	233	0.853	269	0.997	305	0.863	341	0.790
18	0.987	54	0.912	90	0.659	126	0.423	162	0.570	198	0.490	234	0.859	270	0.998	306	0.857	342	0.794
19	0.990	55	0.907	91	0.646	127	0.436	163	0.560	199	0.505	235	0.863	271	0.999	307	0.850	343	0.798
20	0.992	56	0.903	92	0.633	128	0.448	164	0.549	200	0.520	236	0.868	272	1.000	308	0.844	344	0.802
21	0.994	57	0.898	93	0.619	129	0.461	165	0.537	201	0.535	237	0.873	273	1.000	309	0.838	345	0.806
22	0.996	58	0.893	94	0.605	130	0.474	166	0.525	202	0.550	238	0.878	274	1.000	310	0.833	346	0.811
23	0.997	59	0.889	95	0.591	131	0.487	167	0.513	203	0.565	239	0.882	275	1.000	311	0.827	347	0.816
24	0.998	60	0.884	96	0.577	132	0.500	168	0.500	204	0.580	240	0.887	276	0.999	312	0.822	348	0.821
25	0.999	61	0.879	97	0.562	133	0.513	169	0.487	205	0.594	241	0.892	277	0.998	313	0.816	349	0.826
26	0.999	62	0.875	98	0.547	134	0.525	170	0.474	206	0.609	242	0.896	278	0.997	314	0.811	350	0.832
27	0.999	63	0.870	99	0.532	135	0.537	171	0.461	207	0.623	243	0.901	279	0.995	315	0.807	351	0.838
28	0.999	64	0.865	100	0.517	136	0.549	172	0.448	208	0.636	244	0.905	280	0.993	316	0.802	352	0.843
29	0.998	65	0.860	101	0.502	137	0.560	173	0.436	209	0.650	245	0.910	281	0.991	317	0.798	353	0.849
30	0.997	66	0.855	102	0.487	138	0.570	174	0.423	210	0.662	246	0.914	282	0.988	318	0.794	354	0.856
31	0.996	67	0.850	103	0.472	139	0.580	175	0.412	211	0.675	247	0.919	283	0.985	319	0.791	355	0.862
32	0.994	68	0.845	104	0.458	140	0.589	176	0.400	212	0.687	248	0.923	284	0.982	320	0.787	356	0.868
33	0.992	69	0.840	105	0.444	141	0.598	177	0.390	213	0.699	249	0.928	285	0.978	321	0.784	357	0.875
34	0.990	70	0.834	106	0.430	142	0.605	178	0.381	214	0.710	250	0.932	286	0.974	322	0.781	358	0.881
35	0.987	71	0.829	107	0.417	143	0.612	179	0.373	215	0.721	251	0.936	287	0.970	323	0.779	359	0.888

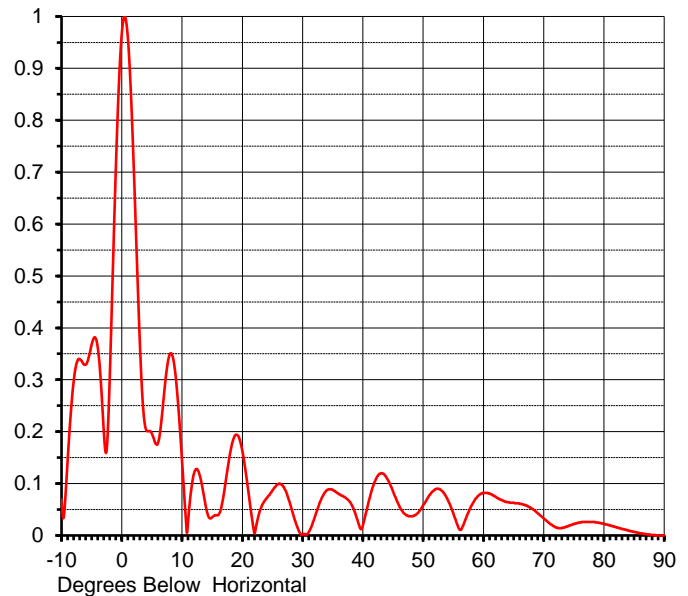
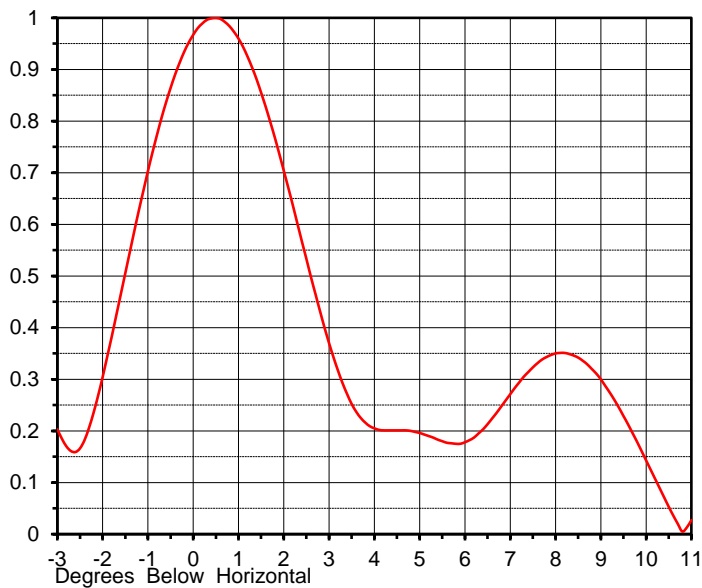
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## ELEVATION PATTERN

Proposal No. **2020111WTG**  
 Date **11-Nov-20**  
 Call Letters **KENS**  
 Channel **29**  
 Frequency **563 MHz**  
 Antenna Type **TFU-16WB-R C160**

RMS Directivity at Main Lobe **14.5 ( 11.61 dB )**  
 RMS Directivity at Horizontal **13.5 ( 11.30 dB )**  
**Calculated**

Beam Tilt **0.55 deg**  
 Pattern Number **16W145055-29**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.069	10.0	0.143	30.0	0.002	50.0	0.058	70.0	0.033
-9.0	0.142	11.0	0.027	31.0	0.006	51.0	0.077	71.0	0.023
-8.0	0.295	12.0	0.120	32.0	0.035	52.0	0.089	72.0	0.016
-7.0	0.340	13.0	0.113	33.0	0.067	53.0	0.087	73.0	0.014
-6.0	0.329	14.0	0.053	34.0	0.087	54.0	0.071	74.0	0.018
-5.0	0.368	15.0	0.035	35.0	0.088	55.0	0.043	75.0	0.022
-4.0	0.363	16.0	0.039	36.0	0.080	56.0	0.012	76.0	0.025
-3.0	0.203	17.0	0.085	37.0	0.074	57.0	0.030	77.0	0.026
-2.0	0.304	18.0	0.160	38.0	0.062	58.0	0.057	78.0	0.026
-1.0	0.703	19.0	0.194	39.0	0.033	59.0	0.075	79.0	0.025
0.0	0.967	20.0	0.163	40.0	0.019	60.0	0.082	80.0	0.022
1.0	0.960	21.0	0.085	41.0	0.067	61.0	0.081	81.0	0.019
2.0	0.704	22.0	0.004	42.0	0.104	62.0	0.075	82.0	0.016
3.0	0.370	23.0	0.050	43.0	0.120	63.0	0.068	83.0	0.013
4.0	0.205	24.0	0.071	44.0	0.110	64.0	0.064	84.0	0.010
5.0	0.196	25.0	0.087	45.0	0.085	65.0	0.063	85.0	0.007
6.0	0.178	26.0	0.099	46.0	0.058	66.0	0.061	86.0	0.004
7.0	0.271	27.0	0.090	47.0	0.041	67.0	0.058	87.0	0.002
8.0	0.350	28.0	0.058	48.0	0.037	68.0	0.052	88.0	0.001
9.0	0.300	29.0	0.020	49.0	0.042	69.0	0.043	89.0	0.000
								90.0	0.000

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## Summary

Proposal No.	20201111WTG
Date	11-Nov-20
Call Letters	KENS
Channel	29
Frequency	563 MHz
Antenna Type	TFU-16WB-R C160

## Antenna

		Hpol
ERP:	580 kW	( 27.63 dBk )
Peak Gain	23.83	( 13.77 dBd )

Antenna Input Power	24.3 kW	( 13.86 dBk )
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## Transmission Line

Type:	Rigid EHT	Attenuation:	( 2.07 dB )
Size:	4-1/16"	Efficiency:	62.1%
Impedance:	50 Ohm		
Length:	1295 ft	394.7 m	

## Transmitter Output

39.2 kW	( 15.94 dBk )
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Transmitter filter losses not included

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