

RF HAZARD STATEMENT  
SECOND FILING WINDOW  
APPLICATION FOR CONSTRUCTION PERMIT  
TV STATION KNVO  
MCALLEN, TEXAS  
CHANNEL 17 1000 KW (DA) 285.6 m

With respect to the potential for human exposure to radio frequency (RF) energy, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF energy at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground<sup>1</sup> based on the following conservative assumptions, with the following results:

Call Sign	Channel	Total ERP (kW) <sup>2</sup>	Distance (m)	Relative Field Factor <sup>3</sup>	FCC Limit <sup>4</sup> (uW/cm <sup>2</sup> )	Percentage of Limit
KNVO	17	1250	285	0.1	327.3	1.6%

As indicated above, the exposure to RF energy at 2-m above ground level will not exceed 1.6% of the FCC limit for general population / uncontrolled exposure.

Therefore, the proposal complies with the FCC limits for human exposure to RF energy and it is categorically excluded from environmental processing.

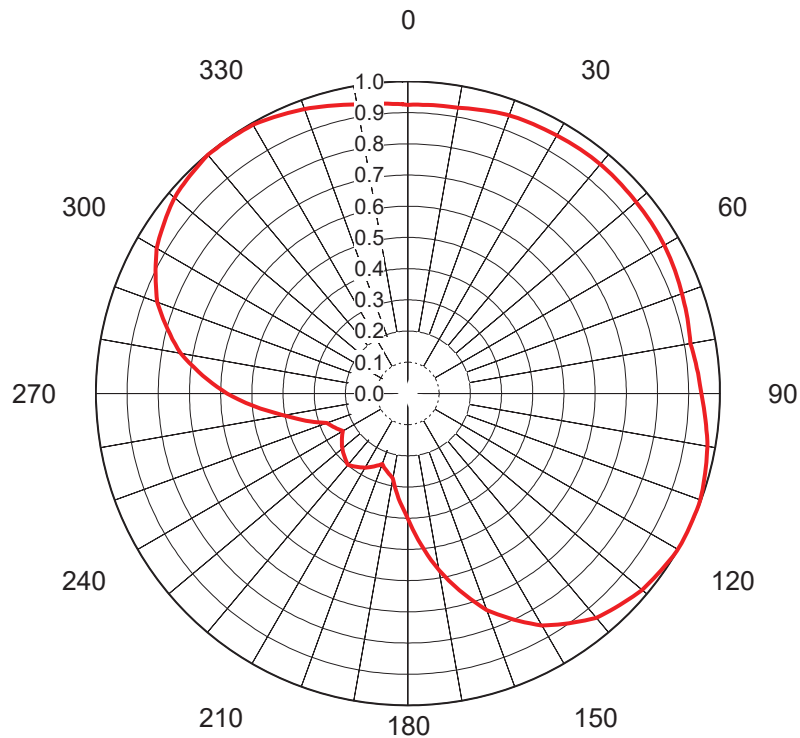
Public access to the transmitting site is restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures are taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing “accepted” RFR protective clothing and/or RFR exposure.

<sup>1</sup> The radiation center is 287 m above ground level.

<sup>2</sup> Horizontally polarized ERP 1000 kW, Vertically polarized ERP 250 kW.

<sup>3</sup> This is a conservative assumption for the maximum relative field at steep downward angles. See attached vertical relative field pattern.

<sup>4</sup> For general population/uncontrolled environments.



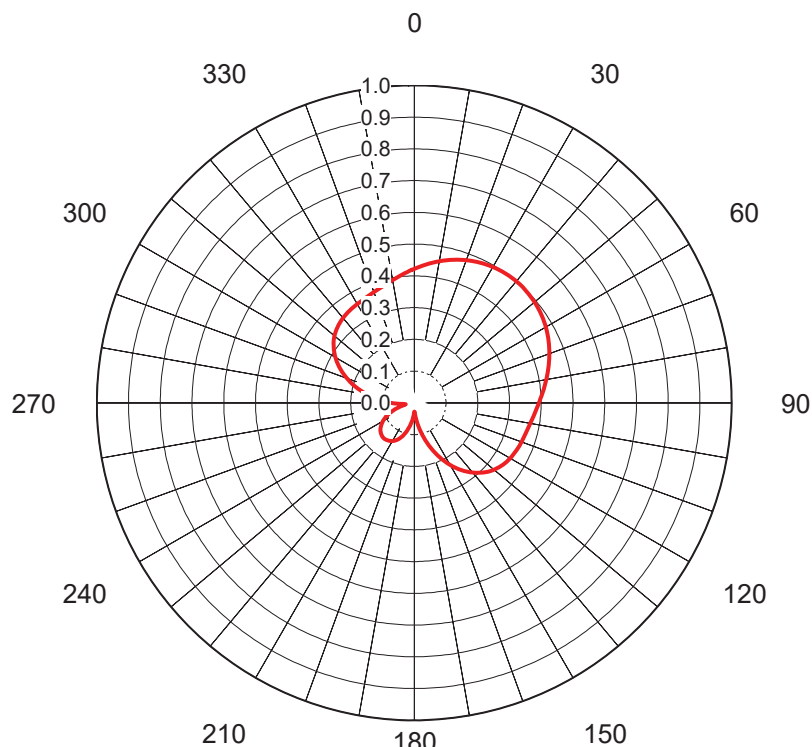
## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-70730**  
 Date **4-May-17**  
 Call Letters **KNVO**  
 Channel **17**  
 Frequency **491 MHz**  
 Antenna Type **TFU-22JSC/VP-R C160**  
 Gain **1.54 (1.89dB)**  
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.925	36	0.958	72	0.932	108	0.993	144	0.907	180	0.400	216	0.289	252	0.301	288	0.832
1	0.925	37	0.959	73	0.930	109	0.996	145	0.899	181	0.388	217	0.292	253	0.313	289	0.844
2	0.926	38	0.959	74	0.929	110	0.998	146	0.891	182	0.375	218	0.294	254	0.326	290	0.855
3	0.927	39	0.960	75	0.928	111	0.998	147	0.883	183	0.363	219	0.297	255	0.338	291	0.863
4	0.927	40	0.960	76	0.926	112	0.998	148	0.875	184	0.350	220	0.299	256	0.351	292	0.870
5	0.928	41	0.960	77	0.924	113	0.999	149	0.867	185	0.338	221	0.297	257	0.363	293	0.877
6	0.928	42	0.959	78	0.923	114	0.999	150	0.859	186	0.326	222	0.294	258	0.376	294	0.885
7	0.928	43	0.959	79	0.922	115	0.999	151	0.847	187	0.313	223	0.292	259	0.389	295	0.892
8	0.929	44	0.958	80	0.920	116	0.999	152	0.835	188	0.301	224	0.289	260	0.401	296	0.900
9	0.929	45	0.957	81	0.922	117	0.999	153	0.823	189	0.288	225	0.287	261	0.419	297	0.908
10	0.930	46	0.957	82	0.924	118	1.000	154	0.811	190	0.276	226	0.285	262	0.437	298	0.915
11	0.932	47	0.956	83	0.926	119	1.000	155	0.799	191	0.273	227	0.282	263	0.455	299	0.923
12	0.934	48	0.956	84	0.928	120	1.000	156	0.787	192	0.269	228	0.280	264	0.473	300	0.930
13	0.936	49	0.956	85	0.930	121	0.998	157	0.775	193	0.266	229	0.277	265	0.491	301	0.935
14	0.938	50	0.955	86	0.932	122	0.996	158	0.763	194	0.262	230	0.275	266	0.508	302	0.939
15	0.939	51	0.955	87	0.934	123	0.994	159	0.751	195	0.259	231	0.272	267	0.526	303	0.944
16	0.941	52	0.954	88	0.936	124	0.992	160	0.739	196	0.255	232	0.268	268	0.544	304	0.949
17	0.943	53	0.953	89	0.938	125	0.990	161	0.723	197	0.252	233	0.265	269	0.562	305	0.953
18	0.945	54	0.953	90	0.940	126	0.988	162	0.706	198	0.248	234	0.261	270	0.580	306	0.958
19	0.947	55	0.952	91	0.943	127	0.986	163	0.690	199	0.244	235	0.258	271	0.596	307	0.963
20	0.949	56	0.952	92	0.947	128	0.984	164	0.673	200	0.241	236	0.255	272	0.612	308	0.968
21	0.950	57	0.951	93	0.951	129	0.982	165	0.657	201	0.244	237	0.251	273	0.628	309	0.972
22	0.950	58	0.951	94	0.954	130	0.980	166	0.641	202	0.248	238	0.248	274	0.644	310	0.977
23	0.951	59	0.951	95	0.957	131	0.976	167	0.624	203	0.251	239	0.244	275	0.660	311	0.979
24	0.951	60	0.950	96	0.961	132	0.972	168	0.608	204	0.255	240	0.241	276	0.676	312	0.981
25	0.952	61	0.948	97	0.965	133	0.968	169	0.591	205	0.258	241	0.244	277	0.692	313	0.983
26	0.953	62	0.947	98	0.968	134	0.964	170	0.575	206	0.261	242	0.248	278	0.708	314	0.985
27	0.953	63	0.946	99	0.971	135	0.960	171	0.558	207	0.265	243	0.252	279	0.724	315	0.988
28	0.954	64	0.944	100	0.975	136	0.955	172	0.540	208	0.268	244	0.255	280	0.740	316	0.990
29	0.954	65	0.942	101	0.977	137	0.951	173	0.522	209	0.272	245	0.259	281	0.752	317	0.992
30	0.955	66	0.941	102	0.980	138	0.947	174	0.505	210	0.275	246	0.262	282	0.763	318	0.994
31	0.956	67	0.939	103	0.982	139	0.943	175	0.488	211	0.277	247	0.266	283	0.775	319	0.996
32	0.956	68	0.938	104	0.984	140	0.939	176	0.470	212	0.280	248	0.269	284	0.786	320	0.998
33	0.956	69	0.937	105	0.987	141	0.931	177	0.452	213	0.282	249	0.273	285	0.798	321	0.998
34	0.957	70	0.935	106	0.989	142	0.923	178	0.435	214	0.285	250	0.276	286	0.809	322	0.997
35	0.957	71	0.933	107	0.991	143	0.915	179	0.417	215	0.287	251	0.289	287	0.821	323	0.997

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## AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-70730**  
Date **4-May-17**  
Call Letters **KNVO**  
Channel **17**  
Frequency **491 MHz**  
Antenna Type **TFU-22JSC/VP-R C160**  
Gain **2.44 (3.88dB)**  
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.422	36	0.499	72	0.447	108	0.361	144	0.265	180	0.028	216	0.146	252	0.062	288	0.211
1	0.426	37	0.500	73	0.444	109	0.360	145	0.259	181	0.030	217	0.146	253	0.057	289	0.219
2	0.429	38	0.500	74	0.441	110	0.359	146	0.252	182	0.033	218	0.147	254	0.052	290	0.226
3	0.432	39	0.500	75	0.438	111	0.358	147	0.246	183	0.037	219	0.147	255	0.047	291	0.233
4	0.435	40	0.500	76	0.435	112	0.358	148	0.239	184	0.042	220	0.147	256	0.042	292	0.239
5	0.438	41	0.500	77	0.432	113	0.357	149	0.233	185	0.047	221	0.147	257	0.037	293	0.246
6	0.441	42	0.500	78	0.429	114	0.356	150	0.226	186	0.052	222	0.147	258	0.033	294	0.252
7	0.444	43	0.500	79	0.426	115	0.355	151	0.219	187	0.057	223	0.146	259	0.030	295	0.259
8	0.447	44	0.499	80	0.422	116	0.354	152	0.211	188	0.062	224	0.146	260	0.028	296	0.265
9	0.450	45	0.499	81	0.419	117	0.353	153	0.204	189	0.067	225	0.145	261	0.028	297	0.271
10	0.453	46	0.498	82	0.416	118	0.352	154	0.197	190	0.072	226	0.144	262	0.029	298	0.276
11	0.456	47	0.497	83	0.413	119	0.350	155	0.189	191	0.076	227	0.143	263	0.032	299	0.282
12	0.459	48	0.496	84	0.410	120	0.349	156	0.182	192	0.081	228	0.142	264	0.036	300	0.287
13	0.462	49	0.496	85	0.407	121	0.348	157	0.174	193	0.086	229	0.140	265	0.041	301	0.292
14	0.464	50	0.495	86	0.404	122	0.346	158	0.166	194	0.090	230	0.139	266	0.046	302	0.297
15	0.467	51	0.493	87	0.401	123	0.344	159	0.158	195	0.094	231	0.137	267	0.053	303	0.302
16	0.469	52	0.492	88	0.398	124	0.343	160	0.150	196	0.098	232	0.135	268	0.059	304	0.306
17	0.472	53	0.491	89	0.396	125	0.341	161	0.143	197	0.102	233	0.133	269	0.066	305	0.310
18	0.474	54	0.489	90	0.393	126	0.338	162	0.135	198	0.106	234	0.131	270	0.073	306	0.314
19	0.476	55	0.488	91	0.390	127	0.336	163	0.127	199	0.110	235	0.128	271	0.081	307	0.318
20	0.478	56	0.486	92	0.388	128	0.334	164	0.119	200	0.113	236	0.125	272	0.088	308	0.321
21	0.480	57	0.484	93	0.385	129	0.331	165	0.111	201	0.117	237	0.123	273	0.096	309	0.325
22	0.482	58	0.482	94	0.383	130	0.328	166	0.104	202	0.120	238	0.120	274	0.104	310	0.328
23	0.484	59	0.480	95	0.381	131	0.325	167	0.096	203	0.123	239	0.117	275	0.111	311	0.331
24	0.486	60	0.478	96	0.379	132	0.321	168	0.088	204	0.125	240	0.113	276	0.119	312	0.334
25	0.488	61	0.476	97	0.377	133	0.318	169	0.081	205	0.128	241	0.110	277	0.127	313	0.336
26	0.489	62	0.474	98	0.375	134	0.314	170	0.073	206	0.131	242	0.106	278	0.135	314	0.338
27	0.491	63	0.472	99	0.373	135	0.310	171	0.066	207	0.133	243	0.102	279	0.143	315	0.341
28	0.492	64	0.469	100	0.371	136	0.306	172	0.059	208	0.135	244	0.098	280	0.150	316	0.343
29	0.493	65	0.467	101	0.370	137	0.302	173	0.053	209	0.137	245	0.094	281	0.158	317	0.344
30	0.495	66	0.464	102	0.368	138	0.297	174	0.046	210	0.139	246	0.090	282	0.166	318	0.346
31	0.496	67	0.462	103	0.367	139	0.292	175	0.041	211	0.140	247	0.086	283	0.174	319	0.348
32	0.496	68	0.459	104	0.366	140	0.287	176	0.036	212	0.142	248	0.081	284	0.182	320	0.349
33	0.497	69	0.456	105	0.364	141	0.282	177	0.032	213	0.143	249	0.076	285	0.189	321	0.350
34	0.498	70	0.453	106	0.363	142	0.276	178	0.029	214	0.144	250	0.072	286	0.197	322	0.352
35	0.499	71	0.450	107	0.362	143	0.271	179	0.028	215	0.145	251	0.067	287	0.204	323	0.353

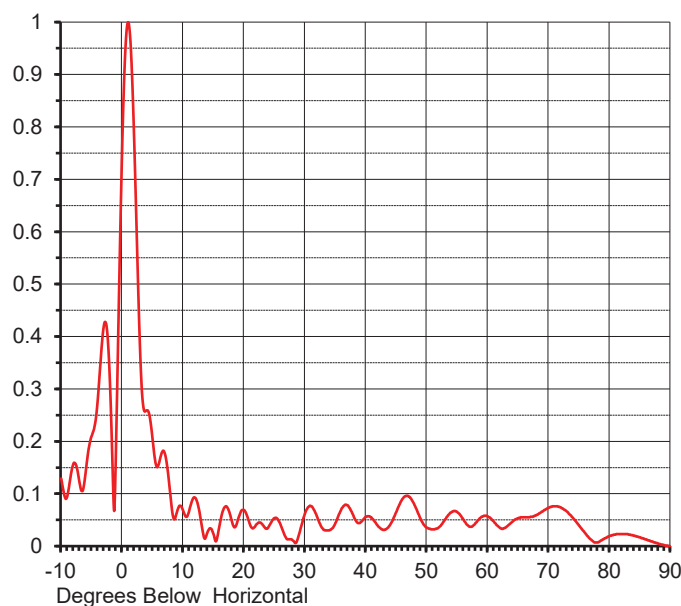
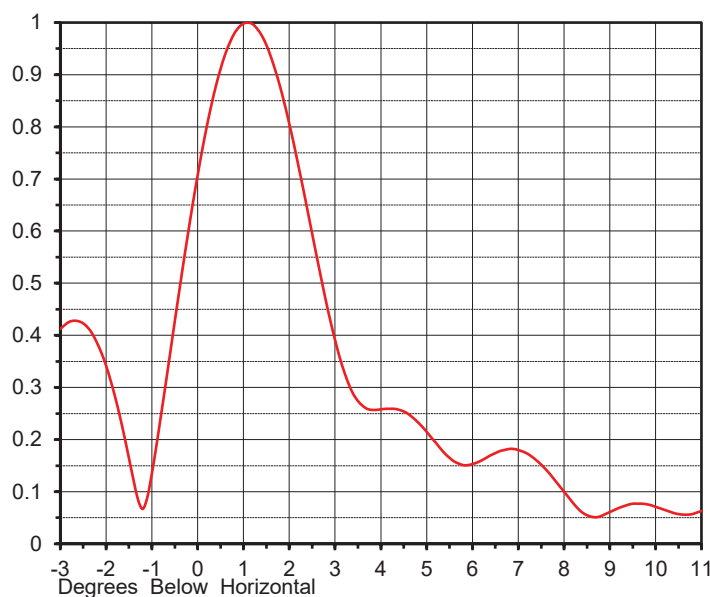
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## ELEVATION PATTERN

Proposal No. **C-70730**  
 Date **4-May-17**  
 Call Letters **KNVO**  
 Channel **17**  
 Frequency **491 MHz**  
 Antenna Type **TFU-22JSC/VP-R C160**

RMS Directivity at Main Lobe **20.0 ( 13.01 dB )**  
 RMS Directivity at Horizontal **11.4 ( 10.57 dB )**  
**Calculated**

Beam Tilt **1.00 deg**  
 Pattern Number **22Z200100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.129	10.0	0.068	30.0	0.062	50.0	0.035	70.0	0.073
-9.0	0.095	11.0	0.067	31.0	0.076	51.0	0.032	71.0	0.076
-8.0	0.157	12.0	0.092	32.0	0.056	52.0	0.036	72.0	0.074
-7.0	0.122	13.0	0.044	33.0	0.032	53.0	0.051	73.0	0.066
-6.0	0.139	14.0	0.026	34.0	0.030	54.0	0.064	74.0	0.054
-5.0	0.210	15.0	0.023	35.0	0.044	55.0	0.065	75.0	0.039
-4.0	0.279	16.0	0.040	36.0	0.071	56.0	0.051	76.0	0.025
-3.0	0.420	17.0	0.076	37.0	0.078	57.0	0.037	77.0	0.012
-2.0	0.313	18.0	0.048	38.0	0.057	58.0	0.044	78.0	0.007
-1.0	0.189	19.0	0.050	39.0	0.044	59.0	0.056	79.0	0.013
0.0	0.756	20.0	0.069	40.0	0.056	60.0	0.057	80.0	0.019
1.0	1.000	21.0	0.041	41.0	0.053	61.0	0.047	81.0	0.022
2.0	0.767	22.0	0.041	42.0	0.038	62.0	0.035	82.0	0.023
3.0	0.358	23.0	0.042	43.0	0.031	63.0	0.036	83.0	0.023
4.0	0.259	24.0	0.036	44.0	0.041	64.0	0.046	84.0	0.020
5.0	0.204	25.0	0.053	45.0	0.065	65.0	0.053	85.0	0.017
6.0	0.156	26.0	0.041	46.0	0.090	66.0	0.055	86.0	0.013
7.0	0.177	27.0	0.014	47.0	0.095	67.0	0.056	87.0	0.009
8.0	0.089	28.0	0.011	48.0	0.078	68.0	0.059	88.0	0.005
9.0	0.065	29.0	0.021	49.0	0.052	69.0	0.066	89.0	0.002
								90.0	0.000

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