



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

Proposal Number: **C-71435-2**
Date: **21-May-20**
Customer: **Hearst/Gray**
Location: **Burlington, VT**

Electrical Specifications

Polarization: **Horizontal** **4" Flex Jumper has a power limit of 23kW at CH20**
Azimuth Pattern: **Directional**
Antenna Input: **6-1/8"** **50 Ohm** **EIA/DCA**
VSWR: Channel **1.15 : 1** Band **1.15 : 1**
Bandwidth: **228 MHz**
Rated Input Power: **40 kW** (16.02 dBk) **Maximum combined average power**

Mechanical Specifications

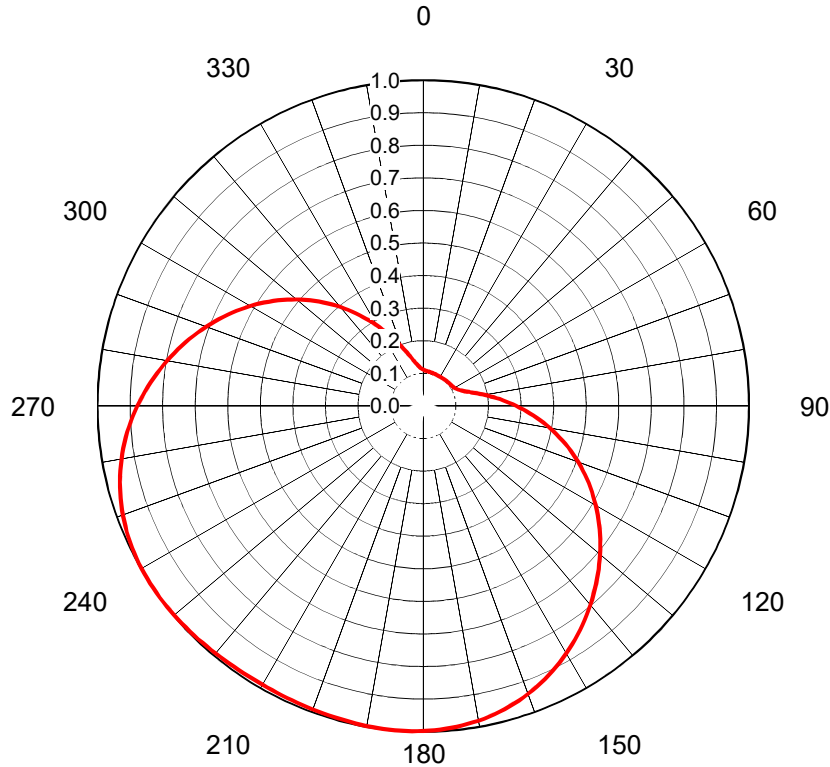
Mounting: **Top Mounted**
Environmental Protection: **Full Radome**
Height: less Lightning Protector **ft (m)** with Lightning Protector
Weight:
Effective Projected Area: **TIA/EIA-222-F** Basic Wind Speed:

Channel Specifications

	Call	CH	Freq	Hpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak at Horizontal Hpol Gain
1	WPTZ	14	473 MHz	250 kW (23.98 dBk)	9.14 kW (9.61 dBk)	30.27 (14.81dB)	28.90 (14.61dB)
2	WCAX	20	509 MHz	400 kW (26.02 dBk)	14.7 kW (11.67 dBk)	30.22 (14.80dB)	28.55 (14.56dB)
3	WFFF	16	485 MHz	40.0 kW (16.02 dBk)	1.61 kW (2.06 dBk)	27.60 (14.41dB)	0.00 #NUM!

AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-71435-2**
 Date **21-May-20**
 Call Letters **WFFF**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-16WB-R C160 OS**
 Gain **2.2 (3.42dB)**
 Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.111	36	0.103	72	0.142	108	0.485	144	0.831	180	0.998	216	0.990	252	0.975	288	0.728
1	0.110	37	0.104	73	0.147	109	0.496	145	0.839	181	0.999	217	0.990	253	0.972	289	0.719
2	0.110	38	0.104	74	0.152	110	0.507	146	0.847	182	0.999	218	0.991	254	0.968	290	0.710
3	0.109	39	0.104	75	0.158	111	0.518	147	0.855	183	0.999	219	0.991	255	0.964	291	0.700
4	0.108	40	0.104	76	0.164	112	0.528	148	0.862	184	0.999	220	0.992	256	0.960	292	0.691
5	0.108	41	0.104	77	0.171	113	0.539	149	0.870	185	0.999	221	0.992	257	0.955	293	0.682
6	0.107	42	0.104	78	0.178	114	0.550	150	0.877	186	0.999	222	0.993	258	0.951	294	0.672
7	0.107	43	0.105	79	0.185	115	0.560	151	0.885	187	0.999	223	0.994	259	0.946	295	0.662
8	0.107	44	0.105	80	0.193	116	0.571	152	0.892	188	0.999	224	0.995	260	0.941	296	0.653
9	0.107	45	0.105	81	0.201	117	0.581	153	0.898	189	0.998	225	0.995	261	0.935	297	0.643
10	0.106	46	0.105	82	0.209	118	0.591	154	0.905	190	0.998	226	0.996	262	0.930	298	0.633
11	0.106	47	0.105	83	0.218	119	0.602	155	0.911	191	0.997	227	0.997	263	0.924	299	0.623
12	0.106	48	0.105	84	0.227	120	0.612	156	0.918	192	0.997	228	0.997	264	0.918	300	0.613
13	0.106	49	0.106	85	0.236	121	0.622	157	0.924	193	0.996	229	0.998	265	0.912	301	0.603
14	0.105	50	0.106	86	0.245	122	0.632	158	0.930	194	0.995	230	0.998	266	0.905	302	0.593
15	0.105	51	0.106	87	0.255	123	0.641	159	0.935	195	0.995	231	0.999	267	0.899	303	0.583
16	0.105	52	0.106	88	0.265	124	0.651	160	0.941	196	0.994	232	0.999	268	0.892	304	0.572
17	0.105	53	0.107	89	0.275	125	0.661	161	0.946	197	0.993	233	1.000	269	0.885	305	0.562
18	0.105	54	0.107	90	0.286	126	0.670	162	0.951	198	0.993	234	1.000	270	0.878	306	0.551
19	0.104	55	0.107	91	0.296	127	0.680	163	0.955	199	0.992	235	1.000	271	0.870	307	0.541
20	0.104	56	0.108	92	0.307	128	0.690	164	0.960	200	0.991	236	1.000	272	0.863	308	0.530
21	0.104	57	0.108	93	0.318	129	0.699	165	0.964	201	0.991	237	1.000	273	0.855	309	0.519
22	0.104	58	0.109	94	0.328	130	0.708	166	0.968	202	0.990	238	0.999	274	0.848	310	0.508
23	0.104	59	0.110	95	0.339	131	0.718	167	0.971	203	0.990	239	0.999	275	0.840	311	0.497
24	0.104	60	0.111	96	0.351	132	0.727	168	0.975	204	0.989	240	0.998	276	0.832	312	0.486
25	0.103	61	0.112	97	0.362	133	0.736	169	0.978	205	0.989	241	0.998	277	0.824	313	0.475
26	0.103	62	0.113	98	0.373	134	0.745	170	0.981	206	0.989	242	0.997	278	0.815	314	0.464
27	0.103	63	0.115	99	0.384	135	0.754	171	0.984	207	0.988	243	0.995	279	0.807	315	0.453
28	0.103	64	0.116	100	0.395	136	0.763	172	0.986	208	0.988	244	0.994	280	0.799	316	0.442
29	0.103	65	0.118	101	0.407	137	0.772	173	0.988	209	0.988	245	0.993	281	0.790	317	0.430
30	0.103	66	0.121	102	0.418	138	0.780	174	0.990	210	0.988	246	0.991	282	0.781	318	0.419
31	0.103	67	0.123	103	0.429	139	0.789	175	0.992	211	0.988	247	0.989	283	0.773	319	0.408
32	0.103	68	0.126	104	0.440	140	0.798	176	0.994	212	0.988	248	0.986	284	0.764	320	0.396
33	0.103	69	0.130	105	0.452	141	0.806	177	0.995	213	0.989	249	0.984	285	0.755	321	0.385
34	0.103	70	0.134	106	0.463	142	0.815	178	0.996	214	0.989	250	0.981	286	0.746	322	0.374
35	0.103	71	0.138	107	0.474	143	0.823	179	0.997	215	0.989	251	0.978	287	0.737	323	0.363

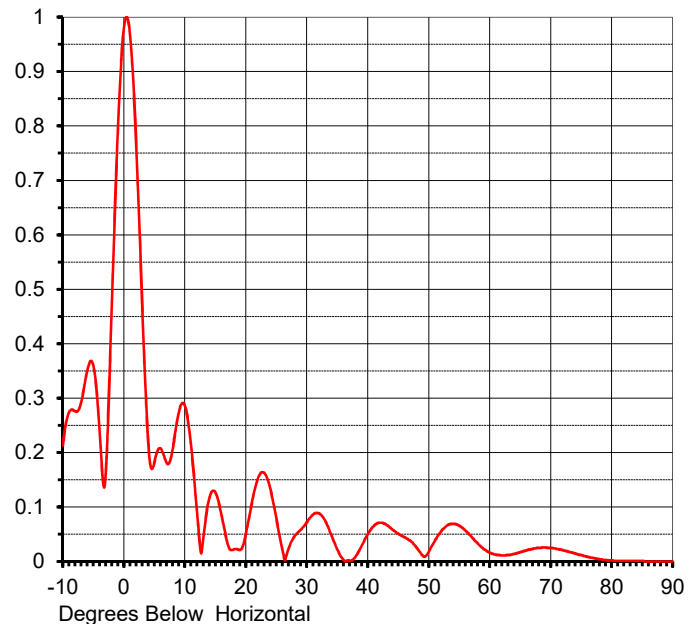
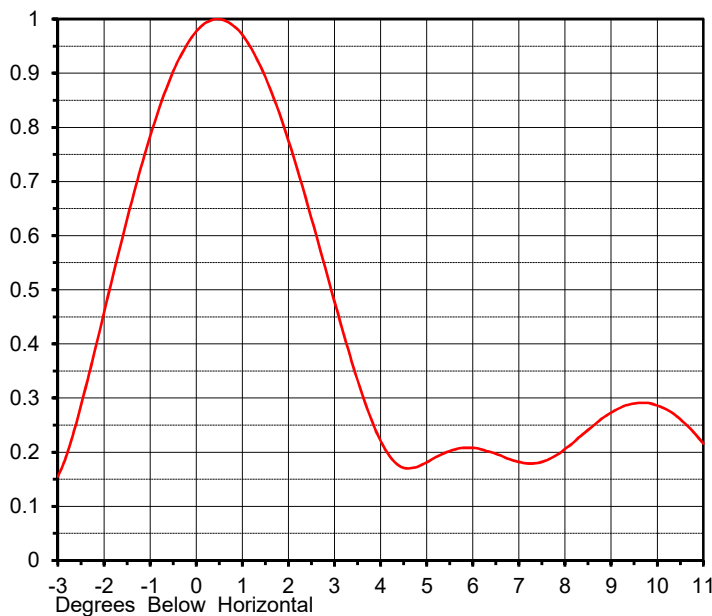
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ELEVATION PATTERN

Proposal No. **C-71435-2**
 Date **21-May-20**
 Call Letters **WPTZ**
 Channel **16**
 Frequency **485 MHz**
 Antenna Type **TFU-16WB-R C160 OS**

RMS Directivity at Main Lobe **13.8 (11.39 dB)**
 RMS Directivity at Horizontal **13.1 (11.17 dB)**
Calculated

Beam Tilt **0.55 deg**
 Pattern Number **16W138055**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.213	10.0	0.286	30.0	0.072	50.0	0.018	70.0	0.025
-9.0	0.273	11.0	0.216	31.0	0.086	51.0	0.038	71.0	0.023
-8.0	0.276	12.0	0.092	32.0	0.088	52.0	0.055	72.0	0.021
-7.0	0.292	13.0	0.039	33.0	0.075	53.0	0.066	73.0	0.018
-6.0	0.350	14.0	0.115	34.0	0.050	54.0	0.069	74.0	0.015
-5.0	0.360	15.0	0.127	35.0	0.022	55.0	0.066	75.0	0.012
-4.0	0.245	16.0	0.087	36.0	0.003	56.0	0.057	76.0	0.009
-3.0	0.155	17.0	0.034	37.0	0.001	57.0	0.046	77.0	0.006
-2.0	0.457	18.0	0.022	38.0	0.009	58.0	0.034	78.0	0.004
-1.0	0.783	19.0	0.021	39.0	0.029	59.0	0.023	79.0	0.003
0.0	0.977	20.0	0.050	40.0	0.050	60.0	0.016	80.0	0.002
1.0	0.971	21.0	0.107	41.0	0.065	61.0	0.013	81.0	0.001
2.0	0.776	22.0	0.153	42.0	0.071	62.0	0.011	82.0	0.001
3.0	0.478	23.0	0.163	43.0	0.068	63.0	0.012	83.0	0.001
4.0	0.221	24.0	0.134	44.0	0.059	64.0	0.014	84.0	0.001
5.0	0.181	25.0	0.080	45.0	0.051	65.0	0.017	85.0	0.001
6.0	0.208	26.0	0.021	46.0	0.045	66.0	0.020	86.0	0.000
7.0	0.182	27.0	0.023	47.0	0.038	67.0	0.023	87.0	0.000
8.0	0.206	28.0	0.046	48.0	0.026	68.0	0.025	88.0	0.000
9.0	0.273	29.0	0.058	49.0	0.011	69.0	0.026	89.0	0.000
								90.0	0.000

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Summary

Proposal No.	C-71435-2
Date	21-May-20
Call Letters	WFFF
Channel	16
Frequency	485 MHz
Antenna Type	TFU-16WB-R C160 OS

Antenna

		Hpol
ERP:	40.0 kW	(16.02 dBk)
Peak Gain*	27.60	(14.41 dB)

Antenna Input Power	1.45 kW	(1.61 dBk)
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Transmission Line

Type:	Rigid	Attenuation:	(0.45 dB)
Size:	4-1/16"	Efficiency:	90.3%
Impedance:	50 Ohm		
Length:	300 ft	91.4 m	

Transmitter Output

1.61 kW	(2.06 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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