



Antenna Model:

TFU-16WB-R C160 OS

Proposal Number: **C-71210-3**
Date: **5-Sep-18**
Customer: **Nexstar**
Location: **Birmingham, NY**

Electrical Specifications

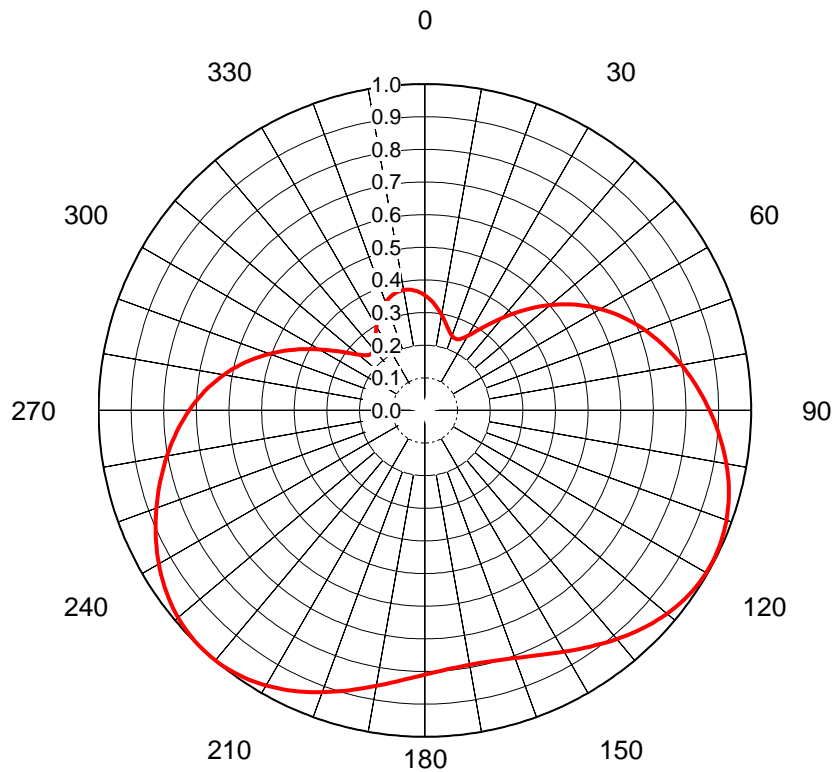
Polarization: **Horizontal**
Azimuth Pattern: **Directional**
Antenna Input: **6-1/8"** **50 Ohm** **EIA/DCA**
VSWR: **Channel** **1.10 : 1** **Band** **1.10 : 1**
Bandwidth: **470-698 MHz**
Rated Input Power: **40 kW** **(16.02 dBk)** **Maximum combined average power**

Mechanical Specifications

Mounting: **Side Mounted**
Environmental Protection: **Full Radome**
Height: **28.9 ft (8.8m)**
Weight: **1300 lb (0.6t)** **Excludes Mounts**
Effective Projected Area: **41 ft² (3.8m²)** **TIA-222-G** **Basic Wind Speed: 89 m/h (143.2 km/h)**

Channel Specifications

	Call	CH	Freq	Hpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak at Horizontal Hpol Gain
1	WIVT	34	593 MHz	345 kW (25.38 dBk)	17.4 kW (12.41 dBk)	28.45 (14.54dB)	25.52 (14.07dB)
2	WIVT	27	551 MHz	298 kW (24.74 dBk)	15.3 kW (11.85 dBk)	27.56 (14.40dB)	25.08 (13.99dB)



AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71210-3**
 Date **5-Sep-18**
 Call Letters **WIVT**
 Channel **27**
 Frequency **551 MHz**
 Antenna Type **TFU-16WB-R C160 OS**
 Gain **1.9 (2.8dB)**
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.353	36	0.322	72	0.736	108	0.977	144	0.890	180	0.810	216	0.993	252	0.861	288	0.533	324	0.260
1	0.349	37	0.334	73	0.744	109	0.980	145	0.884	181	0.813	217	0.995	253	0.854	289	0.520	325	0.265
2	0.344	38	0.346	74	0.752	110	0.984	146	0.877	182	0.817	218	0.997	254	0.847	290	0.507	326	0.271
3	0.339	39	0.358	75	0.760	111	0.987	147	0.871	183	0.821	219	0.998	255	0.840	291	0.494	327	0.277
4	0.334	40	0.371	76	0.768	112	0.989	148	0.865	184	0.826	220	0.999	256	0.832	292	0.481	328	0.284
5	0.328	41	0.384	77	0.776	113	0.991	149	0.859	185	0.830	221	1.000	257	0.825	293	0.468	329	0.290
6	0.322	42	0.397	78	0.784	114	0.993	150	0.854	186	0.835	222	1.000	258	0.817	294	0.454	330	0.296
7	0.316	43	0.410	79	0.791	115	0.994	151	0.848	187	0.840	223	1.000	259	0.810	295	0.441	331	0.303
8	0.310	44	0.423	80	0.799	116	0.995	152	0.843	188	0.846	224	0.999	260	0.802	296	0.427	332	0.309
9	0.303	45	0.437	81	0.807	117	0.996	153	0.837	189	0.851	225	0.998	261	0.795	297	0.414	333	0.316
10	0.297	46	0.450	82	0.814	118	0.996	154	0.832	190	0.857	226	0.997	262	0.787	298	0.401	334	0.322
11	0.290	47	0.463	83	0.822	119	0.996	155	0.828	191	0.863	227	0.995	263	0.779	299	0.387	335	0.328
12	0.284	48	0.476	84	0.829	120	0.995	156	0.823	192	0.869	228	0.993	264	0.772	300	0.374	336	0.333
13	0.278	49	0.490	85	0.837	121	0.994	157	0.819	193	0.875	229	0.990	265	0.764	301	0.361	337	0.339
14	0.272	50	0.503	86	0.844	122	0.993	158	0.815	194	0.881	230	0.987	266	0.756	302	0.349	338	0.344
15	0.266	51	0.515	87	0.851	123	0.991	159	0.811	195	0.887	231	0.984	267	0.748	303	0.337	339	0.348
16	0.260	52	0.528	88	0.858	124	0.989	160	0.808	196	0.894	232	0.980	268	0.739	304	0.325	340	0.353
17	0.255	53	0.541	89	0.866	125	0.987	161	0.805	197	0.900	233	0.977	269	0.731	305	0.313	341	0.357
18	0.250	54	0.553	90	0.873	126	0.984	162	0.802	198	0.906	234	0.972	270	0.722	306	0.303	342	0.360
19	0.247	55	0.565	91	0.880	127	0.981	163	0.799	199	0.913	235	0.968	271	0.714	307	0.292	343	0.364
20	0.243	56	0.577	92	0.887	128	0.977	164	0.797	200	0.919	236	0.963	272	0.705	308	0.283	344	0.367
21	0.241	57	0.588	93	0.894	129	0.973	165	0.795	201	0.925	237	0.958	273	0.696	309	0.274	345	0.369
22	0.239	58	0.600	94	0.900	130	0.969	166	0.794	202	0.931	238	0.953	274	0.687	310	0.266	346	0.371
23	0.239	59	0.611	95	0.907	131	0.965	167	0.793	203	0.937	239	0.947	275	0.677	311	0.259	347	0.373
24	0.239	60	0.622	96	0.914	132	0.960	168	0.792	204	0.943	240	0.941	276	0.667	312	0.253	348	0.374
25	0.241	61	0.632	97	0.920	133	0.955	169	0.792	205	0.948	241	0.935	277	0.657	313	0.248	349	0.374
26	0.243	62	0.643	98	0.926	134	0.950	170	0.792	206	0.954	242	0.929	278	0.647	314	0.244	350	0.375
27	0.247	63	0.653	99	0.932	135	0.944	171	0.792	207	0.959	243	0.923	279	0.637	315	0.241	351	0.374
28	0.252	64	0.663	100	0.938	136	0.939	172	0.792	208	0.964	244	0.917	280	0.626	316	0.240	352	0.374
29	0.258	65	0.673	101	0.944	137	0.933	173	0.793	209	0.969	245	0.910	281	0.615	317	0.239	353	0.373
30	0.264	66	0.682	102	0.949	138	0.927	174	0.795	210	0.973	246	0.903	282	0.604	318	0.239	354	0.371
31	0.272	67	0.692	103	0.955	139	0.921	175	0.796	211	0.977	247	0.896	283	0.593	319	0.241	355	0.369
32	0.281	68	0.701	104	0.960	140	0.915	176	0.798	212	0.981	248	0.890	284	0.581	320	0.243	356	0.367
33	0.290	69	0.710	105	0.964	141	0.909	177	0.801	213	0.985	249	0.883	285	0.569	321	0.246	357	0.364
34	0.300	70	0.719	106	0.969	142	0.902	178	0.803	214	0.988	250	0.876	286	0.557	322	0.250	358	0.361
35	0.311	71	0.727	107	0.973	143	0.896	179	0.806	215	0.991	251	0.868	287	0.545	323	0.255	359	0.357

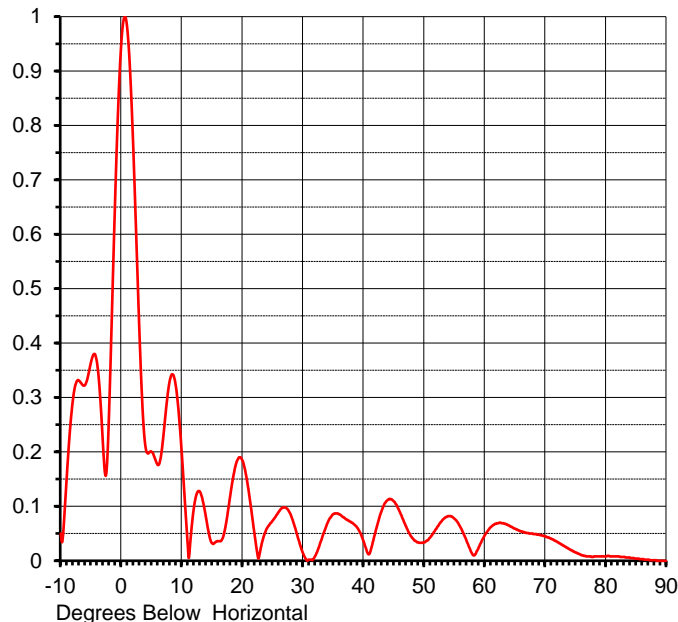
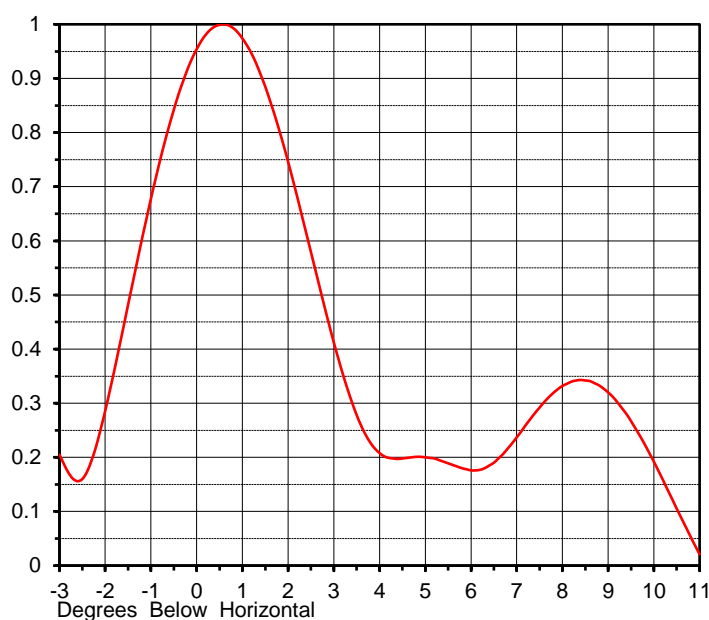
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ELEVATION PATTERN

Proposal No. **C-71210-3**
 Date **5-Sep-18**
 Call Letters **WIVT**
 Channel **27**
 Frequency **551 MHz**
 Antenna Type **TFU-16WB-R C160 OS**

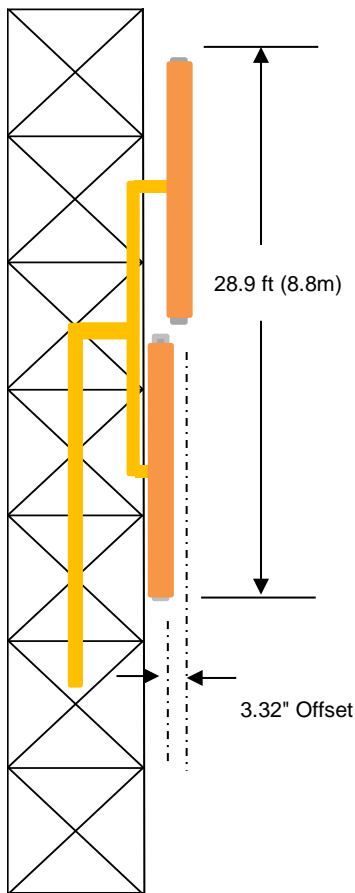
RMS Directivity at Main Lobe **14.5 (11.60 dB)**
 RMS Directivity at Horizontal **13.2 (11.21 dB)**
Calculated

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



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.050	10.0	0.192	30.0	0.013	50.0	0.034	70.0	0.045
-9.0	0.158	11.0	0.021	31.0	0.002	51.0	0.043	71.0	0.040
-8.0	0.296	12.0	0.100	32.0	0.009	52.0	0.059	72.0	0.034
-7.0	0.331	13.0	0.126	33.0	0.038	53.0	0.075	73.0	0.028
-6.0	0.323	14.0	0.077	34.0	0.069	54.0	0.082	74.0	0.021
-5.0	0.366	15.0	0.032	35.0	0.086	55.0	0.077	75.0	0.015
-4.0	0.362	16.0	0.036	36.0	0.085	56.0	0.061	76.0	0.010
-3.0	0.205	17.0	0.053	37.0	0.077	57.0	0.036	77.0	0.008
-2.0	0.286	18.0	0.122	38.0	0.070	58.0	0.011	78.0	0.008
-1.0	0.678	19.0	0.181	39.0	0.060	59.0	0.025	79.0	0.008
0.0	0.954	20.0	0.184	40.0	0.035	60.0	0.047	80.0	0.008
1.0	0.974	21.0	0.129	41.0	0.014	61.0	0.062	81.0	0.008
2.0	0.746	22.0	0.047	42.0	0.056	62.0	0.069	82.0	0.008
3.0	0.412	23.0	0.023	43.0	0.093	63.0	0.069	83.0	0.007
4.0	0.208	24.0	0.059	44.0	0.112	64.0	0.065	84.0	0.005
5.0	0.200	25.0	0.074	45.0	0.109	65.0	0.059	85.0	0.004
6.0	0.176	26.0	0.090	46.0	0.089	66.0	0.054	86.0	0.003
7.0	0.237	27.0	0.098	47.0	0.063	67.0	0.051	87.0	0.002
8.0	0.332	28.0	0.083	48.0	0.042	68.0	0.049	88.0	0.001
9.0	0.320	29.0	0.048	49.0	0.034	69.0	0.048	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No. **C-71210-3**
 Date **5-Sep-18**
 Call Letters **WIVT**
 Channel **34**
 Frequency **593 MHz**
 Antenna Type **TFU-16WB-R C160 OS**

Preliminary Specifications

Side Mounted

With ice TIA-222-G

Height AGL(z) 381 ft (116.1 m)
 Basic Wind Speed 89 m/h (143.2 km/h)

Structure Class II
 Exposure Category C
 Topography Category 1

Design Ice 0.75 in $t_{iz} = 1.47$ in
 Wind Speed w/Ice 40 m/h (64.4 km/h)

Mechanical Specifications

		without ice	with ice	
Height	H2	28.9 ft (8.8m)		
Height of Center of Radiation	H3	14.5 ft (4.4m)		
Effective Projected Area	(EPA) _A	41 ft ² (3.8m ²)	79.4 ft ² (7.4m ²)	Mounts Excluded
Weight	W	1300 lb (0.6t)	2350 lb (1.1t)	Mounts Excluded

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

Prepared by: JBC

Date: 29-Aug-18

ME:

EE:

Rev. No.3 by: JBC

Date: 5-Sep-18

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Summary

Proposal No.	C-71210-3
Date	5-Sep-18
Call Letters	WIVT
Channel	27
Frequency	551 MHz
Antenna Type	TFU-16WB-R C160 OS

Antenna

		Hpol
ERP:	298 kW	(24.74 dBk)
Peak Gain*	27.56	(14.40 dB)

Antenna Input Power	10.8 kW	(10.34 dBk)
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Transmission Line

Type:	Flexline Air	Attenuation:	(1.51 dB)
Size:	4"	Efficiency:	70.6%
Impedance:	50 Ohm		
Length:	500 ft	152.4 m	

Transmitter Output

15.3 kW	(11.85 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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