



TFU-29JSC/VP-R P310BNT

Proposal Number: C-70311
Date: 23-Feb-17
Customer:
Location: Louisville, AL

Electrical Specifications

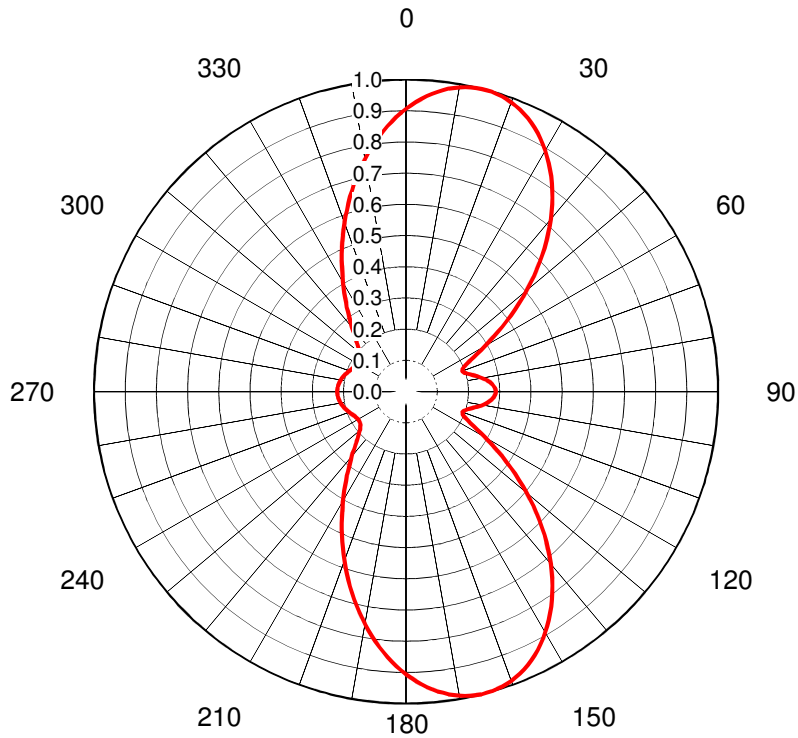
Polarization	Horizontal					
Azimuth Pattern	Directional					
Antenna Input	6-1/8"	75 Ohm	EIA/DCA			
VSWR	Channel	1.08 : 1		Band		1.08 : 1
Bandwidth	6 MHz					
Rated Input Power	30 kW	(14.77 dBk)	Maximum Average Power			

Mechanical Specifications

Mounting	Side Mounted					
Environmental Protection	Full Radome					
Height	55.6 ft (16.9m)					
Weight	1400 lb (0.6t)					
Effective Projected Area	115.7 ft ² (10.7m ²)	TIA/EIA-222-F	Basic Wind Speed	75 m/h (120.7 km/h)		

Channel Specifications

Call	CH	Freq	Hpol ERP	TPO	Peak Main Lob Hpol Gain	Peak at Horizontal Hpol Gain
WGIQ	30	569 MHz	710.0 kW (28.51 dBk)	11.2 kW (10.48 dBk)	77.93 (18.92dB)	48.15 (16.83dB)



AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70311**
 Date **23-Feb-17**
 Call Letters **WGIQ 30**
 Frequency **569 MHz**
 Antenna Type **TFU-29JSC/VP-R P310BNT**

 Gain **3.06 (4.85dB)**
Calculated

 Directional
 Drawing # **TFU-P310BNT-43**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.907	36	0.798	72	0.196	108	0.196	144	0.798	180	0.907	216	0.317	252	0.198	288	0.198	324	0.317
1	0.918	37	0.779	73	0.201	109	0.194	145	0.815	181	0.894	217	0.304	253	0.200	289	0.196	325	0.330
2	0.929	38	0.761	74	0.206	110	0.192	146	0.832	182	0.881	218	0.292	254	0.202	290	0.194	326	0.344
3	0.940	39	0.741	75	0.213	111	0.194	147	0.848	183	0.867	219	0.281	255	0.204	291	0.191	327	0.358
4	0.950	40	0.722	76	0.219	112	0.196	148	0.864	184	0.853	220	0.269	256	0.206	292	0.189	328	0.373
5	0.958	41	0.701	77	0.227	113	0.202	149	0.878	185	0.838	221	0.259	257	0.208	293	0.187	329	0.388
6	0.966	42	0.681	78	0.234	114	0.210	150	0.892	186	0.823	222	0.249	258	0.210	294	0.185	330	0.404
7	0.973	43	0.660	79	0.241	115	0.219	151	0.905	187	0.807	223	0.240	259	0.211	295	0.184	331	0.420
8	0.980	44	0.638	80	0.249	116	0.230	152	0.918	188	0.791	224	0.231	260	0.213	296	0.182	332	0.436
9	0.985	45	0.617	81	0.255	117	0.244	153	0.929	189	0.774	225	0.224	261	0.214	297	0.181	333	0.453
10	0.990	46	0.595	82	0.262	118	0.258	154	0.941	190	0.757	226	0.216	262	0.216	298	0.179	334	0.470
11	0.994	47	0.572	83	0.267	119	0.275	155	0.950	191	0.740	227	0.210	263	0.217	299	0.178	335	0.487
12	0.997	48	0.550	84	0.273	120	0.292	156	0.959	192	0.722	228	0.203	264	0.218	300	0.177	336	0.505
13	0.998	49	0.527	85	0.277	121	0.311	157	0.967	193	0.704	229	0.198	265	0.219	301	0.177	337	0.523
14	1.000	50	0.505	86	0.281	122	0.331	158	0.975	194	0.686	230	0.193	266	0.219	302	0.177	338	0.540
15	1.000	51	0.482	87	0.283	123	0.351	159	0.981	195	0.668	231	0.190	267	0.220	303	0.177	339	0.559
16	0.999	52	0.460	88	0.286	124	0.372	160	0.987	196	0.650	232	0.186	268	0.220	304	0.178	340	0.577
17	0.997	53	0.438	89	0.287	125	0.394	161	0.991	197	0.632	233	0.183	269	0.220	305	0.179	341	0.595
18	0.995	54	0.415	90	0.288	126	0.415	162	0.995	198	0.613	234	0.181	270	0.221	306	0.181	342	0.610
19	0.991	55	0.394	91	0.287	127	0.438	163	0.997	199	0.595	235	0.179	271	0.220	307	0.183	343	0.632
20	0.987	56	0.372	92	0.286	128	0.460	164	0.999	200	0.577	236	0.178	272	0.220	308	0.186	344	0.650
21	0.981	57	0.351	93	0.283	129	0.482	165	1.000	201	0.559	237	0.177	273	0.220	309	0.190	345	0.668
22	0.975	58	0.331	94	0.281	130	0.505	166	1.000	202	0.540	238	0.177	274	0.219	310	0.193	346	0.686
23	0.967	59	0.311	95	0.277	131	0.527	167	0.998	203	0.523	239	0.177	275	0.219	311	0.198	347	0.704
24	0.959	60	0.292	96	0.273	132	0.550	168	0.997	204	0.505	240	0.177	276	0.218	312	0.203	348	0.722
25	0.950	61	0.275	97	0.267	133	0.572	169	0.994	205	0.487	241	0.178	277	0.217	313	0.210	349	0.740
26	0.941	62	0.258	98	0.262	134	0.595	170	0.990	206	0.470	242	0.179	278	0.216	314	0.216	350	0.757
27	0.929	63	0.244	99	0.255	135	0.617	171	0.985	207	0.453	243	0.181	279	0.214	315	0.224	351	0.774
28	0.918	64	0.230	100	0.249	136	0.638	172	0.980	208	0.436	244	0.182	280	0.213	316	0.231	352	0.791
29	0.905	65	0.219	101	0.241	137	0.660	173	0.973	209	0.420	245	0.184	281	0.211	317	0.240	353	0.807
30	0.892	66	0.208	102	0.234	138	0.681	174	0.966	210	0.404	246	0.185	282	0.210	318	0.249	354	0.823
31	0.878	67	0.202	103	0.227	139	0.701	175	0.958	211	0.388	247	0.187	283	0.208	319	0.259	355	0.838
32	0.864	68	0.196	104	0.219	140	0.722	176	0.950	212	0.373	248	0.189	284	0.206	320	0.269	356	0.853
33	0.848	69	0.194	105	0.213	141	0.741	177	0.940	213	0.358	249	0.191	285	0.204	321	0.281	357	0.867
34	0.832	70	0.192	106	0.206	142	0.761	178	0.929	214	0.344	250	0.194	286	0.202	322	0.292	358	0.881
35	0.815	71	0.194	107	0.201	143	0.779	179	0.918	215	0.330	251	0.196	287	0.200	323	0.304	359	0.894

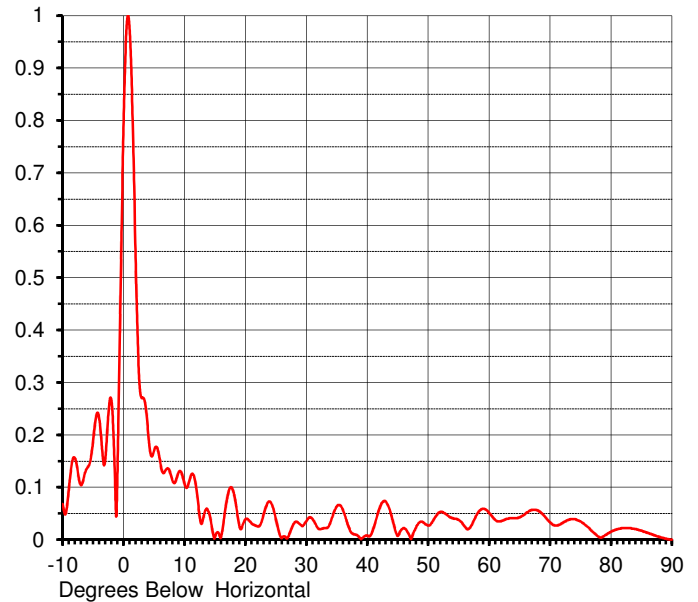
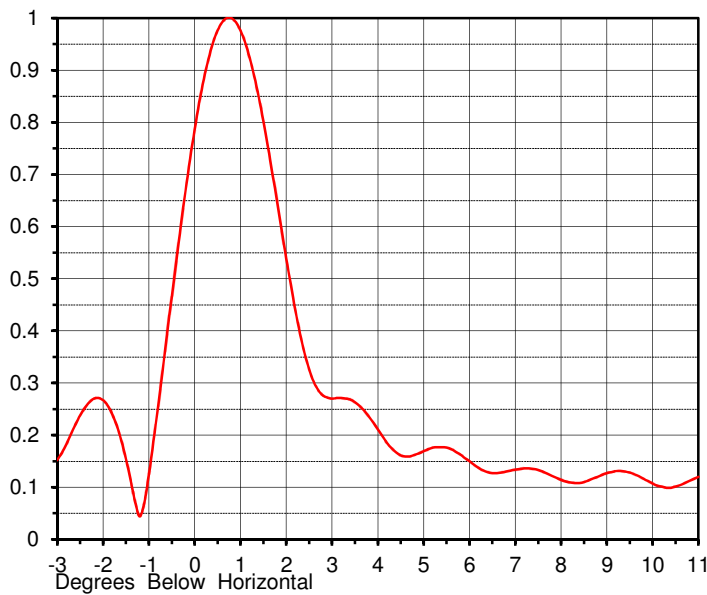
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ELEVATION PATTERN

Proposal No. **C-70311**
 Date **23-Feb-17**
 Call Letters **WGIQ 30**
 Frequency **569 MHz**
 Antenna Type **TFU-29JSC/VP-R P310BN**

RMS Directivity at Main Lobe **25.50 (14.07 dB)**
 RMS Directivity at Horizontal **15.80 (11.99 dB)**
Calculated

Beam Tilt **0.75 deg**
 Drawing Number **29J255075**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.068	10.0	0.107	30.0	0.035	50.0	0.027	70.0	0.033
-9.0	0.093	11.0	0.120	31.0	0.040	51.0	0.040	71.0	0.027
-8.0	0.156	12.0	0.093	32.0	0.021	52.0	0.053	72.0	0.031
-7.0	0.104	13.0	0.037	33.0	0.022	53.0	0.048	73.0	0.038
-6.0	0.136	14.0	0.052	34.0	0.034	54.0	0.041	74.0	0.039
-5.0	0.187	15.0	0.004	35.0	0.063	55.0	0.038	75.0	0.035
-4.0	0.232	16.0	0.004	36.0	0.057	56.0	0.025	76.0	0.026
-3.0	0.152	17.0	0.078	37.0	0.023	57.0	0.025	77.0	0.015
-2.0	0.267	18.0	0.093	38.0	0.010	58.0	0.048	78.0	0.005
-1.0	0.124	19.0	0.027	39.0	0.001	59.0	0.059	79.0	0.008
0.0	0.786	20.0	0.039	40.0	0.008	60.0	0.051	80.0	0.015
1.0	0.976	21.0	0.031	41.0	0.021	61.0	0.038	81.0	0.020
2.0	0.539	22.0	0.025	42.0	0.059	62.0	0.035	82.0	0.022
3.0	0.270	23.0	0.048	43.0	0.073	63.0	0.040	83.0	0.022
4.0	0.211	24.0	0.073	44.0	0.045	64.0	0.041	84.0	0.020
5.0	0.169	25.0	0.040	45.0	0.007	65.0	0.042	85.0	0.017
6.0	0.150	26.0	0.003	46.0	0.022	66.0	0.050	86.0	0.013
7.0	0.134	27.0	0.005	47.0	0.006	67.0	0.057	87.0	0.009
8.0	0.114	28.0	0.031	48.0	0.023	68.0	0.056	88.0	0.005
9.0	0.127	29.0	0.029	49.0	0.034	69.0	0.046	89.0	0.002
								90.0	0.000

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***FutureFill** refers to the use of predetermined illuminations with broadband panels or limited bandwidth slotted coaxial antennas that can be modified in the field to provide the flexibility to customize the null structure at a future date.*

FutureFill OVERLAY

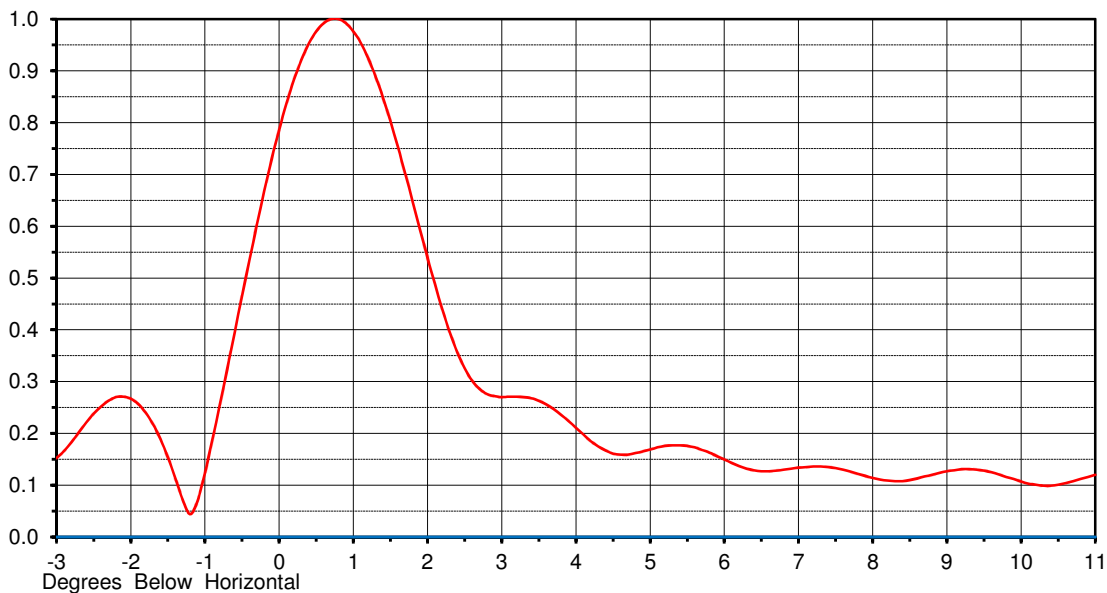
Proposal No. **C-70311**
 Date **23-Feb-17**
 Call Letters **WGIQ 30**
 Frequency **569 MHz**
 Antenna Type **TFU-29JSC/VP-R P310BN**

RMS Directivity 25.50 (14.1 dB)
 RMS Directivity
 Calculated

Beam Tilt 0.75
 Beam Tilt

Drawing No. 29J255075
 Drawing No.

Red
 Blue



Tabulations for

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.000	10.0	0.000	30.0	0.000	50.0	0.000	70.0	0.000
-9.0	0.000	11.0	0.000	31.0	0.000	51.0	0.000	71.0	0.000
-8.0	0.000	12.0	0.000	32.0	0.000	52.0	0.000	72.0	0.000
-7.0	0.000	13.0	0.000	33.0	0.000	53.0	0.000	73.0	0.000
-6.0	0.000	14.0	0.000	34.0	0.000	54.0	0.000	74.0	0.000
-5.0	0.000	15.0	0.000	35.0	0.000	55.0	0.000	75.0	0.000
-4.0	0.000	16.0	0.000	36.0	0.000	56.0	0.000	76.0	0.000
-3.0	0.000	17.0	0.000	37.0	0.000	57.0	0.000	77.0	0.000
-2.0	0.000	18.0	0.000	38.0	0.000	58.0	0.000	78.0	0.000
-1.0	0.000	19.0	0.000	39.0	0.000	59.0	0.000	79.0	0.000
0.0	0.000	20.0	0.000	40.0	0.000	60.0	0.000	80.0	0.000
1.0	0.000	21.0	0.000	41.0	0.000	61.0	0.000	81.0	0.000
2.0	0.000	22.0	0.000	42.0	0.000	62.0	0.000	82.0	0.000
3.0	0.000	23.0	0.000	43.0	0.000	63.0	0.000	83.0	0.000
4.0	0.000	24.0	0.000	44.0	0.000	64.0	0.000	84.0	0.000
5.0	0.000	25.0	0.000	45.0	0.000	65.0	0.000	85.0	0.000
6.0	0.000	26.0	0.000	46.0	0.000	66.0	0.000	86.0	0.000
7.0	0.000	27.0	0.000	47.0	0.000	67.0	0.000	87.0	0.000
8.0	0.000	28.0	0.000	48.0	0.000	68.0	0.000	88.0	0.000
9.0	0.000	29.0	0.000	49.0	0.000	69.0	0.000	89.0	0.000
								90.0	0.000

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MECHANICALS

Proposal No.	C-70311	
Date	23-Feb-17	
Call Letters	WGIQ	30
Frequency	569 MHz	
Antenna Type	TFU-29JSC/VP-R	P310BNT

Preliminary Specifications

Side Mounted

Mechanical Specification without ice TIA/EIA-222-F

Basic Wind Speed	75 m/h (120.7 km/h)
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Mechanical Specifications

Height	H2	55.6 ft (16.9m)
Height of Center of Radiation	H3	27.8 ft (8.5m)
Force Coeff. x Projected Area	CaAc	115.7 ft ² (10.7m ²)
Weight	W	1400 lb (0.6t)

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

Prepared by: KLP

Date: 23-Feb-17

ME:

EE:

Date: 23-Feb-17

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Summary

Proposal No.	C-70311	
Date	23-Feb-17	
Call Letters	WGIQ	30 DTV
Frequency	569 MHz	
Antenna Type	TFU-29JSC/VP-R P310BN1	

Antenna

	Hpol	
ERP:	710.0 kW	(28.51 dBk)
Peak Gain*	77.93	(18.92 dB)

Antenna Input Power	9.1 kW	(9.60 dBk)
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Transmission Line

Type	Rigid Digiline	Attenuation	(0.89 dB)
Size	Size 6-1/8"	Efficiency	81.5%
Impedance	75 Ohm		
Length	764 ft	232.9 m	

Transmitter Output

11.2 kW	(10.48 dBk)
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Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole.

**Antenna Gain includes feed system losses

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