Antenna Model: **TFU-22ETT/VP-R S200**

Proposal Number:	**C-71740-2**
Date:	**31-Oct-22**
Customer:	**Louisiana, PTV**
Location:	**Louisiana, LA**

Electrical Specifications

Polarization:	**Elliptical**		
Azimuth Pattern:	**Directional**		
Antenna Input:	**4-1/16"**	**50 Ohm**	**EIA/DCA**
VSWR:	Channel	**1.08 : 1**	
Bandwidth:	**MHz**		
Rated Input Power:	**37 kW**	**(15.68 dBk)**	**Maximum Average Power**

Mechanical Specifications

Mounting:	**Top Mounted**				
Environmental Protection:	**Full Radome**				
Height:	**46.7 ft (14.2m)**	less Lightning Protector	**50.7 ft (15.5m)**	with Lightning Protector	
Weight:	**6700 lb (3t)**				
Effective Projected Area:	**49.4 ft² (4.6m²)**	**TIA-222-G**	Basic Wind Speed:	**105 m/h (169 km/h)**	

Channel Specifications

Call	CH	Freq	Hpol ERP	Vpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak Main Lobe Vpol Gain	Peak at Horizontal Hpol Gain	Peak at Horizontal Vpol Gain
WLPB	25	539 MHz	600 kW (27.78 dBk)	180 kW (22.55 dBk)	27.6 kW (14.41 dBk)	32.91 (15.17dB)	9.87 (9.94dB)	19.77 (12.96dB)	5.93 (7.73dB)

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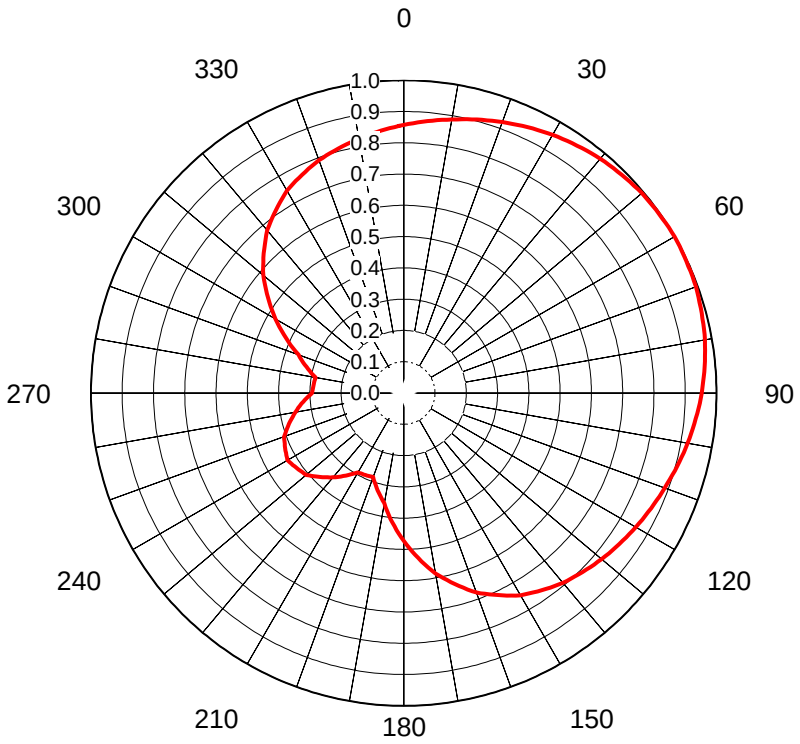
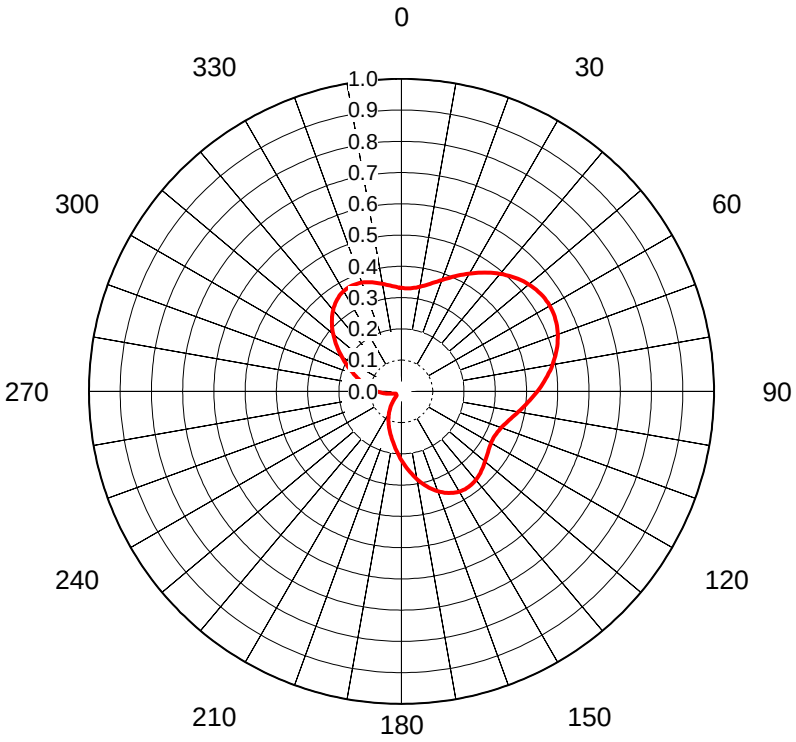


AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	**C-71740-2**
Date	**31-Oct-22**
Call Letters	**WLPB**
Channel	**25**
Frequency	**539 MHz**
Antenna Type	**TFU-22ETT/VP-R S200**
Gain	**1.94 (2.87dB)**
	Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.857	36	0.968	72	0.991	108	0.895	144	0.774	180	0.473	216	0.328	252	0.396	288	0.344	324	0.706
1	0.860	37	0.970	73	0.989	109	0.891	145	0.770	181	0.461	217	0.334	253	0.391	289	0.351	325	0.713
2	0.863	38	0.973	74	0.988	110	0.888	146	0.765	182	0.450	218	0.340	254	0.385	290	0.358	326	0.720
3	0.866	39	0.975	75	0.986	111	0.885	147	0.761	183	0.438	219	0.346	255	0.380	291	0.370	327	0.727
4	0.869	40	0.978	76	0.984	112	0.882	148	0.756	184	0.427	220	0.352	256	0.374	292	0.381	328	0.733
5	0.873	41	0.980	77	0.983	113	0.879	149	0.752	185	0.415	221	0.357	257	0.368	293	0.393	329	0.740
6	0.876	42	0.981	78	0.981	114	0.876	150	0.747	186	0.404	222	0.363	258	0.363	294	0.404	330	0.747
7	0.879	43	0.983	79	0.980	115	0.873	151	0.740	187	0.393	223	0.368	259	0.357	295	0.415	331	0.752
8	0.882	44	0.984	80	0.978	116	0.869	152	0.733	188	0.381	224	0.374	260	0.352	296	0.427	332	0.756
9	0.885	45	0.986	81	0.975	117	0.866	153	0.727	189	0.370	225	0.380	261	0.346	297	0.438	333	0.761
10	0.888	46	0.988	82	0.973	118	0.863	154	0.720	190	0.358	226	0.385	262	0.340	298	0.450	334	0.765
11	0.891	47	0.989	83	0.970	119	0.860	155	0.713	191	0.351	227	0.391	263	0.334	299	0.461	335	0.770
12	0.895	48	0.991	84	0.968	120	0.857	156	0.706	192	0.344	228	0.396	264	0.328	300	0.473	336	0.774
13	0.898	49	0.992	85	0.965	121	0.854	157	0.699	193	0.336	229	0.401	265	0.322	301	0.484	337	0.779
14	0.902	50	0.994	86	0.963	122	0.851	158	0.693	194	0.329	230	0.407	266	0.317	302	0.496	338	0.783
15	0.905	51	0.995	87	0.961	123	0.848	159	0.686	195	0.322	231	0.409	267	0.311	303	0.507	339	0.788
16	0.908	52	0.995	88	0.958	124	0.845	160	0.679	196	0.315	232	0.411	268	0.305	304	0.518	340	0.792
17	0.912	53	0.996	89	0.956	125	0.841	161	0.670	197	0.308	233	0.414	269	0.299	305	0.530	341	0.795
18	0.915	54	0.996	90	0.953	126	0.838	162	0.660	198	0.300	234	0.416	270	0.293	306	0.541	342	0.799
19	0.919	55	0.997	91	0.950	127	0.835	163	0.651	199	0.293	235	0.418	271	0.292	307	0.552	343	0.802
20	0.922	56	0.998	92	0.947	128	0.832	164	0.642	200	0.286	236	0.420	272	0.292	308	0.563	344	0.806
21	0.925	57	0.998	93	0.944	129	0.829	165	0.632	201	0.287	237	0.422	273	0.291	309	0.575	345	0.809
22	0.928	58	0.999	94	0.941	130	0.826	166	0.623	202	0.287	238	0.425	274	0.290	310	0.586	346	0.812
23	0.931	59	0.999	95	0.938	131	0.823	167	0.614	203	0.288	239	0.427	275	0.289	311	0.595	347	0.816
24	0.934	60	1.000	96	0.934	132	0.819	168	0.605	204	0.289	240	0.429	276	0.289	312	0.605	348	0.819
25	0.938	61	0.999	97	0.931	133	0.816	169	0.595	205	0.289	241	0.427	277	0.288	313	0.614	349	0.823
26	0.941	62	0.999	98	0.928	134	0.812	170	0.586	206	0.290	242	0.425	278	0.287	314	0.623	350	0.826
27	0.944	63	0.998	99	0.925	135	0.809	171	0.575	207	0.291	243	0.422	279	0.287	315	0.632	351	0.829
28	0.947	64	0.998	100	0.922	136	0.806	172	0.563	208	0.292	244	0.420	280	0.286	316	0.642	352	0.832
29	0.950	65	0.997	101	0.919	137	0.802	173	0.552	209	0.292	245	0.418	281	0.293	317	0.651	353	0.835
30	0.953	66	0.996	102	0.915	138	0.799	174	0.541	210	0.293	246	0.416	282	0.300	318	0.660	354	0.838
31	0.956	67	0.996	103	0.912	139	0.795	175	0.530	211	0.299	247	0.414	283	0.308	319	0.670	355	0.841
32	0.958	68	0.995	104	0.908	140	0.792	176	0.518	212	0.305	248	0.411	284	0.315	320	0.679	356	0.845
33	0.961	69	0.995	105	0.905	141	0.788	177	0.507	213	0.311	249	0.409	285	0.322	321	0.686	357	0.848
34	0.963	70	0.994	106	0.902	142	0.783	178	0.496	214	0.317	250	0.407	286	0.329	322	0.693	358	0.851
35	0.965	71	0.992	107	0.898	143	0.779	179	0.484	215	0.322	251	0.401	287	0.336	323	0.699	359	0.854



AZIMUTH PATTERN
Vertical Polarization

Proposal No.	**C-71740-2**
Date	**31-Oct-22**
Call Letters	**WLPB**
Channel	**25**
Frequency	**539 MHz**
Antenna Type	**TFU-22ETT/VP-R S200**
Gain	**2.81 (4.49dB)**
	Calculated

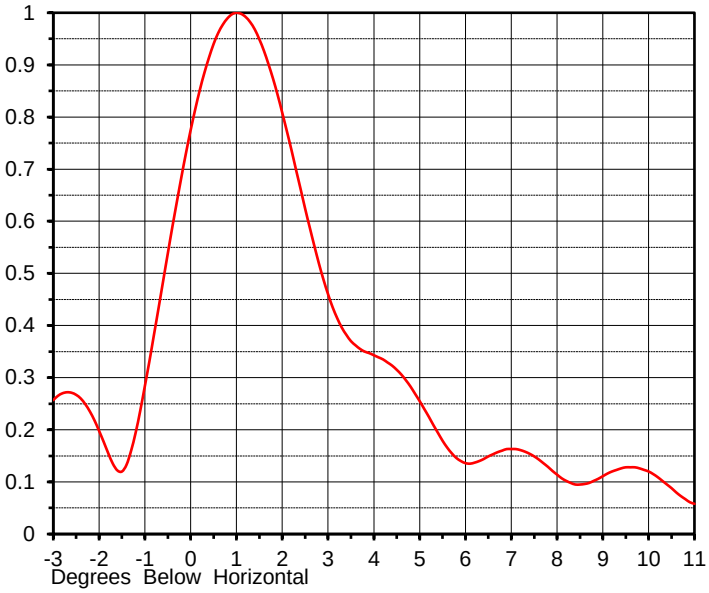
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.331	36	0.469	72	0.526	108	0.346	144	0.373	180	0.220	216	0.057	252	0.023	288	0.152	324	0.356
1	0.331	37	0.475	73	0.522	109	0.343	145	0.374	181	0.214	217	0.053	253	0.024	289	0.157	325	0.359
2	0.330	38	0.480	74	0.518	110	0.340	146	0.374	182	0.207	218	0.050	254	0.026	290	0.162	326	0.362
3	0.330	39	0.486	75	0.514	111	0.337	147	0.373	183	0.201	219	0.046	255	0.028	291	0.167	327	0.364
4	0.331	40	0.491	76	0.510	112	0.335	148	0.372	184	0.195	220	0.043	256	0.031	292	0.173	328	0.367
5	0.331	41	0.496	77	0.505	113	0.334	149	0.371	185	0.189	221	0.040	257	0.033	293	0.178	329	0.368
6	0.332	42	0.501	78	0.501	114	0.332	150	0.370	186	0.184	222	0.036	258	0.036	294	0.184	330	0.370
7	0.334	43	0.505	79	0.496	115	0.331	151	0.368	187	0.178	223	0.033	259	0.040	295	0.189	331	0.371
8	0.335	44	0.510	80	0.491	116	0.331	152	0.367	188	0.173	224	0.031	260	0.043	296	0.195	332	0.372
9	0.337	45	0.514	81	0.486	117	0.330	153	0.364	189	0.167	225	0.028	261	0.046	297	0.201	333	0.373
10	0.340	46	0.518	82	0.480	118	0.330	154	0.362	190	0.162	226	0.026	262	0.050	298	0.207	334	0.374
11	0.343	47	0.522	83	0.475	119	0.331	155	0.359	191	0.157	227	0.024	263	0.053	299	0.214	335	0.374
12	0.346	48	0.526	84	0.469	120	0.331	156	0.356	192	0.152	228	0.023	264	0.057	300	0.220	336	0.373
13	0.349	49	0.529	85	0.464	121	0.332	157	0.352	193	0.148	229	0.021	265	0.061	301	0.226	337	0.373
14	0.353	50	0.532	86	0.458	122	0.333	158	0.348	194	0.143	230	0.020	266	0.064	302	0.233	338	0.372
15	0.356	51	0.535	87	0.452	123	0.335	159	0.344	195	0.139	231	0.020	267	0.068	303	0.239	339	0.371
16	0.361	52	0.538	88	0.447	124	0.336	160	0.340	196	0.134	232	0.019	268	0.072	304	0.246	340	0.370
17	0.365	53	0.540	89	0.441	125	0.338	161	0.335	197	0.130	233	0.019	269	0.076	305	0.253	341	0.369
18	0.370	54	0.542	90	0.435	126	0.340	162	0.331	198	0.126	234	0.019	270	0.080	306	0.259	342	0.367
19	0.374	55	0.544	91	0.429	127	0.342	163	0.326	199	0.122	235	0.020	271	0.083	307	0.266	343	0.365
20	0.379	56	0.545	92	0.423	128	0.345	164	0.320	200	0.118	236	0.020	272	0.087	308	0.272	344	0.363
21	0.384	57	0.546	93	0.418	129	0.347	165	0.315	201	0.114	237	0.020	273	0.091	309	0.279	345	0.361
22	0.390	58	0.547	94	0.412	130	0.349	166	0.309	202	0.110	238	0.020	274	0.095	310	0.285	346	0.359
23	0.395	59	0.548	95	0.406	131	0.352	167	0.303	203	0.106	239	0.020	275	0.099	311	0.291	347	0.357
24	0.401	60	0.548	96	0.401	132	0.354	168	0.297	204	0.102	240	0.020	276	0.102	312	0.297	348	0.354
25	0.406	61	0.548	97	0.395	133	0.357	169	0.291	205	0.099	241	0.020	277	0.106	313	0.303	349	0.352
26	0.412	62	0.547	98	0.390	134	0.359	170	0.285	206	0.095	242	0.020	278	0.110	314	0.309	350	0.349
27	0.418	63	0.546	99	0.384	135	0.361	171	0.279	207	0.091	243	0.020	279	0.114	315	0.315	351	0.347
28	0.423	64	0.545	100	0.379	136	0.363	172	0.272	208	0.087	244	0.020	280	0.118	316	0.320	352	0.345
29	0.429	65	0.544	101	0.374	137	0.365	173	0.266	209	0.083	245	0.020	281	0.122	317	0.326	353	0.342
30	0.435	66	0.542	102	0.370	138	0.367	174	0.259	210	0.080	246	0.019	282	0.126	318	0.331	354	0.340
31	0.441	67	0.540	103	0.365	139	0.369	175	0.253	211	0.076	247	0.019	283	0.130	319	0.335	355	0.338
32	0.447	68	0.538	104	0.361	140	0.370	176	0.246	212	0.072	248	0.019	284	0.134	320	0.340	356	0.336
33	0.452	69	0.535	105	0.356	141	0.371	177	0.239	213	0.068	249	0.020	285	0.139	321	0.344	357	0.335
34	0.458	70	0.532	106	0.353	142	0.372	178	0.233	214	0.064	250	0.020	286	0.143	322	0.348	358	0.333
35	0.464	71	0.529	107	0.349	143	0.373	179	0.226	215	0.061	251	0.021	287	0.148	323	0.352	359	0.332

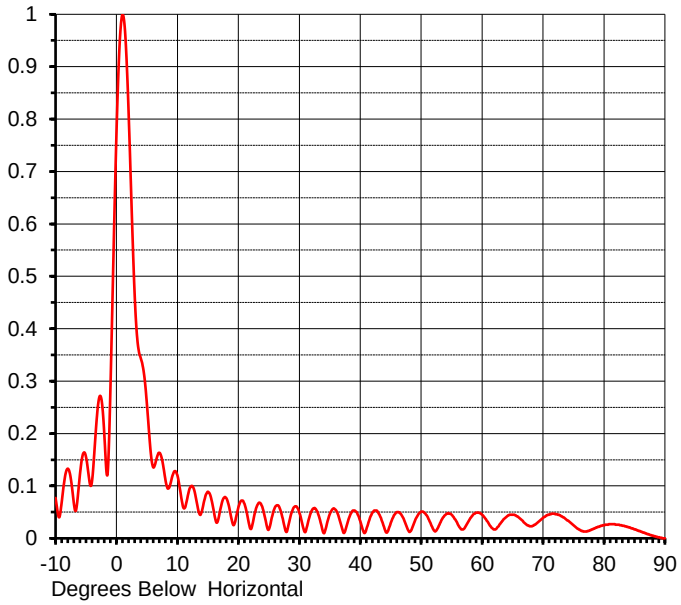
Dielectric®

ELEVATION PATTERN

Proposal No.	**C-71740-2**
Date	**31-Oct-22**
Call Letters	**WLPB**
Channel	**25**
Frequency	**539 MHz**
Antenna Type	**TFU-22ETT/VP-R S200**

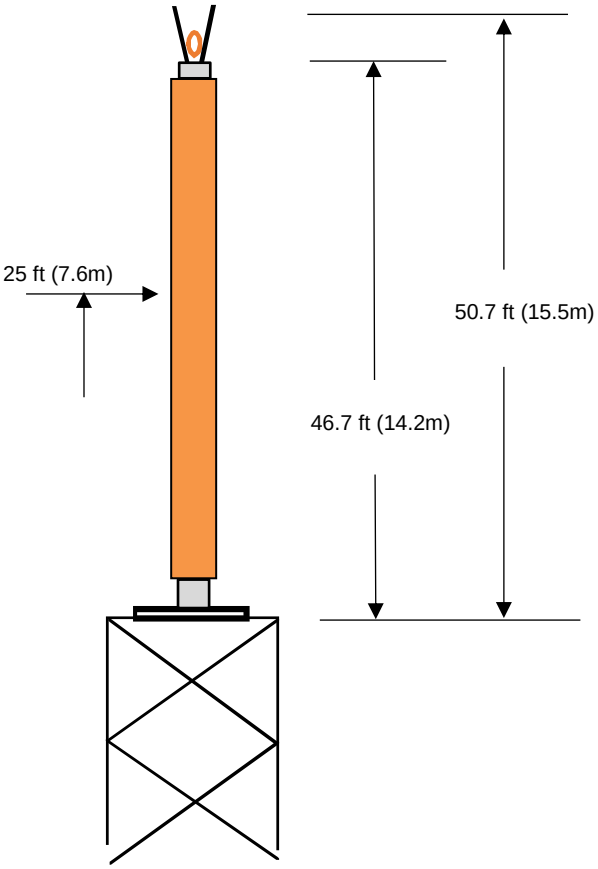
RMS Directivity at Main Lobe	**20.7 (13.16 dB)**	Beam Tilt	**1.00 deg**
RMS Directivity at Horizontal	**12.4 (10.93 dB)**	Pattern Number	**22E207100**
	Calculated		





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.077	10.0	0.120	30.0	0.049	50.0	0.051	70.0	0.039
-9.0	0.068	11.0	0.058	31.0	0.012	51.0	0.042	71.0	0.045
-8.0	0.133	12.0	0.095	32.0	0.052	52.0	0.017	72.0	0.046
-7.0	0.067	13.0	0.079	33.0	0.050	53.0	0.026	73.0	0.042
-6.0	0.122	14.0	0.051	34.0	0.010	54.0	0.045	74.0	0.034
-5.0	0.155	15.0	0.089	35.0	0.046	55.0	0.045	75.0	0.025
-4.0	0.111	16.0	0.050	36.0	0.054	56.0	0.027	76.0	0.016
-3.0	0.257	17.0	0.053	37.0	0.020	57.0	0.018	77.0	0.013
-2.0	0.198	18.0	0.077	38.0	0.033	58.0	0.037	78.0	0.017
-1.0	0.284	19.0	0.031	39.0	0.053	59.0	0.049	79.0	0.022
0.0	0.775	20.0	0.059	40.0	0.033	60.0	0.045	80.0	0.025
1.0	1.000	21.0	0.066	41.0	0.017	61.0	0.030	81.0	0.027
2.0	0.808	22.0	0.018	42.0	0.049	62.0	0.017	82.0	0.026
3.0	0.460	23.0	0.060	43.0	0.048	63.0	0.028	83.0	0.024
4.0	0.343	24.0	0.057	44.0	0.018	64.0	0.041	84.0	0.021
5.0	0.255	25.0	0.017	45.0	0.029	65.0	0.045	85.0	0.017
6.0	0.136	26.0	0.059	46.0	0.050	66.0	0.040	86.0	0.013
7.0	0.163	27.0	0.050	47.0	0.040	67.0	0.029	87.0	0.009
8.0	0.114	28.0	0.014	48.0	0.013	68.0	0.023	88.0	0.005
9.0	0.111	29.0	0.057	49.0	0.034	69.0	0.029	89.0	0.002
								90.0	0.000

MECHANICAL SPECIFICATIONS



Proposal No.	**C-71740-2**
Date	**31-Oct-22**
Call Letters	**WLPB**
Channel	**25**
Frequency	**539 MHz**
Antenna Type	**TFU-22ETT/VP-R S200**

Preliminary Specifications

Top Mounted

With ice TIA-222-G

Basic Wind Speed	105 m/h (169 km/h)
Structure Class	II
Exposure Category	C
Topography Category	1
Design Ice	0.5 in t_{iz} = 1.40 in
Wind Speed w/Ice	30 m/h (48.3 km/h)

Mechanical Specifications		**without ice**	**with ice**
Height with Lightning Protector	H4	50.7 ft (15.5m)	
Height less Lightning Protector	H2	46.7 ft (14.2m)	
Height of Center of Radiation	H3	23.35 ft (7.1m)	
Effective Projected Area	$(EPA)_S$	49.4 ft² (4.6m²)	120.2 ft² (11.2m²)
Moment Arm	D1	25 ft (7.6m)	25.7 ft (7.8m)
Weight	W	6700 lb (3t)	8700 lb (3.9t)

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

Prepared by:	CAB	**Date:**	12-Jul-21	**ME:**	**EE:**
Rev. No.2 by:	CAB	**Date:**	31-Oct-22		

Summary

Proposal No.	**C-71740-2**
Date	**31-Oct-22**
Call Letters	**WLPB**
Channel	**25**
Frequency	**539 MHz**
Antenna Type	**TFU-22ETT/VP-R S200**

Antenna

	Hpol		Vpol	
ERP:	**600 kW**	**(27.78 dBk)**	**180 kW**	**(22.55 dBk)**
Peak Gain*	32.91	(15.17 dB)	9.87	(9.94 dB)

Antenna Input Power

18.2 kW (12.61 dBk)

Transmission Line

Type:	**Rigid**	Attenuation:	**(1.80 dB)**
Size:	**4-1/16"**	Efficiency:	**66.1%**
Impedance:	**50 Ohm**		
Length:	**1150 ft**	**350.5 m**	

Transmitter Output

27.6 kW (14.41 dBk)

Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses