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WNJS AUXILIARY ANTENNA

DIRECTIONAL ANTENNA PATTERN DATA

The azimuth and elevation pattern tabulation of the proposed directional antenna, a Dielectric model TFU-16DSB-B, is included in this exhibit. The manufacturer provided an azimuth pattern with the major lobe oriented at 270 degrees rather than the standard 0 degree reference. A tabulation of the pattern with the major lobe oriented at 0 degrees is included below.

Azimuth	Relative Field	Azimuth	Relative Field
0	1.000	180	0.645
10	0.996	190	0.641
20	0.981	200	0.631
30	0.955	210	0.613
40	0.920	220	0.592
50	0.876	230	0.579
60	0.826	240	0.570
70	0.771	250	0.579
80	0.714	260	0.610
90	0.661	270	0.650
100	0.615	280	0.699
110	0.583	290	0.759
120	0.569	300	0.817
130	0.571	310	0.869
140	0.586	320	0.914
150	0.607	330	0.951
160	0.627	340	0.975
170	0.640	350	0.993

Maxima: 1.000 at 0 degrees

Minima: 0.568 at 121 through 126 degrees (124 degrees minima center)

Per the data provided in the instant application, the antenna will be mounted on the antenna structure with the major lobe oriented at 214 degrees, i.e. the tabulated data above should likewise be rotated 214 degrees.

Dielectric®

Antenna Model: **TFU-16DSB-B**

Proposal Number:	**C-70754**
Date:	**10-Nov-20**
Customer:	**NJ PBS**
Location:	**Camden, NJ**

Electrical Specifications

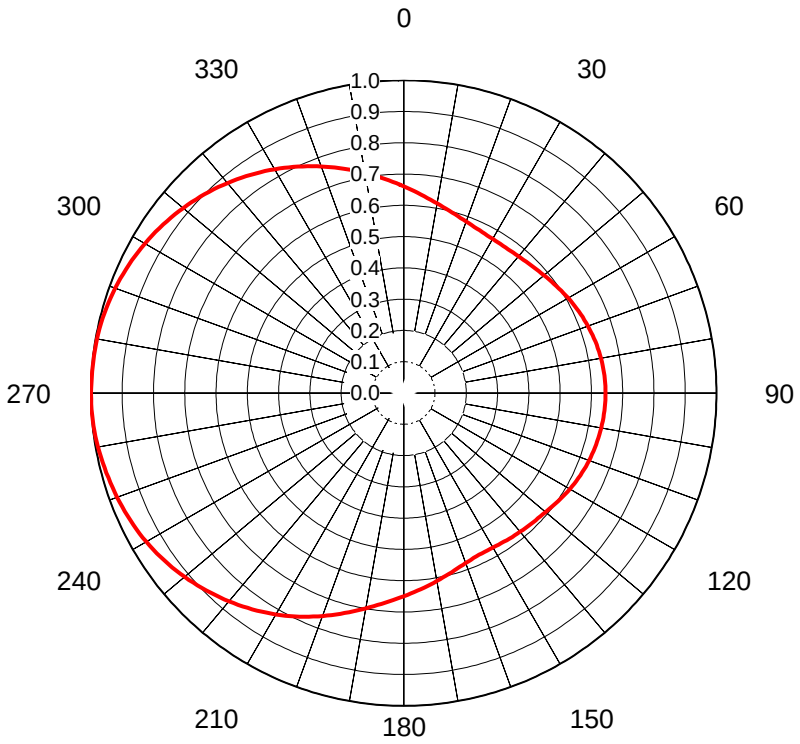
Polarization:	**Horizontal**		
Azimuth Pattern:	**Omni**		
Antenna Input:	**3-1/8"**	**50 Ohm**	**EIA/DCA**
VSWR:	Channel	**1.08 : 1**	
Bandwidth:	**6 MHz**		
Rated Input Power:	**12 kW**	**(10.79 dBk)**	**Maximum Average Power**

Mechanical Specifications

Mounting:	**Side Mounted**			
Environmental Protection:	**Slot Cover**			
Height:	**34.1 ft (10.4m)**			
Weight:	**475 lb (0.2t)**	Excludes Mounts		
Effective Projected Area:	**51.49 ft² (4.8m²)**	**TIA-222-G**	Basic Wind Speed:	**90 m/h (144.8 km/h)**

Channel Specifications

Call	CH	Freq	Hpol ERP	TPO	RMS Main Lobe Hpol Gain	RMS at Horizontal Hpol Gain
WNJS	23	527 MHz			16.00 (12.04dB)	11.75 (10.70dB)



AZIMUTH PATTERN
Horizontal Polarization

In Free Space

Proposal No.	**C-70754**
Date	**10-Nov-20**
Call Letters	**WNJS**
Channel	**23**
Frequency	**527 MHz**
Antenna Type	**TFU-16DSB-B**
Gain	**1.76 (2.45dB)**
	Calculated
Circularity	**+/- 3.0 dB**

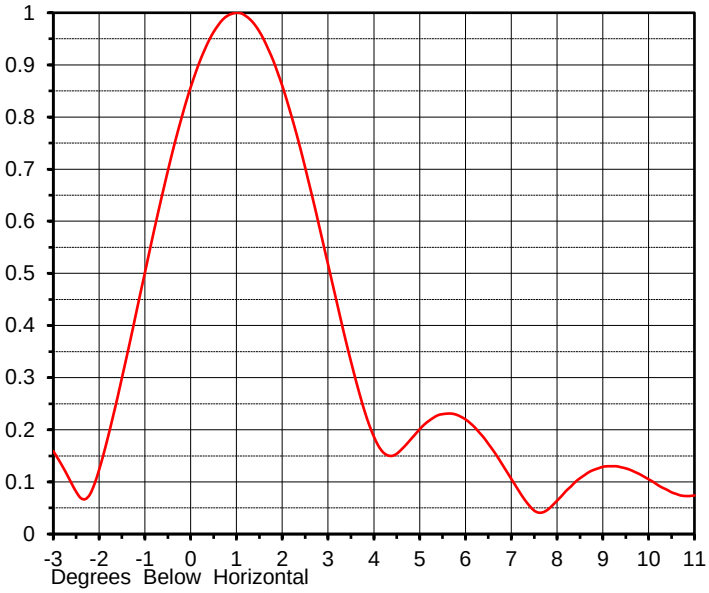
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.661	36	0.568	72	0.630	108	0.633	144	0.575	180	0.650	216	0.849	252	0.979	288	0.985	324	0.857
1	0.656	37	0.569	73	0.632	109	0.632	145	0.574	181	0.654	217	0.854	253	0.980	289	0.983	325	0.852
2	0.651	38	0.569	74	0.633	110	0.631	146	0.573	182	0.659	218	0.859	254	0.982	290	0.981	326	0.847
3	0.646	39	0.570	75	0.634	111	0.629	147	0.572	183	0.663	219	0.864	255	0.984	291	0.979	327	0.842
4	0.641	40	0.571	76	0.636	112	0.628	148	0.572	184	0.668	220	0.869	256	0.986	292	0.977	328	0.836
5	0.637	41	0.572	77	0.637	113	0.626	149	0.571	185	0.673	221	0.874	257	0.988	293	0.975	329	0.831
6	0.632	42	0.573	78	0.638	114	0.625	150	0.570	186	0.678	222	0.879	258	0.990	294	0.972	330	0.826
7	0.628	43	0.574	79	0.639	115	0.623	151	0.570	187	0.683	223	0.883	259	0.991	295	0.970	331	0.820
8	0.624	44	0.575	80	0.640	116	0.621	152	0.570	188	0.688	224	0.888	260	0.993	296	0.967	332	0.815
9	0.619	45	0.577	81	0.641	117	0.619	153	0.570	189	0.694	225	0.893	261	0.994	297	0.964	333	0.810
10	0.615	46	0.578	82	0.642	118	0.618	154	0.570	190	0.699	226	0.897	262	0.995	298	0.961	334	0.804
11	0.612	47	0.580	83	0.643	119	0.616	155	0.571	191	0.705	227	0.902	263	0.996	299	0.958	335	0.799
12	0.608	48	0.582	84	0.643	120	0.613	156	0.572	192	0.711	228	0.906	264	0.997	300	0.955	336	0.793
13	0.604	49	0.584	85	0.644	121	0.611	157	0.573	193	0.716	229	0.910	265	0.998	301	0.952	337	0.787
14	0.601	50	0.586	86	0.644	122	0.609	158	0.575	194	0.722	230	0.914	266	0.999	302	0.949	338	0.782
15	0.597	51	0.588	87	0.645	123	0.607	159	0.577	195	0.728	231	0.919	267	0.999	303	0.946	339	0.776
16	0.594	52	0.590	88	0.645	124	0.605	160	0.579	196	0.734	232	0.923	268	0.999	304	0.942	340	0.771
17	0.591	53	0.592	89	0.645	125	0.602	161	0.581	197	0.740	233	0.927	269	1.000	305	0.939	341	0.765
18	0.589	54	0.594	90	0.645	126	0.600	162	0.584	198	0.747	234	0.930	270	1.000	306	0.935	342	0.759
19	0.586	55	0.596	91	0.645	127	0.598	163	0.587	199	0.753	235	0.934	271	1.000	307	0.932	343	0.754
20	0.583	56	0.598	92	0.645	128	0.596	164	0.590	200	0.759	236	0.938	272	0.999	308	0.928	344	0.748
21	0.581	57	0.600	93	0.645	129	0.594	165	0.593	201	0.765	237	0.941	273	0.999	309	0.924	345	0.742
22	0.579	58	0.603	94	0.645	130	0.592	166	0.596	202	0.771	238	0.944	274	0.999	310	0.920	346	0.737
23	0.577	59	0.605	95	0.644	131	0.590	167	0.600	203	0.777	239	0.948	275	0.998	311	0.916	347	0.731
24	0.575	60	0.607	96	0.644	132	0.589	168	0.603	204	0.783	240	0.951	276	0.998	312	0.912	348	0.726
25	0.574	61	0.609	97	0.643	133	0.587	169	0.607	205	0.789	241	0.954	277	0.998	313	0.908	349	0.720
26	0.573	62	0.611	98	0.643	134	0.586	170	0.610	206	0.795	242	0.956	278	0.997	314	0.904	350	0.714
27	0.571	63	0.614	99	0.642	135	0.584	171	0.614	207	0.801	243	0.959	279	0.996	315	0.899	351	0.709
28	0.570	64	0.616	100	0.641	136	0.583	172	0.618	208	0.806	244	0.962	280	0.996	316	0.895	352	0.703
29	0.569	65	0.618	101	0.640	137	0.582	173	0.622	209	0.812	245	0.964	281	0.995	317	0.890	353	0.698
30	0.569	66	0.619	102	0.640	138	0.581	174	0.625	210	0.817	246	0.966	282	0.994	318	0.886	354	0.692
31	0.568	67	0.621	103	0.639	139	0.580	175	0.629	211	0.823	247	0.968	283	0.993	319	0.881	355	0.687
32	0.568	68	0.623	104	0.638	140	0.579	176	0.633	212	0.828	248	0.971	284	0.992	320	0.876	356	0.682
33	0.568	69	0.625	105	0.637	141	0.578	177	0.637	213	0.834	249	0.973	285	0.990	321	0.872	357	0.676
34	0.568	70	0.627	106	0.636	142	0.577	178	0.641	214	0.839	250	0.975	286	0.989	322	0.867	358	0.671
35	0.568	71	0.628	107	0.634	143	0.576	179	0.646	215	0.844	251	0.977	287	0.987	323	0.862	359	0.666

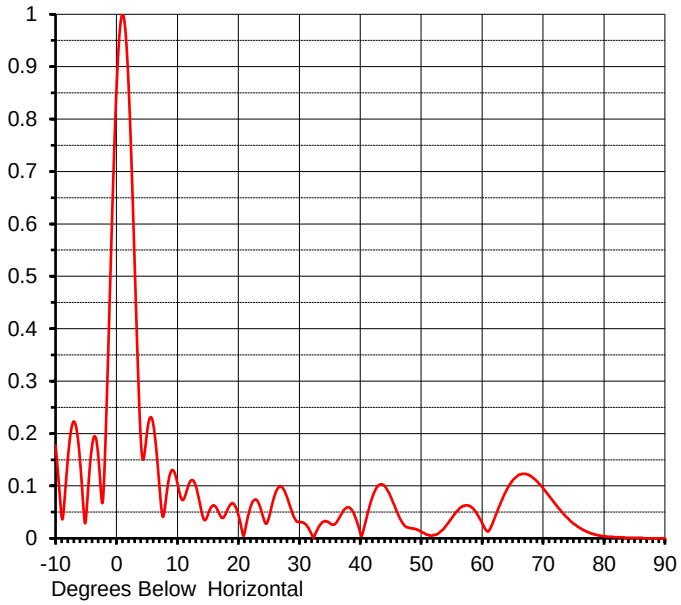
Dielectric®

ELEVATION PATTERN

Proposal No.	**C-70754**
Date	**10-Nov-20**
Call Letters	**WNJS**
Channel	**23**
Frequency	**527 MHz**
Antenna Type	**TFU-16DSB-B**

RMS Directivity at Main Lobe	**16.0 (12.04 dB)**	Beam Tilt	**1.00 deg**
RMS Directivity at Horizontal	**11.8 (10.72 dB)**	Pattern Number	**100**
	Calculated		





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.177	10.0	0.105	30.0	0.031	50.0	0.013	70.0	0.096
-9.0	0.041	11.0	0.074	31.0	0.027	51.0	0.007	71.0	0.081
-8.0	0.150	12.0	0.106	32.0	0.008	52.0	0.006	72.0	0.066
-7.0	0.223	13.0	0.100	33.0	0.017	53.0	0.011	73.0	0.051
-6.0	0.150	14.0	0.049	34.0	0.032	54.0	0.023	74.0	0.039
-5.0	0.039	15.0	0.045	35.0	0.029	55.0	0.038	75.0	0.028
-4.0	0.177	16.0	0.063	36.0	0.029	56.0	0.053	76.0	0.020
-3.0	0.159	17.0	0.044	37.0	0.048	57.0	0.062	77.0	0.014
-2.0	0.123	18.0	0.049	38.0	0.059	58.0	0.061	78.0	0.009
-1.0	0.501	19.0	0.067	39.0	0.046	59.0	0.050	79.0	0.006
0.0	0.857	20.0	0.045	40.0	0.010	60.0	0.029	80.0	0.004
1.0	1.000	21.0	0.010	41.0	0.037	61.0	0.013	81.0	0.003
2.0	0.860	22.0	0.060	42.0	0.079	62.0	0.037	82.0	0.002
3.0	0.517	23.0	0.073	43.0	0.101	63.0	0.066	83.0	0.002
4.0	0.187	24.0	0.043	44.0	0.100	64.0	0.092	84.0	0.001
5.0	0.201	25.0	0.039	45.0	0.079	65.0	0.110	85.0	0.001
6.0	0.220	26.0	0.083	46.0	0.051	66.0	0.121	86.0	0.001
7.0	0.106	27.0	0.099	47.0	0.028	67.0	0.123	87.0	0.000
8.0	0.064	28.0	0.078	48.0	0.020	68.0	0.119	88.0	0.000
9.0	0.129	29.0	0.044	49.0	0.018	69.0	0.109	89.0	0.000
								90.0	0.000