



UHF Antenna Proposal

ATC-BCSE24C2-U-HP

Elliptical Polarization Cavity Slot Antenna
Side Mount

04/22/2023

REV 04/23/23

Alive Telecom

9850 W 190th

Unit F

Mokena, IL 60448

Office 708 478 6886

FAX 708 478 6892

Contact Dan Barton

Cell 708 275 7173

Email dbarton@alivetele.com



Alive Telecom Cavity Slot E-POL Channel 19-26





Summary

Antenna Specifications

Antenna Type	Cavity Slot
Antenna Model	ATC-BCSE24C2-U-HP

Electrical Specifications

Channel(s)	19
Frequency Range (MHz)	500 - 506
Polarization	Elliptical
Horizontal Azimuth Pattern	C1
Directivity	1.50
dB	1.75
Vertical Azimuth Pattern	V3-Medium Cardioid
Directivity	2.80
dB	3.71
Vertical Component	52 %
Azimuth Peak of Beam	65 °
Elevation Pattern	24
Directivity	24.00
dB	13.80
Electrical Beam Tilt	1.00 °
Antenna Peak Power Gain	
Horizontal Gain Power	25.41
Horizontal Gain Ratio	14.05 dBd
Vertical Gain Power	13.03
Vertical Gain Ratio	11.15 dBd
Line Type	8" 75 Ohm Rigid Line
Line Length	0 ft
Total Line Loss	0.00 dB
Effective Radiated Power (ERP)	1000 kW
ERP Vertical Power	520.00 kW
Transmitter Power Output (TPO)	
TPO Power	38.46 kW
TPO Ratio	15.85 dBk
Input Type	EIA 8-3/16" 75 ohm

Antenna Input Line Length at 0

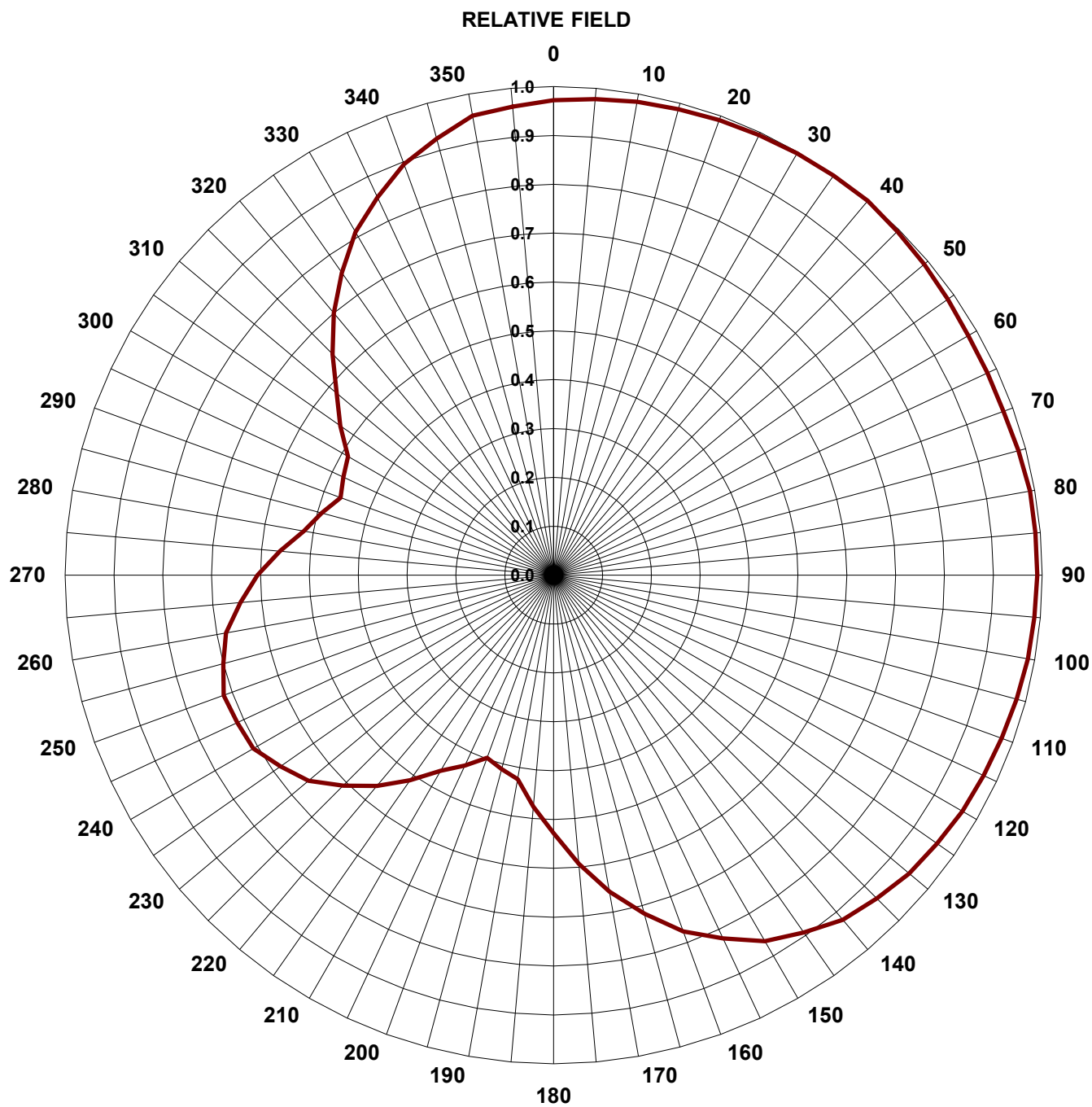
Mechanical Specifications

Mount Type	Side Mount
Length of Antenna	42 ft
Center of Radiation	21.00 ft
Radome Diameter	14.25"
Color	White
Calculated Weight	2650 lbs
Windload (Eff Area)	32.4 SQ FT

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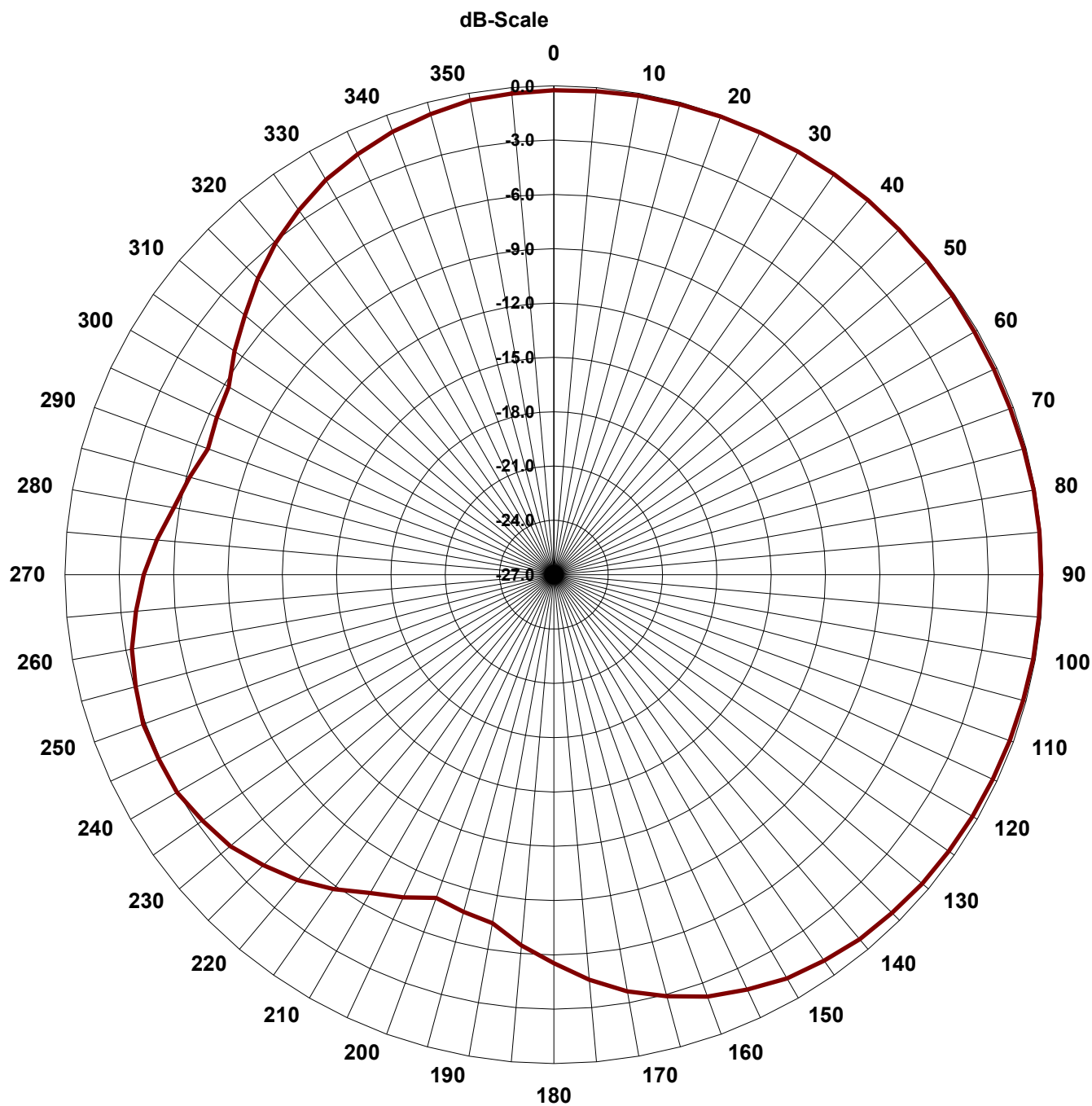
TYPE:	ATC-BCSC2	
	Numeric	dB
Directivity:	1.5	1.76
Polarization:	Horizontal	
Channel:	19	
Location:	Houston	



AZIMUTH PATTERN

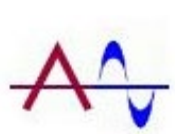


TYPE:	ATC-BCSC2	
	Numeric	dB
Directivity:	1.5	1.76
Polarization:	Horizontal	
Channel:	19	
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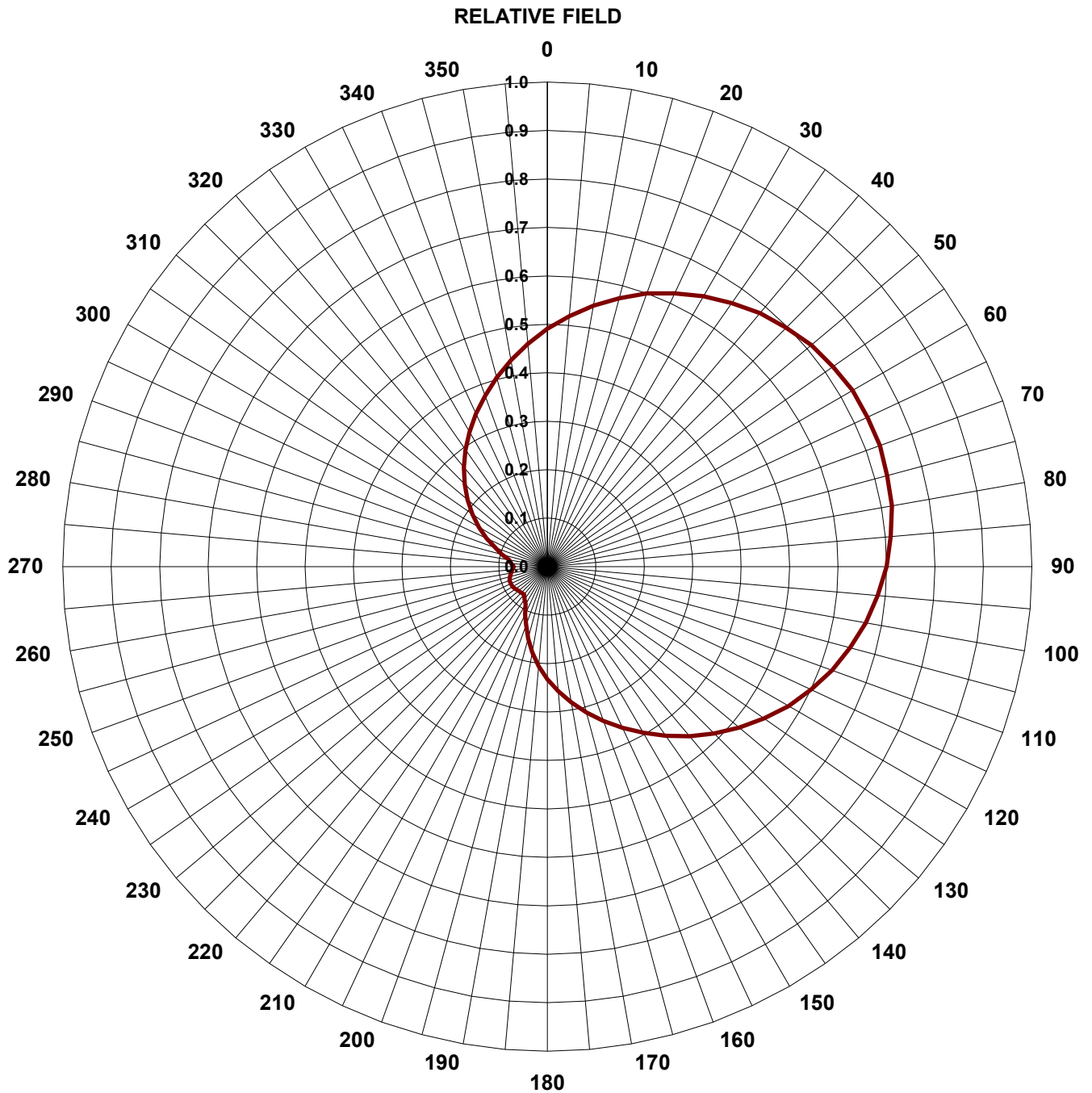


ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.972	-0.25	94	0.989	-0.10	188	0.437	-7.19	282	0.512	-5.81
2	0.972	-0.25	96	0.988	-0.11	190	0.424	-7.45	284	0.498	-6.05
4	0.977	-0.21	98	0.987	-0.12	192	0.421	-7.52	286	0.485	-6.29
6	0.980	-0.18	100	0.986	-0.12	194	0.414	-7.65	288	0.471	-6.54
8	0.981	-0.17	102	0.985	-0.13	196	0.408	-7.79	290	0.464	-6.67
10	0.984	-0.14	104	0.982	-0.16	198	0.401	-7.93	292	0.467	-6.62
12	0.984	-0.14	106	0.980	-0.18	200	0.398	-8.00	294	0.472	-6.52
14	0.987	-0.12	108	0.977	-0.20	202	0.406	-7.83	296	0.478	-6.42
16	0.988	-0.10	110	0.976	-0.21	204	0.422	-7.49	298	0.483	-6.32
18	0.990	-0.09	112	0.975	-0.22	206	0.438	-7.17	300	0.486	-6.27
20	0.991	-0.08	114	0.972	-0.24	208	0.454	-6.86	302	0.498	-6.06
22	0.992	-0.07	116	0.970	-0.27	210	0.462	-6.71	304	0.521	-5.66
24	0.993	-0.06	118	0.967	-0.29	212	0.475	-6.47	306	0.545	-5.28
26	0.995	-0.05	120	0.966	-0.30	214	0.500	-6.02	308	0.568	-4.91
28	0.996	-0.03	122	0.964	-0.32	216	0.525	-5.59	310	0.580	-4.73
30	0.997	-0.03	124	0.960	-0.35	218	0.550	-5.19	312	0.595	-4.51
32	0.997	-0.02	126	0.956	-0.39	220	0.563	-4.99	314	0.625	-4.08
34	0.998	-0.02	128	0.952	-0.43	222	0.575	-4.81	316	0.655	-3.68
36	0.999	-0.01	130	0.950	-0.45	224	0.598	-4.47	318	0.685	-3.29
38	1.000	0.00	132	0.946	-0.48	226	0.621	-4.15	320	0.700	-3.10
40	1.000	0.00	134	0.941	-0.53	228	0.644	-3.83	322	0.714	-2.93
42	0.999	-0.01	136	0.934	-0.59	230	0.655	-3.68	324	0.742	-2.60
44	0.996	-0.03	138	0.928	-0.65	232	0.662	-3.58	326	0.769	-2.28
46	0.994	-0.05	140	0.921	-0.71	234	0.676	-3.41	328	0.797	-1.97
48	0.991	-0.08	142	0.914	-0.78	236	0.689	-3.23	330	0.811	-1.82
50	0.990	-0.09	144	0.900	-0.92	238	0.703	-3.06	332	0.822	-1.71
52	0.989	-0.10	146	0.886	-1.05	240	0.710	-2.97	334	0.843	-1.49
54	0.986	-0.12	148	0.872	-1.19	242	0.711	-2.96	336	0.864	-1.27
56	0.984	-0.14	150	0.865	-1.26	244	0.713	-2.93	338	0.885	-1.07
58	0.981	-0.16	152	0.854	-1.37	246	0.716	-2.91	340	0.895	-0.96
60	0.980	-0.18	154	0.832	-1.60	248	0.718	-2.88	342	0.903	-0.89
62	0.980	-0.18	156	0.809	-1.84	250	0.719	-2.87	344	0.918	-0.75
64	0.980	-0.18	158	0.787	-2.08	252	0.714	-2.92	346	0.933	-0.61
66	0.980	-0.18	160	0.776	-2.20	254	0.705	-3.04	348	0.948	-0.47
68	0.980	-0.18	162	0.761	-2.37	256	0.695	-3.16	350	0.955	-0.40
70	0.980	-0.18	164	0.732	-2.71	258	0.686	-3.28	352	0.957	-0.38
72	0.981	-0.16	166	0.702	-3.07	260	0.681	-3.34	354	0.961	-0.35
74	0.984	-0.14	168	0.673	-3.44	262	0.672	-3.46	356	0.964	-0.32
76	0.986	-0.12	170	0.658	-3.64	264	0.653	-3.70	358	0.968	-0.28
78	0.989	-0.10	172	0.642	-3.85	266	0.634	-3.96	360	0.972	-0.25
80	0.990	-0.09	174	0.609	-4.30	268	0.615	-4.22			
82	0.990	-0.09	176	0.577	-4.78	270	0.606	-4.35			
84	0.990	-0.09	178	0.544	-5.28	272	0.595	-4.51			
86	0.990	-0.09	180	0.528	-5.55	274	0.573	-4.83			
88	0.990	-0.09	182	0.515	-5.76	276	0.552	-5.17			
90	0.990	-0.09	184	0.489	-6.21	278	0.530	-5.52			
92	0.990	-0.09	186	0.463	-6.69	280	0.519	-5.70			

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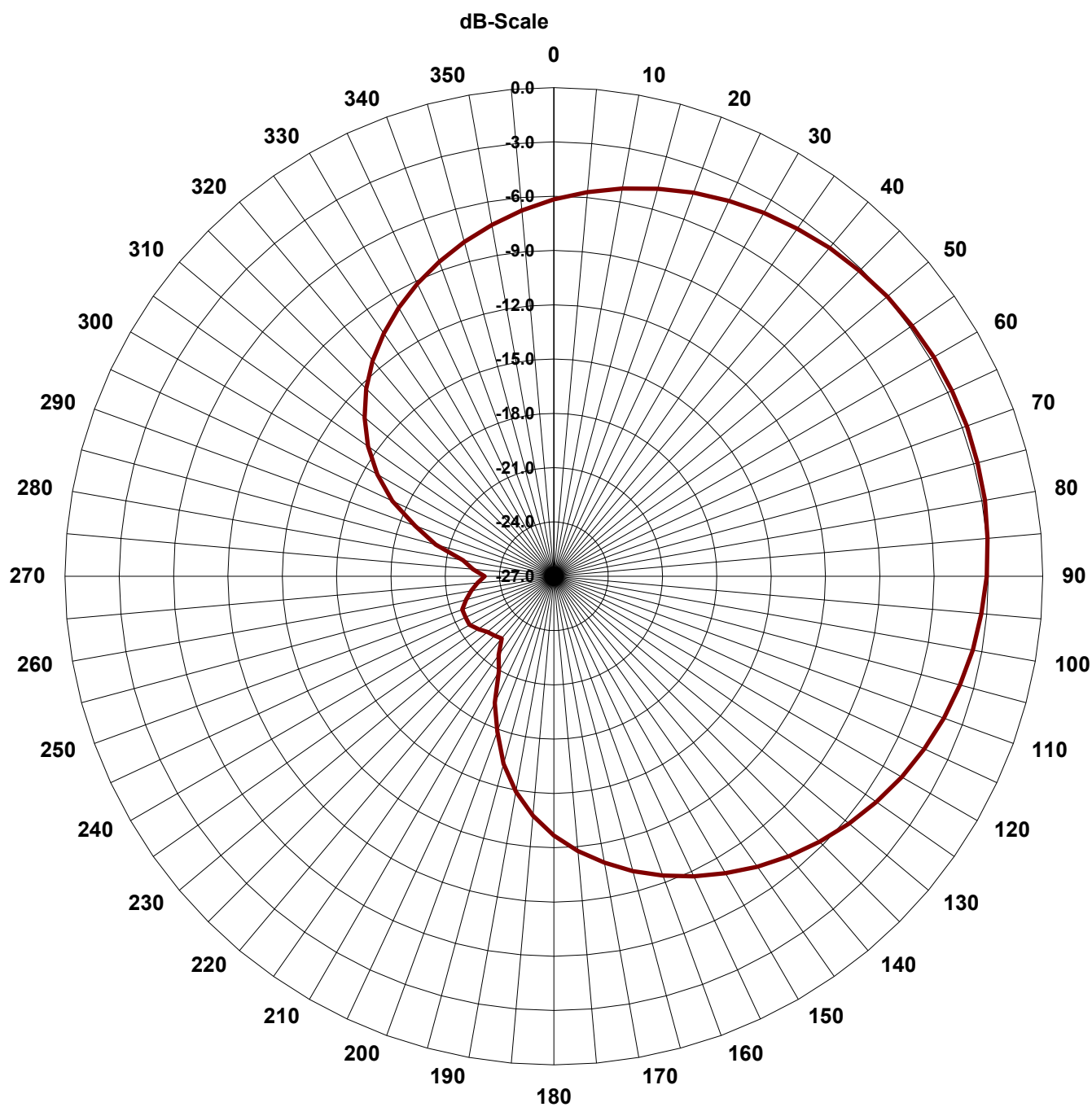
TYPE:	ATC-BCS V C3	
	Numeric	dB
Directivity:	2.7	4.31
Polarization:	Vertical	
Channel:	19	
Location:	Houston	



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TYPE:	ATC-BPHC3	
	Numeric	dB
Directivity:	2.7	4.31
Polarization:	Vertical	
Channel:	19	
Location:	Houston	



ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.491	-6.18	94	0.688	-3.25	188	0.186	-14.60	282	0.084	-21.46
2	0.491	-6.18	96	0.680	-3.35	190	0.180	-14.92	284	0.093	-20.63
4	0.512	-5.82	98	0.672	-3.45	192	0.173	-15.24	286	0.101	-19.87
6	0.526	-5.58	100	0.668	-3.51	194	0.160	-15.91	288	0.110	-19.17
8	0.533	-5.47	102	0.662	-3.58	196	0.147	-16.64	290	0.114	-18.84
10	0.547	-5.24	104	0.652	-3.72	198	0.134	-17.44	292	0.120	-18.39
12	0.547	-5.24	106	0.641	-3.86	200	0.128	-17.87	294	0.133	-17.55
14	0.567	-4.93	108	0.631	-4.00	202	0.123	-18.20	296	0.145	-16.78
16	0.580	-4.73	110	0.626	-4.07	204	0.114	-18.90	298	0.157	-16.08
18	0.593	-4.54	112	0.619	-4.16	206	0.104	-19.66	300	0.163	-15.75
20	0.600	-4.44	114	0.607	-4.34	208	0.095	-20.49	302	0.170	-15.41
22	0.605	-4.36	116	0.594	-4.52	210	0.090	-20.94	304	0.183	-14.77
24	0.617	-4.20	118	0.582	-4.71	212	0.088	-21.12	306	0.196	-14.18
26	0.628	-4.04	120	0.575	-4.80	214	0.084	-21.50	308	0.208	-13.62
28	0.639	-3.89	122	0.568	-4.91	216	0.080	-21.89	310	0.215	-13.36
30	0.645	-3.81	124	0.553	-5.14	218	0.077	-22.31	312	0.222	-13.09
32	0.649	-3.75	126	0.539	-5.37	220	0.075	-22.52	314	0.235	-12.59
34	0.659	-3.62	128	0.524	-5.61	222	0.075	-22.48	316	0.248	-12.11
36	0.668	-3.50	130	0.517	-5.73	224	0.076	-22.40	318	0.261	-11.66
38	0.678	-3.38	132	0.510	-5.85	226	0.077	-22.33	320	0.268	-11.44
40	0.683	-3.32	134	0.499	-6.04	228	0.077	-22.25	322	0.275	-11.23
42	0.686	-3.27	136	0.485	-6.29	230	0.078	-22.21	324	0.288	-10.82
44	0.693	-3.18	138	0.471	-6.54	232	0.078	-22.14	326	0.301	-10.43
46	0.701	-3.09	140	0.457	-6.80	234	0.080	-21.99	328	0.314	-10.05
48	0.708	-3.00	142	0.449	-6.95	236	0.081	-21.84	330	0.321	-9.87
50	0.711	-2.96	144	0.434	-7.25	238	0.082	-21.69	332	0.328	-9.69
52	0.713	-2.93	146	0.419	-7.56	240	0.083	-21.62	334	0.341	-9.34
54	0.717	-2.88	148	0.403	-7.89	242	0.083	-21.62	336	0.355	-9.00
56	0.721	-2.84	150	0.396	-8.05	244	0.083	-21.62	338	0.369	-8.67
58	0.726	-2.79	152	0.389	-8.21	246	0.083	-21.62	340	0.375	-8.51
60	0.728	-2.76	154	0.374	-8.53	248	0.083	-21.62	342	0.383	-8.35
62	0.728	-2.76	156	0.360	-8.87	250	0.083	-21.62	344	0.397	-8.03
64	0.729	-2.75	158	0.346	-9.22	252	0.082	-21.71	346	0.411	-7.72
66	0.729	-2.74	160	0.339	-9.41	254	0.080	-21.89	348	0.425	-7.43
68	0.730	-2.73	162	0.332	-9.58	256	0.079	-22.08	350	0.432	-7.28
70	0.730	-2.73	164	0.318	-9.94	258	0.077	-22.27	352	0.440	-7.14
72	0.729	-2.74	166	0.305	-10.32	260	0.076	-22.37	354	0.454	-6.85
74	0.727	-2.77	168	0.291	-10.72	262	0.075	-22.46	356	0.469	-6.58
76	0.725	-2.79	170	0.284	-10.93	264	0.074	-22.66	358	0.484	-6.31
78	0.723	-2.82	172	0.278	-11.13	266	0.072	-22.86	360	0.491	-6.18
80	0.722	-2.83	174	0.265	-11.54	268	0.070	-23.07			
82	0.719	-2.86	176	0.252	-11.97	270	0.069	-23.18			
84	0.714	-2.93	178	0.239	-12.43	272	0.071	-23.01			
86	0.709	-2.99	180	0.233	-12.67	274	0.073	-22.68			
88	0.703	-3.06	182	0.226	-12.92	276	0.076	-22.37			
90	0.700	-3.09	184	0.213	-13.45	278	0.079	-22.06			
92	0.696	-3.14	186	0.199	-14.01	280	0.080	-21.91			

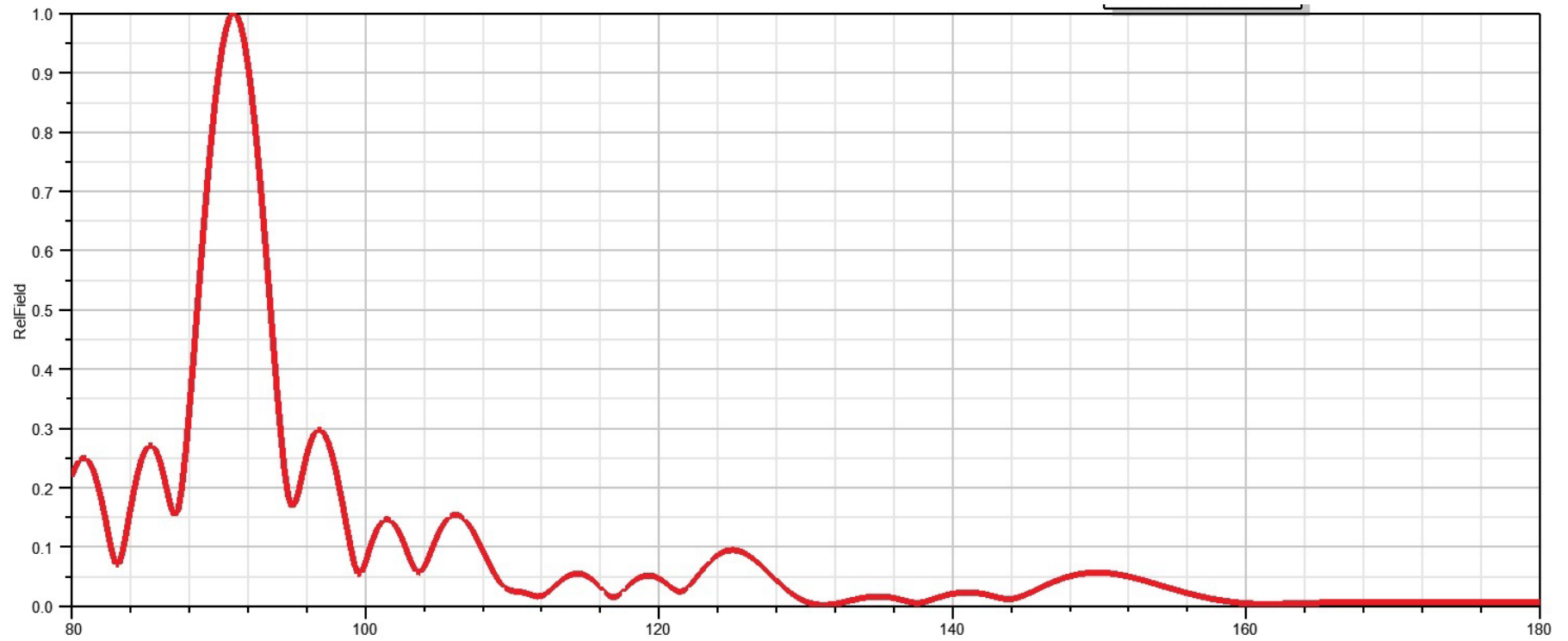


Channel 19 Elevation Pattern

24 Bay

Directivity 24 (13.8 dB)

1.0 Beamtilt



ATC-BCSE24C2-U-HP Channel 19 Elevation Pattern

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.00	0.218	-2.50	0.198	5.00	0.167	12.50	0.114	20.00	0.026	27.50	0.024	35.00	0.095
-9.75	0.234	-2.25	0.256	5.25	0.175	12.75	0.099	20.25	0.025	27.75	0.031	35.25	0.094
-9.50	0.245	-2.00	0.325	5.50	0.198	13.00	0.082	20.50	0.025	28.00	0.037	35.50	0.093
-9.25	0.250	-1.75	0.402	5.75	0.227	13.25	0.068	20.75	0.024	28.25	0.042	35.75	0.091
-9.00	0.249	-1.50	0.482	6.00	0.254	13.50	0.058	21.00	0.022	28.50	0.046	36.00	0.087
-8.75	0.241	-1.25	0.562	6.25	0.275	13.75	0.057	21.25	0.020	28.75	0.049	36.25	0.083
-8.50	0.228	-1.00	0.640	6.50	0.290	14.00	0.065	21.50	0.018	29.00	0.051	36.50	0.079
-8.25	0.208	-0.75	0.714	6.75	0.298	14.25	0.079	21.75	0.017	29.25	0.052	36.75	0.074
-8.00	0.183	-0.50	0.783	7.00	0.297	14.50	0.094	22.00	0.018	29.50	0.052	37.00	0.068
-7.75	0.154	-0.25	0.844	7.25	0.289	14.75	0.110	22.25	0.021	29.75	0.050	37.25	0.062
-7.50	0.122	0.00	0.897	7.50	0.275	15.00	0.124	22.50	0.025	30.00	0.047	37.50	0.056
-7.25	0.092	0.25	0.939	7.75	0.254	15.25	0.135	22.75	0.031	30.25	0.043	37.75	0.050
-7.00	0.071	0.50	0.971	8.00	0.228	15.50	0.145	23.00	0.036	30.50	0.039	38.00	0.044
-6.75	0.072	0.75	0.992	8.25	0.199	15.75	0.151	23.25	0.041	30.75	0.034	38.25	0.038
-6.50	0.095	1.00	1.000	8.50	0.166	16.00	0.154	23.50	0.046	31.00	0.029	38.50	0.033
-6.25	0.128	1.25	0.996	8.75	0.133	16.25	0.155	23.75	0.050	31.25	0.026	38.75	0.027
-6.00	0.163	1.50	0.980	9.00	0.100	16.50	0.152	24.00	0.053	31.50	0.025	39.00	0.022
-5.75	0.195	1.75	0.953	9.25	0.072	16.75	0.147	24.25	0.055	31.75	0.027	39.25	0.018
-5.50	0.224	2.00	0.914	9.50	0.054	17.00	0.140	24.50	0.055	32.00	0.033	39.50	0.014
-5.25	0.247	2.25	0.865	9.75	0.056	17.25	0.130	24.75	0.054	32.25	0.039	39.75	0.011
-5.00	0.263	2.50	0.807	10.00	0.073	17.50	0.119	25.00	0.052	32.50	0.047	40.00	0.008
-4.75	0.271	2.75	0.742	10.25	0.093	17.75	0.107	25.25	0.049	32.75	0.055	40.25	0.006
-4.50	0.271	3.00	0.670	10.50	0.112	18.00	0.094	25.50	0.044	33.00	0.062	40.50	0.004
-4.25	0.263	3.25	0.594	10.75	0.127	18.25	0.081	25.75	0.039	33.25	0.069	40.75	0.003
-4.00	0.246	3.50	0.516	11.00	0.139	18.50	0.069	26.00	0.033	33.50	0.076	41.00	0.003
-3.75	0.223	3.75	0.437	11.25	0.145	18.75	0.057	26.25	0.026	33.75	0.082	41.25	0.002
-3.50	0.195	4.00	0.360	11.50	0.147	19.00	0.047	26.50	0.020	34.00	0.086	41.50	0.003
-3.25	0.168	4.25	0.289	11.75	0.145	19.25	0.038	26.75	0.016	34.25	0.090	41.75	0.003
-3.00	0.153	4.50	0.229	12.00	0.138	19.50	0.032	27.00	0.015	34.50	0.093	42.00	0.004
-2.75	0.162	4.75	0.185	12.25	0.128	19.75	0.028	27.25	0.019	34.75	0.094	42.25	0.005

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
42.50	0.007	50.00	0.021	57.50	0.047	65.00	0.029	72.50	0.004	80.00	0.008	87.50	0.007
42.75	0.008	50.25	0.022	57.75	0.049	65.25	0.027	72.75	0.005	80.25	0.008	87.75	0.007
43.00	0.010	50.50	0.023	58.00	0.051	65.50	0.026	73.00	0.005	80.50	0.008	88.00	0.006
43.25	0.011	50.75	0.024	58.25	0.052	65.75	0.024	73.25	0.005	80.75	0.008	88.25	0.006
43.50	0.012	51.00	0.024	58.50	0.054	66.00	0.022	73.50	0.005	81.00	0.008	88.50	0.006
43.75	0.014	51.25	0.024	58.75	0.055	66.25	0.021	73.75	0.005	81.25	0.008	88.75	0.006
44.00	0.015	51.50	0.023	59.00	0.056	66.50	0.019	74.00	0.006	81.50	0.008	89.00	0.006
44.25	0.016	51.75	0.022	59.25	0.056	66.75	0.018	74.25	0.006	81.75	0.008	89.25	0.006
44.50	0.016	52.00	0.021	59.50	0.057	67.00	0.016	74.50	0.006	82.00	0.008	89.50	0.006
44.75	0.017	52.25	0.020	59.75	0.057	67.25	0.015	74.75	0.006	82.25	0.008	89.75	0.006
45.00	0.017	52.50	0.019	60.00	0.057	67.50	0.014	75.00	0.006	82.50	0.008	90.00	0.006
45.25	0.016	52.75	0.017	60.25	0.057	67.75	0.012	75.25	0.006	82.75	0.007		
45.50	0.016	53.00	0.016	60.50	0.056	68.00	0.011	75.50	0.006	83.00	0.007		
45.75	0.015	53.25	0.014	60.75	0.056	68.25	0.010	75.75	0.007	83.25	0.007		
46.00	0.014	53.50	0.013	61.00	0.055	68.50	0.009	76.00	0.007	83.50	0.007		
46.25	0.013	53.75	0.013	61.25	0.054	68.75	0.008	76.25	0.007	83.75	0.007		
46.50	0.011	54.00	0.013	61.50	0.053	69.00	0.008	76.50	0.007	84.00	0.007		
46.75	0.010	54.25	0.014	61.75	0.052	69.25	0.007	76.75	0.007	84.25	0.007		
47.00	0.008	54.50	0.015	62.00	0.050	69.50	0.006	77.00	0.007	84.50	0.007		
47.25	0.007	54.75	0.017	62.25	0.049	69.75	0.006	77.25	0.007	84.75	0.007		
47.50	0.006	55.00	0.020	62.50	0.047	70.00	0.005	77.50	0.007	85.00	0.007		
47.75	0.006	55.25	0.023	62.75	0.046	70.25	0.005	77.75	0.007	85.25	0.007		
48.00	0.007	55.50	0.026	63.00	0.044	70.50	0.004	78.00	0.008	85.50	0.007		
48.25	0.009	55.75	0.029	63.25	0.042	70.75	0.004	78.25	0.008	85.75	0.007		
48.50	0.011	56.00	0.032	63.50	0.040	71.00	0.004	78.50	0.008	86.00	0.007		
48.75	0.013	56.25	0.034	63.75	0.038	71.25	0.004	78.75	0.008	86.25	0.007		
49.00	0.015	56.50	0.037	64.00	0.037	71.50	0.004	79.00	0.008	86.50	0.007		
49.25	0.017	56.75	0.040	64.25	0.035	71.75	0.004	79.25	0.008	86.75	0.007		
49.50	0.018	57.00	0.043	64.50	0.033	72.00	0.004	79.50	0.008	87.00	0.007		
49.75	0.020	57.25	0.045	64.75	0.031	72.25	0.004	79.75	0.008	87.25	0.007		



Summary

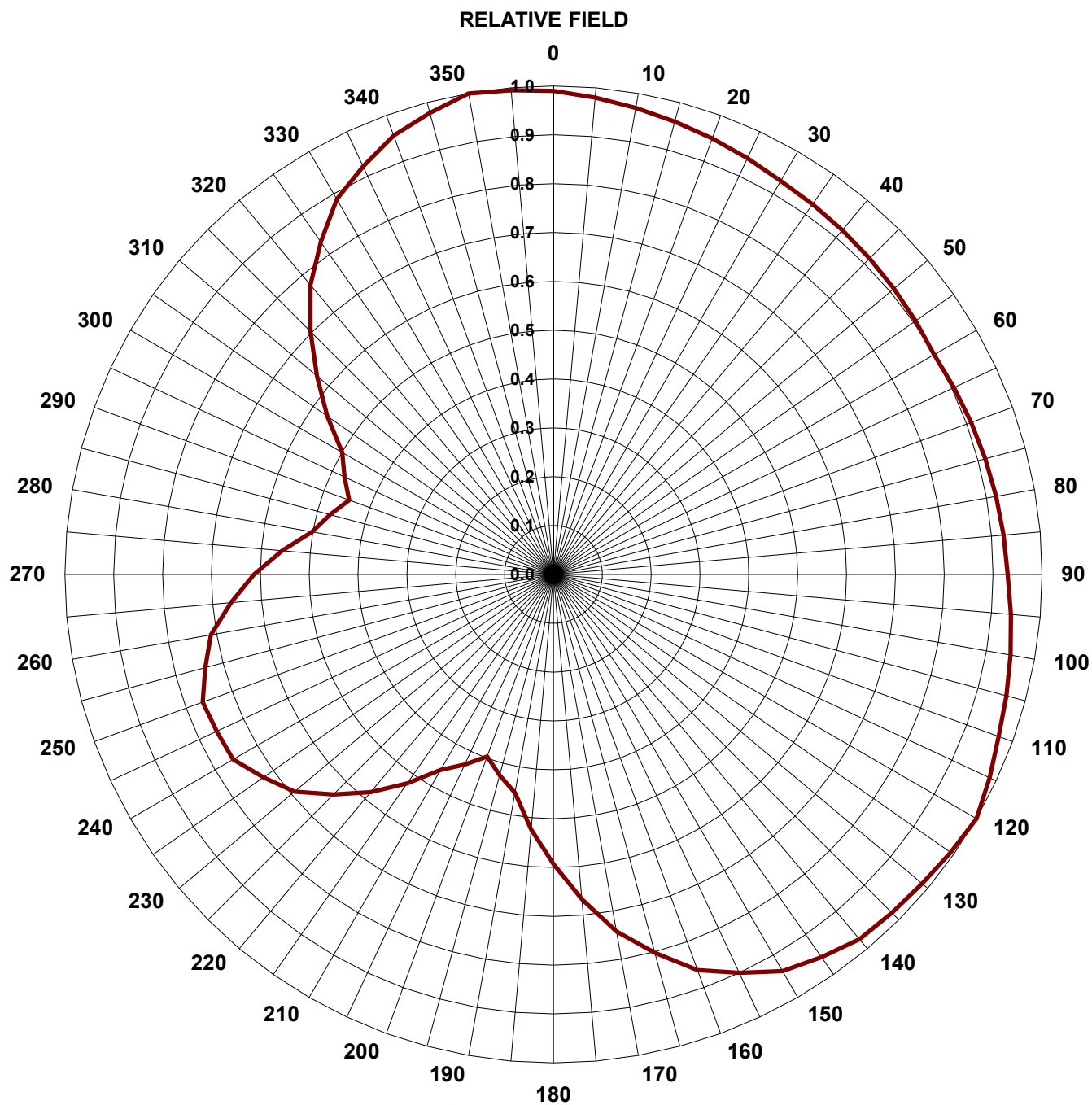
Antenna Specifications	
Antenna Type	Cavity Slot
Antenna Model	ATC-BCSE24C2-U-HP
Electrical Specifications	
Channel(s)	26
Frequency Range (MHz)	542 - 548
Polarization	Elliptical
Horizontal Azimuth Pattern	C2
Directivity	1.60
dB	2.05
Vertical Azimuth Pattern	V3
Directivity	2.80
dB	3.71
Vertical Component	50 %
Azimuth Peak of Beam	65 °
Elevation Pattern	24
Directivity	24.65
dB	13.92
Electrical Beam Tilt	1.00 °
Antenna Peak Power Gain	
Horizontal Gain Power	27.10
Horizontal Gain Ratio	14.33 dBd
Vertical Gain Power	13.60
Vertical Gain Ratio	11.33 dBd
Line Type	8" 75 Ohm Rigid Line
Line Length	0 ft
Total Line Loss	0.00 dB
Effective Radiated Power (ERP)	1000 kW
ERP Vertical Power	500.00 kW
Transmitter Power Output (TPO)	
TPO Power	36.77 kW
TPO Ratio	15.65 dBk
Input Type	EIA 8-3/16" 75 ohm
Mechanical Specifications	
Mount Type	Side Mount
Length of Antenna	42 ft
Center of Radiation	21.00 ft
Radome Diameter	14.25"
Color	White
Calculated Weight	2650 lbs
Windload (Eff Area)	33.4 SQ FT

Antenna Input Line Length at 0

AZIMUTH PATTERN



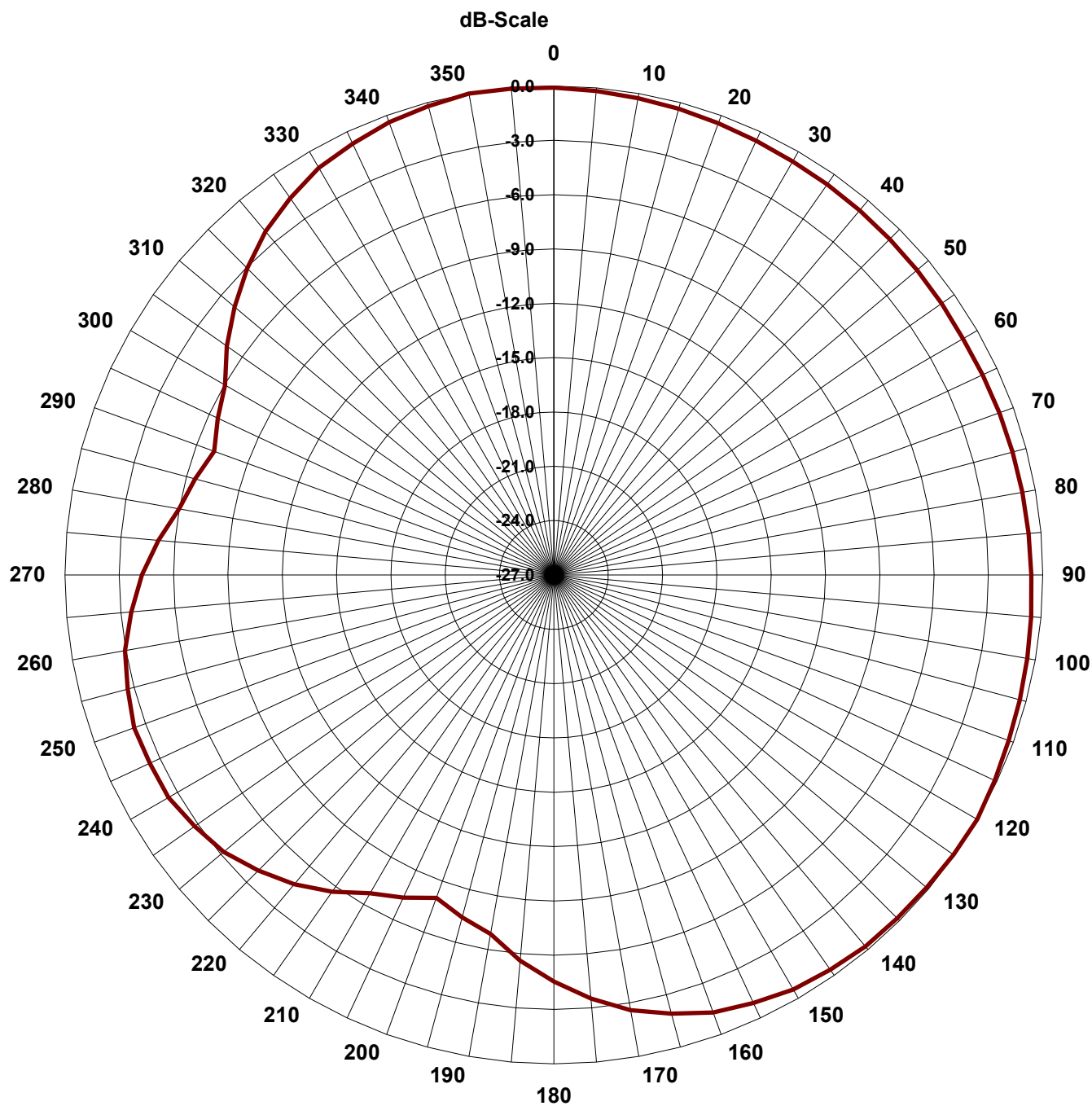
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	Numeric	dB
Directivity:	1.6	2.04
Polarization:	Horizontal	
Channel:	26	
Location:	Houston	



AZIMUTH PATTERN

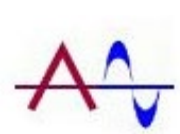


TYPE:	ATC-BCS-C2	
	Numeric	dB
Directivity:	1.6	2.04
Polarization:	Horizontal	
Channel:	26	
Location:	Houston	

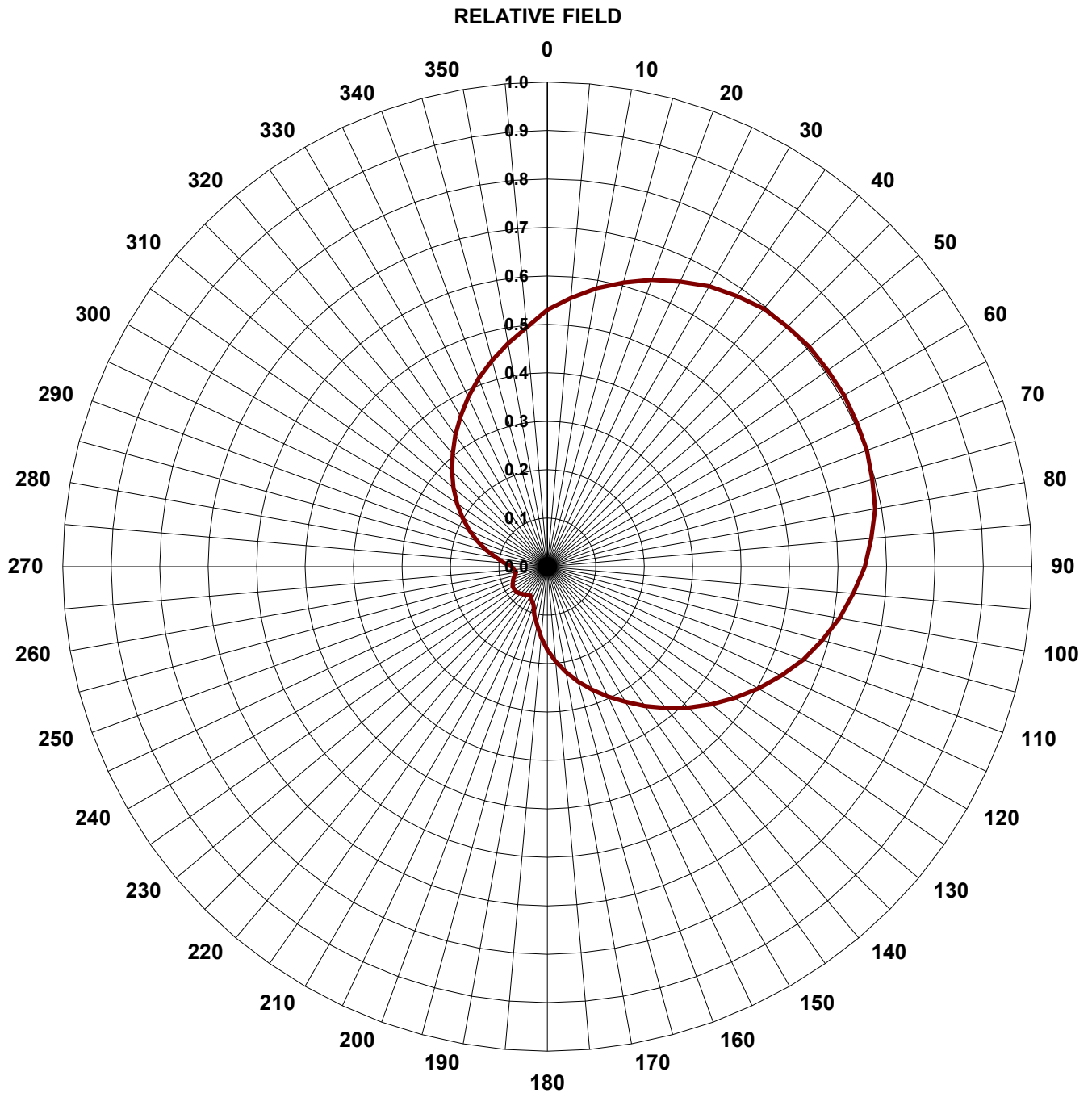


ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.990	-0.09	94	0.938	-0.56	188	0.471	-6.53	282	0.495	-6.11
2	0.990	-0.09	96	0.943	-0.51	190	0.454	-6.86	284	0.481	-6.36
4	0.983	-0.15	98	0.948	-0.47	192	0.447	-7.00	286	0.466	-6.63
6	0.978	-0.20	100	0.950	-0.45	194	0.433	-7.28	288	0.452	-6.89
8	0.975	-0.22	102	0.953	-0.42	196	0.418	-7.57	290	0.445	-7.03
10	0.970	-0.26	104	0.958	-0.38	198	0.404	-7.87	292	0.452	-6.90
12	0.970	-0.26	106	0.963	-0.33	200	0.397	-8.02	294	0.465	-6.65
14	0.963	-0.33	108	0.968	-0.29	202	0.405	-7.85	296	0.479	-6.40
16	0.958	-0.38	110	0.970	-0.26	204	0.421	-7.51	298	0.492	-6.16
18	0.953	-0.42	112	0.974	-0.23	206	0.438	-7.18	300	0.499	-6.04
20	0.950	-0.45	114	0.981	-0.16	208	0.454	-6.86	302	0.516	-5.75
22	0.948	-0.47	116	0.989	-0.10	210	0.462	-6.71	304	0.549	-5.21
24	0.943	-0.51	118	0.996	-0.03	212	0.477	-6.43	306	0.582	-4.70
26	0.938	-0.56	120	1.000	0.00	214	0.507	-5.90	308	0.615	-4.22
28	0.933	-0.61	122	0.998	-0.02	216	0.537	-5.40	310	0.632	-3.99
30	0.930	-0.63	124	0.994	-0.05	218	0.567	-4.93	312	0.650	-3.75
32	0.929	-0.64	126	0.991	-0.08	220	0.582	-4.70	314	0.685	-3.28
34	0.926	-0.67	128	0.987	-0.11	222	0.596	-4.50	316	0.721	-2.84
36	0.924	-0.69	130	0.985	-0.13	224	0.623	-4.11	318	0.756	-2.43
38	0.921	-0.71	132	0.984	-0.14	226	0.651	-3.73	320	0.774	-2.23
40	0.920	-0.72	134	0.982	-0.16	228	0.678	-3.37	322	0.788	-2.07
42	0.919	-0.74	136	0.980	-0.18	230	0.692	-3.20	324	0.816	-1.76
44	0.916	-0.76	138	0.977	-0.20	232	0.700	-3.10	326	0.845	-1.47
46	0.914	-0.78	140	0.975	-0.22	234	0.716	-2.90	328	0.873	-1.18
48	0.911	-0.81	142	0.970	-0.26	236	0.733	-2.70	330	0.887	-1.04
50	0.910	-0.82	144	0.961	-0.34	238	0.749	-2.51	332	0.896	-0.96
52	0.909	-0.83	146	0.952	-0.43	240	0.757	-2.42	334	0.913	-0.79
54	0.906	-0.86	148	0.943	-0.51	242	0.758	-2.41	336	0.930	-0.63
56	0.904	-0.88	150	0.938	-0.56	244	0.760	-2.39	338	0.947	-0.47
58	0.901	-0.90	152	0.929	-0.64	246	0.761	-2.37	340	0.956	-0.39
60	0.900	-0.92	154	0.910	-0.82	248	0.763	-2.35	342	0.962	-0.34
62	0.901	-0.90	156	0.891	-1.01	250	0.764	-2.34	344	0.973	-0.24
64	0.904	-0.88	158	0.872	-1.19	252	0.758	-2.41	346	0.984	-0.14
66	0.906	-0.86	160	0.862	-1.29	254	0.745	-2.56	348	0.995	-0.05
68	0.909	-0.83	162	0.847	-1.44	256	0.732	-2.72	350	1.000	0.00
70	0.910	-0.82	164	0.817	-1.76	258	0.719	-2.87	352	0.999	-0.01
72	0.911	-0.81	166	0.787	-2.08	260	0.712	-2.95	354	0.996	-0.03
74	0.914	-0.78	168	0.757	-2.42	262	0.700	-3.10	356	0.994	-0.05
76	0.916	-0.76	170	0.742	-2.59	264	0.675	-3.42	358	0.991	-0.08
78	0.919	-0.74	172	0.723	-2.81	266	0.650	-3.74	360	0.990	-0.09
80	0.920	-0.72	174	0.686	-3.27	268	0.625	-4.08			
82	0.921	-0.71	176	0.649	-3.76	270	0.613	-4.25			
84	0.924	-0.69	178	0.612	-4.27	272	0.599	-4.45			
86	0.926	-0.67	180	0.593	-4.54	274	0.571	-4.86			
88	0.929	-0.64	182	0.576	-4.80	276	0.544	-5.29			
90	0.930	-0.63	184	0.541	-5.34	278	0.516	-5.75			
92	0.933	-0.61	186	0.506	-5.91	280	0.502	-5.99			

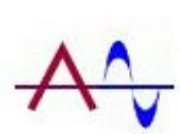
AZIMUTH PATTERN



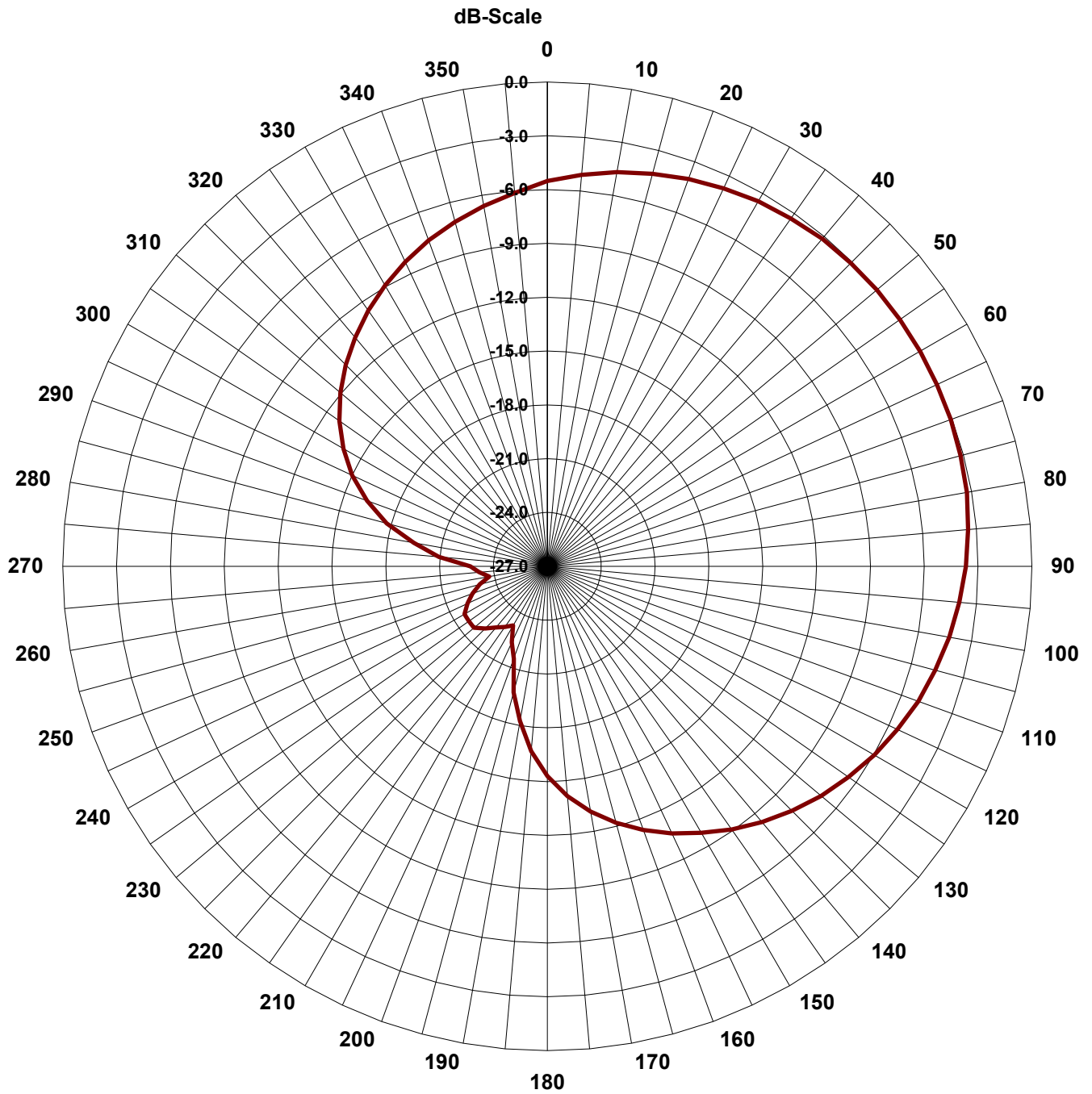
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	Numeric	dB
Directivity:	2.8	4.47
Polarization:	Vertical	
Channel:	26	
Location:	Houston	



AZIMUTH PATTERN



TYPE:	ATC-BCS-V3	
	Numeric	dB
Directivity:	2.8	4.47
Polarization:	Vertical	
Channel:	26	
Location:	Houston	



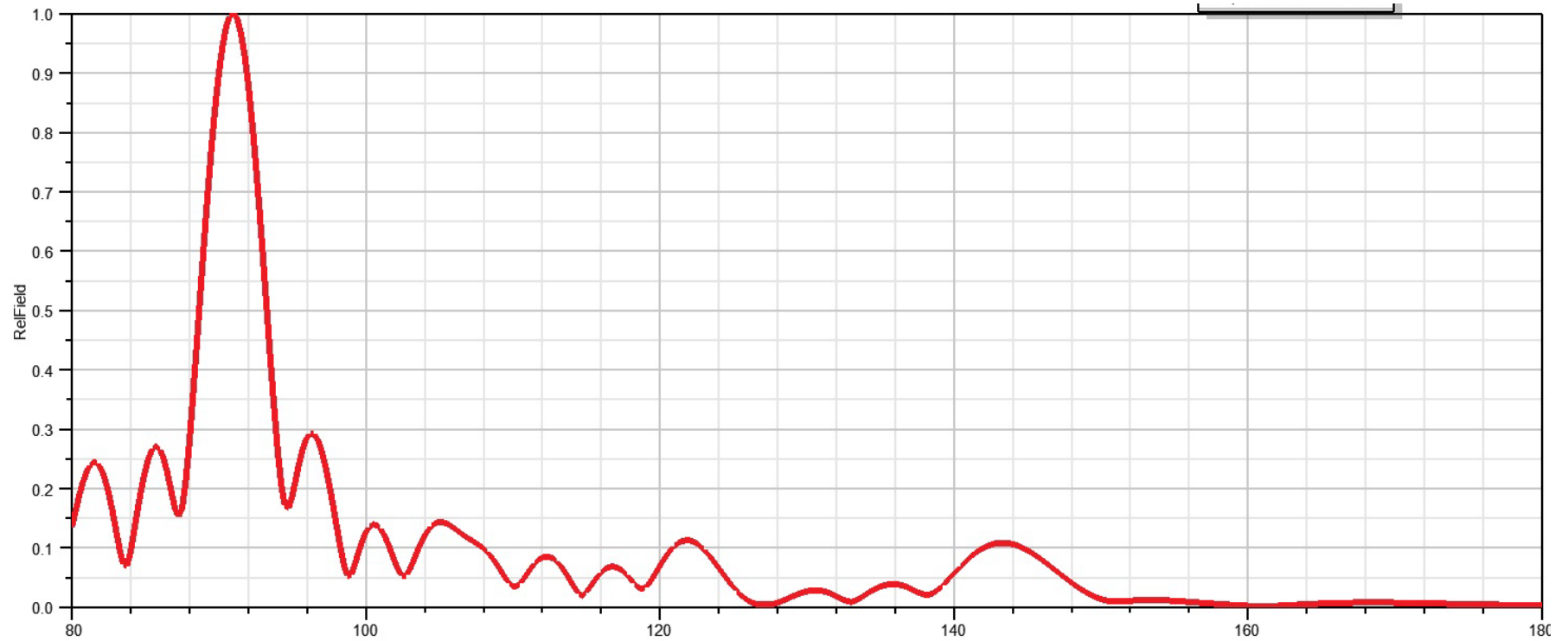
ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.530	-5.52	94	0.639	-3.89	188	0.129	-17.81	282	0.112	-18.99
2	0.530	-5.52	96	0.628	-4.03	190	0.122	-18.24	284	0.124	-18.13
4	0.550	-5.19	98	0.618	-4.18	192	0.118	-18.59	286	0.136	-17.35
6	0.563	-4.99	100	0.612	-4.26	194	0.108	-19.33	288	0.147	-16.64
8	0.570	-4.88	102	0.606	-4.35	196	0.098	-20.14	290	0.153	-16.30
10	0.583	-4.68	104	0.593	-4.53	198	0.089	-21.04	292	0.159	-15.96
12	0.583	-4.68	106	0.581	-4.72	200	0.084	-21.53	294	0.172	-15.31
14	0.601	-4.43	108	0.568	-4.91	202	0.082	-21.72	296	0.184	-14.71
16	0.612	-4.26	110	0.562	-5.01	204	0.078	-22.11	298	0.196	-14.15
18	0.624	-4.10	112	0.555	-5.12	206	0.075	-22.53	300	0.202	-13.88
20	0.630	-4.02	114	0.540	-5.35	208	0.071	-22.97	302	0.209	-13.61
22	0.635	-3.95	116	0.525	-5.59	210	0.069	-23.19	304	0.221	-13.10
24	0.644	-3.82	118	0.511	-5.84	212	0.070	-23.11	306	0.234	-12.62
26	0.654	-3.69	120	0.503	-5.96	214	0.071	-22.95	308	0.247	-12.16
28	0.664	-3.56	122	0.496	-6.10	216	0.073	-22.79	310	0.253	-11.94
30	0.668	-3.50	124	0.480	-6.37	218	0.074	-22.63	312	0.259	-11.72
32	0.672	-3.46	126	0.465	-6.65	220	0.075	-22.55	314	0.272	-11.31
34	0.678	-3.37	128	0.450	-6.94	222	0.076	-22.43	316	0.285	-10.92
36	0.685	-3.29	130	0.442	-7.09	224	0.078	-22.21	318	0.297	-10.54
38	0.692	-3.20	132	0.435	-7.23	226	0.080	-21.99	320	0.304	-10.35
40	0.695	-3.16	134	0.424	-7.46	228	0.082	-21.77	322	0.310	-10.16
42	0.696	-3.14	136	0.410	-7.75	230	0.083	-21.67	324	0.324	-9.79
44	0.699	-3.11	138	0.395	-8.06	232	0.083	-21.67	326	0.338	-9.43
46	0.702	-3.08	140	0.381	-8.39	234	0.083	-21.67	328	0.351	-9.09
48	0.704	-3.04	142	0.373	-8.55	236	0.083	-21.67	330	0.358	-8.92
50	0.706	-3.03	144	0.359	-8.90	238	0.083	-21.67	332	0.365	-8.75
52	0.706	-3.03	146	0.344	-9.26	240	0.083	-21.67	334	0.379	-8.42
54	0.706	-3.02	148	0.330	-9.64	242	0.082	-21.77	336	0.393	-8.11
56	0.707	-3.02	150	0.322	-9.84	244	0.080	-21.99	338	0.407	-7.81
58	0.707	-3.01	152	0.316	-10.01	246	0.078	-22.21	340	0.414	-7.66
60	0.707	-3.01	154	0.303	-10.38	248	0.076	-22.43	342	0.421	-7.52
62	0.706	-3.02	156	0.290	-10.76	250	0.075	-22.55	344	0.434	-7.25
64	0.705	-3.04	158	0.277	-11.16	252	0.073	-22.69	346	0.447	-6.99
66	0.704	-3.05	160	0.270	-11.36	254	0.071	-22.97	348	0.461	-6.73
68	0.702	-3.07	162	0.264	-11.56	256	0.069	-23.26	350	0.467	-6.61
70	0.702	-3.08	164	0.252	-11.98	258	0.066	-23.56	352	0.474	-6.48
72	0.700	-3.10	166	0.239	-12.41	260	0.065	-23.71	354	0.488	-6.23
74	0.696	-3.15	168	0.227	-12.87	262	0.066	-23.58	356	0.502	-5.99
76	0.693	-3.19	170	0.221	-13.11	264	0.068	-23.32	358	0.515	-5.76
78	0.689	-3.24	172	0.215	-13.36	266	0.070	-23.07	360	0.530	-5.52
80	0.687	-3.26	174	0.203	-13.87	268	0.072	-22.83			
82	0.683	-3.31	176	0.190	-14.41	270	0.073	-22.71			
84	0.675	-3.41	178	0.178	-15.00	272	0.077	-22.23			
86	0.667	-3.52	180	0.172	-15.30	274	0.086	-21.34			
88	0.659	-3.62	182	0.166	-15.62	276	0.094	-20.53			
90	0.655	-3.67	184	0.153	-16.29	278	0.102	-19.80			
92	0.650	-3.75	186	0.141	-17.02	280	0.107	-19.45			

Channel 26 Elevation Pattern

24 Bay

Directivity 24.65 (13.92 dB)

1.0 Beamtilt

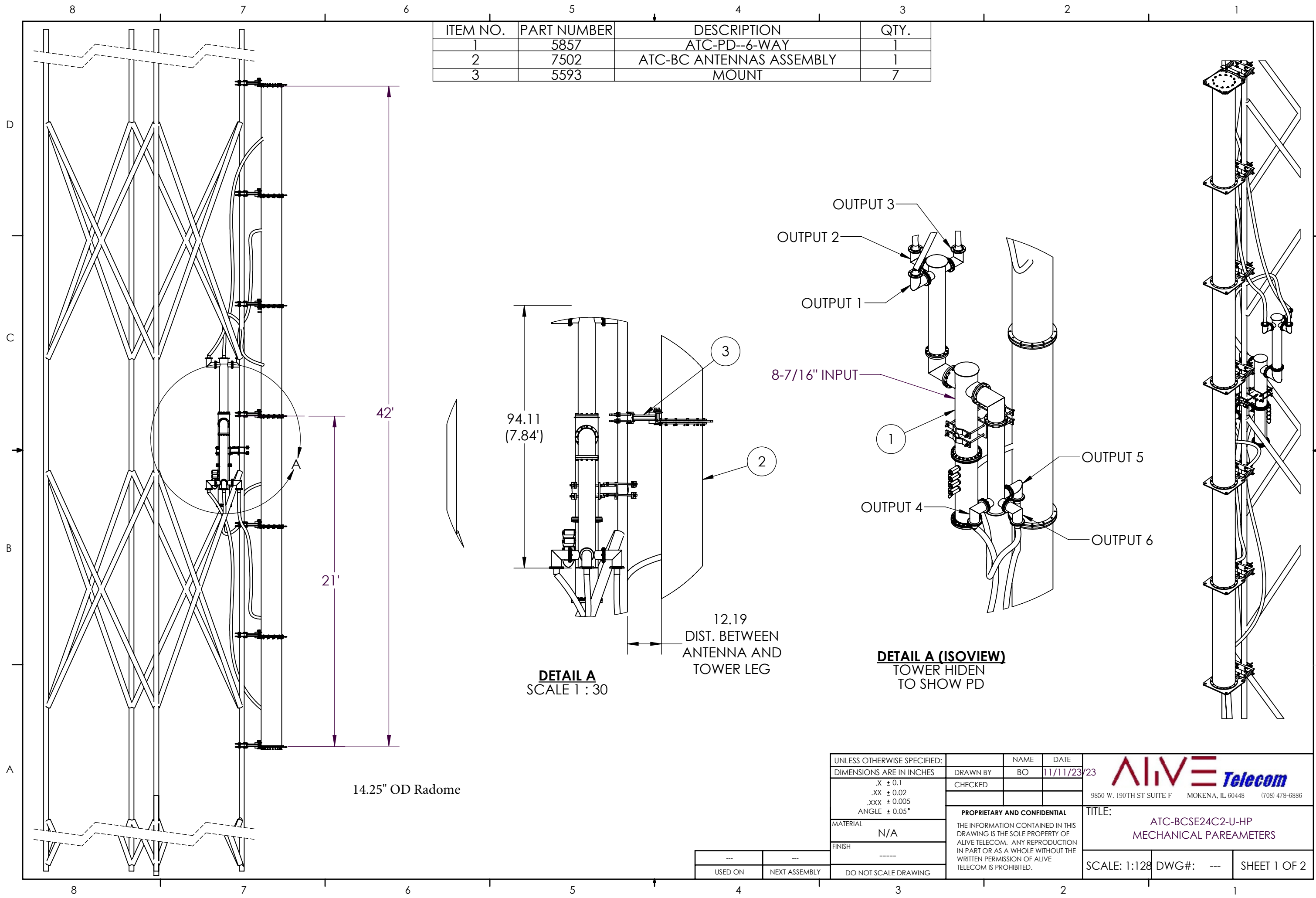


ATC-BCSE24C2-U-HP Channel 26 Elevation Pattern

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.00	0.134	-2.50	0.166	5.00	0.188	12.50	0.053	20.00	0.036	27.50	0.061	35.00	0.034
-9.75	0.161	-2.25	0.211	5.25	0.217	12.75	0.054	20.25	0.036	27.75	0.055	35.25	0.027
-9.50	0.187	-2.00	0.278	5.50	0.247	13.00	0.065	20.50	0.041	28.00	0.048	35.50	0.021
-9.25	0.210	-1.75	0.357	5.75	0.270	13.25	0.079	20.75	0.049	28.25	0.040	35.75	0.016
-9.00	0.228	-1.50	0.442	6.00	0.286	13.50	0.094	21.00	0.058	28.50	0.034	36.00	0.011
-8.75	0.240	-1.25	0.529	6.25	0.293	13.75	0.109	21.25	0.067	28.75	0.031	36.25	0.008
-8.50	0.245	-1.00	0.615	6.50	0.291	14.00	0.121	21.50	0.074	29.00	0.033	36.50	0.006
-8.25	0.243	-0.75	0.697	6.75	0.281	14.25	0.131	21.75	0.080	29.25	0.040	36.75	0.005
-8.00	0.233	-0.50	0.773	7.00	0.263	14.50	0.138	22.00	0.084	29.50	0.049	37.00	0.004
-7.75	0.216	-0.25	0.840	7.25	0.238	14.75	0.142	22.25	0.086	29.75	0.060	37.25	0.004
-7.50	0.193	0.00	0.897	7.50	0.208	15.00	0.144	22.50	0.085	30.00	0.070	37.50	0.005
-7.25	0.164	0.25	0.943	7.75	0.175	15.25	0.143	22.75	0.082	30.25	0.080	37.75	0.006
-7.00	0.132	0.50	0.976	8.00	0.139	15.50	0.141	23.00	0.077	30.50	0.089	38.00	0.008
-6.75	0.098	0.75	0.995	8.25	0.104	15.75	0.138	23.25	0.070	30.75	0.097	38.25	0.010
-6.50	0.072	1.00	1.000	8.50	0.073	16.00	0.133	23.50	0.062	31.00	0.103	38.50	0.013
-6.25	0.070	1.25	0.991	8.75	0.053	16.25	0.129	23.75	0.052	31.25	0.108	38.75	0.015
-6.00	0.094	1.50	0.967	9.00	0.055	16.50	0.124	24.00	0.041	31.50	0.111	39.00	0.018
-5.75	0.130	1.75	0.930	9.25	0.072	16.75	0.120	24.25	0.031	31.75	0.113	39.25	0.021
-5.50	0.167	2.00	0.881	9.50	0.093	17.00	0.116	24.50	0.023	32.00	0.113	39.50	0.023
-5.25	0.201	2.25	0.821	9.75	0.112	17.25	0.112	24.75	0.021	32.25	0.111	39.75	0.025
-5.00	0.231	2.50	0.751	10.00	0.126	17.50	0.108	25.00	0.026	32.50	0.108	40.00	0.027
-4.75	0.253	2.75	0.674	10.25	0.135	17.75	0.104	25.25	0.034	32.75	0.103	40.25	0.028
-4.50	0.267	3.00	0.592	10.50	0.139	18.00	0.099	25.50	0.043	33.00	0.097	40.50	0.029
-4.25	0.271	3.25	0.507	10.75	0.138	18.25	0.093	25.75	0.052	33.25	0.090	40.75	0.029
-4.00	0.266	3.50	0.421	11.00	0.132	18.50	0.086	26.00	0.059	33.50	0.083	41.00	0.028
-3.75	0.251	3.75	0.340	11.25	0.122	18.75	0.078	26.25	0.064	33.75	0.075	41.25	0.026
-3.50	0.227	4.00	0.265	11.50	0.108	19.00	0.069	26.50	0.067	34.00	0.067	41.50	0.024
-3.25	0.197	4.25	0.206	11.75	0.092	19.25	0.059	26.75	0.069	34.25	0.058	41.75	0.022
-3.00	0.168	4.50	0.171	12.00	0.075	19.50	0.049	27.00	0.068	34.50	0.050	42.00	0.019
-2.75	0.153	4.75	0.167	12.25	0.061	19.75	0.041	27.25	0.065	34.75	0.042	42.25	0.016


Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
42.50	0.013	50.00	0.057	57.50	0.051	65.00	0.011	72.50	0.003	80.00	0.008	87.50	0.004
42.75	0.010	50.25	0.064	57.75	0.046	65.25	0.011	72.75	0.004	80.25	0.008	87.75	0.004
43.00	0.009	50.50	0.070	58.00	0.042	65.50	0.010	73.00	0.004	80.50	0.008	88.00	0.004
43.25	0.011	50.75	0.076	58.25	0.037	65.75	0.010	73.25	0.004	80.75	0.008	88.25	0.004
43.50	0.014	51.00	0.082	58.50	0.033	66.00	0.009	73.50	0.005	81.00	0.008	88.50	0.004
43.75	0.018	51.25	0.087	58.75	0.029	66.25	0.009	73.75	0.005	81.25	0.007	88.75	0.004
44.00	0.022	51.50	0.092	59.00	0.025	66.50	0.008	74.00	0.005	81.50	0.007	89.00	0.004
44.25	0.026	51.75	0.096	59.25	0.022	66.75	0.008	74.25	0.006	81.75	0.007	89.25	0.004
44.50	0.029	52.00	0.100	59.50	0.019	67.00	0.007	74.50	0.006	82.00	0.007	89.50	0.004
44.75	0.032	52.25	0.103	59.75	0.016	67.25	0.007	74.75	0.006	82.25	0.007	89.75	0.004
45.00	0.035	52.50	0.105	60.00	0.014	67.50	0.006	75.00	0.006	82.50	0.007	90.00	0.004
45.25	0.037	52.75	0.107	60.25	0.012	67.75	0.006	75.25	0.007	82.75	0.007		
45.50	0.038	53.00	0.108	60.50	0.011	68.00	0.006	75.50	0.007	83.00	0.006		
45.75	0.039	53.25	0.109	60.75	0.010	68.25	0.005	75.75	0.007	83.25	0.006		
46.00	0.039	53.50	0.108	61.00	0.010	68.50	0.005	76.00	0.007	83.50	0.006		
46.25	0.038	53.75	0.108	61.25	0.010	68.75	0.004	76.25	0.008	83.75	0.006		
46.50	0.037	54.00	0.106	61.50	0.010	69.00	0.004	76.50	0.008	84.00	0.006		
46.75	0.035	54.25	0.104	61.75	0.011	69.25	0.004	76.75	0.008	84.25	0.006		
47.00	0.032	54.50	0.102	62.00	0.011	69.50	0.003	77.00	0.008	84.50	0.006		
47.25	0.029	54.75	0.099	62.25	0.012	69.75	0.003	77.25	0.008	84.75	0.006		
47.50	0.026	55.00	0.096	62.50	0.012	70.00	0.003	77.50	0.008	85.00	0.005		
47.75	0.023	55.25	0.092	62.75	0.012	70.25	0.002	77.75	0.008	85.25	0.005		
48.00	0.021	55.50	0.088	63.00	0.012	70.50	0.002	78.00	0.008	85.50	0.005		
48.25	0.021	55.75	0.084	63.25	0.013	70.75	0.002	78.25	0.008	85.75	0.005		
48.50	0.023	56.00	0.080	63.50	0.013	71.00	0.002	78.50	0.008	86.00	0.005		
48.75	0.027	56.25	0.075	63.75	0.012	71.25	0.002	78.75	0.008	86.25	0.005		
49.00	0.032	56.50	0.070	64.00	0.012	71.50	0.002	79.00	0.008	86.50	0.005		
49.25	0.037	56.75	0.065	64.25	0.012	71.75	0.002	79.25	0.008	86.75	0.005		
49.50	0.044	57.00	0.061	64.50	0.012	72.00	0.003	79.50	0.008	87.00	0.004		
49.75	0.050	57.25	0.056	64.75	0.011	72.25	0.003	79.75	0.008	87.25	0.004		

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	5857	ATC-PD--6-WAY	1
2	7502	ATC-BC ANTENNAS ASSEMBLY	1
3	5593	MOUNT	7

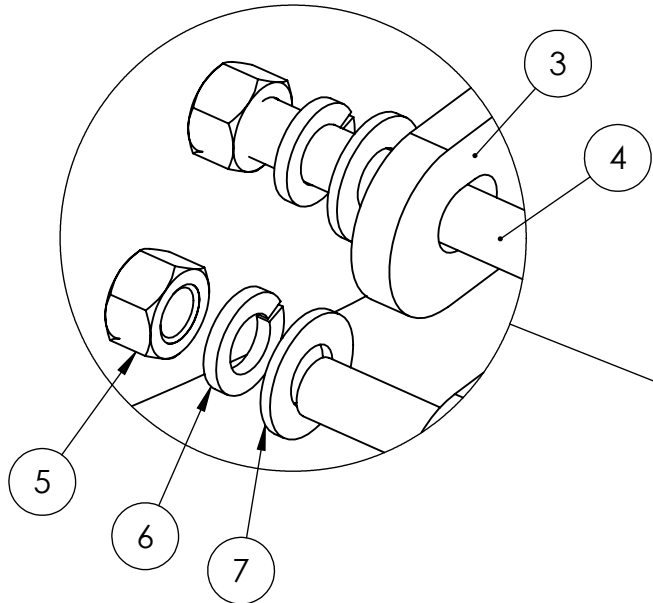
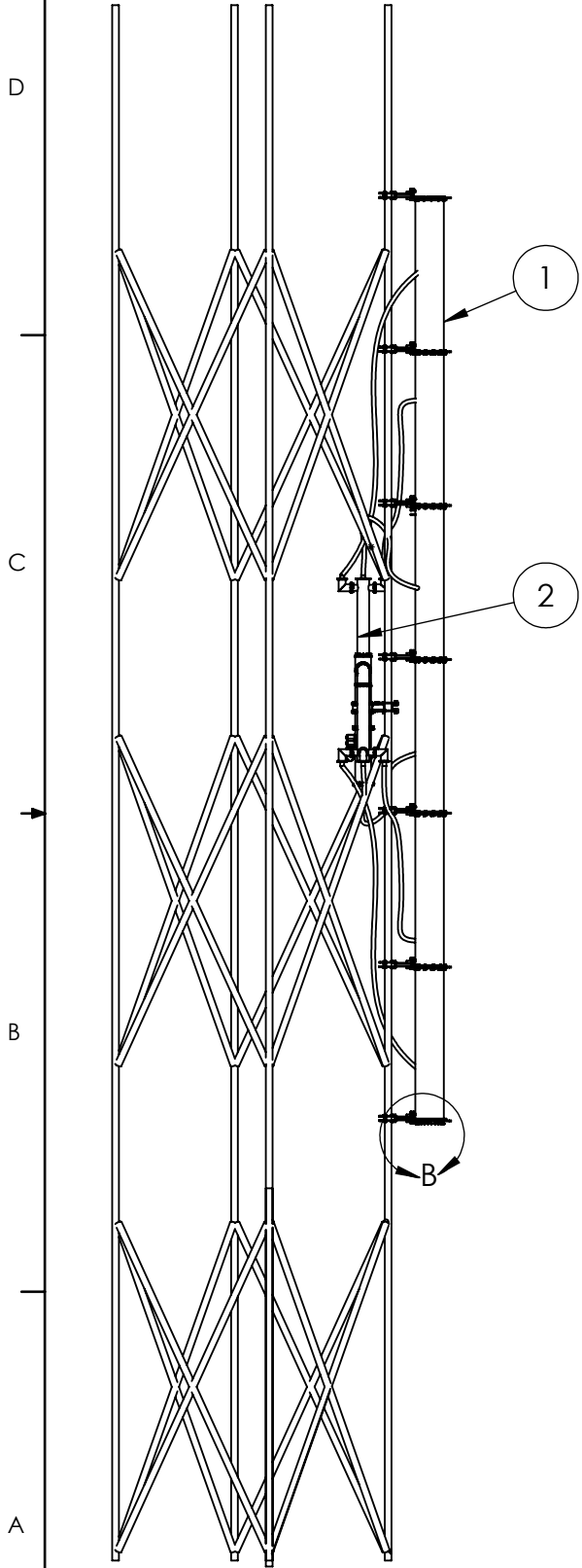


DETAIL A
SCALE 1 : 30

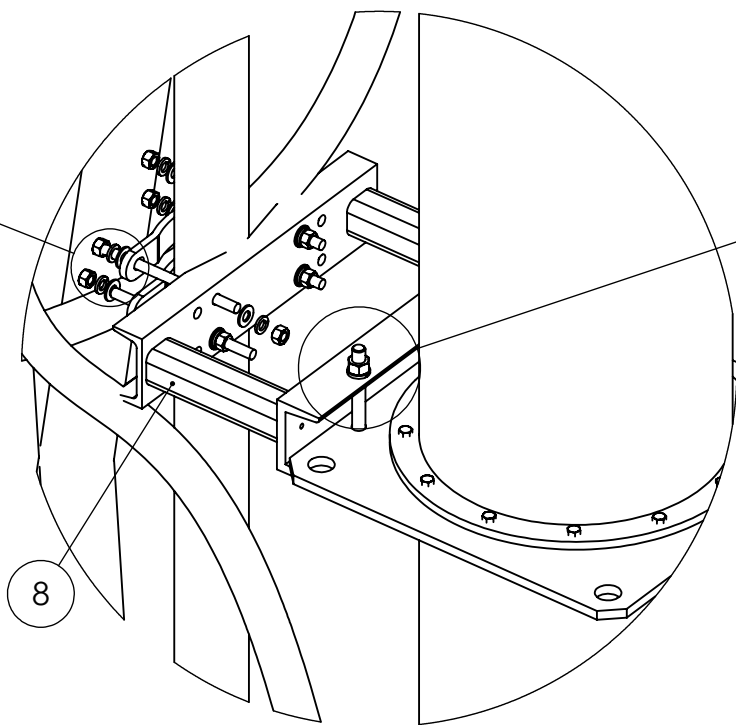
DETAIL A (ISOVIEW)
TOWER HIDDEN
TO SHOW PD

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	DRAWN BY BO	NAME BO	DATE 11/11/23/23	 9850 W. 190TH ST SUITE F MOKENA, IL 60448 (708) 478-6886
.X ± 0.1 .XX ± 0.02 .XXX ± 0.005 ANGLE ± 0.05°	CHECKED			
MATERIAL N/A	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ALIVE TELECOM. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ALIVE TELECOM IS PROHIBITED.			TITLE: ATC-BCSE24C2-U-HP MECHANICAL PAREAMETERS
FINISH ----	USED ON	NEXT ASSEMBLY	DO NOT SCALE DRAWING	SCALE: 1:128 DWG#: --- SHEET 1 OF 2

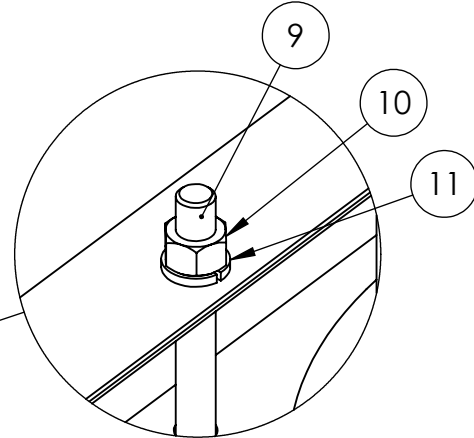
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	ATC-BC	ATC-BCSE24C2-U-HP ANTENNA ASSEMBLY	1
2	P-0001	ATC-PD - 8-3/16 - 6 OUTPUT POWER DIVIDER ASSM.	1
3	LPMT-CLAMP	6.625" SADDLE CLAMP	16
4	45-0037	.50-13 GALV. THREADED ROD	28
5	20-0117	.50-13 GALV. HEX HEAD NUT	72
6	15-0031	.50 GALV. LOCK WASHER	149
7	10-0037	.50 GALV. FLAT WASHER	72
8	3027	FULL RADOME MOUNT - CENTER MOUNT WELDMENT	7
9	5-0319	.625-11 X 5.50 18-8SS HEX CAP SCREW-PT	14
10	20-0172	.625-11 BLACK OXIDE HEX NUT	22
11	15-0017	.625 18-8SS LOCK WASHER	14



DETAIL C
SCALE 2 : 3




DETAIL B
SCALE 1 : 9



DETAIL D
SCALE 1 : 3

**CAVITY SLOT ANTENNA
ATC-BCSE24C2-U-HP**

UNLESS OTHERWISE SPECIFIED:		NAME	DATE	<div></div> <div>9850 W. 190TH ST SUITE F MOKENA, IL 60448 (708) 478-6886</div>		
DIMENSIONS ARE IN INCHES	DRAWN BY	BO	11/11/22			
.X ± 0.1 .XX ± 0.02 .XXX ± 0.005 ANGLE ± 0.05°	CHECKED					
MATERIAL	PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ALIVE TELECOM. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF ALIVE TELECOM IS PROHIBITED.	TITLE:				
N/A		ATC-BCSE24C2-U-HP MECHANICAL PAREAMETERS				
FINISH		SCALE: 1:96				
----		DWG#: --				
DO NOT SCALE DRAWING		SHEET 2 OF 2				



	NO ICE	90 MPH
Antenna Model Modules Power divider	ATC-BCSE24C2-HP-U	
Number of Antenna Sections	= 1	
Size	= 12.8016 m	0.36 m
Area	= 4.634 m ²	
Aspect ratio	35.37	
$C = [(I)(kzt)(kz)]^{0.5} * (V)(D)$	22.22	

Ca (With respect to aspect ratio),
 Consider Flat Surface. In order for a structural component to be considered as a round structure component the component must have a round profile on the windward and leeward sides of the component (TIA 222g - 2.6.9.1.1 Notes).
 Linear interpolation has been made for Ca value.

Total Effective Projected Area of Appurtenances ΣEPA (CaAa)	= 3.012 Sq.m
Structure Height H	= 589 m
Structure Base Elevation @ AGL	= 30 m
Antenna Elevation z	= 612.5992 m
Velocity Pressure qz	= 1964.10 Pa

where $qz = 0.613 (kz) (kzt) (kd) (V^2)(I)$

Exposure Coefficient Kz	= 2.329	Table 2.4 (TIA 222G)
Topographic Factor Kzt	= 1	TIA 222G, Cl 2.6.6.4
Wind Direction Probability Factor Kd	= 0.85	Table 2.2 (TIA 222G)
Gust Response Factor Gh	= 1.35	TIA 222G, Cl 2.6.7.1
Velocity V, Kph	= 144.8406	kph
Velocity V, m/s	= 40.23	m/s
Importance Factor I	= 1	
Wind load Factor	= 1	

where antenna wind force,
 $F = qz(Gh)(\Sigma EPA)(\text{wind load factor})$

Antenna Wind Force	=	<table><tr><td>7986</td><td>N</td></tr><tr><td>1794.584817</td><td>lb-f</td></tr></table>	7986	N	1794.584817	lb-f
7986	N					
1794.584817	lb-f					
Antenna Weight		2650 lbs				