

***PRELIMINARY SPECIFICATION FOR
TRASAR[®] ELLIPTICALLY POLARIZED
COAXIAL SLOTTED ARRAY ANTENNA***

*Prepared for
KHQ-DT Channel 15 Spokane, WA
June 24, 2009*

**ANTENNA TYPE:
ATW25H4-ETTX-15H**

**SPECIFICATION NO :
KO063008-1887 RevD**



PRELIMINARY SPECIFICATION FOR TRASAR[®] ELLIPTICALLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA

ELECTRICAL CHARACTERISTICS:

CHANNEL :		15
FREQUENCY RANGE :		476 - 482 MHz
AZIMUTH PATTERN NUMBER :	Hpol:	CH15HAZ-TX
	Vpol:	CH15VAZ-TX
ELEVATION PATTERN NUMBER :	Hpol:	ATW25H4H
	Vpol:	ATW21H4V
AZIMUTH DIRECTIVITY :	Hpol:	1.44 (1.57 dBd)
	Vpol:	2.17 (3.36 dBd)
ELEVATION DIRECTIVITY :	Hpol:	25.00 (13.98 dBd)
	Vpol:	21.00 (13.22 dBd)
PEAK POWER GAIN :	Hpol:	29.05 (14.63 dBd)
	Vpol:	8.72 (9.40 dBd)
GAIN AT HORIZONTAL :	Hpol:	14.03 (11.47 dBd)
	Vpol:	4.39 (6.43 dBd)
V/H RATIO:		0.30
ELECTRICAL BEAM TILT :		1.00 Degrees
INPUT POWER REQUIRED :		34.42 kW (15.37 dBk)
INPUT TYPE :		6 1/8-75 Ohm
INPUT POWER RATING (MAXIMUM):		45 kW Average, 8VSB Digital
ANTENNA VSWR (MAXIMUM) :		1.10 Over 6MHz Channel

PRELIMINARY SPECIFICATION FOR TRASAR[®] ELLIPTICALLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA

MECHANICAL CHARACTERISTICS:

MOUNTING CONFIGURATION:

Top Mount

*(Tower Interface supplied and installed by others)

HEIGHT OF ANTENNA (D) :

59.70 feet

HEIGHT OF CENTER OF RADIATION (B) :

29.85 feet

OVERALL HEIGHT (A) :

62.70 feet

(Includes two 3-foot Lightning Rods)

DEICING :

Pressurized Radome Enclosure

RADOME DIAMETER (C):

18.40 inches, OD

RADOME COLOR :

AVIATION ORANGE (Standard)

CLIMBING DEVICE :

Fiberglass Climbing Ladder

CALCULATED WEIGHT :

12800.00 lbs

With 0.5" Radial Ice :

14120.00 lbs

WINDLOAD DATA :

TIA/EIA-222F²

CaAc :

No Ice**w/ Factored Ice**

104.4 sq.ft.

127.9 sq.ft.

EFFECTIVE MOMENT ARM:

31.9 sq.ft.

32.5 sq.ft.

ANSI/EIA-222G³

EPAa

90.6 sq.ft.

190.0 sq.ft.

EFFECTIVE MOMENT ARM:

32.2 sq.ft.

31.6 sq.ft.

MOUNTING FLANGE :

BOLT CIRCLE :

24.00 in.

BOLT DIAMETER :

1.25 in.

NUMBER OF BOLTS :

20

This antenna is designed to be supported by a structure that can resist the antenna base reactions and which provides a support that is rigid in the three translational and three rotational degrees of freedom.

1 Calculated weight is based on the **PRELIMINARY** design of the antenna. The actual weight of the antenna will be within $\pm 10\%$ of the calculated weight. The actual weight will be given in the technical manual that accompanies the antenna. This figure is for the antenna only and does not include the antenna input section.

2 Based on a wind speed of 80 miles per hour (MPH), a height above average terrain (HAAT) of 2,142 feet, and a height above ground level (HAGL) of 830 feet per EIA/TIA-222-F.

3 Based on a wind speed of 80MPH [3-sec gust] and 69MPH with 0.5 design ice, a height above average terrain of 2142 feet and a height above ground level of (HAGL) of 830 feet Structure Class II, Exposure Category C, Topographic Category 3 with a crest height of 1000 ft per EIA-222-G

NOTE: Localized conditions may require higher wind speed specifications than TIA/EIA specifications. Check with local authorities to verify wind speed requirements.

Broadcast Antenna System

Power Analysis

KHQ-DT
Spokane, WA
ATW25H4-ETTX-15H

Channel 15

ANTENNA PARAMETERS :

Azimuth Directivity :

Hor. Pol : 1.44 (0.00 dBd)
 Ver. Pol : 2.17 (3.36 dBd)

Elevation Directivity :

Hor. Pol : 25.00 (13.98 dBd)
 Ver. Pol : 21.00 (13.22 dBd)

TRANSMISSION LINE :

VERTICAL RUN :

Type: MACX675
 Length, ft. : 830
 Attenuation , dB/100 ft: 0.099

HORIZONTAL RUN :

Type: MACX675
 Length, ft. : 100
 Attenuation , dB/100 ft: 0.099

OTHER LINE LOSSES:

Type: 0
 Length, ft. : 0
 Attenuation , dB/100 ft: 0

Line Efficiency : 80.90%

ERP :

Hor. Pol : 1,000.00 kW (30.00 dBk)
 Ver. Pol : 300.00 kW (24.77 dBk)

POWER GAIN :

Hor. Pol : 29.05 (14.63 dBd)
 Ver. Pol : 8.72 (9.40 dBd)

ANTENNA INPUT :

kW : 34.42
 dBk : 15.37

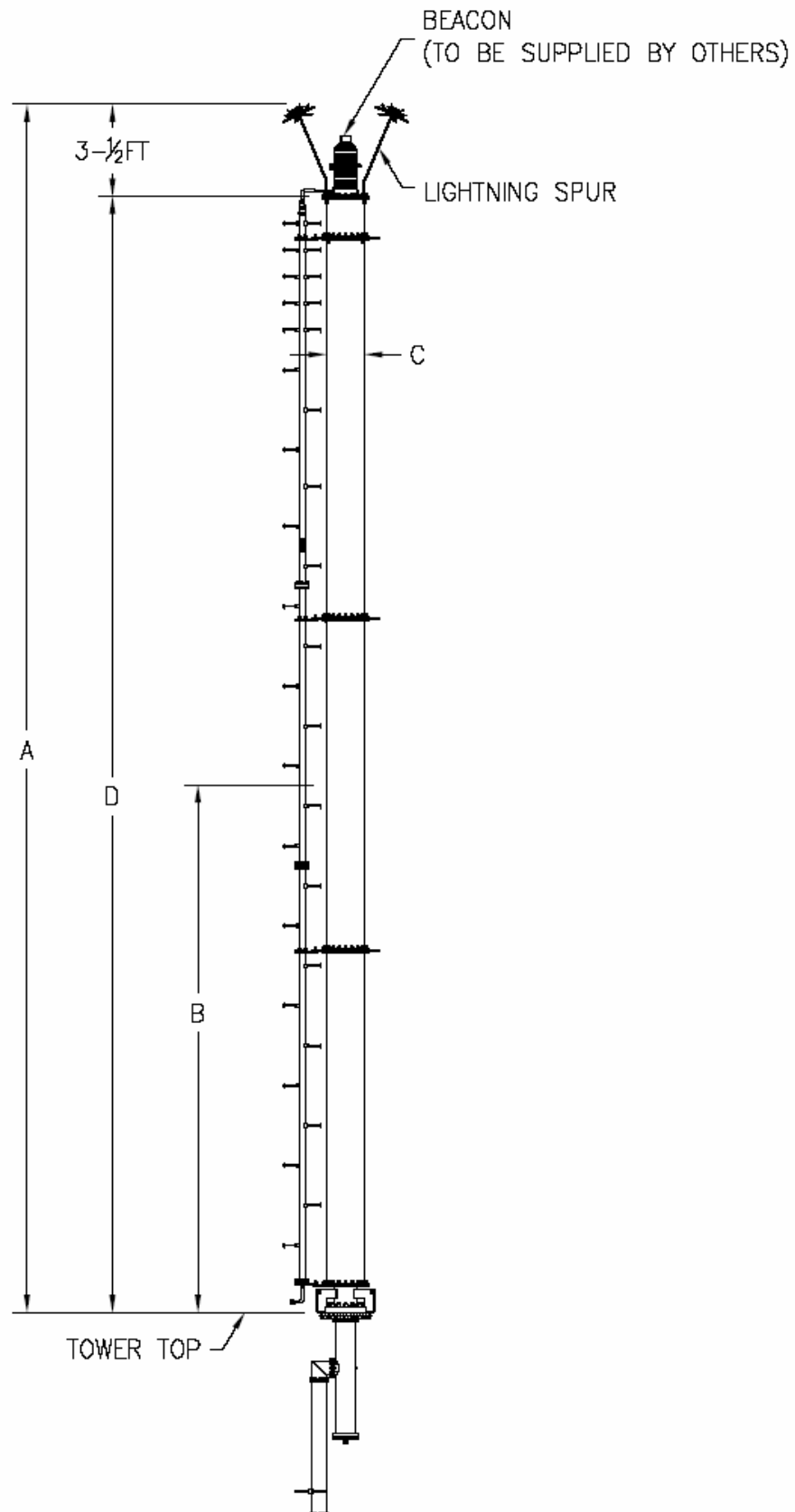
LINE LOSS :

kW : 8.13
 dB : 0.92

TRANSMITTER POWER :

kW : 42.55
 dBk : 16.29

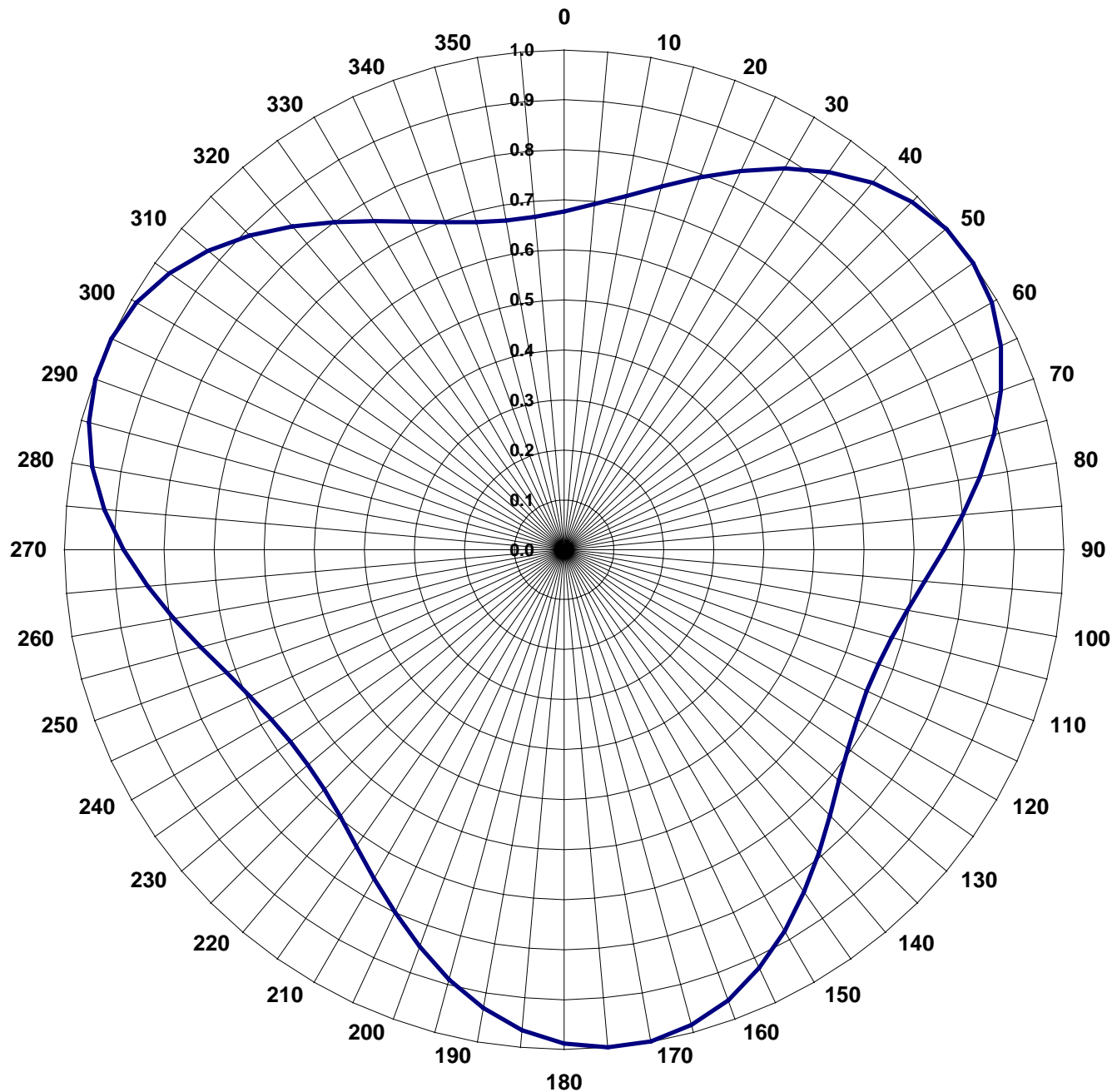
TYPICAL MOUNTING CONFIGURATION SHOWN. ACTUAL CONFIGURATION MAY VARY.



AZIMUTH PATTERN

TYPE:**CH15HAZ-TX****Numeric****dB****Directivity:****1.44****1.57****Peak(s) at:****Polarization:****Horizontal****Frequency:****15 (Digital)****Location:****Spokane, WA**

Note: Pattern shape and directivity may vary with channel and mounting configuration.



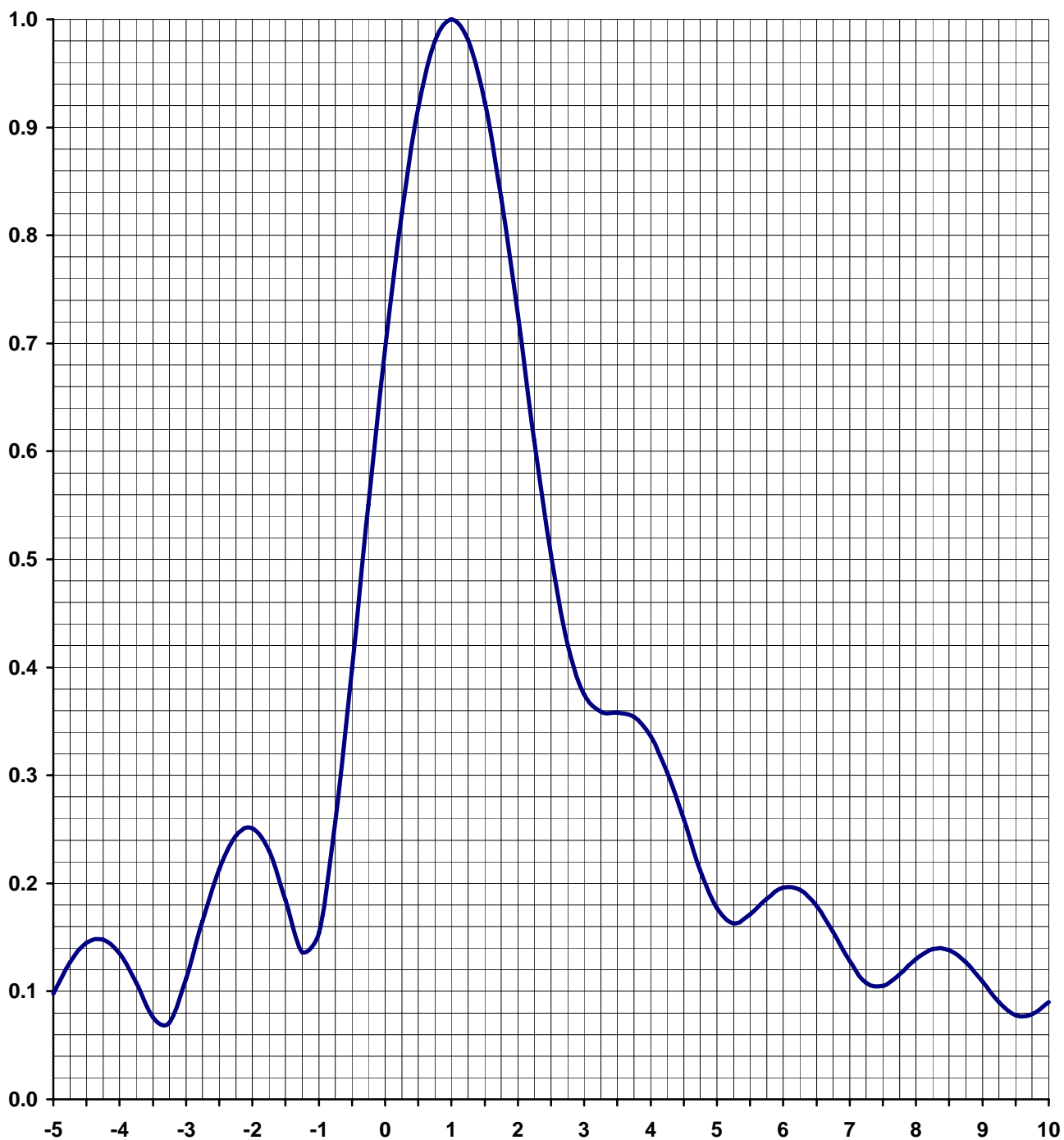
TABULATED DATA FOR AZIMUTH PATTERN**TYPE: CH15HAZ-TX**

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.676	-3.40	92	0.744	-2.57	184	0.969	-0.27	276	0.930	-0.63
2	0.681	-3.34	94	0.731	-2.72	186	0.958	-0.37	278	0.944	-0.50
4	0.689	-3.24	96	0.718	-2.88	188	0.944	-0.50	280	0.958	-0.37
6	0.697	-3.14	98	0.707	-3.01	190	0.930	-0.63	282	0.969	-0.27
8	0.707	-3.01	100	0.697	-3.14	192	0.914	-0.78	284	0.979	-0.18
10	0.718	-2.88	102	0.689	-3.24	194	0.898	-0.93	286	0.987	-0.11
12	0.731	-2.72	104	0.681	-3.34	196	0.881	-1.10	288	0.993	-0.06
14	0.744	-2.57	106	0.676	-3.40	198	0.863	-1.28	290	0.998	-0.02
16	0.759	-2.40	108	0.672	-3.45	200	0.845	-1.46	292	1.000	0.00
18	0.775	-2.21	110	0.669	-3.49	202	0.827	-1.65	294	1.000	0.00
20	0.792	-2.03	112	0.667	-3.52	204	0.809	-1.84	296	0.998	-0.02
22	0.809	-1.84	114	0.667	-3.52	206	0.792	-2.03	298	0.993	-0.06
24	0.827	-1.65	116	0.669	-3.49	208	0.775	-2.21	300	0.987	-0.11
26	0.845	-1.46	118	0.672	-3.45	210	0.759	-2.40	302	0.979	-0.18
28	0.863	-1.28	120	0.676	-3.40	212	0.744	-2.57	304	0.969	-0.27
30	0.881	-1.10	122	0.681	-3.34	214	0.731	-2.72	306	0.958	-0.37
32	0.898	-0.93	124	0.689	-3.24	216	0.718	-2.88	308	0.944	-0.50
34	0.914	-0.78	126	0.697	-3.14	218	0.707	-3.01	310	0.930	-0.63
36	0.930	-0.63	128	0.707	-3.01	220	0.697	-3.14	312	0.914	-0.78
38	0.944	-0.50	130	0.718	-2.88	222	0.689	-3.24	314	0.898	-0.93
40	0.958	-0.37	132	0.731	-2.72	224	0.681	-3.34	316	0.881	-1.10
42	0.969	-0.27	134	0.744	-2.57	226	0.676	-3.40	318	0.863	-1.28
44	0.979	-0.18	136	0.759	-2.40	228	0.672	-3.45	320	0.845	-1.46
46	0.987	-0.11	138	0.775	-2.21	230	0.669	-3.49	322	0.827	-1.65
48	0.993	-0.06	140	0.792	-2.03	232	0.667	-3.52	324	0.809	-1.84
50	0.998	-0.02	142	0.809	-1.84	234	0.667	-3.52	326	0.792	-2.03
52	1.000	0.00	144	0.827	-1.65	236	0.669	-3.49	328	0.775	-2.21
54	1.000	0.00	146	0.845	-1.46	238	0.672	-3.45	330	0.759	-2.40
56	0.998	-0.02	148	0.863	-1.28	240	0.676	-3.40	332	0.744	-2.57
58	0.993	-0.06	150	0.881	-1.10	242	0.681	-3.34	334	0.731	-2.72
60	0.987	-0.11	152	0.898	-0.93	244	0.689	-3.24	336	0.718	-2.88
62	0.979	-0.18	154	0.914	-0.78	246	0.697	-3.14	338	0.707	-3.01
64	0.969	-0.27	156	0.930	-0.63	248	0.707	-3.01	340	0.697	-3.14
66	0.958	-0.37	158	0.944	-0.50	250	0.718	-2.88	342	0.689	-3.24
68	0.944	-0.50	160	0.958	-0.37	252	0.731	-2.72	344	0.681	-3.34
70	0.930	-0.63	162	0.969	-0.27	254	0.744	-2.57	346	0.676	-3.40
72	0.914	-0.78	164	0.979	-0.18	256	0.759	-2.40	348	0.672	-3.45
74	0.898	-0.93	166	0.987	-0.11	258	0.775	-2.21	350	0.669	-3.49
76	0.881	-1.10	168	0.993	-0.06	260	0.792	-2.03	352	0.667	-3.52
78	0.863	-1.28	170	0.998	-0.02	262	0.809	-1.84	354	0.667	-3.52
80	0.845	-1.46	172	1.000	0.00	264	0.827	-1.65	356	0.669	-3.49
82	0.827	-1.65	174	1.000	0.00	266	0.845	-1.46	358	0.672	-3.45
84	0.809	-1.84	176	0.998	-0.02	268	0.863	-1.28	360	0.676	-3.40
86	0.792	-2.03	178	0.993	-0.06	270	0.881	-1.10			
88	0.775	-2.21	180	0.987	-0.11	272	0.898	-0.93			
90	0.759	-2.40	182	0.979	-0.18	274	0.914	-0.78			

ELEVATION PATTERN

TYPE:	ATW25H4H	
Directivity:	Numeric	dBd
Main Lobe:	25.00	13.98
Horizontal:	12.08	10.82

Frequency:	15 (Digital)
Location:	Spokane, WA
Beam Tilt:	1.00
Polarization:	Horizontal



TABULATED DATA FOR ELEVATION PATTERN

TYPE: ATW25H4H

-5 to 10 degrees in 0.25 increments

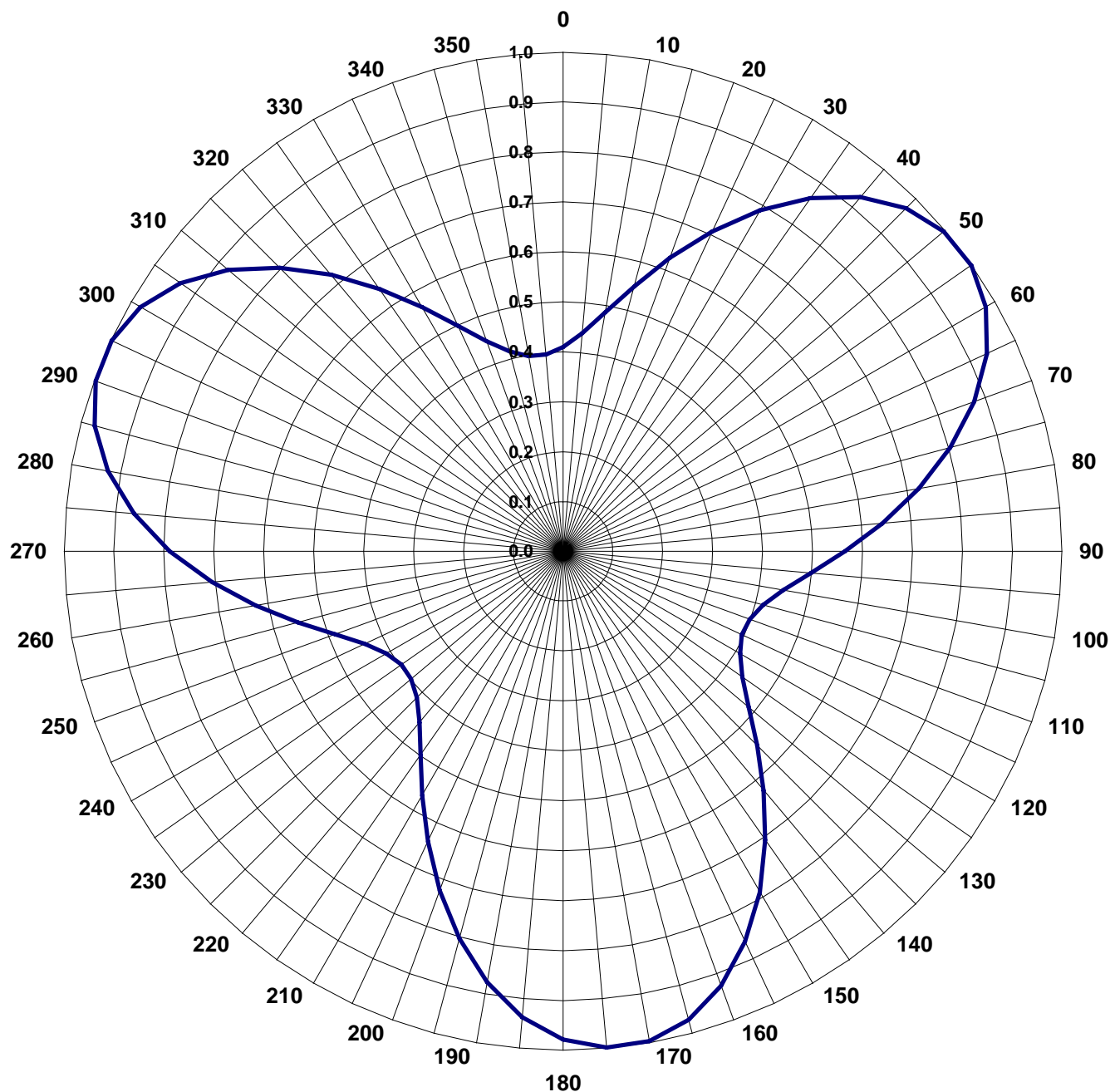
10 to 90 degrees in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.098	-20.18	6.75	0.155	-16.19	27.00	0.040	-27.96	50.50	0.016	-35.92	74.00	0.017	-35.39
-4.75	0.127	-17.92	7.00	0.128	-17.86	27.50	0.028	-31.06	51.00	0.026	-31.70	74.50	0.025	-32.04
-4.50	0.145	-16.77	7.25	0.108	-19.33	28.00	0.024	-32.40	51.50	0.034	-29.37	75.00	0.031	-30.17
-4.25	0.148	-16.59	7.50	0.105	-19.58	28.50	0.034	-29.37	52.00	0.036	-28.87	75.50	0.036	-28.87
-4.00	0.135	-17.39	7.75	0.116	-18.71	29.00	0.041	-27.74	52.50	0.032	-29.90	76.00	0.039	-28.18
-3.75	0.108	-19.33	8.00	0.130	-17.72	29.50	0.037	-28.64	53.00	0.023	-32.77	76.50	0.041	-27.74
-3.50	0.076	-22.38	8.25	0.139	-17.14	30.00	0.025	-32.04	53.50	0.014	-37.08	77.00	0.042	-27.54
-3.25	0.071	-22.97	8.50	0.138	-17.20	30.50	0.022	-33.15	54.00	0.015	-36.48	77.50	0.042	-27.54
-3.00	0.112	-19.02	8.75	0.127	-17.92	31.00	0.032	-29.90	54.50	0.025	-32.04	78.00	0.041	-27.74
-2.75	0.165	-15.65	9.00	0.109	-19.25	31.50	0.039	-28.18	55.00	0.033	-29.63	78.50	0.039	-28.18
-2.50	0.213	-13.43	9.25	0.090	-20.92	32.00	0.035	-29.12	55.50	0.037	-28.64	79.00	0.036	-28.87
-2.25	0.244	-12.25	9.50	0.078	-22.16	32.50	0.024	-32.40	56.00	0.035	-29.12	79.50	0.033	-29.63
-2.00	0.251	-12.01	9.75	0.079	-22.05	33.00	0.021	-33.56	56.50	0.028	-31.06	80.00	0.029	-30.75
-1.75	0.230	-12.77	10.00	0.090	-20.92	33.50	0.030	-30.46	57.00	0.018	-34.89	80.50	0.025	-32.04
-1.50	0.185	-14.66	10.50	0.108	-19.33	34.00	0.037	-28.64	57.50	0.011	-39.17	81.00	0.021	-33.56
-1.25	0.136	-17.33	11.00	0.097	-20.26	34.50	0.035	-29.12	58.00	0.016	-35.92	81.50	0.017	-35.39
-1.00	0.154	-16.25	11.50	0.069	-23.22	35.00	0.025	-32.04	58.50	0.026	-31.70	82.00	0.013	-37.72
-0.75	0.257	-11.80	12.00	0.064	-23.88	35.50	0.018	-34.89	59.00	0.034	-29.37	82.50	0.010	-40.00
-0.50	0.399	-7.98	12.50	0.083	-21.62	36.00	0.026	-31.70	59.50	0.037	-28.64	83.00	0.006	-44.44
-0.25	0.550	-5.19	13.00	0.086	-21.31	36.50	0.035	-29.12	60.00	0.036	-28.87	83.50	0.004	-47.96
0.00	0.695	-3.16	13.50	0.067	-23.48	37.00	0.036	-28.87	60.50	0.030	-30.46	84.00	0.002	-53.98
0.25	0.821	-1.71	14.00	0.049	-26.20	37.50	0.027	-31.37	61.00	0.021	-33.56	84.50	0.003	-50.46
0.50	0.918	-0.74	14.50	0.061	-24.29	38.00	0.018	-34.89	61.50	0.011	-39.17	85.00	0.004	-47.96
0.75	0.980	-0.18	15.00	0.074	-22.62	38.50	0.020	-33.98	62.00	0.010	-40.00	85.50	0.005	-46.02
1.00	1.000	0.00	15.50	0.066	-23.61	39.00	0.031	-30.17	62.50	0.019	-34.42	86.00	0.005	-46.02
1.25	0.981	-0.17	16.00	0.046	-26.74	39.50	0.035	-29.12	63.00	0.028	-31.06	86.50	0.006	-44.44
1.50	0.923	-0.70	16.50	0.044	-27.13	40.00	0.032	-29.90	63.50	0.035	-29.12	87.00	0.006	-44.44
1.75	0.835	-1.57	17.00	0.059	-24.58	40.50	0.021	-33.56	64.00	0.038	-28.40	87.50	0.005	-46.02
2.00	0.726	-2.78	17.50	0.061	-24.29	41.00	0.016	-35.92	64.50	0.038	-28.40	88.00	0.005	-46.02
2.25	0.610	-4.29	18.00	0.047	-26.56	41.50	0.024	-32.40	65.00	0.034	-29.37	88.50	0.004	-47.96
2.50	0.504	-5.95	18.50	0.034	-29.37	42.00	0.033	-29.63	65.50	0.026	-31.70	89.00	0.003	-50.46
2.75	0.420	-7.54	19.00	0.045	-26.94	42.50	0.035	-29.12	66.00	0.017	-35.39	89.50	0.002	-53.98
3.00	0.375	-8.52	19.50	0.056	-25.04	43.00	0.029	-30.75	66.50	0.008	-41.94	90.00	0.001	-60.00
3.25	0.359	-8.90	20.00	0.051	-25.85	43.50	0.019	-34.42	67.00	0.008	-41.94			
3.50	0.358	-8.92	20.50	0.035	-29.12	44.00	0.016	-35.92	67.50	0.017	-35.39			
3.75	0.354	-9.02	21.00	0.032	-29.90	44.50	0.024	-32.40	68.00	0.026	-31.70			
4.00	0.336	-9.47	21.50	0.045	-26.94	45.00	0.033	-29.63	68.50	0.034	-29.37			
4.25	0.303	-10.37	22.00	0.050	-26.02	45.50	0.035	-29.12	69.00	0.038	-28.40			
4.50	0.259	-11.73	22.50	0.041	-27.74	46.00	0.030	-30.46	69.50	0.040	-27.96			
4.75	0.212	-13.47	23.00	0.028	-31.06	46.50	0.020	-33.98	70.00	0.040	-27.96			
5.00	0.177	-15.04	23.50	0.033	-29.63	47.00	0.015	-36.48	70.50	0.037	-28.64			
5.25	0.163	-15.76	24.00	0.044	-27.13	47.50	0.022	-33.15	71.00	0.032	-29.90			
5.50	0.171	-15.34	24.50	0.045	-26.94	48.00	0.032	-29.90	71.50	0.026	-31.70			
5.75	0.186	-14.61	25.00	0.033	-29.63	48.50	0.036	-28.87	72.00	0.018	-34.89			
6.00	0.196	-14.15	25.50	0.025	-32.04	49.00	0.033	-29.63	72.50	0.009	-40.92			
6.25	0.194	-14.24	26.00	0.034	-29.37	49.50	0.024	-32.40	73.00	0.001	-60.00			
6.50	0.179	-14.94	26.50	0.042	-27.54	50.00	0.015	-36.48	73.50	0.009	-40.92			

AZIMUTH PATTERN

TYPE:**CH15VAZ-TX****Numeric****dB****Directivity:****2.17****3.36****Peak(s) at:****Polarization:****Vertical****Frequency:****15 (Digital)****Location:****Spokane, WA**

Note: Pattern shape and directivity may vary with channel and mounting configuration.



TABULATED DATA FOR AZIMUTH PATTERN

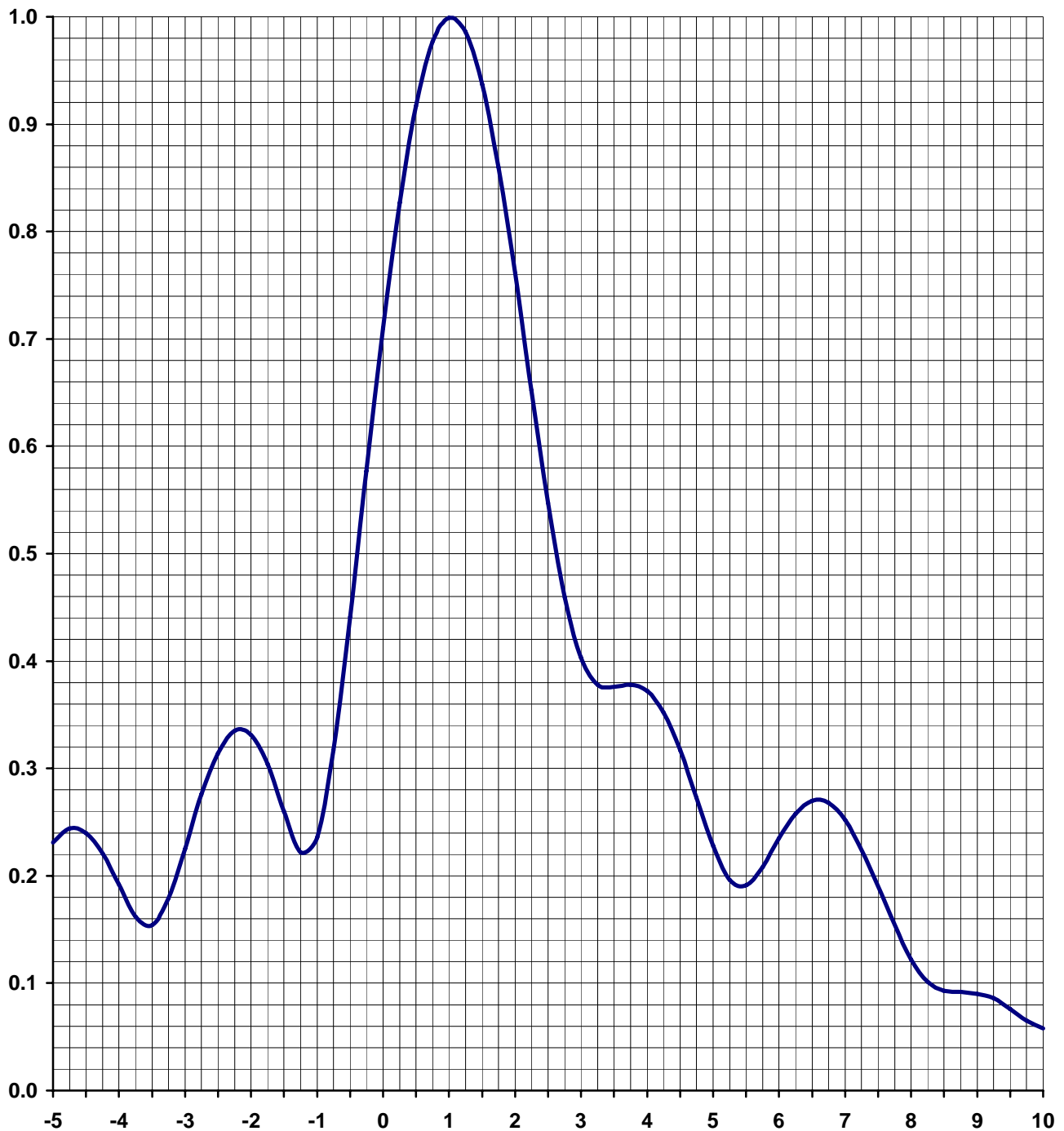
TYPE: CH15VAZ-TX

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.409	-7.77	92	0.536	-5.42	184	0.946	-0.48	276	0.876	-1.15
2	0.419	-7.56	94	0.510	-5.85	186	0.925	-0.68	278	0.902	-0.90
4	0.432	-7.29	96	0.486	-6.27	188	0.902	-0.90	280	0.925	-0.68
6	0.447	-6.99	98	0.466	-6.63	190	0.876	-1.15	282	0.946	-0.48
8	0.466	-6.63	100	0.447	-6.99	192	0.849	-1.42	284	0.963	-0.33
10	0.486	-6.27	102	0.432	-7.29	194	0.819	-1.73	286	0.978	-0.19
12	0.510	-5.85	104	0.419	-7.56	196	0.788	-2.07	288	0.989	-0.10
14	0.536	-5.42	106	0.409	-7.77	198	0.755	-2.44	290	0.996	-0.03
16	0.564	-4.97	108	0.402	-7.92	200	0.723	-2.82	292	1.000	0.00
18	0.593	-4.54	110	0.397	-8.02	202	0.690	-3.22	294	1.000	0.00
20	0.625	-4.08	112	0.395	-8.07	204	0.657	-3.65	296	0.996	-0.03
22	0.657	-3.65	114	0.395	-8.07	206	0.625	-4.08	298	0.989	-0.10
24	0.690	-3.22	116	0.397	-8.02	208	0.593	-4.54	300	0.978	-0.19
26	0.723	-2.82	118	0.402	-7.92	210	0.564	-4.97	302	0.963	-0.33
28	0.755	-2.44	120	0.409	-7.77	212	0.536	-5.42	304	0.946	-0.48
30	0.788	-2.07	122	0.419	-7.56	214	0.510	-5.85	306	0.925	-0.68
32	0.819	-1.73	124	0.432	-7.29	216	0.486	-6.27	308	0.902	-0.90
34	0.849	-1.42	126	0.447	-6.99	218	0.466	-6.63	310	0.876	-1.15
36	0.876	-1.15	128	0.466	-6.63	220	0.447	-6.99	312	0.849	-1.42
38	0.902	-0.90	130	0.486	-6.27	222	0.432	-7.29	314	0.819	-1.73
40	0.925	-0.68	132	0.510	-5.85	224	0.419	-7.56	316	0.788	-2.07
42	0.946	-0.48	134	0.536	-5.42	226	0.409	-7.77	318	0.755	-2.44
44	0.963	-0.33	136	0.564	-4.97	228	0.402	-7.92	320	0.723	-2.82
46	0.978	-0.19	138	0.593	-4.54	230	0.397	-8.02	322	0.690	-3.22
48	0.989	-0.10	140	0.625	-4.08	232	0.395	-8.07	324	0.657	-3.65
50	0.996	-0.03	142	0.657	-3.65	234	0.395	-8.07	326	0.625	-4.08
52	1.000	0.00	144	0.690	-3.22	236	0.397	-8.02	328	0.593	-4.54
54	1.000	0.00	146	0.723	-2.82	238	0.402	-7.92	330	0.564	-4.97
56	0.996	-0.03	148	0.755	-2.44	240	0.409	-7.77	332	0.536	-5.42
58	0.989	-0.10	150	0.788	-2.07	242	0.419	-7.56	334	0.510	-5.85
60	0.978	-0.19	152	0.819	-1.73	244	0.432	-7.29	336	0.486	-6.27
62	0.963	-0.33	154	0.849	-1.42	246	0.447	-6.99	338	0.466	-6.63
64	0.946	-0.48	156	0.876	-1.15	248	0.466	-6.63	340	0.447	-6.99
66	0.925	-0.68	158	0.902	-0.90	250	0.486	-6.27	342	0.432	-7.29
68	0.902	-0.90	160	0.925	-0.68	252	0.510	-5.85	344	0.419	-7.56
70	0.876	-1.15	162	0.946	-0.48	254	0.536	-5.42	346	0.409	-7.77
72	0.849	-1.42	164	0.963	-0.33	256	0.564	-4.97	348	0.402	-7.92
74	0.819	-1.73	166	0.978	-0.19	258	0.593	-4.54	350	0.397	-8.02
76	0.788	-2.07	168	0.989	-0.10	260	0.625	-4.08	352	0.395	-8.07
78	0.755	-2.44	170	0.996	-0.03	262	0.657	-3.65	354	0.395	-8.07
80	0.723	-2.82	172	1.000	0.00	264	0.690	-3.22	356	0.397	-8.02
82	0.690	-3.22	174	1.000	0.00	266	0.723	-2.82	358	0.402	-7.92
84	0.657	-3.65	176	0.996	-0.03	268	0.755	-2.44	360	0.409	-7.77
86	0.625	-4.08	178	0.989	-0.10	270	0.788	-2.07			
88	0.593	-4.54	180	0.978	-0.19	272	0.819	-1.73			
90	0.564	-4.97	182	0.963	-0.33	274	0.849	-1.42			

ELEVATION PATTERN

TYPE:	ATW21H4V	
Directivity:	Numeric	dBd
Main Lobe:	21.00	13.22
Horizontal:	10.59	10.25

Frequency:	15 (Digital)
Location:	Spokane, WA
Beam Tilt:	1.00
Polarization:	Vertical



TABULATED DATA FOR ELEVATION PATTERN

TYPE: ATW21H4V

-5 to 10 degrees in 0.25 increments

10 to 90 degrees in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.231	-12.73	6.75	0.268	-11.44	27.00	0.069	-23.22	50.50	0.035	-29.12	74.00	0.053	-25.51
-4.75	0.244	-12.25	7.00	0.252	-11.97	27.50	0.085	-21.41	51.00	0.024	-32.40	74.50	0.058	-24.73
-4.50	0.240	-12.40	7.25	0.224	-13.00	28.00	0.100	-20.00	51.50	0.011	-39.17	75.00	0.062	-24.15
-4.25	0.221	-13.11	7.50	0.190	-14.42	28.50	0.106	-19.49	52.00	0.018	-34.89	75.50	0.064	-23.88
-4.00	0.192	-14.33	7.75	0.154	-16.25	29.00	0.099	-20.09	52.50	0.034	-29.37	76.00	0.065	-23.74
-3.75	0.162	-15.81	8.00	0.122	-18.27	29.50	0.076	-22.38	53.00	0.048	-26.38	76.50	0.064	-23.88
-3.50	0.154	-16.25	8.25	0.101	-19.91	30.00	0.047	-26.56	53.50	0.058	-24.73	77.00	0.061	-24.29
-3.25	0.179	-14.94	8.50	0.093	-20.63	30.50	0.020	-33.98	54.00	0.062	-24.15	77.50	0.058	-24.73
-3.00	0.225	-12.96	8.75	0.092	-20.72	31.00	0.021	-33.56	54.50	0.061	-24.29	78.00	0.054	-25.35
-2.75	0.276	-11.18	9.00	0.090	-20.92	31.50	0.032	-29.90	55.00	0.058	-24.73	78.50	0.050	-26.02
-2.50	0.314	-10.06	9.25	0.086	-21.31	32.00	0.031	-30.17	55.50	0.054	-25.35	79.00	0.044	-27.13
-2.25	0.335	-9.50	9.50	0.076	-22.38	32.50	0.019	-34.42	56.00	0.054	-25.35	79.50	0.039	-28.18
-2.00	0.331	-9.60	9.75	0.065	-23.74	33.00	0.006	-44.44	56.50	0.056	-25.04	80.00	0.034	-29.37
-1.75	0.304	-10.34	10.00	0.058	-24.73	33.50	0.025	-32.04	57.00	0.058	-24.73	80.50	0.029	-30.75
-1.50	0.260	-11.70	10.50	0.073	-22.73	34.00	0.043	-27.33	57.50	0.059	-24.58	81.00	0.024	-32.40
-1.25	0.222	-13.07	11.00	0.093	-20.63	34.50	0.057	-24.88	58.00	0.058	-24.73	81.50	0.020	-33.98
-1.00	0.236	-12.54	11.50	0.091	-20.82	35.00	0.067	-23.48	58.50	0.051	-25.85	82.00	0.015	-36.48
-0.75	0.317	-9.98	12.00	0.077	-22.27	35.50	0.075	-22.50	59.00	0.043	-27.33	82.50	0.013	-37.72
-0.50	0.441	-7.11	12.50	0.089	-21.01	36.00	0.084	-21.51	59.50	0.033	-29.63	83.00	0.011	-39.17
-0.25	0.577	-4.78	13.00	0.128	-17.86	36.50	0.088	-21.11	60.00	0.026	-31.70	83.50	0.011	-39.17
0.00	0.710	-2.97	13.50	0.157	-16.08	37.00	0.085	-21.41	60.50	0.027	-31.37	84.00	0.011	-39.17
0.25	0.827	-1.65	14.00	0.157	-16.08	37.50	0.072	-22.85	61.00	0.034	-29.37	84.50	0.011	-39.17
0.50	0.917	-0.75	14.50	0.127	-17.92	38.00	0.052	-25.68	61.50	0.041	-27.74	85.00	0.011	-39.17
0.75	0.977	-0.20	15.00	0.081	-21.83	38.50	0.029	-30.75	62.00	0.044	-27.13	85.50	0.011	-39.17
1.00	0.999	-0.01	15.50	0.041	-27.74	39.00	0.018	-34.89	62.50	0.045	-26.94	86.00	0.011	-39.17
1.25	0.986	-0.12	16.00	0.035	-29.12	39.50	0.028	-31.06	63.00	0.042	-27.54	86.50	0.011	-39.17
1.50	0.937	-0.57	16.50	0.037	-28.64	40.00	0.036	-28.87	63.50	0.034	-29.37	87.00	0.010	-40.00
1.75	0.860	-1.31	17.00	0.030	-30.46	40.50	0.035	-29.12	64.00	0.023	-32.77	87.50	0.009	-40.92
2.00	0.761	-2.37	17.50	0.026	-31.70	41.00	0.025	-32.04	64.50	0.009	-40.92	88.00	0.008	-41.94
2.25	0.652	-3.72	18.00	0.038	-28.40	41.50	0.011	-39.17	65.00	0.005	-46.02	88.50	0.006	-44.44
2.50	0.547	-5.24	18.50	0.049	-26.20	42.00	0.021	-33.56	65.50	0.020	-33.98	89.00	0.005	-46.02
2.75	0.459	-6.76	19.00	0.053	-25.51	42.50	0.038	-28.40	66.00	0.035	-29.12	89.50	0.003	-50.46
3.00	0.403	-7.89	19.50	0.069	-23.22	43.00	0.052	-25.68	66.50	0.047	-26.56	90.00	0.001	-60.00
3.25	0.378	-8.45	20.00	0.095	-20.45	43.50	0.061	-24.29	67.00	0.057	-24.88			
3.50	0.376	-8.50	20.50	0.118	-18.56	44.00	0.065	-23.74	67.50	0.064	-23.88			
3.75	0.378	-8.45	21.00	0.127	-17.92	44.50	0.067	-23.48	68.00	0.067	-23.48			
4.00	0.372	-8.59	21.50	0.115	-18.79	45.00	0.069	-23.22	68.50	0.067	-23.48			
4.25	0.352	-9.07	22.00	0.084	-21.51	45.50	0.071	-22.97	69.00	0.064	-23.88			
4.50	0.317	-9.98	22.50	0.046	-26.74	46.00	0.071	-22.97	69.50	0.058	-24.73			
4.75	0.273	-11.28	23.00	0.019	-34.42	46.50	0.066	-23.61	70.00	0.051	-25.85			
5.00	0.228	-12.84	23.50	0.026	-31.70	47.00	0.055	-25.19	70.50	0.043	-27.33			
5.25	0.196	-14.15	24.00	0.031	-30.17	47.50	0.041	-27.74	71.00	0.036	-28.87			
5.50	0.191	-14.38	24.50	0.021	-33.56	48.00	0.026	-31.70	71.50	0.031	-30.17			
5.75	0.208	-13.64	25.00	0.007	-43.10	48.50	0.022	-33.15	72.00	0.030	-30.46			
6.00	0.235	-12.58	25.50	0.022	-33.15	49.00	0.031	-30.17	72.50	0.035	-29.12			
6.25	0.258	-11.77	26.00	0.040	-27.96	49.50	0.038	-28.40	73.00	0.041	-27.74			
6.50	0.270	-11.37	26.50	0.053	-25.51	50.00	0.040	-27.96	73.50	0.048	-26.38			