

***PRELIMINARY SPECIFICATION FOR
HORIZONTALLY POLARIZED
BROADBAND PANEL ARRAY ANTENNA***

*Prepared for
KPMR-TV Channel 38 & KPMR-DT Channel 21 Santa Barbara, CA
April 6, 2005*

**ANTENNA TYPE:
ETU-P2H12-21/38**

**SPECIFICATION NO :
KO032805-1470**

**PRELIMINARY SPECIFICATION FOR
HORIZONTALLY POLARIZED
BROADBAND PANEL ARRAY ANTENNA**

ELECTRICAL CHARACTERISTICS:

CHANNEL :	NTSC	38
	DTV :	21
FREQUENCY RANGE :	NTSC	614 - 620 MHz
	DTV :	512 - 518 MHz
AZIMUTH PATTERN NUMBER :	NTSC	CH38HAZ
	DTV :	CH21HAZ
ELEVATION PATTERN NUMBER :	NTSC	ETU-P2H12-CH38
	DTV :	ETU-P2H12-CH21
AZIMUTH DIRECTIVITY :	NTSC	2.97 (4.73 dBd)
	DTV :	2.80 (4.47 dBd)
ELEVATION DIRECTIVITY :	NTSC	24.18 (13.83 dBd)
	DTV :	20.82 (13.18 dBd)
PEAK POWER GAIN :	NTSC	71.81 (18.56 dBd)
	DTV :	58.30 (17.66 dBd)
GAIN AT HORIZONTAL :	NTSC	57.78 (17.62 dBd)
	DTV :	50.20 (17.01 dBd)
ELECTRICAL BEAM TILT :	NTSC	0.75 Degrees
	DTV :	0.75 Degrees
INPUT POWER REQUIRED :	NTSC	34.12 kW (15.33 dBk)
	DTV :	17.15 kW (12.34 dBk)
INPUT TYPE :		6 1/8 50 Ohm
ANTENNA VSWR (MAXIMUM) :		1.10 Over Operating Channel

PRELIMINARY SPECIFICATION FOR HORIZONTALLY POLARIZED BROADBAND PANEL ARRAY ANTENNA

MECHANICAL CHARACTERISTICS:

MOUNTING CONFIGURATION:		Top Mount*
HEIGHT OF ANTENNA :		42.64 feet
HEIGHT OF CENTER OF RADIATION (B) :		24.93 feet
OVERALL HEIGHT (A) : (Includes two 3-foot Lightning Rods)		45.92 feet
DEICING :		Radome Covered Panels
RADOME COLOR :		WHITE (Standard)
CALCULATED WEIGHT :		8395.0 lbs
ANTENNA AREA :	CaAc :	199.0 sq.ft.

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 100 miles per hour (MPH), a height above average terrain (HAAT) of 3,032 feet, and a height above ground level (HAGL) of 175 feet per EIA/TIA-222-F.

NOTE: County is within 100 miles of hurricane oceanline. Tabulated values of basic windspeed have been adjusted in accordance with ASCE 7-88 to obtain a 50 year recurrence intervals. 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

KPMR-TV
Santa Barbara, CA
ETU-P2H12-21/38

Channel 38

ANTENNA PARAMETERS :

Azimuth Directivity :

Hor. Pol : 2.97
dBd : 4.73

Elevation Directivity :

Hor. Pol : 24.18
dBd : 13.83

TRANSMISSION LINE :

VERTICAL RUN :

Type: MACX650
Length, ft. : 150
Attenuation , dB/100 ft: 0.124

HORIZONTAL RUN :

Type: MACX650
Length, ft. : 100
Attenuation , dB/100 ft: 0.124

OTHER LINE LOSSES:

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

Line Efficiency : 93.11%

ERP :

kW : 2450.00
dBk : 33.89

POWER GAIN :

Ratio : 71.81
dBd : 18.56

ANTENNA INPUT :

kW : 34.12
dBk : 15.33

LINE LOSS :

kW : 2.52
dB : 0.31

COMBINER/SPLITTER LOSS:

kW : 3.08
dB : 0.35

TRANSMITTER POWER :

kW : 39.71
dBk : 15.99

Broadcast Antenna System Power Analysis

KPMR-DT
Santa Barbara, CA
ETU-P2H12-21/38

Channel 21

ANTENNA PARAMETERS :

Azimuth Directivity :

Hor. Pol : 2.80

dBd : 4.47

Elevation Directivity :

Hor. Pol : 20.82

dBd : 13.18

TRANSMISSION LINE :

VERTICAL RUN :

Type: MACX650

Length, ft. : 150

Attenuation , dB/100 ft: 0.113

HORIZONTAL RUN :

Type: MACX650

Length, ft. : 100

Attenuation , dB/100 ft: 0.113

OTHER LINE LOSSES:

Type: N/A

Length, ft. : 0

Attenuation , dB/100 ft: 0

Line Efficiency : 93.70%

ERP :

kW : 1000.00

dBk : 30.00

POWER GAIN :

Ratio : 58.30

dBd : 17.66

ANTENNA INPUT :

kW : 17.15

dBk : 12.34

LINE LOSS :

kW : 1.15

dB : 0.28

COMBINER/SPLITTER LOSS:

kW : 1.54

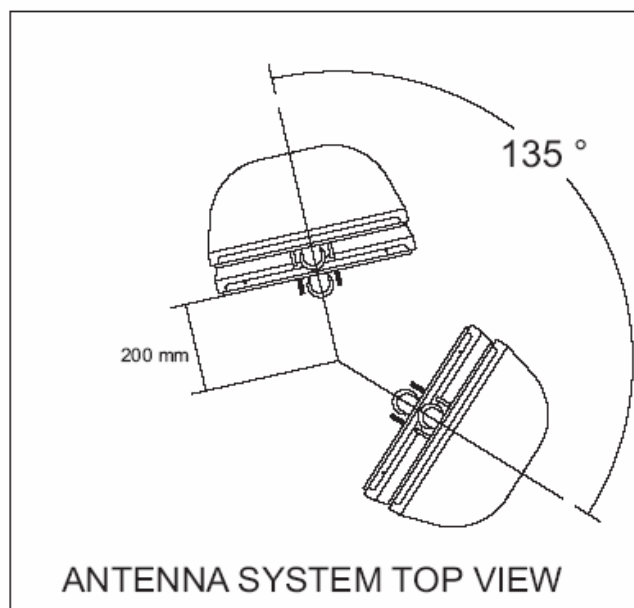
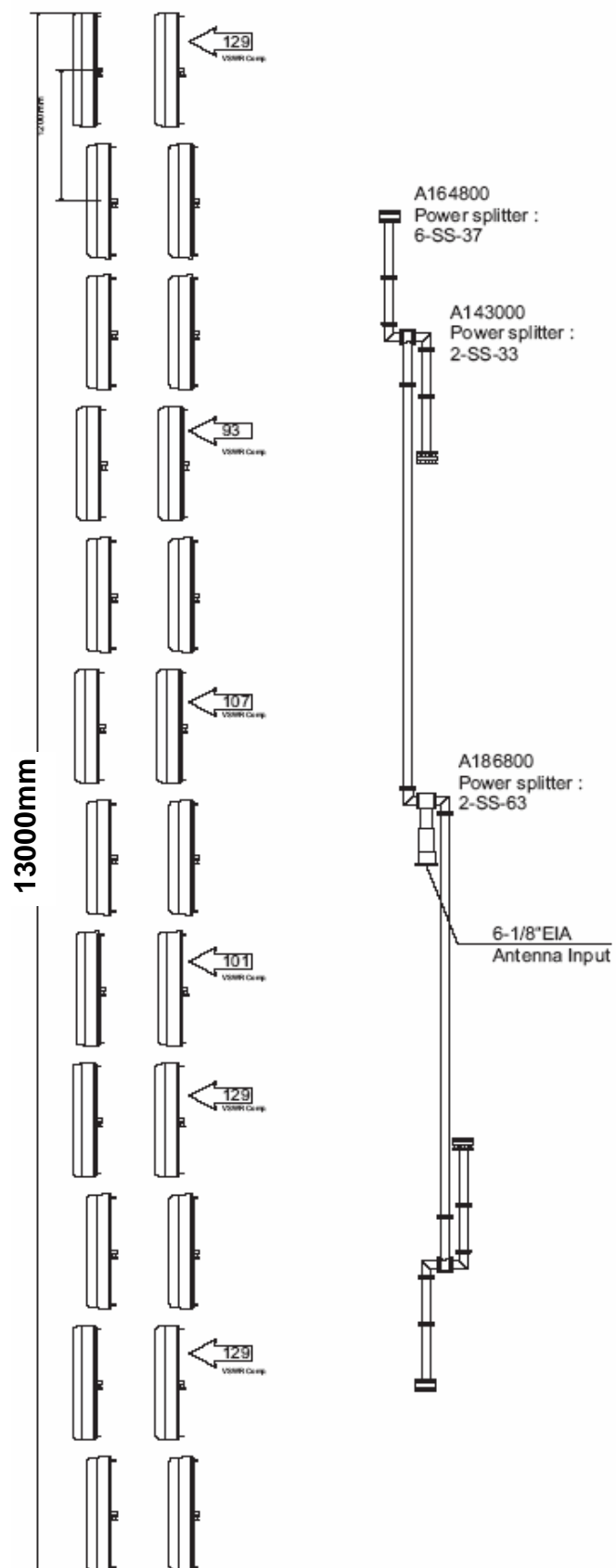
dB : 0.35

TRANSMITTER POWER :

kW : 19.84

dBk : 12.98

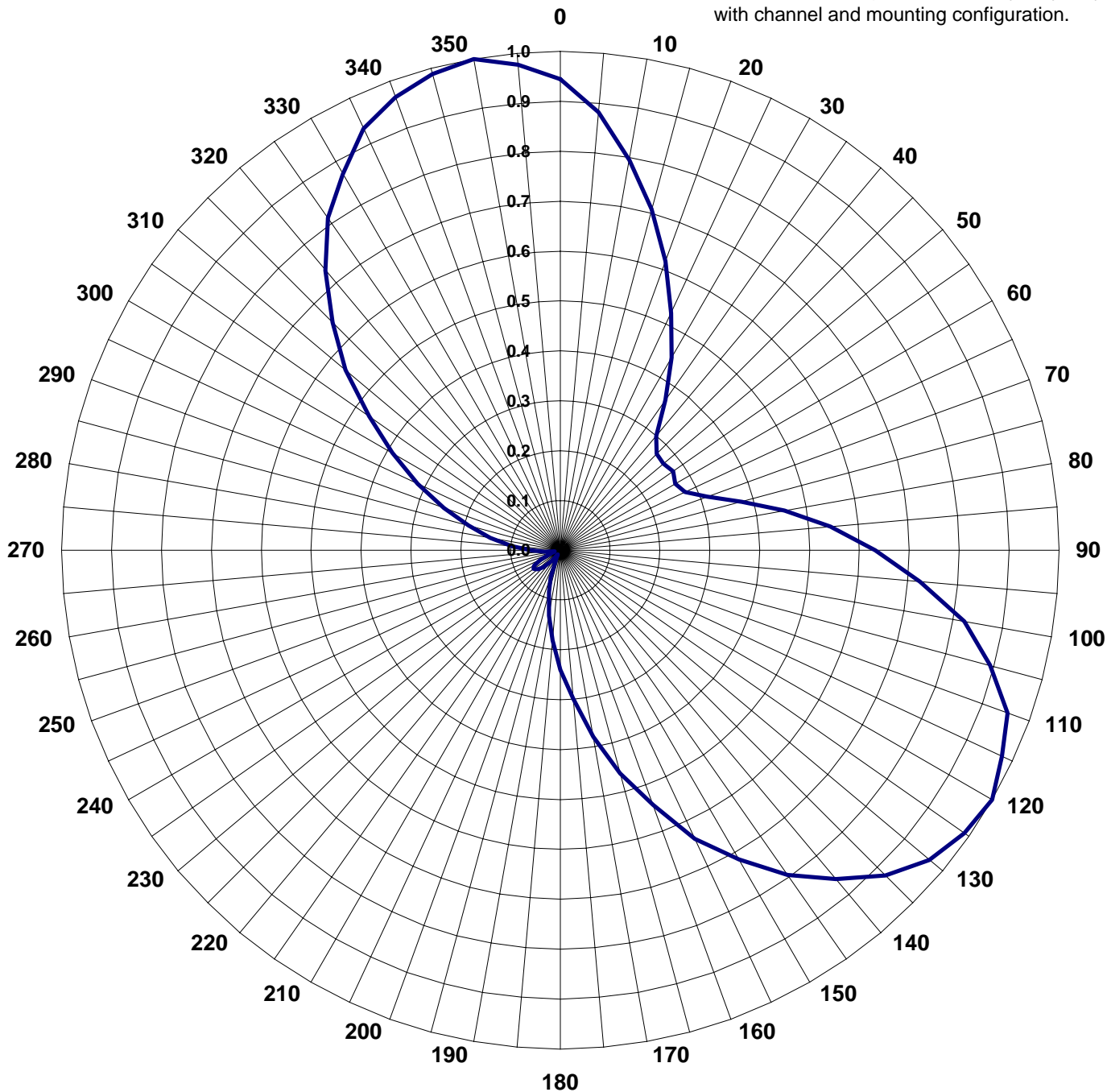
SCHEMATIC DIAGRAM ETU-P2H12-21/38



AZIMUTH PATTERN

TYPE:	CH38HAZ	
	Numeric	dB
Directivity:	2.97	4.73
Peak(s) at:		
Polarization:	Horizontal	
Frequency:	38 (Analog)	
Location:	Santa Barbara, CA	

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

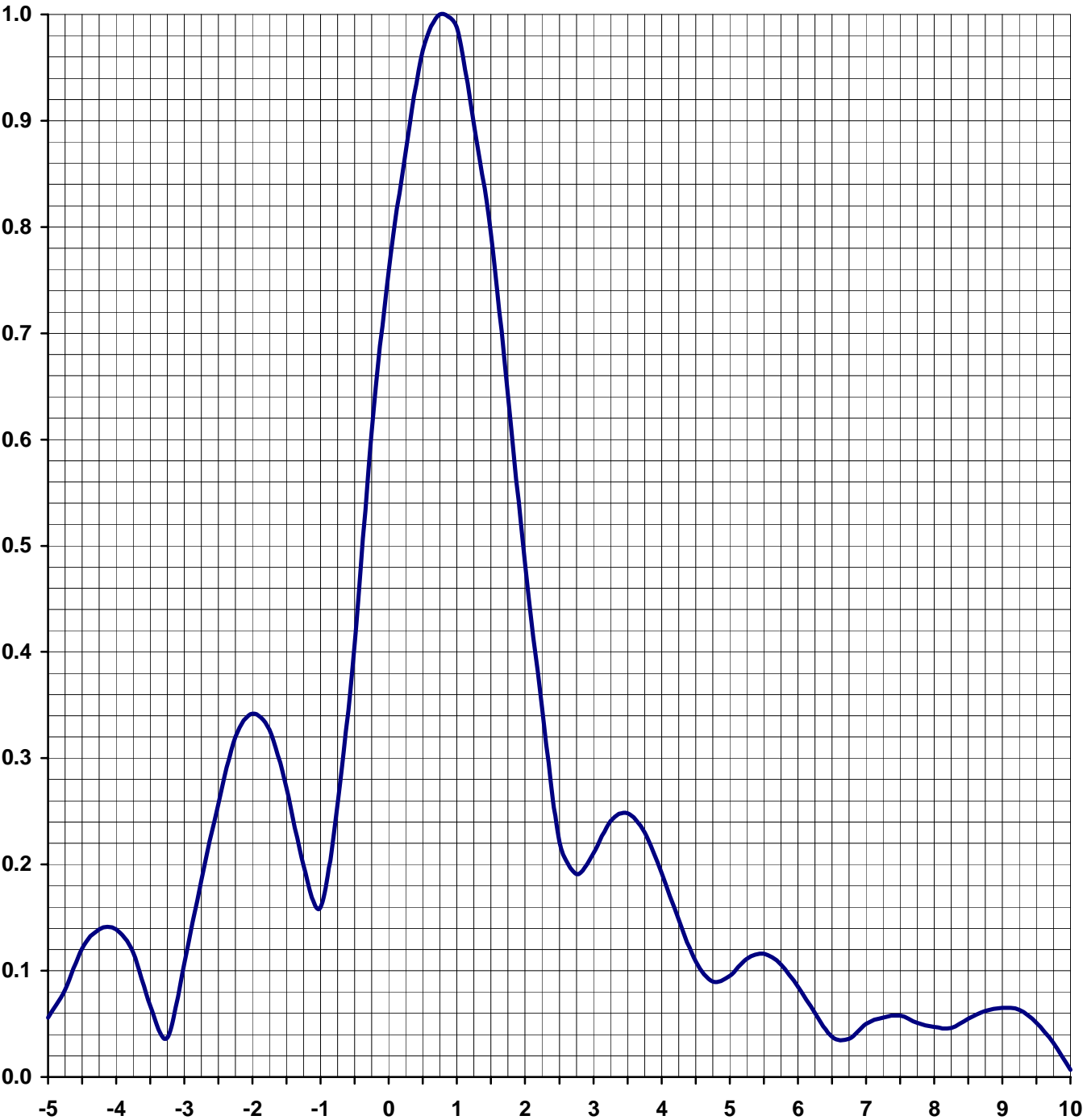


TABULATED DATA FOR AZIMUTH PATTERN**TYPE: CH38HAZ**

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.944	-0.50	92	0.668	-3.50	184	0.191	-14.40	276	0.106	-19.50
2	0.923	-0.70	94	0.708	-3.00	186	0.172	-15.30	278	0.124	-18.10
4	0.891	-1.00	96	0.750	-2.50	188	0.153	-16.30	280	0.143	-16.90
6	0.871	-1.20	98	0.785	-2.10	190	0.133	-17.50	282	0.162	-15.80
8	0.832	-1.60	100	0.822	-1.70	192	0.115	-18.80	284	0.182	-14.80
10	0.794	-2.00	102	0.851	-1.40	194	0.097	-20.30	286	0.200	-14.00
12	0.759	-2.40	104	0.881	-1.10	196	0.086	-21.30	288	0.229	-12.80
14	0.724	-2.80	106	0.912	-0.80	198	0.068	-23.30	290	0.248	-12.10
16	0.692	-3.20	108	0.933	-0.60	200	0.059	-24.60	292	0.279	-11.10
18	0.653	-3.70	110	0.955	-0.40	202	0.041	-27.80	294	0.299	-10.50
20	0.617	-4.20	112	0.966	-0.30	204	0.032	-30.00	296	0.339	-9.40
22	0.575	-4.80	114	0.989	-0.10	206	0.022	-33.10	298	0.367	-8.70
24	0.543	-5.30	116	0.989	-0.10	208	0.012	-38.20	300	0.389	-8.20
26	0.501	-6.00	118	0.989	-0.10	210	0.010	-40.30	302	0.427	-7.40
28	0.479	-6.40	120	1.000	0.00	212	0.010	-39.60	304	0.457	-6.80
30	0.447	-7.00	122	1.000	0.00	214	0.013	-38.00	306	0.490	-6.20
32	0.417	-7.60	124	1.000	0.00	216	0.016	-35.90	308	0.525	-5.60
34	0.376	-8.50	126	0.977	-0.20	218	0.024	-32.50	310	0.562	-5.00
36	0.359	-8.90	128	0.977	-0.20	220	0.028	-31.10	312	0.596	-4.50
38	0.331	-9.60	130	0.966	-0.30	222	0.038	-28.40	314	0.638	-3.90
40	0.299	-10.50	132	0.944	-0.50	224	0.043	-27.40	316	0.668	-3.50
42	0.288	-10.80	134	0.933	-0.60	226	0.051	-25.80	318	0.700	-3.10
44	0.275	-11.20	136	0.912	-0.80	228	0.054	-25.30	320	0.733	-2.70
46	0.272	-11.30	138	0.891	-1.00	230	0.059	-24.60	322	0.759	-2.40
48	0.272	-11.30	140	0.861	-1.30	232	0.060	-24.40	324	0.794	-2.00
50	0.269	-11.40	142	0.841	-1.50	234	0.066	-23.60	326	0.822	-1.70
52	0.275	-11.20	144	0.813	-1.80	236	0.065	-23.70	328	0.851	-1.40
54	0.275	-11.20	146	0.785	-2.10	238	0.060	-24.50	330	0.871	-1.20
56	0.275	-11.20	148	0.750	-2.50	240	0.061	-24.30	332	0.902	-0.90
58	0.272	-11.30	150	0.716	-2.90	242	0.053	-25.50	334	0.923	-0.70
60	0.266	-11.50	152	0.676	-3.40	244	0.049	-26.20	336	0.933	-0.60
62	0.266	-11.50	154	0.646	-3.80	246	0.040	-27.90	338	0.955	-0.40
64	0.272	-11.30	156	0.617	-4.20	248	0.035	-29.00	340	0.966	-0.30
66	0.275	-11.20	158	0.582	-4.70	250	0.026	-31.80	342	0.977	-0.20
68	0.292	-10.70	160	0.543	-5.30	252	0.022	-33.30	344	0.989	-0.10
70	0.313	-10.10	162	0.513	-5.80	254	0.014	-37.00	346	1.000	0.00
72	0.339	-9.40	164	0.473	-6.50	256	0.011	-39.10	348	1.000	0.00
74	0.367	-8.70	166	0.442	-7.10	258	0.010	-40.20	350	1.000	0.00
76	0.394	-8.10	168	0.407	-7.80	260	0.011	-38.80	352	0.989	-0.10
78	0.427	-7.40	170	0.380	-8.40	262	0.013	-37.90	354	0.977	-0.20
80	0.457	-6.80	172	0.347	-9.20	264	0.023	-32.80	356	0.977	-0.20
82	0.490	-6.20	174	0.316	-10.00	266	0.039	-28.10	358	0.955	-0.40
84	0.525	-5.60	176	0.288	-10.80	268	0.050	-26.10	360	0.944	-0.50
86	0.562	-5.00	178	0.260	-11.70	270	0.060	-24.50			
88	0.596	-4.50	180	0.240	-12.40	272	0.077	-22.30			
90	0.631	-4.00	182	0.211	-13.50	274	0.087	-21.20			

ELEVATION PATTERN

TYPE:	ETU-P2H12-CH38	
Directivity:	Numeric	dBd
Main Lobe:	24.18	13.83
Horizontal:	19.46	12.89
Beam Tilt:	0.75	
Polarization:	Horizontal	
Frequency:	38 (Analog)	
Location:	Santa Barbara, CA	



TABULATED DATA FOR ELEVATION PATTERN

TYPE: ETU-P2H12-CH38

-5 to 10 degrees in 0.25 increments

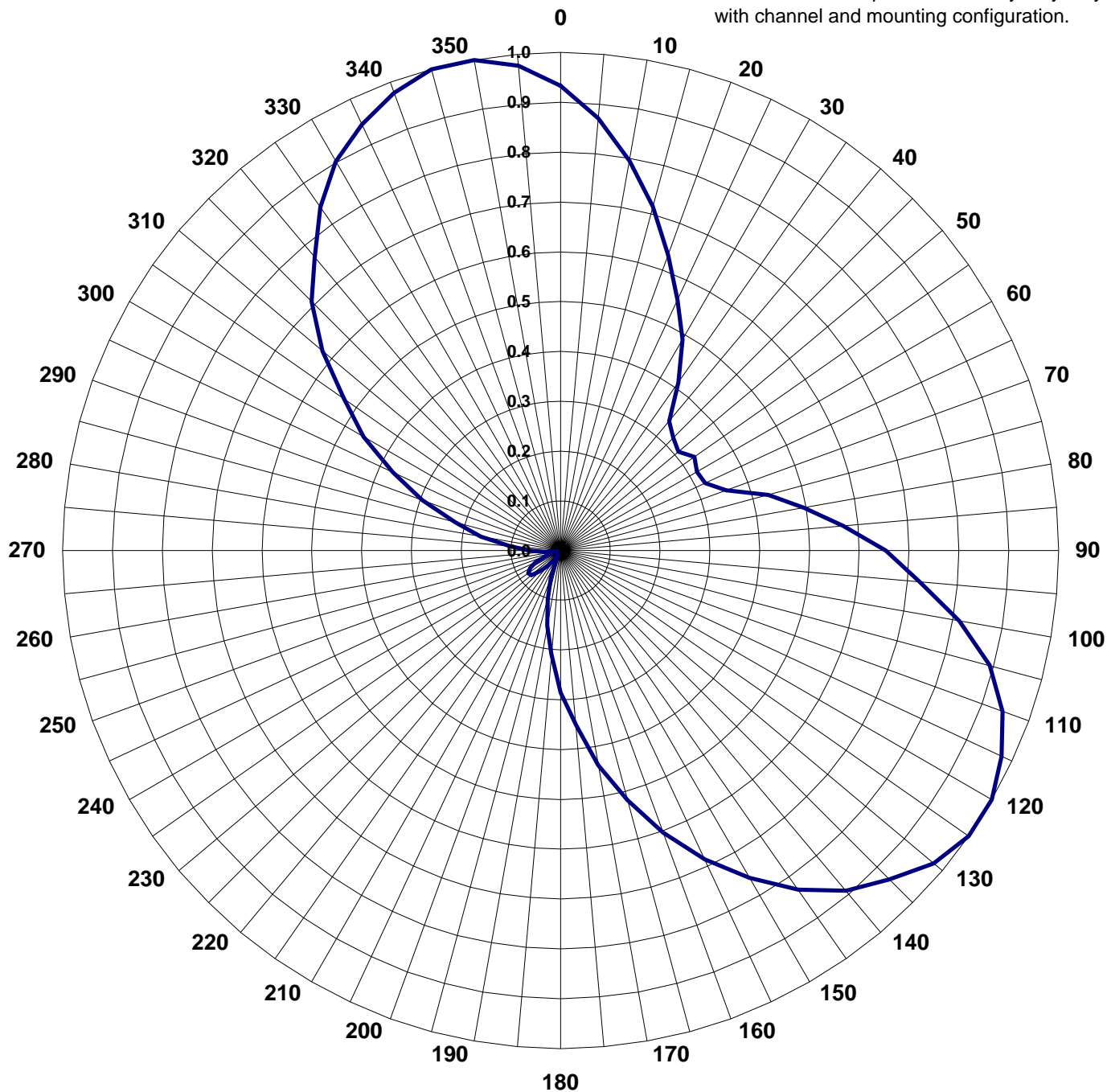
10 to 90 degrees in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.056	-25.04	6.75	0.036	-28.87	27.00	0.027	-31.37	50.50	0.068	-23.35	74.00	0.011	-39.17
-4.75	0.082	-21.72	7.00	0.050	-26.02	27.50	0.034	-29.37	51.00	0.077	-22.27	74.50	0.008	-41.94
-4.50	0.121	-18.34	7.25	0.056	-25.04	28.00	0.036	-28.87	51.50	0.070	-23.10	75.00	0.006	-44.44
-4.25	0.139	-17.14	7.50	0.058	-24.73	28.50	0.030	-30.46	52.00	0.055	-25.19	75.50	0.006	-44.44
-4.00	0.139	-17.14	7.75	0.051	-25.85	29.00	0.019	-34.42	52.50	0.032	-29.90	76.00	0.007	-43.10
-3.75	0.117	-18.64	8.00	0.047	-26.56	29.50	0.019	-34.42	53.00	0.038	-28.40	76.50	0.010	-40.00
-3.50	0.067	-23.48	8.25	0.046	-26.74	30.00	0.022	-33.15	53.50	0.069	-23.22	77.00	0.014	-37.08
-3.25	0.037	-28.64	8.50	0.055	-25.19	30.50	0.018	-34.89	54.00	0.103	-19.74	77.50	0.018	-34.89
-3.00	0.107	-19.41	8.75	0.062	-24.15	31.00	0.011	-39.17	54.50	0.133	-17.52	78.00	0.022	-33.15
-2.75	0.185	-14.66	9.00	0.065	-23.74	31.50	0.013	-37.72	55.00	0.147	-16.65	78.50	0.026	-31.70
-2.50	0.257	-11.80	9.25	0.063	-24.01	32.00	0.021	-33.56	55.50	0.156	-16.14	79.00	0.030	-30.46
-2.25	0.320	-9.90	9.50	0.051	-25.85	32.50	0.022	-33.15	56.00	0.156	-16.14	79.50	0.033	-29.63
-2.00	0.342	-9.32	9.75	0.032	-29.90	33.00	0.021	-33.56	56.50	0.138	-17.20	80.00	0.037	-28.64
-1.75	0.327	-9.71	10.00	0.007	-43.10	33.50	0.019	-34.42	57.00	0.118	-18.56	80.50	0.038	-28.40
-1.50	0.272	-11.31	10.50	0.047	-26.56	34.00	0.016	-35.92	57.50	0.094	-20.54	81.00	0.041	-27.74
-1.25	0.199	-14.02	11.00	0.079	-22.05	34.50	0.012	-38.42	58.00	0.070	-23.10	81.50	0.039	-28.18
-1.00	0.160	-15.92	11.50	0.073	-22.73	35.00	0.006	-44.44	58.50	0.049	-26.20	82.00	0.041	-27.74
-0.75	0.257	-11.80	12.00	0.032	-29.90	35.50	0.019	-34.42	59.00	0.033	-29.63	82.50	0.041	-27.74
-0.50	0.407	-7.81	12.50	0.012	-38.42	36.00	0.032	-29.90	59.50	0.027	-31.37	83.00	0.043	-27.33
-0.25	0.607	-4.34	13.00	0.043	-27.33	36.50	0.038	-28.40	60.00	0.026	-31.70	83.50	0.043	-27.33
0.00	0.758	-2.41	13.50	0.041	-27.74	37.00	0.036	-28.87	60.50	0.028	-31.06	84.00	0.044	-27.13
0.25	0.871	-1.20	14.00	0.029	-30.75	37.50	0.022	-33.15	61.00	0.028	-31.06	84.50	0.044	-27.13
0.50	0.966	-0.30	14.50	0.061	-24.29	38.00	0.004	-47.96	61.50	0.024	-32.40	85.00	0.044	-27.13
0.75	1.000	0.00	15.00	0.091	-20.82	38.50	0.016	-35.92	62.00	0.022	-33.15	85.50	0.044	-27.13
1.00	0.988	-0.10	15.50	0.085	-21.41	39.00	0.024	-32.40	62.50	0.020	-33.98	86.00	0.044	-27.13
1.25	0.897	-0.94	16.00	0.045	-26.94	39.50	0.024	-32.40	63.00	0.016	-35.92	86.50	0.044	-27.13
1.50	0.794	-2.00	16.50	0.015	-36.48	40.00	0.021	-33.56	63.50	0.013	-37.72	87.00	0.044	-27.13
1.75	0.642	-3.85	17.00	0.049	-26.20	40.50	0.032	-29.90	64.00	0.011	-39.17	87.50	0.044	-27.13
2.00	0.484	-6.30	17.50	0.067	-23.48	41.00	0.055	-25.19	64.50	0.009	-40.92	88.00	0.040	-27.96
2.25	0.348	-9.17	18.00	0.049	-26.20	41.50	0.070	-23.10	65.00	0.007	-43.10	88.50	0.039	-28.18
2.50	0.221	-13.11	18.50	0.025	-32.04	42.00	0.074	-22.62	65.50	0.006	-44.44	89.00	0.040	-27.96
2.75	0.191	-14.38	19.00	0.038	-28.40	42.50	0.059	-24.58	66.00	0.006	-44.44	89.50	0.040	-27.96
3.00	0.211	-13.51	19.50	0.046	-26.74	43.00	0.037	-28.64	66.50	0.008	-41.94	90.00	0.035	-29.12
3.25	0.241	-12.36	20.00	0.032	-29.90	43.50	0.011	-39.17	67.00	0.010	-40.00			
3.50	0.248	-12.11	20.50	0.009	-40.92	44.00	0.023	-32.77	67.50	0.012	-38.42			
3.75	0.230	-12.77	21.00	0.044	-27.13	44.50	0.042	-27.54	68.00	0.014	-37.08			
4.00	0.192	-14.33	21.50	0.072	-22.85	45.00	0.049	-26.20	68.50	0.015	-36.48			
4.25	0.148	-16.59	22.00	0.069	-23.22	45.50	0.043	-27.33	69.00	0.017	-35.39			
4.50	0.109	-19.25	22.50	0.044	-27.13	46.00	0.031	-30.17	69.50	0.018	-34.89			
4.75	0.090	-20.92	23.00	0.031	-30.17	46.50	0.024	-32.40	70.00	0.019	-34.42			
5.00	0.095	-20.45	23.50	0.075	-22.50	47.00	0.032	-29.90	70.50	0.019	-34.42			
5.25	0.111	-19.09	24.00	0.114	-18.86	47.50	0.042	-27.54	71.00	0.019	-34.42			
5.50	0.116	-18.71	24.50	0.134	-17.46	48.00	0.041	-27.74	71.50	0.019	-34.42			
5.75	0.106	-19.49	25.00	0.138	-17.20	48.50	0.029	-30.75	72.00	0.019	-34.42			
6.00	0.085	-21.41	25.50	0.117	-18.64	49.00	0.008	-41.94	72.50	0.017	-35.39			
6.25	0.060	-24.44	26.00	0.085	-21.41	49.50	0.020	-33.98	73.00	0.016	-35.92			
6.50	0.038	-28.40	26.50	0.047	-26.56	50.00	0.047	-26.56	73.50	0.013	-37.72			

AZIMUTH PATTERN

TYPE:	CH21HAZ	
	Numeric	dB
Directivity:	2.80	4.47
Peak(s) at:		
Polarization:	Horizontal	
Frequency:	21 (Digital)	
Location:	Santa Barbara, CA	

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



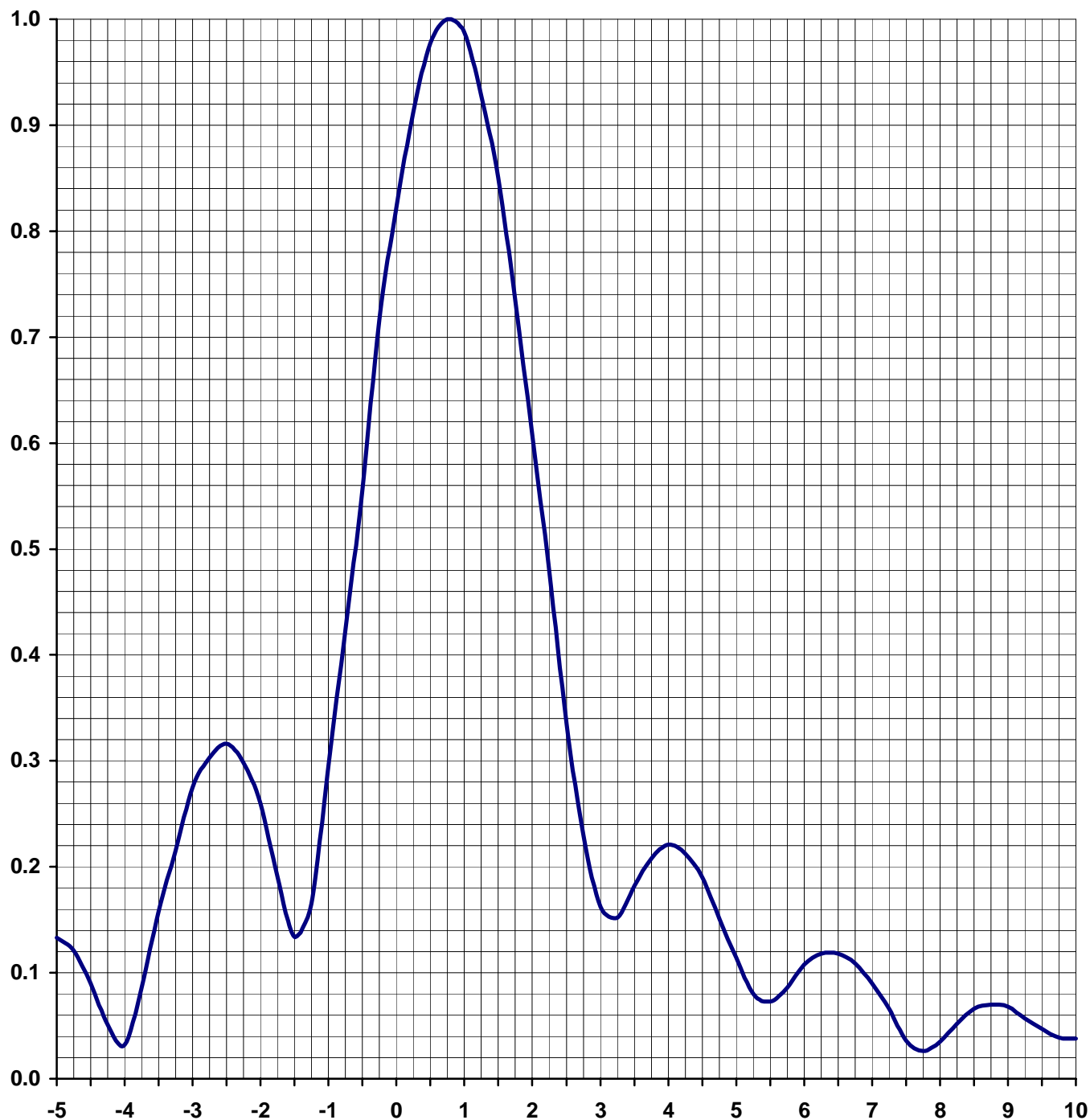
TABULATED DATA FOR AZIMUTH PATTERN

TYPE: CH21HAZ

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.933	-0.60	92	0.684	-3.30	184	0.219	-13.20	276	0.114	-18.90
2	0.912	-0.80	94	0.716	-2.90	186	0.197	-14.10	278	0.141	-17.00
4	0.891	-1.00	96	0.750	-2.50	188	0.174	-15.20	280	0.162	-15.80
6	0.861	-1.30	98	0.785	-2.10	190	0.153	-16.30	282	0.186	-14.60
8	0.832	-1.60	100	0.813	-1.80	192	0.123	-18.20	284	0.209	-13.60
10	0.794	-2.00	102	0.851	-1.40	194	0.104	-19.70	286	0.240	-12.40
12	0.759	-2.40	104	0.871	-1.20	196	0.093	-20.60	288	0.263	-11.60
14	0.724	-2.80	106	0.902	-0.90	198	0.074	-22.60	290	0.295	-10.60
16	0.692	-3.20	108	0.923	-0.70	200	0.058	-24.80	292	0.327	-9.70
18	0.661	-3.60	110	0.944	-0.50	202	0.047	-26.50	294	0.351	-9.10
20	0.631	-4.00	112	0.966	-0.30	204	0.030	-30.50	296	0.385	-8.30
22	0.603	-4.40	114	0.977	-0.20	206	0.021	-33.40	298	0.417	-7.60
24	0.569	-4.90	116	0.989	-0.10	208	0.011	-39.10	300	0.457	-6.80
26	0.537	-5.40	118	0.989	-0.10	210	0.010	-40.30	302	0.479	-6.40
28	0.513	-5.80	120	1.000	0.00	212	0.015	-36.40	304	0.519	-5.70
30	0.490	-6.20	122	1.000	0.00	214	0.017	-35.20	306	0.550	-5.20
32	0.452	-6.90	124	1.000	0.00	216	0.024	-32.50	308	0.582	-4.70
34	0.432	-7.30	126	0.989	-0.10	218	0.031	-30.30	310	0.624	-4.10
36	0.389	-8.20	128	0.989	-0.10	220	0.039	-28.20	312	0.653	-3.70
38	0.363	-8.80	130	0.977	-0.20	222	0.047	-26.60	314	0.684	-3.30
40	0.339	-9.40	132	0.966	-0.30	224	0.056	-25.00	316	0.708	-3.00
42	0.335	-9.50	134	0.944	-0.50	226	0.066	-23.60	318	0.741	-2.60
44	0.320	-9.90	136	0.923	-0.70	228	0.069	-23.20	320	0.767	-2.30
46	0.316	-10.00	138	0.902	-0.90	230	0.078	-22.20	322	0.804	-1.90
48	0.320	-9.90	140	0.891	-1.00	232	0.079	-22.00	324	0.832	-1.60
50	0.309	-10.20	142	0.871	-1.20	234	0.080	-21.90	326	0.861	-1.30
52	0.316	-10.00	144	0.841	-1.50	236	0.079	-22.00	328	0.881	-1.10
54	0.327	-9.70	146	0.822	-1.70	238	0.079	-22.10	330	0.902	-0.90
56	0.324	-9.80	148	0.794	-2.00	240	0.070	-23.10	332	0.912	-0.80
58	0.313	-10.10	150	0.759	-2.40	242	0.068	-23.40	334	0.933	-0.60
60	0.316	-10.00	152	0.733	-2.70	244	0.058	-24.70	336	0.955	-0.40
62	0.316	-10.00	154	0.700	-3.10	246	0.054	-25.30	338	0.966	-0.30
64	0.320	-9.90	156	0.661	-3.60	248	0.045	-27.00	340	0.977	-0.20
66	0.320	-9.90	158	0.631	-4.00	250	0.032	-29.80	342	0.989	-0.10
68	0.335	-9.50	160	0.603	-4.40	252	0.028	-31.00	344	1.000	0.00
70	0.355	-9.00	162	0.569	-4.90	254	0.019	-34.50	346	1.000	0.00
72	0.380	-8.40	164	0.531	-5.50	256	0.016	-35.70	348	1.000	0.00
74	0.407	-7.80	166	0.501	-6.00	258	0.011	-39.40	350	1.000	0.00
76	0.442	-7.10	168	0.468	-6.60	260	0.007	-42.90	352	0.989	-0.10
78	0.473	-6.50	170	0.437	-7.20	262	0.013	-37.50	354	0.977	-0.20
80	0.495	-6.10	172	0.403	-7.90	264	0.021	-33.40	356	0.966	-0.30
82	0.525	-5.60	174	0.372	-8.60	266	0.038	-28.30	358	0.955	-0.40
84	0.556	-5.10	176	0.339	-9.40	268	0.048	-26.40	360	0.933	-0.60
86	0.582	-4.70	178	0.305	-10.30	270	0.064	-23.90			
88	0.610	-4.30	180	0.285	-10.90	272	0.083	-21.60			
90	0.653	-3.70	182	0.251	-12.00	274	0.101	-19.90			

ELEVATION PATTERN

TYPE:	ETU-P2H12-CH21	
Directivity:	Numeric	dBd
Main Lobe:	20.82	13.18
Horizontal:	17.93	12.54
Beam Tilt:	0.75	
Polarization:	Horizontal	
Frequency:	21 (Digital)	
Location:	Santa Barbara, CA	



TABULATED DATA FOR ELEVATION PATTERN

TYPE: ETU-P2H12-CH21

-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	0.133	-17.52	6.75	0.109	-19.25	27.00	0.029	-30.75	50.50	0.021	-33.56	74.00	0.039	-28.18
-4.75	0.121	-18.34	7.00	0.090	-20.92	27.50	0.014	-37.08	51.00	0.029	-30.75	74.50	0.050	-26.02
-4.50	0.090	-20.92	7.25	0.066	-23.61	28.00	0.022	-33.15	51.50	0.040	-27.96	75.00	0.057	-24.88
-4.25	0.051	-25.85	7.50	0.036	-28.87	28.50	0.040	-27.96	52.00	0.050	-26.02	75.50	0.064	-23.88
-4.00	0.032	-29.90	7.75	0.026	-31.70	29.00	0.045	-26.94	52.50	0.054	-25.35	76.00	0.070	-23.10
-3.75	0.086	-21.31	8.00	0.035	-29.12	29.50	0.054	-25.35	53.00	0.056	-25.04	76.50	0.070	-23.10
-3.50	0.158	-16.03	8.25	0.052	-25.68	30.00	0.049	-26.20	53.50	0.052	-25.68	77.00	0.075	-22.50
-3.25	0.215	-13.35	8.50	0.066	-23.61	30.50	0.046	-26.74	54.00	0.044	-27.13	77.50	0.079	-22.05
-3.00	0.275	-11.21	8.75	0.070	-23.10	31.00	0.039	-28.18	54.50	0.030	-30.46	78.00	0.083	-21.62
-2.75	0.303	-10.37	9.00	0.068	-23.35	31.50	0.036	-28.87	55.00	0.015	-36.48	78.50	0.086	-21.31
-2.50	0.316	-10.01	9.25	0.057	-24.88	32.00	0.025	-32.04	55.50	0.002	-53.98	79.00	0.089	-21.01
-2.25	0.298	-10.52	9.50	0.047	-26.56	32.50	0.015	-36.48	56.00	0.014	-37.08	79.50	0.081	-21.83
-2.00	0.260	-11.70	9.75	0.039	-28.18	33.00	0.013	-37.72	56.50	0.027	-31.37	80.00	0.082	-21.72
-1.75	0.191	-14.38	10.00	0.038	-28.40	33.50	0.019	-34.42	57.00	0.034	-29.37	80.50	0.083	-21.62
-1.50	0.134	-17.46	10.50	0.055	-25.19	34.00	0.022	-33.15	57.50	0.038	-28.40	81.00	0.083	-21.62
-1.25	0.165	-15.65	11.00	0.062	-24.15	34.50	0.020	-33.98	58.00	0.036	-28.87	81.50	0.083	-21.62
-1.00	0.295	-10.60	11.50	0.044	-27.13	35.00	0.014	-37.08	58.50	0.032	-29.90	82.00	0.082	-21.72
-0.75	0.423	-7.47	12.00	0.010	-40.00	35.50	0.011	-39.17	59.00	0.027	-31.37	82.50	0.082	-21.72
-0.50	0.555	-5.11	12.50	0.033	-29.63	36.00	0.014	-37.08	59.50	0.020	-33.98	83.00	0.072	-22.85
-0.25	0.716	-2.90	13.00	0.062	-24.15	36.50	0.017	-35.39	60.00	0.017	-35.39	83.50	0.071	-22.97
0.00	0.822	-1.70	13.50	0.067	-23.48	37.00	0.018	-34.89	60.50	0.021	-33.56	84.00	0.070	-23.10
0.25	0.912	-0.80	14.00	0.048	-26.38	37.50	0.014	-37.08	61.00	0.028	-31.06	84.50	0.070	-23.10
0.50	0.977	-0.20	14.50	0.019	-34.42	38.00	0.008	-41.94	61.50	0.031	-30.17	85.00	0.069	-23.22
0.75	1.000	0.00	15.00	0.020	-33.98	38.50	0.008	-41.94	62.00	0.034	-29.37	85.50	0.068	-23.35
1.00	0.988	-0.10	15.50	0.038	-28.40	39.00	0.013	-37.72	62.50	0.034	-29.37	86.00	0.066	-23.61
1.25	0.928	-0.65	16.00	0.035	-29.12	39.50	0.017	-35.39	63.00	0.031	-30.17	86.50	0.066	-23.61
1.50	0.851	-1.40	16.50	0.015	-36.48	40.00	0.017	-35.39	63.50	0.024	-32.40	87.00	0.057	-24.88
1.75	0.736	-2.66	17.00	0.025	-32.04	40.50	0.016	-35.92	64.00	0.016	-35.92	87.50	0.057	-24.88
2.00	0.609	-4.31	17.50	0.059	-24.58	41.00	0.013	-37.72	64.50	0.006	-44.44	88.00	0.057	-24.88
2.25	0.481	-6.36	18.00	0.078	-22.16	41.50	0.012	-38.42	65.00	0.006	-44.44	88.50	0.056	-25.04
2.50	0.335	-9.50	18.50	0.076	-22.38	42.00	0.011	-39.17	65.50	0.017	-35.39	89.00	0.056	-25.04
2.75	0.229	-12.80	19.00	0.051	-25.85	42.50	0.009	-40.92	66.00	0.029	-30.75	89.50	0.055	-25.19
3.00	0.162	-15.81	19.50	0.018	-34.89	43.00	0.006	-44.44	66.50	0.035	-29.12	90.00	0.040	-27.96
3.25	0.152	-16.36	20.00	0.026	-31.70	43.50	0.006	-44.44	67.00	0.044	-27.13			
3.50	0.182	-14.80	20.50	0.049	-26.20	44.00	0.015	-36.48	67.50	0.049	-26.20			
3.75	0.208	-13.64	21.00	0.056	-25.04	44.50	0.024	-32.40	68.00	0.051	-25.85			
4.00	0.221	-13.11	21.50	0.044	-27.13	45.00	0.030	-30.46	68.50	0.050	-26.02			
4.25	0.212	-13.47	22.00	0.023	-32.77	45.50	0.033	-29.63	69.00	0.049	-26.20			
4.50	0.190	-14.42	22.50	0.020	-33.98	46.00	0.030	-30.46	69.50	0.045	-26.94			
4.75	0.151	-16.42	23.00	0.034	-29.37	46.50	0.023	-32.77	70.00	0.037	-28.64			
5.00	0.114	-18.86	23.50	0.038	-28.40	47.00	0.013	-37.72	70.50	0.031	-30.17			
5.25	0.080	-21.94	24.00	0.027	-31.37	47.50	0.003	-50.46	71.00	0.023	-32.77			
5.50	0.073	-22.73	24.50	0.007	-43.10	48.00	0.010	-40.00	71.50	0.019	-34.42			
5.75	0.086	-21.31	25.00	0.021	-33.56	48.50	0.018	-34.89	72.00	0.014	-37.08			
6.00	0.108	-19.33	25.50	0.042	-27.54	49.00	0.021	-33.56	72.50	0.018	-34.89			
6.25	0.118	-18.56	26.00	0.049	-26.20	49.50	0.021	-33.56	73.00	0.024	-32.40			
6.50	0.118	-18.56	26.50	0.045	-26.94	50.00	0.019	-34.42	73.50	0.035	-29.12			