

TECHNICAL EXHIBIT
IN SUPPORT OF
APPLICATION FOR MODIFICATION OF
DTV CONSTRUCTION PERMIT
STATION KPMR (FAC. 12144)
SANTA BARBARA, CALIFORNIA
CH 21 1000 KW (MAX-DA) 930 M

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for modification of construction permit for DTV station KPMR on channel 21 at Santa Barbara, California. Station KPMR is currently authorized (BPCDT-20000427ABZ) to operate on digital channel 21 with a directional antenna maximum effective radiated power (ERP) of 1000 kilowatts (kW) and an antenna height above average terrain (HAAT) of 923.1 meters.

Proposed Operation

It is proposed to operate with a directional antenna maximum ERP of 1000 kW at an antenna HAAT of 930 meters. It is proposed to employ an ERI ETU-P2H12-21/38 antenna which replaces the former Andrew ATW25H3-HTP4-21S digital antenna. This antenna was destroyed when the former tower fell during an ice storm. The antenna will be top-mounted on an existing tower with a structure height of 45.7 meters (150 feet).¹ The proposed antenna radiation center above mean sea level is 1260.5 meters. The FCC's TOWAIR Program indicates that the existing structure does not require registration as there are no airports within 8 kilometers of the KPMR authorized site. Figure 1 is a copy of the FCC's TOWAIR Determination Results.

Response to Paragraph 10 - Antenna Data

Figure 2 provides a graph of the horizontal plane relative field pattern for the proposed ERI ETU-P2H12-21/38 directional antenna system.

Response to Paragraph 12 – City Coverage

Figure 3 is a map showing the FCC predicted DTV coverage contours. The map provides the FCC predicted 41 dBu f(50,90) noise-limited contour and 48 dBu f(50,90) city grade contour. The extent of the contours has been calculated using the normal FCC prediction method and a 3-second digitized terrain database. The Santa Barbara city limits were derived from information contained in the 2000 U.S. Census for California. As shown, the 48 dBu contour encompasses the entire city limits of Santa Barbara.

Compliance with Section 73.622(f)(5)

KPMR-DT proposes to operate on DTV channel 21 with a maximum directional ERP of 1000 kilowatts and an antenna HAAT of 930 meters. These facilities exceed the nominal maximum facilities specified in Section 73.622(f)(8)(ii) of the FCC rules. However, the proposed facilities have been calculated in accordance with the largest station provision of Section 73.622(f)(5). The largest station in the Santa Barbara-Santa Maria-San Luis Obispo is KPMR-DT. The KPMR-DT Appendix B facilities provide noise-limited service to an area of 46,354 square kilometers whereas the proposed KPMR-DT operation is predicted to provide noise-limited service to an area of 43,480 square kilometers. Clarification of the largest station in the market provision is provided in the Report and Order and Further Notice of Proposed Rule Making in MM Docket No. 00-39 at Paragraphs 73-74.

DTV/Class A Allocation Considerations

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin, which demonstrates that the proposal complies with the interference protection provisions of both Section 73.623(a) and Section 73.616.²

¹ Based on information from an agent of the applicant, the existing 199 foot tower was built to replace the previous tower that collapsed as a result of an ice storm.

² The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. A Sun based processor computer system was employed.

Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figures 4A and 4B provide tabulations of the TV and FM stations within 16 kilometers of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed DTV operation.

The proposed transmitter site is 1550 kilometers from the Canadian border, and 338 kilometers from the Mexican border. The closest FCC monitoring is at Livermore, California, approximately 390 kilometers to the north-northwest. The proposed DTV site is outside the National Radio Quiet Zone (VA/WVA), the closest point being 3,557 kilometers to the east. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1,443 kilometers to the east. The closest radio astronomy site operating on TV channel 37 is at Owens Valley, California located approximately 337 kilometers to the northeast. These separations are sufficient to not be a concern for coordination purposes.

Radiofrequency Electromagnetic Field Exposure

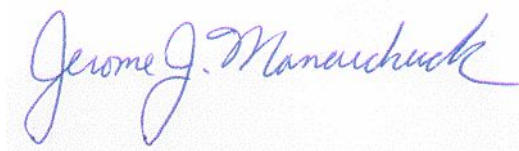
The proposed KPMR facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 52.9 meters above ground level with a maximum ERP of 1000 kW (horizontal polarization). A “worst-case” vertical plane relative field value of 0.089 (for angles below 60 degrees downward) is assumed for the antenna's downward radiation (see sheet 4 of Figure 2 attached). The calculated power density at a point 2 meters above ground level is 0.1021 mW/cm^2 . This is 29.7% of the FCC's recommended limit of 0.3433 mW/cm^2 for channel 21 for an “uncontrolled” environment, and 5.95% of the FCC's recommended limit of 1.717 mW/cm^2 for a “controlled” environment. Since there are 5 FM stations and 1 DTV station on adjacent towers, measurements will be made to show compliance.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to

radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down. The proposed KPMR operation appears to be otherwise categorically excluded from environmental processing.

Finally, it is noted that this technical exhibit only addresses the potential for radio frequency electromagnetic field exposure. Based on information provided by an agent of the applicant, all other aspects of the environmental processing analysis will be or already has been provided to the FCC by the tower owner.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.



Jerome J. Manarchuck

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
(941) 329-6000

April 9, 2010

TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	34-31-28.0 north
Longitude	119-57-38.5 west

Measurements (Meters)

Overall Structure Height (AGL)	60.7
Support Structure Height (AGL)	45.7
Site Elevation (AMSL)	1207.6

Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

[Tower Construction Notifications](#)

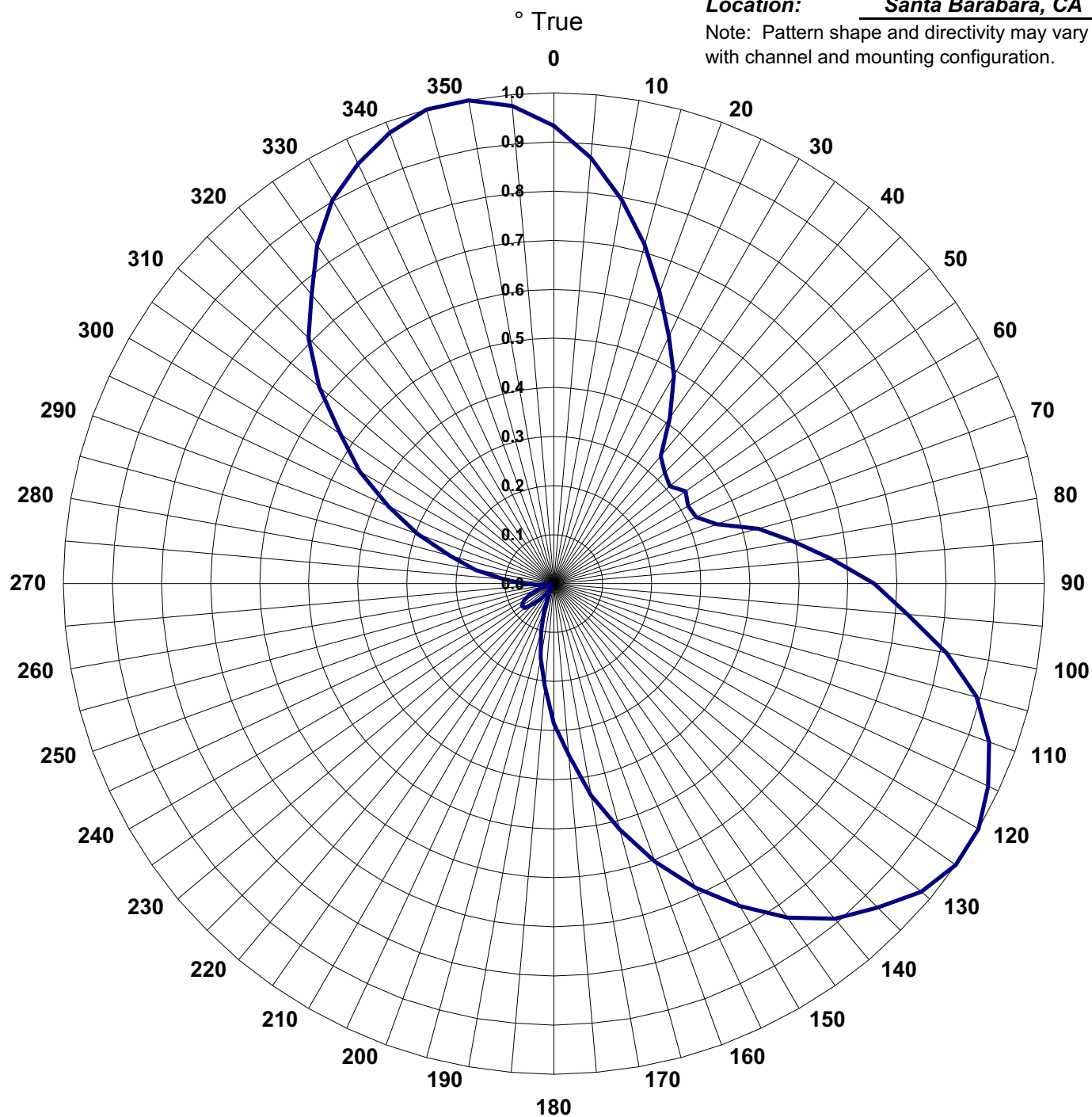
Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

AZIMUTH PATTERN

TYPE:
CH21HAZ
Directivity:
Numeric
dB
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.



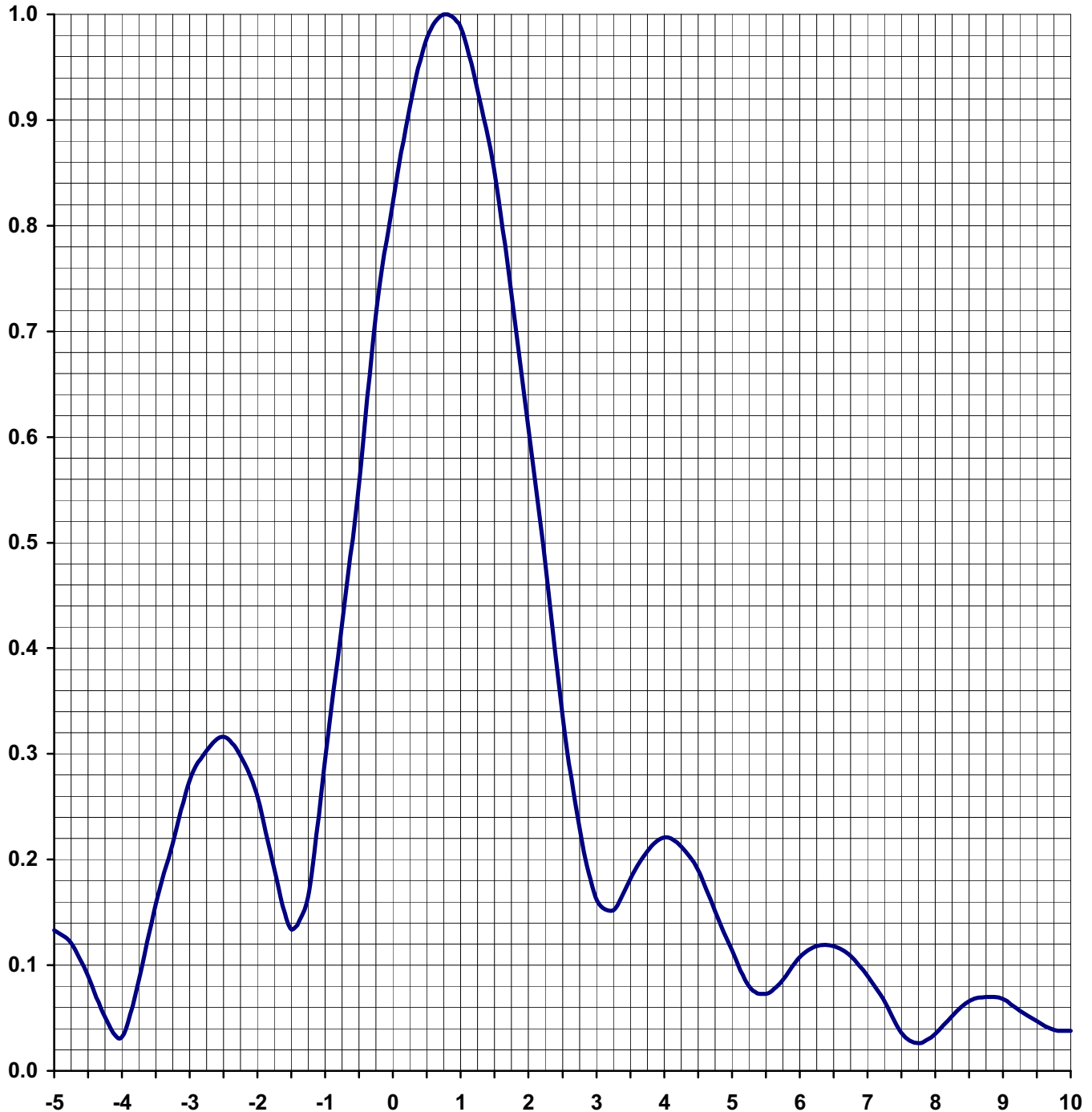
TABULATED DATA FOR AZIMUTH PATTERN

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	

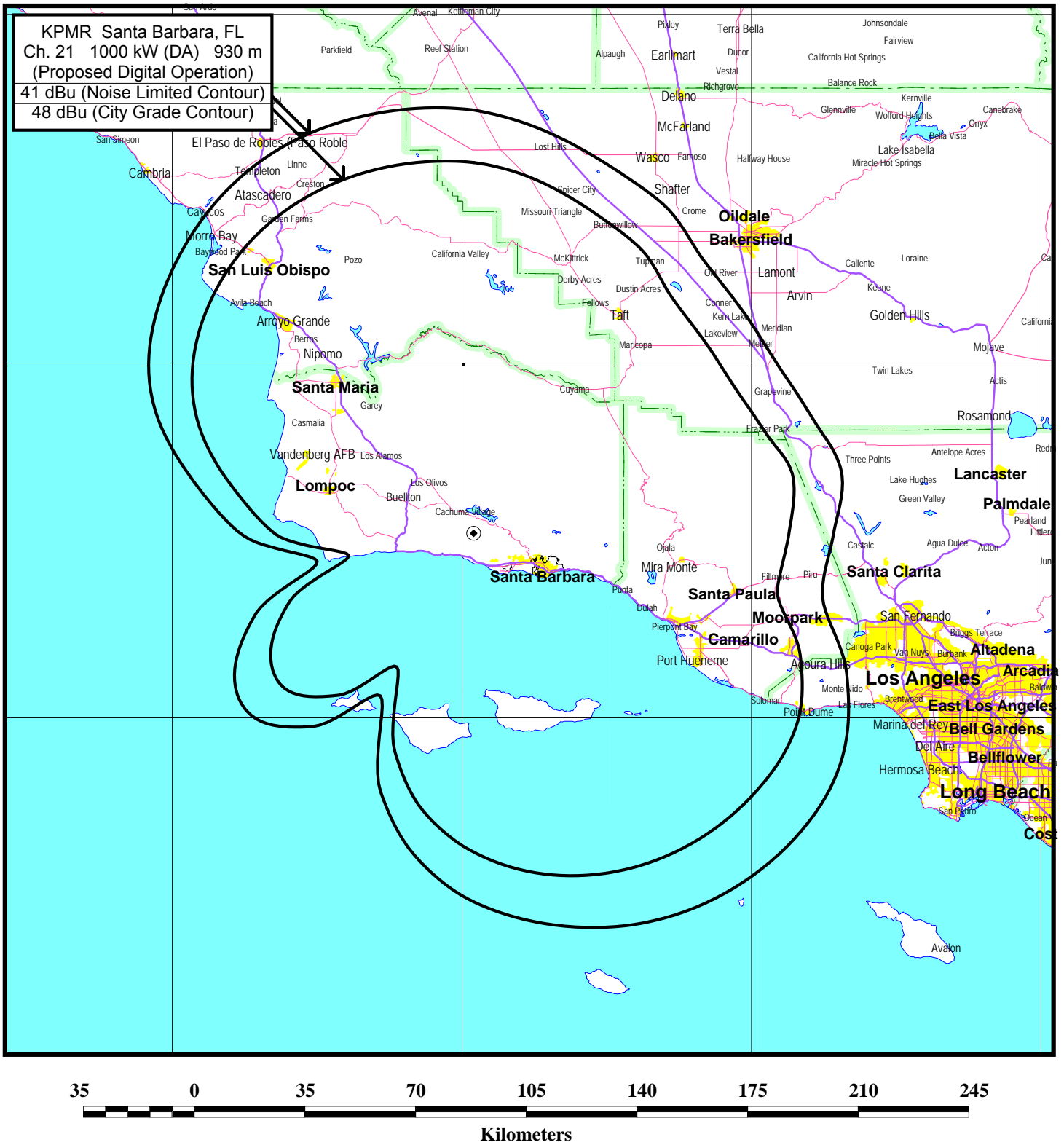


TABULATED DATA FOR ELEVATION PATTERN

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			

Figure 3



FCC PREDICTED COVERAGE CONTOURS

DTV STATION KPMR
 SANTA BARBARA, CALIFORNIA
 CH 21 1000 KW (DA) 930 m

du Treil, Lundin & Rackley, Inc. Sarasota, Florida 34237

TV Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Listed stations are within 16 km of the point at 034-31-28 119-57-35.

<i>Callsign</i>	<i>Chan. Off.</i>	<i>Zone</i>	<i>Service</i>	<i>Status</i>	<i>City</i>	<i>State</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Distance (km)</i>	
<i>ARN</i>		<i>DA</i>	<i>Ant. ID</i>	<i>Rotation</i>	<i>ERP (kW)</i>	<i>HAAT (m)</i>	<i>RCAMSL (m)</i>	<i>Rec. Type</i>	<i>Facility ID</i>	<i>Bearing (deg)</i>
KPMR	21	2	DT	CP	SANTA BARBARA		CA	034-31-28	119-57-35	0
BPCDT-20000427ABZ		D	33205	0	1000	923.1	1259.5	C	12144	180
KEYT-TV	27	2	DT	CP MOD	SANTA BARBARA		CA	034-31-32	119-57-28	0.22
BMPCDT-20060630ACN		D	73232	0	250	918	1252	C	60637	55.27

FM Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Listed stations are within 16 km of the point at 034-31-28 119-57-35.

<i>Callsign</i>	<i>Chan.</i>	<i>Freq.</i>	<i>Class</i>	<i>Service</i>	<i>Status</i>	<i>City</i>			<i>State</i>	<i>Latitude</i>	<i>Longitude</i>	<i>Distance (km)</i>
<i>ARN</i>			<i>DA</i>	<i>Antenna ID</i>	<i>Rotation</i>	<i>ERP (kW)</i>	<i>HAAT (m)</i>	<i>RCAMSL (m)</i>	<i>Rec. Type</i>	<i>Facility ID</i>	<i>Bearing (deg)</i>	
KVYB	277	103.3	B	FM	LIC	SANTA BARBARA			CA	034-31-29	119-57-32	0.08
BLH-19990513KB			N	29045		105	905	1238	C		8853	68.02
KRUZ	248	97.5	B	FM	LIC	SANTA BARBARA			CA	034-31-31	119-57-29	0.18
BMLH-19831018AA						17.5	890	1252	C		3159	58.77
KCSB-FM	220	91.9	B	FM	LIC	SANTA BARBARA			CA	034-31-31	119-57-29	0.18
BLED-19840928DF						0.62	879	1239	C		69081	58.77
KRAZ	290	105.9	A	FM	LIC	SANTA YNEZ			CA	034-31-32	119-57-29	0.2
BLH-20001220AAY			D	33895	0	0.065	894	1232	C		33439	51.04
KSPE-FM	233	94.5	B	FM	LIC	ELLWOOD			CA	034-31-32	119-57-28	0.22
BLH-19890214KC			N			0.88	899	1252	C		61058	55.27
KIST-FM	299	107.7	B1	FM	LIC	SANTA BARBARA			CA	034-30-10	119-50-56	10.46
BLH-19980202KH			N			0.93	496	868	C		31434	103.32
KVRY-LP	242	96.3	L1	FL	LIC	GOLETA			CA	034-26-50	119-53-28	10.63
BLL-20060203AAH			N			0.1	15.52373 1	146	C		124826	143.76
KJEE	225	92.9	B1	FM	CP	MONTECITO			CA	034-29-43	119-49-23	12.96
BPH-20070118AES			N			3.75	258	633	C		43589	104.48