

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF  
CONSTRUCTION PERMIT  
TELEVISION STATION KTSM-DT  
EL PASO, TEXAS

June 28, 2005

CHANNEL 16 250 KW (MAX-DA) 577 M

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
TELEVISION STATION KTSM-DT  
EL PASO, TEXAS  
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TELEVISION STATION KTSM-DT  
EL PASO, TEXAS  
CHANNEL 16 250 KW (MAX-DA) 577 M

Technical Statement

This Technical Exhibit was prepared on behalf of digital television broadcast station KTSM-DT, El Paso, Texas, in support of an application for modification of construction permit (See FCC File No. BPCDT-19991018AAZ). KTSM-DT is authorized for operation on Channel 16 with a maximum directional effective radiated power (ERP) of 1000 kW and an antenna height above average terrain of 582 m. The purpose of this application is to authorize the “as-built” KTSM-DT facility. This is required in order to meet the “use-it-or-lose-it” deadline imposed by the FCC in the recent *Report and Order* in the Second Periodic Review of the Commission’s Rules and Policies Affecting the Conversion to Digital Television, Released: September 7, 2004.\*

The proposed facility will not result in any extension of the predicted 41 dBu noise-limited contour relative to the KTSM-DT authorized construction permit facility.<sup>†</sup> Therefore, the proposal meets the terms of the FCC Filing Freeze for television stations.<sup>‡</sup>

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\* See also *Public Notice*, “DTV Channel Election Issues – Compliance with the July 1, 2005 Replication/Maximization Interference Protection Deadline; Stations Seeking Extension of the Deadline,” Federal Communications Commission, DA 05-1636, Released: June 15, 2005.

<sup>†</sup> See Figure 1.

<sup>‡</sup> See *August 2004 Filing Freeze PN*, DA 04-2446 (MB rel. Aug. 3, 2004).

Environmental Considerations

An evaluation was conducted for the proposed facility concerning compliance with Section 1.1307(b) of the FCC Rules regarding human exposure to radio frequency (RF) energy.<sup>§</sup> Calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF radiation at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground based on the following conservative assumptions, with the following results:

<b>Call Sign</b>	<b>Channel</b>	<b>Average ERP (kW)</b>	<b>Relative Field Factor**</b>	<b>Distance (m)</b>	<b>FCC Limit<sup>††</sup> (mW/cm<sup>2</sup>)</b>	<b>Percentage of Limit</b>
KTSM-DT	16	250	0.10	109	0.323	2.2%

As indicated above, the total exposure to RF radiation at 2-m above ground level will not exceed 2.2% of the FCC limit for general population / uncontrolled exposure. Therefore, the proposal complies with the FCC limits for human exposure to RF energy and it is categorically excluded from environmental processing. The applicant, in

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<sup>§</sup> See FCC Office of Engineering and Technology Bulletin No. 56 for background information on non-ionizing RF energy of the type discussed here. Internet web reference:

[http://www.fcc.gov/Bureaus/Engineering\\_Technology/Documents/bulletins/oet56/oet56e4.pdf](http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf)

\*\* This is a conservative estimate of the elevation pattern relative field toward ground level. See elevation pattern at Appendix 1.

†† for general population/uncontrolled environments

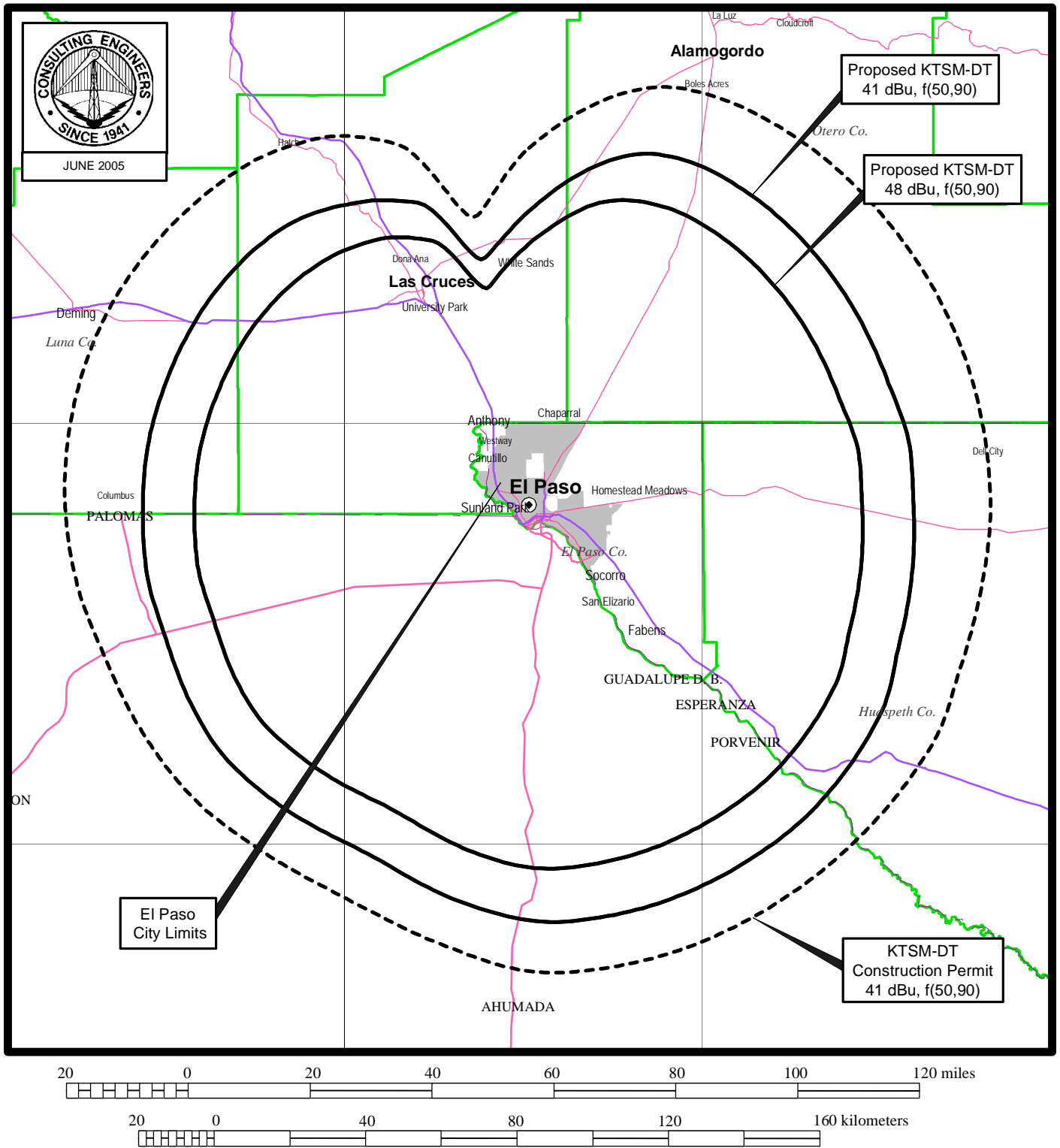
coordination with other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the KTSM-DT tower or antenna from radio frequency radiation in excess of the FCC guidelines.

A handwritten signature in black ink, appearing to read "Louis R. du Treil, Jr.", written in a cursive style.

Louis Robert du Treil, Jr.

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Ave.  
Sarasota, FL 34237-6019

June 28, 2005



## PREDICTED COVERAGE CONTOURS

TELEVISION STATION KTSM-DT  
EL PASO, TEXAS  
CHANNEL 16 250 KW (MAX-DA) 577 M

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

TECHNICAL EXHIBIT  
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EL PASO, TEXAS  
CHANNEL 16 250 KW (MAX-DA) 577 M

Transmitting Antenna  
Manufacturer's Pattern Data

(four pages follow)

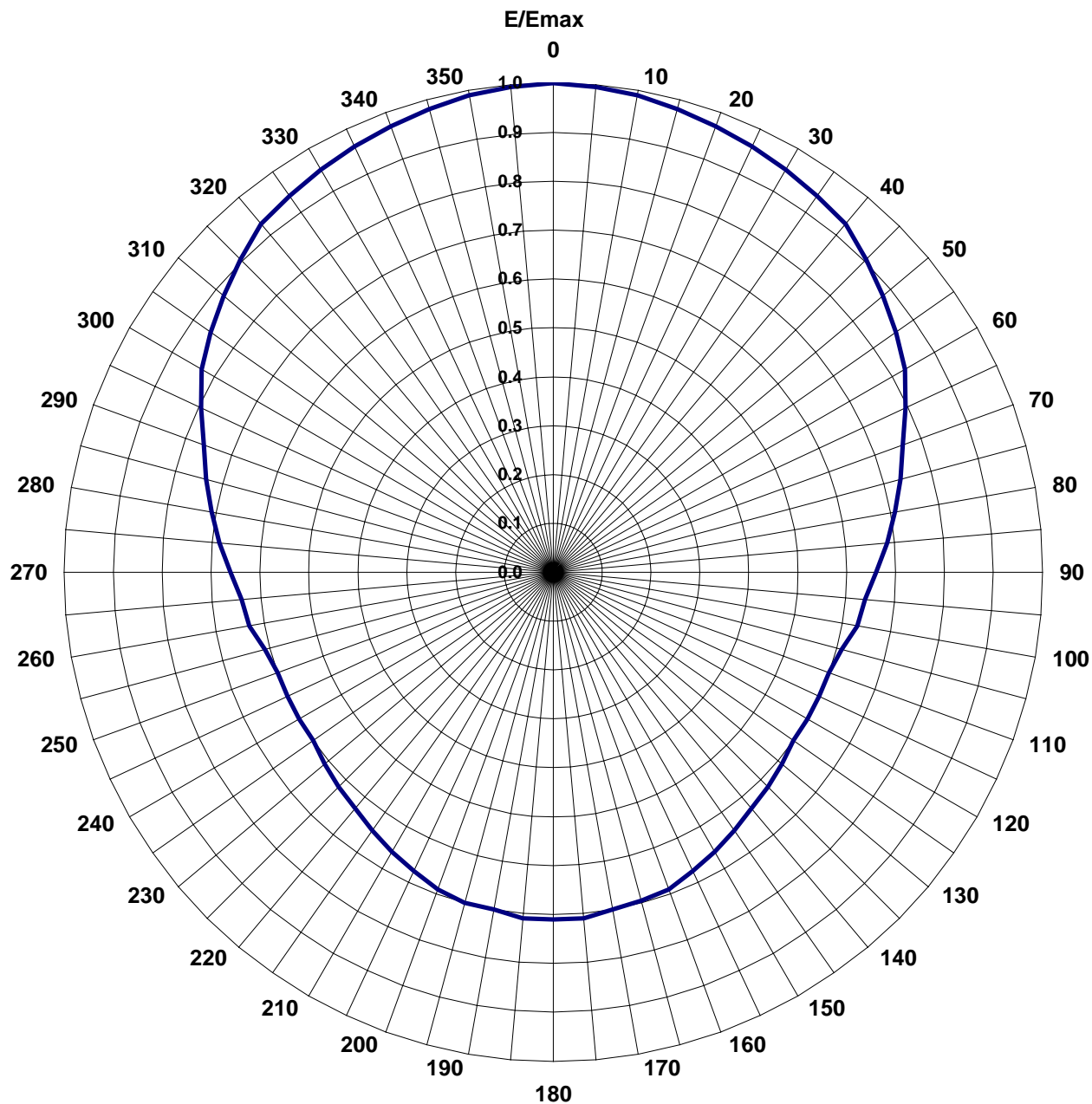


## AZIMUTH PATTERN

TYPE:	RFS - OM	
	Numeric	dB
Directivity:	<u>1.70</u>	<u>2.3</u>
Polarization:	Horizontal	
Channel:	16, 17, 18	
Location:	El Paso, TX	

Model:	RD24OM-1618M6T60
INQUIRY #:	2043
QUOTE #:	1048
ATS Job#:	2419 Rev. C

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





# TABULATED DATA FOR AZIMUTH PATTERN

TYPE: RFS - OM

RADIO FREQUENCY SYSTEMS  
The Clear Choice™



ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	1.000	0.00	94	0.640	-3.88	188	0.700	-3.10	282	0.720	-2.85
2	1.000	0.00	96	0.640	-3.88	190	0.700	-3.10	284	0.730	-2.73
4	1.000	0.00	98	0.630	-4.01	192	0.700	-3.10	286	0.740	-2.62
6	0.990	-0.09	100	0.630	-4.01	194	0.700	-3.10	288	0.750	-2.50
8	0.990	-0.09	102	0.620	-4.15	196	0.690	-3.22	290	0.760	-2.38
10	0.990	-0.09	104	0.610	-4.29	198	0.690	-3.22	292	0.780	-2.16
12	0.980	-0.18	106	0.610	-4.29	200	0.690	-3.22	294	0.790	-2.05
14	0.980	-0.18	108	0.610	-4.29	202	0.680	-3.35	296	0.800	-1.94
16	0.980	-0.18	110	0.600	-4.44	204	0.680	-3.35	298	0.810	-1.83
18	0.970	-0.26	112	0.600	-4.44	206	0.670	-3.48	300	0.830	-1.62
20	0.970	-0.26	114	0.600	-4.44	208	0.670	-3.48	302	0.840	-1.51
22	0.970	-0.26	116	0.600	-4.44	210	0.660	-3.61	304	0.850	-1.41
24	0.960	-0.35	118	0.600	-4.44	212	0.660	-3.61	306	0.860	-1.31
26	0.960	-0.35	120	0.600	-4.44	214	0.650	-3.74	308	0.870	-1.21
28	0.960	-0.35	122	0.600	-4.44	216	0.640	-3.88	310	0.880	-1.11
30	0.950	-0.45	124	0.600	-4.44	218	0.640	-3.88	312	0.890	-1.01
32	0.950	-0.45	126	0.600	-4.44	220	0.630	-4.01	314	0.900	-0.92
34	0.940	-0.54	128	0.610	-4.29	222	0.630	-4.01	316	0.910	-0.82
36	0.940	-0.54	130	0.610	-4.29	224	0.620	-4.15	318	0.920	-0.72
38	0.930	-0.63	132	0.610	-4.29	226	0.620	-4.15	320	0.930	-0.63
40	0.930	-0.63	134	0.620	-4.15	228	0.610	-4.29	322	0.930	-0.63
42	0.920	-0.72	136	0.620	-4.15	230	0.610	-4.29	324	0.940	-0.54
44	0.910	-0.82	138	0.630	-4.01	232	0.610	-4.29	326	0.940	-0.54
46	0.900	-0.92	140	0.630	-4.01	234	0.600	-4.44	328	0.950	-0.45
48	0.890	-1.01	142	0.640	-3.88	236	0.600	-4.44	330	0.950	-0.45
50	0.880	-1.11	144	0.640	-3.88	238	0.600	-4.44	332	0.960	-0.35
52	0.870	-1.21	146	0.650	-3.74	240	0.600	-4.44	334	0.960	-0.35
54	0.860	-1.31	148	0.660	-3.61	242	0.600	-4.44	336	0.960	-0.35
56	0.850	-1.41	150	0.660	-3.61	244	0.600	-4.44	338	0.970	-0.26
58	0.840	-1.51	152	0.670	-3.48	246	0.600	-4.44	340	0.970	-0.26
60	0.830	-1.62	154	0.670	-3.48	248	0.600	-4.44	342	0.970	-0.26
62	0.810	-1.83	156	0.680	-3.35	250	0.600	-4.44	344	0.980	-0.18
64	0.800	-1.94	158	0.680	-3.35	252	0.610	-4.29	346	0.980	-0.18
66	0.790	-2.05	160	0.690	-3.22	254	0.610	-4.29	348	0.980	-0.18
68	0.780	-2.16	162	0.690	-3.22	256	0.610	-4.29	350	0.990	-0.09
70	0.760	-2.38	164	0.690	-3.22	258	0.620	-4.15	352	0.990	-0.09
72	0.750	-2.50	166	0.700	-3.10	260	0.630	-4.01	354	0.990	-0.09
74	0.740	-2.62	168	0.700	-3.10	262	0.630	-4.01	356	1.000	0.00
76	0.730	-2.73	170	0.700	-3.10	264	0.640	-3.88	358	1.000	0.00
78	0.720	-2.85	172	0.700	-3.10	266	0.640	-3.88	360	1.000	0.00
80	0.710	-2.97	174	0.710	-2.97	268	0.650	-3.74			
82	0.700	-3.10	176	0.710	-2.97	270	0.660	-3.61			
84	0.690	-3.22	178	0.710	-2.97	272	0.670	-3.48			
86	0.680	-3.35	180	0.710	-2.97	274	0.680	-3.35			
88	0.670	-3.48	182	0.710	-2.97	276	0.690	-3.22			
90	0.660	-3.61	184	0.710	-2.97	278	0.700	-3.10			
92	0.650	-3.74	186	0.710	-2.97	280	0.710	-2.97			

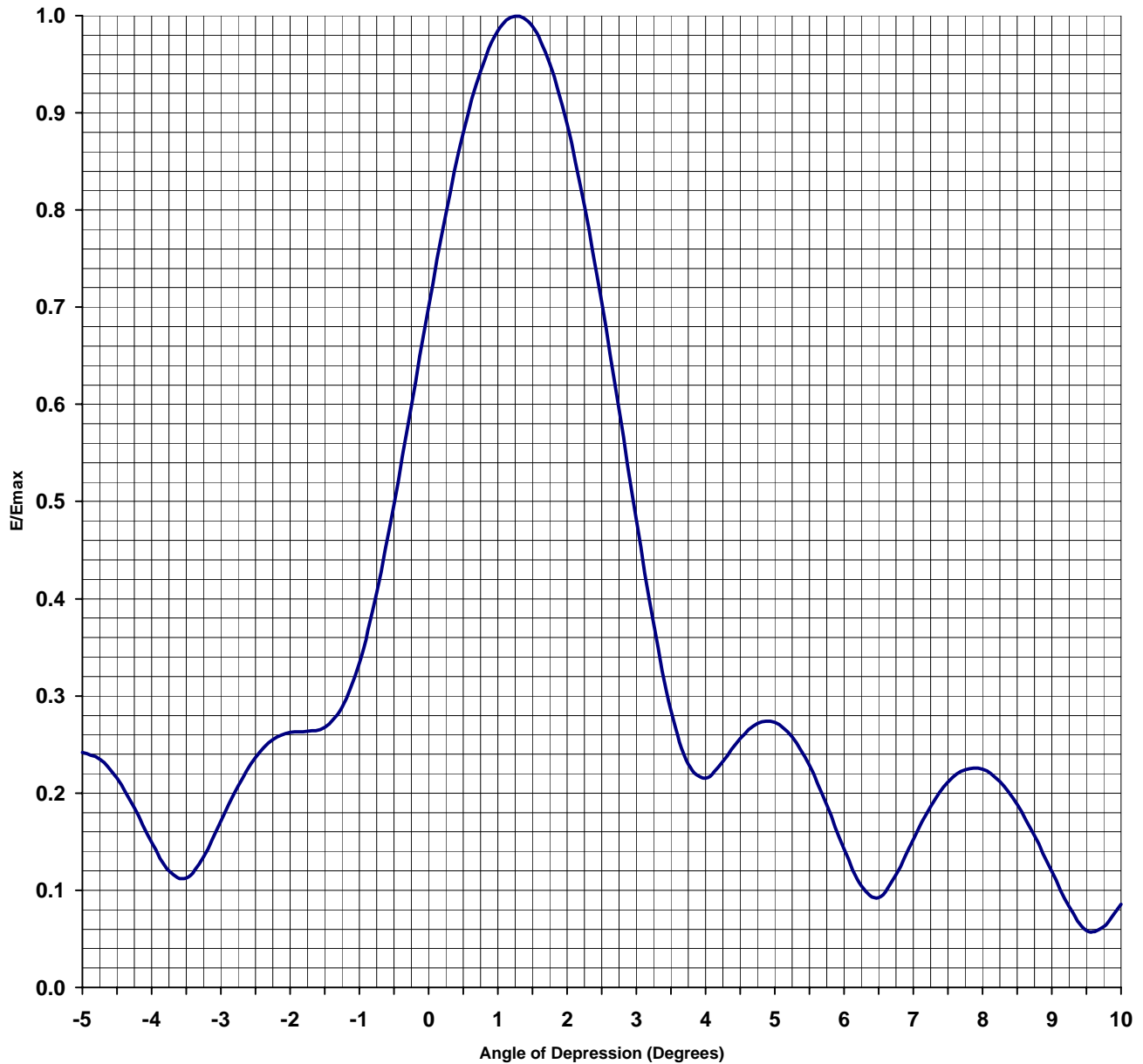
Radio Frequency Systems, Inc.  
200 Pondview Drive Meriden, CT 06450  
Tel: +1 203-630-3311 Fax: +1 203-821-3852  
www.rfsworld.com



## ELEVATION PATTERN

TYPE:	RD24T60	
Directivity:	Numeric	dBd
Main Lobe:	<u>20.2</u>	<u>13.04</u>
Horizontal:	<u>9.9</u>	<u>9.95</u>
Beam Tilt:	1.25	
3 dB Beamwidth:		
Polarization:	Horizontal	
Channel:	16, 17, 18	
Location:	El Paso, TX	

Model:	RD24OM-1618M6T60
INQUIRY #:	2043
QUOTE #:	1048
ATS Job#:	2419 Rev. C





## TABULATED DATA FOR ELEVATION PATTERN

TYPE: RD24T60

-5 to 10 in 0.25 increments

10 to 90 in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.242	-12.32	6.75	0.116	-18.72	27.00	0.031	-30.14	50.50	0.015	-36.31	74.00	0.002	-54.42
-4.75	0.235	-12.57	7.00	0.152	-16.36	27.50	0.048	-26.30	51.00	0.011	-39.33	74.50	0.001	-60.92
-4.50	0.215	-13.34	7.25	0.186	-14.61	28.00	0.058	-24.81	51.50	0.011	-39.49	75.00	0.001	-66.02
-4.25	0.185	-14.67	7.50	0.211	-13.50	28.50	0.056	-25.08	52.00	0.013	-37.92	75.50	0.002	-53.15
-4.00	0.149	-16.52	7.75	0.224	-12.99	29.00	0.045	-27.03	52.50	0.014	-36.95	76.00	0.004	-47.74
-3.75	0.120	-18.42	8.00	0.225	-12.98	29.50	0.029	-30.66	53.00	0.014	-36.95	76.50	0.006	-44.29
-3.50	0.112	-18.99	8.25	0.212	-13.48	30.00	0.023	-32.88	53.50	0.013	-37.92	77.00	0.008	-41.83
-3.25	0.135	-17.42	8.50	0.189	-14.49	30.50	0.031	-30.20	54.00	0.010	-39.66	77.50	0.010	-39.91
-3.00	0.171	-15.35	8.75	0.156	-16.12	31.00	0.040	-28.05	54.50	0.008	-41.94	78.00	0.012	-38.49
-2.75	0.208	-13.66	9.00	0.119	-18.46	31.50	0.042	-27.49	55.00	0.006	-44.44	78.50	0.014	-37.39
-2.50	0.237	-12.51	9.25	0.083	-21.61	32.00	0.040	-28.02	55.50	0.004	-47.96	79.00	0.015	-36.54
-2.25	0.255	-11.88	9.50	0.058	-24.69	32.50	0.038	-28.38	56.00	0.001	-59.17	79.50	0.016	-35.92
-2.00	0.263	-11.62	9.75	0.063	-24.06	33.00	0.044	-27.17	56.50	0.003	-49.37	80.00	0.017	-35.49
-1.75	0.264	-11.58	10.00	0.086	-21.34	33.50	0.055	-25.26	57.00	0.010	-40.26	80.50	0.017	-35.19
-1.50	0.268	-11.45	10.50	0.130	-17.71	34.00	0.064	-23.86	57.50	0.018	-35.09	81.00	0.018	-35.04
-1.25	0.288	-10.80	11.00	0.144	-16.83	34.50	0.068	-23.35	58.00	0.027	-31.47	81.50	0.018	-35.04
-1.00	0.334	-9.54	11.50	0.125	-18.06	35.00	0.065	-23.80	58.50	0.036	-28.80	82.00	0.018	-35.14
-0.75	0.406	-7.83	12.00	0.085	-21.41	35.50	0.055	-25.27	59.00	0.046	-26.82	82.50	0.017	-35.34
-0.50	0.497	-6.08	12.50	0.051	-25.88	36.00	0.040	-27.94	59.50	0.054	-25.40	83.00	0.017	-35.60
-0.25	0.598	-4.47	13.00	0.058	-24.75	36.50	0.024	-32.36	60.00	0.060	-24.42	83.50	0.016	-35.92
0.00	0.700	-3.09	13.50	0.077	-22.26	37.00	0.010	-40.18	60.50	0.064	-23.84	84.00	0.015	-36.36
0.25	0.796	-1.98	14.00	0.081	-21.80	37.50	0.001	-64.44	61.00	0.066	-23.64	84.50	0.014	-36.83
0.50	0.879	-1.12	14.50	0.073	-22.75	38.00	0.006	-44.15	61.50	0.065	-23.77	85.00	0.014	-37.39
0.75	0.943	-0.51	15.00	0.069	-23.19	38.50	0.008	-42.16	62.00	0.061	-24.25	85.50	0.013	-37.92
1.00	0.985	-0.14	15.50	0.082	-21.69	39.00	0.009	-40.92	62.50	0.056	-25.07	86.00	0.012	-38.56
1.25	1.000	0.00	16.00	0.099	-20.05	39.50	0.013	-37.59	63.00	0.049	-26.23	86.50	0.011	-39.25
1.50	0.989	-0.10	16.50	0.106	-19.49	40.00	0.019	-34.66	63.50	0.041	-27.74	87.00	0.010	-39.91
1.75	0.951	-0.44	17.00	0.097	-20.29	40.50	0.022	-33.19	64.00	0.033	-29.55	87.50	0.009	-40.72
2.00	0.889	-1.03	17.50	0.073	-22.70	41.00	0.022	-33.23	64.50	0.027	-31.47	88.00	0.008	-41.51
2.25	0.805	-1.89	18.00	0.043	-27.39	41.50	0.018	-34.89	65.00	0.022	-33.00	88.50	0.008	-42.27
2.50	0.705	-3.03	18.50	0.013	-37.52	42.00	0.013	-37.99	65.50	0.021	-33.56	89.00	0.007	-43.22
2.75	0.595	-4.51	19.00	0.008	-42.05	42.50	0.013	-37.92	66.00	0.022	-33.23	89.50	0.006	-44.15
3.00	0.482	-6.35	19.50	0.018	-35.14	43.00	0.021	-33.72	66.50	0.023	-32.62	90.00	0.000	0.00
3.25	0.375	-8.53	20.00	0.018	-35.04	43.50	0.030	-30.60	67.00	0.025	-32.15			
3.50	0.285	-10.90	20.50	0.019	-34.29	44.00	0.036	-28.90	67.50	0.025	-32.01			
3.75	0.230	-12.77	21.00	0.029	-30.78	44.50	0.038	-28.40	68.00	0.025	-32.22			
4.00	0.216	-13.33	21.50	0.038	-28.47	45.00	0.035	-29.02	68.50	0.023	-32.77			
4.25	0.233	-12.67	22.00	0.039	-28.27	45.50	0.029	-30.84	69.00	0.021	-33.72			
4.50	0.256	-11.83	22.50	0.030	-30.37	46.00	0.020	-34.15	69.50	0.018	-34.99			
4.75	0.272	-11.32	23.00	0.020	-34.15	46.50	0.012	-38.42	70.00	0.015	-36.71			
5.00	0.273	-11.28	23.50	0.028	-31.15	47.00	0.014	-36.95	70.50	0.012	-38.79			
5.25	0.258	-11.78	24.00	0.046	-26.69	47.50	0.022	-33.19	71.00	0.009	-41.31			
5.50	0.229	-12.82	24.50	0.060	-24.48	48.00	0.028	-30.96	71.50	0.006	-44.15			
5.75	0.188	-14.53	25.00	0.062	-24.11	48.50	0.032	-30.03	72.00	0.005	-46.94			
6.00	0.143	-16.92	25.50	0.053	-25.55	49.00	0.031	-30.17	72.50	0.004	-49.12			
6.25	0.105	-19.62	26.00	0.034	-29.27	49.50	0.027	-31.24	73.00	0.003	-50.46			
6.50	0.093	-20.67	26.50	0.020	-34.20	50.00	0.022	-33.31	73.50	0.003	-51.70			