TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
TELEVISION STATION KRMA-DT
DENVER, COLORADO

July 27, 2003

CHANNEL 18 1000 KW (MAX-DA) 340 M

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Technical Statement

This Technical Exhibit was prepared on behalf of digital television broadcast station KRMA-DT, Denver, Colorado; in support of an application for modification of its construction permit (See FCC File No. BPEDT-19981023KH). KRMA-DT is paired with analog NTSC station KRMA-TV, Channel 6. The instant modification application proposes to relocate the proposed KRMA-DT facility to a new tower to be constructed on Mt. Morrison near Denver, Colorado. It is proposed that the KRMA-DT facility operate with a maximum directional average effective radiated power (ERP) of 1000 kW (30.0 dBk) and an antenna radiation center height above average terrain (HAAT) of 340 m. As described in further detail herein, the proposed facility meets the FCC *de minimis* interference protection criteria.*

The KRMA-DT transmitter site is authorized at Lookout Mountain near Denver, Colorado. Pursuant to a recent decision of the Jefferson County Board of Commissioners, KRMA-DT is now required to locate its proposed transmitter site to a new site being constructed on Mt. Morrison 6.9 km south-southeast of Lookout Mountain. This site will accommodate a number of broadcasters including KRMA-TV,

* See FCC *Public Notice*, "Commission Details Application Filing Procedures Digital Television (DTV)", Released: October 16, 1997; and, FCC *Public Notice*, "Additional Application Processing Guidelines for Digital Television (DTV)", Released: August 10, 1998.

Denver, Colorado (Channel 6); KUVO(FM), Denver, CO (Channel 207C1); and KVOD(FM), Denver, Colorado (Channel 211C1).

Proposed Facilities

A Dielectric, Model TUA-C2-12/24H-T transmitting antenna will be employed. The proposed transmitting antenna will be top-mounted on a proposed 18.3-meter tower structure. The transmitter site elevation is 2335 m AMSL. The antenna center of radiation will be located at 26 m above ground level and 2361 m AMSL.

The proposed facility meets the maximum permissible ERP requirements for UHF DTV stations as outlined in Section 73.623(f)(8)(i) of the FCC Rules. According to this section, considering a proposed antenna HAAT for the proposed KRMA-DT facility of 340 m, the maximum permissible ERP is 1000 kW.

There are no AM broadcast stations located within 3.2 km of the proposed transmitter site. The proposed facility is not located within the Mexican or Canadian coordination zones. There are no FCC Monitoring stations in proximity to the proposed facility.

The applicant recognizes its responsibility to correct objectionable electromagnetic interference problems that may result from its proposed operation.

Table Mountain Quiet Zone

An agreement has been reached between the licensee of KRMA-DT and the National Telecommunications and Information Administration (NTIA) concerning protection of the Table Mountain Quiet Zone in conjunction with the KRMA-DT application. Details concerning this agreement are included elsewhere with the instant application

Tower Registration

Antenna structure registration is not required. Figure 1 is a sketch of the proposed antenna and supporting structure.

Allocation Considerations

The proposed KRMA-DT Channel 18 facility meets the requirements of Section 73.623 of the FCC Rules concerning predicted interference to other existing U.S. NTSC facilities and U.S. DTV allotments and assignments. Longley-Rice interference analyses were conducted pursuant to the requirements of the FCC Rules; OET Bulletin No. 69; and published FCC guidelines for preparation of such interference analyses. The Longley-Rice interference analyses were conducted using the software developed by du Treil, Lundin & Rackley, Inc. based on the FCC published software routines.† Stations selected for analysis were determined pursuant to the distance requirements outlined in the FCC DTV Processing Guidelines Public Notice. Accordingly, co-channel DTV and NTSC stations within 429 km and 407 km, respectively, were examined for potential interference; and first-adjacent DTV and NTSC stations within 229 km and 207 km, respectively, were examined for potential interference. Analog taboo-related NTSC stations within 142 km were examined for potential interference. The results of the interference analyses for the proposed KRMA-DT facility are summarized herein at Figure 3. As indicated therein, the proposed facility will meet the 2%/10% criterion outlined in the FCC Rules and published guidelines with respect to all considered stations.‡

† The duTreil, Lundin & Rackley, Inc. DTV interference analysis program is a precise implementation of the 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.
‡ Interference analysis results reflect the net change in interference to a given station considering the interference predicted to occur from all other stations (i.e. "masking") including the allotment facility for KRMA-DT. This properly reflects the net interference change for determining compliance with the FCC DTV2%/10% *de minimis* standard.

With respect to Class A TV station protection, the proposal has been evaluated according to the requirements of Section 73.623(c)(5) of the FCC Rules. The analysis reveals no potentially affected Class A TV stations.

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.[§]

There are other broadcast facilities to be located on the tower or within close proximity of the tower site. Preliminary calculations indicate that the proposed facility may exceed the 5% MPE exclusion level for certain points on the ground in the vicinity of the proposed transmitter site. Therefore, the applicant shall conduct RF power density measurements throughout the transmitter site area to confirm compliance with the FCC specified guidelines for human exposure to RF energy.

The transmitter site is to be restricted from access. In the event that personnel are required to enter the restricted area or climb the tower structure, the

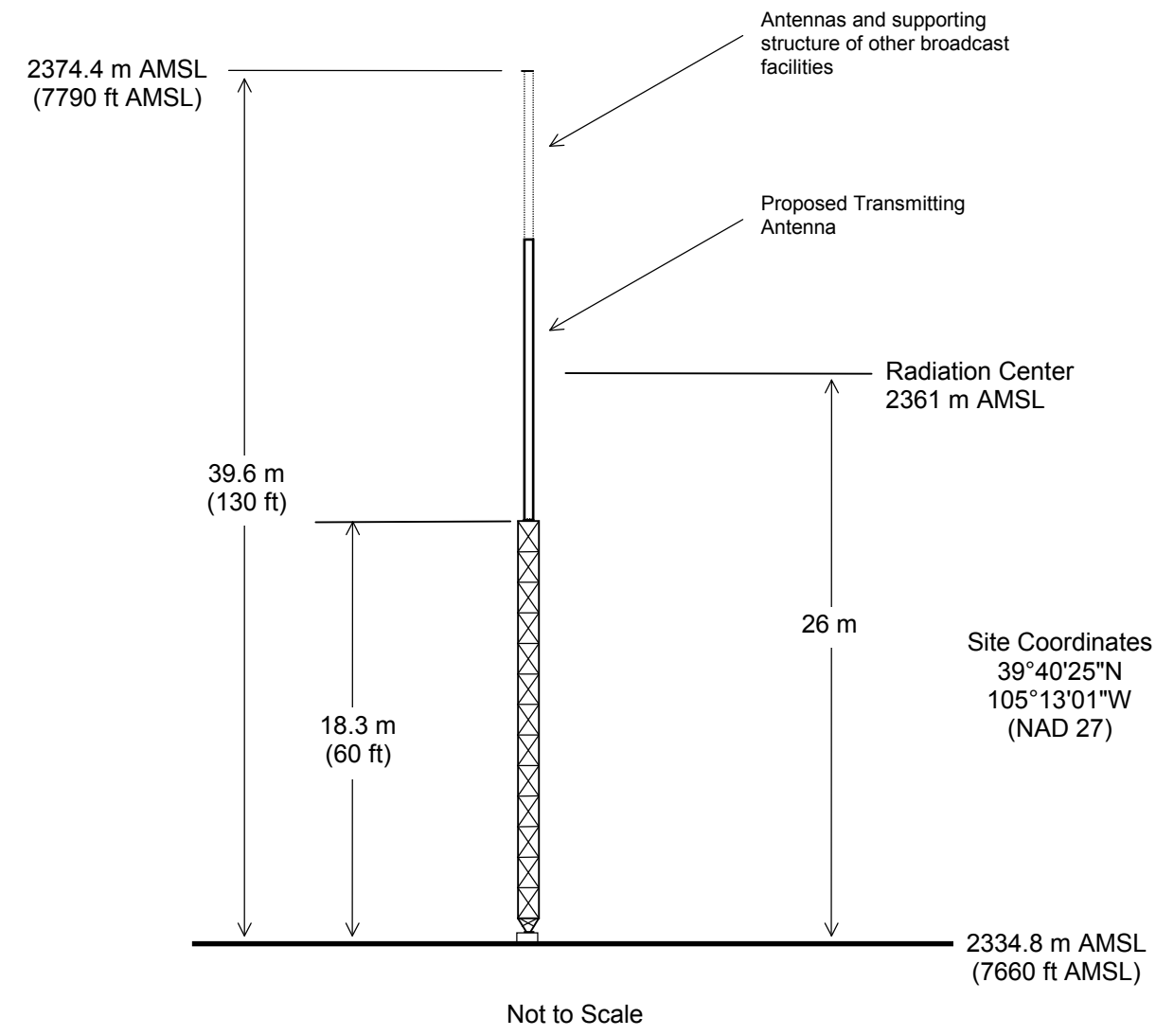
[§] See FCC Office of Engineering and Technology Bulletin No. 56 for background information on non-ionizing RF energy of the type discussed here. Internet web reference: http://www.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet56/oet56e4.pdf

proposed KRMA-DT transmissions shall be reduced or terminated as necessary to prevent RF exposure above the FCC recommended limits.

Louis Robert du Treil, Jr.

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

July 27, 2003



Antenna structure registration not required.

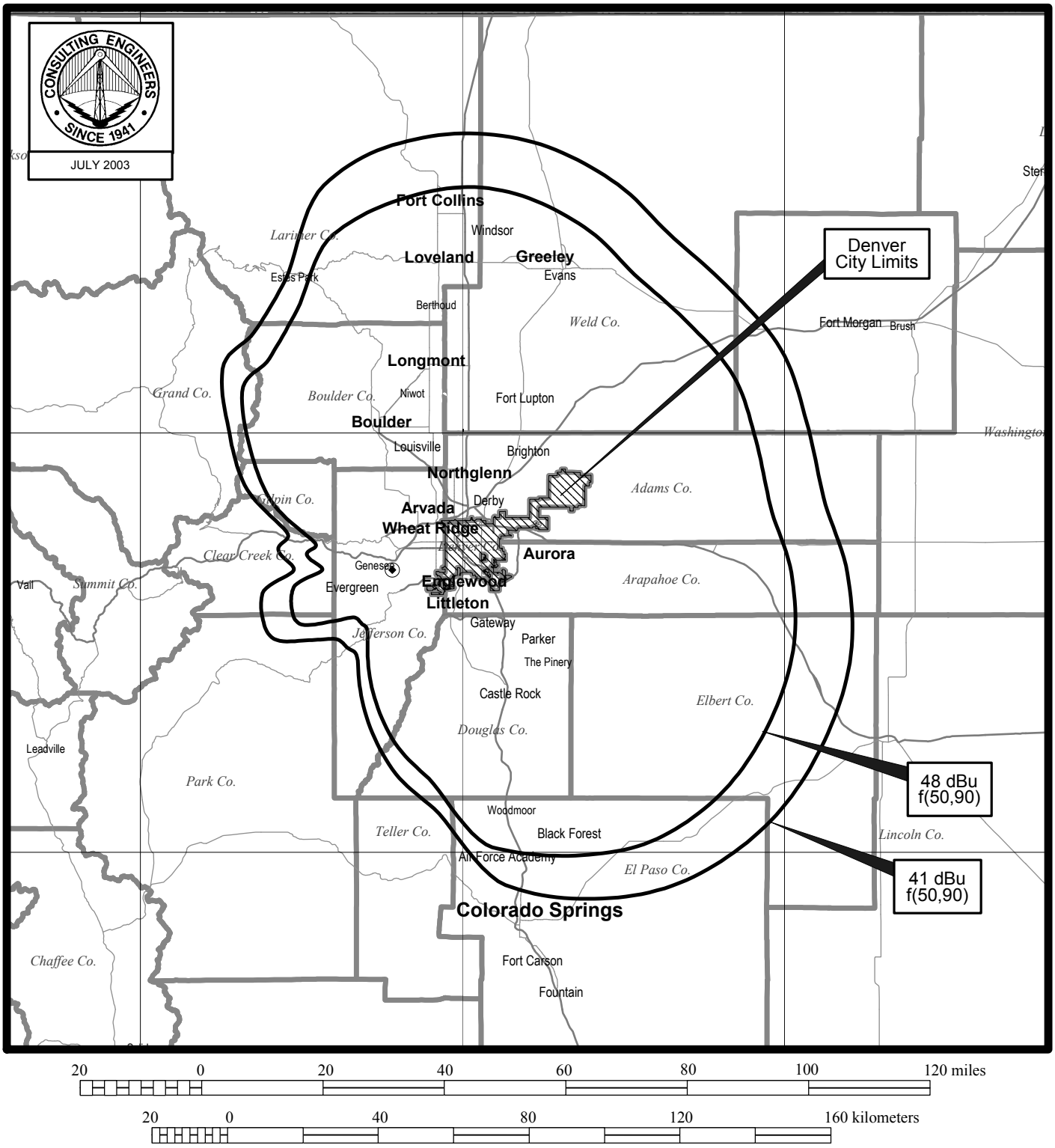
PROPOSED ANTENNA AND SUPPORTING STRUCTURE

TELEVISION STATION KRMA-DT

DENVER, COLORADO

CHANNEL 18 1000 KW (MAX-DA) 340 M

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



PREDICTED COVERAGE CONTOURS

TELEVISION STATION KRMA-DT
DENVER, COLORADO
CHANNEL 18 1000 KW (MAX-DA) 340 M

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Summary of Allocation Analysis

Stations Potentially Affected by Proposed Station							
Facility Number	Channel	Call	City State	Distance (km)	Status	Application Prefix	Application Reference Number
1	14	KTFD-TV	BOULDER CO	0.3	APP	BMPCT	19960716KL
2	14	KTFD-TV	BOULDER CO	0.3	CP MOD	BMPCT	19920612KG
3	17	KMGH-DT	DENVER CO	6.4	PLN	DTVPLN	DTVP0252
4	17	KMGH-TV	DENVER CO	6.5	APP	BMPCDT	20000421AAV
5	18	KRMJ	GRAND JUNCTION CO	269.9	LIC	BLET	19970807KL
6	18	KWNB-DT	HAYES CENTER NE	370.8	PLN	DTVPLN	DTVP0316
7	18	KFNB-DT	CASPER WY	353.2	PLN	DTVPLN	DTVP0335
8	18	KFNB	CASPER WY	353.2	CP	BPCDT	20000110AAG
9	19	KTVD	DENVER CO	6.5	APP	BMPCDT	19981231KE

Stations Potentially Affected by Proposed Station							
Facility Number	Channel	Call	City State	Distance (km)	Status	Application Prefix	Application Reference Number
10	19	KTVD-DT	DENVER CO	0.3	PLN	DTVPLN	DTVP0342
11	19	KTVD	DENVER CO	6.4	CP	BPCDT	19970616KH
12	20	KTVD	DENVER CO	6.5	APP	BMPCT	20020813ABA
13	20	KTVD	DENVER CO	6.4	CP	BPCT	19980827KG
14	20	KTVD	DENVER CO	0.3	LIC	BLCT	19881219KP
15	21	KXRM-TV	COLORADO SPRINGS CO	107.6	LIC	BLCT	19981109KH
16	21	KXRM-TV	COLORADO SPRINGS CO	107.6	CP MOD	BMPCT	19981109KG
17	22	KFCT	FORT COLLINS CO	112.9	LIC	BLCT	19950628KF
18	25	KDEN	LONGMONT CO	54.2	LIC	BLCT	19970428KE

Summary of Interference Analysis for Worst-Case Scenarios							
Facility Number	Interference Population Before Analysis	Interference Population After Analysis	Baseline Population	Net Change in Interference	Percent of Baseline	Permissible Percent of Baseline	Result
1	--	--	--	--	0.000	--	pass
2	--	--	--	--	0.000	--	pass
3	9261	11024	2246783	1763	0.078	2.0	pass
4	6113	7921	2246783	1808	0.080	2.0	pass

Figure 3
Sheet 2 of 3

Summary of Interference Analysis for Worst-Case Scenarios							
Facility Number	Interference Population Before Analysis	Interference Population After Analysis	Baseline Population	Net Change in Interference	Percent of Baseline	Permissible Percent of Baseline	Result
5	--	--	--	--	0.000	--	pass
6	--	--	--	--	0.000	--	pass
7	--	--	--	--	0.000	--	pass
8	--	--	--	--	0.000	--	pass
9	9741	1737	2113028	-8004	-0.379	2.0	pass
10	13438	4965	2113028	-8473	-0.401	2.0	pass
11	1604	1873	2113028	269	0.013	2.0	pass
12	--	--	--	--	0.000	--	pass
13	--	--	--	--	0.000	--	pass
14	--	--	--	--	0.000	--	pass
15	--	--	--	--	0.000	--	pass
16	--	--	--	--	0.000	--	pass
17	--	--	--	--	0.000	--	pass
18	1641	1637	2169834	-4	0.000	2.0	pass

Figure 3
Sheet 3 of 3

Appendix

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DENVER, COLORADO
CHANNEL 18 1000 KW (MAX-DA) 340 M

Transmitting Antenna
Manufacturer's Pattern Data

(four pages follow)

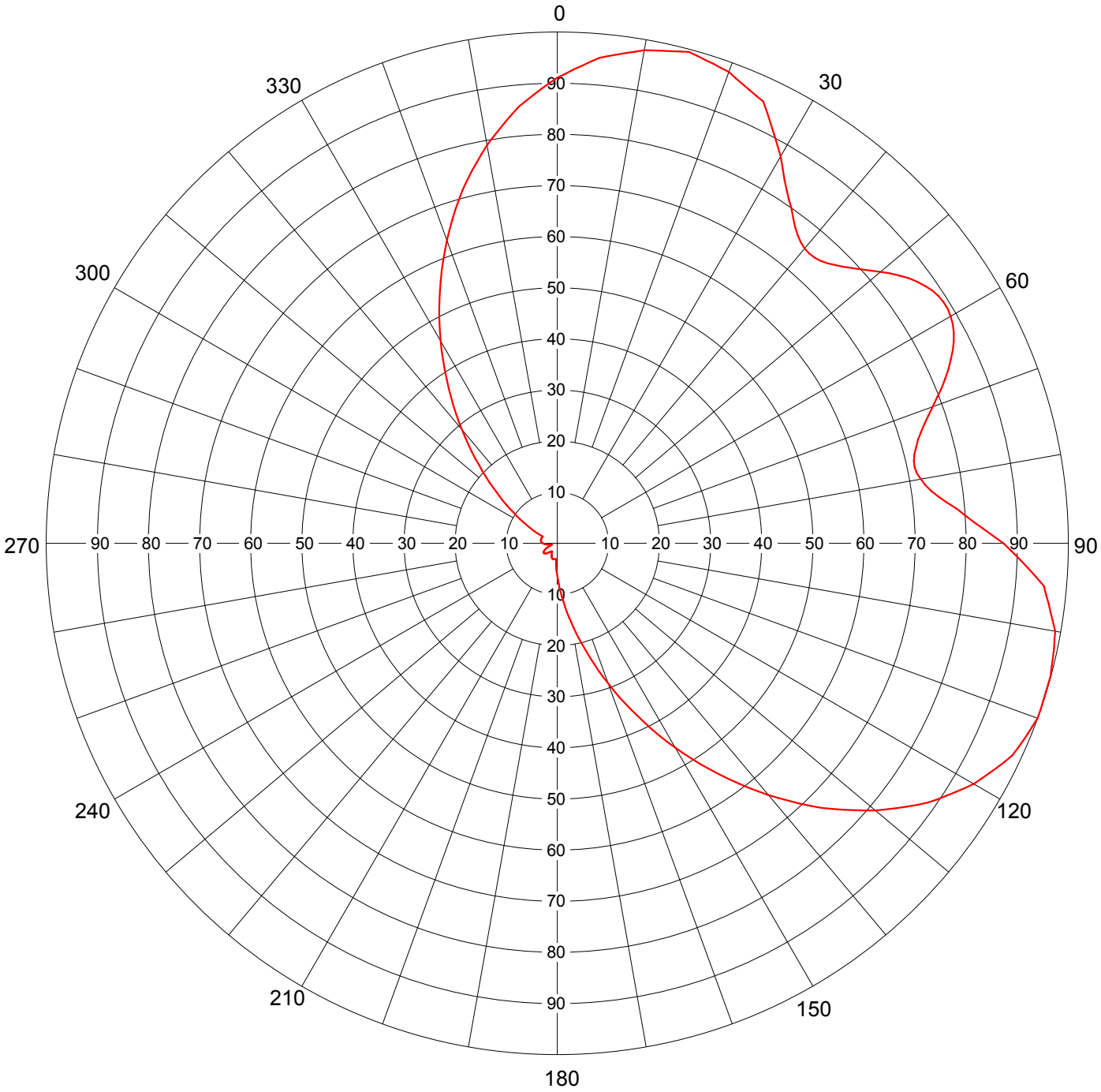
Exhibit No.

Dielectric

Date	**23 Jul 2003**		
Call Letters		Channel	**18**
Location			
Customer			
Antenna Type	**TUA-C2-12/24H-T**		

AZIMUTH PATTERN

Gain	**2.80 (4.47 dB)**	Frequency	**497 MHz**
Calculated / Measured	**Calculated**	Drawing #	**TUA-C2**



Remarks:

Exhibit No.

Dielectric

Date **23 Jul 2003**
Call Letters Channel **18**
Location
Customer
Antenna Type **TUA-C2-12/24H-T**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TUA-C2**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.911	45	0.769	90	0.873	135	0.732	180	0.063	225	0.027	270	0.028	315	0.216
1	0.919	46	0.779	91	0.889	136	0.714	181	0.057	226	0.028	271	0.029	316	0.231
2	0.927	47	0.789	92	0.906	137	0.696	182	0.050	227	0.029	272	0.030	317	0.245
3	0.936	48	0.801	93	0.922	138	0.678	183	0.044	228	0.030	273	0.030	318	0.260
4	0.945	49	0.813	94	0.939	139	0.660	184	0.038	229	0.030	274	0.031	319	0.275
5	0.953	50	0.826	95	0.955	140	0.642	185	0.031	230	0.031	275	0.031	320	0.290
6	0.958	51	0.839	96	0.962	141	0.624	186	0.031	231	0.032	276	0.032	321	0.306
7	0.963	52	0.851	97	0.969	142	0.606	187	0.031	232	0.032	277	0.032	322	0.322
8	0.968	53	0.861	98	0.975	143	0.588	188	0.031	233	0.032	278	0.032	323	0.338
9	0.974	54	0.871	99	0.982	144	0.569	189	0.031	234	0.032	279	0.032	324	0.354
10	0.979	55	0.878	100	0.989	145	0.551	190	0.031	235	0.032	280	0.032	325	0.370
11	0.982	56	0.884	101	0.991	146	0.533	191	0.032	236	0.032	281	0.032	326	0.387
12	0.985	57	0.889	102	0.993	147	0.515	192	0.032	237	0.032	282	0.032	327	0.404
13	0.988	58	0.891	103	0.995	148	0.497	193	0.032	238	0.032	283	0.032	328	0.422
14	0.991	59	0.891	104	0.997	149	0.479	194	0.032	239	0.031	284	0.032	329	0.439
15	0.995	60	0.889	105	0.999	150	0.461	195	0.032	240	0.030	285	0.032	330	0.456
16	0.992	61	0.885	106	0.999	151	0.444	196	0.032	241	0.029	286	0.032	331	0.474
17	0.989	62	0.879	107	1.000	152	0.426	197	0.032	242	0.028	287	0.032	332	0.491
18	0.986	63	0.871	108	1.000	153	0.408	198	0.031	243	0.027	288	0.032	333	0.509
19	0.984	64	0.861	109	1.000	154	0.391	199	0.031	244	0.026	289	0.032	334	0.526
20	0.981	65	0.849	110	1.000	155	0.373	200	0.030	245	0.024	290	0.032	335	0.544
21	0.974	66	0.838	111	0.997	156	0.357	201	0.030	246	0.023	291	0.032	336	0.561
22	0.968	67	0.825	112	0.993	157	0.341	202	0.029	247	0.021	292	0.032	337	0.579
23	0.963	68	0.811	113	0.990	158	0.325	203	0.028	248	0.020	293	0.032	338	0.596
24	0.958	69	0.796	114	0.986	159	0.309	204	0.027	249	0.018	294	0.032	339	0.614
25	0.954	70	0.782	115	0.982	160	0.292	205	0.026	250	0.017	295	0.031	340	0.631
26	0.937	71	0.768	116	0.974	161	0.277	206	0.025	251	0.015	296	0.037	341	0.648
27	0.921	72	0.756	117	0.966	162	0.262	207	0.025	252	0.014	297	0.044	342	0.665
28	0.904	73	0.744	118	0.958	163	0.248	208	0.024	253	0.013	298	0.050	343	0.682
29	0.889	74	0.734	119	0.949	164	0.233	209	0.023	254	0.012	299	0.056	344	0.699
30	0.874	75	0.727	120	0.941	165	0.218	210	0.022	255	0.012	300	0.063	345	0.716
31	0.856	76	0.720	121	0.930	166	0.205	211	0.021	256	0.012	301	0.071	346	0.731
32	0.839	77	0.716	122	0.919	167	0.193	212	0.020	257	0.012	302	0.079	347	0.746
33	0.824	78	0.715	123	0.907	168	0.181	213	0.020	258	0.013	303	0.088	348	0.761
34	0.811	79	0.717	124	0.896	169	0.169	214	0.019	259	0.014	304	0.096	349	0.776
35	0.799	80	0.722	125	0.884	170	0.156	215	0.019	260	0.015	305	0.104	350	0.791
36	0.785	81	0.729	126	0.870	171	0.146	216	0.019	261	0.017	306	0.114	351	0.804
37	0.774	82	0.739	127	0.856	172	0.136	217	0.020	262	0.018	307	0.124	352	0.817
38	0.764	83	0.751	128	0.842	173	0.125	218	0.020	263	0.020	308	0.135	353	0.831
39	0.758	84	0.766	129	0.827	174	0.115	219	0.021	264	0.021	309	0.145	354	0.844
40	0.753	85	0.784	130	0.812	175	0.105	220	0.022	265	0.023	310	0.155	355	0.857
41	0.751	86	0.798	131	0.796	176	0.096	221	0.023	266	0.024	311	0.167	356	0.868
42	0.752	87	0.815	132	0.780	177	0.088	222	0.024	267	0.025	312	0.179	357	0.879
43	0.756	88	0.833	133	0.764	178	0.080	223	0.025	268	0.026	313	0.191	358	0.889
44	0.762	89	0.853	134	0.748	179	0.071	224	0.026	269	0.027	314	0.204	359	0.900

Remarks:

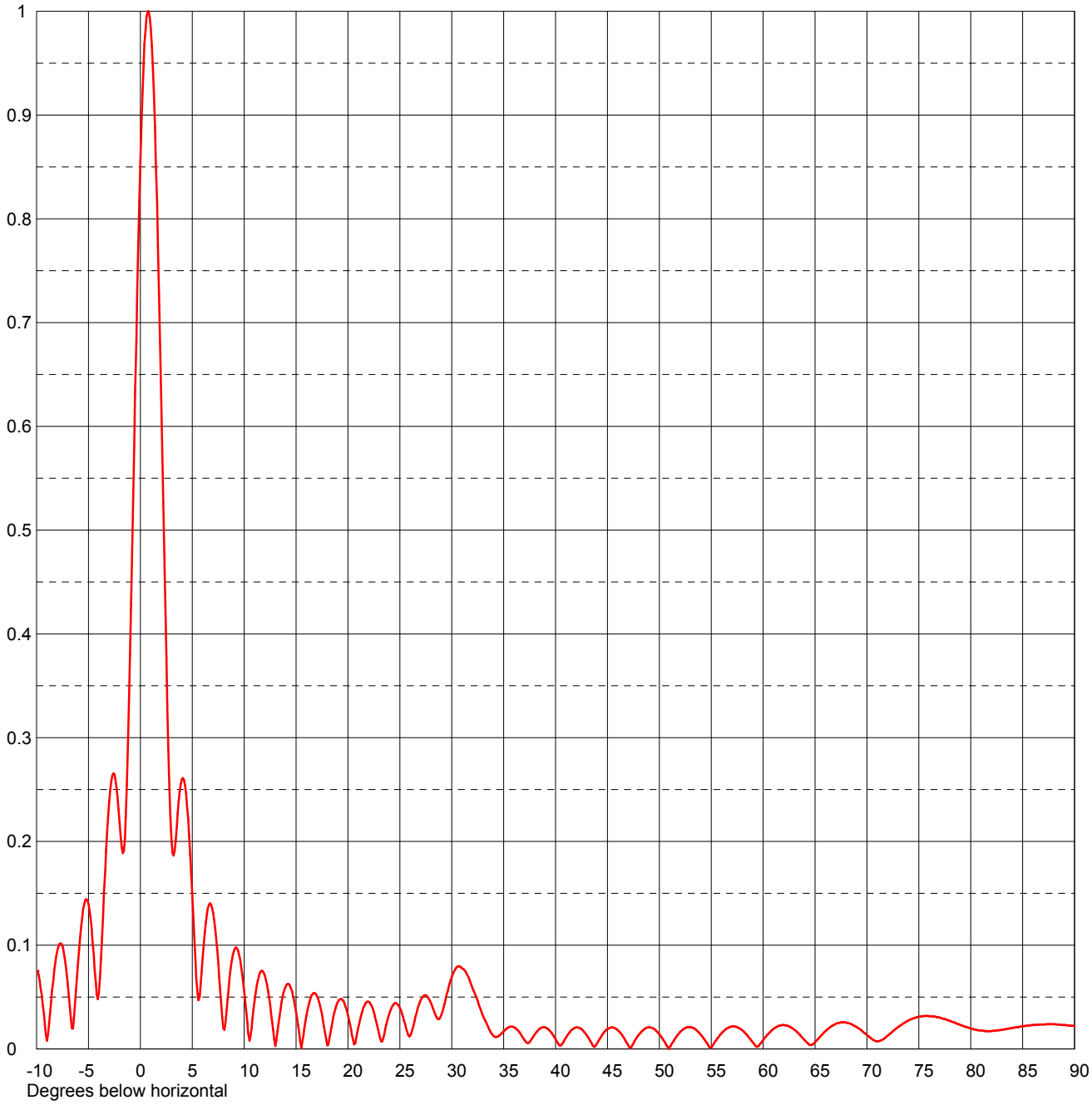
Exhibit No.

Dielectric

Date	**23 Jul 2003**		
Call Letters		Channel	**18**
Location			
Customer			
Antenna Type	**TUA-C2-12/24H-T**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**23.9 (13.78 dB)**	Beam Tilt	**0.75 Degrees**
RMS Gain at Horizontal	**17.5 (12.43 dB)**	Frequency	**497.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**12U239075-90**



Remarks:

Exhibit No.

Dielectric

Date **23 Jul 2003**
Call Letters
Location
Customer
Antenna Type **TUA-C2-12/24H-T**

Channel **18**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **12U239075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.078	2.4	0.426	10.6	0.011	30.5	0.079	51.0	0.002	71.5	0.009
-9.5	0.051	2.6	0.331	10.8	0.029	31.0	0.078	51.5	0.010	72.0	0.013
-9.0	0.008	2.8	0.252	11.0	0.046	31.5	0.071	52.0	0.016	72.5	0.017
-8.5	0.056	3.0	0.201	11.5	0.073	32.0	0.058	52.5	0.020	73.0	0.021
-8.0	0.095	3.2	0.186	12.0	0.070	32.5	0.046	53.0	0.021	73.5	0.025
-7.5	0.099	3.4	0.202	12.5	0.042	33.0	0.032	53.5	0.019	74.0	0.027
-7.0	0.063	3.6	0.227	13.0	0.003	33.5	0.021	54.0	0.014	74.5	0.030
-6.5	0.020	3.8	0.249	13.5	0.039	34.0	0.013	54.5	0.007	75.0	0.031
-6.0	0.084	4.0	0.260	14.0	0.060	34.5	0.012	55.0	0.001	75.5	0.032
-5.5	0.135	4.2	0.259	14.5	0.059	35.0	0.017	55.5	0.009	76.0	0.032
-5.0	0.140	4.4	0.246	15.0	0.036	35.5	0.021	56.0	0.015	76.5	0.031
-4.5	0.091	4.6	0.221	15.5	0.001	36.0	0.021	56.5	0.020	77.0	0.030
-4.0	0.054	4.8	0.188	16.0	0.032	36.5	0.016	57.0	0.022	77.5	0.029
-3.5	0.151	5.0	0.148	16.5	0.052	37.0	0.009	57.5	0.021	78.0	0.027
-3.0	0.239	5.2	0.106	17.0	0.051	37.5	0.007	58.0	0.018	78.5	0.025
-2.8	0.258	5.4	0.067	17.5	0.033	38.0	0.014	58.5	0.013	79.0	0.023
-2.6	0.266	5.6	0.047	18.0	0.004	38.5	0.020	59.0	0.006	79.5	0.021
-2.4	0.260	5.8	0.061	18.5	0.026	39.0	0.021	59.5	0.002	80.0	0.020
-2.2	0.243	6.0	0.088	19.0	0.045	39.5	0.017	60.0	0.009	80.5	0.019
-2.0	0.218	6.2	0.112	19.5	0.047	40.0	0.010	60.5	0.015	81.0	0.018
-1.8	0.194	6.4	0.130	20.0	0.033	40.5	0.003	61.0	0.019	81.5	0.017
-1.6	0.191	6.6	0.139	20.5	0.008	41.0	0.011	61.5	0.022	82.0	0.017
-1.4	0.224	6.8	0.139	21.0	0.021	41.5	0.018	62.0	0.023	82.5	0.018
-1.2	0.291	7.0	0.132	21.5	0.040	42.0	0.021	62.5	0.022	83.0	0.019
-1.0	0.380	7.2	0.116	22.0	0.045	42.5	0.019	63.0	0.019	83.5	0.019
-0.8	0.479	7.4	0.095	22.5	0.035	43.0	0.013	63.5	0.014	84.0	0.020
-0.6	0.582	7.6	0.069	23.0	0.014	43.5	0.005	64.0	0.009	84.5	0.021
-0.4	0.682	7.8	0.042	23.5	0.015	44.0	0.006	64.5	0.004	85.0	0.022
-0.2	0.775	8.0	0.020	24.0	0.035	44.5	0.014	65.0	0.007	85.5	0.023
0.0	0.855	8.2	0.026	24.5	0.044	45.0	0.019	65.5	0.012	86.0	0.023
0.2	0.921	8.4	0.048	25.0	0.040	45.5	0.021	66.0	0.017	86.5	0.023
0.4	0.968	8.6	0.069	25.5	0.024	46.0	0.018	66.5	0.021	87.0	0.024
0.6	0.995	8.8	0.084	26.0	0.013	46.5	0.012	67.0	0.024	87.5	0.024
0.8	1.000	9.0	0.094	26.5	0.031	47.0	0.004	67.5	0.026	88.0	0.024
1.0	0.984	9.2	0.098	27.0	0.047	47.5	0.006	68.0	0.025	88.5	0.024
1.2	0.946	9.4	0.095	27.5	0.052	48.0	0.013	68.5	0.024	89.0	0.023
1.4	0.889	9.6	0.086	28.0	0.044	48.5	0.019	69.0	0.021	89.5	0.023
1.6	0.815	9.8	0.073	28.5	0.031	49.0	0.021	69.5	0.018	90.0	0.022
1.8	0.727	10.0	0.056	29.0	0.033	49.5	0.019	70.0	0.013		
2.0	0.630	10.2	0.036	29.5	0.052	50.0	0.014	70.5	0.010		
2.2	0.528	10.4	0.015	30.0	0.069	50.5	0.007	71.0	0.007		

Remarks: