

Exhibit 40
NATURE OF THE PROPOSAL
PROPOSED ANTENNA SYSTEM
prepared for
United Communications Corporation
KEYC-DT Mankato, Minnesota
Ch. 38 1000 kW DA 291 m
Facility ID 68853

United Communications Corporation (“*United*”) is the licensee of analog station KEYC-TV Channel 12, Mankato, Minnesota. In the Commission’s Second Memorandum Opinion and Order on Reconsideration of the Fifth and Sixth Report and Orders on Advanced Television,¹ *United* was allotted DTV Channel 38 as a “paired” DTV Channel for KEYC-TV. *United* holds a construction permit for KEYC-DT, a new digital television (“DTV”) facility on DTV Channel 38 (BMPCDT-20000321AAO). The purpose of the instant application is to change the authorized non-directional antenna system to a directional antenna system and thereby utilize a more practical transmitter/antenna configuration.

No change in overall tower structure height is proposed as a result of this proposal. The antenna structure has been registered with the Commission. The registration number is 1025277.

The proposed directional antenna system will not exceed the non-directional envelope authorized for KEYC-DT. Further, the proposed facility specifies the same coordinates and radiation center as the recently granted construction permit. However, the proposed antenna height above average terrain (“HAAT”) of 291 meters is 26 meters less than the allotted reference facility HAAT of 317 meters. The proposed ERP exceeds the 845 kW reference ERP for this DTV station. Considering the formula prescribed by the Commission in §73.622(f)(3)(i), the maximum ERP allowed for a “checklist” facility 25 meters lower than the reference HAAT is 0.71 dB stronger or

¹See MM Docket 87-268, *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, FCC 98-315, released December 18, 1998.

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(995.9 kW). Thus, the proposed ERP of 1000 kW is 0.02 dB or 4.1 kW greater than the power which would qualify as a “checklist” application. Accordingly, pursuant to §73.622(f)(5) of the Commission’s rules, an interference study is supplied for completeness herein per §73.623(c); see **Exhibit 41**. As shown therein, it is believed that the instant proposal satisfies the Commission’s published interference criteria.

The proposed transmitting antenna, a *Dielectric* model TFU-30DSC-R 3C130-38, is directional in the horizontal plane. A proposed electrical beam tilt of 0.75 degrees is specified. The antenna system will be installed in accordance with the manufacturer’s instructions. Said installation will be supervised on-site by a competent technical representative of the applicant. The antenna’s horizontal plane patterns, expressed in terms of relative field and power, are supplied as **Figures 1**, and **1A**, properly oriented relative to True North. **Figure 2** presents the theoretical vertical plane (elevation) pattern for the antenna system. **Tables I** and **IA** list the relative field data for **Figures 1** and **2**.

The nearest FCC monitoring station is 470.5 km distant at Grand Island, Nebraska. This exceeds by a great margin the threshold minimum distance specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. There are no AM broadcast stations within 3.2 km (2 miles) of the proposed site, according to information extracted from the Commission’s engineering database.



FIGURE 1
HORIZONTAL PLANE PATTERN
(EXPRESSED IN RELATIVE FIELD)

prepared January 2001 for
United Communications Corporation
KEYC-DT Mankato, Minnesota
DTV Ch. 38 1000 kW 291m AAT

Cavell, Mertz & Davis, Inc.
Fairfax, Virginia

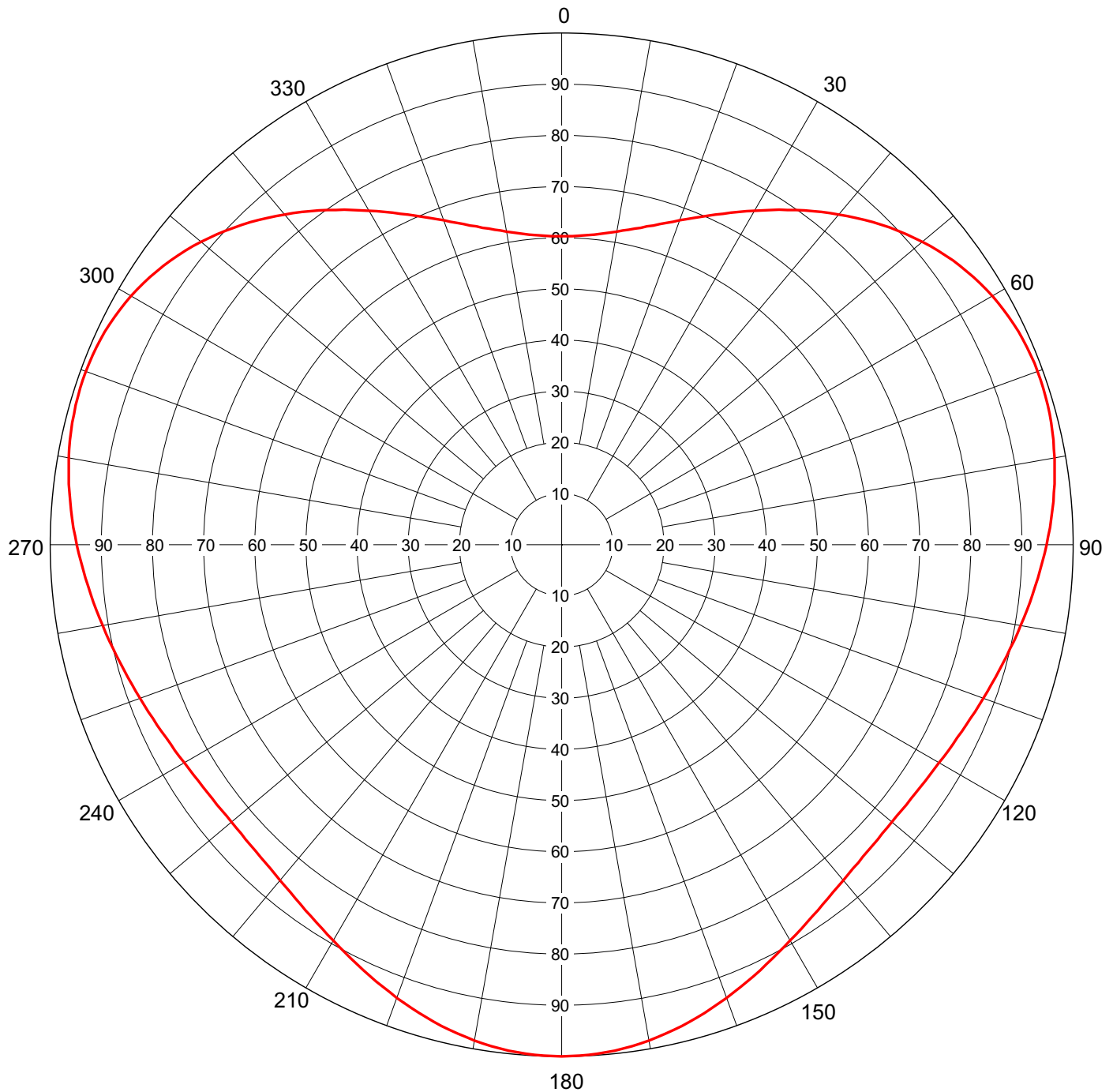
AZIMUTH PATTERN

RMS Gain at Main Lobe
Calculated / Measured

1.30 (1.14 dB)
Calculated

Drawing #

TFU-3C130-38



Remarks:



FIGURE 1A
HORIZONTAL PLANE PATTERN
(EXPRESSED IN dBk)

prepared January 2001 for
United Communications Corporation
KEYC-DT Mankato, Minnesota
DTV Ch. 38 1000 kW 291m AAT

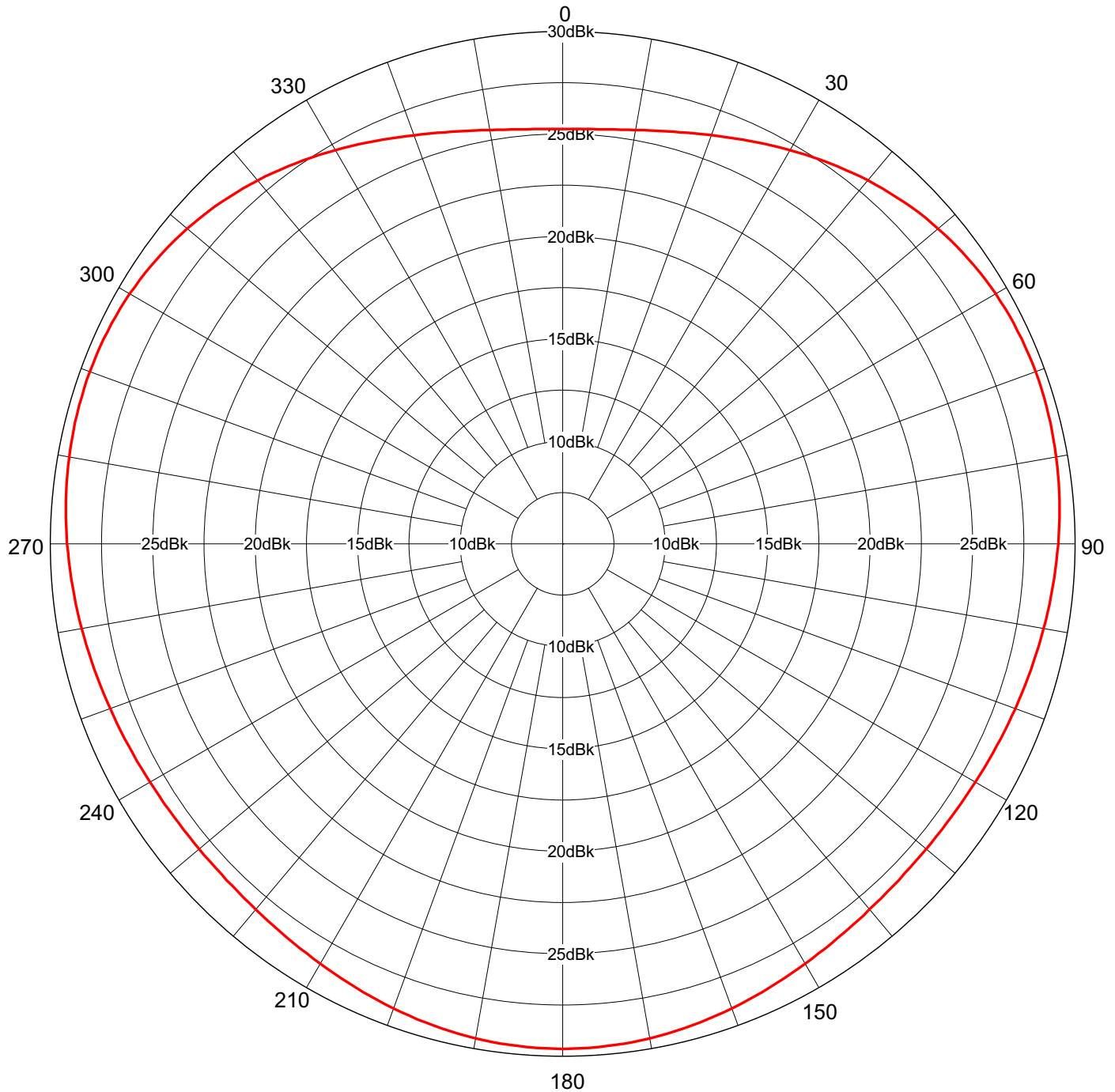
Cavell, Mertz & Davis, Inc.
Fairfax, Virginia

AZIMUTH PATTERN

RMS Gain at Main Lobe
Calculated / Measured

1.30 (1.14 dB)
Calculated

Drawing # **TFU-3C130-38**



Remarks:



TABLE I
HORIZONTAL PLANE PATTERN DATA
(EXPRESSED IN RELATIVE FIELD)

prepared January 2001 for
United Communications Corporation
 KEYC-DT Mankato, Minnesota
 DTV Ch. 38 1000 kW 291m AAT

Cavell, Mertz & Davis, Inc.
 Fairfax, Virginia

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-3C130-38**

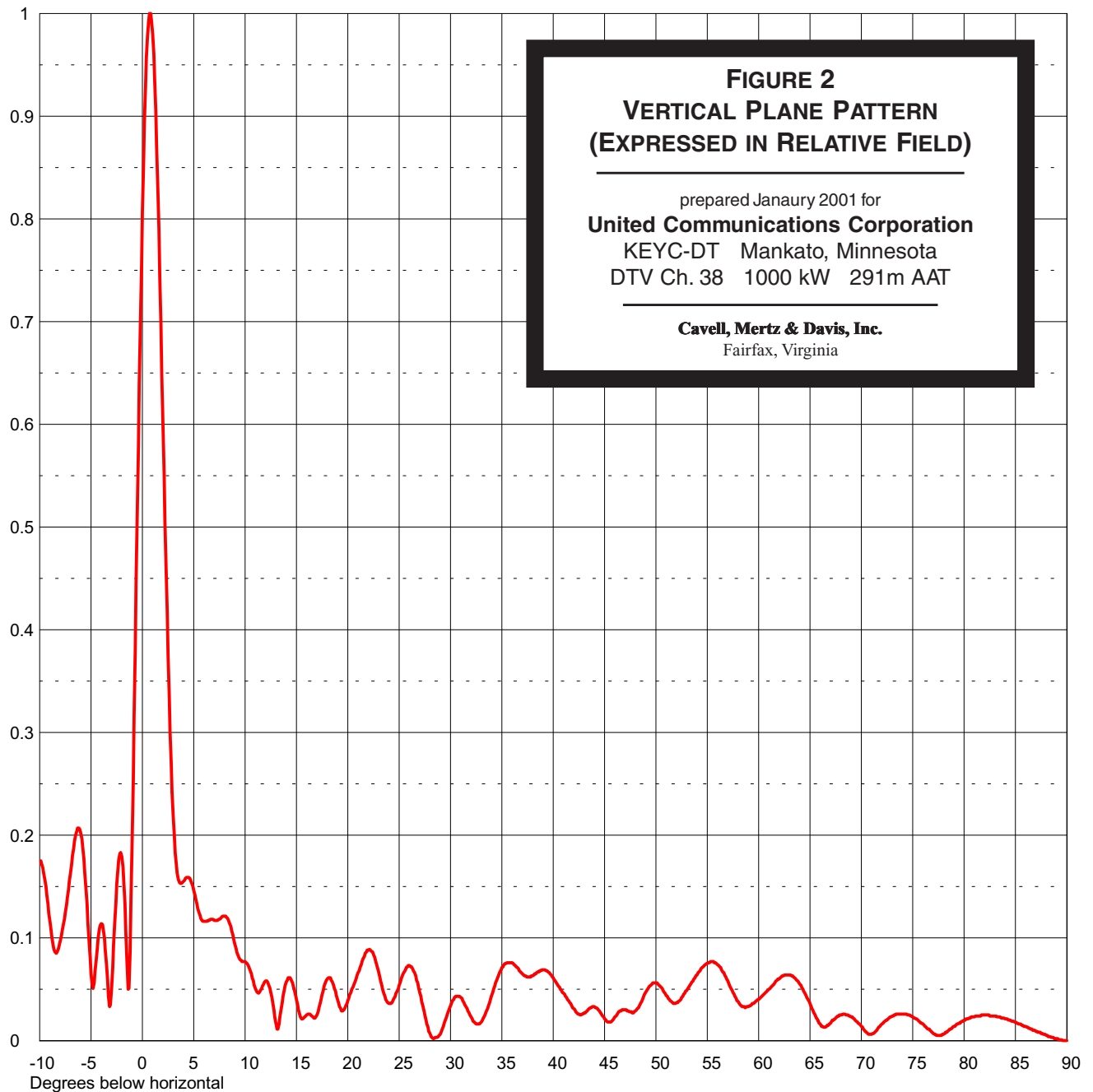
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.603	45	0.884	90	0.948	135	0.847	180	1.000	225	0.847	270	0.948	315	0.884
1	0.603	46	0.892	91	0.944	136	0.848	181	1.000	226	0.845	271	0.952	316	0.876
2	0.604	47	0.900	92	0.941	137	0.850	182	0.999	227	0.844	272	0.955	317	0.868
3	0.605	48	0.907	93	0.937	138	0.852	183	0.998	228	0.844	273	0.958	318	0.860
4	0.606	49	0.914	94	0.933	139	0.854	184	0.997	229	0.843	274	0.962	319	0.851
5	0.608	50	0.921	95	0.930	140	0.856	185	0.996	230	0.843	275	0.965	320	0.843
6	0.609	51	0.927	96	0.926	141	0.859	186	0.994	231	0.843	276	0.968	321	0.834
7	0.612	52	0.934	97	0.922	142	0.862	187	0.992	232	0.843	277	0.971	322	0.825
8	0.615	53	0.939	98	0.919	143	0.865	188	0.990	233	0.844	278	0.974	323	0.816
9	0.618	54	0.945	99	0.915	144	0.869	189	0.987	234	0.844	279	0.976	324	0.807
10	0.621	55	0.950	100	0.911	145	0.872	190	0.984	235	0.845	280	0.979	325	0.798
11	0.625	56	0.956	101	0.908	146	0.876	191	0.980	236	0.846	281	0.981	326	0.789
12	0.629	57	0.960	102	0.904	147	0.880	192	0.977	237	0.848	282	0.983	327	0.780
13	0.634	58	0.965	103	0.900	148	0.884	193	0.973	238	0.849	283	0.984	328	0.771
14	0.639	59	0.968	104	0.897	149	0.889	194	0.969	239	0.851	284	0.986	329	0.763
15	0.644	60	0.972	105	0.893	150	0.893	195	0.965	240	0.852	285	0.987	330	0.754
16	0.649	61	0.975	106	0.890	151	0.898	196	0.961	241	0.854	286	0.989	331	0.745
17	0.655	62	0.979	107	0.887	152	0.903	197	0.956	242	0.856	287	0.989	332	0.736
18	0.661	63	0.981	108	0.883	153	0.908	198	0.952	243	0.858	288	0.990	333	0.728
19	0.668	64	0.983	109	0.880	154	0.912	199	0.947	244	0.861	289	0.990	334	0.720
20	0.674	65	0.985	110	0.877	155	0.917	200	0.942	245	0.863	290	0.990	335	0.712
21	0.681	66	0.987	111	0.874	156	0.922	201	0.937	246	0.866	291	0.990	336	0.704
22	0.689	67	0.988	112	0.871	157	0.927	202	0.932	247	0.869	292	0.989	337	0.696
23	0.696	68	0.989	113	0.869	158	0.932	203	0.927	248	0.871	293	0.988	338	0.689
24	0.704	69	0.990	114	0.866	159	0.937	204	0.922	249	0.874	294	0.987	339	0.681
25	0.712	70	0.990	115	0.863	160	0.942	205	0.917	250	0.877	295	0.985	340	0.674
26	0.720	71	0.990	116	0.861	161	0.947	206	0.912	251	0.880	296	0.983	341	0.668
27	0.728	72	0.990	117	0.858	162	0.952	207	0.908	252	0.883	297	0.981	342	0.661
28	0.736	73	0.989	118	0.856	163	0.956	208	0.903	253	0.887	298	0.979	343	0.655
29	0.745	74	0.989	119	0.854	164	0.961	209	0.898	254	0.890	299	0.975	344	0.649
30	0.754	75	0.987	120	0.852	165	0.965	210	0.893	255	0.893	300	0.972	345	0.644
31	0.763	76	0.986	121	0.851	166	0.969	211	0.889	256	0.897	301	0.968	346	0.639
32	0.771	77	0.984	122	0.849	167	0.973	212	0.884	257	0.900	302	0.965	347	0.634
33	0.780	78	0.983	123	0.848	168	0.977	213	0.880	258	0.904	303	0.960	348	0.629
34	0.789	79	0.981	124	0.846	169	0.980	214	0.876	259	0.908	304	0.956	349	0.625
35	0.798	80	0.979	125	0.845	170	0.984	215	0.872	260	0.911	305	0.950	350	0.621
36	0.807	81	0.976	126	0.844	171	0.987	216	0.869	261	0.915	306	0.945	351	0.618
37	0.816	82	0.974	127	0.844	172	0.990	217	0.865	262	0.919	307	0.939	352	0.615
38	0.825	83	0.971	128	0.843	173	0.992	218	0.862	263	0.922	308	0.934	353	0.612
39	0.834	84	0.968	129	0.843	174	0.994	219	0.859	264	0.926	309	0.927	354	0.609
40	0.843	85	0.965	130	0.843	175	0.996	220	0.856	265	0.930	310	0.921	355	0.608
41	0.851	86	0.962	131	0.843	176	0.997	221	0.854	266	0.933	311	0.914	356	0.606
42	0.860	87	0.958	132	0.844	177	0.998	222	0.852	267	0.937	312	0.907	357	0.605
43	0.868	88	0.955	133	0.844	178	0.999	223	0.850	268	0.941	313	0.900	358	0.604
44	0.876	89	0.952	134	0.845	179	1.000	224	0.848	269	0.944	314	0.892	359	0.603



Antenna Type **TFU-30DSC-R**

ELEVATION PATTERN

RMS Gain at Main Lobe	25.5 (14.07 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	16.6 (12.20 dB)	Frequency	617.00 MHz
Calculated / Measured	Calculated	Drawing #	30Q255075-90



Remarks:



TABLE IA
VERTICAL PLANE PATTERN DATA
(EXPRESSED IN RELATIVE FIELD)

prepared January 2001 for
United Communications Corporation
 KEYC-DT Mankato, Minnesota
 DTV Ch. 38 1000 kW 291m AAT

Cavell, Mertz & Davis, Inc.
 Fairfax, Virginia

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **30Q255075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.176	2.4	0.416	10.6	0.065	30.5	0.043	51.0	0.044	71.5	0.010
-9.5	0.157	2.6	0.336	10.8	0.058	31.0	0.042	51.5	0.038	72.0	0.016
-9.0	0.116	2.8	0.270	11.0	0.051	31.5	0.033	52.0	0.037	72.5	0.020
-8.5	0.086	3.0	0.219	11.5	0.049	32.0	0.023	52.5	0.042	73.0	0.024
-8.0	0.097	3.2	0.183	12.0	0.058	32.5	0.016	53.0	0.049	73.5	0.026
-7.5	0.125	3.4	0.163	12.5	0.047	33.0	0.018	53.5	0.057	74.0	0.026
-7.0	0.163	3.6	0.154	13.0	0.017	33.5	0.029	54.0	0.064	74.5	0.025
-6.5	0.200	3.8	0.153	13.5	0.030	34.0	0.044	54.5	0.071	75.0	0.023
-6.0	0.202	4.0	0.155	14.0	0.057	34.5	0.059	55.0	0.075	75.5	0.020
-5.5	0.149	4.2	0.158	14.5	0.059	35.0	0.071	55.5	0.077	76.0	0.016
-5.0	0.065	4.4	0.159	15.0	0.040	35.5	0.076	56.0	0.074	76.5	0.011
-4.5	0.078	4.6	0.158	15.5	0.021	36.0	0.076	56.5	0.067	77.0	0.007
-4.0	0.114	4.8	0.153	16.0	0.025	36.5	0.071	57.0	0.058	77.5	0.005
-3.5	0.075	5.0	0.146	16.5	0.024	37.0	0.065	57.5	0.047	78.0	0.006
-3.0	0.051	5.2	0.138	17.0	0.025	37.5	0.062	58.0	0.038	78.5	0.010
-2.8	0.093	5.4	0.129	17.5	0.045	38.0	0.063	58.5	0.033	79.0	0.014
-2.6	0.134	5.6	0.122	18.0	0.060	38.5	0.067	59.0	0.033	79.5	0.017
-2.4	0.166	5.8	0.117	18.5	0.057	39.0	0.069	59.5	0.036	80.0	0.020
-2.2	0.182	6.0	0.116	19.0	0.040	39.5	0.067	60.0	0.040	80.5	0.022
-2.0	0.179	6.2	0.116	19.5	0.029	40.0	0.061	60.5	0.045	81.0	0.023
-1.8	0.154	6.4	0.117	20.0	0.039	40.5	0.053	61.0	0.050	81.5	0.024
-1.6	0.106	6.6	0.118	20.5	0.052	41.0	0.046	61.5	0.055	82.0	0.025
-1.4	0.050	6.8	0.118	21.0	0.066	41.5	0.039	62.0	0.060	82.5	0.024
-1.2	0.087	7.0	0.117	21.5	0.080	42.0	0.031	62.5	0.064	83.0	0.024
-1.0	0.193	7.2	0.117	22.0	0.088	42.5	0.026	63.0	0.064	83.5	0.023
-0.8	0.316	7.4	0.118	22.5	0.084	43.0	0.027	63.5	0.061	84.0	0.021
-0.6	0.447	7.6	0.119	23.0	0.067	43.5	0.031	64.0	0.055	84.5	0.020
-0.4	0.577	7.8	0.121	23.5	0.046	44.0	0.033	64.5	0.046	85.0	0.018
-0.2	0.699	8.0	0.121	24.0	0.036	44.5	0.029	65.0	0.036	85.5	0.016
0.0	0.807	8.2	0.120	24.5	0.041	45.0	0.021	65.5	0.025	86.0	0.014
0.2	0.894	8.4	0.117	25.0	0.054	45.5	0.018	66.0	0.016	86.5	0.011
0.4	0.957	8.6	0.111	25.5	0.067	46.0	0.023	66.5	0.013	87.0	0.009
0.6	0.993	8.8	0.103	26.0	0.073	46.5	0.029	67.0	0.017	87.5	0.007
0.8	1.000	9.0	0.094	26.5	0.066	47.0	0.030	67.5	0.022	88.0	0.005
1.0	0.980	9.2	0.086	27.0	0.047	47.5	0.028	68.0	0.025	88.5	0.003
1.2	0.936	9.4	0.081	27.5	0.025	48.0	0.029	68.5	0.025	89.0	0.002
1.4	0.870	9.6	0.078	28.0	0.007	48.5	0.036	69.0	0.023	89.5	0.001
1.6	0.789	9.8	0.077	28.5	0.003	49.0	0.047	69.5	0.019	90.0	0.000
1.8	0.697	10.0	0.077	29.0	0.006	49.5	0.054	70.0	0.014		
2.0	0.601	10.2	0.075	29.5	0.020	50.0	0.056	70.5	0.008		
2.2	0.506	10.4	0.071	30.0	0.034	50.5	0.052	71.0	0.006		