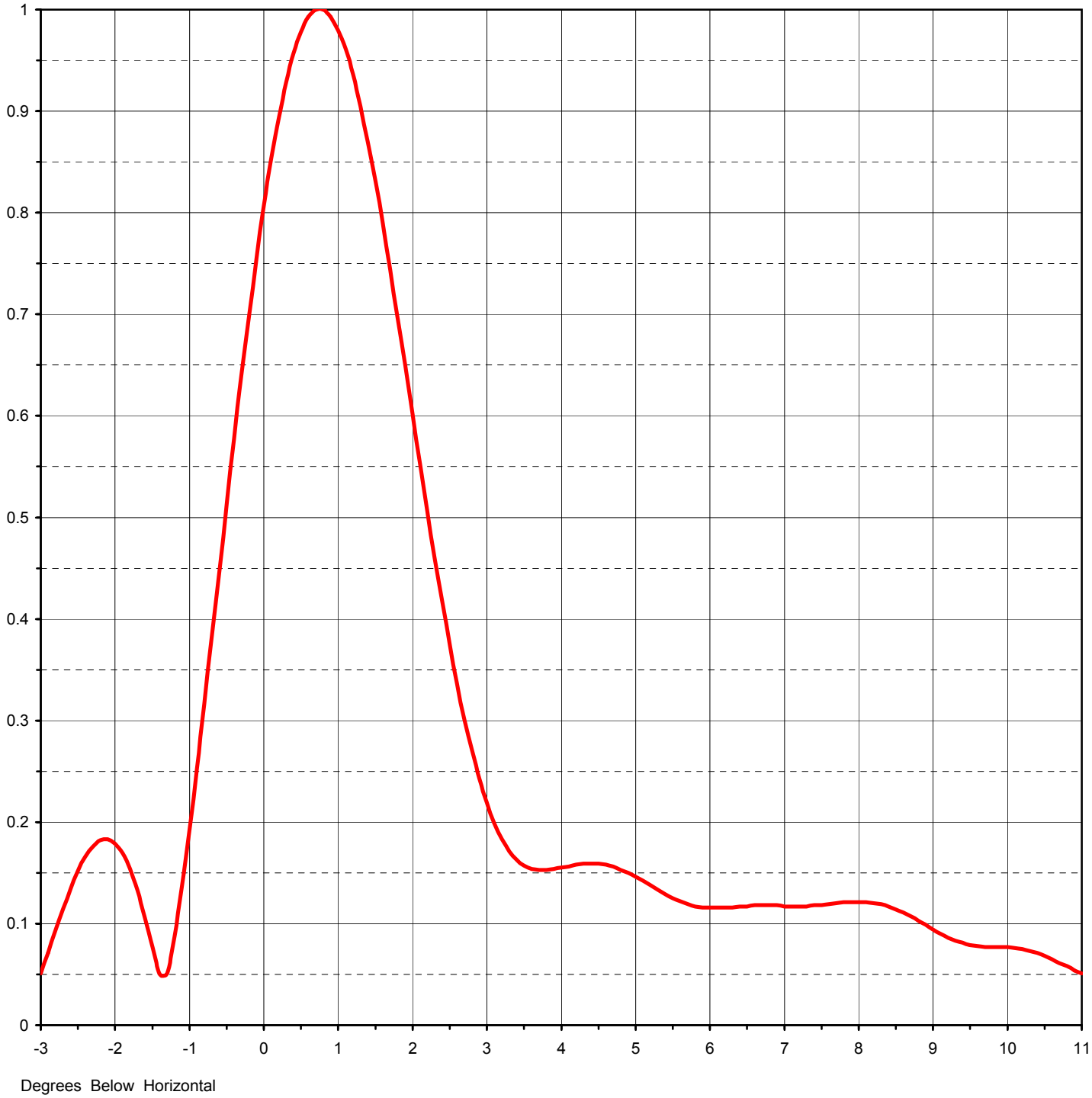
Proposal Number	**DCA-10602**		
Date	**22-Jul-04**		
Call Letters	**KCTV-DT**	Channel	**24**
Location	**Kansas City, MO**		
Customer			
Antenna Type	**TFU-30DSC-R 4C140**		

ELEVATION PATTERN

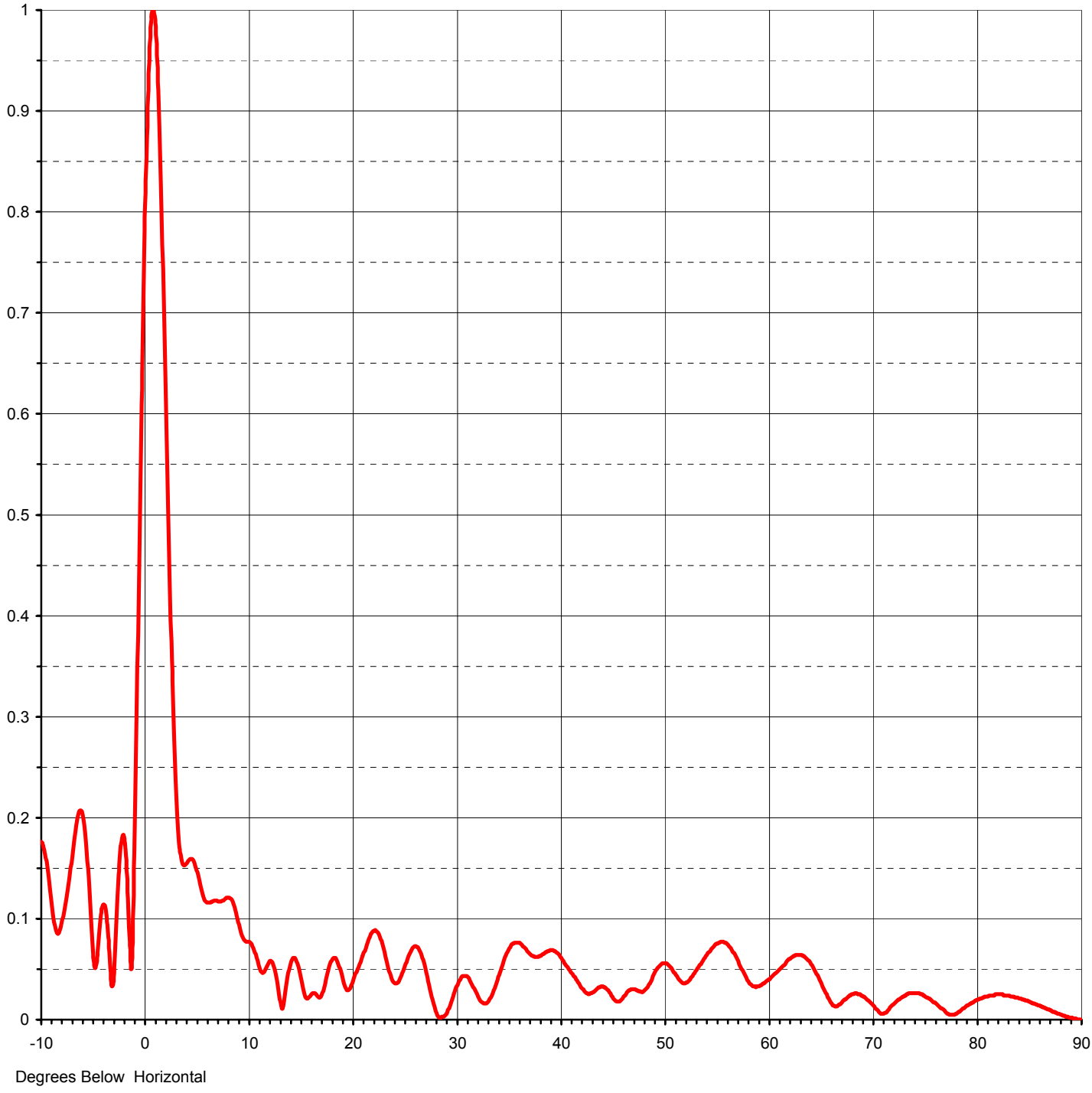
RMS Gain at Main Lobe	**25.50 (14.07 dB)**	Beam Tilt	**0.75 deg**
RMS Gain at Horizontal	**16.60 (12.20 dB)**	Frequency	**533.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**30Q255075**



Proposal Number	**DCA-10602**		
Date	**22-Jul-04**		
Call Letters	**KCTV-DT**	Channel	**24**
Location	**Kansas City, MO**		
Customer			
Antenna Type	**TFU-30DSC-R 4C140**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**25.50 (14.07 dB)**	Beam Tilt	**0.75 deg**
RMS Gain at Horizontal	**16.60 (12.20 dB)**	Frequency	**533.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**30Q255075-90**



Dielectric

Proposal Number **DCA-10602**
Date **22-Jul-04**
Call Letters **KCTV-DT** Channel **24**
Location **Kansas City, MO**
Customer
Antenna Type **TFU-30DSC-R 4C140**

TABULATION OF ELEVATION PATTERN

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

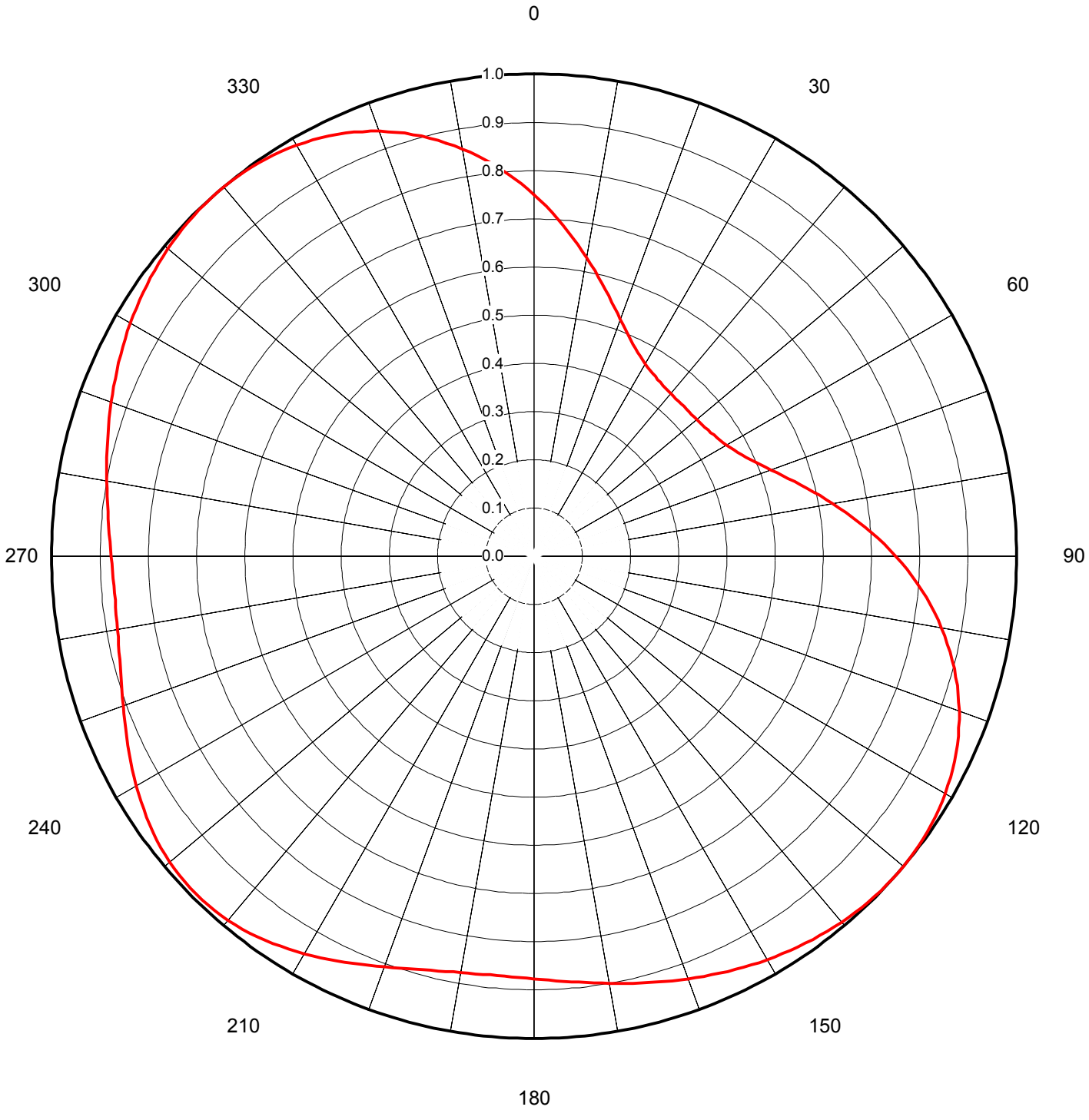
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.176	2.4	0.416	10.6	0.068	30.5	0.042	51.0	0.046	71.5	0.010
-9.5	0.157	2.6	0.336	10.8	0.061	31.0	0.043	51.5	0.039	72.0	0.016
-9.0	0.116	2.8	0.270	11.0	0.054	31.5	0.035	52.0	0.036	72.5	0.020
-8.5	0.086	3.0	0.219	11.5	0.047	32.0	0.025	52.5	0.040	73.0	0.024
-8.0	0.097	3.2	0.183	12.0	0.057	32.5	0.017	53.0	0.048	73.5	0.026
-7.5	0.125	3.4	0.163	12.5	0.051	33.0	0.017	53.5	0.055	74.0	0.026
-7.0	0.163	3.6	0.154	13.0	0.023	33.5	0.026	54.0	0.063	74.5	0.025
-6.5	0.200	3.8	0.153	13.5	0.023	34.0	0.040	54.5	0.070	75.0	0.023
-6.0	0.202	4.0	0.155	14.0	0.053	34.5	0.056	55.0	0.075	75.5	0.020
-5.5	0.149	4.2	0.158	14.5	0.061	35.0	0.069	55.5	0.077	76.0	0.016
-5.0	0.065	4.4	0.159	15.0	0.044	35.5	0.075	56.0	0.075	76.5	0.011
-4.5	0.078	4.6	0.158	15.5	0.023	36.0	0.076	56.5	0.069	77.0	0.007
-4.0	0.114	4.8	0.153	16.0	0.024	36.5	0.072	57.0	0.060	77.5	0.005
-3.5	0.075	5.0	0.146	16.5	0.025	37.0	0.066	57.5	0.049	78.0	0.006
-3.0	0.051	5.2	0.138	17.0	0.023	37.5	0.062	58.0	0.039	78.5	0.010
-2.8	0.093	5.4	0.129	17.5	0.041	38.0	0.063	58.5	0.033	79.0	0.014
-2.6	0.134	5.6	0.122	18.0	0.058	38.5	0.066	59.0	0.033	79.5	0.017
-2.4	0.166	5.8	0.117	18.5	0.059	39.0	0.069	59.5	0.036	80.0	0.020
-2.2	0.182	6.0	0.116	19.0	0.044	39.5	0.068	60.0	0.040	80.5	0.022
-2.0	0.179	6.2	0.116	19.5	0.029	40.0	0.062	60.5	0.044	81.0	0.023
-1.8	0.154	6.4	0.117	20.0	0.036	40.5	0.055	61.0	0.049	81.5	0.024
-1.6	0.106	6.6	0.118	20.5	0.050	41.0	0.047	61.5	0.054	82.0	0.025
-1.4	0.050	6.8	0.118	21.0	0.063	41.5	0.040	62.0	0.060	82.5	0.024
-1.2	0.087	7.0	0.117	21.5	0.077	42.0	0.032	62.5	0.063	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	0.086	43.0	0.026	63.5	0.062	84.0	0.021
-0.6	0.447	7.6	0.119	23.0	0.071	43.5	0.030	64.0	0.057	84.5	0.020
-0.4	0.577	7.8	0.121	23.5	0.050	44.0	0.033	64.5	0.046	85.0	0.018
-0.2	0.699	8.0	0.121	24.0	0.037	44.5	0.030	65.0	0.036	85.5	0.016
0.0	0.807	8.2	0.120	24.5	0.039	45.0	0.023	65.5	0.025	86.0	0.014
0.2	0.894	8.4	0.117	25.0	0.051	45.5	0.018	66.0	0.016	86.5	0.011
0.4	0.957	8.6	0.111	25.5	0.065	46.0	0.021	66.5	0.013	87.0	0.009
0.6	0.993	8.8	0.103	26.0	0.073	46.5	0.028	67.0	0.017	87.5	0.007
0.8	1.000	9.0	0.094	26.5	0.068	47.0	0.030	67.5	0.022	88.0	0.005
1.0	0.980	9.2	0.086	27.0	0.052	47.5	0.028	68.0	0.025	88.5	0.003
1.2	0.936	9.4	0.081	27.5	0.029	48.0	0.028	68.5	0.025	89.0	0.002
1.4	0.870	9.6	0.078	28.0	0.009	48.5	0.034	69.0	0.023	89.5	0.001
1.6	0.789	9.8	0.077	28.5	0.002	49.0	0.045	69.5	0.019	90.0	0.000
1.8	0.697	10.0	0.077	29.0	0.005	49.5	0.053	70.0	0.014		
2.0	0.601	10.2	0.076	29.5	0.017	50.0	0.056	70.5	0.008		
2.2	0.506	10.4	0.073	30.0	0.032	50.5	0.053	71.0	0.006		

Dielectric

Proposal Number	**DCA-10602**		
Date	**22-Jul-04**		
Call Letters	**KCTV-DT**	Channel	**24**
Location	**Kansas City, MO**		
Customer			
Antenna Type	**TFU-30DSC-R 4C140**		

AZIMUTH PATTERN

Gain	**1.40**	**(1.46 dB)**	Frequency	**533.00 MHz**
Calculated / Measured	**Calculated**		Drawing #	**TFU-4C140-24**



Dielectric

Proposal Number	**DCA-10602**
Date	**22-Jul-04**
Call Letters	**KCTV-DT** Channel **24**
Location	**Kansas City, MO**
Customer	
Antenna Type	**TFU-30DSC-R 4C140**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-4C140-24**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.749	45	0.439	90	0.749	135	0.998	180	0.876	225	0.991	270	0.876	315	0.998
1	0.738	46	0.439	91	0.761	136	0.997	181	0.875	226	0.990	271	0.878	316	0.999
2	0.725	47	0.439	92	0.773	137	0.996	182	0.874	227	0.990	272	0.880	317	0.999
3	0.713	48	0.440	93	0.784	138	0.994	183	0.873	228	0.989	273	0.881	318	1.000
4	0.701	49	0.440	94	0.795	139	0.993	184	0.873	229	0.988	274	0.884	319	1.000
5	0.689	50	0.441	95	0.806	140	0.991	185	0.873	230	0.986	275	0.886	320	1.000
6	0.677	51	0.441	96	0.817	141	0.989	186	0.873	231	0.984	276	0.888	321	1.000
7	0.665	52	0.443	97	0.828	142	0.987	187	0.873	232	0.981	277	0.891	322	0.999
8	0.652	53	0.444	98	0.838	143	0.985	188	0.874	233	0.979	278	0.894	323	0.998
9	0.640	54	0.445	99	0.848	144	0.982	189	0.875	234	0.975	279	0.896	324	0.997
10	0.628	55	0.447	100	0.858	145	0.980	190	0.877	235	0.972	280	0.899	325	0.996
11	0.617	56	0.449	101	0.867	146	0.977	191	0.878	236	0.968	281	0.902	326	0.994
12	0.605	57	0.451	102	0.876	147	0.975	192	0.880	237	0.965	282	0.906	327	0.992
13	0.594	58	0.454	103	0.885	148	0.972	193	0.882	238	0.961	283	0.909	328	0.989
14	0.583	59	0.457	104	0.893	149	0.969	194	0.885	239	0.956	284	0.912	329	0.987
15	0.572	60	0.461	105	0.902	150	0.966	195	0.888	240	0.952	285	0.916	330	0.984
16	0.561	61	0.465	106	0.909	151	0.963	196	0.891	241	0.947	286	0.919	331	0.981
17	0.551	62	0.469	107	0.917	152	0.960	197	0.894	242	0.943	287	0.922	332	0.977
18	0.541	63	0.474	108	0.924	153	0.956	198	0.898	243	0.938	288	0.926	333	0.974
19	0.532	64	0.480	109	0.931	154	0.953	199	0.902	244	0.933	289	0.929	334	0.969
20	0.523	65	0.486	110	0.937	155	0.950	200	0.906	245	0.929	290	0.933	335	0.965
21	0.514	66	0.492	111	0.944	156	0.946	201	0.910	246	0.924	291	0.936	336	0.960
22	0.507	67	0.499	112	0.949	157	0.943	202	0.915	247	0.919	292	0.940	337	0.955
23	0.499	68	0.507	113	0.955	158	0.940	203	0.919	248	0.915	293	0.943	338	0.949
24	0.492	69	0.514	114	0.960	159	0.936	204	0.924	249	0.910	294	0.946	339	0.944
25	0.486	70	0.523	115	0.965	160	0.933	205	0.929	250	0.906	295	0.950	340	0.937
26	0.480	71	0.532	116	0.969	161	0.929	206	0.933	251	0.902	296	0.953	341	0.931
27	0.474	72	0.541	117	0.974	162	0.926	207	0.938	252	0.898	297	0.956	342	0.924
28	0.469	73	0.551	118	0.977	163	0.922	208	0.943	253	0.894	298	0.960	343	0.917
29	0.465	74	0.561	119	0.981	164	0.919	209	0.947	254	0.891	299	0.963	344	0.909
30	0.461	75	0.572	120	0.984	165	0.916	210	0.952	255	0.888	300	0.966	345	0.902
31	0.457	76	0.583	121	0.987	166	0.912	211	0.956	256	0.885	301	0.969	346	0.893
32	0.454	77	0.594	122	0.989	167	0.909	212	0.961	257	0.882	302	0.972	347	0.885
33	0.451	78	0.605	123	0.992	168	0.906	213	0.965	258	0.880	303	0.975	348	0.876
34	0.449	79	0.617	124	0.994	169	0.902	214	0.968	259	0.878	304	0.977	349	0.867
35	0.447	80	0.628	125	0.996	170	0.899	215	0.972	260	0.877	305	0.980	350	0.858
36	0.445	81	0.640	126	0.997	171	0.896	216	0.975	261	0.875	306	0.982	351	0.848
37	0.444	82	0.652	127	0.998	172	0.894	217	0.979	262	0.874	307	0.985	352	0.838
38	0.443	83	0.665	128	0.999	173	0.891	218	0.981	263	0.873	308	0.987	353	0.828
39	0.441	84	0.677	129	1.000	174	0.888	219	0.984	264	0.873	309	0.989	354	0.817
40	0.441	85	0.689	130	1.000	175	0.886	220	0.986	265	0.873	310	0.991	355	0.806
41	0.440	86	0.701	131	1.000	176	0.884	221	0.988	266	0.873	311	0.993	356	0.795
42	0.440	87	0.713	132	1.000	177	0.881	222	0.989	267	0.873	312	0.994	357	0.784
43	0.439	88	0.725	133	0.999	178	0.880	223	0.990	268	0.874	313	0.996	358	0.773
44	0.439	89	0.738	134	0.999	179	0.878	224	0.990	269	0.875	314	0.997	359	0.761