



Exhibit No.

Date

09 Mar 2004

Call Letters

Channel 45

Location

Customer

Antenna Type

TFU-16DSC-R C170

AZIMUTH PATTERN

Gain

1.70 (2.30 dB)

Frequency

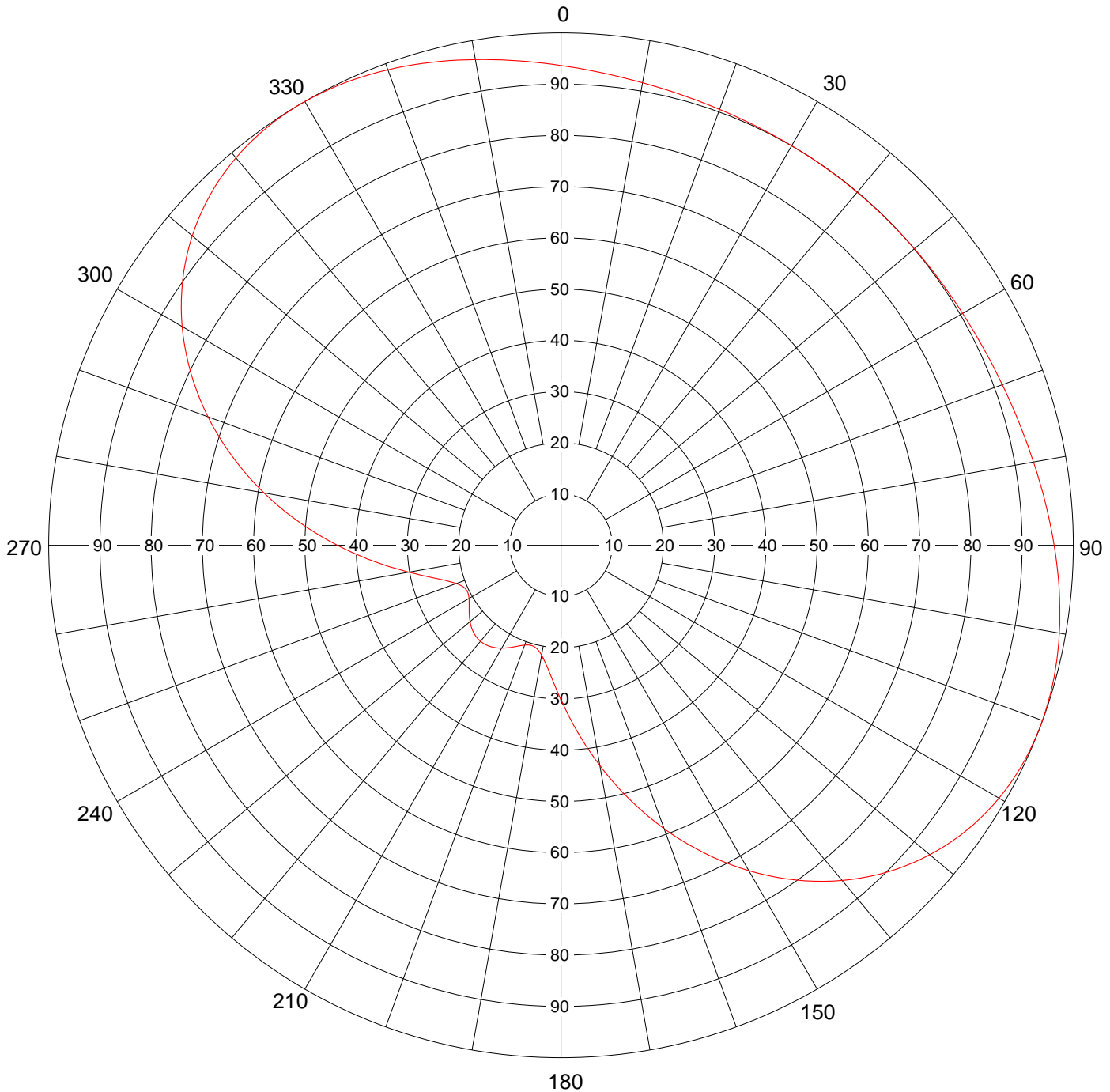
659 MHz

Calculated / Measured

Calculated

Drawing #

TFU-C170



Remarks:



Date

09 Mar 2004

Call Letters

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Location

Customer

Antenna Type TFU-16DSC-R C170

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # TFU-C170

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.936	45	0.900	90	0.963	135	0.901	180	0.302	225	0.241	270	0.437	315	0.968
1	0.934	46	0.900	91	0.965	136	0.893	181	0.290	226	0.240	271	0.451	316	0.973
2	0.932	47	0.900	92	0.968	137	0.883	182	0.280	227	0.238	272	0.466	317	0.977
3	0.930	48	0.900	93	0.971	138	0.874	183	0.269	228	0.236	273	0.482	318	0.981
4	0.928	49	0.900	94	0.973	139	0.864	184	0.260	229	0.234	274	0.497	319	0.984
5	0.926	50	0.900	95	0.976	140	0.854	185	0.251	230	0.232	275	0.512	320	0.987
6	0.924	51	0.901	96	0.978	141	0.843	186	0.243	231	0.229	276	0.527	321	0.990
7	0.922	52	0.901	97	0.981	142	0.832	187	0.235	232	0.227	277	0.543	322	0.992
8	0.920	53	0.901	98	0.983	143	0.821	188	0.229	233	0.224	278	0.558	323	0.994
9	0.918	54	0.902	99	0.986	144	0.809	189	0.223	234	0.222	279	0.573	324	0.996
10	0.917	55	0.902	100	0.988	145	0.797	190	0.218	235	0.219	280	0.588	325	0.997
11	0.915	56	0.903	101	0.990	146	0.785	191	0.214	236	0.216	281	0.604	326	0.998
12	0.914	57	0.903	102	0.992	147	0.773	192	0.210	237	0.214	282	0.619	327	0.999
13	0.912	58	0.904	103	0.993	148	0.760	193	0.207	238	0.211	283	0.634	328	1.000
14	0.911	59	0.905	104	0.995	149	0.747	194	0.206	239	0.209	284	0.648	329	1.000
15	0.910	60	0.905	105	0.996	150	0.733	195	0.204	240	0.207	285	0.663	330	1.000
16	0.909	61	0.906	106	0.997	151	0.720	196	0.204	241	0.206	286	0.677	331	1.000
17	0.908	62	0.907	107	0.998	152	0.706	197	0.204	242	0.205	287	0.692	332	0.999
18	0.907	63	0.908	108	0.999	153	0.692	198	0.205	243	0.204	288	0.706	333	0.998
19	0.906	64	0.909	109	1.000	154	0.677	199	0.206	244	0.204	289	0.720	334	0.997
20	0.905	65	0.910	110	1.000	155	0.663	200	0.207	245	0.204	290	0.733	335	0.996
21	0.905	66	0.911	111	1.000	156	0.648	201	0.209	246	0.206	291	0.747	336	0.995
22	0.904	67	0.912	112	1.000	157	0.634	202	0.211	247	0.207	292	0.760	337	0.993
23	0.903	68	0.914	113	0.999	158	0.619	203	0.214	248	0.210	293	0.773	338	0.992
24	0.903	69	0.915	114	0.998	159	0.604	204	0.216	249	0.214	294	0.785	339	0.990
25	0.902	70	0.917	115	0.997	160	0.588	205	0.219	250	0.218	295	0.797	340	0.988
26	0.902	71	0.918	116	0.996	161	0.573	206	0.222	251	0.223	296	0.809	341	0.986
27	0.901	72	0.920	117	0.994	162	0.558	207	0.224	252	0.229	297	0.821	342	0.983
28	0.901	73	0.922	118	0.992	163	0.543	208	0.227	253	0.235	298	0.832	343	0.981
29	0.901	74	0.924	119	0.990	164	0.527	209	0.229	254	0.243	299	0.843	344	0.978
30	0.900	75	0.926	120	0.987	165	0.512	210	0.232	255	0.251	300	0.854	345	0.976
31	0.900	76	0.928	121	0.984	166	0.497	211	0.234	256	0.260	301	0.864	346	0.973
32	0.900	77	0.930	122	0.981	167	0.482	212	0.236	257	0.269	302	0.874	347	0.971
33	0.900	78	0.932	123	0.977	168	0.466	213	0.238	258	0.280	303	0.883	348	0.968
34	0.900	79	0.934	124	0.973	169	0.451	214	0.240	259	0.290	304	0.893	349	0.965
35	0.900	80	0.936	125	0.968	170	0.437	215	0.241	260	0.302	305	0.901	350	0.963
36	0.899	81	0.939	126	0.963	171	0.422	216	0.242	261	0.313	306	0.910	351	0.960
37	0.899	82	0.941	127	0.958	172	0.407	217	0.243	262	0.326	307	0.918	352	0.957
38	0.899	83	0.944	128	0.952	173	0.393	218	0.244	263	0.338	308	0.925	353	0.954
39	0.899	84	0.946	129	0.946	174	0.379	219	0.244	264	0.352	309	0.933	354	0.952
40	0.899	85	0.949	130	0.940	175	0.365	220	0.245	265	0.365	310	0.940	355	0.949
41	0.899	86	0.952	131	0.933	176	0.352	221	0.244	266	0.379	311	0.946	356	0.946
42	0.899	87	0.954	132	0.925	177	0.338	222	0.244	267	0.393	312	0.952	357	0.944
43	0.899	88	0.957	133	0.918	178	0.326	223	0.243	268	0.407	313	0.958	358	0.941
44	0.899	89	0.960	134	0.910	179	0.313	224	0.242	269	0.422	314	0.963	359	0.939

Remarks:



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Antenna Type

TFU-16DSC-R C170

ELEVATION PATTERN

RMS Gain at Main Lobe

13.0 (11.14 dB)

Beam Tilt

1.00 Degrees

RMS Gain at Horizontal

10.6 (10.25 dB)

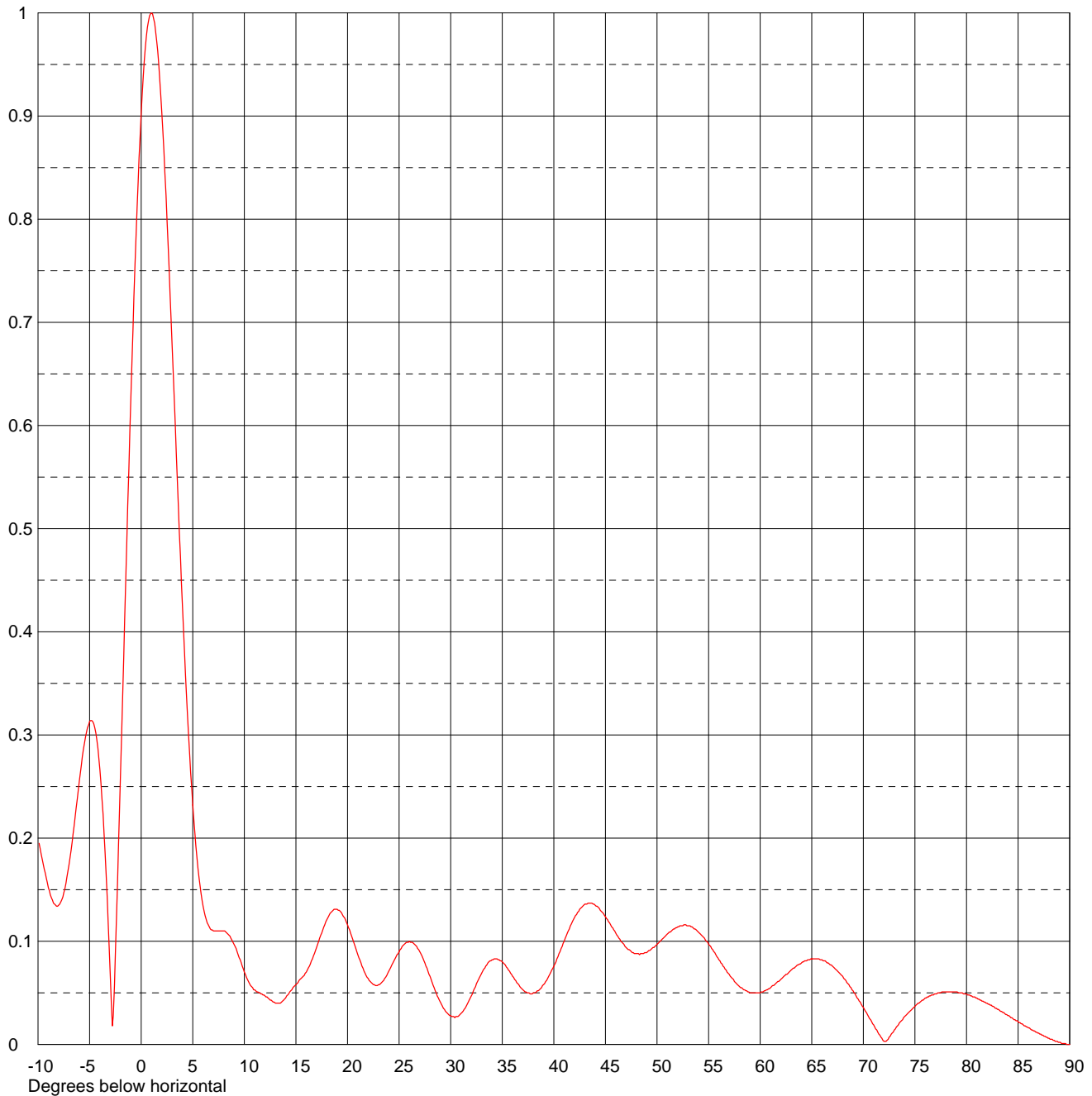
Frequency

659.00 MHz

Calculated / Measured

Calculated

Drawing #

16Q130100-90

Remarks:



Date

09 Mar 2004

Call Letters

Channel 45

Location

Customer

Antenna Type

TFU-16DSC-R C170

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #

16Q130100-90

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.200	2.4	0.823	10.6	0.057	30.5	0.027	51.0	0.107	71.5	0.010
-9.5	0.175	2.6	0.777	10.8	0.055	31.0	0.030	51.5	0.111	72.0	0.003
-9.0	0.152	2.8	0.728	11.0	0.053	31.5	0.037	52.0	0.114	72.5	0.007
-8.5	0.137	3.0	0.677	11.5	0.050	32.0	0.047	52.5	0.115	73.0	0.014
-8.0	0.135	3.2	0.626	12.0	0.047	32.5	0.059	53.0	0.115	73.5	0.021
-7.5	0.147	3.4	0.574	12.5	0.043	33.0	0.069	53.5	0.113	74.0	0.027
-7.0	0.174	3.6	0.522	13.0	0.040	33.5	0.077	54.0	0.109	74.5	0.032
-6.5	0.212	3.8	0.473	13.5	0.040	34.0	0.082	54.5	0.104	75.0	0.037
-6.0	0.255	4.0	0.425	14.0	0.045	34.5	0.083	55.0	0.097	75.5	0.041
-5.5	0.292	4.2	0.379	14.5	0.052	35.0	0.080	55.5	0.090	76.0	0.045
-5.0	0.313	4.4	0.337	15.0	0.058	35.5	0.074	56.0	0.082	76.5	0.047
-4.5	0.307	4.6	0.298	15.5	0.064	36.0	0.066	56.5	0.075	77.0	0.049
-4.0	0.266	4.8	0.263	16.0	0.070	36.5	0.059	57.0	0.068	77.5	0.050
-3.5	0.186	5.0	0.232	16.5	0.081	37.0	0.053	57.5	0.061	78.0	0.051
-3.0	0.068	5.2	0.205	17.0	0.094	37.5	0.050	58.0	0.056	78.5	0.051
-2.8	0.018	5.4	0.182	17.5	0.108	38.0	0.050	58.5	0.053	79.0	0.051
-2.6	0.057	5.6	0.162	18.0	0.121	38.5	0.052	59.0	0.050	79.5	0.050
-2.4	0.122	5.8	0.146	18.5	0.129	39.0	0.058	59.5	0.050	80.0	0.049
-2.2	0.191	6.0	0.134	19.0	0.131	39.5	0.066	60.0	0.050	80.5	0.047
-2.0	0.264	6.2	0.125	19.5	0.126	40.0	0.076	60.5	0.052	81.0	0.045
-1.8	0.338	6.4	0.118	20.0	0.116	40.5	0.088	61.0	0.055	81.5	0.042
-1.6	0.412	6.6	0.114	20.5	0.102	41.0	0.100	61.5	0.059	82.0	0.040
-1.4	0.486	6.8	0.111	21.0	0.087	41.5	0.112	62.0	0.063	82.5	0.037
-1.2	0.558	7.0	0.110	21.5	0.074	42.0	0.123	62.5	0.068	83.0	0.034
-1.0	0.627	7.2	0.110	22.0	0.064	42.5	0.131	63.0	0.072	83.5	0.031
-0.8	0.693	7.4	0.110	22.5	0.058	43.0	0.136	63.5	0.076	84.0	0.028
-0.6	0.755	7.6	0.110	23.0	0.058	43.5	0.137	64.0	0.079	84.5	0.025
-0.4	0.811	7.8	0.110	23.5	0.062	44.0	0.135	64.5	0.081	85.0	0.022
-0.2	0.860	8.0	0.110	24.0	0.071	44.5	0.130	65.0	0.083	85.5	0.019
0.0	0.903	8.2	0.109	24.5	0.081	45.0	0.124	65.5	0.083	86.0	0.016
0.2	0.939	8.4	0.107	25.0	0.090	45.5	0.116	66.0	0.082	86.5	0.013
0.4	0.966	8.6	0.105	25.5	0.097	46.0	0.108	66.5	0.079	87.0	0.011
0.6	0.986	8.8	0.101	26.0	0.100	46.5	0.100	67.0	0.076	87.5	0.008
0.8	0.997	9.0	0.097	26.5	0.097	47.0	0.094	67.5	0.071	88.0	0.006
1.0	1.000	9.2	0.093	27.0	0.090	47.5	0.090	68.0	0.066	88.5	0.004
1.2	0.995	9.4	0.087	27.5	0.079	48.0	0.088	68.5	0.059	89.0	0.002
1.4	0.982	9.6	0.082	28.0	0.066	48.5	0.088	69.0	0.052	89.5	0.001
1.6	0.963	9.8	0.076	28.5	0.052	49.0	0.089	69.5	0.044	90.0	0.000
1.8	0.936	10.0	0.070	29.0	0.041	49.5	0.093	70.0	0.036		
2.0	0.903	10.2	0.065	29.5	0.032	50.0	0.097	70.5	0.027		
2.2	0.866	10.4	0.061	30.0	0.028	50.5	0.102	71.0	0.019		

Remarks: