



Proposal Number	C-02122	Revision:	3
Date	16-Apr-08		
Call Letters	WGGN-DT	Channel	42
Location	Sandusky, OH		
Customer			
Antenna Type	TFU-14GTH/VP-R 4C240		

ELEVATION PATTERN

RMS Gain at Main Lobe	12.00 (10.79 dB)	Beam Tilt	1.00 deg
RMS Gain at Horizontal	10.50 (10.21 dB)	Frequency	641.00 MHz
Calculated / Measured	Calculated	Drawing #	14G120100



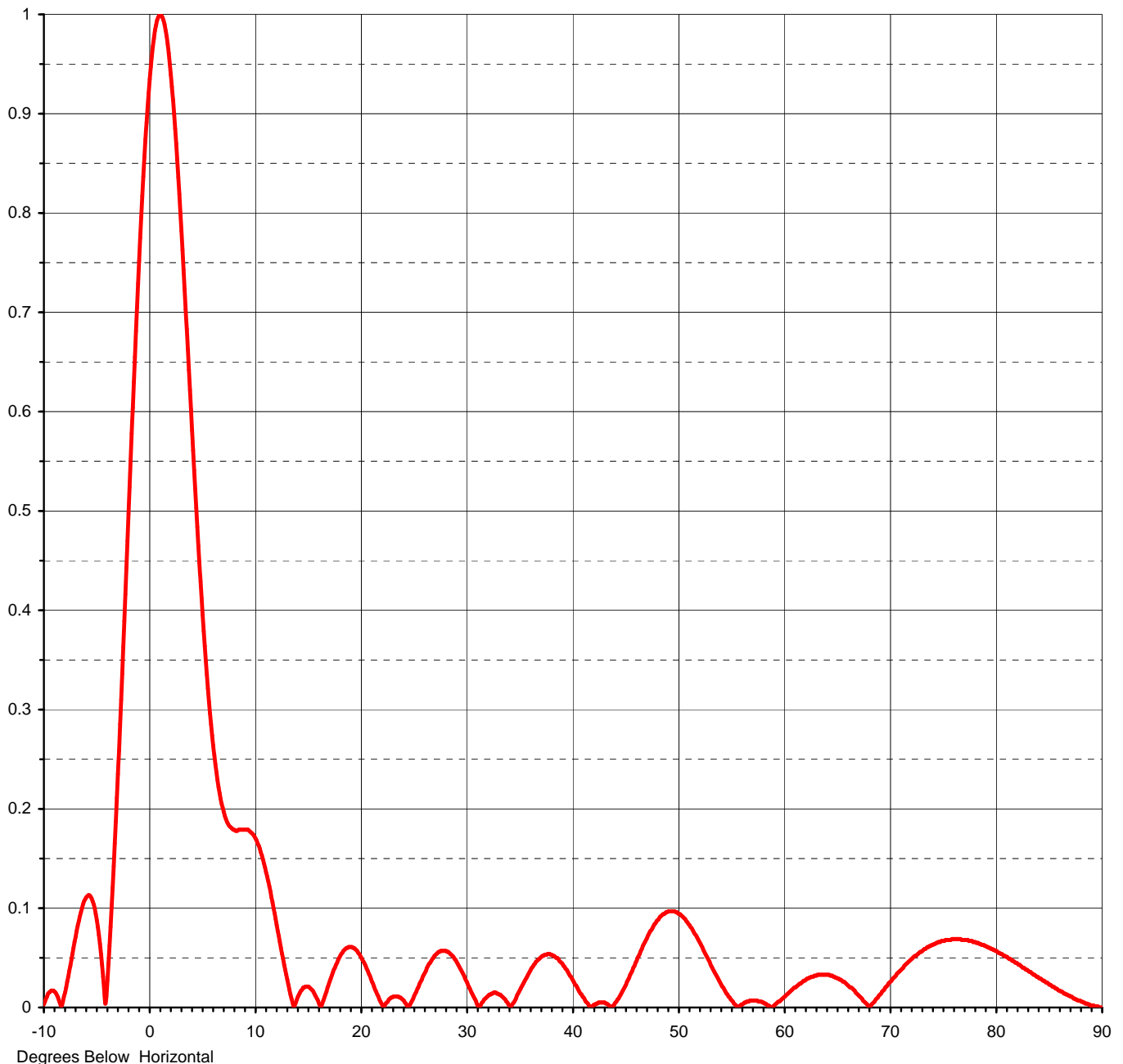
Degrees Below Horizontal



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Customer			
Antenna Type	TFU-14GTH/VP-R 4C240		

ELEVATION PATTERN

RMS Gain at Main Lobe	12.00 (10.79 dB)	Beam Tilt	1.00 deg
RMS Gain at Horizontal	10.50 (10.21 dB)	Frequency	641.00 MHz
Calculated / Measured	Calculated	Drawing #	14G120100-90



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Customer
Antenna Type **TFU-14GTH/VP-R 4C240**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **14G120100-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.003	2.4	0.885	10.6	0.156	30.5	0.015	51.0	0.084	71.5	0.044
-9.5	0.015	2.6	0.853	10.8	0.149	31.0	0.004	51.5	0.076	72.0	0.049
-9.0	0.016	2.8	0.819	11.0	0.141	31.5	0.005	52.0	0.067	72.5	0.053
-8.5	0.005	3.0	0.782	11.5	0.117	32.0	0.011	52.5	0.056	73.0	0.057
-8.0	0.015	3.2	0.743	12.0	0.089	32.5	0.014	53.0	0.046	73.5	0.061
-7.5	0.042	3.4	0.703	12.5	0.060	33.0	0.014	53.5	0.035	74.0	0.063
-7.0	0.071	3.6	0.663	13.0	0.033	33.5	0.010	54.0	0.025	74.5	0.066
-6.5	0.096	3.8	0.622	13.5	0.009	34.0	0.003	54.5	0.016	75.0	0.067
-6.0	0.111	4.0	0.581	14.0	0.008	34.5	0.005	55.0	0.008	75.5	0.068
-5.5	0.110	4.2	0.541	14.5	0.018	35.0	0.016	55.5	0.002	76.0	0.069
-5.0	0.088	4.4	0.503	15.0	0.021	35.5	0.026	56.0	0.003	76.5	0.069
-4.5	0.043	4.6	0.465	15.5	0.017	36.0	0.036	56.5	0.006	77.0	0.068
-4.0	0.027	4.8	0.429	16.0	0.007	36.5	0.044	57.0	0.007	77.5	0.067
-3.5	0.121	5.0	0.395	16.5	0.007	37.0	0.050	57.5	0.007	78.0	0.066
-3.0	0.235	5.2	0.364	17.0	0.023	37.5	0.053	58.0	0.005	78.5	0.064
-2.8	0.285	5.4	0.335	17.5	0.038	38.0	0.053	58.5	0.002	79.0	0.062
-2.6	0.336	5.6	0.308	18.0	0.050	38.5	0.050	59.0	0.001	79.5	0.059
-2.4	0.389	5.8	0.285	18.5	0.058	39.0	0.045	59.5	0.006	80.0	0.057
-2.2	0.443	6.0	0.264	19.0	0.061	39.5	0.038	60.0	0.010	80.5	0.054
-2.0	0.497	6.2	0.245	19.5	0.059	40.0	0.029	60.5	0.015	81.0	0.051
-1.8	0.551	6.4	0.229	20.0	0.052	40.5	0.020	61.0	0.020	81.5	0.047
-1.6	0.604	6.6	0.216	20.5	0.042	41.0	0.011	61.5	0.024	82.0	0.044
-1.4	0.655	6.8	0.205	21.0	0.029	41.5	0.004	62.0	0.027	82.5	0.040
-1.2	0.705	7.0	0.197	21.5	0.016	42.0	0.002	62.5	0.030	83.0	0.037
-1.0	0.752	7.2	0.190	22.0	0.004	42.5	0.005	63.0	0.032	83.5	0.033
-0.8	0.796	7.4	0.185	22.5	0.005	43.0	0.005	63.5	0.033	84.0	0.030
-0.6	0.837	7.6	0.182	23.0	0.010	43.5	0.002	64.0	0.033	84.5	0.027
-0.4	0.874	7.8	0.180	23.5	0.011	44.0	0.003	64.5	0.032	85.0	0.023
-0.2	0.907	8.0	0.179	24.0	0.008	44.5	0.011	65.0	0.029	85.5	0.020
0.0	0.935	8.2	0.178	24.5	0.001	45.0	0.021	65.5	0.026	86.0	0.017
0.2	0.958	8.4	0.179	25.0	0.009	45.5	0.033	66.0	0.022	86.5	0.014
0.4	0.976	8.6	0.179	25.5	0.021	46.0	0.045	66.5	0.018	87.0	0.011
0.6	0.989	8.8	0.179	26.0	0.033	46.5	0.057	67.0	0.012	87.5	0.008
0.8	0.997	9.0	0.179	26.5	0.044	47.0	0.068	67.5	0.006	88.0	0.006
1.0	1.000	9.2	0.179	27.0	0.052	47.5	0.078	68.0	0.000	88.5	0.004
1.2	0.997	9.4	0.178	27.5	0.056	48.0	0.087	68.5	0.006	89.0	0.002
1.4	0.990	9.6	0.176	28.0	0.057	48.5	0.093	69.0	0.013	89.5	0.001
1.6	0.978	9.8	0.175	28.5	0.054	49.0	0.096	69.5	0.020	90.0	0.000
1.8	0.961	10.0	0.172	29.0	0.048	49.5	0.097	70.0	0.026		
2.0	0.939	10.2	0.168	29.5	0.038	50.0	0.095	70.5	0.032		
2.2	0.914	10.4	0.163	30.0	0.027	50.5	0.091	71.0	0.038		

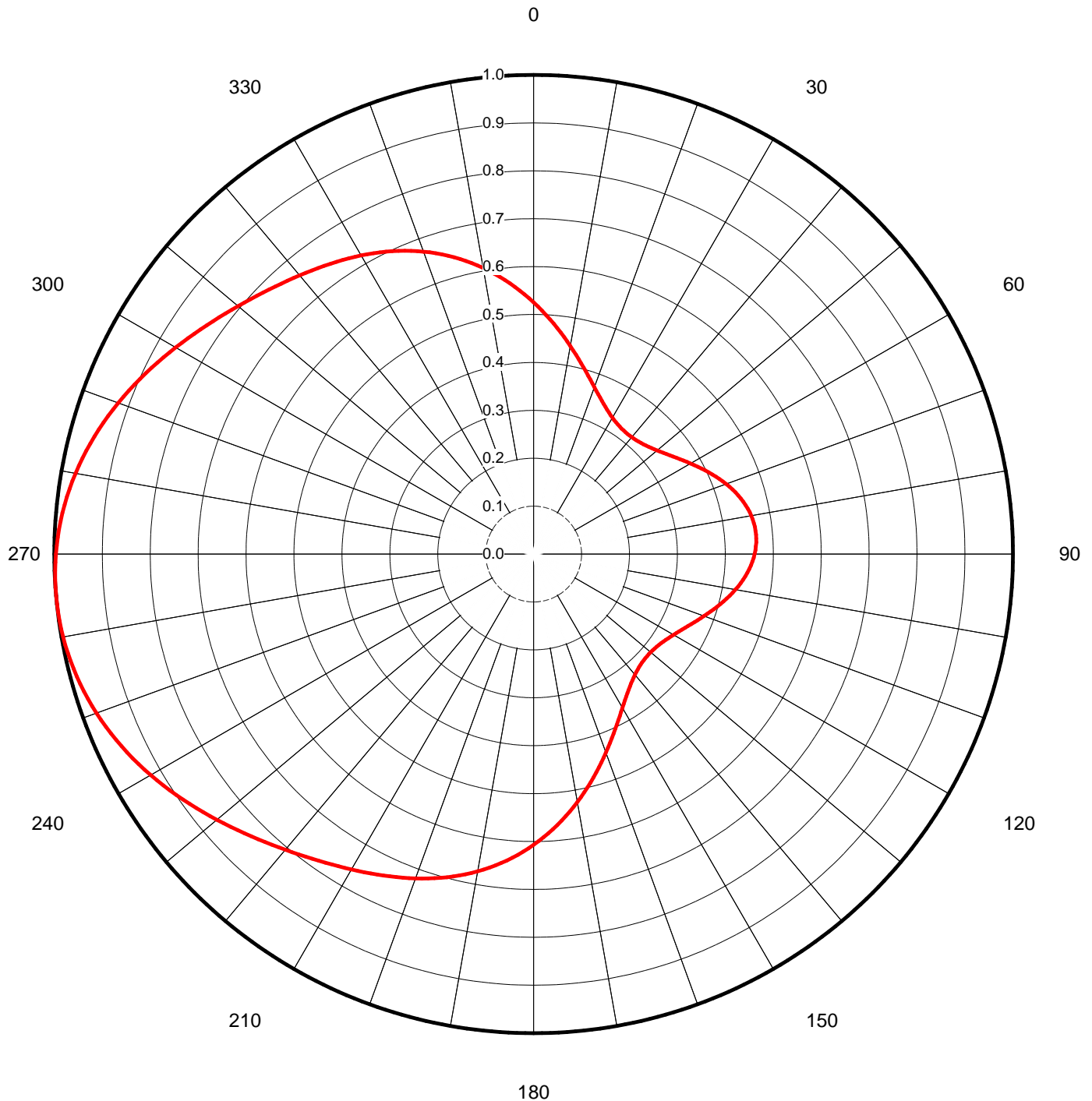
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Date	16-Apr-08		
Call Letters	WGGN-DT	Channel	42
Location	Sandusky, OH		
Customer			
Antenna Type	TFU-14GTH/VP-R 4C240		

AZIMUTH PATTERN

Gain **2.40** (3.80 dB)
Calculated / Measured **Calculated**

Frequency **641.00 MHz**
Drawing # **TFU-4C240**





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Call Letters **WGGN-DT** Channel **42**
Location **Sandusky, OH**
Customer
Antenna Type **TFU-14GTH/VP-R 4C240**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **TFU-4C240**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.525	45	0.324	90	0.461	135	0.320	180	0.607	225	0.833	270	0.996	315	0.781
1	0.517	46	0.326	91	0.459	136	0.321	181	0.614	226	0.839	271	0.995	316	0.776
2	0.508	47	0.328	92	0.457	137	0.323	182	0.621	227	0.845	272	0.993	317	0.772
3	0.500	48	0.331	93	0.454	138	0.324	183	0.628	228	0.851	273	0.991	318	0.768
4	0.491	49	0.334	94	0.451	139	0.326	184	0.635	229	0.857	274	0.989	319	0.763
5	0.482	50	0.337	95	0.448	140	0.329	185	0.642	230	0.863	275	0.987	320	0.759
6	0.474	51	0.340	96	0.444	141	0.332	186	0.648	231	0.869	276	0.984	321	0.755
7	0.466	52	0.343	97	0.440	142	0.335	187	0.655	232	0.875	277	0.981	322	0.751
8	0.457	53	0.347	98	0.436	143	0.338	188	0.661	233	0.881	278	0.978	323	0.747
9	0.449	54	0.351	99	0.432	144	0.342	189	0.667	234	0.887	279	0.974	324	0.743
10	0.441	55	0.355	100	0.428	145	0.346	190	0.672	235	0.893	280	0.970	325	0.740
11	0.433	56	0.359	101	0.423	146	0.350	191	0.678	236	0.899	281	0.966	326	0.736
12	0.425	57	0.364	102	0.418	147	0.355	192	0.683	237	0.905	282	0.962	327	0.732
13	0.418	58	0.368	103	0.413	148	0.360	193	0.689	238	0.911	283	0.958	328	0.728
14	0.410	59	0.373	104	0.408	149	0.365	194	0.693	239	0.917	284	0.953	329	0.724
15	0.403	60	0.378	105	0.403	150	0.371	195	0.698	240	0.922	285	0.949	330	0.720
16	0.396	61	0.383	106	0.398	151	0.376	196	0.703	241	0.928	286	0.944	331	0.715
17	0.389	62	0.388	107	0.393	152	0.383	197	0.708	242	0.933	287	0.938	332	0.711
18	0.383	63	0.393	108	0.388	153	0.389	198	0.712	243	0.939	288	0.933	333	0.707
19	0.377	64	0.398	109	0.383	154	0.396	199	0.716	244	0.944	289	0.928	334	0.702
20	0.371	65	0.403	110	0.378	155	0.403	200	0.720	245	0.949	290	0.922	335	0.698
21	0.365	66	0.408	111	0.373	156	0.410	201	0.725	246	0.953	291	0.916	336	0.693
22	0.360	67	0.413	112	0.369	157	0.418	202	0.729	247	0.958	292	0.911	337	0.688
23	0.355	68	0.418	113	0.364	158	0.425	203	0.733	248	0.962	293	0.905	338	0.682
24	0.350	69	0.423	114	0.360	159	0.433	204	0.736	249	0.967	294	0.899	339	0.677
25	0.346	70	0.427	115	0.355	160	0.441	205	0.740	250	0.970	295	0.893	340	0.672
26	0.342	71	0.432	116	0.351	161	0.449	206	0.744	251	0.974	296	0.887	341	0.666
27	0.338	72	0.436	117	0.347	162	0.457	207	0.748	252	0.978	297	0.881	342	0.660
28	0.335	73	0.440	118	0.344	163	0.466	208	0.752	253	0.981	298	0.874	343	0.654
29	0.331	74	0.444	119	0.340	164	0.474	209	0.756	254	0.984	299	0.868	344	0.648
30	0.329	75	0.448	120	0.337	165	0.483	210	0.760	255	0.987	300	0.862	345	0.641
31	0.326	76	0.451	121	0.334	166	0.491	211	0.764	256	0.989	301	0.856	346	0.635
32	0.324	77	0.454	122	0.331	167	0.500	212	0.768	257	0.991	302	0.850	347	0.628
33	0.322	78	0.457	123	0.329	168	0.508	213	0.773	258	0.993	303	0.844	348	0.621
34	0.321	79	0.459	124	0.327	169	0.517	214	0.777	259	0.995	304	0.838	349	0.614
35	0.320	80	0.461	125	0.324	170	0.526	215	0.781	260	0.997	305	0.832	350	0.606
36	0.319	81	0.463	126	0.323	171	0.534	216	0.786	261	0.998	306	0.827	351	0.599
37	0.318	82	0.464	127	0.321	172	0.543	217	0.791	262	0.999	307	0.821	352	0.591
38	0.318	83	0.465	128	0.320	173	0.551	218	0.796	263	0.999	308	0.816	353	0.583
39	0.318	84	0.465	129	0.319	174	0.559	219	0.801	264	1.000	309	0.810	354	0.575
40	0.319	85	0.466	130	0.319	175	0.568	220	0.806	265	1.000	310	0.805	355	0.567
41	0.319	86	0.465	131	0.318	176	0.576	221	0.811	266	1.000	311	0.800	356	0.559
42	0.320	87	0.465	132	0.318	177	0.584	222	0.816	267	0.999	312	0.795	357	0.551
43	0.321	88	0.464	133	0.319	178	0.591	223	0.822	268	0.999	313	0.790	358	0.542
44	0.323	89	0.463	134	0.319	179	0.599	224	0.827	269	0.998	314	0.785	359	0.534

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Location	Sandusky, OH		
Customer			
Antenna Type	TFU-14GTH/VP-R 4C240		

AZIMUTH PATTERN/VERTICAL POLARIZATION

Gain	4.10	(6.13 dB)
Calculated / Measured		Calculated

Frequency	641.00 MHz
Drawing #	TFU-4C410-VP

