



Proposal Number

Date

Call Letters

Location

Customer

Antenna Type

**15-Nov-04**

**KRDO-DT** Channel **24**

**Colorado Springs, CO**

**TFU-16DSB-J**

## SYSTEM SUMMARY

### Antenna:

Type:	<b>TFU-16DSB-J</b>	ERP:	<b>200 kW</b>	H Pol	<b>( 23.01 dBk )</b>
Channel:	<b>24</b>	Peak Gain*:	<b>30.0</b>		<b>( 14.77 dB )</b>
Location:	<b>Colorado Springs, CO</b>	Input Power:	<b>6.7 kW</b>		<b>( 8.24 dBk )</b>

### Transmission Line:

Type:	<b>FLEXLine</b>	Attenuation:	<b>0.41 dB</b>
Size:	<b>5 in</b>	Efficiency:	<b>90.9%</b>
Impedance:	<b>50 ohm</b>		
Length:	<b>220 ft</b>		<b>67.1 m</b>

### Transmitter:

Power Required: **7.3 kW ( 8.65 dBk )**

\* Gain is with respect to half wave dipole.



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## AZIMUTH PATTERN

Gain

**2.00**

**( 3.01 dB)**

Frequency

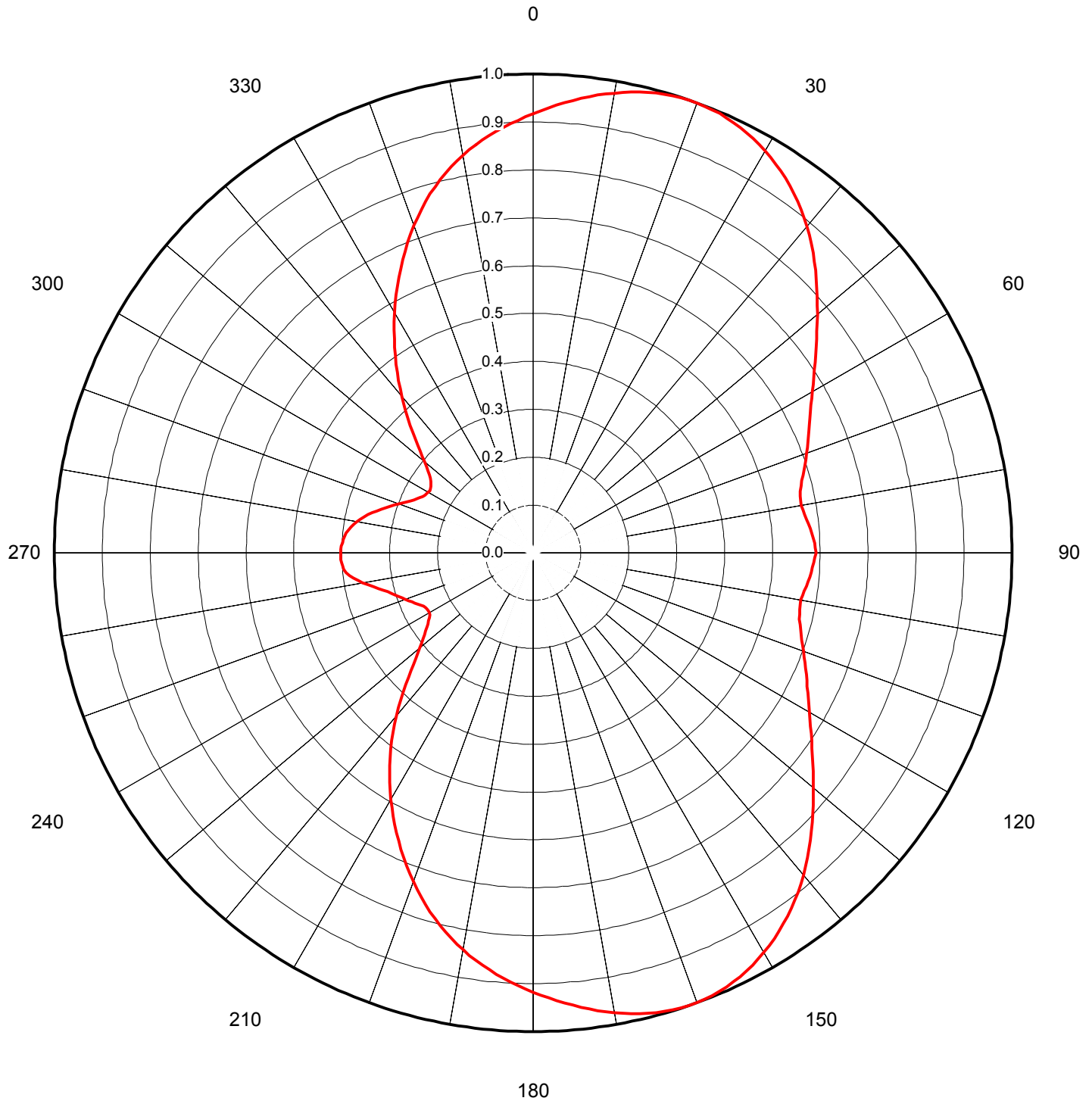
**533.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**DSB-J**





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## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: DSB-J

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.917	45	0.834	90	0.591	135	0.822	180	0.918	225	0.368	270	0.402	315	0.355
1	0.923	46	0.822	91	0.588	136	0.834	181	0.911	226	0.355	271	0.401	316	0.369
2	0.930	47	0.810	92	0.586	137	0.845	182	0.905	227	0.342	272	0.401	317	0.383
3	0.936	48	0.798	93	0.584	138	0.856	183	0.898	228	0.330	273	0.399	318	0.397
4	0.942	49	0.786	94	0.582	139	0.867	184	0.890	229	0.319	274	0.397	319	0.412
5	0.948	50	0.775	95	0.580	140	0.878	185	0.883	230	0.309	275	0.395	320	0.427
6	0.954	51	0.763	96	0.577	141	0.888	186	0.875	231	0.300	276	0.392	321	0.442
7	0.960	52	0.752	97	0.574	142	0.898	187	0.868	232	0.292	277	0.389	322	0.457
8	0.965	53	0.741	98	0.572	143	0.908	188	0.859	233	0.284	278	0.385	323	0.472
9	0.970	54	0.731	99	0.570	144	0.917	189	0.851	234	0.277	279	0.380	324	0.487
10	0.975	55	0.720	100	0.568	145	0.926	190	0.842	235	0.271	280	0.374	325	0.502
11	0.980	56	0.710	101	0.568	146	0.934	191	0.833	236	0.265	281	0.368	326	0.518
12	0.984	57	0.700	102	0.569	147	0.942	192	0.823	237	0.260	282	0.361	327	0.533
13	0.987	58	0.691	103	0.571	148	0.950	193	0.813	238	0.256	283	0.354	328	0.548
14	0.991	59	0.682	104	0.573	149	0.957	194	0.803	239	0.252	284	0.346	329	0.564
15	0.994	60	0.673	105	0.577	150	0.964	195	0.792	240	0.250	285	0.338	330	0.579
16	0.996	61	0.665	106	0.581	151	0.970	196	0.780	241	0.250	286	0.330	331	0.594
17	0.998	62	0.657	107	0.585	152	0.975	197	0.768	242	0.251	287	0.322	332	0.609
18	0.999	63	0.650	108	0.590	153	0.981	198	0.756	243	0.252	288	0.314	333	0.625
19	1.000	64	0.643	109	0.595	154	0.985	199	0.744	244	0.255	289	0.306	334	0.640
20	1.000	65	0.637	110	0.601	155	0.989	200	0.731	245	0.259	290	0.299	335	0.655
21	0.999	66	0.630	111	0.606	156	0.993	201	0.718	246	0.263	291	0.291	336	0.670
22	0.998	67	0.624	112	0.612	157	0.995	202	0.705	247	0.268	292	0.285	337	0.685
23	0.997	68	0.619	113	0.618	158	0.997	203	0.692	248	0.273	293	0.278	338	0.699
24	0.994	69	0.613	114	0.624	159	0.999	204	0.678	249	0.279	294	0.273	339	0.713
25	0.991	70	0.608	115	0.630	160	1.000	205	0.664	250	0.284	295	0.268	340	0.728
26	0.988	71	0.602	116	0.637	161	1.000	206	0.650	251	0.290	296	0.263	341	0.741
27	0.984	72	0.597	117	0.644	162	0.999	207	0.637	252	0.295	297	0.259	342	0.755
28	0.979	73	0.592	118	0.651	163	0.998	208	0.623	253	0.301	298	0.256	343	0.767
29	0.974	74	0.586	119	0.658	164	0.996	209	0.608	254	0.308	299	0.254	344	0.780
30	0.969	75	0.581	120	0.666	165	0.994	210	0.594	255	0.315	300	0.253	345	0.792
31	0.963	76	0.576	121	0.674	166	0.991	211	0.580	256	0.323	301	0.252	346	0.803
32	0.957	77	0.573	122	0.683	167	0.988	212	0.566	257	0.331	302	0.253	347	0.814
33	0.950	78	0.570	123	0.692	168	0.984	213	0.551	258	0.340	303	0.254	348	0.825
34	0.943	79	0.569	124	0.701	169	0.980	214	0.536	259	0.351	304	0.257	349	0.834
35	0.935	80	0.569	125	0.711	170	0.975	215	0.521	260	0.361	305	0.260	350	0.844
36	0.927	81	0.570	126	0.721	171	0.970	216	0.506	261	0.371	306	0.265	351	0.852
37	0.919	82	0.572	127	0.732	172	0.965	217	0.491	262	0.380	307	0.271	352	0.861
38	0.910	83	0.575	128	0.742	173	0.960	218	0.475	263	0.387	308	0.279	353	0.869
39	0.900	84	0.578	129	0.753	174	0.954	219	0.460	264	0.392	309	0.287	354	0.876
40	0.890	85	0.581	130	0.764	175	0.948	220	0.444	265	0.396	310	0.296	355	0.883
41	0.879	86	0.583	131	0.776	176	0.942	221	0.428	266	0.399	311	0.307	356	0.891
42	0.868	87	0.586	132	0.787	177	0.936	222	0.413	267	0.401	312	0.318	357	0.897
43	0.857	88	0.588	133	0.799	178	0.930	223	0.397	268	0.402	313	0.330	358	0.904
44	0.845	89	0.589	134	0.810	179	0.924	224	0.382	269	0.402	314	0.342	359	0.911



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## ELEVATION PATTERN

RMS Gain at Main Lobe **15.00 ( 11.76 dB )**

Beam Tilt **1.50 deg**

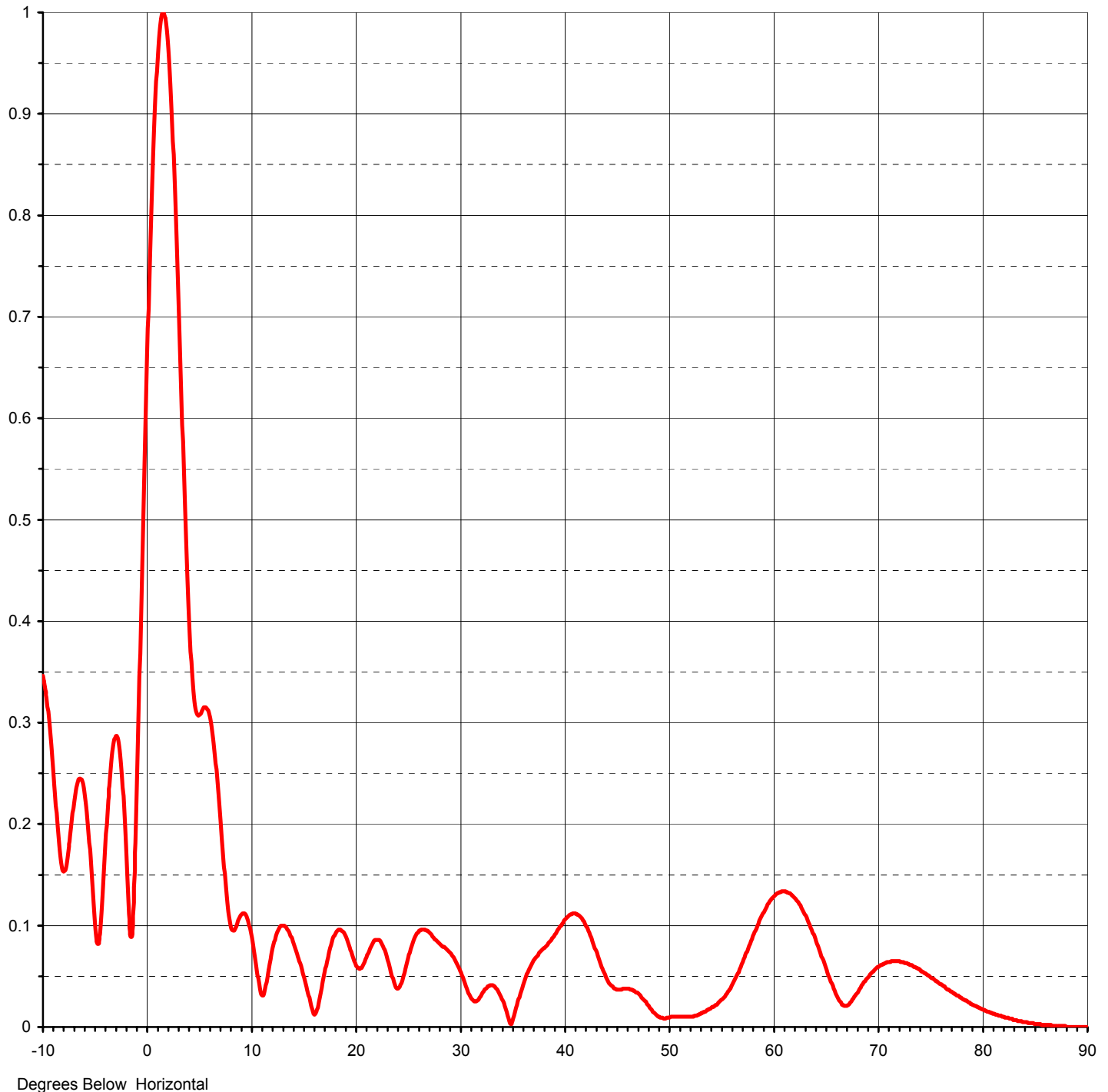
RMS Gain at Horizontal **6.70 ( 8.26 dB )**

Frequency **533.00 MHz**

Calculated / Measured **Calculated**

Drawing #

**16B150150-90**





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## ELEVATION PATTERN

RMS Gain at Main Lobe **15.00 ( 11.76 dB )**

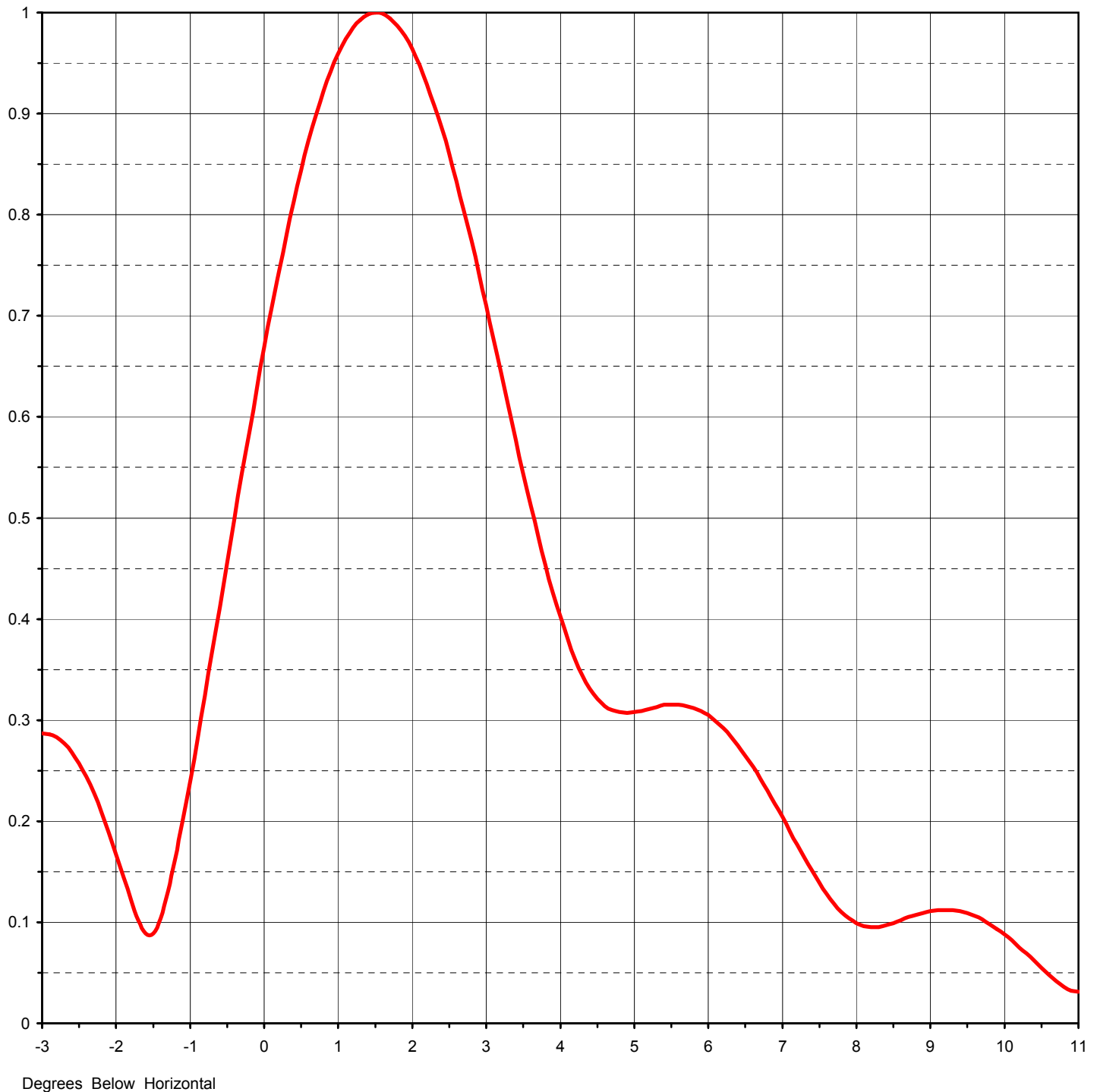
RMS Gain at Horizontal **6.70 ( 8.26 dB )**

Calculated / Measured **Calculated**

Beam Tilt **1.50 deg**

Frequency **533.00 MHz**

Drawing # **16B150150**





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## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **16B150150-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.346	2.4	0.885	10.6	0.055	30.5	0.043	51.0	0.010	71.5	0.065
-9.5	0.311	2.6	0.833	10.8	0.042	31.0	0.030	51.5	0.010	72.0	0.065
-9.0	0.252	2.8	0.774	11.0	0.032	31.5	0.025	52.0	0.010	72.5	0.063
-8.5	0.186	3.0	0.710	11.5	0.044	32.0	0.030	52.5	0.011	73.0	0.061
-8.0	0.153	3.2	0.643	12.0	0.073	32.5	0.038	53.0	0.013	73.5	0.059
-7.5	0.178	3.4	0.577	12.5	0.093	33.0	0.041	53.5	0.015	74.0	0.056
-7.0	0.223	3.6	0.512	13.0	0.100	33.5	0.038	54.0	0.018	74.5	0.053
-6.5	0.245	3.8	0.453	13.5	0.096	34.0	0.029	54.5	0.022	75.0	0.049
-6.0	0.229	4.0	0.402	14.0	0.085	34.5	0.015	55.0	0.026	75.5	0.045
-5.5	0.175	4.2	0.360	14.5	0.070	35.0	0.005	55.5	0.032	76.0	0.042
-5.0	0.101	4.4	0.331	15.0	0.052	35.5	0.022	56.0	0.040	76.5	0.038
-4.5	0.098	4.6	0.314	15.5	0.033	36.0	0.039	56.5	0.050	77.0	0.035
-4.0	0.182	4.8	0.308	16.0	0.013	36.5	0.054	57.0	0.062	77.5	0.031
-3.5	0.256	5.0	0.308	16.5	0.024	37.0	0.064	57.5	0.074	78.0	0.028
-3.0	0.287	5.2	0.311	17.0	0.050	37.5	0.071	58.0	0.087	78.5	0.025
-2.8	0.283	5.4	0.315	17.5	0.074	38.0	0.077	58.5	0.100	79.0	0.022
-2.6	0.268	5.6	0.315	18.0	0.090	38.5	0.083	59.0	0.111	79.5	0.020
-2.4	0.244	5.8	0.312	18.5	0.096	39.0	0.089	59.5	0.121	80.0	0.017
-2.2	0.209	6.0	0.305	19.0	0.091	39.5	0.097	60.0	0.128	80.5	0.015
-2.0	0.167	6.2	0.292	19.5	0.078	40.0	0.105	60.5	0.132	81.0	0.013
-1.8	0.122	6.4	0.275	20.0	0.063	40.5	0.110	61.0	0.134	81.5	0.011
-1.6	0.089	6.6	0.254	20.5	0.058	41.0	0.112	61.5	0.132	82.0	0.010
-1.4	0.104	6.8	0.230	21.0	0.067	41.5	0.109	62.0	0.128	82.5	0.008
-1.2	0.163	7.0	0.204	21.5	0.079	42.0	0.102	62.5	0.121	83.0	0.007
-1.0	0.240	7.2	0.177	22.0	0.086	42.5	0.090	63.0	0.112	83.5	0.006
-0.8	0.324	7.4	0.151	22.5	0.083	43.0	0.076	63.5	0.101	84.0	0.005
-0.6	0.412	7.6	0.128	23.0	0.070	43.5	0.062	64.0	0.088	84.5	0.004
-0.4	0.500	7.8	0.110	23.5	0.051	44.0	0.049	64.5	0.071	85.0	0.003
-0.2	0.586	8.0	0.099	24.0	0.038	44.5	0.041	65.0	0.057	85.5	0.003
0.0	0.669	8.2	0.095	24.5	0.046	45.0	0.037	65.5	0.043	86.0	0.002
0.2	0.745	8.4	0.097	25.0	0.065	45.5	0.037	66.0	0.031	86.5	0.002
0.4	0.813	8.6	0.102	25.5	0.083	46.0	0.038	66.5	0.022	87.0	0.001
0.6	0.873	8.8	0.107	26.0	0.093	46.5	0.037	67.0	0.021	87.5	0.001
0.8	0.922	9.0	0.111	26.5	0.096	47.0	0.034	67.5	0.027	88.0	0.000
1.0	0.959	9.2	0.112	27.0	0.094	47.5	0.028	68.0	0.034	88.5	0.000
1.2	0.985	9.4	0.111	27.5	0.088	48.0	0.022	68.5	0.042	89.0	0.000
1.4	0.998	9.6	0.106	28.0	0.083	48.5	0.015	69.0	0.049	89.5	0.000
1.6	0.999	9.8	0.103	28.5	0.079	49.0	0.010	69.5	0.055	90.0	0.000
1.8	0.987	10.0	0.093	29.0	0.074	49.5	0.008	70.0	0.059		
2.0	0.964	10.2	0.082	29.5	0.067	50.0	0.009	70.5	0.062		
2.2	0.929	10.4	0.069	30.0	0.057	50.5	0.010	71.0	0.064		