

Horizontal Polarization
AZIMUTH PATTERN

Exhibit No. C-70323
Date 20 Mar 2017
Call Letters KCDT
Channel 18
Antenna Type TFU-8WB
Location Coeur D'Alene, Idaho
Customer Idaho Public TV

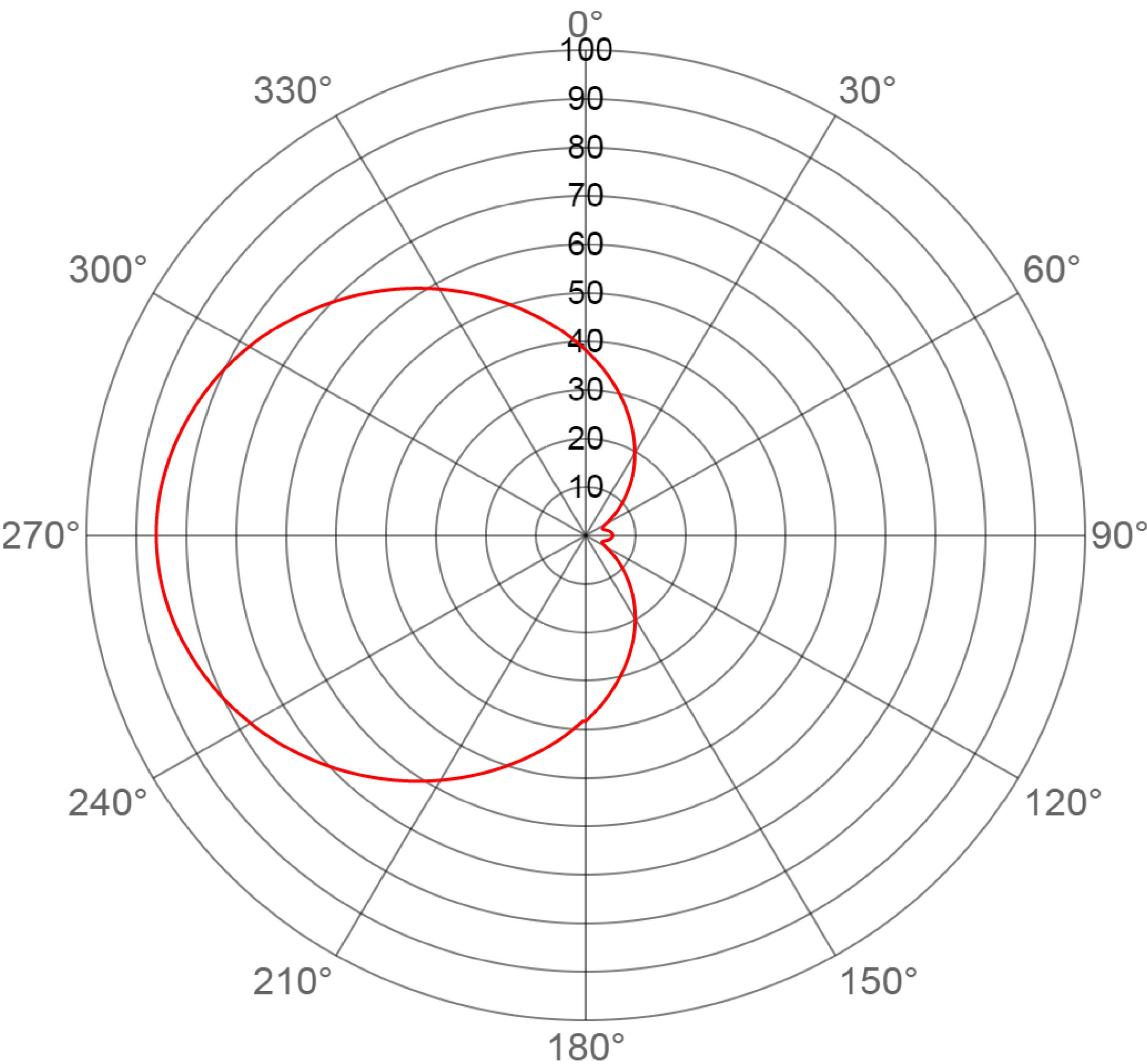
Gain 2.1 (3.24 dB)
Calculated
Drawing # WB-S230H

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.627	36	0.282	72	0.457	108	0.457	144	0.286	180	0.627	216	0.850	252	0.977	288	0.980	324	0.856
1	0.618	37	0.277	73	0.464	109	0.450	145	0.292	181	0.627	217	0.855	253	0.979	289	0.978	325	0.851
2	0.609	38	0.273	74	0.470	110	0.443	146	0.299	182	0.635	218	0.859	254	0.981	290	0.975	326	0.847
3	0.600	39	0.269	75	0.476	111	0.436	147	0.306	183	0.644	219	0.864	255	0.983	291	0.973	327	0.842
4	0.590	40	0.266	76	0.482	112	0.428	148	0.314	184	0.652	220	0.868	256	0.985	292	0.970	328	0.837
5	0.581	41	0.264	77	0.487	113	0.420	149	0.322	185	0.661	221	0.872	257	0.987	293	0.968	329	0.833
6	0.571	42	0.263	78	0.492	114	0.412	150	0.330	186	0.669	222	0.876	258	0.989	294	0.965	330	0.828
7	0.561	43	0.263	79	0.497	115	0.404	151	0.339	187	0.677	223	0.880	259	0.990	295	0.962	331	0.823
8	0.552	44	0.263	80	0.501	116	0.396	152	0.348	188	0.684	224	0.885	260	0.992	296	0.960	332	0.818
9	0.542	45	0.265	81	0.505	117	0.387	153	0.358	189	0.692	225	0.889	261	0.993	297	0.957	333	0.813
10	0.532	46	0.267	82	0.509	118	0.379	154	0.368	190	0.699	226	0.893	262	0.994	298	0.954	334	0.807
11	0.521	47	0.270	83	0.512	119	0.370	155	0.378	191	0.707	227	0.896	263	0.996	299	0.951	335	0.802
12	0.511	48	0.274	84	0.515	120	0.361	156	0.388	192	0.714	228	0.900	264	0.997	300	0.947	336	0.797
13	0.501	49	0.279	85	0.517	121	0.353	157	0.398	193	0.721	229	0.904	265	0.998	301	0.944	337	0.791
14	0.490	50	0.284	86	0.519	122	0.345	158	0.408	194	0.728	230	0.908	266	0.998	302	0.941	338	0.785
15	0.480	51	0.290	87	0.520	123	0.336	159	0.419	195	0.735	231	0.912	267	0.999	303	0.938	339	0.779
16	0.469	52	0.297	88	0.521	124	0.328	160	0.429	196	0.741	232	0.915	268	0.999	304	0.934	340	0.773
17	0.459	53	0.304	89	0.522	125	0.321	161	0.440	197	0.748	233	0.919	269	1.000	305	0.931	341	0.767
18	0.448	54	0.311	90	0.522	126	0.313	162	0.450	198	0.754	234	0.923	270	1.000	306	0.927	342	0.761
19	0.437	55	0.319	91	0.522	127	0.306	163	0.461	199	0.760	235	0.926	271	1.000	307	0.924	343	0.755
20	0.427	56	0.327	92	0.521	128	0.299	164	0.471	200	0.767	236	0.930	272	1.000	308	0.920	344	0.749
21	0.416	57	0.335	93	0.520	129	0.293	165	0.481	201	0.773	237	0.933	273	1.000	309	0.917	345	0.742
22	0.406	58	0.343	94	0.519	130	0.287	166	0.492	202	0.778	238	0.937	274	0.999	310	0.913	346	0.735
23	0.395	59	0.351	95	0.517	131	0.282	167	0.502	203	0.784	239	0.940	275	0.999	311	0.909	347	0.729
24	0.385	60	0.360	96	0.515	132	0.278	168	0.512	204	0.790	240	0.943	276	0.998	312	0.905	348	0.722
25	0.375	61	0.369	97	0.512	133	0.274	169	0.523	205	0.795	241	0.946	277	0.997	313	0.901	349	0.715
26	0.365	62	0.377	98	0.509	134	0.271	170	0.533	206	0.801	242	0.950	278	0.996	314	0.898	350	0.707
27	0.355	63	0.386	99	0.505	135	0.268	171	0.543	207	0.806	243	0.953	279	0.995	315	0.894	351	0.700
28	0.345	64	0.394	100	0.501	136	0.267	172	0.553	208	0.812	244	0.956	280	0.994	316	0.890	352	0.692
29	0.336	65	0.403	101	0.497	137	0.267	173	0.562	209	0.817	245	0.959	281	0.992	317	0.886	353	0.685
30	0.327	66	0.411	102	0.492	138	0.267	174	0.572	210	0.822	246	0.961	282	0.991	318	0.882	354	0.677
31	0.318	67	0.419	103	0.487	139	0.268	175	0.581	211	0.827	247	0.964	283	0.989	319	0.877	355	0.669
32	0.310	68	0.427	104	0.482	140	0.270	176	0.591	212	0.832	248	0.967	284	0.988	320	0.873	356	0.661
33	0.302	69	0.435	105	0.476	141	0.273	177	0.600	213	0.836	249	0.969	285	0.986	321	0.869	357	0.652
34	0.295	70	0.443	106	0.470	142	0.277	178	0.609	214	0.841	250	0.972	286	0.984	322	0.865	358	0.644
35	0.288	71	0.450	107	0.464	143	0.281	179	0.618	215	0.846	251	0.974	287	0.982	323	0.860	359	0.635

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Location: Coeur D'Alene, Idaho
Customer: Idaho Public TV
Generated by DASP



Vertical Polarization
AZIMUTH PATTERN

Exhibit No. C-70323
Date 20 Mar 2017
Call Letters KCDT
Channel 18
Antenna Type TFU-8WB
Location Coeur D'Alene, Idaho
Customer Idaho Public TV

Gain 2.1 (3.24 dB)
Calculated
Drawing # WB-S230H

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.382	36	0.162	72	0.038	108	0.038	144	0.164	180	0.384	216	0.625	252	0.827	288	0.829	324	0.629
1	0.376	37	0.157	73	0.040	109	0.037	145	0.169	181	0.384	217	0.631	253	0.831	289	0.826	325	0.622
2	0.369	38	0.151	74	0.041	110	0.036	146	0.175	182	0.391	218	0.638	254	0.834	290	0.822	326	0.615
3	0.363	39	0.145	75	0.042	111	0.036	147	0.181	183	0.397	219	0.645	255	0.837	291	0.819	327	0.608
4	0.357	40	0.140	76	0.043	112	0.035	148	0.187	184	0.404	220	0.652	256	0.840	292	0.815	328	0.601
5	0.350	41	0.134	77	0.045	113	0.035	149	0.193	185	0.410	221	0.659	257	0.842	293	0.811	329	0.594
6	0.344	42	0.129	78	0.046	114	0.036	150	0.199	186	0.417	222	0.666	258	0.845	294	0.807	330	0.587
7	0.338	43	0.123	79	0.047	115	0.036	151	0.205	187	0.423	223	0.673	259	0.847	295	0.802	331	0.580
8	0.331	44	0.118	80	0.049	116	0.038	152	0.211	188	0.430	224	0.679	260	0.849	296	0.798	332	0.573
9	0.325	45	0.113	81	0.050	117	0.039	153	0.217	189	0.437	225	0.686	261	0.851	297	0.793	333	0.566
10	0.319	46	0.107	82	0.051	118	0.041	154	0.223	190	0.443	226	0.692	262	0.853	298	0.788	334	0.559
11	0.313	47	0.102	83	0.052	119	0.044	155	0.229	191	0.450	227	0.699	263	0.854	299	0.783	335	0.552
12	0.306	48	0.097	84	0.052	120	0.047	156	0.235	192	0.457	228	0.705	264	0.856	300	0.778	336	0.545
13	0.300	49	0.092	85	0.053	121	0.050	157	0.241	193	0.464	229	0.712	265	0.857	301	0.773	337	0.537
14	0.294	50	0.087	86	0.054	122	0.053	158	0.247	194	0.470	230	0.718	266	0.858	302	0.768	338	0.530
15	0.288	51	0.083	87	0.054	123	0.057	159	0.253	195	0.477	231	0.724	267	0.859	303	0.763	339	0.523
16	0.282	52	0.078	88	0.054	124	0.061	160	0.259	196	0.484	232	0.730	268	0.859	304	0.757	340	0.516
17	0.276	53	0.074	89	0.055	125	0.065	161	0.265	197	0.491	233	0.736	269	0.860	305	0.751	341	0.509
18	0.270	54	0.069	90	0.055	126	0.069	162	0.271	198	0.498	234	0.742	270	0.860	306	0.746	342	0.503
19	0.263	55	0.065	91	0.055	127	0.073	163	0.278	199	0.505	235	0.748	271	0.860	307	0.740	343	0.496
20	0.257	56	0.061	92	0.054	128	0.078	164	0.284	200	0.512	236	0.754	272	0.860	308	0.734	344	0.489
21	0.251	57	0.057	93	0.054	129	0.083	165	0.290	201	0.519	237	0.759	273	0.859	309	0.728	345	0.482
22	0.245	58	0.054	94	0.054	130	0.087	166	0.296	202	0.526	238	0.765	274	0.859	310	0.722	346	0.475
23	0.239	59	0.050	95	0.053	131	0.092	167	0.302	203	0.533	239	0.770	275	0.858	311	0.716	347	0.468
24	0.233	60	0.047	96	0.052	132	0.097	168	0.308	204	0.540	240	0.775	276	0.857	312	0.709	348	0.461
25	0.227	61	0.045	97	0.051	133	0.103	169	0.315	205	0.547	241	0.781	277	0.855	313	0.703	349	0.455
26	0.221	62	0.042	98	0.050	134	0.108	170	0.321	206	0.554	242	0.785	278	0.854	314	0.696	350	0.448
27	0.215	63	0.040	99	0.049	135	0.113	171	0.327	207	0.561	243	0.790	279	0.852	315	0.690	351	0.441
28	0.209	64	0.039	100	0.048	136	0.119	172	0.333	208	0.568	244	0.795	280	0.850	316	0.683	352	0.435
29	0.203	65	0.037	101	0.047	137	0.124	173	0.340	209	0.575	245	0.800	281	0.848	317	0.677	353	0.428
30	0.197	66	0.036	102	0.046	138	0.129	174	0.346	210	0.582	246	0.804	282	0.846	318	0.670	354	0.421
31	0.191	67	0.036	103	0.045	139	0.135	175	0.352	211	0.589	247	0.808	283	0.844	319	0.663	355	0.415
32	0.186	68	0.036	104	0.043	140	0.141	176	0.359	212	0.596	248	0.812	284	0.841	320	0.656	356	0.408
33	0.180	69	0.036	105	0.042	141	0.146	177	0.365	213	0.603	249	0.816	285	0.839	321	0.650	357	0.402
34	0.174	70	0.037	106	0.041	142	0.152	178	0.371	214	0.610	250	0.820	286	0.836	322	0.643	358	0.395
35	0.168	71	0.038	107	0.039	143	0.158	179	0.378	215	0.618	251	0.824	287	0.833	323	0.636	359	0.389

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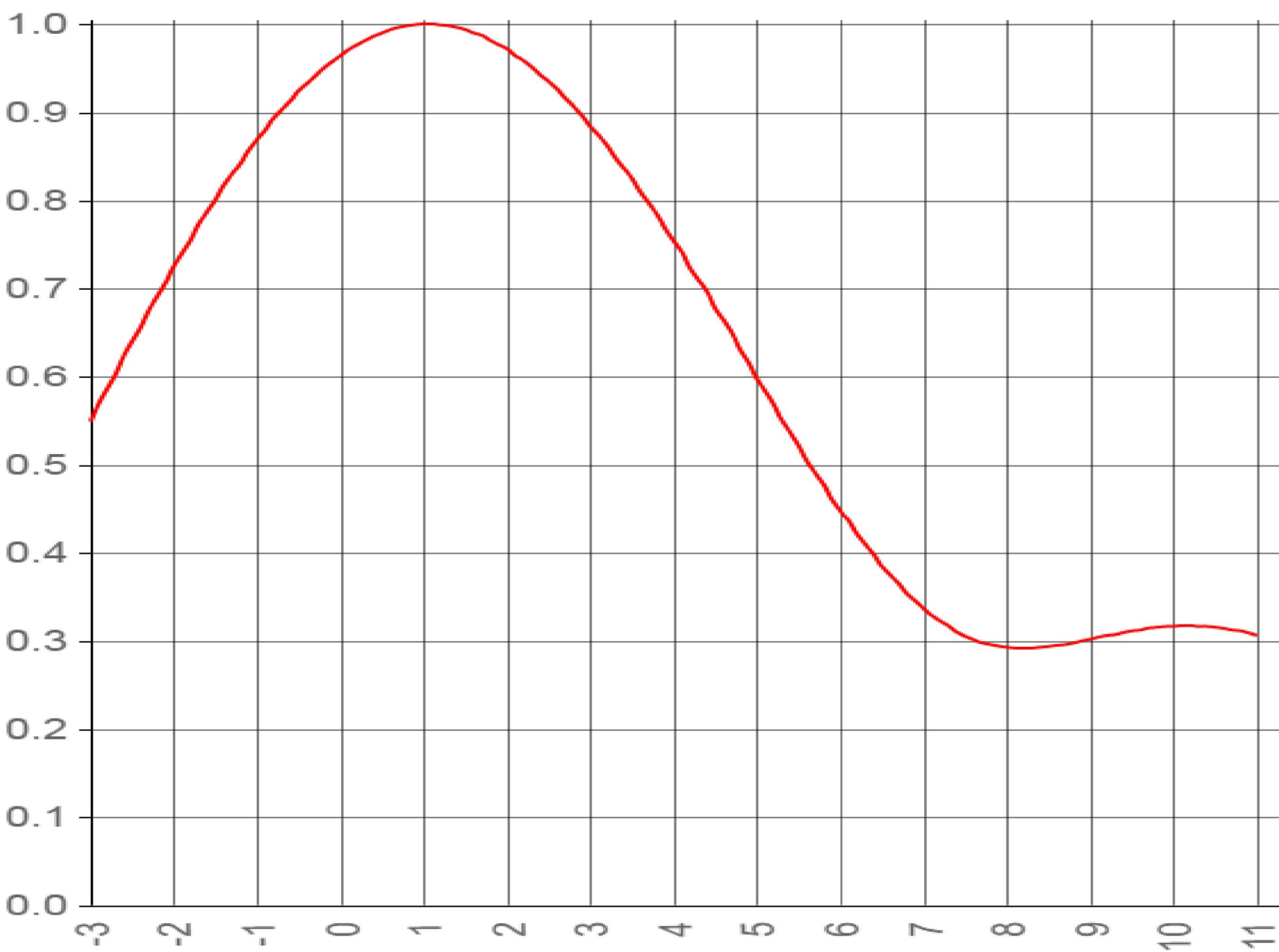
Location: Coeur D'Alene, Idaho
Customer: Idaho Public TV
Generated by DASP

ELEVATION PATTERN

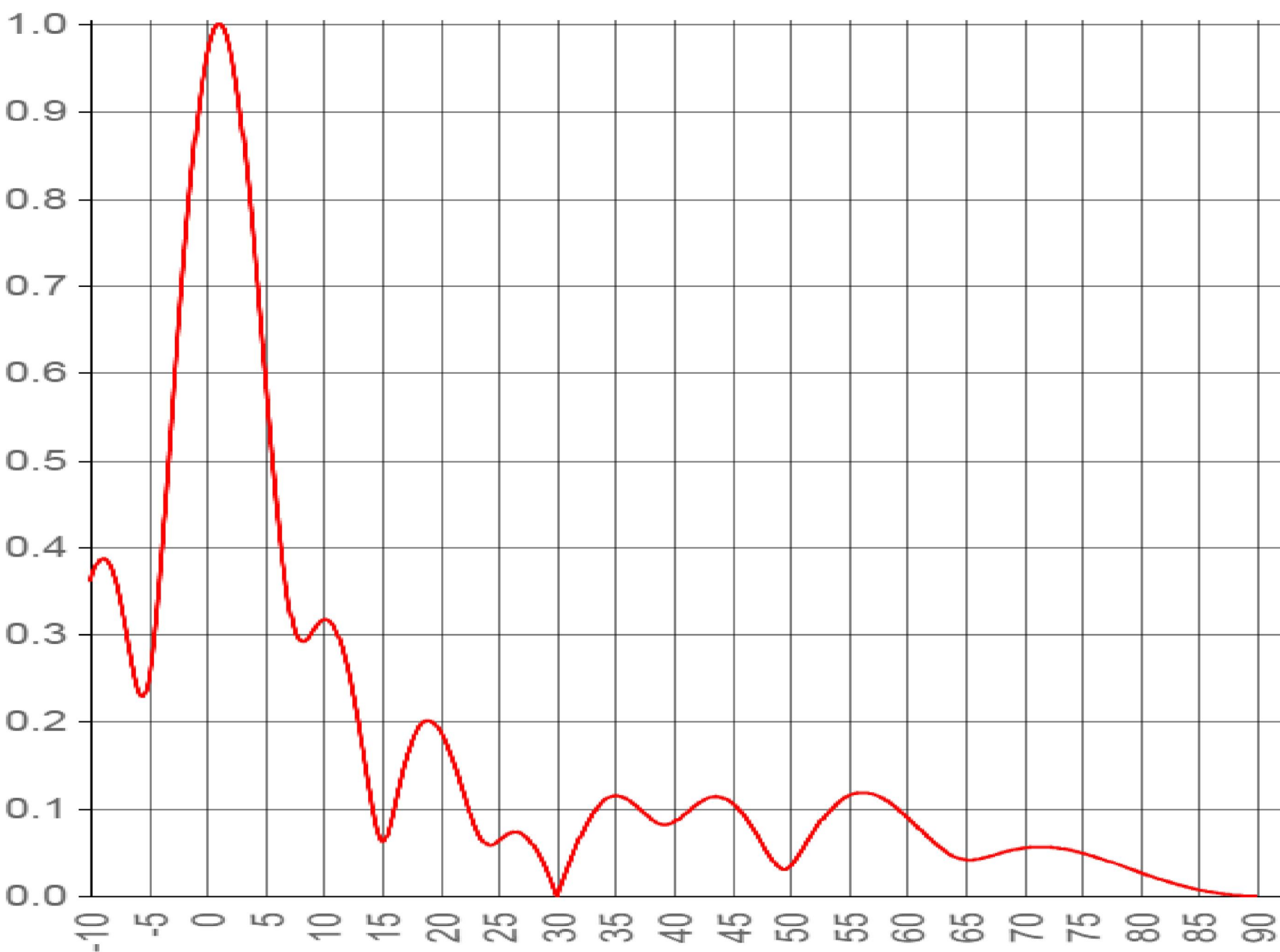
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RMS Gain at Main Lobe 8.0 (9.03 dB)
RMS Gain at Horizontal 7.4 (8.72 dB)
Calculated

Beam Tilt 1.05 Degrees
Drawing # 08I080105



Degrees below horizontal



Degrees below horizontal

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10	0.360	10	0.316	30	0.000	50	0.034	70	0.055
-9	0.386	11	0.306	31	0.035	51	0.052	71	0.056
-8	0.368	12	0.265	32	0.067	52	0.073	72	0.056
-7	0.310	13	0.197	33	0.093	53	0.092	73	0.055
-6	0.242	14	0.118	34	0.109	54	0.106	74	0.052
-5	0.248	15	0.063	35	0.115	55	0.115	75	0.049
-4	0.373	16	0.097	36	0.111	56	0.118	76	0.045
-3	0.549	17	0.153	37	0.100	57	0.117	77	0.041
-2	0.724	18	0.189	38	0.088	58	0.111	78	0.036
-1	0.869	19	0.201	39	0.082	59	0.102	79	0.031
0	0.965	20	0.189	40	0.084	60	0.090	80	0.027
1	1.000	21	0.158	41	0.094	61	0.077	81	0.022
2	0.972	22	0.118	42	0.105	62	0.065	82	0.018
3	0.885	23	0.079	43	0.112	63	0.054	83	0.014
4	0.754	24	0.059	44	0.113	64	0.045	84	0.010
5	0.599	25	0.063	45	0.106	65	0.042	85	0.007
6	0.448	26	0.072	46	0.093	66	0.042	86	0.005
7	0.336	27	0.071	47	0.073	67	0.045	87	0.003
8	0.293	28	0.057	48	0.051	68	0.049	88	0.001
9	0.302	29	0.032	49	0.033	69	0.052	89	0.000

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Trusted for Decades. Ready for Tomorrow.



Location: Coeur D'Alene, Idaho
Customer: Idaho Public TV
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System Summary

Exhibit No.	C-70323
Date	20 Mar 2017
Call Letters	KCDT
Channel	18
Antenna Type	TFU-8WB
Location	Coeur D'Alene, Idaho
Customer	Idaho Public TV

Antenna

ERP:	31.1 kW (14.93 dBk)	22.4 kW (13.50 dBk)
Peak Gain*:	11.0 (10.43 dB)	8.2 (9.12 dB)

Hpol

Vpol

Antenna Input Power:

2.8 kW

Transmission Line

Type:	Transmission Line		
Size:	3-1/8"		
Impedance:	50 ohm		
Length:	105 ft (32.0 m)	Attenuation:	0.2 dB
		Efficiency:	94.57 %

Transmitter Output

3.0 kW (4.74 dBk)

* Gain is with respect to half wave dipole.

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Mechanicals

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Preliminary Specifications

Side Mounted

Mechanical Specification without ice TIA-222-G

Basic Wind Speed	90 mph
Structure Class	II
Exposure Category	C
Topography Category	1

Mechanical Specifications

Height less Lightning Protector	(H2)	14.4 ft (4.4 m)
Center of Radiation	(H3)	7.2 ft (2.2 m)
Effective Projected Area	(EPA)s	18.0 ft² (5.5 m²)
Weight	W	564.5 lbs

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