

ENGINEERING STATEMENT  
DIGITAL DISPLACEMENT TRANSLATOR APPLICATION  
ON BEHALF OF  
**KTVQ COMMUNICATIONS, INC.**  
K39IJ (K69CM), BIG TIMBER, ETC., MONTANA  
CHANNEL 17 132 W DA ERP 2214.5 METERS RCAMSL

AUGUST 2009

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.


City of Washington                    )  
  ) ss  
District of Columbia                )

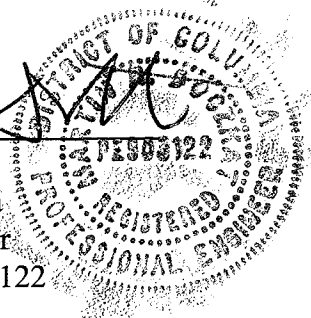
Martin R. Doczkat being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the Pennsylvania State University, a Registered Professional Engineer in the District of Columbia, and is a staff engineer at Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

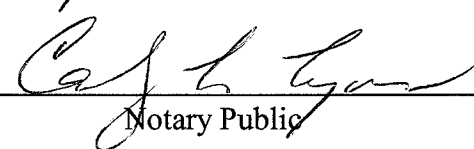
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

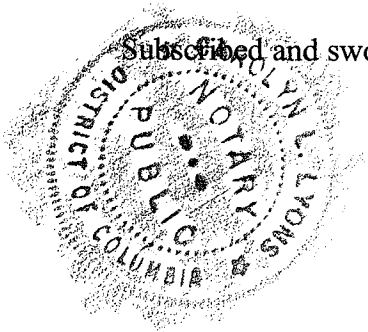
  
\_\_\_\_\_  
Martin R. Doczkat  
District of Columbia  
Professional Engineer  
Registration No. PE905122



Subscribed and sworn to before me this 21<sup>st</sup> day of August, 2009.

  
\_\_\_\_\_  
Notary Public

My Commission Expires: 2/28/2013



This engineering statement has been prepared on behalf of KTVQ Communications, Inc. licensee of television translator station K69CM, Big Timber, Etc., Montana. K69CM is licensed to operate on out-of-core channel 69 with a directional ERP of 0.44 kW. Accordingly, this statement supports the licensee's request operate digitally on in-core channel 17 with a directional effective radiated power ("ERP") of 132 watts at a radiation center above mean sea level ("RCAMSL") of 2214.5 meters.

There is no change in transmitter site. The NAD-27 geographic coordinates of the existing site are as follows:

North Latitude: 45° 40' 45"

West Longitude: 110° 46' 21"

The existing tower is less than 200 feet and TOWAIR indicates that the structure does not require registration. There are no airports within 8 kilometers (5 miles) of the existing site.

#### Allocation

The proposed operation is in accordance with Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b), and 73.1030 of the FCC Rules. An allocation study performed August 18, 2009, indicates that the proposed Channel 17 operation will not cause objectionable interference to any authorized or proposed full-service operation or authorized LPTV /TV translator stations.

#### Transmitting Equipment

The following equipment will be used for the proposed operation.

Transmitter:           Type Accepted

Antenna: Kathrein-Scala K69CM-DA CH-17 Composite

The K69CM operation is a composite antenna system that is side-mounted on the existing tower at 5.5 meters above ground. The overall tower height above ground level remains unchanged at 7.9 meters.

FCC Rule, Section 1.1307

The proposed channel 17, 0.132 kW directional operation will utilize a Kathrein-Scala K69CM-DA CH-17 composite antenna system (or equivalent) described above with a center of radiation above ground of 5.5 meters. The proposed channel 39 operation of K69CM will create a radiofrequency field level of less than  $1.3 \mu\text{W}/\text{cm}^2$  at the base of the tower. This level is less than 0.5% of the Maximum Permissible Exposure (“MPE”) level for the general population and uncontrolled environment.

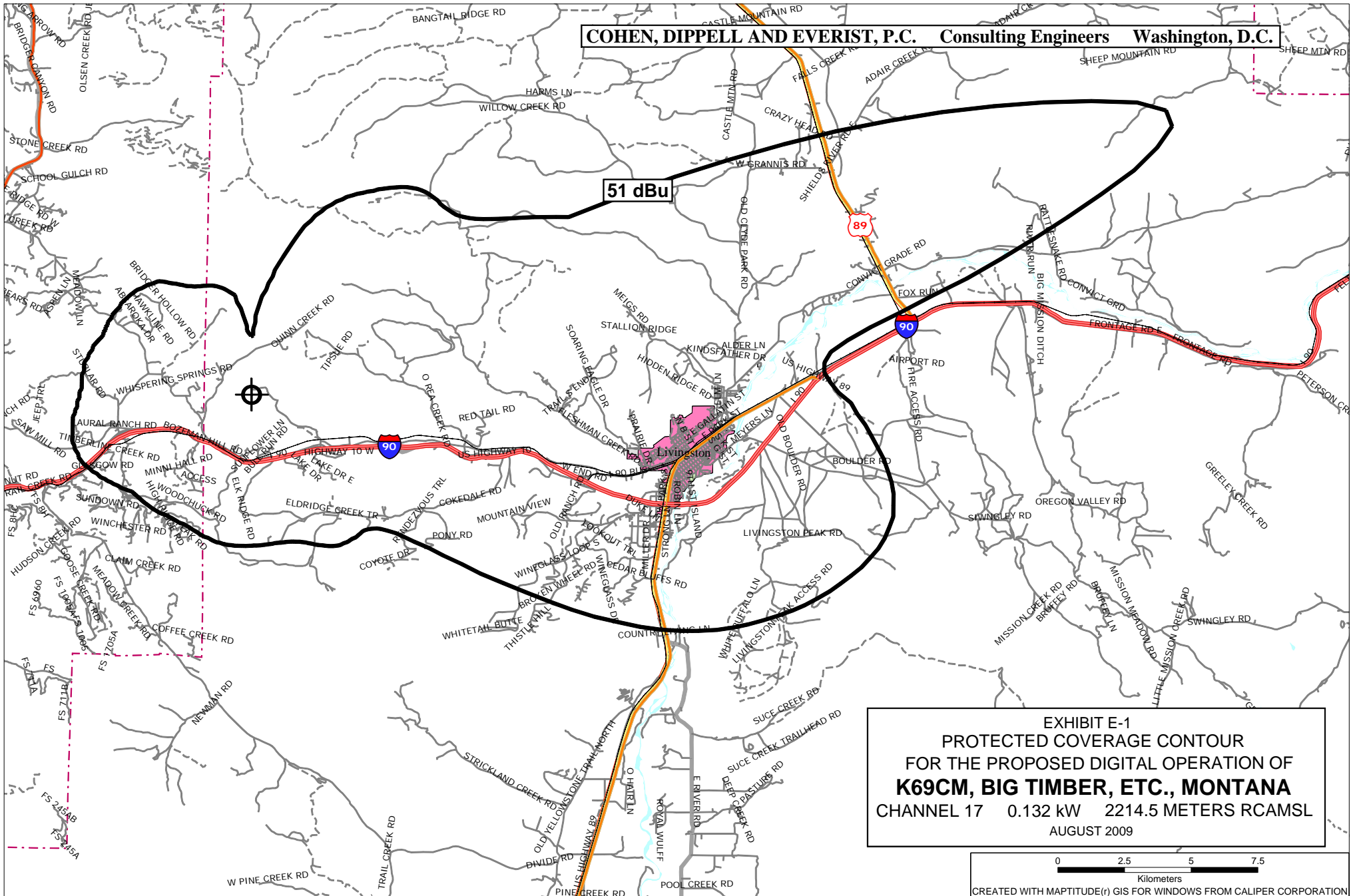
Authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on or near the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment (“EA”) is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the applicant indicates:

(a)(1) The existing tower is not located in an officially designated wilderness area.

- (a)(2) The existing tower is not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities located on a tower which was built prior to the adoption of WT Docket No. 03-128 and is grandfathered and has not affected any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The existing tower is not located near any known Indian religious sites.
- (a)(6) The existing tower is not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

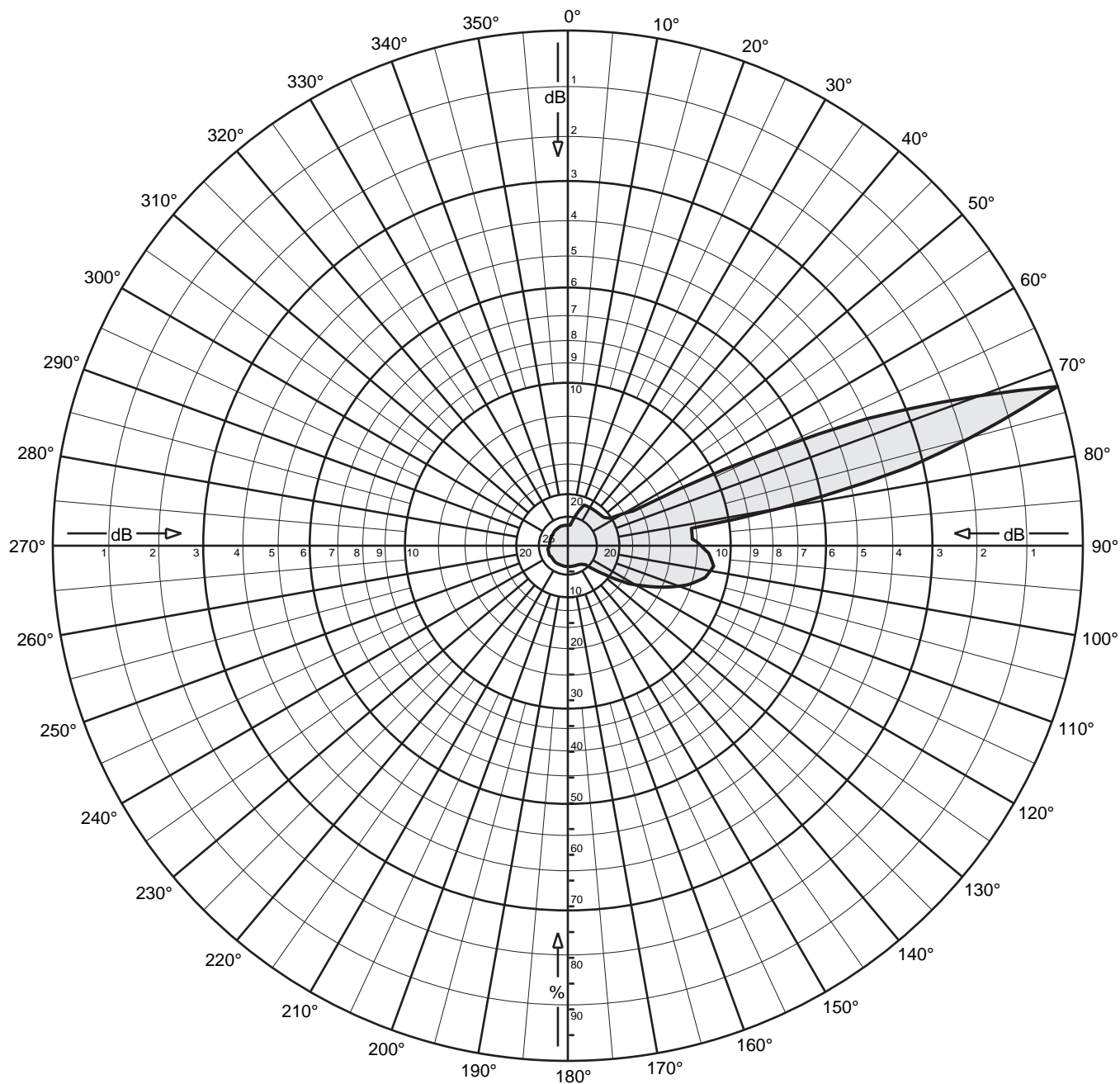


COHEN, DIPPELL AND EVERIST, P.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

K39IJ (K69CM), BIG TIMBER, ETC., MONTANA



One GLF10-450 oriented at 72 deg w/90%  
 One PR-TV-17/50 oriented at 98 deg w/10%  
 Channel - 17  
 Gain: 19.5 dBd  
 Horizontal Polarization  
 Vertical Stacked  
 Horizontal plane Pattern  
 K69CM-DA CH-17





One GLF10-450 oriented at 72 deg w/90%  
 One PR-TV-17/50 oriented at 98 deg w/10%  
 Channel - 17  
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Horizontal Polarization  
 Vertical Stacked  
 Horizontal plane Pattern  
 K69CM-DA CH-17

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	0.040	-27.95	-8.45	0.14	45	0.087	-21.23	-1.73	0.67
1	0.040	-27.93	-8.43	0.14	46	0.087	-21.21	-1.71	0.67
2	0.040	-27.92	-8.42	0.14	47	0.087	-21.19	-1.69	0.68
3	0.040	-27.90	-8.40	0.14	48	0.087	-21.17	-1.67	0.68
4	0.040	-27.90	-8.40	0.14	49	0.088	-21.13	-1.63	0.69
5	0.040	-27.90	-8.40	0.14	50	0.088	-21.08	-1.58	0.69
6	0.040	-27.90	-8.40	0.14	51	0.089	-21.04	-1.54	0.70
7	0.040	-27.89	-8.39	0.14	52	0.089	-21.00	-1.50	0.71
8	0.043	-27.38	-7.88	0.16	53	0.091	-20.86	-1.36	0.73
9	0.045	-26.89	-7.39	0.18	54	0.092	-20.69	-1.19	0.76
10	0.048	-26.42	-6.92	0.20	55	0.094	-20.52	-1.02	0.79
11	0.050	-25.98	-6.48	0.22	56	0.096	-20.36	-0.86	0.82
12	0.053	-25.57	-6.07	0.25	57	0.098	-20.20	-0.70	0.85
13	0.056	-25.05	-5.55	0.28	58	0.107	-19.45	0.05	1.01
14	0.059	-24.56	-5.06	0.31	59	0.116	-18.73	0.77	1.19
15	0.062	-24.09	-4.59	0.35	60	0.125	-18.06	1.44	1.39
16	0.066	-23.65	-4.15	0.38	61	0.134	-17.44	2.06	1.61
17	0.069	-23.23	-3.73	0.42	62	0.143	-16.87	2.63	1.83
18	0.072	-22.83	-3.33	0.46	63	0.240	-12.38	7.12	5.15
19	0.075	-22.45	-2.95	0.51	64	0.338	-9.42	10.08	10.18
20	0.079	-22.08	-2.58	0.55	65	0.436	-7.22	12.28	16.91
21	0.082	-21.73	-2.23	0.60	66	0.533	-5.46	14.04	25.34
22	0.085	-21.39	-1.89	0.65	67	0.631	-4.00	15.50	35.46
23	0.085	-21.39	-1.89	0.65	68	0.703	-3.07	16.43	43.99
24	0.085	-21.39	-1.89	0.65	69	0.777	-2.19	17.31	53.80
25	0.085	-21.39	-1.89	0.65	70	0.851	-1.40	18.10	64.59
26	0.085	-21.39	-1.89	0.65	71	0.926	-0.67	18.83	76.36
27	0.085	-21.39	-1.89	0.65	72	1.000	0.00	19.50	89.13
28	0.085	-21.39	-1.89	0.65	73	0.935	-0.59	18.91	77.83
29	0.085	-21.38	-1.88	0.65	74	0.871	-1.20	18.30	67.67
30	0.085	-21.37	-1.87	0.65	75	0.808	-1.85	17.65	58.21
31	0.085	-21.37	-1.87	0.65	76	0.745	-2.56	16.94	49.47
32	0.086	-21.36	-1.86	0.65	77	0.682	-3.33	16.17	41.44
33	0.086	-21.35	-1.85	0.65	78	0.593	-4.54	14.96	31.33
34	0.086	-21.34	-1.84	0.65	79	0.505	-5.93	13.57	22.75
35	0.086	-21.34	-1.84	0.65	80	0.418	-7.59	11.91	15.54
36	0.086	-21.33	-1.83	0.66	81	0.330	-9.63	9.87	9.70
37	0.086	-21.32	-1.82	0.66	82	0.242	-12.32	7.18	5.23
38	0.086	-21.32	-1.82	0.66	83	0.242	-12.31	7.19	5.23
39	0.086	-21.31	-1.81	0.66	84	0.242	-12.32	7.18	5.23
40	0.086	-21.30	-1.80	0.66	85	0.242	-12.32	7.18	5.23
41	0.086	-21.29	-1.79	0.66	86	0.242	-12.32	7.18	5.23
42	0.086	-21.28	-1.78	0.66	87	0.242	-12.32	7.18	5.22
43	0.086	-21.27	-1.77	0.66	88	0.249	-12.07	7.43	5.53
44	0.087	-21.25	-1.75	0.67	89	0.254	-11.91	7.59	5.74



One GLF10-450 oriented at 72 deg w/90%  
 One PR-TV-17/50 oriented at 98 deg w/10%  
 Channel - 17  
 Gain: 19.5 dBd

Horizontal Polarization  
 Vertical Stacked  
 Horizontal plane Pattern  
 K69CM-DA CH-17

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
90	0.259	-11.75	7.75	5.96	135	0.058	-24.73	-5.23	0.30
91	0.263	-11.59	7.91	6.18	136	0.054	-25.30	-5.80	0.26
92	0.268	-11.43	8.07	6.41	137	0.051	-25.92	-6.42	0.23
93	0.274	-11.25	8.25	6.68	138	0.049	-26.14	-6.64	0.22
94	0.276	-11.18	8.32	6.80	139	0.048	-26.29	-6.79	0.21
95	0.279	-11.10	8.40	6.92	140	0.048	-26.44	-6.94	0.20
96	0.281	-11.02	8.48	7.04	141	0.047	-26.60	-7.10	0.20
97	0.283	-10.95	8.55	7.16	142	0.046	-26.76	-7.26	0.19
98	0.286	-10.88	8.62	7.29	143	0.045	-26.92	-7.42	0.18
99	0.283	-10.95	8.55	7.16	144	0.045	-27.00	-7.50	0.18
100	0.281	-11.02	8.48	7.04	145	0.044	-27.09	-7.59	0.17
101	0.279	-11.10	8.40	6.92	146	0.044	-27.18	-7.68	0.17
102	0.276	-11.18	8.32	6.80	147	0.043	-27.27	-7.77	0.17
103	0.274	-11.25	8.25	6.68	148	0.043	-27.36	-7.86	0.16
104	0.268	-11.43	8.07	6.41	149	0.043	-27.40	-7.90	0.16
105	0.262	-11.62	7.88	6.14	150	0.042	-27.44	-7.94	0.16
106	0.257	-11.81	7.69	5.87	151	0.042	-27.48	-7.98	0.16
107	0.251	-12.01	7.49	5.61	152	0.042	-27.53	-8.03	0.16
108	0.245	-12.21	7.29	5.36	153	0.042	-27.57	-8.07	0.16
109	0.237	-12.49	7.01	5.02	154	0.042	-27.59	-8.09	0.16
110	0.229	-12.79	6.71	4.69	155	0.042	-27.61	-8.11	0.15
111	0.222	-13.09	6.41	4.37	156	0.042	-27.62	-8.12	0.15
112	0.214	-13.41	6.09	4.07	157	0.041	-27.64	-8.14	0.15
113	0.206	-13.73	5.77	3.77	158	0.041	-27.66	-8.16	0.15
114	0.198	-14.08	5.42	3.48	159	0.041	-27.68	-8.18	0.15
115	0.190	-14.44	5.06	3.21	160	0.041	-27.69	-8.19	0.15
116	0.182	-14.82	4.68	2.94	161	0.041	-27.70	-8.20	0.15
117	0.174	-15.21	4.29	2.69	162	0.041	-27.72	-8.22	0.15
118	0.166	-15.62	3.88	2.44	163	0.041	-27.73	-8.23	0.15
119	0.159	-15.98	3.52	2.25	164	0.041	-27.75	-8.25	0.15
120	0.152	-16.36	3.14	2.06	165	0.041	-27.76	-8.26	0.15
121	0.145	-16.75	2.75	1.88	166	0.041	-27.77	-8.27	0.15
122	0.139	-17.17	2.33	1.71	167	0.041	-27.79	-8.29	0.15
123	0.129	-17.81	1.69	1.47	168	0.041	-27.80	-8.30	0.15
124	0.121	-18.35	1.15	1.30	169	0.041	-27.81	-8.31	0.15
125	0.113	-18.91	0.59	1.14	170	0.041	-27.81	-8.31	0.15
126	0.106	-19.52	-0.02	0.99	171	0.041	-27.81	-8.31	0.15
127	0.098	-20.18	-0.68	0.86	172	0.041	-27.81	-8.31	0.15
128	0.090	-20.88	-1.38	0.73	173	0.041	-27.82	-8.32	0.15
129	0.085	-21.39	-1.89	0.65	174	0.041	-27.82	-8.32	0.15
130	0.080	-21.93	-2.43	0.57	175	0.041	-27.82	-8.32	0.15
131	0.075	-22.50	-3.00	0.50	176	0.041	-27.83	-8.33	0.15
132	0.070	-23.12	-3.62	0.44	177	0.041	-27.83	-8.33	0.15
133	0.066	-23.68	-4.18	0.38	178	0.041	-27.83	-8.33	0.15
134	0.062	-24.18	-4.68	0.34	179	0.041	-27.84	-8.34	0.15



One GLF10-450 oriented at 72 deg w/90%  
 One PR-TV-17/50 oriented at 98 deg w/10%  
 Channel - 17  
 Gain: 19.5 dBd

Horizontal Polarization  
 Vertical Stacked  
 Horizontal plane Pattern  
 K69CM-DA CH-17

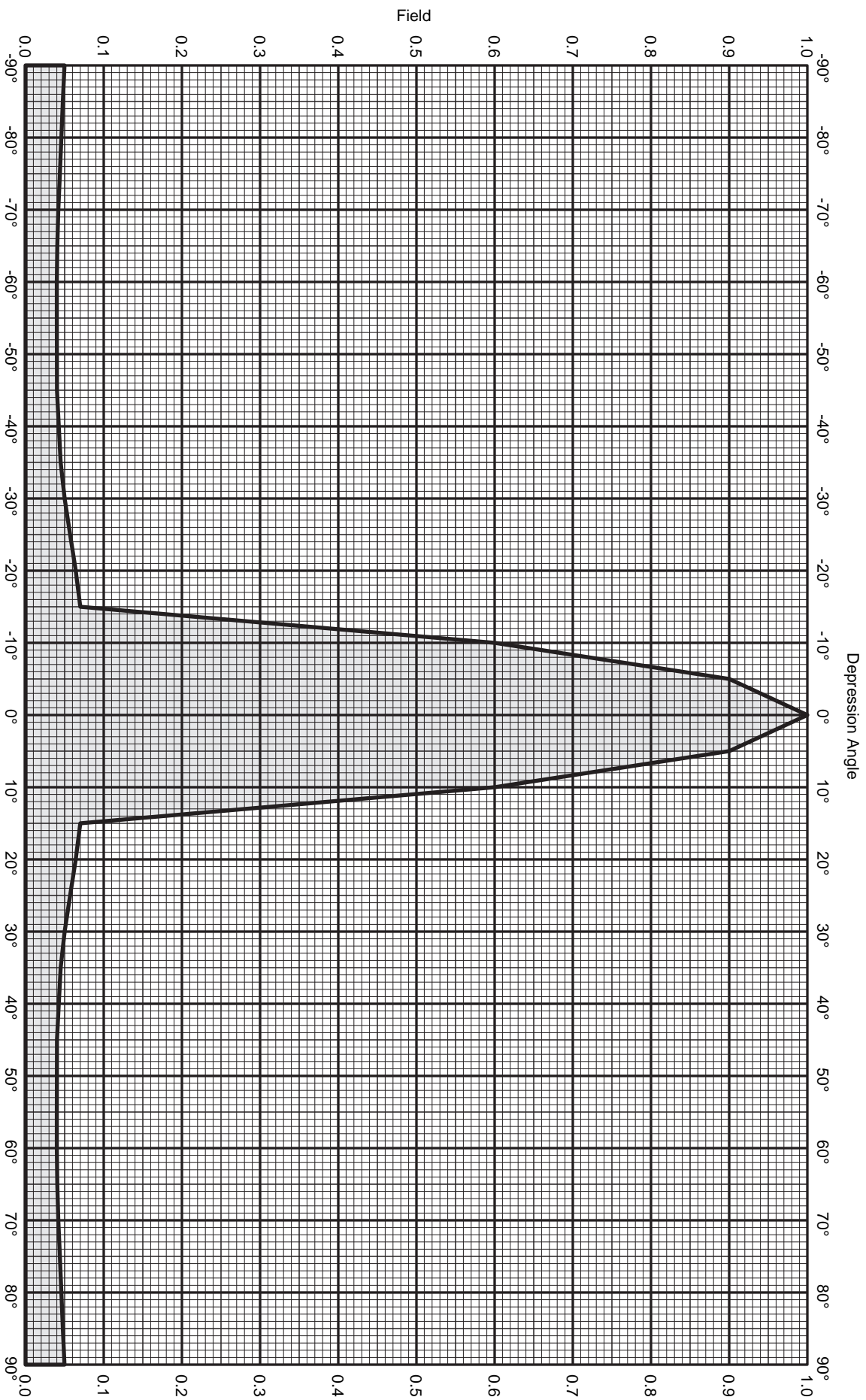
Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
180	0.041	-27.85	-8.35	0.15	225	0.039	-28.13	-8.63	0.14
181	0.040	-27.86	-8.36	0.15	226	0.039	-28.16	-8.66	0.14
182	0.040	-27.87	-8.37	0.15	227	0.039	-28.19	-8.69	0.14
183	0.040	-27.88	-8.38	0.15	228	0.039	-28.21	-8.71	0.13
184	0.040	-27.88	-8.38	0.15	229	0.039	-28.22	-8.72	0.13
185	0.040	-27.88	-8.38	0.15	230	0.039	-28.23	-8.73	0.13
186	0.040	-27.88	-8.38	0.15	231	0.039	-28.24	-8.74	0.13
187	0.040	-27.89	-8.39	0.14	232	0.039	-28.25	-8.75	0.13
188	0.040	-27.89	-8.39	0.14	233	0.039	-28.26	-8.76	0.13
189	0.040	-27.89	-8.39	0.14	234	0.039	-28.27	-8.77	0.13
190	0.040	-27.90	-8.40	0.14	235	0.039	-28.29	-8.79	0.13
191	0.040	-27.90	-8.40	0.14	236	0.038	-28.30	-8.80	0.13
192	0.040	-27.90	-8.40	0.14	237	0.038	-28.31	-8.81	0.13
193	0.040	-27.90	-8.40	0.14	238	0.039	-28.20	-8.70	0.13
194	0.040	-27.92	-8.42	0.14	239	0.039	-28.10	-8.60	0.14
195	0.040	-27.93	-8.43	0.14	240	0.040	-28.01	-8.51	0.14
196	0.040	-27.95	-8.45	0.14	241	0.040	-27.91	-8.41	0.14
197	0.040	-27.96	-8.46	0.14	242	0.041	-27.82	-8.32	0.15
198	0.040	-27.98	-8.48	0.14	243	0.040	-27.85	-8.35	0.15
199	0.040	-27.98	-8.48	0.14	244	0.040	-27.89	-8.39	0.14
200	0.040	-27.99	-8.49	0.14	245	0.040	-27.93	-8.43	0.14
201	0.040	-27.99	-8.49	0.14	246	0.040	-27.98	-8.48	0.14
202	0.040	-27.99	-8.49	0.14	247	0.040	-28.02	-8.52	0.14
203	0.040	-28.00	-8.50	0.14	248	0.040	-28.06	-8.56	0.14
204	0.040	-27.99	-8.49	0.14	249	0.039	-28.07	-8.57	0.14
205	0.040	-27.98	-8.48	0.14	250	0.039	-28.08	-8.58	0.14
206	0.040	-27.97	-8.47	0.14	251	0.039	-28.09	-8.59	0.14
207	0.040	-27.96	-8.46	0.14	252	0.039	-28.10	-8.60	0.14
208	0.040	-27.95	-8.45	0.14	253	0.039	-28.12	-8.62	0.14
209	0.040	-27.95	-8.45	0.14	254	0.039	-28.12	-8.62	0.14
210	0.040	-27.94	-8.44	0.14	255	0.039	-28.13	-8.63	0.14
211	0.040	-27.93	-8.43	0.14	256	0.039	-28.13	-8.63	0.14
212	0.040	-27.93	-8.43	0.14	257	0.039	-28.14	-8.64	0.14
213	0.040	-27.92	-8.42	0.14	258	0.039	-28.14	-8.64	0.14
214	0.040	-27.93	-8.43	0.14	259	0.039	-28.16	-8.66	0.14
215	0.040	-27.94	-8.44	0.14	260	0.039	-28.17	-8.67	0.14
216	0.040	-27.94	-8.44	0.14	261	0.039	-28.18	-8.68	0.14
217	0.040	-27.95	-8.45	0.14	262	0.039	-28.20	-8.70	0.13
218	0.040	-27.96	-8.46	0.14	263	0.038	-28.34	-8.84	0.13
219	0.040	-27.98	-8.48	0.14	264	0.038	-28.47	-8.97	0.13
220	0.040	-28.01	-8.51	0.14	265	0.037	-28.61	-9.11	0.12
221	0.040	-28.03	-8.53	0.14	266	0.037	-28.75	-9.25	0.12
222	0.040	-28.05	-8.55	0.14	267	0.036	-28.89	-9.39	0.12
223	0.039	-28.08	-8.58	0.14	268	0.036	-28.90	-9.40	0.11
224	0.039	-28.10	-8.60	0.14	269	0.036	-28.91	-9.41	0.11



One GLF10-450 oriented at 72 deg w/90%  
 One PR-TV-17/50 oriented at 98 deg w/10%  
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Horizontal Polarization  
 Vertical Stacked  
 Horizontal plane Pattern  
 K69CM-DA CH-17

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
270	0.036	-28.93	-9.43	0.11	315	0.038	-28.42	-8.92	0.13
271	0.036	-28.94	-9.44	0.11	316	0.038	-28.39	-8.89	0.13
272	0.036	-28.96	-9.46	0.11	317	0.038	-28.36	-8.86	0.13
273	0.036	-28.97	-9.47	0.11	318	0.038	-28.32	-8.82	0.13
274	0.036	-28.97	-9.47	0.11	319	0.038	-28.31	-8.81	0.13
275	0.036	-28.97	-9.47	0.11	320	0.038	-28.30	-8.80	0.13
276	0.036	-28.97	-9.47	0.11	321	0.039	-28.29	-8.79	0.13
277	0.036	-28.97	-9.47	0.11	322	0.039	-28.27	-8.77	0.13
278	0.036	-28.97	-9.47	0.11	323	0.039	-28.26	-8.76	0.13
279	0.036	-28.97	-9.47	0.11	324	0.039	-28.25	-8.75	0.13
280	0.036	-28.97	-9.47	0.11	325	0.039	-28.24	-8.74	0.13
281	0.036	-28.97	-9.47	0.11	326	0.039	-28.23	-8.73	0.13
282	0.036	-28.97	-9.47	0.11	327	0.039	-28.22	-8.72	0.13
283	0.036	-28.97	-9.47	0.11	328	0.039	-28.21	-8.71	0.13
284	0.036	-28.96	-9.46	0.11	329	0.039	-28.19	-8.69	0.14
285	0.036	-28.94	-9.44	0.11	330	0.039	-28.16	-8.66	0.14
286	0.036	-28.93	-9.43	0.11	331	0.039	-28.13	-8.63	0.14
287	0.036	-28.91	-9.41	0.11	332	0.039	-28.10	-8.60	0.14
288	0.036	-28.90	-9.40	0.11	333	0.039	-28.08	-8.58	0.14
289	0.036	-28.89	-9.39	0.12	334	0.040	-28.05	-8.55	0.14
290	0.036	-28.89	-9.39	0.12	335	0.040	-28.03	-8.53	0.14
291	0.036	-28.88	-9.38	0.12	336	0.040	-28.01	-8.51	0.14
292	0.036	-28.88	-9.38	0.12	337	0.040	-27.98	-8.48	0.14
293	0.036	-28.87	-9.37	0.12	338	0.040	-27.96	-8.46	0.14
294	0.036	-28.86	-9.36	0.12	339	0.040	-27.95	-8.45	0.14
295	0.036	-28.84	-9.34	0.12	340	0.040	-27.94	-8.44	0.14
296	0.036	-28.83	-9.33	0.12	341	0.040	-27.94	-8.44	0.14
297	0.036	-28.81	-9.31	0.12	342	0.040	-27.93	-8.43	0.14
298	0.036	-28.80	-9.30	0.12	343	0.040	-27.92	-8.42	0.14
299	0.036	-28.79	-9.29	0.12	344	0.040	-27.93	-8.43	0.14
300	0.036	-28.79	-9.29	0.12	345	0.040	-27.93	-8.43	0.14
301	0.036	-28.78	-9.28	0.12	346	0.040	-27.94	-8.44	0.14
302	0.036	-28.77	-9.27	0.12	347	0.040	-27.95	-8.45	0.14
303	0.036	-28.77	-9.27	0.12	348	0.040	-27.95	-8.45	0.14
304	0.036	-28.76	-9.26	0.12	349	0.040	-27.96	-8.46	0.14
305	0.037	-28.74	-9.24	0.12	350	0.040	-27.97	-8.47	0.14
306	0.037	-28.73	-9.23	0.12	351	0.040	-27.98	-8.48	0.14
307	0.037	-28.72	-9.22	0.12	352	0.040	-27.99	-8.49	0.14
308	0.037	-28.71	-9.21	0.12	353	0.040	-28.00	-8.50	0.14
309	0.037	-28.66	-9.16	0.12	354	0.040	-27.99	-8.49	0.14
310	0.037	-28.62	-9.12	0.12	355	0.040	-27.99	-8.49	0.14
311	0.037	-28.57	-9.07	0.12	356	0.040	-27.99	-8.49	0.14
312	0.037	-28.53	-9.03	0.13	357	0.040	-27.98	-8.48	0.14
313	0.038	-28.48	-8.98	0.13	358	0.040	-27.98	-8.48	0.14
314	0.038	-28.45	-8.95	0.13	359	0.040	-27.96	-8.46	0.14



PRTV-17 Paraflector

Ch-17

Maximum gain: 15.6 dBd

Horizontal polarization



**KATHREIN**  
**SCALA DIVISION**

Post Office Box 4580  
Medford, OR 97501 (USA)  
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Fax: (541) 779-3991  
<http://www.kathrein-scala.com>



PRTV-17 Paraflector

Ch-17

Maximum gain: 15.6 dBd

Horizontal polarization

Vertical radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.050	-26.06	-10.46	0.09	-45	0.040	-27.92	-12.32	0.06
-89	0.049	-26.13	-10.53	0.09	-44	0.041	-27.82	-12.22	0.06
-88	0.049	-26.20	-10.60	0.09	-43	0.041	-27.72	-12.12	0.06
-87	0.049	-26.28	-10.68	0.09	-42	0.042	-27.62	-12.02	0.06
-86	0.048	-26.35	-10.75	0.08	-41	0.042	-27.53	-11.93	0.06
-85	0.048	-26.43	-10.83	0.08	-40	0.043	-27.43	-11.83	0.07
-84	0.047	-26.50	-10.90	0.08	-39	0.043	-27.33	-11.73	0.07
-83	0.047	-26.57	-10.97	0.08	-38	0.043	-27.24	-11.64	0.07
-82	0.047	-26.64	-11.04	0.08	-37	0.044	-27.14	-11.54	0.07
-81	0.046	-26.71	-11.11	0.08	-36	0.044	-27.05	-11.45	0.07
-80	0.046	-26.78	-11.18	0.08	-35	0.045	-26.96	-11.36	0.07
-79	0.045	-26.86	-11.26	0.07	-34	0.046	-26.76	-11.16	0.08
-78	0.045	-26.93	-11.33	0.07	-33	0.047	-26.57	-10.97	0.08
-77	0.045	-27.00	-11.40	0.07	-32	0.048	-26.38	-10.78	0.08
-76	0.044	-27.08	-11.48	0.07	-31	0.049	-26.20	-10.60	0.09
-75	0.044	-27.15	-11.55	0.07	-30	0.050	-26.02	-10.42	0.09
-74	0.044	-27.23	-11.63	0.07	-29	0.051	-25.78	-10.18	0.10
-73	0.043	-27.31	-11.71	0.07	-28	0.053	-25.55	-9.95	0.10
-72	0.043	-27.39	-11.79	0.07	-27	0.054	-25.32	-9.72	0.11
-71	0.042	-27.47	-11.87	0.06	-26	0.056	-25.10	-9.50	0.11
-70	0.042	-27.56	-11.96	0.06	-25	0.057	-24.88	-9.28	0.12
-69	0.042	-27.61	-12.01	0.06	-24	0.058	-24.67	-9.07	0.12
-68	0.041	-27.66	-12.06	0.06	-23	0.060	-24.45	-8.85	0.13
-67	0.041	-27.72	-12.12	0.06	-22	0.061	-24.25	-8.65	0.14
-66	0.041	-27.77	-12.17	0.06	-21	0.063	-24.05	-8.45	0.14
-65	0.041	-27.83	-12.23	0.06	-20	0.064	-23.85	-8.25	0.15
-64	0.040	-27.86	-12.26	0.06	-19	0.065	-23.69	-8.09	0.16
-63	0.040	-27.88	-12.28	0.06	-18	0.067	-23.54	-7.94	0.16
-62	0.040	-27.91	-12.31	0.06	-17	0.068	-23.39	-7.79	0.17
-61	0.040	-27.93	-12.33	0.06	-16	0.069	-23.24	-7.64	0.17
-60	0.040	-27.96	-12.36	0.06	-15	0.070	-23.10	-7.50	0.18
-59	0.040	-27.96	-12.36	0.06	-14	0.176	-15.09	0.51	1.12
-58	0.040	-27.96	-12.36	0.06	-13	0.282	-11.00	4.60	2.89
-57	0.040	-27.96	-12.36	0.06	-12	0.388	-8.22	7.38	5.47
-56	0.040	-27.96	-12.36	0.06	-11	0.494	-6.13	9.47	8.86
-55	0.040	-27.96	-12.36	0.06	-10	0.600	-4.44	11.16	13.07
-54	0.040	-27.95	-12.35	0.06	-9	0.660	-3.61	11.99	15.82
-53	0.040	-27.95	-12.35	0.06	-8	0.720	-2.85	12.75	18.82
-52	0.040	-27.95	-12.35	0.06	-7	0.780	-2.16	13.44	22.09
-51	0.040	-27.94	-12.34	0.06	-6	0.840	-1.51	14.09	25.62
-50	0.040	-27.94	-12.34	0.06	-5	0.900	-0.92	14.68	29.41
-49	0.040	-27.93	-12.33	0.06	-4	0.920	-0.72	14.88	30.73
-48	0.040	-27.93	-12.33	0.06	-3	0.940	-0.54	15.06	32.08
-47	0.040	-27.92	-12.32	0.06	-2	0.960	-0.35	15.25	33.46
-46	0.040	-27.92	-12.32	0.06	-1	0.980	-0.18	15.42	34.87
					0	1.000	0.00	15.60	36.31



PRTV-17 Paraflector

Ch-17

Maximum gain: 15.6 dBd

Horizontal polarization

Vertical radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	15.60	36.31	45	0.040	-27.92	-12.32	0.06
1	0.980	-0.18	15.42	34.87	46	0.040	-27.92	-12.32	0.06
2	0.960	-0.35	15.25	33.46	47	0.040	-27.92	-12.32	0.06
3	0.940	-0.54	15.06	32.08	48	0.040	-27.93	-12.33	0.06
4	0.920	-0.72	14.88	30.73	49	0.040	-27.93	-12.33	0.06
5	0.900	-0.92	14.68	29.41	50	0.040	-27.94	-12.34	0.06
6	0.840	-1.51	14.09	25.62	51	0.040	-27.94	-12.34	0.06
7	0.780	-2.16	13.44	22.09	52	0.040	-27.95	-12.35	0.06
8	0.720	-2.85	12.75	18.82	53	0.040	-27.95	-12.35	0.06
9	0.660	-3.61	11.99	15.82	54	0.040	-27.95	-12.35	0.06
10	0.600	-4.44	11.16	13.07	55	0.040	-27.96	-12.36	0.06
11	0.494	-6.13	9.47	8.86	56	0.040	-27.96	-12.36	0.06
12	0.388	-8.22	7.38	5.47	57	0.040	-27.96	-12.36	0.06
13	0.282	-11.00	4.60	2.89	58	0.040	-27.96	-12.36	0.06
14	0.176	-15.09	0.51	1.12	59	0.040	-27.96	-12.36	0.06
15	0.070	-23.10	-7.50	0.18	60	0.040	-27.96	-12.36	0.06
16	0.069	-23.24	-7.64	0.17	61	0.040	-27.93	-12.33	0.06
17	0.068	-23.39	-7.79	0.17	62	0.040	-27.91	-12.31	0.06
18	0.067	-23.54	-7.94	0.16	63	0.040	-27.88	-12.28	0.06
19	0.065	-23.69	-8.09	0.16	64	0.040	-27.86	-12.26	0.06
20	0.064	-23.85	-8.25	0.15	65	0.041	-27.83	-12.23	0.06
21	0.063	-24.05	-8.45	0.14	66	0.041	-27.77	-12.17	0.06
22	0.061	-24.25	-8.65	0.14	67	0.041	-27.72	-12.12	0.06
23	0.060	-24.45	-8.85	0.13	68	0.041	-27.66	-12.06	0.06
24	0.058	-24.67	-9.07	0.12	69	0.042	-27.61	-12.01	0.06
25	0.057	-24.88	-9.28	0.12	70	0.042	-27.56	-11.96	0.06
26	0.056	-25.10	-9.50	0.11	71	0.042	-27.47	-11.87	0.06
27	0.054	-25.32	-9.72	0.11	72	0.043	-27.39	-11.79	0.07
28	0.053	-25.55	-9.95	0.10	73	0.043	-27.31	-11.71	0.07
29	0.051	-25.78	-10.18	0.10	74	0.044	-27.23	-11.63	0.07
30	0.050	-26.02	-10.42	0.09	75	0.044	-27.15	-11.55	0.07
31	0.049	-26.20	-10.60	0.09	76	0.044	-27.08	-11.48	0.07
32	0.048	-26.38	-10.78	0.08	77	0.045	-27.00	-11.40	0.07
33	0.047	-26.57	-10.97	0.08	78	0.045	-26.93	-11.33	0.07
34	0.046	-26.76	-11.16	0.08	79	0.045	-26.86	-11.26	0.07
35	0.045	-26.96	-11.36	0.07	80	0.046	-26.78	-11.18	0.08
36	0.044	-27.05	-11.45	0.07	81	0.046	-26.71	-11.11	0.08
37	0.044	-27.14	-11.54	0.07	82	0.047	-26.64	-11.04	0.08
38	0.043	-27.24	-11.64	0.07	83	0.047	-26.57	-10.97	0.08
39	0.043	-27.33	-11.73	0.07	84	0.047	-26.50	-10.90	0.08
40	0.043	-27.43	-11.83	0.07	85	0.048	-26.43	-10.83	0.08
41	0.042	-27.53	-11.93	0.06	86	0.048	-26.35	-10.75	0.08
42	0.042	-27.62	-12.02	0.06	87	0.049	-26.28	-10.68	0.09
43	0.041	-27.72	-12.12	0.06	88	0.049	-26.20	-10.60	0.09
44	0.041	-27.82	-12.22	0.06	89	0.049	-26.13	-10.53	0.09
					90	0.050	-26.06	-10.46	0.09

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I  
LONGLEY-RICE INTERFERENCE  
FOR THE PROPOSED OPERATION OF  
K69CM, BIG TIMBER, ETC., MONTANA  
CHANNEL 17 0.132 KW DA ERP 2214.5 METERS HAAT  
AUGUST 2009

<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
15	K15HI	BOZEMAN MT	22.1	CP MO	BMPTTL-20070511ABO	No interference
15	K15HI	BOZEMAN MT	22.1	LIC	BLTTL-20070622ACD	No interference
17	K17CO	GEORGETOWN ID	356.2	LIC	BLTT-19891215IC	0.00%
17	KISU-TV	POCATELLO ID	284.5	CP	BPEDT-20080620AGK	No interference
17	KISU-TV	POCATELLO ID	284.5	LIC	BLEDT-20030131AHZ	No interference
17	DKMMF	MISSOULA MT	275.8	CP	BPCDT-20080515AAK	No interference
17	NEW	EVANSTON WY	370	APP	BNPTTL-20000831EHA	0.00%
17	NEW	JACKSON WY	246.5	APP	BNPTTL-20000830BKR	No interference
17	K65BW	MEETEETSE WY	225.1	APP	BDISDTT-20090630AGZ	No interference
18	KSVI	BILLINGS MT	189.2	CP	BPCDT-19991029ACI	0.00%
20	K20DY	BELGRADE, ETC. MT	38.7	LIC	BLTT-20050505ABO	No interference
24	K24FL	COLUMBUS MT	117.7	LIC	BLTT-20040930ANI	0.00%



### Section III - Engineering (Digital)

#### TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

#### TECH BOX

1. Channel: \_\_\_\_\_
2. Translator Input Channel No. \_\_\_\_\_
3. Station proposed to be rebroadcast:

Call Sign	City	State	Channel
-----------	------	-------	---------

4. Antenna Location Coordinates: (NAD 27)

\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " ☐ N ☐ S Latitude  
\_\_\_\_\_ ° \_\_\_\_\_ ' \_\_\_\_\_ " ☐ E ☐ W Longitude

5. Antenna Structure Registration Number: \_\_\_\_\_

☐ Not applicable ☐ See Explanation in Exhibit No. ☐ FAA Notification Filed with FAA

6. Antenna Location Site Elevation Above Mean Sea Level: \_\_\_\_\_ meters
7. Overall Tower Height Above Ground Level: \_\_\_\_\_ meters
8. Height of Radiation Center Above Ground Level: \_\_\_\_\_ meters
9. Maximum Effective Radiated Power (ERP): \_\_\_\_\_ kW
10. Transmitter Output Power: \_\_\_\_\_ kW

11. a. Transmitting Antenna: ☐ Nondirectional ☐ Directional ☐ Directional composite

Manufacturer	Model
--------------	-------

- b. Electrical Beam Tilt: \_\_\_\_\_ degrees ☐ Not applicable

c. Directional Antenna Relative Field Values:

Rotation: \_\_\_\_\_ ° ☐ No rotation ☐ N/A (Nondirectional)

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

**NOTE: In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.**

12. **Out-of-Channel Emission Mask:** Simple ☐ Stringent ☐

**CERTIFICATION**

13. **Interference.** The proposed facility complies with all of the following applicable rule sections. 47 C.F.R. Sections 74.709, 74.793(e), 74.793(f), 74.793(g), 74.793(h), 74.794(b) and 73.1030. ☐ Yes ☐ No 

See Explanation in Exhibit No.

14. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (*i.e.*, the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine RF compliance. An **Exhibit is required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

Exhibit No.

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

15. **Channels 52-59.** If the proposed channel is within channels 52-59, the applicant certifies compliance with the following requirements, as applicable:

☐ The applicant is applying for a digital companion channel for which no suitable channel from channel 2-51 is available.

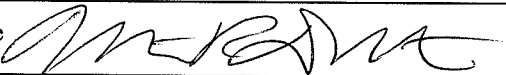
☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees.

**PREPARER'S CERTIFICATION ON PAGE 8 MUST BE COMPLETED AND SIGNED.**

16. **Channels 60-69.** If the proposed channel is within channels 60-69, the applicant certifies compliance with the following requirements, as applicable:

- ☐ Pursuant to Section 74.786(e), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies inside the licensed geographic boundaries of the wireless licensees or within 75 miles and 50 miles, respectively, of the geographic boundaries of co-channel and adjacent-channel wireless licensees,
- ☐ Pursuant to Section 74.786(e), the applicant proposing operation on channel 63, 64, 68 and 69 ("public safety channels") has secured a coordinated spectrum use agreement(s) with 700 MHz public safety regional planning committee(s) and state frequency administrator(s) of the region(s) and state(s) within which the antenna site of the digital LPTV or TV translator station is proposed to locate, and those adjoining regions and states with boundaries within 75 miles of the proposed station location.
- ☐ Pursuant to Section 74.786(e), an applicant for a channel adjacent to channel 63, 64, 68 or 69 has notified, within 30 days of filing this application, the 700 MHz public safety regional planning committee(s) and state administrator(s) of the region and state containing the proposed digital LPTV or TV translator antenna site and regions and states whose geographic boundaries lie within 50 miles of the proposed LPTV or TV translator antenna site.

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name <b>Martin R. Doczkat</b>		Relationship to Applicant (e.g., Consulting Engineer) <b>Consulting Engineer</b>	
Signature 		Date <b>August 21, 2009</b>	
Mailing Address <b>Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100</b>			
City <b>Washington</b>	State or Country (if foreign address) <b>DC</b>		ZIP Code <b>20005</b>
Telephone Number (include area code) <b>(202) 898-0111</b>		E-Mail Address (if available) <b>cde@attglobal.net</b>	

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