

ENGINEERING STATEMENT
APPLICATION FOR A DTV CONSTRUCTION PERMIT
REPLACEMENT TELEVISION TRANSLATOR SERVICE
PER MB DOCKET NO. 08-253
WOODLAND PARK, COLORADO
CHANNEL 47 0.447 KW MAX DA ERP 2766 METERS RC/AMSL

JULY 2010

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)

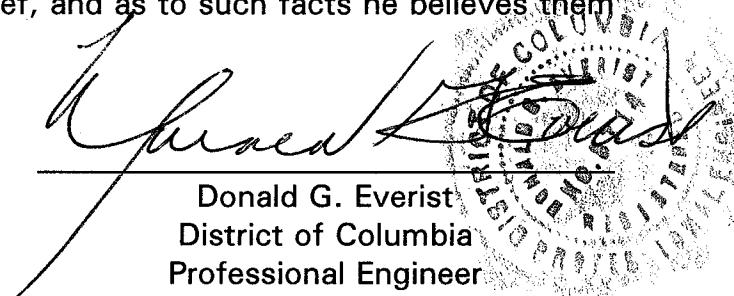
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of 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 his qualifications are a matter of record in the Federal Communications Commission;

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

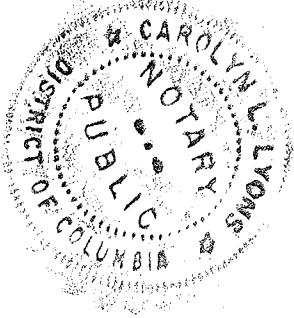
That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.


Donald G. Everist
District of Columbia
Professional Engineer
Registration No. 5714

Subscribed and sworn to before me this 30th day of July, 2010.


Notary Public

My Commission Expires: 2/28/2013



Introduction

This engineering statement has been prepared on behalf of Sangre de Cristo Communications, Inc., licensee of full-service television station KOAA-TV, Pueblo, Colorado. This statement supports the licensee's request for replacement DTV translator operation to serve the area of Woodland Park, Colorado. It is proposed to operate with DTV effective radiated power ("ERP") of 0.447 kW at a radiation center above mean sea level ("RCAMSL") of 2766 meters. It is designed to fill in an area where previous analog service existed.

Transmitter Site

No significant alteration of the tower is proposed. The existing tower is located on a ridge immediately north of State Route 24, Woodland Park, Colorado. A tower sketch is included as Exhibit E-1. The geographic coordinates of the existing site are as follows.

North Latitude: 38° 59' 12"

West Longitude: 105° 04' 08"

NAD-27

Elevation Data

Elevation of site above mean sea level	2737 meters (8980 feet)
Center of radiation of antenna above ground level	29 meters (95 feet)
Center of radiation of antenna above mean sea level	2766 meters (9075 feet)
Overall height of the tower above ground with appurtenances	50 meters (164 feet)

Overall height of the tower above mean sea level with appurtenances	2787 meters (9144 feet)
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Antenna Structure Registration for the existing tower is not required. The existing tower is less than 200 feet and TOWAIR indicates that the structure does not require registration.

There are no airports within 8 km (5 miles) of the site specified herein.

Power Data

Transmitter:	0.125 kW	-9.03 dBk
Combiner Efficiency/Loss	75.9%	1.2 dB
Transmission Line Efficiency/Loss:	75.3%	1.23 dB
Input Into Antenna:	0.071 kW	-11.49 dBk
Antenna Gain:	6.3	8.0 dB
ERP:	0.447 kW	-3.49 dBk

Equipment Data

Transmitter:	Type-approved
Transmission Line:	Andrew, Type HJ5-50, 7/8", Air Helix 36.6 meters (120 feet) with 75.3% efficiency
Antenna:	Kathrein-Scala, 4DR-8-3HC with maximum gain of 8 dB and 0° electrical beam tilt. Antenna pattern information is provided in Exhibit E-2
Transmission Mask:	Simple

As indicated above, the transmitter with typical power output of 0.125 kW will deliver 0.071 kW to the input of the antenna. The antenna, having a maximum gain of 8 dB and an electrical beam tilt of 0°, will produce maximum ERP of 0.447 kW. A coverage map of the proposed facility has been included as Exhibit E-3 of this report. Exhibit E-4 provides the relationship of the proposed replacement translator service area for Woodland Park to the predicted KOAA-TV service area.

Other Broadcast Facilities

A brief analysis was completed to determine the presence of stations in the vicinity of the existing tower using the July 30, 2010 data contained within the Commission's Consolidated Database System ("CDBS"). Within 500 meters of the proposed site, there is one Subpart G exempt authorized FM radio station, no authorized full-service FM or full-service television stations, and two analog and one digital low-power television or television translator stations other than the proposed operation. There are no AM facilities within 3.2 km of the existing tower. Although no adverse technical affects are expected due to the proposed changes, the licensee will take measures to resolve any problems proven to be related to the changes proposed in this application.

Interference Analysis

A study of predicted interference caused by the proposed new low-power digital operation has been performed using the Longley-Rice program for which the source data has been posted by the Commission on its website at http://www.fcc.gov/oet/dtv/dtv_apps.html. The FCC's FORTRAN-77 code was modified only to the extent necessary (primarily input/output

handling) for the program to run on a Microsoft Windows XP platform. Comparison of service/interference areas and population indicates this model closely matches the FCC's digital low-power TV/translator evaluation program. Best efforts have been made to use data and calculation identical to the FCC's program. The model employs the Longley-Rice propagation methodology and evaluates in grid cells of approximately 1 sq. km. Using 3-second terrain data sampled approximately every 1.0 km at one-degree azimuth intervals with 2000 census centroids, all studies are based upon data in the current CDBS database update of the FCC's engineering database. A Longley-Rice study was performed with the proposed new low-power digital facilities and all relevant stations listed in the FCC data base as of July 30, 2010. The study results and the included stations are listed in Table I.

Other Licensed and Broadcast Facilities

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the licensee will install filters or take other measures as necessary to resolve the problem.

FCC Rule, Section 1.1307

The proposed 0.447 kW directional operation will utilize a Kathrein-Scala, Type 4DR-8-3HC antenna (or equivalent) described above with a center of radiation above ground of 29 meters. The proposed antenna is side-mounted on a steel lattice tower with an overall height of 50 meters above ground.

The proposed operation based upon the current OET Bulletin No. 65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radiofrequency field ("RFF")

guidelines, and thus, complies with Section 1.1307 of the FCC Rules. The elevation pattern for the Kathrein-Scala, Type 4DR-8-3HC antenna, Exhibit E-2, shows a maximum relative field of less than 0.25 toward the ground (30° to 90° below the horizontal). Calculation according to OET Bulletin 65 predicts a maximum RFF power density of less than 1.8 $\mu\text{W}/\text{cm}^2$, 2 meters above ground or less than 0.1% of the controlled Maximum Permissible Exposure (“MPE”) guideline.

For completeness, the contribution by facilities located within 500 meters to the electromagnetic field environment is considered herein, as there are multiple emitters in the area. The RFF study will also consider the following stations:

<u>Call Sign</u>	<u>Channel</u>	<u>Status</u>
K28GE (TX)	28	Licensed
K33EW (TX)	33	Licensed
K45KB-D	45	Licensed
NEW-D	47	Proposed

The RFF contribution of each station will be calculated using the following basic formula:

$$S = \frac{33.4(F^2) \text{ Total ERP}}{R^2}$$

where:

S = power density in $\mu\text{W}/\text{cm}^2$

F = relative field factor

Total ERP = ERP Horizontal Polarization + ERP Vertical Polarization

R = RCAGL - 2 meters

ERP = RMS ERP in watts for DTV Stations

$$\text{ERP} = [0.4 \text{ERP}_v + \text{ERP}_A] \text{ for NTSC Stations}$$

ERP_v = peak visual ERP in watts

ERP_A = RMS aural ERP in watts

$$\text{ERP} = \text{ERP (horizontally polarized)} + \text{ERP (vertically polarized)}$$

K28GE Analog Low-Power TV/Translator Facility

Channel 28 Freq: 554-560 MHz range
 ERP = (0.4)[1.12 kilowatts (visual)]+[0.112 kilowatts (aural)]
 Polarization = Horizontal
 RCAGL -2 meters = 13.2 meters

$$S = \frac{33.4 (F^2) \text{Tot ERP}}{R^2} \quad \text{Tot ERP} = 560 \text{ watts (Horizontal Only)}$$

$R = 13.2 \text{ meters}$
 $F = 0.5 \text{ (assumed)}$

$$S = < 27 \mu\text{W}/\text{cm}^2$$

Therefore, K28GE is predicted to contribute less than $27 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for a controlled environment for this frequency is $1856.7 \mu\text{W}/\text{cm}^2$.

K28GE contributes less than 1.5% RFF level for a controlled environment two meters above the ground.

K33EW Analog Low-Power TV/Translator Facility

Channel 33 Freq: 584-590 MHz range
 ERP = (0.4)[1.12 kilowatts (visual)]+[0.112 kilowatts (aural)]
 Polarization = Horizontal
 RCAGL -2 meters = 13.2 meters

$$S = \frac{33.4 (F^2) \text{Tot ERP}}{R^2} \quad \text{Tot ERP} = 560 \text{ watts (Horizontal Only)}$$

$R = 13.2 \text{ meters}$
 $F = 0.5 \text{ (assumed)}$

$$S = < 27 \mu\text{W}/\text{cm}^2$$

Therefore, K33EW is predicted to contribute less than $27 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for a controlled environment for this frequency is $1956.7 \mu\text{W}/\text{cm}^2$.

K33EW contributes less than 1.4% RFF level for a controlled environment two meters above the ground.

K45KB-D Digital Low-Power TV/Translator Facility

Channel 45	Freq:	656-662 MHz range
	ERP =	0.5 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	27 meters

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \text{Tot ERP} = 0.5 \text{ kW (Horizontal Only)}$$

$$R = 27 \text{ meters}$$

$$F = 0.25 \text{ (assumed)}$$

$$S = < 1.5 \mu\text{W}/\text{cm}^2$$

Therefore, K45KB-D is predicted to contribute less than $1.5 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for a controlled environment for this frequency is $2196.7 \mu\text{W}/\text{cm}^2$.

K45KB-D contributes less than 0.1% RFF level for a controlled environment two meters above the ground.

New Digital Translator Facility (Proposed)

Channel 47	Freq:	668-674 MHz range
	ERP =	0.447 kW
	Polarization =	Horizontal
	RCAGL -2 meters =	27 meters

$$S = \frac{33.4 (F^2) \text{ Tot ERP}}{R^2} \quad \text{Tot ERP} = 0.447 \text{ kW (Horizontal Only)}$$

$$R = 27 \text{ meters}$$

$$F = 0.25 \text{ (from manufacturer's data)}$$

$$S = < 1.4 \mu\text{W}/\text{cm}^2$$

Therefore, the proposed facility is predicted to contribute less than $1.4 \mu\text{W}/\text{cm}^2$ at 2 meters above ground.

The limit for a controlled environment for this frequency is $2236.7 \mu\text{W}/\text{cm}^2$.

The proposed facility contributes less than 0.1% RFF level for a controlled environment two meters above the ground.

Total RFF contribution

$1.5\% + 1.4\% + 0.1\% + 0.1\% = 3.1\%$ for the controlled environment two meters above ground including the proposed DTV translator operation.

The entrance to the site is blocked by locked access with an eight-foot fence and signs cautioning “RF Exposure Area.”.

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 guyed 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.

ABOVE GROUND

ABOVE MEAN SEA LEVEL

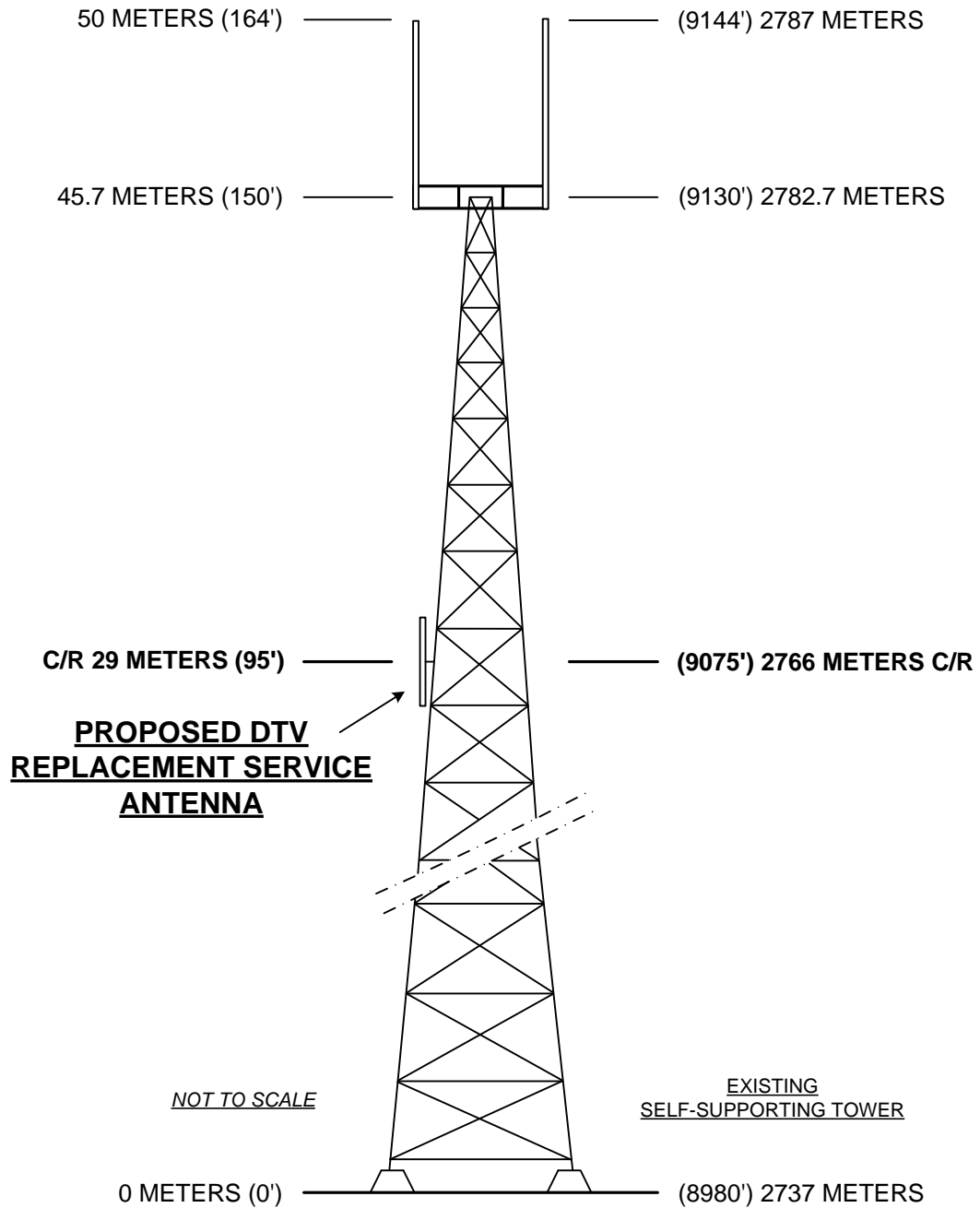


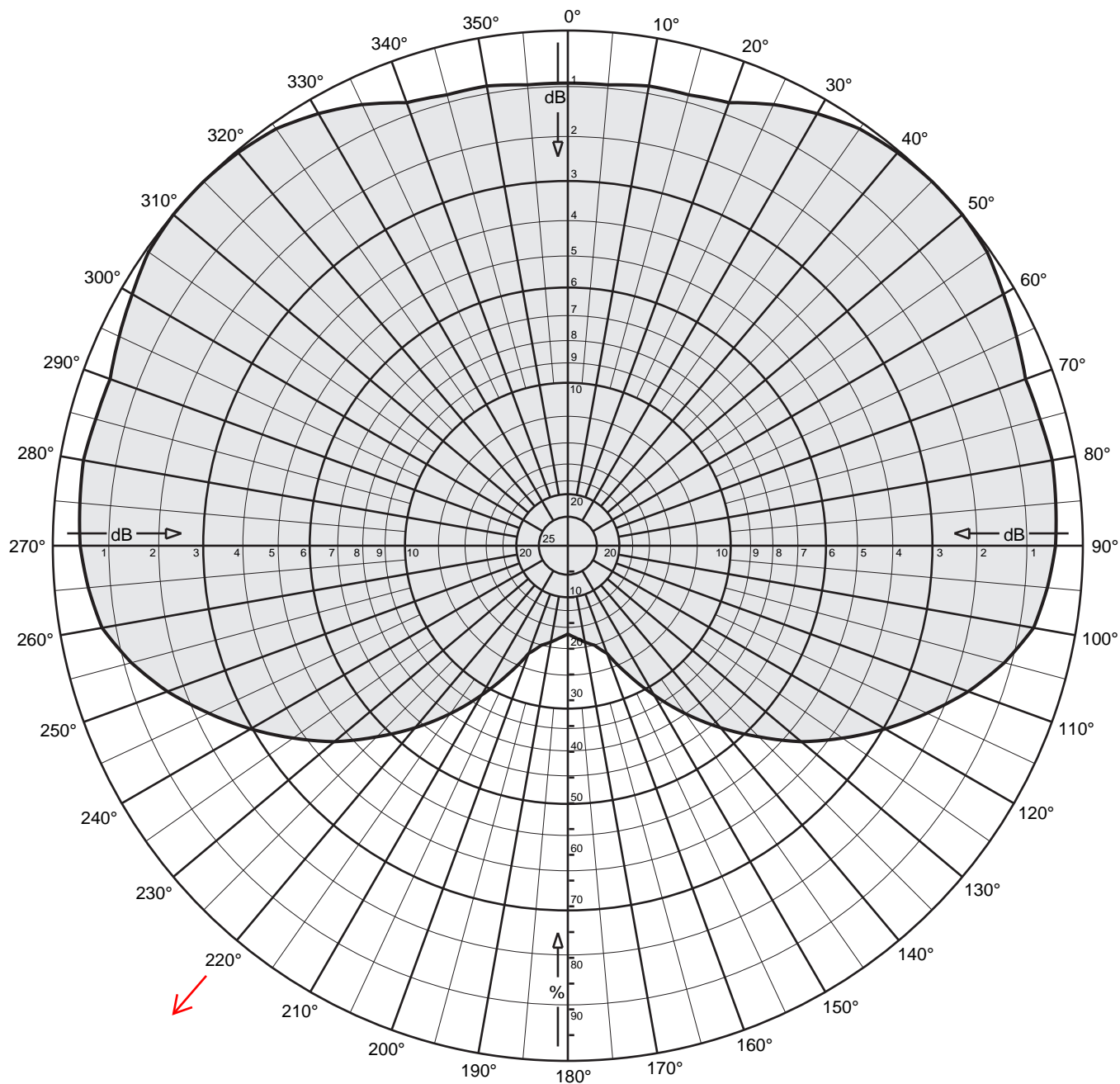
EXHIBIT E-1
VERTICAL SKETCH
FOR THE PROPOSED NEW DTV
REPLACEMENT SERVICE TRANSLATOR OPERATION IN
WOODLAND PARK, COLORADO
JULY 2010

COHEN, DIPPELL AND EVERIST, P.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

NEW-D, WOODLAND PARK, COLORADO



4DR-8-3HC Panel Array

Ch-47

Maximum gain: 8.0 dBd

Horizontal polarization

Horizontal radiation pattern

0 degree electrical downtilt



4DR-8-3HC Panel Array

Ch-47

Maximum gain: 8.0 dBd

Horizontal polarization

Horizontal radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	0.898	-0.93	7.07	5.09	45	1.000	-0.00	8.00	6.31
1	0.898	-0.93	7.07	5.09	46	1.000	-0.00	8.00	6.31
2	0.898	-0.93	7.07	5.09	47	1.000	-0.00	8.00	6.31
3	0.898	-0.93	7.07	5.09	48	1.000	-0.00	8.00	6.31
4	0.898	-0.93	7.07	5.09	49	1.000	-0.00	8.00	6.31
5	0.898	-0.93	7.07	5.09	50	1.000	-0.00	8.00	6.31
6	0.900	-0.92	7.08	5.11	51	0.999	-0.01	7.99	6.29
7	0.901	-0.90	7.10	5.12	52	0.998	-0.02	7.98	6.28
8	0.903	-0.89	7.11	5.14	53	0.996	-0.03	7.97	6.26
9	0.904	-0.87	7.13	5.16	54	0.995	-0.04	7.96	6.25
10	0.906	-0.86	7.14	5.18	55	0.994	-0.05	7.95	6.23
11	0.906	-0.86	7.14	5.18	56	0.991	-0.08	7.92	6.19
12	0.906	-0.86	7.14	5.18	57	0.987	-0.11	7.89	6.15
13	0.906	-0.86	7.14	5.18	58	0.984	-0.14	7.86	6.11
14	0.906	-0.86	7.14	5.18	59	0.980	-0.18	7.82	6.06
15	0.906	-0.86	7.14	5.18	60	0.977	-0.20	7.80	6.02
16	0.908	-0.84	7.16	5.20	61	0.973	-0.23	7.77	5.98
17	0.910	-0.82	7.18	5.22	62	0.971	-0.26	7.74	5.94
18	0.911	-0.81	7.19	5.24	63	0.967	-0.29	7.71	5.90
19	0.913	-0.79	7.21	5.26	64	0.964	-0.31	7.69	5.87
20	0.915	-0.77	7.23	5.28	65	0.961	-0.34	7.66	5.83
21	0.921	-0.71	7.29	5.35	66	0.958	-0.37	7.63	5.79
22	0.927	-0.66	7.34	5.42	67	0.955	-0.40	7.60	5.76
23	0.933	-0.60	7.40	5.49	68	0.952	-0.43	7.57	5.72
24	0.939	-0.55	7.45	5.56	69	0.949	-0.45	7.55	5.68
25	0.945	-0.49	7.51	5.63	70	0.946	-0.48	7.52	5.64
26	0.950	-0.45	7.55	5.69	71	0.947	-0.48	7.52	5.65
27	0.954	-0.41	7.59	5.75	72	0.947	-0.47	7.53	5.66
28	0.959	-0.36	7.64	5.81	73	0.948	-0.47	7.53	5.67
29	0.964	-0.32	7.68	5.86	74	0.948	-0.46	7.54	5.67
30	0.969	-0.28	7.72	5.92	75	0.949	-0.45	7.55	5.68
31	0.972	-0.24	7.76	5.96	76	0.950	-0.44	7.56	5.70
32	0.976	-0.21	7.79	6.01	77	0.951	-0.43	7.57	5.71
33	0.980	-0.18	7.82	6.06	78	0.953	-0.42	7.58	5.73
34	0.984	-0.14	7.86	6.11	79	0.954	-0.41	7.59	5.74
35	0.988	-0.11	7.89	6.16	80	0.955	-0.40	7.60	5.76
36	0.989	-0.09	7.91	6.18	81	0.954	-0.41	7.59	5.75
37	0.991	-0.08	7.92	6.20	82	0.953	-0.41	7.59	5.74
38	0.993	-0.06	7.94	6.22	83	0.953	-0.42	7.58	5.73
39	0.994	-0.05	7.95	6.24	84	0.952	-0.43	7.57	5.72
40	0.996	-0.04	7.96	6.26	85	0.951	-0.44	7.56	5.71
41	0.997	-0.03	7.97	6.27	86	0.950	-0.44	7.56	5.70
42	0.998	-0.02	7.98	6.28	87	0.949	-0.45	7.55	5.69
43	0.998	-0.01	7.99	6.29	88	0.949	-0.46	7.54	5.68
44	0.999	-0.01	7.99	6.30	89	0.948	-0.47	7.53	5.67



4DR-8-3HC Panel Array
Ch-47

Maximum gain: 8.0 dBd
Horizontal polarization

Horizontal radiation pattern
0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
90	0.947	-0.47	7.53	5.66	135	0.524	-5.61	2.39	1.74
91	0.944	-0.50	7.50	5.63	136	0.512	-5.82	2.18	1.65
92	0.942	-0.52	7.48	5.60	137	0.499	-6.03	1.97	1.57
93	0.940	-0.54	7.46	5.57	138	0.487	-6.26	1.74	1.49
94	0.937	-0.56	7.44	5.54	139	0.474	-6.49	1.51	1.42
95	0.935	-0.59	7.41	5.51	140	0.461	-6.72	1.28	1.34
96	0.931	-0.62	7.38	5.47	141	0.449	-6.96	1.04	1.27
97	0.928	-0.65	7.35	5.44	142	0.436	-7.21	0.79	1.20
98	0.925	-0.68	7.32	5.40	143	0.423	-7.47	0.53	1.13
99	0.922	-0.71	7.29	5.36	144	0.411	-7.73	0.27	1.06
100	0.918	-0.74	7.26	5.32	145	0.398	-8.00	-0.00	1.00
101	0.910	-0.82	7.18	5.23	146	0.385	-8.28	-0.28	0.94
102	0.902	-0.90	7.10	5.13	147	0.373	-8.57	-0.57	0.88
103	0.894	-0.97	7.03	5.04	148	0.360	-8.87	-0.87	0.82
104	0.886	-1.05	6.95	4.95	149	0.347	-9.18	-1.18	0.76
105	0.878	-1.13	6.87	4.86	150	0.335	-9.51	-1.51	0.71
106	0.867	-1.24	6.76	4.75	151	0.323	-9.82	-1.82	0.66
107	0.858	-1.33	6.67	4.64	152	0.311	-10.14	-2.14	0.61
108	0.847	-1.44	6.56	4.53	153	0.299	-10.48	-2.48	0.56
109	0.838	-1.54	6.46	4.43	154	0.287	-10.83	-2.83	0.52
110	0.827	-1.65	6.35	4.32	155	0.276	-11.20	-3.20	0.48
111	0.816	-1.77	6.23	4.20	156	0.265	-11.54	-3.54	0.44
112	0.804	-1.89	6.11	4.08	157	0.254	-11.89	-3.89	0.41
113	0.793	-2.02	5.98	3.96	158	0.244	-12.26	-4.26	0.37
114	0.781	-2.15	5.85	3.85	159	0.233	-12.65	-4.65	0.34
115	0.769	-2.28	5.72	3.73	160	0.222	-13.06	-5.06	0.31
116	0.758	-2.41	5.59	3.62	161	0.218	-13.23	-5.23	0.30
117	0.746	-2.54	5.46	3.51	162	0.213	-13.41	-5.41	0.29
118	0.735	-2.68	5.32	3.41	163	0.209	-13.60	-5.60	0.28
119	0.723	-2.82	5.18	3.30	164	0.204	-13.79	-5.79	0.26
120	0.711	-2.96	5.04	3.19	165	0.200	-13.98	-5.98	0.25
121	0.699	-3.11	4.89	3.08	166	0.198	-14.07	-6.07	0.25
122	0.687	-3.26	4.74	2.98	167	0.196	-14.16	-6.16	0.24
123	0.675	-3.41	4.59	2.88	168	0.194	-14.25	-6.25	0.24
124	0.663	-3.57	4.43	2.78	169	0.192	-14.34	-6.34	0.23
125	0.651	-3.73	4.27	2.67	170	0.190	-14.43	-6.43	0.23
126	0.639	-3.89	4.11	2.58	171	0.188	-14.53	-6.53	0.22
127	0.627	-4.05	3.95	2.48	172	0.186	-14.62	-6.62	0.22
128	0.616	-4.22	3.78	2.39	173	0.184	-14.72	-6.72	0.21
129	0.604	-4.38	3.62	2.30	174	0.182	-14.82	-6.82	0.21
130	0.592	-4.56	3.44	2.21	175	0.180	-14.91	-6.91	0.20
131	0.578	-4.76	3.24	2.11	176	0.178	-14.99	-6.99	0.20
132	0.565	-4.96	3.04	2.01	177	0.176	-15.07	-7.07	0.20
133	0.551	-5.17	2.83	1.92	178	0.175	-15.15	-7.15	0.19
134	0.538	-5.39	2.61	1.83	179	0.173	-15.24	-7.24	0.19



4DR-8-3HC Panel Array

Ch-47

Maximum gain: 8.0 dBd

Horizontal polarization

Horizontal radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
180	0.171	-15.32	-7.32	0.19	225	0.524	-5.61	2.39	1.74
181	0.173	-15.24	-7.24	0.19	226	0.538	-5.39	2.61	1.83
182	0.175	-15.15	-7.15	0.19	227	0.551	-5.17	2.83	1.92
183	0.176	-15.07	-7.07	0.20	228	0.565	-4.96	3.04	2.01
184	0.178	-14.99	-6.99	0.20	229	0.578	-4.76	3.24	2.11
185	0.180	-14.91	-6.91	0.20	230	0.592	-4.56	3.44	2.21
186	0.182	-14.82	-6.82	0.21	231	0.604	-4.38	3.62	2.30
187	0.184	-14.72	-6.72	0.21	232	0.616	-4.22	3.78	2.39
188	0.186	-14.62	-6.62	0.22	233	0.627	-4.05	3.95	2.48
189	0.188	-14.53	-6.53	0.22	234	0.639	-3.89	4.11	2.58
190	0.190	-14.43	-6.43	0.23	235	0.651	-3.73	4.27	2.67
191	0.192	-14.34	-6.34	0.23	236	0.663	-3.57	4.43	2.78
192	0.194	-14.25	-6.25	0.24	237	0.675	-3.41	4.59	2.88
193	0.196	-14.16	-6.16	0.24	238	0.687	-3.26	4.74	2.98
194	0.198	-14.07	-6.07	0.25	239	0.699	-3.11	4.89	3.08
195	0.200	-13.98	-5.98	0.25	240	0.711	-2.96	5.04	3.19
196	0.204	-13.79	-5.79	0.26	241	0.723	-2.82	5.18	3.30
197	0.209	-13.60	-5.60	0.28	242	0.735	-2.68	5.32	3.41
198	0.213	-13.41	-5.41	0.29	243	0.746	-2.54	5.46	3.51
199	0.218	-13.23	-5.23	0.30	244	0.758	-2.41	5.59	3.62
200	0.222	-13.06	-5.06	0.31	245	0.769	-2.28	5.72	3.73
201	0.233	-12.65	-4.65	0.34	246	0.781	-2.15	5.85	3.85
202	0.244	-12.26	-4.26	0.37	247	0.793	-2.02	5.98	3.96
203	0.254	-11.89	-3.89	0.41	248	0.804	-1.89	6.11	4.08
204	0.265	-11.54	-3.54	0.44	249	0.816	-1.77	6.23	4.20
205	0.276	-11.20	-3.20	0.48	250	0.827	-1.65	6.35	4.32
206	0.287	-10.83	-2.83	0.52	251	0.838	-1.54	6.46	4.43
207	0.299	-10.48	-2.48	0.56	252	0.847	-1.44	6.56	4.53
208	0.311	-10.14	-2.14	0.61	253	0.858	-1.33	6.67	4.64
209	0.323	-9.82	-1.82	0.66	254	0.867	-1.24	6.76	4.75
210	0.335	-9.51	-1.51	0.71	255	0.878	-1.13	6.87	4.86
211	0.347	-9.18	-1.18	0.76	256	0.886	-1.05	6.95	4.95
212	0.360	-8.87	-0.87	0.82	257	0.894	-0.97	7.03	5.04
213	0.373	-8.57	-0.57	0.88	258	0.902	-0.90	7.10	5.13
214	0.385	-8.28	-0.28	0.94	259	0.910	-0.82	7.18	5.23
215	0.398	-8.00	-0.00	1.00	260	0.918	-0.74	7.26	5.32
216	0.411	-7.73	0.27	1.06	261	0.922	-0.71	7.29	5.36
217	0.423	-7.47	0.53	1.13	262	0.925	-0.68	7.32	5.40
218	0.436	-7.21	0.79	1.20	263	0.928	-0.65	7.35	5.44
219	0.449	-6.96	1.04	1.27	264	0.931	-0.62	7.38	5.47
220	0.461	-6.72	1.28	1.34	265	0.935	-0.59	7.41	5.51
221	0.474	-6.49	1.51	1.42	266	0.937	-0.56	7.44	5.54
222	0.487	-6.26	1.74	1.49	267	0.940	-0.54	7.46	5.57
223	0.499	-6.03	1.97	1.57	268	0.942	-0.52	7.48	5.60
224	0.512	-5.82	2.18	1.65	269	0.944	-0.50	7.50	5.63



4DR-8-3HC Panel Array

Ch-47

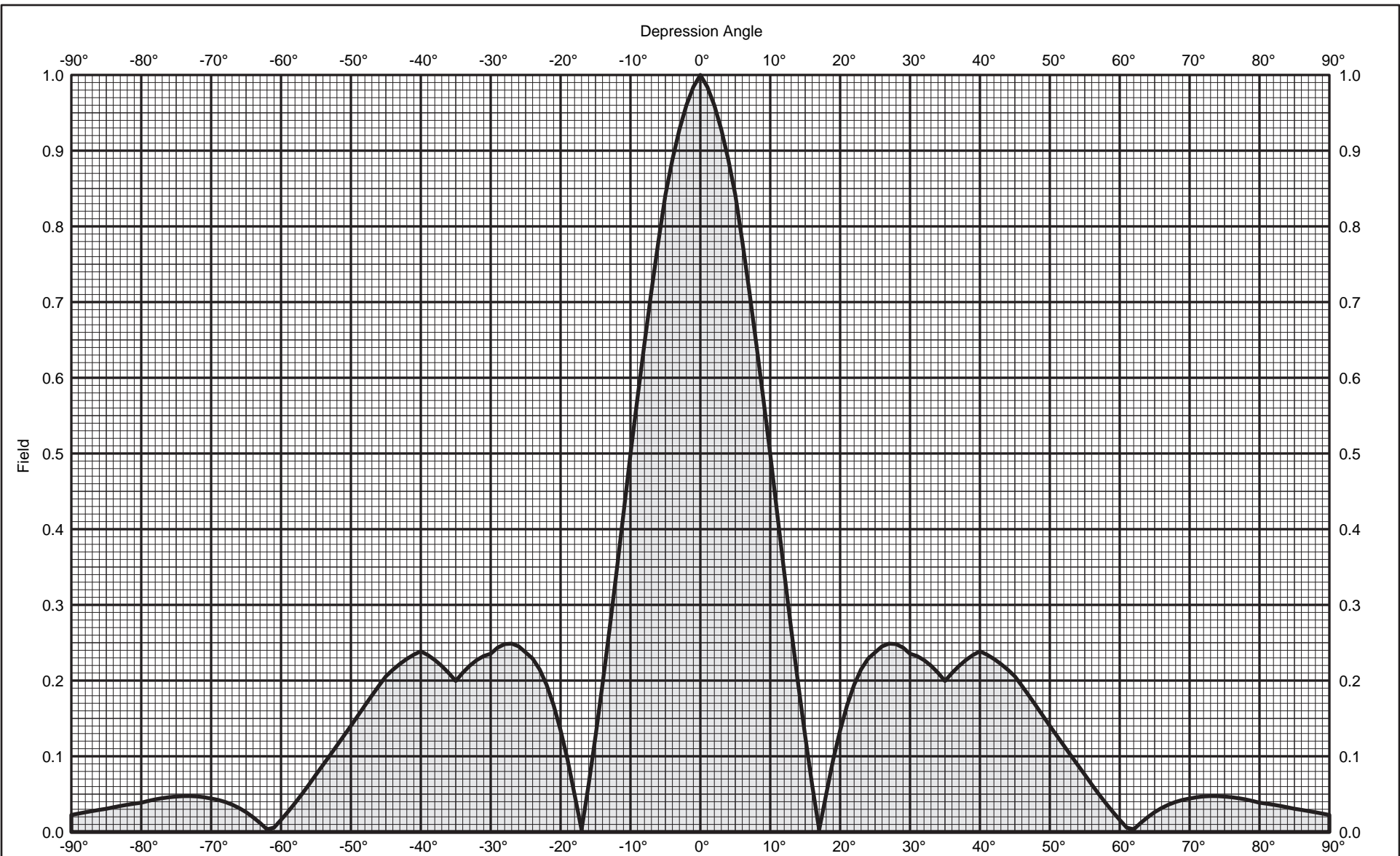
Maximum gain: 8.0 dBd

Horizontal polarization

Horizontal radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
270	0.947	-0.47	7.53	5.66	315	1.000	-0.00	8.00	6.31
271	0.948	-0.47	7.53	5.67	316	0.999	-0.01	7.99	6.30
272	0.949	-0.46	7.54	5.68	317	0.998	-0.01	7.99	6.29
273	0.949	-0.45	7.55	5.69	318	0.998	-0.02	7.98	6.28
274	0.950	-0.44	7.56	5.70	319	0.997	-0.03	7.97	6.27
275	0.951	-0.44	7.56	5.71	320	0.996	-0.04	7.96	6.26
276	0.952	-0.43	7.57	5.72	321	0.994	-0.05	7.95	6.24
277	0.953	-0.42	7.58	5.73	322	0.993	-0.06	7.94	6.22
278	0.953	-0.41	7.59	5.74	323	0.991	-0.08	7.92	6.20
279	0.954	-0.41	7.59	5.75	324	0.989	-0.09	7.91	6.18
280	0.955	-0.40	7.60	5.76	325	0.988	-0.11	7.89	6.16
281	0.954	-0.41	7.59	5.74	326	0.984	-0.14	7.86	6.11
282	0.953	-0.42	7.58	5.73	327	0.980	-0.18	7.82	6.06
283	0.951	-0.43	7.57	5.71	328	0.976	-0.21	7.79	6.01
284	0.950	-0.44	7.56	5.70	329	0.972	-0.24	7.76	5.96
285	0.949	-0.45	7.55	5.68	330	0.969	-0.28	7.72	5.92
286	0.948	-0.46	7.54	5.67	331	0.964	-0.32	7.68	5.86
287	0.948	-0.47	7.53	5.67	332	0.959	-0.36	7.64	5.81
288	0.947	-0.47	7.53	5.66	333	0.954	-0.41	7.59	5.75
289	0.947	-0.48	7.52	5.65	334	0.950	-0.45	7.55	5.69
290	0.946	-0.48	7.52	5.64	335	0.945	-0.49	7.51	5.63
291	0.949	-0.45	7.55	5.68	336	0.939	-0.55	7.45	5.56
292	0.952	-0.43	7.57	5.72	337	0.933	-0.60	7.40	5.49
293	0.955	-0.40	7.60	5.76	338	0.927	-0.66	7.34	5.42
294	0.958	-0.37	7.63	5.79	339	0.921	-0.71	7.29	5.35
295	0.961	-0.34	7.66	5.83	340	0.915	-0.77	7.23	5.28
296	0.964	-0.31	7.69	5.87	341	0.913	-0.79	7.21	5.26
297	0.967	-0.29	7.71	5.90	342	0.911	-0.81	7.19	5.24
298	0.971	-0.26	7.74	5.94	343	0.910	-0.82	7.18	5.22
299	0.973	-0.23	7.77	5.98	344	0.908	-0.84	7.16	5.20
300	0.977	-0.20	7.80	6.02	345	0.906	-0.86	7.14	5.18
301	0.980	-0.18	7.82	6.06	346	0.906	-0.86	7.14	5.18
302	0.984	-0.14	7.86	6.11	347	0.906	-0.86	7.14	5.18
303	0.987	-0.11	7.89	6.15	348	0.906	-0.86	7.14	5.18
304	0.991	-0.08	7.92	6.19	349	0.906	-0.86	7.14	5.18
305	0.994	-0.05	7.95	6.23	350	0.906	-0.86	7.14	5.18
306	0.995	-0.04	7.96	6.25	351	0.904	-0.87	7.13	5.16
307	0.996	-0.03	7.97	6.26	352	0.903	-0.89	7.11	5.14
308	0.998	-0.02	7.98	6.28	353	0.901	-0.90	7.10	5.12
309	0.999	-0.01	7.99	6.29	354	0.900	-0.92	7.08	5.11
310	1.000	-0.00	8.00	6.31	355	0.898	-0.93	7.07	5.09
311	1.000	-0.00	8.00	6.31	356	0.898	-0.93	7.07	5.09
312	1.000	-0.00	8.00	6.31	357	0.898	-0.93	7.07	5.09
313	1.000	-0.00	8.00	6.31	358	0.898	-0.93	7.07	5.09
314	1.000	0.00	8.00	6.31	359	0.898	-0.93	7.07	5.09



4DR-8-3HC Panel Array

Ch-47

Maximum gain: 8.0 dBd

Horizontal polarization

Vertical radiation pattern

0 degree electrical downtilt

KATHREIN
SCALA DIVISION
 Post Office Box 4580 Phone:(541)779-6500
 Medford, OR 97501 (USA) Fax:(541)779-3991
<http://www.kathrein-scala.com>



4DR-8-3HC Panel Array

Ch-47

Maximum gain: 8.0 dBd

Horizontal polarization

Vertical radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.023	-32.95	-24.95	0.00	-45	0.206	-13.74	-5.74	0.27
-89	0.024	-32.29	-24.29	0.00	-44	0.214	-13.38	-5.38	0.29
-88	0.026	-31.70	-23.70	0.00	-43	0.222	-13.08	-5.08	0.31
-87	0.028	-31.17	-23.17	0.00	-42	0.229	-12.82	-4.82	0.33
-86	0.029	-30.69	-22.69	0.01	-41	0.234	-12.61	-4.61	0.35
-85	0.031	-30.27	-22.27	0.01	-40	0.239	-12.44	-4.44	0.36
-84	0.033	-29.74	-21.74	0.01	-39	0.234	-12.63	-4.63	0.34
-83	0.034	-29.28	-21.28	0.01	-38	0.227	-12.87	-4.87	0.33
-82	0.036	-28.88	-20.88	0.01	-37	0.219	-13.18	-5.18	0.30
-81	0.037	-28.54	-20.54	0.01	-36	0.210	-13.56	-5.56	0.28
-80	0.039	-28.25	-20.25	0.01	-35	0.200	-14.00	-6.00	0.25
-79	0.041	-27.75	-19.75	0.01	-34	0.210	-13.54	-5.54	0.28
-78	0.043	-27.33	-19.33	0.01	-33	0.220	-13.17	-5.17	0.30
-77	0.045	-27.00	-19.00	0.01	-32	0.227	-12.88	-4.88	0.33
-76	0.046	-26.76	-18.76	0.01	-31	0.232	-12.68	-4.68	0.34
-75	0.047	-26.60	-18.60	0.01	-30	0.235	-12.56	-4.56	0.35
-74	0.047	-26.49	-18.49	0.01	-29	0.244	-12.27	-4.27	0.37
-73	0.047	-26.48	-18.48	0.01	-28	0.248	-12.11	-4.11	0.39
-72	0.047	-26.57	-18.57	0.01	-27	0.249	-12.08	-4.08	0.39
-71	0.046	-26.77	-18.77	0.01	-26	0.245	-12.21	-4.21	0.38
-70	0.044	-27.10	-19.10	0.01	-25	0.237	-12.50	-4.50	0.36
-69	0.042	-27.46	-19.46	0.01	-24	0.229	-12.80	-4.80	0.33
-68	0.040	-28.02	-20.02	0.01	-23	0.215	-13.36	-5.36	0.29
-67	0.036	-28.84	-20.84	0.01	-22	0.194	-14.23	-6.23	0.24
-66	0.032	-29.99	-21.99	0.01	-21	0.168	-15.52	-7.52	0.18
-65	0.026	-31.63	-23.63	0.00	-20	0.134	-17.44	-9.44	0.11
-64	0.019	-34.21	-26.21	0.00	-19	0.095	-20.41	-12.41	0.06
-63	0.012	-38.48	-30.48	0.00	-18	0.050	-26.09	-18.09	0.02
-62	0.010	-40.00	-32.00	0.00	-17	0.010	-40.00	-32.00	0.00
-61	0.010	-40.00	-32.00	0.00	-16	0.062	-24.18	-16.18	0.02
-60	0.016	-35.92	-27.92	0.00	-15	0.127	-17.95	-9.95	0.10
-59	0.027	-31.45	-23.45	0.00	-14	0.195	-14.19	-6.19	0.24
-58	0.038	-28.38	-20.38	0.01	-13	0.268	-11.45	-3.45	0.45
-57	0.050	-26.00	-18.00	0.02	-12	0.343	-9.30	-1.30	0.74
-56	0.063	-24.06	-16.06	0.02	-11	0.420	-7.53	0.47	1.12
-55	0.076	-22.41	-14.41	0.04	-10	0.499	-6.04	1.96	1.57
-54	0.088	-21.07	-13.07	0.05	-9	0.573	-4.84	3.16	2.07
-53	0.101	-19.89	-11.89	0.06	-8	0.645	-3.81	4.19	2.63
-52	0.114	-18.85	-10.85	0.08	-7	0.715	-2.92	5.08	3.22
-51	0.127	-17.91	-9.91	0.10	-6	0.780	-2.15	5.85	3.84
-50	0.140	-17.07	-9.07	0.12	-5	0.842	-1.50	6.50	4.47
-49	0.154	-16.27	-8.27	0.15	-4	0.888	-1.03	6.97	4.98
-48	0.167	-15.54	-7.54	0.18	-3	0.928	-0.65	7.35	5.43
-47	0.180	-14.88	-6.88	0.20	-2	0.960	-0.35	7.65	5.81
-46	0.193	-14.28	-6.28	0.24	-1	0.984	-0.14	7.86	6.11
					0	1.000	0.00	8.00	6.31



4DR-8-3HC Panel Array

Ch-47

Maximum gain: 8.0 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	8.00	6.31	45	0.206	-13.74	-5.74	0.27
1	0.984	-0.14	7.86	6.11	46	0.193	-14.28	-6.28	0.24
2	0.960	-0.35	7.65	5.81	47	0.180	-14.88	-6.88	0.20
3	0.928	-0.65	7.35	5.43	48	0.167	-15.54	-7.54	0.18
4	0.888	-1.03	6.97	4.98	49	0.154	-16.27	-8.27	0.15
5	0.842	-1.50	6.50	4.47	50	0.140	-17.07	-9.07	0.12
6	0.780	-2.15	5.85	3.84	51	0.127	-17.91	-9.91	0.10
7	0.715	-2.92	5.08	3.22	52	0.114	-18.85	-10.85	0.08
8	0.645	-3.81	4.19	2.63	53	0.101	-19.89	-11.89	0.06
9	0.573	-4.84	3.16	2.07	54	0.088	-21.07	-13.07	0.05
10	0.499	-6.04	1.96	1.57	55	0.076	-22.41	-14.41	0.04
11	0.420	-7.53	0.47	1.12	56	0.063	-24.06	-16.06	0.02
12	0.343	-9.30	-1.30	0.74	57	0.050	-26.00	-18.00	0.02
13	0.268	-11.45	-3.45	0.45	58	0.038	-28.38	-20.38	0.01
14	0.195	-14.19	-6.19	0.24	59	0.027	-31.45	-23.45	0.00
15	0.127	-17.95	-9.95	0.10	60	0.016	-35.92	-27.92	0.00
16	0.062	-24.18	-16.18	0.02	61	0.010	-40.00	-32.00	0.00
17	0.010	-40.00	-32.00	0.00	62	0.010	-40.00	-32.00	0.00
18	0.050	-26.09	-18.09	0.02	63	0.012	-38.48	-30.48	0.00
19	0.095	-20.41	-12.41	0.06	64	0.019	-34.21	-26.21	0.00
20	0.134	-17.44	-9.44	0.11	65	0.026	-31.63	-23.63	0.00
21	0.168	-15.52	-7.52	0.18	66	0.032	-29.99	-21.99	0.01
22	0.194	-14.23	-6.23	0.24	67	0.036	-28.84	-20.84	0.01
23	0.215	-13.36	-5.36	0.29	68	0.040	-28.02	-20.02	0.01
24	0.229	-12.80	-4.80	0.33	69	0.042	-27.46	-19.46	0.01
25	0.237	-12.50	-4.50	0.36	70	0.044	-27.10	-19.10	0.01
26	0.245	-12.21	-4.21	0.38	71	0.046	-26.77	-18.77	0.01
27	0.249	-12.08	-4.08	0.39	72	0.047	-26.57	-18.57	0.01
28	0.248	-12.11	-4.11	0.39	73	0.047	-26.48	-18.48	0.01
29	0.244	-12.27	-4.27	0.37	74	0.047	-26.49	-18.49	0.01
30	0.235	-12.56	-4.56	0.35	75	0.047	-26.60	-18.60	0.01
31	0.232	-12.68	-4.68	0.34	76	0.046	-26.76	-18.76	0.01
32	0.227	-12.88	-4.88	0.33	77	0.045	-27.00	-19.00	0.01
33	0.220	-13.17	-5.17	0.30	78	0.043	-27.33	-19.33	0.01
34	0.210	-13.54	-5.54	0.28	79	0.041	-27.75	-19.75	0.01
35	0.200	-14.00	-6.00	0.25	80	0.039	-28.25	-20.25	0.01
36	0.210	-13.56	-5.56	0.28	81	0.037	-28.54	-20.54	0.01
37	0.219	-13.18	-5.18	0.30	82	0.036	-28.88	-20.88	0.01
38	0.227	-12.87	-4.87	0.33	83	0.034	-29.28	-21.28	0.01
39	0.234	-12.63	-4.63	0.34	84	0.033	-29.74	-21.74	0.01
40	0.239	-12.44	-4.44	0.36	85	0.031	-30.27	-22.27	0.01
41	0.234	-12.61	-4.61	0.35	86	0.029	-30.69	-22.69	0.01
42	0.229	-12.82	-4.82	0.33	87	0.028	-31.17	-23.17	0.00
43	0.222	-13.08	-5.08	0.31	88	0.026	-31.70	-23.70	0.00
44	0.214	-13.38	-5.38	0.29	89	0.024	-32.29	-24.29	0.00
					90	0.023	-32.95	-24.95	0.00

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I
LONGLEY-RICE INTERFERENCE ANALYSIS
FOR THE PROPOSED NEW DTV TRANSLATOR IN
WOODLAND PARK, COLORADO
CHANNEL 47 0.447 KW DA ERP 2766 METERS RCAMSL
JULY 2010

<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>
33	KMAS-LP	DENVER CO	77.4	LIC	BLTTL-20080602AIR	0.00%
33	K33BV	FRASER, ETC. CO	114.6	LIC	BLTT-19890609IJ	0.00%
33	K33KE-D	SARGENTS CO	121.4	CP	BDISTT-20090210AEC	0.00%
33	K33EW	WOODLAND PARK CO	0	LIC	BLTT-19990126JB	No interference
39	KQDK-CA	AURORA CO	78.4	LIC	BLTTA-20040219ABP	0.00%
39	K39BT	FRASER, ETC. CO	114.6	LIC	BLTT-19890609II	0.00%
39	K39CD	LAKE GEORGE CO	39.1	LIC	BLTT-19890808IB	No interference
43	K43CG	COLORADO SPRINGS CO	32.3	LIC	BLTTL-20030604ACP	No interference
44	K44CI	SALIDA, ETC. CO	101.4	LIC	BLTT-19901107JX	0.00%
45	KTLO-LP	COLORADO SPRINGS CO	32.2	CP	BDISTTL-20071019AQO	No interference
45	KHDT-LP	DENVER CO	104.8	LIC	BLTTL-20040714ABT	0.00%
46	K46JN-D	AGUILAR CO	181.9	CP	BDCCDTT-20061030AQH	0.00%
46	K54DK	BOULDER CO	108.9	CP	BDISTT-20070215AAT	0.00%
46	KETD	CASTLE ROCK CO	61	LIC	BLCDDT-20050810AAF	0.04%
46	KTLO-LP	COLORADO SPRINGS CO	32.2	CP	BDISTTL-20080910ACG	0.04%
46	K46JO-D	DEL NORTE CO	178.1	CP	BDCCDTT-20061030AQJ	0.00%
46	K46JZ-D	FORT COLLINS CO	173.7	CP	BDCCDTL-20070425AFL	0.00%
46	K45KC-D	GLENWOOD SPRINGS CO	201.7	CP	BDCCDTT-20061030AQG	0.00%
46	K46DB	SAPINERO CO	204.6	CP	BDFCDTT-20100210ABB	0.00%
46	K46DB	SAPINERO CO	200.2	LIC	BLTT-19930326JE	0.00%
46	NEW	SEIBERT CO	191.7	APP	BNPDTL-20100514AFN	0.00%
46	K46KI-D	WOODY CREEK CO	165.9	LIC	BLDTT-20100308AAH	0.00%
47	K47FT-D	ANTON CO	176.8	LIC	BLDTT-20090204ABN	No interference
47	NEW	ASPEN CO	154.7	APP	BNPDTL-20090825BXO	No interference
47	K50IV	CORTEZ CO	333.6	APP	BPTT-20040805AAJ	No interference
47	K47BL-D	CRESTED BUTTE CO	160.3	LIC	BLDTT-20100301AAJ	No interference
47	KSBS-LP	DENVER CO	44.3	CP	BPTTA-20080111AFX	No interference
47	KSBS-LP	DENVER CO	44.3	LIC	BLTTA-20040524ALT	No interference
47	K47CJ	DEORA CO	240	LIC	BLTT-19880621IQ	No interference
47	K47EC	ESTES PARK CO	156.4	LIC	BLTT-19940506II	No interference

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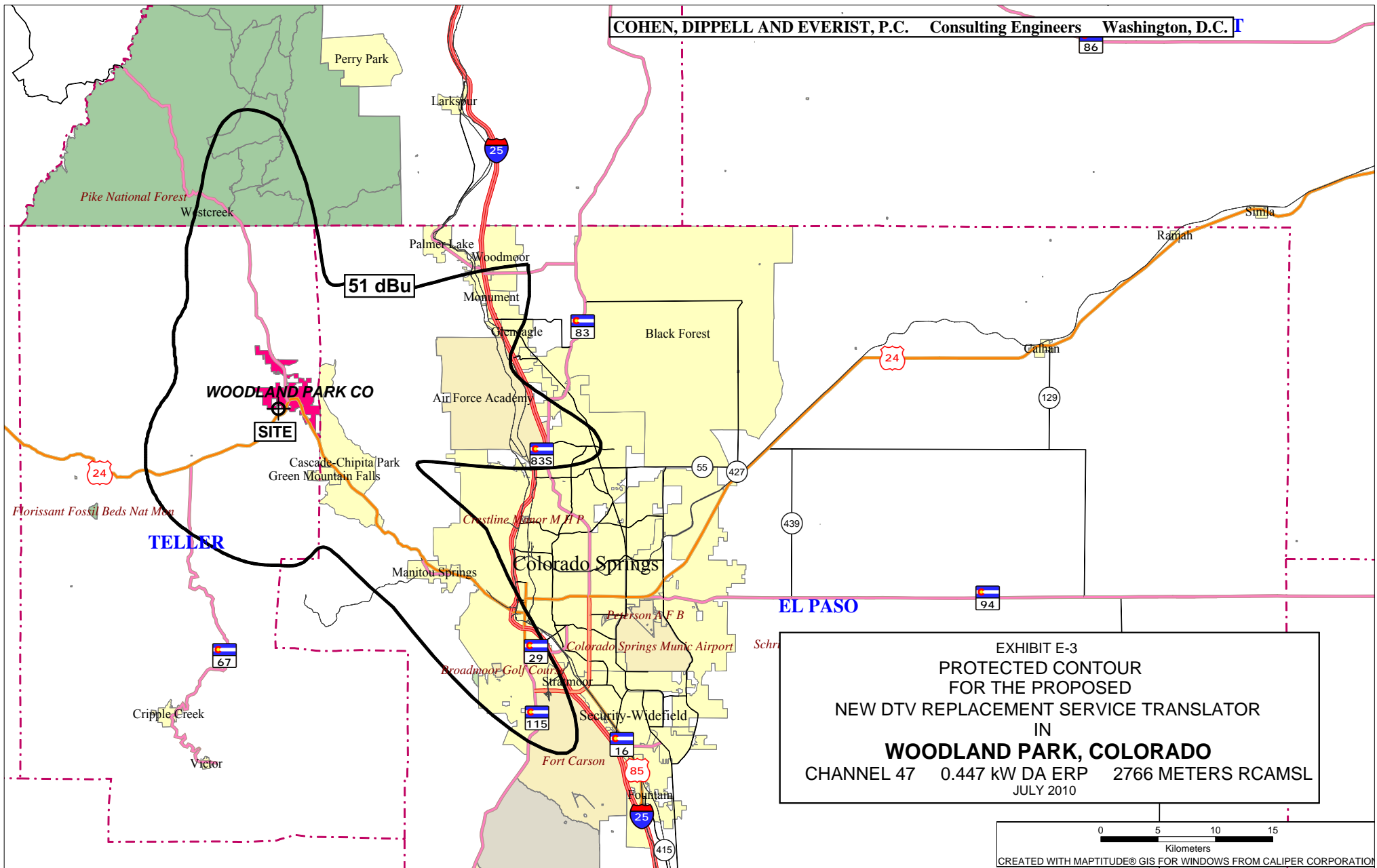
TABLE I
LONGLEY-RICE INTERFERENCE ANALYSIS
FOR THE PROPOSED NEW DTV TRANSLATOR IN
WOODLAND PARK, COLORADO
CHANNEL 47 0.447 KW DA ERP 2766 METERS RCAMSL
JULY 2010

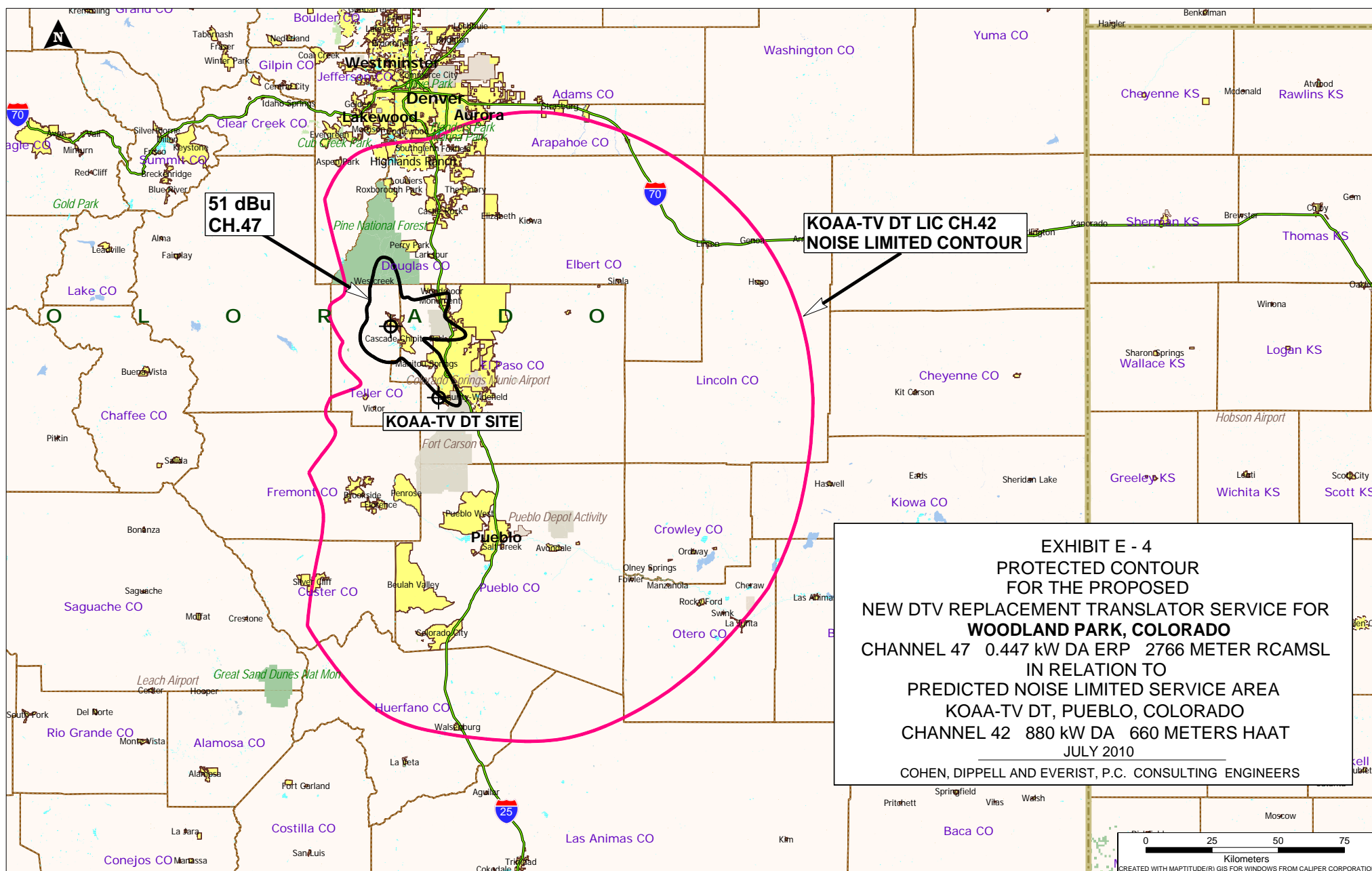
<u>Channel</u>	<u>Call</u>	<u>City/State</u>	<u>Dist(km)</u>	<u>Status</u>	<u>FCC File No.</u>	<u>Result</u>
47	KRMA-TV	FORT COLLINS CO	173.7	LIC	BLEDT-20090824ACJ	No interference
47	K47JR	3RAND JUNCTION, ETC. CC	317.7	LIC	BLTT-20050930ADN	No interference
47	K47MP-D	HOEHNE CO	211.2	CP	BNPDTT-20090908AAT	No interference
47	K47JH	JULESBURG CO	313.3	LIC	BLTT-20041109AAI	No interference
47	K47FJ	MANITOU SPRINGS CO	19.2	LIC	BLTT-19980318JN	1.68%
47	K47LL	PAGOSA SPRINGS CO	269.4	CP	BNPTTL-20000828AFY	No interference
47	K47KC	ROMEO CO	250.6	CP	BDFCDTL-20090824ACE	No interference
47	K47KC	ROMEO CO	250.6	CP	BPTTL-20090526AFR	No interference
47	K47KC	ROMEO CO	250.6	LIC	BLTT-20090410AAC	No interference
47	K47LZ-D	SARGENTS CO	121.3	LIC	BLDTT-20091021ABL	No interference
47	K47LZ-D	SARGENTS CO	121.4	CP	BDISTT-20090210AEF	No interference
47	K47AC	SILT, ETC. CO	205.3	LIC	BLTT-19800513IB	No interference
47	K47MQ-D	SANTA FE NM	333	CP	BNPDTL-20091014AAX	No interference
47	KGSC-LD	CHEYENNE WY	243.3	LIC	BLDTL-20090915ADV	No interference
48	K49EX-D	ANTON CO	176.8	CP	BDISDTT-20090824AIW	0.00%
48	NEW	ASPEN CO	154.7	APP	BNPDTL-20090825BXP	0.00%
48	K11QJ	BOULDER CO	108.9	APP	BSTA-20100422ABP	No interference
48	K11QJ	BOULDER CO	108.9	APP	BDISDTT-20100421ACU	No interference
48	K48FW	DENVER CO	84.4	LIC	BLTT-20021219AAB	No interference
48	K48CG	LOVELAND CO	174	LIC	BLTT-19940330JG	0.00%
48	K48CU	PUEBLO CO	88	LIC	BLTT-20000313AAW	No interference
48	KVSN-DT	PUEBLO CO	32.4	LIC	BLCDDT-20090409AIS	0.22%
48	K48LW-D	REDSTONE CO	187.4	LIC	BLDTT-20100308AAN	0.00%
48	K48EF	SAPINERO CO	204.6	CP	BDFCDTT-20100210ABC	0.00%
48	K48EF	SAPINERO CO	200.2	LIC	BLTT-19930326JF	0.00%
48	K48ME-D	VAIL CO	138.6	CP	BNPDTL-20091028ABL	No interference
48	K48LO-D	WOODY CREEK CO	165.9	LIC	BLDTT-20100308AAI	0.00%
49	KTLO-LP	COLORADO SPRINGS CO	32.2	LIC	BLTTL-20000505AAL	No interference
49		DENVER CO	84.7	STA	BSTA-20030808AEN	0.00%
49	K49KR-D	SARGENTS CO	121.4	CP	BDISTT-20090210AEG	0.00%

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TABLE I
LONGLEY-RICE INTERFERENCE ANALYSIS
FOR THE PROPOSED NEW DTV TRANSLATOR IN
WOODLAND PARK, COLORADO
CHANNEL 47 0.447 KW DA ERP 2766 METERS RCAMSL
JULY 2010

<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>
51	KWHS-LP	COLORADO SPRINGS CO	32.3	CP	BPTTL-20061129AKZ	No interference
51	KWHS-LP	COLORADO SPRINGS CO	32.3	LIC	BLTTL-19950825IG	No interference





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
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- 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.

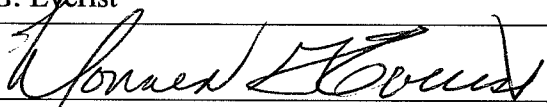
☐ Pursuant to Section 74.786(d), the applicant has notified, within 30 days of filing this application, all commercial wireless licensees of the spectrum comprising the proposed TV channel and the first adjacent channels thereto, for which the proposed digital LPTV or TV translator antenna site lies 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 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 Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date July 30, 2010	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100			
City Washington		State or Country (if foreign address) DC	ZIP Code 20005
Telephone Number (include area code) (202) 898-0111		E-Mail Address (if available) cde@attglobal.net	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).