

**Application for Modification**  
**Post – Repack Construction Permit**  
**Engineering Exhibit**

**KPXC-TV – Denver, Colorado**

Facility ID: 68695

Licensee “ION MEDIA DENVER LICENSE, INC” currently has an application to operate on Post-Repack DTV channel 18 with an effective radiated power (ERP) of 785 kW at an HAAT of 449 m. The Antenna Structure Registration Number is 1254146 with a Latitude of 40° 05' 59.0" N+ and a Longitude of 104° 54' 04.0" W-.

The purpose of this application is to request authority to modify the construction permit application (0000027023) to operate from Antenna Structure Registration Number 1034537 with a Latitude of 40° 05' 47.3" N+ and a Longitude of 104° 54' 05.9" W-. A HAAT of 329.61 m (AGL 298.94 m) and an AMSL of 1850.34 m with an ERP of 330 kW will be utilized.

**Antenna System**

A directional side mounted antenna will be utilized. It will be attached to an existing guyed tower structure and will not increase the overall height of the structure. Any vertical component will not exceed the horizontal pattern in any direction. Elevation and Azimuth patterns are attached.

**RF Hazard (Environmental)**

Human Exposure measurements were calculated using the OET- 65 equation and the outcome is compliant with FCC 1.1310. Furthermore, the calculation is under 5% of the limit categorically excluding the application from further environmental evaluations.

Calculated Maximum	Calculated Exposure	Percent of Limit
mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	
0.331	0.002525	0.76%

The station will coordinate with other(s) to comply with access, antenna and/or tower issues related to maintenance, servicing and installation of equipment.

**Broadcast Facility**

**§73.616 Interference Caused**

A calculation using *TVStudy* version 2.2.4 using an LMS database dated 2018-03-08 indicates that there is no excessive inference caused by this application. This study used cell spacing of 2 km and a profile spacing of 1 km.

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§73.622 Maximum ERP and Antenna Height

The application does not exceed the maximum ERP for the specified HAAT.

§73.623 DTV Allotments

The application does not change the channel allotment.

§73.625 Coverage of Principal Community

The application's ERP will sufficiently cover Denver, Colorado. RF coverage analysis attached.

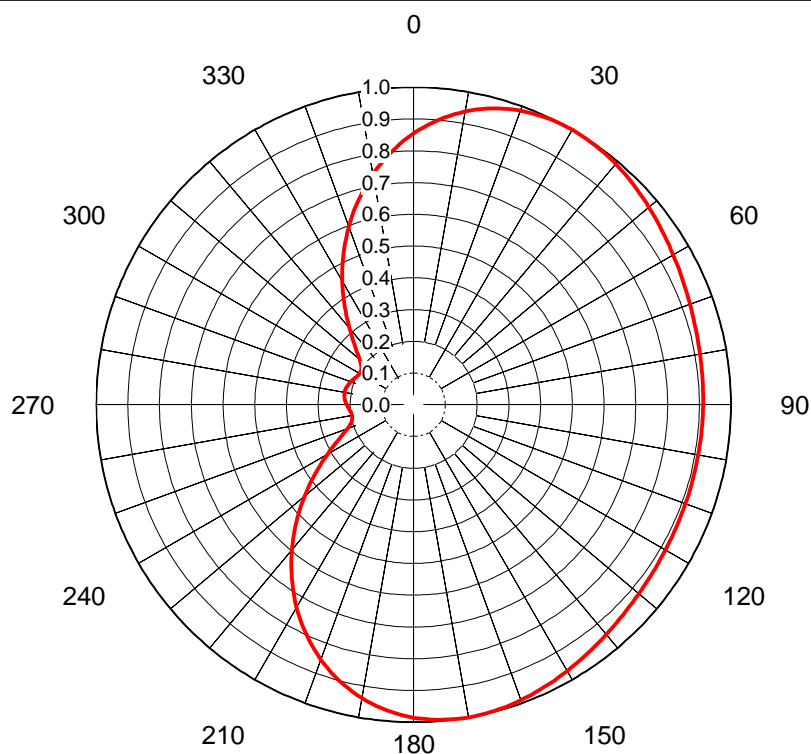
§73.1030 Radio, Research and Receiving Locations

A letter of successful coordination with the Department of Commerce is attached to address any issues with the Table Mountain Radio Receiving Zone.

A calculation using *TVStudy* version 2.2.4 using an LMS database dated 2018-03-08 indicates that no excessive interference to any other "protected" locations. As such, no other coordination or notification is required.

§73.1650 International Agreements

The application's transmit location is 989.5 km from Canada and 935.4 km from Mexico. As such, no coordination or notification is required.



## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-70339-2**  
Date **20-Dec-17**  
Call Letters **KPXC**  
Channel **18**  
Frequency **497 MHz**  
Antenna Type **TFU-18DSC/VP-R C170**  
Gain **1.68 (2.26dB)**  
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.854	36	0.996	72	0.924	108	0.911	144	0.953	180	0.986	216	0.655	252	0.212	288	0.214
1	0.864	37	0.995	73	0.923	109	0.911	145	0.956	181	0.982	217	0.640	253	0.208	289	0.212
2	0.874	38	0.994	74	0.921	110	0.912	146	0.958	182	0.979	218	0.626	254	0.204	290	0.211
3	0.883	39	0.992	75	0.920	111	0.912	147	0.961	183	0.975	219	0.611	255	0.202	291	0.209
4	0.892	40	0.990	76	0.919	112	0.912	148	0.963	184	0.971	220	0.597	256	0.199	292	0.207
5	0.901	41	0.988	77	0.918	113	0.912	149	0.966	185	0.966	221	0.582	257	0.198	293	0.205
6	0.909	42	0.986	78	0.917	114	0.913	150	0.968	186	0.962	222	0.567	258	0.197	294	0.204
7	0.917	43	0.984	79	0.917	115	0.913	151	0.970	187	0.956	223	0.552	259	0.197	295	0.202
8	0.924	44	0.982	80	0.916	116	0.914	152	0.973	188	0.951	224	0.537	260	0.196	296	0.200
9	0.931	45	0.980	81	0.915	117	0.914	153	0.975	189	0.944	225	0.522	261	0.197	297	0.199
10	0.938	46	0.978	82	0.915	118	0.915	154	0.978	190	0.938	226	0.507	262	0.198	298	0.198
11	0.944	47	0.975	83	0.914	119	0.915	155	0.980	191	0.931	227	0.493	263	0.199	299	0.197
12	0.951	48	0.973	84	0.914	120	0.916	156	0.982	192	0.924	228	0.478	264	0.200	300	0.196
13	0.956	49	0.970	85	0.913	121	0.917	157	0.984	193	0.917	229	0.463	265	0.202	301	0.197
14	0.962	50	0.968	86	0.913	122	0.917	158	0.986	194	0.909	230	0.448	266	0.204	302	0.197
15	0.966	51	0.966	87	0.912	123	0.918	159	0.988	195	0.901	231	0.434	267	0.205	303	0.198
16	0.971	52	0.963	88	0.912	124	0.919	160	0.990	196	0.892	232	0.420	268	0.207	304	0.199
17	0.975	53	0.961	89	0.912	125	0.920	161	0.992	197	0.883	233	0.406	269	0.209	305	0.202
18	0.979	54	0.958	90	0.912	126	0.921	162	0.994	198	0.874	234	0.392	270	0.211	306	0.204
19	0.982	55	0.956	91	0.911	127	0.923	163	0.995	199	0.864	235	0.378	271	0.212	307	0.208
20	0.986	56	0.953	92	0.911	128	0.924	164	0.996	200	0.854	236	0.364	272	0.214	308	0.212
21	0.988	57	0.951	93	0.911	129	0.925	165	0.997	201	0.844	237	0.351	273	0.215	309	0.217
22	0.991	58	0.949	94	0.911	130	0.926	166	0.998	202	0.833	238	0.338	274	0.217	310	0.222
23	0.993	59	0.947	95	0.911	131	0.928	167	0.999	203	0.822	239	0.326	275	0.218	311	0.229
24	0.995	60	0.944	96	0.911	132	0.929	168	1.000	204	0.811	240	0.314	276	0.219	312	0.236
25	0.996	61	0.942	97	0.911	133	0.931	169	1.000	205	0.799	241	0.303	277	0.220	313	0.244
26	0.998	62	0.940	98	0.910	134	0.933	170	1.000	206	0.788	242	0.291	278	0.220	314	0.252
27	0.999	63	0.938	99	0.910	135	0.934	171	1.000	207	0.775	243	0.281	279	0.221	315	0.261
28	0.999	64	0.936	100	0.910	136	0.936	172	0.999	208	0.763	244	0.270	280	0.221	316	0.270
29	1.000	65	0.934	101	0.910	137	0.938	173	0.999	209	0.750	245	0.261	281	0.221	317	0.281
30	1.000	66	0.933	102	0.910	138	0.940	174	0.998	210	0.737	246	0.252	282	0.220	318	0.291
31	1.000	67	0.931	103	0.911	139	0.942	175	0.996	211	0.724	247	0.244	283	0.220	319	0.303
32	1.000	68	0.929	104	0.911	140	0.944	176	0.995	212	0.710	248	0.236	284	0.219	320	0.314
33	0.999	69	0.928	105	0.911	141	0.947	177	0.993	213	0.697	249	0.229	285	0.218	321	0.326
34	0.998	70	0.926	106	0.911	142	0.949	178	0.991	214	0.683	250	0.222	286	0.217	322	0.338
35	0.997	71	0.925	107	0.911	143	0.951	179	0.988	215	0.669	251	0.217	287	0.215	323	0.351

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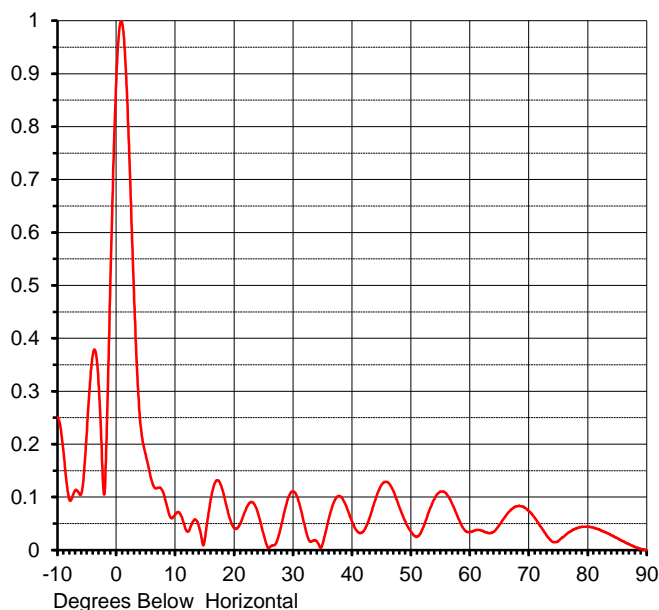
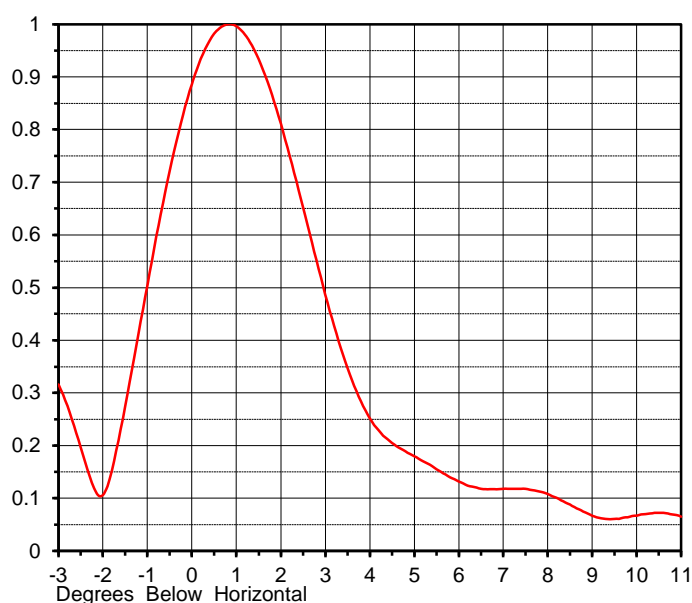
Trusted for Decades. Ready for Tomorrow.

## ELEVATION PATTERN

Proposal No. **C-70339-2**  
 Date **20-Dec-17**  
 Call Letters **KPXC**  
 Channel **18**  
 Frequency **497 MHz**  
 Antenna Type **TFU-18DSC/VP-R C170**

RMS Directivity at Main Lobe **16.2 ( 12.10 dB )**  
 RMS Directivity at Horizontal **12.7 ( 11.04 dB )**  
**Calculated**

Beam Tilt **0.75 deg**  
 Pattern Number **18Q162075**



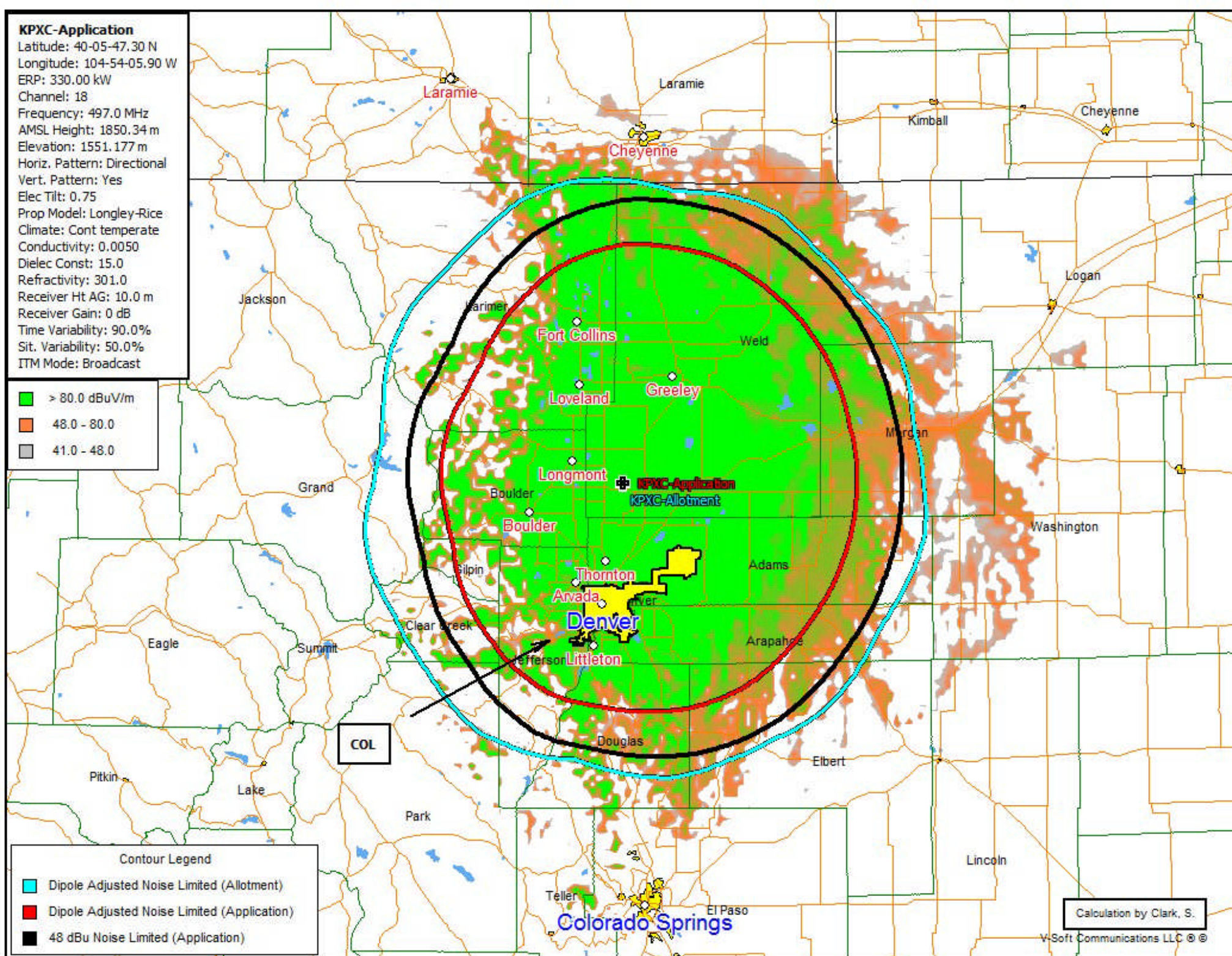
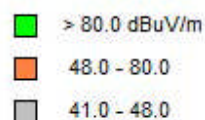
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.251	10.0	0.069	30.0	0.111	50.0	0.034	70.0	0.073
-9.0	0.179	11.0	0.063	31.0	0.087	51.0	0.026	71.0	0.060
-8.0	0.094	12.0	0.035	32.0	0.040	52.0	0.043	72.0	0.043
-7.0	0.114	13.0	0.055	33.0	0.016	53.0	0.074	73.0	0.027
-6.0	0.108	14.0	0.042	34.0	0.015	54.0	0.099	74.0	0.015
-5.0	0.242	15.0	0.026	35.0	0.015	55.0	0.111	75.0	0.018
-4.0	0.374	16.0	0.100	36.0	0.060	56.0	0.105	76.0	0.027
-3.0	0.297	17.0	0.132	37.0	0.095	57.0	0.085	77.0	0.036
-2.0	0.123	18.0	0.111	38.0	0.101	58.0	0.059	78.0	0.041
-1.0	0.551	19.0	0.066	39.0	0.081	59.0	0.038	79.0	0.044
0.0	0.912	20.0	0.041	40.0	0.052	60.0	0.034	80.0	0.044
1.0	0.989	21.0	0.052	41.0	0.034	61.0	0.038	81.0	0.042
2.0	0.781	22.0	0.080	42.0	0.038	62.0	0.037	82.0	0.038
3.0	0.456	23.0	0.091	43.0	0.065	63.0	0.032	83.0	0.033
4.0	0.239	24.0	0.068	44.0	0.100	64.0	0.035	84.0	0.028
5.0	0.175	25.0	0.026	45.0	0.125	65.0	0.049	85.0	0.022
6.0	0.128	26.0	0.006	46.0	0.128	66.0	0.065	86.0	0.016
7.0	0.118	27.0	0.013	47.0	0.110	67.0	0.077	87.0	0.011
8.0	0.104	28.0	0.052	48.0	0.080	68.0	0.083	88.0	0.006
9.0	0.064	29.0	0.096	49.0	0.053	69.0	0.082	89.0	0.002
								90.0	0.000

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**KPXC-Application**

Latitude: 40-05-47.30 N  
Longitude: 104-54-05.90 W  
ERP: 330.00 kW  
Channel: 18  
Frequency: 497.0 MHz  
AMSL Height: 1850.34 m  
Elevation: 1551.177 m  
Horiz. Pattern: Directional  
Vert. Pattern: Yes  
Elec Tilt: 0.75  
Prop Model: Longley-Rice  
Climate: Cont temperate  
Conductivity: 0.0050  
Dielec Const: 15.0  
Refractivity: 301.0  
Receiver Ht AG: 10.0 m  
Receiver Gain: 0 dB  
Time Variability: 90.0%  
Sit. Variability: 50.0%  
ITM Mode: Broadcast

**Contour Legend**

- Dipole Adjusted Noise Limited (Allotment)
- Dipole Adjusted Noise Limited (Application)
- 48 dBu Noise Limited (Application)

Calculation by Clark, S.

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