

EXHIBIT A

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of TRINITY BROADCASTING OF TEXAS, licensee of digital television station KPJR-TV Channel 17 in Greeley, Colorado, in support of its application for modification of Construction Permit [LMS-0000158506] to specify a new antenna, radiation center above ground level (RCAGL) and an increase to the effective radiated power (ERP). No change in site location is proposed herein.

The licensee wishes to separate from a multiplexed antenna onto their own antenna. The tower space available to them is lower than the current multiplexed antenna. Due to FCC concerns about loss area created by station modifications, the licensee must increase their ERP to limit loss area due to lower RCAGL.

It is proposed to mount a Dielectric TFU-24JSC/VP-R C170 directional, elliptically polarized slotted cylinder antenna at the 271.3-meter level of an existing 352.9-meter tower. Exhibit B is a map upon which the predicted service contours of the proposed facility are plotted. As shown, the entire community of license, Greeley, CO, is encompassed by the proposed 48 dBu city-grade service contour. Exhibit C is a map on which the authorized and proposed noise-limited, dipole-adjusted service contours are plotted. Exhibit D is a loss area analysis showing only 111 people in “underserved” area will be affected by this proposal.

Azimuth and elevation pattern data for the Dielectric directional antenna is included in Exhibit E. Exhibit F contains the summary results from a TVStudy interference study, which was conducted using a cell size of 1.0 kilometers and increment spacing of 0.1 kilometer. It concludes that the proposed facility meets the Commission’s de minimis interference criteria to all co-channel and adjacent-channel full-power and Class A television facilities.

Due to the proximity of the site to the Table Mountain Radio Quiet Zone, coordination with the Department of Commerce National Telecommunications and Information Administration (NTIA) site manager is required. It is calculated that the signal strength of the new antenna at the higher ERP but lower effective height will result in similar signal strength at the Table Mountain reference point. Thus, the effect on the quiet zone will be negligible with this change. Exhibit G is a copy of the letter issued by NTIA approving the change. A detailed power density calculation is provided in Exhibit H.

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application. In addition, the Commission has assigned Antenna Structure Registration Number 1254146 to this tower.

KPJR-TV Authorized

Latitude: 40-05-57 N

Longitude: 104-54-03.2 W

ERP: 633.00 kW

Channel: 17

Frequency: 491.0 MHz

RCAMSL Height: 1878.4 m

Elevation: 1551.0 m

Azimuth Pattern: Dielectric TUD-C5-14/70H-2-B

KPJR-TV Proposed

Latitude: 40-05-57 N

Longitude: 104-54-03.20 W

ERP: 1000.00 kW

Channel: 17

Frequency: 491.0 MHz

RCAMSL Height: 1822.7 m

Elevation: 1551.0 m

Azimuth Pattern: Dielectric TFU-24JSC/VP-R C170

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.


KYLE T. FISHER

March 6, 2024

Laramie

Laramie

CONTOUR POPULATION (2020 U.S. CENSUS DATA)
CITY-GRADE (48 DBU) : 3,876,412 (HH 1,608,880)
NOISE-LIMITED SERVICE : 3,975,882 (HH 1,649,182)

Cheyenne



KPJR-TV Proposed N/L Service Contour

KPJR-TV Proposed City Grade Service Contour

Larimer

Fort Collins

Weld

Loveland

Greeley

COMMUNITY OF LICENSE

Morgan

Table Mountain

Longmont

Boulder

KPJR-TV PROP

Boulder

Brighton

Broomfield

Adams

Gilpin

Thornton

Arvada

Denver

Denver

Clear Creek

Arapahoe

Jefferson

Littleton

Castle Rock

Elbert

Park

Scale 1:1,000,000



EXHIBIT B
PREDICTED SERVICE CONTOURS
KPJR-TV
CHANNEL 17 - GREELEY, COLORADO

Laramie

Laramie

Cheyenne



KPJR-TV AUTH (17)

KPJR-TV PROP (17)

KPJR-TV Authorized N/L Service Contour

Larimer

Fort Collins

Weld

Loveland

Greeley

Morgan

Table Mountain

Longmont

Boulder

KPJR-TV PROP

Boulder

Brighton

Broomfield

Adams

Gilpin

Thornton

Arvada

Denver

Denver

Arapahoe

Clear Creek

Jefferson

Littleton

Castle Rock

Elbert

Park

Scale 1:1,000,000

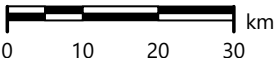


EXHIBIT C
FCC SERVICE CONTOUR COMPARISON
KPJR-TV
CHANNEL 17 - GREELEY, COLORADO

EXHIBIT D

LOSS AREA ANALYSIS

We have analyzed the area and population that is presently located within the licensed KPJR-TV Channel 17 service contour and located outside the proposed service contour. This will be referred to as “contour-based loss area”. Exhibit D-1 is a map upon which we have plotted the 39.04 dBu noise-limited, dipole-adjusted digital service contour proposed for both the authorized and proposed facilities. As shown, there is a thin strip of loss area (shown in red) located at various boundaries of the authorized contour. According to the 2020 U.S. Census, there are 19,004 people living within the contour-based loss area.

In Exhibit D-2, we have added to the map the noise-limited dipole-adjusted service contours of all full-power licensed television stations that place a contour over some portion of the KPJR-TV service area. The computer program (a service-counting module in the V-Soft Probe 5 software we use) then determines the number of contours that cover specific portions of the KPJR-TV service area and colors them by a numbering scheme (0-5+). It is important to note that the Commission considers an area to be “adequately served” if it is located within the FCC-based coverage contours of at least five full-power television stations. As shown in Exhibit D-2, the vast majority of the area within the KPJR-TV coverage area is served by at least 5 television station contours (shown as yellow area on the map). The largest areas of underserved population in the loss area (the non-yellow areas outside the red proposed noise-limited arc and inside the blue authorized noise-limited arc) are to the far east and west of the

SMITH AND FISHER

proposed KPJR-TV coverage contour. Below is a list of the stations included in this part of our study:

Call Sign	Lic	Chan.	Svc	Cls	City	ST	DA	Power
-----	---	-----	---	---	-----	--	--	-----
KCDO-TV	LI	23	T	2C	Sterling	CO	No	1000.0
KRDO-TV	LI	24	T	2C	Colorado Springs	CO	Yes	200.0
KOAA-TV	LI	25	T	2C	Pueblo	CO	Yes	1000.0
KKTV-D	LI	26	T	2C	Colorado Springs	CO	Yes	350.0
KVSN-DT	LI	27	T	2C	Pueblo	CO	Yes	232.0
KTFD-TV	LI	28	T	2C	Denver	CO	Yes	400.0
KDEN-TV	LI	29	T	2C	Longmont	CO	Yes	800.0
KTVD-D	LI	31	T	2C	Denver	CO	Yes	960.0
KCEC-D	LI	32	T	2C	Boulder	CO	Yes	650.0
KRMA-TV	LI	33	T	2E	Denver	CO	Yes	1000.0
KWGN-TV	LI	34	T	2C	Denver	CO	No	1000.0
KCNC-TV	LI	35	T	2C	Denver	CO	Yes	1000.0
KDVR-D	LI	36	T	2C	Denver	CO	Yes	1000.0
KNEP-D	LI	7	T	2C	Sidney	NE	No	32.0
KTNE-TV	LI	13	T	2E	Alliance	NE	No	27.0
KSTF-D	LI	29	T	2C	Scottsbluff	NE	Yes	3.5
KWYP-DT	LI	8	T	2E	Laramie	WY	Yes	64.0
KQCK-D	LI	11	T	2C	Cheyenne	WY	Yes	31.1
KLWY-D	LI	27	T	2C	Cheyenne	WY	Yes	169.0
KGWN-TV	LI	30	T	2C	Cheyenne	WY	Yes	459.0
KREG-TV	LI	23	T	2C	Glenwood Springs	CO	Yes	16.1
KXRM-TV	LI	22	T	2C	Colorado Springs	CO	Yes	51.0
KFCT-D	LI	21	T	2C	Fort Collins	CO	No	50.0
KRMT-D	LI	20	T	2E	Denver	CO	Yes	84.0
KPXC-TV	LI	18	T	2C	Denver	CO	Yes	330.0
KETD-D	LI	15	T	2C	Castle Rock	CO	Yes	200.0
KBDI-TV	LI	13	T	2E	Broomfield	CO	Yes	33.6
KRMZ-D	LI	10	T	2E	Steamboat Springs	CO	Yes	0.481
KUSA-D	LI	9	T	2C	Denver	CO	Yes	45.0
KTSC-D	LI	8	T	2E	Pueblo	CO	Yes	22.4
KMGH-TV	LI	7	T	2C	Denver	CO	Yes	54.0

Exhibit D-3 shows the underserved loss area in green on the east side of KPJR's coverage. We ran a population report on this area which returned 111 people residing in this area. Exhibit D-4 shows the underserved loss area in green on the west side of KPJR's coverage. A population report ran on this area shows 3,857 people residing in this area based on the FCC noise-limited coverage arcs.

However, we ran a Longley-Rice-based coverage analysis on this western underserved loss area and found only small pockets of predicted noise-limited Longley-Rice coverage, under the present KPJR-TV authorization. The few pockets of coverage that do exist in this area are likely occurring on mountaintops and contain no population living there. Exhibit D-5 is a map showing this coverage and results of our population study.

In conclusion, we find that a total of only 111 people within the underserved loss area could be affected by the instant proposal.

As a result, we believe the Commission can consider the population in the majority of the loss area created by this proposal to be “adequately served” by other stations, and the population within the underserved portion of that loss area to be *de minimis*.

Laramie

Laramie

TOTAL POPULATION IN LOSS AREA: 19,004

■ KPJR-TV AUTH (17)

■ KPJR-TV PROP (17)

■ LOSS AREA

SMITHANDFISHER

Cheyenne

Larimer

Fort Collins

Weld

Loveland

Greeley

Morgan

Longmont

Boulder

KPJR-TV PROP

Boulder

Brighton

Broomfield

Adams

Gilpin

Thornton

Arvada

Denver

Denver

Arapahoe

Clear Creek

Jefferson

Littleton

Castle Rock

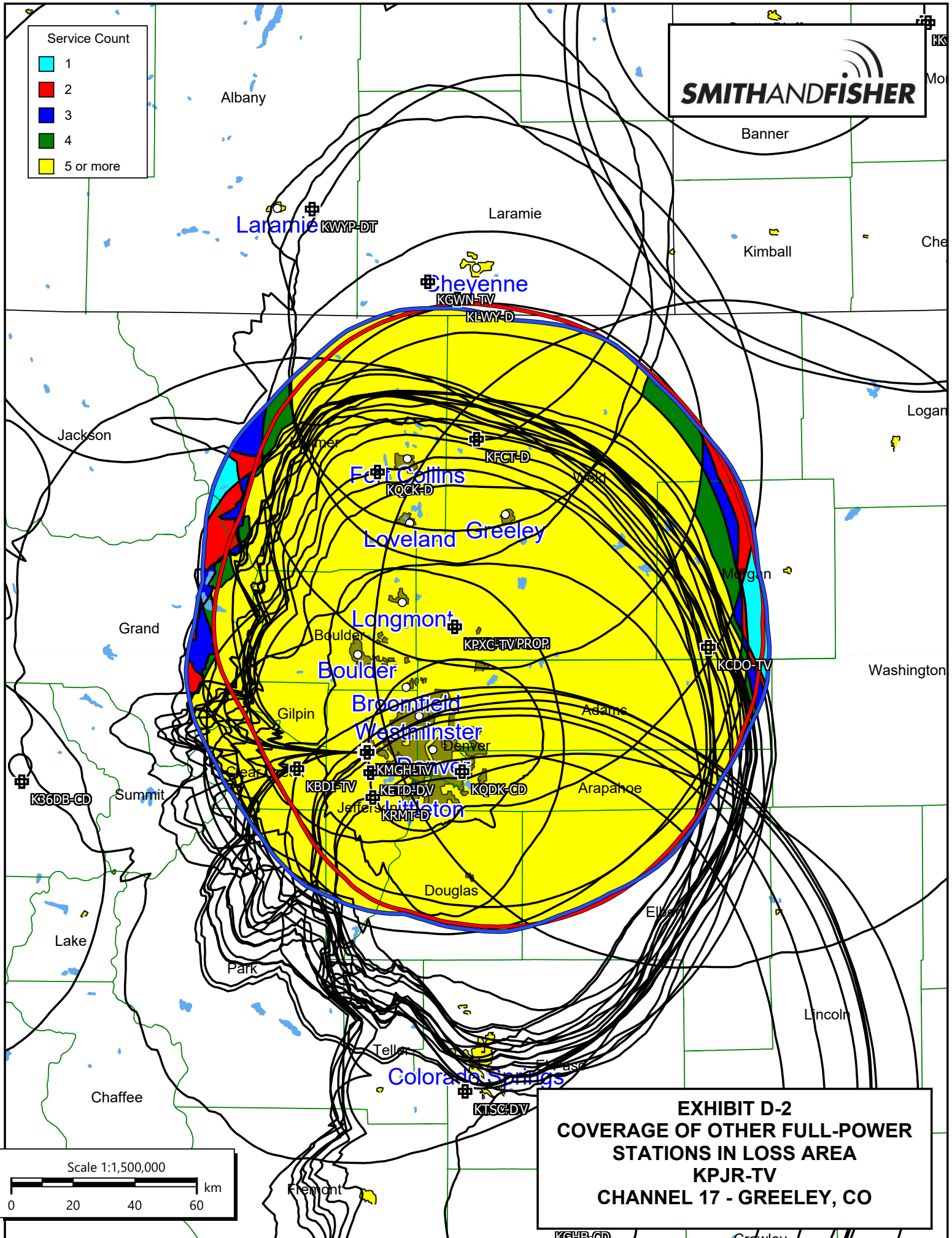
Elbert

Park

Scale 1:1,000,000

0 10 20 30 km

**EXHIBIT D-1
FCC SERVICE LOSS AREA
KPJR-TV
CHANNEL 17 - GREELEY,**



**UNDERSERVED LOSS AREA
POPULATION (2020 US CENSUS): 111**



 **UNDERSERVED LOSS AREA**

Weld

Ste

New Raymer

Merino

Hillrose

Wiggins

Log Lane Village
Fort Morgan

Brush

Ak

KCDO-TV

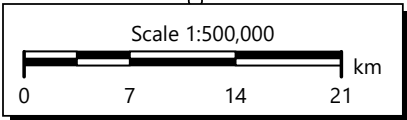
Wa

Adams

tt

**EXHIBIT D-3
UNDERSERVED LOSS AREA EAST
KPJR-TV
CHANNEL 17 - GREELEY, CO**

V-Soft Communications LLC ©



Arapahoe

**UNDERSERVED LOSS AREA
POPULATION (2020 US
CENSUS): 3,857**



 **UNDERSERVED LOSS AREA**

Jackson

Larimer

Fort Collins

KQCK-D

Love

Longmont

Grand

Boulder

Boulder

Louisville

Brooklyn

Scale 1:550,000


0 7 14 21 km

**EXHIBIT D-4
UNDERSERVED LOSS AREA WEST
KPJR-TV
CHANNEL 17 - GREELEY, CO**

**L/R - BASED COVERAGE OF LOSS AREA
POPULATION (2020 US CENSUS): 0**



 **UNDERSERVED LOSS AREA**

 **> 39.04 dBuV/m**

Jackson

Larimer

Fort C

KQCK-D

Love

Longm

Grand

Boulder

Boulder

Louisville

Scale 1:550,000

0 7 14 21 km

**EXHIBIT D-5
LONGLEY-RICE COVERAGE OF LICENSED
FACILITY
IN UNDERSERVED LOSS AREA - WEST
KPJR-TV
CHANNEL 17 - GREELEY, CO**

V-Soft Comm



Antenna Model: TFU-24JSC/VP-R C170

Proposal Number: **C-80124-2**
 Date: **11-Mar-24**
 Customer: **Trinity Broadcast**
 Location: **Greeley, CO**

Electrical Specifications

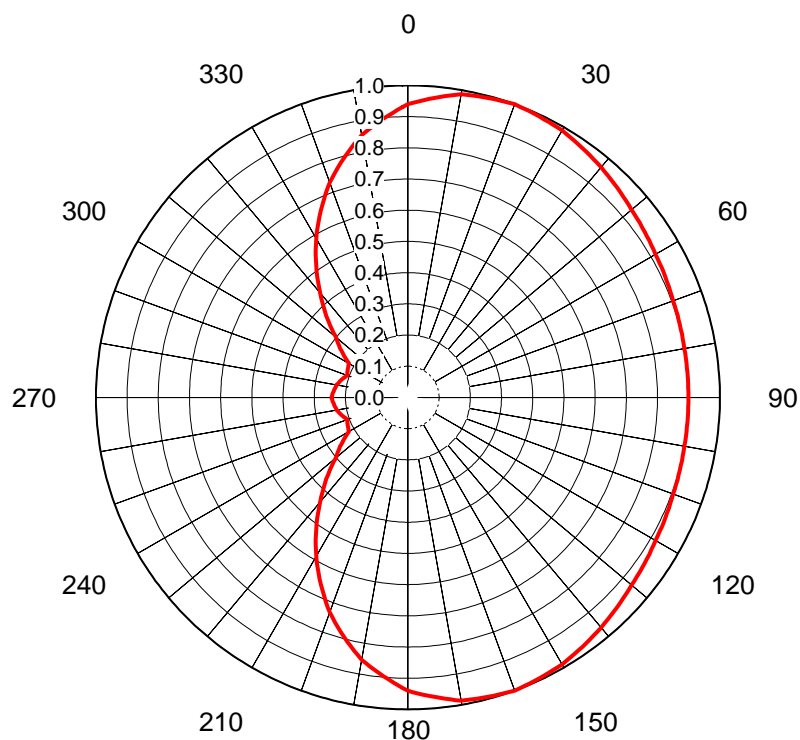
Polarization: **Elliptical**
 Azimuth Pattern: **Directional**
 Antenna Input: **6-1/8"** **75 Ohm** **EIA/DCA**
 VSWR: **Channel** **1.08 : 1**
 Bandwidth: **6 MHz**
 Rated Input Power: **40 kW** **(16.02 dBk)** **Maximum Average Power**

Mechanical Specifications

Mounting: **Side Mounted**
 Environmental Protection: **Full Radome**
 Height: **54.1 ft (16.5m)**
 Weight: **1200 lb (0.5t)** **Excludes Mounts**
 Effective Projected Area: **45.3 ft² (4.2m²)** **TIA-222-G** **Basic Wind Speed: 90 m/h (144.8 km/h)**

Channel Specifications

Call	CH	Freq	Hpol ERP	Vpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak Main Lobe Vpol Gain	Peak at Horizontal Hpol Gain	Peak at Horizontal Vpol Gain
KPJR	17	491 MHz	1,000 kW (30.00 dBk)	300 kW (24.77 dBk)	42.1 kW (16.24 dBk)	31.45 (14.98dB)	9.43 (9.75dB)	16.21 (12.10dB)	4.86 (6.87dB)



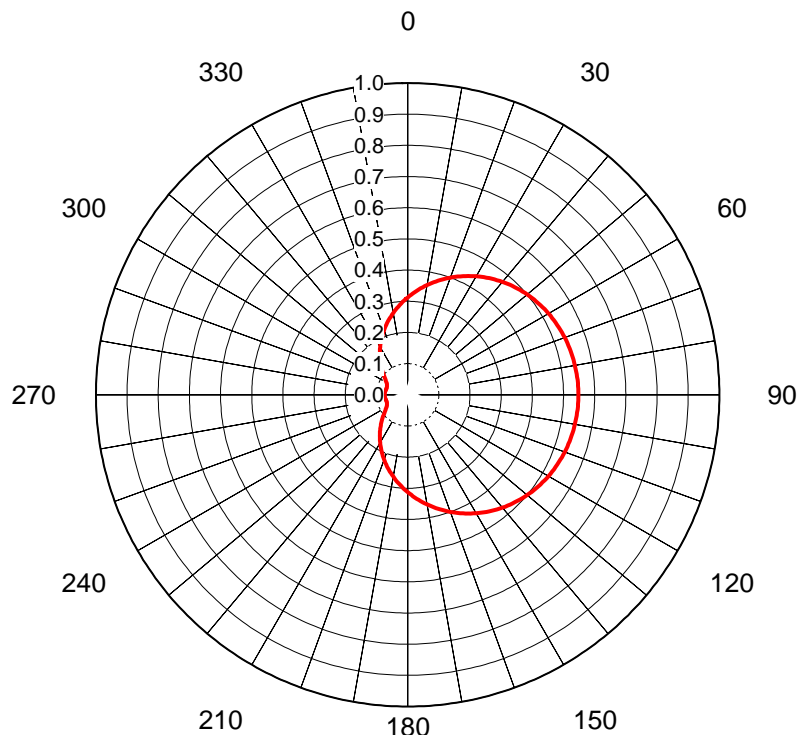
AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-80124-2**
 Date **11-Mar-24**
 Call Letters **KPJR**
 Channel **17**
 Frequency **491 MHz**
 Antenna Type **TFU-24JSC/VP-R C170**
 Gain **1.7 (2.31dB)**
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.940	36	0.973	72	0.904	108	0.904	144	0.973	180	0.940	216	0.497	252	0.212	288	0.212
1	0.945	37	0.970	73	0.904	109	0.905	145	0.975	181	0.931	217	0.482	253	0.214	289	0.209
2	0.949	38	0.968	74	0.903	110	0.905	146	0.978	182	0.923	218	0.467	254	0.217	290	0.207
3	0.954	39	0.965	75	0.902	111	0.906	147	0.980	183	0.914	219	0.452	255	0.220	291	0.208
4	0.959	40	0.963	76	0.902	112	0.907	148	0.983	184	0.906	220	0.437	256	0.222	292	0.209
5	0.964	41	0.960	77	0.901	113	0.909	149	0.985	185	0.897	221	0.424	257	0.225	293	0.210
6	0.968	42	0.958	78	0.901	114	0.910	150	0.988	186	0.888	222	0.410	258	0.227	294	0.211
7	0.973	43	0.955	79	0.900	115	0.911	151	0.989	187	0.880	223	0.396	259	0.229	295	0.213
8	0.978	44	0.952	80	0.900	116	0.912	152	0.990	188	0.871	224	0.383	260	0.232	296	0.214
9	0.982	45	0.950	81	0.900	117	0.913	153	0.992	189	0.863	225	0.370	261	0.233	297	0.215
10	0.987	46	0.947	82	0.900	118	0.915	154	0.993	190	0.854	226	0.356	262	0.235	298	0.216
11	0.988	47	0.944	83	0.900	119	0.916	155	0.994	191	0.842	227	0.343	263	0.236	299	0.217
12	0.990	48	0.941	84	0.900	120	0.917	156	0.995	192	0.830	228	0.329	264	0.237	300	0.218
13	0.991	49	0.939	85	0.900	121	0.919	157	0.996	193	0.818	229	0.315	265	0.238	301	0.226
14	0.992	50	0.936	86	0.899	122	0.921	158	0.998	194	0.806	230	0.302	266	0.240	302	0.235
15	0.993	51	0.934	87	0.899	123	0.923	159	0.999	195	0.794	231	0.294	267	0.241	303	0.243
16	0.995	52	0.932	88	0.899	124	0.925	160	1.000	196	0.781	232	0.285	268	0.242	304	0.252
17	0.996	53	0.930	89	0.899	125	0.927	161	0.999	197	0.769	233	0.277	269	0.244	305	0.260
18	0.997	54	0.928	90	0.899	126	0.928	162	0.997	198	0.757	234	0.268	270	0.245	306	0.268
19	0.999	55	0.927	91	0.899	127	0.930	163	0.996	199	0.745	235	0.260	271	0.244	307	0.277
20	1.000	56	0.925	92	0.899	128	0.932	164	0.995	200	0.733	236	0.252	272	0.242	308	0.285
21	0.999	57	0.923	93	0.899	129	0.934	165	0.993	201	0.719	237	0.243	273	0.241	309	0.294
22	0.998	58	0.921	94	0.899	130	0.936	166	0.992	202	0.704	238	0.235	274	0.240	310	0.302
23	0.996	59	0.919	95	0.900	131	0.939	167	0.991	203	0.689	239	0.226	275	0.238	311	0.315
24	0.995	60	0.917	96	0.900	132	0.941	168	0.990	204	0.675	240	0.218	276	0.237	312	0.329
25	0.994	61	0.916	97	0.900	133	0.944	169	0.988	205	0.660	241	0.217	277	0.236	313	0.343
26	0.993	62	0.915	98	0.900	134	0.947	170	0.987	206	0.646	242	0.216	278	0.235	314	0.356
27	0.992	63	0.913	99	0.900	135	0.950	171	0.982	207	0.632	243	0.215	279	0.233	315	0.370
28	0.990	64	0.912	100	0.900	136	0.952	172	0.978	208	0.617	244	0.214	280	0.232	316	0.383
29	0.989	65	0.911	101	0.900	137	0.955	173	0.973	209	0.603	245	0.213	281	0.229	317	0.396
30	0.988	66	0.910	102	0.901	138	0.958	174	0.968	210	0.588	246	0.211	282	0.227	318	0.410
31	0.985	67	0.909	103	0.901	139	0.960	175	0.964	211	0.573	247	0.210	283	0.225	319	0.424
32	0.983	68	0.907	104	0.902	140	0.963	176	0.959	212	0.558	248	0.209	284	0.222	320	0.437
33	0.980	69	0.906	105	0.902	141	0.965	177	0.954	213	0.543	249	0.208	285	0.220	321	0.452
34	0.978	70	0.905	106	0.903	142	0.968	178	0.949	214	0.528	250	0.207	286	0.217	322	0.467
35	0.975	71	0.905	107	0.904	143	0.970	179	0.945	215	0.512	251	0.209	287	0.214	323	0.482

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AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-80124-2**
Date **11-Mar-24**
Call Letters **KPJR**
Channel **17**
Frequency **491 MHz**
Antenna Type **TFU-24JSC/VP-R C170**
Gain **2.39 (3.79dB)**
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.312	36	0.460	72	0.539	108	0.539	144	0.460	180	0.312	216	0.151	252	0.071	288	0.071
1	0.317	37	0.463	73	0.540	109	0.537	145	0.457	181	0.308	217	0.147	253	0.071	289	0.071
2	0.321	38	0.466	74	0.540	110	0.536	146	0.453	182	0.303	218	0.143	254	0.071	290	0.071
3	0.326	39	0.470	75	0.541	111	0.535	147	0.450	183	0.298	219	0.139	255	0.071	291	0.071
4	0.330	40	0.473	76	0.542	112	0.534	148	0.446	184	0.294	220	0.135	256	0.071	292	0.071
5	0.335	41	0.476	77	0.543	113	0.533	149	0.442	185	0.289	221	0.131	257	0.072	293	0.072
6	0.339	42	0.479	78	0.544	114	0.531	150	0.439	186	0.285	222	0.128	258	0.072	294	0.072
7	0.344	43	0.482	79	0.544	115	0.530	151	0.435	187	0.280	223	0.124	259	0.072	295	0.073
8	0.348	44	0.485	80	0.545	116	0.528	152	0.431	188	0.276	224	0.120	260	0.072	296	0.074
9	0.353	45	0.487	81	0.545	117	0.527	153	0.428	189	0.271	225	0.117	261	0.073	297	0.075
10	0.357	46	0.490	82	0.546	118	0.525	154	0.424	190	0.266	226	0.113	262	0.073	298	0.076
11	0.361	47	0.493	83	0.546	119	0.523	155	0.420	191	0.262	227	0.110	263	0.073	299	0.077
12	0.366	48	0.495	84	0.547	120	0.522	156	0.416	192	0.257	228	0.107	264	0.073	300	0.078
13	0.370	49	0.498	85	0.547	121	0.520	157	0.412	193	0.253	229	0.104	265	0.074	301	0.080
14	0.374	50	0.500	86	0.547	122	0.518	158	0.408	194	0.248	230	0.101	266	0.074	302	0.082
15	0.379	51	0.503	87	0.547	123	0.516	159	0.404	195	0.244	231	0.098	267	0.074	303	0.083
16	0.383	52	0.505	88	0.548	124	0.514	160	0.400	196	0.239	232	0.095	268	0.074	304	0.085
17	0.387	53	0.508	89	0.548	125	0.512	161	0.396	197	0.234	233	0.092	269	0.074	305	0.088
18	0.391	54	0.510	90	0.548	126	0.510	162	0.391	198	0.230	234	0.090	270	0.074	306	0.090
19	0.396	55	0.512	91	0.548	127	0.508	163	0.387	199	0.225	235	0.088	271	0.074	307	0.092
20	0.400	56	0.514	92	0.548	128	0.505	164	0.383	200	0.221	236	0.085	272	0.074	308	0.095
21	0.404	57	0.516	93	0.547	129	0.503	165	0.379	201	0.216	237	0.083	273	0.074	309	0.098
22	0.408	58	0.518	94	0.547	130	0.500	166	0.374	202	0.212	238	0.082	274	0.074	310	0.101
23	0.412	59	0.520	95	0.547	131	0.498	167	0.370	203	0.207	239	0.080	275	0.074	311	0.104
24	0.416	60	0.522	96	0.547	132	0.495	168	0.366	204	0.203	240	0.078	276	0.073	312	0.107
25	0.420	61	0.523	97	0.546	133	0.493	169	0.361	205	0.198	241	0.077	277	0.073	313	0.110
26	0.424	62	0.525	98	0.546	134	0.490	170	0.357	206	0.194	242	0.076	278	0.073	314	0.113
27	0.428	63	0.527	99	0.545	135	0.487	171	0.353	207	0.190	243	0.075	279	0.073	315	0.117
28	0.431	64	0.528	100	0.545	136	0.485	172	0.348	208	0.185	244	0.074	280	0.072	316	0.120
29	0.435	65	0.530	101	0.544	137	0.482	173	0.344	209	0.181	245	0.073	281	0.072	317	0.124
30	0.439	66	0.531	102	0.544	138	0.479	174	0.339	210	0.176	246	0.072	282	0.072	318	0.128
31	0.442	67	0.533	103	0.543	139	0.476	175	0.335	211	0.172	247	0.072	283	0.072	319	0.131
32	0.446	68	0.534	104	0.542	140	0.473	176	0.330	212	0.168	248	0.071	284	0.071	320	0.135
33	0.450	69	0.535	105	0.541	141	0.470	177	0.326	213	0.164	249	0.071	285	0.071	321	0.139
34	0.453	70	0.536	106	0.540	142	0.466	178	0.321	214	0.159	250	0.071	286	0.071	322	0.143
35	0.457	71	0.537	107	0.540	143	0.463	179	0.317	215	0.155	251	0.071	287	0.071	323	0.147

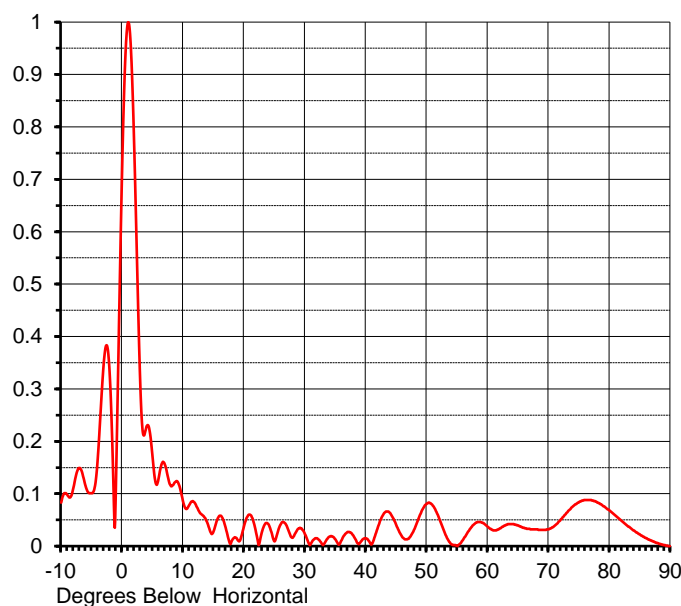
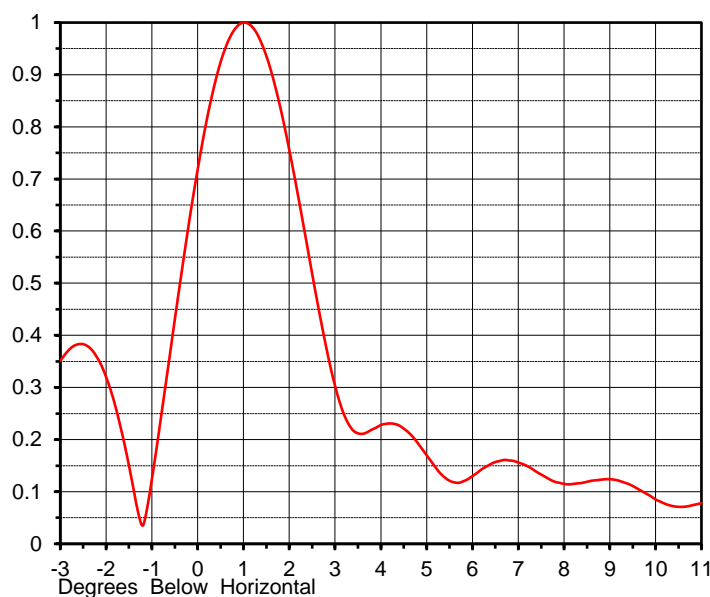
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ELEVATION PATTERN

Proposal No. **C-80124-2**
 Date **11-Mar-24**
 Call Letters **KPJR**
 Channel **17**
 Frequency **491 MHz**
 Antenna Type **TFU-24JSC/VP-R C170**

RMS Directivity at Main Lobe **22.4 (13.50 dB)**
 RMS Directivity at Horizontal **11.5 (10.61 dB)**
Calculated

Beam Tilt **1.00 deg**
 Pattern Number **24J224100**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.083	10.0	0.085	30.0	0.023	50.0	0.081	70.0	0.032
-9.0	0.098	11.0	0.078	31.0	0.005	51.0	0.077	71.0	0.039
-8.0	0.111	12.0	0.081	32.0	0.015	52.0	0.054	72.0	0.051
-7.0	0.149	13.0	0.061	33.0	0.002	53.0	0.024	73.0	0.064
-6.0	0.115	14.0	0.044	34.0	0.018	54.0	0.004	74.0	0.076
-5.0	0.101	15.0	0.028	35.0	0.013	55.0	0.000	75.0	0.084
-4.0	0.167	16.0	0.058	36.0	0.011	56.0	0.013	76.0	0.088
-3.0	0.351	17.0	0.035	37.0	0.027	57.0	0.031	77.0	0.088
-2.0	0.320	18.0	0.010	38.0	0.019	58.0	0.044	78.0	0.083
-1.0	0.124	19.0	0.011	39.0	0.006	59.0	0.045	79.0	0.076
0.0	0.718	20.0	0.038	40.0	0.015	60.0	0.037	80.0	0.068
1.0	1.000	21.0	0.060	41.0	0.004	61.0	0.030	81.0	0.058
2.0	0.756	22.0	0.025	42.0	0.037	62.0	0.034	82.0	0.048
3.0	0.303	23.0	0.029	43.0	0.063	63.0	0.040	83.0	0.038
4.0	0.228	24.0	0.042	44.0	0.063	64.0	0.042	84.0	0.030
5.0	0.170	25.0	0.009	45.0	0.040	65.0	0.039	85.0	0.022
6.0	0.130	26.0	0.041	46.0	0.017	66.0	0.035	86.0	0.015
7.0	0.156	27.0	0.039	47.0	0.014	67.0	0.032	87.0	0.010
8.0	0.115	28.0	0.016	48.0	0.033	68.0	0.032	88.0	0.005
9.0	0.124	29.0	0.034	49.0	0.062	69.0	0.031	89.0	0.002
								90.0	0.000

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***FutureFill** refers to broadband panels or limited bandwidth slotted coaxial antennas that can be modified in the field to provide the flexibility to customize the null structure at a future date.*

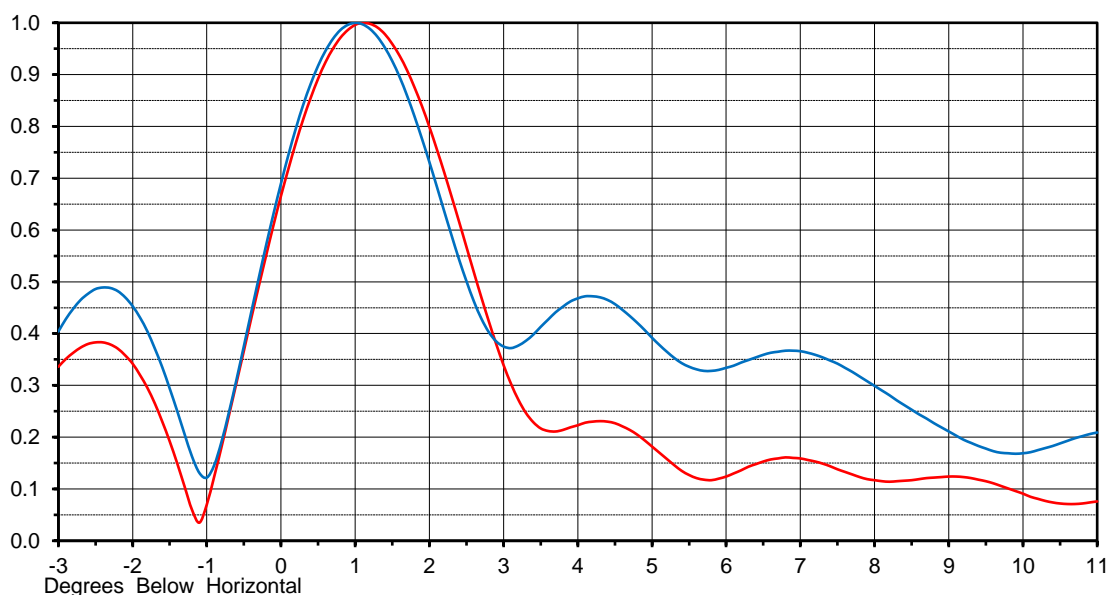
FutureFill OVERLAY

Proposal No. **C-80124-2**
 Date **11-Mar-24**
 Call Letters **KPJR**
 Channel **17**
 Frequency **491 MHz**
 Antenna Type **TFU-24JSC/VP-R C170**

RMS Directivity 22.4 **(13.50dB)**
 RMS Directivity 16.1 **(12.07dB)**
 Calculated

Beam Tilt 1.00
 Beam Tilt 1.00

Pattern No. 24J224100 **Red**
 Pattern No. 24J224100-FF **Blue**

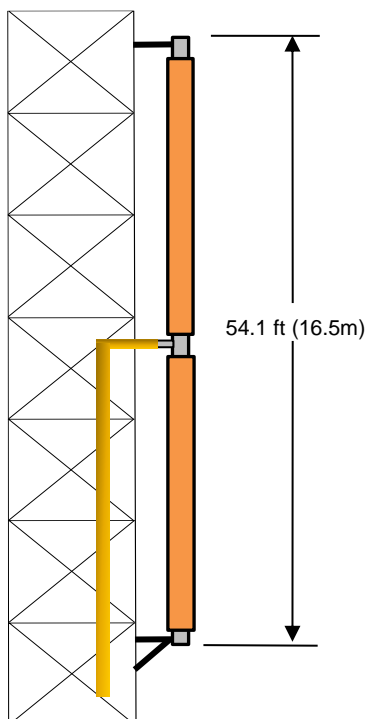


Tabulations for 24J224100-FF

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.253	10.0	0.169	30.0	0.028	50.0	0.060	70.0	0.052
-9.0	0.291	11.0	0.209	31.0	0.006	51.0	0.035	71.0	0.040
-8.0	0.219	12.0	0.183	32.0	0.015	52.0	0.013	72.0	0.037
-7.0	0.139	13.0	0.095	33.0	0.024	53.0	0.049	73.0	0.048
-6.0	0.123	14.0	0.087	34.0	0.038	54.0	0.073	74.0	0.062
-5.0	0.128	15.0	0.115	35.0	0.033	55.0	0.074	75.0	0.075
-4.0	0.095	16.0	0.115	36.0	0.044	56.0	0.060	76.0	0.082
-3.0	0.404	17.0	0.095	37.0	0.070	57.0	0.055	77.0	0.085
-2.0	0.453	18.0	0.117	38.0	0.071	58.0	0.070	78.0	0.083
-1.0	0.122	19.0	0.107	39.0	0.051	59.0	0.085	79.0	0.078
0.0	0.690	20.0	0.042	40.0	0.041	60.0	0.094	80.0	0.070
1.0	1.000	21.0	0.031	41.0	0.065	61.0	0.097	81.0	0.060
2.0	0.731	22.0	0.053	42.0	0.108	62.0	0.098	82.0	0.050
3.0	0.375	23.0	0.080	43.0	0.135	63.0	0.096	83.0	0.040
4.0	0.468	24.0	0.068	44.0	0.128	64.0	0.090	84.0	0.031
5.0	0.392	25.0	0.031	45.0	0.100	65.0	0.083	85.0	0.023
6.0	0.334	26.0	0.071	46.0	0.082	66.0	0.079	86.0	0.016
7.0	0.366	27.0	0.069	47.0	0.082	67.0	0.076	87.0	0.010
8.0	0.299	28.0	0.028	48.0	0.078	68.0	0.072	88.0	0.005
9.0	0.211	29.0	0.034	49.0	0.071	69.0	0.064	89.0	0.002
								90.0	0.000

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MECHANICAL SPECIFICATIONS



Proposal No. **C-80124-2**
 Date **11-Mar-24**
 Call Letters **KPJR**
 Channel **17**
 Frequency **491 MHz**
 Antenna Type **TFU-24JSC/VP-R C170**

Preliminary Specifications

Side Mounted

Without ice TIA-222-G

Basic Wind Speed 90 m/h (144.8 km/h)

Structure Class II

Exposure Category C

Topography Category 1

Terrain Type Flat topped ridge

Base 2621 ft (798.9 m)

Mechanical Specifications

Height	H2	54.1 ft (16.5m)	
Height of Center of Radiation	H3	27.1 ft (8.3m)	
Effective Projected Area	(EPA) _A	45.3 ft ² (4.2m ²)	Mounts Excluded
Weight	W	1200 lb (0.5t)	Mounts Excluded

Antenna designed in accordance with AISC specifications for design of structural steel as prescribed by TIA-222-G

Prepared by: CAB

Date: 15-Feb-24

ME:

EE:

Rev. No.2 by: CAB

Date: 11-Mar-24

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Summary

Proposal No.	C-80124-2
Date	11-Mar-24
Call Letters	KPJR
Channel	17
Frequency	491 MHz
Antenna Type	TFU-24JSC/VP-R C170

Antenna

	Hpol	Vpol
ERP:	1,000 kW (30.00 dBk)	300 kW (24.77 dBk)
Peak Gain*	31.45 (14.98 dB)	9.43 (9.75 dB)

Antenna Input Power	31.8 kW (15.02 dBk)
----------------------------	------------------------------

Transmission Line

Type:	Rigid	Attenuation:	(1.22 dB)
Size:	6-1/8"	Efficiency:	75.5%
Impedance:	75 Ohm		
Length:	1140 ft	347.5 m	

Transmitter Output

42.1 kW (16.24 dBk)

Transmitter filter losses not included

* Directivity and Gain are with respect to half wave dipole. The gain includes feed system losses

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TVSTUDY ANALYSIS

PROPOSED KPJR-DT
CHANNEL 17 – GREELEY, CO

Study created: 2024.03.06 15:08:00

Study build station data: LMS TV 2024-03-04

Proposal: KPJR-TV D17 DT CP GREELEY, CO

File number: BLANK0000158506

Facility ID: 166510

Station data: User record

Record ID: 90

Country: U.S.

Zone: II

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
Yes	KQDK-CD	D16	DC	LIC	DENVER, CO	BLANK0000071650	47.2 km
Yes	KQDK-CD	D16	DC	CP	DENVER, CO	BLANK0000219959	50.1
Yes	KLBY	D17	DT	LIC	COLBY, KS	BLANK0000086337	317.8
Yes	KTWO-TV	D17	DT	LIC	CASPER, WY	BLCDDT20110315ABB	317.8
Yes	KPXC-TV	D18	DT	LIC	DENVER, CO	BLANK0000071556	0.3

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D17

Latitude: 40 5 57.00 N (NAD83)

Longitude: 104 54 3.20 W

Height AMSL: 1822.7 m

HAAT: 302.6 m

Peak ERP: 1000 kW

Antenna: DIE C170 0.0 deg

Elev Pattn: Generic

Elec Tilt: 0.80

39.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	884 kW	343.0 m	104.1 km
45.0	901	328.0	102.9
90.0	808	304.5	99.5
135.0	901	300.5	100.0
180.0	884	270.0	96.0
225.0	133	248.1	78.0
270.0	60.0	301.5	78.2
315.0	133	325.4	86.2

Distance to Canadian border: 989.2 km

Distance to Mexican border: 935.7 km

Conditions at FCC monitoring station: Grand Island NE
Bearing: 78.4 degrees Distance: 554.4 km

Proposal is not within the West Virginia quiet zone area

**Proposal is within coordination distance of Table Mountain receiving zone

**Proposal exceeds field strength limit at Table Mountain receiving zone

Conditions at Table Mountain receiving zone:

Bearing: 274.5 degrees Distance: 27.7 km

ERP: 58.3 kW Field strength: 95.2 dBu, 57.8 mV/m

No land mobile station failures found

Study cell size: 1.00 km

Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%

Maximum new IX to LPTV: 2.00%

No IX check failures found.

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U.S. DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
INSTITUTE FOR TELECOMMUNICATION SCIENCES
325 Broadway
Boulder, Colorado 80305-3328

Reply to the attention of:

March 6, 2024

Kyle Fisher
Smith and Fisher, LLC
4791 Wintergreen Ct
Woodbridge, VA 22192
kyle@smithandfisher.com
833-472-3373

Re: KPJR Antenna Change

To Kyle Fisher:

Per your request from 26FEB2024, the Department of Commerce has evaluated the effects of Trinity Broadcasting of Texas' proposed operation on the Table Mountain Radio Receiving Zone (Table Mountain). Based on this evaluation, the Department is pleased to inform you that the request has been successfully coordinated.

This coordination is based solely on technical information submitted to our office and not on the actual measured signal.

We do not expect interference to Table Mountain users. Should a problem arise, we reserve the right to request modifications to your testing.

Regards,

A handwritten signature in blue ink, appearing to be "Mike Chang", is located below the "Regards," text.

Mike Chang

ITS: The Nation's Spectrum and Communications Lab | Realizing the full potential of telecommunications to drive a new era of innovation, development, and productivity. | U.S. Depart. of Commerce | NTIA | Institute for Telecommunication Sciences | 325 Broadway, Boulder, CO 80305 | mchang@ntia.gov | C: 720.626.0499

POWER DENSITY CALCULATION

PROPOSED KPJR-DT
CHANNEL 17 – GREELEY, CO

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Greeley facility. Employing the methods set forth in OET Bulletin No. 65 and considering a main-lobe effective radiated power of 1000 kW, an antenna radiation center 327 meters above ground, and assuming a vertical relative field value for the proposed KPJR-DT Dielectric antenna, maximum power density two meters above ground of 0.0039 mW/cm² is calculated to occur near the base of the tower. Since this is only 1.03 percent of the 0.33 mW/cm² reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 17 (488-494 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.