

Technical Summary

Request for Special Temporary Authority

Engineering Exhibit

KPXN-TV – San Bernardino, CA

Facility ID: 58978

Licensee "ION TELEVISION LICENSE, LLC" is currently authorized to operate on DTV channel 24. The Antenna Structure Registration Number is 1036897 with a Latitude of 34° 13' 36" N+ and a Longitude of 118° 04' 02.2" W-.

The purpose of this application is to request emergency special temporary authority to operate from Antenna Structure Registration Number 1036897 with a Latitude of 34° 13' 36" N+ and a Longitude of 118° 04' 02.2" W-. The HAAT is 900.24 m (AGL 38.10 m) with an AMSL of 1772.40 m. An ERP of 156 kW will be utilized.

Channel Share

KPXN-TV channel shares with television station KILM(TV), Inglewood, California (Facility ID 63865) pursuant to a Shared License Authorization (File No. 0000068510). Accordingly, all information in this application pertains to both stations. This includes, but not limited to, technical parameters, RF Hazard statement and RF Coverage analysis.

Antenna System

A directional side-mounted antenna will be utilized. It will be affixed to an existing guyed tower structure and will not increase the overall height of the structure. Elevation and Azimuth patterns are attached.

RF Hazard (Environmental)

The applicant, in coordination with the other occupants of the transmitter site, shall conduct radio frequency (RF) power density measurements throughout the transmitter site area to the extent necessary to confirm compliance with the FCC specified guidelines for human exposure to RF energy. Therefore, the proposal complies with Section 1.1307(b) of the FCC rules regarding human exposure to RF energy.

The transmitter site is restricted from access. In the event that personnel are required to enter the restricted area or climb the tower structure, the proposed transmissions shall be reduced or terminated as necessary to prevent RF exposure above the FCC recommended limits.

Antenna Model: **TFU-8WB-R C160**

Reference Number:

Date: **4-Aug-21**

Customer: **KPXN**

Location: **SAN BERNADINO, CA**

Electrical Specifications

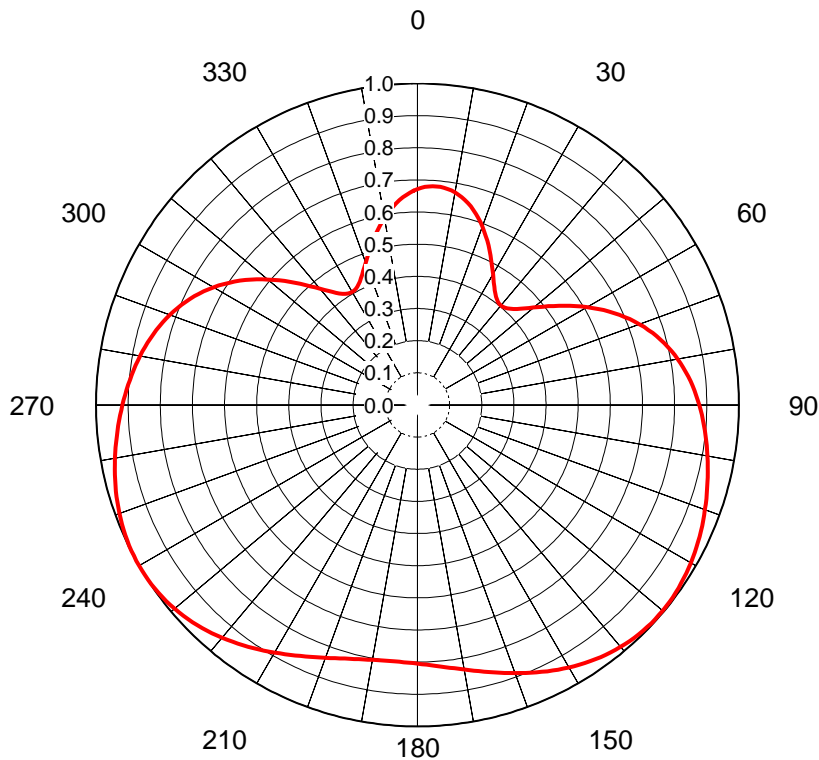
Polarization: **Horizontal**
Azimuth Pattern: **C160**
Antenna Input: **4-1/16 in 50 Ohm EIA/DCA**
VSWR: Channel **1.15:1** Band **1.15:1**
Bandwidth: **470-698 MHz**
Rated Input Power: **20 kW (13.01 dBk) Maximum Average Power**

Mechanical Specifications

Mounting: **Side Mounted**
Environmental Protection: **Full Radome**
Height: **14.4 ft (4.4m)**
Weight: **570 lb (259 kg)** mounts excluded
Effective Projected Area: **19.3 ft² (1.8m²)** Basic Wind Speed: **90 mph (145 km/h)**

Channel Specifications

Call	Ch	Freq	Hpol ERP	TPO	Peak Gain Main Lobe Hpol	Peak Gain at Horizontal Hpol
KPXN	24	533	240 kW (23.80 dBk)	20.5 kW (13.11 dBk)	12.35 (10.92dB)	11.72 (10.69dB)



AZIMUTH PATTERN Horizontal Polarization

Proposal No.
 Date **4-Aug-21**
 Call Letters **KPXN**
 Channel **24**
 Frequency **533 MHz**
 Antenna Type **TFU-8WB-R C160**
 Gain **1.57 (1.96dB)**
 Calculated

Pattern Number **WB-C160-24 Hpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.672	36	0.416	72	0.755	108	0.945	144	0.970	180	0.805	216	0.924	252	0.981	288	0.833	324	0.431
1	0.675	37	0.411	73	0.765	109	0.948	145	0.966	181	0.803	217	0.930	253	0.979	289	0.827	325	0.423
2	0.679	38	0.407	74	0.775	110	0.952	146	0.962	182	0.802	218	0.935	254	0.976	290	0.820	326	0.417
3	0.681	39	0.405	75	0.783	111	0.955	147	0.957	183	0.801	219	0.940	255	0.972	291	0.813	327	0.412
4	0.682	40	0.404	76	0.792	112	0.959	148	0.953	184	0.801	220	0.946	256	0.969	292	0.805	328	0.408
5	0.682	41	0.405	77	0.800	113	0.962	149	0.948	185	0.801	221	0.951	257	0.966	293	0.797	329	0.406
6	0.682	42	0.407	78	0.808	114	0.965	150	0.943	186	0.801	222	0.955	258	0.962	294	0.789	330	0.406
7	0.681	43	0.411	79	0.815	115	0.968	151	0.938	187	0.802	223	0.960	259	0.959	295	0.781	331	0.406
8	0.678	44	0.416	80	0.822	116	0.971	152	0.933	188	0.802	224	0.964	260	0.955	296	0.772	332	0.409
9	0.675	45	0.422	81	0.829	117	0.974	153	0.927	189	0.804	225	0.969	261	0.952	297	0.762	333	0.413
10	0.671	46	0.430	82	0.835	118	0.977	154	0.922	190	0.805	226	0.973	262	0.948	298	0.753	334	0.418
11	0.667	47	0.439	83	0.841	119	0.980	155	0.916	191	0.807	227	0.976	263	0.944	299	0.743	335	0.424
12	0.661	48	0.449	84	0.847	120	0.982	156	0.910	192	0.809	228	0.980	264	0.941	300	0.732	336	0.432
13	0.655	49	0.460	85	0.853	121	0.985	157	0.905	193	0.812	229	0.983	265	0.937	301	0.721	337	0.440
14	0.647	50	0.471	86	0.858	122	0.987	158	0.899	194	0.815	230	0.986	266	0.933	302	0.710	338	0.450
15	0.640	51	0.484	87	0.863	123	0.989	159	0.893	195	0.818	231	0.989	267	0.929	303	0.698	339	0.460
16	0.631	52	0.497	88	0.868	124	0.990	160	0.888	196	0.821	232	0.991	268	0.925	304	0.686	340	0.471
17	0.622	53	0.510	89	0.872	125	0.992	161	0.882	197	0.825	233	0.993	269	0.922	305	0.674	341	0.483
18	0.612	54	0.524	90	0.877	126	0.993	162	0.876	198	0.828	234	0.995	270	0.918	306	0.661	342	0.494
19	0.601	55	0.538	91	0.881	127	0.994	163	0.871	199	0.833	235	0.997	271	0.914	307	0.648	343	0.507
20	0.590	56	0.552	92	0.885	128	0.995	164	0.865	200	0.837	236	0.998	272	0.910	308	0.635	344	0.519
21	0.579	57	0.566	93	0.890	129	0.996	165	0.860	201	0.842	237	0.999	273	0.906	309	0.621	345	0.531
22	0.567	58	0.580	94	0.894	130	0.996	166	0.855	202	0.846	238	1.000	274	0.902	310	0.607	346	0.544
23	0.555	59	0.595	95	0.897	131	0.996	167	0.850	203	0.851	239	1.000	275	0.898	311	0.593	347	0.556
24	0.543	60	0.609	96	0.901	132	0.996	168	0.845	204	0.856	240	1.000	276	0.894	312	0.579	348	0.568
25	0.531	61	0.623	97	0.905	133	0.995	169	0.840	205	0.862	241	1.000	277	0.889	313	0.565	349	0.580
26	0.518	62	0.636	98	0.909	134	0.994	170	0.836	206	0.867	242	0.999	278	0.885	314	0.551	350	0.591
27	0.506	63	0.650	99	0.912	135	0.993	171	0.831	207	0.873	243	0.999	279	0.881	315	0.537	351	0.602
28	0.494	64	0.663	100	0.916	136	0.991	172	0.827	208	0.878	244	0.998	280	0.876	316	0.524	352	0.612
29	0.482	65	0.676	101	0.920	137	0.990	173	0.824	209	0.884	245	0.996	281	0.871	317	0.510	353	0.622
30	0.470	66	0.688	102	0.923	138	0.988	174	0.820	210	0.890	246	0.995	282	0.866	318	0.497	354	0.631
31	0.459	67	0.701	103	0.927	139	0.985	175	0.817	211	0.895	247	0.993	283	0.861	319	0.484	355	0.640
32	0.449	68	0.712	104	0.931	140	0.983	176	0.814	212	0.901	248	0.991	284	0.856	320	0.472	356	0.648
33	0.439	69	0.724	105	0.934	141	0.980	177	0.811	213	0.907	249	0.989	285	0.851	321	0.460	357	0.655
34	0.430	70	0.735	106	0.938	142	0.977	178	0.809	214	0.913	250	0.987	286	0.845	322	0.450	358	0.661
35	0.423	71	0.745	107	0.941	143	0.973	179	0.807	215	0.918	251	0.984	287	0.839	323	0.440	359	0.667

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ELEVATION PATTERN

Proposal No.

Date **4-Aug-21**

Call Letters **KPXN**

Channel **24**

Frequency **533 MHz**

Antenna Type **TFU-8WB-R C160**

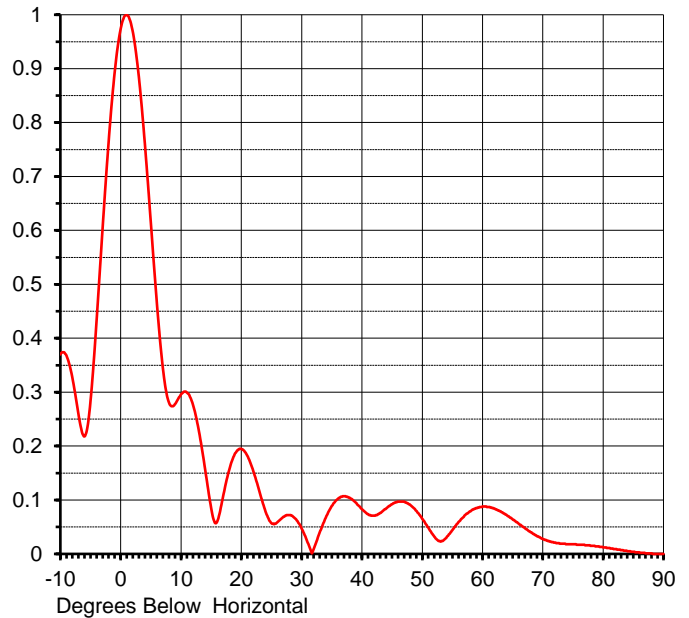
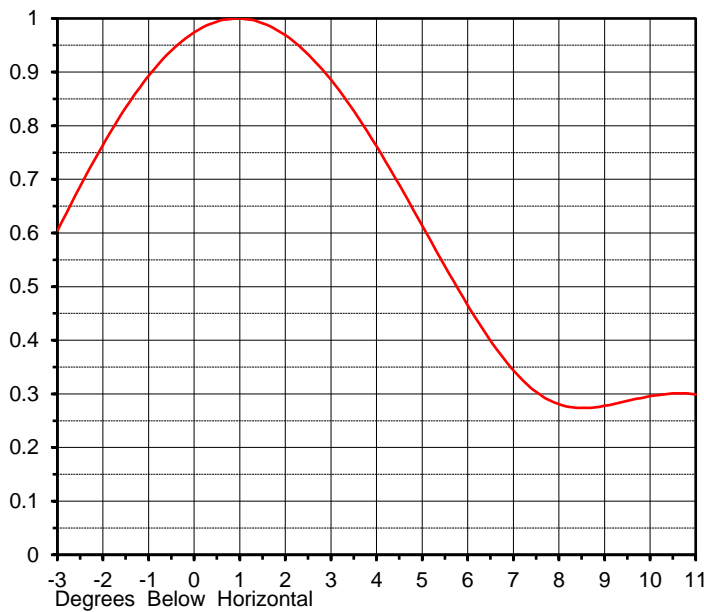
RMS Directivity at Main Lobe **7.9 (8.96 dB)**

RMS Directivity at Horizontal **7.5 (8.75 dB)**

Calculated

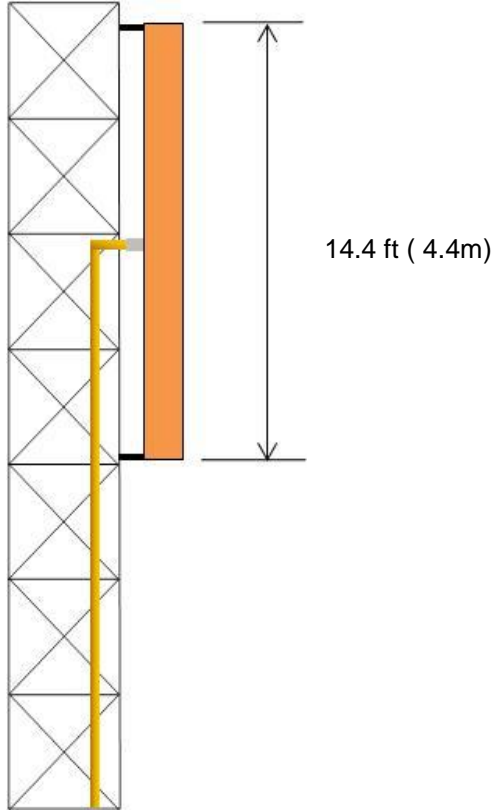
Beam Tilt **1.05 deg**

Pattern Number **08W079105-24**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.370	10.0	0.296	30.0	0.047	50.0	0.065	70.0	0.028
-9.0	0.368	11.0	0.299	31.0	0.021	51.0	0.049	71.0	0.024
-8.0	0.326	12.0	0.276	32.0	0.009	52.0	0.032	72.0	0.021
-7.0	0.259	13.0	0.226	33.0	0.040	53.0	0.023	73.0	0.019
-6.0	0.218	14.0	0.157	34.0	0.067	54.0	0.030	74.0	0.018
-5.0	0.284	15.0	0.085	35.0	0.089	55.0	0.044	75.0	0.018
-4.0	0.432	16.0	0.060	36.0	0.102	56.0	0.059	76.0	0.017
-3.0	0.604	17.0	0.108	37.0	0.107	57.0	0.071	77.0	0.016
-2.0	0.764	18.0	0.156	38.0	0.104	58.0	0.079	78.0	0.015
-1.0	0.893	19.0	0.187	39.0	0.095	59.0	0.085	79.0	0.014
0.0	0.974	20.0	0.195	40.0	0.083	60.0	0.088	80.0	0.012
1.0	1.000	21.0	0.182	41.0	0.074	61.0	0.087	81.0	0.011
2.0	0.969	22.0	0.153	42.0	0.071	62.0	0.084	82.0	0.009
3.0	0.886	23.0	0.116	43.0	0.076	63.0	0.079	83.0	0.007
4.0	0.762	24.0	0.079	44.0	0.084	64.0	0.072	84.0	0.005
5.0	0.614	25.0	0.057	45.0	0.092	65.0	0.064	85.0	0.004
6.0	0.465	26.0	0.059	46.0	0.097	66.0	0.056	86.0	0.003
7.0	0.344	27.0	0.069	47.0	0.097	67.0	0.048	87.0	0.001
8.0	0.281	28.0	0.072	48.0	0.091	68.0	0.040	88.0	0.001
9.0	0.278	29.0	0.065	49.0	0.080	69.0	0.033	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No.
 Date **4-Aug-21**
 Call Letters **KPXN**
 Channel **24**
 Frequency **533 MHz**
 Antenna Type **TFU-8WB-R C160**

Preliminary Specifications

Side Mounted

With Ice TIA-222-G

Basic Wind Speed 90 mph (145 km/h)

Structure Class II
 Exposure Category C
 Topography Category 4

Design Ice 0.75 in t_{iz}= 2.27 in
 Wind Speed with Ice 40 mph

Mechanical Specifications		without ice	with ice
Height	H2	14.4 ft (4.4m)	
Height of Center of Radiation	H3	7.2 ft (2.2m)	
Effective Projected Area	(EPA) _s	19.3 ft² (1.8m²)	34.5 ft² (3.2m²) mounts excluded
Weight	W	570 lb (259 kg)	1410 lb (640 kg) mounts excluded

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

Mechanical data is based on listed criteria and should be verified by the tower engineer.

Prepared by: **Date:** 4-Aug-21

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Summary

Proposal No.	
Date	4-Aug-21
Call Letters	KPXN
Channel	24
Frequency	533 MHz
Antenna Type	TFU-8WB-R C160

Antenna

		Hpol
ERP:	240 kW	(23.80 dBk)
Peak Gain	12.35	(10.92 dBd)

Antenna Input Power	19.4 kW	(12.89 dBk)
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Transmission Line

Type:	Rigid	Attenuation:	(0.22 dB)
Size:	6-1/8"	Efficiency:	95.0%
Impedance:	75 Ohm		
Length:	200 ft	61.0 m	

Transmitter Output

20.5 kW	(13.11 dBk)
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Transmitter filter losses not included

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KPXN - STA

Latitude: 34-13-36 N
Longitude: 118-03-59 W
ERP: 156.00 kW
Channel: 24
Frequency: 533.0 MHz
AMSL Height: 1772.4 m
Elevation: 1734.3 m
Horiz. Pattern: Directional
Vert. Pattern: Yes
Elec Tilt: 1.05
Prop Model: None

