Dielectric®

Antenna Model: **TFU-24ETT/VP-R P290**

Proposal Number:	C-70448
Date:	17-Mar-17
Customer:	Nexstar
Location:	Little Rock, AK

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:	25 kW	(13.98 dBk)	Maximum Average Power

Mechanical Specifications

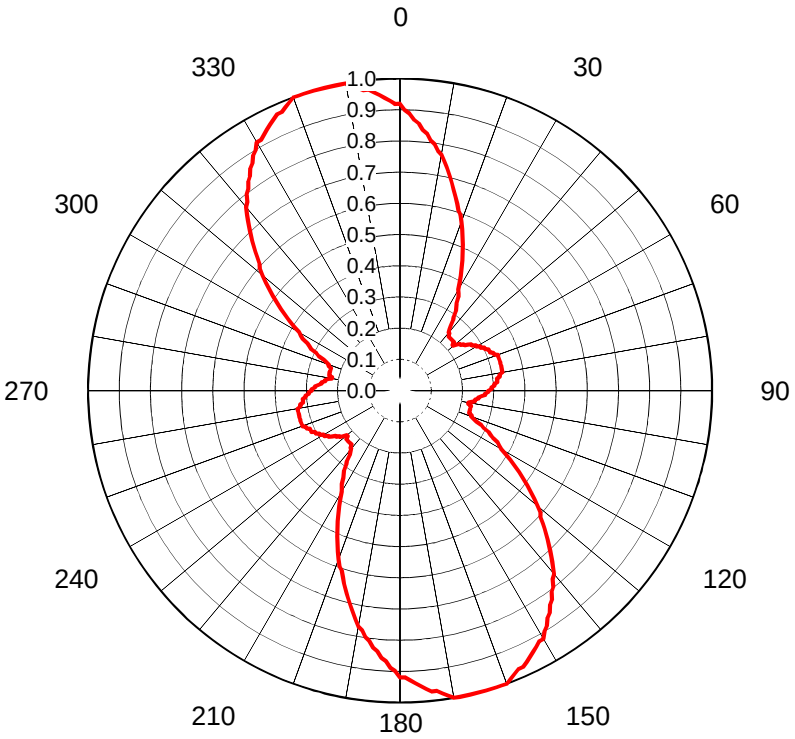
Mounting:	Top Mounted			
Environmental Protection:	Full Radome			
Height:	45 ft (13.7m)	less Lightning Protector	49 ft (14.9m)	with Lightning Protector
Weight:	4450 lb (2t)			
Effective Projected Area:	44.1 ft² (4.1m²)	TIA/EIA-222-F	**Basic Wind Speed:**	70 m/h (112.7 km/h)

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
KASN	34	593 MHz	906 kW (29.57 dBk)	160 kW (22.04 dBk)	32.9 kW (15.17 dBk)	49.00 (16.90dB)	8.65 (9.37dB)	33.84 (15.29dB)	5.97 (7.76dB)

Andre J Skalina
have reviewed this document
'00'04- 16:18:26 2017.03.19

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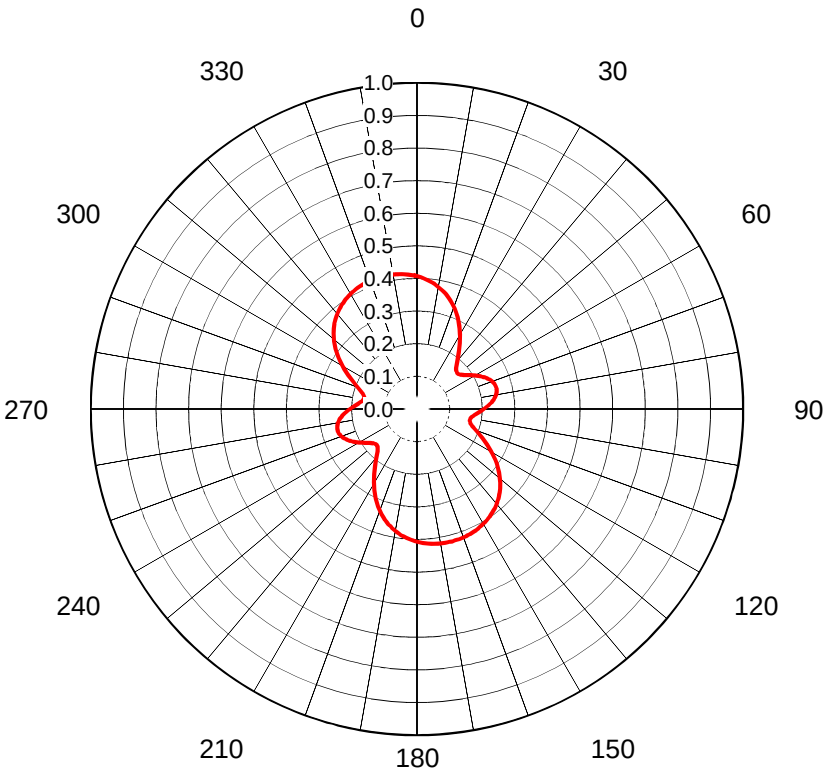


AZIMUTH PATTERN
Horizontal Polarization

Proposal No.	**C-70448**
Date	**17-Mar-17**
Call Letters	**KASN**
Channel	**34**
Frequency	**593 MHz**
Antenna Type	**TFU-24ETT/VP-R P290**
Gain	**2.84 (4.53dB)**
	Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.919	36	0.293	72	0.333	108	0.232	144	0.828	180	0.919	216	0.293	252	0.333	288	0.232	324	0.828
1	0.899	37	0.283	73	0.333	109	0.242	145	0.838	181	0.899	217	0.283	253	0.333	289	0.242	325	0.838
2	0.889	38	0.263	74	0.333	110	0.242	146	0.859	182	0.889	218	0.263	254	0.333	290	0.242	326	0.859
3	0.869	39	0.253	75	0.333	111	0.253	147	0.869	183	0.869	219	0.253	255	0.333	291	0.253	327	0.869
4	0.859	40	0.242	76	0.333	112	0.263	148	0.889	184	0.859	220	0.242	256	0.333	292	0.263	328	0.889
5	0.838	41	0.242	77	0.333	113	0.283	149	0.899	185	0.838	221	0.242	257	0.333	293	0.283	329	0.899
6	0.828	42	0.232	78	0.333	114	0.293	150	0.919	186	0.828	222	0.232	258	0.333	294	0.293	330	0.919
7	0.808	43	0.232	79	0.333	115	0.313	151	0.919	187	0.808	223	0.232	259	0.333	295	0.313	331	0.919
8	0.798	44	0.232	80	0.333	116	0.323	152	0.929	188	0.798	224	0.232	260	0.333	296	0.323	332	0.929
9	0.778	45	0.232	81	0.323	117	0.333	153	0.939	189	0.778	225	0.232	261	0.323	297	0.333	333	0.939
10	0.768	46	0.232	82	0.323	118	0.354	154	0.949	190	0.768	226	0.232	262	0.323	298	0.354	334	0.949
11	0.747	47	0.232	83	0.313	119	0.364	155	0.960	191	0.747	227	0.232	263	0.313	299	0.364	335	0.960
12	0.727	48	0.232	84	0.313	120	0.374	156	0.970	192	0.727	228	0.232	264	0.313	300	0.374	336	0.970
13	0.707	49	0.222	85	0.313	121	0.394	157	0.970	193	0.707	229	0.222	265	0.313	301	0.394	337	0.970
14	0.687	50	0.222	86	0.303	122	0.414	158	0.980	194	0.687	230	0.222	266	0.303	302	0.414	338	0.980
15	0.667	51	0.232	87	0.303	123	0.434	159	0.990	195	0.667	231	0.232	267	0.303	303	0.434	339	0.990
16	0.646	52	0.242	88	0.293	124	0.455	160	1.000	196	0.646	232	0.242	268	0.293	304	0.455	340	1.000
17	0.626	53	0.242	89	0.293	125	0.475	161	1.000	197	0.626	233	0.242	269	0.293	305	0.475	341	1.000
18	0.606	54	0.253	90	0.283	126	0.495	162	1.000	198	0.606	234	0.253	270	0.283	306	0.495	342	1.000
19	0.596	55	0.253	91	0.283	127	0.515	163	1.000	199	0.596	235	0.253	271	0.283	307	0.515	343	1.000
20	0.576	56	0.263	92	0.273	128	0.535	164	1.000	200	0.576	236	0.263	272	0.273	308	0.535	344	1.000
21	0.556	57	0.273	93	0.273	129	0.556	165	1.000	201	0.556	237	0.273	273	0.273	309	0.556	345	1.000
22	0.535	58	0.273	94	0.263	130	0.576	166	1.000	202	0.535	238	0.273	274	0.263	310	0.576	346	1.000
23	0.515	59	0.283	95	0.253	131	0.596	167	1.000	203	0.515	239	0.283	275	0.253	311	0.596	347	1.000
24	0.495	60	0.283	96	0.253	132	0.606	168	1.000	204	0.495	240	0.283	276	0.253	312	0.606	348	1.000
25	0.475	61	0.293	97	0.242	133	0.626	169	1.000	205	0.475	241	0.293	277	0.242	313	0.626	349	1.000
26	0.455	62	0.293	98	0.242	134	0.646	170	1.000	206	0.455	242	0.293	278	0.242	314	0.646	350	1.000
27	0.434	63	0.303	99	0.232	135	0.667	171	0.990	207	0.434	243	0.303	279	0.232	315	0.667	351	0.990
28	0.414	64	0.303	100	0.222	136	0.687	172	0.980	208	0.414	244	0.303	280	0.222	316	0.687	352	0.980
29	0.394	65	0.313	101	0.222	137	0.707	173	0.970	209	0.394	245	0.313	281	0.222	317	0.707	353	0.970
30	0.374	66	0.313	102	0.232	138	0.727	174	0.970	210	0.374	246	0.313	282	0.232	318	0.727	354	0.970
31	0.364	67	0.313	103	0.232	139	0.747	175	0.960	211	0.364	247	0.313	283	0.232	319	0.747	355	0.960
32	0.354	68	0.323	104	0.232	140	0.768	176	0.949	212	0.354	248	0.323	284	0.232	320	0.768	356	0.949
33	0.333	69	0.323	105	0.232	141	0.778	177	0.939	213	0.333	249	0.323	285	0.232	321	0.778	357	0.939
34	0.323	70	0.333	106	0.232	142	0.798	178	0.929	214	0.323	250	0.333	286	0.232	322	0.798	358	0.929
35	0.313	71	0.333	107	0.232	143	0.808	179	0.919	215	0.313	251	0.333	287	0.232	323	0.808	359	0.919

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AZIMUTH PATTERN
Vertical Polarization

Proposal No.	**C-70448**
Date	**17-Mar-17**
Call Letters	**KASN**
Channel	**34**
Frequency	**593 MHz**
Antenna Type	**TFU-24ETT/VP-R P290**
Gain	**1.91 (2.8dB)**
	Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.407	36	0.219	72	0.250	108	0.182	144	0.393	180	0.407	216	0.219	252	0.250	288	0.182	324	0.393
1	0.405	37	0.212	73	0.251	109	0.187	145	0.396	181	0.405	217	0.212	253	0.251	289	0.187	325	0.396
2	0.403	38	0.205	74	0.252	110	0.192	146	0.398	182	0.403	218	0.205	254	0.252	290	0.192	326	0.398
3	0.401	39	0.199	75	0.252	111	0.199	147	0.401	183	0.401	219	0.199	255	0.252	291	0.199	327	0.401
4	0.398	40	0.192	76	0.252	112	0.205	148	0.403	184	0.398	220	0.192	256	0.252	292	0.205	328	0.403
5	0.396	41	0.187	77	0.251	113	0.212	149	0.405	185	0.396	221	0.187	257	0.251	293	0.212	329	0.405
6	0.393	42	0.182	78	0.250	114	0.219	150	0.407	186	0.393	222	0.182	258	0.250	294	0.219	330	0.407
7	0.390	43	0.177	79	0.248	115	0.226	151	0.409	187	0.390	223	0.177	259	0.248	295	0.226	331	0.409
8	0.387	44	0.173	80	0.246	116	0.234	152	0.410	188	0.387	224	0.173	260	0.246	296	0.234	332	0.410
9	0.384	45	0.170	81	0.243	117	0.241	153	0.412	189	0.384	225	0.170	261	0.243	297	0.241	333	0.412
10	0.380	46	0.168	82	0.240	118	0.249	154	0.413	190	0.380	226	0.168	262	0.240	298	0.249	334	0.413
11	0.376	47	0.166	83	0.237	119	0.257	155	0.415	191	0.376	227	0.166	263	0.237	299	0.257	335	0.415
12	0.372	48	0.165	84	0.233	120	0.264	156	0.416	192	0.372	228	0.165	264	0.233	300	0.264	336	0.416
13	0.368	49	0.166	85	0.229	121	0.272	157	0.417	193	0.368	229	0.166	265	0.229	301	0.272	337	0.417
14	0.364	50	0.167	86	0.225	122	0.279	158	0.417	194	0.364	230	0.167	266	0.225	302	0.279	338	0.417
15	0.359	51	0.168	87	0.220	123	0.286	159	0.418	195	0.359	231	0.168	267	0.220	303	0.286	339	0.418
16	0.354	52	0.171	88	0.215	124	0.293	160	0.419	196	0.354	232	0.171	268	0.215	304	0.293	340	0.419
17	0.349	53	0.174	89	0.210	125	0.300	161	0.419	197	0.349	233	0.174	269	0.210	305	0.300	341	0.419
18	0.344	54	0.177	90	0.205	126	0.307	162	0.420	198	0.344	234	0.177	270	0.205	306	0.307	342	0.420
19	0.338	55	0.181	91	0.200	127	0.314	163	0.420	199	0.338	235	0.181	271	0.200	307	0.314	343	0.420
20	0.332	56	0.186	92	0.195	128	0.320	164	0.420	200	0.332	236	0.186	272	0.195	308	0.320	344	0.420
21	0.326	57	0.190	93	0.190	129	0.326	165	0.420	201	0.326	237	0.190	273	0.190	309	0.326	345	0.420
22	0.320	58	0.195	94	0.186	130	0.332	166	0.420	202	0.320	238	0.195	274	0.186	310	0.332	346	0.420
23	0.314	59	0.200	95	0.181	131	0.338	167	0.420	203	0.314	239	0.200	275	0.181	311	0.338	347	0.420
24	0.307	60	0.205	96	0.177	132	0.344	168	0.420	204	0.307	240	0.205	276	0.177	312	0.344	348	0.420
25	0.300	61	0.210	97	0.174	133	0.349	169	0.419	205	0.300	241	0.210	277	0.174	313	0.349	349	0.419
26	0.293	62	0.215	98	0.171	134	0.354	170	0.419	206	0.293	242	0.215	278	0.171	314	0.354	350	0.419
27	0.286	63	0.220	99	0.168	135	0.359	171	0.418	207	0.286	243	0.220	279	0.168	315	0.359	351	0.418
28	0.279	64	0.225	100	0.167	136	0.364	172	0.417	208	0.279	244	0.225	280	0.167	316	0.364	352	0.417
29	0.272	65	0.229	101	0.166	137	0.368	173	0.417	209	0.272	245	0.229	281	0.166	317	0.368	353	0.417
30	0.264	66	0.233	102	0.165	138	0.372	174	0.416	210	0.264	246	0.233	282	0.165	318	0.372	354	0.416
31	0.257	67	0.237	103	0.166	139	0.376	175	0.415	211	0.257	247	0.237	283	0.166	319	0.376	355	0.415
32	0.249	68	0.240	104	0.168	140	0.380	176	0.413	212	0.249	248	0.240	284	0.168	320	0.380	356	0.413
33	0.241	69	0.243	105	0.170	141	0.384	177	0.412	213	0.241	249	0.243	285	0.170	321	0.384	357	0.412
34	0.234	70	0.246	106	0.173	142	0.387	178	0.410	214	0.234	250	0.246	286	0.173	322	0.387	358	0.410
35	0.226	71	0.248	107	0.177	143	0.390	179	0.409	215	0.226	251	0.248	287	0.177	323	0.390	359	0.409

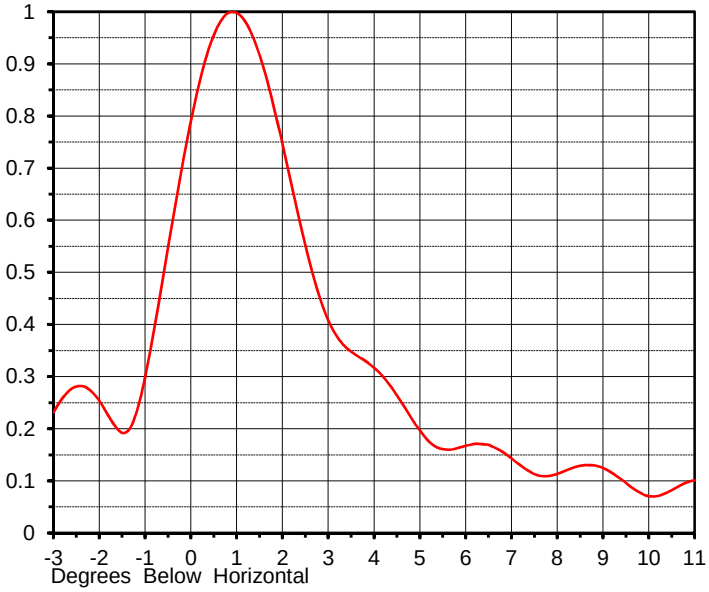
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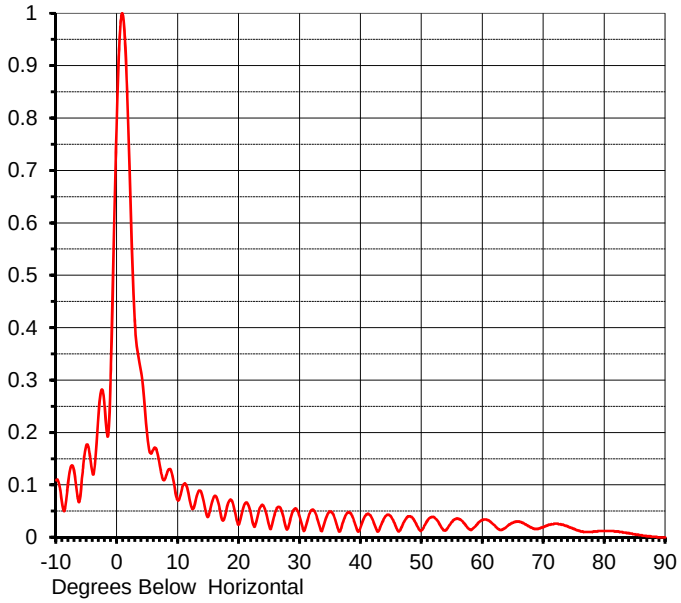
ELEVATION PATTERN

Proposal No.	**C-70448**
Date	**17-Mar-17**
Call Letters	**KASN**
Channel	**34**
Frequency	**593 MHz**
Antenna Type	**TFU-24ETT/VP-R P290**

RMS Directivity at Main Lobe	**21.8 (13.38 dB)**	Beam Tilt	**0.80 deg**
RMS Directivity at Horizontal	**15.1 (11.79 dB)**	Pattern Number	**24E218080**

Calculated





Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.109	10.0	0.070	30.0	0.037	50.0	0.014	70.0	0.020
-9.0	0.061	11.0	0.102	31.0	0.023	51.0	0.033	71.0	0.024
-8.0	0.110	12.0	0.066	32.0	0.052	52.0	0.038	72.0	0.026
-7.0	0.121	13.0	0.076	33.0	0.029	53.0	0.023	73.0	0.024
-6.0	0.085	14.0	0.078	34.0	0.027	54.0	0.014	74.0	0.020
-5.0	0.177	15.0	0.041	35.0	0.049	55.0	0.030	75.0	0.016
-4.0	0.120	16.0	0.079	36.0	0.025	56.0	0.035	76.0	0.012
-3.0	0.246	17.0	0.043	37.0	0.027	57.0	0.026	77.0	0.010
-2.0	0.240	18.0	0.057	38.0	0.048	58.0	0.014	78.0	0.010
-1.0	0.343	19.0	0.064	39.0	0.027	59.0	0.024	79.0	0.012
0.0	0.831	20.0	0.025	40.0	0.021	60.0	0.033	80.0	0.012
1.0	0.991	21.0	0.065	41.0	0.044	61.0	0.032	81.0	0.012
2.0	0.707	22.0	0.040	42.0	0.031	62.0	0.022	82.0	0.011
3.0	0.390	23.0	0.039	43.0	0.014	63.0	0.014	83.0	0.009
4.0	0.309	24.0	0.060	44.0	0.040	64.0	0.021	84.0	0.008
5.0	0.185	25.0	0.019	45.0	0.038	65.0	0.028	85.0	0.006
6.0	0.169	26.0	0.050	46.0	0.013	66.0	0.030	86.0	0.004
7.0	0.136	27.0	0.049	47.0	0.028	67.0	0.025	87.0	0.002
8.0	0.117	28.0	0.017	48.0	0.040	68.0	0.018	88.0	0.001
9.0	0.120	29.0	0.053	49.0	0.027	69.0	0.016	89.0	0.000
								90.0	0.000

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MECHANICAL SPECIFICATIONS

Proposal No.	**C-70448**
Date	**17-Mar-17**
Call Letters	**KASN**
Channel	**34**
Frequency	**593 MHz**
Antenna Type	**TFU-24ETT/VP-R P290**

Preliminary Specifications

Top Mounted

Without ice TIA/EIA-222-F

Basic Wind Speed 70 m/h (112.7 km/h)

Mechanical Specifications

Height with Lightning Protector	H4	49 ft (14.9m)
Height less Lightning Protector	H2	45 ft (13.7m)
Height of Center of Radiation	H3	22.5 ft (6.9m)
Force Coeff. x Projected Area	CaAc	44.1 ft² (4.1m²)
Moment Arm	D1	24.5 ft (7.5m)
Weight	W	4450 lb (2t)

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

Prepared by: KLP **Date:** 17-Mar-17 **ME:** **EE:**

jls **Date:** 18-Mar-17

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Summary

Proposal No.	**C-70448**
Date	**17-Mar-17**
Call Letters	**KASN**
Channel	**34**
Frequency	**593 MHz**
Antenna Type	**TFU-24ETT/VP-R P290**

Antenna

	Hpol		Vpol	
ERP:	906 kW	**(29.57 dBk)**	160 kW	**(22.04 dBk)**
Peak Gain*	49.00	(16.90 dB)	8.65	(9.37 dB)

Antenna Input Power

18.5 kW **(12.67 dBk)**

Transmission Line

Type:	**Rigid**	Attenuation:	**(2.50 dB)**
Size:	**6-1/8"**	Efficiency:	**56.2%**
Impedance:	**75 Ohm**		
Length:	**2100 ft**	**640.1 m**	

Transmitter Output

32.9 kW **(15.17 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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