



Antenna Model:

**TUA-C1-2/2M-1-K**

Proposal Number: **C-71949**  
Date: **22-Sep-22**  
Customer: **SBG**  
Location: **Chico, CA**

### Electrical Specifications

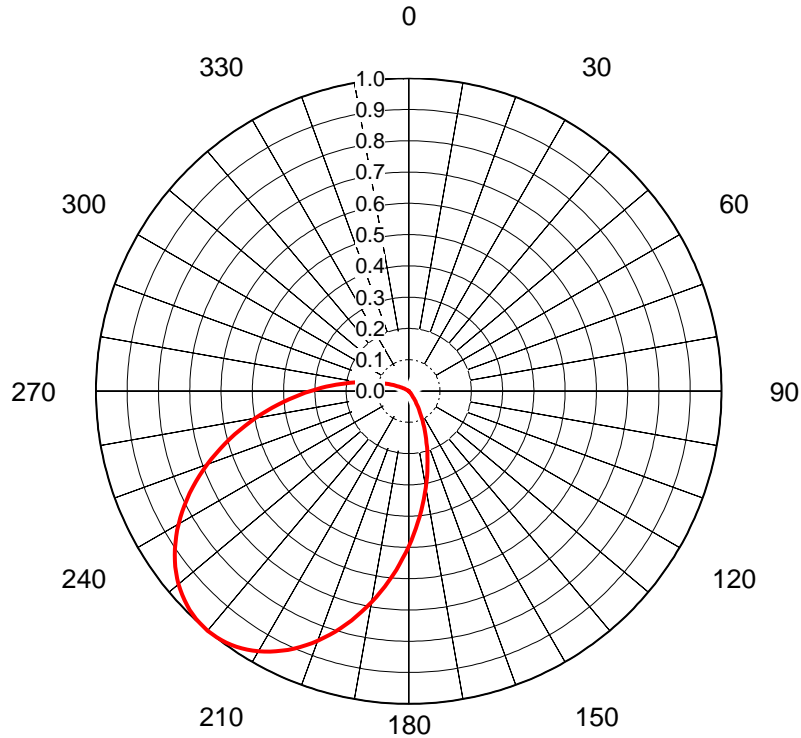
Polarization: **Horizontal**  
Azimuth Pattern: **Directional**  
Antenna Input: **1-5/8"** **50 Ohm** **EIA/DCA**  
VSWR: **Channel** **1.08 : 1**  
Bandwidth: **MHz**  
Rated Input Power: **5 kW** **(6.99 dBk)** **Maximum Average Power**

### Mechanical Specifications

Mounting: **Side Mounted**  
Environmental Protection: **Panel Cover**  
Height: **7 ft (2.1m)**  
Weight: **75 lb (0t)** **Excludes Mounts**  
Effective Projected Area: **14.1 ft² (1.3m²)** **TIA-222-G** **Basic Wind Speed: 90 m/h (144.8 km/h)**

### Channel Specifications

Call	CH	Freq	Hpol ERP	TPO	Peak Main Lobe Hpol Gain	Peak at Horizontal Hpol Gain
KKTF	24	533 MHz	15.0 kW (11.76 dBk)	0.714 kW -(1.47 dBk)	27.46 (14.39dB)	27.46 (14.39dB)



## AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71949**  
 Date **22-Sep-22**  
 Call Letters **KKTF**  
 Channel **24**  
 Frequency **533 MHz**  
 Antenna Type **TUA-C1-2/2M-1-K**  
 Gain **6.02 (7.8dB)**  
 Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.000	36	0.000	72	0.000	108	0.000	144	0.024	180	0.497	216	0.994	252	0.649	288	0.076
1	0.000	37	0.000	73	0.000	109	0.000	145	0.029	181	0.516	217	0.996	253	0.630	289	0.068
2	0.000	38	0.000	74	0.000	110	0.000	146	0.034	182	0.535	218	0.998	254	0.611	290	0.060
3	0.000	39	0.000	75	0.000	111	0.000	147	0.040	183	0.554	219	1.000	255	0.592	291	0.053
4	0.000	40	0.000	76	0.000	112	0.000	148	0.046	184	0.573	220	1.000	256	0.573	292	0.046
5	0.000	41	0.000	77	0.000	113	0.000	149	0.053	185	0.592	221	1.000	257	0.554	293	0.040
6	0.000	42	0.000	78	0.000	114	0.000	150	0.060	186	0.611	222	0.998	258	0.535	294	0.034
7	0.000	43	0.000	79	0.000	115	0.000	151	0.068	187	0.630	223	0.996	259	0.516	295	0.029
8	0.000	44	0.000	80	0.000	116	0.000	152	0.076	188	0.649	224	0.994	260	0.497	296	0.024
9	0.000	45	0.000	81	0.000	117	0.000	153	0.085	189	0.667	225	0.990	261	0.478	297	0.020
10	0.000	46	0.000	82	0.000	118	0.000	154	0.094	190	0.686	226	0.986	262	0.459	298	0.016
11	0.000	47	0.000	83	0.000	119	0.000	155	0.104	191	0.704	227	0.981	263	0.440	299	0.013
12	0.000	48	0.000	84	0.000	120	0.000	156	0.115	192	0.721	228	0.975	264	0.421	300	0.010
13	0.000	49	0.000	85	0.000	121	0.000	157	0.126	193	0.739	229	0.968	265	0.403	301	0.008
14	0.000	50	0.000	86	0.000	122	0.000	158	0.137	194	0.756	230	0.961	266	0.384	302	0.006
15	0.000	51	0.000	87	0.000	123	0.000	159	0.149	195	0.772	231	0.952	267	0.366	303	0.004
16	0.000	52	0.000	88	0.000	124	0.000	160	0.162	196	0.789	232	0.944	268	0.348	304	0.003
17	0.000	53	0.000	89	0.000	125	0.000	161	0.175	197	0.805	233	0.934	269	0.331	305	0.002
18	0.000	54	0.000	90	0.000	126	0.000	162	0.189	198	0.820	234	0.924	270	0.313	306	0.001
19	0.000	55	0.000	91	0.000	127	0.000	163	0.203	199	0.835	235	0.913	271	0.297	307	0.000
20	0.000	56	0.000	92	0.000	128	0.000	164	0.217	200	0.849	236	0.901	272	0.280	308	0.000
21	0.000	57	0.000	93	0.000	129	0.000	165	0.232	201	0.863	237	0.889	273	0.264	309	0.000
22	0.000	58	0.000	94	0.000	130	0.000	166	0.248	202	0.877	238	0.877	274	0.248	310	0.000
23	0.000	59	0.000	95	0.000	131	0.000	167	0.264	203	0.889	239	0.863	275	0.232	311	0.000
24	0.000	60	0.000	96	0.000	132	0.000	168	0.280	204	0.901	240	0.849	276	0.217	312	0.000
25	0.000	61	0.000	97	0.000	133	0.000	169	0.297	205	0.913	241	0.835	277	0.203	313	0.000
26	0.000	62	0.000	98	0.000	134	0.001	170	0.313	206	0.924	242	0.820	278	0.189	314	0.000
27	0.000	63	0.000	99	0.000	135	0.002	171	0.331	207	0.934	243	0.805	279	0.175	315	0.000
28	0.000	64	0.000	100	0.000	136	0.003	172	0.348	208	0.944	244	0.789	280	0.162	316	0.000
29	0.000	65	0.000	101	0.000	137	0.004	173	0.366	209	0.952	245	0.772	281	0.149	317	0.000
30	0.000	66	0.000	102	0.000	138	0.006	174	0.384	210	0.961	246	0.756	282	0.137	318	0.000
31	0.000	67	0.000	103	0.000	139	0.008	175	0.403	211	0.968	247	0.739	283	0.126	319	0.000
32	0.000	68	0.000	104	0.000	140	0.010	176	0.421	212	0.975	248	0.721	284	0.115	320	0.000
33	0.000	69	0.000	105	0.000	141	0.013	177	0.440	213	0.981	249	0.704	285	0.104	321	0.000
34	0.000	70	0.000	106	0.000	142	0.016	178	0.459	214	0.986	250	0.686	286	0.094	322	0.000
35	0.000	71	0.000	107	0.000	143	0.020	179	0.478	215	0.990	251	0.667	287	0.085	323	0.000

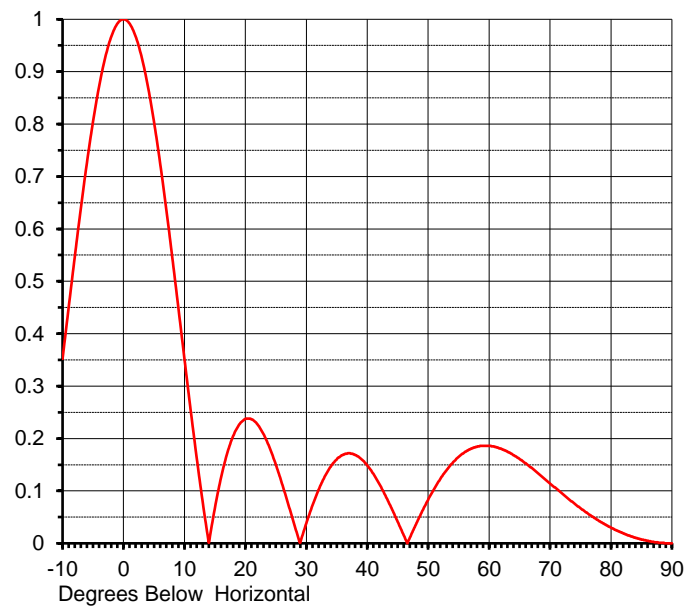
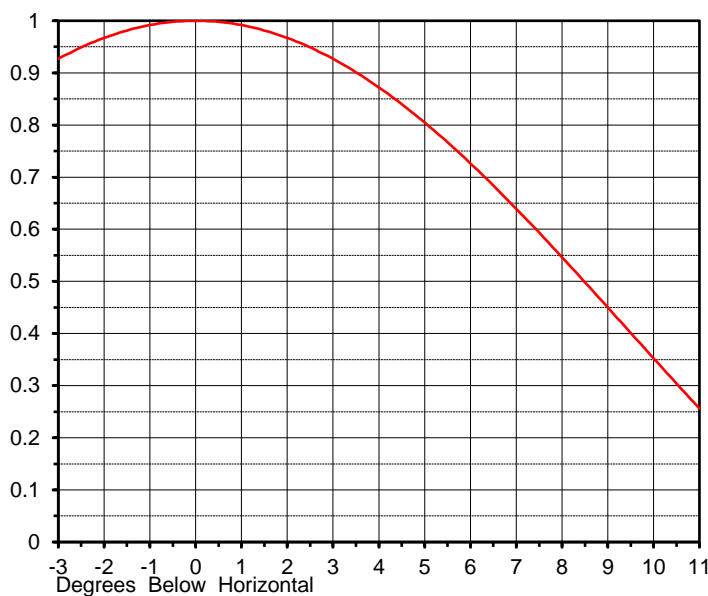
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## ELEVATION PATTERN

Proposal No. **C-71949**  
 Date **22-Sep-22**  
 Call Letters **KKTF**  
 Channel **24**  
 Frequency **533 MHz**  
 Antenna Type **TUA-C1-2/2M-1-K**

RMS Directivity at Main Lobe **4.6 ( 6.59 dB )**  
 RMS Directivity at Horizontal **4.6 ( 6.63 dB )**  
**Calculated**

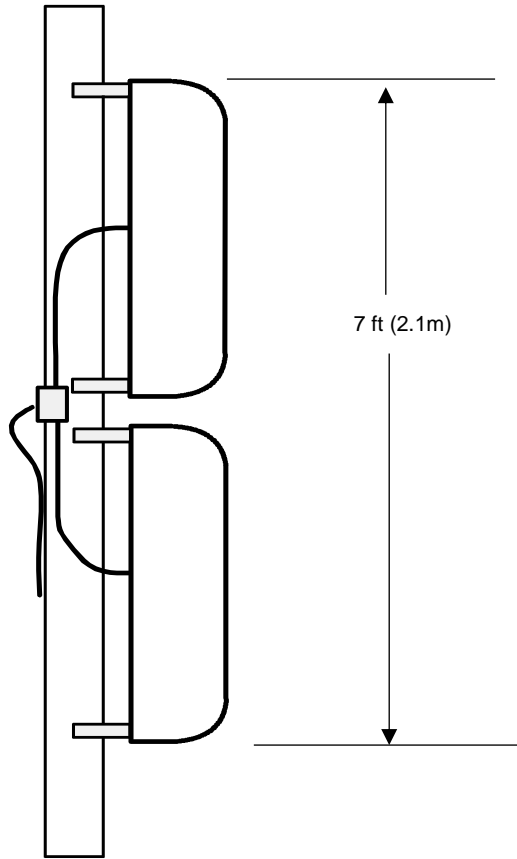
Beam Tilt **0.00 deg**  
 Pattern Number **02U046000**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.352	10.0	0.352	30.0	0.038	50.0	0.083	70.0	0.114
-9.0	0.450	11.0	0.256	31.0	0.072	51.0	0.104	71.0	0.105
-8.0	0.546	12.0	0.164	32.0	0.102	52.0	0.123	72.0	0.095
-7.0	0.639	13.0	0.079	33.0	0.127	53.0	0.139	73.0	0.085
-6.0	0.726	14.0	0.001	34.0	0.146	54.0	0.153	74.0	0.076
-5.0	0.805	15.0	0.067	35.0	0.160	55.0	0.165	75.0	0.067
-4.0	0.872	16.0	0.125	36.0	0.169	56.0	0.174	76.0	0.059
-3.0	0.927	17.0	0.171	37.0	0.172	57.0	0.180	77.0	0.051
-2.0	0.967	18.0	0.205	38.0	0.169	58.0	0.184	78.0	0.043
-1.0	0.992	19.0	0.227	39.0	0.161	59.0	0.186	79.0	0.036
0.0	1.000	20.0	0.237	40.0	0.149	60.0	0.186	80.0	0.030
1.0	0.992	21.0	0.237	41.0	0.133	61.0	0.184	81.0	0.024
2.0	0.967	22.0	0.227	42.0	0.113	62.0	0.180	82.0	0.019
3.0	0.927	23.0	0.208	43.0	0.091	63.0	0.175	83.0	0.015
4.0	0.872	24.0	0.182	44.0	0.067	64.0	0.168	84.0	0.011
5.0	0.805	25.0	0.150	45.0	0.041	65.0	0.161	85.0	0.007
6.0	0.726	26.0	0.114	46.0	0.015	66.0	0.153	86.0	0.005
7.0	0.639	27.0	0.076	47.0	0.011	67.0	0.144	87.0	0.003
8.0	0.546	28.0	0.037	48.0	0.036	68.0	0.134	88.0	0.001
9.0	0.450	29.0	0.001	49.0	0.061	69.0	0.124	89.0	0.000
								90.0	0.000

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## MECHANICAL SPECIFICATIONS



Proposal No. **C-71949**  
 Date **22-Sep-22**  
 Call Letters **KKTF**  
 Channel **24**  
 Frequency **533 MHz**  
 Antenna Type **TUA-C1-2/2M-1-K**

### Preliminary Specifications

#### Side Mounted

#### With ice TIA-222-G

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

Structure Class II

Exposure Category C

Topography Category 1

Design Ice 0.5 in  $t_{iz} = 1.28$  in

Wind Speed w/Ice 40 m/h (64.4 km/h)

#### Mechanical Specifications

		without ice	with ice	
Height	H2	7 ft (2.1m)		
Height of Center of Radiation	H3	3.5 ft (1.1m)		
Effective Projected Area	(EPA) <sub>A</sub>	14.1 ft <sup>2</sup> (1.3m <sup>2</sup> )	22.7 ft <sup>2</sup> (2.1m <sup>2</sup> )	Mounts Excluded
Weight	W	75 lb (0t)	150 lb (0.1t)	Mounts Excluded

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

Prepared by: CAB

Date: 22-Sep-22

ME:

EE:

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## Summary

Proposal No.	<b>C-71949</b>
Date	<b>22-Sep-22</b>
Call Letters	<b>KKTF</b>
Channel	<b>24</b>
Frequency	<b>533 MHz</b>
Antenna Type	<b>TUA-C1-2/2M-1-K</b>

## Antenna

		Hpol
ERP:	<b>15.0 kW</b>	<b>( 11.76 dBk )</b>
Peak Gain*	27.46	( 14.39 dB )

<b>Antenna Input Power</b>	<b>0.546 kW</b>	<b>-( 2.63 dBk )</b>
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## Transmission Line

Type:	<b>Flexline Air</b>	Attenuation:	<b>( 1.16 dB )</b>
Size:	<b>2-1/4"</b>	Efficiency:	<b>76.6%</b>
Impedance:	<b>50 Ohm</b>		
Length:	<b>280 ft</b>	<b>85.3 m</b>	

## Transmitter Output

<b>0.714 kW</b>	<b>-( 1.47 dBk )</b>
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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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