

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
DIGITAL CONSTRUCTION PERMIT
CLASS A STATION KFTU-CA
FACILITY ID 53004
TUCSON, ARIZONA
CH 18 15 KW (MAX-DA) 2652.3 M (RCAMSL)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an Application for Modification of Construction Permit for Class A station KFTU-CA at Tucson, Arizona (Facility ID:53004).

Class A station KFTU-CA proposes to change its directional antenna and increase its antenna radiation center height above ground level (RCAGL). Specifically, it is proposed to operate with an Alive ATC-BCC88C3-18 elliptically polarized directional antenna, a maximum directional ERP of 15 kilowatts and an antenna radiation center height above mean sea level (RCAMSL) of 2652.3 meters. No other changes are proposed.

Since there is no proposed change in transmitter site, overlap of the KFTU-CA proposed digital contour and its licensed analog contour is axiomatic. Therefore, this application is considered a minor change.

Antenna Data

It is proposed to employ the Alive ATC-BCC88C3-18 elliptically polarized directional antenna and operate with a maximum horizontally polarized ERP of 15 kilowatts and a maximum vertically polarized ERP of 5.25 kilowatts. The antenna has 2° of electrical tilt and 1° of mechanical tilt at 210° true. Figure 1 contains pattern data for the Alive ATC-BCC88C3-18 antenna.

Antenna Structure Registration

Operation is proposed on an existing structure with an overall height above ground level (OHAGL) of 78.9 meters. The FCC Tower Registration Number for the existing tower is 1002407.

Response to Paragraph 11 (Interference)

A study has been conducted to assure that the proposal will not create prohibited interference with other licensed, authorized or pending analog or digital TV, LPTV/translator and Class A TV stations. Using the procedures outlined in the FCC's OET-69 Bulletin, a 1 kilometer cell size resolution, a distance terrain increment of 0.2 kilometer and 2000 U.S. Census, the proposal complies with all applicable rule sections: Sections 73.6016, 73.6017, 73.6018, 73.6019, 73.6020, 73.6027, and 74.794(b).

Mexican Coordination

The proposed transmitter site is located 120 kilometers from the U.S. Mexican Border. Therefore, it is respectfully requested that the FCC coordinate this proposal with Mexico, if necessary. Figure 2 is a separation study based on the provisions of the U.S. Mexican TV Agreement (June 1982) and the Memorandum Of Understanding (MOU) Between The United States And Mexico Regarding The Use Of DTV Broadcasting Service Along The Common Border. The separation requirements are applicable to full-power NTSC and DTV stations (but are not applicable to low power stations) but have been used for this analysis in an abundance of caution. As indicated, the proposed channel 18 digital operation complies with the separation requirements to all Mexican NTSC and DTV stations and allotments.

Environmental Considerations

The calculated power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation contained in the Bulletin. As shown on Figure 2 (antenna vertical relative pattern), the maximum vertical relative field for depression angles towards the tower base (-60° to -90°) is less than 0.2. Therefore, using a conservative vertical relative field value 0.2, a maximum ERP of 20.25 kilowatts (15 kW (horizontally polarization), 5.25 kW (vertical polarization)) and an antenna center of radiation height above ground level of 63.2 meters, the calculated power density at two meters above ground level at the base of the tower is 0.007 milliwatt per square centimeter (mW/cm^2), 2.18 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.331 \text{ mw}/\text{cm}^2$ for TV

channel 18). Therefore, the facility complies with the FCC's RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, a protocol will be in effect to control access to the site. In the event that workers or other authorized personnel enter the restricted area appropriate measures shall be taken to limit RF energy exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been addressed by the tower owner as part of the tower registration process.

If there are questions concerning the technical portion of this application, please contact the office of the undersigned.



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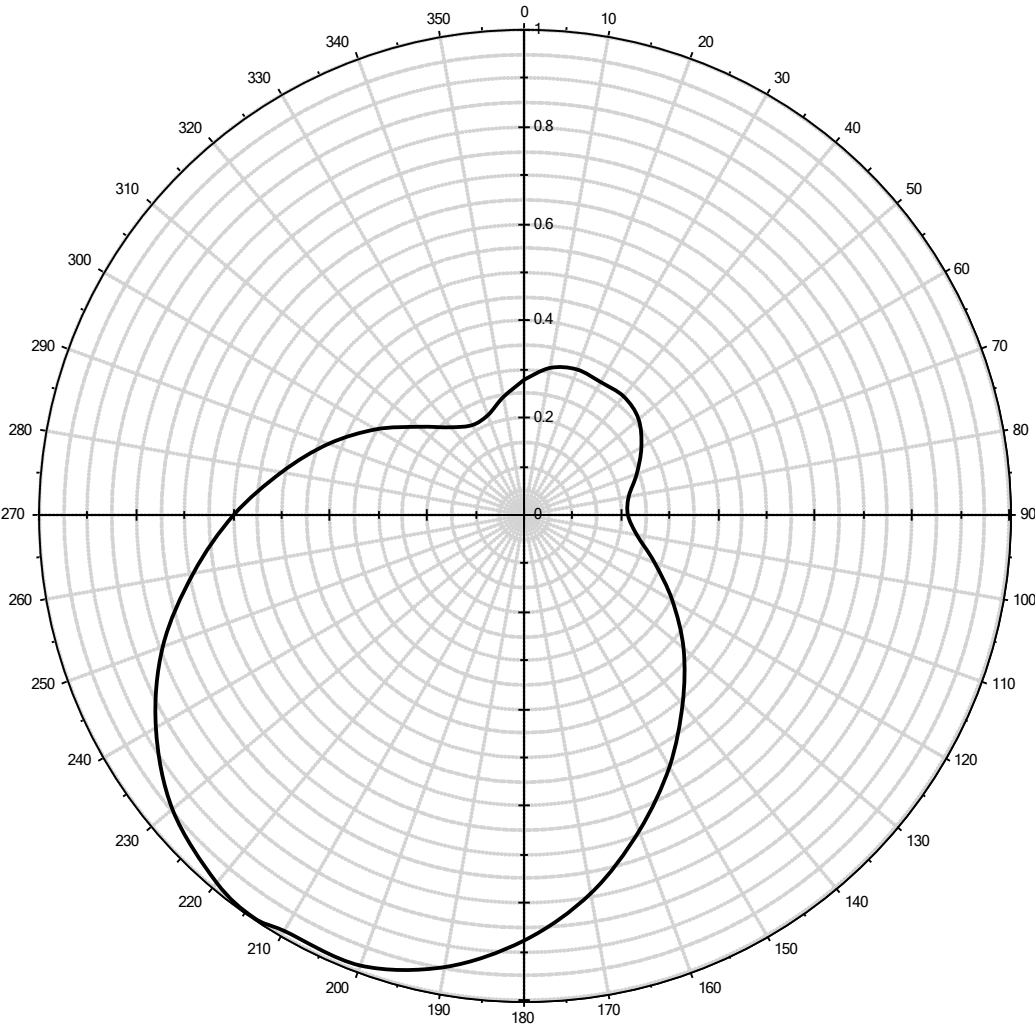
September 27, 2010

DA Inquiry

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Antenna ID: ALIVEATCC3



Note: display reflects rotation of 0.00°

0° 0.279	60° 0.279	120° 0.353	180° 0.877	240° 0.877	300° 0.353	214° 1.000
10° 0.308	70° 0.247	130° 0.429	190° 0.946	250° 0.793	310° 0.283	
20° 0.319	80° 0.219	140° 0.508	200° 0.988	260° 0.693	320° 0.236	
30° 0.316	90° 0.214	150° 0.599	210° 0.990	270° 0.599	330° 0.214	
40° 0.319	100° 0.236	160° 0.693	220° 0.988	280° 0.508	340° 0.219	
50° 0.308	110° 0.286	170° 0.792	230° 0.946	290° 0.429	350° 0.247	

Antenna Make:

Standard Pattern:

Antenna Model:

Last Change Date:



ELEVATION PATTERN



TYPE: ATC-BCC88C3-18

Directivity:	Numeric	dBd
Main Lobe:	8.68	9.4
Horizontal:	6.90	8.4
Beam Tilt:	2.00	
Polarization:	Elliptical	
Channel:	18	
Location:	Tucson	



ELEVATION PATTERN TABULATION**ATC-BCC88C3-18****-5 to 10 in 0.25 increments****10 to 90 in 0.50 increments**

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.100	-20.00	6.75	0.472	-6.52	27.00	0.072	-22.85	50.50	0.122	-18.27	74.00	0.046	-26.74
-4.75	0.107	-19.41	7.00	0.433	-7.27	27.50	0.089	-21.01	51.00	0.116	-18.71	74.50	0.046	-26.74
-4.50	0.147	-16.65	7.25	0.396	-8.05	28.00	0.104	-19.66	51.50	0.110	-19.17	75.00	0.047	-26.56
-4.25	0.189	-14.47	7.50	0.361	-8.85	28.50	0.114	-18.86	52.00	0.101	-19.91	75.50	0.048	-26.38
-4.00	0.232	-12.69	7.75	0.330	-9.63	29.00	0.121	-18.34	52.50	0.092	-20.72	76.00	0.049	-26.20
-3.75	0.277	-11.15	8.00	0.303	-10.37	29.50	0.124	-18.13	53.00	0.082	-21.72	76.50	0.049	-26.20
-3.50	0.322	-9.84	8.25	0.281	-11.03	30.00	0.123	-18.20	53.50	0.071	-22.97	77.00	0.050	-26.02
-3.25	0.368	-8.68	8.50	0.264	-11.57	30.50	0.118	-18.56	54.00	0.059	-24.58	77.50	0.051	-25.85
-3.00	0.413	-7.68	8.75	0.253	-11.94	31.00	0.109	-19.25	54.50	0.047	-26.56	78.00	0.051	-25.85
-2.75	0.460	-6.74	9.00	0.248	-12.11	31.50	0.098	-20.18	55.00	0.034	-29.37	78.50	0.051	-25.85
-2.50	0.506	-5.92	9.25	0.249	-12.08	32.00	0.084	-21.51	55.50	0.022	-33.15	79.00	0.051	-25.85
-2.25	0.551	-5.18	9.50	0.255	-11.87	32.50	0.068	-23.35	56.00	0.011	-39.17	79.50	0.051	-25.85
-2.00	0.596	-4.50	9.75	0.263	-11.60	33.00	0.050	-26.02	56.50	0.007	-43.10	80.00	0.051	-25.85
-1.75	0.639	-3.89	10.00	0.273	-11.28	33.50	0.032	-29.90	57.00	0.016	-35.92	80.50	0.050	-26.02
-1.50	0.681	-3.34	10.50	0.284	-10.93	34.00	0.016	-35.92	57.50	0.027	-31.37	81.00	0.049	-26.20
-1.25	0.722	-2.83	11.00	0.307	-10.26	34.50	0.013	-37.72	58.00	0.037	-28.64	81.50	0.048	-26.38
-1.00	0.760	-2.38	11.50	0.325	-9.76	35.00	0.028	-31.06	58.50	0.047	-26.56	82.00	0.047	-26.56
-0.75	0.797	-1.97	12.00	0.336	-9.47	35.50	0.043	-27.33	59.00	0.056	-25.04	82.50	0.045	-26.94
-0.50	0.831	-1.61	12.50	0.340	-9.37	36.00	0.057	-24.88	59.50	0.064	-23.88	83.00	0.043	-27.33
-0.25	0.862	-1.29	13.00	0.334	-9.53	36.50	0.070	-23.10	60.00	0.071	-22.97	83.50	0.041	-27.74
0.00	0.891	-1.00	13.50	0.321	-9.87	37.00	0.080	-21.94	60.50	0.077	-22.27	84.00	0.039	-28.18
0.25	0.917	-0.75	14.00	0.300	-10.46	37.50	0.087	-21.21	61.00	0.082	-21.72	84.50	0.037	-28.64
0.50	0.939	-0.55	14.50	0.273	-11.28	38.00	0.092	-20.72	61.50	0.086	-21.31	85.00	0.034	-29.37
0.75	0.958	-0.37	15.00	0.242	-12.32	38.50	0.094	-20.54	62.00	0.089	-21.01	85.50	0.032	-29.90
1.00	0.974	-0.23	15.50	0.208	-13.64	39.00	0.093	-20.63	62.50	0.091	-20.82	86.00	0.029	-30.75
1.25	0.986	-0.12	16.00	0.175	-15.14	39.50	0.089	-21.01	63.00	0.093	-20.63	86.50	0.026	-31.70
1.50	0.994	-0.05	16.50	0.145	-16.77	40.00	0.082	-21.72	63.50	0.093	-20.63	87.00	0.023	-32.77
1.75	0.999	-0.01	17.00	0.123	-18.20	40.50	0.073	-22.73	64.00	0.093	-20.63	87.50	0.020	-33.98
2.00	1.000	0.00	17.50	0.114	-18.86	41.00	0.063	-24.01	64.50	0.092	-20.72	88.00	0.017	-35.39
2.25	0.997	-0.03	18.00	0.118	-18.56	41.50	0.050	-26.02	65.00	0.090	-20.92	88.50	0.013	-37.72
2.50	0.990	-0.09	18.50	0.130	-17.72	42.00	0.036	-28.87	65.50	0.088	-21.11	89.00	0.010	-40.00
2.75	0.981	-0.17	19.00	0.147	-16.65	42.50	0.021	-33.56	66.00	0.086	-21.31	89.50	0.007	-43.10
3.00	0.967	-0.29	19.50	0.162	-15.81	43.00	0.006	-44.44	66.50	0.082	-21.72	90.00	0.003	-50.46
3.25	0.951	-0.44	20.00	0.173	-15.24	43.50	0.012	-38.42	67.00	0.079	-22.05			
3.50	0.931	-0.62	20.50	0.180	-14.89	44.00	0.028	-31.06	67.50	0.075	-22.50			
3.75	0.907	-0.85	21.00	0.182	-14.80	44.50	0.044	-27.13	68.00	0.072	-22.85			
4.00	0.881	-1.10	21.50	0.178	-14.99	45.00	0.059	-24.58	68.50	0.068	-23.35			
4.25	0.852	-1.39	22.00	0.169	-15.44	45.50	0.073	-22.73	69.00	0.064	-23.88			
4.50	0.820	-1.72	22.50	0.156	-16.14	46.00	0.086	-21.31	69.50	0.060	-24.44			
4.75	0.786	-2.09	23.00	0.138	-17.20	46.50	0.097	-20.26	70.00	0.057	-24.88			
5.00	0.750	-2.50	23.50	0.117	-18.64	47.00	0.107	-19.41	70.50	0.054	-25.35			
5.25	0.713	-2.94	24.00	0.093	-20.63	47.50	0.115	-18.79	71.00	0.051	-25.85			
5.50	0.674	-3.43	24.50	0.069	-23.22	48.00	0.121	-18.34	71.50	0.049	-26.20			
5.75	0.634	-3.96	25.00	0.047	-26.56	48.50	0.125	-18.06	72.00	0.048	-26.38			
6.00	0.593	-4.54	25.50	0.033	-29.63	49.00	0.127	-17.92	72.50	0.046	-26.74			
6.25	0.552	-5.16	26.00	0.037	-28.64	49.50	0.127	-17.92	73.00	0.046	-26.74			
6.50	0.512	-5.81	26.50	0.054	-25.35	50.00	0.125	-18.06	73.50	0.046	-26.74			

TV Study

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Station Type: DT **Station Coordinates:** 032-24-54 110-42-56 (NAD 27)
Station Channel: 18 **Station Zone:** II **Equivalent Canadian Class:** EX
Buffer Distance: 50 km **Comment:**

Callsign	Status	Channel	Service	Zone	City				State	Latitude	Dist. (km)	Min. (km)	Spacing (km)
Facility ID	ARN			Class	DA	Ant ID	ERP (kW)	HAAT (m)	Rec Type	Longitude	Bear. (deg)	Max. (km)	Comment
KFTU-CA	CP	18	DC			TUCSON			AZ	032-24-54	0	223.7	-223.7
53004	BDISDTA	20090612AEW		D	17791	15			C	110-42-56	0	223.7	SHORT
DKTTUTV	DTVALT	19	DT	2		TUCSON			AZ	32-14-55	41.96	24	-17.96
0						17160	103.2	600	C	111-06-57	243.91	110	SHORT
KTTU	LIC	19	DT	2		TUCSON			AZ	032-24-56	0.17	24	23.83
11908	BLCDT	20030926ANZ		D	59934	480		1123	C	110-42-50	68.45	110	CLEAR