

TECHNICAL EXHIBIT  
APPLICATION FOR DTV CONSTRUCTION PERMIT  
STATION KTFK-DT  
FACILITY ID: 20871  
STOCKTON, CALIFORNIA  
CH 62 195 KW (MAX-DA) 935 M

Technical Narrative

This Technical Exhibit supports an application for a DTV construction permit for the digital operation of station KTFK-DT at Stockton, California. Station KTFK-DT is currently licensed to operate on channel 62 with a maximum directional antenna effective radiated power (ERP) of 300 kilowatts (kW) and an antenna height above average terrain (HAAT) of 928 meters (BLCDT-20030813AFW). This application proposes to modify the KTFK-DT licensed operation by decreasing the ERP, increasing the HAAT and changing the directional antenna system. No other changes are proposed.

Freeze Compliance

This application can be accepted for filing as it does not request a change which is considered "frozen" by the FCC's Public Notice (DA 04-2446) released August 3, 2004, *Freeze on the Filing of Certain TV and DTV Requests for Allotment or Service Area Changes*. Specifically, the proposed facilities will not result in an extension of the authorized 41 dBu contour (see below).

Proposed Operation

Station KTFK-DT proposes to operate on DTV channel 62 from its currently licensed site, N 37° 52' 54" W 121° 55' 05". Specifically, it is proposed to decrease the maximum ERP to 195 kW and to side mount an Radio Frequency Systems (RFS) model RD16-R directional antenna on the existing 91-meter tower (Antenna Structure Registration #1014626). As a result of a revision to the registered tower data, the ground elevation increased by 7 meters. Therefore, although the antenna radiation center height above ground level did not change (61 meters) the

resulting antenna radiation center height above mean sea level and HAAT increased by 7 meters to 1159 meters and 935 meters, respectively.

Compliance with Section 73.622(f)(5)

The currently authorized KTFK-DT facilities (ERP 300 kW/HAAT 928 meters, DA) were based on the provisions of Section 73.622(f)(5) which permits facilities to be proposed which provide the same geographic coverage as the largest station within the market which, in this case, was KCRA-DT on channel 35 at Sacramento, CA. As the proposed facilities will not result in an extension of the authorized 41 dBu contour (see below), it is believed that the instant proposal complies with the provisions of Section 73.622(f)(5).

Response to Paragraph 10 - Directional Antenna Data

Figure 1 provides graphs of the horizontal and vertical relative field patterns for the proposed antenna.

Response to Paragraph 12 - City Coverage

Figure 2 is a map showing the DTV predicted coverage contours. The map provides the predicted 41 dBu f(50,90) noise-limited contour and 48 dBu f(50,90) city grade contour. The extent of the contours has been calculated using the normal FCC prediction method. The Stockton city limits were derived from information contained in the 2000 U.S. Census for California. As shown, the 48 dBu contour encompasses the entire city limits of Stockton.

In addition, the noise-limited service area of KTFK-DT's licensed facility is also shown on the map. As can be seen, the proposed 41 dBu (noise-limited) contour is fully encompassed by the licensed noise-limited envelope, and therefore there is no increase in service area.

NTSC/DTV/Class A Allocation Considerations

Figure 3 is a DTV channel 62 separation study toward other NTSC and DTV allotments based on a 32 kilometer "buffer". Although the separation requirements are only applicable to new DTV allotments, they can be used as an indication of which stations have the potential of receiving interference from the proposed channel 62 DTV operation.

An interference analysis has been conducted using the procedures outlined in the FCC's OET-69 bulletin, which demonstrates that the proposal complies with the interference protection provisions of Section 73.623(c)(2).<sup>1</sup> Interference calculations for the proposed KTFK-DT operation are summarized below with respect to all authorized NTSC, DTV, and Class A facilities.

Station	Facility	Ch.	City	State	FCC Service Population	Proposed Interference Population	% of Baseline
KSTS	LIC	48	SAN JOSE	CA	5,925,287	0	NONE
KSTS	APP	48	SAN JOSE	CA	5,976,590	0	NONE
KTEH	LIC	54	SAN JOSE	CA	4,349,000	0	NONE
KQCA	LIC	58	STOCKTON	CA	4,774,254	0	NONE
KCSM-TV	LIC	60	SAN MATEO	CA	5,539,317	0	NONE
KXTV-DT	PLN	61	SACRAMENTO	CA	4,083,076	0	NONE
KTNC-DT	PLN	63	CONCORD	CA	6,554,033	0	NONE
KTFK-TV	LIC	64	STOCKTON	CA	5,855,000	0	NONE
KKPX	LIC	65	SAN JOSE	CA	4,358,000	0	NONE
KFSF-TV	LIC	66	VALLEJO	CA	5,810,520	0	NONE

The study indicated that the KTFK-DT operation will not be involved in prohibited contour overlap to any Class A stations. It is also apparent that the KTFK-DT proposal on channel 62 complies with the FCC's interference standards towards all authorized NTSC and DTV assignments.

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<sup>1</sup> The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 2 km was employed. A Sun based processor computer system was employed.

Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the KTFK-DT transmitter site. Figure 4 is a list of authorized full service NTSC, DTV, & FM stations within 16 kilometers (10 miles) of the proposed DTV site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed DTV operation.

The closest FCC monitoring station is at Livermore, CA, located 22.6 kilometers along a bearing of 140 degrees true. The proposed ERP towards the FCC monitoring station will be less than the currently authorized ERP.<sup>2</sup> In addition, the applicant will comply with the FCC's Rules with respect to the FCC monitoring station.

The proposed transmitter site is more than 1,156 kilometers from the Canadian border. The proposed transmitter site is more than 735 kilometers from the US/Mexican border area. The proposed DTV site is outside the National Radio Quiet Zone (VA/WVA), the closest point being more than 3,570 kilometers to the east-northeast. The closest point of the Table Mountain Radio Quiet Zone (CO) is more than 1,450 kilometers to the east-northeast. The closest radio astronomy site operating on TV channel 37 is at Owens Valley, CA, located approximately 329 kilometers to the east. These separations are sufficient to not be a concern for coordination purposes.

Response to Paragraph 13 - Environmental Protection Act

The proposed facility has been evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level in accordance with OET Bulletin No. 65, Evaluating Compliance with FCC Specified Guidelines for Human Exposure to

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<sup>2</sup> The authorized ERP towards the FCC monitoring station is 237.6 kW (23.8 dBk) and the proposed ERP towards the FCC monitoring station is 38.7 kW (15.9 dBk). Thus, the proposed operation will result in a 7.9 dB reduction in ERP towards the FCC monitoring station.

Radiofrequency Electromagnetic Fields<sup>3</sup>. The power density at the base of the tower was calculated using the appropriate procedures contained in the Bulletin.

The proposed KTFK-DT antenna will be side mounted on the existing KTFK-DT tower. The antenna center of radiation is located 61 meters above ground level. The calculated power density at 2 meters above ground level (AGL) was calculated using the appropriate equation contained in the Bulletin. A graph of the vertical plane relative field pattern proposed antenna is shown in Figure 1. The maximum vertical relative field value towards the tower base (-60 to -90 elevation) is less than 0.1. Therefore, using a "worst-case" vertical relative field value of 0.1, the calculated power density at 2 meters above the ground is 0.0187 milliwatts per square centimeter (mW/cm<sup>2</sup>), which is 3.7% of the Commission's recommended limit of 0.51 mW/cm<sup>2</sup> for channel 62, applicable to uncontrolled exposure areas. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the new RF emission rules.

The site is appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site procedures are in place in the event that workers or other authorized personal climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure

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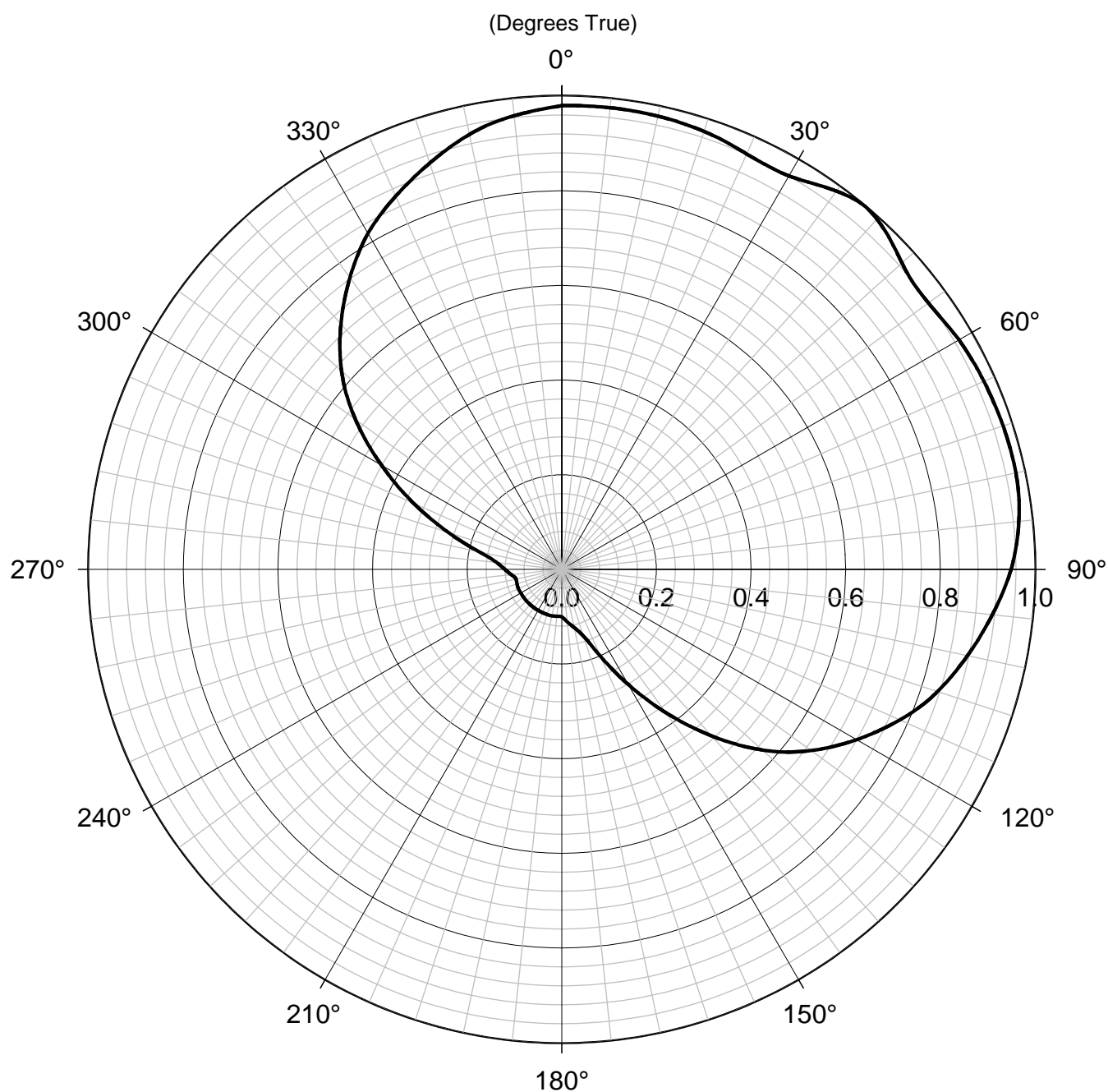
<sup>3</sup> OET Bulletin 65, Second Edition 97-01, August, 1997.

monitors or scheduling work when the stations are at reduced power or shut down.

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**PROPOSED DIRECTIONAL ANTENNA RADIATION PATTERN**  
**(RELATIVE FIELD)**

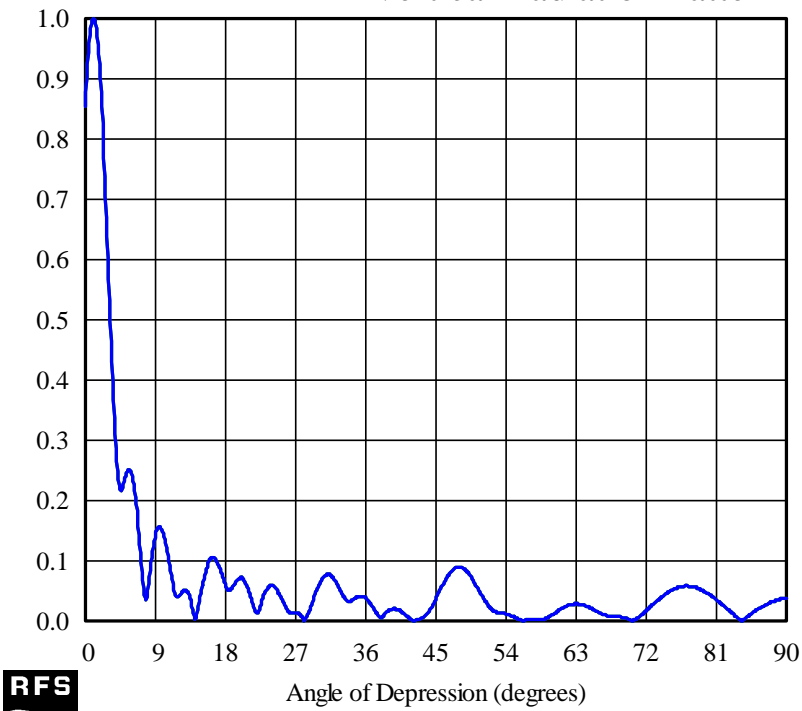
**DTV STATION KTFK-DT**  
**STOCKTON, CALIFORNIA**  
**CH 62 195 KW (MAX-DA) 935 M**

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

# RADIO FREQUENCY SYSTEMS

E / E<sub>max</sub>

## Vertical Radiation Pattern



Date : 11/24/2004

Station : KTFK

Frequency (MHz) : 761.00

Directivity (dBd) : 12.52

Beam Tilt (deg) : 1.0 °

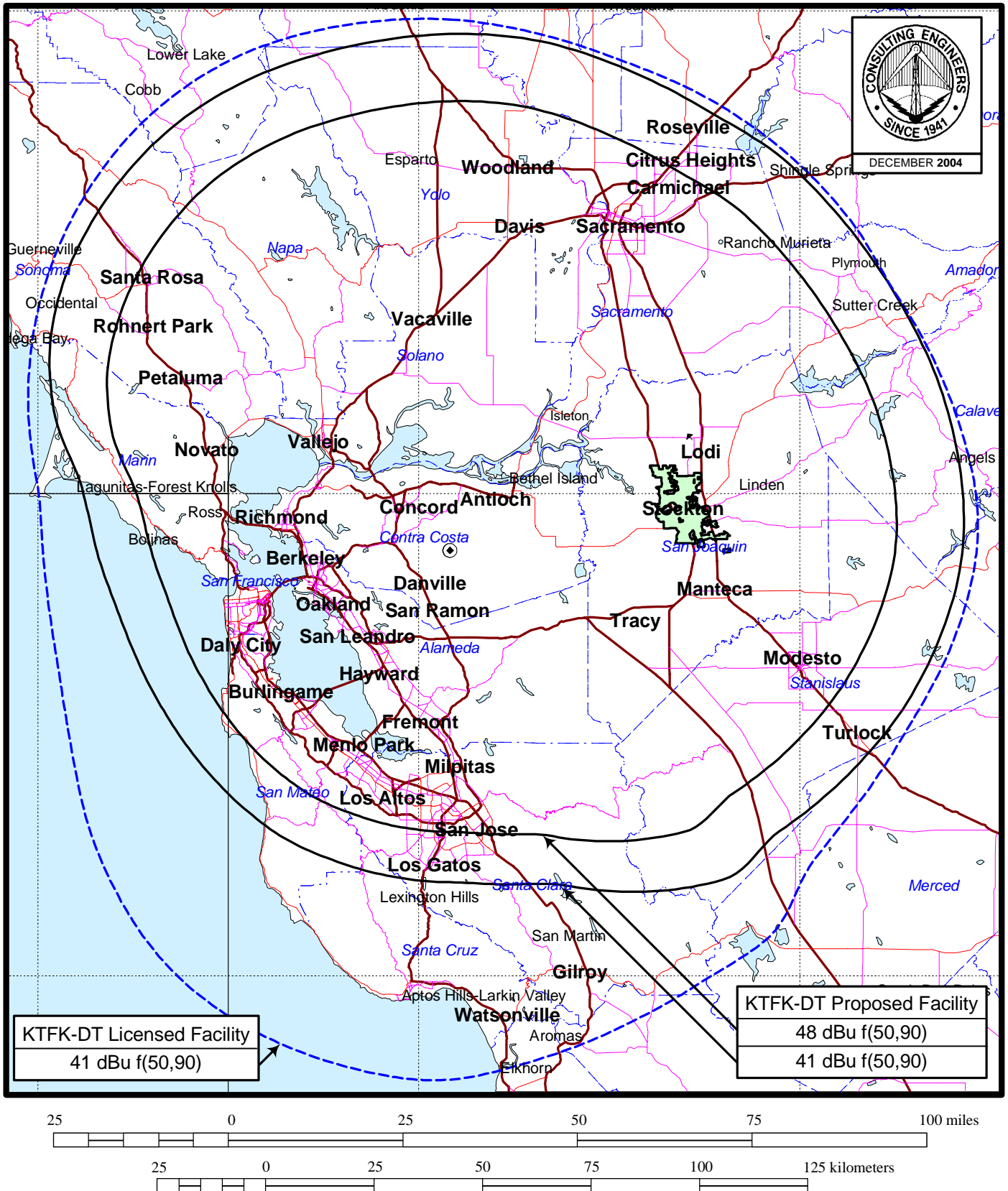
1/2 3dB Beamwidth : 6.2

Vertical Spacing (m) : 1.645

Level	Power	Phase	Loc'n	Tilt
1	1.000	99.1	0.000	0.0
2	1.000	44.3	1.645	0.0
3	1.000	0.0	3.290	0.0
4	1.000	17.4	4.935	0.0



Figure 2



## FCC PREDICTED COVERAGE CONTOURS

DTV STATION KTFK-DT

STOCKTON, CALIFORNIA

CH 62 195 kW (MAX-DA) 935 m

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

Figure 3

CDBS TV/DTV SEPARATION STUDY

Job Title: KTFK-DT Separation Study  
 Channel: 62  
 Type: DT

Separation Buffer: 32 km  
 Coordinates: 37-52-54 121-55-05  
 Zone: II

Call Id	City St	Status	File Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min max	
KSTS 64987	SAN JOSE CA APP	C	BPCT 20001215AB	48(-) II	3030.000 687.7	D 41455	37-29-57 121-52-16	174.4	42.6	24.1	96.6
KSTS 64987	SAN JOSE CA LIC	C	BLCT 19990721KE	48(-) II	2510.000 688	D 17436	37-29-57 121-52-16	174.4	42.7	24.1	96.6
KTEH 35663	SAN JOSE CA LIC	C	BLET 20030409AA	54(Z) II	661.000 662	D 33906	37-29-17 121-51-59	174.1	43.9	24.1	96.6
KQCA 10242	STOCKTON CA LIC	C	BLCT 19870224KH	58(Z) II	5000.000 559	D 18691	38-14-24 121-30-03	42.4	54.1	24.1	96.6
KCSM-T 58912	SAN MATEO CA LIC	C	BLET 19980730KF	60(Z) II	3550.000 370	D 16297	37-41-07 122-26-01	244.4	50.4	24.1	96.6
KXTV 25048	SACRAMENTO CA LIC	C	BLCDT 19991116BE	61( ) II	1000.000 593	N 30377	38-14-24 121-30-03	42.4	54.1	24.0	110.0
DKXTV	SACRAMENTO CA DTV			61( ) II	1000.000 595	D	38-14-24 121-30-03	42.4	54.1	24.0	110.0
KTFK-T 20871	STOCKTON CA LIC	C	BLCDT 20030813AF	62( ) I	300.000 928	D 44999	37-52-54 121-55-05	101.3	0.0	196.3	196.3
DKFTL	STOCKTON CA DTV			62( ) II	63.500 874	D	37-53-35 121-53-58	52.2	2.1	223.7	223.7
KTNC-T 21533	CONCORD CA CP	C	BMPCD 20020814AA	63( ) II	47.300 942	D 67687	37-52-54 121-55-05	101.3	0.0	24.0	110.0
DKTNCT	CONCORD CA DTV			63( ) II	61.000 856	D	37-53-34 121-53-53	54.9	2.1	24.0	110.0
KTFK-T 20871	STOCKTON CA LIC	C	BLCT 19910403KE	64(Z) II	1950.000 874		37-53-35 121-53-58	52.2	2.1	24.1	96.6
KKPX 22644	SAN JOSE CA LIC	C	BLCT 19861223KO	65(Z) II	3090.000 812	D 17185	37-06-41 121-50-30	175.5	85.8	24.1	96.6
KFSF-T 51429	VALLEJO CA LIC	C	BLCT 20021206AB	66(Z) II	3470.000 466	D 17180	37-45-19 122-27-16	253.6	49.3	24.1	96.6

**du Treil, Lundin, and Rackley****Full Service DTVs & TVs within 16 km****Coordinates: 37-52-54****121-55-05****Channel Range: -****Range: 16**

Date: 11/15/2004

**CDBS Tv Inquiry List**

Page: 1

<b>Rec Type</b>	<b>Facility Id</b>	<b>Call</b>	<b>Status</b>	<b>Chan</b>	<b>Svc Class</b>	<b>Class</b>	<b>City</b>	<b>St</b>	<b>DA</b>	<b>Latitude</b>	<b>Longitude</b>	<b>ERP (kW)</b>	<b>HAAT (m)</b>	<b>RCAMSL (m)</b>	<b>Bearing</b>	<b>Dist. (km)</b>
C	20871	KTFK-T	LIC	62	DT		STOCKTON	CA	D	37-52-54	121-55-05	300.000	928	1152	0	0
C	21533	KTNC-T	CP	63	DT		CONCORD	CA	D	37-52-54	121-55-05	47.300	942	1166	0	0
C	20871	KTFK-T	LIC	64	TV		STOCKTON	CA		37-53-35	121-53-58	1950.00	874	1117	52.21	2.07
C	21533	KTNC-T	LIC	42	TV		CONCORD	CA	N	37-53-34	121-53-53	1290.00	856	1098	54.85	2.15

**du Treil, Lundin, and Rackley****Full Service FMs within 16 km****Coordinates: 37-52-54 121-55-05 Frequency Range: - Range: 16**

Date: 11/15/2004

**CDBS FM Inquiry List**

Page: 1

<b>Rec Type</b>	<b>Fac Id</b>	<b>Call</b>	<b>Status</b>	<b>Chan</b>	<b>Svc Class</b>	<b>Class</b>	<b>City</b>	<b>St</b>	<b>DA</b>	<b>Latitude</b>	<b>Longitude</b>	<b>ERP (kW)</b>	<b>HAAT (m)</b>	<b>RCAMSL (m)</b>	<b>Bear</b>	<b>Dist. (km)</b>
C	36032	KABL-F	CP	221	FM	A	WALNUT CREEK	CA	N	37-54-02	122-05-07	3.000	24.0	211.0	278.2	14.9
C	36032	KABL-F	LIC	221	FM	A	WALNUT CREEK	CA		37-53-59	122-05-38	3.000	27.0	211.0	277.5	15.6
C	69685	KSTN-F	LIC	297	FM	B	STOCKTON	CA		37-49-17	121-46-49	8.100	491.0	713.0	118.9	13.9