

TECHNICAL EXHIBIT  
APPLICATION FOR MODIFICATION OF  
DTV CONSTRUCTION PERMIT  
STATION KFTH-DT  
FACILITY ID 60537  
ALVIN, TEXAS  
CH 36 1000 KW (MAX-DA) 579 M

Technical Narrative

This Technical Exhibit supports an application for modification of the construction permit for KFTH-DT at Alvin, Texas. Station KFTH-DT is presently authorized by outstanding construction permit (BPCDT-19991027ACC, Facility ID 60537) to operate on DTV channel 36 with a directional antenna maximum effective radiated power (ERP) of 1000 kilowatts and a antenna radiation center height above average terrain (HAAT) of 598.6 meters. By means of the application it is proposed to modify the KFTH-DT construction permit to change the directional antenna system and decrease the HAAT. No other changes are proposed.

Specifically, KFTH-DT proposes to operate on DTV channel 36 from its authorized tower located at N29°34'15", W95°30'37". The antenna structure registration number is 1064696. It is proposed to operate with a directional DTV antenna system maximum ERP of 1000 kW and an HAAT of 579 meters.

Figure 1 is a sketch of the proposed antenna and supporting structure. Figure 2 provides the horizontal and vertical plane radiation patterns for the proposed RFS model PHP80U22211E, horizontally polarized, directional antenna system.

Response to Paragraph 11 - NTSC/DTV Allocation Considerations

Figure 3 is the separation study for DTV channel 36 from the proposed KFTH-DT site. The study has been used to determine the assignments requiring interference studies using the procedures outlined in the FCC's OET-69 bulletin.

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 KFTH-DT DTV operation are summarized below. It is noted that the summary only includes stations with which interference (masked or unmasked) is calculated.

Protected NTSC/DTV Station	FCC Service Population	Current Interference	Proposed Unique Interference Population*
KPRC-DT DTV Ch. 35 (Allotment) Houston, TX	3,933,700	0.1%	270 (0.0%)
KXAN-TV, NTSC Ch. 36 (License) Austin, TX	1,106,237	4.5%	17,922 (1.6%)

\*Considers interference "masking" from other NTSC and DTV assignments.

From the above, it is apparent that the proposed KFTH-DT DTV operation on channel 36 complies with the FCC's 2%/10% interference standard towards all authorized NTSC (analog) and DTV assignments.

#### Class A Allocation Considerations

A study has been conducted which indicates that the KFTH-DT proposal will not create prohibited interference to other existing, authorized or proposed Class A stations with the exceptions of KHMV-LP on channel 28, Houston, Texas (BLTTL-20001220ABA) and KTWL-LP on channel 36 at Crockett, Texas (BPTVL-19980715JB).<sup>2</sup> However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 73.623(5)(iii)] it is believed that KFTH-DT's proposed operation complies with the FCC's interference criteria towards these stations. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square

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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. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

<sup>2</sup>It is noted that the proposed operation of Class A station KVIT-LP on channel 34 at Victoria, Texas (BPTTA-20020122ABH) will be co-located with KFTH-DT (-2 channel cross/inter-modulation taboo). However, as KVIT-LP proposes to operate with an ERP of less than 50 kW there is no restriction on the proposed KFTH-DT operation.

kilometer grid. The results of the OET Bulletin No. 69 are summarized below and, as indicated, the proposal complies with the FCC's 0.5% interference threshold.

Protected Class A Station	FCC Service Population	Proposed Interference Population
KHMY-LP, NTSC Ch. 28 (License) Houston, TX	2,000,981	0(0.0%)
KTWC-KP, NTSC ch. 36 (Application) Crockett, TX	13,419	0 (0.0%)

#### Response to Paragraph 12 - City Coverage

Figure 4 is a map showing the predicted 41 dBu and 48 dBu, F(50,90), coverage contours. The Alvin city limits were derived from information contained in the 2000 U.S. Census for Texas. As indicated, all of Alvin is located within the proposed 48 dBu contour. The distances to the predicted contours were determined in accordance with the provisions of Section 73.625. The average elevations from 3.2 to 16.1 kilometers from the transmitter site, were obtained from the NGDC 30-second terrain database and were used for determining the distances to coverage contours.

#### Objectionable Interference

There are no known authorized full service AM stations within 5 kilometers (3 miles) of the proposed transmitter site. Figure 5 provides a tabulation of all known authorized full service FM and TV stations within 16 kilometers (10 miles) of the proposed site. Although no adverse electromagnetic impact is expected, the applicant recognizes its responsibility to correct problems, which are a result of its proposed operation.

The proposed site is more than 1764 kilometers from the closest point of the Canadian border. The proposed transmitter site is located more than 433 kilometers from the closest point of the Mexican border. The closest FCC monitoring station is located at Kingsville, Texas, more than 331 kilometers to the southwest. The closest point of the National Radio Quiet Zone (VA/WV) is more than 1643 kilometers

to the northeast. The closest point of the Table Mountain Radio Quiet Zone (CQZ) is more than 1467 kilometers to the northwest. The closest radio astronomy site operating on TV channel 37 is at Fort Davis, Texas, located more than 819 kilometers to the west. It is believed that these separations are sufficient to not be a concern for coordination purposes.

Response to Paragraph 13 - Environmental Protection Act

The proposed facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The radiation center for the proposed DTV antenna is located 574.5 meters above ground level. The maximum DTV ERP is 1000 kW (horizontal polarization). Presuming a greater than expected vertical plane relative field value of 0.4 for angles towards the tower base ( $-60^{\circ}$  to  $-90^{\circ}$  elevation), the calculated power density at a point 2 meters above ground level is  $0.0163 \text{ mW/cm}^2$ . This is 4.1% of the FCC's recommended limit of  $0.40 \text{ mW/cm}^2$  for TV channel 36 for an "uncontrolled" environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the 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, an agreement will be in effect with the other stations in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measures 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 or scheduling work when the stations are at reduced power or shut down.

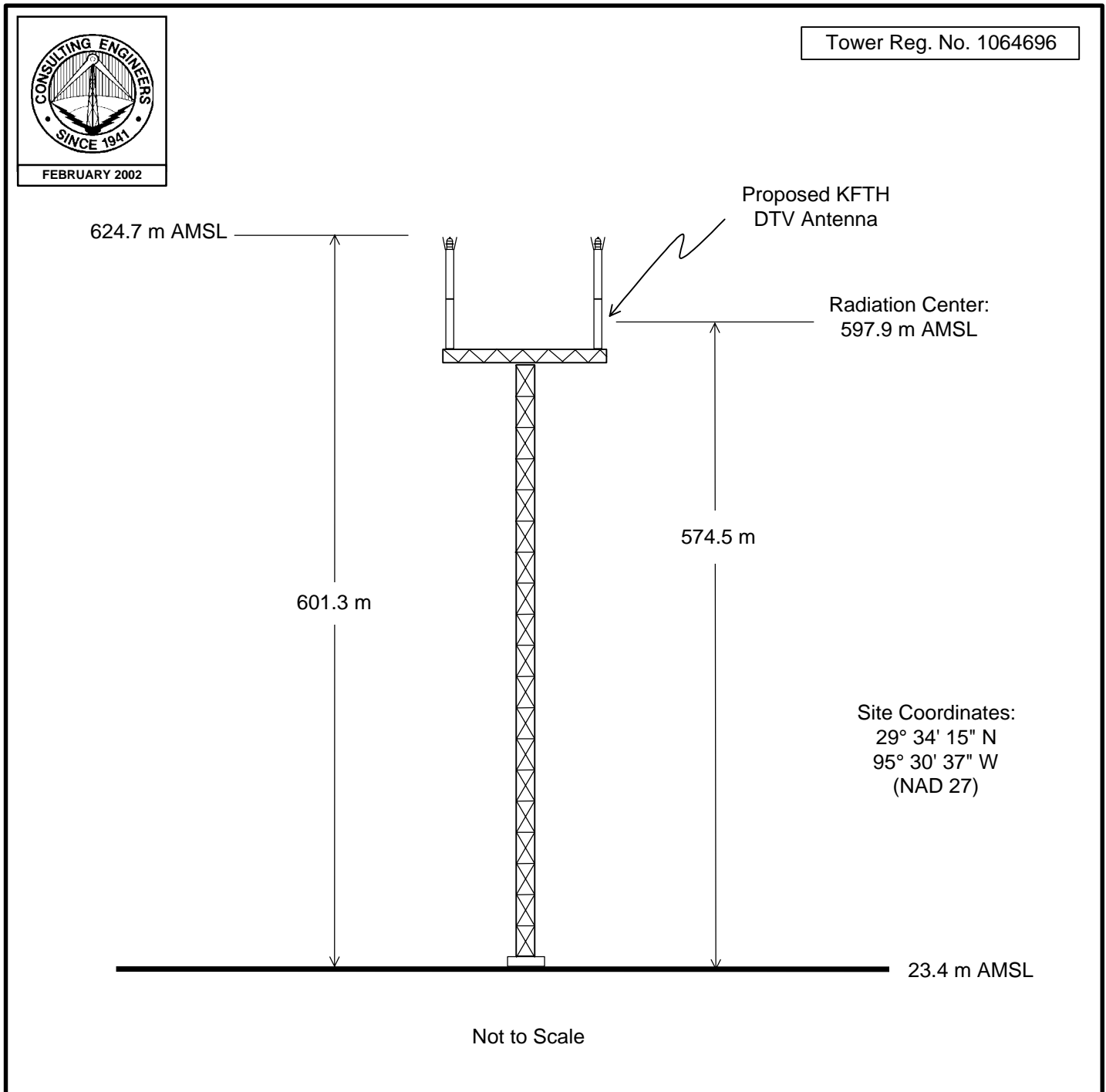
If there are questions concerning the technical portion of this application, please contact the office of the undersigned.

W. Jeffrey Reynolds

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237-6019  
(941) 329-6000  
JEFF@DLR.COM

February 25, 2002

Figure 1



## PROPOSED ANTENNA AND SUPPORTING STRUCTURE

DTV STATION KFTH-DT

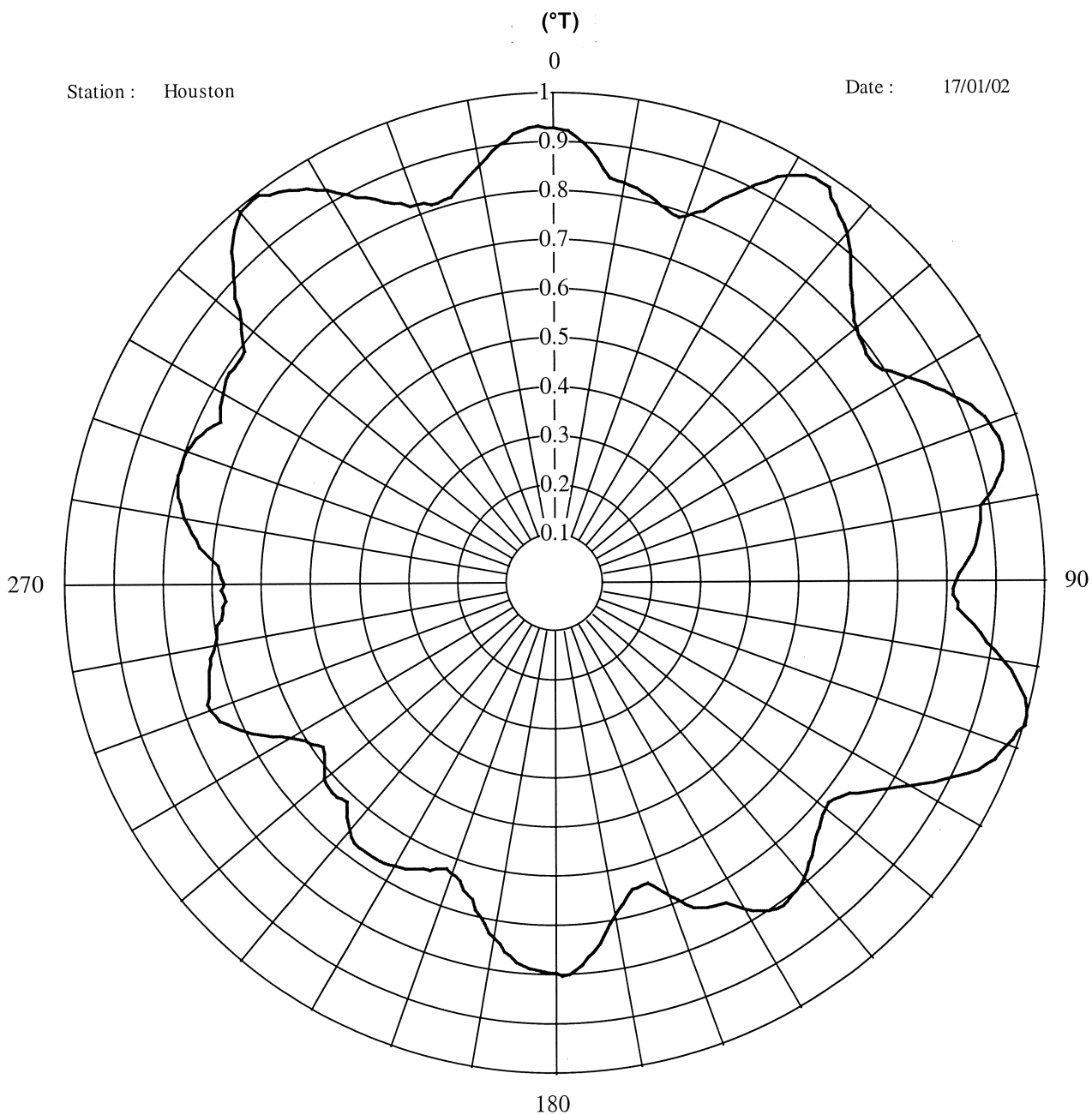
ALVIN, TEXAS

CH 36 1000 KW (MAX-DA) 579 M

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



## Horizontal Radiation Pattern



Model : PHP80U22211E

Polarisation : Horizontal

Frequency (MHz) : 605.00

Directivity : 1.89 dB

Elevation Angle : 0.7 degrees

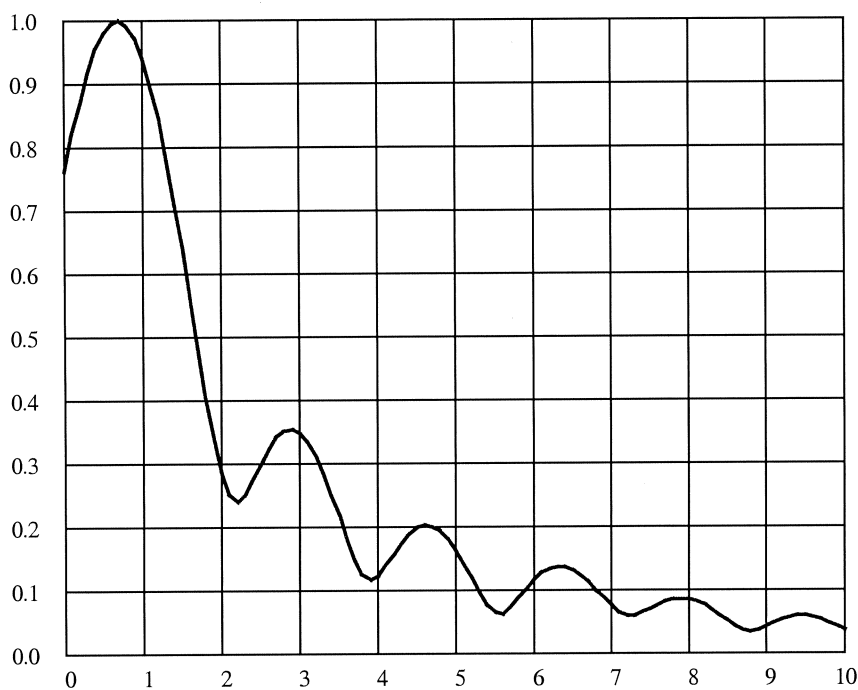
Horizontal Unit Pattern

File = 5so-600.pat

Pattern Tolerance +/- 5% of E<sub>max</sub>

E / E<sub>max</sub>

## Vertical Radiation Pattern



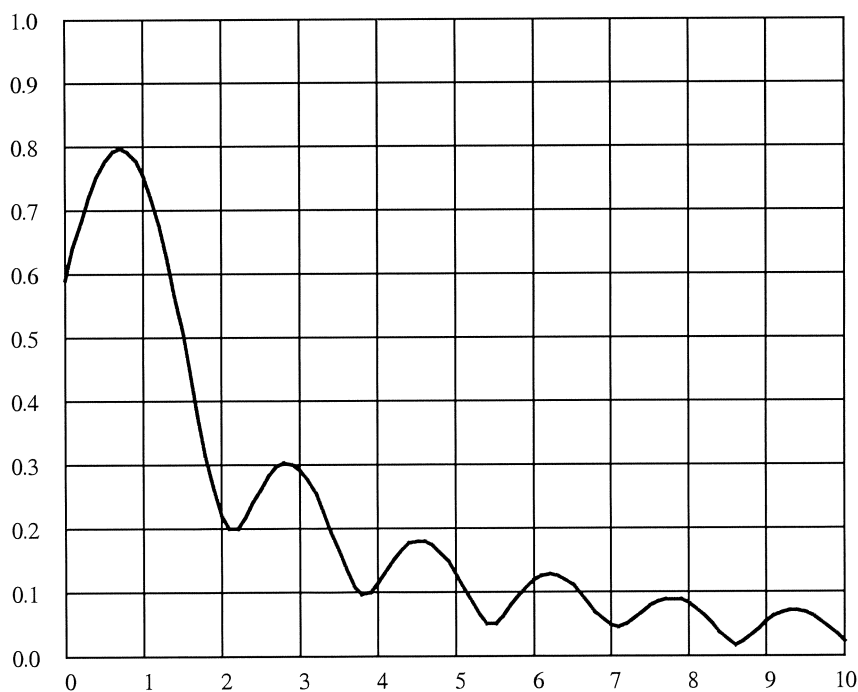
Date : 17/01/02  
 Station : Houston  
 Model : PHP80U22211E  
 Frequency (MHz) : 605.00  
 Directivity : 15.29 dBd  
 Tilt : 0.7 degrees  
 Azimuth Angle : 107 degrees  
 Vertical Unit Pattern : PHP-620.vup



Angle of Depression (degrees)

E / E<sub>max</sub>

## Vertical Radiation Pattern



Date : 17/01/02  
 Station : Houston  
 Model : PHP80U22211E  
 Frequency (MHz) : 605.00  
 Directivity : 13.32 dBd  
 Tilt : 0.7 degrees  
 Azimuth Angle : 287 degrees  
 Vertical Unit Pattern : PHP-620.vup



Angle of Depression (degrees)



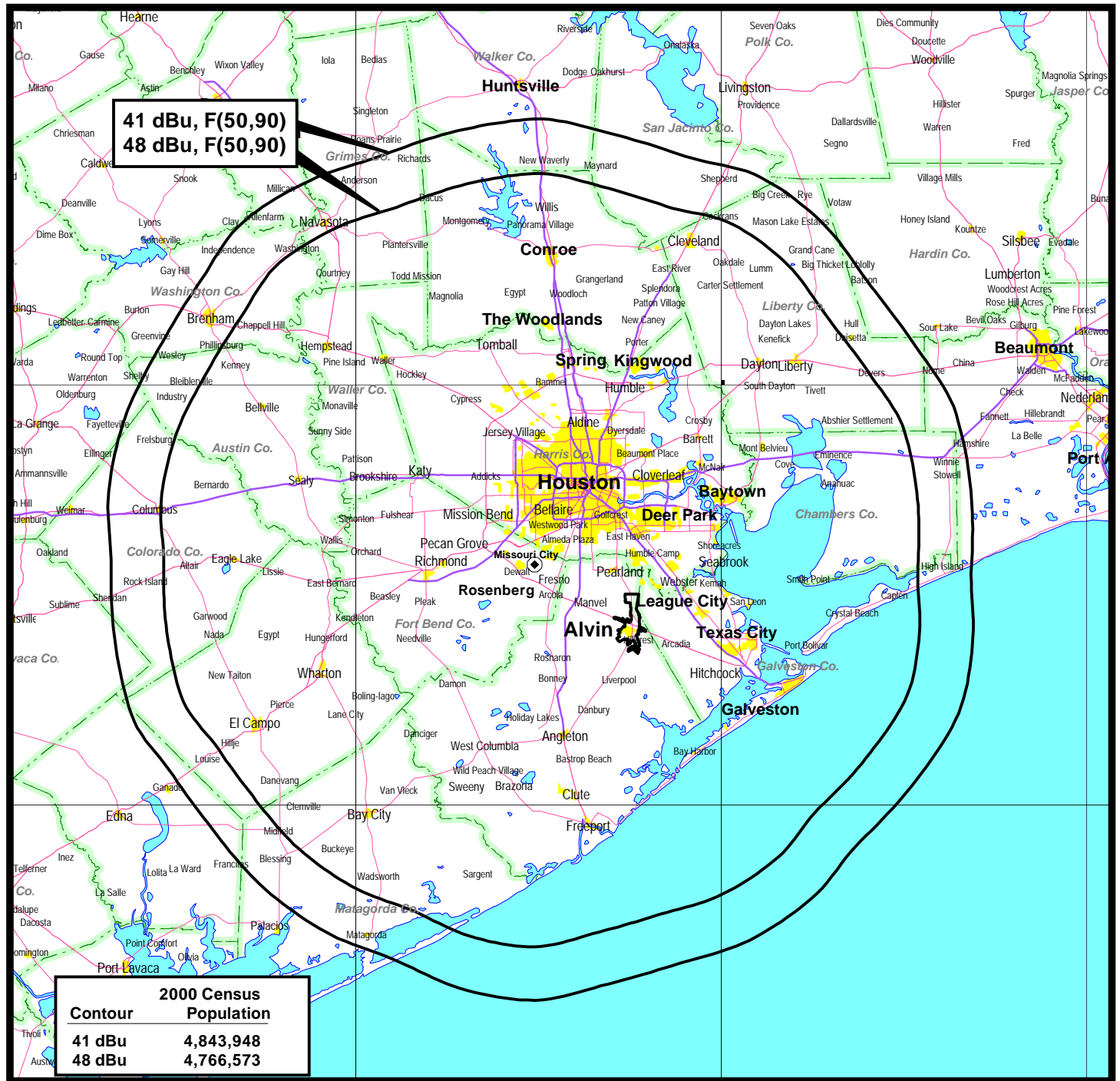
CDBS TV/DTV SEPARATION STUDY

Job Title: Proposed KFTH-DT  
Channel: 36  
Class:  
Type: DT

Separation Buffer: 50 km  
Coordinates: 29-34-15 95-30-37  
Zone: III

Call Id	City St	Status	File Num	Channel Zone	ERP HAAT	DA Id	Latitude Longitude	Bear	Dist. (km)	Req. min	max
KLTJ 24436	GALVESTON	TX LIC C	BLET 199401111KFIII	22(Z)	5000.000 566	D 17307	29-17-56 095-14-11	138.7	40.2 16.08	24.1	96.6 Short
KHMY-L 66790	HOUSTON	TX LIC C	BLTTL 20001220AB	28(-)	115.000	D 17638	29-34-35 095-30-37	2.4	0.6 23.48	0.0	0.0 Class A
KVIT-L 13200	VICTORIA	TX APP C	BPTTA 20011211AA	34(Z)	40.000	D 42321	29-34-16 095-30-38	318.3	0.0 24.06	0.0	0.0 Class A
KVIT-L 13200	VICTORIA	TX APP C	BPTTA 20020122AB	34(Z)	40.000	D 16701	29-34-16 095-30-38	318.3	0.0 24.06	0.0	0.0 Class A
DKPRCT	HOUSTON	TX DTV		35( ) III	1000.000 588	D	29-34-06 095-29-57	104.5	1.1 22.89	24.0	110.0 Clear
KPRC-T 53117	HOUSTON	TX LIC C	BLCDT 19991022ABIII	35( )	1000.000 585	N 28664	29-34-06 095-29-57	104.5	1.1 22.89	24.0	110.0 Clear
98298	HOUSTON	TX ADD C		35(Z)			29-45-26 095-21-37	34.9	25.3 13.25	12.0	106.0 Short
KFTH 60537	ALVIN	TX CP C	BPCDT 19991027ACIII	36( )	1000.000 598.6	D 29488	29-34-15 095-30-37	99.5	0.0		
DKHSHT	ALVIN	TX DTV		36( ) III	107.600 543	D	29-34-06 095-29-57	104.5	1.1		
KXAN-T 35920	AUSTIN	TX LIC C	BLCT 19971202KFIII	36(Z)	5000.000 374	N	30-19-33 097-47-58	291.4	236.3 8.29	244.6	244.6 Short
KHNB 23394	HOUSTON	TX LIC C	BMLCT 20011009ADIII	39(-)	5000.000 594	D 17163	29-34-06 095-29-57	104.5	1.1 22.99	24.1	96.6 Clear
KHPL-C 35913	LA GRANGE	TX CP C	BPTTL 19980601UP	40(Z)	8.500	N	29-54-45 096-52-53	286.4	137.9 41.34	0.0	0.0 Class A
890630 20575	BAY CITY	TX C		43(+) III			28-54-49 096-06-58	219.0	93.7 2.93	24.1	96.6 Short

### Figure 4



**PREDICTED COVERAGE CONTOURS**  
**STATION KFTH-DT**  
**ALVIN, TEXAS**  
**CH 36 1000 KW (MAX-DA) 579 M**

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

**du Treil, Lundin, and Rackley****Figure 5, Sheet 1 of 3****Proposed KFTH****Coordinates: 293415 953037 Frequency Range: -****Range: 16**

Date: 2/25/02

**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	23083	KKBQ-F	LIC	225	FM	C	PASADENA	TX		29-34-34	095-30-36	97	585.0	605.0	3.6	0.6
C	18516	KTBZ-F	LIC	233	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	25449	KIKK-F	LIC	239	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	47749	KHMX	LIC	243	FM	C	HOUSTON	TX		29-34-34	095-30-36	97	585.0	605.0	3.6	0.6
C	11969	KBXX	LIC	250	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	35337	KODA	LIC	256	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	25439	KILT-F	LIC	262	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	35073	KLOL	LIC	266	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	35524	KRBE-F	LIC	281	FM	C	HOUSTON	TX		29-34-34	095-30-36	95	585.0	605.0	3.6	0.6
C	27702	KHCB-F	LIC	289	FM	C	HOUSTON	TX	N	29-34-06	095-29-57	100	492.0	511.0	104.5	1.1
C	69150	KUHF	LIC	204	FM	C	HOUSTON	TX	N	29-34-27	095-29-37	100	524.0	544.0	77.0	1.7
C	9625	KKRW	LIC	229	FM	C	HOUSTON	TX	D	29-34-27	095-29-37	100	524.0	544.0	77.0	1.7
C	11971	KMJQ	LIC	271	FM	C	HOUSTON	TX		29-34-27	095-29-37	100	524.0	544.0	77.0	1.7

**du Treil, Lundin, and Rackley**

**Figure 5, Sheet 2 of 3**

**Proposed KFTH**

**Coordinates: 293415 953037 Channel Range: -**

**Range: 16**

Date: 2/25/02

**CDBS Tv Inquiry List**

Page: 1

Rec Type	Facility Id	Call	Status	Chan	Svc Class	City	St	DA	Latitude	Longitude	ERP (kW)	HAAT (m)	RCAMSL (m)	Bearing	Dist. (km)
C	70492	KAZH	CP	41	DT	BAYTOWN	TX	D	29-34-15	095-30-37	1000.00	596	615	99.53	0
C	60537	KFTH	CP	36	DT	ALVIN	TX	D	29-34-15	095-30-37	1000.00	598.6	618	99.53	0
C	31870	KNWS-T	CP	52	DT	KATY	TX	N	29-34-15	095-30-37	1000.00	598	617	99.53	0
C	60537	KFTH	CP	67	TV	ALVIN	TX	D	29-34-15	095-30-37	5000.00	597.7	617	99.53	0
C	70492	KAZH	CP	57	TV	BAYTOWN	TX	D	29-34-15	095-30-37	5000.00	597	616	99.53	0
C	64984	KTMD	APP	47	DT	GALVESTON	TX	D	29-34-15.2	095-30-37.2	430.000	597.1	616	315.8	0.01
C	64984	KTMD	APP	48	TV	GALVESTON	TX	D	29-34-15.2	095-30-37.2	5010.00	597.1	616	315.8	0.01
C	13200	KVIT-L	APP	18	CA	VICTORIA	TX	D	29-34-16	095-30-38	40.000		373	318.3	0.04
C	51569	KTXH	LIC	20	TV	HOUSTON	TX		29-34-34	095-30-36	5000.00	552	571	3.562	0.59
C	66790	KHMY-L	LIC	28	CA	HOUSTON	TX	D	29-34-35	095-30-37	115.000		420	2.351	0.62
C	58835	KPXB	CP	5	DT	CONROE	TX	D	29-33-44	095-30-35	8.000	603	619	177.3	0.96
C	31870	KNWS-T	APP	52	DT	KATY	TX	N	29-33-44	095-30-35	1000.00	575	594	177.3	0.96
C	28324	KTBU	CP	42	DT	CONROE	TX	D	29-33-44	095-30-35	1000.00	552	571	177.3	0.96
C	12895	KETH	CP	24	DT	HOUSTON	TX	D	29-33-44	095-30-35	800.000	545	564	177.3	0.96
C	53847	KXLN-T	CP	46	DT	ROSENBERG	TX	D	29-33-44	095-30-35	363.000	578	595	177.3	0.96
C	51569	KTXH	CP	19	DT	HOUSTON	TX	D	29-33-44	095-30-35	421.000	596	615	177.3	0.96
C	53847	KXLN-T	CP	45	TV	ROSENBERG	TX	D	29-33-44	095-30-35	5000.00	594	611	177.3	0.96
C	51569	KTXH	CP	20	TV	HOUSTON	TX	D	29-33-44	095-30-35	5010.00	578	597	177.3	0.96
C	53117	KPRC-T	LIC	35	DT	HOUSTON	TX	N	29-34-06	095-29-57	1000.00	585	605	104.5	1.11
C	23394	KHWB	CP	38	DT	HOUSTON	TX	D	29-34-06	095-29-57	1000.00	582	599	104.5	1.11
C	23394	KHWB	LIC	39	TV	HOUSTON	TX	D	29-34-06	095-29-57	5000.00	594	615	104.5	1.11
C	53117	KPRC-T	LIC	2	TV	HOUSTON	TX	N	29-34-06	095-29-57	100.000	588	609	104.5	1.11
C	60537	KFTH	LIC	67	TV	ALVIN	TX	D	29-34-06	095-29-57	5000.00	543	563	104.5	1.11
C	34529	KHOU-T	LIC	31	DT	HOUSTON	TX	N	29-33-40	095-30-04	759.000	551	593	140.6	1.4
C	34529	KHOU-T	LIC	11	TV	HOUSTON	TX	N	29-33-40	095-30-04	316.000	570	612	140.6	1.4
C	31870	KNWS-T	LIC	51	TV	KATY	TX	D	29-33-40	095-30-04	2290.00	500	517	140.6	1.4
C	22204	KRIV	APP	27	DT	HOUSTON	TX	D	29-34-28	095-29-37	750.000	534	553	76.01	1.66
C	22204	KRIV	LIC	27	DT	HOUSTON	TX	D	29-34-28	095-29-37	261.000	534	553	76.01	1.66
C	69269	KUHT	CP	9	DT	HOUSTON	TX	D	29-34-28	095-29-37	8.400	564	584	76.01	1.66
C	35675	KTRK-T	LIC	32	DT	HOUSTON	TX	D	29-34-27	095-29-37	797.000	562	582	77.04	1.66

Date: 2/25/02

**CDBS Tv Inquiry**

**Figure 5, Sheet 3 of 3**

<b>Rec Type</b>	<b>Facility Id</b>	<b>Call</b>	<b>Status</b>	<b>Chan</b>	<b>Svc 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	22204	KRIV	LIC	26	TV	HOUSTON	TX	D	29-34-28	095-29-37	5000.00	594	614	76.01	1.66
C	69269	KUHT	LIC	8	TV	HOUSTON	TX		29-34-28	095-29-37	316.000	564	584	76.01	1.66
C	35675	KTRK-T	LIC	13	TV	HOUSTON	TX	N	29-34-27	095-29-37	316.000	588	607	77.04	1.66
C	69531	KZJL	CP	44	DT	HOUSTON	TX	N	29-33-25	095-30-04	1000.00	421	437	150.1	1.78
C	12895	KETH	LIC	14	TV	HOUSTON	TX	D	29-33-25	095-30-04	4470.00	438	454	150.1	1.78
C	53847	KXLN-T	LIC	45	TV	ROSENBERG	TX	D	29-33-25	095-30-04	2190.00	439	459	150.1	1.78
C	69531	KZJL	LIC	61	TV	HOUSTON	TX	D	29-33-25	095-30-04	4680.00	429	445	150.1	1.78