

TECHNICAL EXHIBIT  
REQUEST FOR SPECIAL TEMPORARY  
AUTHORITY  
TELEVISION STATION WORO-DT (STA)  
FAJARDO, PUERTO RICO

April 12, 2006

CHANNEL 33 6 KW (MAX-DA) 844 M

TECHNICAL EXHIBIT  
REQUEST FOR SPECIAL TEMPORARY AUTHORITY  
TELEVISION STATION WORO-DT (STA)  
FAJARDO, PUERTO RICO  
CHANNEL 33 6 KW (MAX-DA) 844 M

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Technical Statement

This Technical Statement was prepared on behalf of WORO-DT concerning a request for Special Temporary Authority (STA) for WORO-DT, Fajardo, Puerto Rico (Channel 33). This request is made pursuant to the DTV STA provisions outlined in the FCC *Memorandum Opinion and Order on Reconsideration, In the Matter of Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, MM Docket No. 00-39, Released: November 15, 2001.

The proposed WORO-DT STA facility is to operate with a transmitting antenna side-mounted on the existing WORO-TV tower. The maximum directional effective radiated power of the WORO-DT STA facility is 6.0 kW with an antenna radiation center height above average terrain of 844 m. The details and specifications of the proposed operation are summarized in the table below:

Parameter	Proposed
Channel	33
Location	El Yunque Peak
FCC ASRN	1011469
Geographic coordinates (NAD27)	18-18-36N / 065-47-41W
Site elevation	1004.7 m AMSL
Overall structure height (with all appurtenances)	79 m

Parameter	Proposed
Antenna radiation center height above ground	45 m
Antenna radiation center height above mean sea level	1050 m
Antenna radiation center height above average terrain	844 m
Transmission line, make and model	Andrew, HJ8-50B
Transmission line length	76 m
Antenna, make and model	Dielectric, TFU-8DSB-M(C)
Antenna type	Directional
Antenna Gain at Channel 33	15.2 dB
Maximum ERP	7.78 dBk (6.0 kW)
Proposed Operation	
Transmitter power output	-3.04 dBk (0.50 kW)
Total transmission loss	1.00 dB
Antenna input power	-4.04 dBk
Antenna gain	11.82 dB
Maximum effective radiated power	7.78 dBk (6.0 kW)

There will be no change in the overall height of the existing registered antenna structure as a result of the proposed operation.

The 41 dBu, f(50,90) noise limited contour of the proposed WORO-DT STA facility is well within the predicted 41 dBu, f(50,90) noise limited contour of the authorized WORO-DT facility. See FCC File No. BPCDT-19991101AGY.<sup>\*</sup> Figure 1 is a map illustrating the predicted coverage contours for the proposed WORO-DT operation and the authorized construction permit facility of WORO-DT.<sup>†</sup> Also as indicated in Figure 1, the predicted 48 dBu, f(50,90) contour fully encompasses the city limits of Fajardo, as required.

There are other broadcast and non-broadcast facilities located in proximity to the proposed facility. No adverse electromagnetic impact is expected with respect to these facilities. However, the applicant recognizes its responsibility to correct objectionable electromagnetic interference problems that result from its proposed operation.

With respect to the potential for human exposure to radio frequency (RF) radiation, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF radiation at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground<sup>‡</sup> based on the following conservative assumptions, with the following results:

Call Sign	Channel	Peak Visual ERP or Average ERP (kW)	Aural ERP (kW)	Relative Field Factor <sup>§</sup>	FCC Limit <sup>**</sup> (mW/cm <sup>2</sup> )	Percentage of Limit
WORO-DT STA	33	6.0	--	0.20	0.389	1.1%

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<sup>\*</sup> WORO-DT is authorized for operation on Channel 33 with a nominal non-directional effective radiated power of 280 kW and an antenna height above average terrain of 869 m.

<sup>†</sup> Figure 1 was originally prepared in November 2001. There are no changes since that time.

<sup>‡</sup> The radiation center height above ground is 45 m.

<sup>§</sup> This is a worst-case estimate of the relative field factor in the downward direction.

<sup>\*\*</sup> for general population/uncontrolled environments

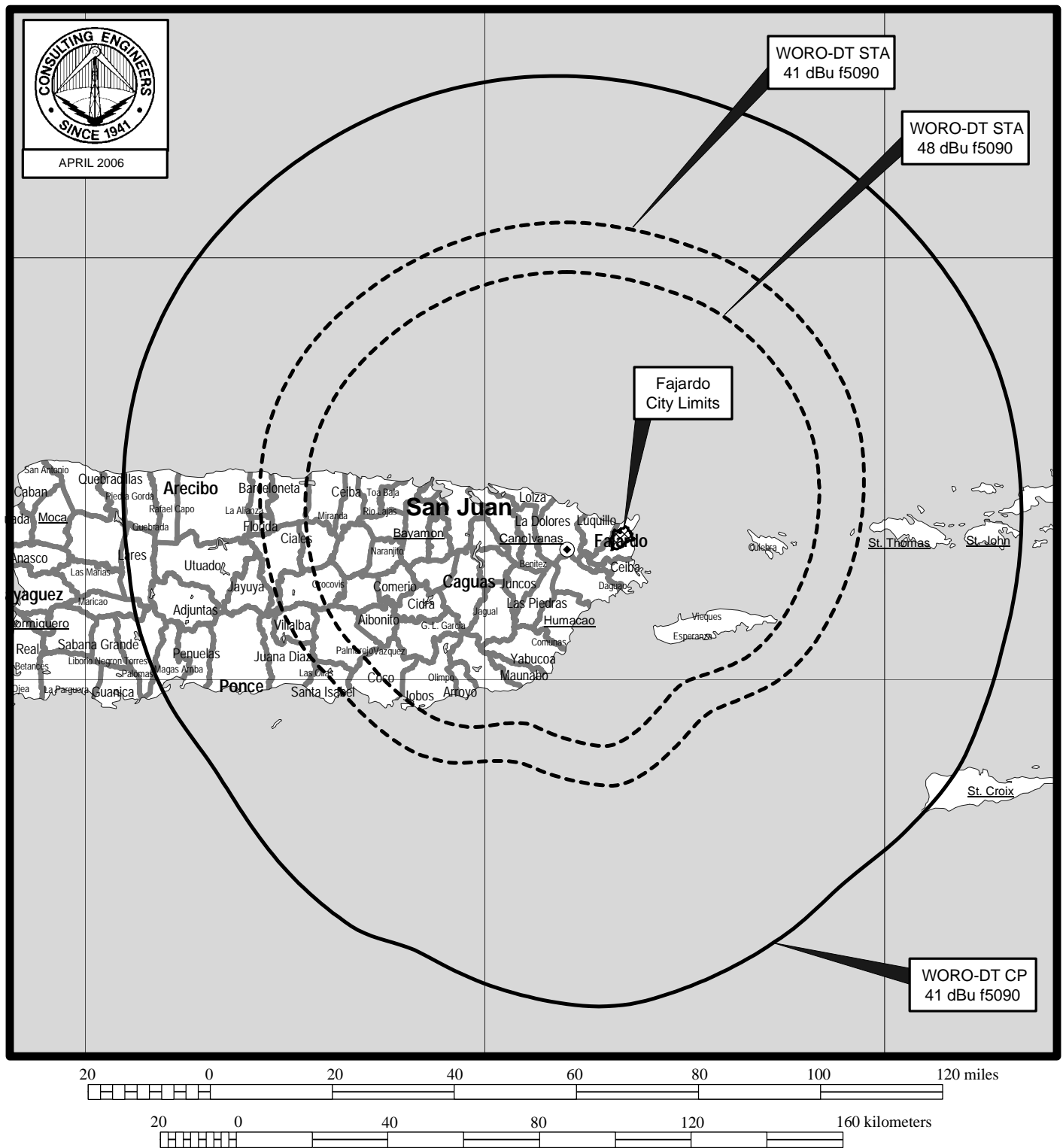
As indicated above, the exposure to RF radiation at 2-m above ground level will not exceed 1.1% of the FCC limit for general population / uncontrolled exposure. Therefore, the proposal complies with the FCC limits for human exposure to RF radiation and it is categorically excluded from environmental processing. The applicant, in coordination with any other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the WORO-DT tower or antenna from radio frequency radiation in excess of the FCC guidelines.



Louis Robert du Treil, Jr., P.E.

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April 12, 2006



## PREDICTED COVERAGE CONTOURS

TELEVISION STATION WORO-DT (STA)  
FAJARDO, PUERTO RICO  
CHANNEL 33 6 KW (MAX-DA) 844 M

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

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Transmitting Antenna Manufacturer's  
Azimuthal Plane and Vertical Plane Pattern Data

(four pages follow)





Exhibit No.

Date

29 Nov 2001

Call Letters

Channel 33

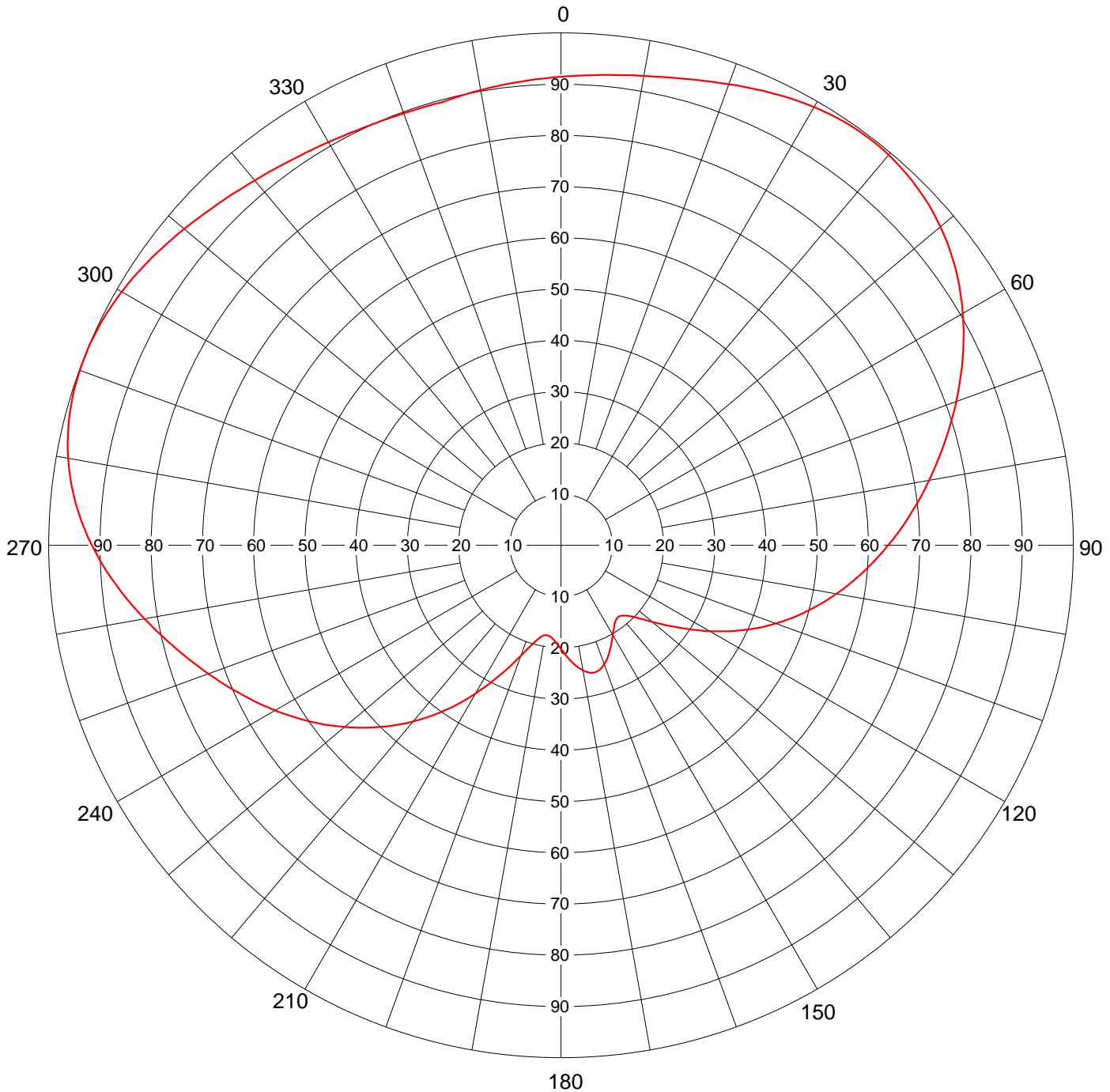
Location

FAJARDO, PUERTO RICO

Customer

Antenna Type

TFU-8DSB-M (C)

**AZIMUTH PATTERN**RMS Gain at Main Lobe  
Calculated / Measured**1.90**  
**Calculated**Frequency  
Drawing #**587 MHz**  
**DSB-M**

Remarks:



Date **29 Nov 2001**  
 Call Letters **Channel 33**  
 Location **FAJARDO, PUERTO RICO**  
 Customer  
 Antenna Type **TFU-8DSB-M (C)**

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **DSB-M**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.914	5.0	7.00
10	0.930	5.2	7.15
20	0.958	5.5	7.41
30	0.988	5.9	7.68
40	0.995	5.9	7.74
50	0.967	5.6	7.49
60	0.906	4.9	6.92
70	0.821	4.0	6.07
80	0.730	3.2	5.05
90	0.639	2.4	3.89
100	0.546	1.8	2.53
110	0.446	1.2	0.77
120	0.335	0.7	-1.72
130	0.232	0.3	-4.91
140	0.180	0.2	-7.11
150	0.202	0.2	-6.11
160	0.247	0.4	-4.36
170	0.248	0.4	-4.33
180	0.202	0.2	-6.11
190	0.178	0.2	-7.21
200	0.229	0.3	-5.02
210	0.334	0.7	-1.74
220	0.449	1.2	0.83
230	0.552	1.8	2.62
240	0.644	2.5	3.96
250	0.733	3.2	5.08
260	0.826	4.1	6.12
270	0.916	5.0	7.02
280	0.977	5.7	7.58
290	1.000	6.0	7.78
300	0.990	5.9	7.69
310	0.960	5.5	7.43
320	0.930	5.2	7.15
330	0.908	4.9	6.94
340	0.897	4.8	6.84
350	0.902	4.9	6.89

### Maxima

Angle	Field	ERP (kW)	ERP (dBk)
37	0.996	6.0	7.75
165	0.257	0.4	-4.02
292	1.000	6.0	7.78

### Minima

Angle	Field	ERP (kW)	ERP (dBk)
141	0.179	0.2	-7.16
189	0.178	0.2	-7.21
345	0.895	4.8	6.82

Remarks:



Date

29 Nov 2001

Call Letters

Channel 33

Location

FAJARDO, PUERTO RICO

Customer

Antenna Type

TFU-8DSB-M (C)

**ELEVATION PATTERN**

RMS Gain at Main Lobe

**8.0 (9.03 dB)**

Beam Tilt

**1.00 Degrees**

RMS Gain at Horizontal

**7.4 (8.69 dB)**

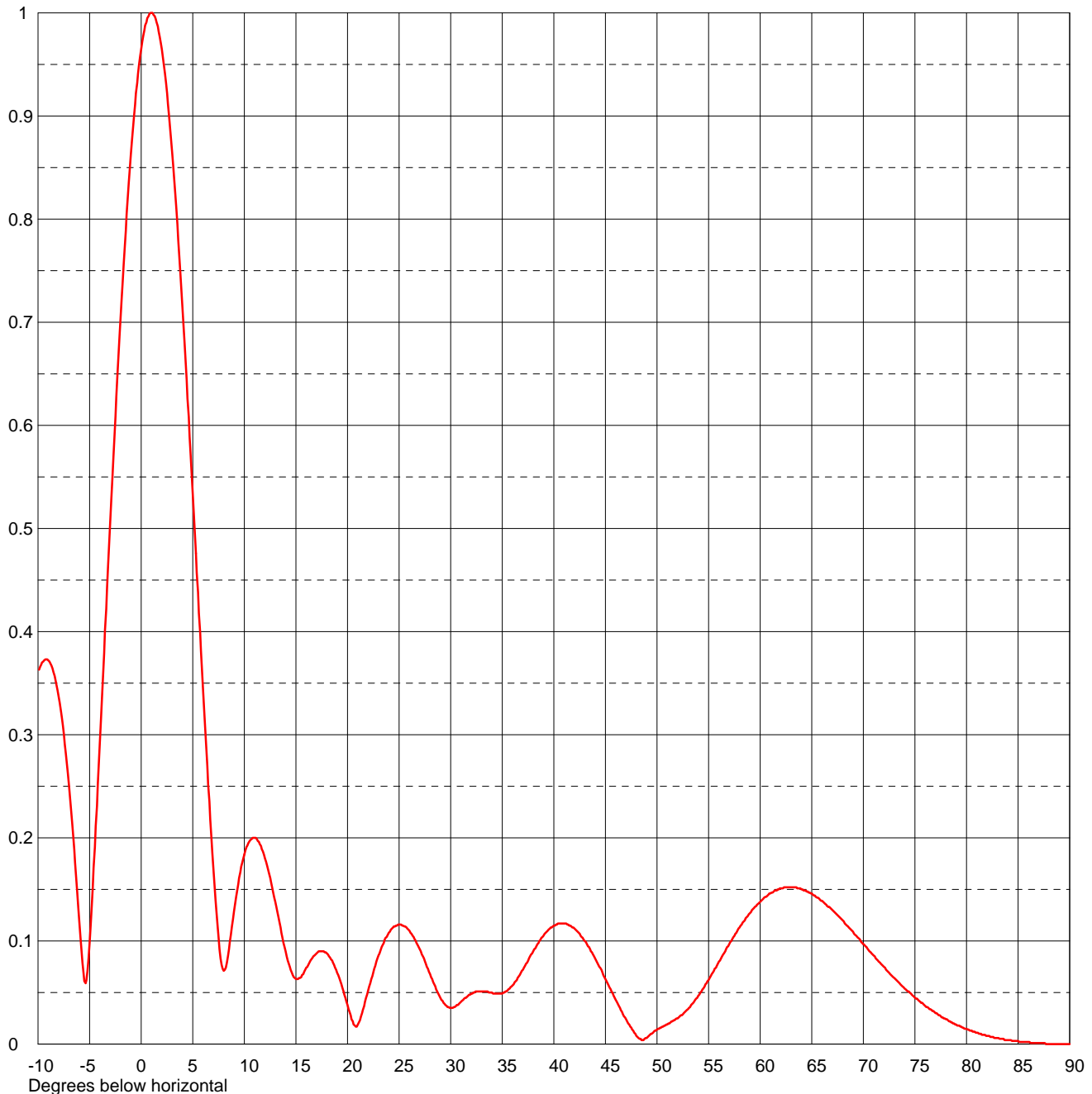
Frequency

**587.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**08B080100-90**

Remarks:



Date **29 Nov 2001**  
 Call Letters **Channel 33**  
 Location **FAJARDO, PUERTO RICO**  
 Customer  
 Antenna Type **TFU-8DSB-M (C)**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **08B080100-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.360	2.4	0.932	10.6	0.198	30.5	0.037	51.0	0.019	71.5	0.080
-9.5	0.371	2.6	0.912	10.8	0.200	31.0	0.041	51.5	0.022	72.0	0.075
-9.0	0.372	2.8	0.889	11.0	0.200	31.5	0.045	52.0	0.025	72.5	0.069
-8.5	0.361	3.0	0.865	11.5	0.194	32.0	0.049	52.5	0.029	73.0	0.064
-8.0	0.337	3.2	0.838	12.0	0.180	32.5	0.051	53.0	0.034	73.5	0.059
-7.5	0.300	3.4	0.810	12.5	0.161	33.0	0.051	53.5	0.040	74.0	0.054
-7.0	0.251	3.6	0.780	13.0	0.138	33.5	0.051	54.0	0.047	74.5	0.050
-6.5	0.189	3.8	0.748	13.5	0.113	34.0	0.050	54.5	0.054	75.0	0.045
-6.0	0.119	4.0	0.714	14.0	0.090	34.5	0.049	55.0	0.062	75.5	0.041
-5.5	0.061	4.2	0.680	14.5	0.072	35.0	0.049	55.5	0.071	76.0	0.037
-5.0	0.098	4.4	0.644	15.0	0.063	35.5	0.052	56.0	0.080	76.5	0.034
-4.5	0.191	4.6	0.608	15.5	0.065	36.0	0.057	56.5	0.088	77.0	0.030
-4.0	0.294	4.8	0.571	16.0	0.074	36.5	0.064	57.0	0.097	77.5	0.027
-3.5	0.401	5.0	0.533	16.5	0.082	37.0	0.072	57.5	0.105	78.0	0.024
-3.0	0.507	5.2	0.495	17.0	0.088	37.5	0.081	58.0	0.113	78.5	0.021
-2.8	0.548	5.4	0.457	17.5	0.090	38.0	0.090	58.5	0.120	79.0	0.019
-2.6	0.589	5.6	0.418	18.0	0.088	38.5	0.098	59.0	0.127	79.5	0.017
-2.4	0.628	5.8	0.381	18.5	0.081	39.0	0.105	59.5	0.133	80.0	0.015
-2.2	0.667	6.0	0.343	19.0	0.069	39.5	0.111	60.0	0.138	80.5	0.013
-2.0	0.704	6.2	0.306	19.5	0.055	40.0	0.115	60.5	0.143	81.0	0.011
-1.8	0.739	6.4	0.270	20.0	0.038	40.5	0.117	61.0	0.146	81.5	0.009
-1.6	0.773	6.6	0.235	20.5	0.022	41.0	0.117	61.5	0.149	82.0	0.008
-1.4	0.805	6.8	0.202	21.0	0.019	41.5	0.115	62.0	0.151	82.5	0.007
-1.2	0.835	7.0	0.170	21.5	0.033	42.0	0.112	62.5	0.152	83.0	0.006
-1.0	0.863	7.2	0.140	22.0	0.052	42.5	0.107	63.0	0.152	83.5	0.005
-0.8	0.888	7.4	0.114	22.5	0.070	43.0	0.100	63.5	0.152	84.0	0.004
-0.6	0.911	7.6	0.092	23.0	0.086	43.5	0.092	64.0	0.150	84.5	0.003
-0.4	0.932	7.8	0.077	23.5	0.098	44.0	0.083	64.5	0.148	85.0	0.003
-0.2	0.950	8.0	0.071	24.0	0.108	44.5	0.074	65.0	0.146	85.5	0.002
0.0	0.965	8.2	0.074	24.5	0.114	45.0	0.063	65.5	0.142	86.0	0.002
0.2	0.978	8.4	0.085	25.0	0.116	45.5	0.053	66.0	0.139	86.5	0.001
0.4	0.988	8.6	0.099	25.5	0.114	46.0	0.043	66.5	0.134	87.0	0.001
0.6	0.995	8.8	0.114	26.0	0.110	46.5	0.033	67.0	0.130	87.5	0.001
0.8	0.999	9.0	0.129	26.5	0.102	47.0	0.024	67.5	0.125	88.0	0.000
1.0	1.000	9.2	0.143	27.0	0.092	47.5	0.016	68.0	0.120	88.5	0.000
1.2	0.998	9.4	0.155	27.5	0.080	48.0	0.008	68.5	0.114	89.0	0.000
1.4	0.994	9.6	0.167	28.0	0.068	48.5	0.004	69.0	0.109	89.5	0.000
1.6	0.987	9.8	0.176	28.5	0.056	49.0	0.006	69.5	0.103	90.0	0.000
1.8	0.977	10.0	0.184	29.0	0.045	49.5	0.010	70.0	0.097		
2.0	0.965	10.2	0.191	29.5	0.038	50.0	0.014	70.5	0.091		
2.2	0.949	10.4	0.195	30.0	0.035	50.5	0.017	71.0	0.086		

Remarks: