

ENGINEERING STATEMENT  
APPLICATION FOR AMENDMENT OF  
APPLICATION BMPCDT-20021209ABN  
ON BEHALF OF  
YOUNG BROADCASTING OF SIOUX FALLS, INC.  
**KDLO-DT, FLORENCE, SOUTH DAKOTA**  
CHANNEL 2 3.7 KW ERP MAX 240.6 METERS

MAY 2003

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WASHINGTON, D.C.

### Introduction

This engineering statement has been prepared on behalf of Young Broadcasting of Sioux Falls, Inc. ("Young"), licensee of KDLO-TV. The purpose of this engineering statement is to accompany its request for amendment to application BMPCDT-20021209ABN. The station is filing with the directional pattern attached (Exhibits E-2A through E-2B) to reduce interference to KUSD-TV. Included with this report are the exhibits referred to in this text along with FCC Form 301, Section III-D.

Young operates Station KDLO-TV on NTSC television Channel 3 with a maximum visual effective radiated power (ERP) of 100 kW (horizontal polarization) and an antenna height above average terrain (HAAT) of 512 meters (1680 feet). Young was allotted DTV Channel 25 with facilities of 1000 kW and an HAAT of 512 meters in the revised DTV Table of Allotments.<sup>1</sup> Young has been authorized in Report and Order, MM Docket No. 02-102 (RM-10430) to substitute DTV Channel 2 in lieu of DTV Channel 25. Young proposes to operate from an existing tower (no change in overall height) with 3.7 kW ERP with a directional antenna at an HAAT of 240.6 meters.

### KDLO-DT Tower

The DTV antenna will be top-mounted on an existing tower having a total overall structure height above ground of 248.0 meters (813.6 feet). The existing transmitter site is located 0.5 miles north of Garden City, South Dakota. The tower (Exhibit E-1) has been registered under the number 1035407.

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<sup>1</sup>"In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service", MM Docket No. 87-286, Memorandum Opinion and Order on Reconsideration of the Sixth Report and Order. (FCC 98-24), 2/12/98, DTV Table of Allotments.

North Latitude: 44E 57' 53"

West Longitude: 97E 34' 50"

NAD-27

Equipment Data

General Electric, type TY-50F (equivalent to Dielectric, type TAB 6L) antenna with no electrical beam tilt will be installed.<sup>2</sup> The horizontal and the elevation radiation patterns and other exhibits required by Section 73.625(c) are attached (exhibits E-2A through E-2E).

Elevation Data

(Existing Tower; No Change in Overall Height)

Elevation of site above mean sea level	563.0 meters (1847 feet)
Overall height above ground of the existing antenna structure (including beacon)	248 meters (813.6 feet)
Overall height above mean sea level of existing tower (including beacon)	811 meters (2661 feet)
Center of radiation of Channel 2 antenna above ground	231 meters (759 feet)
Center of radiation of Channel 2 antenna above mean sea level	794 meters (2605 feet)
Antenna height above average terrain	240.6 meters

Note: Slight height differences result due to conversion to metric.

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<sup>2</sup>The antenna that will be implemented is a GE, type TY-50F. The successor antenna manufacturer indicates that this antenna's performance is almost identical to a Harris, type TAB 6L. Dielectric now is the successor to both of the previous manufacturers, and therefore, has supplied the attached information.

### Allocation

An allocation study from the proposed site has not been performed since the proposed DTV facilities will radiate the equivalent effective radiated power in every direction that is either less than or equal to the effective radiated power authorized for the KDLO-DT facilities in the Report and Order, MM Docket No. 02-102 (RM-10007). The actual transmitter site is less than 0.8 km from the site specified in the rule making previously mentioned.

### Interference Analysis

A study of predicted interference caused by the proposed Channel 2 DTV service was performed using a version of the Longley-Rice program in the Petition for Rule Making dated February 2002. It is proposed to operate with similar facilities as that specified and authorized in the rule making. There is a slight change in transmitter site that is well within the 5.0 km criteria specified in Section 73.622. KDLO-DT proposes to operate with the directional pattern shown in Exhibits E-2A and E-2B. This reduces the interference to KUSD-TV to 1.75%.

### Coverage

The map in Exhibit E-3 shows the proposed 35 and 28 dBu F(50,90) coverage contours. This map illustrates that the principal community, Florence, South Dakota, is well within the proposed 35 dBu F(50,90) contour.

### Other Licensed and Broadcast Facilities

There are no AM stations within 3.2 km of the existing KDLO-DT tower site. There are no FM broadcast stations, and no other television broadcasting stations within 100 meters of the proposed KDLO-DT transmitter site.

No adverse technical effect is anticipated by the proposed DTV operation to any other FCC licensed facility. If required, the licensee of KDLO-DT will install filters or take other measures as necessary to resolve the problem.

#### Environmental Statement

There are no other transmitters operating within 100 meters of the proposed KDLO-DT site. The radiofrequency field level ("RFF") contribution of KDLO-DT is shown below. The proposed operation based upon the current OET Bulletin No.65, Edition 97-01 dated August 1997 and Supplement A meets the provisions of the FCC radio frequency field guidelines, and thus, complies with Section 1.1307 of the FCC Rules.

<u>Station</u>	<u>Frequency</u>	<u>Channel</u>	<u>ERP (kW)</u>	<u>RCAGL(m)</u> <sup>1</sup>	<u>F</u> <sup>2</sup>	<u>S (μW/cm<sup>2</sup>)</u>	<u>RFF %</u> <sup>3</sup>
KDLO-DT	57 MHz	2	3.7	246	0.2	0.08	0.04

1. Radiation Center - 2 m

2. F = Relative Downward Field

3. Limit for an uncontrolled environment

The contribution of the KDLO-DT proposed operation, 2 meters above the ground at the base of the tower, will be less than 0.2 percent of the current FCC guidelines for general population exposure. Authorized personnel and rigging contractors will be alerted to the potential zone of high radiation on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

Environmental Assessment

An environmental assessment (“EA”) is categorically excluded under Section 1.1306 of the FCC Rules and Regulations since the permittee indicates:

- (a)(1) The proposed facilities on an existing communications site are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities on an existing communications site are not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities will not affect any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities are not located near any known Indian religious sites.
- (a)(6) The proposed facilities are not located in a flood plain.
- (a)(7) The installation of the antenna on the existing tower will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) It is not proposed to equip the tower with high intensity white lights unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines in accordance with OET Bulletin No. 65, Edition 97-01, dated August 1997 and Supplement A.

TABLE I  
DTV COVERAGE DATA  
FOR PROPOSED OPERATION OF  
KDLO-DT FLORENCE SOUTH DAKOTA  
CHANNEL 2 3.7 KW ERP 240.6 METERS HAAT  
MAY 2003

<u>Radial</u>	<u>Effective</u>	<u>Average</u>		<u>Distance to Contour</u>	
<u>N ° E, T</u>	<u>Height</u>	<u>Elevation</u>	<u>ERP</u>	<u>35 dBu</u>	<u>28 dBu</u>
	<u>meters</u>	<u>meters</u>	<u>kW</u>	<u>km</u>	<u>km</u>
0	232.6	561.4	3.1	77.3	90.4
10	230.0	564.0	3.5	77.9	91.1
20	234.4	559.6	3.7	78.7	91.9
30	233.9	560.1	3.7	78.6	91.9
40	238.9	555.1	3.5	78.6	91.8
50	240.2	553.8	3.3	78.3	91.5
60	242.1	551.9	3.1	78.0	91.2
70	247.0	547.0	2.9	77.8	91.0
80	245.0	549.0	2.8	77.4	90.5
90	248.0	546.0	2.9	77.9	91.1
100	248.3	545.7	3.1	78.5	91.8
110	241.4	552.6	3.5	78.7	92.0
120	238.9	555.1	3.7	79.0	92.3
130	235.0	559.0	3.7	78.7	92.0
140	233.7	560.3	3.5	78.1	91.4
150	235.0	559.0	3.3	77.9	91.1
160	236.5	557.5	3.1	77.6	90.8
170	242.1	551.9	2.9	77.4	90.6
180	239.2	554.8	2.8	76.9	90.0
190	240.8	553.2	2.9	77.3	90.5
200	243.8	550.2	3.1	78.2	91.4
210	248.1	545.9	3.5	79.3	92.6
220	251.2	542.8	3.7	80.0	93.4
230	250.4	543.6	3.7	79.9	93.3
240	246.8	547.2	3.5	79.2	92.5
250	246.8	547.2	3.3	78.8	92.1
260	246.7	547.3	3.1	78.4	91.6
270	246.2	547.8	2.9	77.8	90.9
280	247.9	546.1	2.8	77.6	90.8

TABLE I  
DTV COVERAGE DATA  
FOR PROPOSED OPERATION OF  
KDLO-DT FLORENCE SOUTH DAKOTA  
CHANNEL 2 3.7 KW ERP 240.6 METERS HAAT  
MAY 2003  
 (continued)

<u>Radial</u>	<u>Effective</u>	<u>Average</u>		<u>Distance to Contour</u>	
N ° E, T	<u>Height</u>	<u>Elevation</u>	<u>ERP</u>	<u>48 dBu</u>	<u>41 dBu</u>
	meters	meters	kW	km	km
290	243.0	551.0	2.9	77.5	90.7
300	239.5	554.5	3.1	77.8	91.0
310	243.0	551.0	3.5	78.9	92.2
320	244.1	549.9	3.7	79.4	92.7
330	245.7	548.3	3.7	79.6	92.9
340	240.3	553.7	3.5	78.7	91.9
350	238.9	555.1	3.3	78.2	91.4



ABOVE MEAN SEA LEVEL

ABOVE GROUND

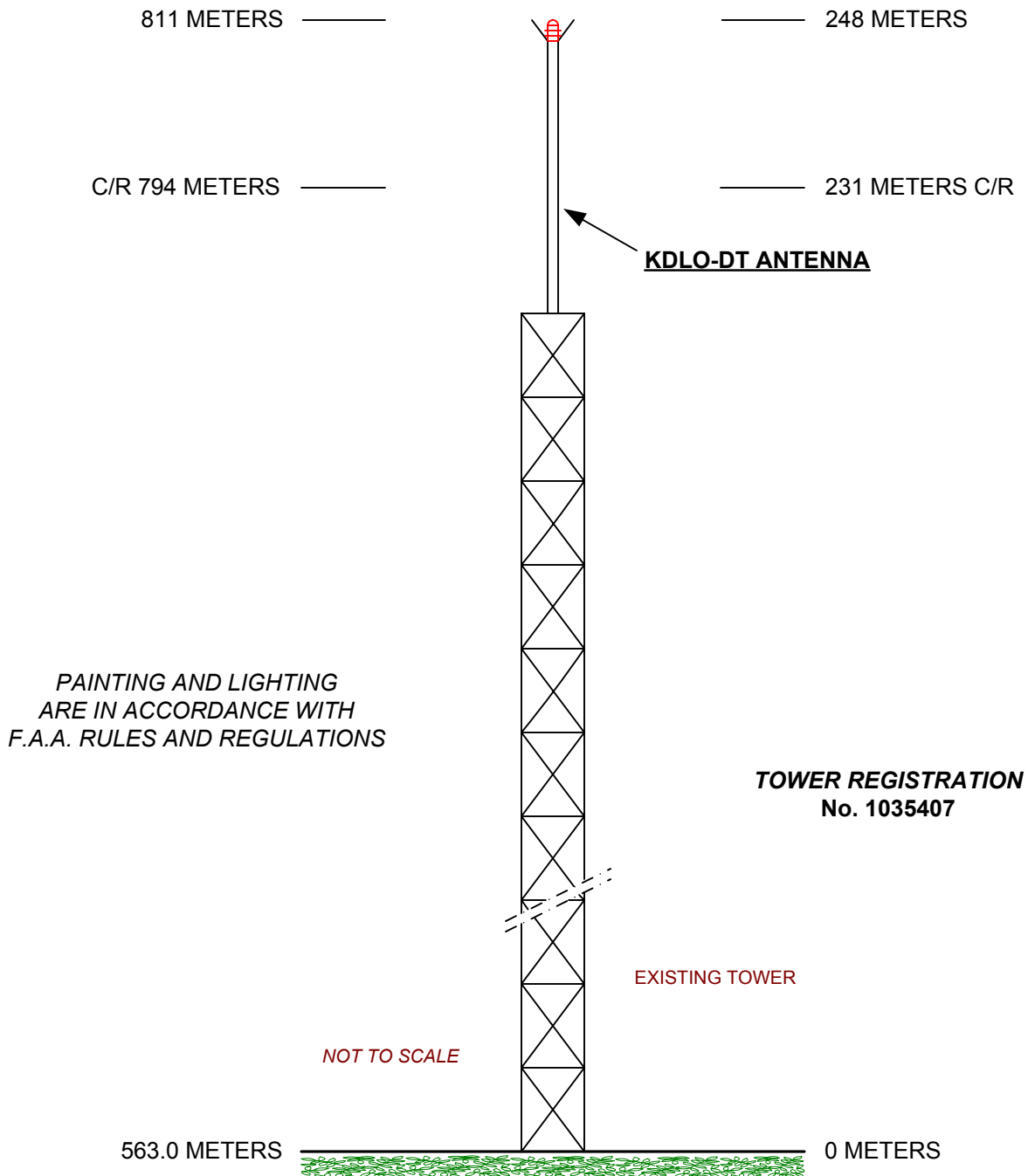


EXHIBIT E-1  
VERTICAL SKETCH  
FOR THE PROPOSED OPERATION OF  
**KDLO-DT, FLORENCE, SOUTH DAKOTA**  
MAY 2003

# HORIZONTAL PLANE PATTERN

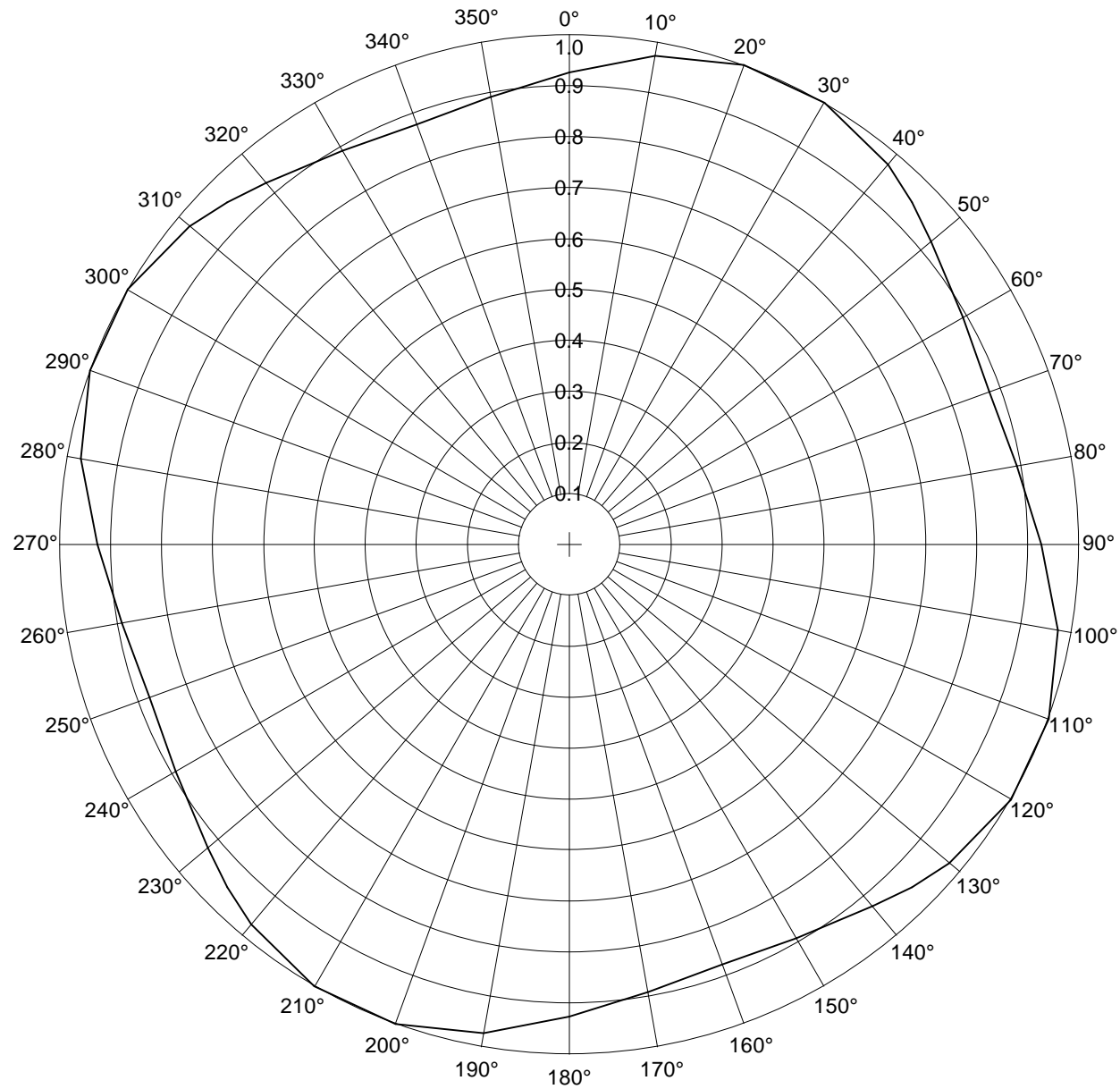


EXHIBIT E-2B  
TABULATION DATA FOR AZIMUTH PATTERN  
GENERAL ELECTRIC, TYPE TY-50F  
KDLO-DT, FLORENCE, SOUTH DAKOTA  
MAY 2003

<u>Azimuth</u> N ° E, T	<u>Relative Field</u>	<u>Azimuth</u> N ° E, T	<u>Relative Field</u>
0	0.920	180	0.920
10	0.966	190	0.966
20	0.994	200	0.994
30	0.994	210	0.994
40	0.966	220	0.966
45	0.943	225	0.943
50	0.920	230	0.920
60	0.886	240	0.886
70	0.871	250	0.871
80	0.886	260	0.886
90	0.920	270	0.920
100	0.966	280	0.966
110	0.994	290	0.994
120	0.994	300	0.994
130	0.966	310	0.966
135	0.943	315	0.943
140	0.920	320	0.920
150	0.886	330	0.886
160	0.871	340	0.871
170	0.886	350	0.886



Proposal Number

Revision

Date

**06 Dec 2002**

Call Letters

**KDLO**

Channel

**2**

Location

**Florence, SD**

Customer

Antenna Type

**TAB-6L**

### ELEVATION PATTERN

RMS Gain at Main Lobe

**6.0 (7.78 dB)**

Beam Tilt

**0.00 Degrees**

RMS Gain at Horizontal

**6.0 (7.78 dB)**

Frequency

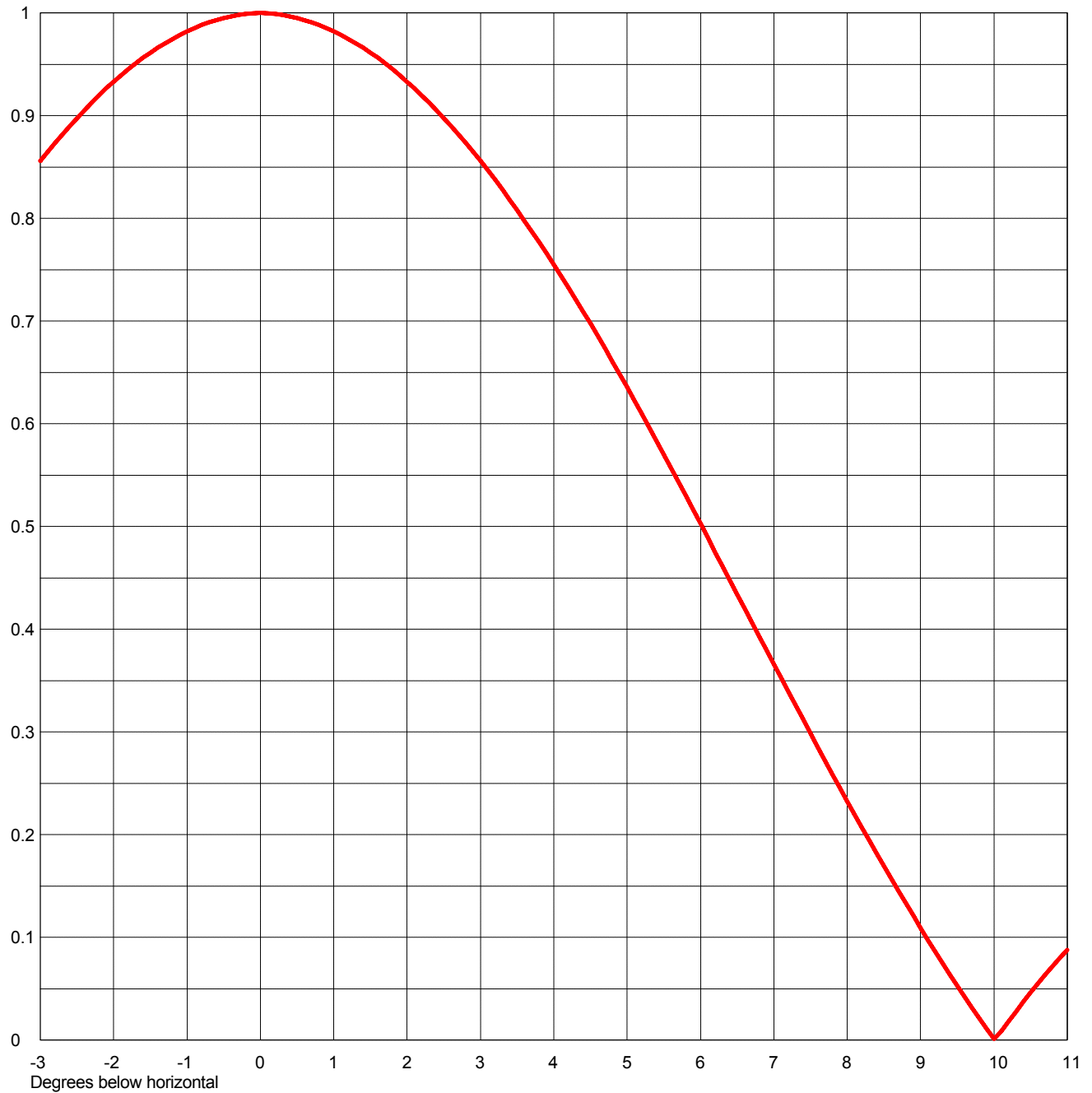
**57.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**TAB-6L000**



Remarks:



Proposal Number

Revision

Date

**06 Dec 2002**

Call Letters

**KDLO**

Channel

**2**

Location

**Florence, SD**

Customer

Antenna Type

**TAB-6L**

### ELEVATION PATTERN

RMS Gain at Main Lobe

**6.0 (7.78 dB)**

Beam Tilt

**0.00 Degrees**

RMS Gain at Horizontal

**6.0 (7.78 dB)**

Frequency

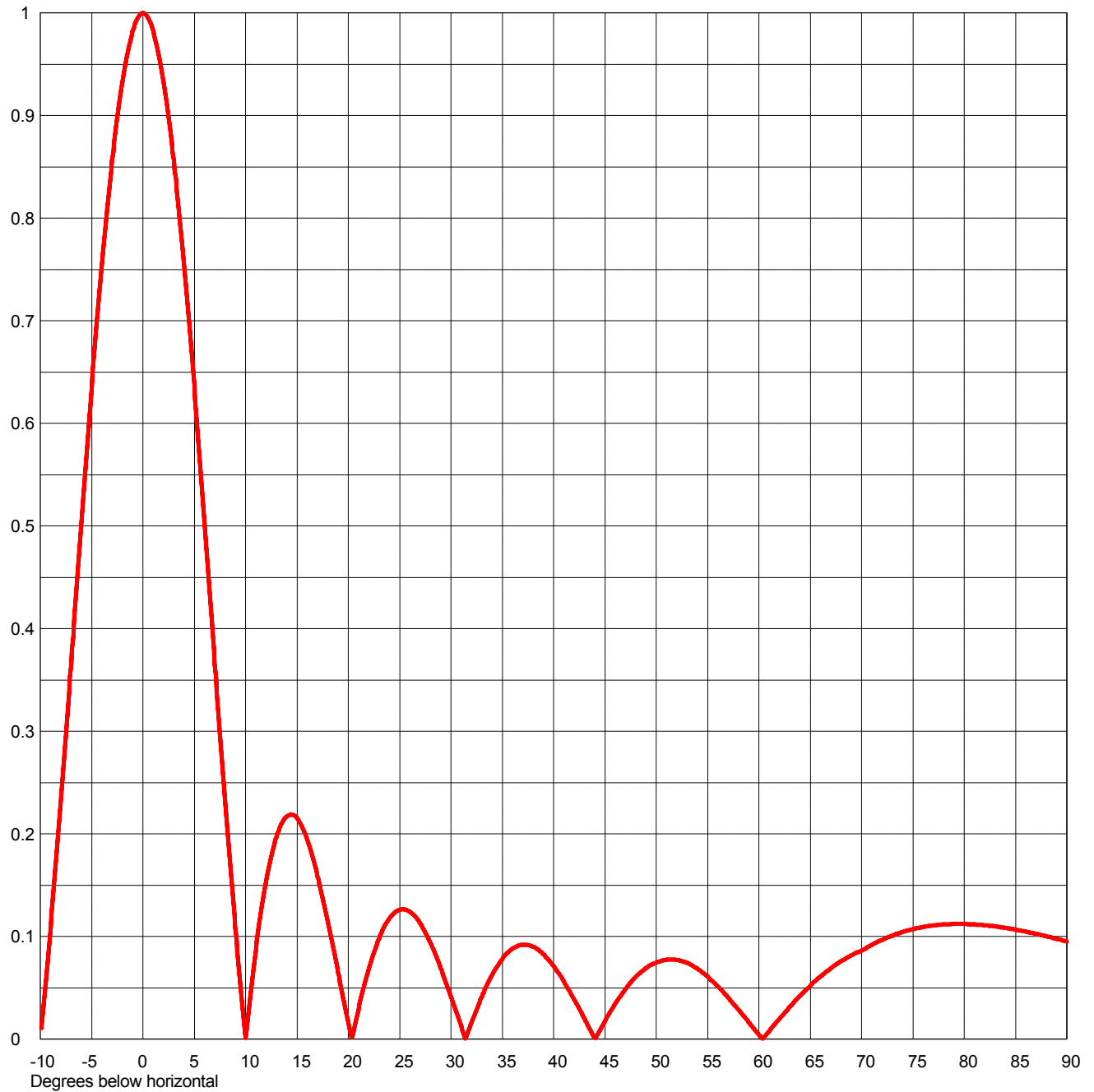
**57.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**TAB-6L000-90**



Remarks:



Proposal Number

Revision

Date

**06 Dec 2002**

Call Letters

**KDLO**

Channel

**2**

Location

**Florence, SD**

Customer

Antenna Type

**TAB-6L**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #

**TAB-6L000-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.001	2.4	0.905	10.6	0.055	30.5	0.027	51.0	0.077	71.5	0.094
-9.5	0.053	2.6	0.890	10.8	0.072	31.0	0.012	51.5	0.078	72.0	0.097
-9.0	0.109	2.8	0.873	11.0	0.088	31.5	0.002	52.0	0.077	72.5	0.099
-8.5	0.169	3.0	0.856	11.5	0.124	32.0	0.016	52.5	0.076	73.0	0.101
-8.0	0.233	3.2	0.837	12.0	0.154	32.5	0.029	53.0	0.074	73.5	0.103
-7.5	0.298	3.4	0.818	12.5	0.178	33.0	0.041	53.5	0.072	74.0	0.104
-7.0	0.366	3.6	0.798	13.0	0.197	33.5	0.052	54.0	0.069	74.5	0.106
-6.5	0.434	3.8	0.777	13.5	0.210	34.0	0.062	54.5	0.065	75.0	0.107
-6.0	0.502	4.0	0.755	14.0	0.217	34.5	0.071	55.0	0.061	75.5	0.108
-5.5	0.570	4.2	0.732	14.5	0.219	35.0	0.078	55.5	0.056	76.0	0.109
-5.0	0.636	4.4	0.709	15.0	0.216	35.5	0.084	56.0	0.051	76.5	0.110
-4.5	0.697	4.6	0.685	15.5	0.207	36.0	0.088	56.5	0.046	77.0	0.111
-4.0	0.755	4.8	0.661	16.0	0.194	36.5	0.091	57.0	0.040	77.5	0.111
-3.5	0.808	5.0	0.636	16.5	0.178	37.0	0.092	57.5	0.035	78.0	0.112
-3.0	0.856	5.2	0.610	17.0	0.159	37.5	0.092	58.0	0.029	78.5	0.112
-2.8	0.873	5.4	0.583	17.5	0.138	38.0	0.090	58.5	0.023	79.0	0.112
-2.6	0.890	5.6	0.557	18.0	0.115	38.5	0.087	59.0	0.017	79.5	0.112
-2.4	0.905	5.8	0.530	18.5	0.090	39.0	0.083	59.5	0.010	80.0	0.112
-2.2	0.920	6.0	0.502	19.0	0.066	39.5	0.077	60.0	0.004	80.5	0.112
-2.0	0.933	6.2	0.475	19.5	0.041	40.0	0.071	60.5	0.002	81.0	0.112
-1.8	0.945	6.4	0.448	20.0	0.016	40.5	0.064	61.0	0.008	81.5	0.111
-1.6	0.956	6.6	0.420	20.5	0.007	41.0	0.056	61.5	0.014	82.0	0.111
-1.4	0.966	6.8	0.393	21.0	0.030	41.5	0.048	62.0	0.020	82.5	0.110
-1.2	0.975	7.0	0.366	21.5	0.050	42.0	0.039	62.5	0.026	83.0	0.110
-1.0	0.982	7.2	0.339	22.0	0.068	42.5	0.029	63.0	0.031	83.5	0.109
-0.8	0.988	7.4	0.312	22.5	0.085	43.0	0.020	63.5	0.037	84.0	0.108
-0.6	0.993	7.6	0.285	23.0	0.098	43.5	0.010	64.0	0.042	84.5	0.108
-0.4	0.997	7.8	0.259	23.5	0.109	44.0	0.001	64.5	0.047	85.0	0.107
-0.2	0.999	8.0	0.233	24.0	0.118	44.5	0.008	65.0	0.052	85.5	0.106
0.0	1.000	8.2	0.207	24.5	0.123	45.0	0.017	65.5	0.057	86.0	0.105
0.2	0.999	8.4	0.182	25.0	0.126	45.5	0.026	66.0	0.061	86.5	0.104
0.4	0.997	8.6	0.157	25.5	0.126	46.0	0.034	66.5	0.065	87.0	0.103
0.6	0.993	8.8	0.133	26.0	0.124	46.5	0.042	67.0	0.069	87.5	0.101
0.8	0.988	9.0	0.109	26.5	0.120	47.0	0.049	67.5	0.073	88.0	0.100
1.0	0.982	9.2	0.086	27.0	0.113	47.5	0.055	68.0	0.076	88.5	0.099
1.2	0.975	9.4	0.064	27.5	0.104	48.0	0.061	68.5	0.079	89.0	0.098
1.4	0.966	9.6	0.042	28.0	0.094	48.5	0.065	69.0	0.082	89.5	0.096
1.6	0.956	9.8	0.021	28.5	0.082	49.0	0.069	69.5	0.084	90.0	0.095
1.8	0.945	10.0	0.001	29.0	0.069	49.5	0.072	70.0	0.086		
2.0	0.933	10.2	0.019	29.5	0.056	50.0	0.074	70.5	0.089		
2.2	0.920	10.4	0.037	30.0	0.041	50.5	0.076	71.0	0.092		

Remarks:

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