TECHNICAL EXHIBIT
APPLICATION FOR LICENSE
TELEVISION STATION WBIH-DT
SELMA, ALABAMA
CH 29 1000 KW (MAX-DA) 408 M

Technical Statement

This Technical Exhibit has been prepared on behalf of Television Station WBIH-DT on Channel 29 assigned to Selma, Alabama in support of its application for license to flash-cut from their present analog Channel 29 operation to digital operation on the same channel. The station is operating pursuant to the automatic program test authority with authorized facilities of 1,000 kilowatts with an antenna height above average terrain of 408 meters on Channel 29.[1]

Figure 1 is a tabulation of the carrier transmission system losses.

This facility is simply converting its existing analog operation to digital operation. The same directional antenna as that employed by the analog operation will continue to be employed by the digital operation, a Dielectric TFU-29JTT-R S360 antenna with 0.75° electrical beamtilt. The transmitting antenna manufacturer and its model number differs from that authorized in the digital construction permit but is the

[1] See FCC Construction Permit File Number: BPCDT-19991101AJQ.

same as that licensed by the Commission for analog use.[2] Attached as Appendix A is a copy of the technical section of the application for license (BLCT-20010928ACT) providing the Dielectric antenna specifications. In light of the foregoing, it is respectively requested that the subject digital license issuance reflect the use of the Dielectric antenna.

Charles A. Cooper

May 16, 2005

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
941.329.6000

[2] The initial modification application for WBIH on Channel 29 was filed July 22, 1999 for analog operation (BMPCT-19990722LC). This application was granted on April 18, 2000 for analog operation. Another application was filed on November 1, 1999 for digital operation (BMPCDT-19991101AJQ). This application was granted on May 21, 2003 for digital operation. Both of these applications specified an Andrew ATW27H2-HTC5-29S directional antenna. However, in the intervening time, the analog facility was constructed and licensed using a similar Dielectric type of directional antenna (BLCT-20010928ACT). The Commission therefore accepted this Dielectric pattern for analog use.

Figure 1

TECHNICAL EXHIBIT
APPLICATION FOR LICENSE
TELEVISION STATION WBIH-DT
SELMA, ALABAMA
CH 29 1000 KW (MAX-DA) 408 M

WBIH-DT Transmission System

Description	System
Transmitter Power Output (13.5 kW):	11.3 dBk
Transmission Line Loss (Dielectric 6-1/8" EIA/DCA) 1200 feet:	1.4 dB
Antenna Dielectric TFU-29JTT-R S360 (102.6 Power Gain):	20.1 dB
Effective Radiated Power (1000 kW):	30.0 dBk

APPENDIX A

COPY OF ANALOG WBIH APPLICATION FOR LICENSE TECHNICAL EXHIBIT FCC FILE NUMBER: BLCT-20010928ACT

SECTION III - TV LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Flinn Broadcasting Corporation

1. Facilities Authorized in construction permit

Call Sign	Channel No.	File No. of Construction Permit	Frequency Band	Carrier Frequency Visual	Carrier Frequency Aural
WBIH	29	BMPCT-19990722LC	560-566 MHz	561.24 MHz	565.74 MHz

Maximum Effective Radiated Power (visual) in dBk:	Maximum Effective Radiated Power (visual) in kW:	Antenna height above average terrain
35.9	3900	406.50 Meters

2. Station location (principal community)

State	City or Town
Alabama	Selma

3. Transmitter location

State	County	City or Town	Street address (or other identification)
Alabama	Autauga	Jones	619 Co. Rd. 1 North

4. Main studio location

State	County	City or Town	Number and Street
Alabama	Autauga	Prattville	225 North Memorial Drive

5. Operating constants - Visual transmitter (peak)

Transmitter power output (after vestigal sideband filter, if used, and after multiplexer, if combined)		Multiplexer loss in dB, if separate	Input to transmission line
17.22 dBK	52.7 kW	N/A dB	17.22 dBk

Transmission line power loss	Antenna Input power	Maximum antenna power gain	Maximum effective radiated power
1.42 dB	15.8 dBk	20.11 dB	35.91 dBk / 3,900 kW

Does the transmitter comply with 47 C.F.R. Section 73.1660? ☒ Yes ☐ No

If No, describe fully in an Exhibit. Exhibit No. N/A

6. Antenna, Transmission Line and Multiplexer

Antenna make and type No.	Maximum power gain	Average (RMS) horizontal plan power gain
Dielectric TFU29JTT-RS360	20.11 dB	5.56 dB

Elevation of the top of antenna supporting structure above ground (including antenna and all other appurtenances and lighting, if any)	Height of antenna radiation center above ground	Height of antenna radiation center above mean sea level
367.89 Meters	358.64 Meters	501.40 Meters

Geographical Coordinates of antenna

North Latitude	32 ° 32 ' 26.24 "	West Longitude	086 ° 50 ' 36.71 "

Is a directional antenna used? ☒ Yes ☐ No

Is electrical or mechanical beam tilting employed? ☒ Yes ☐ No

If either a directional antenna or one employing beam tilt is used, and the radiation patterns differ from those on file with the construction permit application, give full details in an Exhibit. Exhibit No. 1

SECTION II - Page 2

Transmission Line		
Make Dielectric	**Type No.** DC - 677 - 003	**Coaxial or waveguide** Coaxial
Size (nominal inside transverse dimensions) 15.56 centimeters	**Length** 374.9 Meters	**Power loss for this length** 1.42 dB
Multiplexer		
Make Dielectric (Constant Impedance filter)	**Type No.** Transmitter uses Combined Amp.	**Loss (if not included in transmitter power output)** Visual N/A dB Aural N/A dB

7. Frequency measurements

Measured visual carrier frequency (specify at least to nearest 100 — 561,239,744* Hz

Measured aural carrier center frequency (specify at least to nearest 100 Hz) — 565,739,754* Hz

Give date measurements made and method used or frequency measurement service employed.

8. Performance Data

Have equipment performance measurements been taken in accordance with 47 C.F.R. Section 73.1590, demonstrating compliance with the Commission's transmission standards and transmission system requirements, and are those measurements available for submission to the Commission upon request? [X] Yes [ ] No

If No, explain.

9. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

Antenna changed from Andrew ATW27H2-HTC5-29S to a Dielectric TFU-29JTT-R360 with comparable Horizontal Pattern and with .25 additional beam tilt. See Exhibit 1

* Item 7 was measured on 9/13/01 using a Leader LDC-824S calibrated in July 2001

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please print or type) Dirk B. Freeman	Signature (check appropriate box below)
Address (include ZIP Code) P.O. Box 753 Wheat Ridge, CO 80034	Date 9/24/2001
	Telephone No. (include area code) 303 940 4866

[ ] Technical Director
[ ] Chief Operator
[ ] Other (specify)
[ ] Registered Professional Engineer
[X] Technical Consultant

Dielectric

Proposal #: **DCA-9031** Antenna Type: **TFU-29JTT-R S360** Channel: **29 NTSC**
Call Letters: **WBIH** Location: **Selma, AL**

Electrical Specifications		Value Ratio	Value dB	Remarks
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	28.5	14.55	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	18.8	12.74	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol	102.6	20.11	
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	67.8	18.31	
	Vpol			
Circularity		dB		
Axial Ratio		dB		
Beam Tilt		0.75 deg		
Peak TV Power 10% Aural		45 kW	16.53 dBk	
Antenna Input: T/L		6-1/8 in	75.0 ohm	Type: EIA/DCA
Maximum Antenna Input VSWR		Pix + 5MHz	1.05 : 1	
		Color	1.08 : 1	
		Aural	1.10 : 1	
		Channel	1.10 : 1	
Patterns	Azimuth	TFU-S360-29		
	Elevation	29N285075	29N285075-90	

Mechanical Specifications		Metric	English	
Height with Lightning Protector	H4	18.5 m	60.6 ft	
Height Less Lightning Protector	H2	17.3 m	56.6 ft	
Height of Center of Radiation	H3	8.6 m	28.3 ft	
Basic Wind Speed	V	112.7 km/h	70 mi/h	TIA/EIA-222-F.
Force Coeff. x Projected Area	CaAc	3.97 m^2	42.7 ft^2	Above base flange
Moment Arm	D1	8.8 m	28.8 ft	Above base flange
Force Coeff. x Projected Area	CaAc	m^2	ft^2	
Moment Arm	D3	m	ft	
Pole Bury Length	D2	m	ft	
Weight	W	2.4 t	5,200 lbs	
Radome				

Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA/EIA-222-F.

NOTE:

Prepared By : RLM Approved By : AJS

Original Date : 30-Oct-00

Dielectric

Proposal Number	**DCA-9031**		
Date	**30-Oct-00**		
Call Letters	**WBIH**	Channel	**29**
Location	**Selma, AL**		
Customer			
Antenna Type	**TFU-29JTT-R S360**		

SYSTEM SUMMARY

Antenna:

				H Pol
Type:	**TFU-29JTT-R S360**	ERP:	**3900 kW**	**(35.91 dBk)**
Channel:	**29**	Peak Gain*:	**102.6**	**(20.11 dB)**
Location:	**Selma, AL**	Input Power:	**38.0 kW**	**(15.80 dBk)**

Transmission Line:

Type:	**EIA/DCA**	Attenuation:		**1.39 dB**
Size:	**6-1/8 in**	Efficiency:	**72.7%**	
Impedance:	**75 ohm**			
Length:	**1,200 ft**	**365.8 m**		

Transmitter:

Power Required: **52.3 kW** **(17.19 dBk)**

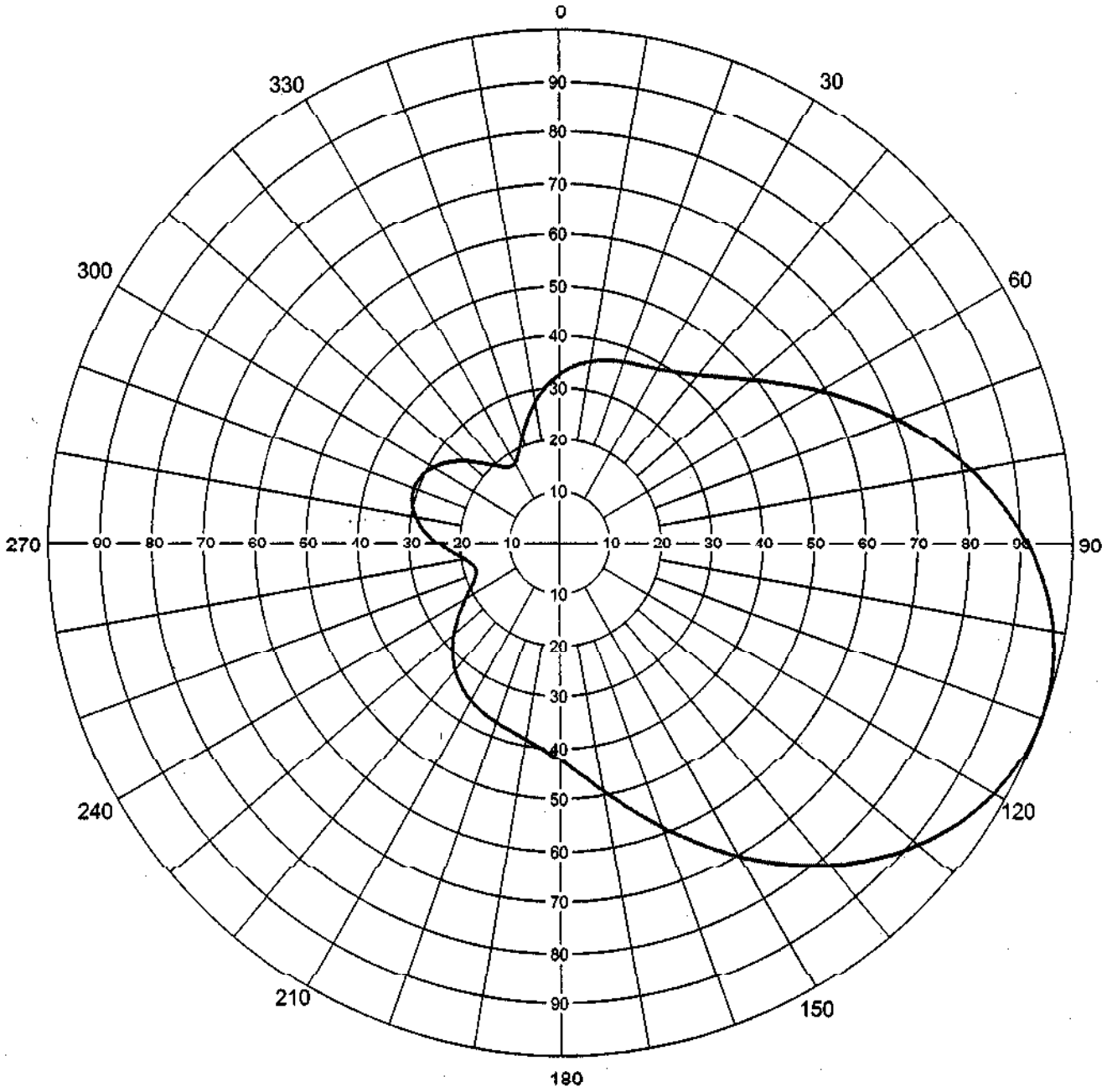
* Gain is with respect to half wave dipole.

Dielectric

Proposal Number	**DCA-9031**	Revision	
Date	**24 Aug 2001**		
Call Letters	**WBIH**	Channel	**29**
Location	**Selma, AL**		
Customer			
Antenna Type	**TFU-29JTT-R S360**		

AZIMUTH PATTERN

RMS Gain at Main Lobe	**3.60 (5.56 dB)**	Frequency	**563 MHz**
Calculated / Measured	**Calculated**	Drawing #	**TFU-S360-29**



Remarks:

Dielectric

Proposal Number **DCA-9031** Revision
Date **24 Aug 2001**
Call Letters **WBIH** Channel **29**
Location **Selma, AL**
Customer
Antenna Type **TFU-29JTT-R S360**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing # **TFU-S360-29**

Angle	Field	ERP (kW)	ERP (dBk)
0	0.326	414.5	26.18
10	0.356	494.3	26.94
20	0.372	539.7	27.32
30	0.388	587.1	27.69
40	0.424	701.1	28.46
50	0.492	944.0	29.75
60	0.589	1353.0	31.31
70	0.703	1927.4	32.85
80	0.817	2603.2	34.16
90	0.913	3250.9	35.12
100	0.977	3722.7	35.71
110	1.000	3900.0	35.91
120	0.977	3722.7	35.71
130	0.913	3250.9	35.12
140	0.817	2603.2	34.16
150	0.703	1927.4	32.85
160	0.589	1353.0	31.31
170	0.492	944.0	29.75
180	0.424	701.1	28.46
190	0.388	587.1	27.69
200	0.372	539.7	27.32
210	0.356	494.3	26.94
220	0.326	414.5	26.18
230	0.277	299.2	24.76
240	0.217	183.6	22.64
250	0.178	123.6	20.92
260	0.193	145.3	21.62
270	0.245	234.1	23.69
280	0.291	330.3	25.19
290	0.309	372.4	25.71
300	0.291	330.3	25.19
310	0.245	234.1	23.69
320	0.193	145.3	21.62
330	0.178	123.6	20.92
340	0.217	183.6	22.64
350	0.277	299.2	24.76

Maxima

Angle	Field	ERP (kW)	ERP (dBk)
110	1.000	3900.0	35.91
290	0.309	372.4	25.71

Minima

Angle	Field	ERP (kW)	ERP (dBk)
252	0.176	120.8	20.82
328	0.176	120.8	20.82

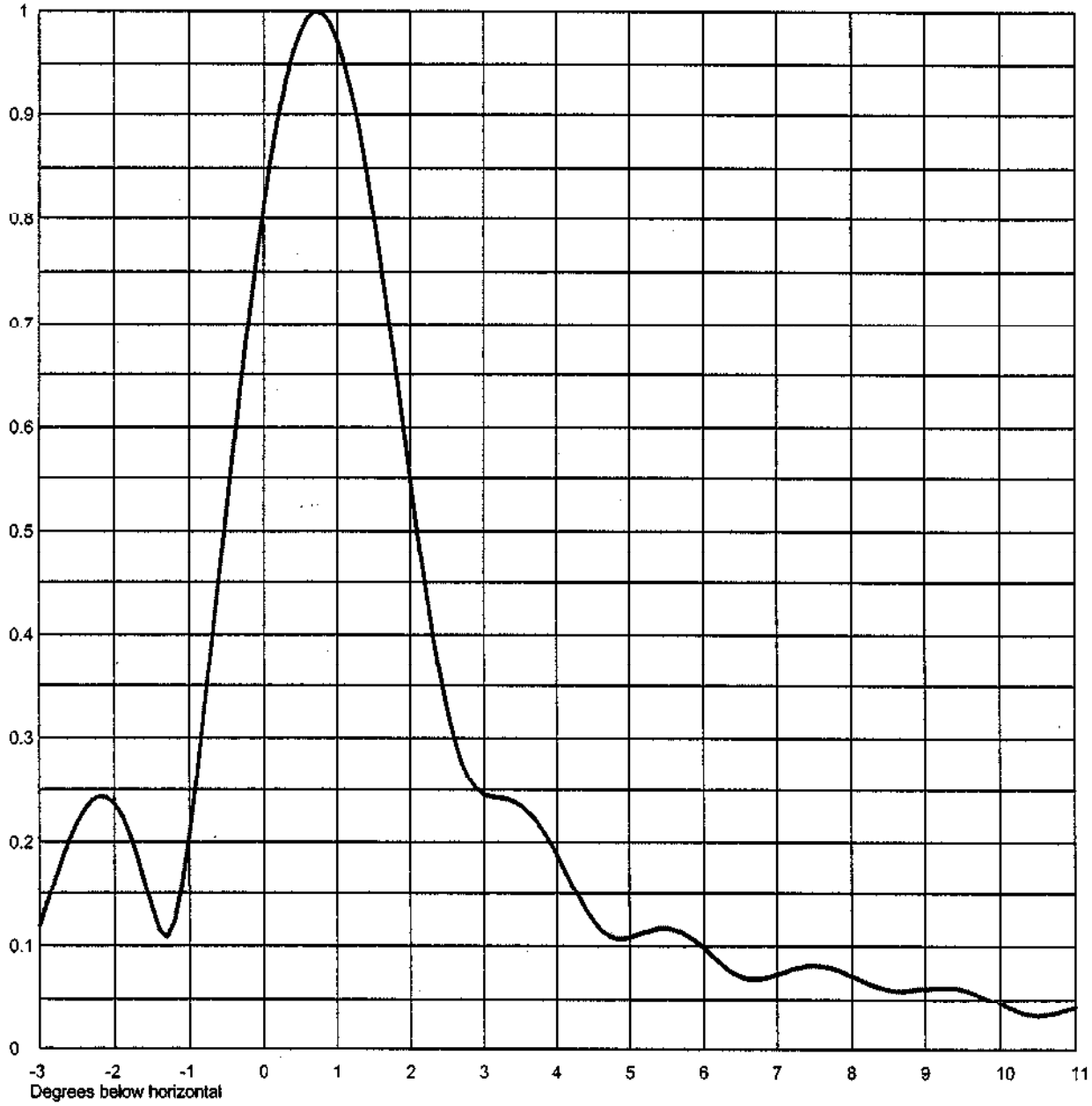
Remarks:

Dielectric

Proposal Number	**DCA-9031**	Revision	
Date	**24 Aug 2001**		
Call Letters	**WBIH**	Channel	**29**
Location	**Selma, AL**		
Customer			
Antenna Type	**TFU-29JTT-R S360**		

ELEVATION PATTERN

RMS Gain at Main Lobe	**28.5 (14.55 dB)**	Beam Tilt	**0.75 Degrees**
RMS Gain at Horizontal	**18.8 (12.74 dB)**	Frequency	**563.00 MHz**
Calculated / Measured	**Calculated**	Drawing #	**29N285075**



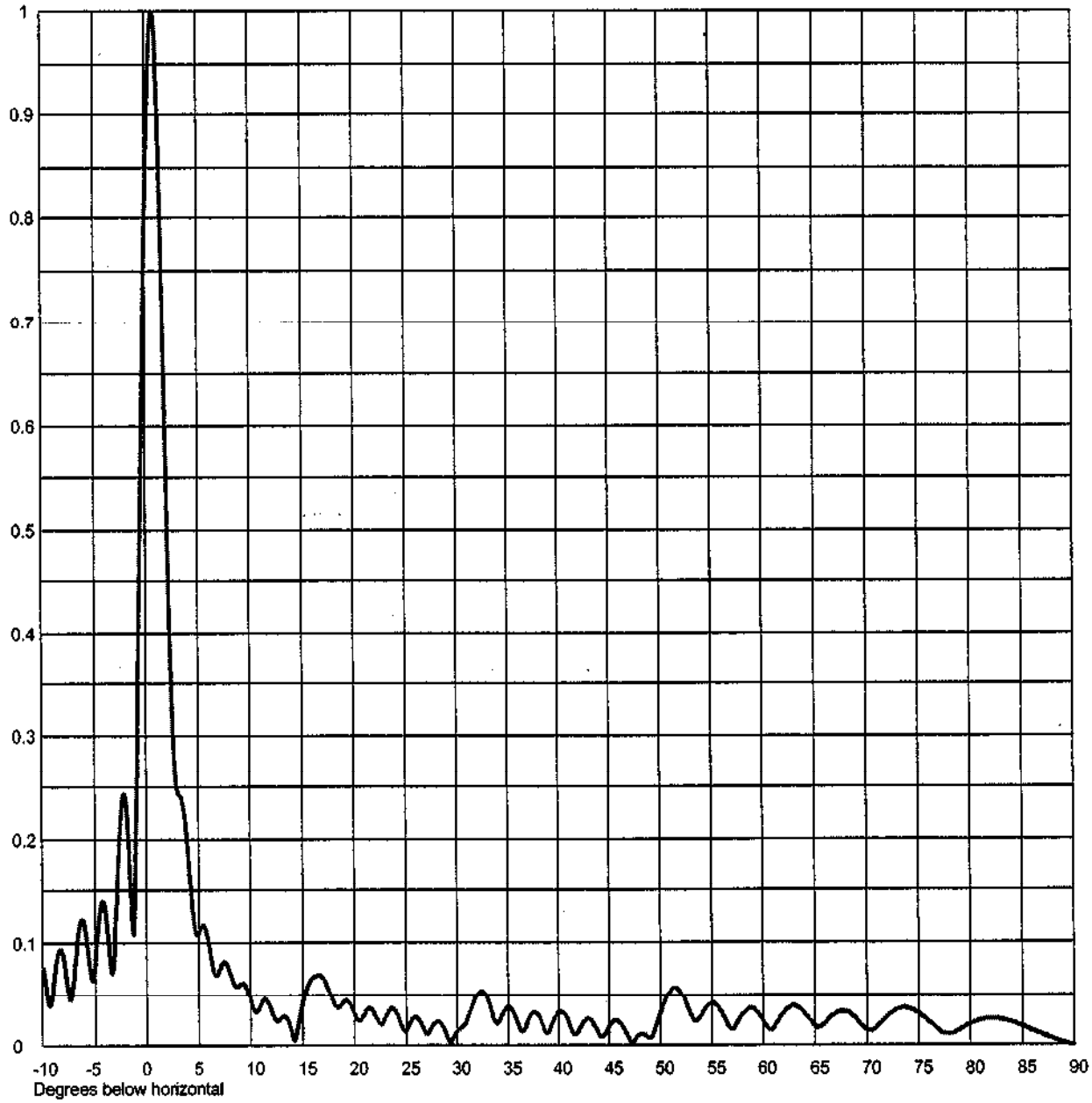
Remarks:

Dielectric

Proposal Number	DCA-9031	Revision	
Date	24 Aug 2001		
Call Letters	WBIH	Channel	29
Location	Selma, AL		
Customer			
Antenna Type	TFU-29JTT-R S360		

ELEVATION PATTERN

RMS Gain at Main Lobe	28.5 (14.55 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	18.8 (12.74 dB)	Frequency	563.00 MHz
Calculated / Measured	Calculated	Drawing #	29N285075-90



Remarks:

Dielectric

Proposal Number	**DCA-9031**	Revision	
Date	**24 Aug 2001**		
Call Letters	**WBIH**	Channel	**29**
Location	**Selma, AL**		
Customer			
Antenna Type	**TFU-29JTT-R S360**		

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **29NZ85075**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.082	2.4	0.362	10.6	0.033	30.5	0.018	51.0	0.054	71.5	0.023
-9.5	0.045	2.6	0.296	10.8	0.036	31.0	0.025	51.5	0.057	72.0	0.028
-9.0	0.055	2.8	0.260	11.0	0.040	31.5	0.039	52.0	0.052	72.5	0.032
-8.5	0.090	3.0	0.245	11.5	0.044	32.0	0.051	52.5	0.041	73.0	0.035
-8.0	0.087	3.2	0.242	12.0	0.034	32.5	0.054	53.0	0.029	73.5	0.036
-7.5	0.049	3.4	0.239	12.5	0.023	33.0	0.045	53.5	0.023	74.0	0.035
-7.0	0.066	3.6	0.229	13.0	0.027	33.5	0.030	54.0	0.029	74.5	0.033
-6.5	0.113	3.8	0.212	13.5	0.026	34.0	0.021	54.5	0.037	75.0	0.030
-6.0	0.117	4.0	0.188	14.0	0.010	34.5	0.031	55.0	0.041	75.5	0.027
-5.5	0.077	4.2	0.160	14.5	0.017	35.0	0.037	55.5	0.038	76.0	0.022
-5.0	0.078	4.4	0.134	15.0	0.042	35.5	0.033	56.0	0.031	76.5	0.018
-4.5	0.129	4.6	0.115	15.5	0.059	36.0	0.020	56.5	0.021	77.0	0.014
-4.0	0.132	4.8	0.107	16.0	0.067	36.5	0.014	57.0	0.016	77.5	0.011
-3.5	0.077	5.0	0.108	16.5	0.069	37.0	0.025	57.5	0.022	78.0	0.011
-3.0	0.119	5.2	0.113	17.0	0.066	37.5	0.032	58.0	0.030	78.5	0.012
-2.8	0.163	5.4	0.117	17.5	0.055	38.0	0.029	58.5	0.035	79.0	0.015
-2.6	0.203	5.6	0.115	18.0	0.041	38.5	0.018	59.0	0.035	79.5	0.018
-2.4	0.231	5.8	0.109	18.5	0.037	39.0	0.012	59.5	0.031	80.0	0.020
-2.2	0.243	6.0	0.099	19.0	0.042	39.5	0.023	60.0	0.023	80.5	0.022
-2.0	0.236	6.2	0.086	19.5	0.041	40.0	0.032	60.5	0.016	81.0	0.024
-1.8	0.208	6.4	0.075	20.0	0.031	40.5	0.031	61.0	0.016	81.5	0.025
-1.6	0.162	6.6	0.069	20.5	0.024	41.0	0.022	61.5	0.023	82.0	0.025
-1.4	0.115	6.8	0.070	21.0	0.031	41.5	0.011	62.0	0.031	82.5	0.025
-1.2	0.123	7.0	0.074	21.5	0.036	42.0	0.014	62.5	0.036	83.0	0.024
-1.0	0.207	7.2	0.079	22.0	0.029	42.5	0.023	63.0	0.038	83.5	0.023
-0.8	0.325	7.4	0.082	22.5	0.021	43.0	0.025	63.5	0.036	84.0	0.022
-0.6	0.454	7.6	0.081	23.0	0.027	43.5	0.020	64.0	0.031	84.5	0.020
-0.4	0.583	7.8	0.078	23.5	0.035	44.0	0.011	64.5	0.024	85.0	0.018
-0.2	0.705	8.0	0.072	24.0	0.033	44.5	0.010	65.0	0.019	85.5	0.016
0.0	0.813	8.2	0.066	24.5	0.020	45.0	0.019	65.5	0.018	86.0	0.014
0.2	0.899	8.4	0.061	25.0	0.014	45.5	0.024	66.0	0.021	86.5	0.011
0.4	0.961	8.6	0.058	25.5	0.023	46.0	0.022	66.5	0.027	87.0	0.009
0.6	0.994	8.8	0.059	26.0	0.027	46.5	0.015	67.0	0.031	87.5	0.007
0.8	0.998	9.0	0.060	26.5	0.020	47.0	0.005	67.5	0.033	88.0	0.005
1.0	0.973	9.2	0.061	27.0	0.011	47.5	0.005	68.0	0.032	88.5	0.003
1.2	0.921	9.4	0.061	27.5	0.017	48.0	0.010	68.5	0.029	89.0	0.002
1.4	0.847	9.6	0.057	28.0	0.023	48.5	0.010	69.0	0.025	89.5	0.001
1.6	0.755	9.8	0.051	28.5	0.020	49.0	0.007	69.5	0.019	90.0	0.000
1.8	0.653	10.0	0.044	29.0	0.009	49.5	0.016	70.0	0.015		
2.0	0.548	10.2	0.037	29.5	0.004	50.0	0.031	70.5	0.014		
2.2	0.448	10.4	0.033	30.0	0.013	50.5	0.045	71.0	0.018		

Remarks: