

Proposal #: **DCA-9964-1** Antenna Type: **TUV-32GTH/13HV-R 06/O3** Channel: **29 DTV**
 Call Letters: **WKNO-DT** Location: **Memphis, TN** **10**

Electrical Specifications		Value		Remarks
		Ratio	dB	
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	25.5	14.07	
	Vpol			
RMS Gain at Horizontal over Halfwave Dipole	Hpol	16.8	12.25	
	Vpol			
Peak Directional Gain over Halfwave Dipole	Hpol			
	Vpol			
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol			
	Vpol			
Circularity		+/- 2.0 dB		
Axial Ratio		dB		
		0.75 deg		
DTV		45 kW	16.53 dBk	
Antenna Input:	T/L	6-1/8 in	75.0 ohm	Type: D29:
Maximum Antenna Input VSWR	Channel	1.08 : 1		
Patterns	Azimuth	TUV-06-29		10:
	Elevation	32G255075	32G255075-90	
<div style="display: flex; justify-content: space-between; align-items: center;"> <div>Attenuation of Tower Run</div> <div style="border: 1px solid black; padding: 2px 10px;">1.237</div> </div> <div style="text-align: center; margin-top: 10px;">0.6</div>				

29-May-02

1

16-Sep-02

EXHIBIT A

Proposal Number	DCA-9964	Revision:	1
Date	16-Sep-02		
Call Letters	WKNO-DT	Channel	29
Location	Memphis, TN		
Customer			
Antenna Type	TUV-32GTH/13HV-R 06/03		

SYSTEM SUMMARY

Antenna:

Type:	TUV-32GTH/13HV-R 06/03	ERP:	800 kW	H Pol	(29.03 dBk)
Channel:	29	RMS Gain*:	25.5		(14.07 dB)
Location:	Memphis, TN	Input Power:	31.4 kW		(14.97 dBk)

Transmission Line:

Type:	EIA/DCA	Attenuation:	1.24 dB
Size:	6-1/8 in	Efficiency:	75.2%
Impedance:	75 ohm		
Length:	1,070 ft		326.1 m

Combiner:	DCA	Attenuation:	0.20 dB
		Efficiency:	95.5%

Combiner Input:

Power Required:	43.7 kW	16.40 dBk)
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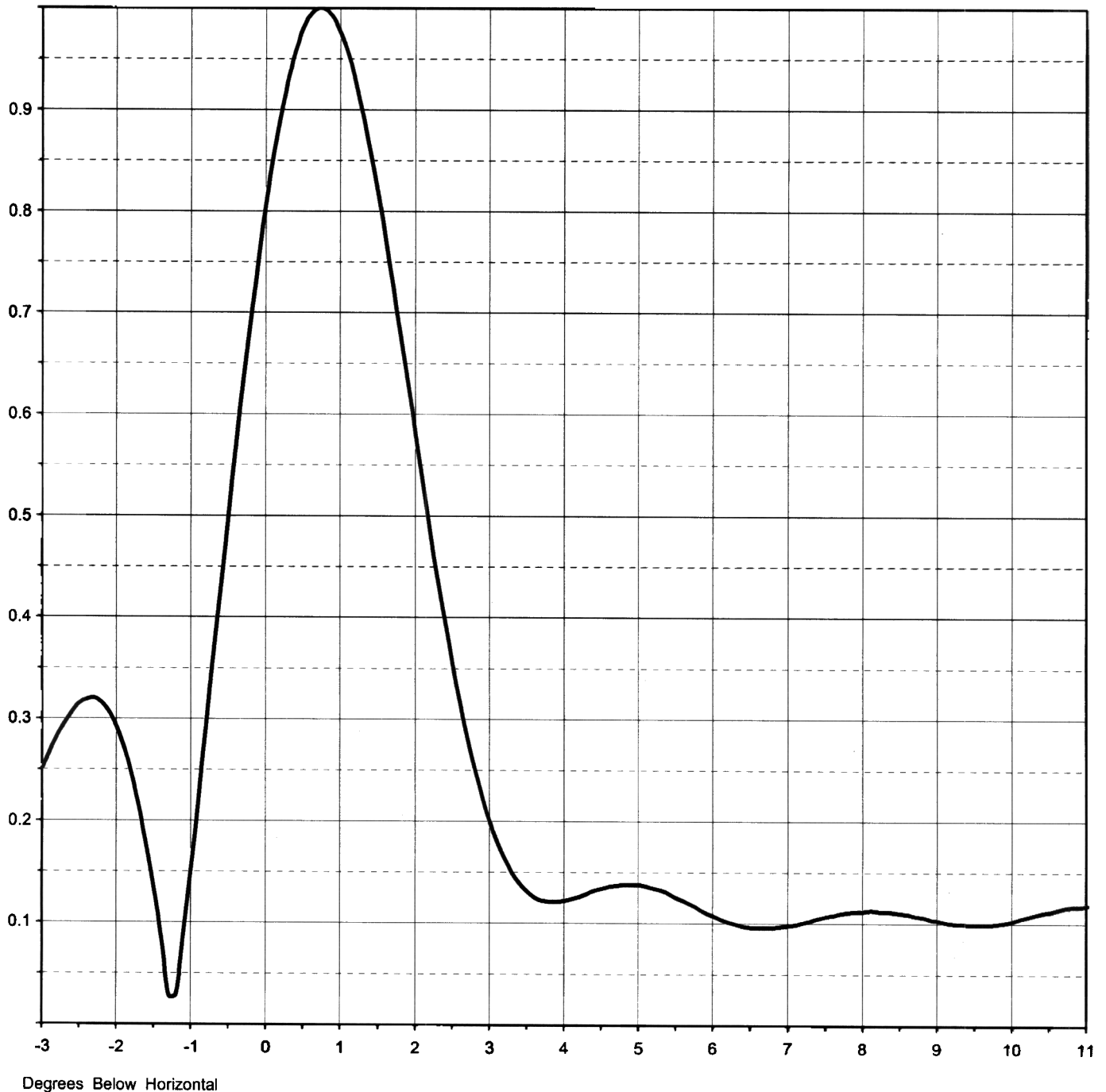
* Gain is with respect to half wave dipole.

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ELEVATION PATTERN

RMS Gain at Main Lobe	25.50	(14.07 dB)
RMS Gain at Horizontal	16.80	(12.25 dB)
Calculated / Measured	Calculated	

Beam Tilt	0.75 deg
Frequency	563.00 MHz
Drawing #	32G255075



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ELEVATION PATTERN

RMS Gain at Main Lobe **25.50 (14.07 dB)**

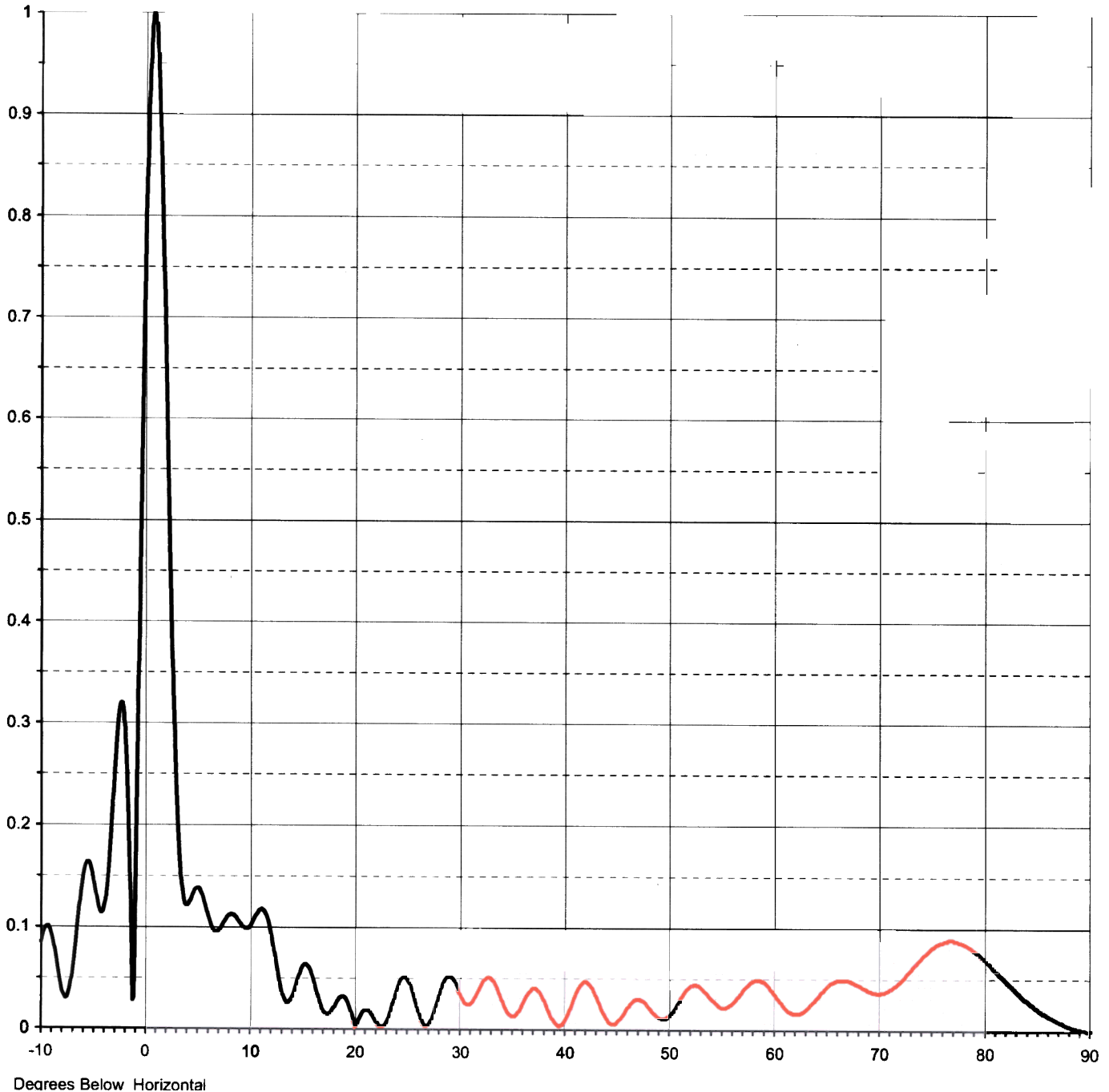
RMS Gain at Horizontal **16.80 (12.25 dB)**

Calculated / Measured **Calculated**

Beam Tilt **0.75 deg**

Frequency **563.00 MHz**

Drawing # **32G255075-90**



Proposal Number **DCA-9964** Revision: **1**
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 Antenna Type **TUV-32GTH/13HV-R 06/03**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **32G255075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.085	2.4	0.395	10.6	0.112	30.5	0.026	51.0	0.028	71.5	0.043
-9.5	0.100	2.6	0.317	10.8	0.116	31.0	0.024	51.5	0.036	72.0	0.048
-9.0	0.093	2.8	0.251	11.0	0.117	31.5	0.031	52.0	0.042	72.5	0.054
-8.5	0.067	3.0	0.200	11.5	0.112	32.0	0.041	52.5	0.044	73.0	0.059
-8.0	0.038	3.2	0.163	12.0	0.092	32.5	0.049	53.0	0.042	73.5	0.065
-7.5	0.031	3.4	0.139	12.5	0.062	33.0	0.050	53.5	0.037	74.0	0.071
-7.0	0.057	3.6	0.125	13.0	0.036	33.5	0.043	54.0	0.031	74.5	0.076
-6.5	0.105	3.8	0.121	13.5	0.026	34.0	0.031	54.5	0.026	75.0	0.081
-6.0	0.149	4.0	0.122	14.0	0.032	34.5	0.019	55.0	0.022	75.5	0.084
-5.5	0.164	4.2	0.126	14.5	0.049	35.0	0.013	55.5	0.022	76.0	0.086
-5.0	0.146	4.4	0.132	15.0	0.062	35.5	0.015	56.0	0.025	76.5	0.088
-4.5	0.119	4.6	0.136	15.5	0.062	36.0	0.024	56.5	0.031	77.0	0.088
-4.0	0.119	4.8	0.138	16.0	0.049	36.5	0.034	57.0	0.037	77.5	0.086
-3.5	0.168	5.0	0.138	16.5	0.030	37.0	0.040	57.5	0.043	78.0	0.084
-3.0	0.251	5.2	0.134	17.0	0.017	37.5	0.038	58.0	0.047	78.5	0.081
-2.8	0.283	5.4	0.129	17.5	0.015	38.0	0.030	58.5	0.049	79.0	0.078
-2.6	0.307	5.6	0.122	18.0	0.022	38.5	0.018	59.0	0.047	79.5	0.073
-2.4	0.319	5.8	0.114	18.5	0.031	39.0	0.008	59.5	0.043	80.0	0.069
-2.2	0.315	6.0	0.107	19.0	0.031	39.5	0.004	60.0	0.036	80.5	0.064
-2.0	0.291	6.2	0.101	19.5	0.020	40.0	0.008	60.5	0.030	81.0	0.058
-1.8	0.244	6.4	0.097	20.0	0.003	40.5	0.019	61.0	0.023	81.5	0.053
-1.6	0.174	6.6	0.096	20.5	0.013	41.0	0.032	61.5	0.018	82.0	0.048
-1.4	0.082	6.8	0.096	21.0	0.019	41.5	0.043	62.0	0.016	82.5	0.043
-1.2	0.030	7.0	0.098	21.5	0.015	42.0	0.047	62.5	0.016	83.0	0.038
-1.0	0.157	7.2	0.101	22.0	0.007	42.5	0.043	63.0	0.019	83.5	0.033
-0.8	0.295	7.4	0.105	22.5	0.003	43.0	0.033	63.5	0.024	84.0	0.029
-0.6	0.436	7.6	0.108	23.0	0.008	43.5	0.021	64.0	0.030	84.5	0.025
-0.4	0.574	7.8	0.111	23.5	0.023	44.0	0.011	64.5	0.037	85.0	0.021
-0.2	0.701	8.0	0.112	24.0	0.040	44.5	0.006	65.0	0.042	85.5	0.017
0.0	0.812	8.2	0.112	24.5	0.051	45.0	0.007	65.5	0.046	86.0	0.014
0.2	0.900	8.4	0.111	25.0	0.048	45.5	0.013	66.0	0.049	86.5	0.011
0.4	0.961	8.6	0.109	25.5	0.034	46.0	0.021	66.5	0.049	87.0	0.009
0.6	0.994	8.8	0.106	26.0	0.017	46.5	0.027	67.0	0.049	87.5	0.007
0.8	0.998	9.0	0.103	26.5	0.005	47.0	0.030	67.5	0.046	88.0	0.005
1.0	0.974	9.2	0.100	27.0	0.005	47.5	0.028	68.0	0.044	88.5	0.003
1.2	0.925	9.4	0.099	27.5	0.017	48.0	0.023	68.5	0.041	89.0	0.002
1.4	0.856	9.6	0.099	28.0	0.034	48.5	0.017	69.0	0.038	89.5	0.001
1.6	0.771	9.8	0.099	28.5	0.048	49.0	0.012	69.5	0.037	90.0	0.000
1.8	0.677	10.0	0.101	29.0	0.052	49.5	0.011	70.0	0.036		
2.0	0.579	10.2	0.105	29.5	0.047	50.0	0.013	70.5	0.037		
2.2	0.484	10.4	0.109	30.0	0.036	50.5	0.020	71.0	0.040		