

Exhibit 40 - Statement A  
**NATURE OF APPLICATION AND  
PROPOSED ANTENNA SYSTEM**  
prepared for  
**WISN Hearst-Argyle Television, Inc.**  
WISN-DT Milwaukee, Wisconsin  
Facility ID 65680  
Ch. 34 863 kW 263 m

*WISN Hearst-Argyle Television, Inc.* (“*Hearst-Argyle*”) is the licensee of WISN-TV, Channel 12, Milwaukee, Wisconsin and has been assigned DTV Channel 34 as its paired DTV allotment. An application is pending before the Commission to implement the full power WISN-DT DTV facility (BPCDT-19981209KF) while special temporary authorization (“STA”) has been granted to operate WISN-DT at a lesser power in the interim (BEDSTA-20030206ADE). With the instant amendment, *Hearst-Argyle* is proposing to construct a “checklist” DTV facility in place of the expansion facility proposed in 1998.

The proposed WISN-DT will utilize the existing transmitting antenna employed by the current WISN-DT STA facility with no change in mounting location. The antenna is mounted on an existing antenna supporting structure, having FCC Antenna Structure Registration number 1035766. The antenna system is side-mounted below the top of the existing structure with no proposed change in the overall structure height.

*Pursuant to the Commission’s Second Memorandum Opinion and Order on Reconsideration of the Fifth and Sixth Report and Orders on Advanced Television,*<sup>1</sup> *WISN* was allotted DTV Channel 34 as a “paired” DTV Channel for WISN-TV. It is believed that the instant proposal does not require an interference study under the present requirements of §73.622(f)(2) of the Commission’s rules. Specifically, (1) the proposed DTV Channel 34 was established for this station under §73.622(b); (2) the proposed facility will operate from a site within 5 km from the DTV reference site for WISN established under §73.622(d)(1); and (3) the proposed facility will operate with an “equivalent” effective radiated power (“ERP”) of 863 kW and antenna height above average terrain (“HAAT”) of 263 meters, which will not exceed the DTV reference ERP and HAAT

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<sup>1</sup>See MM Docket 87-268, *Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, FCC 98-315, released December 18, 1998.

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established for this station (832.8 kW ERP and 305 meters HAAT) under §73.622(f)(1), as described below.

The WISN-DT antenna will be mounted *below* the reference height (at 263 meters HAAT as opposed to 305 meters HAAT, a difference of 42 meters). In this case, the reference ERP may be adjusted upward 0.74 dB using the formula and method described in §73.622(f)(3) of the Commission's rules. Thus, at the proposed HAAT the adjusted reference ERP becomes 988 kW (i.e.: 0.74 dB higher than the allotted 832.8 kW).

The adjusted reference ERP refers only to the *maximum* ERP that may be achieved by the DTV station at the proposed HAAT, however, actual maximum ERP values vary by azimuth. The Commission's replication process develops a directional antenna pattern for the reference WISN-DT in order to match the distance to the analog Grade B contour with the DTV coverage contour. The WISN reference directional antenna pattern (repWIMILWAUKEE\_34) was obtained from the Commission's database and used to develop maximum ERP levels. The attached **Table 1** supplies a summary of the reference relative field (column two) and ERP values (column three) based on the allotted antenna HAAT for radials spaced every 10 degrees. Column four shows the ERP as adjusted upwards 0.74 dB (as described above), considering the proposed HAAT. The table also shows the proposed antenna's relative field pattern (column five), with the resulting proposed ERP (column six) along each azimuthal direction. As shown in **Table 1**, the proposed ERP (column six) does not exceed the adjusted reference ERP (column four) at *any* azimuth. Thus, the instant proposal is not subject to the interference analysis provisions of §73.623(c).

### **Antenna System**

The proposed transmitting antenna, a *Dielectric* model TFU-26GTH-R CT160, is directional in the horizontal plane. This antenna will employ 0.75 degrees of electrical beam tilt on DTV Channel 34. The ERP will be 863 kilowatts, horizontally polarized. The antenna system will be installed in accordance with the manufacturer's instructions. Said installation will be supervised on-site by a competent technical representative of the applicant. The antenna's horizontal plane

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pattern, expressed in terms of relative field and power, is supplied as **Figure 1**, properly oriented relative to True North. **Figures 2 and 2A** present the theoretical vertical plane (elevation) pattern for the antenna system.

**Radial Truncation**

Pursuant to §73.625(b)(4) the calculated average terrain elevation and associated HAAT have been adjusted due to the proximity of the site to the shoreline of Lake Michigan. The 45 and 90 degree radials have been omitted. The 135 degree radial has been truncated to include only the part of the radial extending from 3.2 kilometers to the outermost portion of land area within the United States covered by the radial. **Figure 3** provides a map of the proposed facility's 48 dB $\mu$  and 41 dB $\mu$  coverage contours, along with the 8 standard radials.

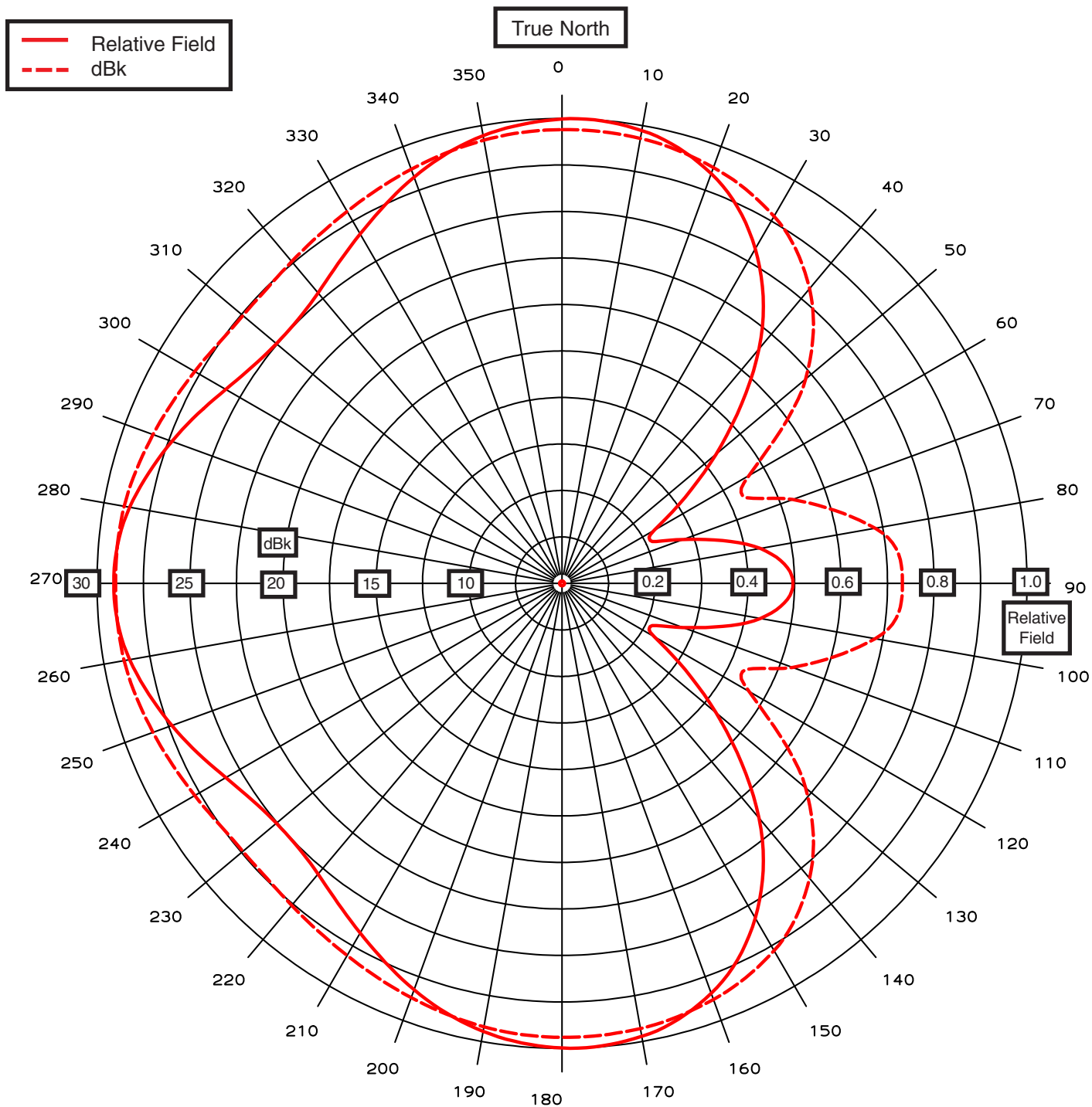
**Other Allocation Considerations**

The nearest FCC monitoring station is 170.8 km distant at Allegan, MI. This exceeds the threshold minimum distance of 80 km specified in §73.1030(c)(3) that would suggest consideration of the monitoring station. There are no AM broadcast stations within 3.2 km (2 miles) of the proposed site, according to information extracted from the Commission's engineering database.

Thus, this proposal is believed to be in compliance with the current Commission Rules and policy with respect to allocation matters.

Table 1  
**REFERENCE AND PROPOSED FACILITY  
EFFECTIVE RADIATED POWER**  
prepared for  
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Azimuth	Reference DA Pattern	Reference ERP at Allotted	Reference ERP Adjusted +0.74 dB	Proposed	Proposed 863 kW
<u>(°T)</u>	<u>Relative</u>	<u>832.8 kW / 305 m</u>	<u>for 263 m HAAT</u>	<u>Relative</u>	<u>at Proposed</u>
(1)	Field	(kW)	(kW)	Field	(kW)
(2)	(3)	(4)	(5)	(6)	
0	0.947	746.9	886.2	0.999	861.3
2	0.945	743.7	882.4	<b>1.000 (max)</b>	<b>863.0</b>
10	0.939	734.3	871.3	0.989	844.1
20	0.933	724.9	860.2	0.938	759.3
30	0.930	720.3	854.6	0.831	596.0
40	0.929	718.7	852.8	0.659	374.8
50	0.928	717.2	851.0	0.432	161.1
60	0.928	717.2	851.0	0.229	45.3
70	0.928	717.2	851.0	0.277	66.2
80	0.928	717.2	851.0	0.433	161.8
90	0.928	717.2	851.0	0.497	213.2
100	0.928	717.2	851.0	0.433	161.8
110	0.929	718.7	852.8	0.277	66.2
120	0.929	718.7	852.8	0.229	45.3
130	0.929	718.7	852.8	0.432	161.1
140	0.930	720.3	854.6	0.659	374.8
150	0.932	723.4	858.3	0.831	596.0
160	0.934	726.5	862.0	0.938	759.3
170	0.938	732.7	869.4	0.989	844.1
178	0.941	737.4	875.0	<b>1.000 (max)</b>	<b>863.0</b>
180	0.942	739.0	876.8	0.999	861.3
190	0.949	750.0	889.9	0.978	825.4
200	0.956	761.1	903.1	0.930	746.4
210	0.966	777.1	922.1	0.868	650.2
220	0.979	798.2	947.1	0.816	574.6
230	0.989	814.6	966.5	0.802	555.1
240	0.991	817.9	970.4	0.835	601.7
250	0.994	822.8	976.3	0.893	688.2
260	0.997	827.8	982.2	0.944	769.1
270	<b>1.000 (max)</b>	<b>832.8</b>	<b>988.1</b>	0.964	802.0
280	0.997	827.8	982.2	0.944	769.1
290	0.994	822.8	976.3	0.893	688.2
300	0.992	819.5	972.4	0.835	601.7
310	0.989	814.6	966.5	0.802	555.1
320	0.981	801.5	950.9	0.816	574.6
330	0.969	782.0	927.8	0.868	650.2
340	0.960	767.5	910.7	0.930	746.4
350	0.953	756.4	897.4	0.978	825.4



**EXHIBIT 40 - FIGURE 1**  
**ANTENNA HORIZONTAL PLANE RADIATION PATTERN**

prepared May 2003 for  
**WISN Hearst-Argyle Television, Inc.**  
WISN-DT Milwaukee, Wisconsin  
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**Cavell, Mertz & Davis, Inc.**  
Manassas, Virginia



**EXHIBIT 40 - FIGURE 2  
ANTENNA VERTICAL (ELEVATION)  
PLANE RADIATION PATTERN**

prepared May 2003 for  
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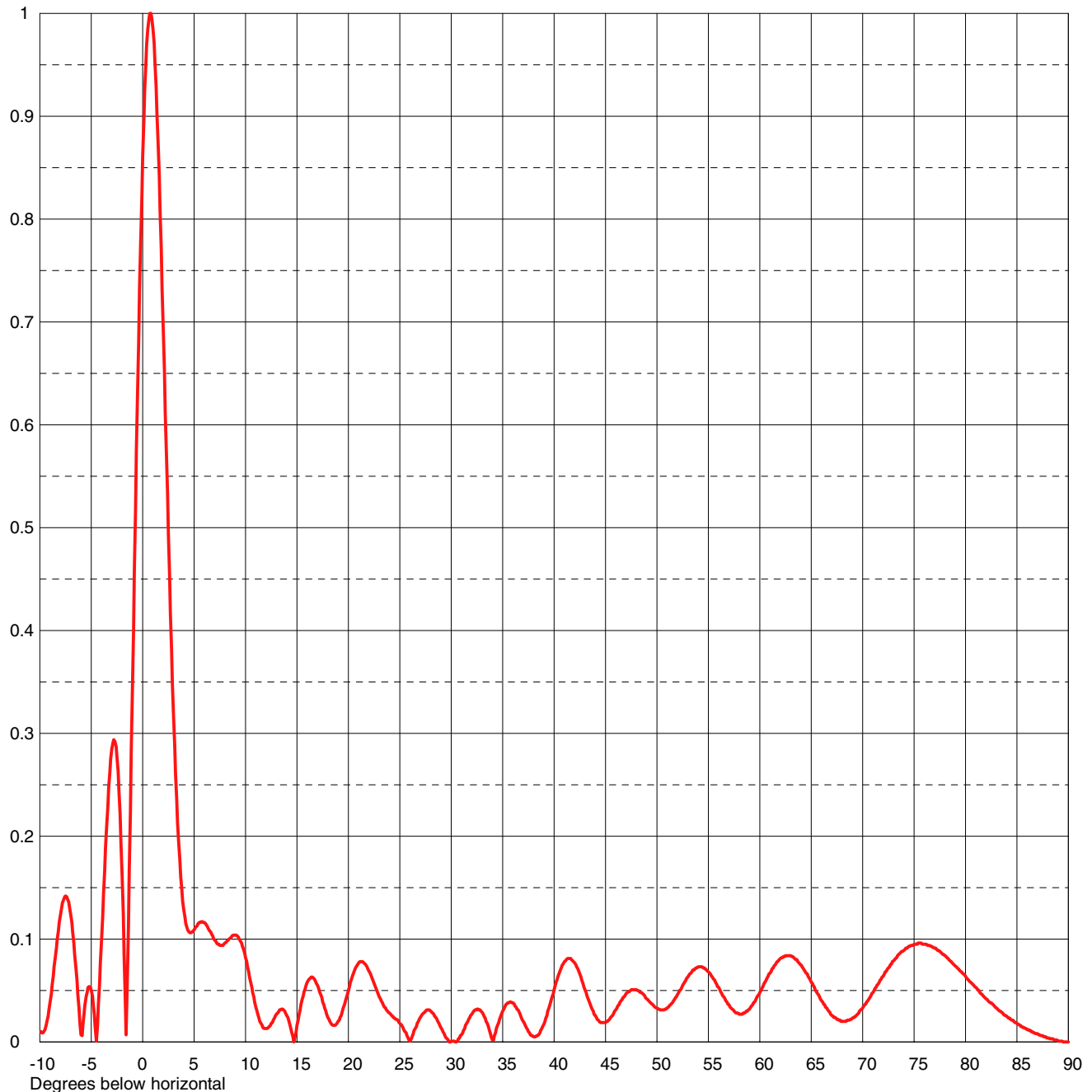
**ELEVATION PATTERN**

RMS Gain at Main Lobe  
RMS Gain at Horizontal  
Calculated / Measured

**22.5 (13.52 dB)**  
**16.7 (12.23 dB)**  
**Calculated**

Beam Tilt  
Frequency  
Drawing #

**0.75 Degrees**  
**MHz**  
**26G225075-90**



Remarks:



**EXHIBIT 40 - FIGURE 2A  
ANTENNA VERTICAL (ELEVATION)  
PLANE RADIATION PATTERN DETAIL**

prepared May 2003 for  
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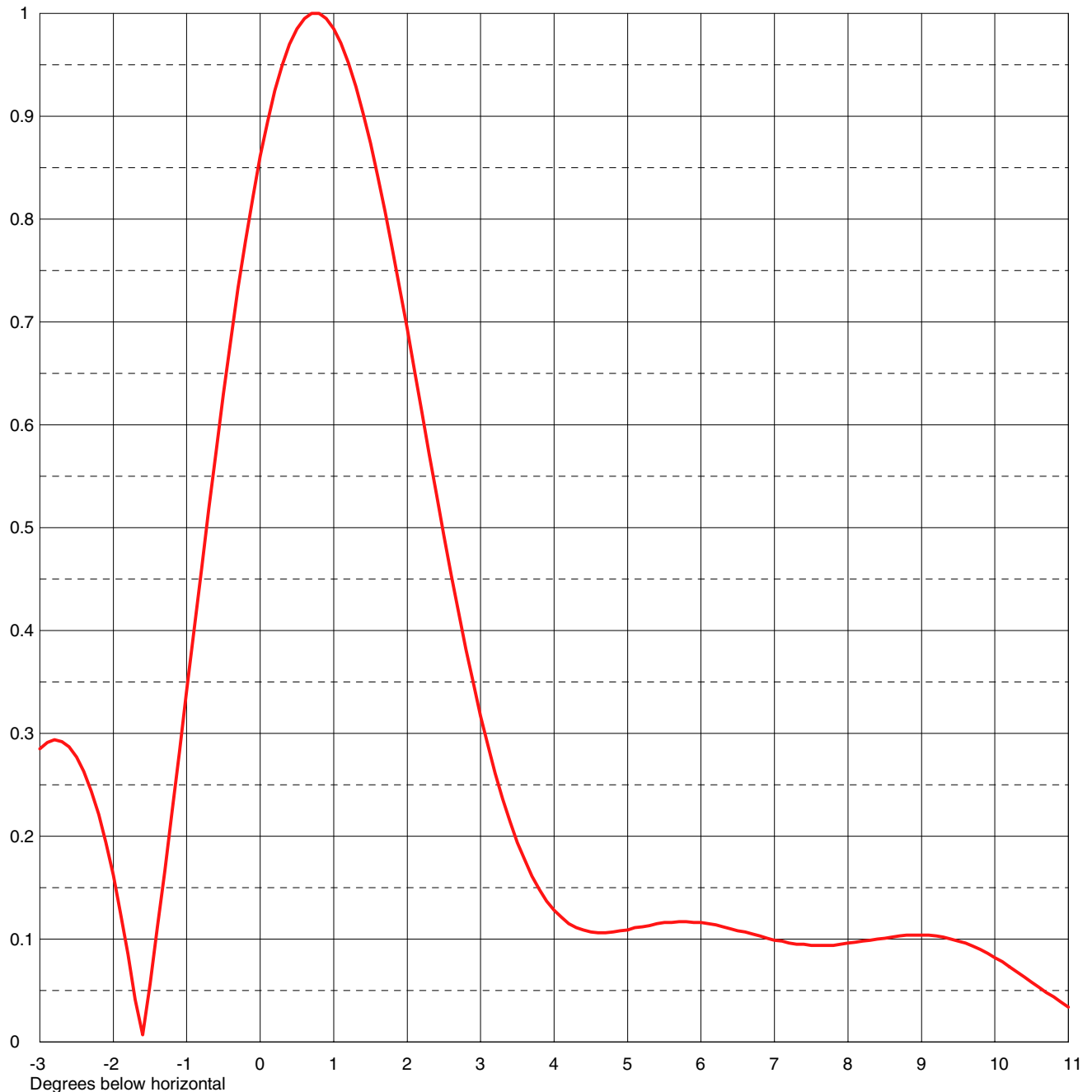
**ELEVATION PATTERN**

RMS Gain at Main Lobe  
RMS Gain at Horizontal  
Calculated / Measured

**22.5 (13.52 dB)**  
**16.7 (12.23 dB)**  
**Calculated**

Beam Tilt  
Frequency  
Drawing #

**0.75 Degrees**  
**MHz**  
**26G225075**



Remarks:

