

VALIDATION OF TOTAL POWER GAIN CALCULATION

W260CG ASHEBORO, NC.

MODEL 6810-2-SS-DA

Elevation Gain of Antenna

0.7

Horizontal RMS value divided by the Vertical RMS value equals the Horiz. - Vert. Ratio

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|-------|----------|-------|----------|-----------|-------|
| H RMS | 0.756188 | V RMS | 0.737139 | H/V Ratio | 1.026 |
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Elevation Gain of Horizontal Component 0.718

Elevation Gain of Vertical Component 0.682

Horizontal Azimuth Gain equals $1/(\text{RMS})^2$. 1.749Vertical Azimuth Gain equals $1/(\text{RMS}/\text{Max Vert})^2$. 1.782

Max. Vertical 0.984

***Total Horizontal Power Gain is the Elevation Gain Times the Azimuth Gain**

Total Horizontal Power Gain = 1.256

***Total Vertical Power Gain is the Elevation Gain Times the Azimuth Gain**

Total Vertical Power Gain = 1.216

ERP divided by Horizontal Power Gain equals Antenna Input Power

0.25 kW ERP Divided by H Gain 1.256 equals 0.199 kW H Antenna Input Power

Antenna Input Power times Vertical Power Gain equals Vertical ERP

0.199 kW Times V Gain 1.216 equals 0.242 kW V ERP

Maximum Value of the Vertical Component squared times the Maximum ERP equals the Vertical ERP

 $(0.984)^2$ Times 0.25 Equals 0.242 kW Vertical ERP

NOTE: Calculating the ERP of the Vertical Component by two methods validates the total power gain calculations