

Name: APERR_008V01**Description:****Type:** Earth station, Receiving

Appendix 30 reference receiving earth station antenna pattern for Region 2 for individual reception.

Region(s): 2**Required Input Parameters:**

gain,bmwidth

Validation Warnings/Errors:

Type	Message
Warning	Phi0 () is out of limits [0.1:10.0].

Pattern Information:

This pattern is used for planning the BSS in Region 2.

The minimum antenna diameter was such that the half-power beamwidth is 1.7 degrees.

The pattern requires input parameter beamwidth.

Co-Polar Component:

$$G = G_{\max} \quad \text{for } 0 \leq (\varphi/\varphi_0) \leq 0.25$$

$$G = G_{\max} - 12 (\varphi/\varphi_0)^2 \quad \text{for } 0.25 < (\varphi/\varphi_0) \leq 1.13$$

$$G = G_{\max} - 14 - 25 \log (\varphi/\varphi_0) \quad \text{for } 1.13 < (\varphi/\varphi_0) \leq 14.7$$

$$G = G_{\max} - 43.2 \quad \text{for } 14.7 < (\varphi/\varphi_0) \leq 35$$

$$G = G_{\max} - 85.2 + 27.2 \log (\varphi/\varphi_0) \quad \text{for } 35 < (\varphi/\varphi_0) \leq 45.1$$

$$G = G_{\max} - 40.2 \quad \text{for } 45.1 < (\varphi/\varphi_0) \leq 70$$

$$G = G_{\max} + 55.2 - 51.7 \log (\varphi/\varphi_0) \quad \text{for } 70 < (\varphi/\varphi_0) \leq 80$$

$$G = G_{\max} - 43.2 \quad \text{for } 80 < (\varphi/\varphi_0)$$

Cross-Polar Component:

$$G_x = G_{\max} - 25 \quad \text{for } 0 \leq (\varphi/\varphi_0) \leq 0.25$$

$$G_x = G_{\max} - 30 - 40 \log \left| \frac{\varphi}{\varphi_0} - 1 \right| \quad \text{for } 0.25 < (\varphi/\varphi_0) \leq 0.44$$

$$G_x = G_{\max} - 20 \quad \text{for } 0.44 < (\varphi/\varphi_0) \leq 1.28$$

$$G_x = G_{\max} - 17.3 - 25 \log \left| \frac{\varphi}{\varphi_0} \right| \quad \text{for } 1.28 < (\varphi/\varphi_0) \leq 3.22$$

$$G_x = G_{\max} - 30 \quad \text{for } 3.22 < (\varphi/\varphi_0)$$

$$\text{If } G_x > G: G_x = G$$