

Name: APEUAE235V01**Description:****Type:** Earth station, Receiving and Transmitting

Earth station antenna pattern submitted by UAE for receiving and transmitting 16 dB earth station.

Required Input Parameters:

gain

Validation Warnings/Errors:

Type	Message
Error	Gmax () is less than G1 (). Square root of negative value.

Co-Polar Component:

$$\begin{aligned}
 G &= G_{\max} && \text{for } 0^\circ \leq \varphi < \varphi_1 \\
 G &= G_{\max} * (1 - ((\varphi - \varphi_1)/\varphi_2)^2) && \text{for } \varphi_1 \leq \varphi < \varphi_m \\
 G &= G_1 = \text{CoefA} - \text{CoefB} * \log \varphi_r && \text{for } \varphi_m \leq \varphi < \varphi_r \\
 G &= \text{CoefA} - \text{CoefB} * \log \varphi && \text{for } \varphi_r \leq \varphi < \varphi_b \\
 G &= G_{\min} = \text{CoefA} - \text{CoefB} * \log \varphi_b && \text{for } \varphi_b \leq \varphi \leq 180^\circ
 \end{aligned}$$

where

$$\text{CoefA} = 44.69$$

$$\text{CoefB} = 25.5152$$

$$\varphi_1 = 6^\circ$$

$$\varphi_m = 16^\circ$$

$$\varphi_r = 30^\circ$$

$$\varphi_b = 76^\circ$$

$$G_1 = \text{coefA} - \text{coefB} * \log \varphi_r = 7$$

$$\varphi_2 = \frac{\varphi_m - \varphi_1}{\sqrt{1 - \frac{G_1}{G_{\max}}}} = 13.334^\circ$$

$$G_{\min} = -3.299$$