**Name:** APENST814V01  
**Type:** Earth station, Receiving and Transmitting  
**Region(s):** 123  
**Required Input Parameters:** gain, coefA, phi1  

**Validation Warnings/Errors:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error</td>
<td>G(Phi1) () is less than Gmin (). G(Phi1) is too low or Phi1 is too high.</td>
</tr>
<tr>
<td>Error</td>
<td>Gmax () is less than G(Phi1) (). Gmax is too low.</td>
</tr>
<tr>
<td>Error</td>
<td>Phi1 () is out of limits [1:180].</td>
</tr>
<tr>
<td>Error</td>
<td>CoefA () is out of limits [18:47].</td>
</tr>
</tbody>
</table>

**Pattern Information:**
Pattern is equal to the maximum antenna gain in the main-lobe range (for off-axis angles less than Phi1).

**Co-Polar Component:**

\[
G = \begin{cases} 
G_{\text{max}} & \text{for } 0^\circ \leq \phi < \phi_1 \\
\text{Max}(\text{coefA} - \text{coefB} \times \log \phi, \ G_{\text{min}}) & \text{for } \phi_1 \leq \phi \leq 180^\circ 
\end{cases}
\]

where:

- CoefB = 25
- G_{\text{min}} = -3 dB