Name: APEREC005V01

Type: Earth station, Receiving and Transmitting

Region(s): 123

Required Input Parameters:

gain

Description:

Recommendation ITU-R M.694-0 reference Earth station antenna pattern for ship earth station antennas having circular paraboloidal reflectors with diameters between 0.8 m and 1.3 m and with an operating frequency range of about 1500 to 1650 MHz.

Validation Warnings/Errors:

Type	Message
Warning	Gmax () is out of limits [19.7:24.8]. See ranges for Diameter and Frequency in REC-694.
Warning	Phib () is less than Phir ().
Warning	Phir () is less than Phim ().

Pattern Information:

Used for coordination studies and the assessment of interference between ship earth stations and terrestrial stations, and between ship earth stations and the space stations of different satellite systems sharing the same frequency bands.

Co-Polar Component:

$G = G_{max} - 2.5 \times 10^{-3} (D/\lambda\ \varphi)^2$ for $0° \le \varphi < \varphi_m$

$G = G_1$ for $\varphi_m \le \varphi < \varphi_r$

$G = 52 - 10 \log (D/\lambda) - 25 \log \varphi$ for $\varphi_r \le \varphi < \varphi_b$

$G = 0$ for $\varphi_b \le \varphi \le 180°$

where:

$D/\lambda = 10^{\left(\frac{G_{max} - 7.7}{20}\right)}$.

$G_1 = 2 + 15 \log (D/\lambda)$.

$\varphi_m = 20\ \lambda/D\ \sqrt{G_{max} - G_1}$.

$\varphi_r = 100\ \lambda/D$.

$\varphi_b = \varphi_1 = 120\ (\lambda/D)^{0.4}$.