Name: APERR_012V01

Type: Earth station, Receiving and Transmitting

Region(s): 123

Description:

Appendix 7 Earth station antenna pattern for the determination of the coordination area around an earth station in frequency bands between 100 MHz and 105 GHz.

Required Input Parameters:

gain

Validation Warnings/Errors:

Type	Message
Error	D/lambda () is less than 35 ().

Pattern Information:

Orinally specified in Recommendation ITU-R SM.1448-0. Also specified in Recommendation ITU-R IS.847-1 (but without low limit on D/lambda).

Pattern is applicable only for D/lambda > 35.

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 $\varphi_m \le \varphi < \varphi_r$

$G = 29 - 25 \log \varphi$ for $\varphi_r \le \varphi < \varphi_b$

$G = -10$ for $\varphi_b \le \varphi \le 180°$

where:

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

$G_1 = -1 + 15 \log (D/\lambda)$, for $D/\lambda \ge 100$,

$= -21 + 25 \log (D/\lambda)$, for $35 \le D/\lambda < 100$.

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

$\varphi_r = 15.85 (D/\lambda)^{-0.6}$, for $D/\lambda \ge 100$,

$= 100 \ \lambda/D$, for $35 \le D/\lambda < 100$.

$\varphi_b = 36°$.