ABSTRACT

SATELLITE CROSS POLARIZATION

Satellites that utilize 24 Transponders and 12 Transponders that are horizontally polarized and 12 Transponders that are vertically polarized. Care must be taken to ensure that the Earth Station is properly aligned to keep the Transponders from interacting with one another.

This paper presents principals behind the changes that occur in the received polarization direction and suggests the appropriate times for making polarization adjustments. Faraday rotation and rain depolarization are considered, as well as satellite position and antenna pointing error.

In addition to the theoretical analysis of depolarization, practical methods for aligning antenna feeds are presented.

Author: Robert C. Tenten
Director of Engineering Development
Home Box Office, Inc.
New York, N.Y.