Path Align-R™

Aligning Antenna Links using Frequencies outside the Path Align-R™'s Band range

An antenna system whose link frequency is designed outside the frequency band edge of the ***Path Align-R™*** can still have its path alignment correctly adjusted, as long as the antenna system uses a waveguide which can operate at both the link frequency and a nearby frequency covered by the ***Path Align-R™***.

The main purpose of path alignment is to physically align the antenna's azimuth and elevation for maximum signal transfer (minimum path loss). All that is required is that a signal can be transmitted and received over the link so that the path loss can be measured and the antenna adjustment optimized. The Received Signal Level (RSL) can be as low as -90 dBm and the ***Path Align-R™*** can still optimize the link. If the test signal presented to the antennas is not the same frequency the antenna has been ideally tuned for (to give minimum VSWR), but is within the waveguide's frequency pass band, this test signal will still be transmitted and received over the link, with only a few dB difference in path loss from the intended link frequency…the link can still be optimized.

As an example, take a link designed to operate at 5.315 GHz using WR-159 waveguides. 5.315 GHz is between the lower and upper frequencies of Band 2's range on the ***Path Align-R™***, but the WR-159 waveguide can also accommodate 5.800 GHz (a frequency available in the upper range of Band 2). Using the ***Path Align-R™***, set to 5.800 GHz, with the WR-159 waveguide, will allow precise alignment of this 5.315 GHz link.

Of the fourteen EIA designated waveguides that span the 1.45–26.5 GHz microwave frequency range, thirteen can be used with the model 2240/2241 (ten for the model 2200/2201) ***Path Align-R™*** for link alignment. On the next page is a chart showing the thirteen waveguides through which the ***Path Align-R™*** can launch a signal and achieve optimum path alignment.

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Alignment can be successfully accomplished with the ***Path Align-R™*** *for all frequencies within these thirteen waveguide passbands!*