



Spectrum Compact and SG Compact Applications



Typical Spectrum Compact Applications

SAF's team of engineers has directly assisted countless customers with installation, maintenance and troubleshooting of microwave networks for more than a decade. It has given SAF a unique edge when designing Spectrum Compact. Special attention was paid to ensure the best user experience. From its wide range of features requested by microwave field engineers for their day-to-day work, to its intuitive and efficient interface, the Spectrum Compact is a peerless tool for:

- Microwave link planning
- Link installation
- Site acceptance
- Link maintenance.

Spectrum Compact has a wide range of time & money saving capabilities for link troubleshooting and frequently makes diagnostics possible even from the GROUND LEVEL. Here's a review of some of the most popular applications.

Site investigation before installation

The Spectrum Compact allows you to check availability of the chosen radio channel in the installation area. Skipping this step, the installer risks additional expenses if spectrum availability issues are detected after installation.

Antenna alignment

Spectrum Compact will help you to align an antenna by observing the spectrum at the remote end of the radio link with remarkable precision.

No more problems recognizing side lobes – just follow the real-time visual data on your Spectrum Compact color screen.

The high sensitivity threshold of the Spectrum Compact, which exceeds maximum radio sensitivity by about 20 dBm, allows for easy installation of large antennas, as the device detects even the slightest signal variations.

It is also an ideal solution for installation of passive repeaters, as the repeater antennas can be precisely aligned with just the Spectrum Compact attached.

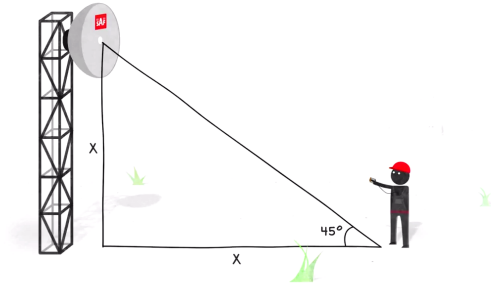
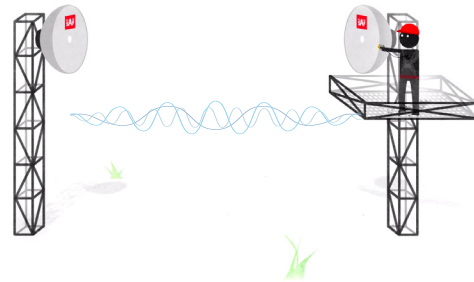
Reminder: Spectrum Compact can be connected to all standardized antennas via waveguide flange.

Radio verification

Spectrum Compact is perfect for checking a radio's performance parameters, such as Tx power, frequency, band and signal quality. This will help you verify that the radio is functioning as per the manufacturer's specifications and, if no deviations are found, exclude it as the source of any link performance issues.

Spectrum Compact provides a range of options for link troubleshooting from GROUND LEVEL, enabling you to check:

- Signal polarization
- Transmitted frequency
- Transmitted bandwidth
- Antenna-radio interconnection quality
- Transmitter operation



After climbing the tower but **without interrupting link functionality**, you'll be able to check:

- Antenna alignment, which, if done incorrectly, is the number one cause for insufficient system gain.
- Antenna gain
- Absence of interference. Interference can degrade or completely disrupt a radio link, and it can appear after the installation, making the Spectrum Compact a useful tool for link maintenance as well as installation.
- Transmitter quality
- Receiver quality. That's right - you can detect the link element that's causing the performance issue even if it's at the remote end of the link.

Integrated Spectrum Compact and SG Compact Applications

Site survey:

- Determining minimum antenna height
- Free radio channel selection in unlicensed frequencies
- Interference detection
- LoS verification up to 86km/53miles

Resolving radio link RF part issues:

- Antenna alignment verification
- Antenna gain verification
- Antenna polarization verification
- Center frequency verification
- Channel bandwidth verification
- Faulty RF part identification from one side of the link
- Rx level fluctuations
- Low Rx level
- Multipath detection
- Transmitter condition verification
- Verify if the radios have been installed correctly

Radio link and passive repeater installation:

- Antenna alignment
- Antenna alignment without radios
- Antenna cross-polarization adjustment
- Antenna cross-polarization discrimination measurement
- High frequency antenna alignment
- HSB, FD, SD link installation
- HSB, FD, SD optimal antenna height determination
- Interference detection
- Replacement of already installed antennas with very little downtime
- Rx level measurements
- Transmitter verification
- Tx power measurements
- Waveguide quality verification

