

Keysight Technologies

Top 5 Reasons Why FieldFox is the Ideal Companion for Satellite Ground Station Maintenance

Your challenge

Satellite communications are targeted for very long range communications. Satellite ground stations must provide very high uplink transmit power, receive very low signals on the downlink, and compensate for link variations due to weather and satellite/ground antenna changes. There are many sophisticated and delicate RF and microwave components and subsystems in satellite ground stations such as; antenna subsystems, waveguides, coaxial cables, filters, LNAs, LNBs, BUCs, HPAs and TWTAs. These components must be verified during installation and/or operation. The spectrum performance of the whole system also needs to be monitored. This maintenance becomes even more challenging when the ground station is in a remote area.

Your solution

FieldFox handheld analyzers are rugged and portable RF and microwave analyzers that incorporate the same measurement science as many of Keysight Technologies's high-performance benchtop instruments. FieldFox is a multi-function tool that enables you to handle wider frequency ranges. FieldFox can be used for satellite ground station maintenance, operation verification, and installation testing.



1. Quickly assure system performance with high confidence

With FieldFox's InstAlign, the spectrum analyzer's internal amplitude alignment occurs automatically as the environment conditions change, without any user intervention. This provides unprecedented amplitude accuracy up to 0.5 dB for spectrum analysis and power measurements. Better yet, FieldFox provides accurate spectrum measurements immediately upon instrument turn on – no warm up required.

2. Obtain greater efficiency and consistency to maintain antenna subsystem

Each instrument is CalReady at both RF ports, immediately following power-on or preset. This means it's already calibrated and ready to make measurements such as; one-port cable loss, VSWR, return loss, and DTF measurements at the test port.

– Industry's first and only QuickCal

The industry's first and only built-in calibration system allows you to calibrate the FieldFox without carrying a calibration kit into the field. As with any test instrument, when you add an additional device to the test port, such as a jumper cable or attenuator, you need to calibrate using a calibration kit (cal kit). QuickCal eliminates the hassle of carrying and using a cal kit, plus it provides worry-free accuracy every time.

– Broadband calibration

FieldFox allows you to make broadband calibrations, which means the instrument is calibrated over the maximum frequency span. After a broadband calibration, you can change the frequency range or number of points without recalibrating the instrument.

In addition to CalReady and QuickCal, FieldFox also supports OSLT cal, waveguide calibration and external ECAL. FieldFox provides the most comprehensive calibration techniques in a handheld cable and antenna analyzer and VNA.



Download application notes, watch webcasts and videos

Learn more about satellite ground station maintenance
www.keysight.com/find/fieldfoxsatellite



3. Quickly diagnose ground station faults

In order to make critical tests and measurements of RF systems in satellite ground stations, FieldFox provides a spectrum analyzer, vector network analyzer, power meter and frequency converter measurement tool all in a single handheld box with frequency coverage up to 26.5 GHz.

In addition, FieldFox provides measurement tools and functions for cable and antenna analysis such as; independent signal source, interference analyzer with record/playback, vector voltmeter, RF pulse measurement, built in GPS receiver and DC voltage source.

4. Pinpoint performance issues quickly

- FieldFox can record the spectrum of interest and replay it, allowing fast and detailed analysis and performance issue determination.
- FieldFox has a variety of modern computer I/O interfaces (Ethernet, USB, SD card slot) making data exchange easy and efficient.
- FieldFox can be remotely monitored and controlled using a PC or iOS device such as iPad or iPhone via a LAN network connection.
- FieldFox also can be remotely programmed via SCPI commands to perform automated tasks.

5. Rugged enough to meet MIL specs

- Completely sealed instrument enclosure provides measurement stability in harsh environments
- Specially designed connector bay protects RF connectors from damage due to drops or other external impacts (designed to withstand 4' drop on concrete surface on all 6 faces)
- Water-resistant chassis, keypad and case withstand wide temperature ranges and salty, humid environments
- Case withstands shock and vibration
- Wide operating temperature -10 to +55 °C (14 to 131 °F)
- Meets MIL-PRF-28800F Class 2 requirements
- Type tested and meets MIL-STD-810G, Method 511.5, Procedure I requirements for operation in explosive environments
- Meets IEC/EN 60529 IP53 requirements for protection from dust and water



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