

Anritsu MS27103A Remote Spectrum Monitor

The perfect tool for satellite signal monitoring



Interference in Satellite Systems

The MS27103A is ideal for satellite operators and broadcasters who need to rely on clear communication channels to ensure optimal performance. A typical earth station will consist of many satellite dishes, all of which need to be monitored in real time. The MS27103A multiport remote spectrum monitor enables the spectrum of each satellite uplink or downlink to be monitored for spectral purity and the presence of interferers. Alarms can be automatically triggered on detection of unwanted interferers that would degrade the signal integrity.

Multiple RF Inputs

The MS27103A with multiple RF inputs is ideally suited for multiple transmission monitoring. The MS27103A can monitor up to 12 satellite signals, with an option to extend the number of inputs to 24.

Reliability

The MS27103A employs capabilities such as remote power cycling, automated system recovery protocols and watchdog timer to ensure uninterrupted operation. Also featured is a high dynamic range, high sensitivity and low spurious signals. This enables the MS27103A to reliably distinguish between low-level signals being monitored and those signals generated by itself.

Features

- Sweep rates up to 24 GHz/s
- Low spurious signals for accurate signal discovery
- 20 MHz IF bandwidth
- Low power consumption < 11 watts
- Integrated GPS receiver for monitoring location and time synchronization applications
- Gigabit Ethernet available for high speed communications
- Measurements: occupied bandwidth and channel power
- Interference analysis: spectrogram and signal strength
- Dynamic range: > 106 dB normalized to 1 Hz BW
- Phase noise: -99 dBc/Hz @ 10 kHz offset at 1 GHz
- Frequency accuracy: < ± 1.5 ppm, < ± 50 ppb with GPS High Accuracy Mode
- IQ block mode and streaming with time stamping for time difference of arrival (TDOA) applications
- Remote control via SCPI commands
- Vision™ software optional for automated spectrum measurements, setting alarms, and geo-locating signal sources



The MS27103A is housed in a rack-mountable enclosure with 12 (or optionally) 24 RF Inputs. An electronic switch is used to address each port. The MS27103A is a full featured platform for monitoring and recording signals at user specified frequencies.

MS27103A Remote Spectrum Monitor

9 kHz to 6 GHz

Continuous. Fast. Reliable.

The MS27103A remote spectrum monitor is designed to identify and locate interfering signals. This serves to keep satellite communication channels clear, a key goal for satellite operators. This translates into customer loyalty, reduced customer churn and superior brand. Capable of sweep rates up to 24 GHz/s, the MS27103A allows for the capture of many types of signals. This includes periodic or transient transmissions as well as short “bursty” signals. The 20 MHz instantaneous FFT bandwidth available on the MS27103A monitor provides the ability for wideband real-time captures of signal activity for subsequent post-processing. IQ captures can be recorded both in block mode or streamed.

Key Benefits of Remote Spectrum Monitoring

- Automation and Scalability
- Highly automated process to help minimize expenses while preserving network integrity
- Vision software or your own applications, users can identify patterns of interference, record a spectrum history and geo-locate the sources of problem signals
- Easily add additional monitors as the need for interference mitigation grows
- New features and options can be added remotely
- No site visits required

Key Applications

- Network interference monitoring
- Geo-location of interference signals
- Maintain history of spectrum activity
- Set power threshold levels to automatically generate alarms
- Generate records of interference events for potential legal action
- Spectrum Occupancy Measurements

Signals of Interest (SOI)

The wide variety of signals to be monitored fall into several categories. Each of these types of signals will be examined in some detail. These include:

- Intentional interference (including illegal or unlicensed broadcasts)
- Accidental interference
- Occupancy

Integrated Web Server

Using an Internet browser (Chrome and FireFox are supported), a user from anywhere in the world can log in to the spectrum monitor and control any of its features. This includes such parameters as frequency settings, RBW/ VBW control, reference level configuration and many other settings relevant to the user’s spectrum monitoring application. Trace data, spectrograms and other measurements can be viewed inside the browser window. A key advantage in using the web server is that it is platform agnostic. Any electronic device capable of rendering a browser will work with the web server.

