

Protecting Communications with CW and Sweeping CW Removal

KRATOS



Restore Communications by Removing CW and Sweeping CW Interference

One of the most common forms of Radio Frequency Interference (RFI) is unmodulated carrier signals including Continuous Wave (CW) and Sweeping CW caused by mis-aligned antennas, malfunctioning equipment and accidental and deliberate transmissions. Does your organization suffer the effects of this type of interference?

Traditional approaches to resolving this type of interference requires identifying the source and then working with the interfering party to mitigate the effects. SigX[®] a signal cancellation appliance, offers a completely new approach to resolving CW interference and accidental CW interference without the reliance on the interfering party. The appliance directly removes RF interference (RFI) from satellite communication links in real-time to protect valuable bandwidth.

Bandwidth Protection

SigX is a small form factor appliance that employs advanced signal cancellation algorithms to remove CW and sweeping CW interference. This includes cancelling up to four signals causing interference with any mix of static CW, sweeping CW, and less common saw-tooth or triangle waveforms from the protected bandwidth.

SigX helps to:

- Protect an organization's revenue or mission by maintaining or restoring service
- Reduce support costs and troubleshooting time by accelerating the time to resolution
- Deliver a higher level of quality of service to customers

Key Features

Input Frequency Coverage

- L Band (950-2150 MHz)
(IF or UHF with converter)

Protected IF Bandwidths

- Up to 54 MHz

Input/Output Power Levels

- -60 to -25dBm

RF Interference Types

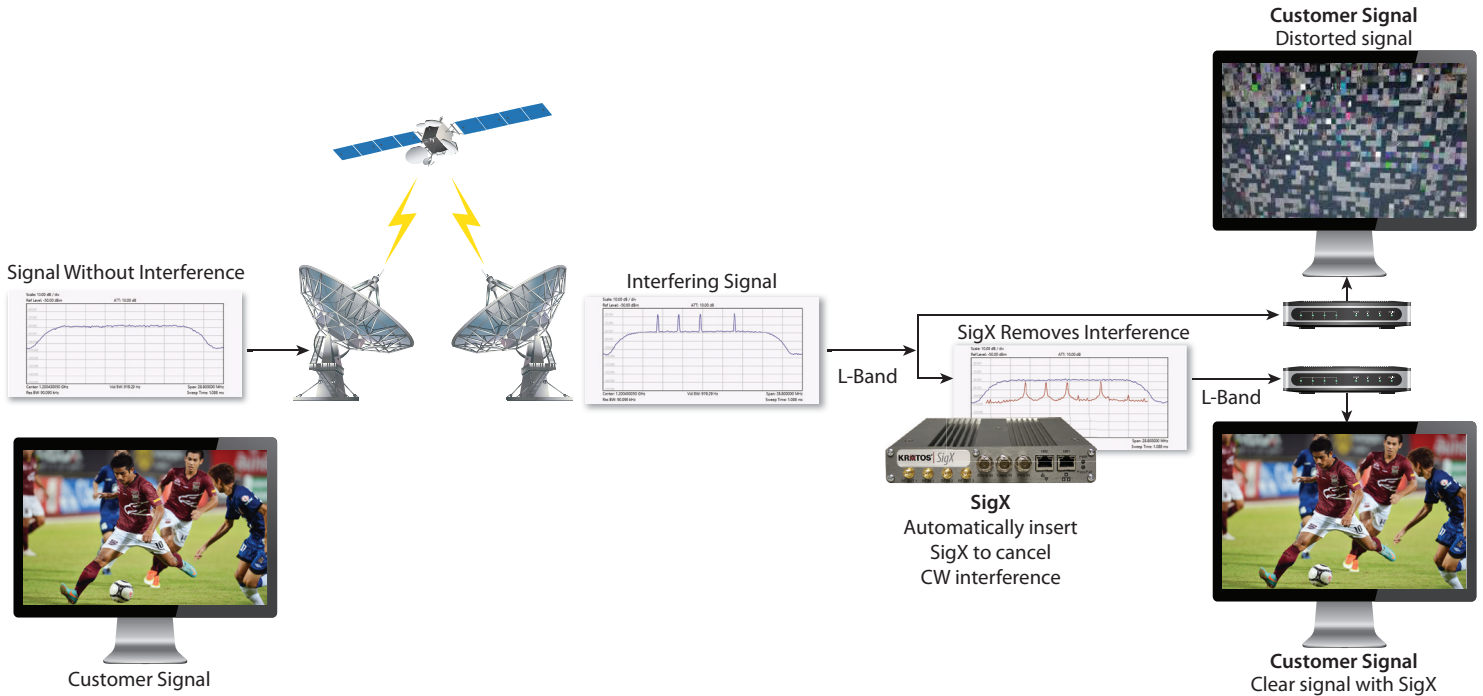
- Up to four stationary CW
- Up to four sweeping CW

Protected Modulation Types

- BPSK
- QPSK
- OQPSK
- 8PSK
- 16APSK
- TDMA & MF-TDMA
- Field upgradable for interference type, modulation

Cost-Effective Operation

By placing SigX on the receive side of the communication link, the appliance operates without the need for similar equipment on the transmit side. As a result, it protects point-to-point and point-to-multipoint networks. SigX fits between the down-converter and the satellite modem or demodulator. It removes RFI from communication signals that pass through it. Since it adds minimal delay to the communications path and does not require added bandwidth, it preserves the integrity of the protected link. By working with existing communication hardware, SigX enhances network robustness by protecting bandwidth from interference while preserving investments and limiting impact to operations.



▲ SigX cancels CW interference in near real time with no prior knowledge of interfering signal

Simple and Fast Configuration

SigX can be configured very quickly in four easy steps to start cancelling interference.

1. Browse to SigX web UI
2. Enter Center Frequency
3. Take Sweep
4. Turn on Cancel CW

The screenshot shows the Kratos SigX web UI. The browser address bar displays '10.244.200.141/#/cwcancellation'. The interface includes a 'Protected Center Frequency' field set to '1.2 GHz' with 'Sweep' and 'Cancel CW' buttons. A 'SigX Status' section shows 'System' and 'DSP' as active, and 'Cancelling 4 CW signals'. A main graph displays 'Interfering signals' with a PSD (dBm/Hz) vs Frequency (Hz) plot. A zoomed-in view of the graph shows 'Interfering signals suppressed'.

▲ With very minimal configuration, SigX is setup to cancel severely interfered bandwidth.