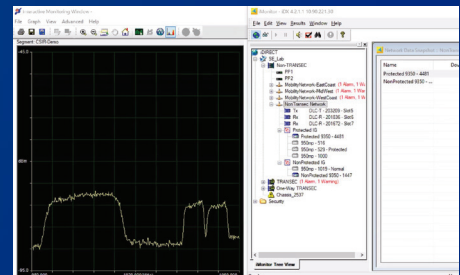# Communication Signal Interference Removal (CSIR)

A growing concern for military and government SATCOM users is radio frequency interference and jamming in satellite communications. With increasing spectral usage and frequency overlap, jamming incidents have become commonplace. Also, entering the traditional SATCOM landscape are Low Earth Orbit satellite constellations and 5G terrestrial players which will attribute to the growing number of incidents.

This growing incidence of interference or jamming, intentional or not, highlights the need for improved mitigation capabilities. An anti-jam product should perform as follows:

- Mitigate multiple non-cooperative interferer types

- Require no prior knowledge of the interferer

- Introduce minimal implementation loss

- Introduce minimal latency

- Minimize architectural complexity

- Require no additional bandwidth

iDirect Government's Communication Signal Interference Removal (CSIR)* technology offers the greatest flexibility and performance for non-cooperative co-channel signal excision.

"CSIR technology offers the greatest flexibility and performance for non-cooperative co-channel signal excision."

CSIR Application and Signal of Interest (SOI)

CSIR can be inserted into any receive chain and mitigate unknown interferences in a variety of scenarios with no added complexity for anyone from the system architect to the terminal operator. The primary design focus of CSIR leverages existing knowledge of the operator's SOI, namely the symbol rate and center frequency, to deliver resiliency from interference. Unlike other interference mitigation solutions, CSIR does not require any information about the interfering signal or additional bandwidth. As a mature, DSP-based solution, CSIR is available in multiple configurations:

1. Embedded in iDirect Government 9-Series modems and DLC-R via licensing.
2. Black core for integration into digitally modulated carriers.
3. An in-line appliance that can fit into existing satellite receive paths. Model GS380X.

WITHOUT **CSIR**   WITH **CSIR**