WHISPER HUNTER® DIRECTION FINDER

High-speed, wideband RF **detection and classification of signals** in congested spectrum environments

The *Whisper Hunter*® direction finder is a high-speed, wideband radio frequency (RF) direction finding (DF) system, capable of detecting various signals of interest in contested and congested spectrum environments.

DETECTING AND CLASSIFYING SIGNALS OF INTEREST

Detecting and accurately locating signals is crucial to improving situational awareness and giving warfighters the information they need to complete their missions safely.

The *Whisper Hunter* DF system is capable of passively detecting, locating and classifying a variety of signals – from unmanned aircraft systems (UAS) and their controllers, technologies such as OcuSync, Lightbridge and NTSC, to radios and other general energy signals. Once a signal is detected, the system provides lines of bearing (LOBs) for the signal.

The system leverages a novel four element custom antenna array for full 360° azimuth coverage, and fast frequency scanning for coverage across multiple RF bands.

FLEXIBLE DESIGN TO MEET MISSION REQUIREMENTS

The *Whisper Hunter* system is designed to be flexible and can operate as a standalone unit or as part of a multi-system integrated solution.

As a standalone unit, the *Whisper Hunter* system gives operators an in-depth view of the type and angle of arrival of signals in their area of operations. When combined with a radar and EO/IR camera, the *Whisper Hunter* system becomes an integral part of a system of systems like SRC's *Silent Archer*® counter-UAS technology suite.

Low-SWaP Rugged Hardware

The low size, weight and power (SWaP) design of the system enables integration on a variety of SWaP constrained platforms, including unmanned ground vehicles, manned HMMWV and Stryker platforms.

The *Whisper Hunter* DF system has been designed for operation in a variety of situations to deliver persistent, passive spectrum surveillance.

APPLICATIONS

- Counter-UAS
- Navigation warfare (NAVWAR)
- NAVWAR situational awareness (NAVSENSE)
- Spectrum sensing
- UAS traffic management

BENEFITS

- Full simultaneous 360° coverage
- Wideband frequency coverage reduces spectrum blind spots
- Passive operation decreases chances of detection
- Library of signatures for commonly used commercial UAS enables rapid classification of signals

ABOVE: The *Whisper Hunter* direction finder on riser

THE WHISPER HUNTER DIRECTION FINDER GIVES WARFIGHTERS THE ABILITY TO PASSIVELY DETECT AND CLASSIFY SIGNALS OF INTEREST

WHISPER HUNTER® DIRECTION FINDER

SPECIFICATIONS

- Power
  - Input: 12-15 VDC
  - Typical consumption: ~45W
  - Optional power supplies available for 120/240 VAC or 28 VDC operation
- Weight: 32.5 lbs
- Height: 17.5 in
- Diameter: 14 in
- Operating frequency: 395 MHz-6000 MHz
- Azimuth coverage: 360°
- Elevation coverage: -32° to +48° from horizontal
- Detectable signals and protocols
  - Continuous wave
  - Amplitude/frequency modulation
  - Phase shift keying
  - Direct sequence spread spectrum
  - Frequency hopped spread spectrum
  - DJI Lightbridge video
  - OcuSync video
  - Additional signals, protocols and target types can be added upon request

BELOW: The *Whisper Hunter* direction finder integrated on Stryker platform and commercial pickup truck as part of SRC's *Silent Archer* counter-UAS technology

FEATURES

- Passive low probability of detection, low probability of intercept (LPD/LPI) operation
- Four element custom antenna array for 360° azimuth coverage
- Four coherent receive channels
- Can be cued to provide LOBs via external systems, or run static target lists
- Directed search mode for manual tasking
- Database search mode for automated self-tasking
- Maximum likelihood estimator (MLE) based direction finding algorithm
- Fast frequency scanning using high-speed FPGA-based signal processing for coverage across multiple frequency bands
- Wide receiver bandwidth for simultaneous direction finding on multiple signals

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