

RIDGEBACK

ELECTRONIC WARFARE SYSTEM

A WIDEBAND EW SYSTEM WITH COMMUNICATIONS INTELLIGENCE, GEOLOCATION AND ELECTRONIC ATTACK

The Leonardo DRS Ridgeback System is the top performing EW System in the industry today. Featuring a fully-digital signal processing path with up to 18 wideband channels, each with an extremely wide instantaneous bandwidth. The communications intelligence (COMINT) system provides ultra-fast scanning, signal detection, interception, direction finding (DF), collection, geolocation, measurement, analysis, signal recognition and the identification of conventional, modern, and agile signals.

This robust system offers performance that features a wideband intercept capability with simultaneous DF measurement. It utilizes Leonardo DRS' Vesper transceivers with an instantaneous bandwidth of 100 MHz to scan all or part of the 20 MHz to 6 GHz band at up to 20 GHz per second.

Along with the wideband DF, the system includes monitor channels with DDC narrowband capability. In addition, with the full monitor option, the system can have up to 48 DDCs (6 per each within the 8 independently tunable 100 MHz instantaneous bandwidth) each with selectable bandwidth filters. The DDCs include independently selectable IF bandwidth and streaming I/Q in VITA-49 format.



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HIGHLIGHTS

- Provides super high-speed wideband scanning with simultaneous DF, band channelization, signal acquisition, and recognition capabilities combined with a wideband recording interface.
- Optimized performance utilizing field-programmable gate arrays (FPGAs), NVIDIA graphic processing units (GPUs) and CUDA code processing.
- Operating modes include wideband scanning with DF, narrowband signal analysis and DF, multi-view hop plot, polar plot for situational awareness, geolocation using multiple sites, signal analysis, plus built in test (BIT).
- Precision DF using Leonardo DRS's proprietary correlative interferometry algorithm.
- Co-channel DF capability resolves lines of bearing to multiple frequency coincident interferers.
- Optimized relational database storage to an external recording device through a wideband digital interface.
- Seamlessly integrates with the Leonardo DRS EW Battalion System Software.

PERFORMANCE SPECIFICATIONS

DIRECTION FINDING	
Frequency Range DF	20 MHz to 6,000 MHz (Optional 2 MHz)
Tuner Channels	5 or 6 (Array Dependent, 5 ch std)
Instantaneous Bandwidth	100 MHz
Scan Rate	10 GHz/sec, 20 GHz/sec option available (over full frequency range @ 31.25 kHz channel resolution)
Available Channel Resolutions	500 kHz, 250 kHz, 125 kHz, 62.5 kHz, 31.25 kHz, 15.62 kHz, 7.81 kHz, 3.9 kHz
System DF Accuracy	<2 degrees RMS typical (platform, DF Array, and environment dependent)
System Sensitivity DF	-114 dBm minimum (in 3.9 kHz BW)
Techniques	Correlative interferometry, MUSIC co-channel processing
Frequency Agile Detection	500 Hops per second, standard
Minimum Signal Duration	1 ms
Instantaneous Dynamic Range	65 dB, two-tone method, 75 dB single-tone method (3.9 kHz bandwidth)

MONITORING	
Number of Digital Drop Receivers	6 DDCs per tuner typical 8 tuners DF/MON, 48 DDCs
DDC Selectable Bandwidths	3.3 kHz to 6 MHz DDC stream selection Up to 6 DDCs per tuner available 10 GigE Interface
DDC Output Format	VITA-49
Signal Recognition Interface	100+ modulation types and trainable knowledge base

EXCITER	
Center-tuned range	20 MHz to 6.0 GHz
Input	Various waveforms
IBW	100 MHz
Tuning Speed	100 microseconds
Output power	0 dBm

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