Electronic Warfare

ADVANCED DIGITAL RADAR WARNING RECEIVER

The Radio Frequency (RF) threat to airborne platforms is real and is becoming increasingly lethal with the proliferation of complex weapon systems, often modern derivatives of Sovietera Surface to Air Missiles. When combined with the cluttered electromagnetic environment, compressed following the sale by Governments worldwide of bandwidth for new generation mobile communications technology, the strain on Radar Warning Receivers (RWR) is greater now than it has previously been.

To meet these challenges, we have developed SEER, a high-performance, 'low SWAP' RWR that continues the company's proud heritage in the design of combat-proven RF receivers.

System Decription
In its E-J band configuration, SEER comprises one compact Signal Processing Unit (SPU) and two, dual-channel, wide-band Digital Detector Heads (DDH), installed near to the antennas pairs. C-D and K band extensions are fully developed and available where required. The DDHs digitise the received RF emissions, sending pulse data down ethernet cables to the SPU.

The pulse data is then classified in accordance with a Mission Data Set and displayed on a dedicated Threat Warning Indicator or pre-existing aircraft Multi-Function Display. The digital data transfer from the DDHs to SPU prevents the losses in sensitivity normally associated with long RF cable runs, and also eases the installation burden for Aircraft Integrators, negating the need for heavily screened and matched RF cable lengths.

Comprehensive EW Operational Support (EWOS)
SEER is provided with a PC based Mission Data Generator (MDG) and Replay tool, backed up by a range of comprehensive EWOS services from a team of dedicated experts. The MDG gives users sovereign control over their Mission Dependent Data, allowing them to rapidly update Mission Data Sets according to theatre specific imperatives.

Furthermore, the parametric level RF emitter data that is detected by SEER is recorded and made available for postmission analysis using the Replay tool. This allows front-line crews and support staff to review the time-stamped data, replaying where necessary over a moving map for geographical reference.

SEER

Principal Features

- Highly sensitive, providing detailed parametric and Angle of Highly sensitive, providing detailed parametric and Angle of Arrival measurement of intercepted signals
- Accurate detection, processing and characterisation of RF signals with RF and pulse parameter agility
- Processing of high duty cycle and pulse group emissions (Pulse, Pulse Doppler and CW, including Interrupted CW)
- Identification, categorisation and reporting of threats in accordance with the embedded generic data or user-programmed Mission Data Set
- Automatic Countermeasures Control, including RF expendables (Chaff, Active Decoys) and Jammers
- A-Kit compatible with previous generation Sky Guardian 200 installations on existing L-159 and Hawk aircraft.

Benefits

- Increased Probability of Intercept with reduced ambiguity of detected signals leading to accurate emitter identification and threat warning
- Merges different modes of detected signals as single emitters
- Operating correctly in high density modern electromagnetic environments
- SEER is fully programmable, allowing users to configure its operation with indigenous Mission Dependent Data (see EWOS section)
- SEER allows users to program RF countermeasure responses in accordance with theatre specific Tactics, Techniques and Procedures
- SEER provides Sky Guardian 200 users with a cost-effective means of improving their RWR performance whilst lowering life-cycle costs.

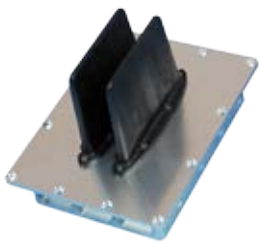
Weighing just 11Kg in its E-J band configuration, SEER is suitable for all platform types.

TECHNICAL SPECIFICATION

Frequency coverage	C-K Band (E-J variant pictured)
Direction finding	< 10° RMS
Detection	Pulsed, pulse doppler, CW
Pulse characteristics	Stable, all agile types
Pulse width	> 50ns (including agile)
Sensitivity	Typically -55 to -60dBm
Frequency measurement	< 10MHz
Mission recording capacity	> 20 hours
Weight	11 Kg (E-J Band Coverage)
Power	< 200W RMS
Controls and Display	Aircraft MFD or Dedicated Display (see below)
Full Data Recording	Dedicated Data Transfer Unit or via EW Controller (where fitted)

Options include

C-D Band Antenna with integral upconverter.



Dual Polarised E-K Band Antenna with integrated down-converter.

High Resolution, NVIS Compatible, 3ATI AMLCD Controls and Display.

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