

RSS8000

RADAR THREAT SIMULATORS



COMPREHENSIVE CAPABILITIES FOR EW SYSTEM PROVING, TEST, EVALUATION AND TRAINING APPLICATION

FEATURES

- Complex emitters and scenarios
- 100 MHz to 40 GHz coverage
- Amplitude, Phase, DTOA DF
- Windows™ GUI software
- Upgradeable modular design

DESCRIPTION

The RSS8000 Radar Threat Simulator offers the latest integrated technologies for generating complex and accurate radar signals. Available in a wide variety of modular constructions ranging from small portable units to large multisource, multichannel DF systems, the RSS8000 can be configured to meet all EW system test, evaluation, and training requirements.

The RSS8000 provides both dynamic platform scenarios and static emitter scripts to suit all levels of emitter generation.

Sophisticated receiver antenna modelling is also supported for direct coupling into DF receivers.

The RSS8000 is ideally suited for EW system test and evaluation applications and for EW operator training. The systems are in wide spread use by government agencies and EW systems integrators for performance proving and EW library validation.

The RSS8000 provides an ideal tool for multi-SUT environments with dynamic partitioning of RF Sources and SUTs. This allows a multi-channel simulator to operate either as a single system with all the SUTs sharing a common scenario or as a group of independent parallel simulators for testing SUTs individually. Partitioning of unused elements is available without interruption to on-going scenarios, allowing for maximum utilisation of the equipment.

Such multi-user operation is also supported by the use of server based data storage, with secure permission based access to common and user specific data.



SYSTEM

- Laptop PC simulation controller
- C++ / MATLAB® software
- Microsoft Windows™ application
- VME64 bus architecture
- 1000 Mb/s Ethernet control link
- Embedded PowerPC and VxWorks™ OS
- All platforms have 6 degrees of freedom
- Real-time simulation engine
- Dynamic update of emitter parameters
- Employs live threat databases
- DirectorPro™ dynamic scenario builder
- DirectorLt® static test builder
- Microsoft Excel™-based pattern data entry
- Microsoft Access™ database engine
- Database import/export
- Fast-tuning internal FLO or synthesizer
- External (GPIB) synthesizer
- Modular banded operation
- AOA (amplitude), phase or DTOA DF options
- Independent patterns in every port

PLATFORMS

- Curved-Earth modelling (WGS-84)
- All capable of X, Y, Z roll and pitch motion
- Movement over 2000 nm (X, Y) to 100,000 ft (Z)
- Placement to 1m (X, Y, and Z)
- Speed to 2000 kts
- Straight or curved motion maneuvers
- Turn rate to 180° per second
- Flight path definition via waypoints or external input
- Absolute or relative movement
- Independent or convoyed platforms
- Targeted (follow me) motion
- Remote control platforms

RF SOURCE/DF PORTS

- Complete 100 MHz to 40 GHz coverage
- Frequency resolution 250 KHz or better
- Multiple RF source configurations
- >90 dB dynamic range
- <-90 dBm/MHz noise
- <-60 dBc spurious level
- <-60 dBc harmonic level

DIGITAL PULSE GENERATOR

- Up to 4096 complex emitters per scenario
- Modular DPG card architecture
- Real-time geometry and path loss calculations
- Scan amplitude
- Unrestricted agility on each emitter
- 10 ns step AMOP, PMOP, FMOP
- Simultaneous FMOP, PMOP or AMOP
- Scan-to-pulse train synchronization

EMITTERS

- Pulse density in excess of 0.8 Mpps per RF source
- 1.1 μ s to 800 ms PRI range
- 10 ns PRI resolution
- 20 ns to 160 ms and CW PW range
- 10 ns PW resolution
- Overlapping co-pulse emitters
- Modulations:
 - Stable
 - Stagger
 - Agile
 - Jitter
 - Sinusoidal
 - Triangular
 - Sawtooth
 - Exponential
 - Periodic
 - Discrete
 - User defined
 - Groups
 - Doublet
 - Triplet
 - Burst
 - Drift
 - Switcher
 - Dwell
 - Cycler
 - Wobble
 - Sync
- 8k staggered and hopper tables with 512 pattern definitions per emitter and 64k pulse repeats
- Jitter: uniform or Gaussian, up to 99%
- Up to 8 synchronized pulse trains or beams
- Scan patterns:
 - Stable
 - Lock-on
 - Circular
 - Helical
 - Conical
 - Sinusoidal
 - Triangular
 - Unidirectional sector
 - Bidirectional sector
 - Unidirectional raster
 - Bidirectional raster
 - Spiral
 - Nodding
 - TWS
 - Lobing
 - Electronic
 - Multibeam
 - User defined
- 0.005 to 500 Hz
- 100 μ s to 1 s electronic beam dwell period
- Antenna beam patterns:
 - SinX/X
 - CosX
 - Cos2X
 - Cosec2X
 - Cosine array
 - Cosine taper
 - Fan
 - Pencil
 - Isotropic
 - User defined
- 0.5° to 40° antenna beam width
- 0.1° beam width resolution
- Antenna coverage: Az \pm 180°, EL \pm 90°
- 64 dB DF antenna pattern modulation range

ADDITIONAL SPECIFICATIONS

- Log of lost pulses due to collision
- Scenario event file logging
- VCR-style scenario control buttons
- >24 hr game time
- Pulse timing sync output
- Digital pulse descriptor outputs
- Automatic BIT fault isolation to LRU
- Unattended RF calibration
- "Health monitoring" BIST
- Terrain masking-DTED mapping
- Multiple SUT support
- Remote control facilities
- PDW Data logging and Analysis
- LAN/IRIG-B/1553B interfacing



making a difference

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