

Pulseman Portable Combat Electromagnetic Environment Simulator (CEESIM)



The Pulseman Portable Combat Electromagnetic Environment Simulator (CEESIM) is a compact, low cost simulator system that can be used throughout all phases of an Electronic Warfare (EW)/Electronic Combat (EC) system's life-span to provide high signal fidelity and unparalleled test capabilities. Applications include laboratory testing, as well as free-space radiation field testing (e.g. out on the flightline, on a pier, etc.) where limited pulse density is required. In addition, when combined with EW/EC system, can be used for classroom training, on-board training (OBT), and system testing.

Pulseman Portable CEESIM Description

The Pulseman CEESIM consists of the three main CEESIM subsystems: a control subsystem, digital subsystem, and RF generation subsystem. Unlike larger versions of the CEESIM, the one or two RF channel configurations can reside in the same

chassis. Two different chassis sizes are available, either a 3U or 9U (dual-channel configuration) rack-mountable chassis. The control subsystem can consist of a Linux-based external workstation, a laptop, or a rack-mountable computer.

Types of Systems Tested

- Radar Warning Receivers (RWR)
- Electronic Countermeasures (ECM)/Electronic Attack (EA)
- Electronic Support Measures (ESM)
- Landbased/Airborne/Shipboard EW systems
- SIGINT/ELINT systems
- Towed Radar Decoy (TRD)

Typical Applications

- Laboratory development testing
- Bench-top testing
- Anechoic chamber signal source
- Free-space radiation
- Mission Data Verification/Validation
- Flightline GO/NO-GO tester
- Pierside/Shipboard stimulus to ESM/ECM for OBT

Commonality

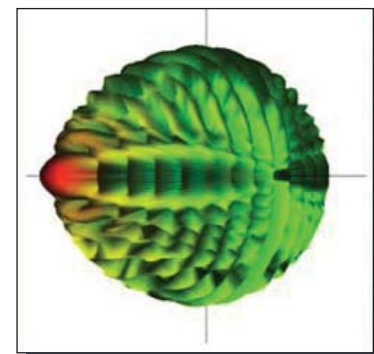
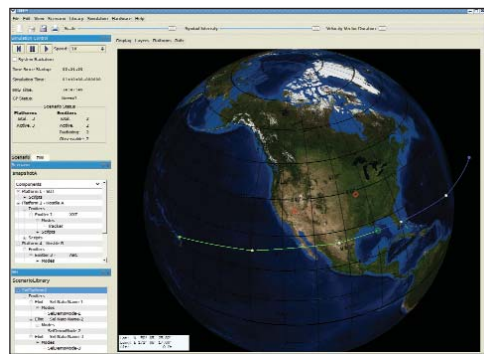
The Pulseman CEESIM provides emitter and scenario compatibility with other CEESIM systems. As a member of the Amherst Systems family of simulators, it produces signals with the same fidelity as larger CEESIM systems. All known EW/EC emitters can be accurately simulated.

Modular Packaging

- Stand-alone or rack-mountable
- RF modules plug into chassis
- BIT provided to LRU level
- Digital pulse data collection capability for post test analysis

Physical Characteristics

- Power: 110-240 volts, 47-63 Hz
- Operating Temperature: 15-30 degrees C



Pulseman Portable Combat Electromagnetic Environment Simulator (CEESIM)

High Fidelity Threat Simulation

- Emitter/scenario compatibility with other CEESIM systems
 - All known EW/EC emitters can be accurately simulated
 - Same 3D, Drag-and-Drop Graphical User Interface as other CEESIM systems
 - Seamless scenario and emitter transportability between systems, no conversion needed
- Up to 128 instantaneous emitters/platforms
 - Each emitter can be full complexity
 - 8 nsec PRI resolution
 - The crystal clock of each emitter can be uniquely defined
- Each platform is modeled with full 6 degrees of freedom
- Fully dynamic simulations, including operator or external control (Ethernet) of events



Superior Signal Fidelity

- CEESIM's unparalleled signal fidelity allows users to simulate the most modern, complex threats on today's most sophisticated platforms
- Frequency (Stable, Random Agile, Sequential Agile, Periodic, Multi-beam, Dwell Switch)
- PRI (CW, On/Off Keyed, Constant, Discrete Jitter, Stagger, Dwell Switch, Periodic, Burst, Synchronized)
- Pulse Width (LFMOP, DFMOP, PMOP, Jitter, Stable, Constant Duty Cycle, Periodic)
- Scan (Steady, Circular, AZ/EL Sector, Raster, Helical, Spiral, Conical, Palmer, Synchronized in AZ and/or EL, Electronically Scanned with programmable track interrupts)
- Intra-emitter Synchronization: PRI/Frequency/Pulse/Scan Synchronization

RF Specifications

- Maximum RF output level:
 - Configuration Dependent, -5 dBm typical (direct injection)
 - Can be configured with high-power assets for free-space radiation
 - Five configurable omnidirectional SMA output ports
 - Overall frequency coverage of .05-18.0 GHz
 - Optional frequency expansion to 40 GHz
 - Single or dual channel configuration
 - Provides true Pulse-on-Pulse and Pulse-on-CW capability
- RF sources: FLO, Synthesizer
- Pulse Density from 0.4-2.0 MPPS (per channel) including pulse burst
- Generic TWTA control interface
 - Programmable grid control and duty cycle control
- Customized digital pulse level stimulus

For more information, please contact

Northrop Grumman Corporation
 Amherst Systems
 1740 Wehrle Drive
 Buffalo, New York 14221-7032 USA
 Phone: 1-800-631-0610, ext. 2259
 Fax: (716) 631-0629
 e-mail: amherstsolutions@ngc.com
 www.northropgrumman.com/simulation

