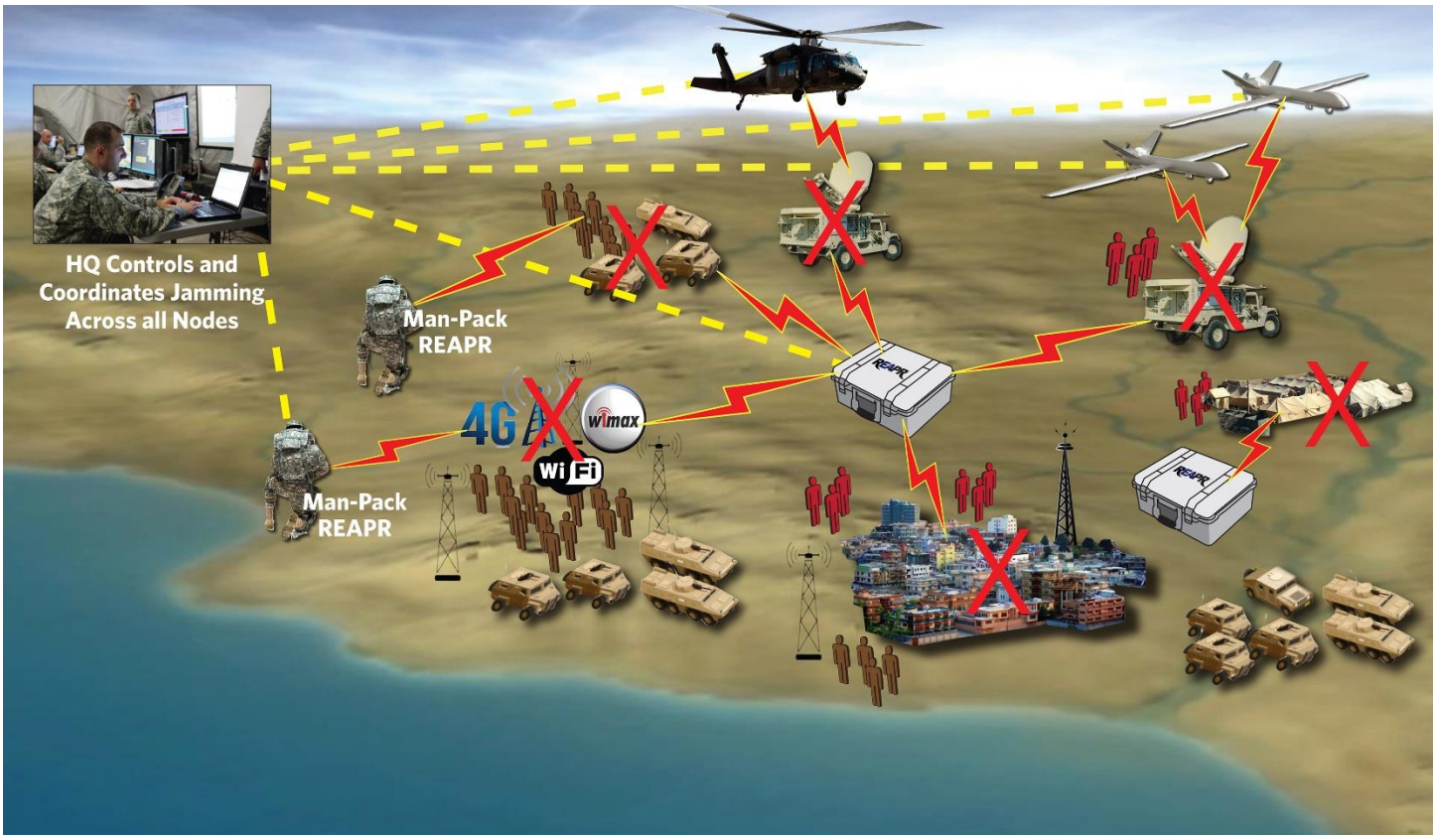
Reactive Electronic Attack Portable Radio



Reactive Electronic Attack Portable Radio (REAPR™) *is an innovative, open-architecture multi-function radio frequency (RF) system that can create realistic test and training environments by simulating friendly, adversary, and neutral radios and jamming systems. REAPR can precisely and autonomously reactively jam signals, and it can create signals at pre-planned times based on a playbook.*

Key Features

- Intelligent multi-function RF system for over-the-air electromagnetic spectrum operations (EMSO) test and training activities.
- Simulates friendly, adversary, and neutral radio signals to create targets for testing/training SIGINT and DF systems.
- Creates jamming waveforms to simulate opposing force (OPFOR) offensive electronic attack (EA) capabilities so soldiers can train in a contested and unpredictable electromagnetic operating environment (EMOE).
- Signals and Frequencies of Interest can be preloaded or updated on the fly during mission enabling operators to rapidly adapt to dynamic events and maneuvers.
- Open architecture supports standard I/Q and VITA-49 spectrum data interfaces to ingest and replay spectrum from multiple tools and waveform generators.

REAPR Overview

Reactive Electronic Attack Portable Radio (REAPR) is a small SWaP, efficient and effective multi-mode Electronic Warfare (EW), Electronic Support (ES), Electronic Attack (EA), and radio simulator system that operates in real time to identify, disrupt, and simulate signals of interest. REAPR creates realistic, robust, congested, and contested over-the-air (OTA) test and training environments, and it can be used operationally as an ES/EA mission system.

REAPR supports frequencies between 70 MHz to 6 GHz and can disrupt multiple signals including single channel RF radio networks, WI-FI, cellular communications, military and commercial mobile and tactical single-channel radios, SATCOM U/D, GPS signals, radar, and a wide-variety of voice, data, and targeting systems.

REAPR offers an extensible platform designed to defeat current waveforms with open interfaces and modular components so additional techniques can quickly be incorporated as new threats emerge.

An intuitive HQApp enables end users to operate the REAPR system either locally or remotely, selecting signals or frequencies of interest to target, as well as operational modes, frequency ranges, and other mission-specific data. REAPR nodes can operate in networked or stand-alone mode. The HQApp can change mission parameters on-the-fly for networked REAPR nodes.

During the mission, REAPR scans at a rate of 1million scans per second and, upon detecting a SOI, immediately transmits a disrupting effect. REAPR continues to scan and halts the transmission as soon as the target SOI is no longer detected. The combination of an extremely narrow signal that is only transmitted for milliseconds significantly reduces the power and RF footprint making the REAPR extremely difficult for operators to detect and locate.

www.KerberosInc.com ▪ (888) 784-1660 ▪ info@kerberosinc.com

Multi-Function ES, EA, and OTA Simulation

REAPR can be configured for a multitude of purposes. REAPR supports OTA test and training activities as a network of portable ground-based RF simulators, capable of simulating radio waveforms and jamming systems. Alternatively, REAPR can be configured as an EMSO mission system for performing man-pack or airborne ES and EA activities in a collaborative network of low-SWaP Electromagnetic Warfare (EW) systems.

REAPR enhances test and training activities by generating clearly-defined threat and target signals with high-precision. REAPR creates test and training scenarios with a range of complexities starting with beginner EMSO training scenarios and ranging to expert-level scenarios that will challenge even the most experienced and capable operators.

REAPR operators can create pre-planned scenarios that transmit specific waveforms from networked nodes and pre-defined times. Operators can also create high-priority reactive signals that only emit under specific circumstances. This intelligent, autonomous reactive mode minimizes REAPR's electromagnetic footprint, making it difficult for operators to detect, locate, and eliminate REAPR's sources of interference.

REAPR is also capable of recording spectrum for post-mission analysis so that users can find, characterize, identify, and save new SOIs. REAPR is delivered with multiple Government Purpose Rights signal analysis tools.

Familiar User Interfaces: REAPR supports RaptorX, a standard mapping and C2 interface for military operators and, thus, requires little-to-no training for the numerous RaptorX users across the DOD.

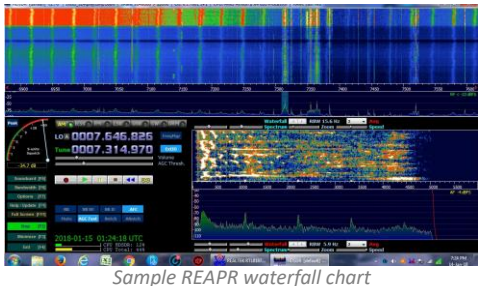
Sample REAPR Base Model Technical Specifications

RF TRANCEIVER OPERATING CHARACTERISTICS	
TX Frequencies	70 MHz ~ 6.0 GHz standard other configurations available
RX Frequencies	70 MHz ~ 6.0 GHz standard other configurations available
Antennas	Various Multiband Antennas
Modulation Schemes	Various Commercial & DoD Waveforms
Power Output	Configurable based on Power Amplifier
VSWR	2:5:1 Typical
Control Mode	Remote / Networked / Standalone
Encryption	WEP, WPA, WEP+WPA-2 (PSK)WPA Enterprise (RADIUS)
POWER REQUIREMENTS	
Power Source	Shore Power or BA-5590 batteries
MECHANICAL SPECIFICATIONS	
Dimensions	Approximately 3.8 H x 5.5 W x 10.25 D
Weight	~18.3 lbs with embedded amplifier
ENVIRONMENTAL SPECIFICATIONS	
Temperature	-58º F to +160º F (-50º C to +71º C)
Humidity	5% to 95% non-condensing

REAPR Modularity & Open Architecture

REAPR's modular architecture delivers a flexible platform that can be configured for multiple platforms with mission-specific parameters. REAPR can be configured to support land-based, man-pack, vehicle-mounted, and airborne platforms.

Flexible Operation Can Adapt to Mission Requirements: The REAPR "base model" can be adapted with various frequencies, RF amplifiers and antennas that support the user's desired platform and mission parameters. REAPR can perform its EA/ES operations as a Stand-alone or Networked platform (or a combination of such) to coordinate electronic attacks (aka SWARM).



Sample REAPR waterfall chart

The REAPR frequency range is SDR dependent. The current REAPR "base model" supports 70 MHz to 6 GHz. The REAPR framework can cover multiple frequency bands simultaneously. REAPR's EA capabilities are currently implemented on a multi-channel transceiver.

REAPR offers an open architecture framework that is compatible with 3rd party waveform generation tools. This enables end users to rapidly develop effective techniques for new waveforms immediately and on the fly, rather than relying on a contractor support contract to develop new waveforms, which could take months to years. REAPR offers standard VITA-49 and I/Q spectrum data interfaces to ingest and replay spectrum from a number of tools and waveform generators.

In a Networked configuration, the REAPR forms a Point-to-Multi-Point (P2MP) operation, enabling a C2 function to remotely control the REAPRs, updating them on-the-fly, sharing information, adjusting "fire" accordingly and coordinating attacks (collaborative swarming systems).

In a Stand-alone configuration, each REAPR conducts its individual solo operation utilizing its pre-loaded configuration. The REAPR can be updated while in route, but, in stand-alone mode, it is not sharing its findings or tasks with any other REAPR. It is truly a Point-to-MultiPoint (P2MP) operation.

About Kerberos International

Kerberos International, Inc. is an 8(a) certified, Woman Owned Small Business (WOSB) founded in 2006 and specializes in delivering small SWaP-C, innovative RF communications solutions to the US military.

For additional information contact:
Sammy Smith ▪ SSmith@KerberosInc.com ▪ 210.473.5327