

The smallest and most powerful RF signal environment for testing sensors and communications systems.



NEXT-GENERATION RF SIGNAL ENVIRONMENT

Bring true-to-life RF simulation to your facility for real-world testing of sophisticated communications systems. At the core of Viasat's smallest and most powerful portable RF simulator is the Software-Defined Waveform (SDWave) processor. Roll this portable system into your lab to create a realistic RF environment for Communication, Navigation, and Identification (CNI) system testing, so you can address potential design issues earlier, and save millions of dollars in development.

The SDWave supports the higher modulation rates and spectral bandwidth of modern communications systems. The SDWave not only provides signal generation capabilities, but can also be configured with a daughter card to offer receive side RF capture.

DENSE RF ENVIRONMENT/COMPACT SIZE

The product's standard configuration offers two simultaneous channels of RF signals in the frequency range from 900 Mhz to 1.2 Ghz on a single card. The system is expandable to support wider frequency ranges, and up to 500 platforms, and 500 emitters.

BROAD SIGNAL LIBRARY

The SDWave is an extremely powerful test tool when bundled with Viasat's extensive signal library. The current signal library supports over 100 blue and red threat signals. In addition, Viasat supports rapid custom signal development for unique requirements. With the SDWave system, Viasat continues its legacy of providing an accurate representation of the real-world RF environment to your System Under Test (SUT).

The updated user interface provides a three-dimensional graphical display for better visualization of test conditions. The simulation uses Defense Terrain Elevation Data for RF propagation processing and map display.

IDENTIFICATION FRIEND OR FOE SIGNAL SET

Viasat's core signal library includes IFF signals in compliance with the Air Traffic Control Radar Beacon System (ATCRBS) IFF Mark XII System (AIMS). Virtual platforms can be configured with Mark XII Mode 1, 2, 3/A, C, and S interrogations and replies to stimulate your SUT. Optional configurations support the encrypted Modes 4 and 5.

REALISTIC MOTION/COMMUNICATIONS

Whether you are testing to determine your SUT's performance in receiving a desired signal among interfering signals, or evaluating the effects of platform motion and terrain on signals of interest, an SDWave stimulator system can provide a robust, realistic, and repeatable test environment.

SYSTEM AT-A-GLANCE

Realistic Signal Environment

» A simulated environment generating real RF

High-Density Signal Environment

» 50+ independent signals

Dynamic RF Environment

» Independent signal behavior

Behaviorial Emitter Models

» Coherent signals that react to the environment

Independent Platform Motion

» 6 DOF motion models

Independent Signal Control

» Frequency, amplitude, delay, doppler, pulse characteristics, and more...

Viasat Portable RF Signal Environment Generator

SPECIFICATIONS

SIGNAL GENERATION

CNI Signals	Library of over 100 signals
IFF Mark XIIA Signals	Modes 1, 2, 3/A, C, S, 4, and 5
Signal Density	50+ (Depending on spacing and signal type)
Simultaneous Signals	2 to 16
Transmit Timing Accuracy	+/- 50 nsec
Signal Data Rates	up to 80 Msps

SIMULATION CHARACTERISTICS

Scenario Space	Full Earth
Terrain	Digital Terrain Elevation Data (DTED) Levels 1, 2, & 3
Platform Motion	Six Degrees-of-Freedom (6-DOF)
Virtual Platforms	>100
Scenario Update Rate	100 Hz
Behavioral Models	User-Defined and Programmable

RF PERFORMANCE

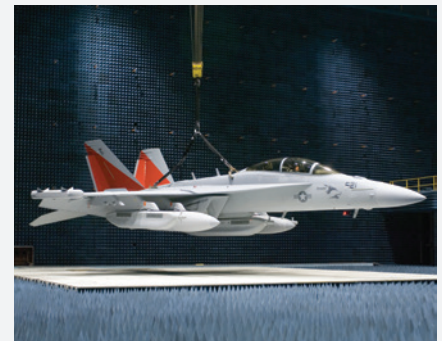
Frequency Range	500 kHz to 2,000 MHz
Frequency Resolution	1 Hz
Amplitude Resolution	< 0.5 dB with < 1 dB RMS error
Dynamic Range	Approximately 100 dB
Spurious Response	-50 dBc (From Largest Emitter/Band)

PHYSICAL CHARACTERISTICS

Rack Dimensions (WHD)	24 x 50 x 30 in
Rack Weight	< 150 lb

INTERFACES

Output RF	SMA, 50 Ohm load
Input Power	115 VAC, 60 Hz, < 10 Amps



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