VRG-1000/ VRG-1000SD

IFF Environment Generator for Realistic Signal Testing

WEB-BASED INTERFACE

The ViaSat Radio Frequency Generator 1000 (VRG-1000) is a dynamic, true-to-life RF environment generator for testing Identification, Friend or Foe (IFF) systems in high-density signal environments. With an industry leading 50 independent interactive IFF interrogator or 25 independent interactive transponder platforms, this test set brings high-density signal testing on-location to your installed or in-development IFF system, so you can replicate crowded airspace and reduce flight test time by evaluating your system in a lab.

This portable RF environment generator includes an intuitive graphical interface that works with a standard web-based browser, no additional software needed. The operator can create and control a test scenario that includes moving platforms, each with an IFF interrogator or transponder. Each IFF interrogator and transponder can be associated with an antenna pattern to create a dense, robust, and realistic IFF environment. The System Under Test (SUT) is presented with interactive IFF replies that have the correct relative time delay and amplitude, so they can be received and analyzed as they would in dynamic operation. For advanced antenna testing, a sum and difference channel configuration (VRG-1000SD) is available upon request.

With an established library of IFF signals, independent control of all transponders and interrogators, and a convenient compact design, ViaSat's VRG-1000 delivers easy and accurate IFF signal testing to your system.

VRG-1000/VRG-1000SD AT-A-GLANCE

High-Density Signal Environment

- Supports test scenarios with up to 50 independent IFF platforms
  - Up to 25 in-beam Mode 5 replies
  - Up to 8 simultaneous garbled signals

Independent Signal Control

- Provides all Mark XIIA modes, including 1, 2, 3/A, C, S, 4, and 5
- ADSB and M5L2
- Includes ViaSat's Software Defined Waveform processor for support of current and potential new waveforms
- In-chassis interface for KIV-77 and SIT 2010 cryptographic equipment

Dynamic RF Environment

- Simulation engine enables dynamic platforms and realistic RF environments accounting for path loss, antenna patterns, delay, and more

Compact, Portable Design

- Bring IFF interrogator and transponder signal testing to your system

IFF System Assurance

- Ensures IFF systems are working correctly; send IFF signals to the SUT and capture SUT emanations
- Facilitates seamless Mode 5 and Mode S system integration

ViaSat Radio Frequency Generator 1000

SPECIFICATIONS

INTERROGATION GENERATION

Modes Supported	1, 2, 3/A, C, 4, S, and 5
Frequency	1030 MHz
Amplitude	-90 to +6 dBm
PGRI	10 to 2.5 ms

INTERROGATION RECEPTION

Modes Supported	1, 2, 3/A, C, 4, S, and 5
Frequency	1030 MHz
Amplitude	
» **VRG-1000**	-50 to 0 dBm
» **VRG-1000SD**	+15 to +65 dBm

SCENARIO FEATURES

» Up to 50 moving IFF platforms
» 6 degrees of freedom (latitude, longitude, altitude, heading, pitch, roll)
» Transmit/receive antenna patterns
» Realistic RF environment accounting for path loss and pointing angles
» Elementary surveillance (ELS) and enhanced surveillance (EHS) (optional)
» DIS (platform motion) interface (optional)

TRANSPONDER GENERATION

Modes Supported	1, 2, 3/A, C, 4, S, and 5
Frequency	1090 MHz
Amplitude	-90 to +6 dBm
Sum/Difference Channels	VRG-1000SD version

TRANSPONDER RECEPTION

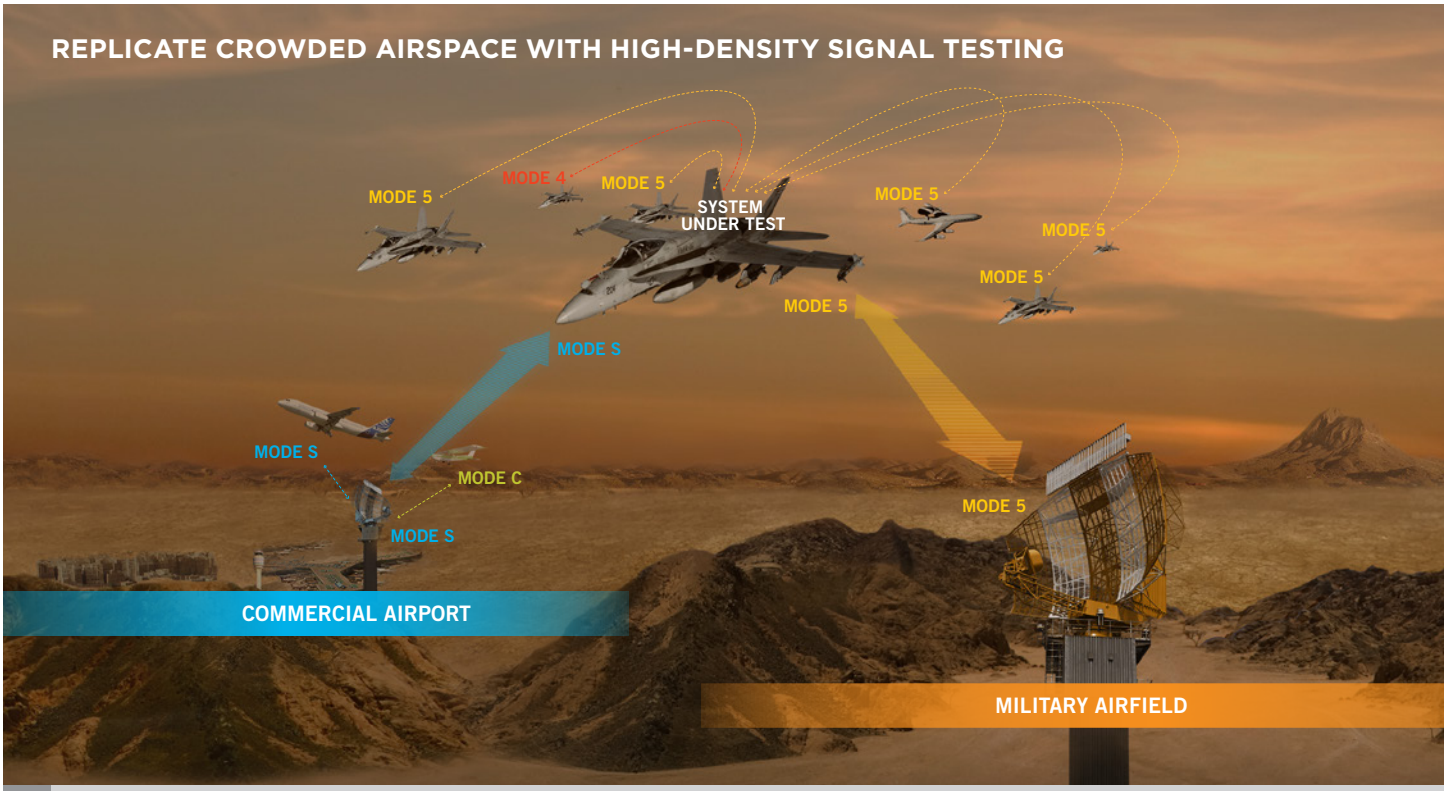
Modes Supported	1, 2, 3/A, C, 4, S, and 5
Frequency	1090 MHz
Amplitude	
» **VRG-1000**	-50 to 0 dBm
» **VRG-1000SD**	+15 to +65 dBm

GENERAL

Optional External Reference	10 MHz, +10 dBm
Control Interface	Ethernet
RF Interface Connectors	N-Type/TNC
Operating Temperature	-10° to +40° C
Power	110 to 240 VAC, 5A, 50/60 Hz
Dimensions (W x H x D)	19 x 7 x 27 in.
Weight	40 lb

PART NUMBERS

VRG-1000 (Interrogations Only)	1237493
VRG-1000 (w/ Transponders)	1199118
VRG-1000SD (Interrogations Only)	1237494
VRG-1000SD (w/ Transponders)	1170355



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