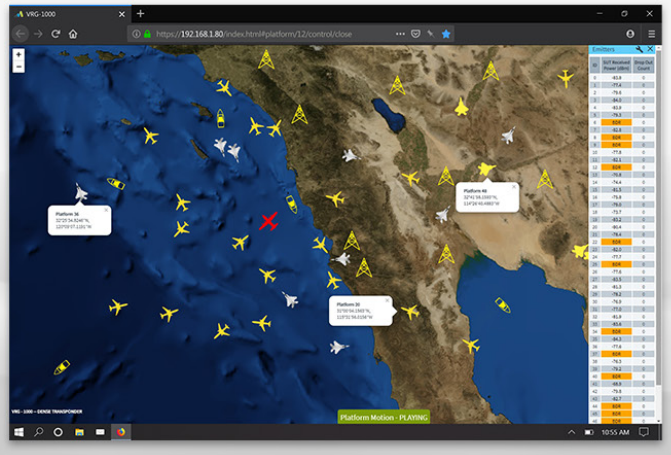
VRG-1000/ VRG-1000SD

Environment Generator for Realistic IFF Signal Testing



WEB-BASED INTERFACE

M5 CAPABLE | M5L2-B CAPABLE | ADS-B CAPABLE | ELS/EHS CAPABLE

The Viasat Radio Frequency Generator 1000 (VRG-1000) is the only AIMS certified, true-to-life environment generator for testing Identification, Friend or Foe (IFF) systems in high-density signal environments. With 50 independent interactive IFF interrogators, 25 independent interactive transponders, or 400 squittered transponder platforms, this test set brings realistic 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.

ONLY AIMS CERTIFIED IFF ENVIRONMENT GENERATION TEST SET

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.

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 400 independent IFF platforms
  - 400 squittered transponders
  - 25 interactive transponders or 50 interrogators
  - Up to 25 in-beam Mode 5 replies
  - Up to 32 simultaneous garbled signals
  - Transponder antenna diversity testing
  - Interrogator sum and difference channels

Independent Signal Control

- Provides all Mark XIIA modes, including 1, 2, 3/A, C, S, 4, 5, ADS-B, M5L2, M5L2-B, ELS, and EHS
- Includes Viasat's Software Defined Waveform processor for support of current and potential new waveforms
- In-chassis interface for KIV-77 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

Data Extraction

- Capture information about all RF generated and received for detailed post-test analysis

DIS Platform Control

- Coordinate platform movement with radar target generators

Viasat Radio Frequency Generator 1000

SPECIFICATIONS

INTERROGATION GENERATION

Modes Supported	1, 2, 3/A, C, 4, S, 5, and All-Call
Frequency	1030 MHz
Amplitude	-90 to +6 dBm
PGRI	10 to 2.5 ms
Antenna Diversity	VRG-1000SD version

INTERROGATION RECEPTION

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

SCENARIO FEATURES

- 50 interrogators, 25 interactive transponders, or 400 squittered transponders
- Up to 400 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
- DIS (platform motion) interface
- Reception of external antenna pointing angle
- Data extraction for detailed post processing

TRANSPONDER GENERATION

Modes Supported	1, 2, 3/A, C, 4, S, M5L1, M5L2, M5L2-B, ADS-B, ELS, and EHS
Frequency	1090 MHz
Amplitude	-90 to +6 dBm
Sum/Difference Channels	VRG-1000SD version

TRANSPONDER RECEPTION

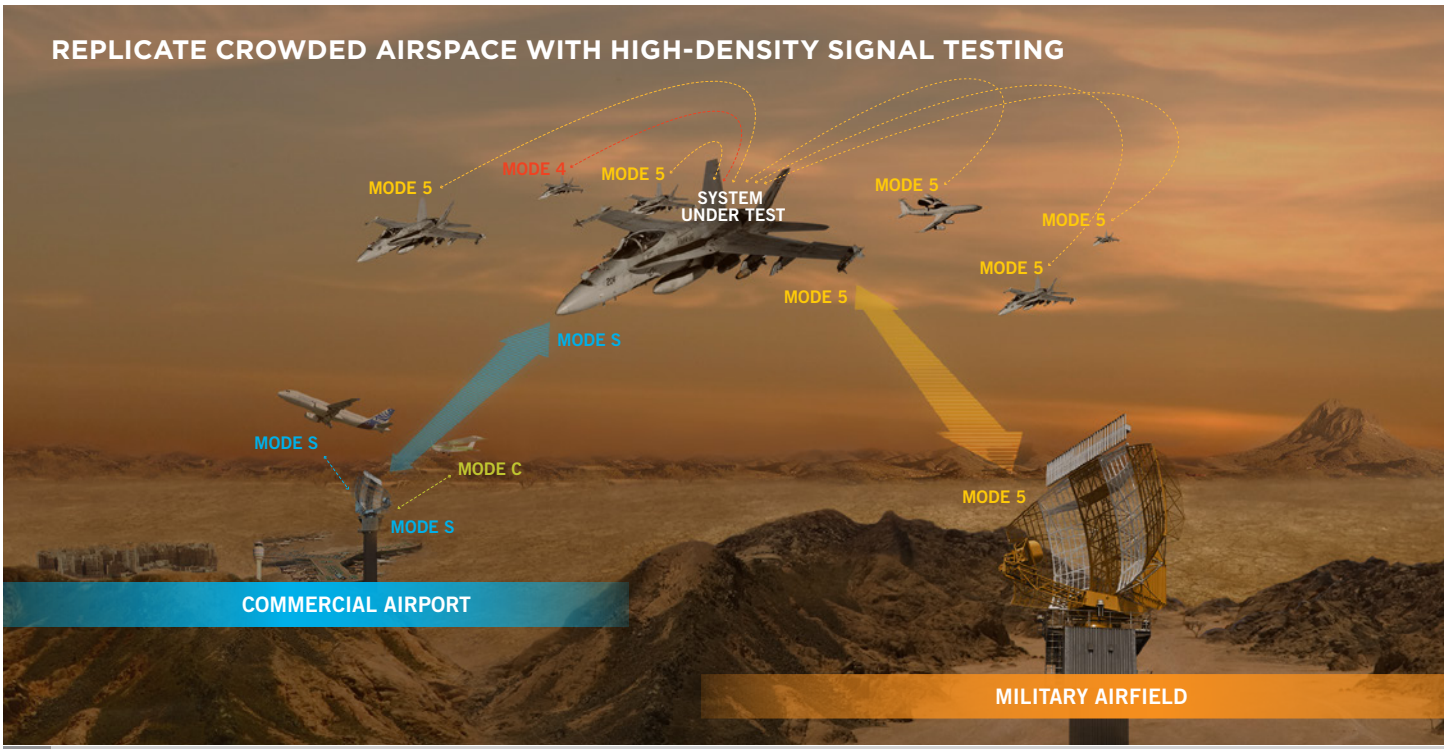
Modes Supported	1, 2, 3/A, C, 4, S, M5L1, M5L2, M5L2-B, and ADS-B
Frequency	1090 MHz
Amplitude	
» **VRG-1000**	-50 to 0 dBm
» **VRG-1000SD**	+15 to +65 dBm

GENERAL

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 (w/ Transponders)	1199118
VRG-1000SD (w/ Transponders)	1170355



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