VRG-1000/VRG-1000SD

Environment Generator for Realistic IFF Signal Testing

Automated Certification Tools Available

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

IFF Environment Generation Test Set

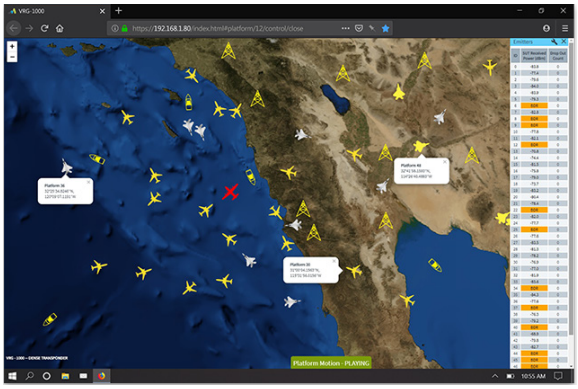
The Viasat Radio Frequency Generator 1000 (VRG-1000) is an AIMS-certified, true-to-life environment generator for testing Identification, Friend or Foe (IFF) systems in high density signal environments. With 50 independent, synchronized IFF interrogators or 400 independent, interactive transponders capable of squittering ADS-B and/or M5L2, this test set brings realistic signal testing on-location to your installed or in-development IFF system. Replicate crowded airspace and reduce flight test time by evaluating your system in a lab.

Automated Certification Tools

The VRG-1000 provides automated test tools that reduce certification times from weeks to hours.

Intuitive Web-Based Interface

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 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 live 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, accurate IFF signal testing to your system.

VRG-1000/VRG-1000SD At-A-Glance

HIGH-DENSITY SIGNAL ENVIRONMENT

Supports test scenarios with:

- 400 independent, moving IFF platforms
- 400 interactive/squittered transponders
- 50 synchronized interrogators
- 20 or more in-beam replies
- Up to 32 simultaneous garbled signals
- Transponder antenna diversity testing
- Interrogator sum and difference channels
- Encrypted interrogations and replies using a single real crypto
- Link multiple VRGs for increased density

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 that can be easily upgraded to support new waveforms
- In-chassis interface for cryptographic equipment: KIV-77, SIT2010, or KIV-79 (with adapter)

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 dense IFF interrogator and transponder signal testing to your system

DATA EXTRACTION

- Capture and time stamp (16 nanosecond resolution), all RF generated and received for detailed post-test analysis

DIS PLATFORM CONTROL

- Externally control all platform movement with the IEEE DIS Ethernet standard

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		2 ms to 1 second
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 synchronized interrogators or 400 interactive transponders capable of squittering ADS-B and/or M5L2
- Up to 400 independently 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
- Time stamped 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

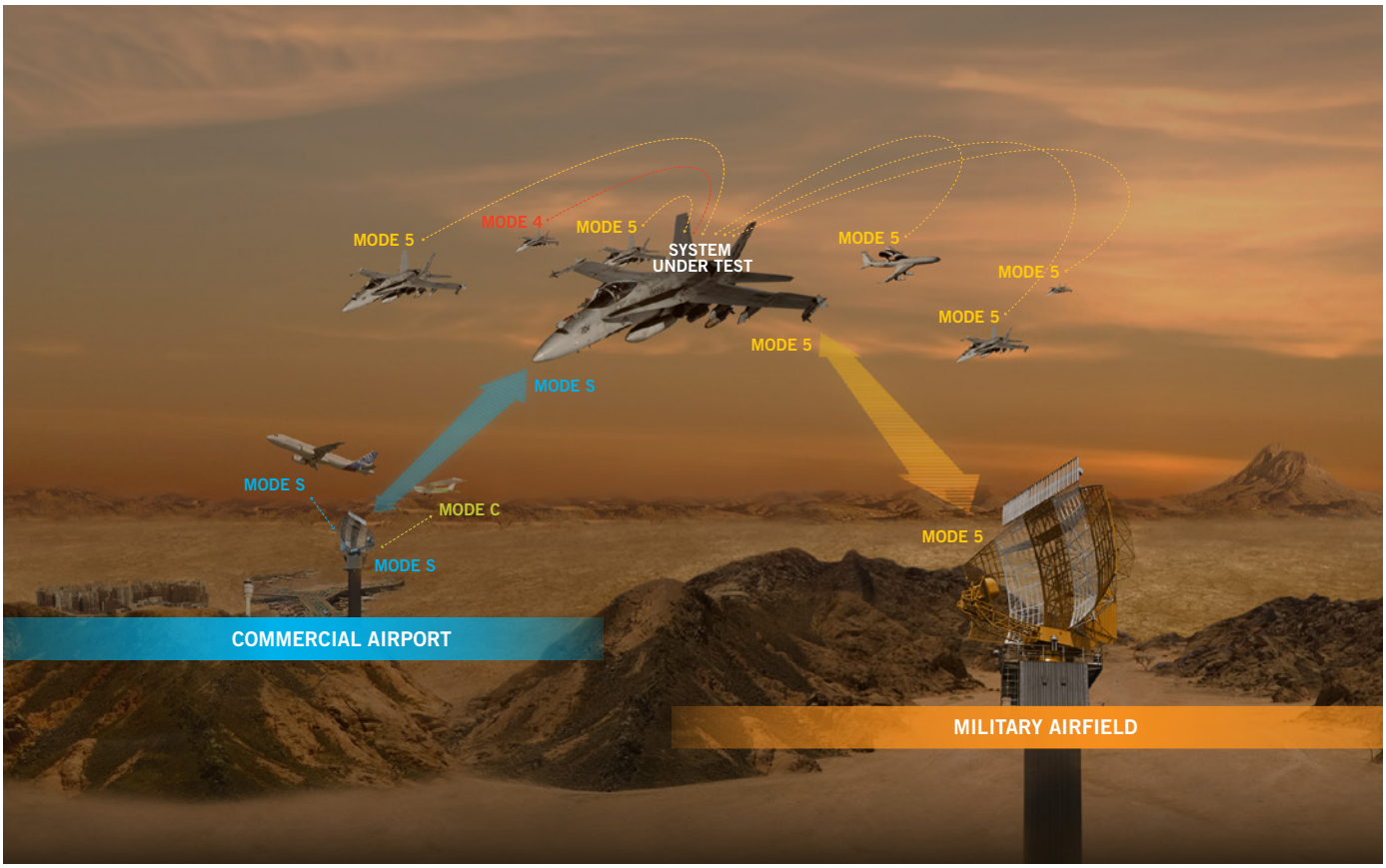
Modes Supported		1, 2, 3/A, C, 4, S, M5L1, M5L2, M5L2-B, and ADS-B
Frequency		1090 MHz
Amplitude	**VRG-1000**	-50 to 0 dBm
	VRG-1000SD	+15 to +65 dBm

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	1199118
VRG-1000SD	1170355



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