



Viasat Radio Frequency Generator 1000

Environment generator for
realistic IFF signal testing





The only real-time, AIMS- certified, FF RF environment generator

With the world's radio frequency (RF) signal environment growing increasingly complex and diverse, older Identification Friend or Foe (IFF) testing systems can no longer adequately support the changing needs of modern missions. Additionally, new AIMS certification requirements demand more advanced and realistic testing capabilities, creating a need for faster, more efficient solutions that perform amid extreme signal depth and diversity. Meet the Viasat Radio Frequency Generator 1000 (VRG-1000), an AIMS-certified, real-time IFF RF environment generator that helps verify military systems are ready for operational deployment.

The VRG-1000 is a commercial IFF testing capability that is highly specialized for testing military and commercial IFF systems. A portable RF flight test generator, it uses an intuitive graphical interface with multiple, simultaneous interrogators or interactive transponders to simulate a true flight experience. The VRG-1000 leverages real-time models to provide accurate attenuation and delay of signals, and mimics coherent RF messaging in dense, dynamic signal environments.

Enhanced preparedness with VRG-1000



The Viasat VRG-1000 enables testing in a realistic, highly crowded environment that other IFF tests can't replicate. It is designed to support 400 targets on a single system, and up to 2,000 targets with multiple systems. The VRG-1000 is capable of squittering Automatic Dependent Surveillance-Broadcast (ADS-B) and/or Mode 5 Level 2 (M5L2 & M5L2-B) with real cryptos. Operators can utilize the IFF test set to generate RF for up to 50 tightly synchronized interrogators, creating complex, non-overlapping interrogations for testing transponder density and corner cases. The VRG-1000 brings realistic on-location signal testing to a customer's installed, or in-development, flight system. The IFF test set also provides certification tools for transponders, interrogators and passive receivers. Viasat's evolved solution significantly simplifies the process for complex testing, which previously required the use of multiple test sets to complete a single test.

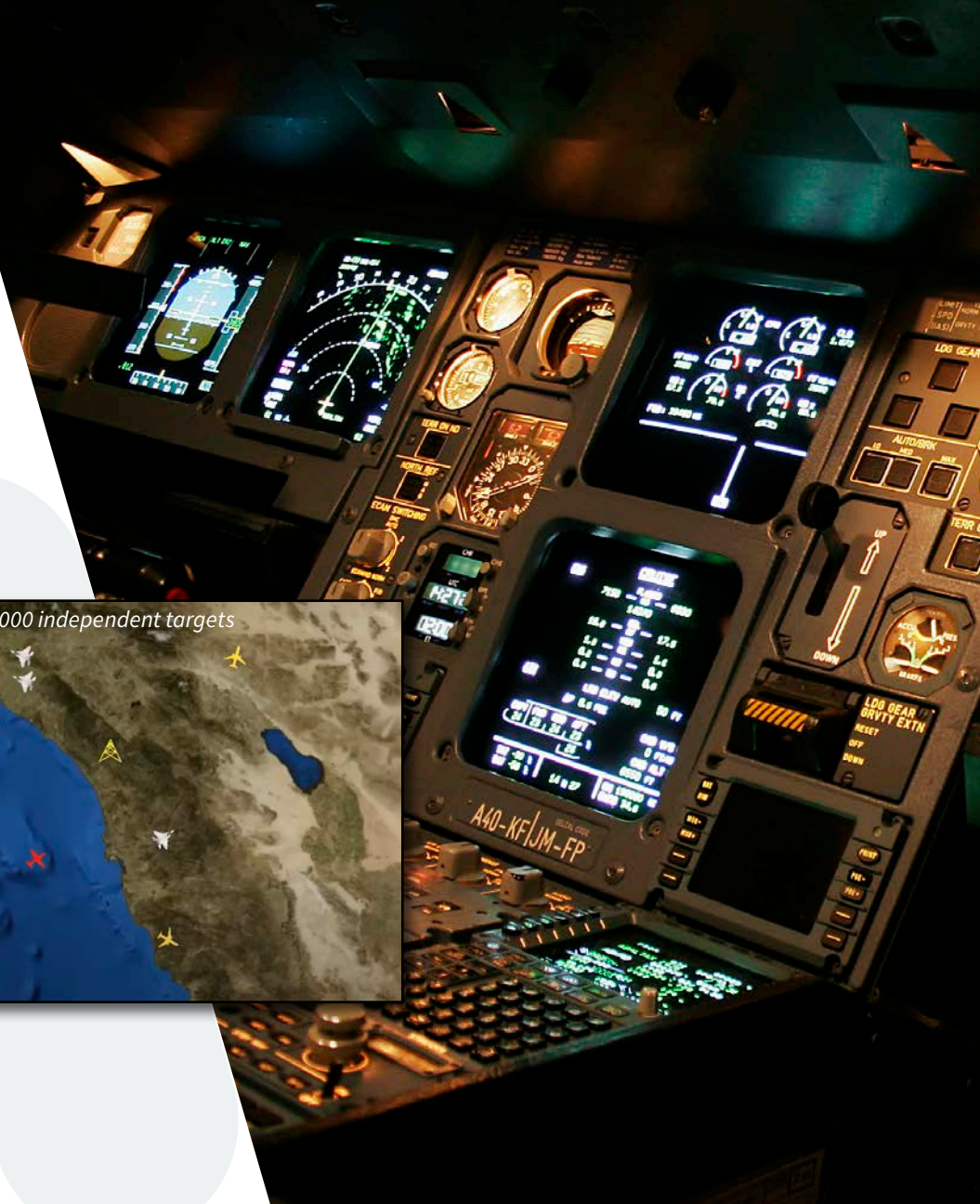


Reduces testing time from weeks to hours

The VRG-1000 certification tool can perform all the complex transponder Automatic Overload Control (AOC) certification tests in less than one hour. For advanced interrogator monopulse testing, the VRG-1000 provides a sum and difference channel configuration with user configurable antenna patterns.

The VRG-1000 leverages state-of-the-art technology to create a precise and realistic simulation environment, using real cryptographic equipment (KIV-77, KIV-79, SIT2010) for encoding Mode 4 and Mode 5 IFF signals. The intuitive graphical interface 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 integrator or transponder. The system under test 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 independent control of all transponders and interrogators, and an intuitive user interface, Viasat's VRG-1000 delivers easy, accurate IFF signal testing for all IFF systems.

Synchronize over 2,000 independent targets



VRG-1000: Accelerating time-to-market while lowering development and testing costs

The Viasat VRG-1000 enables customers to comprehensively lab test their avionics to prepare them for the battlefield. Simulation engine enables dynamic platforms and realistic RF environments accounting for path loss, antenna patterns, delay and more:

- Real-time processing with real cryptos, supporting directed interrogators
- Capture and time stamp (16 nanosecond resolution), all RF generated and received for detailed post-test analysis
- 6 degrees of freedom motion models (latitude, longitude, altitude, heading, pitch, roll)
- Externally control all platform movement with IEEE DIS Ethernet Standard
- Viasat's Software Defined Waveform processor can be easily upgraded to support new requirements or new waveforms

To learn more

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