RFSS Announces New Advanced Radar Target Generator System

Industry First Generic and Expandable Radar Environment Simulator For AESA Radar Applications


Advanced Radar Target Generator

ORANGE, CALIFORNIA, USA, March 9, 2015 /EINPresswire.com/ -- Radio Frequency Simulation Systems, Inc. (RFSS) has introduced a new generic advanced Radar Environment Simulator (RES) for testing the latest Active Electronically Scanned Array (AESA) radar systems. Named the Advanced Radar Target Generator (ARTG) system, ARTG is an X-Band Six Channel 12/12-Bit DRFM based RES for modern airborne AESA radar systems. The ARTG is designed using open standards and fully COTS hardware, including the core DRFM cards. The X-Band (8 GHz to 12 GHz) ARTG makes use of state-of-the-art 12/12-Bit Digital RF Memory (DRFM) with instantaneous bandwidth (IBW) of 1+ GHz, excellent spurious-free performance of greater than -60 dBc (worse case, -70 dBc typical) across the IBW, and exceptional memory depth of over 200 ms. A generic Radar Communication Card allows Direct Inject (DI) interface to numerous radar busses, such as, the APG-63(V), APG-73, APG-79, and APG-82, and future radar systems. The ARTG has six (6) DRFM channels (scalable) whereby each DRFM can provide up to 16 independent target returns, or 1 target with up to 16 scatters with overlap capability and scatter spacing of up to 42 usec (> 6 km). Each scatter can be independently controlled for amplitude, range, phase, and Doppler, and may be used as targets or to create a complex target. The ARTG has a beamshaping unit to model the antenna and provides six RF injection legs that could include SUM, DIFFAZ, DIFFEL, and GUARD legs while allowing for 360 degrees of simulation around the radar. The ARTG can handle up to 6 targets, clutter, and jammers in the field of view (the beam) and hundreds more targets and jammers in the field of regard. The ARTG can generate a comprehensive set of coherent and non-coherent Electronic Countermeasures (ECM), Jet Engine Modulation (JEM), Scintillation, Clutter, and other target phenomena like Glint, Multi-path, and weather conditions (like rain). In addition to direct injection, the ARTG provides for four (4) separate RF I/O ports for Free-Space applications. The ARTG has the flexibility of swapping out the X-Band for 6 – 18 GHz or 2 – 18 GHz RF down and up converters as an option. Further the ARTG has an interface for up to four (4) external jammers for Jammer-In-The-Loop functionality. To control the simulator, the ARTG is provided with a sophisticated software Graphical User Interface (GUI) that is Windows based and has terrain display capability that is controlled locally by a host PC or real-time external control via a customer host PC.

> The ARTG is the first truly generic and expandable RES for AESA applications and raises the bar for fidelity, flexibility, performance, and low Cost in the radar test and simulation market.
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> *Richard Damon, President & CEO*

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