



Talen-X Unveils New Anechoic Chamber System

In mid-2017, Talen-X and Skydel engineers began to conceptualize a GNSS simulation system emanating from their BroadSim platform for the purpose of simulating GNSS and jamming signals in anechoic chambers. Over the next 6 months, Talen-X and Skydel designed, built, tested and delivered a revolutionary new anechoic chamber simulator capable of simultaneously generating multi-GNSS, jamming and spoofing signals. BroadSim Anechoic can be used to support a wide variety of operational tests. Talen-X's Chief Technology Officer, Tim Erbes, said:



"Our new Anechoic Chamber solution will radically change the way in which mission critical platforms and systems are tested because we are enabling our customers to create real-world threats. Not only will BroadSim Anechoic be able

to emulate real-world threat scenarios but it will be easier than ever before to create and simulate these environments."



BroadSim Anechoic has everything you need for testing Global Navigation Satellite Signals (GNSS), spoofing and jamming in an anechoic chamber. The BroadSim Controller is at the heart of the system running Skydel's SDX software suite. Using SDX, you can easily create advanced scenarios that include both jamming and spoofing signals. The 16 Software Defined Radios (SDRs) each with dual transmit ports (32 total outputs) can be configured to output GNSS or jamming signals, giving you the flexibility you need to run test after test. The transmit chains include all of the necessary hardware for you to power 16 dual frequency antennas. The included GNSS receivers let you monitor the environment inside the chamber, providing confidence that your tests are running correctly.

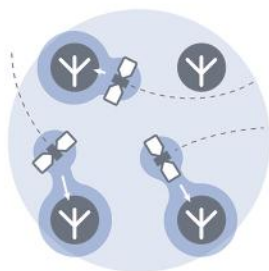
Another application in which BroadSim Anechoic will excel in is Controlled Radiation Pattern Antenna (CRPA) testing. Many ground, airborne and water based platforms are transitioning to using CRPA's because of their added jamming resiliency and significant tracking advantages in degraded environments. Validation and real-world testing is critical in understanding and characterizing the mitigation these antennas can add in highly degraded areas. By using BroadSim Anechoic, users have the ability to create representative jammers with real-world characteristics (modulations, frequencies, angles, power levels, etc.).



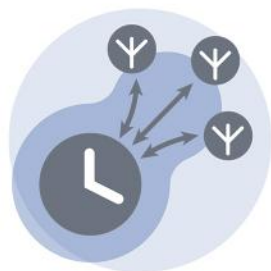
Skydel's Chief Technology Officer, Iurie Ilie, elaborated:



"Skydel developed an innovative approach for time offset calibration between multiple transmitting antenna using a COTS Software-Defined Radio (SDR). This approach allows for very precise measurements and adjustments (better than 100ps) to be done automatically before simulation start. At the same time, transmitting signal power is automatically adjusted to keep the power offset at receiving antenna better than 0.1dB."



Automatic
Antenna Mapping



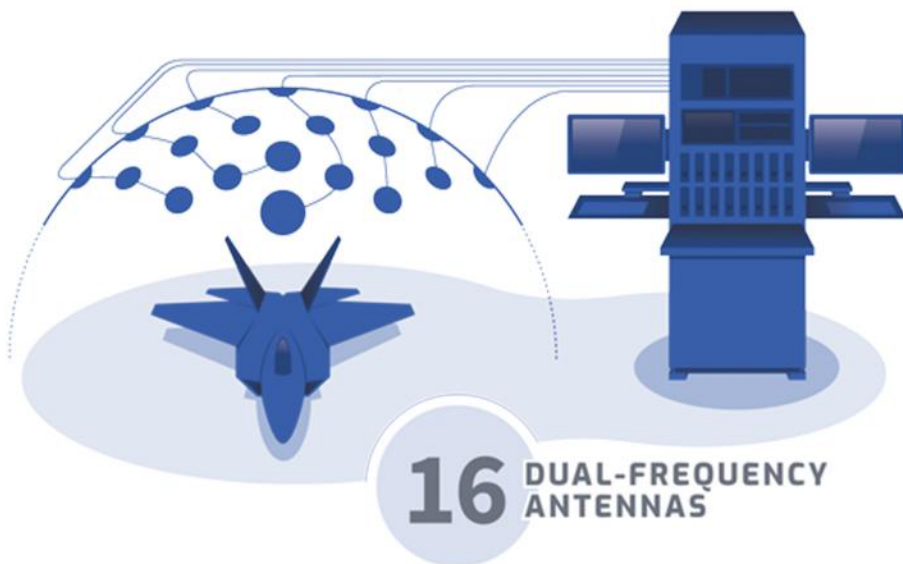
Automatic
Time Delay Calibration



Automatic
Power Loss Calibration

BroadSim Anechoic is capable of powering up to 16-dual frequency antennas and has one receive channel for every transmit channel, giving it 32 RF receive ports. The architecture used for this system required the ability to receive signals in a manner such that precise processing could be done on the receive signal. Innovative software techniques have been developed enabling the accurate time and power calibration for each antenna transmit chain using the SDR receive ports.

BroadSim Anechoic is unique because it takes advantage of state-of-the-art software defined radios (SDR) for RF up-converting while signal IQ generation uses high performance commercial-off-the-shelf (COTS) graphics-processing units (GPU). The ability to generate the IQ data in software (using the GPU) as opposed to hardware (FPGA) significantly reduces the cost while maximizing capability, value and time to market.



For purchase inquiries or to schedule a web demo, please contact sales@talen-x.com

Learn more by visiting www.talen-x.com/broadsim-anechoic