Radio / Satellite Communications

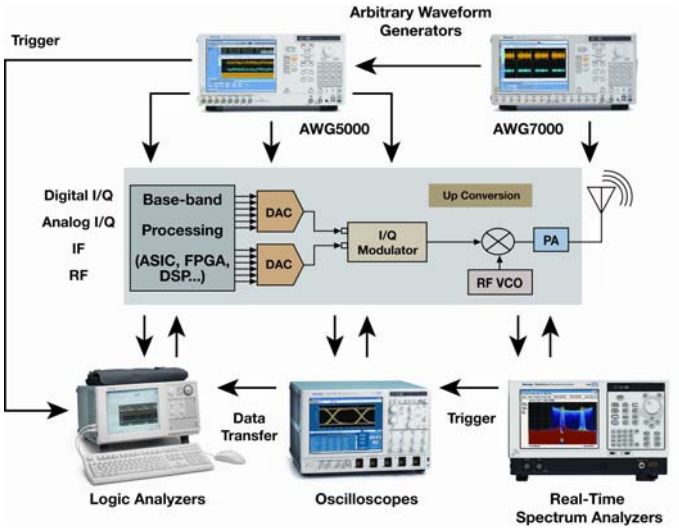
Measurement Confidence for Next-generation Secure Communications

The availability of high-speed components (DACs/ADCs/DSPs) has enabled modern radio and satellite communication systems to improve capacity, utility, battery-life, and where necessary, avoid detection. Wider bandwidth and complex modulations can increase capacity. Dynamic SW control and advanced DSP can improve utility and battery-life. Baseband hopping utility can improve radio cloaking. Radio development teams have often seen the need to develop custom test benches to fully characterize and validate their designs due to the lack of commercial off-the-shelf solutions for design and development.

Whether you are moving into digital radio implementation or deploying mission-critical satellite systems, our innovative test solutions deliver the measurement confidence you need in your designs. Our signal generation and analysis tools provide the unique insight necessary for the development and debugging of modern communication systems with time synchronous multi-domain analysis across the functional components.

Radio and Satellite Communications Challenges:

Transmitter Design Validation	▪ LO feed thru ▪ Signal and power supply coupling ▪ Improper hopping sequences and non-zero phase crossing states ▪ Dynamic changes to modulation, power, or linearization correction that are not sample aligned to baseband ▪ Software errors or illegal state values
Stimulus Test	▪ Sensitivity and interference testing from the expected operation environment ▪ Generation of expected interference signals to verify blocking performance ▪ Margin testing of known Tx variables
Testing with Confidence	▪ Reproducible test results for in-channel, in-band, and out-of-band performance ▪ Discover and trigger on spectrum anomalies with 100% probability ▪ Automatic pulse measurements for pulse communications technologies



Tektronix

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Transmitter Design Validation

RSA Series Real-Time Spectrum Analyzers

- Discover elusive spectrum events with 100% probability with over 292,000/s spectrum updates and Swept DPX (RSA5000/6000)
- Trigger and isolate spectrum events with 100% probability using patented DPX Density™, Frequency Mask, Frequency Edge, and Time-qualified Triggering and cross-trigger oscilloscopes or logic analyzers within the event record
- Capture signals utilizing the highest combination of dynamic range and bandwidth
- Get repeatable results faster with automated measurements for complex modulations and pulse analysis
- Speed troubleshooting with correlation of frequency, time, modulation, and statistical domain on single acquisition

Wideband Transmitter Design Validation

DPO/DSA Series Oscilloscopes with SignalVu™ Software

- Quickly find intermittent events with DPX® acquisition technology that displays up to 250,000 wfms/s
- Pinpoint timing anomalies with full sample rate and record length across all 4 channels
- Capture of wide bandwidth waveform sequences for direct replay in AWGs
- Find difficult problems faster with time-correlated multi-domain analysis

Stimulus for Design Validation

AWG Series Arbitrary Waveform Generators with RFXpress® Software

- Generate digital baseband and analog baseband, IF, RF, and microwave signals with versatile multi-channel AWG
- Synthesize high dynamic range signals directly with up to 9.6 GHz signal bandwidth
- Easy creation of very complex and repeatable radar signals using RFXpress® software
- Verify component and functional designs by emulating common transmitter impairments
- Speed troubleshooting with playback of captured waveforms from Real-Time Spectrum Analyzers and Oscilloscopes

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