A²PATS® FAMILY

TEST, TRAINING & SIMULATION

GENERATING COMPLEX EMITTER SIMULATIONS FOR NUMEROUS SYSTEMS

Our Advanced Architecture Phase, Amplitude and Time Simulator (A²PATS) product line is designed to verify that U.S. and allied aircraft electronic warfare (EW) systems can precisely locate, identify and defend against ground-based, air-to-air and surface-to-air missile threats. Our unique, plug-and-play architecture uses identical phase coherent, direct digital Synthetic Stimulus Instruments (SSIs) as the radio frequency (RF) source for all signals.

TextronSystems.com

TEXTRON Systems

▸ PUSHING PAST POSSIBLE

A²DSG™ PORTABLE & AFFORDABLE SOLUTION FOR COMPLEX SIGNAL GENERATION

Our Advanced Architecture Desktop Signal Generator (A²DSG™) provides a small, affordable, portable signal generation capability for signal development, signal test and signal verification and validation (V&V) of pulse based and communications signals of interest. Our unique, plug-and-play architecture uses direct digital SSIs as the RF source for all signals. The configurable A²DSG and Intuitive 3D graphical user interface with enhanced visualization provides all the capability sized for your needs and is affordably priced to complement any budget.

FEATURES & BENEFITS

> Easy system expansion through addition of TSES commercially available SSI modules

> Allows for long-periods of simulation time with no external calibration procedures

> Varying numbers of identical SSIs in each port enable stringent testing scenarios with pulse densities exceeding eight million pulses per second

> Ability to generate peer and near-peer complex signals

> Easy setup, installation and relocation

> Capable of generating complex intrapulse modulations

> Operator defined transmit/receive antenna patterns

> Amplitude only simulation

> Affordable and cost effective test solution

RF SOURCE
Textron Systems SSIs
Up to 4 SSIs

PULSE DENSITY
Up to 4MPPS
(expandable to 8MPPS)
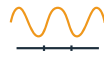
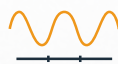**OPERATING FREQUENCY RANGE**
Standard 20 MHz - 22 GHz continuous

OUTPUT POWER
+10 dBm typical

MINI A²PATS

In addition to the capability of the A2DSG, our Mini A2PATS goes from 1 to 8 SSIs and can produce up to 16 MPPS for highly complex, dense scenarios.

OPERATING FREQUENCY RANGE
20 MHz – 22 GHz, continuous
40 GHz, optional

PULSE DENSITY
Up to 16 MPPS

MAXIMUM POWER
-5 dBm typical

FREQUENCY RESOLUTION/ACCURACY
0.1 Hz/+- 1Hz

A²PATS SINGLE TO MULTI CABINET CONFIGURATIONS

Textron Systems' comprehensive training solutions build customer capability to promote positive mission outcomes and experienced asset utilization over time through initial training, ongoing concurrency and delta training. Our capabilities include a variety of platform types, and we can train at customer sites or our own facilities.

SINGLE CABINET

MAINTENANCE/
ALIGNMENT CABINET   STIMULUS CABINET

MULTI-CABINET SYSTEM

FEATURES & BENEFITS

> Simultaneous simulation of phase, amplitude and time angle of arrival

> Easy setup, installation and relocation

> Designed for easy system expansion through addition of TSES commercially available SSI modules

> Reconfigurable architecture to meet test requirements

> Continuous, real-time background alignment for lower support cost and higher operational availability

> Continuous alignment keeps the system within tolerance

> Direct-to-port Direct Digital Synthesis (DDS) RF Generation

PULSE REPETITION INTERVAL
512 ns to 1.0s/20 ps +/- 1.0 ns

MAXIMUM POWER
-5 dBm typical

PULSE DENSITY
Single Cabinet: Up to 16 SSIs (2 MPPS per SSI)
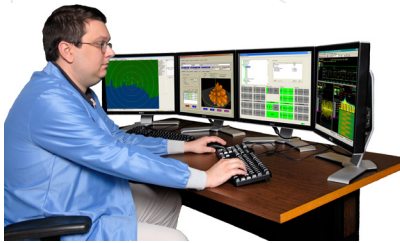Multi-Cabinet: Up to 256 SSIs (2 MPPS per SSI)

PULSE WIDTH RANGE
24 ns to 1.0 s/20 ps+/- 1.0ns

INCLUDED SOFTWARE

A²PATS 4.0 SOFTWARE

State of the art visualization and 2D/3D graphics that provides full situational awareness for the operator as well as the capability to model complex system behaviors.

SPEC	A²DSG	MINI-A²PATS	A²PATS
MAX SSI	1 (4)	8	256
MAX POWER	+10 dBm	+10 dBm	-5 dBm
MPPS	2-8	2-16	2-16
FREQUENCY	20 MHz - 22GHz	20 MHz - 40 GHz	20 MHz - 40 GHz
FREQUENCY RESOLUTION/ACCURACY	0.1 Hz/+1Hz	0.1 Hz/+1Hz	0.1 Hz/+1Hz
PRI RESOLUTION/ACCURACY	514 ns to 1.0 s/20 ps/+1.0 ns	513 ns to 1.0 s/20 ps/+1.0 ns	512 ns to 1.0 s/20 ps/+1.0 ns
PULSE WIDTH	26 ns to 1.0 s/20 ps/+`1.0 ns	25 ns to 1.0 s/20 ps/+`1.0 ns	24 ns to 1.0 s/20 ps/+`1.0 ns
PORT-TO-PORT ATTENTUATION/RESOLUTION/ACCURACY	12 dB/0.03 dB/0.5 dB RMS	11 dB/0.03 dB/0.5 dB RMS	10 dB/0.03 dB/0.5 dB RMS
"WIDEBAND CHIRP BANDWIDTH/SLEW RATE"	+/- 25 MHz/50MHz/us	+/- 25 MHz/50MHz/us	+/- 25 MHz/50MHz/us

OPTIONAL ACCESSORIES

ADVANCED ARCHITECTURE DATA RECORDER/INJECTOR (A²DRI™)

High-speed Pulse Descriptor Word (PDW) Capture, Record, Playback and Interface Device

NEWEG DGEN COMPLIANT

PDW INJECTOR AND CONVERTER

PDW CAPTURE, STORAGE, PLAYBACK

FEATURES & BENEFITS

> 16 Terabytes of RAID storage

> Multiple interfaces to include 10 gig for live streaming, 1 gig and high speed serial

> Ability to utilize NEWEG formatted PDW

> Record and playback captured PDWs

MMW MODULE
(A²PATS and Mini A²PATS only)

> Extends frequency range up to 40 GHz

WIDEBAND CHIRP MODULE
(A²PATS and Mini A²PATS only)

> Provides 1.1 GHz/uses chirp capability

SWITCH MATRIXES
(A²PATS and Mini A²PATS only)

> Allows operator to set the number of SSIs on each port, providing capability to run simple to high density scenarios

> Multiple interfaces to include 10 gig for live streaming, 1 gig and high speed serialstreaming, 1 gig and high speed serial