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
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 4 MPPS
- (expandable to 8 MPPS)

**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/+-1 Hz
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.

**A²PATS SINGLE TO MULTI CABINET CONFIGURATIONS**

**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 1.0 s/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 ± 1.0 ns
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.

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### SPEC

<table>
<thead>
<tr>
<th></th>
<th>A²DSG</th>
<th>MINI-A²PATS</th>
<th>A²PATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAX SSI</td>
<td>1 (4)</td>
<td>8</td>
<td>256</td>
</tr>
<tr>
<td>MAX POWER</td>
<td>+10 dBm</td>
<td>+10 dBm</td>
<td>-5 dBm</td>
</tr>
<tr>
<td>MPPS</td>
<td>2-8</td>
<td>2-16</td>
<td>2-16</td>
</tr>
<tr>
<td>FREQUENCY</td>
<td>20 MHz - 22GHz</td>
<td>20 MHz - 40 GHz</td>
<td>20 MHz - 40 GHz</td>
</tr>
<tr>
<td>FREQUENCY RESOLUTION/ACCURACY</td>
<td>0.1 Hz/+1Hz</td>
<td>0.1 Hz/+1Hz</td>
<td>0.1 Hz/+1Hz</td>
</tr>
<tr>
<td>PRI RESOLUTION/ACCURACY</td>
<td>514 ns to 1.0 s/20 ps/+1.0 ns</td>
<td>513 ns to 1.0 s/20 ps/+1.0 ns</td>
<td>512 ns to 1.0 s/20 ps/+1.0 ns</td>
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<tr>
<td>PULSE WIDTH</td>
<td>26 ns to 1.0 s/20 ps/+1.0 ns</td>
<td>25 ns to 1.0 s/20 ps/+1.0 ns</td>
<td>24 ns to 1.0 s/20 ps/+1.0 ns</td>
</tr>
<tr>
<td>PORT-TO-PORT ATTENUATION/RESOLUTION/ACCURACY</td>
<td>12 dB/0.03 dB/0.5 dB RMS</td>
<td>11 dB/0.03 dB/0.5 dB RMS</td>
<td>10 dB/0.03 dB/0.5 dB RMS</td>
</tr>
<tr>
<td>&quot;WIDEBAND CHIRP BANDWIDTH/SLEW RATE&quot;</td>
<td>+/- 25 MHz/50MHz/µs</td>
<td>+/- 25 MHz/50MHz/µs</td>
<td>+/- 25 MHz/50MHz/µs</td>
</tr>
</tbody>
</table>

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### ADVANCED ACCESSORIES

**ADVANCED ARCHITECTURE DATA RECORDER/INJECTOR (A²DRI™)**
High-speed Pulse Descriptor Word (PDW) Capture, Record, Playback and Interface Device

- **NEWEG DGEN COMPLIANT PDW CAPTURE, STORAGE, PLAYBACK**
- **PDW INJECTOR AND CONVERTER**
- **PDW CAPTURE, STORAGE, PLAYBACK**

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### 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

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### MMW MODULE
(A²PATS and Mini A²PATS only)
- Extends frequency range up to 40 GHz

### WIDEBAND CHIRP MODULE
(A²PATS and Mini A²PATS only)
- Provides 11 GHz/uses chirp capability

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### 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 serial streaming, 1 gig and high speed serial