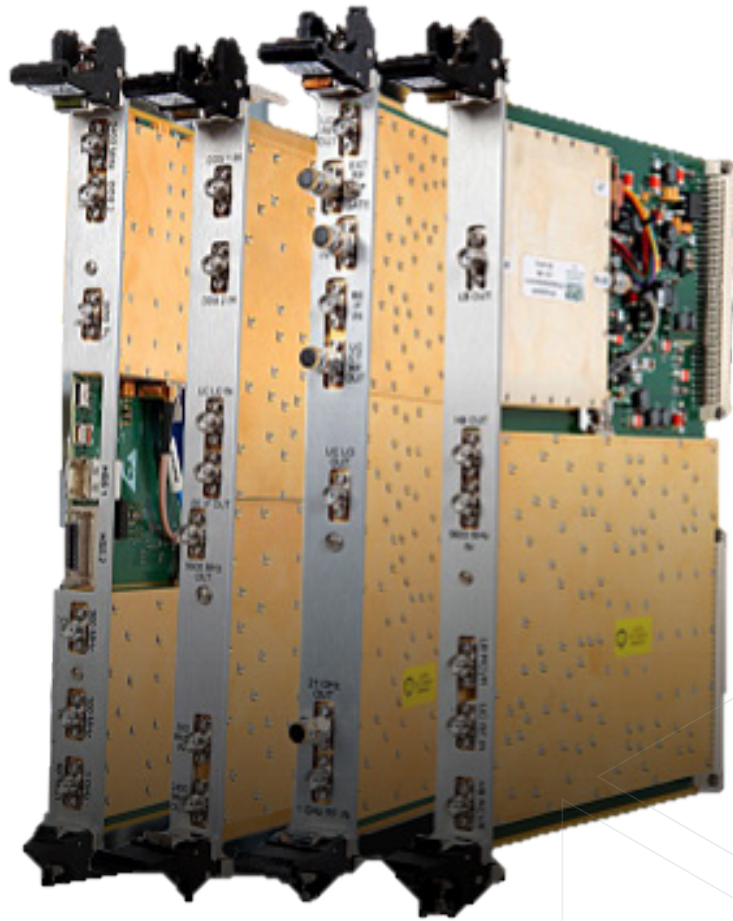


# SSI SYNTHETIC STIMULUS INSTRUMENT



The -SSI (Synthetic Stimulus Instrument) is a phase- coherent, wide-band Direct-Digital Synthesizer (DDS), which provides 500MHz of instantaneous bandwidth, enabling threat generation of today's most complex emitters. The SSI is the common RF source for all A<sup>2</sup>PATS® signals and can be configured to run in either of two distinct modes of operation. The two modes of operation enable the capability to generate over 2 MPPS in radar mode (mode 1) or 32 simultaneous communication emitters (mode 2) per SSI, creating a dense, complex, realistic signal environment for test and evaluation.

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**TEXTRON** Systems

► PUSHING PAST POSSIBLE

The SSI has been designed with industry leading noise reduction and spurious free dynamic range (SFDR) with over 70 dBc of SFDR. The -SSI frequency range encompasses 0.5MHz-40GHz, making it the most capable DDS source on the market. Our SSI is in its 5th generation of a technology refresh and is backward compatible to existing A<sup>2</sup>PATS<sup>®</sup> installations with minor retrofit kits.

## SPECIFICATIONS

### PULSE DENSITY

Over 2 MPPS or  
32 simultaneous  
communications  
emitters

### PHASE RESOLUTION/ ACCURACY

0.022°/1.7° RMS

### NOISE FLOOR

-90 dBm/MHz (No  
signal present)

### BANDWIDTH

500 MHz

### PULSE REPETITION INTERVAL

375 ns to 10 s  
Resolution: 10 ps  
Accuracy: +/- 1 ns

### PULSE WIDTH RANGE

24 ns to 1 s  
Resolution: 20 ps  
Accuracy: +/- 1 ns

### TESTING

Direct Injection

### CHIRP RANGE

500 MHz - 40GHz

### FREQUENCY RESOLUTION / ACCURACY

Resolution: 0.0625 Hz  
Accuracy: 0.1 Hz

### OPERATING FREQUENCY RANGE

500KHZ - 40GHZ

### SPURS & HARMONICS

-70dBc (max)

### RF SOURCE

Up to 8 SSIs per port

## KEY BENEFITS & FEATURES

- > 500MHz of instantaneous bandwidth
- > Multi-signal capability:
  - Radar Mode: 4 simultaneous CW plus pulsed emitters in a 500MHz bandwidth
  - COMMS Mode: 32 simultaneous COMMS emitters
- > Ultra-wide frequency range .5 MHz to 40 GHz
- > Superior Spectral fidelity
- > Accommodates all fielded A<sup>2</sup>PATS system features and incorporates capability expansion
- > Backward compatible to existing A<sup>2</sup>PATS installations
- > Commercially available with implementing software for industry and military applications

