SPEDIS-TX

Electronic warfare simulator

SPEDIS-TX is a family of electronic warfare simulators. It generates a controllable RF environment for passive radar and ELINT systems, so that the receiver is tested against a realistic, repeatable spectrum before it goes to the field. Up to 64 emitters are simulated at the same time, each with its own carrier frequency, pulse width and pulse repetition interval agility, intra-pulse modulation, antenna pattern and antenna scan. SPEDIS-TX covers 0.5 to 18 GHz with 1 GHz instantaneous bandwidth and works in both direct injection and radiation modes. The portable version is for range testing and workbench use; versions for anechoic chamber, tower and other test site installations are also available.

AT A GLANCE

FREQUENCY BAND
0.5 GHz – 18 GHz

INSTANTANEOUS BANDWIDTH
1 GHz

SIMULTANEOUS EMITTERS
Up to 64

PULSE WIDTH
50 ns – 100 ms

PRI
1 µs – 1 s

APPLICATIONS

- Performance verification of passive radar and ELINT systems
- Workbench and range testing of passive radar and ELINT receivers
- Anechoic chamber and tower test installations



Figure 1. SPEDIS-TX portable simulator with its emitter scenario software on the built-in screen

Key Features

- Up to 64 simultaneous emitters
- PRI, pulse width and carrier agility
- Intra-pulse modulation
- Antenna pattern and scan
- Noise jammer
- Portable and fixed installations

Capabilities

Up to 64 simultaneous emitters

Each emitter in the scenario is defined independently, so the device under test receives a dense spectrum of overlapping radar signals rather than a single test tone.

PRI, pulse width and carrier agility

Pulse repetition interval, pulse width and carrier frequency follow constant, jitter, stagger, dwell and switch, wobbulation or burst profiles to reproduce real radar modes. Pulse width runs from 50 ns to 100 ms and PRI from 1 µs to 1 s.

Intra-pulse modulation

Frank, Zadoff, P and Barker codes, BPSK and QPSK with custom variants, custom phase patterns, and frequency and amplitude modulation.

Antenna pattern and scan

Uniform, CosX, fixed, pencil, cosecant and custom antenna patterns, combined with circular, conical, bidirectional and unidirectional raster, sector, helical, spiral and random scans (random from 100 µs).

Noise jammer

Barrage noise at 50, 100 or 200 MHz bandwidth and spot noise at 1, 2, 5, 10 or 20 MHz bandwidth.

Portable and fixed installations

The portable unit with integrated screen and keyboard serves workbench and range testing. Advanced versions are installed in anechoic chambers, on towers and at other test sites, in direct injection or radiation mode.

Specifications

General	
Frequency band	0.5 GHz – 18 GHz
Instantaneous bandwidth	1 GHz
Simultaneous emitters	Up to 64
Pulse width	50 ns – 100 ms
PRI	1 µs – 1 s
Dynamic range	80 dB block (40 dB instantaneous)
Noise jammer	Barrage (50/100/200 MHz), spot (1/2/5/10/20 MHz)
Operating modes	Direct injection and radiation
Warranty	2 years

Warranty

All hardware and software procured from Zeta is under warranty against manufacturing or design failures for 2 years. Customer-specific warranty terms may be arranged.

Disclaimer

Due to ongoing research and development, Zeta reserves the right to change product specifications without notice.

About Zeta

Zeta Defence develops electronic intelligence (ELINT) and communication intelligence (COMINT) equipment and radar / electronic warfare simulators. Its capabilities include RF transceiver system design, digital design and large-scale software development.

Contact

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