SPEDIS-TRX

Radar Target & Environment Simulator

Spedis-TRX is a portable DRFM-based radar target simulator designed for testing and verifying radar systems under different scenarios consisting of multiple targets, deceptive ECM and noise jammers. The Spedis-TRX allows user to define platforms with arbitrary trajectories or can work with external provided real-time motion data. Easy to deploy portable version is available for range testing and workbench use. Advanced versions available for anechoic chamber installation, tower testing and other test site installations. Spedis-TRX supports operation up to 18 GHz and can be used for both direct injection and radiation modes.



Highlights

- Up to 5 targets signal can be generated simultaneously
- 300 m to 1000 km distance simulation
- High doppler resolution
- Robust GUI for simple scenario creation
- Radar signal spectrum monitoring
- FSPL (Free-space path loss) simulation

Technical Specifications

Frequency Band	0.5 GHz – 18 GHz
Dynamic Range	80 dB block (40 dB instantaneous)
Instantaneous Bandwidth	1 GHz
IFM	Error < 1% (Optional)
Range Simulation	300 m - 1000 km
Radial Velocity Simulation	Up to 30,000 m/s
Number of Targets	5
Deceptive ECM	RGPO/VGPO (coordinated/uncoordinated), clutter, chaff, multiple false targets
Noise Jammer	Barrage (50/100/200 MHz) Spot (1/2/5/10/20 MHz)
VMIC Interface	1 ms update for 5 platforms (Optional)

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Moving Target Definition

Spedis-TRX user interface provides to create up to 5 targets scenarios. Target motion parameters; range, velocity, acceleration and attenuation level are defined and the scenario file can be saved and reloaded. Motion can be defined as the target moving towards or away from the radar system. User can add multiple motion intervals for every single target.

Noise Jamming Definition

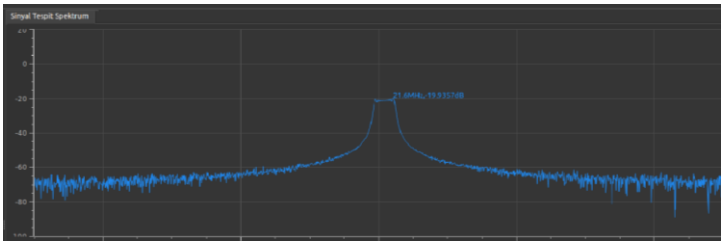
Deceptive ECM and noise jamming entities can be defined to evaluate the detection/tracking performance of radar system under harsh conditions. Motion parameters can also be defined for deceptive ECM/noise jamming.

Radar Signal Analysis

Spedis-TRX user interface provides to monitor input Radar signal spectrum. The system also analyzes the radar signal and measure the radar signal frequency, amplitude level and PRI of pulses. The user can follow the radar signal parameters via radar status graphs.

Radar Status Graphs

- Spectrum
- Instantaneous Frequency
- Instantaneous Amplitude
- Pulse Frequency
- Pulse Amplitude
- Pulse Period



Physical Characteristics

- Portable simulator dimensions: 524 mm, 372 mm, 226 mm
- Weight: Less than 20 kg
- Temperature: operating 0°C – 50°C, storage -20°C – 70°C

DSP Characteristics

PW (Pulse Width)	50 ns – 1 ms (Detectable PW Range)
PRI (Pulse Repetition Interval)	1 us – 100 ms (Detectable PRI Range)
Number of Targets	5
Distance Range	300 m – 300 km
Distance Resolution	1 m
Doppler Shift	±2 MHz
Doppler Resolution (Adjustable)	1 Hz

Warranty

All hardware and software procured from Zeta is under warranty against manufacturing or design failures for 2 years. Customers specific demands for warranty may also be arranged.

Disclaimer

Due to ongoing R&D, Zeta reserves the right to change the product specification without notice.

About Zeta Defense

Zeta Defense was founded in February 2015 to develop Electronic Intelligence (ELINT), Communication Intelligence (COMINT) equipment and Radar/Electronic Warfare Simulators,. Our capabilities include RF transceiver system design, digital design and large-scale software development.

- The areas of expertise of the company can be summarized as follows:
- Radar Target and Environment Simulators
- Electronic Warfare Simulators
- Spectrum Monitoring Systems
- Communication Systems

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