

Multi Channel RADAR Target Simulator (MRTS)

Key Specifications

The UTS Multi Channel RADAR Target Simulator (MRTS) is used to test RADAR in both Injection mode and Radiation mode by taking reference signal as input and generate coherent target(static/moving) echo signals(simulate real targets) with variations in Delay, Signal Strength, Doppler Frequency, Relative Velocity and RCS and with Clutter & Jamming effects. The simulator has ECM at target side so that ECCM features of the Radar can be tested.



Applications

- ✓ Injection/radiation mode of testing of surveillance /tracking Radars
- ✓ Field BITE module for Radar
- ✓ Seeker Development and Testing
- ✓ LPI Radar signal processing algorithm development and testing
- ✓ Effectiveness analysis of ECCM techniques for Radars

Specification	Value
Frequency	Baseband IF (30 MHz, Bandwidth 2.5 to 12 MHz) RF : X-Band
Instantaneous Bandwidth	up to 1 GHz
No. of Channels	3 (Three Channel Monopulse outputs for 3D Simulation of any trajectories for Target & Jammers)
Type of Radar Pulses	All Modulations (LFM, NLFM, Pulsed Signals, Barker Coded, Poly phased)
Pulse width	20ns to 100µs
Range	100m to 120Km
Range Resolution	1m
Doppler Control	-0.5 MHz to +0.5 MHz (1 Hz Resolution)
PRI	7.5 – 15 KHz
i /p power	0 dBm in injection mode 0 to 50 dBm in Radiation mode
o/p power	0 dBm in injection mode -100 to +10 dBm in Radiation mode
No. of targets	10
Target Parameters	Fixed/Dynamically Varying Delay, Variable Doppler Frequency, Signal Strength Variations according to Target Range & Direction, Relative Velocity (m/s), Different RCS size
Target Models	Point, Multi-point Scatter, Jet Engine Modulation, Helicopter Blade Modulation, RCS variation, Multipath fading
RCS	Configurable
Programmable Clutter models	Ground/Sea/Weather
No. of Jammers	16
Type of Jammers	Coherent, Towed Decoy, Chaff
ECM & Advanced ECM Options	Spot, Sweep, Noise Jamming Deceptive Jamming- RGPO/I, VGPO/I, Multiple False Targets
User friendly GUI	Yes
Local and remote scenario Control	Yes
Power Supply	230V, 50Hz