

# Wideband RADAR Target Simulator (WRTS)

The UTS Wideband DRFM based RADAR Target Simulator (WRTS) is an ideal choice to test the Radar in Injection or Radiation mode by simulating the real time objects or echoes under Lab environment. This System provide three output channels (at a time one channel is selectable) having the capability to generate Fading Profiles & AWGN.

WRTS is able to generate Continuous wave Signals, Pulse Modulated Signals, Digital Modulated Schemes and Multi-tone Signals. WRTS takes the input from RPF Transmitter and produces output, which consists of multiple modeled targets with effects of Fading, AWGN and Doppler Shifts. The product consists of control unit running on PC with GUI connected to embedded unit over Ethernet.

## Key Specifications

Specification	Value
Frequency Range	UHF to Ku Band (500 MHz to 20 GHz)
Instantaneous Bandwidth	120 MHz
Frequency Sensing/Selection	User configuration required for centre frequency between 500MHz to 20GHz. Automatic within $\pm 60$ MHz BW around configured frequency
Signal waveform modulation	CW, Pulsed CW, LFM, Poly phase coded RF Pulse, Non linear FM
Waveform Bandwidth	10 MHz (max.)
Pulse Width Range	1 us (min) to CW
Input/ Output VSWR	< 2:1
Pulse Repetition Interval (PRI)	100 us (min.) to CW
Parameter update rate in DRFM	100 us
Min No. of Targets	6 (max-as per client requirement)
Target Types Range	Fixed, Moving, Fixed + Moving 0.1 to 120m (CW operation) 2.5Km to 10000 Km (Pulsed mode)
Range Resolution	0.1m
RCS	Swerling models 0,1,2,3,4



Specification	Value
Input Power	-50 dBm to + 10 dBm
Output Power	-120 dBm to + 10 dBm
Power Setting Resolution	0.1 dB
Fading Profiles	Doppler, Rayleigh, Rice, Constant Phase
AWGN	Crest factor > 14dB, SNR - 50dB to +40dB
Type of Noise Jamming	Spot (other options available based on user requirement)
Clutter models	Land, sea and volume clutter models with configurable RCS parameters. User provided clutter model is also supported.
System with Latency Calibration	Yes
Scenario Control	User Friendly GUI running on local/ Remote PC
Power Supply	230 V AC $\pm 10\%$ , 50 Hz
Dimensions & Weight	10U Rack mountable, <120Kg

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