

RFL-DRT

24GHz FSK Doppler Radar Training System



FEATURES

- A digital 24 GHz pulsed-FSK Doppler radar transceiver with on-board FFT signal processing, multi-target tracking and a configurable detection zone over a UART interface.
- Microwave transceiver
- Speed, rotation, level control, contact-less vibration measurement.
- Multi-target tracking (Up to 8 tracked objects)
- Modulation Pulsed FSK
- Mobile based interactive e-manual

SPECIFICATIONS

- 16 bit radar data acquisition System
- Displays and logs doppler signals
- Maximum 2 channel acquisition supported (I and Q Signals)
- Signal views in frequency and time domain
- Signals observable on test points on front plate as well as in software windows
- Real time Log file playback to screen and test points
- Works with single channel and dual channel radar modules
- Detailed analysis of signals possible using external measurement systems
- System power obtained from host using USB port
- Strong software support

Microwave Transceiver

- Type: Integrated transmitter and receiver with dual 4 patch antenna
- Operating frequency: 24GHz (K-Band)
- Single balanced mixer: 50MHz bandwidth
- EIRP output power: 15dBm
- Beam aperture: 80° / 34°

Software

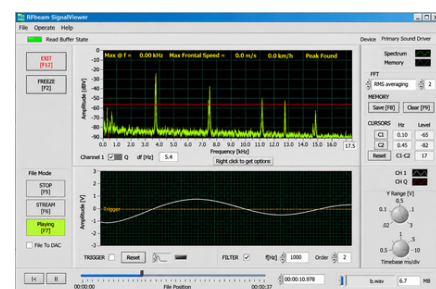
- Graphically configurable frequency and peak detection
- Time domain display (scope) with trigger and filter functions
- Real time capture and display of signal at background

along with current acquired signal

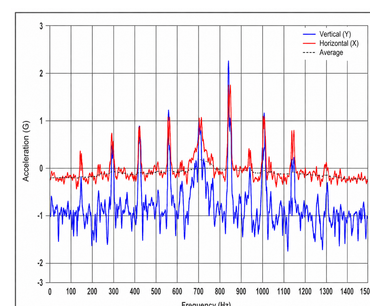
- Speed display: Display in km/Hr, m/s, KHz
- Volts/div: 20mV/div ~ 3V/div
- Display: Peak to peak level display
- Time Base: 0.5mS/div ~ 10mS/div (real time)
- Trigger: Manual
- Storage mode: Streaming to standard save files
- FFT: Real time with cursor measurement
- FFT Power spectrum display: 5 Hz ~ 20 kHz

EXPERIMENTS

- Introduction to Doppler Radar
- Study of Doppler Shift and how it is being used in various applications
- To find out the time period and frequency of pendulum
- To measure the speed of fan in RPM
- To measure the frequency of peizo electric buzzer
- To find out the accuracy of the radar using tuning fork
- To detect the transformer HUM and its frequency



Screenshot of signal for tuning fork



TRACKING DATA (TDAT)