RT-01
RADAR TRAINER SYSTEM

RT-01 Radar Trainer System is a versatile table top system. It's a useful tool that provides hands-on experimentation and understanding of the principle and working of Doppler Shift Effect in Radar. Students will find it very easy to use this system. The trainer is also capable of estimating the speed of a moving object, distance traveled by a moving object, frequency of vibrating object and reflections from objects. The trainer is provided with Microwave Transceiver. A set of detailed instruction/operating manual and oscilloscope simulating software on CD are also provided with the system. Trainer demonstrates the principle of Doppler shift of reflected electromagnetic wave from a moving object. Speed, rotation, event counting, level control and contact less vibration measurement can be demonstrated.

FEATURES

- Demonstrates the principle of doppler shift of reflected electroma gnetic wave from a moving object
- Speed, rotation, level control, contact less vibration measurement
- Reflected wave observation and measurements with software on CD

SPECIFICATIONS

- 16Bit Radar Data Acquisition System
- Displays and Logs Doppler Signals
- Max 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 & 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 & receiver with dual 4 patch antenna
- Operating Frequency: 24GHz (K-Band)
- Single balanced mixer: 50MHz Bandwidth
- EIRP Output power: 15dBm
- Beam Aperture: 80^0 / 34^0

SOFTWARE

- Graphically Configurable Frequency and Peak Detection
- Time Domain Display (scope) with Trigger and Filter Functions
- Real time or Manual Controlled Playback Function
- Real time capture & Display of signal at background along with current acquired signal
- Speed Display : Display in km/hr, m/s, KHz
- Volts/div : 20mV/div to 3V/div
- Display : Peak to peak Level display
- Time Base : 0.5mS/div to 10ms/div (real time)
- Trigger : Manual
- Storage mode : Streaming to Standard save Files
- FFT : Real time with cursor measurement
- FFT Power Spectrum Display from 5Hz to 20 kHz

LIST OF EXPERIMENTS

- Introduction to Doppler Radar
- Study of Doppler shift & how it is being used in various applications
- To find out the time period and frequency of pendulum
- To measure the speed of CPU 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 & its frequency

ACCESSORIES

Connecting Cables
Peizo buzzer
Ball pendulum
CPU Fan
Transformer
Tuning Fork
Software on CD
Experiment E-Manual

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