

Product Name :
Doppler Radar Training System

Product Code :
NLAB-ELECTRONICSAB200007



Description :

Doppler Radar Training System

Technical Specification :

Demonstrates the principle of Doppler shift of reflected electro magnetic wave from a moving object

Speed, rotation, level control, contact less vibration measurement

Observation and measurements with software

Microwave operation

High gain Parabolic antenna provided for narrow beamwidth and clutter reduction.

PC based oscilloscope provided

FFT with cursor measurement

Technical Specifications

Microwave Transceiver:

Type : MMIC transceiver with parabolic dish antenna

Antenna Size : 25cm dia with f/d 0.25

Frequency : Microwave DRO stabilized

Output Level : 0 dBm typical

Sensitivity : -70dBm typical

Output : PC Compatible

Power Supply: 100-240V, 47-63 Hz

Software:

Display : Responsive real-time up to 50 fps refresh

Bandwidth : 10 Hz - 20 kHz, AC coupling

Timebase : 10 us - 5 s

ADC : 8-bit and 16-bit acquisition

Sampling : 11 kHz to 44 kHz rate

FFT : Amplitude and/or phase System

PC required : Windows® 7 or 8 sound card,(Not supplied)

Data export : Raw data export as WAV file

Screenshot : Saved in BMP and EMF formats

Visible trace : can be saved as text file

Function : Copy-paste for screenshots or data files - Printing,

Triggering : Adjustable trigger level, slope, and delay

Pretrigger : View - Single shot triggering mode Measure : On screen - Two cursors set by left and right click - Voltage and time

difference readout - Direct frequency readout

Radar Jammer cum Moving Target Emulator:

Range : 0 to 1000km/hr

List of experiments:

To investigate the fundamental concepts of Doppler radar

To setup radar and tune it for best performance

To measure speed of a fan

To detect the presence of a hidden Time Bomb with the help of a Doppler radar

To find out the Time period and frequency of a moving Pendulum for different lengths

To actuate the opening of a door, Traffic signal, Intrusion alarm etc. with the help of a radar

To measure the units of items being produced in an assembly line production unit

To determine the presence of moving plasma from one electrode to other in a Tube light

To detect the presence of transformer hum and find its frequency

To measure the variable speeds of moving objects using Velocity simulator

Calibration of Doppler radar using tuning fork

To study the reflective, absorptive and transmissive properties of materials using radar and velocity simulator

To find the speed of a moving object with Doppler radar from different angles

To find the speed of a moving object approaching or receding away from radar from different-different angles

To estimate the size of a moving objects using Radar

To find out the presence of a Pedestrian and manage Traffic till he walks away

To find out the presence of an aero plane with the rotation of the turbine of its engine as used by Air Force

To study the use of radar in detecting respiration and heart beating

Study of climatic conditions of atmosphere cyclones, Clouds, tornado using a Doppler radar

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