

Features:

- * Demonstrates the principle of Doppler shift of reflected electro magnetic wave from a moving object
- * Speed, rotation, event counting, level control, contact less vibration measurement
- * Observation and measurements with software
- * Microwave X band operation
- * High gain Parabolic antenna provided for narrow beamwidth and clutter reduction.
- * PC based oscilloscope provided
- * FFT with cursor measurement

Amitec DXR10 Technical Specifications

Microwave Transceiver:

Type	: MMIC transceiver with parabolic dish antenna.
Antenna Size	: 25cm dia with f/d 0.25
Frequency	: 10.3 GHz DRO stabilized
Output Level	: 0 dBm typical
Sensitivity	: -70dBm typical
Output	: PC Compatible
Power Supply	: 100-240V, 47-63 Hz

Software:

Speed Display	: Display in km/hr,miles/hr, m/s, rpm, event, Khz
Frequency set	: gate time selectable from 10 ms to 1000ms and frequency threshold selectable from 1mV to 1000mV

Oscilloscope

Oscilloscope	: Real time with digital storage
Display setting	: Both X and Y position adjustable
Volts/div	: Adjustable
Time Base	: Adjustable
Trigger	: Auto

Fast Fourier transform

FFT	: Real time Simultaneous speed and frequency display with cursor measurement
Scanwidth	: Selectable in steps

Settings

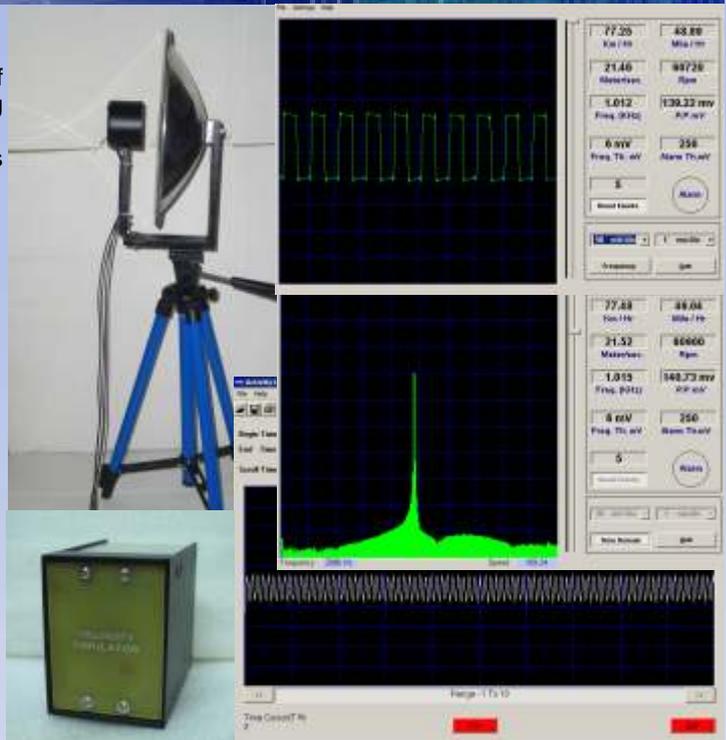
Activity Log	: User defined Start and Stop Event
Display	: Peak to peak voltage display
Annunciation	: audio & visual
Alarm	: Adjustable threshold with
Event counting	: With reset to zero
Speed Factor	: User settable Hz/(Km/hr)
Counter	: In built frequency counter in GUI
Audio in/out	: Volume settings; alarm On/Off Settings
Accessories	: Tuning Fork, Buzzer, Turbine Fan, Pendulum, Reflector Panel

Moving Target Emulator:

Range	: 0 to 1000km/hr
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E-Manual: Installation Video for ease of Learning

Dimensions: 56X41X18 cms. Weight: 6 kg.
Warranty: 3 yrs.



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 measure the distance traveled 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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