

ETD700B

Antenna Trainer

This single training system can be used to teach all types of antenna measurements. It covers UHF, L, S and ISM bands.

It includes a software controlled PLL Synthesized Source and Detector working up to 4 GHz with high dynamic range of power transmission and a graphical LCD display with numeric keypad is used to monitor and navigate the experiments..

Experiments

- ✓ Measure the variation of field strength/inverse square law
- ✓ Prove the reciprocity theorem of antenna
- ✓ Plot Radiation pattern of all Wired antenna
- ✓ Plot Radiation pattern of all Aperture antenna
- ✓ Plot Radiation pattern of all Reflector antenna
- ✓ Plot Radiation pattern of all Array antenna
- ✓ Plot Radiation pattern of all Planar (microstrip) antenna
- ✓ Measure co-polarization, cross polarization
- ✓ Measurement circularly polarized antennas
- ✓ Measurement of Front to back (F/B) ration of Yagi antenna
- ✓ Measurement of 3 dB beamwidth of horn antenna
- ✓ Side lobe level measurement
- ✓ Comparative study of different antenna type and its radiation pattern

Main characteristics

RF Transmitter

- ✓ Source type: PLL Synthesize with Integrated VCO
- ✓ Frequency range: 100 MHz to 4 GHz
- ✓ Transmitted power: -50 dBm to +50 dBm
- ✓ Impedance : 50 Ω SMA connector

RF Detector

- ✓ Detector type: Logarithmic detector
- ✓ Frequency range: 100 MHz to 8 GHz
- ✓ Resolution: 0.1 dB
- ✓ Dynamic range: 65 dB (± 3 dB)
- ✓ Noise level: -90 dBm
- ✓ Impedance : 50 Ω SMA connector
- ✓ Stepper motor controller : 1.8° and 5.4° resolution

Targeted training

▶ Vocational training

▶ Technical college

▶ University

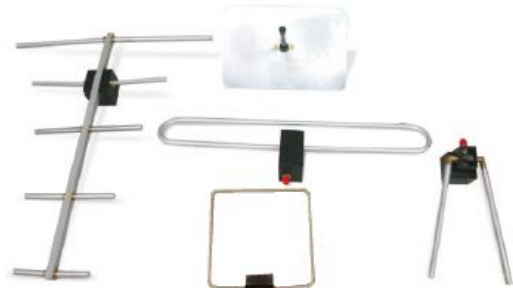


Antennas

➤ Wire antenna

Wire antennas are also known as linear or curved antennas.

These antennas are very simple, cheap and are used in a wide range of UHF and VHF range applications



➤ Planer antenna

Planar antennas include microstrip antennas and printed circuit board antennas.

The antenna "patches" may be square, triangular or circular.

They can be very small, making them ideal for wireless applications.



➤ Aperture antenna

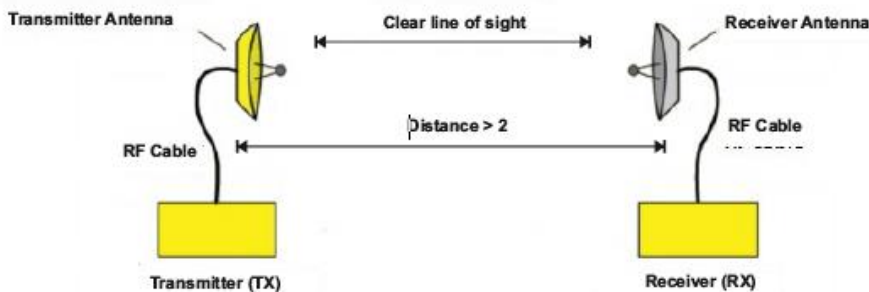
Aperture antennas are the main type of directional antennas used at microwave frequencies and above.

➤ Array antenna

The array antenna is to provide directivity and gain by using two or more antenna elements in such a way that their fields combine and interact to focus the signal in one direction, or a limited number of directions.



Typical Antenna Measurement Setup



Typical parameters of antennas are **gain, radiation pattern, beamwidth, polarization, and impedance.**

Standard configuration

ETD 700 B – Basic package Antenna Trainer including:

Reference	Description	Qty
ETD700000	Transmitter, PLL Synthesized, 100 MHz to 4 GHz, transmitted power -50 to +50 dBm, Receiver, logarithmic detector, 100 MHz to 8 GHz, resolution 0.1 dB, noise level -90 dBm, 0 to 360° rotation	1
	Set of 22 Antennas, transmission and reception antennas, "classic", microstrips, horn ...	1
	Antenna mounting assembly (legs, base plate for transmitter and receiver, accessories)	1
	Supplied with accessories (software, experiments manual, cables ...)	1

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