

PC Based Motorized Antenna Trainer has been designed to provide useful tools for hands on experimentation and teaching of various commonly used antennas in VHF-UHF-Microwave band in the laboratory for students of all levels. It can be used in stand-alone mode as well as be interfaced with a computer via USB interface. In this Receiving Antenna can be rotated from 0 to 360 Degrees automatically with the help of Stepper motor controller unit and accordingly Receiving Antennas Signal strength can be monitored. The system consists of a set of tripod for mounting the transmitting antenna and another stepper motor controlled antenna positioning pod for mounting the receiving antenna, 22Antennas, RF Transmitter, RF Receiver, Stepper Controller Unit, Antenna Plotting Software and relevant accessories/ cables.

**Network Analyser: RF Transmitter & Receiver:**

Frequency : 86 - 860 MHz PLL synthesized  
 Step Size : 0.05, 0.1, 0.25, 0.5, 1, 10, 100 MHz  
 Accuracy : 0.01%  
 Display : 16X2 Backlit LCD  
 Functions : Menu, Enter, Escape, Up & Down  
 Memory Location : 1000 individual frequencies and level can be stored/recalled  
 Output Impedance : 50 Ohms  
 RF Level : 90 dBuV Typical  
 Measurement : RF level in dBuV with 0.1dB resolution  
 Dynamic Range : 60 dB Log  
 Manual/ Auto Mode : Data logging for antenna gain & polar/cartesian plot  
 USB interface : Easy connectivity to PC using polar pattern plotting software  
 Power Supply : 230V @ 50 Hz



**Stepper Motor Controller Unit:**

Rotation : 0-360 Degrees with 1 Deg resolution  
 Angular Steps : 1, 5, 10, 45 degrees  
 Display : 16X2 Backlit LCD  
 Functions : Menu, Enter, Escape, Up & Down  
 Memory : 1000 memories for storing angular positions for quick recall  
 Auto mode : Automatic Rotation with Interface to Receiver  
 Mode : Clockwise/Anti Clockwise Rotation, Fast /Slow Speed

**Experiments:**

- Variation of field strength with distance
- Plot radiation pattern of omni directional antenna
- Plot radiation pattern of directional antenna
- Polarization of vertical and horizontal antenna
- Study resonant and non resonant antenna and estimate VSWR and impedance
- Demonstrate reciprocity theorem of antennas
- Study current distribution along the element of antenna
- Study different antennas polar plots, radiation patterns, gain, beam width, front back ratio
- Comparison of different antennas

**Shipping List Order Code - 10006 : Antennas Other Accessories**

- |                                   |                                 |
|-----------------------------------|---------------------------------|
| 01. Microstrip Rectangular Patch  | a. RF Transmitter Tripod        |
| 02. Microstrip Circular patch     | b. USB Connecting Lead          |
| 03. Microstrip Ring               | c. Experimental Manual          |
| 04. Microstrip Triangular patch   | d. Antenna Plotting Software CD |
| 05. Crossed Dipole RHCP           |                                 |
| 06. Microstrip Slot               |                                 |
| 07. Microstrip Colinear           |                                 |
| 08. Microstrip Semicircular patch |                                 |
| 09. Log Periodic                  |                                 |
| 10. Dipole L/2                    |                                 |
| 11. Axial Mode Helix RHCP         |                                 |
| 12. Endfire Array L/2             |                                 |
| 13. Phase Array L/4               |                                 |
| 14. Broadside Array L/2           |                                 |
| 15. Dipole L/4                    |                                 |
| 16. Yagi Uda (4E)                 |                                 |
| 17. Yagi Uda (3E)                 |                                 |
| 18. Folded Dipole                 |                                 |
| 19. Monopole                      |                                 |
| 20. Sleeve                        |                                 |
| 21. Axial Mode Helix LHCP         |                                 |
| 22. Square Loop                   |                                 |

Note: Specifications are subject to change.

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