



Tesca Antenna Measurement System has been designed to Teach, Measure and Test Various parameters and categories of Antennas

This system consists of a wide band PLL based source and detector module working up to 3GHz, a very sturdy non magnetic Transmitter and Receiver stand, Universal Antenna Mount with plug and fit assembly and radiation pattern plotting software.

This system can be interfaced with PC for remote access of the system and supplied software enables to plot the radiation pattern and perform measurement.

### Specifications

- Single training system to teach all types of antenna measurement
- Covers UHF, L, and ISM Bands
- Software controlled PLL Synthesized Source and Detector working upto 3GHz with high dynamic range of power Transmission
- Customized selection of antenna from the list as per syllabus requirement
- Non conductive and non magnetic Transmitter and Receiver stand
- Radiation pattern plotting software
- Stepper motor controlled receiver stand

### Antenna Measurement System

#### RF Source

- Source types : PLL Synthesized with integrated VCO
- Frequency range : 100MHz to 3GHz

Note: Specifications are subject to change.

- Frequency resolution : 1MHz
- Transmitted power min : -50 dBm
- Transmitted power max: +5dBm
- Impedance : 50W / SMA

#### RF Detector

- Detector type : logarithmic detector
- Frequency range : 1MHz to 8GHz
- Resolution : 0.1dB
- Dynamic range : 65dB ( $\pm 3$ dB)
- Impedance : 50W / SMA
- Representation of RF level : dBm

#### Display

- 128x64 Graphic LCD Display with backlit

#### Keypad

- 15 Key Membrane Keypad for user entry

#### Stepper motor controller

- 1.8° and 5.4° resolutions

### List of Standard 22 Antenna Supplied with the setup Wire Antenna

1. Monopole Plane base ground
2. Dipole (2nos.)
3. Yagi
4. Folded Dipole
5. Vee Dipole
6. Rectangular Loop
7. Helical

### Microstrip Antenna

1. Planar Dipole
2. Planar Monopole
3. CMSA
4. TMSA
5. 2X1 ARRAY
6. Annular ring
7. Chip Antenna
8. RMSA
9. RMSA- Circular Polarized

### Aperture Antenna

1. E- Horn
2. Open ended Waveguide Rectangular

### Array Antenna

1. Broadside Array
2. Collinear Array



**Antenna Selection List as Per User Requirement**

Wire Antenna	Planner Antenna	Aperture Antenna
Monopole - Wire	Monopole - Planner	Dipole - SLOT
Dipole-Wire	Dipole planner	E-Horn
Yagi	RMSA - Shorting pin	H-Horn
Monopole - wire base ground	RMSA -Circular polarize	Open Ended Waveguide Rectangular
Monopole with loading	RMSA- Shorting plate	
3A/2 linear dipole	Yagi-Uda	<b>Reflector Antenna</b>
Folded dipole	RMSA- Stubloaded	DIPOLE - Plane reflector
Cross dipole	RMSA- Dual stub and Slot loaded	Corner reflector
Vee dipole	CMSA	Parabolic
Logperodic	TMSA	
Circular loop	Insert Feed	<b>Array Antenna</b>
Rectangular loop	2X1 ARRAY	Broadside
Helical	Annular ring	End fire
_	RMSA	Collinear



Wired Antenna



Planner Antenna



Aperture Antenna



Reflector Antenna



Array Antenna

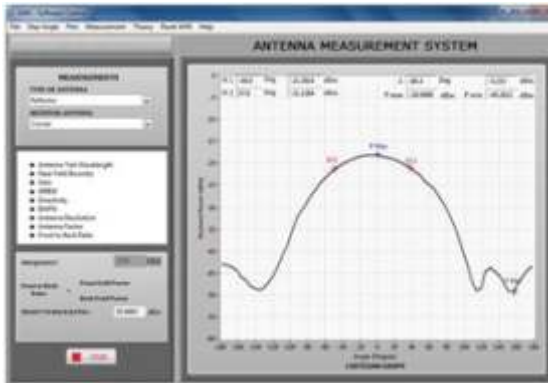


Antenna Mount

Note: Specifications are subject to change.

### Software

Radiation pattern plotting and analysis software suitable for windows environment



### Antenna Positioner

The Transmitter and Receiver Antenna stand is made of special material which is inert to EM frequency and it has engraved height and angle scale on it. It has facility to adjust the height and level.

Universal plug and fix Antenna mounts are provided to hold the antenna assembly in vertical and horizontal orientation for co and cross polarization.

### Accessories

- SMA (M) to SMA (M) 50 RG316 cable : 02nos
- USB cable ( Male A to Male A) : 01no
- 3 Pin 6 Amp Power chord : 01no
- Manual : 01no
- Software on CD : 01no

### Experiments

- Measure the variation of field strength /inverse square law.
- Prove the reciprocity theorem of antenna.
- Plot Radiation pattern of WIRED Antenna Omni directional antenna.
- Plot Radiation pattern of all Aperture antenna.
- Plot Radiation pattern of all Reflector antenna.
- Plot Radiation pattern of all Array antenna.
- Measure co-polarization , cross polarization, gain, f/b ratio.

### WIRELESS ENVIRONMENT EMULATOR - Add on module

Wireless environment emulator operates at ISM band (2.45GHz), allows transmission of Audio

Note: Specifications are subject to change.

and Video signals.

### Specifications

- Two analog inputs for low (Audio) and high (video) frequencies

### Multipath Phase shifter range

- 0° to 360° @ 5.6° step

### Frequency range

- -2.4 to 2.48 Ghz

### RF Output Impedance

- -50Ω

### Antenna

- Identical pair of Horn
- Identical pair of reflector
- Identical pair of RMSA

### Additional Experiments with this add on Module

- Demonstration of VIDEO TRANSMISSION using directional antenna
- Demonstration of AUDIO TRANSMISSION using microstrip antenna on 2.45GHz

### Accessories

- Camera
- Microphone
- BNC to BNC cable
- BNC tee connector
- TV & connecting cables