

## Microwave and Optical Communications Lab

This lab is offered to B.Tech ECE students and concentrates on introducing the advances in communications. This lab is well equipped with all the microwave devices. The Laboratory conducts practical sessions to enable the students to implement their theoretical knowledge and observe the practical results, following outcome based education.

Lab deals with the measurements of the signals at micro frequency range. It involves measurement of frequency, wave length, VSWR, Impedance and scattering parameters of various microwave devices like Circulator, Direction Coupler, and Magic-Tee. Even the latest trend of communication technology i.e fiber optics is also introduced and propagation conditions will be verified by evaluating the losses .The Budget of this lab is around Rs. 13,89,346/-



## Major Equipment:

S.No.	Name of the Equipment	Qty.	Cost in Rs.
1.	Gunn Diode Microwave bench	06	3,91,680:00
2.	Reflex Klystron Microwave Bench	04	4,19,508:00
3.	Micro strip Antenna Trainer	01	82,761:00
4.	Fiber Optic Trainer	10	1,47,748:00

## MICROWAVE AND OPTICAL COMMUNICATIONS LAB – P855

(Minimum 12 experiments has to be conducted)

### List of Experiments ( As per curriculum )

#### Part-1: Microwave communications

S.No.	Name of the Experiment
1.	Reflex Klystron Characteristics.
2.	Gunn Diode Characteristics.
3.	Attenuation Measurements.
4.	Directional Coupler Characteristics.
5.	VSWR Measurements.
6.	Impedance Measurements & Frequency Measurements.
7.	Scattering Parameters of Circulator.
8.	Scattering Parameters of Magic Tee

#### Part-2: Optical communications

S.No.	Name of the Experiment
1.	Characterization of LED.
2.	Characterization of Laser Diode.
3.	Measurement of Data rate for Digital Optical link..
4.	Measurement of Numerical Aperture of Optical fibre.
5.	Measurement of losses for Analog Optical link.

### List of Experiments ( Beyond the Syllabus ):

S.No.	Name of the Experiment
1.	Micro strip Antenna

**Lab Mentor** : Dr. G.L. N. Murthy

**Lab incharge** : Smt.K.RaniRudrama.

**Lab Co-incharge** :Mr.V. Ravi Sekhara

**Reddy Lab Technician** :Mr. A. Lenin Babu