






## RESEARCH EQUIPMENT DETAILS- DEPARTMENT OF ECE


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Xilinx Virtex 5 FPGA</b>
<b>Specifications</b>	<b>Clock speed 500 MHz,17280 logic slices, each with four 4-input LUTs and 4 flip-flops</b>
<b>Function</b>	<b>Implementation of circuits for digital signal processing and image processing applications.</b>
<b>Photo</b>	

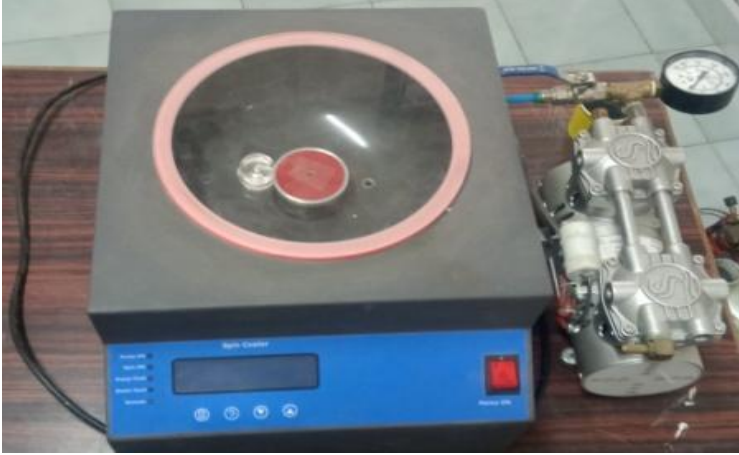
<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Basic Digital Communication System Teaching Bundle - set</b>
<b>Specifications</b>	<b>USRP - Universal Serial Radio Protocol and it is a software defined radio. The hardware can work upto a carrier frequency of 6 GHz with an IF bandwidth of 56 MHz.</b>
<b>Function</b>	<b>To measure Received Signal power and to analyz digital passband signal transmission.</b>
<b>Photo</b>	


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Keysight Vector Network Analyzer</b>
<b>Specifications</b>	<b>N9925A (30KHz – 9GHz) with two ports</b>
<b>Function</b>	<b>Measure Scattering (S) parameters of the fabricated antenna, RF and Microwave components and devices. TDR measurement for fault diagnosis. Cable and antenna analyzer for measuring the efficiency of antenna systems. VNA Time domain analysis.</b>
<b>Photo</b>	

<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>WiCOMM-T Wireless Digital Communication Training System</b>
<b>Specifications</b>	<b>IF bandwidth of 70 MHz and RF at 2.4 GHz.</b>
<b>Function</b>	<b>The digital communication techniques can be implemented using this transceiver module both in IF bandwidth of 70 MHz and RF at 2.4 GHz.</b>
<b>Photo</b>	


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Spectrum analyzer</b>
<b>Specifications</b>	<b>1GHz</b>
<b>Function</b>	<b>Can capture RF signals upto 1 GHz</b>
<b>Photo</b>	


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Electrochemical Workstation</b>
<b>Specifications</b>	<b>PC software: Origa Master (via USB 2.0) and OrigaViewer (via Ethernet)</b> <b>Temperature measurement: -10°C to 105°C. 14°F to 221°F</b> <b>Electrode connections: 2,3 and 4</b> <b>Acquisition time: &gt; 100 microseconds</b> <b>Scanning speed: 200 V/s</b>
<b>Function</b>	<b>It is a comprehensive research platform for electrochemical analysis. The important measurements for a supercapacitor are cyclic voltammetry, galvanostatic charge and discharge measurement and electrochemical impedance spectroscopic measurement.</b>
<b>Photo</b>	


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Spin Coater</b>
<b>Specifications</b>	<b>RPM: 10000 with 10 channel and gas purging with valve along with this unit Diaphragm pump</b>
<b>Function</b>	<b>Spin coater is used to deposit uniform thin film to flat substrate. It is the starting point and benchmark for most academic and industrial processes that require a thin and uniform coating.</b>
<b>Photo</b>	


<b>Department Name</b>	<b>: Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Basler Camera acA4600-7gc</b>
<b>Specifications</b>	<b>Resolution : 4608 px x 3288 px , Pixel Size (H x V) : 1.4 gm x 1.4 gm Sensor Size : 6.5 mm x 4.6 mm, Resolution : 14 MP, Frame Rate : 7 fps Mono/Color : Color, Interface : GigE</b>
<b>Function</b>	<b>It Offer Top-Quality Images and an Outstanding Price/Performance Ratio</b>
<b>Photo</b>	




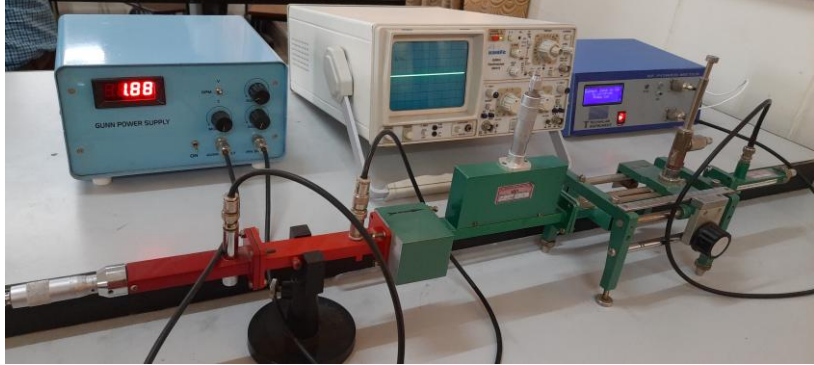
<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Industrial Control 3173 - 1P20</b>
<b>Specifications</b>	<b>Intel Core i7-5650U @ 2.2GHz + Xilinx Kintex-7 XC7K160T, RAM : 8GB, ROM : 32GB 4 USB Ports, 5 Ethernet Ports, Display Port, IP20</b>
<b>Function</b>	<b>Offers high levels of processing power and connectivity for automated image processing, data acquisition, and control applications in extreme environments</b>
<b>Photo</b>	 A photograph showing a person in a light-colored shirt sitting at a desk in a laboratory or office setting. The person is looking at a computer monitor displaying a software interface. On the desk, there is a keyboard, a mouse, and a specialized computer system unit. In the background, there is a window with a calendar and some equipment.


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Texas Instruments DSP Starter kit</b>
<b>Specifications</b>	<b>TMS320C6748</b>
<b>Function</b>	<b>The TMS320C6748 DSP development kit (LCDK) is a scalable platform that breaks down development barriers for applications that require embedded analytics and real-time signal processing, including biometric analytics, communications and audio</b>
<b>Photo</b>	 A photograph of a Texas Instruments DSP development kit (LCDK) circuit board. The board is green and populated with various electronic components, including a large integrated circuit (the DSP), capacitors, resistors, and connectors. It has a blue USB connector on the left side and a black power jack on the right side.


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Digital Video Development Platform Kit</b>
<b>Specifications</b>	<b>TMS320DM6437</b>
<b>Function</b>	<b>DM6437 DVDP provides developers with a comprehensive platform for the entire design process to accelerate the development of digital video across a wide range of applications, including in-flight entertainment systems, IP net cameras, video phones and vision systems.</b>
<b>Photo</b>	

<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Biomedical Engineering Application Toolkit</b>
<b>Specifications</b>	<b>miBEAT</b>
<b>Function</b>	<b>A biomedical engineering application toolkit which is a medical grade data acquisition system used to obtain diagnostic quality signals to learn, implement and modify concepts of Digital Signal Processing and use them for research purposes. It is a complete learning solution that provides an in-depth study of the bio-signals and its processing e.g. ECG using wavelets to extract Heart Rate Variability in Time Domain, Frequency Domain etc.</b>
<b>Photo</b>	


<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>X-band Reflex Klystron set up</b>
<b>Specifications</b>	<b>X-Band Klystron power supply, Klystron Mount, Isolator, Variable attenuator, Frequency Meter, Slotted section, Detector Mount</b>
<b>Function</b>	<ul style="list-style-type: none"> <li>• To determine mode characteristic of reflex klystron</li> <li>• Microwave signal transmission and reception through horn antenna</li> </ul>
<b>Photo</b>	

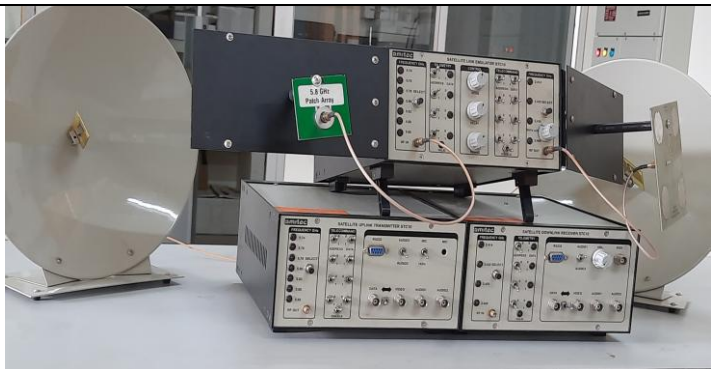
<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>X-band Gunn setup</b>
<b>Specifications</b>	<b>X-Band Gunn power supply, Gunn Oscillator, Pin Modulator, Isolator, Variable attenuator, Frequency Meter, Slotted section, Detector Mount, Power meter and Sensor</b>
<b>Function</b>	<b>To determine VI characteristics and power measurement using X-band Gunn diode microwave setup.</b>
<b>Photo</b>	

<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Mode characteristics of optical fibre kit</b>
<b>Specifications</b>	<b>LD driver, LD Unit, Power Meter, ST single mode fibre, OFT power supply</b>
<b>Function</b>	<b>To find the various modes of optical light signal using single mode and multimode optical fibre.</b>
<b>Photo</b>	

<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Optical trainer kit</b>
<b>Specifications</b>	<b>OFT power supply, Fibre optic trainer kit, Numerical aperture stand, 1m 650nm plastic fibre, patch chords</b>
<b>Function</b>	<b>Optical trainer kit is used for data communication between transmitter and receiver using optical fibre.</b>
<b>Photo</b>	



<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Light Runner Basic</b>
<b>Specifications</b>	<b>Various distance spools 1km,2km,3km</b>
<b>Function</b>	<ul style="list-style-type: none"> <li>• <b>To determine dispersion, attenuation in optical fiber.</b></li> <li>• <b>To analyze time division multiplexing of digital signals, rise time and power budgeting of fibre optic link.</b></li> </ul>
<b>Photo</b>	

<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Satellite trainer kit</b>
<b>Specifications</b>	<b>Satellite uplink transmitter, satellite link emulator, satellite downlink receiver, 5.8GHz patch array, 2.45 GHz circularly polarized patch antenna</b>
<b>Function</b>	<b>To understand the basic concepts of satellite communication, to setup communication link between uplink transmitter and downlink receiver using satellite.</b>
<b>Photo</b>	

<b>Department Name</b>	<b>Electronics and Communication Engineering</b>
<b>Equipment Name</b>	<b>Radar trainer kit</b>
<b>Specifications</b>	<b>Parabolic reflector, RADAR, radar target emulator RTE10, Radar jammer RJX10, rotating blades, peudulum, speed regulator,tuning fork, microwave absorber</b>
<b>Function</b>	<b>To measure speed of the fan, signal strength during jamming of the signal using electromagnetic signal in radar trainer kit.</b>
<b>Photo</b>	