VLSI & Embedded Lab

Microcontroller Trainer - 8051 / PIC / AVR

Features :
- Based on Atmel AT89S52 | PIC16F877A
- On-board USB Programmer | ATmega16
- Open ports with box connector and pin headers
- On-board 16x2 LCD | 4x4 Matrix Keypad
- Breadboard | ISP programming
- On-board RTC | DAC | ADC | 7-Segment
- On-board Stepper motor | Relay driver
- On-board RS-232 communication

Advance 8051 / PIC trainer kit

Features :
- 40-pin ZIF Socket | 44-pin PLCC Socket
- LED's | Slide Switches | 2x16 Character LCD
- On board 128x64 Graphical LCD
- 4x4 Matrix Keypad | UART (RS232) | Buzzer
- Stepper Motor Interface | SPDT Relay | RTC
- Digital Temperature Sensor | 7-Segment Display
- RF433.92 MHz Transmitter/Receiver
- ISP Programmer | RS-485 Interface | PS/2

AVR evaluation board

Features :
- RS232 Interface to PC for programming & control.
- Sockets for 8-pin, 20-pin, 28-pin & 40-pin AVR devices.
- Parallel and Serial High-Voltage Prog. of AVR devices.
- Push-buttons | LEDs for general use.
- All I/O ports easily accessible through pin header connectors.
- Expansion connectors for plug-in modules/prototyping area.

Universal Embedded Development Board

Features :
- On-board 16x2 LCD | 4x4 Matrix Keypad
- 7-Segment | USB prog. | Data logger | LEDs
- On-board ADC | DAC | RTC | EEPROM
- On-board Stepper motor | Relay | Buzzer
- Breadboard connection port
- On-board ISP prog. | RS-232 communication interface | Human Speech control experiment
- Easy Software for downloading hex files into microcontroller | Water level control
- Unique Software based Traffic light control

Arm7 trainer kit

Features :
- LEDs | Slide Switches | 2x16 Character LCD
- On Board 128x64 Graphical LCD | Relay | RTC
- 4x4 Matrix Keypad | 7-Segment
- Analog Input | Stepper Motor Interface
- USB | UART (RS232) | PS/2 | JTAG Header
- ISP Programmer | Temperature Sensor
- Buzzer | Digital / Analog Output
- 40-Pin Expansion Connector | Serial EEPROM
- Interrupts Study | Reset Button

Advance Arm7 trainer kit

Features :
- Serial Ethernet | CAN 2.0 | 4x4 Matrix Keypad
- On board 128x64 Graphical LCD | 2x16 Character LCD
- LEDs | Slide switches | Digital Temperature sensor
- 7-Segment Display Stepper Motor Interface | Relay
- Analog Input (Potentiometer) | RTC | Reset Button
- Buzzer (Alarm), Digital / Analog Output
- UART (RS232) | Serial EEPROM | PS/2 | RS-485
- Interrupts Study | 10-Pin Port Expansion Connector
- JTAG Header (Program/Debug) | ISP Programmer

Arm9 trainer kit

Features :
- On board RAM | Flash | EEPROM
- Serial Ports | Audio output/input
- RTC | Buzzer | Camera | USB | SD Card Socket
- Touch Panel | TFT display | Debug: 10 pin JTAG
- User Inputs: 6x push buttons and 1x A/D pot
- User Outputs: 4x LEDs | Ethernet Connector
- Expansion: 40 pin System Bus, 34 pin GPIO, 10 pin Buttons

Arm11 trainer kit

Features :
- On board RAM | Flash | EEPROM
- Serial Ports | Audio output/input
- RTC | Buzzer | Camera | TV Output | USB | SPI
- Touch Panel | TFT display | IR
- Analog Input and Output | Ethernet Connector
- User Inputs: 6x push buttons and 1x A/D pot
- User Outputs: 4x LEDs | SD Card Socket

Spartan-6 FPGA development board

Features :
- Xilinx Spartan-6 FPGA, BGA package
- On-board USB ports for programming & data transfer
- USB-UART and USB-HID port
- HDMI video input & output ports
- Codec with line-in, line-out, mic & headphone
- 10/100/1000 Ethernet
- 48 I/O's routed to expansion connectors
- GPIO includes 8 LEDs, 6 buttons, & 8 slide switches

Advance FPGA Training Kit

Features :
- Xilinx Spartan 3-E FPGA, 250K gate | Relay
- USB full-speed port for FPGA configuration and data transfers | LEDs
- On-board 16x2 LCD display | 4x4 Matrix Keypad
- On-board ADC | DAC | RTC | EEPROM | 7-Segment
- On-board Stepper motor | Buzzer | DC Motor Driver
- On-board DTMF decoder | 3.5mm Stereo output socket

CPLD Trainer

Features :
- Multiple IO banks can be operated at different voltage for level translation
- Compare Xilinx XC9500 and Cool Runner-II
- Unlike most FPGA, CPLDs are static and store their configuration permanently
- Several devices in easy-to-solder TQFP-44 packages

Advance Microprocessor Trainer Kit

Features :
- VLSI based | Breadboard | ZIF Socket
- LCD Display | Keypad | 7-segment | LEDs
- On board various applications & interface modules
- All Components inside the box
- Easy to operate | On board Schematic
- USB | RS-232 interface
- Low cost | Maintenance Free

Control & Instrumentation Lab

PLC training console

Features :
- Case/Structure: Extruded Aluminum | Relay
- PLC: Siemens | ABB | Delta | Fatek | Select
- Display module: 5.7" Inches Colored
- Touch screen | Servo Motor | Contactor
- Numerous Analog and Digital input / output channels | Stepper Motor | DC Motor
- Application Peripherals: VFD | LED display
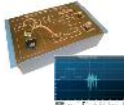- On demand numerous application modules

Industrial PLC Trainer

Features :
- PLC: Siemens | ABB | Delta | Fatek
- On board NO/NC switches | IR switches
- Sample of Annunciator given on board
- Most user friendly, most powerful instruction sets | Power Supplies | Select
- PC Based Programming | Ready experiments
- Ready to use Application boards

Control System Lab

Features :
- Bidirectional speed control | Characteristics LDR
- Motor control / Light intensity control using PWM method | V-F/F-V converter
- Motor speed & input characteristics
- Tachogenerator using F/V converter
- Position control of DC Servo Motor
- DC Motor Control - Open / Close Loop
- Temperature Control - Open / Close Loop
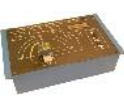- Light intensity Control - Open / Close Loop

Vibration Trainer

Features :
- Microcontroller based.
- Speed / Vibration adjustment
- PC Based software for vibration plotting
- USB interface
- Vibration measurement through accelerometer

Angular Velocity Trainer

Features :
- Microcontroller based
- Rotational motion through precise servo motor
- Gyroscope as measurement sensor
- Max Range: 60 deg/sec
- 16x2 Alpha Numeric Display

PID Based Speed Control of DC Motor

Features :
- Microcontroller based PID Controller for control circuit. | In built Motor and motor driver
- High protection against noise
- 20x4 LCD display to indicate the set speed and actual speed in (0-1500).

Load Cell trainer

Features :
- Microcontroller Based | 16x2 LCD Display
- Load Cell of 3kg with 200mV output
- Two no. of pot meter provided to vary the gain & zero adjustment.
- Good Quality, reliable terminal/sockets are provided at appropriate places on panel for connections/observation of waveforms.

Other Products :
- TIME RESPONSE OF SECOND ORDER SYSTEM. ◆ CHARACTERISTICS OF SYNCHRO: SYNCHRO TRANSMITTER & RECEIVER ◆ EFFECT OF FEEDBACK ON DC SERVO MOTOR ◆ TRANSFER FUNCTION OF DC MOTOR ◆ EFFECT OF P, PI & PID CONTROLLER ON A SECOND ORDER SYSTEM ◆ LAG & LEAD COMPENSATION - MAGNITUDE AND PHASE PLOT ◆ TEMPERATURE CONTROLLER USING PID WITH PC INTERFACE ◆ CHARACTERISTICS OF MAGNETIC AMPLIFIER ◆ CHARACTERISTICS OF AC SERVO MOTOR ◆ PNEUMATIC SYSTEM TRAINER ◆ HYDRAULIC SYSTEM TRAINER ◆ LVDT TRAINER ◆ DATA ACQUISITION TRAINER ◆ TEMPERATURE MEASUREMENT TRAINER ◆ LEVEL MEASUREMENT TRAINER.

Analog Communication Lab

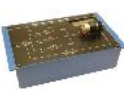**Range of Products :**
- AMPLITUDE / FREQUENCY MODULATION AND DEMODULATION
- BALANCED MODULATION TRAINER
- PHASE LOCKED LOOP USING 565
- SINGLE SIDE BAND SYSTEM TRAINER
- DIODE DETECTOR CHARACTERISTICS
- PRE-EMPHASIS & DE-EMPHASIS TRAINER
- MIXER CHARACTERISTICS / DIGITAL PHASE DETECTOR TRAINER
- AGC CHARACTERISTICS / FREQUENCY SYNTHESISER TRAINER
- PHASE MODULATION & DEMODULATION

Digital Communication Lab

Range of Products :
- PULSE AMPLITUDE MODULATION AND DEMODULATION
- PULSE WIDTH MODULATION AND DEMODULATION
- PULSE WIDTH/POSITION MODULATION AND DEMODULATION
- FSK / PSK / ASK MODULATION AND DEMODULATION
- DPSK MODULATION AND DEMODULATION
- PULSE CODE MODULATION AND DEMODULATION
- DIFFERENTIAL PULSE CODE MODULATION AND DEMODULATION
- TIME DIVISION MULTIPLEXING AND DEMULTIPLEXING
- ANALOG SIGNAL SAMPLING AND RECONSTRUCTION
- DELTA MODULATION AND DEMODULATION.
- SUPER HETERODYNE RADIO RECEIVER TRAINER

Advance Communication Lab

3G Mobile Trainer

Features :
- To study the Input/ Output signals of different signals. | SIM cards | charging of handset
- To study Ringer section. | send & receive emails
- To study front panel of 3G mobile phone trainer
- To study block diagram of 3G mobile phone trainer
- To observe test point voltages | different faults
- To make Voice Calling | SMS | video calling
- To surf Internet at 3G speed | waveforms

GSM/GPRS Trainer

Feature :
- Study of GSM technology
- Study of GSM MODEM and it's components
- Introduction to AT commands
- Data / Voice communication using AT commands
- Sending text message
- Interfacing of LCD / LED with SMS response
- Establishing GPRS Connection

RFID Trainer

Features :
- Students can learn RFID system design skill more efficiently
- PC based programming trainer.
- Air protocol | transmission protocols analysis
- Air protocol can be programmed by using C, C++

Bluetooth Trainer

Features :
- Graphical LCD display
- Bluetooth enabled devices detection
- On-board Data Generator
- Test points to observe signals
- User friendly software
- Equipped with UART & USB port

LCD / LED / HDTV Trainer

Features :
- Case/Structure: Extruded Aluminum
- Preventive maintenance of a LCD / LED / HDTV
- Understanding control panel settings
- Study of power supply pin outs | IR remote
- Hardware Monitoring | AV signal with faults
- Analyze analog signal on speakers
- Analyze VGA | LVDS signals with faults
- Study and analyze main board of LCD / LED / HDTV Trainer | keypad interface

Wi Fi TV Trainer Kit

Features :
- Built-in WiFi Internet streaming device
- Audio | Video | Photo streaming
- Delivers audio and video files in smartphone to TV or A/V receiver
- LAN Ethernet | Mini USB input
- HDMI | Optical output

Computer System Trainer

Features :
- Case/Structure: Extruded Aluminum
- Preventive maintenance of a Computer System
- Understanding control panel settings
- Analyze Mother Board signals with faults
- Study of power supply pin outs | Keyboard
- Analyze analog signal on Speakers
- Mouse signal with faults | Hardware Monitoring

VOIP Trainer Kit

Features :
- Onboard Colored LCD Display
- Onboard Ethernet Connector
- Onboard Keyboard
- On board Speaker

Electrical Trainer

Range of Products :
◆ Three Phase/DC Machine Lab/Induction Motor Trainer ◆ DC Series Motor ◆ Single Phase Induction Motor Lab / Energy Meter Trainer/Transformer Lab ◆ Study of Triac and A.C.Phase Control ◆ Single phase Half Controlled Symmetrical & Asymmetrical Bridge Converter with Power Supply ◆ AC Regulators using Triac, anti parallel Thyristor & Triac & Diac with Power Supply ◆ Lamp Dimmer Using Diac & Triac/Illumination Control using SCR with Power Supply ◆ Fan Regulator Using Diac & Triac/SCR Controlled Emergency Light with Power Supply ◆ Electronic Timer Using IC-555 with Power Supply ◆ Three Phase Half/Full Wave Rectifier with Power Supply ◆ Three Phase Half/Fully Controlled Thyristorized Bridge Converter with Triggering Circuit with Power Supply ◆ R.M.S. & Average Values of Rectified Voltage ◆ Determination of fusing characteristics & fusing factor of given fuse ◆ Single Phasae Half Wave & Bridge Controlled Rectifier ◆ Transformer/3 Phase Induction Motor Trainer ◆ Power Electronics Trainer Panel Based ◆ UPS/Inverter/SERVO stabilizer/Applied Power Electronics trainer.

Basic Electronics Lab

Basic Electronics Trainer

Feature :
- Measure AC / DC Current | 7-Segment. | LED voltage using DMM. | Capacitor | Logic Gates
- Learn properties of Diode | LDR | Resistor | Relay
- Thermistor | Liver | SPDT switches | Push
- Verification of OHM's law.
- To study operation of a REED
- Measure the output volt/Amp of solar cells in various combinations.
- To demonstrate working principle of WIND MILL and DC voltage generators.

Analog Digital Lab

Features :
- On board Breadboards / Logic Inputs.
- Outputs | Logic Probe | Variable Resistance
- Power Supply: 5 V, IA; -5 V, 500 mA | +1 V to + 30V 500 mA (variable)
- Function Generator: 1 Hz to 1 MHz
- Amplitude : 1V-5V (TTL) | Continuity Tester
- Seven Segment Display | Push Switches

Range of Products :
- CHARACTERISTICS OF PN JUNCTION DIODE / ZENER DIODE WITH METERS / ZENER & ZENER AS VOLTAGE REGULATOR.
- TRANSISTOR CHARACTERISTICS (CE, CC & CB) WITH METERS / (CE) WITH METERS / (CB) WITH METERS
- CHARACTERISTICS OF LDR / FET / UJT / CMOS / IGBT WITH METERS / UJT & RELAXATION OSCILLATOR.
- CHARACTERISTICS OF MOSFET / SCR / SOLAR CELL / LED & LASER / PHOTO DIODE WITH METERS.
- CHARACTERISTICS OF PHOTO TRANSISTOR / DIAC / TRIAC WITH METERS / THERMISTOR WITH GALVANOMETER.
- ENERGY GAP OF SEMICONDUCTOR / ALL DEVICE CHARACTERISTICS WITH METERS.

Network Theorem & Bridge Lab

Range of Products :
- SCHERING BRIDGE FOR MEASUREMENT OF CAPACITANCE
- KELVIN DOUBLE / MAXWELL INDUCTANCE / ANDERSON BRIDGE
- WEIN BRIDGE FOR MEASUREMENT OF CAPACITANCE / FREQUENCY.
- WHEATSTONE / DESAUTY'S / OWEN'S / HAY'S BRIDGE
- LCR SERIES & PARALLEL RESONANCE WITH AC ANALOG METER
- TIME CONSTANT OF CR CIRCUIT WITH DIGITAL METER
- TRANSIENT RESPONSE OF LCR WITH SQUARE WAVE GENERATOR
- OHM'S / KIRCHOFF'S LAW TRAINER WITH METERS
- THEVENIN'S & NORTON'S / MAXIMUM POWER TRANSFER THEOREM TRAINER
- SUPER POSITION / RECIPROCITY THEOREM/ OP AMP APPLICATION TRAINER
- SERIES VOLTAGE & SHUNT VOLTAGE REGULATOR TRAINER
- HALF & FULL WAVE RECTIFIERS WITH FILTERS.

Digital Electronics Lab

Range of Products :
- BASIC LOGIC GATES TRAINER / IC VERSION
- VARIFICATION OF DEMORGAN'S THEOREM
- HALF & FULL ADDER/SUBTRACTOR / RS, T, D & JK FLIP FLOP TRAINER
- MASTER SLAVE JK FLIP FLOP USING NAND GATES
- 4 BIT DECADE / UP-DOWN /MODULO-N-COUNTER TRAINER
- 8 BIT A TO D / D TO A CONVERTER TRAINER
- 8 / 4 LINE TO 1 LINE MULTIPLEXER AND DEMULTIPLEXER TRAINER
- 4 x 4 BIT BINARY MULTIPLIER / DIGITAL / LINEAR IC TRAINER
- 4 BIT BINARY TO GREY & GREY TO BINARY CONVERTER
- BCD TO SEVEN SEGMENT / BINARY TO DECIMAL DECODER TRAINER
- UNIVERSAL LOGIC GATES / SHIFT RESISTOR / OP AMP TRAINER
- UNIVERSAL / COUNTERS FLIP FLOP TRAINER USING GATES
- SHIFT RESISTORS (SIPO, SISO, PIPO, PISO) TRAINER

Microwave Lab

Features :
- Various bench set-up as per standard models as well as individual components as per requirement.
- Different waveguide components
- Digital VSWR & Frequency Meter with LCD display
- Our instruments are comparatively more compact and rough & tough for use.
- In-Built Audio Communication
- In-Built PC-Interface for Gunn Power Supply and VSWR Meter.

Mechanical Engineering Lab

Laboratories :
- Internal Combustion Engine Lab
- Refrigeration & Air Conditioning Lab
- Heat & Mass Transfer Lab
- Fluid Mechanics Lab
- Hydraulic Machine Lab
- Measurement & Control System Lab
- Theory of Machine Lab
- Dynamics of Machine Lab
- Thermodynamics Lab
- Automobile Lab
- Vibration Lab
- Mechanical Models

Robotics Lab

Features :
- High Precision Low Cost Robots
- FMS/CIM Supported Robots*
- Special Designed Gripper
- Many Sensor options
- Wireless Control Supported*
- Advance Programming
- Controlling Software
- Simple Programming Codes
- PLC/CNC/Matlab/Labview interface*
- USB Connectivity

Industrial & Laboratory work Benches

- Customized to suit your requirement
- Ergonomically designed
- Certificate of calibration (on request)
- Flexibility of configuration

Configuration Available :
- Basic Electronics / Mechanical / Electrical Work Station
- Advance Instrumentation / Communication Work Station
- Advance communication / Power Electronic Work Station

Electronics | Mechanical | Robotics

Product Catalogue

- Robotics
- VLSI & Embedded
- PLC & Automation
- Tele-communication
- Electrical Trainer
- Basic Electronics