

# PC BASED BASIC ELECTRICITY & ELECTRONICS TRAINER

# ED-1420

- 15 experimental modules for basic electricity/electronics and analog & digital circuits
- Capable of real time measurement on PC by linking it to CBIS-1400 model.
- By connecting PC to the Docking station, contact control is implemented on MMI(HMI) based software
- Report on experimental results & electronic manual on PC

PART1  
ELECTRICALS/  
ELECTRONICS/  
EMBEDDED



## > CONFIGURATION

- ED-1420 : PC Based Basic Electricity & Electronics Trainer
  - » Number of Modules : 15ea
  - » Module Dimension : 290(W) x 210(H) x 26(D)mm
  - » Module Storage Box(2ea) : 596(W) x 318(H) x 255 (D)mm
- Required Systems
  - » DS-1410 : Docking Station(Optional)
    - › Please refer to DS-1410 specifications below
  - » CBIS-1400 : Computer Based Instrument System(Optional)
    - › Please refer to page 22 on CBIS-1400 specifications
  - » Computer(Optional)

## > SPECIFICATIONS

### DS-1410 Docking Station



- Display : Graphical LCD
- Power Supply
  - » Fixed Power Supply(DC 5V, ±15V, 500mA)
  - » Variable AC Voltage(0~50V)
- Variable Resistor : 3 types(1kΩ, 10kΩ, 100kΩ)
- Function Generator : 2CH(10Hz~100kHz), SINE, SQUARE
- System Board : MPU, RELAY, POWER, MUX, Graphical LCD
- Interface : 25pin Connector x 2, RS-232, BNC, B-Jack
- Power Source : AC220V, 50/60Hz
- Dimension : 420(W) x 140(H) x 375(D)mm
- Weight : 6.4kg

### CBIS-1400 Computer-based Instrument System



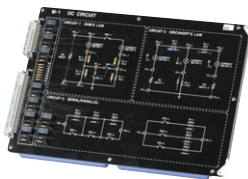
- Digital Storage Oscilloscope
- Variable Power Supply
- Digital Multimeter
- Frequency Counter
- Function Generator
- Multi-function Card
- Software

## Operating Software



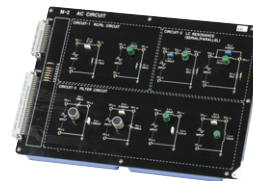
- **Remote Control Function**
  - » Accessing student's experiment programs from the professor's experiment program
- **Electronic Manual**
  - » Real-time, online report submission and print function for experiment results
  - » Report grading function
  - » Online attendance verification and print function
  - » Enrollment of 5 students per system
- **Experiment Process**
  - » Experiment circuits and experiment methods are presented in detail
  - » Designed to protect the user and circuit and prevent error
- **Convenience Function**
  - » Teaching is enhanced using the measurement instrument on the same screen
  - » Practical experiment is possible using PC-based measurement instrument

## Basic Electricity/ Electronics Circuit Experiment



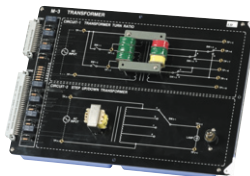
### M-1 DC Circuit

- P1. Ohm's Law
- P2. Kirchhoff's Law
- P3. Serial/Parallel



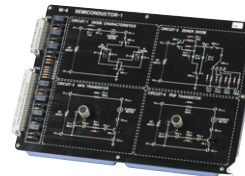
### M-2 AC Circuit

- P1. RL/RC Circuit
- P2. LC Resonance
- P3. Filter Circuit



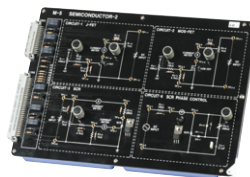
### M-3 Transformer

- P1. Transformer Turn Ratio
- P2. Step Up/Down Transformer



### M-4 Semiconductor - 1

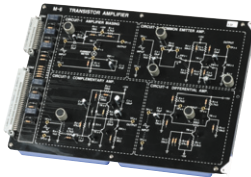
- P1. Diode Characteristics
- P2. Zener Diode
- P3. NPN Transistor
- P4. PNP Transistor



### M-5 Semiconductor - 2

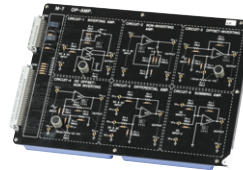
- P1. J-FET Characteristics
- P2. MOS-FET Characteristics
- P3. SCR Characteristics
- P4. SCR Phase Control

## Analog Circuit Experiment



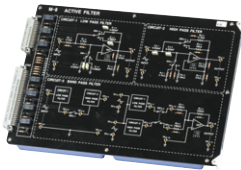
### M-6 Transistor Amplifier - 1

- P1. Amplifier Biasing
- P2. Common Emitter Amp
- P3. Complementary Amp
- P4. Differential Amp



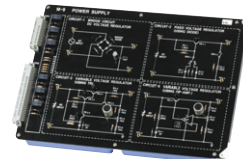
### M-7 OP AMP - 1

- P1. Inverting Amp
- P2. Non Inverting Amp
- P3. DC Offset
- P4. Differential Amp
- P5. Summing Amp



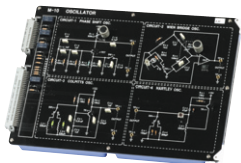
### M-8 Active Filter - 1

- P1. Low Pass Filter
- P2. High Pass Filter
- P3. Band Pass Filter



### M-9 Power Supply

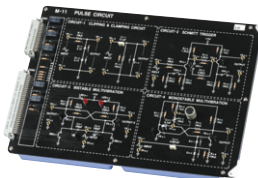
- P1. Bridge Circuit
- P2. DC Voltage Regulator
- P3. Variable Voltage Regulator



### M-10 Oscillator

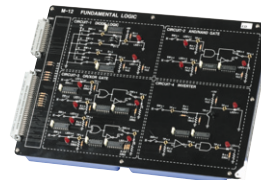
- P1. Phase Shift Oscillator
- P2. Wien Bridge Oscillator
- P3. Colpitts Oscillator
- P4. Hartley Oscillator

## Basic Electricity/ Electronics Circuit Experiment



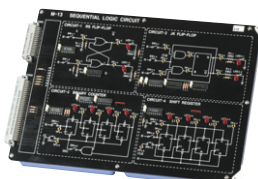
### M-11 Pulse Circuit

- P1. Clipping Circuit
- P2. Schmitt Trigger
- P3. Bistable M.V
- P4. Monostable M.V



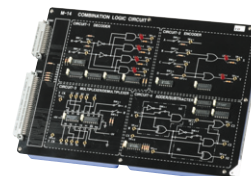
### M-12 Fundamental Logic

- P1. Diode Logic
- P2. AND/NAND Gate
- P3. OR/XOR Gate
- P4. Inverter



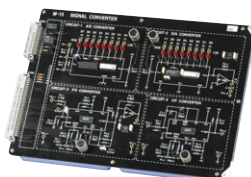
### M-13 Sequential Logic

- P1. RS Flip-Flop
- P2. JK Flip-Flop
- P3. Binary Counter
- P4. Shift Register



### M-14 Combination Logic

- P1. Decoder
- P2. Encoder
- P3. Multiplexer/Demultiplexer
- P4. Adder/Subtractor



### M-15 Signal Converter

- P1. A/D Converter
- P2. D/A Converter
- P3. F/V Converter
- P4. V/F Converter