

# Switching Mode Power Supply (SMPS) with Digital Meters

## Model : SB-121DM

**SINCOM SB-121DM Switching Mode Power Supply (SMPS) Trainer** with Digital meters is a remarkable self contained simply designed trainer useful to study the operation, line and load regulation characteristics of a Switching Mode Power supply (SMPS) in a simple experimental way. The trainer is equipped with on board Digital voltmeter & Digital Ammeter.

### Features

- ❖ User friendly Design
- ❖ +12V SMPS Regulated DC Output voltage
- ❖ Wide AC Input Voltage range
- ❖ PWM based HF Power Switching circuit
- ❖ SMPS based on SMT Transformer, Full Wave bridge Rectifier, Power Transistor Control Switching, High Frequency rectifier and Capacitor Filter circuit
- ❖ Variable Resistive Load
- ❖ Low Output voltage Ripples
- ❖ High operating Temperature range
- ❖ Facility to apply variable single phase AC Input voltage from Dimmerstat
- ❖ Very Easy for Operation
- ❖ Multi color Circuit Diagram is screen printed on the front of the white color acrylic board
- ❖ Enclosed in an attractive, light weight, High Quality, Poly Coated Imported Pine Wooden cabinet
- ❖ On Board 3<sup>1/2</sup> Digit Digital Voltmeter and Ammeter
- ❖ Interconnections by 2mm high quality banana sockets and pins
- ❖ Maximum Test points to explore all the corners of experiment
- ❖ 1 Year Warranty

### Technical Specifications

▪ AC Mains Power Supply	: 230V $\pm$ 10%, 50Hz
▪ AC Input Voltage Range Vin	: Single Phase AC 50V-280V, 50Hz
▪ Regulated DC Outputs Vo	: +12V
▪ Output Load Current	: 1A Max
▪ Transformer type	: Switching Mode Transformer (SMT)
▪ Rectifier and Filter	: Full Wave bridge Rectifier with Capacitor filter
▪ Switching	: Power Transistor PWM based
▪ Load Resistor	: Variable Resistive Load of 10K $\Omega$
▪ Regulation type	: Line and Load Regulation
▪ Total Digital Meters	: 03 (2 Voltmeter and 1 Ammeter)
▪ Digital Voltmeter	: 0-20V (2 No.)
▪ Digital Ammeter	: 0-200mA (1No.)
▪ Meter Display	: Red Color, 3 <sup>1/2</sup> Digit , LED Display
▪ Weight	: 3.0 kg (approx)



An ISO 9001:2015 Co.

- Dimensions (mm) : L 220 x W 270 x H 110
- Interconnections : 2mm Banana sockets
- Operating Temperature : 0-50°C, 80% RH

### Learning Scope

- To Study the operation of Switching Mode Power Supply (SMPS) Circuit.
- To Observe & Note the regulated DC O/P.
- To observe & Note the time period/frequency of Switching.
- To Study Change in O/P Voltage w.r.t. change in I/P Voltage with Load RL constant (Line Regulation)
- To Study Change in O/P Voltage w.r.t change in Load RL with I/P voltage constant (Load Regulation)

**Other Instruments Required :** Digital Multimeter, Dimmerstat

**Accessories Included :** Set of Patch Cord and Details Instruction Manual