



General Description

The Electronic Circuits Trainer is a comprehensive training system designed for in-depth instruction and experimentation in analog and digital electronics. It features **nine modular circuit sections**, a **Function Generator**, and a **DC Power Supply** integrated into a single platform, making it suitable for educational and laboratory environments.

Modular System Components

Module 1: Diode Circuit Experiments

- Half-wave and Full-wave Rectifiers
- Bridge Full-wave Rectifier
- Capacitive Filter Circuits
- Clamping Circuit
- Half-wave Voltage Quadrupler
- Limiting Circuit

Module 2: Bipolar Junction Transistor (BJT) Circuits

- Transistor Switch
- DC Bias Circuit
- Darlington Amplifier
- Fixed Bias Common-Emitter Amplifier
- Self-Bias Common-Emitter Amplifier
- Common-Collector Amplifier
- Common-Base Amplifier
- Capacitively Coupled Multistage Amplifier

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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- Directly Coupled Multistage Amplifier

Module 3: Field Effect Transistor (FET) Circuits

- MOSFET DC Bias Circuit
- MOSFET Common-Source / Common-Drain / Common-Gate Amplifiers
- Capacitively & Directly Coupled MOSFET Multistage Amplifiers
- CMOS Common-Source / Cascode / Capacitively Coupled Multistage Amplifiers

Module 4: Operational Amplifier Circuits

- Inverting / Non-Inverting Amplifiers
- Voltage Follower
- Miller Integrator
- Differentiator
- Comparator
- Weighted Summer
- Subtractor
- Differential Amplifier
- Instrumentation Amplifier
- Basic Multiplier

Module 5: Practical Waveform Generator Circuits

- RC Phase Shift Oscillator
- Wien Bridge Oscillator
- Hartley & Colpitts Oscillators
- Astable & Monostable Multivibrators
- Triangular Waveform Oscillator
- Voltage Controlled Oscillator
- Crystal Oscillator

Module 6: Digital & Timing Circuits

- 8-bit BCD Adder / Subtractor
- 555 Tone Generator
- PWM Light Intensity Control Circuit
- BCD Digit Display Circuit

Module 7: Junction Field Effect Transistor (JFET) Circuits

- JFET DC Bias Circuit

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- JFET Common-Source / Common-Drain / Common-Gate Amplifiers
- Capacitively Coupled JFET Amplifiers
- JFET and MOSFET Directly Coupled Multistage Amplifiers

Module 8: Power Amplifier Circuits

- Class A / B / AB / C Power Amplifiers
- Single-ended Push-Pull Power Amplifier

Module 9: Voltage Regulator Circuits

- Fixed Voltage Regulators: 7805, 7809
- Variable Regulators: LM317 (Voltage & Current)
- Zener Diode Regulator
- BJT Regulator

Function Generator & DC Power Supply Specifications

Waveforms: Sine, Triangle, Square, TTL Pulse

Output Amplitude: >10 Vpp

Output Impedance: 50 Ω \pm 10%

Duty Cycle Control: 30% to 60%

Display: 6-digit LED

Frequency Range:

- 10 Hz – 100 kHz (4 ranges)
- 100 Hz – 1 MHz (4 ranges)

DC Power Supply Outputs:

- Fixed Outputs: \pm 5V, \pm 12V
- Variable Outputs: 0V to \pm 15V

Input Power: 220–230V AC, 50Hz, Single Phase

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