



Digital Logic Circuits Trainer with Eight Module and Function Generator & DC Power Supply-A

General Description

This Digital Logic Circuits Trainer is a comprehensive experimental platform designed for instruction and practical training in fundamental and advanced digital electronics. The system comprises **eight dedicated logic training modules**, each focusing on a different category of digital logic principles. Additionally, it includes an integrated **function generator** and **DC power supply**, making it ideal for use in technical institutions, engineering colleges, and vocational training centers.

Module Overview & Experiment Details

Module 1: Basic Logic Gates Circuits

- **Logic Gate Structures:** DL, RTL, TTL, CMOS
- **Input:** 2-bit DIP switch
- **Experiments:**
 - AND, NAND, OR, NOR, XOR, NOT Gates
 - TTL & CMOS voltage/current measurement: VIH, VIL, VOH, VOL, IOH, IOL
 - TTL-CMOS interfacing (5V→12V)
 - Transmission delay measurement: TTL (20.8 ns), CMOS (99.1 ns)

Module 2: Combinational Logic Circuits

- **Key Functions:**
 - 4-bit Comparator

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



Export Sales: +91-9829132777
India Sales: +91-9588842361



IT-2013, Ramchandrapura Industrial Area,
Sitapura Extension, Jaipur-302022, India.



info@tesca.in
www.tescaglobal.com

- Tristate Gate and Schmitt Trigger Gate
- Half/Full Adder and Subtractor
- **Input:** DIP switches
- **Output:** LED displays

Module 3: Extended Combinational Logic Circuits

- **Experiments:**
 - 4-bit ALU (16 operations)
 - 8-to-3 Encoder / 3-to-8 Decoder
 - Multiplexer / Demultiplexer
 - Digitally Controlled Analog Multiplexer/Demultiplexer
 - Analog Input/Output: 0–5V

Module 4: Clock Generator Circuits

- **Oscillator Types:**
 - Logic Gate Oscillator: 3.58 MHz
 - Schmitt Trigger Oscillator: 3.58 MHz
 - Voltage-Controlled Oscillator: 26.8 kHz–35.5 kHz
 - BJT Astable Multivibrator: 160 kHz
 - Op-Amp Oscillator: 2.56 kHz
 - 555 Timer: Astable (4.75 Hz), Monostable (user-controlled)

Module 5: Sequential Logic Circuits

- **Experiments:**
 - RS, JK, D Flip-Flops
 - Asynchronous/Synchronous Counters (up to 5-bit output)
 - Presettable Counter (4-bit preset, up/down count)

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



Export Sales: +91-9829132777
India Sales: +91-9588842361



IT-2013, Ramchandrapura Industrial Area,
Sitapura Extension, Jaipur-302022, India.



info@tesca.in
www.tescaglobal.com

Digital Logic Circuits Trainer with Eight Module and Function Generator & DC Power Supply-B**Module 6: Memory Circuits**

- **Experiments:**
 - ROM using Diodes (2-bit output)
 - RAM using D Flip-Flops (4-bit I/O)
 - Programmable ROM
 - 64-bit RAM

Module 7: Converter Circuits

- **Analog-Digital Conversions:**
 - OPA ADC (0–5V input, 4-bit output)
 - ADC0804 (8-bit, 0–5V range)
- **Digital-Analog Conversions:**
 - 4-bit R-2R DAC
 - DAC0800 (Unipolar: 0–5V, step 0.019V; Bipolar: –5V to +5V, step 0.038V)

Module 8: Logic Application Circuits

- **Application Experiments:**
 - Electronic Voting System (ICs: 7408, 7404, 7432, 7486)
 - Electronic Wheel-Amusement Circuit (ICs: 555, CD4017B)
 - Competition Answering Circuit (IC: CD4011B)
 - Traffic Light Controller (ICs: 555, CD4017B)

Function Generator & DC Power Supply Specifications

- **Waveforms:** Sine, Triangle, Square, TTL Pulse
- **Amplitude:** >10 Vpp
- **Output Impedance:** 50Ω ±10%
- **Duty Cycle Control:** 30% to 60%
- **Display:** 6-digit LED
- **Frequency Ranges:**
 - 10 Hz to 100 kHz (4 Ranges)

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



Export Sales: +91-9829132777
India Sales: +91-9588842361



IT-2013, Ramchandrapura Industrial Area,
Sitapura Extension, Jaipur-302022, India.



info@tesca.in
www.tescaglobal.com

- 100 Hz to 1 MHz (4 Ranges)
- **Tuning:** Coarse and Fine adjustment
- **DC Output:**
 - Fixed: $\pm 5V$, $\pm 12V$
 - Variable: 0V to $\pm 15V$
- **Power Input:** 220V AC $\pm 10\%$, 50 Hz

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



Export Sales: +91-9829132777
India Sales: +91-9588842361



IT-2013, Ramchandrapura Industrial Area,
Sitapura Extension, Jaipur-302022, India.



info@tesca.in
www.tescaglobal.com