

**Product Name :**

Digital Lab Trainer for Vocational Training and Didactic Labs

**Product Code :**

Digital Lab Trainer



**Description :**

Digital Lab Trainer Equipment for Education, Engineering and Vocational Training - The DIGITAL LAB is intended for elementary as well as advance training of digital electronics. The digital lab covers regular digital circuits by solder-less interconnections on breadboard and as well as compatible with all optional modules through use of 2mm brass terminals and patch cords. Various clock generators, logic level input/output indicators and DC regulated power supplies etc. are in-built. The unit housed in attractive enclosure is supplied with mains cord, patch cords, Instruction manual and Component Set.

Experimental Coverage:

Logic gates operation

To verify De-morgan's theorem with boolean logic equations

Binary to Gray code conversion

Gray code to Binary conversion

Binary to Excess-3 code conversion

Binary Adder and Subtractor

Binary Multiplier

EX-OR gate implementation

Application of EX-OR gate

Johnson Counter

To verify the dual nature of Logic Gates

Study of Flip-Flops RS, JK, D&T

Multiplexer and Demultiplexer

4 Bit Binary up and down counter

Study of 8 to 3 Line Encoder

Study of 3 to 8 Line Decoder

Study of Shift Register (SIPO)

CMOS-TTL Interfacing

Study of Crystal oscillator

Study of pulse stretcher circuit

Features:

Bread Board : Unique solder-less large size, spring loaded breadboard consisting of two Terminal Strips with

1280 tie points and 4 Distribution Strips with 100 tie points each, totaling to 1680 tie points. (Size : 112mm x 170mm approx)

Regulated DC Power Supply : +5V at 1 Amp, -5V at 500 mA, 3 to +15V at 500mA, and -3 to -15V at 500 mA.

Pulse Generator : 1 Hz to 1 MHz in 6 Steps. Variable in between steps

- Amplitude : 3-15V (CMOS), 5V (TTL)

- Duty Cycle : 50% TTL / CMOS Output

Pulsar Switches : 2 independent buffered bounce free manual pulser (useful for freezing the action of each stage of the counter after every clock pulse)

Data Switches : 12 Nos. independent buffered logic level inputs to select High / Low TTL levels, each with a bi-color LED to indicate high / low status and termination.

Logic Indicators : 12 Nos. independent buffered logic level indicators for High / Low status indication with bi-color LED for digital outputs

Seven Segment Display : 2 Nos. BCD to Seven Segment Decoder / Driver IC with terminals

Logic Probe : Logic level indicator for TTL / CMOS

CMOS/TTL : Provided

Power : 230 V  $\pm$  10%, 50 Hz

Components Provided : ICs-4001/1, 4049/1,4069/1, 7400/1, 7402/1, 7404/1, 7406/1, 7408/2, 7410/2, 7411/3, 7420/2,7432/3, 7474/2,7476/2,7486/1.Resistors-330E/1,1K/2, 1K8/1,,15K/1, 47K/1.1M/2, Capacitors- 0.01mF/1, 0.1mF/1, 0.22 mF/1,Crystal-32.768MHz/1.

Accessories : Mains cord, Operating and Experimental manual, Red & Black patch cords (2mm with Pin) 10 each, Red & Black patch cord (Pin to Pin) 10 each. Wire 24/25 SWG. 1Meter each 5 Colour Instruction manual : Strongly supported by detailed operating instructions.

#### OPTIONAL MODULES:

Apart from above given experimental coverage of 20 experiments on breadboard, customers can purchase these optional modules. These are ready to use modules with wired components & circuit schematic drawn on top compatible to use with Digital Lab.

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Study of pulse stretcher circuit

4 Bit Ring Counter

38522 Modulo 12 Counter By Direct Clearing

Decade counter

Shift Register SISO and PIPO

Decimal to BCD Converter

Astable Multivibrator using Digital IC

Bistable Multivibrator using Digital IC

Monostable Multivibrator using Digital IC  
Octal to binary Encoder  
4 Bit Magnitude Comparator  
Interface of TTL-IC to CMOS-IC & CMOS IC to TTL-IC

## Naugra Export

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