

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, 0.22mF/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. 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 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 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

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