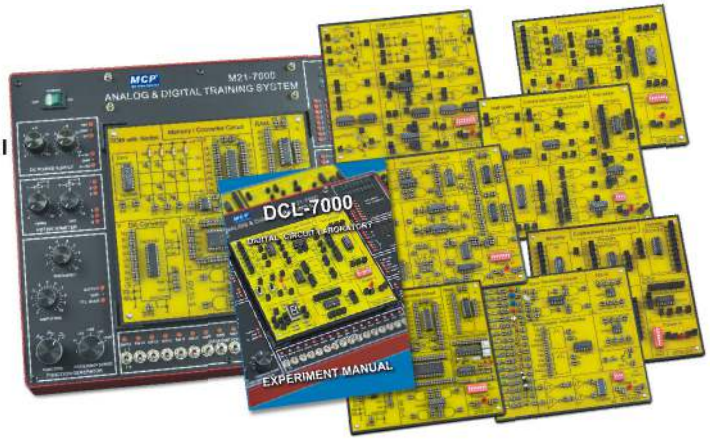
DCL-7000 CE



Feature

.Seven circuit boards form 19 experiments.
.Step-by-step exercises and application with experiment manual
.Suitable for combinational logic, sequential logic, and microprocessor circuit experimentation and design.
.Ideal tool for learning the basics of digital logic circuits.
.Integrated training system, with complete<INSTRUCTION>.
.Combination with M21-7000 digital-analog training system as main unit.
.Expandability and flexibility of experiments greatly increased by large breadboard.
.Board can be changed easily.

The DCL-7000 digital circuit laboratory is a comprehensive and self-contained system suitable for tuition and experimentation with a range of digital electronics circuits. All necessary equipments for digital logic experiments such as power supply, signal generator, switches and displays are built-in on the main unit. The 7 circuit boards cover a wide variety of essential topics in the field of digital logic. It is a time and cost saving device for both students experiment and researchers interested in developing and testing circuit prototypes.

Specification

I.MAIN UNIT M21-7000

1. SOLDERLESS BREADBOARD:
Interconnected with 2820 tie points nickel plated contact, fitted all DIP sizes and all components with lead and solid wire AWG #22-30 (0.3-0.8mm). It can be changed and replaced for different purpose and can be connected with demonstration panel. Therefore, it is very convenient for both teachers and students.

M21-7000

2. DC POWER SUPPLY:
A. Fixed DC output: +5V, 1A
B. Fixed DC output: -5V, 1 A
C. Variable DC output: 0V to +15V, 1 A.
D. Variable DC output: 0V to －15V, 1 A.

3. POTENTIOMETERS:
A. Variable resistor VR1 = 1kΩ
B. Variable resistor VR2 = 100kΩ

4. FUNCTION GENERATOR:
(A)Frequency range: 1Hz—10Hz
10Hz—100Hz
100Hz—1kHz
1kHz—10kHz
10kHz—100kHz
(B)Amplitude
Sine wave output: 0—10 Vpp variable
Triangle wave output: 0—10 Vpp variable
Square wave output: 0—10 Vpp variable
TTL mode output: 4 Vpp

5. SIXTEEN BITS DATA SWITCHES:
16pcs toggle switches and corresponding output point. When switch is set at "down" position, the output is LO level; contrarily, it is to be HI level while setting at "up" position.

6. TWO PULSE SWITCH:
(WITH 2 SET OF OUTPUT: ($\overline{A}$, A, $\overline{B}$, B))
2pcs pushbuttons contain switches debouncer for eliminating the bounce caused by switch from "open" to "close" or from "close" to "open" position.

7. SPEAKER:
2-1/2 inch diameter, 8 ohm/0.5W to be used for load.

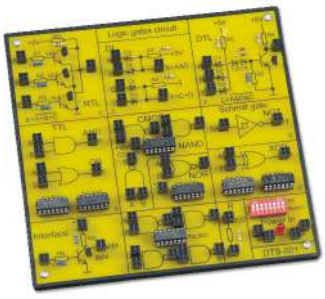
8. FOUR CHANNEL ADAPTOR:
Both of the two banana sockets' and two BNC jacks' point tips are changeable. It is suitable for M21-7000 to be connected with peripherals.

9. TWO DIGITS OF 7 SEGMENT LED DISPLAY:
(A) Output display
Numerical designs and resultant displays

10. SIXTEEN BITS LED DISPLAY:
16 red LED's separate input terminals. The LED will be lighted up when input is at "HI level" ,and it will be turned off when it is at no input or at "LO level" .

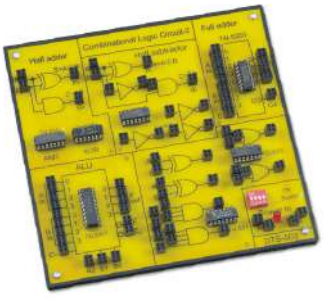
II.DTS CIRCUIT BOARD

Seven circuit boards form 19 experiments detailed in <INSTRUCTION OF DIGITAL CIRCUIT EXPERIMENTATIONS> Each circuit board contains the experiment circuits which are clearly illustrated by a circuit diagram on its top panel. The circuit boards are as follow :

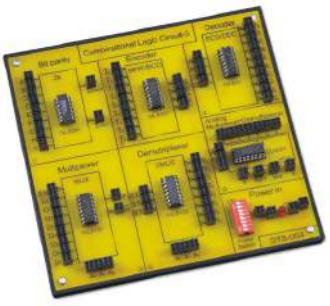


DTS-001 logic gates circuit

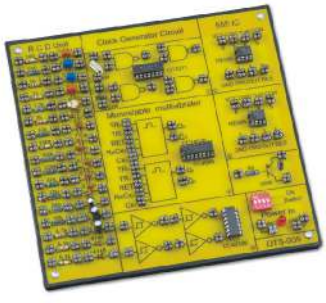
DTS-002
combinational logic circuit-1



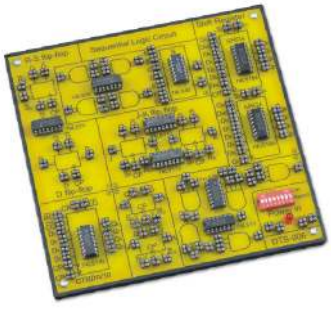
DTS-003
combinational logic circuit-2



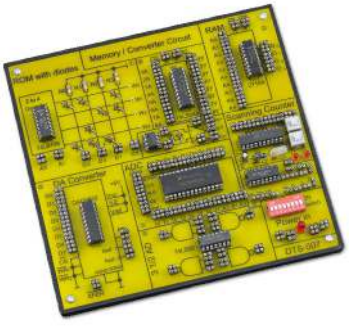
DTS-004
combinational logic circuit-3



DTS-005 clock generator circuit



DTS-006 sequential logic circuit



DTS-007 memory / converter circuit

III.THE FULL LIST OF EXPERIMENTS PERFORMED USING THE ABOVE CIRCUIT BOARDS

Experiment 1	Transistor Switching Characteristics
Experiment 2	Logic Function and Parameter test of TTL Integrated Logic Gate
Experiment 3	Logic Functions and Parameter Test of CMOS Logic Gate
Experiment 4	Verify Function of Logic Gate
Experiment 5	Integration Logic Circuit Connection and Drive
Experiment 6	Applications of TTL Gates with Open-collector Outputs and Tri-state Outputs
Experiment 7	Digital Comparator Circuit
Experiment 8	Arithmetic Operation Circuit
Experiment 9	Parity Generator
Experiment 10	Encoder and Decoder
Experiment 11	Data Selector and Distributor
Experiment 12	Use Gate to Produce Pulse Signal (Multivibrator)
Experiment 13	Monostable Trigger and Schmitt Trigger (Pulse Delay and Waveform Shaping Circuit)
Experiment 14	555 Timer and Its Application
Experiment 15	Trigger (flip-flop) and Its Application
Experiment 16	Shift Register IC and Its Application
Experiment 17	IC Counter and Its Application
Experiment 18	Random Access Memory 2114A and Its Application
Experiment 19	D/A and A/D converter

IV.GENERAL

1. Accessories
(1) Power cord
(2) Pin leads: 10cm 20pcs, 20cm 20pcs
(3) User manual + instruction of analog circuit experimentations

2. INPUT VOLTAGE: 110~127VAC±10% 60Hz, 220~240VAC±10% 50Hz Switchable

3. DIMENSIONS:
(1) Main unit (W×H×D):258×95×334mm
(2) Circuit board:165×170mm

4. WEIGHT:
(1) Main unit:4.5kg
(2) Circuit board:0.4kg×7