

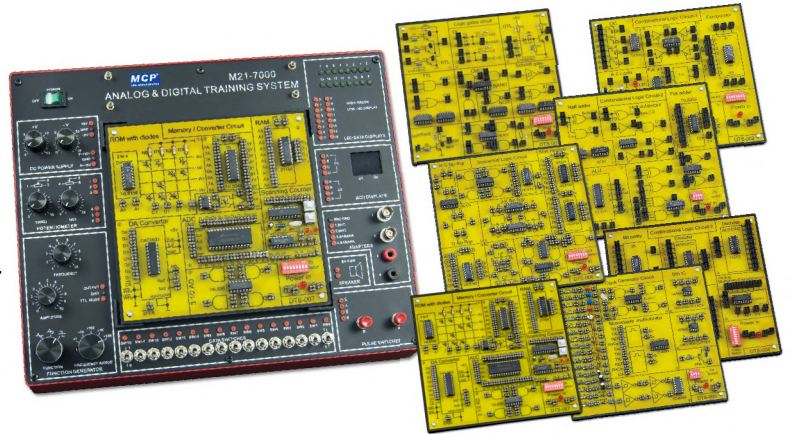
DCL-7000



NEW

Feature

- .Seven circuit boards form 19 experiments.
- .Suitable for combinational logic, sequential logic, and microprocessor circuit experimentation and design.
- .Ideal tool for learning the basics of digital logic circuits.
- .Step-by-step exercises and application.
- .Integrated training system, with complete<INSTRUCTION>.
- .Combination with M21-7000 digital-analog training system as main unit.
- .Step-by-step exercises and application .
- .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.

2. DC POWER SUPPLY:

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

3. POTENTIOMETERS:

- A. Variable resistor VR1 = 1k Ω
- B. Variable resistor VR2 = 100k Ω

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: \bar{A} , A, \bar{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.



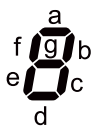
M21-7000

9. TWO DIGITS OF 7 SEGMENT LED DISPLAY:

- (A) Output display
Numerical designs and resultant displays



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

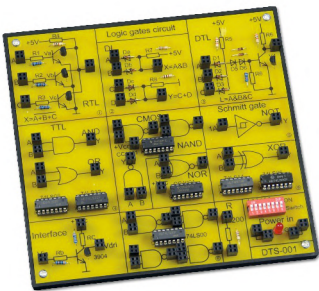


10. SIXTEEN BITS LED DISPLAY:

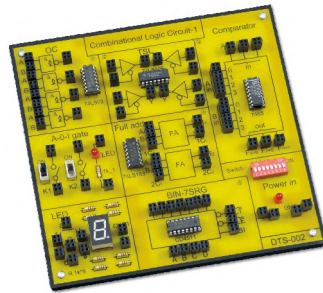
16 red LED's separate input terminals. The LED will be lighted up when input is at “HI level” ,and it will be turned off when it is at no input or at “LO level” .

II.DTS CIRCUIT BOARD

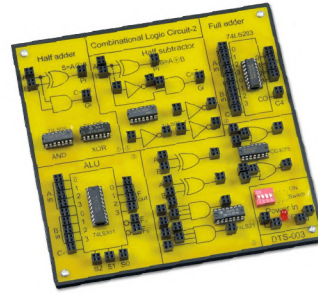
Seven circuit boards form 19 experiments detailed in <INSTRUCTION OF DIGITAL CIRCUIT EXPERIMENTATIONS> Each circuit board contains the experiment circuits which are clearly illustrated by a circuit diagram on its top panel. The circuit boards are as follow :



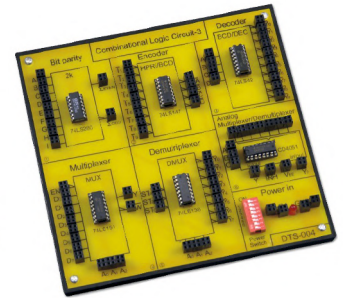
DTS-001 logic gates circuit



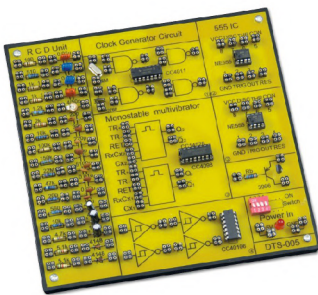
DTS-002 combinational logic circuit-1



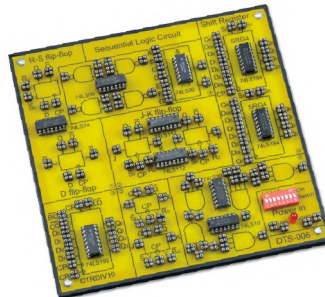
DTS-003 combinational logic circuit-2



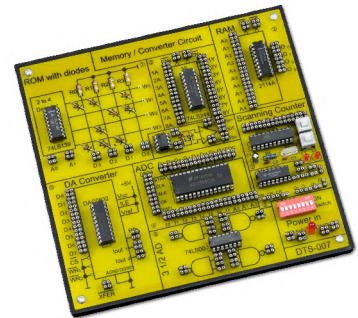
DTS-004 combinational logic circuit-3



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

- Accessories
 - Power cord
 - Pin leads: 10cm 20pcs, 20cm 20pcs
 - User manual+ instruction of analog circuit experimentations
- INPUT VOLTAGE: 110~127VAC \pm 10% 60Hz, 220~240VAC \pm 10% 50Hz Switchable
- DIMENSIONS:
 - Main unit (W \times H \times D):258 \times 95 \times 334mm
 - Circuit board:165 \times 170mm
- WEIGHT:
 - Main unit:4.5kg
 - Circuit board:0.4kg \times 7