

ANALOG CIRCUIT LABORATORY

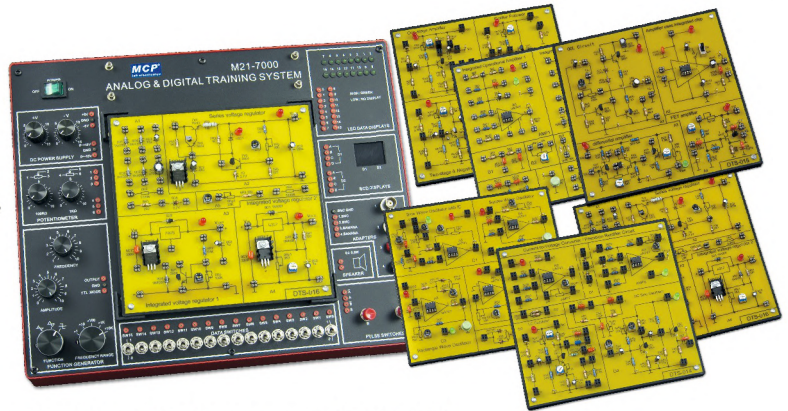
ACL-7000



NEW

Feature

- .Six circuit boards form 22 experiments.
- .Ideal tool for learning the basics of analog 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.
- .Boards can be changed easily.



The ACL-7000 analog circuit laboratory is a comprehensive and self-contained system suitable for tuition and experimentation with a range of analog electronics circuits. All necessary equipments such as power supply, signal generator, switches and displays are built-in on the main unit. The 6 circuit boards cover a wide variety of essential topics in the field of analog electronics. 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 = 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: (\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".

POWER SUPPLY

TEST INSTRUMENT

EDU. INSTRUMENT

METER

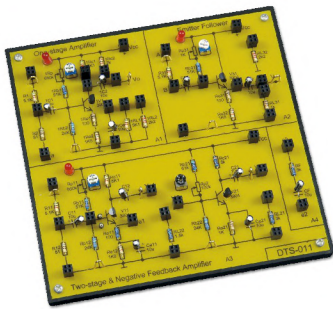
MACHINE

ACCESSORY

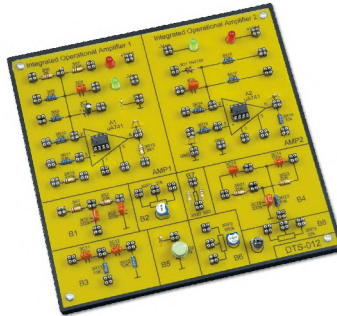
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II.DTS CIRCUIT BOARD

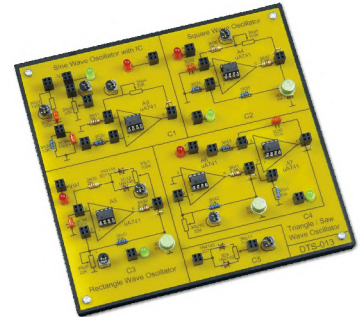
Six circuit boards form 22 experiments detailed in <INSTRUCTION OF DIGITAL CIRCUIT EXPERIMENTATIONS> Each circuit board contains the experiment circuits which are clearly illustrated by a circuit diagram on its top panel. The circuit boards are as follow :



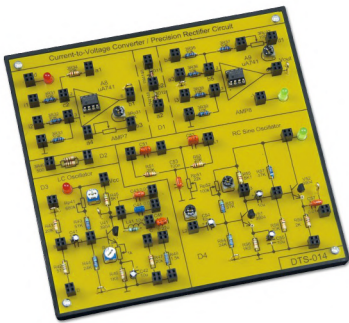
DTS-011 basic amplifier circuit



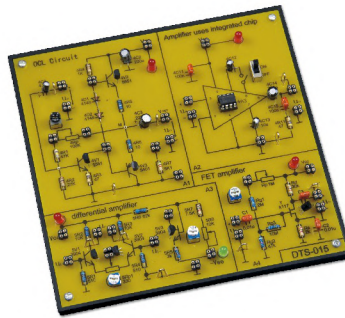
DTS-012 operational amplifier circuit



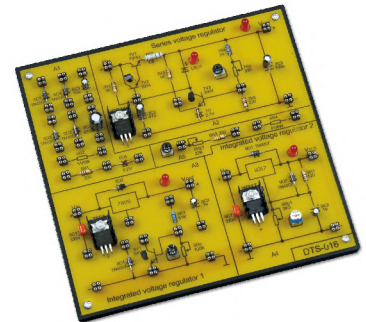
DTS-013 oscillator circuit



DTS-014 various circuit 1



DTS-015 various circuit 2



DTS-016 regulator circuit

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

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|---------------|--|
| Experiment 1 | Monopole Amplifying Circuit |
| Experiment 2 | Two Stage Amplifier Circuit |
| Experiment 3 | Negative Feedback Amplifier Circuit |
| Experiment 4 | Emitter Follower |
| Experiment 5 | Differential Amplifier |
| Experiment 6 | Scaling Summing Amplifier |
| Experiment 7 | Integrator and Differentiator Amplifier |
| Experiment 8 | Waveform Generator Circuit |
| Experiment 9 | Active Filter |
| Experiment 10 | Voltage Comparator |
| Experiment 11 | Wien Bridge Oscillator |
| Experiment 12 | Integrated Power Amplifier |
| Experiment 13 | Rectifier Filter and Parallel Regulation Circuit |
| Experiment 14 | Series Regulation Circuit |
| Experiment 15 | Integrated Voltage Regulator |
| Experiment 16 | RC Oscillator |
| Experiment 17 | LC Oscillator and Frequency-selective Amplifier |
| Experiment 18 | Current/voltage Conversion Circuit |
| Experiment 19 | Voltage/frequency Conversion Circuit |
| Experiment 20 | Complementary Symmetry Power Amplifier |
| Experiment 21 | Waveform Conversion Circuit |
| Experiment 22 | FET Amplifier |

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 6