

**ANALOG OVERLAY LEARNING SYSTEM**  
OMEGA TYPE AL-1046

**OMEGA TYPE AL-1046** Electronics could be taught straight from a book if students were able to visualise the function of an experimental circuit. Unfortunately this is rarely the case and until now it has been necessary to laboriously assemble every experiment to be examined.

The assembly of each circuit has no didactic value whatsoever other than to provide the student with a circuit on which to perform the experiment. Now, this can be dramatically improved with the AL-1046 Analog Overlay Overlay Learning System.

**FEATURES**

The AL-1046 Analog Overlay Overlay Learning System. allows the student to assemble even the most involved circuit in less than five minutes, thus leaving enough time for fruitful experimentation. The AL-1046 Analog Overlay Overlay Learning System features wiring templates which fit over a breadboard and guide students to an immediate and rational experimental layout whilst the experiment book relates to the traditional circuit diagram.

The AL-1046 Analog Overlay Overlay Learning System is ideal for use with omega products of AL-1042 Analog Lab and DAL-1043 Digital Analog Lab system's

No add-ons are required. All the necessary equipment including a standardised set of components is included. The thoroughly researched courseware was designed by educators with over 20 years practical teaching experience, with the aim to enforce theory and not confuse students. The professionally produced manuals are referenced to the most widely used theory books, and the schematic diagrams, component listings, and experiment procedure are clearly listed. Each experiment was tested for typical student reaction prior to final editing.

No prerequisites are demanded other than basic arithmetic. The emphasis is on an instrumental understanding rather than a mathematical one. The continuous hands-on exposure ensures the transfer of marketable technological skills in the minimum amount of time.

**OBJECTS:**

- 01 Semiconductor Silicon Diodes in DC Circuits
- 02 Light Emitting Diodes in DC Circuits
- 03 Silicon Diodes in AC Circuits: Half Wave Rectification
- 04 Silicon Diodes in AC Circuits : Full Wave Rectification
- 05 The Use of a Diode Bridge in DC Circuits
- 06 The Use of a Diode Bridge in AC Circuits
- 07 Filtering and Regulation of a Pulsating DC Voltage
- 08 An Experimental Power Supply using a "PI" Filter
- 09 Voltage Multiplying using diodes & Capacitors : Voltage Doubling
- 10 DC Current Gain of a Common Emitter Transistor Configuration
- 11 The Common Emitter as an AC Amplifying Stage
- 12 Cascaded Stages of Amplification
- 13 Class A Singles-Ended Loudspeaker Driven Audio Amplifier
- 14 The Class A Push-Pull Audio Amplifier
- 15 Complementary-Symmetrical Push-Pull Output Circuits
- 16 The Field Effect Transistor : The Common-Source Amplifier
- 17 Oscillator Circuits : The Zero-Phase Shift Oscillator



- 18 Oscillator Circuits : The Phase-Shift Oscillator
- 19 Oscillator Circuits : The Armstrong Oscillator
- 20 Oscillator Circuits : The Hartley Oscillator
- 21 Oscillator Circuits : The Colpitts Oscillator
- 22 Digital Integrated Circuits : The AND Gates
- 23 Digital Integrated Circuits : The OR Gate
- 24 Digital Integrated Circuits : The AND-OR Function
- 25 Digital Integrated Circuits : The Inverting Gate
- 26 Digital Integrated Circuits : The NAND Gate
- 27 Digital Integrated Circuits : The NOR Gate
- 28 Digital Integrated Circuits : The Full Adder

**PACKAGE CONTENTS**

- 01 Wiring templates (28 pieces)
- 02 Experiment manual 1set
- 03 Component pack 1 set with templates
- 04 Breadboard 1680 Tie points.
- 05 Dimensions 170 x 127 x 50mm
- 06 Weight 1.4Kg.

**COMPONENTS PROVIDED (ACCESSORIES)**

**RESISTORS 1/2W :**

- 4E7/1, 10E/1, 100E/1 120E/1, 270E/5, 470E/1, 680E/1, 1K/2, 1K5/2, 1K8/1, 2K7/2, 3K3/1, 3K9/1, 4K7/3, 5K6/1, 8K2/1, 10K/3, 22K/1, 27K1, 33K/1, 39K/1, 47K/1, 68K/1 270K/1, 1M/1,

- POLYESTER CAPACITORS :** 0.01uF/3, 0.015uF/2, 0.022uF/2, 0.047uF/2, .0.1uF/1, 0.22uF/2

- ELECTROLYTIC CAPACITORS:** 22uF 25V/2, 100uF 25V/3

- DIODES AND LEDs :** IN4007/4, 5mm LED (Red)/5

- TRANSISTOR :** CL-100/1, CK-100/1, BC-546/2, 2N-2222/1, BFW10/1

- INTEGRATED CIRCUITS :** 7400/1, 7404/1, 7411/1, 7432/1

- POTENTIOMETERS :** 1K/1, 4K7/2, 10K/1

- SWITCHES :** SPDT/3.

- TRANSFORMERS :** OUT-PUT/1, IN-PUT/1,

- SPEAKER :** 8E, 0.25W/1

- MULTIMETER :** 03

**LIST OF ACCESSORIES:**

- PATCH BOARD:-** :2mm TO 1mm Length  
25cm - 8Pcs

- CONNECTING WIRE: :** 1mm TO 1mm Length  
15cm - 32Pcs

**INSTRUCTION MANUAL:**

Strongly supported by detailed operating instructions.

We are committed to the continuous development of our products, and therefore reserve the right to amend specifications without prior notice.

**OMEGA ELECTRONICS**

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