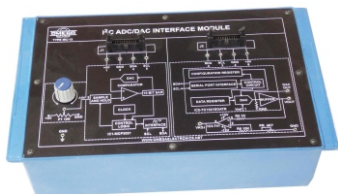


**APPLICATION MODULES FOR  
MICROCONTROLLER WITH PROGRAMMER  
AT89S51/52, AVR ATMEGA8515  
OMEGA TYPE MCM-13 & MCM-16**

**I<sup>2</sup>C ADC/DAC INTERFACE MODULE  
OMEGA TYPE MCM-13**



**Omega Type MCM-13** I<sup>2</sup>C protocol based ADC/DAC module enables students and practicing engineers to gain invaluable practical experience of applications of microcontroller. The objective is to have a clear understanding of how two wire serial interface device is used for interfacing with microcontroller to communicate with external applications. Analog inputs are converted into digital through microcontrollers and vice versa. ADC/DAC module, has input and output terminals for connection of external real world applications.

**OBJECTS:**

- 01 To study interfacing of I<sup>2</sup>C ADC
- 02 To study interfacing of I<sup>2</sup>C DAC

**TECHNICAL SPECIFICATIONS**

**01 Resolution :**

- ADC : 10-bit
- DAC : 10-bit

- 02 ADC Input & Reference : 0 - 5 V DC (Variable)

- 03 Power supply : From Microcontroller development board with programmer trainer OE-5001 & 5003

- 04 Interface : Using 20 pin FRC cable

- 05 Test points : 14

- 06 Dimension : W 340 x H125 x D210 (mm)

- 07 Weight : 700 gm (approx)

**GENERAL SPECIFICATIONS:**

- 01 PC based Programming
- 02 Expansion connectors for plug in with Microcontroller Unit and prototyping area
- 03 Every pin is marked in order to make work easier
- 04 Input/Output test points provided on board
- 05 Ready Experiments
- 06 Exhaustive course & reference material

**ADC**

- 01 I<sup>2</sup>C™ compatible serial interface, 400kHz I<sup>2</sup>C™ Fastmode
- 02 Single-ended analog input channel
- 03 On-chip sample and hold
- 04 On-chip conversion clock
- 05 Single supply operation

**DAC**

- 01 Simple I<sup>2</sup>C™ Serial Interface
- 02 Low Power : 350uA Operation, 0.5uA Shutdown
- 03 Single Supply Operation

**LIST OF ACCESSORIES:-**

- 01 Operating Manual

**PWM BASED VOLTAGE REGULATOR  
OMEGA TYPE MCM-16**



**Omega Type MCM-16** PWM based Voltage Regulator module enable students and practicing engineers to gain invaluable practical experience of voltage regulation using Pulse Width Modulation (PWM).

The objective is to have a clear understanding of how PWM is generated using microcontroller to use in various applications like Servo Motor speed control etc.

**OBJECTS:**

- 01 To Study PWM
- 02 To Study PWM based Voltage regulator

**TECHNICAL SPECIFICATIONS**

- 01 Input and Reference voltage range: 0 - 5 V DC (Variable)

- 02 Amplifier Gain : 1 to 2

- 03 Power supply : From Microcontroller development board with programmer trainer OE-5001 & 5003

- 04 Interface : 20 pin FRC cable

- 05 Test points : 07

- 06 Dimension : W175xD130xH28 (mm)

- 05 Weight : 230 gm (Approximately)

**GENERAL SPECIFICATIONS:**

- 01 PC based Programming
- 02 Expansion connectors for plug in with Microcontroller Unit and prototyping area
- 03 Onboard Amplifier to amplify Voltage
- 04 Every pin is marked in order to make work easier
- 05 Input/Output test points provided on board
- 06 Ready Experiments
- 07 Exhaustive course & reference material

**LIST OF ACCESSORIES:-**

- 01 Operating Manual

Note : These modules work only in combination with Omega Type OE-5001 & OE-5003 Trainers

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

**OMEGA ELECTRONICS**

**Works:**

28E & F, Malviya Industrial Area,  
Jaipur-302 017 (INDIA)  
Phone: 0141-2751559

E-mail : info@omegaelectronics.net  
omegajaipur62@gmail.com

[www.omegaelectronics.net](http://www.omegaelectronics.net)

**Marketing Division:**

B-28, Fateh Singh Scheme, Opp. Rajputana  
Palace Sheraton, Jaipur-302006 (INDIA)  
Phone : 091-141-2375647, 2379223