



43557 Traditionally Embedded systems have come to mean microcontroller based design and programming. 43557 the AVR development board with programmer trainer is a full featured development system for AVR ATMEGA8515 microcontroller. It is an ideal trainer to implement and test the designs both for the beginners and the experts.

The 43557 is a convenient way to teach the principles of the family of microcontrollers through to programming and interfacing on the ATMEGA8515 device. Using the trainer a range of projects in various domains like telecommunication, robotics, consumer electronics etc can be done. The OE-5003 gives designers a quick start to develop code on controller with on board programmer and on board breadboard facility. The flexibility of connectors allows the user to make external connections. On board Breadboard allows making their own circuits and performing an experiment as they desire.

Experiments:

1. To Study the Procedure of Flash programming of AVR MCU from USB Port Programmer
2. To Study Procedure PC Serial Communication

Technical Specifications

1. Serial Port communication : RS 232 Port Using DB-9
2. MCU Programming : Using USB
3. Baud rate : 9600 bps
4. MCU : ATMEGA8515
5. Crystal frequency : 4 MHz
6. Size of Breadboard : 175 x 65 x 8mm
7. Tie points : 840
8. Test points : 40
9. On board DC supply : $\pm 12V$ and $\pm 5 V$

Note: Specifications are subject to change.

General Specification

1. ATMEL ATMEGA8515 MCU clocked at 4MHz
2. Expansion connectors for plug in modules and Prototyping area
3. On board programmer for ATMEGA8515 device
4. Serial Port Interface to PC for Communication
5. Every pin is marked in order to make work easier
6. Master Reset/Restart Key for hardware reset
7. Input/Output test points provided on board
8. On board breadboard
9. Self contained trainer with On board DC and AC power supply
10. CD with sample project code, Programmer software & useful documents.
11. Programmer unit : Ready to run programmer will program ATMEGA8515 Device
12. Power supply : 230V $\pm 10\%$, 50 Hz
13. Power consumption : 20 VA (approx)
14. Dimension (mm) : W 415 x H165 x D315
15. Weight : 3 Kg. (Approx)

List of Accessories:

1. RS-232 serial cable (9 Pin Male to Female).. 01
2. USB B type to A Type male connector cable..01
3. 20 pin FRC cable.....04
4. Mains cord..... 01
5. Operating Manual.....01
6. Software CD.....01

Othre Apparatus Required:

The comprehensive range of modules has been designed to aid the teaching of microcontroller interfacing to various peripherals.

The module design enables students to easily understand each experiment section as it is worked upon. This plug – in modules are supplied optionally with the lab.

1. Input interface module - TCM-01
2. ADC/DAC module - TCM-02
3. Computer interface module - TCM-03
4. Display module - TCM-04
5. Motor drive module - TCM-05
6. Elevator Control Module - TCM-06
7. TTL I/O Interface Module - TCM-07
8. Graphical Display Module - TCM-09
9. Display & Switch Module - TCM-10
10. Multi Interface Module - TCM-11
11. Infrared Communication Module - TCM-12
12. PWM Based Voltage Regulator - TCM-16

