

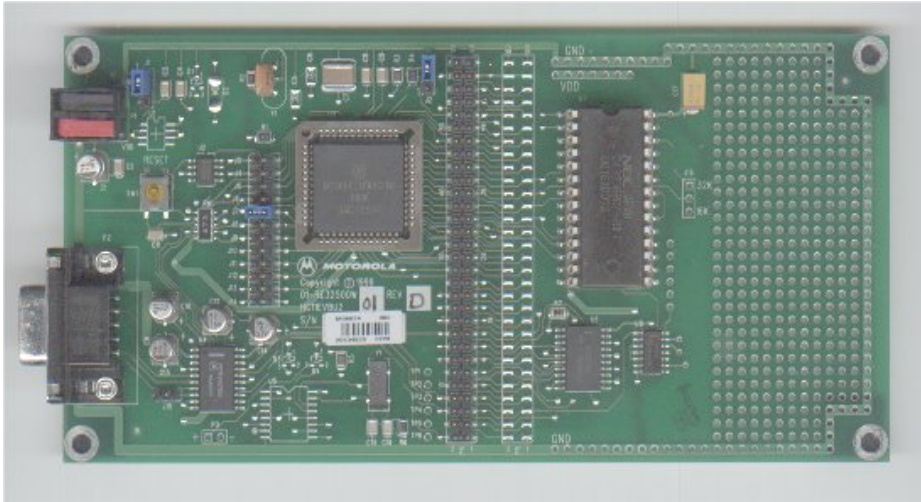
Motorola 68HC11 Microcontroller Training Kit

EL-68HC11-TK

EDU-LABS



The ultimate 68HC11 Training Kit at a very affordable price. System includes:



Hardware

Motorola M68HC11 Microcontroller Board
Computer Interface Cable

Software

Interfacing software for Microsoft Windows 98, 2000, XP
Simulation Software
Motorola M68HC11 Assembler (as11)
11 Example Projects Program & Circuits
Softcopy in CD-ROM format and manual to be provided.

External Equipments Required (Optional)

IBM Compatible Computer running Windows 95/98/2000/XP
5 Volts regulated power supply
Digital Multimeter

Documents

68HC11 Training Lab Instructor Manual
Student Experiments Manual

Experiments Modules (Optional)

Module 1 : 8 Bits Data Display Module

This module consists of 8 input sockets and 8 buffers driven LEDs. It is used for monitoring the status of the each output port bit of the main frame.

Module 2 : 8 Bits Switch Input Module

This module consists of 8 toggle switches and 8 buffer driven output sockets. It is used for input of data to the input port of the main frame.

Module 3 : 7 Segment Display Module

This module consists of two 7-segment displays. The display is driven by a BCD to 7-segment driver IC through 2 multiplexing transistors.

Module 4 : Digital To Analog Converter Module

This module consists of an 8-bit D/A converter IC. Its output drives an inverting op amp with variable amplification factor.

Module 5 : DC Motor Control Module

This module consists of a small DC motor, 2 relays for direction control and an amplifier circuit for feeding PWM power to the DC motor.

Module 6 : Stepper Motor Control Module

This module consists of a 4-phase unipolar stepper motor driven through a buffer IC. 4 LEDs are connected to the stepper motor terminals so that phase status can be observed (at low speed stepping only).

Module 7 : Keypad Module

This module consists of a 12 key keypad wired up in 3 x 4 matrix. It is an input device for the main frame.

Module 8 : Trigger Sensors And Alarm Circuit Module

This module consists of 4 photo-coupled input devices and 2 transistors driven devices, a buzzer and a lamp.

Module 9 : Dot Matrix Display Module

This module consists of two 5 x 7 dot matrix LEDs. They are driven by buffers in a 10 x 7 matrix.

Module 10 : Car Park System Application Module

This module consists of 2 sets of Infrared detectors, 2 motor driven gates, and four 7-segment displays. This module is designed for testing automatic car-park system software on a small scale.

Module 11 : LCD Display Module

Consists of a LCD panel (2 x 16 characters). Supply + 5V DC and ground terminals