



Microcontrollers and Digital Signal Processors are the main engines of the deeply Embedded development world. Microcontrollers are primarily used in control oriented applications that are interrupt driven, in sensing, and in controlling external events.

Microcontroller Trainer ST5011 is an AT89Cxx series based development platform that provides understanding of all the fundamentals of Microcontrollers. It helps the user to gain knowledge regarding Arithmetic, Logic, Single bit programming and interfacing of peripherals. It also provides a development platform to design and implement Microcontroller based systems. The trainer is user friendly & completely self contained, having all the basic required circuits and controls on board.

### Features

- Atmel 89C51/52 MCU clocked at 11.0592MHz
- 16 x 2 characters LCD display interface
- 8 channel ADC interface
- ASCII keyboard interface
- LED interface block
- RS 232C interface using Rx/Tx of MCU for Uploading/Downloading
- Printer interface
- Four input sensing switches
- Pin to pin study of microcontroller unit
- Visual indication by LED's for displaying data, status & control pins
- Reset/Restart button
- Input/Output & test points provided on board
- Self-contained trainer with built in power supply
- User friendly software
- Exhaustive course & reference material

### Technical specifications

**Serial Communication :** RS-232 port

**Parallel Communication :** 25 pin LPT port

**Baud Rate :** 9600 bps

**MCU :** AT89C51/52

**Crystal frequency :** 11.0592 MHz

**Display :** 16 × 2 LCD display

**Keyboard :** ASCII keyboard

**LED's :** Eight No's

**Switches :** Four No's

**Printer :** Dot matrix printer (optional)

**Contrast control :** 0 - 5V (Variable)

**Interconnections :** 2 mm sockets

**Test points :** 43

**Backlight control :** 0 - 5V (Variable)

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

### General

**Power Supply :** 220V ± 10%, 50 Hz (60 Hz on request)

**Power Consumption :** 17 VA (approx.)

**Dimension (mm) :** W 340 × D 240 × H 105

**Weight :** 1.5 Kg (Approx)

### Included Accessories :

RS-232 serial cable

Printer cable

ASCII keyboard

Patch cords

Operating Manual

### Optional Accessories :

Microcontroller Programmer

Dot matrix printer (80 column)

### Experiments that can be performed

- To study interfacing of ADC
- Pin to pin study of MCU
- To study implementation, analysis and interfacing of ASCII keyboard
- To study and analyze the interfacing of Switches
- To study Basics of Serial communication and MCU connections to Serial port
- To study MCU connections to Parallel port
- To study of Synchronous & Asynchronous Serial Communication
- To study Programming and Transmission of data through Serial port
- To study Programming and Reception of data through Serial port
- To study and analyze the interfacing of 16 × 2 LCD
- To study implementation and analysis of printer interface using Parallel port and many more ...



(Subject to change)

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