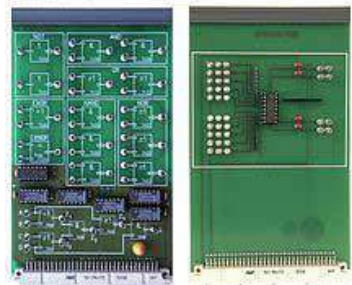
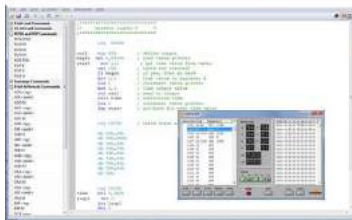
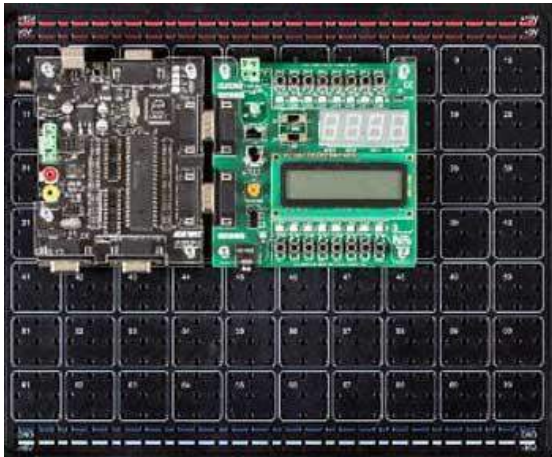


# Microprocessor



## Description

### Training systems on microcontroller technology :

- ✓ Microcontroller trainer, computer trainer, microprocessor trainer
- ✓ Intel, Microchip and ARM processors
- ✓ Integrated development environment, modular component system for experiments

### Training objectives :

- ✓ Fundamentals, architecture, low-level programming, interfaces

### Subjects :

- ✓ Digital technology courses
- ✓ Microcomputer technology courses (INTEL 8085)
- ✓ Microcontroller Technology using the 8-Bit Microchip PIC16F887
- ✓ Microcontroller Technology using the 32-Bit ARM Cortex M3
- ✓ Field Programmable Gate Array "FPGA"
- ✓ UML-programming of 8-Bit microcontrollers
- ✓ UML-programming of Arduino
- ✓ Basics of "Cyber physical systems"

## MICROCOMPUTER TECHNOLOGY

Multimedia courses on microcomputer technology cover the world of modern microprocessors and microcomputers. Animations and numerous pictures allow for an in-depth understanding of the theoretical basis. The individual components of a microcomputer are introduced and, with the aid of numerous experiments and exercises, the interaction between the various components can be easily understood by students. A further feature is the programming of microcomputers. The fundamentals of machine code are explained and knowledge is enhanced by the writing and analysis of assembler programs.

## FIELD PROGRAMMABLE GATE ARRAY "FPGA"

The computing power of electronic systems has grown at an exponential rate, while the circuitry has been getting smaller and smaller. As a result of such developments, it is now possible to provide even complex and demanding technical functionality in an easily portable housing. The beginning of this “technical revolution” was marked by the introduction of standard components. However, since they were only able to provide a limited number of functions, it was necessary to connect multiple components together to accomplish more complex tasks. PLDs (programmable logic devices) are the solution to this problem, in particular field programmable gate arrays (FPGAs). With the aid of such logic circuits, it is now possible to implement highly complex functionality with a minimum of wiring.

## MICROCONTROLLER TECHNOLOGY USING THE 8-BIT MICROCHIP

This course cover the basic knowledge and programming and debugging techniques needed for the 8-bit RICE micro-controller. The microcontroller’s instruction set is comprised of 35 “single word” instructions and is thus perfectly suited for technical training purposes. All of microcontroller’s ports can be accessed and used as desired. The power supply is available either via the working platform or by way of the USB interface. The clock frequency is generated either by an internal or external generator. RESET can be realized via software or hardware.