

MICROCONTROLLER TRAINING SYSTEM

TM-311

The **TM-311** microcontroller trainer has been specifically designed to teach programming and use of the most commonly used commercial microcontrollers on the market, quickly and efficiently. The instrument is based on the 80537 microcontroller whose main characteristic is its complete compatibility with the 8031/8051 range of microcontrollers, widely distributed throughout industry. This is the basic starting point for training future microcontroller experts. Furthermore, the 80537 being a much more up-to-date microcontroller, it includes a multitude of improvements that make it more powerful and easier to use, such as: 9 I/O ports, 12 analogue inputs, programmable reference voltage and multiple data pointers.



- Equipped with a 80537 microcontroller, 100% compatible with software for the 8031/8051 range of microcontrollers.
 - 32 k EPROM for program code.
 - 32 k static RAM for program code.
 - 32 k static RAM for data.
 - Microcontroller bus expansion connector
 - Connector allowing access to the microcontroller I/O ports
 - Communication with PCs by RS-232C (2 ports) or RS-485
- FEATURES**
- Assembler, diagnosis and simulator software
 - RS-232C cable
 - Technical Documentation
 - Software and Training Manual

(The Documentation only available in Spanish language)

16 bits MICROPROCESSOR TRAINING SYSTEM

The **TM-683 MICROINSTRUCTOR** is intended for developing and debugging application programs related with the 68000 Microprocessor, by using a personal computer or a terminal as control elements. Definite features have been considered in its design so to produce a prominent training equipment in fields covered by microprocessors and, specifically by the 68000, its structure and programming.

The software supplied is a three-module structure: Monitor, Simulator and Assembler programs. Working with the **TM-683** is efficient and user-friendly.

TM-683



SOFTWARE FEATURES

- Handling of the **TM-683** memory
- Handling of the CPU registers
- Executing an user program
- File handling (Motorola S28 format)
- Further specific functions of system
- Memory handling menu
- Block handling menu
- Port handling menu
- Execution options menu
- Assembler program

HARDWARE FEATURES

- **CPU** Uses the 68000 μ P at 8 MHz without wait states
- **Memory** Provided with 64 k words of 16 bits in SRAM (128 kbytes)
- **EPROM** memory for 32 k words of 16 bits, expandable up to 64k
- Inputs and outputs
- Connectability and expansion
- 68000 own signals
- Microprocessor control signal
- Signals for decoding memory and peripherals
- Communication with terminal