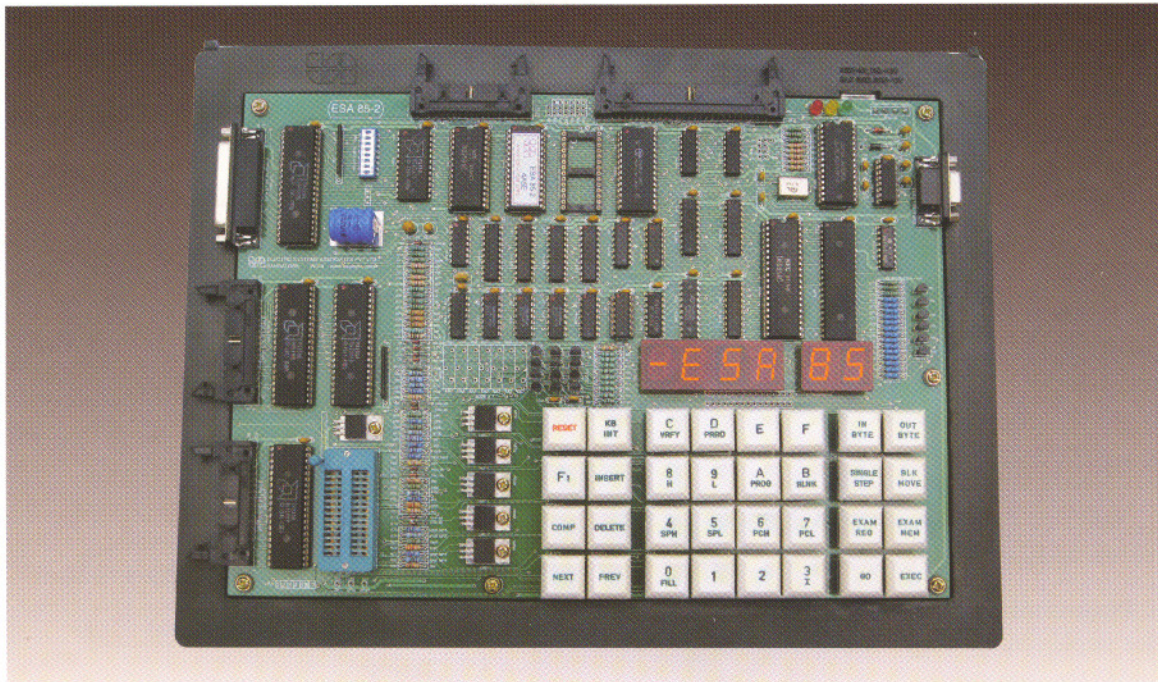# ESA 85-2

AN ADVANCED
MICROPROCESSOR TRAINER

A microprocessor trainer with standard features like small keypad, LED display, monitor program etc,. has become a very popular in training and development, probably due to its low cost. As microprocessor applications have become more and more popular, the requirement for a more advanced microcomputer trainer with powerful system software and additional hardware started growing and ESA 85-2 is a result of ESA's conscious effort to satisfy this requirement. ESA 85-2 has most of the useful features any single board computer user wishes for and the reliability for which ESA's products are popular.

ESA 85-2 is an extremely powerful microprocessor trainer based on the popular 8085 CPU. The system firmware provides on-board EPROM Programmer, stand-alone monitor, serial monitor, 2 pass assembler, disassembler and text editor. ESA 85-2 is supplied with comprehensive and user friendly documentation as well as windows based communication software with on line help.

MAIN FEATURES

★ ESA 85-2 can be operated either from on board Keypad or from a PC through its RS 232-C interface.

★ Keypad and Serial Monitor programs support the entry of user programs, editing and relocation; debug facilities like breakpoints and single-stepping, direct port input / output and full speed execution of user programs.

★ On board text editor, assembler and disassembler facility in serial mode.

★ User friendly windows and DOS driver software for the upload/download to/from host PC.

★ On board EPROM Programmer features a 28-pin ZIF socket to program all standard EPROMs, 2716 through 27512 and EEPROM 2816A.

★ On-board Parallel Printer Port.

★ On board Programmable Interrupt Controller 8259A.

★ 32K bytes of CMOS static RAM with optional battery backup. Total on board memory can be expanded upto 64K bytes.

★ Allows multi-processor system design by supporting the HOLD and HLDA signals.

★ STD bus compatible signals available on the ribbon cable connector for easy system expansion.

ACCESSORIES (OPTIONAL)

★ Power Supply : +5V @ 3A; ±12V @ 250mA; and +30V @ 100mA

★ Interface modules for training purpose: Keyboard, Elevator, Display, Dual DAC, 12 bit 8 Channel ADC, Logic Controller, Traffic Lights, Tone Generator, Stepper Motor, Opto Isolated Input, Opto Isolated Output, Relay Output, DC Motor Interface, Temperature Controller Interface, Latch interface, etc.

★ Study Cards for 8255, 8279, 8251/8253 and 8259 peripherals.

★ Parallel Printer Cable.

★ Ni-Cd Battery for power backup to RAM.

★ RS-232-USB converter to connect to PC's USB Port.

SPECIFICATIONS

CENTRAL PROCESSOR

8085 @ 3.072 MHz.

MEMORY

Three 28-pin JEDEC sockets offer 64K bytes of memory as follows :

16K bytes of firmware in 27128 at U4 socket. 32K bytes of static RAM using 62256 at U6 socket. Optional EPROM/RAM at U5 socket, which can be configured for 2764/27128/6264/62256, through Jumper Settings.

FIRMWARE

Serial and keyboard monitor programs. Text Editor, Assembler (2 pass) and Disassembler in serial mode. Drivers for printer interface and EPROM Programmer, etc,.

PERIPHERALS

8279 : Controls 32 keys keypad and 6-digit, 0.5" seven segment LED display.

8253 : 3 Programmable interval timers. Timer 0 is used for implementing single-step facility. Timer 1 is used for generating baud clock. Timer 2 is available to the user.

8251 : For serial communication supporting all standard bauds from 110 to 19,200

8259 : Programmable interrupt controller accepts 8 interrupt signals.

8255 : (4 numbers) Two are used by the system to implement on-board EPROM Programmer and Parallel Printer port. The other two are available to the user giving 48 programmable I/O lines.

BUS EXPANSION

STD Compatible Bus signals are available on a 50 pin Ribbon Cable Connector.

INTERFACE SIGNALS

Parallel I/O : 48 TTL compatible lines (2x8255) are brought out through two 26 pin Ribbon cable Connectors.

Serial I/O : RS-232-C compatible signals are available on on-board 9 pin D type female connector.

Printer : Parallel printer interface available on a 25 pin D type female connector (compatible to PC printer port)

INTERRUPTS

All interrupts except TRAP (used for single-step implementation) are available to user. If single-step is not required, user can utilise TRAP also via jumper option.

GENERAL

Power Supply Requirement : +5V @ 1 Amp, +12V @ 250mA; +30V @ 100mA

Dimensions : (L) 365mm x (B) 275 mm x (H) 55 mm (Approx)

Weight : 1400 gms (Approx)

Housed in ABS Plastic moulded cabinet

SCOPE OF SUPPLY

1. ESA 85-2 Trainer.
2. RS-232-C Cable.
3. User's Manual.
4. 8085 Assembly Language Reference Card.
5. Windows and DOS driver software CD

(NOTE : Specifications are subject to change without prior notice)

OUR PRODUCT RANGE : Microprocessor Trainers for 8085, Z80, 6809, 8086/88, 68000; Microcontroller Trainers for 8031/51, 80C196 KB/KC, ARM, PIC Trainers and Interface Modules; DSP Trainers; Power PCs; In-Circuit Emulators; ROM Emulators; Microcomputer Development Systems; Universal Device Programmers; UV Erasers; PC compatible systems and Add-on Cards, Logic Analysers, AD/DA cards, DIO cards, etc.; Microprinters; Printer Support Products and Software Development Tools; etc.,

Dealer / Distributor