ESA 85E

LOW COST
MICROPROCESSOR TRAINER

ESA 85E is the economy model of MPS 85-3 Microprocessor trainer based on the popular 8085 CPU with onboard LCD and PC connectivity through its RS-232-C port. ESA 85E can be used as a flexible instructional aid in academic institutions.

The system firmware provides stand-alone mode monitor, serial monitor, single line assembler and dis-assembler. ESA 85E is supplied with comprehensive and user-friendly documentation along with windows drivers to communicate with host PC.

MAIN FEATURES

★ ESA 85E operates on single +5V power supply either in stand-alone mode using PC keyboard and LCD or with host PC through its RS-232-C interface in serial mode.

★ Stand-alone and serial monitor programs support the entry of user programs, editing and debugging facilities like breakpoints and single-stepping and full speed execution of user programs.

★ Single Line Assembler & Dis-assembler support in both stand-alone and serial modes of operation.

★ 32K Bytes of CMOS static RAM is provided with battery backup option.

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

★ 48 I/O lines and 3 programmable interval timers.

★ Driver software for file upload / download to / from host PC.

ACCESSORIES (OPTIONAL)

★ Power Adapter: +5V@2A; (SMPS)

★ PC keyboard for stand-alone mode of operation.

★ EPROM Programmer Interface (2716 through 27512).

★ Interface Modules for training purpose (Keyboard, Elevator, 7 Segment Display, ADC with DAC, Dual Slope, Logic Controller, Crystal Clock Divider, Traffic Lights, RTC, Tone Generator, Stepper Motor etc.)

★ Power Supply: +5V@3A; ±12V @ 250mA; +30V @ 100mA (required for some of the above interfaces).

★ 3.6V Ni-Cd battery for power backup to RAM.

CPU : 8085 @ 3.072 MHz.

MEMORY

Two JEDEC 28 Pin sockets provide the following memory configuration.

ROM : 16K bytes using 27128 or 32K bytes using 27256. The system firmware is supplied in 27128 EPROM.

RAM : 32K bytes using 62256.

PERIPHERALS

89C2051 : MCU used to interface with PC Keyboard in stand alone mode of operation.

8251A : Programmable communication interface for serial communication supporting standard bauds from 110 to 9600.

8255A : Three Programmable peripheral interface devices. Two Nos. for user; one supplied, another for user expansion (optional). Remaining one is used for LCD and System Configuration.

8253 : Three programmable interval timers: Timer 0 is used for single step, Timer 1 for baud clock generation and Timer 2 is available for user.

INTERFACE SIGNALS

CPU BUS : De-multiplexed, buffered and non-buffered TTL compatible signals are terminated on 50 pin ribbon cable connector.

Parallel I/O : 48 TTL compatible I/O lines (2 x 8255) brought out through two 26 pin ribbon cable connectors.

Serial I/O : RS-232-C through on-board 9 pin D-type female connector.

Timer Signals : All three Timer signals are brought out to J3 header.

GENERAL

Power Supply requirements : +5V DC @ 0.8A (approx.)

Dimensions : 238 mm x 207 mm x 45mm (L x B x H)

Weight : 700 Gms. (approx.)

Housed in an ABS plastic molded cabinet.

SCOPE OF SUPPLY

1. ESA 85E Trainer.
2. RS-232-C Cable.
3. ESA 85 Driver Software CD.
4. User's Manual with Schematics.
5. 8085 Assembly Reference card.

(Specifications are subject to change without prior notice.)

OUR PRODUCT RANGE : Microprocessor Trainers for 8085, Z80, 8086/88, 68000; Microcontroller Trainers for 8051, 80C196, PIC Trainers, and Interface Modules; ARM Boards ; In-Circuit Emulators; ROM Emulators; Microcomputer Development Systems; Universal Device Programmers; UV Erasers; PC compatible systems and Add-on Cards, AD/DA cards, DIO cards, Logic Analyzers, etc.; Microprinters and Software Development Tools.

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