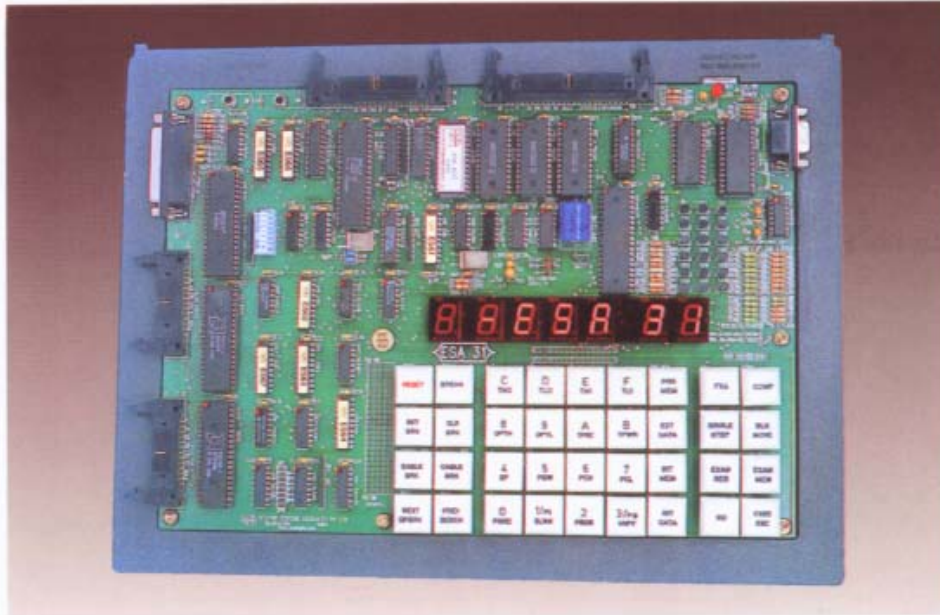




ESA 31

AN ADVANCED MICROCONTROLLER TRAINER



MCS-51 family of microcontrollers is increasingly becoming popular for instrumentation and control applications due to its speed and powerful instruction set which are essential for realtime applications. This has created the need for a good trainer and development tools. ESA 31 provides complete solution for this requirement. It can be used as a flexible instructional aid in academic institutions and a powerful development tool in R&D Labs.

MAIN FEATURES

- Operates on a **single 5V power supply** either from on-board keypad or from a PC compatible system through its RS-232-C interface.
- Keyboard and serial monitor programs support the entry of user programs, editing and debugging facilities like breakpoints (128K), single stepping and full speed execution of user programs
- Line Assembler & Disassembler in Serial Mode
- File upload/download from host system using DOS & Windows based driver software
- On-board audio cassette interface
- Total on-board memory is 128K bytes of which 88K bytes memory has optional battery backup facility
- On-board Centronics Parallel Printer Interface
- 13 uncommitted port lines of 8031 brought out to the connector (including INT1, RXD & TXD pins)
- Buffered bus signals are available through ribbon cable connector for easy system expansion

ACCESSORIES (OPTIONAL)

- Power Supply : +5V @ 3A; ±12V @ 250mA; and +30V @ 100mA
- Ni-Cd Batteries for Power backup to RAM
- EPROM programmer interface programme 2716 through 27512.
- 8751 adapter for the above interface.
- Interface Modules for training purpose : Keyboard, Elevator, Display, ADC with DAC, Dual DAC, 8 bit-16 Channel ADC, 12 bit 8 Channel ADC, Logic Controller, Traffic Lights, Tone Generator, Stepper Motor, Opto Isolated Input, Opto Isolated Output, Relay Output etc.,
- On-chip serial port adapter and study cards for 8255, 8279, 8251, 8253 etc.
- Parallel Printer Cable
- 50 Core Ribbon Cable for Bus expansion.

SPECIFICATIONS :

MCU

8031/51 operated at 11.0592 MHz.

MEMORY

Four 28 pin JEDEC sockets offer total 128 K bytes of memory.

PROGRAM MEMORY :

32K bytes EPROM using 27256 and 32K bytes of static RAM using 62256 with optional battery backup.

DATA MEMORY :

56K bytes of static RAM in two 62256 with optional battery backup. Upper most 8K bytes are reserved for I/O devices and I/O expansion.

FIRMWARE :

Serial and Keyboard Monitor programs, Assembler and Disassembler in serial mode, Drivers for Cassette Interface, Centronics Printer Interface and EPROM Programmer Interface.

PERIPHERALS

- 8155** : Used by the system to control the mode of operation (keyboard mode or serial mode), to provide clock to 8251A USART depending on the baud setting (DIP switch) and to provide Audio Tape and Centronics Parallel Printer Interfaces.
- 8255** : Two Nos. are available to the user providing 48 programmable I/O lines.
- 8253** : Three programmable interval timers are available to the user.
- 8251** : Used for serial communication supporting all standard bauds from 110 to 9600.
- 8279** : Used to Control 36 keys keypad and 0.5 inch, 7-Digit, Seven Segment LED Display.

BUS EXPANSION

STD compatible bus signals available through a 50 pin ribbon cable connector.

I/O Expansion : 8751 port lines available through a 40 pin ribbon cable connector.

INTERFACE SIGNALS

Parallel I/O : 48 TTL compatible lines (2X8255) brought out through two 26 pin ribbon cable connectors.

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

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

SCOPE OF SUPPLY

1. ESA 31 Trainer
2. User's Manual
3. 8051 Reference card
4. CD with Windows & DOS based driver software for PC
5. RS-232-C Cable set

DIMENSIONS

LxBxH : 365 x 275 x 55 mm (Approx)

Weight : 1375 gms (Approx)

Housed in an ABS Plastic moulded cabinet



OUR PRODUCT RANGE : Microprocessor Trainers for 8085, Z80, 6809, 8086/88, 68000; Microcontroller Trainers for 8031, 80C196 KB/KC, 68HC11 and interface modules; DSP Trainers for TMS 320 3X, TMS 320 5XTK, TMS 320 54X, TMS3206711; In-Circuit Emulators for 8085, Z80, 8048 family, 8086 / 8088, 68000 and 8051 family; ROM Emulators; Microcomputer Development Systems; Universal Device Programmers; UV Erasers; PC compatible systems and Add-on Cards; Logic Analyzer, IC Tester, AD/DA cards, DIO cards etc; Microprinters; Communication Protocol Converters and Software Development Tools.