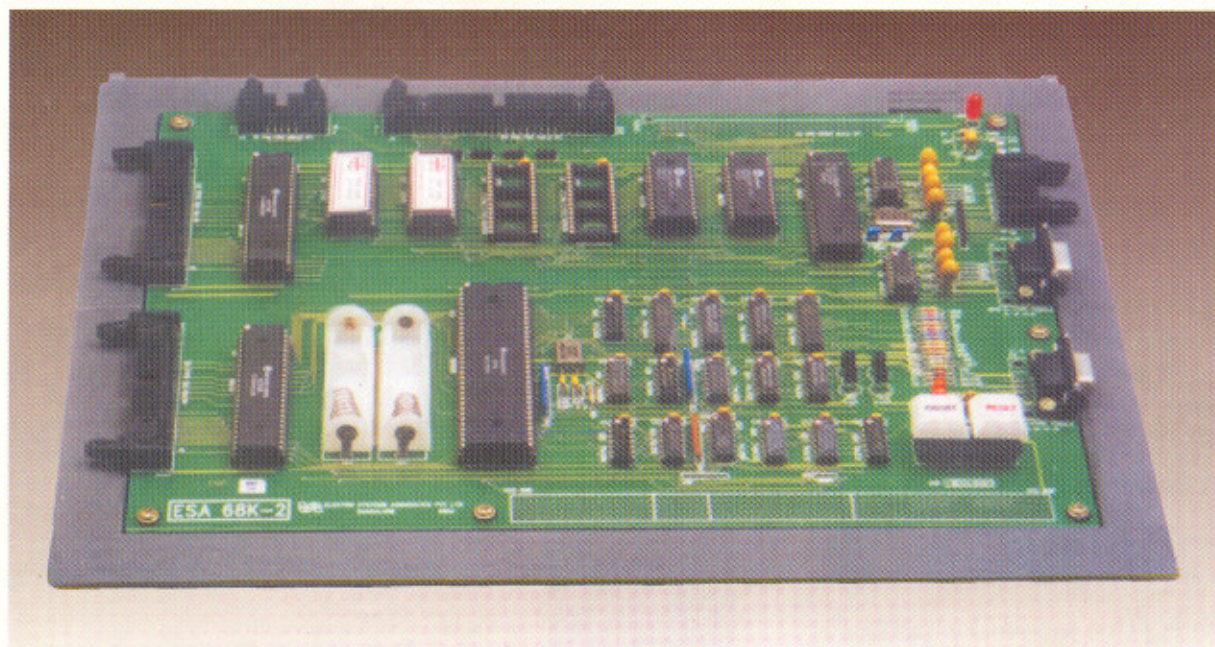




# ESA 68K-2

A Versatile  
Microprocessor Trainer



The ESA 68K-2 Microprocessor Trainer is a powerful and cost-effective complete single-board microprocessor based on the Motorola 68000 CPU supported by the popular peripheral chips from Motorola. The powerful system monitor includes one-line assembler for mnemonic entry, disassembler and Centronics printer interface driver in addition to the user friendly set of debug monitor commands. ABORT facility permits graceful recovery, preserving the complete user context, from "STUCK" programs. ESA 68K-2 is supported by a wide variety of interface modules making it an extremely useful educational aid. Careful bus arbitration design permits the access of all on-board resources by an off-board master making it easy to expand ESA 68K-2 into a multi-master configuration. Thus ESA 68K-2 is a valuable aid for teaching, software and hardware development in academic institutions, research institutions and R&D labs.

## MAIN FEATURES

- ★ Operates on single +5V power supply with a PC compatible system through its RS 232 C serial communication interface.
- ★ Powerful system monitor permits entry of programs, debugging through breakpoint, trace and instruction step facilities.
- ★ Hardware debugging through Read loop, Write loop and Test memory commands.
- ★ Built-in one line assembler and disassembler.
- ★ Centronics printer Driver included in the monitor program.
- ★ Interfacing with PC compatibles, with file upload / download capability.
- ★ Provision for multi-master design expansion.
- ★ ABORT facility to recover gracefully from "STUCK" programs.
- ★ Flexible and powerful interrupt system.
- ★ Supported by a variety of interface modules.

## ACCESSORIES (OPTIONAL)

- ★ Power supply (5V@3A, ±12V @ 250mA, 30V@ 100mA)
- ★ +5V Power Adapter.
- ★ Interface Modules : Keyboard, Elevator, Display, ADC using DAC, Dual Slope ADC, Dual DAC, Logic Controller, Traffic Lights, RTC, 18 Column Numeric Printer etc.,
- ★ 68020 / 68881 upgrade : A plug in replacement for 68000 processor which allows all the advanced features of the 68020 and 68681.
- ★ Centronics printer interface cable.
- ★ 50 core ribbon cable connector set.



## SPECIFICATIONS

### CPU

68000 at 8 MHZ

### MEMORY

ROM : Four JEDEC compatible 28 pin sockets provide.

128K Bytes using 4 X 27256

256K Bytes using 4 X 27512

System firmware is supplied in 2 X 27256.

Rest is for user expansion.

RAM : Four 28-pin sockets to give 128K bytes using 4 X 62256. 64K Bytes supplied using 2 X 62256. Rest is for user expansion

### PERIPHERALS

#### 68681 Dual UART :

To provide two RS-232C Ports 8 output lines, counter timer etc.

#### 68230 Parallel Interface / Timer :

To provide 16 I/O lines, 8 user defined lines and 24 bit counter timer with 5 bit ( $\div 32$ ) prescaler.

#### Interrupts :

On-board interrupt priority encoder, On-board autovector generation. Complete flexibility in selecting on-board / off-board interrupt sources. Level 7 interrupt is dedicated for implementing ABORT function.

### BUS

Buffered TTL Compatible bus signals brought out to Spectra Strip type 50 pin ribbon cable connector for easy expansion.

Bus arbitration signals available on the connector.

Provision for accessing on-board resources by off-board master.

### INTERFACE SIGNALS

**Parallel I/O :** 24 lines of TTL compatible signals brought out to Spectra Strip type 26 pin ribbon cable connectors.

**Serial I/O :** Two RS 232 C ports with standard MODEM control signals through on-board 9 pin D-type connectors.

### SCOPE OF SUPPLY

1. 68K-2 Trainer
2. XT68K2 Driver Software
3. RS-232C cables set.
4. User's Manual



**OUR PRODUCT RANGE :** Microprocessor Trainers for 8085, Z80, 6502, 6809, 8086/88, 68000; Microcontroller Trainers for 8031, 80C196 KB/KC, 68HC11 and interface modules; DSP Trainers for TMS320 2X, TMS 320 3X, TMS 320 54X; In-Circuit Emulators for 8085, Z80, 6502, 8048 family, 8086 / 8088, 68000 and 8051 family; ROM Emulators; Microprocessor Development Systems; Universal Device Programmers; UV Erasers; PC compatible systems and Add-on Cards, Logic Analyzer, IC Tester, AD/DA cards, DIO cards etc.; CRT Terminals; Microprinters; Printer Support Products and Software Development Tools.



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