

# MICROPROCESSOR TRAINER

## MDA-8086

### ■ FEATURE

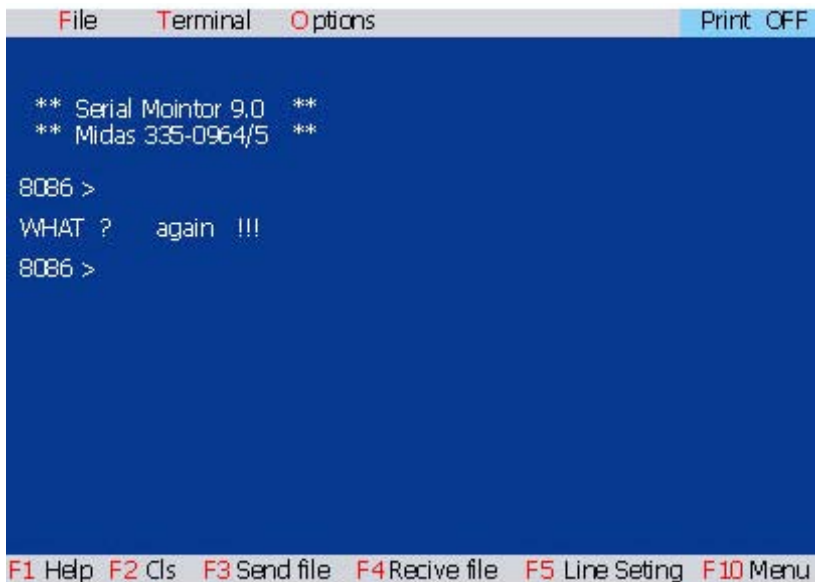


**Program debugging function by PC.**  
 Program Download and trace function.  
 Display to register contents.  
**Memory contents modification and dump function.**  
 Various command function.  
 Include with step motor interface circuit.  
 Dot matrix experiment.  
**LCD(Liquid Crystal Display) 16 X 2 line experiment.**  
**D/A and A/D converter experiment.**  
 Sound experiment by speaker.  
 Interrupt experiment.  
**A/D converter experiment by thermistor.**  
**D/A converter experiment by Level meter.**  
 Key board experiment.  
 External interface connector.  
 LED display of current system bus status.  
 +5V, +12V, -12V S.M.P.S(Free Voltage) Power(110V/220V).  
**Wood case.**

### ■ Technical Specification

CPU	8086
Main RAM	64KB(62256 x 2)
Monitor ROM	64KB(27C256 x 2)
Display Unit	LCD(16 x 2 Line)
I/O Port	8255A
Serial Port	RS-232C (8251A x 1)
System Clock	4.9152 MHz
Clock Generator	8284
Interrupt Controller	8259
Level Meter	10 step
DOT Matrix	8 x 8 (3 Color)
Operation	System 8086 Assembler
Software	
Key Board	16 Key of data, 10Key of function
System bus indicator	LED(3Ø) x 12
Expansion Connector	System bus 62pin x 1 External interface 20pin x 1
Step Motor Interface	Driver T.R x 4
A/D, D/A Converter	ADC : ADC 0804 DAC : DAC0800
Power	110V/220V
Board size(mm)	310 x 265
Wood case(mm)	100(H) x 300(D) x 430(W) ± 10(mm)

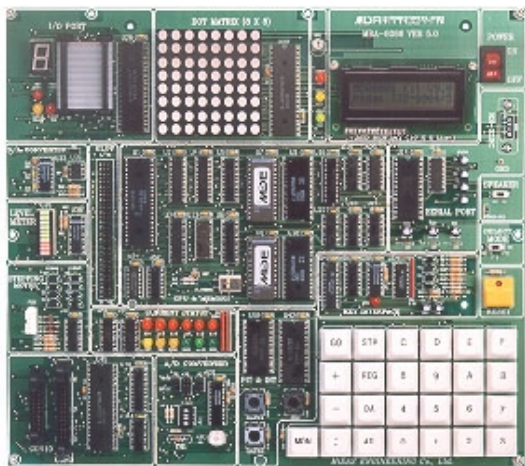
# WinComm



## Serial Mointer

is the basic monitor program to do data communicate between MDA-8086 and user computer

## MDA-8086 Board



### CPU(Central processing unit) :

- Using Intel 8086, Using 4.9152Mhz.

### ROM(Read Only Memory) :

- It has program to control user's key input, LCD display, user's program. 64K Byte, it has data communication program. Range of ROM Address is F0000~FFFFFH.

### SRAM(Static Random Access Memory) :

- Input user's program & data. Address of memory is 00000H~0FFFFH, totally 64K Byte.

### DISPLAY :

- It is LCD (Liquid Crystal Display), 16(Character)×2(Line)

### KEYBOARD :

- It is used to input machine language and has 16 of hexa-decimal keys and 8 of function keys.

### SPEAKER :

- Able to test sound using with speaker and further more able to test synthesizer.

### RS-232C :

- It is ready to do data communication with IBM compatible personal computer.

### DOT MATRIX LED :

- To understand & test of dot matrix structure and principle of display it is interfaced to 8255A(PPI).

### A/D CONVERTER :

- Convert analog signal to digital signal using with ADC0804.

### D/A CONVERTER :

- Convert digital signal to analog signal using with DAC0800 and it is interfaced so as to more Level meter.

### STEP MOTOR INTERFACE :

- So as to control step motor driver circuit of step motor is interfaced.

### POWER :

- AC 110V~220V, DC +5V 3A, +12V 1A, -12V 0.5A SMPS.(110V/220V)