

Digital Signal Processor TRAINER

MDA-DSP(TMS320C50)



■ FEATURE

1. MDA-DSP Integration Development Environment Program.

- Display the **TMS320C50** internal architecture.
- Edit, Assemble, Compile, Download and program run of source file.
- Program Trace, Break functions.
- Code memory disassemble function.
- **TMS320C50 register Block & external memory Dump and Editing functions.**
- Program Scroll display function.
- Pop-up menu display.
- Program Stop to "ESC" key.
- Use to keyboard and mouse.

2. Direct input to machine language.

3. LCD display function use to keyboard.

4. LED display of current system bus status.

5. Various command function.

6. I/O Port and interrupt experiment.

7. **I/O Port experiment use to C-Language.**

8. In-Output function use to audio or analog signal.

9. **Analog signal input function use to 16bit A/D converter.**

10. **Analog signal output function use to 16bit D/A converter.**

11. Extension memory and I/O port interface connector for use.

12. + 5V, +12V, -12V 의 S.M.P.S(FREE VOLTAGE) Power

13. **Wood case**

■ Technical Specification

PC Operation Program	MDA-DSP Integration Development Environment Program.
DSP	TMS320C50
Main RAM	64KB(62256 x 2)
Monitor ROM	128KB(27512 x 2)
Display Unit	LCD(16 x 4Line)
Serial Port 1	RS-232C(8251A x 1)
System Clock	40 MHz
Memory and I/O Decoder	PAL 16L8 or GAL16V8 x 2
MDA-DSP Integration Development Environment Program.	Display the TMS320C50 internal architecture Edit, Assemble, Compile, Download and program running of source file Program the trace, Break function Code memory disassemble function TMS320C50 Register Blank & External memory Dump and editing function Program scroll display function Pop-up menu display Program stop function by "ESC" key. Use to keyboard and mouse



Keyboard	16Key of data, 8Key of function
Expansion Connector (I)	System 40pin connector x 2 External interface connector 20pin x 1 8255A, A, B, C port 30pin x 1 Emulator 14pin connector x 1
Expansion connector(II)	TLC32040(12 bit include with to A/D, D/A)
Audio Interface (AIC)	Input x 1, Output x 1
Audio jack	ADS7805P(16bit)
A/D Converter	DAC712P(16bit)
D/A Converter	10Ø x 8
I/O Output LED	8Pin Dip S/W x 1, Tact S/W x 4
I/O Input and Interrupt S/W	8255A x 1
External I/O Interface	Driver T.R x 4
Step motor interface	LED(5Ø) x 12
System bus indicator	110V/220V
Power	310 x 265, 4 Layer
Board size(mm) & PCB Layer	100(H) x 300(D) x 430(W) ± 10(mm)
Wood case(mm)	

Integration Development Environment Program



MDA-DSP of program
MDA-DSP Integration Development Environment Program

Program Window

Memory Mapped Resister Windows

Block Window

Stack Window

Program Memory Window :

- Use the key to move the cursor the display will scroll when you reach the edges of the window. Press the Page-Up, Page-Down key to page through the program memory

Memory Mapped Register Window :

- This display the memory mapped registers. Any value within the window can be altered by positioning the cursor and typing in a new value.

Block B2 Window :

- Any value within the window can be altered by positioning the cursor and typing in a new value
- The values displayed here are updated after a breakpoint is encountered when executing normally, after every instruction while single-stepping.

Block B0-B1 Window :

- Any value within the window can be altered by positioning the cursor and typing in a new value
- The values displayed here are updated after a breakpoint is encountered when executing normally, after every instruction while single-stepping.

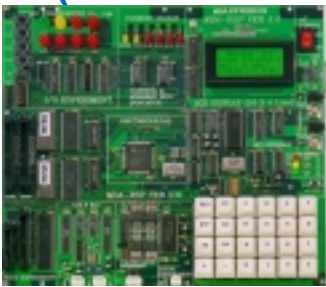
Stack Window :

- This display the contents of stack. This window can not be written data

File name Window :

- The current work file is display. if you change the work file, use the Work(W)-File Open(O)

MDA-DSP(TMS320C50) Board



DSP(Digital Signal Processor) :

- The DSP use the TMS320C50 with the clock 40[Mhz].

ROM(Read Only Memory) :

- The ROM use the EP-ROM(27C512×2). It contains the basic program to allow user to control the MDA-DSP kit with the keyboard, LCD display, data communication.

SRAM(Static Random Access Memory) :

- The SRAM is (62256×2). The information(data) can be inserted (written) into RAM. The information can be also be read from memory or altered by user.

LCD (Liquid Crystal Display Module) :

- The LCD display use for the data or control information display. It has the 16(Character)×4(Line).

KEYBOARD :

- It is a switch consisting of sixteen labeled hexadecimal, eight function keys. The keyboard is interfaced to system bus by the priority encoder. Control information and data is entered into system by the key.

8251A & RS-232C :

- It use the IBM compatible PC to communicate the data.
- TLC32040 & RCA CONNECTOR →It uses the Voice quality analog data acquisition via the TLC320C40.

AD7805/DAC712 :

- The AD7805/DAC712 with 16 bit A/D & D/A converter use to convert the analog & digital signal.

A/D, D/A CONNECTOR :

- It is connected the four A/D, D/A channel through the multiplexer.

STATUS LED :

- The 12 LED use to indicate the current status of the system → The DSP control bus, address bus.

LED & SWITCH :

It use to I/O experiment.

8255A & I/O CONNECTOR (CON10) :

- It use to I/O experiment through the 8255A.

XDS510 PORT :

- The 14 pin(J5) emulator connector

I/O EXPANSION BUS :

- It is used to external design(CON8, CON9).

POWER :

- The power spec. is the +5V(3A), +12V(1A), -12V(0.5A).