

WICE-8052

USER'S MANUAL



LEAP ELECTRONIC



THE WICE-8052 WINDOW OPERATING SYSTEM

Instruction

Thank you for using the WICE-8052 designed by LEAP ELECTRONIC. We hope that you find the WICE-8052 meets all of your development needs.

- *File menu
- *View menu
- *Project menu
- *Run menu
- *Debug menu
- *Window menu
- *Other Menu
- *Help menu

The WICE-8052 Windows software consist Hardware Control. When you do any development, the WICE-8052 will offer you best quality program support. By the way, it is not possible to run this software without WICE-8052.

The WICE-8052 is designed according to users' point of view and full of user-friendly. However, if there is any of your estimable comments, please feel free to contact us at Tel 886-2-2991860 or Fax 886-2-29990015 or e-mail service@leap.com.tw.

Again thank you for using WICE-8052 and other high-quality LEAP products.



File menu

The following options are available on the File Drop-down menu

1. Load :

Both of them will be disassembled and load into WICE-8052 at the same time.

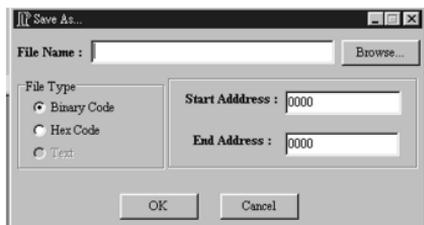
-Hex Files : It would load hex file into WICE-8052 and link with symbol tables ,debug control and source files. If those three files couldn't be found, disassembled form opens only.

-Binary Files : It would load binary file into WICE-8052.

-Debug Control Files, Symbol Table Files: Those formats of files are produced form AD2500 compiler. If you hope to run this system with symbols, you have to have those files.

2. Save :

Save current binary code or hex code. You can choose the range that you want to save it by entering the start and end address.



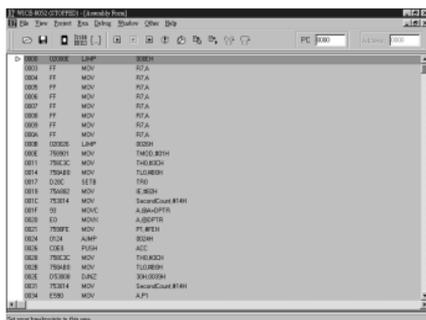
3. Exit:

Exit the WICE-8052 software.

View menu

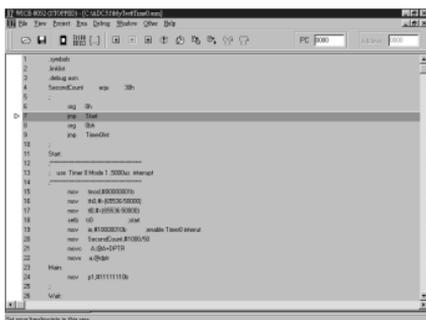
1 . Assembly Mode :

Display the assembly form.



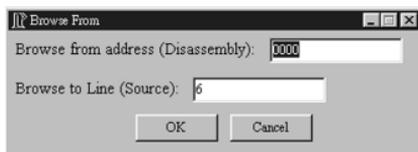
2. Source Mode :

Display the source form.



3. Browse From/To:

This function disassembles hex code and starts from the address that you edited.

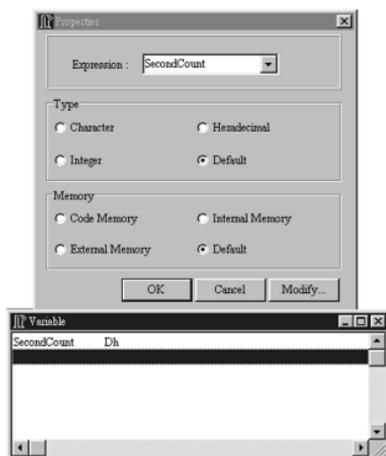


4. Variable:

List that you would like to see the variation of variables or arguments.



Double clicks to open another window, and chose a variable. It will appear in variable list after you click ok button. By the way, press Delete to delete the variable with highlight.



Project menu

The following options are available on the Project Drop-down menu

1.New Project :

First at all, choice which compiler tool that you normally use, and then system will create a new project file for you.



NOTE : In this version of WICE-8052 software, support AD2500 Compiler ver. 2.00 for windows only.

2.Open Project :

Open a project file that you have created before. And then, it will open an Application for you to add source files automatically.

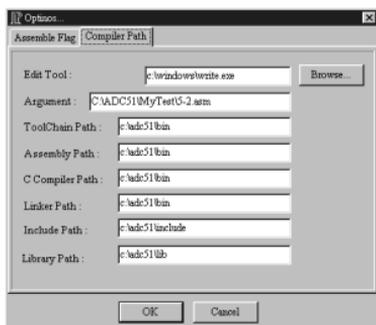
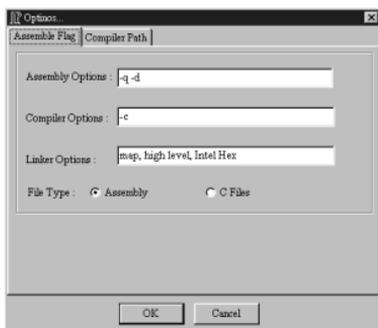
3.Add Source Files :

To add files that you would like to involve in this project and compile with. However, you could take files off from this project.



4.Options :

Set your compiler path and some information about the project. Also, you would select an editor tool that you normally use from this function.



5.Edit:

Open an editor tool that you normally use with a file. System will compile this project automatically after you close this editor tool.

6.Compile:

Compile the project with your compiler tool.

Run menu

The following options are available on the Run Drop-down menu

1. Go(Full speed) :

Run the currently loaded program at the instructive point to by pro-

gram counter.

Once program has been executed, it will continue until interrupted by users manually click “Stop” button.

2. Run :

Run the currently loaded program at the instructive point to by program counter.

Once program has been executed, it will continue until interrupted by reach a break point. However, if users didn't set any break points, this function would be as same as Go(Full speed).

3. Run Until :

If you select this function, there is an edit window where you should enter the stop address.

After press Enter, WICE-8052 will execute current loaded program, and stop at the yellow highlight's location on assembly window.

Note: If the Breakpoint or users manual interrupt, Run Until will stop.

4.Run To Line : (For Source only)

If you select this function, there is an edit window where you should enter the stop line in source form. After press Enter, WICE-8052 will execute current loaded program, and stop at the start address of this line of source with yellow highlight's location on assembly window. This function appears only when Source Form exist.

5. Trace Into :

For Assembly:

When you select this function, it will instruct the WICE-8052 to execute only on “single step” way. All Registers and Data Memory on the screen will be immediately update to software if there any changes caused the execution of the single instruction. This command will go into sub-procedure instructions example for “ACALL” and “LCALL”.

For Source:

When you select this function, it will instruct the WICE-8052 to ex-

ecute only on “one source line” way. The meaning is the end address of this source line is a break point and has been set to WICE-8052. Run loaded program until interrupted by reach this break point.

6. Step Over :

For Assembly/Source:

If you click this function, it will instruct the WICE-8052 to execute only on “single step” way. This function is same as “Step Into” except instructions like “ACALL” and “LCALL”, Step Over will not directly go into Sub-procedure and execute. Besides, users set break points in Sub-procedure.

7. Slow Trace Into :

Automatically execute the current execution program slowly and enter sub-program.

Note: Only run this function in Assembly Form.

8. Slow Step Over :

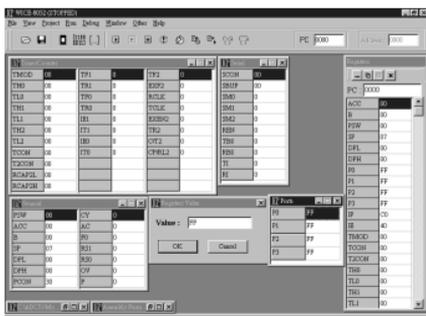
Automatically execute the current execution program slowly and directly execute sub program.

Note: Only run this function in Assembly Form.

9. Reset :

This function is used to finish “System Reset” of the WICE-8052:

- 1) Initialize the program counter to 0, i.e. execution will subsequently begin from address 0000.
 - 2) Initialize SFRs to particular values.
 - 3) The WICE-8052 send the “Reset” signal to reset the hardware ports.
 - 4) All breakpoints would not be clear.
 - 5) Restore main source file.
-



This function contains all Special Function Registers in WICE-8052. Double clicking by mouse can modify the contents of the individual field.

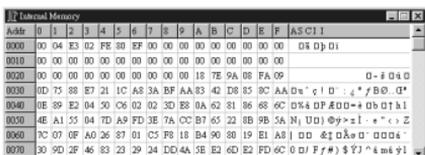
- All : Include all normal registers.
- Ports : Include all ports registers.
- General : Include all general registers.
- Serial : Include all serial registers.
- Timer/Counter : Include all Timer/Counter registers.

Window menu

The following options are available on the Window Drop-down menu

1. Internal Memory :

This will show the current contents of the 256 bytes INTERNAL memory. You can click mouse to toggle the edit mode ON/OFF. When the edit mode is ON, the contents can be modified, otherwise, the contents are viewed only.



2. External Memory :

This frame shows the current contents of the 64k EXTERNAL memory. You can click mouse to toggle the edit mode ON/OFF. When the edit mode is ON, the contents can be modified, otherwise, the contents are



viewed only.

Addr	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ASCII
0000	55	BC	55	E2	11	B0	45	AA	1D	FF	54	74	55	B3	55	D9	U%U!aE*oyTt'U'U0
0010	95	51	85	EA	30	D9	05	C1	55	F8	15	88	D5	08	30	F2	+Q.iP0aUu-d'0Pp0
0020	55	BA	55	9C	3D	91	44	BA	55	8B	D7	B0	15	71	11	2F	U'Uaj' D'U' a= Dq Df
0030	65	F0	3D	E2	15	DA	43	C3	55	CB	15	A2	55	F8	55	B3	h j i G0EiUE0q UaU'0
0040	15	99	04	A6	55	AA	C4	72	81	DB	14	92	54	CB	54	4B	0P0!U' A: 0D0' TETK
0050	45	34	14	BE	95	BA	55	3F	75	72	15	AE	55	99	45	88	E40M*'U' a: 00UPEa
0060	45	BC	05	B8	45	A2	55	62	54	6C	15	AS	51	7A	51	B7	E! 0, E4Ub T! 0 Qz Q.
0070	15	7B	74	D0	55	DC	54	AS	41	B3	40	EA	55	DA	54	BB	[i BUUT' A' @ UUT'.

3. Code Memory :

This frame shows the current contents of the 64k INTERNAL memory. You can click mouse to toggle the edit mode ON/OFF. When the edit mode is ON, the contents can be modified, otherwise, the contents are viewed only.

Addr	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ASCII
0000	02	00	0E	FF	02	00	26	75	39	0	Dy y y y y y y y D & x %						
0010	01	75	8C	3C	75	8A	B0	D2	8C	75	AS	B2	75	30	14	93	Q x OE' e 5' OEa' . u 0 0 -
0020	B0	75	90	F8	01	24	C0	B0	75	8C	3C	75	8A	B0	D5	30	k x 0 0 5 A i u OE' e 5' 0 0
0030	08	75	30	14	E5	90	23	F5	90	D0	B0	32	FF	FF	FF	FF	0 x 0 0 i 0 # 0 0 0 i 2 y y y y
0040	FF	y y y y y y y y y y y y y y y y															
0050	FF	y y y y y y y y y y y y y y y y															
0060	FF	y y y y y y y y y y y y y y y y															
0070	FF	y y y y y y y y y y y y y y y y															

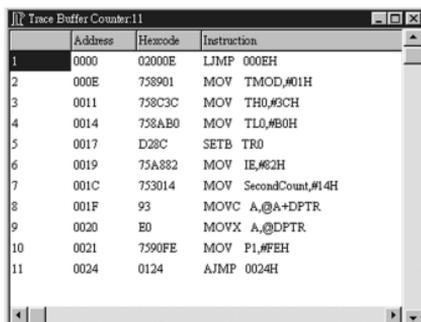
4. Trace Range :

Allow you to key in start and end addresses from the dialog.

Trace Range	
Start Address :	<input type="text" value="0000"/>
End Address :	<input type="text" value="24"/>
<input type="button" value="OK"/> <input type="button" value="Cancel"/>	

5. Trace Buffer :

This frame shows the listing of the buffer traced.



The screenshot shows a debugger window titled "Trace Buffer Counter:11". It contains a table with three columns: "Address", "Hexcode", and "Instruction". The table lists 11 instructions, with the first instruction (address 0000) highlighted in black. The instructions are as follows:

	Address	Hexcode	Instruction
1	0000	02000E	LJMP 000EH
2	000E	758901	MOV TMOD,#01H
3	0011	758C3C	MOV TH0,#3CH
4	0014	758AB0	MOV TL0,#B0H
5	0017	D28C	SETB TR0
6	0019	75A882	MOV IE,#62H
7	001C	753014	MOV SecondCount,#14H
8	001F	93	MOVC A,@A+DPTR
9	0020	E0	MOVX A,@DPTR
10	0021	7590FE	MOV P1,#FEH
11	0024	0124	AJMP 0024H

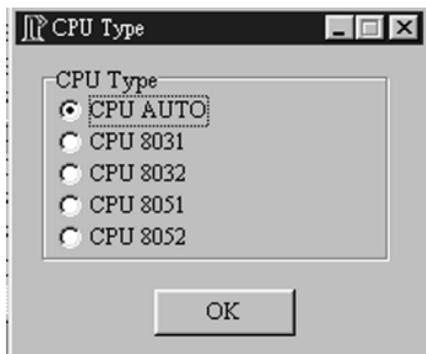


Other Menu

The following options are available on the Other Drop-down menu

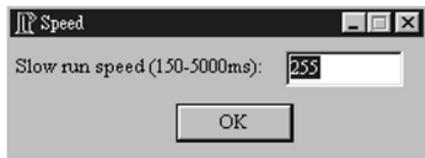
1. CPU type selection :

Select the CPU types, default is Autodetect.



2. Slow Run Speed :

The “Set Slow Run Timer” Option allows you set interval of Slow Run Timer for 150ms upto 5000ms.



3. Tile:

Tile MDI Windows in screen.

4. Cascade:

All MDI Windows in screen will be cascaded.

5. Arrange Icons:

All MDI Windows will be minimized.



Help menu

The following options are available on the Help Drop-down menu

1. About WICE-8052 :

A dialog is showing LEAP ELECTRONIC. information.

2. About :

When you choose the About command from the Help menu, a dialog box appears, showing copyright and version information.

3. User Guide:

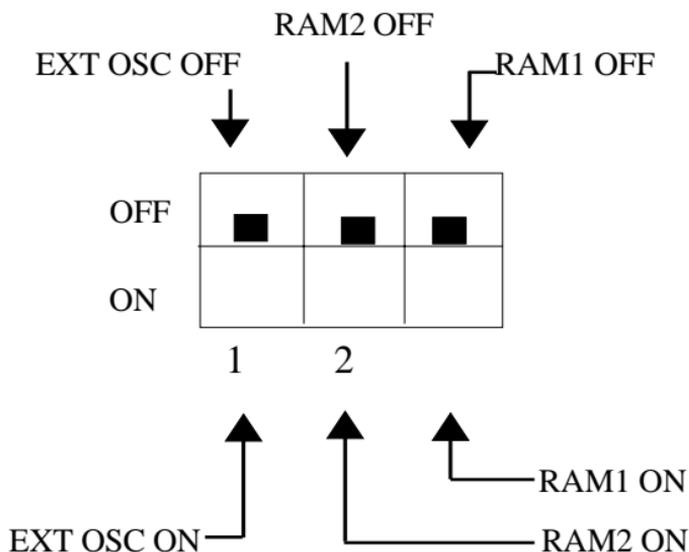
Help you to get into this program.

Support

This WICE-8052 software supports WIDE Version 2.00.51 and provides for source debug. Be make sure the file that you want to open has got those file format : Debug Control File, Symbols Table, Source Files and Hex(basically requier), before you use source debug.

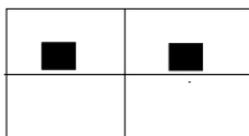
When you execute link.exe, entre input file name, output file name(if you want to differentiate from input file.) and options flag C. You would get outfilename.dcf, outfilename.sym, and outfilename.hex without any linking errors.

Setup



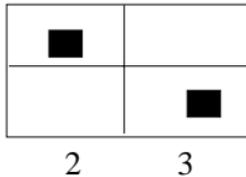
1. EXT OSC OFF provided from 12MHZ inside.
EXT OSC ON provided from frequency of TARGET BOARD outside.

2. (1)



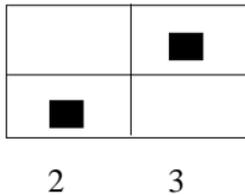
Switch to internal emulate RAM of WICE-8052.

(2)



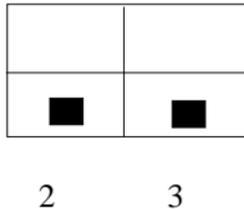
Switch to external TARGET BOARD RAM, and internal emulate RAM of WICE-8052 become READ Only.

(3)



Switch to external TARGET BOARD RAM, and internal emulate RAM of WICE-8052 become WRITE Only.

(4)



Switch to external TARGET BOARD RAM, and turn off internal emulate RAM of WICE-8052.



THE WICE-8052 DOS OPERATING SYSTEM

I. MENU



1. FILE





- (1) New: Edit a new text file.
- (2) Open: Open a file. A dialog box display as follow. You can select the file format includes Binary code, Intel HEX, Normal text.



For example, when you select Intel HEX, the following dialog box will show.





- (3) Save: Save an edited file
- (4) Save as: Save an edited file in another name. The dialog box is display as follow.



- (5) Chang dir: In the following dialog box, you may switch current program directory.



- (6) DOS shell: Shift to DOS command line temporarily.
- (7) Exit: Quit the WICE-8052 program.



2. Edit



- (1) If you load a text file, click Find and you can search the text which you want to edit.



- (2) If you click List program, you can type the start address where you want to edit.



3. Run:



- (1) Run: Run the loaded file from the current Program Counter.
- (2) Stop: Stop the program's execution.
- (3) Program reset: Reset the hardware and software of WICE-8052



- (4) Trace into: Stop the program's execution after running a single instruction
- (5) Step over: Stop the program's execution after running a single instruction and it's sub-program.
- (6) Run until: Stop the program's execution at the position where you set.



- (7) Go to address: key in the following dialog box for editing the current Program counter.





(8) Slow run: Run the program in a slow speed.



*Delay (10ths of sec): Set the delay time for the program running. The minimum is 1 and the maximum is 50.

*Select mode:

Trace into: Execute Slow run by the way of trace into”.

Step over: Execute Slow run by the way of tep over”.

4.Debug



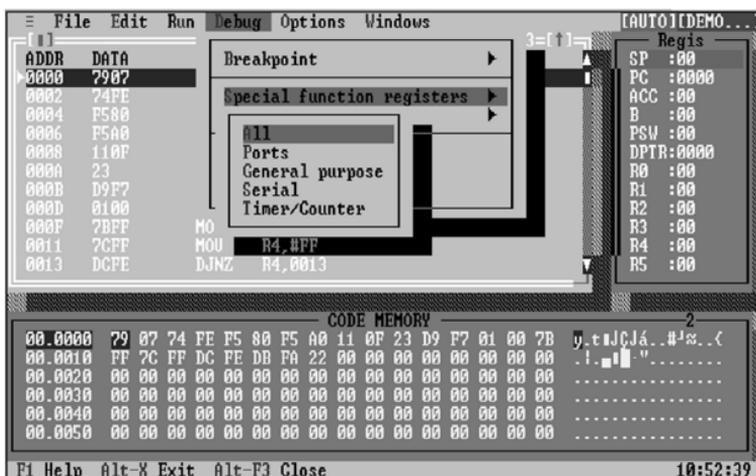


(1) Breakpoint

Toggle: Program code address where cursor indicates on CODE window, you may set or remove breakpoint. You may press F2 or couple click mouse to remove and set breakpoint.

Delete all: Clear all the breakpoints in the CODE window.

(2) Special function registers



All: displays all of the following four registers windows

Ports: Displays the Port register window

General purpose: Displays the general purpose register window.

Serial: Displays the Serial register window.

Timer/Counter: Displays Show the Timer/Counter register window.



The screenshot shows the WICE-8052 software interface. The main window displays assembly code with columns for ADDRESS, DATA, and INSTRUCTION. The current instruction is at address 0000: MOV R1, #07. To the right, there are several status windows: Serial (SBUF:00, SCON:00, SM0:0, SM1:0, SM2:0, REN:0, T8:0, RE8:0), Ports 5 (P0:00, P1:00, P2:00, P3:00), and a General purpose register window (PSW:00, ACC:00, B:00, SP:00, DPL:00, DPH:00, CV:0, AC:0). Below the main code window is a CODE MEMORY window showing a hex dump of memory from 00.0000 to 00.0050. The status bar at the bottom shows 'F1 Help Ctrl+F3 Download F7 Trace F8 Step' and the time '10:50:45'.

ADDR	DATA	INSTRUCTION
0000	7907	MOV R1, #07
0002	74FE	MOV A, #FE
0004	F500	MOV 00, A
0006	F500	MOV 00, A
0008	110F	ACALL 000F
000A	23	RL A
000B	D9F7	DJNZ R1, 0004
000D	8100	AJMP 0000
000F	7BFF	MOV R3, #FF
0011	7CFE	MOV R4, #FE
0013	DCFE	DJNZ R4, 0013

CODE MEMORY

Address	Hex
00.0000	79 07 74 FE F5 00 F5 00 11 0F 23 D9 F7 01 00 7B
00.0010	FF 7C FF DC FE DB FA 22 00 00 00 00 00 00 00
00.0020	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0030	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0040	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0050	00 00 00 00 00 00 00 00 00 00 00 00 00 00

Note: For editing Registers windows, you may press Enter at the item you want to edit. Take Program Code (PC) editing as an example like follow, the system shows the dialog box which allow you to edit PC:

The screenshot shows the WICE-8052 software interface with a 'Modify Register' dialog box open. The dialog box has a title bar 'Modify Register' and contains a label 'PC' followed by a text input field containing '0000' and an 'OK' button. The background shows the assembly code window with the current instruction at address 0000: NOP. To the right, there is a 'Registers' window showing the values of various registers: SP:00, PC:0000, ACC:00, B:00, PSW:00, DPTR:0000, R0:00, R1:00, R2:00, R3:00, R4:00, R5:00. Below the main code window is a CODE MEMORY window showing a hex dump of memory from 00.0000 to 00.0050. The status bar at the bottom shows 'F1 Help Alt-X Exit Alt-F3 Close' and the time '16:14:13'.

Modify Register

PC 0000 OK

Registers

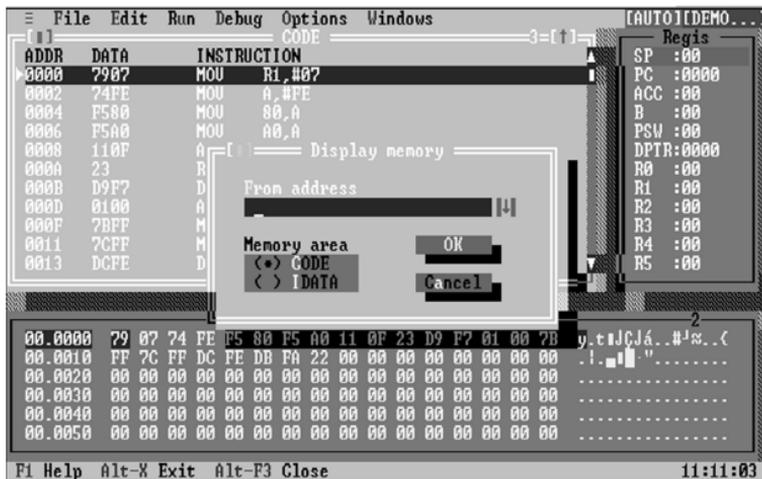
Register	Value
SP	00
PC	0000
ACC	00
B	00
PSW	00
DPTR	0000
R0	00
R1	00
R2	00
R3	00
R4	00
R5	00

CODE MEMORY

Address	Hex
00.0000	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0010	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0020	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0030	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0040	00 00 00 00 00 00 00 00 00 00 00 00 00 00
00.0050	00 00 00 00 00 00 00 00 00 00 00 00 00 00



(3) Memory



From address: Key in the start address

CODE: Displays program's HEX code

IDATA: Show the HEX code of the internal memory. You may use Insert key to edit the program.

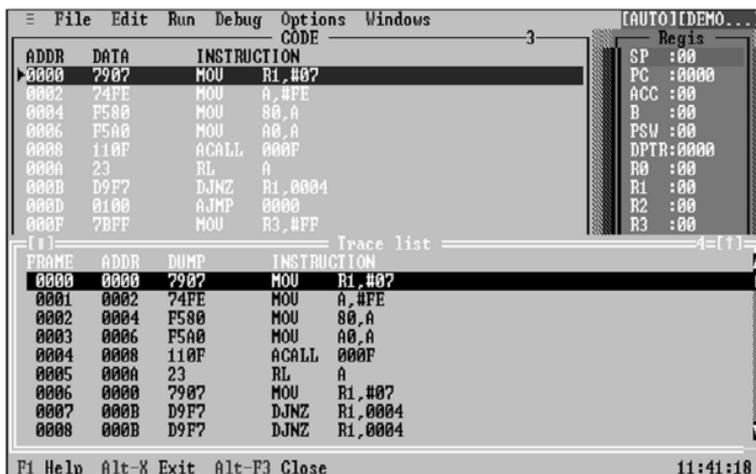




- (4) Trace setup: Set the start and end address of tracing.



- (5) Trace window: The trace contents can be viewed from the Trace windows

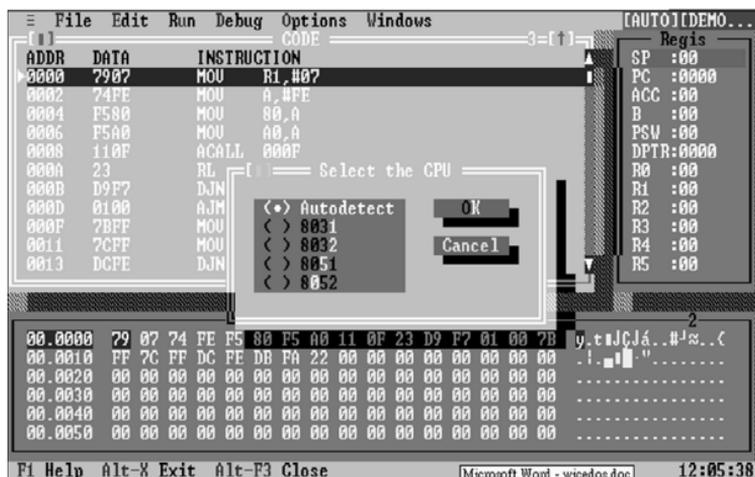




5.Option



- (1) CPU type: Select the CPU type which you want to emulate. If no indication is provided, the system will automatically detect the CPU type.





- (2) Record macro: In the following dialog box, key in the file name for recording marco.



- (3) Play macro: In the following dialog box, select the macro file which you want to play.





6.Windows



(1) Size/Move: There are two ways, keyboard and mouse, to change the size of windows and move the windows.

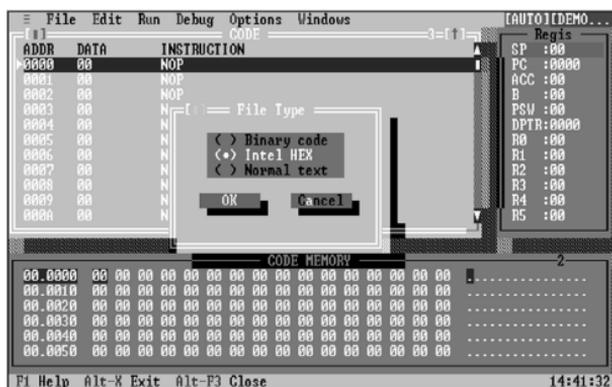
*Keyboard: To shift the position of the windows, you can press Ctrl + F5 then press . To change the size of the windows, you can press Shift + .

*Mouse: To shift the position of the windows, you may move onto the title of the window and drag it. To change the size of the windows, you may move onto the right-down corner of the window and drag it.

- (2) Zoom: Enlarge or diminish the current window
- (3) Cascade: Display all windows in cascade way
- (4) Tile: Display all windows in tile way
- (5) Next: Move to the next window
- (6) Previous: Move the previous window



- (7) Close: Close the current window
- (8) Close all: Close all the windows
- (9) Code: Show the CODE window, CODE MEMORY window, and Registers window together
- (10) Memory: Please refers to 4. Debug concerning Display/Edit
- (11) Registers: Open the Registers window or move to the Registers window.
- (12) Internal memory: Open the internal memory window or move to the internal memory window.



- (13) Trace buffer: Open the Trace buffer window or move to the Trace buffer window



II. OPERATION EXAMPLE:

*How to open a file?

1. In the file menu, select open, the following figure will show. There are 3 kinds of format. Every single one will show the dialog box. Then, select the file which you would like to load in.
 - (1)Binary Code
 - (2)Intel Hex
 - (3)Normal Text
2. If download is successful, a dialog box will show for inquiring if you would like to download to hardware. Press yes for auto download.
3. Press F9 for running

*How to set breakpoint?

1. After download the machine code, the breakpoint is able to set.
 2. In the disassembler, select the address which you would like to set, double-click, or press F2. The address will change to red. If double-click or press F2 again, the breakpoint will be canceled.
-
-