WICE-4/8MA

USER'S MANUAL

LEAP ELECTRONIC

Contents

I. Introduction

WICE-4/8MA is a high performance in-circuit emulator for developing and debugging ROM/SRAM applications. It offers real-time emulation up to 8M bit.

WICE-4/8MA interface to an IBM PC or clone via the printer port. It is able to be driven under DOS or Windows 3.1/95.

It is mainly a manual for WICE-8MA, if you buy a WICE-4MA, the operation is the same as WICE-8MA.

II. Supported Devices

WICE-4MA

Capacity	Quantity	Device	Low voltage Device
2K ¡Ñ 8	2	2716	-
4K ¡Ñ 8	2	2732	-
8K ¡Ñ 8	2	2764	-
16K ¡Ñ 8	2	27128	-
32K ¡Ñ 8	2	27256	-
64K ¡Ñ 8	2	27512	-
128K ¡Ñ 8	2	27010	27LV010
256K ¡Ñ 8	2	27020	27LV020
512K ¡Ñ 8	1	27040	27LV040
64K ¡Ñ 16	1	271024	27LV1024
128K ¡Ñ 16	1	272048	27LV2048
256K ¡Ñ 16	1	274096	27LV4096
2K ¡Ñ 8	2	6116	-
8K ¡Ñ 8	2	6264	-
32K ¡Ñ 8	2	62256	-
128K ¡Ñ 8	2	628128	-

WICE-8MA

Capacity	Quantity	Device	Low voltage Device
2K ¡Ñ 8	2	2716	-
4K ¡Ñ 8	2	2732	-
8K ¡Ñ 8	2	2764	-
16K ¡Ñ 8	2	27128	-
32K ¡Ñ 8	2	27256	-
64K ¡Ñ 8	2	27512	-
128K ¡Ñ 8	2	27010	27LV010
256K ¡Ñ 8	2	27020	27LV020
512K ¡Ñ 8	2	27040	27LV040
1024K¡Ñ 8	1	27080	27LV080
64K ¡Ñ 16	1	271024	27LV1024
128K ¡Ñ 16	1	272048	27LV2048
256K ¡Ñ 16	1	274096	27LV4096
2K ¡Ñ 8	2	6116	-
8K ¡Ñ 8	2	6264	-
32K ¡Ñ 8	2	62256	-
128K ¡Ñ 8	2	628128	-
512K ¡Ñ 8	2	628512	-

P.S.Low voltage type must have 3.3V adaptor and switch to 3.3 voltage selection.

III. Accessories

1. Standard Accessories:

* WICE-4/8MA mainframe x 1
* 26-pin cable x 1
* 32-pin single connector flat cable x 1
* 32-pin double connector flat cable x 1
* 16 bit 40-pin module + flat cable x 1
* 4 signal line hook x 1
* 28-pin IC socket x 2
* System software disk x 1
* User manual x 1

* DC power adaptor x 1
* 3.3V adaptor x 2

2. Option

* 28F002 module driver
* PLCC adaptor

IV. Host Computer Requirements

*IBM PC or compatible computer (above 386)
*MS-DOS VER 3.0(or above); Windows 3.1/95

V. Installation

1. Plug one head of 26-pin cable in WICE-4/8MA, and another head in printer port.
2. Switch the selector to choose which voltage device you want to emulate. For example, you want to emulate 5V device then switch the selector to 5V.
3. Plug adaptor in 110V power socket and the other head in WICE-4/8MA DC IN.
4. If you want to emulate 3.3V device, add 3.3V adaptor is needed. Then plug 32-pin cable in WICE-4/8MA.
5. Install the system software. (key in INST8MD.EXE under DOS)
6. Run the software.

VI. Hardware Specification

1. Transmit by printer port.
2. One printer port can control 2 units of WICE-4/8MA.

3. The switch is able to be adjusted to 3.3V or 5V.

(Note:There is no reverse protection when the switch is at 3.3V if without 3.3V adaptor.)

4. Signal line is able to control RESET or HOLD on target board.

VII. DOS Operation Introduction

Note:Change W8 into W4 if you operate WICE-4MA.

1. Path File Operation under DOS

w8 [d:][path] file name [/type] [/#ID] [/EVEN] [/ODD] [/RESET] [/LPTn] [/Nn] [/Snnnnnn] [/V]

(1) [d:] [path] file name: the files which users need to be simulated, include set the disk number/path/file name/accessory file name.

(2)[/type]: assign the name of device

[/16] or [/2716]	= 2K	¡Ñ 8bits
[/32] or [/2732]	= 4K	¡Ñ 8bits
[/64] or [/2764]	= 8K	¡Ñ 8bits
[/128] or [/27128]	= 16K	¡Ñ 8bits
[/256] or [/27256]	= 32K	¡Ñ 8bits
[/512] or [/27512]	= 64K	¡Ñ 8bits
[/010] or [/27010]	= 128K	¡Ñ 8bits
[/020] or [/27020]	= 256K	¡Ñ 8bits
[/040] or [/27040]	= 512K	¡Ñ 8bits
[/080] or [/27080]	= 1024K	¡Ñ 8bits

(3) [/#ID]: assign the emulator. One printer port is able to control two units of WICE-4/8M and each WICE-4/8M has two port.

[/#1A]=WICE-#1A

[/#1B]=WICE-#1B

[/#2A]=WICE-#2A

[/#2B]=WICE-#1B

(4) [/EVEN]: set the data of even position loaded

(5) [/ODD]: set the data of odd position loaded

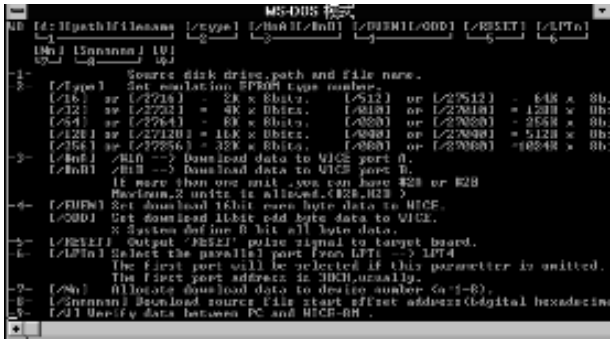
(6) [/RESET]: set the reset signal after transmission, reset the circuit.

(7) [/LPTn]: select the number of Printer Port, n might be 1-4. If you do not want to set this parameter, it will automatically set to "LTP1".

(8) [/Snnnnnn]: select the beginning position of loaded files.

(9) [/V]: verify the data which is from PC to WICE-4/8MA to make sure the correction of the data.

(10) [W8/?]: mention that the way to set parameter. It will show you like following.



Example:

W8 TEST. BIN /010 /V

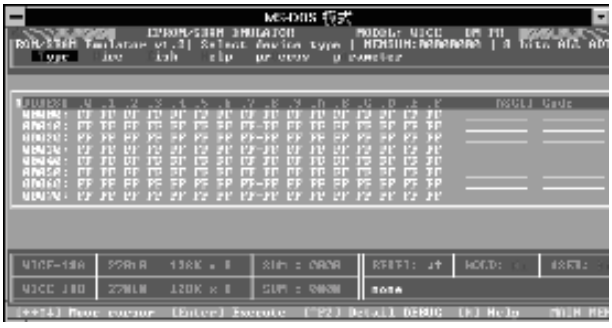
Emulate 27010 from file TEST.BIN to port A

The error message

1. Have not source file name enter!
   without assigning the source of the file name
2. Source file not found!
   could not find the source file
3. Source file read error!
   the error made from reading source file
4. Source file not *.EXE file or bad!
   the source file is not *.EXE or the file length is not enough
5. Illegal start offset address!
   the start address is wrong
6. Start offset > file length!
   the start address is longer than the file length
7. Illegal download source file allocate to device number
   Error in downloading source file allocate to device number
8. Download data to WICE-8MA error!
   the error from transmitted verification
9. Check the power and the cable of WICE!
   make sure the conncetion of power and the cable of WICE
10. Port B not ready check Port B please!
    please check Port B if it is ready
11. WICE hardware do not define parallel port (LPTn)!
    WICE hardware do not define parallel port address

2. Window Operation under DOS

Key in WICE-4/8/MA under this path and get into main chart.



TYPE : set the type of output
WICE : the function of output/input
DISK : disk loading operating system
HELP : operating introduction and EPROM pinout introduction
PROCESS : process the data in buffer
PARAMETER : set the parameter

A. TYPE:

Set the IC type and output position
[T] Set emulator type
According to IC position for choosing the type of IC

B. WICE:

Transmit the data from buffer to WICE.

1. [M] Move data block to WICE
   Move buffer data from 0000 position to WICE
2. [Shift] [M] Move any block to WICE User can transmit any block data to WICE

3. [R] Read WICE data into buffer
   Read the data from WICE into buffer
4. [N] Read WICE data check sum
   Calculate and show the data check sum
5. [V] Verify WICE/Buffer data
   Verify the difference between WICE and buffer, if there are differences it will show you the address and the data.
6. [Ctrl] [C] Clear WICE data to "FF"h"h
   Clear WICE data to "FF"h
7. [E]Move data with error check
   Examine error while transmitting data"h
8. [1] Reset target board (Pluse)
   Send the pluse signal to target board, it is a signal which is from high to low and then back to high.
9. [Shift] [1] Change RESET Output state
   Change RESET output state from high to low or from low to high.
10. [2] Change "HOLD" output state
    Change HOLD output state from high to low or from low to high.
11. [3] Change "USER" output state
    Change USER output state from high to low or from low to high.
12. [Z] Change memory (cache) segment
    Change memory cache segment

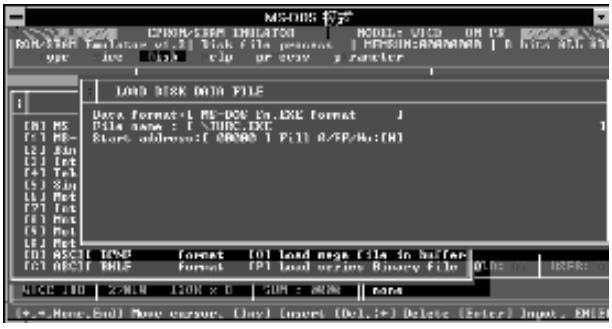
C. DISK

Disk loading operating system.

1. [Ctrl] [D] List disk directory
   List the file name/length/date in the disk

2. [L] Load disk data file to buffer

   Download disk files to PC buffer, it will list 26 types of transmission format. Normally, it is [2] Binary/Machine Code or [3] Intel HEX format. You do not have to key in the file name, simply use A:*.* to list the data in the file and download it by using the cursor.



   Start address [00000]: indicate the start address of buffer,
   Fill 0/FF/NO: fill in [ ].
   [0]: clear the buffer data to 00h before loading
   [F]: clear the buffer data to FFh before loading
   [N]: do nothing to buffer before loading

3. [S] Save buffer data to disk

   Save buffer data to floppy or hard disk

4. [Shift] [L] Load encryption data to buffer

   load encryption data to buffer

5. [Shift] [S] Save encryption data to disk

   Save encryption data to disk

6. [Ctrl] [M] Define macro key

   User define macro key to buffer

   Macro key capture:[ ] you can set from F1 to F10

Macro key remark: [ ] key in the note of file name

Example:

Set the procedure in ROM.BIN into macro key.

(1) Press [Ctrl] [M] and do the set-up like following:

Macro key capture: [F2]

Macro key remark: [ROM.BIN]

(2) Press [Enter]

(3) Press [L] to load 26 types and click [2] Binary/ Machine Code

(4) Press [Enter] to load A: *.* then [Enter], after listing file name move the cursor to ROM.BIN

(5) Press [Enter], choose the start address 0000. Press [F] to select blank and fill the data. Then press [Enter] to start loading.

(6) Press [Ctrl] [M] to end the set-up procedres

Note: You can press [F2] to repeat above procedures.

7. [Ctrl] [E] Erase macro key

Erase the set-up macro key

8. [Ctrl] [T] List macro key

List macro key and its explanatory notes

9. [Ctrl] [L] Load macro key file

Load macro key file to buffer, it will automatically load UNIV.KEY when you get into the system.

10. [Ctrl] [S] Save macro key file to disk

Save macro key file to disk

11. [Shift] [T] View text file

View text file on screen, the function is the same as "type" in DOS.

12. [Ctrl] [I] Rest time, system lock

    Rest time which you can set password to avoid someone else usurp the data.

13. [0] To decompose big file (>262K)

    Decompose big file into small one. Please refer to HELP.

14. [W] Select mega buffer file

    Select mega buffer in disk

15. [Shift] [I] Initial mega file buffer file in disk

    Product 1MEGA buffer in disk

16. [Ctrl] [Q] Exit, Return DOS

    End of work, press [S] SAVE all parameter and file then exit

    Press [Y] EXIT return to DOS, not saving the data

    Press [N] No not leaving the emulator software

D. HELP

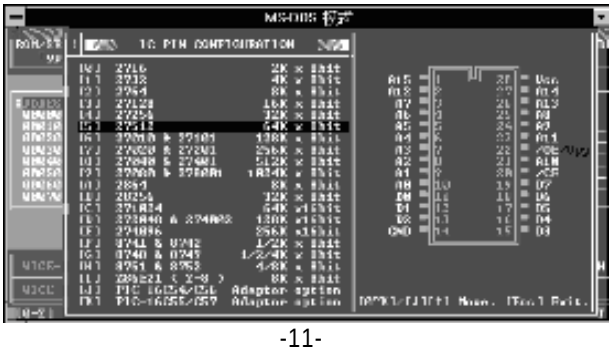
Operating introduction and pin configuration

1. [H] HELP

   Operating introduction, you can check by [Pgup] [Pgdn]

2. [I] Device information

   Provide IC pin configuration



E. PROCESS

Process the data in buffer.

1. [D] Dump/Edit buffer data
   Showing the whole buffer data which contain HEX/ASCII to edit. It will show you the binary, hexadecimal and ASCII CODE of code format.
   Key in [Ctrl] [E] to edit HEX
   [Ctrl] [A] to edit ASCII
   [Ctrl] [D] to go the data you want to examine
   [ESC] back to main screen
   This function will provide you a easy way to DUMP and EDIT. You can press [Ctrl] [F2] into a special process buffer
2. [U] Display buffer used map
   Show the current buffer condition to provide users analyzing
3. [Shift] [D] Edit encryption table
   Provide a spare buffer (256K byte) to process input password, like encryption code
4. [Shift] [C] Buffer data lock/unlock
   Protect the data in main buffer. You may retrieve the data by processing the same password.
5. [Ctrl] [N] Read memory check sum
   Read memory check sum from buffer
6. [Ctrl] [F] Buffer fill (FFh) data
   Fill buffer with FFh data
7. Buffer fill (00h) data
   Fill buffer with 00h data
8. Fill sequential word into all
   Fill buffer with sequential word
9. Fill sequential byte into all

Fill buffer with sequential byte

10. [Ctrl] [X] Divide 16/32/64 to 8 bit
    Divide buffer data into 8 bit
11. [Shift] [X] Combine 8 to 16/32 bit
    Combine 8 bit into 16/32 bit

F. PARAMETER

Set the parameter.

1. [Shift] [A] 8 bit BUS all address
   Transmit 8 bit data from buffer to WICE-4/8MA
2. [Shift] [E] 16 bit BUS Even address
   Transmit 16 bit ,Even data from buffer to WICE-4/8MA
3. [Shift] [0] 16 bit BUS Odd address
   Transmit 16 bit ,Odd data from buffer to WICE-4/8MA
4. [Ctrl] [0] Select printer port
   Select printer port

G. Window software operating example

Transmit BIN of 27010 to drive# on WICE-4/8MA.

1. Press [TYPE] and select [0] WICE#A (27010) to set the size of WICE#A

2. Select [L] Load disk data file to buffer in DISK, it will show you 26 transmission types . Choose Binary/Machine code, then [Enter], the start address is (00000), [Enter], Fill 0/FF/No: [N], then the data is loading in buffer.
3. Select WICE key in [E], it will show you [WICE-1#A (27010)-378 address is A], then press[Enter] for transmitting the data to drive#A.
4. Turn on target board

VIII. Set Up Windows Software

1. Standard Requirements

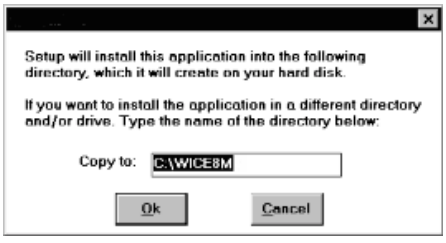
*IBM PC or compatible computer (above 386)
*10M hardisk space
*WINDOWS 3.1/95
*8M RAM

2. Installation Procedures

[A] Please back up your software disk.
[B] Turn on your computer and set the Windows in, please in the

"SETUP DISK" and execute the "SETUP.EXE" in order to set the WICE-4/8MA main program into computer.

[C] Your screen will show the dialogue to choose the set-up path, please key in the path of the file that you want to install.



[D] When you finish the set-up, it appears a new program in your Windows explorer.

[E] You can check WICE-4/8MA chart twice to execute the main program.

3.Connect WICE-4/8MA

Introduction:

Please follow the procedures to connect the WICE-4/8MA with PC.

Connection Procedure:

[A] Plug one head of cable in WICE-4/8MA and the other head in printer port.

[B] Turn it on and execute the WICE-4/8MA main program.

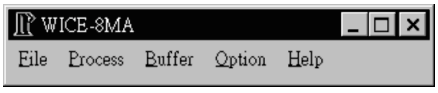
[C] Select Process-WICE control box on the MENU and turn into WICE Control Box.(Or click the third button on Tool bar).

[D] Take a look at WICE DRIVE SELECT, if it is dissolved then it doesn't connected. You can click Auto Detect WICE in WICE Control Box, do the detection again.

[E] Click Auto Detect WICE, if it is still dissolved then check [A] [B] and repeat [C] [D] [E].

IX. Windows Operation

WICE-4/8MA MENU



Menu Introduction

File : functions of file process

Buffer : function of file editing

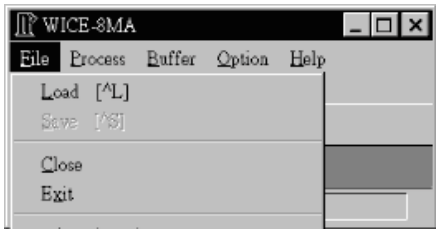
Process: hardware process

Option : working environment option

Help : on line help

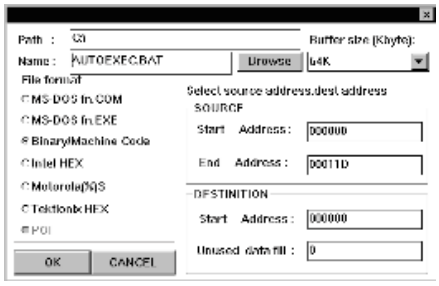
Window: re-arrange windows

1. Introduce File



Load: load in a old file

It will show you a Dialog box like following



Path : to select load path

Name : to select load name

File format : to select file format Buffer

size : to select buffer range (max 16Mbyte)

Source : to select the start file address and end address (Program will self-judge if the input correct or not)

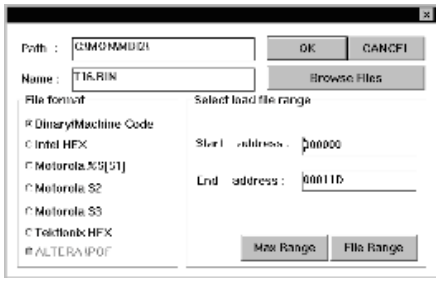
Destination : to select the buffer destination start address for disk and input unused block.

unused fill : unused data fill.

Browse : to select file by browse

Save: save files

It will show you a Dialogue box like following.



Path : to select save path

Name : to select save name

File format : to select file format

Select buffer range : to select buffer range (Program will self-judge if the input correct or not)

Destination : to select the buffer destination start address for disk and input unused block.

unused fill : unused data fill.

Browse : to select file by browse

Buffer range : to fill the buffer range in the destination

File range : to use file range to fill select buffer range

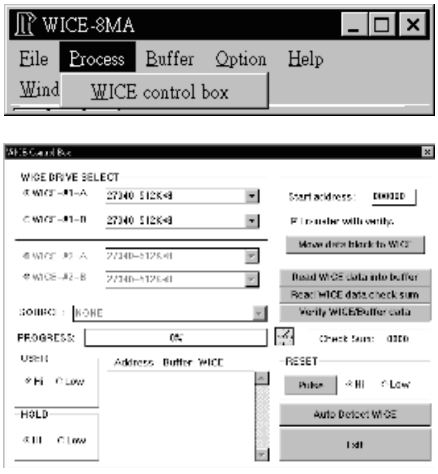
Close: close the current window (current window is focus window)

Exit: exit current program

2. Process-WICE control box

Introduction

Mainly to open the "WICE control box" dialog and control the hardware of WICE-4/8MA. Explain the approach like following about "WICE control box"

". 

[WICE control box]

WICE DRIVE SELECT

To select the device number of emulation device.

SOURCE

Select the data which will transmit to WICE-4/8MA

PROGRESS

Show the progress at the present

Start address

Select the start address of transmission

Transfer with verify

Verify data while transmitting, but it delay the transmitting time

Move data block to WICE

Transmit data to WICE-4/8MA

Read WICE data into buffer

Read data from WICE-4/8MA

Read WICE data check sum

Read data check sum from WICE-4/8MA

Verify WICE/Buffer data

Verify the data in buffer and WICE-4/8MA

Check sum

Show the check sum of data

USER

Hi: turn the USER test hook to high level voltage

Low: turn the USER test hook to low level voltage

HOLD

Hi: turn the HOLD test hook to high level voltage

Low: turn the HOLD test hook to low level voltage

RESET

Pluse: In RESET test hook, it will output pluse from Low to High

Hi: turn the RESET test hook to high level voltage

Low: turn the RESET test hook to low level voltage

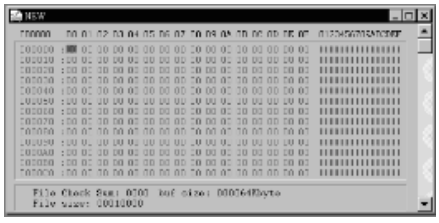
Auto Detect WICE

Detect the connection of WICE-4/8MA

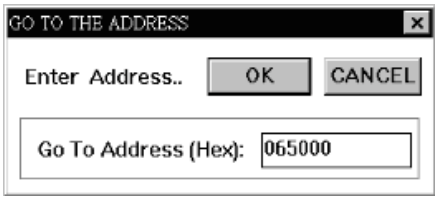
Note:It will delay transmitting time while you choose "Transfer with verify".

3. Buffer

New: open a new edit window to use a blank buffer

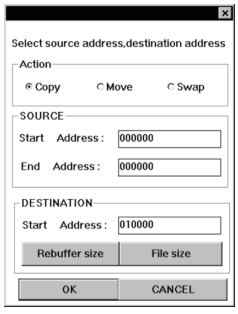


Jump: move the cursor to an address where you would like to go.



Just fill the address and press OK, then you can go there quickly.

Block: for copy, or move, or exchange the block content.



Action: to select to block

1. copy : to copy block
2. move: to move block
3. swap: to swap two blocks

Source: to select source block.

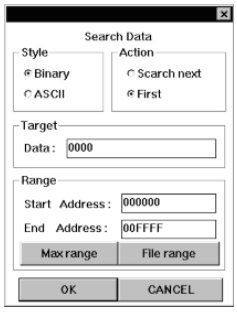
DESTINATION: to select the destination address.

Buffer range: to fill the buffer range in the destination

File range: to fill the file range in the destination

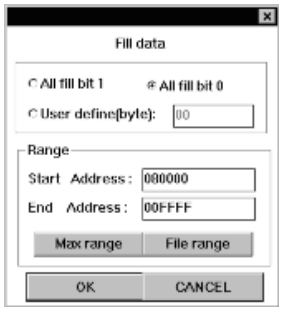
Note: If input wrong to the above selection, the program will send message to remind you.

Search: search for the goal data



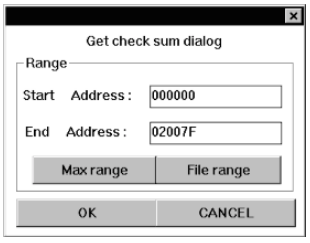
Style: select the search style(use Binary or ASCII to search)
Action : to select the search start
Search next : to search the next one
First : the first search data
Target : the target data (ASCII or Binary)
Range:
Start Address:search start address
End Address :search end address
Max range :the maximum buffer address
File range :the maximum range of file address that you have already load.

Fill: fill in data



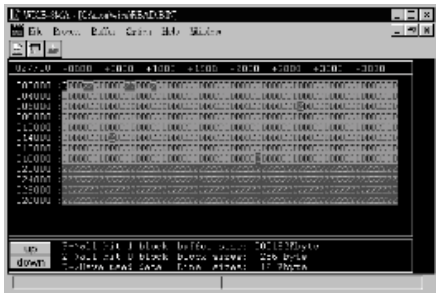
Fill data : select fill data:
All fill bit 1 :All bit fill "1"
All fill bit 0 :All bit fill "0"
User define : to fill the user define byte.
Range : to select and fill the range
Max range : to fill the range with maximum butter range
File range : to fill the range with the maxumum file range

Get Check Sum: get the check sum from the Edit.



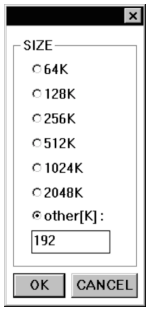
Range: to select the range of calculation
Max range: the maximum buffer range
File range: the maximum file range

Insert File: Insert the file to the edit file. (only accept Binary type)
Use Map: use map to reflect the data of the edit file.



The window of use map

Buffer resize: resize the buffer



Size: select the length of buffer

4. Option

Introduction

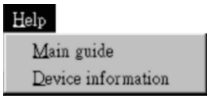
These selections are for you to set the working environment.

Hide status bar: you can hide status bar by choosing this

Text color: you have 15 colors option to choose

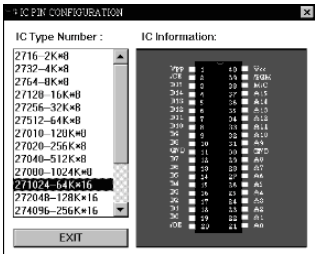
Big tools bar & Small tools bar: you can shift big tools bar or small tools bar

5. Help

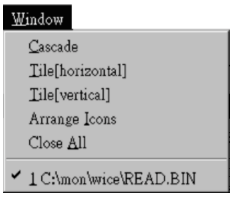


Main guide: You can choose this function if you have any question about WICE-4/8MA.

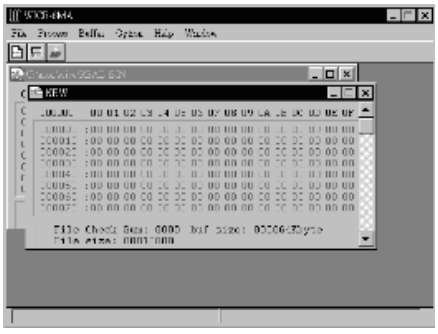
Device information: Show the information of emulated devices pinout like following.



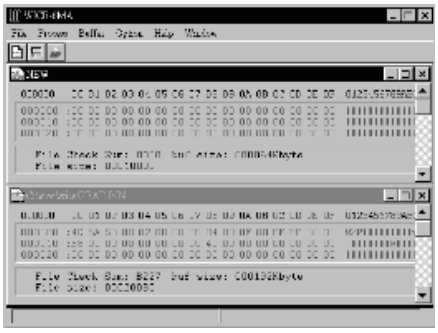
6. Window



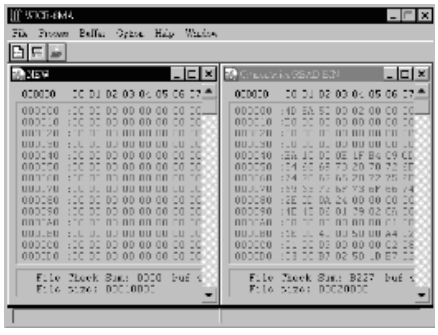
Cascade: to use cascade way for arranging windows



Tile[horizontal]: to use horizontal way for arranging windows



Tile [vertical]: to use horizontal way for arranging windows



[arrange windows by horizontal way]

Arrange Icons: to use arrange icons for arranging windows

[icons arrangement]

Close All: to close all of windows

7. Tools Bar

File---Load function

File---Save function

WICE Control box