

EH-8100

Ethernet-enabled Control Panel

User's Manual



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1 Overview

1.1 Introduction.

The EH-8100 Ethernet-enabled control panel is a breakthrough product that brings an all-new operational interface for Ethernet-based control systems or information appliances in the Internet era.

The EH-8100, a stylish control panel, ends the age of walls that are cluttered with switches, control panels and thermostats. Its wall-mounted design with graphic-mode display is ideal for the kitchen, bedroom, bathroom or office... anywhere you want to control whole-house audio and video, home theater, lighting, security and HVAC.

The EH-8100 can be fully customized for any control environment and any decor. Graphic icons and programmable “quick” pushbuttons let users easily select and control any function.

Using reliable Ethernet connectivity or RS-485 or LON to the devices, EH-8100 lets you monitor, control and operate all home automation or building automation devices or controllers easily with just one finger.

EH-8100's internet/Ethernet service also offers the most efficient method of system diagnostics and maintenance, thus reducing the customer's total cost of ownership.

1.2 Features.

- Affordable and stylish design.
- 128 x 64 resolution mono-display.
- 10/100 Base-T Ethernet.
- RS-485 or FTT-10 Support.
- Built-in Temperature sensor.
- 5 Functional Keypad Design.
- Easy wall mounting or back box mounting system.
- MSC-51 compliant MCU with 24 MHz performance.
- Lonworks Support.
- Supports Hardware Ethernet protocol stack: (TCP, UDP, IP, ICMP, IGMP, ARP)
- Provides ISP download on RS-232 port.

1.3 Application.

- Boardrooms.
- Conference centers.
- Home automation.

- Training rooms.
- Lighting control.
- Environmental control.
- Building automation.
- HVAC applications.

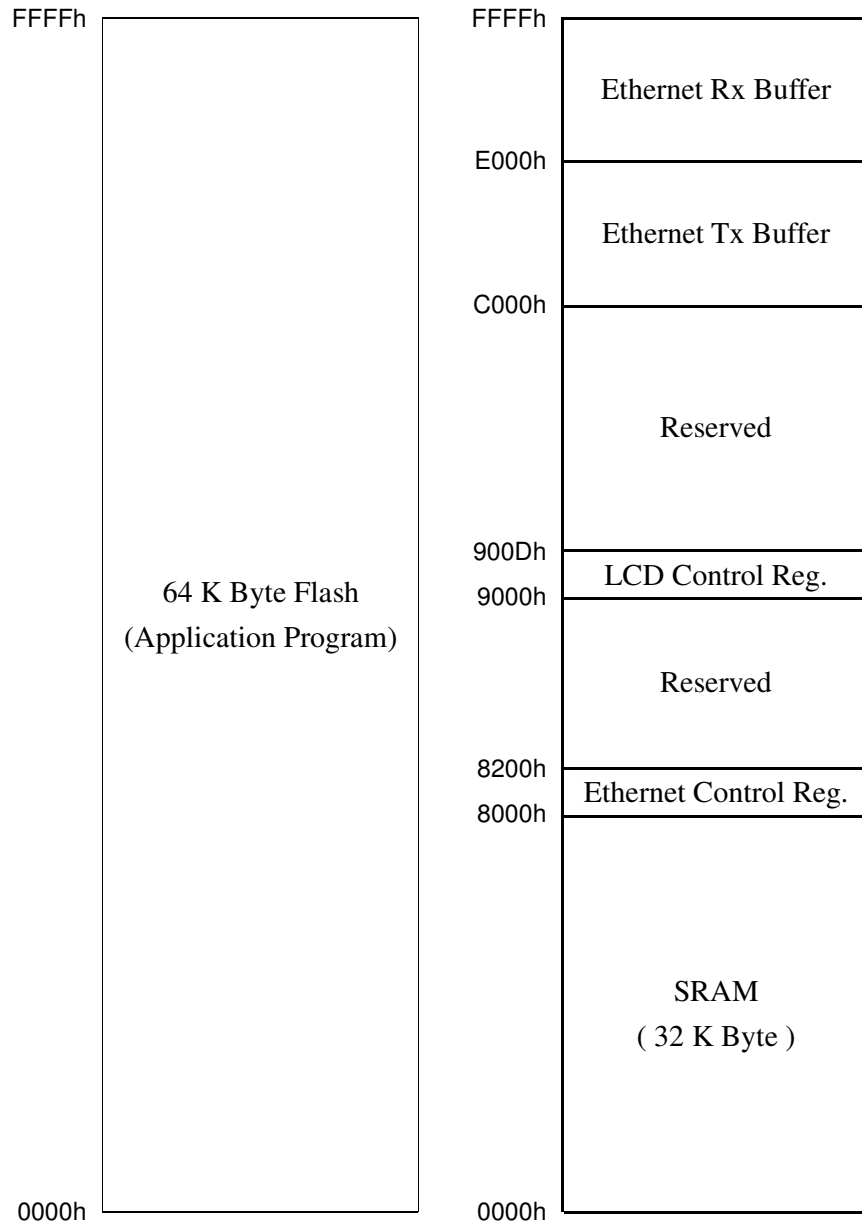
2 Product Specification.

2.1 Hardware Specification

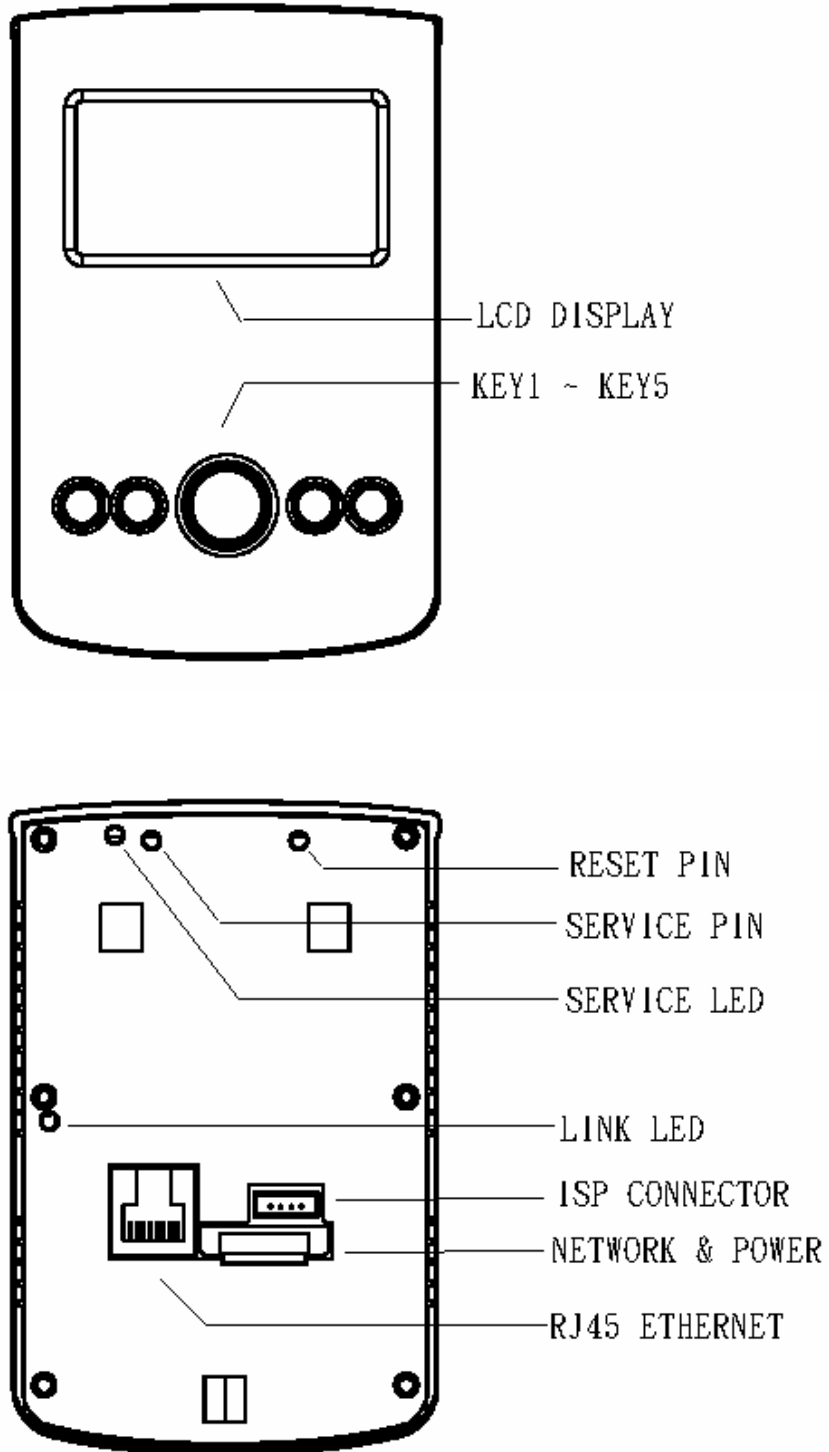
Model	EH-8100-LA	EH-8100-R8	EH-8100-LO	EH-8100-LR	EH-8100-LL
Description	supports LAN	Supports RS-485	Supports LON	Supports LAN & RS-485	Supports LAN & LON
Spec.	<ul style="list-style-type: none"> * 8051 processor with 24MHz performance * 128 x 64 resolution mono graphical display * Built - in Temperature sensor * 5 Functional keypad design * On chip 64KB flash memory * External 32 KB RAM * 12 ~ 30 VDC * Screw Phenix connector 4-pin 2-pin: DC power input 2-pin: Twisted Pair communication port 				
	Network type : <i>10/100 Base -T Ethernet.</i> Support Hardware Ethernet protocol stack: <i>TCP, IP, UDP, ICMP, ARP</i> <i>RJ – 45 terminal type connector</i> Power Dissipation: <i>1W / 24V</i>	Network type : <i>RS - 485</i> Power Dissipation: <i>865mW / 24V</i>	Network type: <i>FTT-10A 78Kbps</i> Power Dissipation: <i>1.3W / 24V</i>	Network type : <i>RS – 485 , 10/100 Base - T Ethernet</i> Support Hardware Ethernet protocol stack : <i>TCP, IP, UDP, ICMP, ARP</i> <i>RJ - 45 terminal type connector</i> Power Dissipation: <i>1W / 24V</i>	Network type : <i>FTT – 10A , 10/100 Base-T Ethernet</i> Support Hardware Ethernet protocol stack : <i>TCP, IP, UDP, ICMP, ARP</i> <i>RJ - 45 terminal type connector</i> Power Dissipation: <i>1.5W / 24V</i>

2.2 Memory map

Memory map of HE-8100



2.3 Miscellaneous (EH-8100)



2.3.1 Ethernet interface



RJ-45 connector

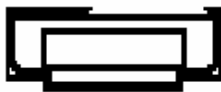
2.3.2 RS485 interface



VDC +
GND
Net +
Net -

Net + & Net - for RS-485 network connector

2.3.3 Lonworks interface (FTT-10A)



VDC +
GND
Net +
Net -

Net + & Net - for Lonworks network connector (FTT-10A)

Ps. It use serial port to connect that between 8051 processor and Neuron chip.

2.3.4 Key button



Key1 ~ Key5 for function selection base on customer define

2.3.5 LCD display



Display status base on customer define

2.3.6 LED

Link LED for Ethernet attached

The Service LED indicates the node status of the detector.

No light: The node is configured.

Flashing light: The node is unconfigured. Each flash period is 1 second.

Fixed light: No software is loaded.

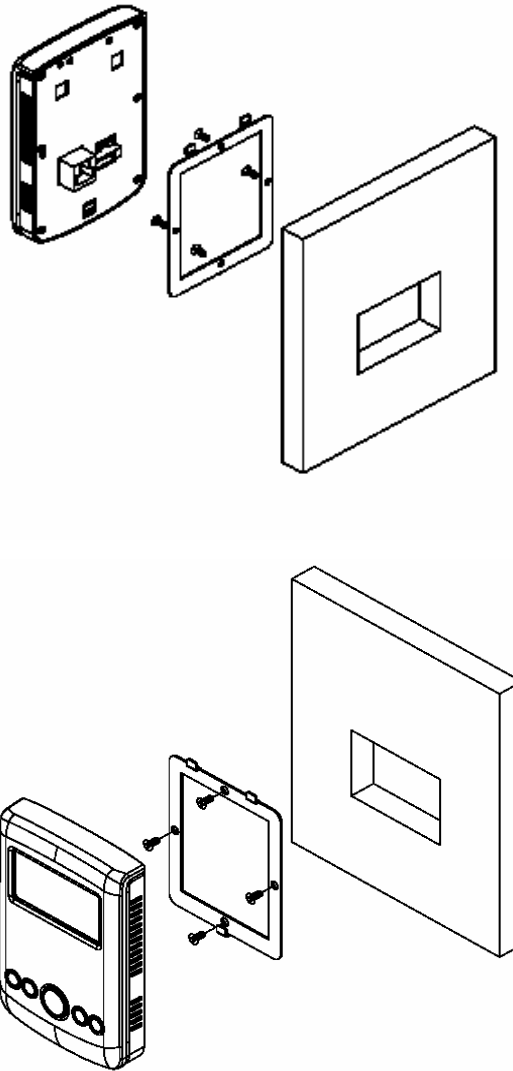
2.3.7 Switch button

Reset Pin for System Reset

Service pin (active LOW). Alternates between input and output at a 76 Hz rate. (Built-In Configurable Pull-up)

3 Installation

3.1 Hardware install



1. Mount the frame at desired location,
2. Make necessary connector wirings:
POWER: VDC 12 ~ 30V
GROUND: GND
NET+ : RS-485+ or LONWORKD

NET- : RS-485- or LONWORKD

Or

RJ-45 Ethernet connector

3. Plug in the POWER& NETWORK connector successfully,
then LCD panel should be light.

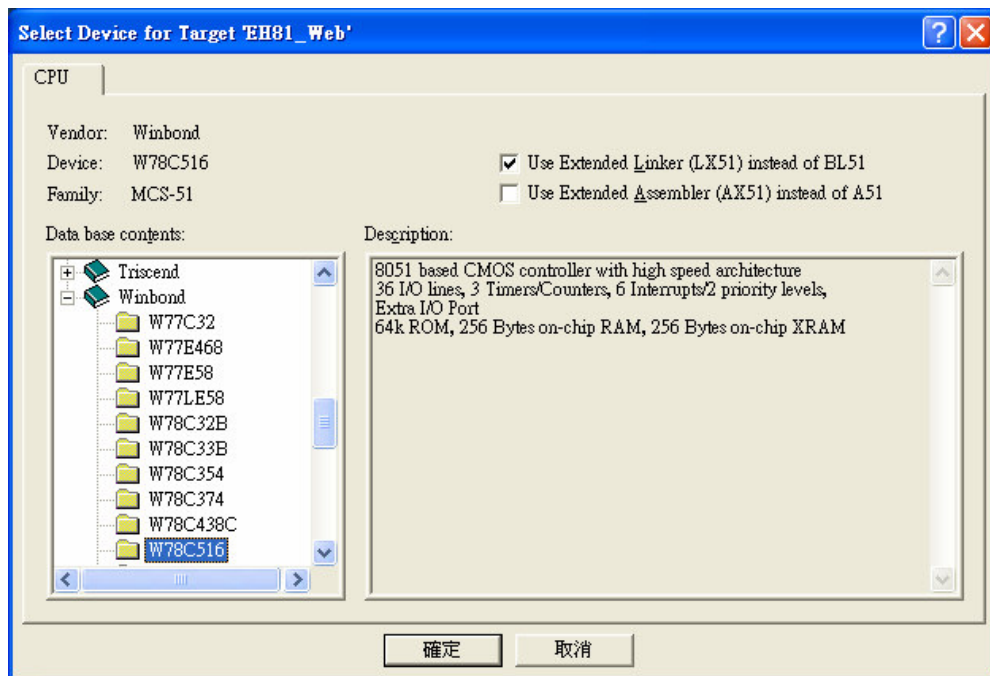
4. Hang the panel EH8100 up the frame.

3.2 Software configure

Using μ Version 2 of Keil software.

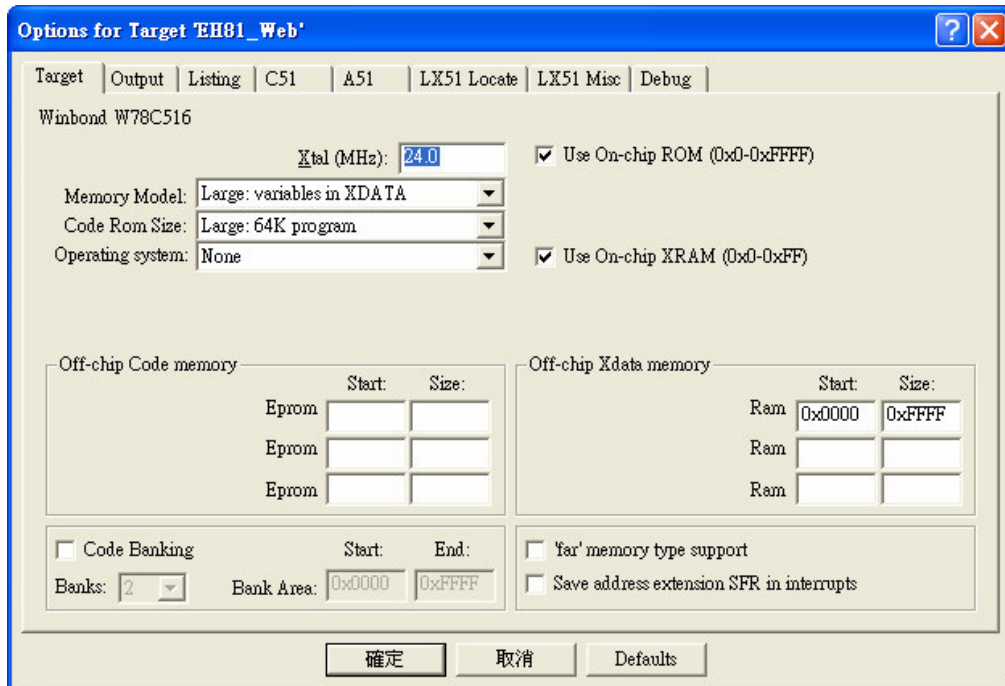
Step 1.

After create project and then “Select Device for Target” to
W78C516.



Step 2.

Select project and do “Options for Target”

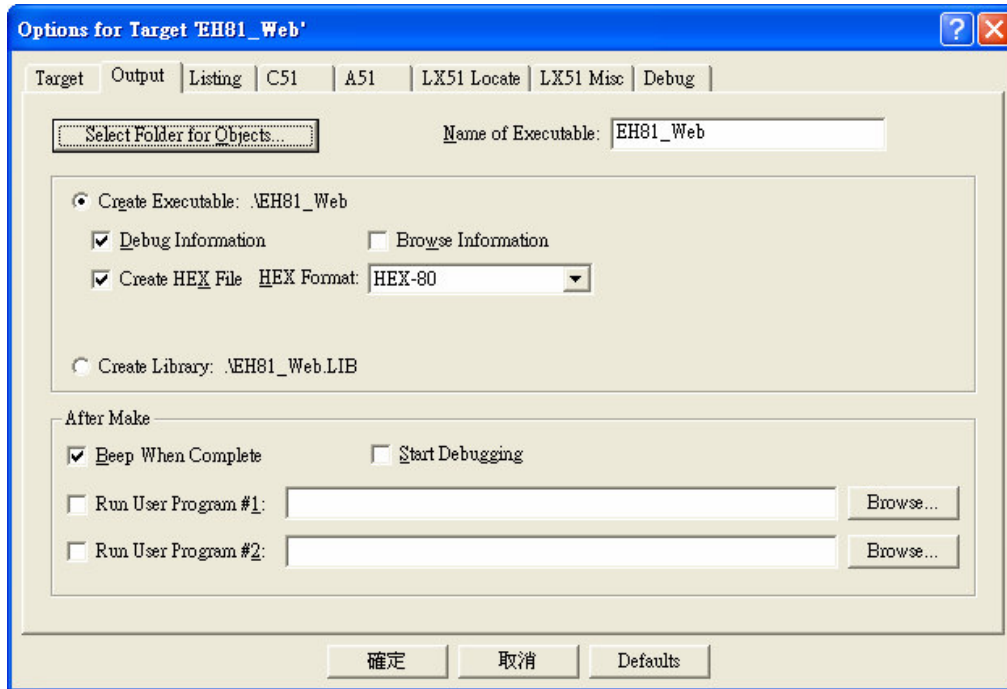


1. Set Xtal to 24 MHz.
2. Memory Model : Large: variables in XDATA.
3. Code Rom Size : Large: 64K program.
4. Off-chip Xdata memory : 0x0000 to 0xFFFF.

Step 3.

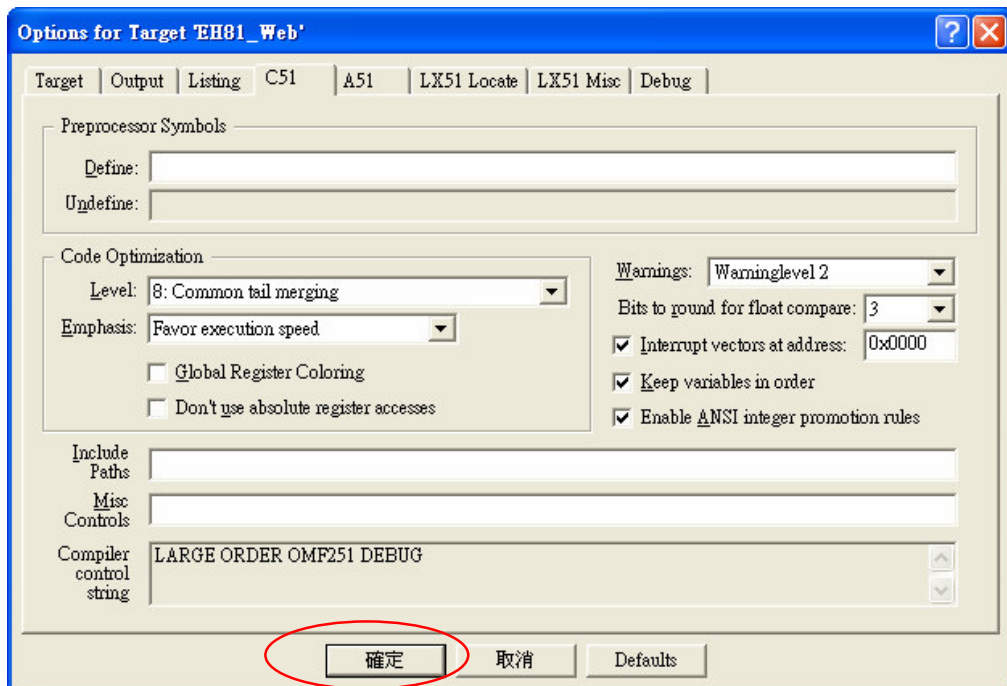
Select “Output” and checked “Create HEX File”

HEX Format : HEX-80.



Step 4.

Select "C51" and checked "Keep variables in order".



Step 5.

Click the "OK" button

5 Firmware Uploading

Setp 1.

Connect program cable and power cable first. HE-8100 will be auto going to firmware uploading mode when the power is on.

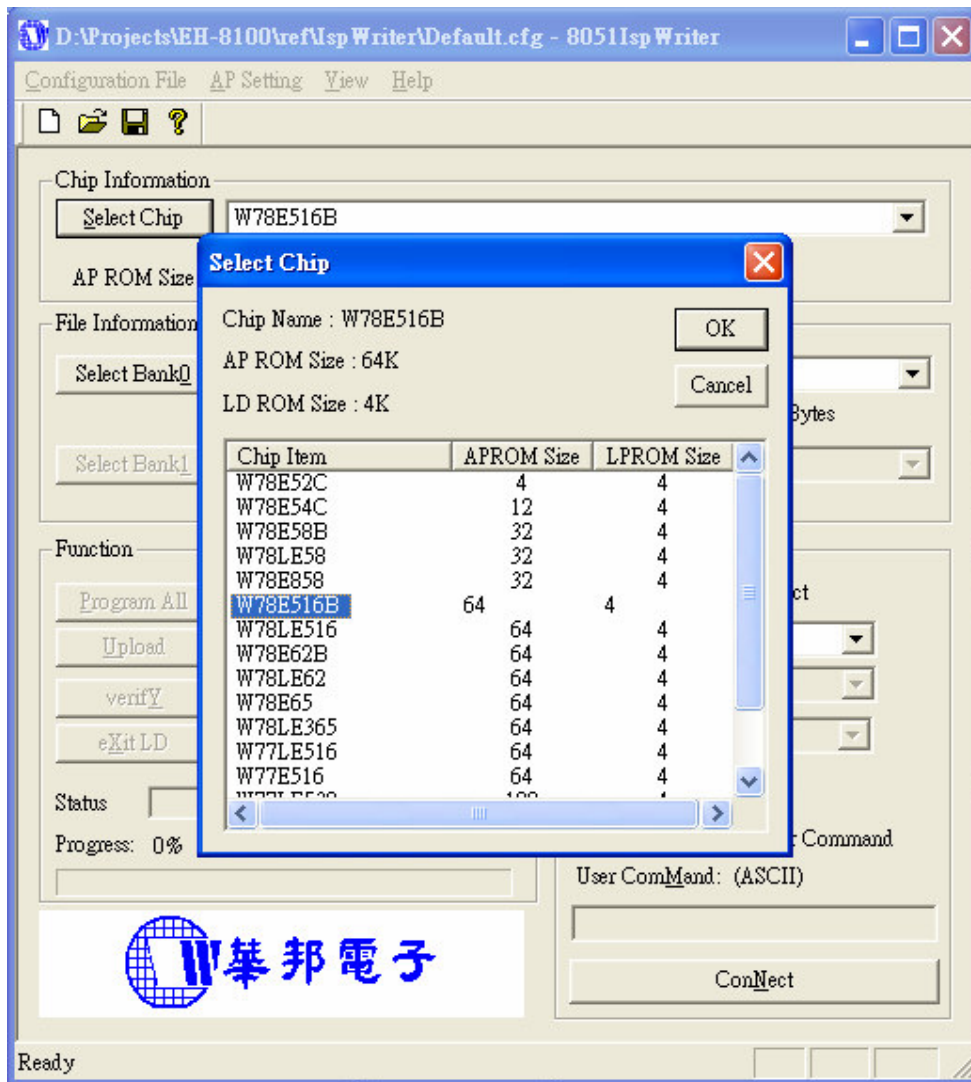
Setp 2.

Use ISP WRITER

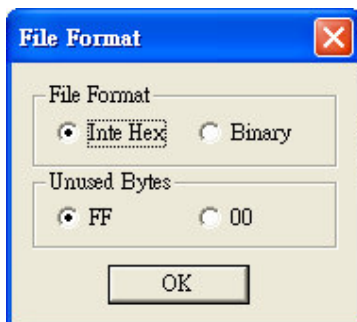
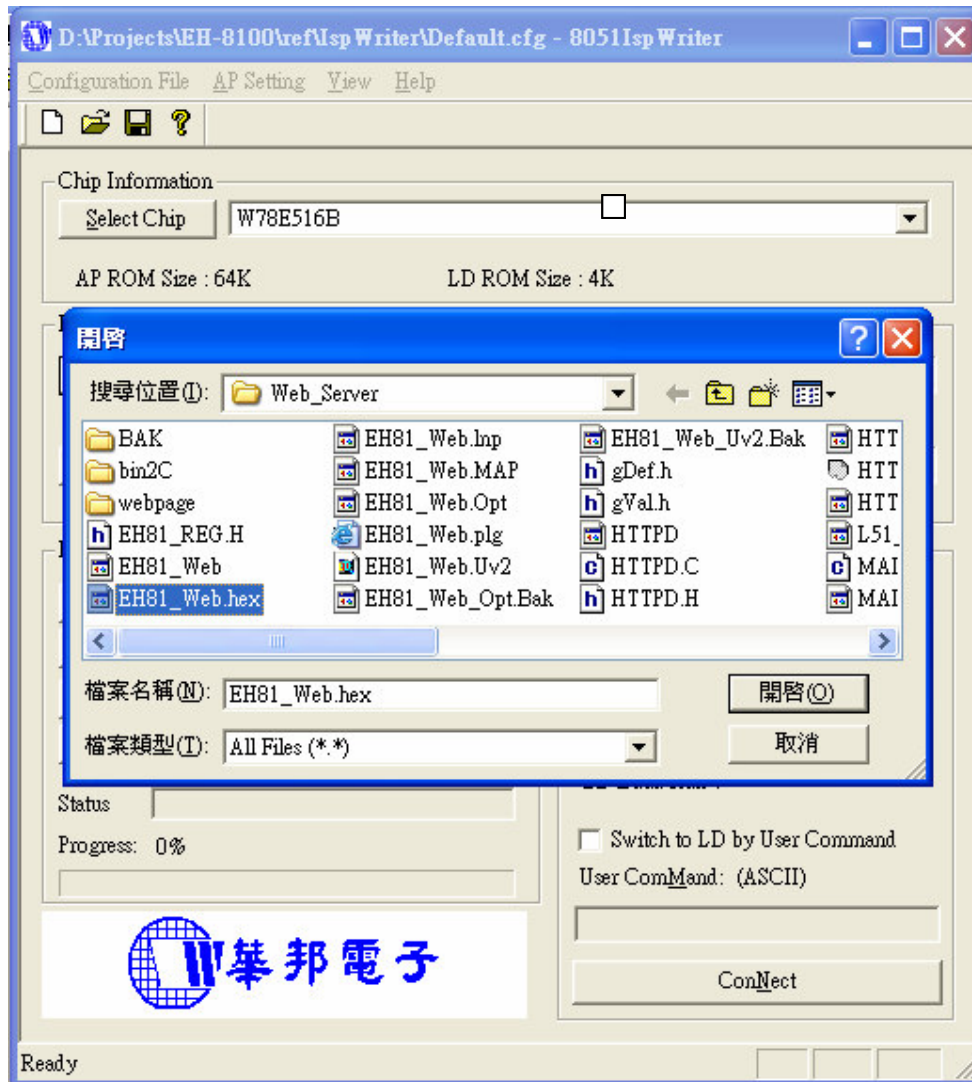
a. You will enter the window as follow after executing the ispwriter.exe file.



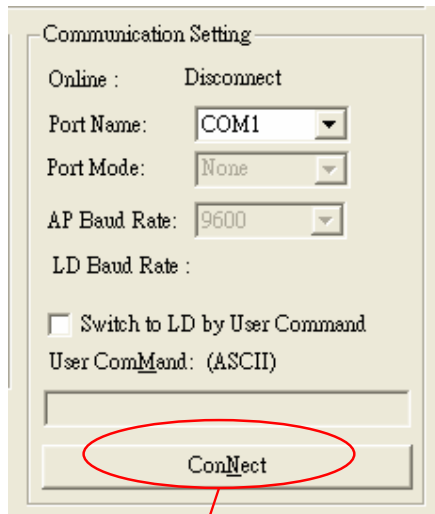
- b. Click the “Select Chip” button, and choose W78E516B type to going to program.



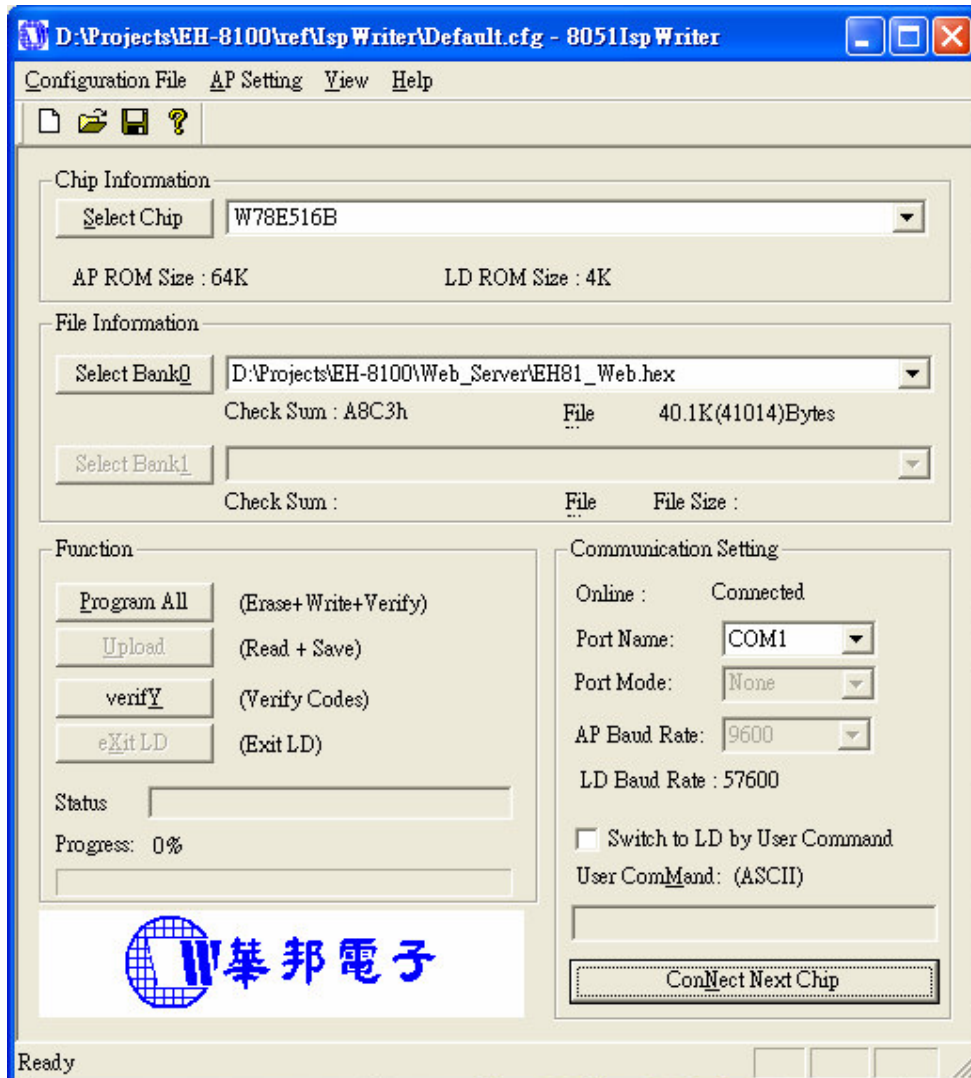
- c. Click the “Select Bank0” button and selecting a file which a HEX format required.



d. Select the communication Setting: Port Name



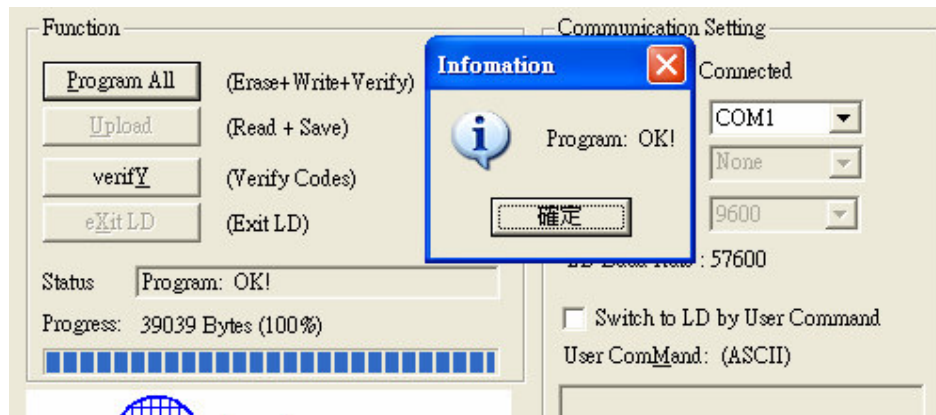
e. Click the “ConNect” button.



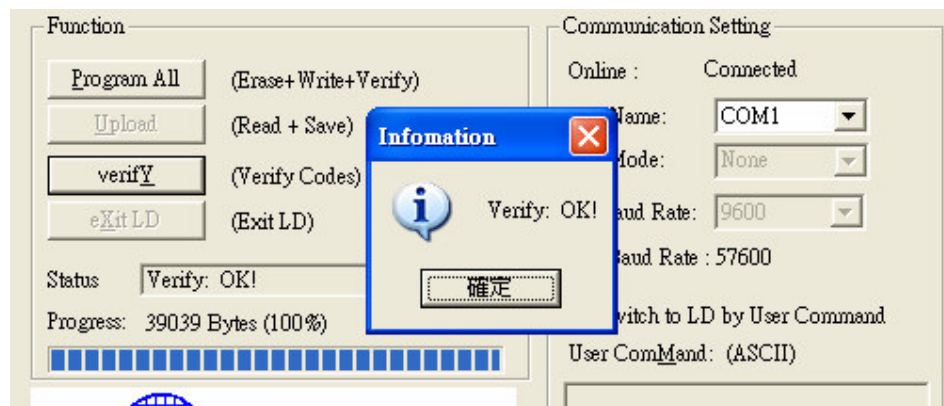
Step 3.

Executing ISP

- a. Click “Program All” button that will execute erase and program. Then you can get the window as follow, and click ok.



- b. Click “verify” button that will execute verify action. Then you can get the window as follow, and click ok.



Step 4.

After update the program of APROM, must remove the program cable and reboot HE-8100. The HE-8100 will be boot from your program of APROM.