HY-Hex Loader
User Manual

Table of Contents

Attention：

1、 With products advancement,HYCON Technology Corp. reserves the right to change the content of this datasheet without further notice. For most up-to-date information, please constantly visit our website: http://www.hycontek.com .

2、 HYCON Technology Corp. is not responsible for problems caused by figures or application circuits narrated herein whose related industrial properties belong to third parties.

3、 Specifications of any HYCON Technology Corp. products detailed or contained herein stipulate the performance, characteristics, and functions of the specified products in the independent state. We does not guarantee of the performance, characteristics, and functions of the specified products as placed in the customer's products or equipment. Constant and sufficient verification and evaluation is highly advised.

4、 Please note the operating conditions of input voltage, output voltage and load current and ensure the IC internal power consumption does not exceed that of package tolerance. HYCON Technology Corp. assumes no responsibility for equipment failures that resulted from using products at values that exceed, even momentarily, rated values listed in products specifications of HYCON products specified herein.

5、 Notwithstanding this product has built-in ESD protection circuit, please do not exert excessive static electricity to protection circuit.

6、 Products specified or contained herein cannot be employed in applications which require extremely high levels of reliability, such as health/medical equipments, security equipments,vehicle equipments or any apparatus installed in aircrafts and other vehicles that will affect human body.

7、 Despite the fact that HYCON Technology Corp. endeavors to enhance product quality as well as reliability in every possible way, failure or malfunction of semiconductor products may happen. Hence, users are strongly recommended to comply with safety design including redundancy and fire-precaution equipment to prevent any accidents and fires that may follow.

8、 Use of the information described herein for other purposes and/or reproduction or copying without the permission of HYCON Technology Corp. is strictly prohibited.

1 HY-Hex Loader Overview

1.1 Introduction

The programming software, HY-Hex Loader, aims to program the .Hex file that generated by all present version of HYCON-IDE by means of hardware programmers (Users are required to accurately select IC model number and programmer ID, detailed description is given in *Chapter 2*).

1.2 HY-Hex Installation and System Requirement

1.2.1 System Requirement of HY-Hex Loader Operation:
- PC Hardware Request
  Compatible PC with PENTIUM® CPU
  128 MB Memory（256MB is recommended）
  10 GB Hard Disk Space
- OS
  Windows XP/Windows Vista/Windows 7/Windows 8
  Supporting 32/64 bit system.
- Applicable Interface
  USB Port,USB HID Port
- Supporting Software Version
  HY11P Hex Loader V2.1 above
- Supporting Products
  -HY11P12, HY11P13, HY11P14
  -HY11P22, HY11P23, HY11P24
  -HY11P32, HY11P33, HY11P35, HY11P36
  -HY11P41, HY11P42
  -HY11P52,HY11P52B,HY11P54,HY11P54B,HY11P58

-HY12P63,HY12P65,HY12P66

Supporting Hardware Model No.

- WK01/WK02/WK02B programmer

- WK05/WK06 /WK07Bprogrammer

Software Version consistency.

Hex files that compiled by all present version of HYCON-IDE can be downloaded for programming via HY-Hex Loader software.

Functions

-Supporting download the Hex files to Flash Memory of programmers

-Supporting read out function of the Hex files that downloaded to Flash Memory of programmers

Note: For some Windows OS, it may require to have administrator identity to install the Hex

Loader to the computer.

Insert the HYCON-IDE CD into the CD ROM drive and find the file in the CD ROM or file to execute Setup.exe.

Following the instruction window dialogs step by step to continue setup procedures. As shown in Figure 1-1.

The first-time installation must initiate USB driver program, setup procedures are as Figure 1-2 shown.
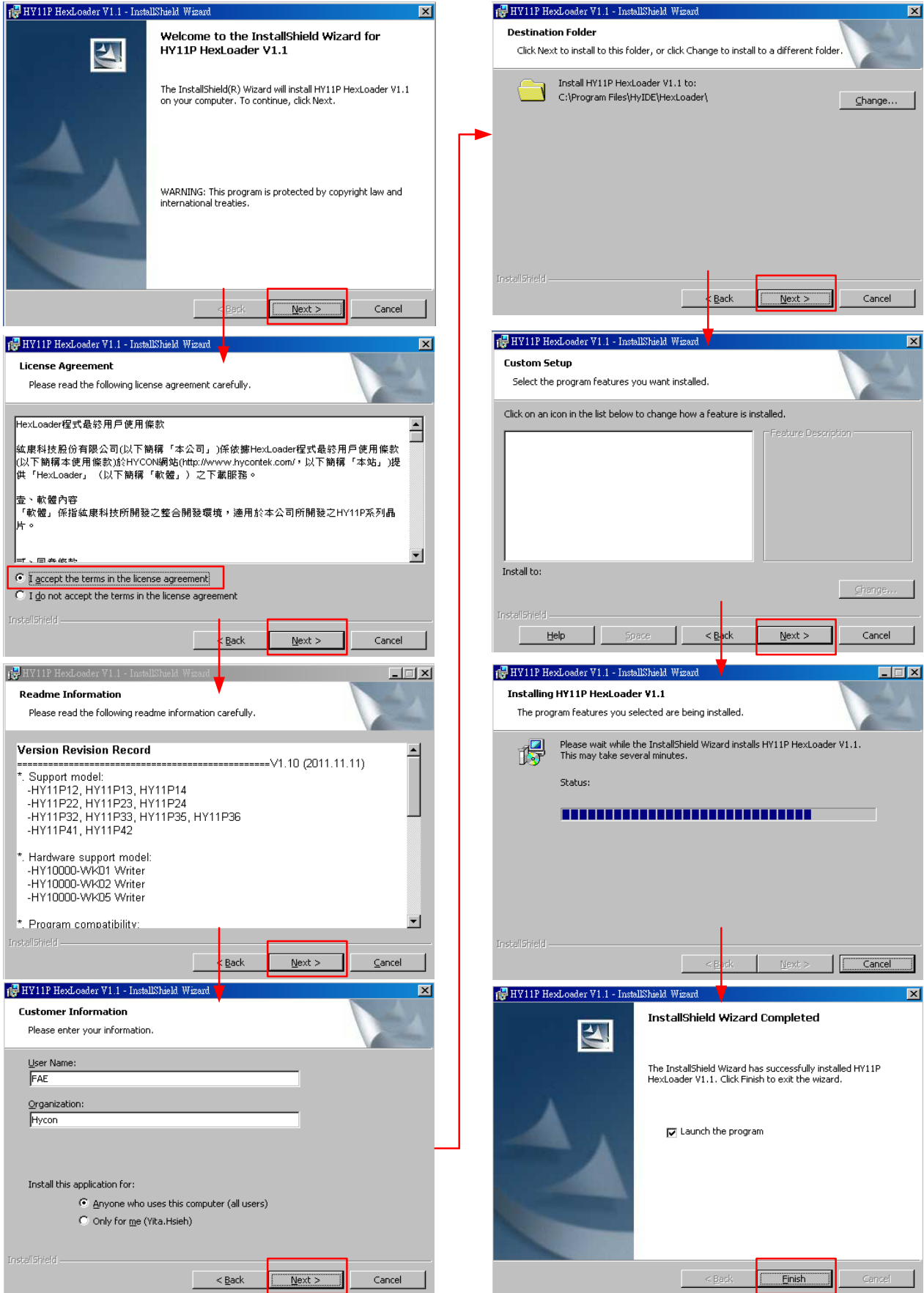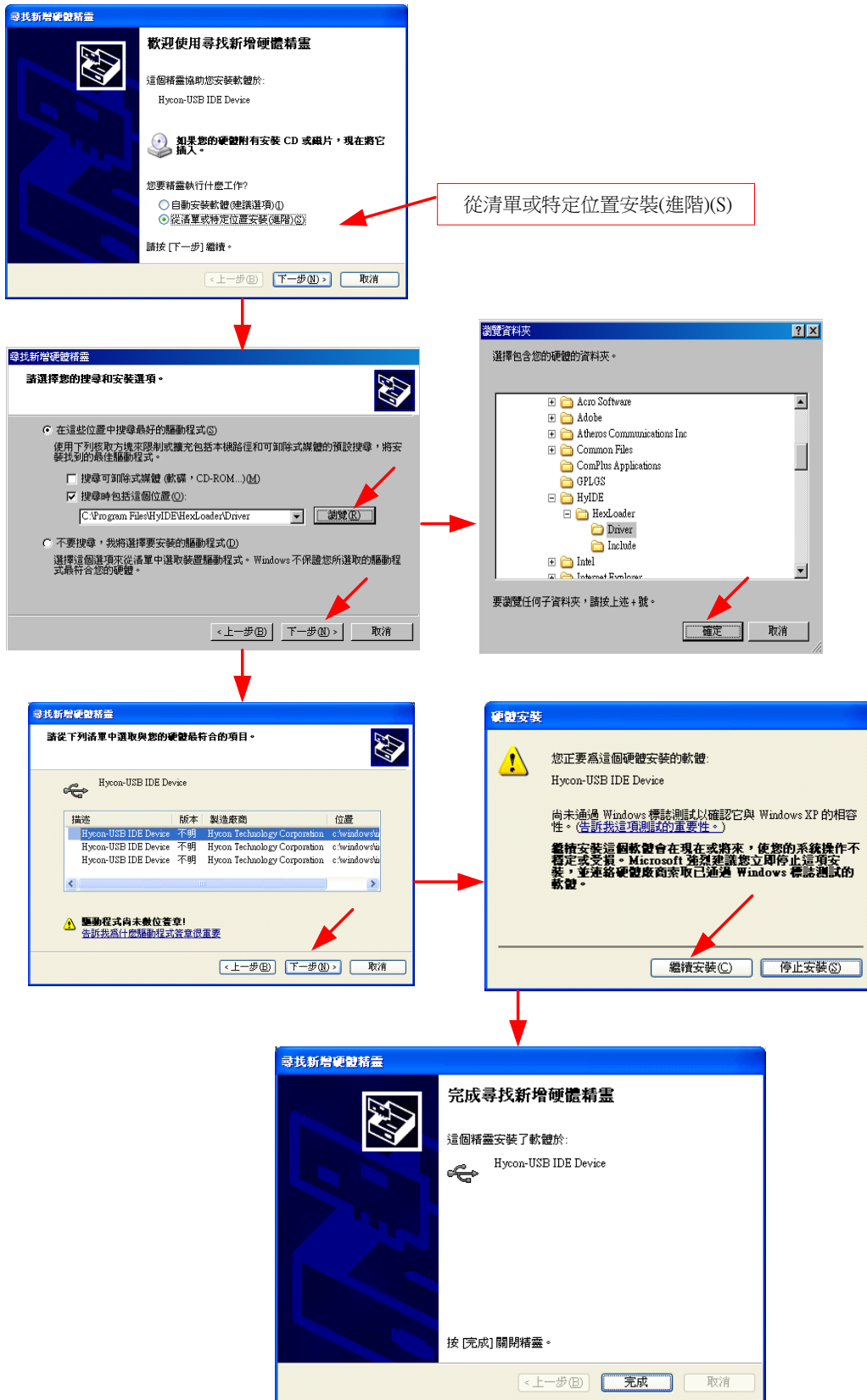
Figure 1-1

Figure 1-2

Uninstall

Please remove the file of "HY11P-Hex Loader V1.1" in "Add/Remove Program" under Control Panel.

Interface

When the software is opened, the window in below will pop up, as Figure 1- 3 shown.
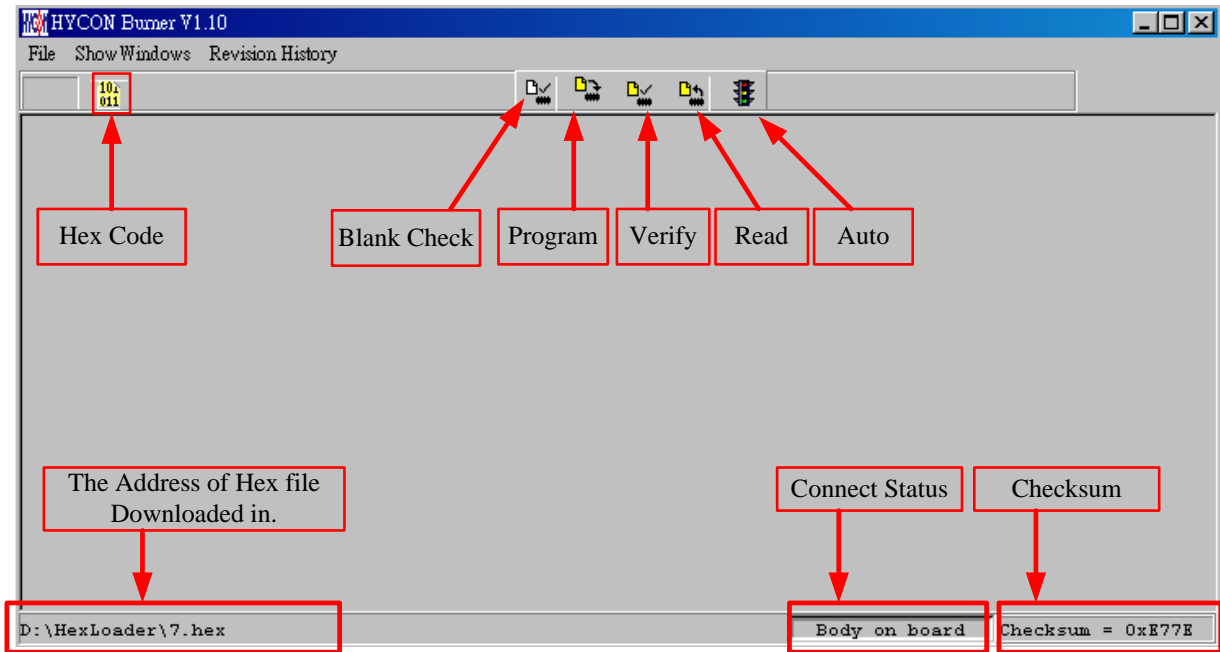
Figure1- 1

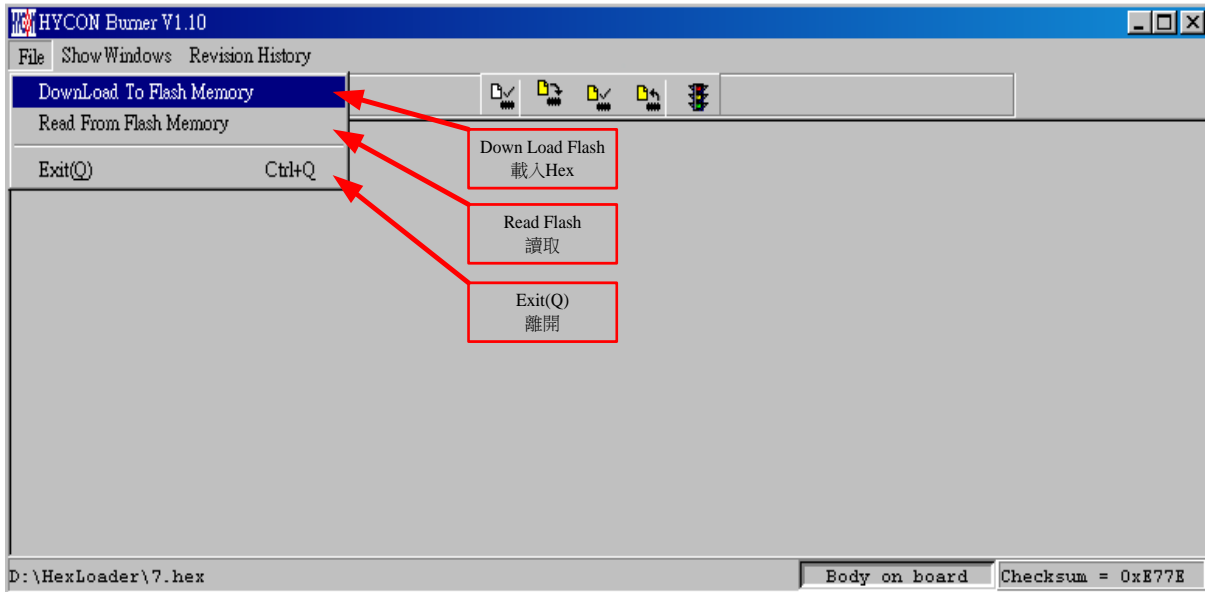Click File and the window will show as Figure 1- 4.

Figure 1- 2

Down Load To Flash Memory → Download to Flash memory of programmer

Read From Flash Memory → Read Flash memory from programmer
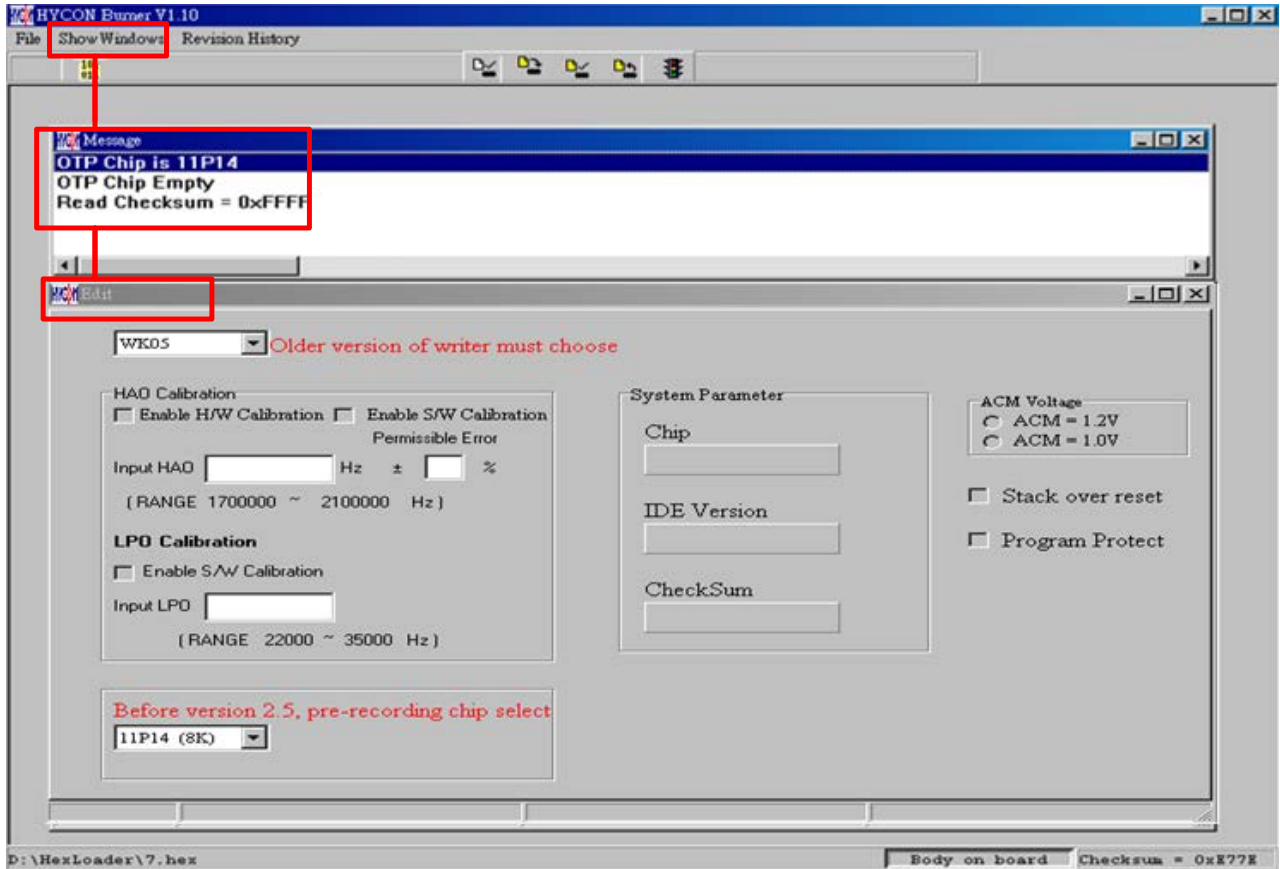
When Show Windows button is clicked, the window will show as Figure 1- 5.

Figure1- 3

Message → message field

Edit → A display window that is defined confirmation item,serve as display function only . no need to tick on this window

Operation Procedures

Step 01: Choose "Down Load To Flash Memory" from File, as shown in Figure 1- 6.

Figure1- 4

Step 02：Select programmer version

Step 03：Select IC model.Note:this option has no actual meaning at present,selecting IC part no. doesn't influence programming result.

Step 04：Select IC program limit times; to enable this function, tick "Enable Program Times" and input the limit number. Do not tick if this function is unnecessary.
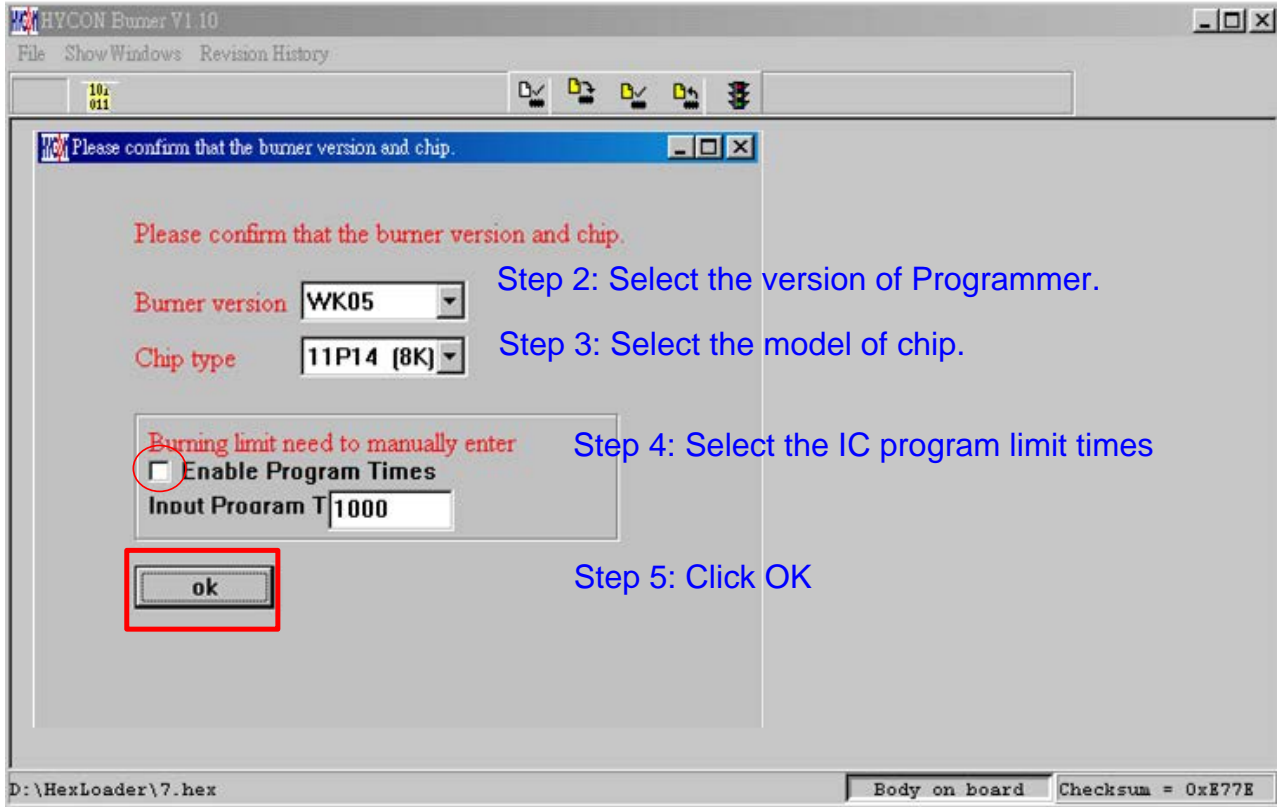
Step 05：Click OK when setups are finished

Figure 1- 5

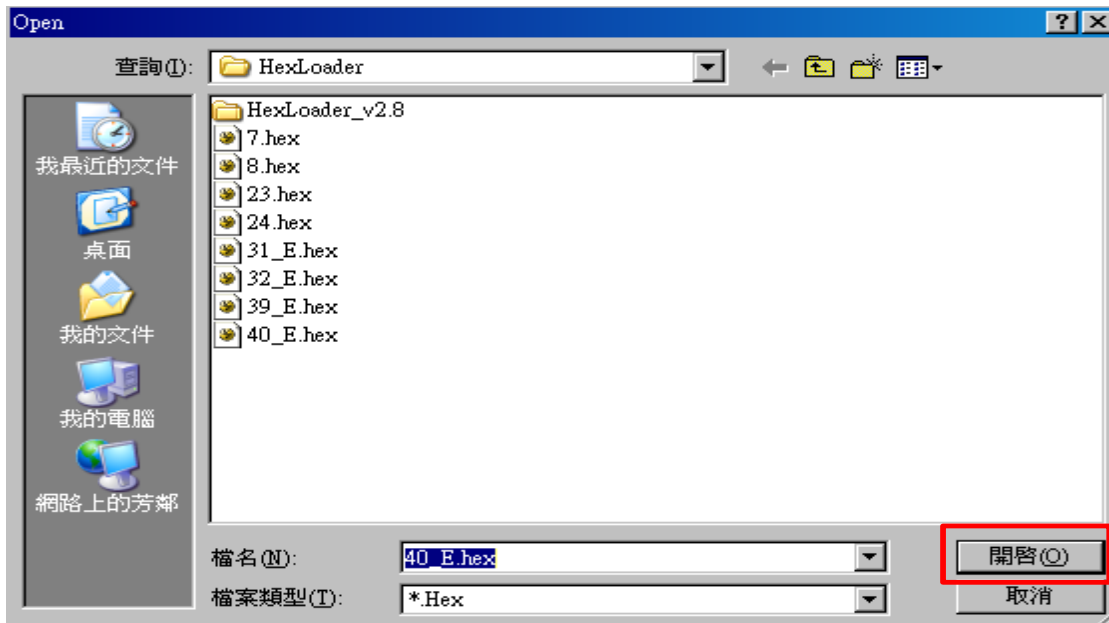**Step 06**：Select Hex files and download to Flash Memory of programmer, as Figure 1- 8 indicated

Figure 1- 6

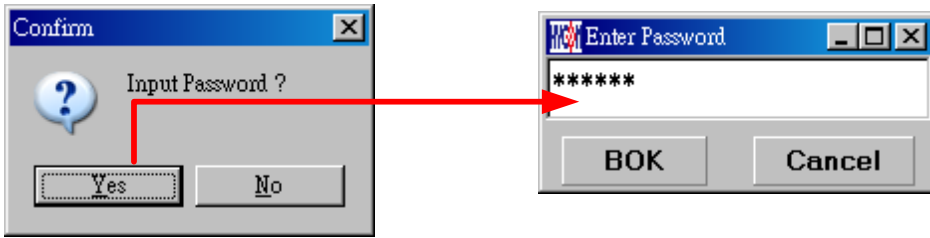**Step 07**：Select whether to input Password, as Figure 1- 9

Figure 1- 7

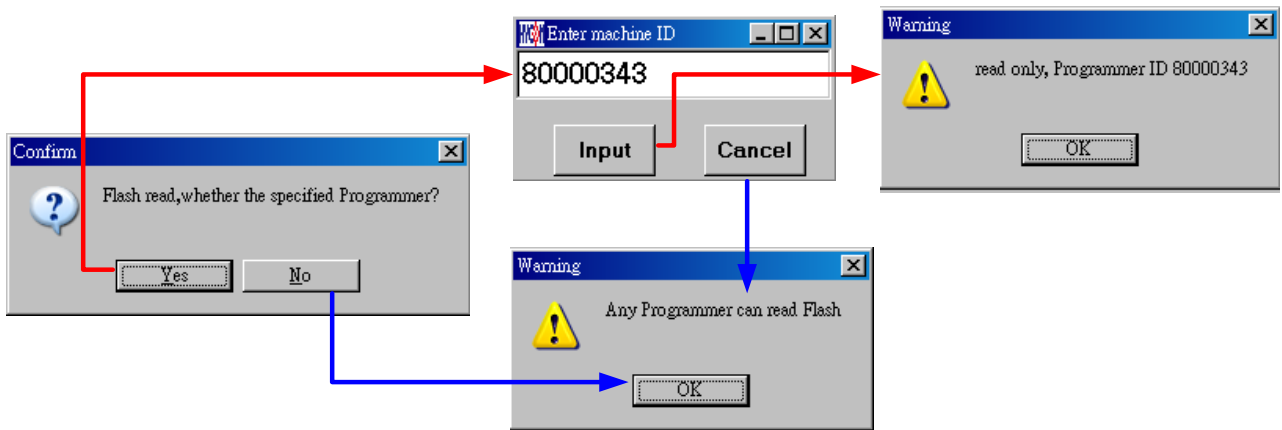**Step 08**：Select whether to specify programmer ID, as Figure 1- 10 shown

Figure 1- 8

Step 09：Message field will show the information once setups were all done, as Figure 1- 11


```
1 Flash had been protected !!
2 read only, Programmer ID:80000343
3 H/W HAO Calibration Function ON!
4 S/W LPO Calibration Function ON!
5 D:\HexLoader\40_E.hex  Download OK
6 Program Times Download OK !!
7 Program Times Function Enable ***** Program Times = 1000
```

1.Flash Memory密碼保護啟動
2.指定燒錄器功能啟動
3.HAO硬體校正功能啟動
4.LPO軟體校正功能啟動
5.顯示成功將程式Download到燒錄器的Flash Memory
6.表示啟動燒錄次數限制
7.顯示還可以燒錄的次數

Figure 1- 9

Step 10：Select Edit to display the information after Hex file was loaded. This window is for information display purpose, no need to change the setups.
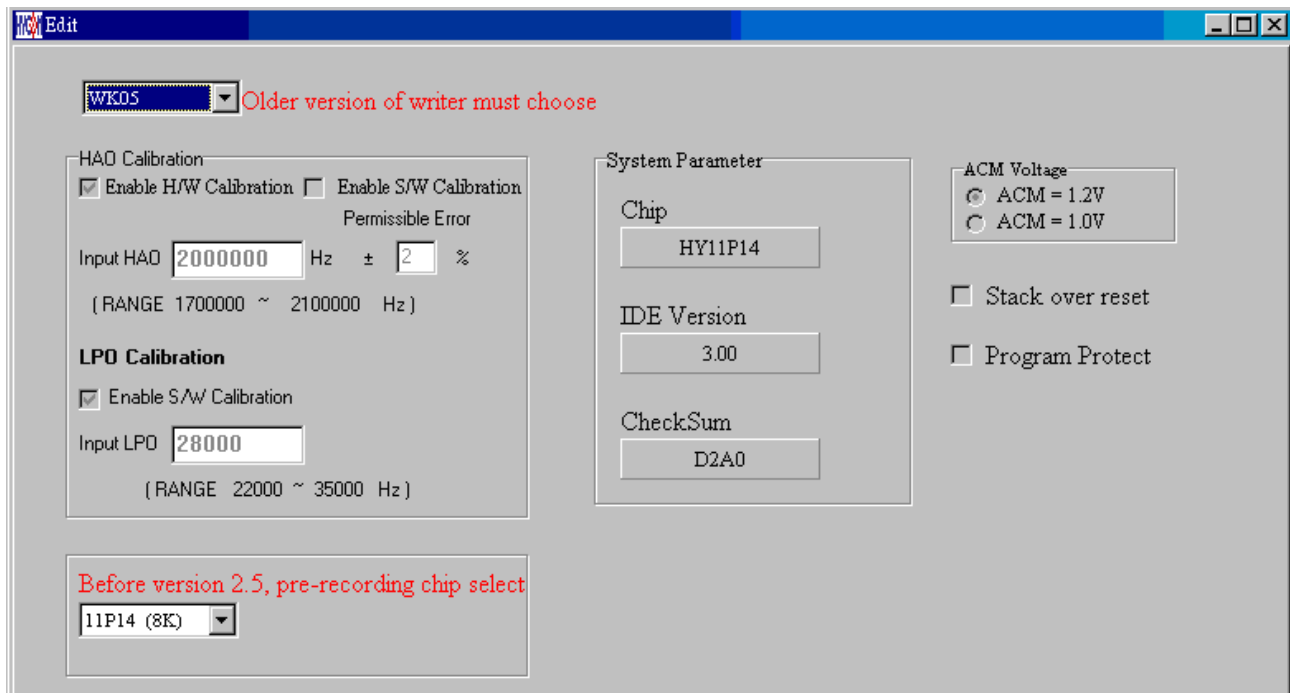
Figure 1- 10

(1) When used USB interface, program code would be loaded to Flash Memory of programmer once the main program was compiled for mass production programming purpose.

(2) Users can choose whether to input password before loading the code to Flash Memory of programmer, as shown in Figure1- 9. This function enables users to see the code that has been loaded from PC to Flash Memory of programmer. Please note that Password can only have 6 digits (ASCII Code). In order to protect the code developed by user, the programmer is defaulted to have a set of Password. If the Password was canceled during operation processes, then it is prohibited to read out the code from the programmer in the future.

Notice: Once the Password was set, it is the same password of programmer operation. This password would be required every time the CODE was to be read out. Please memorize the password carefully so that to prevent that the password can not be read out. The programmer would ask to re-input the password every time a new code is loaded.

(3) After the Password was set, it will ask whether to specify programmer; once a programmers was specified; only it can read the Code of Flash Memory. If not specified, then any programmer can read the code, as shown in Figure 1- 10.

(4) If assemblu options have enabled programming time selection, the message field will display the programming limit time.

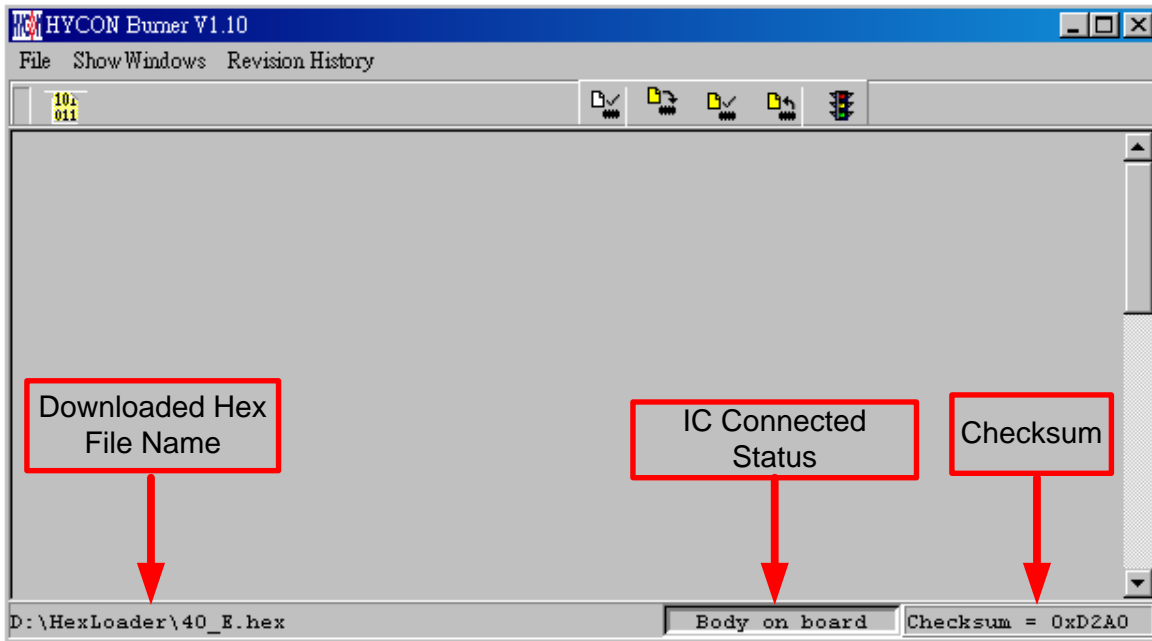(5) After compile finished, the Hex file name and Checksum would be shown below as shown in Figure 1- 13.

Figure 1- 11

Read out the Code in Flash Memory of Programmer

Users can utilize this function to confirm whether the Code in Flash Memory of programmer conformed to the Download Code. However, the input Password must be the same with that of the Download code to enable the display.
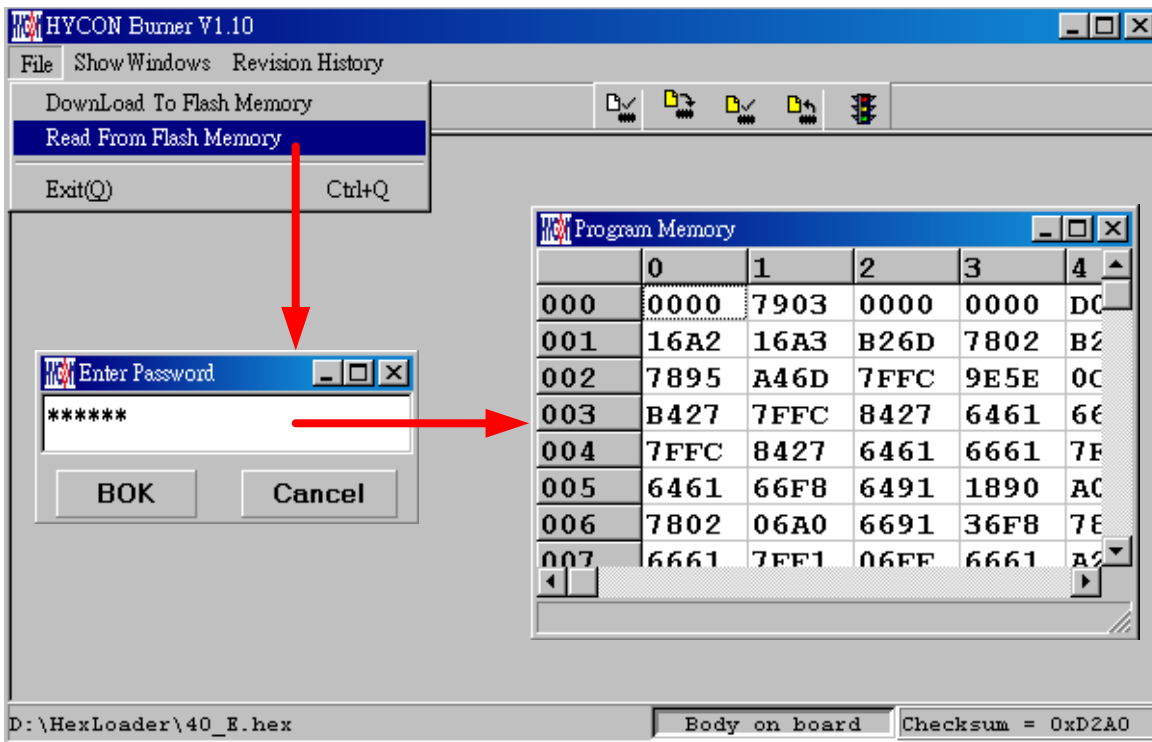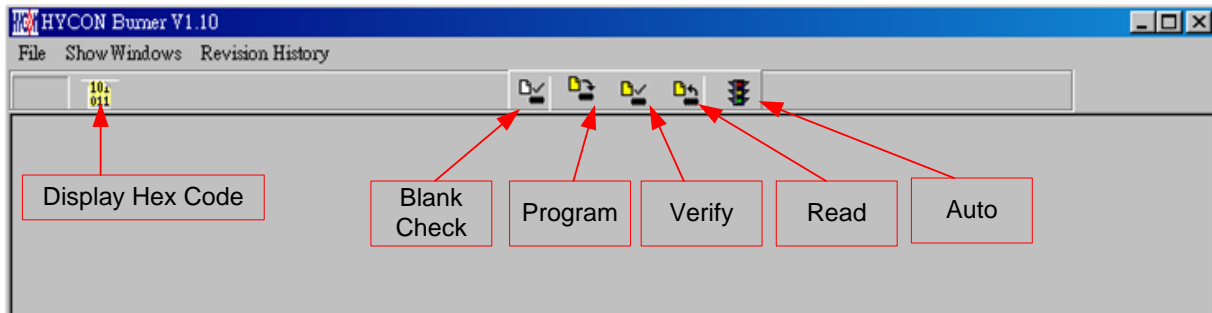

Figure 1- 12

PC Online OTP Programming

Figure 1-1

Blank Check, Programming, Verify and Read Commands can be implemented when the programmed file was successfully loaded into programmer or IDE Flash Memory, IC is connected as Figure 1-16 shown.,not as Figure 1-17 shown.
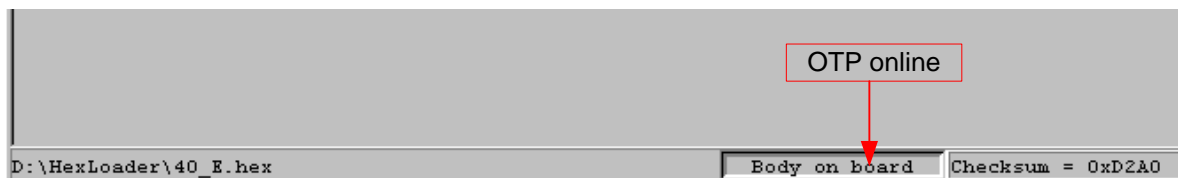
Figure 1-2
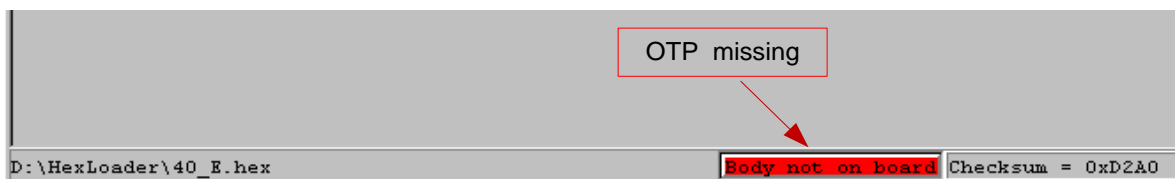
Figure 1-3

1.5.1 Blank Check

The internal code of Blank ICs that have yet been programmed is 0xFFFF. The purpose of checking the IC is to make sure the OTP address content is 0xFFFF.

To check whether the IC is blank means the OTP that will be programmed address content is 0xFFFF.

If the IC selection is correct and the content is empty, a message will appear as Figure 1-18.
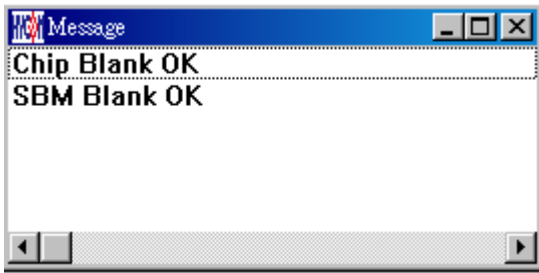
Figure 1-4

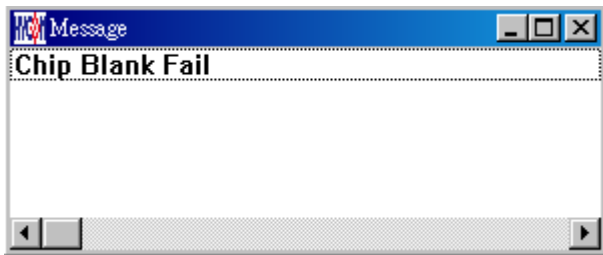If the IC selection is incorrect or the content is not empty, a message will show up as Figure 1-19 described.

Figure 1-5

Program

The purpose of programming is to write Compiler accomplished program into IC OTP. When programming is completed and the IC is assembled as finished goods, programmer can operate the program as users commanded.

Program the downloaded or assembly finished Hex file (displayed at the bottom of the column) in the selected IC and verify the correctness of the programming content.

If the selected IC is correct and the programming succeeds, message will appear at the information column, If "Enable Program Times" is ticked up, the enable program times will minus 1 and the program times left will be revealed in the message column as Figure 1-20 illustrated.
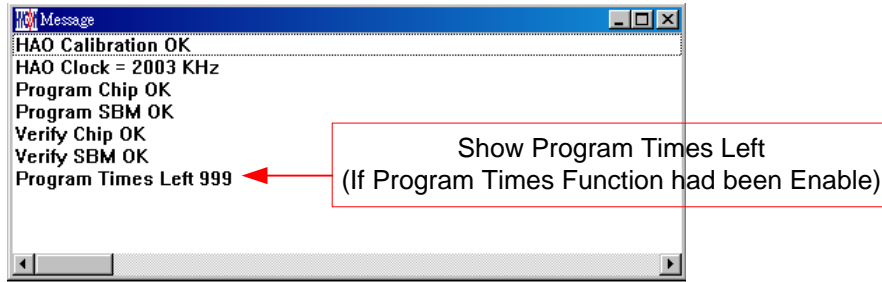
Figure 1-6

Verify

The purpose to verify programming IC is to compare whether the code written into the IC OTP conforms to the program downloaded to programmer Flash Memory.

Verify programming IC content consistency with the downloaded or assembled finished Hex file (displayed at the bottom of the column). If the IC is protected by programmed, this verification is ineffective or the comparison failed.

If IC selection and program verification is success, a message will appear as Figure 1- 21

Figure 1-7

If IC selection is incorrect or the program verification miscarries, a message will pop up as Figure 1-22.
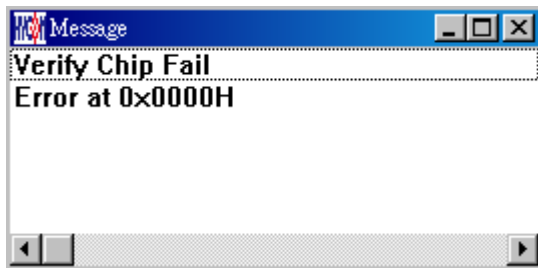
Figure 1-8

Read

The purpose to read the IC is to verify the consistency of OTP Checksum and programmed Hex file. To read IC content, the procedures are illustrated as Figure 1-23. The content will reveal at "Display Code" window.
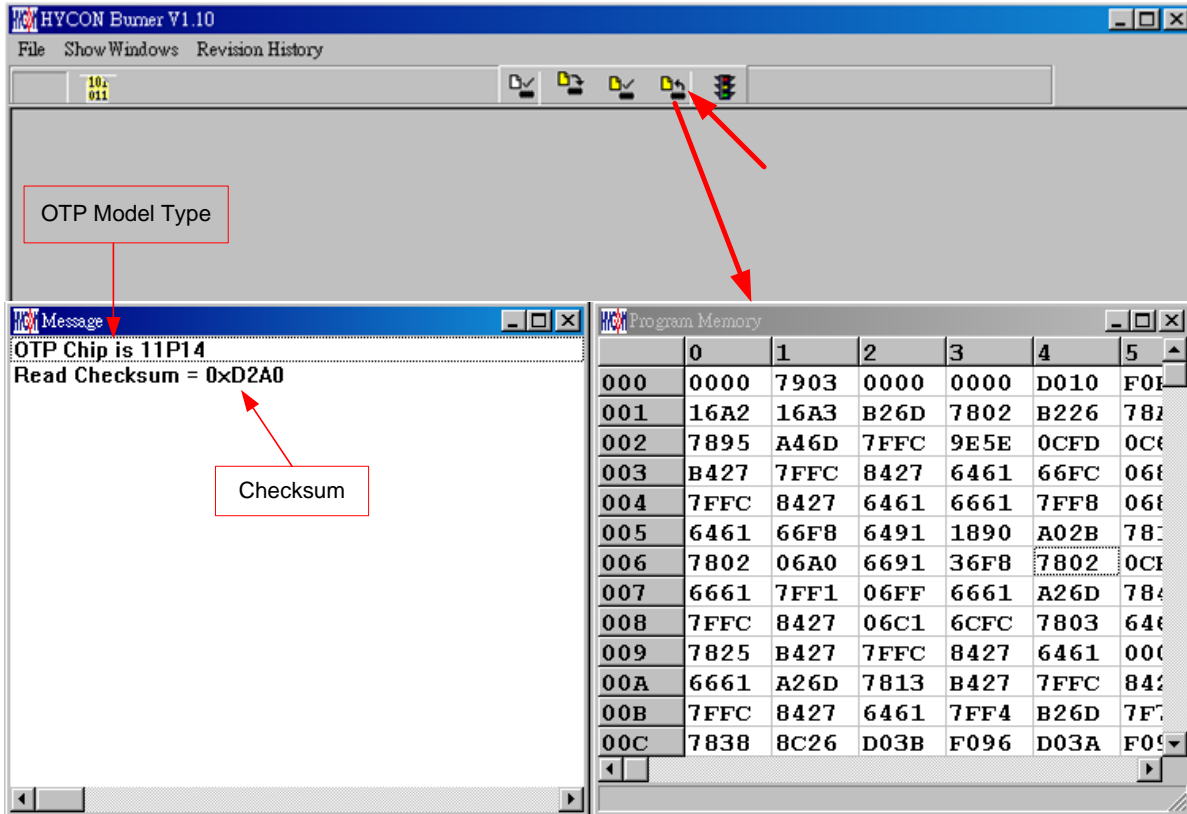
Figure 1-9

1.5.5 Read BIE

Support Part No:HY11P32、HY11P33、HY11P35、HY11P36、HY11P41、HY11P42、HY11P52、HY11P52B、HY11P54

For the chips that support BIE, while reading chip , you can see BIE information in last 64 word of Program Memory。

1.5.6AUTO

Auto integrates Blank Check, Program and Verify function. If user selects Auto, it will first check whether the IC is blank, then to program and verify.

After the execution succeeded, a message will be displayed as Figure 1-24. If the option, "Enable Program Times" is ticked up, the program permitted times will reduce 1 and the program times left will be shown in the message column.
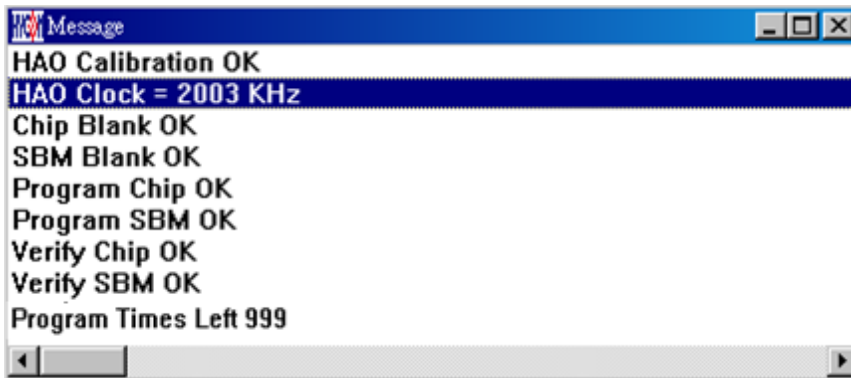

Figure 1-10

If any function fails, the whole process will stop and display an error message in the message column.

2.Hex Loader Notice

2.1 Configuration Items

Pay attention to Notice 01 and Notice 03 when using Hex Loader programming software, or it would lead to error programming.

Notice 01: Please correctly choose programmers (WK01, WK02,WK05,WK06,WK07B).

Notice 02: Please pick the right IC model number (chip type) that matches to the Hex Code.

Note:this option function has no actual meaning,IC number selection doesn't influence programming result.

Notice 03: Mind the Programming limit time. Tick "Enable Program Times" to enable the function and input the programming times. If this function is not necessary, please do not tick.

When Hex Code was loaded to the programmer and the above 3 points were accurately set, the software will set up the programming environment that matched to your selected IC model number. Chip Type now support:

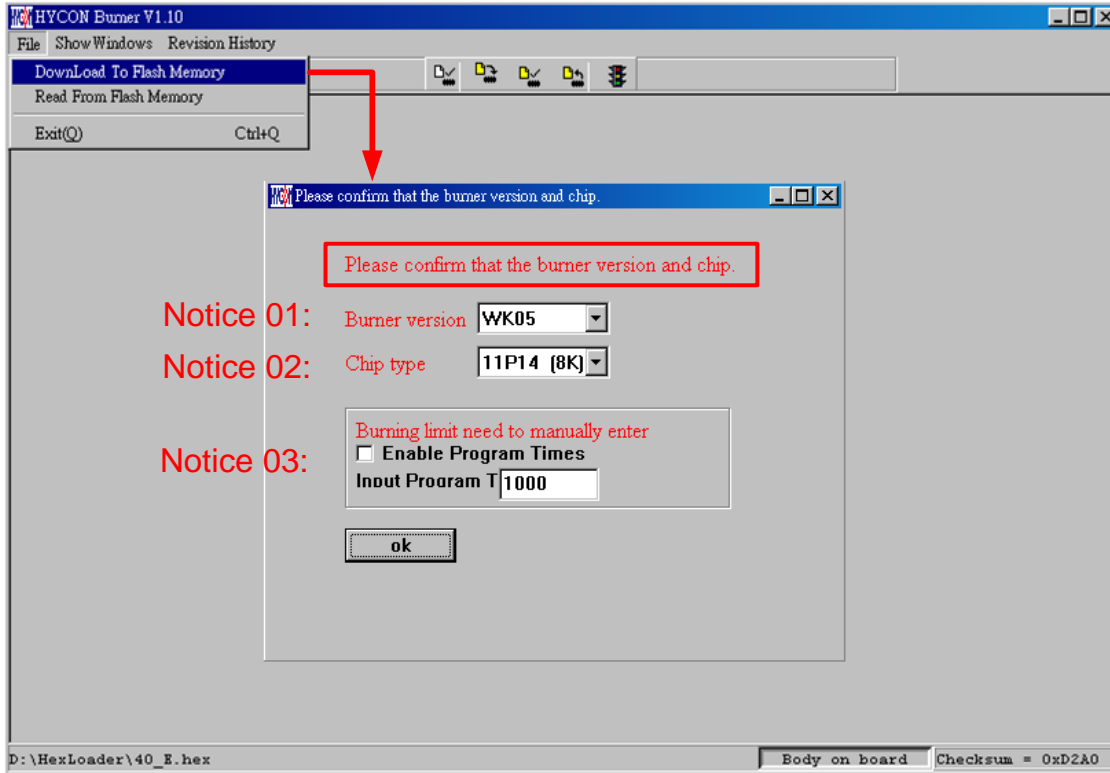HY11P14/HY11P13/HY11P12/HY11P24/HY11P23/HY11P22/HY11P36/HY11P35/HY11P32/HY11P33/HY11P42/HY11P41 and HY11P52

Figure 2- 1

The way to connect hardware programmer, please link http://hycontek.com/e-page2.html for corresponding programmer manuals.

1. ※When using online programming function, make sure 9V adapter is connected before connecting USB LINE. Do not unplug 9V adapter while PC connected or the PC may crash.Note:Programmer WK07B doesn't have input port Adapter 9V,only have port USB 5V.When WK07B is connected with USB 5V,OTP programming can be executed.

3 Offline Programming

3.1 Blank Function Options of Program Key

Notice: This function is only workable under offline programming and is only supportable to programmer after version of HY10000-WK02B

As Figure 3- 1, when setting the software function, Program Key can set whether to switch on the blank function by selecting blank on or blank off. Then press the button of PBKUBPUT to write the setting into programmer.

If blank on is chosen: the procedure is Blank Check → Program → Verify.

If blank off is chosen: the procedure is Program → Verify.

If "Program Protect" of Build Options was chosen before downloading the file to Flash Memory, the programmer will enforce to protect the file after it is verified. When the setting is finished, the setting status of the software can be read on each type of programmer's information.
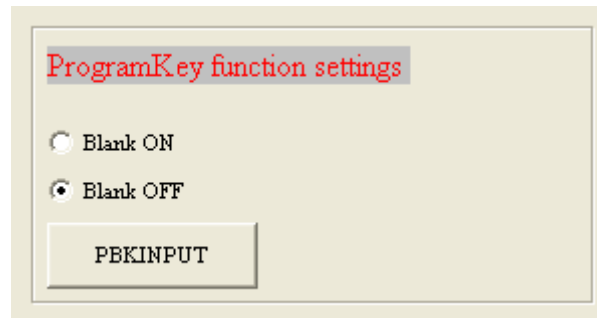
Figure 3- 1

Notice: To observe LCM message on offline programmer, USB must be unplugged and the power line must be reconnected so as to display correct LCM message.

Please refer to correspond programmer manuals: http://hycontek.com/e-page2.html for HY11P series technical support.

Contrast documents below and refer to *Offline Programming Chapter*.

WK01/02 Programmer: http://hycontek.com/attachments/MSP/APD-HYIDE004_EN.pdf

WK05/06 Programmer: http://hycontek.com/attachments/MSP/APD-HYIDE007_EN.pdf

4 Information Button

Please refer to correspond programmer manuals: http://hycontek.com/e-page2.html for HY11P series technical support.

Contrast documents below and refer to *Information Button Chapter*.

WK01/02 Programmer: http://hycontek.com/attachments/MSP/APD-HYIDE004_EN.pdf

WK05/06 Programmer: http://hycontek.com/attachments/MSP/APD-HYIDE007_EN.pdf

5 Error Message

Please refer to correspond programmer manuals: http://hycontek.com/e-page2.html for HY11P series technical support.

Contrast documents below and refer to *Error Message Chapter*.

WK01/02 Programmer: http://hycontek.com/attachments/MSP/APD-HYIDE004_EN.pdf

WK05/06 Programmer: http://hycontek.com/attachments/MSP/APD-HYIDE007_EN.pdf

6 Revision History

Major differences are stated thereinafter:

Version	Page	Revision Summary
V01	ALL	First edition
V02	P.4	Add the supportable programmer model. (WK02B)
	P.18	Add the description of Program Key functions under offline programming.
V03	P.19	Add chapter 1.5.5 for　Read　BIE
V04	P6/P7/P17	Add description that programmer chip type selection(Chip Type) has no
	P8	Programmer Key executes blank function option,amend to support version after WK02B only, and apply offline programming only.
	ALL	Add information of programmer WK07B.