

# HY16F Series Writer Kit Instruction Manual



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# 1. Package Contents

Support HY16F series integrated writer, the following is the HY10000-WK08D integrated writer package description:



Figure 1-1

Model No.		Part Name	Description	Quantity
	1.	HY10000-WK08D	Integrated Writer	1
	2.	Cable line	USB Type A to Mini B Cable	1
HY10000-WK08D	3.	Programming line	6pin/2.0 (2.0mm pitch)	1
	4.	Programming line	4x2pin/2.54 (2.54mm pitch)	1
	5.	Power Supply	Output: DC 5V	1

Table 1-1



### 2. Safety Precautions

- Do not place heavy objects on the display panel, in order to avoid damage caused by stress.
- Place the application display boards at steady place, so as to avoid falling damage.
- Do not use this product with the input voltage which is not meeting the electrical specifications, in order to avoid working abnormally or damage.
- Avoid application display boards being touched by liquid, dirt and avoid being exposed to moisture during operation. This application should be kept in a dry environment, so as not to affect the function and performance.
- Remove the power supply when not using it.
- When following status occurred, please remove the power supply immediately, and contact our engineer.
  - Power Supply line is worn or damaged.
  - Power source (battery) connected but no any light on while operating.
  - Component off.



# 3. Writer Introduction

#### 3.1. Writer Introduction

HY16F Writer is mainly for AndeSight IDE compiler generated by the .bin file to burn. Through writer kit application software, download the code to writer. Support on-line application operation to write code to chip and also support off-line writer write code to chip process for mass production.

#### 3.2. Hardware Version Requirement

HY10000-WK08C or HY10000-WK08D integrated writer (hereinafter referred to as WK08x), need to be built to support HY16F products burn **F/W Ver. 3.4** above.

#### 3.3. Software Installation Steps

#### 3.3.1. Software Installation

Minimum System Requirements of operating writer kit application HY16F Writer:

- PC Hardware Requirement: PC compatible with (PENTIUM®) system 256MB Memory (recommend 512MB) 500MB Hard disk
- Operating System Support: Windows XP (32 bit), Windows 7(32 bit/64 bit), Windows 8(32 bit/64 bit), Windows 10(64 bit)
- Apply the following interface modes: USB Port
- Software Version Support:
   HV16E Writer V3.3 above
  - HY16F Writer V3.3 above
- Support Chip Product Model: -HY16F18X product (HY16F184, HY16F187, HY16F188) -HY16F19X product (HY16F196, HY16F197, HY16F198) -HY16F19XB product (HY16F196B, HY16F197B, HY16F198B, HY16F1983) -HY16F3981
- Applicable to the following interface modes
   USB Port with "HID-compliant device"
   The HY10000-WK08D's USB Port driver uses the Windows standard
   "HID-compliant device" (Figure 3-1), so there is no need to install another USB driver.



Human Interface Devices
 Bluetooth Low Energy GATT compliant HID device
 HID-compliant consumer control device
 HID-compliant consumer control device
 HID-compliant consumer control device
 HID-compliant device



#### • Program Version Compatibility

Through the HY16F IDE software version compiled file (bin file), can be downloaded and burned by HY16F Writer software.

- Unzip the HY16F Writer software and execute the Setup.exe executable file.
- Follow the instructions on the screen to perform the installation step by step.

Unzip the HY16F Writer software package <sup>setup</sup> and run it to install the software (the steps are as shown in the figure below). After the installation is completed, directly run the

\HYCON\HY16F Writer directory

HY16F Writer

to open the software for operation.

Note: Please run the software as a "system administrator".



#### 3.3.2. HY16F Writer Software Installation Steps

Setup - HY16F Writer	
- C w	elcome to the HY16F Writer
	etup Wizard
	s will install HY16F Writer version 2.2 on your computer. s recommended that you close all other applications before
	ntinuing.
I C I 🖸 "	Rifect to containde, or called to exit setup.
<b>5</b>	
9	
i i ella i i	
	Next > Cancel
<u></u>	•
📀 Setup - HY16F Writer	
License Agreement	
Please read the following import	tant information before continuing.
Please read the following Licens agreement before continuing w	e Agreement. You must accept the terms of this ith the installation.
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# HY16F Series Writer Kit Instruction Manual



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# HY16F Series Writer Kit Instruction Manual



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Installing Please wait while Setup ins	talls HY16F Writer on your computer.
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– HYCON Technology Corporati	ionCancel
	Cancer
	•
📀 Setup - HY16F Writer	
	Completing the HY16F Writer Setup Wizard
<b>/</b> j	Setup has finished installing HY16F Writer on your computer. The application may be launched by selecting the installed icons.
The second se	Click Finish to exit Setup.
	View Revision.txt
F	View APD-HY16IDE006_TC.pdf
	View APD-HY 161DE006_EN.pdf
<b>T</b>	
T and a	
	Finish

## 3.3.3. Uninstall

Please go to settings "Apps and Features" to find HY16F Writer select the removal program.



# 4. Operating Instructions

#### 4.1. Writer Introduction

#### 4.1.1. Description of Writer Kit's Button and LED

#### 4.1.1.1. Program Button (External Button)

The program is programmed into the chip, including **checking the Chip model→Erase All→Program→Verify**. During the programming process, pressing the programming button has no effect.

#### 4.1.1.2. Status Indicator LED

**Green LED L1**: Representative of checking and writing action status are normal after writing action is executed.

**Red LED L2**: Representative of any action failure after writing action been executed.

**Yellow LED L3**: Writing process display light. Used with automated writing machine. Light on when writing, otherwise light off.



Name	Description
Programming pin	PIN1: Reset(VPP)
	PIN2: NC(SCK)
	PIN3: EDIO(SDI)
	PIN4: ECK(SDO)
	PIN5: VDD
	PIN6: VSS
Status indicator LED	L1: OK (Green LED)
	L2: Error (Red LED)
	L3: Busy (Yellow LED)
USB Port	WK08x writer power input port / data transmission line ports
Program button	Programming button
Blank button	This button is invalid
Information button	Programming Information inquiry



#### 4.1.2. The illustration of writer status port and programmed pin



Figure 4-1 WK08D writer port

#### 4.2. HY16F Series Programming Area Description

After the project program is compiled through AndeSight IDE, it will generate a Bin File burning code (as shown in Figure 4-2). For some requirements that require partition burning, you can also choose to compile separately to generate the block burning program. code (as shown in Figure 4-3, in which App Bin and Data Bin are distinguished from Bin File), the programming code can be directly burned to the chip's Flash ROM (divided into App Flash ROM and Data Flash ROM), the detailed configuration of the Flash ROM programming area of the chip is shown in Figure 4-4:







#### Figure 4-3 Separate compiled Bin File





Figure 4-4 Programming area configuration

- App Bin File: This programmed code is generated by the user application program, programmed in the chip's App Flash ROM area, this code is necessary during the programming.
- 2. Data Bin File: This programmed code is generated by the user own fixed parameters or calibration parameters, programmed in the chip's Data Flash ROM area, this code is unnecessary, depending on the actual needs of customers.
- 3. App Bin and Data Bin is separated by the BIN File, the purpose is to do the application of partition programming, if you do not need to do partition programming, you can directly use the BIN file to replace the App Bin file.



#### 4.3. Writer Software Description

HY16F Writer S/W interface function blocks, introduction of functions are as following:

	App Bin	Data Bin	App in Chip	Data in Chip	App in Burner	Data in Burne	Clock Calibrate			Function 🔳 🗙
	6		7		8,		10-1			10
Converting days 2						Load	File size:	Checksum		
Council V Pash Ence						9				
Status										
Partie 00020										
3 partno. 00040										
00050										
4 F/W Ver: N/A Software Ver 3.8.1 00040										
Econet & Deconet 000000										
5 Chroyot with password 000E0										
Password Dx PEPEPEPE 00100										
O Encrypt without pessword 00120										
00140										
Tagle Citle Sune 00160										
Program Read Area 001A0										
Dum of numb 001C0										
12 Chip Code 001E0										
13 NO Reservers Cathy 00200										
00220										
1.4 00260										
14 App writing Address Begin: 0 00280										
Call Data Bin - 002A0										
15 Data Writing Address Begin: F000 002C0										
00220										
10 Erase Al 00320										
Eved Dum 00340										
17 18 00360										
00340										
003A0										
00300										
00400										
00420										
88440										
00450										
00410										
00400										
004E0										
00500										
19							05			

#### Figure 4-5 Interface function block diagram

#### 4.3.1. Connection Interface

HYCON HY16F Serial
Connection check  Connect  Connect  Flash Erase  Status
Part No. 3 part no.
4 F/W Ver: N/A     Software Ver 3.8.1       Encrypt & Decrypt       5 • Encrypt with password
Password 0x FFFFFFFF

Figure 4-6 Connection interface diagram



(1) Connection status: Connect / Disconnect Button:

Connected is displayed when the USB connection, When the display Disconnect the USB offline, when the chip has encryption protection, the connection will have the following situation:

- When the chip selection model is HY16F18X or HY16F19X:
  - If the chip is hardware encryption, need enter the correct password to decrypt the chip before the normal connection.
  - If the chip is software encryption, through the Flash Erase function to decrypt the chip before the normal connection.
- When the chip selection model is HY16F19XB or HY16F3981:
  - If the chip is hardware encryption, need enter the correct password to decrypt the chip before the normal connection. After the connection, the chip's App ROM will be cleared.
  - If the chip is software encryption, through the Flash Erase function to decrypt the chip before the normal connection.

(2) Flash Erase Button: Direct erase all data in the chip (Including Flash ROM and decryption)

- When the chip selection model is HY16F18X or HY16F19X:
  - > If the chip does not have encryption protection, direct erase chip Flash ROM data.
  - If the chip has been Hardware encryption protection (display Code Protection), need check the password, if the password is error will display Password Error and don't do any action, when the password is correct will erase chip Flash ROM data and decryption, after the completion of the chip is displayed blank message.
- When the chip selection model is HY16F19XB or HY16F3981:

Regardless of whether the chip has encryption protection, through the Flash Erase button (do not need enter password) can directly erase chip Flash ROM data, and decryption at the same time.

(3) Part No.: display the current chip model, as well as the size of the RAM and APROM.

(4) Version information: writer F/W version and Writer software version.

- F/W Ver. : displays the current F/W version of WK08x.
- Software Ver. : displays HY16F Writer software Version.

**NOTE:** Before using WK08x, make sure that the Writer has F/W that is loaded to support the HY16F product, detailed F/W loading method can refer to "Integrated Writer's Manual APD-HYIDE013". HY16F Writer V3.8.1 above version, it no longer supports Burner



Transformer to update Writer's F/W. Please direct use HY16F Writer V3.8.1 option (Update Firmware) to update Writer's F/W.

(5) Encrypt & Decrypt: Encryption protection function

- Encrypt with password: Hardware encryption function (with password), password input range is 0x0 ~ 0xFFFFFFF value as hardware protection; default is no password state 0xFFFFFFFF, each time the download program will enter the password into the Burner and Chip; whether the password correct or not determines whether the program can be read out; If forget password, the chip will not be burned repeatedly.
- Encrypt without password: Software encryption function (no password), do not need enter password; if the chip is encrypted, need to manually press the "Flash Erase" button to decrypt.

#### 4.3.2. Program Interface

	App Bin	Data Bin	App in Chip	Data in Chip	App in Burner	Data in Burner	Clock Calibrate		Function	
7	6		7		8	Load	10-1 File size:	Checksum:	10	
					1	9				

Figure 4-7 Program Interface diagram

Program Interface is classified into three pages

(6)App Bin & Data Bin: Respectively show the contents of the program to be burned, preset display screen is App Bin.

(7) App in Chip & Data in Chip: Respectively show Read out the contents of the chip.

(8) App in Burner & Data in Burner: Read out the contents of the burner.

(9) Load file: Load the .bin file to be programmed, and displays File size & Checksum.

(10) Function : There are seven options are as follows:



- I. Unlock Flash: Not open for use.
- II. Lock Flash: Not open for use.
- III. Restore to UnSeal State: Enables the hardware encrypted chip into an unencrypted state.



**NOTE:** HY16F188 and HY16F19X products cannot use this function.

- IV. Save Option Project: Save the project, including the programmed configuration and setting.
- V. Open Option Project: Loading project.
- VI. Download LCM String : Download LCM's display string.
   Note : If you encounter no font display on LCD or garbled characters, you can choose to update and download LCM String
- VII. Update Firmware: On-line update WK08D firmware.
   HY16F Writer V3.8.1 above version, recommend user use this way to update WK08D firmware. The user doesn't use HYCON Burner Transformer to update WK08D firmware.

(10-1) Clock Calibrate: Calibrate HAO frequency function. It is the special function. If the user has to use the function, please contact with HYCON staff.



#### 4.3.3. Status Interface

Targe	at: 💿 Chip 🔵 Burner
Prog	gram Read Area
11=	Burn of number
12	Chip Code
13	ISP Resource Setting
14	App Bin App Writing Address Begin:
15	Data Bin Data Writing Address Begin: F000
16	Erase Al
	Read Burn
	17 18

Figure 4-8 Status Interface diagram

(11) Burn of number : Set the number of times the burner can be programmed, setting range is from 0 to 99999999.

(12) Chip Code : Rolling code function (the rolling code is programmed in the last 4 bytes of the chip Flash ROM), support off-line programming function, the rolling code will be incremented automatically when programming is successful, the maximum increase to 999999999 will stop; this function can be enabled when the "Chip Code" is selected, the user can set the starting value (range is 1 to 99999999).

#### For example:

Assuming that the user uses the HY16F198B chip to programming, and the current rolling count to 10000, then the programmed address 0xFFFC~0xFFFF of the Flash ROM will display => 0x2710

(13) ISP Resource Setting : Definition of ISP UART Pin & ISP Check Pin.HY16F Writer V3.3 above version supports ISP Resource Setting. If the user needs an ISP Bootloader function, ISP Resource Setting can enable Bootloader function.

(14) App Bin and address Begin: General programming is to select the App Bin, can enter the starting address of programming (Initial value is 0, do not deliberately change)

(15) Data Bin and address Begin: If you need to program the Data Bin, you can select this function and enter the starting address of programming (The initial value is F000, do not need to deliberately change).

(16) Erase All: Determine whether or not to erase the chip's flash ROM space before programming.

- When Erase All function is selected: Chip's Flash ROM (App ROM and Data ROM) will be cleared before programming, so it is recommended that the Erase All function should be selected when the chip is programmed for the first time.
- When Erase All function isn't selected: Chip's Flash ROM (App ROM and Data ROM) will not be cleared before programming, so it is not necessary to select the Erase All function when you need to separate App Bin and Data Bin as separate actions.

(17) Read Function: According to Target selection to determine HY16F writer software is read-back the programmed code from Chip or Burner.

- When the chip selection model is HY16F18X or HY16F19X:
  - > When Target options selection is Chip:
    - 1. If the chip has not done any encryption protection, can directly read the chip's fully Flash ROM data.
    - 2. If the chip has been software encryption protection, cannot read the chip's any programmed code.
    - 3. If the chip has been hardware encryption protection, you have to enter the correct password to read the chip's fully Flash ROM data.
  - > When Target options selection is Burner:
    - 1. If the chip has not done any hardware encryption protection, can directly read WK08x's fully Flash ROM data.
    - 2. If the chip has been hardware encryption protection, you have to enter the correct password to read WK0xC's fully Flash ROM data, when the password error will show Password read fail and cannot read.
- When the chip selection model is HY16F19XB or HY16F3981:
  - > When Target options selection is Chip:
    - 1. If the chip has not done any encryption protection, can directly read the chip's fully Flash ROM data.
    - 2. If the chip has been software encryption protection, cannot read the chip's any programmed code.
    - 3. If the chip has been hardware encryption protection, you have to enter the correct password to read the chip's fully Flash ROM data (App ROM will be cleared before reading).
  - > When Target options selection is Burner:
    - 1. If the chip has not done any hardware encryption protection, can directly read WK08x's fully Flash ROM data.



2. If the chip has been hardware encryption protection, you have to enter the correct password to read WK08x's fully Flash ROM data, when the password error will show Password read fail and cannot read.

(18) Burn Function: According to the Target selection, described as follows

- Target options selection is Chip: The App Bin, Data Bin and encrypted messages are programmed into the chip.
   NOTE: If the chip has been encrypted to protect, you must first decrypt to perform the above actions.
- Target options selection is Burner : Download the App Bin, Data Bin, encryption

message, chip model and programmed settings to the WK08x.

(19) Burning status : Display burning progress



Figure 4-9 Burn progress chart

(20) Reading Address Begin & End: This function is the same as the function of read-back the programmed code in Figure 4-8 (17) Read, the difference is that the user can set the read address of the start and end points, as shown below:



Figure 4-10 Read Area Interface diagram



### 5. Examples of programming operation

Use the HY16F198B chip as an example.

#### 5.1. On-line Programming Function

**STEP01**: Open HY16F writer software, click "**Connect**" to connect the WK08x and chip, select the chip type to be programmed according to the Part No. chip model shown.

STEP02: Select "Chip".

STEP03: App Bin must be selected, a normal programming need to select the "Erase All".

**STEP04**: Click **"Load"** to load programmed App Bin file, file checksum and other messages will be displayed.

**STEP05**: Click **"Burn"**, if the chip has not done any hardware encryption protection, then it can directly write the program to chip. If chip is in hardware encryption protected status, you have to enter the correct password, after finish programming, it will display the result.



Figure 5-1



#### 5.2. Off-line Programming Function

**STEP01**: Open HY16F writer software, click "**Connect**" to connect the WK08x and chip, select the chip type to be programmed according to the "**Part No**". chip model shown.

#### **STEP02**: Select "Burner".

STEP03: App Bin must be selected, a normal programming need to select the "Erase All".

**STEP04**: Click **"Load"** to load programmed App Bin File, File Checksum and other messages will be displayed.

**STEP05**: Click **"Burn"**, The BIN File will be downloaded to WK08x writer, PASS is displayed after download is complete.

**STEP06**: After the HY16F writer software is turned off, the chip can be programmed by the Program button on the WK08x writer, While programming, L3 (Busy) light on. After programming, L3 light off and light on L1 (OK) or L2 (Error).

		App Bin	Data Bin	App in Chip	Data in Chip	App in Burner	Data in Burne	r	Function
TEPOThes	C:\Users	s\Administrator\Desk	top\BIN198\HY	198_HIGH_SC	ALER-	Load F	ile size: 13220 B	ytes Checksum:	0x987D
Connect Flash Erase					S	TEP04			
Offline Part No.	00000_48_00 000 Select ar	n C2 92 00 92 00 92 n IC Type	00 92 00 40 0	0.00.09.48.00.0	0 BE 92 00 92 92	00 92 00 92 00 00 92 00 92 00 00 92 00 92 00	40 00 00 09 40 00 00 09 40 00 00 09	нн. нн.	@н @н @н
16F1981C RAM: 8 K Bytes APROM: 64 K Bytes	000 000 IC Ty	pe List	HY16F	198B>:	92 92	00 92 00 92 00 00 92 00 92 00	40 00 00 09 40 00 00 09	нн.	@н @н
Encrypt & Decrypt	000 HY 16F 1 000 HY 16F 1 000 HY 16F 1	.84 .87 .88	RAM Size	:	92 92 92	00 92 00 92 00 00 92 00 92 00 00 92 00 92 00	40 00 00 09 40 00 00 09 40 00 00 09	нн. нн.	@н @н @н
Password 0.	001 HY 16F1 HY 16F1 HY 16F1	196 197	APROM S	ize:	92	00 92 00 92 00 00 92 00 92 00	40 00 00 09 1E 03 09 00	нн.	@н @н.
Target: Cho OBurner STEP02	001 HY16F1 001 HY16F1	1968 1978	64K		09 09 81	00 04 1C 09 00 00 1E 03 09 00	1E 03 09 00 1E 03 09 00 94 30 34 FE	н	F Y ·
Program Read Area	001 HY16F3 001	981	Part No	c	00	03 64 00 00 08 FF 80 00 3A 0F	80 5F 3A 2F 88 04 64 02	d d d" . <d. d="" th="" }<=""><th>:dd LH</th></d.>	:dd LH
Chip Code	001			-	64	00 00 04 49 00 00 59 DE 80 80 3C 46 10 00 90	00 DF 64 72 64 12 00 02 58 10 81 44	dd"d" drd d"d2	
V App Bin	002		ОК	Cano	el 64	02 00 03 64 12 00 D5 CA 3A 0F	A4 03 64 22 80 3C 84 01	8!	d Cd d d
STEP03	002 002A0 D5 B6	3A OF 80 3C 84 06 D	B2 3A OF 80 3	C 84 07 D5 AE 3	A OF 80 3C 84	04 D5 BA 3A 0F 08 D5 AA 3A 0F 0C D5 9A 3A 0F	80 3C 84 05 80 3C 84 09 80 3C 84 00		, < : < : . < : < : 
Data Writing Address Begin: F000	002E0 D5 96 00300 OF 80	3A OF 80 3C 84 0E D 47 F0 00 01 59 FF 8F	92 3A OF 80 3 C0 46 20 00 0	C 84 OF D5 8E 4	7 D0 00 00 59 4 24 E0 03 49	DE 80 80 47 CF 00 00 06 48 00	FF FF 59 CE 0B 50 FC 00	:	. < G Y G XI d\$ I H
V Erase Al Read Burn	00320 D5 00 00340 46 10 00360 00 40	FC 01 46 10 00 00 58 00 93 58 10 83 94 46 94 08 46 20 00 93 58	10 80 50 46 0 F0 00 93 58 Fi 21 03 94 98 4	00 00 58 00 0 7 83 7C DD 2F 4 7 46 20 00 00 5	0 40 9A 08 80 6 10 00 00 58 8 21 00 50 40	40 46 00 00 00 10 80 50 46 00 00 00 00 58 00	58 00 00 40 00 00 58 00 00 50 94 10	FXF	FX.@@F K ./FXPF RF XIPF X
STEP05	00380 80 40 003A0 58 00	46 00 00 00 58 00 00 00 50 9A 88 84 60 84	50 46 F0 00 93 20 B6 20 9C 04	58 F7 83 7C D 9 S0 DC 9A 53 4	D2F 46 10 00 E 16 FF FB F0	00 58 10 81 60 81 FC 01 64 02	46 00 00 00 64 02 90 10	.@FXPF XP`	
	003C0 F0 81 003E0 44 10 00400 D5 0B	F0 01 84 2A 4C 00 80 10 00 AC 40 64 00 00 44 04 01 04 44 1F FE	0B E6 0A E9 25 00 D5 16 44 04	5 84 2B 4C 00 8 1 01 04 44 1F F 1 00 81 58 F7 8	0 0E 84 2C 40 F 10 AC 40 48 0 28 DD 2F F6	00 80 16 D5 1E F0 00 81 58 F7	44 04 01 06 80 28 DD 2F 40 00 00 09	D	.%.+L,L DD@F> F X ( / @
					01				







Figure 5-4



#### 5.3. Off-line Programming Function

**STEP01**: Open the HY16F Writer software to connect WK08x and chip.

**STEP02**: Enter the correct Password (if the password is wrong, it will not be able to connect to the chip), if there is no password, do not write.

**STEP03**: Click **"connect"** button, program will sent the password data to let chip examine, if pass the examination it will display **"Password Protection"**. If IC examination fails, it will display **"Chip Error"**, after pass the examination, you can reset the password data.

STEP04: Click "Chip" to set read chip mode, choose to read "App Bin".

STEP05: Click "Read" button, the software will switch to "App in chip" display window.

**STEP06**: The Read Chip function mainly compares the Load's BIN file with the chip's Flash ROM

When the comparison is passed, it will display "Equal" in the Chip screen.

> When the comparison is not passed, it will display "Not equal".



Figure 5-5

#### NOTE:

If use Debug Tool programming (chip that hasn't be programmed before), and load it via writer kit, the default will load whole Flash ROM code. Therefore the checksum is not a correct checksum value; If use Debug Tool programming (chip that has been programmed before) and load it via writer kit, the default will load App Flash ROM code from last time that programmed. Therefore the Checksum's measurement value is not correct checksum value of the chip; So the checksum of the chip which is programmed by Debug Tool can not be used as a reference.

# HY16F Series Writer Kit Instruction Manual



#### 5.4. Read Burner Function

**STEP01**: Open the HY16F Writer software to connect WK08x and chip.

STEP02: Input correct Password (If the password is wrong, it can't connect to chip).

**STEP03**: Click "**connect**" button, program will sent password data to let chip examine, if pass the examination it will display "**Password Protection**". If IC examination fails, it will display "**Chip Error**", after pass the examination, you can reset the password data.

STEP04: Click "Chip" to set read Burner mode, choose to read "App Bin".

STEP05: Click "Read" button, the software will switch to "App in chip" display window.

**STEP06**: Read Burner functions: Burner and loaded BIN files for comparison.

- When the comparison is passed, it will display "Equal" in the Burner screen.
- > When the comparison is not passed, it will display "Not equal".

HYCON HY16F Serial	App Bin Data Bin App in Chip Data in Chip App in Burne paton Chip App in Burne Data	Function 📃 🗙
Connection check STEP03 Disconnect Flash Erase	File size:         57632 Bytes         Checksum:         Didlicition         Burn of Marine         Writing Address         Didlicition         Equal           Chip Code:         Minim         SEP Resource         Nominim         Part No:         SetTable:         Export         STEP06         STEP06	b.
Connected	00000 FC 00 49 00 01 42 FC 80 FC 00 49 00 01 40 FC 80 FC 00 49 00 01 3E FC 80 FC 00 49 00 01 48 FC 80 00020 FC 00 49 00 01 49 FC 80 FC 00 49 00 01 47 FC 80 FC 00 49 00 01 45 FC 80 FC 00 49 00 01 43 FC 80 00040 FC 00 49 00 01 41 FC 80 00 00 00 00 00 00 00 00 00 00 00 00	IBI@I>IK. ^
Part No.  16F1981C RAM: 8 K Bytes APROM: 64 K Bytes	00663 00 00 00 00 00 00 00 00 00 00 00 00 00	·
F/W Ver:3.4 Software Ver: 2.2	000C0FF FC D5 01 3C 0D FF FF 96 04 C0 FD 3C 0D FF FE 90 10 49 00 00 75 3C 1D FF FF 84 1E FE 0E 3C 0F 000E0FF FF D5 F1 FC 00 44 04 03 10 44 10 FF 16 B6 20 84 03 49 00 02 16 84 01 49 00 02 0F 84 01 49 00 00100 21 98 40 54 41 10 00 FF 49 00 02 21 84 00 44 10 00 FF 49 00 02 1C 84 01 41 10 00 FF 49 00 02 17	
Encrypt with password     Password 0x     FFFFFFF     STEP02	0012084         02         44         10         00         FE         49         00         02         12         18         03         14         10         05         89         01         18         20         18         20         18         20         18         20         49         00         20         16 <t< th=""><th></th></t<>	
Chrcypt without password Target: Chip OBurner STEP04	001107F 86 3E 00 00 02 44 0F FF E0 3E 00 00 03 44 0F FF E4 3E 00 00 03 44 40 00 00 64 3E 00 00 05 84 00 001A03E 00 00 66 84 00 3E 00 00 78 44 00 78 40 00 78 44 00 00 58 84 28 49 00 04 6F C6 80 FC 02 F6 81 001C046 08 00 00 F1 01 E2 01 E8 08 F0 01 FE 03 F6 81 F0 01 9C 01 F0 81 40 11 10 0F 80 0F D5 04 84 00 001C046 08 00 00 F1 01 E2 01 E8 08 F0 01 FE 03 F6 81 F0 01 9C 01 F0 81 40 11 10 0F 80 0F D5 04 84 00 001C046 08 00 00 F1 01 E2 01 E8 08 F0 01 FE 03 F6 81 F0 01 9C 01 F0 81 40 11 10 0F 80 0F D5 04 84 00	
Program Read Area	001E010 0 0 00 0 0 0 0 0 0 0 0 0 0 0 0 0	.X@@.7N B.L@>
Chip Code	00260 49 00 01 A0 F0 01 9C 01 F0 81 00 0F 80 0F 9C 01 10 0F 80 0F 00 0F 80 0F 96 40 00 0F 80 00 96 00 00280 E2 20 E9 E9 FC 82 FC 80 FC 80 FC 80 FC 00 FC 80 FC 00 49 00 01 1E C0 0D A49 00 01 21 49 00 01 20 3C 0F 002A0FF FE 3C 0D FF F5 58 00 00 13 CC 0F FF FF C6 80 FC 00 FC 80 FC 00 FC 80 FC 00 FC 80 FC 00 FC 80	I@ 
ISP Resource Setting	002260FC 00 FC 80 FC 00 FC 80 FC 00 FC 80 FC 00 84 00 84 21 49 00 00 98 14 03 49 00 19 98 14 00 49 00 01 87 49 00 002E001 A3 44 00 10 04 90 03 03 04 01 49 00 01 A2 84 00 84 21 49 00 03 38 40 00 90 66 40 00 00 66 84 00 0030049 00 00 52 84 00 84 20 49 00 00 5D 84 00 49 00 07 21 84 00 84 20 84 20 80 81 84 01 49 00 09 92	
App Writing Address Begin: 0	00220 84 00 49 00 00 A2 49 00 00 D9 49 00 00 CA 49 00 00 DC 14 01 49 00 00 88 84 00 49 00 00 85 84 01 00240 69 00 00 82 FC 60 FC 01 F 08 1D 55 92 00 FC 01 FD 9E 01 F0 81 F0 01 C8 FB FC 81 FC C0 0E 60 EE 81 2 00260 E6 2E E8 10 44 24 11 04 B4 62 92 70 40 31 C0 08 44 40 FF 00 FE E7 FE 5F 94 04 FE 0F B6 02 84 00	
Data Writing Address Begin: F000	00300 05 02 04 01 FC 00 FC 00 E6 02 E9 03 04 01 05 0A 46 12 00 00 40 00 50 08 FE 0F 44 14 11 00 B6 01 003A084 00 FC 80 FC 80 E6 02 E9 03 84 01 05 0A 46 11 00 00 40 00 55 08 FE 0F 44 14 11 00 B6 01 84 00 003A07FC 80 FC 80 E6 81 E6 24 E8 12 44 24 11 04 B4 62 46 4F FC 8F 58 42 0F FF 40 90 40 08 FE 65 003FFC 80 FC 00 E6 08 E8 14 E6 24 E8 12 44 24 11 04 B4 62 46 4F FC 8F 58 42 0F FF 40 90 40 08 FE 65 003FFC 80 FC 90 FC	F@PD 
Erase All SIEFUS Read Burn	00400 B4 41 46 3F 0F F5 83 31 8F FF FE 9E 40 00 60 00 F6 00 FE 17 B6 01 84 00 FC 80 FC 00 E6 04 E8 10 E6 24 00420 B4 41 46 3F 0F F5 93 31 8F FF FE 9E 40 00 60 00 8F 47 44 24 11 00 B6 02 B4 00 5C 80 40 00 50 2 B4 01 FC 80 00440 FC 00 E6 02 E9 03 84 01 05 02 84 41 11 04 B4 41 46 3F FF 75 83 31 8F FF FE 9E 40 00 AC 08 FE 17	. AF? XI
	00460 B5 01 84 00 FC 80 FC 00 E5 10 E9 03 84 01 D5 08 94 02 58 00 3C 00 44 14 11 00 B5 01 84 00 FC 80 00400 FC 00 E5 04 E5 02 E5 0C 44 20 F0 40 94 04 FE 17 94 4F FE 47 44 24 03 0C B5 22 84 00 D5 02 004/08 01 FC 80 FC 00 E5 02 E9 03 84 01 D5 08 90 00 58 00 20 04 11 11 00 B5 01 84 00 FC 80 FC 00	X <. D. 
DASS	004C006 00 10 10 44 14 00 08 B6 01 FC 00 FC 00 44 04 00 08 B4 00 96 04 FC 80 FC 00 44 10 01 00 44 04 00 08 B4 00 96 04 FC 80 F	FDDDDD. DD

Figure 5-6



#### 5.5. ISP Resource Setting Function

HY16F3981 chip as an example in the chapter. User can Enable or Disable the HY16F3981 ISP Bootloader function. Please refer to the picture below. Select the ISP mode as **"Timeout Entry"** mode, and click "Enable ISP", and click ISP UART port as "PT2.0&PT2.1". The ISP Resource Setting information will be 01000355.

Part No.	ISP Resource Setting	×				
016F3981 RAM: 8 K Bytes APROM: 64 K Bytes	Enable ISP					
F/W Ver:WK08 3.4 Software Ver: 3.3	Uart Oscillator Setting					
Encrypt & Decrypt     encrypt with password     Password 0x     FFFFFFF     Encrypt without password	ISP Method Select  Timeout Entry					
Target: ● Chip OBurner Program Read Area	CheckPin Entry     ISP Uart Port	ISP Check Pin				
Burn of number       Chip Code       ISP Resource Setting       App Bin       App Writing Address Begin:       Data Bin       Data Writing Address Begin:	<ul> <li>PT2.08PT2.1</li> <li>PT2.48PT2.5</li> <li>PT8.08PT3.1</li> <li>PT8.48PT8.5</li> <li>PT9.48PT9.1</li> <li>PT9.48PT9.5</li> </ul>	<ul> <li>PT2.1</li> <li>PT2.2</li> <li>PT2.3</li> <li>PT2.4</li> <li>PT2.5</li> <li>PT2.6</li> <li>PT2.7</li> </ul>				
Erase All Read Burn	Read Write	OK Close				

Figure 5-6

If select "**CheckPin Entry**" mode, click ISP UART port as "PT2.0&PT2.1" and ISP Check Pin as"PT2.2". The ISP Resource Setting information will be 01030355.

Part No.	ISP Resource Setting	×			
D16F3981 RAM: 8 K Bytes APROM: 64 K Bytes	Enable ISP				
F/W Ver:WK08 3.4 Software Ver: 3.3 Encrypt & Decrypt	- Uart Oscillator Setting  Internal OSC(HAO)				
Encrypt with password     Password 0x     FFFFFFF     Encrypt without password	ISP Method Select				
Target: Ochip OBurner Program Read Area	ISP Uart Port	ISP Check Pin			
Burn of number	● PT2.08PT2.1	• PT2.1 • PT2.2			
ISP Resource Setting D1030355 D103035 D1030355 D103035 D1030 D103035 D1030 D103035 D1030 D1030 D103035 D1030 D103035 D1030 D103035 D1030 D1030 D103035 D1030 D1	OPT2.48PT2.5 OPT2.3 OPT8.08PT8.1 OPT2.4 OPT9.48PT7 5				
Data Bin Data Writing Address Begin:	OPT9.08PT9.1 OPT9.48PT9.5	OPT2.6 OPT2.7			
Erase All Read Burn	Read Write	OK Close			

Figure 5-7

In the same setting, if unchecked the Enable ISP function, the ISP Resource Setting information will be 01030300.





#### 5.6. Update Firmware Function

HY16F Writer V3.8.1 above version, recommend user use this way to update WK08D firmware. The user doesn't use HYCON Burner Transformer to update WK08D firmware. Below is the guideline to use "Update Firmware" function to update WK08D firmware.

**Step1**: Connect the HY10000-WK08D and open the software. Function, select the Update Firmware.





**Step2**: Enter the operation page, Update Firmware. Click Update button, it will jump next operation page.





1. Disconnect Burner: Please be noted WK08D Hardware. Remove (Disconnect) the USB port, and prepare the "short jump" and short it on "Update Pin", refer to the picture below.





# Figure 5-11

2. Link burner with computer: re-connect the USB port, this step is equal to do power on for WK08D. Because the "Update Pin" have connected to ground (VSS), the WK08D enter F/W update mode.



Figure 5-12

Step3: Click Next button, execute FW updating and waiting until to 100%.





**Step4**: After the update is completed to 100%, press the Close button, on the hardware side, remember to remove the short-circuit jumper of the writer. At this time, the writer has left the FW update mode and can work in the normal mode.





# Figure 5-13

**Step5**: Click Connect button, check F/W Ver. The user can check "F/W Ver." by On-line or Off-line mode, refer to the pictures below.

EX: "Software Ver. 3.8.1" adapt to "F/W Ver. WK08 4.4" Version.

Connection check	Connection check
Connect 👻 Flash Erase	Connect 👻 Flash Erase
Offline	Offline
Part No. 016F3981 RAM: 8 K Bytes APROM: 64 K Bytes	Part No. 016F3981 RAM: 8 K Bytes APROM: 64 K Bytes
F/W Ver:WK08 4.4 Software Ver 3.8.1	F/W Ver:WK08 4.4 Software Ver 3.8.1
Encrypt & Decrypt	Encrypt & Decrypt
Encrypt with password	Encrypt with password
Password 0x FFFFFFF	Password 0x FFFFFFF
O Encrypt without password	O Encrypt without password





Note: If WK08D no enter F/W update mode, click Update button to make the firmware update abnormal. And it will display the error message. EX: **"No such USB device"** or **"Send sycn packno cmd fail"**, the update status stops on the 0%. If user struggling in FW update abnormal condition, please check the step1~4 in detail again.

Update Firmware				09 09	00 00	28 84	0D 03	( (
- Support IC Type of Burner	FW Version 4.4	Suppor		8D 64	30 02	4A 00	00 03	E
O Load other Bin File				No	such U	JSB dev 確定	ice	
0%				ЗА	OF	80	04	1
Do not disconnect the link with burner!		Jpdate	Close	3A 34	OF OF	80 80	3C 3C	1



Update Firmware			09 09	00 00	28 84	0D 03	09 09
-Support IC Type of Burner Support HY 16F 188, HY 16F 198, HY 16F 198, HY 16F 1981	FW Version 4.4	Support	8D 64	30 02	4A 00	00 03	3C 64
			Erro	or			×
O Load other Bin File			Ser	nd sync	packno	o cmd fi	ail
O Load other Bin File			 Ser	nd sync	packno	o cmd fa 確定	ail





# 6. Writer Display Information Description

For HY10000-WK08x integrated writer the following information:

#### 6.1. Writer Configuration Information

Information button is pressed, Display a variety of information parameters





#### 6.2. Error Message

In the process of using the writer, if an error message is displayed, please refer to the following instructions.

e error

Error 1 means Writer kit VDD voltage error

Error 2 means Writer kit VPP voltage error

The connected IC does not match the code

Error 3 means the bin file not match with chip ID, please confirm information 3 Chip ID from Flash.

Blank fail

Error 4 means the chip is not blank, the chip has been programmed.

Program fail

Error 5 means programming failure, please check the Writer kit connector (short or wrong connection), or return to HYCON.

Verify fail

Error 6 means verification failure after finish programming, please check the Writer kit connector (short or wrong connection), or return to HYCON.



Protect fail

Error7 means Protect failure.



Burn count = 0

Error 8 means that the program count is zero. It need to re-download the bin file or re-setting the program count to the Writer kit.

The connected IC does not match the programmed code

Error 11 means the connected IC does not match the programmed code. The connected IC have to match the Chip ID, otherwise it can't be programmed.

Communication error

Error 12 means communication error, please check the Writer kit connector (short or wrong connection), or return to HYCON, For HY16F.

IC has been protected

Error 13 means that the chip is Encryption, For HY16F.

Password error

Error 14 means that the currently password in the Writer kit not the same with connection IC, For HY16F.



Chip code write error

Error 15 means the chip code write error. In general case, it only be occurred on the abnormal communication, For HY16F.

Erase fail

Error 16 means the chip erase failure, For HY16F.

Error 17 Update Info Page Fail

Update fail

Error 17 means the information page update failure, For HY16F.



# 7. Revisions

The following describes the major changes made to the document, excluding the punctuation and font changes.

Date	Version	Page	Summary of Changes		
	V01	ALL	First version release		
	V02	ALL	Add installation steps and composing		
	V03	ALL	Writing software version updated		
	V04	ALL	Writing software version updated		
	V05	ALL	<ol> <li>ALL software update installation instructions contain requirements increase Writing Address Begin, Reading Address Begin function, update the AP illustration.</li> <li>Data bin file imports add functionality.</li> <li>Added WK08C Burner instructions, software interface description.</li> <li>Flash Erase button &amp; read description</li> </ol>		
	V08	ALL	<ol> <li>Added Encrypt &amp; Decrypt features and instructions.</li> <li>Update the VISIO diagram to add an error message description.</li> <li>Remove the HY16F00-WK02B Writer message.</li> <li>Synchronize with Chinese version (V08).</li> <li>Strengthen the overall operating instructions.</li> </ol>		
2017/06/06	V09	16	1. Update the "Chip Code" operating instructions.		
2020/04/14	V10	All	<ol> <li>Add 5.5 section: ISP Resource Setting description</li> <li>Add description and explanation on 6.2 section "Error Message"</li> </ol>		
2021/06/15	V11	All	<ol> <li>Update the pictures 4-5, 4-6, 4-7. Update and fix the description of Function in Chapter 4.3.2.</li> <li>Add 5.6 section : Update Firmware description.</li> </ol>		
2023/02/02	V12	All	<ol> <li>Update picture 1-1, correct picture 4-1, add picture 3-1.</li> </ol>		