



HY10000-WK09

Integrated Writer User's Manual

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1. Package Contents

HY10000-WK09 integrated writer is a tool for connecting PC to program the chips. As shown in Figure 1-1, HYCON HY16F/HY17P/HY17M series products can be programmed through the integrated writer, the related hardware is equipped as shown below:

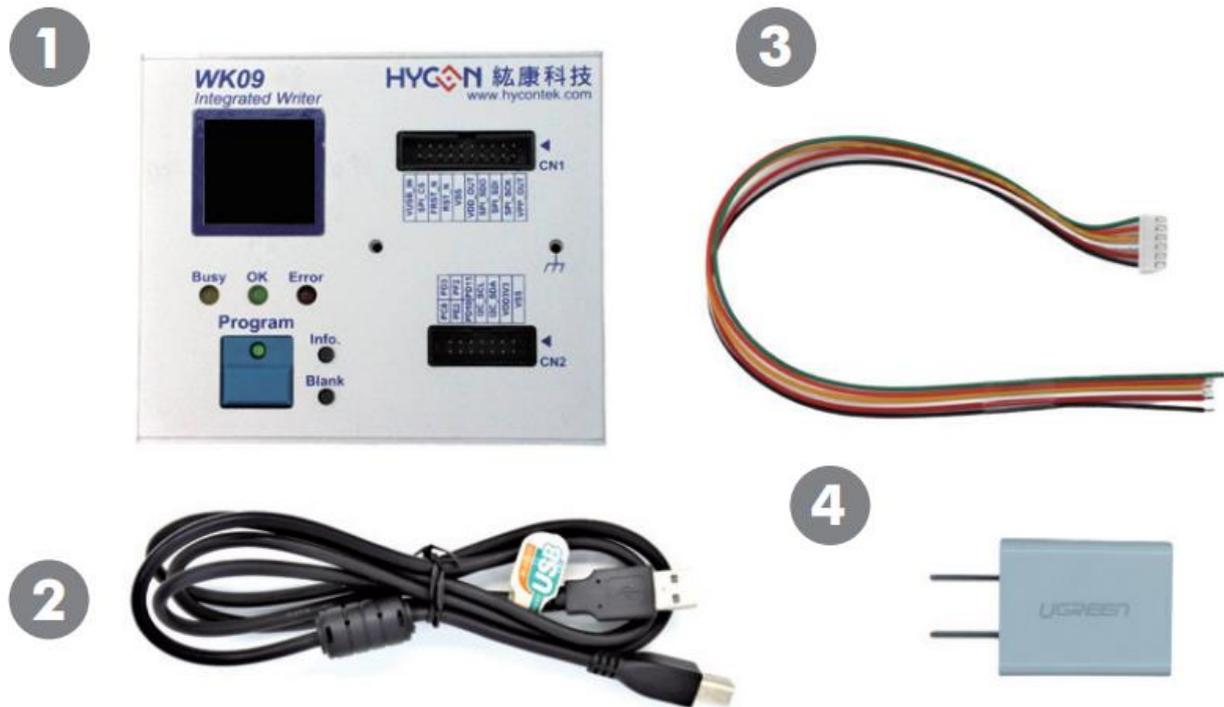


Figure 1-1

No.	Model No.	Description	Quantity
HY10000-WK09	1. HY10000-WK09	Integrated Writer	1
	2. Cable line	USB Type A to Type B Cable	1
	3. Programming line	6pin/2.5(2.5mm pitch)	1
	4. Power Supply	Output: DC 5V	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. Software Installation Requirements

3.1. Software Installation Requirements

Minimum system configuration required to run the burner application IDE & HexLoader:

- (1) PC/NB hardware requirement:
 - IBM PC compatible X86 system CPU
 - 512MB memory (1GB recommended)
 - 1GB Hard disk
- (2) Supported Products:
 - 16F/17P/HY17M series products
- (3) Supported Hardware Model No.:
 - HY10000-WK09 writer kit
- (4) Supported software version:
 - Support 8bit OTP IDE's software version
 - HYCON 8bit Writer V1.0.5(including) above
 - HY16F Writer V3.9.2(including) above
- (5) Supported Operating system:
 - Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10
- (6) Apply the following interface modes:
 - USB Port with "**HID-compliant device**"

The HY10000-WK09's USB Port driver uses the Windows standard "**HID-compliant device**" (Figure 3-1), there is no need to install another USB driver.



Figure 3-1

3.2. Hardware online automatic update

HY10000-WK09 integrated writer supports 16F/17P/HY17M series products. Each time the internal firmware is converted, it is only applicable to one series of products. Before switching between different firmware, you can check the current firmware supported writer through the "information 1" message.

The integrated writer needs to cooperate with the download software, which can automatically convert the internal firmware of the burner to support the burning of different series of products. The usage methods are as follows:

1. Automatically convert firmware with HYCON 8bit Writer

Connect the integrated writer to the computer via a USB cable, open software  **HYCON 8bit Writer**, the interface will be shown in Figure 3-2, click **"Chip Type"** and click **"Load"** load the corresponding HEX file, then click the **"Download to Burner"** button, the software will detect the firmware version of the burner, if it does not support the current chip, it will be automatically upgraded, as shown in Figure 3-3.

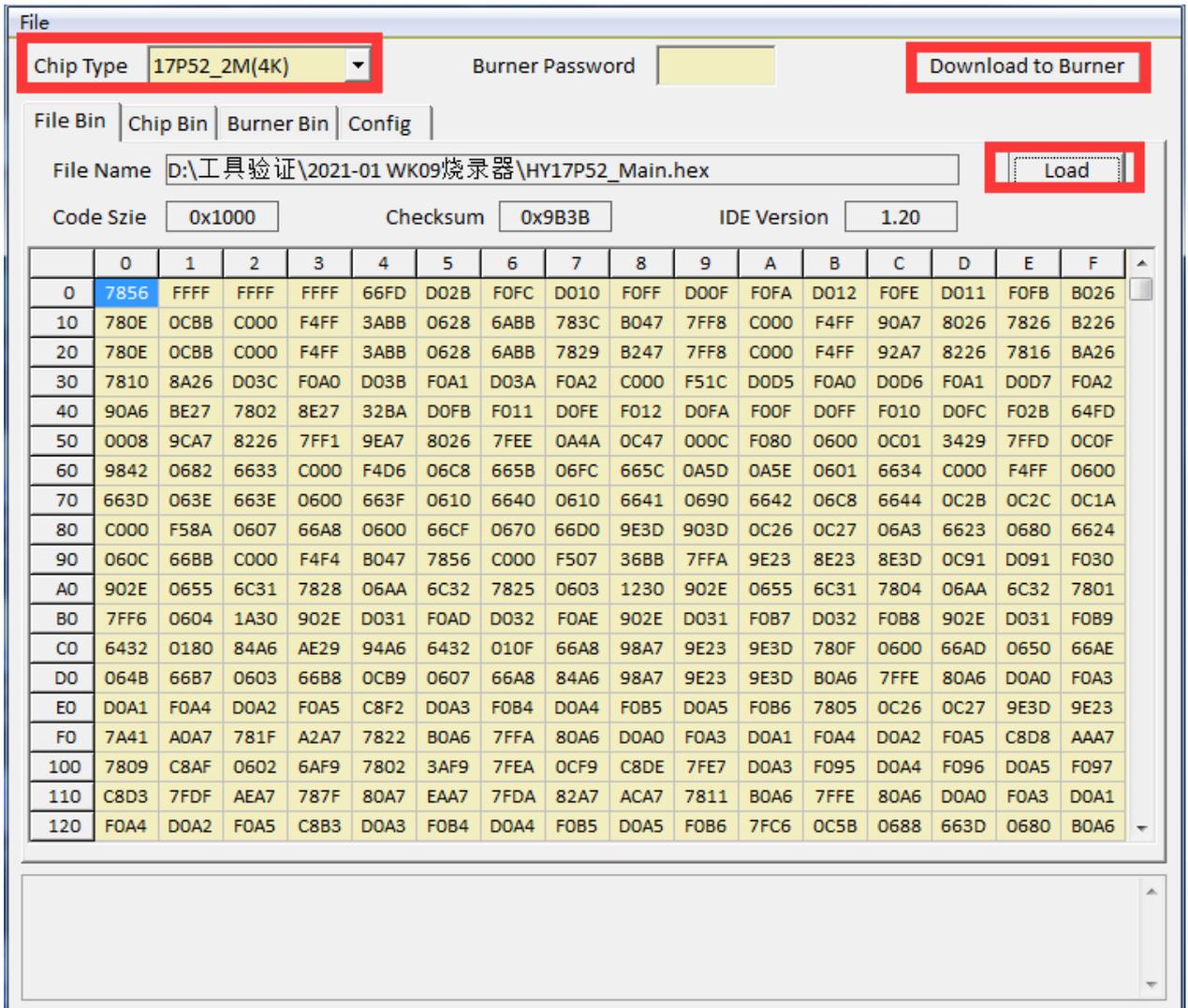


Figure 3-2

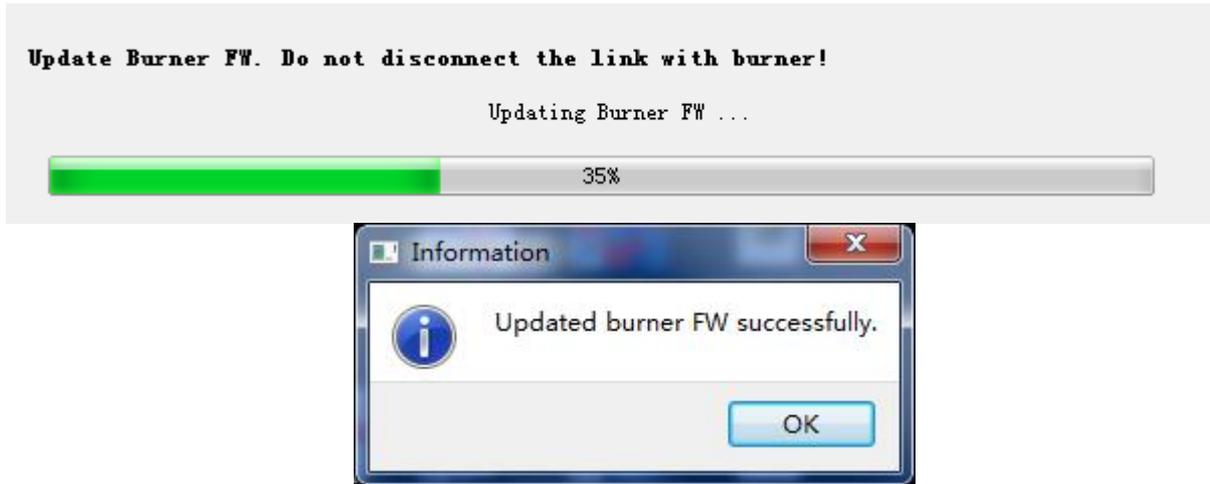


Figure 3-3

2. Automatically convert firmware with HY16F Writer

Connect the integrated writer to the computer via a USB cable, open the software  **HY16F Writer**, as shown in Figure 3-4, select **"Connect Burner Only"** in the Connect drop-down box, and select the chip model in the pop-up selection dialog box. At this time, the software will detect the burner Firmware version, if the current chip is not supported, an upgrade dialog box will pop up, select **"Yes (Y)"** to automatically upgrade, as shown in Figure 3-5.

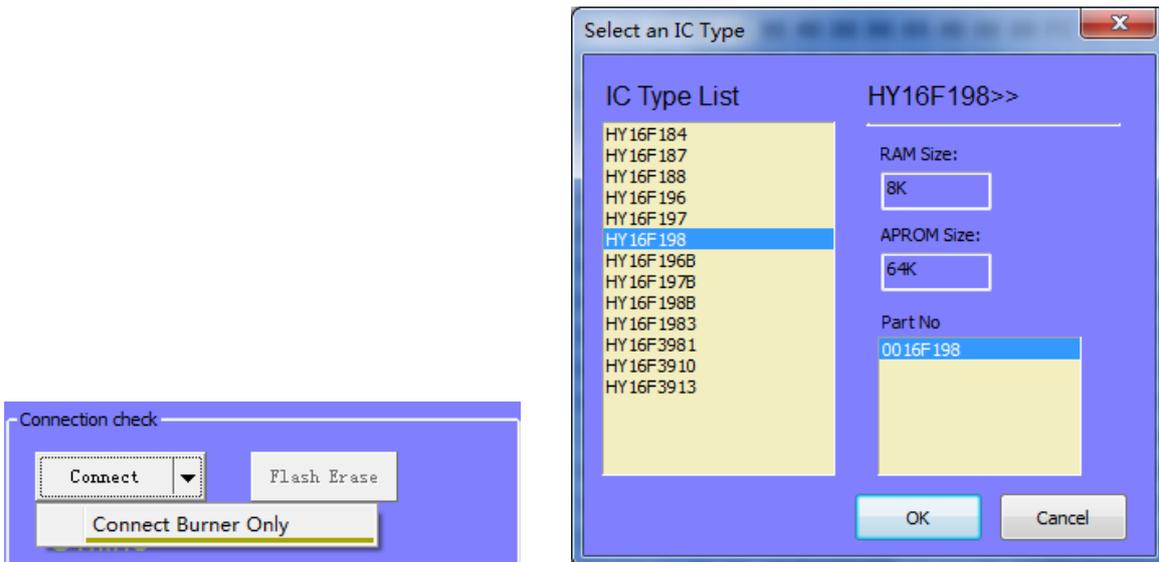


Figure 3-4



Figure 3-5

3.3. Hardware online manual update

The integrated writer also supports online manual firmware conversion to support the burning of different series of products. Currently, only the manual conversion of HY16F firmware is supported. The usage methods are as follows:

Connect the integrated programmer to the computer via a USB cable. Then open the software  HY16F Writer, click the "Function" button in the upper right corner of the software, and select "Update Firmware" in the drop-down box. And selecting the chip model, clicking "Update" will automatically upgrade, as shown in Figure 3-6.

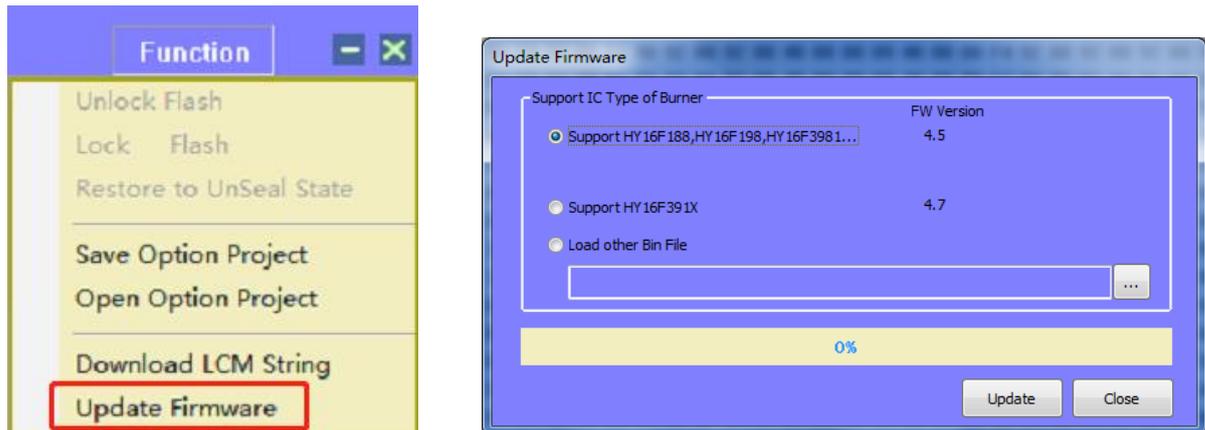
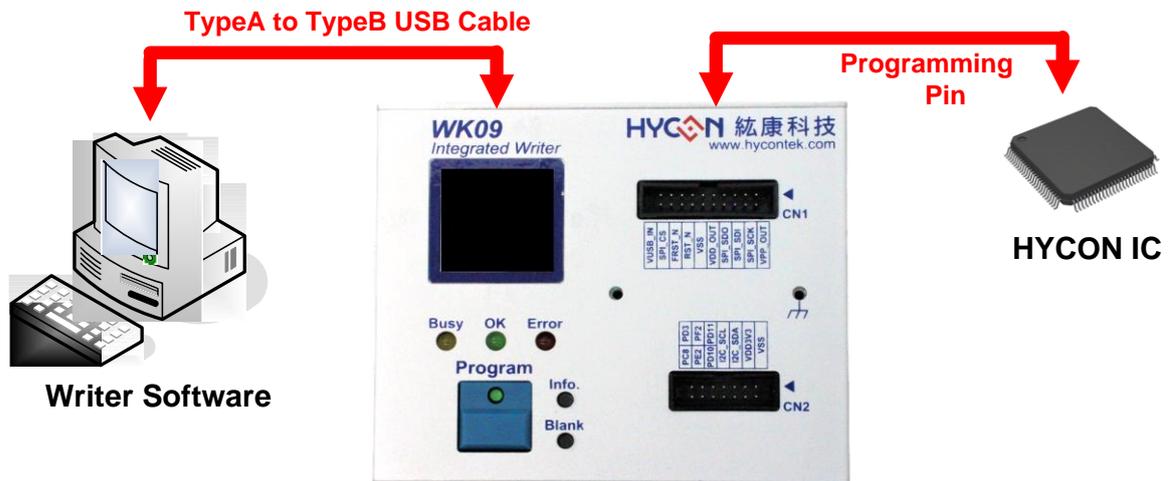


Figure 3-6

4. Writer Architecture

4.1. Architecture Description

The integrated writer can perform programming and other functions through the PC connection (as shown in Figure 4-1). For details, please refer to the Development Tools-Hardware Manual (<http://www.hycontek.com/>).



WK09 Writer Kit
 Figure 4-1

4.2. Appearance introduction

The integrated writer is a tool for programming chips; it is can be programmed 16F/17P/HY17M series products through the integrated writer, as shown in Figure 4-2.

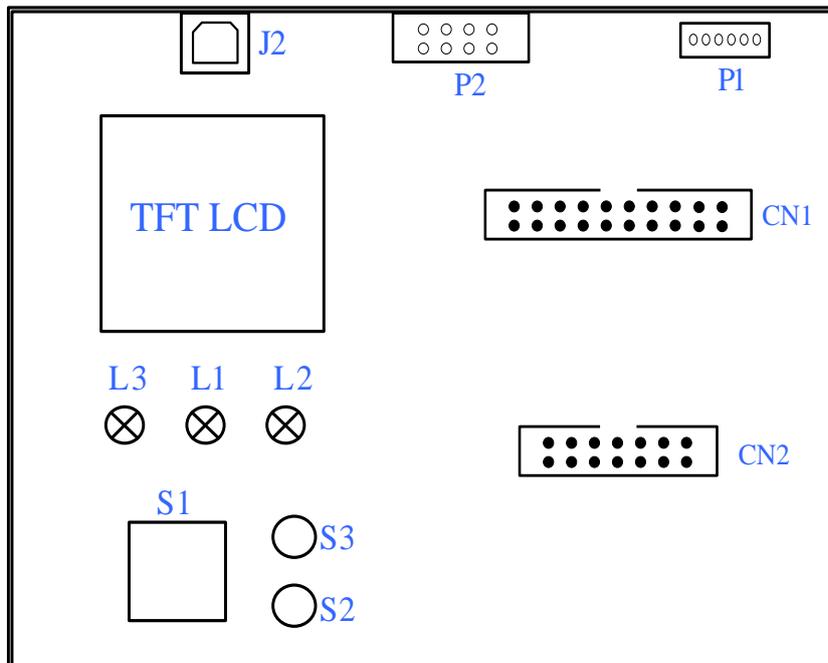
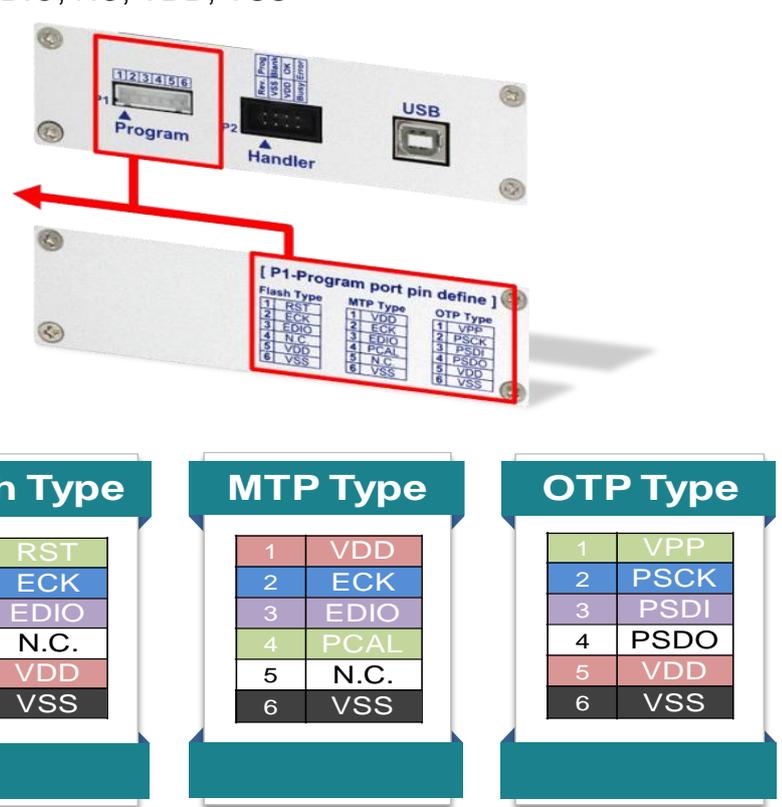


Figure 4-2

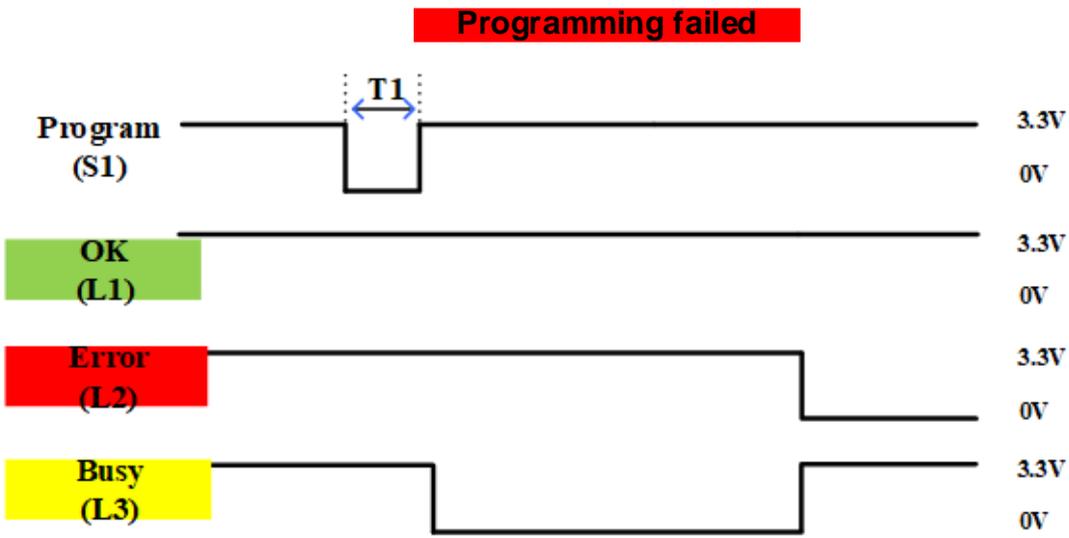
4.3. Operating instructions

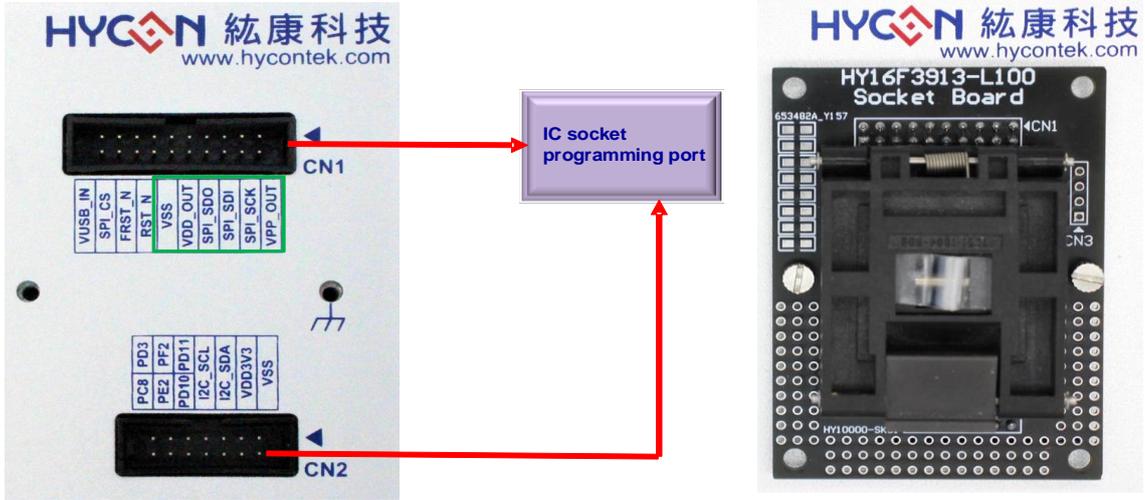
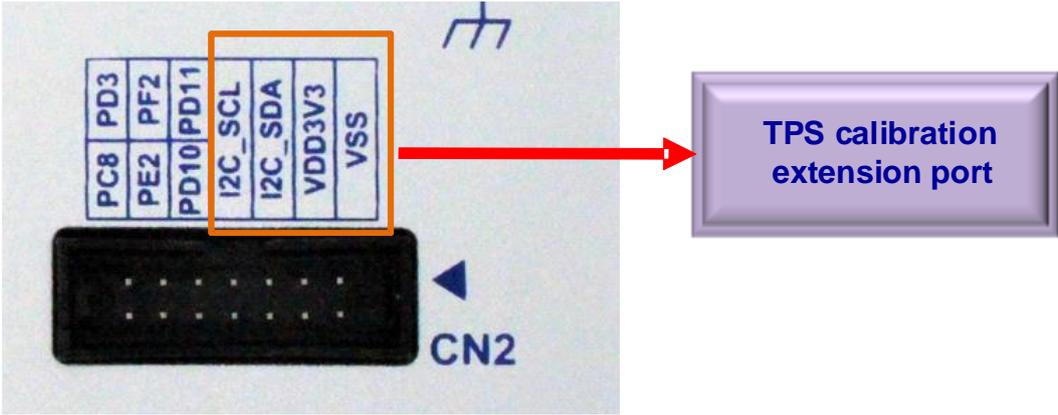
The following table shows the description of each device:

Item	Descriptions
<p>J5 USB</p>	<p>USB Connector: It is also a 5V power supply port that can be connected with the PC, and through the USB port, the Hex & Bin code to be programmed can be downloaded through USB port for HY16F/17P/HY17M series products.</p>
<p>P1 Program</p>	<p>Programming Control Port: The port is connected to the chip's programming pins, and support 8-bit and 32-bit (HY16F series) MCU product. The programming pins are shown in Figure 4-3a.</p> <ul style="list-style-type: none"> ● 8-bit OTP MCU (HY17P) dedicated programming pin: VPP, PSCK, PSDI, PSDO, VDD, VSS ● 8-bit MTP MCU (HY17M) dedicated programming pin: VDD, ECK, EDIO, PCAL, NC, VSS ● 32-bit Flash MCU (HY16F) dedicated programming pin: RST, ECK, EDIO, NC, VDD, VSS  <p style="text-align: center;">Figure 4-3a</p>
<p>P2 Handler</p>	<p>Handler extension programming control port: Users can connect to the semi-automatic programming machine or connect external buttons and indicators (refer to Figure 4-3b) to achieve extended</p>

Item	Descriptions																												
	programming control according to the defined functions of each pin. The functions of each pin are described as follows:																												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #d9e1f2;">Pin</th> <th style="background-color: #d9e1f2;">Name</th> <th style="background-color: #d9e1f2;">Descriptions</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>NC</td> <td>NC</td> </tr> <tr> <td>2</td> <td>VSS</td> <td>Ground pin</td> </tr> <tr> <td>3</td> <td>VDD</td> <td>Integrated Writer 3V/150mA power output pin</td> </tr> <tr> <td>4</td> <td>Busy</td> <td>Burning busy status pin : Normal High, active Low</td> </tr> <tr> <td>5</td> <td>Program</td> <td>Chip blank control status pin (built-in pull-up resistor): active Low</td> </tr> <tr> <td>6</td> <td>Blank</td> <td>Chip blank status pin (built-in pull-up resistor):active Low</td> </tr> <tr> <td>7</td> <td>OK</td> <td>Burning success status pin : Normal High, active Low</td> </tr> <tr> <td>8</td> <td>Error</td> <td>Burning error status pin : Normal High, active Low</td> </tr> </tbody> </table>		Pin	Name	Descriptions	1	NC	NC	2	VSS	Ground pin	3	VDD	Integrated Writer 3V/150mA power output pin	4	Busy	Burning busy status pin : Normal High, active Low	5	Program	Chip blank control status pin (built-in pull-up resistor): active Low	6	Blank	Chip blank status pin (built-in pull-up resistor):active Low	7	OK	Burning success status pin : Normal High, active Low	8	Error	Burning error status pin : Normal High, active Low
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	<p>Figure 4-3b</p> <p>The timing diagram of automatic programming control signal, the programming is successful as shown in Figure 4-3c</p>																												
	<p>Figure 4-3c</p>																												

OK(L1) PIN can be continuously inquired. If it changes from high pulse to low pulse, it means the programming is successful.

Item	Descriptions
	<p>The timing diagram of the automatic programming control signal, the programming fails as shown in Figure 4-3d</p>  <p>Programming failed</p> <p>The diagram shows four signals over time, each with a 3.3V high level and 0V low level:</p> <ul style="list-style-type: none"> Program (S1): A low pulse of duration T1. OK (L1): A constant high signal. Error (L2): A constant high signal. Busy (L3): A constant high signal. <p>Error(L2) PIN can be continuously inquired. If the changes from high pulse to low pulse, it means that the programming fails.</p> <p style="text-align: center;">Figure 4-3d</p> <p>T1: Program "external trigger" low pulse, 10ms < T1</p> <p>The usage instructions are as follows:</p> <ol style="list-style-type: none"> 1) Input a low pulse in the Program Pin to start programming, as shown in T1 in the above figure (this action is equivalent to After pressing the Program (S1) programming button). 2) The OK(L2) Pin can be continuously inquired. If the pulse changes from high pulse to low pulse, as shown in Figure 4-3c above, it means the programming is successful. 3) The Error(L3) Pin can be continuously inquired. If the pulse changes from high pulse to low pulse, as shown in Figure 4-3d above, it means that the programming fails.
CN1	<p>IC socket programming port:</p> <p>By connecting this programming port to the chip programming pin, both online and offline programming can be used, allowing users to directly perform programming or debugging functions more easily, as shown in Figure 4-3e below.</p>

Item	Descriptions															
	 <p style="text-align: center;">Figure 4-3e</p>															
<p>CN2</p>	<p>TPS calibration extension port: Temperature Sensor module interface.</p> <p>CN2 is a dedicated TPS calibration port for 8-bit MCU, as shown in Figure 4-3f below. Its main function is for TPS calibration of the temperature sensor built into the chip. Users can connect an external temperature Sensor module board to CN2 to perform TPS calibration. The functions of each pin are as follows :</p> <table border="1" data-bbox="304 1133 1430 1308"> <thead> <tr> <th>Pin</th> <th>Name</th> <th>Descriptions</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>I2C_SCL</td> <td>Temperature Sensor module board I2C communication clock pin</td> </tr> <tr> <td>2</td> <td>I2C_SDA</td> <td>Temperature Sensor module board I2C communication data pin</td> </tr> <tr> <td>3</td> <td>VDD3V3</td> <td>Temperature Sensor module board 3V3 power supply</td> </tr> <tr> <td>4</td> <td>VSS</td> <td>Temperature Sensor module board ground</td> </tr> </tbody> </table>  <p style="text-align: center;">Figure 4-3f</p>	Pin	Name	Descriptions	1	I2C_SCL	Temperature Sensor module board I2C communication clock pin	2	I2C_SDA	Temperature Sensor module board I2C communication data pin	3	VDD3V3	Temperature Sensor module board 3V3 power supply	4	VSS	Temperature Sensor module board ground
Pin	Name	Descriptions														
1	I2C_SCL	Temperature Sensor module board I2C communication clock pin														
2	I2C_SDA	Temperature Sensor module board I2C communication data pin														
3	VDD3V3	Temperature Sensor module board 3V3 power supply														
4	VSS	Temperature Sensor module board ground														
<p>L1</p>	<p>Action success indicator (OK LED): Programming success message indicator. The OK(L1) pin outputs high level by default, and outputs low level when action occurs.</p>															
<p>L2</p>	<p>Action failure indicator (Error LED): This message indicator will be on in case of programming failure, blank checking failure and HAO frequency calibration failure.</p>															

Item	Descriptions
	The Error(L2) pin outputs high level by default, and outputs low level when action occurs.
L3	Busy message indicator (Busy LED): When the Writer is programming, this message indicator will be on. The Busy(L3) pin outputs high level by default, and outputs low level when action occurs.
S1	Program: Chip programming button. The Program(S1) pin inputs a pull-up high level by default, and the action input is a low level.
S2	Blank Check: Chip blank checking button(HY16F product has no this function). The Blank(S2) pin inputs a pull-up high level by default, and the action input is a low level.
S3	Information: Information inquiry button of the Writer.

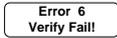
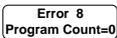
4.4. Description of Writer Characteristics

No	Item	Description
1	Model of Writer	HY10000-WK09
2	Supporting chip Model	HY16F/17P/HY17M Series
3	Display screen	TFT color display
4	Programing times counting	support
5	Hardware calibration function of chip frequency	support
6	Software calculation function of chip frequency difference	HAO and LPO (8-bit OTP MCU only)
7	“Auto button” function	Blank(Erase), Program, Verify
8	LED light display (L2 / L3 / L4)	Green LED(L2), Red LED(L3), Yellow LED(L4)
9	Writer firmware update	Automatic updates
10	Programming software support version	HYCON 8bit Writer V1.0.5 (inclusive) or above HY16F Writer V3.9.2 (inclusive) or above It can be used with HY10000-WK09 burner to download the compiled HEX code into the programmer, and then the programmer can perform online or offline programming to IC.

Notice:

1. Supported chip model: HY10000-WK09 can program HY16F/17P/HY17M Series chips.
2. Program self-checking mechanism at startup: HY10000-WK09 is a high-level self checking mechanism at startup to ensure the correctness of data, when power on, it will check whether the code to be programmed is correct or not and Checksum is correct or not, therefore, the LCM screen will display "**Verifying....**" string, If the check is passed, the "**HYCON IDE**" string will appear to ensure the correctness of the data, which means that the Writer can be started; if the check fails, the "**Verify error 6**" string will appear, which means that the code to be programmed is not correct, and the code to be programmed must be downloaded again.
3. Allowed chip programming times: HY10000-WK09 supported.
4. Auto button function: HY10000-WK09 automatic programming sequence is **Blank(Erase) → Program → Verify.**
5. LED lights: **Green(L1)/Red(L2)/Yellow(L3)** light of HY10000-WK09 respectively represents **OK / Error / Busy**. when the L3(Busy) message indicator is on during the programming process, the L3(Busy) message indicator is off after the programming is completed. When light L1 (OK) is on, it means that the programming is successful, and when light L2 (Error) is on, it means that the programming has failed or the HAO frequency calibration has failed.

4.5. Cautions

1. If the HY10000-WK09 Writer displays  at the first time of startup, it is caused by, the code to be programmed has not been downloaded to the flash of the Writer, not because the Writer is damaged, so the user does not need to pay attention to this error message.
2. When HY10000-WK09 Writer use the "limit programming times" function, assuming that the programming times are used up, pressing the "**Program**" button will display  and cannot program, pressing the "**Information**" button will display "**Information 2**": program counter enable left 00000000".

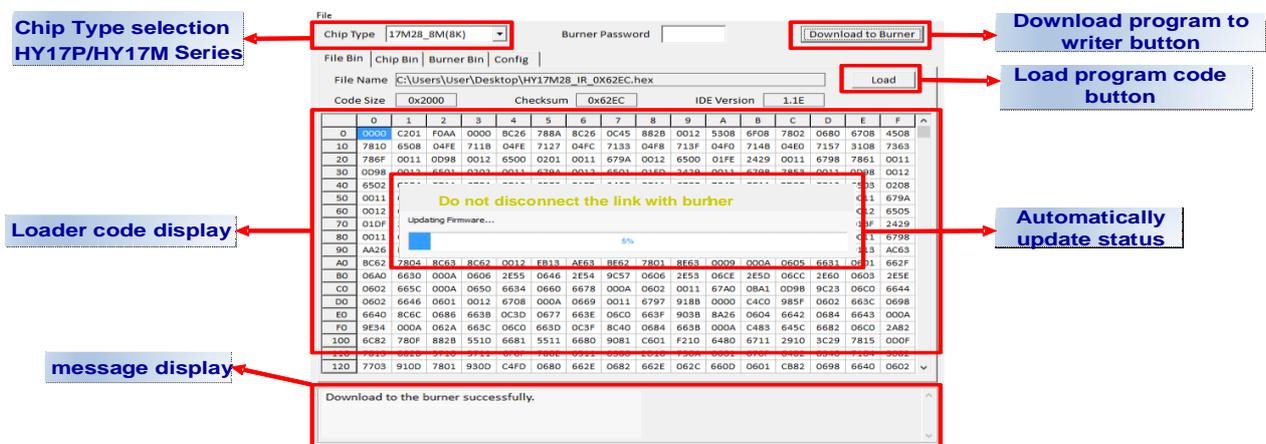
5. Software HYCON 8bit Writer Download Operation description

In order to facilitate customers to use the writer WK09 of HYCON Technology, a dedicated download environment for 8bit Writer has been developed, which can download the compiled HEX file to the writer.

HYCON 8bit Writer is specially used for WK09, and can be downloaded to WK09 for programming of HY17P/17M series HEX.

5.1. Software window interface

The following interface will appear when opening the Hycon 8bit Writer software, as shown below.



5.2. Program download method

Step 01: Connect WK09 to the computer via USB and open  HYCON 8bit Writer the software.

Step 02: Select the IC model in Chip Type.

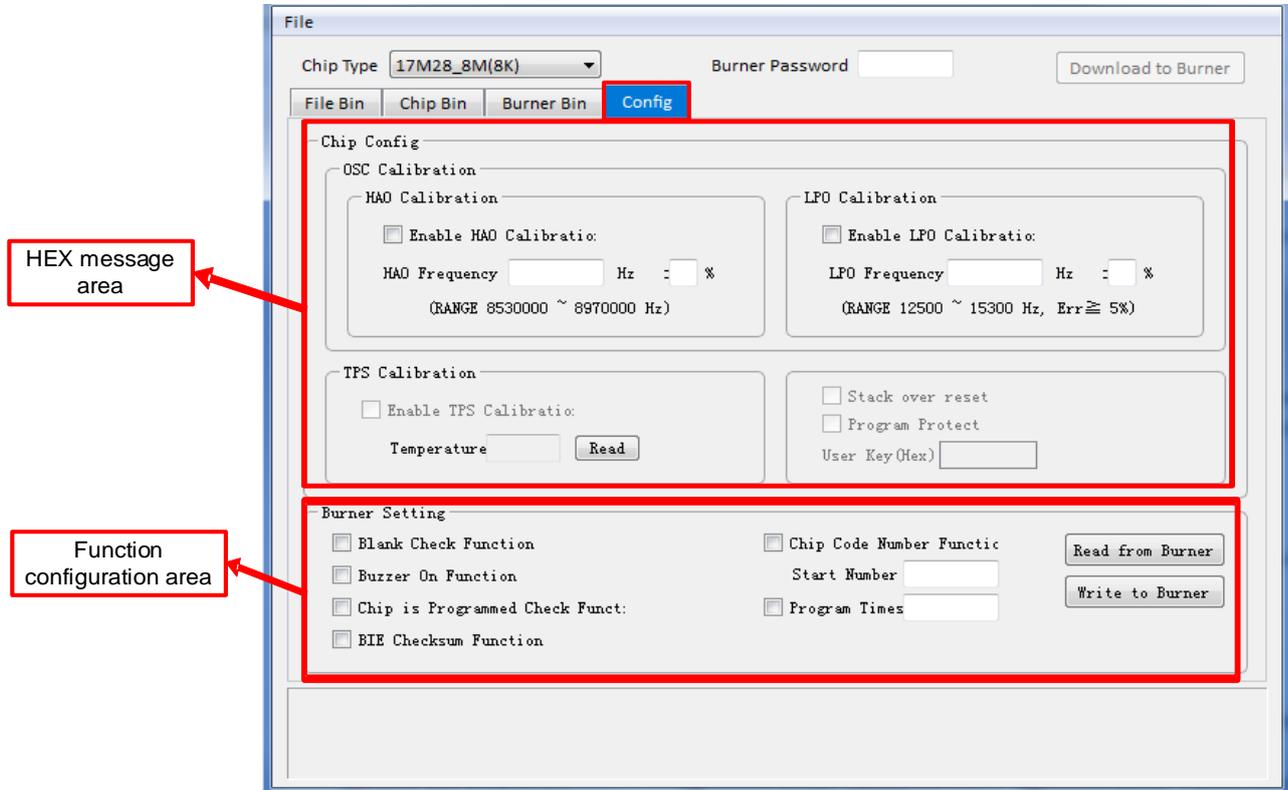
Step 03: Click "Load" to select HEX. Note that HEX must be consistent with the selected IC model, otherwise HEX will fail to load;

Step 04: Click "Download to Burner" to start downloading; if the current version is not supported, the WK09 firmware will be automatically upgraded; if the download fails after upgrading the firmware, click "Download to Burner" again;

Step 05: Check whether the download is successful on the message display. The download is complete when it is successful.

5.3. Function settings

The Config page of the Hycon 8bit Writer software is the function configuration area. The interface is as shown below



The **HEX message area** displays the relevant configurations in HEX after loading HEX, as described in the following table:

No.	Item	Description
1	HAO Calibration block	After loading the HEX file, HAO information is displayed; <input type="checkbox"/> If it is selectable, it means you can cancel or add HAO settings here. Click "Download to Burner" to download and take effect;
2	LPO Calibration block	After loading the HEX file, LPO information is displayed; <input type="checkbox"/> If it is selectable, it means you can cancel or add LPO settings here. Click "Download to Burner" to download and take effect;
3	TPS Calibration block	After loading the HEX file, the TPS temperature correction information is displayed and cannot be modified;
4	Stack over reset	After loading the HEX file, Stack overflow information is displayed and cannot be modified;
5	Program Protect	After loading the HEX file, it displays whether it is write-protected and cannot be modified;
6	User Key(Hex)	After loading the HEX file, the user password is displayed and cannot be modified;

The **function configuration area** is related to the settings of the auxiliary functions of the writer, as described in the following table:

No.	Item	Description
1	Blank Check Function	Blank check function, check it to indicate blank check
2	Buzzer On Function	Buzzer function, check it to turn on the buzzer
3	Chip is Programmed Check Function	checksum check function, note: if there is no need for this, it is recommended not to check it
4	BIE Checksum Function	Checksum is written to the BIE function, and checking it means turning on this function; If turned on, the Checksum value is written to the chip BIE area address "0x3F"
5	Chip Code Number Function	Chip Code function, write decimal number, check to turn on this function; If turned on, the Chip Code value is written to the chip BIE area address "0x3D/3E", the low bit is "0x3D", and the high bit is "0x3E"
6	Program Times	Number of burning times, write in decimal number, check to turn on this function
7	Read from Burner	Read the function settings of the writer
8	Writer from Burner	Write function settings to the writer

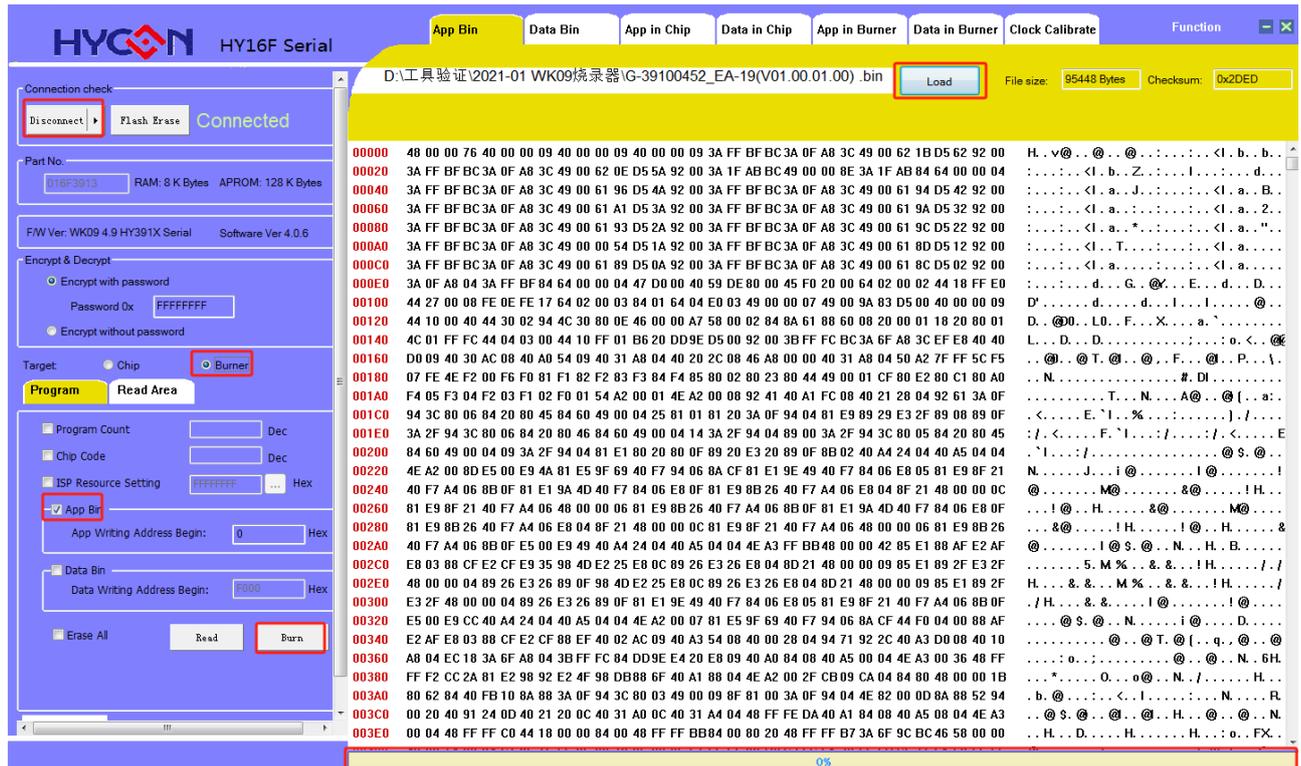
Note: For relevant settings in the **function configuration area**, click "Download to Burner" on the homepage File Bin page to download and take effect; you can also modify the function on the Config page after downloading and click "Writer to Burner" to take effect.

6. Software HY16F Writer download operation instructions

In order to facilitate customers to use the writer of HYCON Technology, a dedicated download environment for HY16F Writer has been developed. The compiled BIN file of the HY16F series chip can be downloaded to the writer.

6.1. Software Window interface

When opening the HY16F Writer software, the following interface will appear, as shown below.



6.2. Program download method

Step 01: Connect WK09 to the computer via USB and open  **HY16FWriter** the software.

Step 02: Click "Connect" to connect or select the chip model from the drop-down box; if the current version is not supported, the WK09 firmware will be automatically upgraded.

Step 03: Select Bruner and download the BIN file to the writer.

Step 04: Click "Load" to load the BIN file, check App Bin, and other required functions.

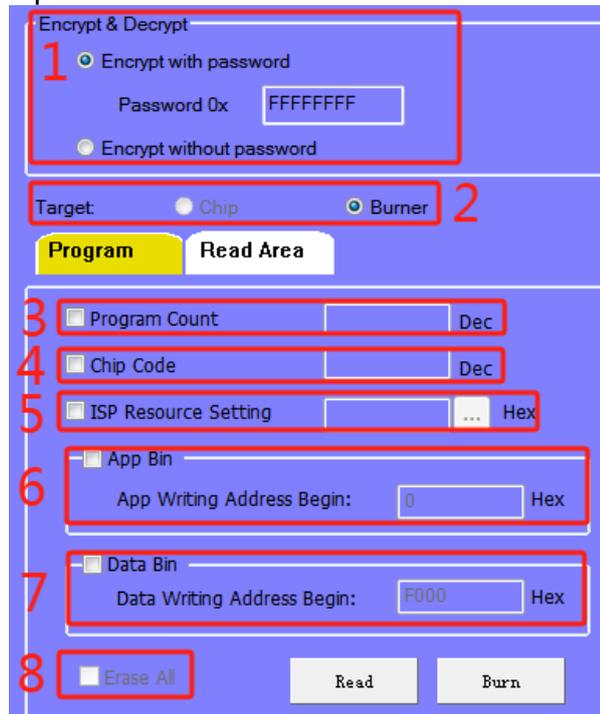
Step 05: Click "Burn" to start downloading;

Step 06: Check the download progress in the action status display bar. If the download is successful, it is completed.

Note: If the firmware of WK09 is HY17P/17M, to convert to HY16F firmware, you can only use manual upgrade method; please refer to Chapter 3.3

6.3.HY16F Writer function setting

Open the HY16F Writer software and select the function interface as shown below



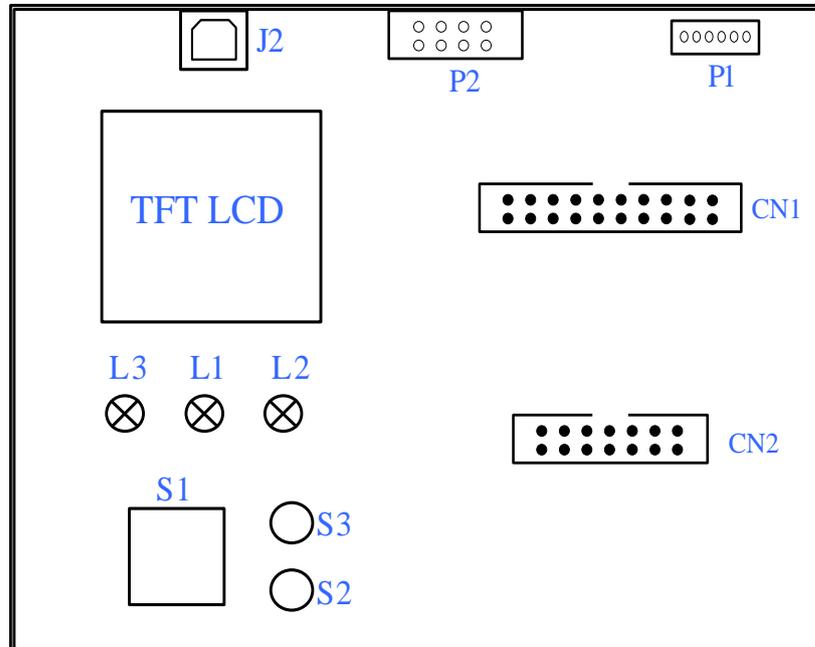
Relevant instructions are as follows:

No.	Item	Description
1	Encrypt & Decrypt block	Encrypt with password: If the written value is FFFFFFFF, it means no encryption; if it is other values, it means encryption; Encrypt without password : Encryption without password
2	Target	Select the operation target. Chip operates the connected chip online, and Burner operates the burner.
3	Program Count	Set limit of burning times
4	Chip Code	Rolling code writing function
5	ISP Resource Setting	ISP function settings, define ISP UART Pin & ISP Check Pin
6	App Bin	Required , download the App Bin to the target
7	Data Bin	Download Data Bin to target
8	Erase All	If checked, it means that all chip Flash will be cleared before burning. Unchecked means that only the Flash block to be burned in the chip will be cleared.

7. Offline (PC) burning instructions

7.1. Burning instructions

When the user program enters the mass production stage from the development stage, the mass production is burned offline. At this time, the burner can be used alone without connecting to the PC.



(Please refer to Chapter 4.3 for description of each device)

The following table describes the functions of the LED indicators and buttons:

Name	Function
J2	USB connector, connect 5V power supply via USB
P1	Program programming socket, connect the chip to be programmed
L1	Green light, power-on indicator light signal. Programming success message indicator light signal.
L2	Red light, Blank Check Fail message indicator signal. Programming failure message indicator signal. HAO frequency calibration failure indicator signal.
L3	Yellow light, Busy message indicator light signal
S1	Program → Verify ; chip programming button.
S2	Blank Check ; Chip blank check button.
S2	Information ; Writer information check button.

- For offline operation, you need to first download the programming code (HEX or BIN file) into the Flash Memory of the writer. Please refer to the programming software instruction manual of each product.
- During offline programming, first press button S2 (Blank) to check whether the chip is empty. After checking, the L1 (OK) green LED should light up.
- Button S1 (Program) is the burning button, and the steps are Program → Verify. At this time, the L3 (Busy) message indicator light is on. If you have checked

"Burning Protection" in the "Assembly Options" before downloading to Flash Memory, Then the burning protection will be performed after Verify; if it is not checked, it will stop after Verify. After the burning is completed, **L3** (Busy) will be off, and the **L1** (OK) green LED will be on.

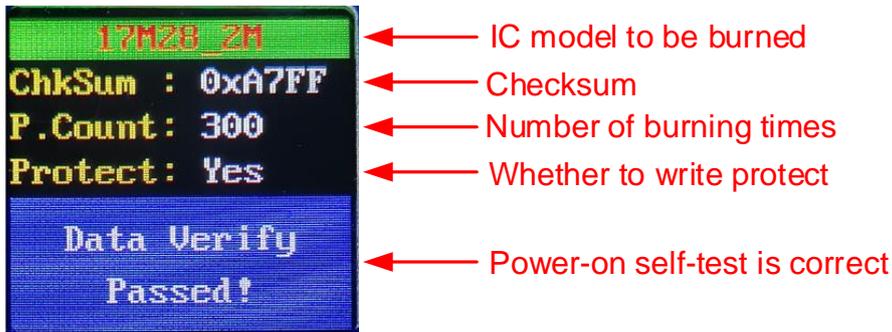
- After the programming is completed, you can press button **S2** (Blank) to check again whether the chip is empty. At this time, the **L2** (Error) red LED should light up, indicating that the programming is completed (because the programming code has been burned into the IC, so Blank Check Fail).
- It is recommended to press S2 (Blank) to check if the chip is empty before burning, and then press S1 (Program) to perform the burning operation to ensure correct burning.
- If there is any error or failure during execution, the L2 (Error) red LED will light up; if successful, the L1 (OK) green LED will light up.

8. Display message description

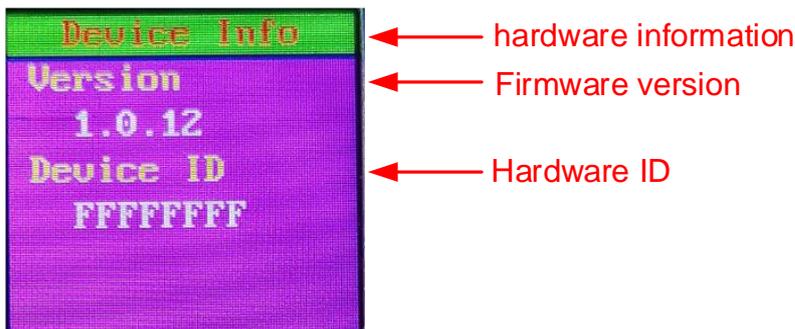
8.1. HY17P/17M message description

After HYCON 8-bit Writer downloads HY17P/17M HEX to WK09, you can view relevant information through the S3 Information button.

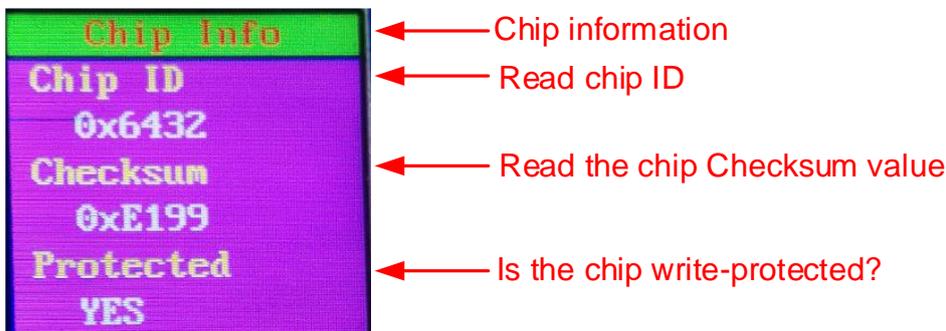
- Page 1, the power-on homepage of the display screen is as shown below, which displays the chip model currently to be burned, Checksum value, number of burns, whether to write protected, and the results of the power-on check program.



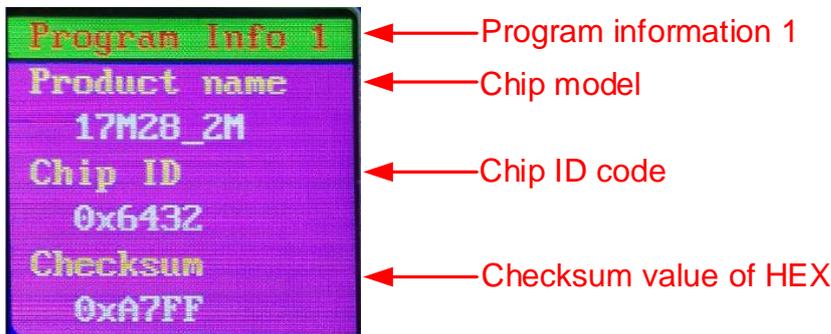
- Page 2, Device Info, displays the writer information, firmware version and serial number.



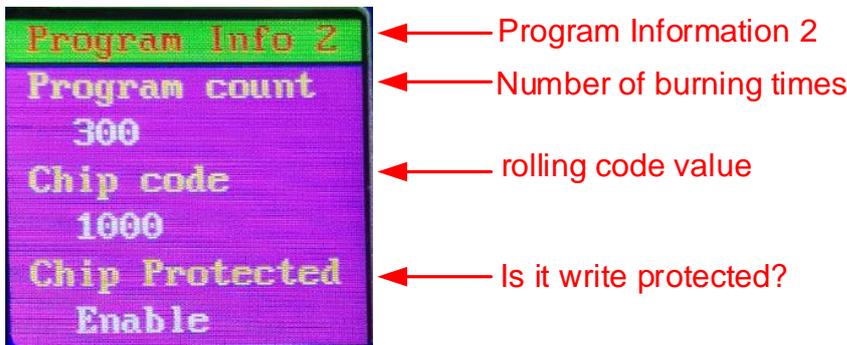
- Page 3, Chip Info, displays the chip information connected to WK09. Chip ID: Read the chip ID code; Checksum: Read the chip Checksum value; Protected: Whether the chip is write-protected; If the chip is not connected, there is no value.



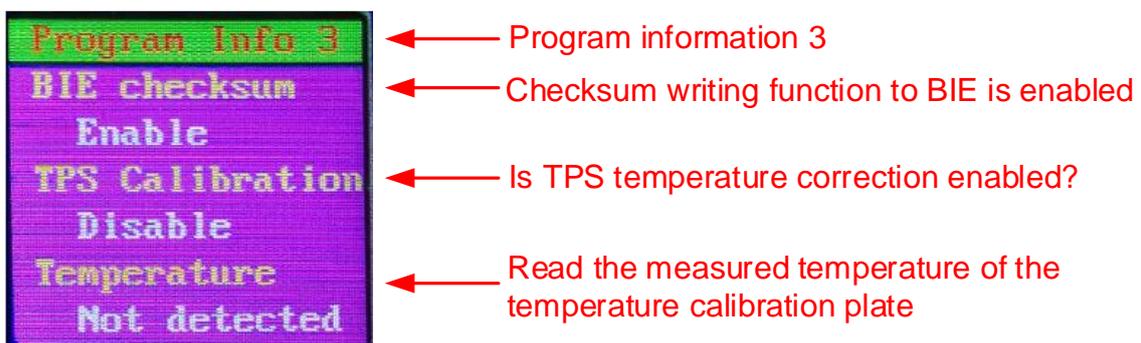
- Page 4, Program Info 1, current HEX related information, Product name: chip model; Chip ID: chip ID code; Checksum: Checksum value of HEX.



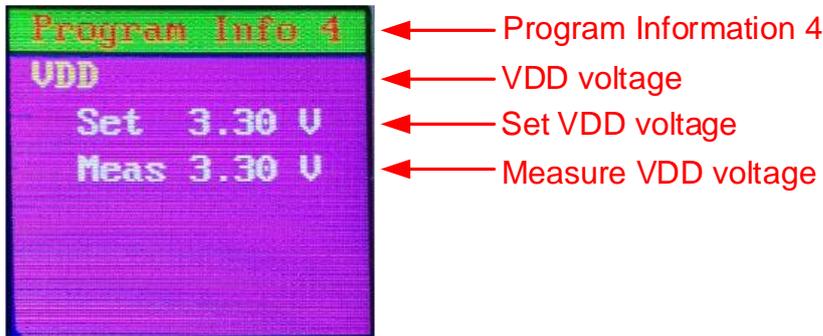
- Page 5, Program Info 2, Program count: the number of programming times; Chip code: rolling code value, a value indicates that the Chip code function is turned on; Chip Protected: whether write protection is turned on.



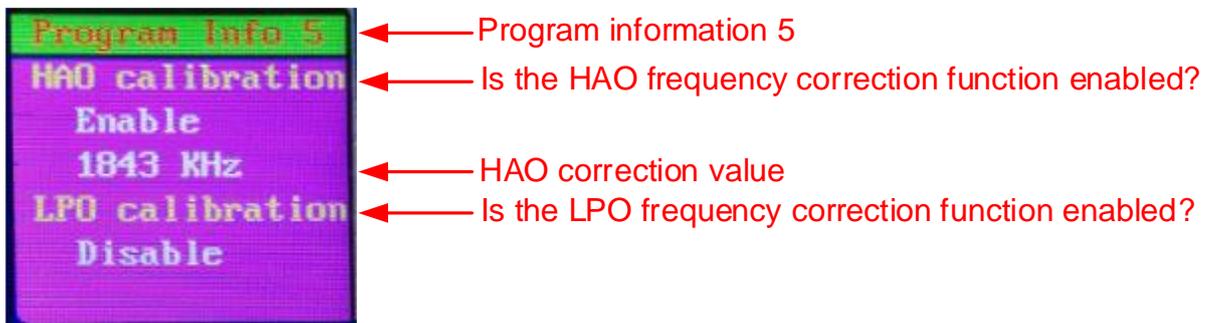
- Page 6, Program Info 3, BIE checksum: Checksum to write to BIE whether the function is turned on; TPS Calibration: whether TPS temperature correction is turned on; Temperature: read the measured temperature of the temperature correction PCB.



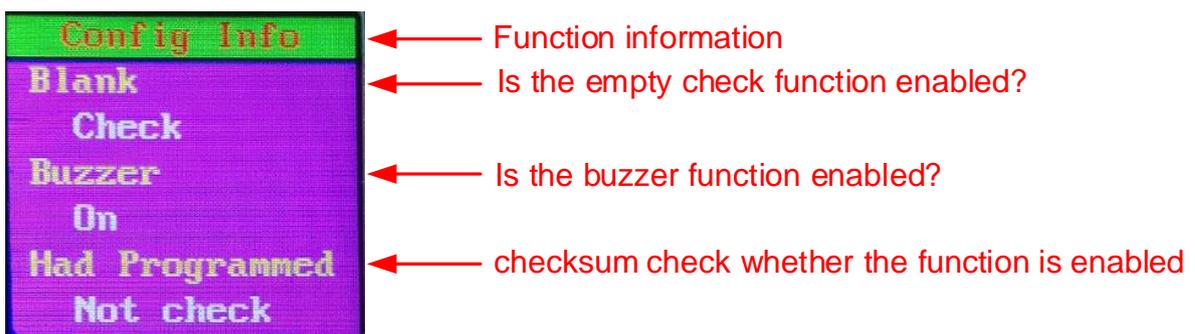
- Page 7, Program Info 4, VDD: Read the VDD voltage of WK09; VPP: Read the VPP voltage of WK09.



- Page 8, Program Info 5, HAO calibration: whether the HAO frequency correction function is turned on, and the correction value; LPO calibration: whether the LPO frequency correction function is turned on, and the correction value.



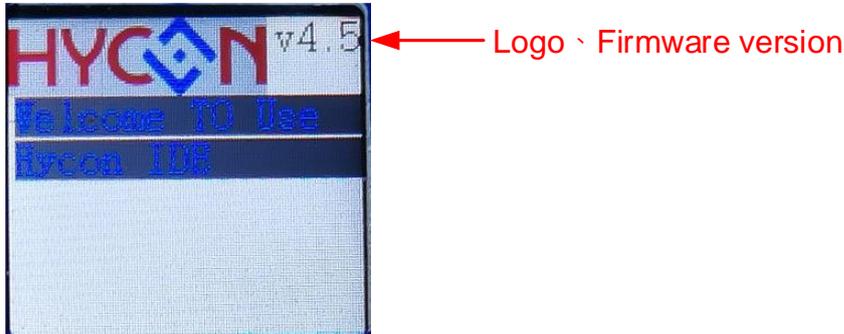
- Page 9, Config Info, Blank: whether the blank check function is turned on; Buzzer: whether the buzzer function is turned on; Had Programmed: whether the checksum check function is turned on; For details, please see Chapter 5.3.



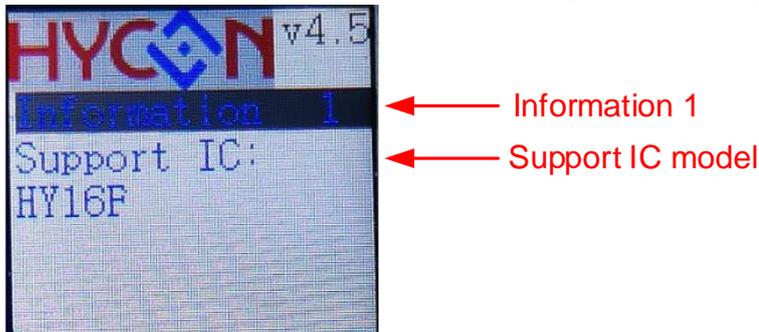
8.2. HY16F message description

After HY16FWriter downloads the HY16F BIN file to WK09, you can view relevant information through the S3 Information button.

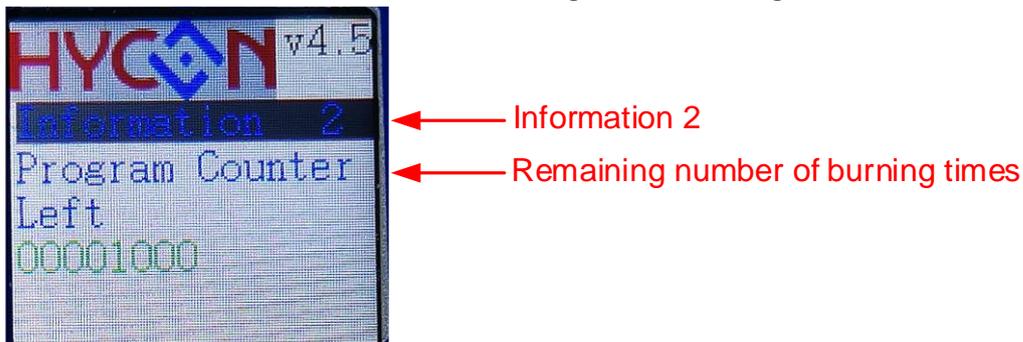
- The home page of the power-on display is as shown below, showing the current writer firmware version.



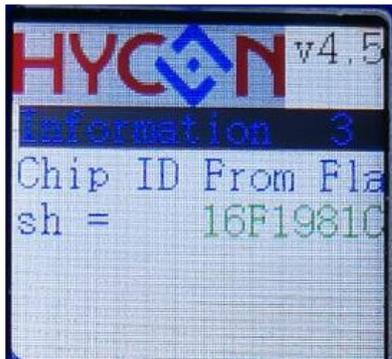
- Information 1 is as shown below, showing the currently supported chips.



- Information 2 is as shown below, showing the remaining number of burning times.



- Information 3 is as shown below, showing that Chip ID From Flash indicates the chip model selected when downloading HY16F Writer; Chip ID From IC indicates the model of the chip currently connected to WK09, if the chip is not connected, it is FFFFFFFF; and the status of the chip.

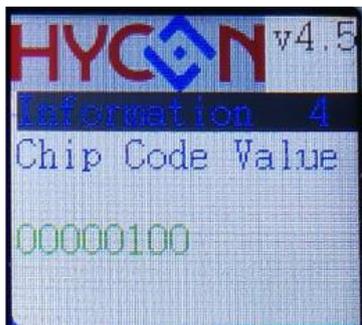


- ← Information 3
- ← Chip model selected when downloading



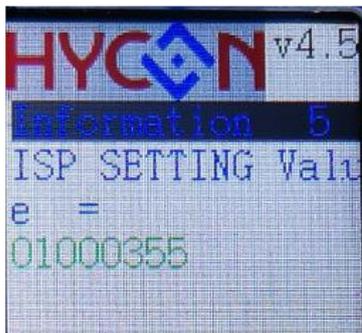
- ← Information 3
- ← Model of chip connected to WK09
- ← Chip connection status

- Information 4 is as shown below, showing the Chip Code value.



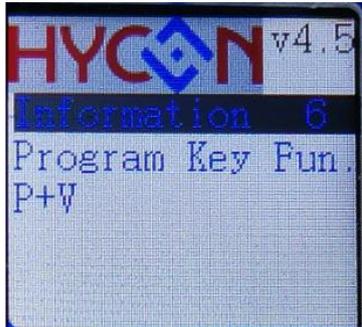
- ← Information 4
- ← Chip Code value

- Information 5 is as shown below, showing the ISP value.



- ← Information 5
- ← ISP value

- Information 6 is as shown below, showing the burning steps, P means Program, V means Verify, and E means encryption (with password encryption).



← Information 6
← Program steps: P means Program, V stands for Verify, E stands for Encryption

- Information 7 is as shown below. App Bin Name represents the name of the downloaded App Bin; Size represents the size of the App Bin; CheckSum represents the CheckSum value of the App Bin; Write Add Begin represents the starting address of the App Bin.

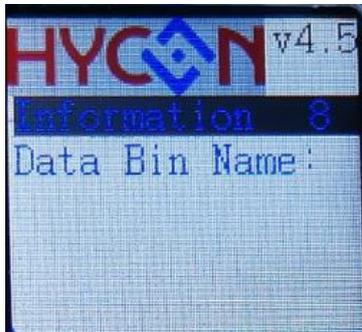


← Information 7
← App Bin name

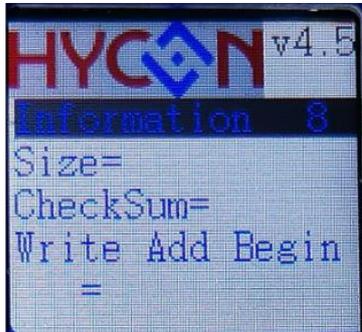


← Information 7
← App Bin size
← CheckSum value of App Bin
← Starting address of App Bin

- Information 8 is as shown below. Data Bin Name represents the name of the downloaded Data Bin; Size represents the size of the Data Bin; CheckSum represents the CheckSum value of the Data Bin; Write Add Begin represents the starting address of the Data Bin.

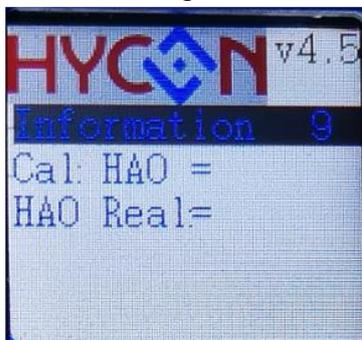


← Information 8
← Data Bin name



← Information 8
← Data Bin size
← CheckSum value of Data Bin
← Data Bin starting address

- Information 9 is shown in the figure below. Cal HAO represents the frequency correction target value; HAO Real represents the corrected frequency value.



← Information 9
← HAO frequency correction target value
← Frequency value after HAO frequency correction

9. Revisions

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

Version	Page	Date	Revision Summary
V01	All	2022/10/5	First edition
V02	All	2024/05/21	Updated WK09 pictures and related instructions; Added Chapter 5 software HYCON 8-bit Writer download operation instructions, Chapter 6 HY16F Writer download operation instructions, Chapter 8 display message instructions.