



Table of Contents

1.	PACKAGE CONTENTS
2.	SAFETY PRECAUTIONS
3.	SOFTWARE INSTALLATION REQUIREMENTS7
3.1.	Software Installation Requirements7
3.2.	Hardware Version Requirements8
3.3.	Firmware Version Conversion
4.	WRITER ARCHITECTURE
4.1.	Architecture Description10
4.2.	Appearance introduction10
4.3.	Operating instructions
4.4.	Description of Writer Characteristics12
4.5.	Cautions
5.	PROGRAMMING SOFTWARE OPERATION INSTRUCTIONS14
6.	ON-LINE (PC) PROGRAMMING INSTRUCTIONS15
6.1.	Connect to burning OTP15
6.2.	Chip check(Blank Check)16
6.3.	Burning chip (Program)17
6.4.	Check chip(Verify)17
6.5.	Read chip(Read)18
6.6.	Automatic burning and reading(AUTO)18
6.7.	Cautions



7.	OFF-LINE (PC) PROGRAMMING INSTRUCTIONS
7.1.	Programming Instructions
7.2.	Limitation of Programming Times21
7.3.	Cautions
8.	MESSAGES DESCRIPTION
8.1.	Information Messages Description22
8.2.	Error Messages Description24
8.3.	Cautions
9.	REVISIONS



Attention:

- 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: <u>http://www.hycontek.com</u>.
- 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 do 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 device or equipment affecting the human body, health/medical equipment, security systems, or any apparatus installed in aircrafts and other vehicles.
- 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. Package Contents

HY10000-WK08D integrated writer is a tool for connecting PC to program the chips. As shown in Figure 1-1, HYCON HY10P/HY11P/HY12P/HY13P/HY15P/HY17P/HY16F series products can be programmed through the integrated writer, the related hardware is equipped as shown below:



Figure 1-1

No. Model No.		Model No.	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	4*2Pin/2.54 (2.54mm pitch)	1
	5.	Power Supply	Output: DC 5V	1

Note:

HY10000-WK08C (previous generation products) is also an integrated writer, although its appearance is slightly different from HY10000-WK08D, its functions are the same. This chapter mainly introduces HY10000-WK08D only.



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 Requirements of operating HY10000-WK08D hardware:

- PC/NB hardware requirement:
 IBM PC compatible X86 system CPU
 512MB Memory (1GB recommended)
 1GB Hard disk
- (2) Supported Products: HY10P/11P/12P/13P/15P/16F/17P series products
- (3) Supported Hardware Model No.: HY10000-WK08C & HY10000-WK08D writer kit
- (4) Supported software version:
- Support 8bit OTP IDE's software version
 - HY10P IDE V3.4(including) above
 - HY11P IDE V4.5(including) above
 - HY12P IDE V3.9(including) above
 - HY13P IDE V3.6(including) above
 - HY15P IDE V2.2(including) above
 - HY17P IDE V1.1(including) above
- Support Writer's programming software version
 - HY10P and HY13P HexLoader V1.6(including) above
 - HY11P and HY12P HexLoader V2.5(including) above
 - HY15P HexLoader V1.9(including) above
 - HY17P HexLoader V1.0(including) above
 - HY16F Writer V2.3(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-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



3.2. Hardware Version Requirements

The firmware versions of each product to be matched with the writer are as follows:

- Firmware of HY10P/HY13P series products uses W13AD1.6(including) above
- Firmware of HY11P/HY12P series products uses WRIV2.40(including) above
- Firmware of HY15P series products uses W15P02.3(including) above
- Firmware of HY17P series products uses W17D01.6(including) above
- Firmware of HY16F series products uses V3.4(including) above

3.3. Firmware Version Conversion

HY10000-WK08D integrated writer supports HY10P/HY11P/HY12P/HY13P/HY15P/ HY17P & HY16F series products, and it's internal firmware can only be used for one family of products per conversion, before different firmware conversion, you can view the current firmware version through the "**information 1**" message.

The integrated writer needs to cooperate with the "**Burner Transformer**" software to convert the internal firmware of the writer to support the programming of different series of products, the conversion method is as follows:

(1) Short circuit Pin1~Pin2 of the "Handler" interface of the integrated writer, as shown in Figure 3-2:



Figure 3-2

(2) Connect the integrated writer to the computer through the USB cable, at this time, the LED lights on the writer will be off, after opening software shown in Figure 3-3a will appear, and then click the "connect" button to connect.

Burner Transformer V1.6	About 🔲 🔀	Burner Transformer V1.6 About 📃 🔀
ドイン (1) 転康科技設份有限公司		ドマンシン 転 東 科 技 股 份 有 限 公 司
Connection Check Connect Disconnected 1. Link "Update Pin" to ground. 2. Link burner w	/ith computer.	Connection Check Disconnect IC Serial: HY11P, HY12P HY11P, HY12P HY11P, HY12P HY13P HY13P HY13P HY13P HY13P HY13P HY13P
Figure 3-3a		Figure 3-3b



(3) Start update:

- Select the firmware version to be upgraded (as shown in figure 3-3b) in the "IC serial" drop-down menu, and then click "transform" to start the update.
- If the update is OK, the progress bar will display 100%, and a message window will appear (as shown in Figure 3-4) indicating that the firmware has been downloaded successfully, at this time, close the software, unplug the USB cable and remove the short circuit.

Burner Transformer V1.6	About 🗖 🔀
トロンシント 転 康科 技 股 份 有 限 公 司	
Connection Check	
Disconnect Cor Burner Transformer X	
Download success!	
IC Serial: HY11P, HY12 確定	Close
100%	

Figure 3-4

Note:

For more information about the "**Burner Transformer**" software, please refer to the "**APD-HYIDE014_EN**" document (HY10000-WK08x Integrated Writer Online Update Manual).



4. Writer Architecture

4.1. Architecture Description

The HY10000-WK08D is a programming device between the Chips to be programmed and the writer software, the assembly diagram is as follows:



Figure 4-1

4.2. Appearance introduction

The integrated writer is a tool for programming chips, it can burn HY10P/ HY11P/ HY12P/HY13P/HY15P/HY17P & HY16F series products through the integrated writer, as shown in Figure 4-2:







4.3. Operating instructions

The following table shows the description of each device:

Item	Descriptions			
U11	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 HY10P/11P/12P/ 13P/15P/16F/17P series products.			
P1	Programming Control Port: The port is connected to the chip's programming pins, and can supports 8-bit and 32-bit MCU product programming pins as follows: • 8-bit OTP MCU dedicated programming pin: VSS, VDD, PSDO, PSDI, PSCK, VPP (as shown in Figure 4-3a) • 32-bit Flash MCU (HY16F series product) dedicated programming pin: VSS, VDD, ECK, EDIO, NC, RST (as shown in Figure 4-3b) • VPP			
P3	Extended Programming Port: Refer to Figure 4-3c for the definition of each pin name and figure 4-3d for the specific connection line, where- Program(S1) \cdot Blank(S2) \cdot OK(L1) \cdot Error(L2) \cdot Busy(L3) Blank OK Program OK Error OK S2 S1 S2 S1 S1 S2 S1 S1 S2 S1 S1 S2 S1			
L1	Action success indicator (OK LED): Programming success message indicator.			
L2	Action failure indicator (Error LED): This message indicator will be on in case of programming failure, blank checking failure and HAO frequency calibration failure.			



L3	Busy message indicator (Busy LED):
	When the Writer is programming, this message indicator will be on.
S1	Program:
	Chip programming button.
C 2	Blank Check:
32	Chip blank checking button(HY16F product has no this function).
S3	Information:
	Information inquiry button of the Writer.

4.4. Description of Writer Characteristics

No	ltem	Description
1	Model of Writer	HY10000-WK08D & HY10000-WK08C
2	Supporting chip Model	HY10P/11P/12P/13P/15P/16F/17P Series
3	Power on self- check mechanism	High
4	Programing times counting	Support
5	Hardware calibration function of chip frequency	2MHz/4MHz/8MHz HAO (8-bit MCU only)
6	Software calculation function of chip frequency difference	HAO and LPO (8-bit OTP MCU only)
7	"Auto button" function	Blank, Program, Verify
8	LED light indicator	Green LED(L1), Red LED(L2), Yellow LED(L3)
9	IDE software support version (For 8-bit OTP MCU only)	Please refer to chapter 3.1 for supporting version:
10	Programming code download support	You need to download the programming code to the
		Writer through the programming software.
11	Programming software support version	Please refer to chapter 3.1 for supporting version:
		Special programming software is provided for each
		product, which can download the code to be
		programmed to the Writer, to provide on-line or off-line
		programming function for the chip by the Writer.



Notice:

- Supporting chip model: HY10000-WK08D can program HY10P/HY11P/HY12P/HY13P /HY15P/HY17P & HY16F series chips.
- 2. Program self-checking mechanism at startup: HY10000-WK08D 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-WK08D supported.
- 4. Chip frequency hardware calibration function: HY10000-WK08D supports the hardware calibration function of 2MHz/4MHz/8MHz HAO frequency.
- 5. Software calculation function of chip frequency difference: HY10000-WK08D supports the software difference calculation function of HAO frequency and LPO frequency.
- 6. Auto button function: HY10000-WK08D automatic programming sequence is **Blank** \rightarrow **Program** \rightarrow **Verify**.
- 7. LED light: Green(L1) / Red(L2) / Yellow(L3) light of HY10000-WK08D 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 L1 is on, it means the programming is successful, and when L2 is on, it means the programming is failed or the HAO frequency correction is failed.
- 8. There is no frequency calibration function for HY16F series chip programming

4.5. Cautions

- If the HY10000-WK08D Writer displays Verify Failt 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.
- When HY10000-WK08D Writer use the "limit programming times" function, assuming that the programming times are used up, pressing the "**Program**" button will display
 Program Counter
 and cannot program, pressing the "Information" button will display
 "Information 2": program counter enable left 00000000".



5. Programming Software Operation Instructions

Only 8-bit OTP chip is introduced below, for HY16F series products, please refer to "**APD-HY16IDE006_EN**" document directly.



6. On-Line (PC) Programming Instructions

Only 8-bit OTP chip is introduced below, for HY16F series products, please refer to **"APD-HY16IDE006_EN"** document directly.

6.1. Connect to burning OTP

Determine the burn chip model selected under the title window, as shown in Figure 6-1, Figure 6-2. The same as the OTP model, when the burner performs Blank Check, burn and Verify, the program will compare the settings to select whether the chip model and the flashed OTP model are the same, if not otherwise it will not be burned into the OTP, the error message is displayed in the message bar, as shown in Figure 6-3.





HYIDE HID - Mode:[Edit] V2.20 Chip = HY - 15P53_2M(4K) ICE Inteface = USB Project = File Edit Search View Assemble&Run Programmer Options Windows Revision History ۵<u>س</u> D⁄ Dt. 101 011 司 49 ŝ 尙 ÷÷ Programmer Options Wir Blank Check Program Chip Read Chip Verify Chip Auto



When the file is successfully loaded into the burner or the Flash Memory of the IDE. The blank check, burn, verify, and read actions will be possible. If the file is not loaded successfully, the blank check, burn, verify, and read actions will not succeed.





Before burning, if want to check the model is correct, point the mouse indicator to the **"Chip Connection Status Display Area"** and press the left mouse button, if the chip model is correct, it is displayed, as shown in Figure 6-4; if it is incorrect, it is displayed as shown in Figure 6-5; If **"Enable Program Times"** is checked, the remaining number of burns will be displayed in the message bar, as shown in Figure 6-6.

	The IC model of the OTP
<	has been connected
main: C:\HYCON\HY15P IDE\DemoCode\HY15P53 Scale\Main.hex	Body on board Checksum = 0x820E
Figure 6-4	
	The IC model of the OTP
<	has not been connected >
C:\HYCON\HY15P IDE\DemoCode\HY15P53 Scale\Main.hex	Body not on board Checksum = 0x820E
Figure 6-5	
101 Message	

Flash had been protected !! C:\HYCON\HY15P IDE\DemoCode\HY15P53 Scale\Main.hex Download OK Program Times Download OK !! Program Times Function Enable ***** Program Times = 1000

Figure 6-6

6.2. Chip check(Blank Check)

The Blank Check in a chip that has not yet been burned, the code inside the chip should be read as a 0xFFFF, and the purpose of the chip check is to determine that the contents of all addresses of this OTP are 0xFFFF. Checking if the chip is empty means that the contents of the OTP address to be burned are 0xFFFF. If the chip is selected correctly and the check is empty, the following message appears in the message bar, as shown in Figure 6-7.

🗱 Message
Chip Blank OK
Figure 6-7

If the chip is selected incorrectly or the check is not empty, the following message appears in the message bar, as shown in Figure 6-8.

Message Chip Blank Fail Figure 6-8



6.3. Burning chip (Program)

The programming chip (Program) is shown in , The purpose of burning is to burn the program that has been completed by Compiler into the OTP chip, and after the finished product is assembled after the burning is completed, the program can be run according to the instructions written by the user.

If the chip is selected correctly and the burn is successful, the following message appears in the message bar, as shown in Figure 6-9, if "Enable Program Times" is checked, the number of burns allowed will be reduced by 1, and the remaining number of burns will be displayed in the message bar.

Message	
Program Chip OK Program SBM OK Verify Chip OK Verify SBM OK Program Times Left 999 The number of burning remaining If you check "Enable Program Times."	
<	
F i a a	

Figure 6-9

If the chip is selected incorrectly and the programming is not successful, the following message appears in the message bar, as shown in Figure 6-10



6.4. Check programming chip (Verify)

Verify the programming chip (Verify) is shown as ¹, the purpose of verifying the programming chip is to compare whether the program programmed into the OTP chip is the same as the program loaded into the programmer.

Confirm whether the content of the programmed chip is consistent with the downloaded or assembled Hex fil e (displayed in the bottom display column). If the chip has been programmed and protected, this item is invalid or the comparison fails.

If the selected chip is correct and the programming is confirmed successfully, the following message will appear in the message column, as shown in Figure 6-11.

🕅 Message	
Verify Chip OK	
Verify SBM OF	(

Figure 6-11

If the chip is selected incorrectly or the programming is confirmed to be unsuccessful, the following message appears in the message bar, as shown in Figure 6-12.





6.5. Read chip(Read)

The purpose of reading the chip is to let the user confirm that the Checksum reading OTP is the same as the Hex file. Read the chip content, as shown in Figure67-13, and display the content in the "Show Code" window; If the chip has been programmed to protect, this entry is invalid or the comparison fails.

Prog	ram Memo	iry	Disp	lay the OI	TP CODE					1001	•	Display the OTP model
-	0	1	2	3	4	5	6	7	8	9	A	 OTP Chip is 15P53
000	BA2C	7835	C200	F78B	66FD	D02B	FOFC	D010	FOFF	DOOF	FOFA	Read Checksum = 0x6837
001	7801	8026	BA26	780D	8A26	D03C	FOA4	D03B	F0A5	D03A	F0A6	Display the OTP Checksur
002	92A8	B226	7801	8226	B426	7805	8426	6EA7	32A7	6ED1	32D1	
003	FOOF	DOFF	F010	DOFC	F02B	64FD	0008	0A7A	0A73	000C	F080	
004	6633	C000	F577	06C8	6780	06FC	6781	0611	6634	C000	F758	
005	663F	0610	6640	0640	6641	0600	6642	06C8	6638	0C2B	0C2C	
006	0C27	06A4	6623	0601	66C7	98A8	0607	66C6	0C9C	0003	8E3D	<
007	6C31	780B	065A	6C32	7808	0607	129C	0637	689C	7FEF	0633	
800	7885	0606	189C	6630	8E3D	88A8	0606	6680	06BA	C000	F767	
009	6680	06BC	6681	0693	6682	0601	6683	0602	6684	C000	F419	
00A	F098	0696	6680	0693	6681	0699	6682	0603	6683	0603	6684	
00B	6899	7802	D099	F0C7	0608	6694	60BE	010F	6693	1493	3694	
00C	6697	D0C2	F093	D0C3	F094	D0C4	F095	0693	6680	0696	6681	
00D	6684	CB47	0698	6680	06BC	6681	0693	6682	0605	6683	0602	
OOE	D093	F0D2	D094	F0D3	D095	F0D4	060A	6696	0693	6680	0696	
00F	0601	6684	0603	6685	C000	F458	D097	F0D5	D098	F0D6	D099	
010	A070	7816	C000	F758	A070	7812	C000	F758	98A8	0638	6830	
011	0627	6784	6785	0602	6786	0660	6787	7FFF	0664	66A7	649D	
012	6786	6787	C000	P5RC	6RA7	7FFC	3690	7FD8	C000	F758	0658	×

HYIDE HID - Mode:[Edit] V2.20
 Chip = HY - 15P53_4M(4K)
 ICE Inteface = USB Project =
 File Edit Search View Assemble&Run Programmer Options Windows Revision History

Figure 6-13

6.6. Automatic programming and reading (AUTO)

AUTO is shown as, Auto is a combination of three functions of Blank Check, Program and Verify. Selecting Auto will first check whether the chip is empty, and then program to confirm the programming chip.

When the execution is successful, the following message will appear in the message bar, as shown in Figure 6-14. If "Enable Program Times" is checked, the number of allowed programming times will be reduced by 1, and the remaining programming times will be displayed in the message bar.

Message 📃 🔲	×
Chip Blank OK	
SBM Blank OK	
Program Chip OK	
Program SBM OK	
Verify Chip OK	
Verify SBM OK	
Program Times Left 999	
<	>

Figure 6-14

If there is a failure, the entire process stops immediately and an error message is displayed in the message bar.



6.7. Cautions

HY16F series programming function is different from 8-bit OTP chip products, which is not fully applicable to the above functions (such as no voltage, frequency calibration, etc.), please refer to HY16F series programming operation manual (<u>http://www.hycontek.com/</u>).



7. Off-Line (PC) Programming Instructions

Only 8-bit OTP chip is introduced below, for HY16F series products, please refer to "**APD-HY16IDE006_EN**" document directly.

7.1. Programming Instructions

When the user program enters the mass production stage from the development stage, it is programmed on the production line, at this time, the Writer can be used independently without connecting to the PC.



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

The following table shows the description of the LED indicator and buttons:

Item	Descriptions				
L1	Action success indicator (OK LED):				
	Programming success message indicator.				
L2	Action failure indicator (Error LED):				
	This message indicator will be on in case of programming failure, blank				
	checking failure and HAO frequency calibration failure.				
L3	Busy message indicator (Busy LED):				
	When the Writer is programming, this message indicator will be on.				
S1	Program:				
	Chip programming button.				
S2	Blank Check:				
	Chip blank checking button(HY16F product has no this function).				
S3	Information:				
	Information inquiry button of the Writer.				

 During Off-Line programming operation, it is necessary to download the programmed code (HEX or BIN file) into flash memory of the Writer, please refer to the user manual of Writer's programming software.



- During Off-Line programming operation, first press S2(Blank) button to check whether the chip is blank or not, after checking, it should be L1(Green) LED on.
- The S1 button is the burn button, and its action steps are Program -> Verify, at this time, the L3(Busy) message indicator light is on, If "Program Protection" is selected in "Build Optiions" menu before downloading the code to be programmed to Writer's flash memory, programming protection will be executed after verify; if not, it will stop after verify, and L3(Busy) will be off after programming, while L1(Green) LED will be on.
- After the programming is completed, press S2(Blank) to check whether the chip is blank or not, at this time, L2(Red) LED should be on, indicating that the programming is completed (because the code has been programmed into the chip, and the LCM screen will display "Blank Check Fail")
- It is recommended to press S2(Blank) button to check whether the chip is blank before programming, and then press S1(Program) button to program to ensure the correct programming.
- If there is any error or failure in the programming process, L2(Red) LED will be on; and L1(Green) LED will be on if the programming is successful.

7.2. Limitation of Programming Times

In the "**Options**" function, there is a function selection of "**Enable Program Times**" in the "**Build Options**" menu, this option is used to limit the number of programming times, this is a safety mechanism, the purpose is to limit the number of programming times on the production line to prevent excessive programming.

After compiling the firmware program or downloading the code to be programmed to flash memory, this parameter will be loaded into the EEPROM on the Writer, every time a Writer is performed, the count value will be automatically reduced by 1, when the count value is reduced to 0, if the programming continues, it will not be performed, and the **L2**(Red) LED will be on, but the **S2**(Blank) buttons blank check function can still operate normally.

7.3. Cautions

HY16F series programming function is different from 8-bit OTP chip products, which is not fully applicable to the above functions (such as no voltage, frequency calibration, etc.), please refer to HY16F series programming operation manual (<u>http://www.hycontek.com/</u>).



8. Messages Description

8.1. Information Messages Description

• Press the Information button (S3) on the Writer to display the product information



Welcome To Use Hycon IDE

• Press the **Information** button again to display the Writer support model information



Press the Information button again to display the program counter times message
If the program counter times value is set, the remaining programmable times





Press the Information button again to display the VDD & VPP voltage status



 Press the Information button again to display the OTP ID: connected chip ID & Flash ID: hex file's chip ID.



Press the Information button again to display the programming setting:
 (B)Blank Checking, (P)Programming, (V)Verify function status



 Press the Information button again to display the message of the (ST)Checksum of the download programming code of the Writer(and do the verification action) and the (RI)Checksum of the connected chip.

Information 6:





• Press the Information button again to display the Chip Code (Rolling Code) message

Information 7:



Press the Information button again to display the Chip's Checksum message



• In **Information 8-10**, display the frequency information after the completion of frequency calibration, for example, fully calibration will display as follows:



• In **Information 11-13**, the set calibration message will be displayed, If all calibration functions are enabled, the following will be displayed:

Information 11 :		Cal . H-HAO= 2000 KHZ
Information 12 :	●	Cal . S-HAO= 2000 KHZ
Information 13 :	●	Cal . S-LPO= 28.00 KHZ



8.2. Error Messages Description

• Error 1: Indicates that the VDD voltage of the Writer is wrong, please disconnect the programming cable first to confirm whether the VDD in the message of **Information 3** has been abnormal or not, if it is abnormal, please send it back for maintenance, if it is not, it means the wiring problem.



VDD voltage error

• Error 2: Indicates that the VPP voltage of the Writer is wrong, please disconnect the programming cable first to confirm whether the VPP in the message of **Information 3** has been abnormal or not, if it is abnormal, please send it back for maintenance, if it is not, it means the wiring problem.



VPP voltage error

• Error3: Indicates that the chip model of hex file is not consistent with the connected chip model, please confirm the Flash ID (chip model of hex file) and OTP (connected chip model) displayed in Information 4.



The connected chip does not match the ID of the code to be programmed

• Error 4: Indicates that the chip is not blank and the chip has been programmed



Blank checking failed

• Error 5: Indicates that there is an error in the programming process, please check whether the programming pin is connected wrongly or short circuited, or send it back for maintenance.



Programming failed

• Error 6: Indicates that there is an error in code verification after programming, please check whether the programming pin is connected wrongly or short circuited, or send it back for maintenance.



Verification failed

• Error 7: Indicates that the set programming protection is not protected due to poor programming.



Error 7 Protect fail !

Programming protection error

• Error 8: Indicates that the set number of programming times is used up, and it is necessary to download the programming code again and set the number of programming times.

Error 8 Program Count=0

Programming times= 0

• Error 9: Indicates that the calibrated HAO frequency exceeds the set frequency range, and the chip can no longer be programmed

HAO frequency calibration failed

• Error 10: Indicates that the voltage detected during frequency calibration is out of range.

Error 10 CAL. POWER ERROR

Voltage error in frequency calibration

• Error 11: Indicates the connected chip model, which does not match the programming code downloaded by the writer, because the programming code contains information such as chip model, it can only be programmed if the model is consistent, please find the correct programming code and download again.



The connected chip does not match the model No. of the code to be programmed

• Error 12: Only applicable to HY16F programming information description, indicating connection error, please check whether there is error in the connection line.

Error 12 Com munication Error

Communication error

• **Error 13**: Only applicable to HY16F programming information description, indicating that chip has been programmed and protected.



Chip has been protected



• Error 14: Only applicable to HY16F programming information description, indicating that the current password is inconsistent with the password programmed into the chip.

Password Error

• Error 15: Only applicable to HY16F programming information description, indicating that the chip code is programmed incorrectly. Generally, this message will only appear when the communication is abnormal.

Chip Code error

• Error 16: Only applicable to HY16F programming information description, indicating that the chip erasure failure.



Erase failed

• Error 17: Only applicable to HY16F programming information description, indicating that the configuration information set by the customer has failed to upgrade.



Upgrade failed

• Error 18: Only when the "check on" function is selected by Hexloader, it will appear when programming, indicating that the chip already has programmed data, and the Checksum of the programming code downloaded by the Writer is inconsistent with the Checksum of OTP IC.



Checksum mismatch

• Error 19: When viewing Information 6, this error indicates that the Checksum value of the programming code downloaded by the Writer is detected to be inconsistent with the calculated Checksum value, that is, the programming code loaded is wrong, and the programming code needs to be downloaded again.



Checksum error



8.3. Cautions

HY16F series programming function is different from 8-bit OTP chip products, which is not fully applicable to the above functions (such as no voltage, frequency calibration, etc.), please refer to HY16F series programming operation manual (<u>http://www.hycontek.com/</u>).



9. Revisions

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

Version	Page	Date	Revision Summary
V06	All	2023/2/3	First edition