HYC�N 紘康科技

HY13P-Hex Loader Software User Manual



Table of Contents

1. Hex Loader Overview	4
1.1Software Introduction	4
1.2Software Installation	4
1.2.1 Installation	4
1.2.2 Uninstall	6
1.3 INTERFACE WINDOW	6
1.4 OPERATION PROCEDURES	7
1.4.1 Read out the Code in Flash Memory of Programmer	11
1.5 PC OFFLINE OTP PROGRAMMING	11
1.5.1 Blank Check	12
1.5.2 Program	12
1.5.3 Verify	13
1.5.4 Read	14
1.5.5 AUTO	14
2. HEX LOADER NOTICE	16
2.1 CONFIGURATION ITEMS	16
3. OFFLINE PROGRAMMING	17
3.1 PROGRAM KEY EXECUTES BLANK FUNCTION	17
3.2 BUZZER FUNCTION	17
6. REVISION HISTORY	18



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>.
- 2. HYCON Technology Corp. is not responsible for problems caused by figures or application circuits narrated herein whose related industrial properties belong to third parties.
- 3. Specifications of any HYCON Technology Corp. products detailed or contained herein stipulate the performance, characteristics, and functions of the specified products in the independent state. We does not guarantee of the performance, characteristics, and functions of the specified products as placed in the customer's products or equipment. Constant and sufficient verification and evaluation is highly advised.
- 4. Please note the operating conditions of input voltage, output voltage and load current and ensure the IC internal power consumption does not exceed that of package tolerance. HYCON Technology Corp. assumes no responsibility for equipment failures that resulted from using products at values that exceed, even momentarily, rated values listed in products specifications of HYCON products specified herein.
- 5. Notwithstanding this product has built-in ESD protection circuit, please do not exert excessive static electricity to protection circuit.
- 6. Products specified or contained herein cannot be employed in applications which require extremely high levels of reliability, such as device or equipment affecting the human body, health/medical equipments, 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 equipments 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. Hex Loader Overview

1.1Software Introduction

The programming software, Hex Loader, aims to program the .Hex file that generated by all present version of HY13P IDE by means of hardware programmers (Users are required to accurately select IC model number and programmer ID, detailed description is given in *Chapter 2*).

1.2Software Installation

1.2.1 Installation

HY13P-Hex Loader Installation and System Requirement

- PC Hardware Request
 - Compatible PC with PENTIUM® CPU
 - 128 MB Memory (256MB is recommended)
 - 10 GB Hard Disk Space
- OS

Windows 98SE /Windows 2000/Windows XP/Windows Vista/Windows 7

• Applicable Interface

USB Port

- Supporting Software Version
 HY13P Hex Loader V1.0 or above version
- Supporting Products:
 - -HY13P56
- Supporting Hardware Model No.:
 - CM01 programmer
- Supporting Hex Files Version

Hex files that compiled by all present version of HY13P IDE can be downloaded for programming via Hex Loader software.

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

For some Windows OS, it may require to have administrator identity to install the Hex Loader to the computer.

- Find the file in the CD ROM or file to execute Setup.exe
- Following the instruction window dialogs step by step to continue setup procedures. As shown in Figure 1-1.

HY13P- Hex Loader Software User Manual



🙀 HV11P HexLoader V1.1 - Inst	allShield Wizard	🚰 H¥111P HexLoader V1.1 - InstallShield Wizard
	Welcome to the InstallShield Wizard for HY11P HexLoader V1.1	Destination Folder Click Next to install to this folder, or click Change to install to a different folder.
	The InstallShield(R) Wizard will install HY11P HexLoader V1.1 on your computer. To continue, click Next.	Install HY11P HexLoader V1.1 to: C:\Program Files\Hy1DE\HexLoader\
2	WARNING: This program is protected by copyright law and international treaties.	InstallShield
	eack Cancel	
i∰ HV11P HexLoader V1.1 - Inst	allShield Wizard 🔽	🕼 HY11P HexLoader V1.1 - InstallShield Wizard 🔽 🔀
License Agreement		Custom Setup
Please read the following lice	ense agreement carefully.	Select the program features you want installed.
Heyl oader程式最终用户使用	俗計	Click on an icon in the list below to change how a feature is installed.
は な 康科技股份有限公司(以下・ (以下簡稱本使用條款)於HYC 供「HexLoader」(以下簡稱 吉、軟體內容	wew 篩稱「本公司」)係依據HexLoader程式最終用戶使用條款 ON網站(http://www.hycontek.com/,以下簡稱「本站」)提 「軟體」) 之下載服務。	- Feature Description
「軟體」係指紘康科技所開發 片。	後之整合開發環境,適用於本公司所開發之HY11P系列晶	
ず、回井攸ち		Install to:
• I accept the terms in the lice • I do not accept the terms in	nse agreement the license agreement	
TectalShield		Install5hield
	< <u>B</u> ack <u>N</u> ext > Cancel	Help Space < Back Next > Cancel
🕀 HV11P HeyLoader V1.1 - Inst		1 12 HY11P HexLoader VI 1 - InstallShield Wizard
Readme Information		Installing HY11P Hext order ¥1.1
Please read the following rea	adme information carefully.	The program features you selected are being installed.
Version Revision Recor	d	Please wait while the InstallShield Wizard installs HY11P HexLoader V1.1.
* Compart model		This may take several minutes.
- Support model. -HY11P12, HY11P13, H -HY11P22, HY11P23, H -HY11P32, HY11P33, H -HY11P41, HY11P42	IY11P14 IY11P24 IY11P35, HY11P36	Status:
*. Hardware support mode -HY10000-WK01 Writer -HY10000-WK02 Writer -HY10000-WK05 Writer	l:	
*. Program compatibility:		
Instalishield	<pre>Eack Next > Cancel</pre>	- Instalishield
🙀 HY11P HexLoader V1.1 - Inst	allShield Wizerd	🛿 👘 HY11P HexLoader V1.1 - InstallShield Wizard
Eustomer Information Please enter your information	n.	InstallShield Wizard Completed
<u>U</u> ser Name: FAE		The Install5hield Wizard has successfully installed HY11P HexLoader V1.1. Click Finish to exit the wizard.
Organization: Hycon		☑ Launch the program
Install this application for:		
Anyone who Only for me	uses this computer (all users) (Yita.Hsieh)	
InstallShield	< Back Next > Cancel	< Back Finish Concel





1.2.2 Uninstall

Please remove the file of "HY13P-Hex Loader" in "Add/Remove Program" under Control Panel.

1.3 Interface Window

When the software is opened, the window in below will pop up, as like Figure 1-2.

File Show Windows Revision History	
Display Hex Code Blank Check Program Verify Read Auto	
Show Hex loading address	
D:\HexLoader\7.hex Body on board Dhecksum = 0xE77	'E

Figure 1-2

Choose File and the roll will show as Figure 1-3.

File ShowWindows R	evision History									
DownLoad To Flash N	lemory		D <u>_</u>	• B <u>v</u>	D <u>th</u>	3				
Read From Flash Men	lory									
Exit(Q)	Ctrl+Q									
		-								
) D:\HexLoader\7.he	x						Body on	board	Checksum	= 0xE77E

Figure1-3

Down Load To Flash Memory \rightarrow Download to Flash memory of programmer Read From Flash Memory \rightarrow Read Flash memory from programmer When Show Windows button is clicked, the window will show as Figure 1- 4.



M HYCON Burner V1.00			
File Show Windows Recision History			
With Messarie			
OTP Chip Is 13P36 OTP Chip Empty			
Read Checksum = 0xFFFF			
<			8
KGN Edit			- 🗆 🛛
CM01 _			
HAO Calibration Enable H/W Calibration Enable S/W Calibration	System Parameter	ACM Voltage	
Permissible Error	Chip	C ACM = 1.0V	
Input HAO Hz ± %		C Shark and south	
(RANGE 1850000 ~ 2150000 Hz)	IDE Version) Stack over reset	
LPO Calibration		🗆 Program Protect	
Enable S/W Calibration	CheckSum		
Input LPU			
[RANGE 10000 *** 15000 Hz]			
1			
			_
C:\Documents and Settings\YC.Cho\桌面\HY13S T	ool\HY13P56\HY13P56 SPI_Special	MAIN_13p56.hex	Body on board Checksum = 0x3CB0

Figure 1-4

Message \rightarrow message field

Edit \rightarrow Display function, no need to tick on this window

1.4 Operation Procedures

Step 01 : Choose "Down Load To Flash Memory" from File, as shown in Figure 1-5.



Figure1-5

Step 02 : Select programmer version

Step 03 : Select IC model

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



File Show Windows Revision History	
Please confirm that the burner version and chip.	
Please confirm that the burner vers	sion and chip. Step 2: Select the version of Programmer.
Chip type 11P14 (8K)	Step 3: Select the model of chip.
Burning limit need to manually en Enable Program Times Input Program T	ter Step 4: Select the IC program limit times
ok	Step 5: Click OK

Figure 1-6

Step 06 : Select Hex files and download to Flash Memory of programmer, as Figure 1-7 indicated.

Open					? ×
查詢([):	🗀 HexLoader		•	+ 🗈 💣 🎟	•
 我最近的文件 () 点面 () 成の文件 () 成の文件 () 成の文件 () 成の文件 () 成の支援 <	HexLoader_v2 7.hex 8.hex 23.hex 24.hex 31_E.hex 32_E.hex 39_E.hex 40_E.hex	8			
	檔名(N):	40_E.hex		-	開啓(0)
	檔案類型(I):	*.Hex		-	取消

Figure 1-7

Step 07 : Select whether to input Password, as Figure 1-8.



Figure1-8

Step 08: Select whether to specify programmer ID, as Figure 1-9.



Figure 1-9

Step 09: Select Edit as the display data after Hex file loaded. This window is to read data, needless to change the configuration.

III Edit		
► MOI HAO Calibration ► Enable H/W Calibration Permissible Error Input HAO 1850000 Hz ± 2 % (RANGE 1850000 Hz ± 2 % (RANGE 1850000 ~ 2150000 Hz) LPO Calibration ✓ Enable S/W Calibration Input LPO 14000 (RANGE 10000 ~ 15000 Hz)	System Parameter Chip 13P56 (4K) IDE Version 1.00 CheckSum 3CB0	ACM Voltage C ACM = 1.2V ACM = 1.0V Stack over reset Program Protect

Figure 1-10



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

(2) Users can choose whether to input password before loading the code to Flash Memory of programmer, as shown in Figure1- 8. This function enables users to see the code that has been loaded from PC to Flash Memory of programmer. Please note that Password can only have 6 digits (ASCII Code). In order to protect the code developed by user, the programmer is defaulted to have a set of Password. If the Password was canceled during operation processes, then it is prohibited to read out the code from the programmer.

Notice: Once the Password was set, it is the same password of programmer operation. This password would be required every time the CODE was to be read out. Please memorize the password carefully. The programmer would ask to re-input the password every time a new code is loaded.

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

(4) If the programming time function was enabled, the message field will display the programming limit number.

(5) After compile finished, the Hex file name and Checksum would be shown in the message line as shown in Figure 1- 11.







1.4.1 Read out the Code in Flash Memory of Programmer

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

HYCON Burner V1.10								<u>- 🗆 ×</u>
File Show Windows Revisio	on History							
DownLoad To Flash Memor	ry		D_		🗠 📴	3		
Read From Flash Memory								
Exit(Q)	Ctrl+Q							
		-	🙀 Progra	m Memory			_	
				0	1	2	3	4 -
			000	0000	7903	0000	0000	D(
			001	16A2	16A3	B26D	7802	B2
Enter Password			002	7895	A46D	7FFC	9E5E	0C
*****			003	B427	7FFC	8427	6461	66
		-	004	7FFC	8427	6461	6661	7 F
BOK C	ancel		005	6461	66F8	6491	1890	AC
			006	7802	06A0	6691	36F8	78
			∩∩7 ↓	6661	7 FF1	በናፑፑ	6661	A\$▼ ▶
] D:\HexLoader\40_E.hex				Body	on boar	d Cheo	:ksum = (DxD2A0

Figure 1-12

1.5 PC Offline OTP Programming

WHYCON Burner V1.10						
File Show Windows Revision History						
			¥ 🖭 🗿			
Display Hex Code	Blank Check	Program	Verify	Read	Auto	



Blank Check, Programming, Verify and Read Commands can be implemented when the programmed file was successfully loaded into programmer or IDE Flash Memory, as Figure 1- 14. On the contrary, those commands will not be activated if the download failed, as shown inFigure 1- 15.

© 2013 HYCON Technology Corp www.hycontek.com





Figure 1-15

1.5.1 Blank Check 🎽

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

Check whether IC is blank, the OTP address to be programmed must be 0xFFFF. If the IC selection is correct and the content is empty, a message will appear as follows.

🌃 Message	
Chip Blank OK	J
SBM Blank OK	
	Þ



If the IC selection is incorrect or the content is not empty, a message will show up as follows.

Massage	- D ×
Chip Blank Fail	
	Þ



1.5.2 Program

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



can operate the program as users commanded.

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

If the selected IC is correct and the programming succeeds, message will appear at the information column as Figure 1-28 illustrated. If "Enable Program Times" is ticked up, the enable program times will minus 1 and the program times left will be revealed in the message column.



Figure 1-18

1.5.3 Verify 🎽

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

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

If IC selection and program verification is success, a message will appear as below.

Message	_ _ _ _ ×
Verify Chip OK	
Verify SBM OK	
•	•

Figure 1-19

If IC selection is incorrect or the program verification miscarries, a message will pop up as Figure1- 20.



Message	
Verify Chip Fail	
Error at 0x0000H	
•	•

Figure1-20

1.5.4 Read 🏪

The purpose to read the IC is to verify the consistency of OTP Checksum and programmed Hex file. To read IC content, the procedures are illustrated as Figure 1-21. The content will reveal at "Display Code" window.

File ShowWindows Revision History									
102	By	D_ D_	D <u>h</u>	8					
顯示Hex Code		Re	ad讀取		[顯示讀	寶取OTI	P的Code	9
🙀 Message		Prog	ram Memo	лу					
OTP Chip is 13P56 🛛 🚽	顯示OTP型號		0	1	2	3	4	5	6 ^
Read Checksum = 0x3CB0		000	78E3	0000	0000	0000	66ED	642B	66E
		001	788C	8226	8675	C860	6E29	785C	64E
Т		002	C867	7850	0682	6CEA	7822	C84E	6E2
		003	0600	660F	6400	66E7	3AA3	06C0	18A
		004	7FE9	7830	0600	66E7	C843	6E29	7FF
顯示OTP的Checksur	n	005	66E9	AEEA	7810	C820	6E29	781C	060
		006	36E9	7FF1	780F	0600	A4EA	0601	660
		007	36E9	7FF1	9675	7829	0608	66E2	A47
		008	B475	7803	BA75	7FFC	0501	36E2	7FE
		009	A475	7803	BA75	7FFC	0501	B475	780
		00A	D040	FOEA	D03F	F0EB	D03E	F0EC	92A
		00B	66A3	7826	80A4	84A4	64A3	18A2	B82
		00C	7804	64EA	A0A4	64EB	7801	64EC	660
		00D	7806	A0A4	7802	90A4	7FE6	94A4	7 FE 🗸
		<	A.						>
<	>								11

Figure 1-21

1.5.5 AUTO 躇

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

After the execution succeeded, a message will be displayed as Figure 1- 22. If the option, "Enable Program Times" is ticked up, the program permitted times will reduce 1 and the program times left will be shown in the message column.



III Message	_ _ _ _ _ _
HAO Calibration OK	
HAO Clock = 2003 KHz	
Chip Blank OK	
SBM Blank OK	
Program Chip OK	
Program SBM OK	
Verify Chip OK	
Verify SBM OK	
Program Times Left 999	
	Þ



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



2. Hex Loader Notice

2.1 Configuration Items

Three points that must be selected correctly when using Hex Loader programming software, or it would lead to error programming

Notice 01: Please correctly choose programmers (CM01)

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

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

When Hex Code was loaded to the programmer and the above three points were accurately set, the software will set up the programming environment that matched to your selected IC model number. Chip Type supports: HY13P56

Devertier Breaken Review A from Plan Manor Notice 01: Burner version and chip. Notice 01: Burner version CM01 Notice 02: Chip type 13P56 (4K) Notice 03: Burning limit need to manually enter V Enable Program Times Inout Program Times Inout Program Times	I I Y CON Barner V 1.00	
<pre>wide the New Water wide the large in the second from that the burner version and chip. Notice 01: Burner version CM01 Notice 02: Chip type 13P56 (4K) Notice 03: Burning limit need to manually enter V Enable Program Times Inout Prooram T 1000 </pre>	s Show Windows Revision History	
A the hald Maay Mgp Cade Notice O1: Burner version and chip. Notice O1: Burner version CM01 Notice O2: Chip type 13P56 (4K) Notice O3: Burning limit need to manually enter V Enable Program Times Inout Prooram T 1000 ok	DownLoad To Fisch Memory Dy 02 02 04 05 🕱	
Notice 01: Burner version and chip. Notice 01: Burner version CM01 • Notice 02: Chip type 13P56 (4K)• Notice 03: Burning limit need to manually enter v Enable Program Times Inout Prooram T 1000 ok	Read From Flash Memory	
Notice 01: Burner version CM01 Notice 02: Chip type 13P56 (4K) Notice 03: Version Times Inout Program Times Inout Program Times	Exet() Ctd+Q	
Notice 01: Burner version CM01 • 02: Chip type 13P56 (4K) Notice 03: Burning limit need to manually enter \$\varnothin\$ Enable Program Times Inout Program T[1000]		
Notice 01: Burner version CM01 Notice 02: Chip type 13P56 (4K) Notice 03: Burning limit need to manually enter v Enable Program Times Inout Program T 1000		
Notice 01: Burner version CM01 Notice 02: Chip type 13P56 [4K] • Notice O3: Burning limit need to manually enter Image: Construction of the program Times Inout		
Notice 01: Burner version CM01 O2: Chip type 13P56 (4K) Notice 03: Burning limit need to manually enter V Enable Program Times Inout Program T		
Notice 01: Burner version CM01 Notice 02: Chip type 13P56 [4K] Notice 03: Burning limit need to manually enter V Enable Program Times Inout Program T1000 ok		
Notice 01: Burner version CM01 ▼ Notice 02: Chip type 13P56 [4K] ▼ Notice 03: Burning limit need to manually enter ✓ Enable Program Times Inout Prooram T 1000	🙀 Please confirm that the burner version and chip. 🔤 🗖	×
Please confirm that the burner version and chip. Notice 01: Burner version CM01 Notice 02: Chip type 13P56 [4K]. Notice 03: Burning limit need to manually enter Image: mathematical comparison Image: mathematical comparison Image: mathematical comparison Image: mathmatematical comparison <t< td=""><td></td><td>-</td></t<>		-
Please confirm that the burner version and chip. Notice 01: Burner version CM01 Notice 02: Chip type 13P56 [4K].▼ Notice 03: Burning limit need to manually enter ✓ Enable Program Times Inout Program T[1000		
Please confirm that the burner version and chip. Notice 01: Burner version CM01 Notice 02: Chip type 13P56 [4K]. Notice 03: Burning limit need to manually enter Image: Constrained to manually enter <td></td> <td></td>		
Notice 01: Burner version CM01 Notice 02: Chip type 13P56 (4K) Notice 03: Burning limit need to manually enter F Enable Program Times Inout Program Times Inout Program Times	Please confirm that the burner version and chip.	
Notice 01: Burner version CM01 ▼ Notice 02: Chip type 13P56 (4K) ▼ Notice 03: Burning limit need to manually enter ✓ Enable Program Times Inbut Program Times Inbut Program Times <tr< td=""><td></td><td></td></tr<>		
Notice 01: Burner version CM01 Notice 02: Chip type 13P56 (4K) - Notice 03: Burning limit need to manually enter Image:		
Notice 02: Chip type 13P56 (4K) - Notice 03: Purning limit need to manually enter F Enable Program Times Inout Program T 1000 OK	Notice 01: Burner version CM01 -	
Notice 02: Chip type 13P56 [4K] • Notice 03: Burning limit need to manually enter ✓ Enable Program Times Inbut Program T_1000		
Notice 02: Chip type [13P56 [4K] Notice 03: Burning limit need to manually enter F Enable Program Times Inout Program T 1000		
Notice 03: Purning limit need to manually enter Inout Program Times Inout Program Times Inout Program Times		
Notice 03: Burning limit need to manually enter F Enable Program Times Input Program T1000 Ok		
Notice 03: Burning limit need to manually enter F Enable Program Times Inout Program T 1000		
Notice 03: Finable Program Times Inout Program T 1000	The second	
Notice 03: Input Program Times Input Program Tin	Burning mint need to manually enter	
Input Program T 1000	Notice 03. M Enable Program limes	
	Input Program T 1000	
	ok	
	<u></u>	

Figure 2-1

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

When using online programming function, make sure 9V adapter is connected before connecting USB LINE. Do not unplug 9V adapter while PC connected or the PC may crash.



3. Offline Programming

3.1 Program Key Executes Blank Function

AsFigure 3-1 shows, users can select whether to execute blank function of Program key.

- 1. Select on/of in settings.
- Select: press PBKUBPUT to write settings to programmer.
 If blank on is chosen, the step is: Blank Check → Program → Verify.
 If blank off is chosen, the step is: Program → Verify.
- 3. If program protect is ticked before downloading Flash Memory, the program protect will be executed after Verify.

If not, it will stop after Verify.

ProgramKey function settings
C Blank ON
Blank OFF
PBKINPUT

Figure 3-1

3.2 Buzzer Function

Users can select whether to enable Fail alarm when programming.

Buzzer function settings
C Buzzer ON Buzzer OFF
Buzzer Setting



6. Revision History

Version	Page	Revision Summary
V01	ALL	First edition