

UM0103

HC-ISPTool instructions

Introduction

 $HC-ISPIt\ is\ the\ new\ generation\ of\ Xinsheng ISPDownload\ tool,\ suitable\ for\ Xinsheng 8051 kernel\ series Flash\ MCU of\ burning.\ Main\ document$

To introduce the use of this tool to help customers improve product development speed.

- Currently supported chips are:HC89F0411P,HC89F0421,HC89F0431,HC89S003F4,HC89F0531,
 HC89F0541,HC89S103K6,HC89S105C8,HC89S105K8,HC89S105S8,HC89S001P
- Relevant data sheets, tools and technical documents download website: http://www.holychip.cn/.



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1, brief description

HC-ISPas core saintFLASHProduct development and debugging download tool. Users can use this debugging download tool to improve product development speed.

Note:

HC-ISPThere is also an android versionapp, supportOTGfeature phones can use this appDownload the client program. this apponly supportISP Auto Programmeror USB-TTLdownload, not supported HC-LINK. this appOnly supports downloading client applications, not downloading OPTIONS. appDownload URL: http://www.holychip.cn/.

- passISP Auto Programmeror USB-TTLThe tool can be debugged and passed by connecting the user application board HC-LINK V3.0, HC-LINK V4.0,
- = SDKThe development board is connected to the user application board to realizeISPDownload can observe the status changes of each download
- channel in real time
- optionalISP Auto Programmer 3.3Vpower supply or5.0VPower supply saves
- when it was last turned onoptionset up
- resettableoptionset up
- Fast programming
- Support multi-channel simultaneous download
- Support code option selection, FLASHRead and write protection, customer information setting, programming page, erasing page
- selection supports loading and savinghcfdocument(PM51burner burn file)

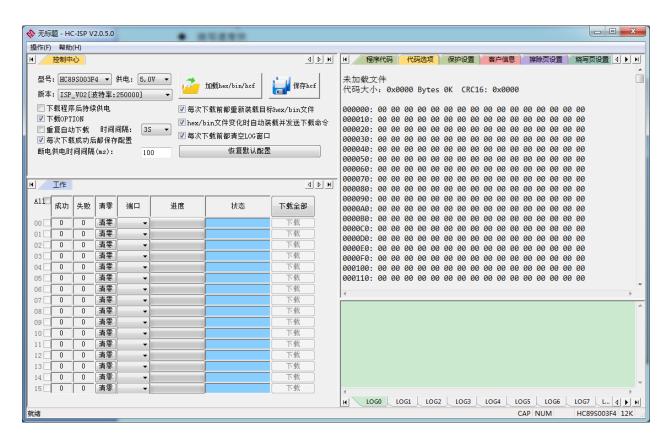


Figure 1-1 HC-ISPOperation interface



2, hardware connection

user's target application board viaHC ISP Auto Programmeror USB-TTLorHC-LINKtools and PCconnect,

As shown below.



Figure 2-1hardware connection (HC ISP Auto Programmer)



Figure 2-2 HC-LINK V3.0(TK-RXRight nowHC-LINKofRX,TK-TXRight nowHC-LINKofTX)



Figure 2-3 HC-LINK V4.0(footprint seePCBboard back)

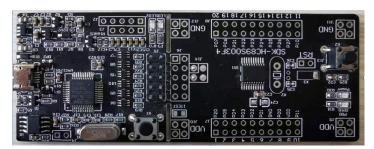


Figure 2-4 SDKDevelopment board (see the pin diagramPCBboard back)



useHC ISP Auto ProgrammerWhen downloading, set theHC ISP Auto ProgrammerofTXDConnected toMCUof ISP_RXDport,RXDConnected toMCUofISP_TXDport, then set theHC ISP Auto ProgrammerofGNDandVDD respectively connected toMCUofGNDandVDDThat's it.

useUSB-TTLWhen the tool is downloaded, the USB-TTL of TXDC onnected to MCU of ISP_TXDport, then set the USB-TTL of GNDC onnected to MCU of GND, and then click Download to give MCU of VDD Just power on.

useHC-LINK(includeHC-LINK V3.0,HC-LINK V4.0,SDKdevelopment board) when downloading, set theHC-LINKof TX Connected toMCUofISP_RXDport,RXConnected toMCUofISP_TXDport, then set theHC-LINKofGND and VDD respectively connected toMCUofGND and VDD That's it.

currently supported ISPofMCUModel Correspondence ISP_TXD, ISP_RXDpins as well as customer maximum Roman capacity, as shown in the table below:

MCUmodel	ISP_TXDpin	ISP_RXDpin	clientROMMaximum capacity	Remark
HC89S003F4	P2.1	P0.3	12K	
HC89S001P	P0.2	P0.1	12K	
HC89F0431	P0.0	P0.1	12K	
HC89F0421	P0.0	P0.1	12K	
HC89F0411P	P0.0	P0.1	12K	
HC89S105C8	P4.3	P3.7	60K	
HC89S105K8	P4.3	P3.7	60K	
HC89F0541	P2.1	P2.2	28K	

Form 2-1 MCUmodel pins and Roman capacity



3, Operating procedures

 $This \, chapter \, will \, be HC89S003F4 as \, an \, example \, and \, use HC \, ISP \, Auto \, Programmer Introduce \, the \, operation \, process \, and \, an example \, and \, use HC \, ISP \, Auto \, Programmer Introduce \, the \, operation \, process \, and \, an example \, and \, and \, an example \, an example \, and \, an example \, an$

1, After connecting the hardware, open the control center and click Loadhex/bin/hcf, select the one to downloadhex/bin/hcffile, chooseMCU

Model, power supply voltage, whether to continue to supply power after the program is downloaded, whether to downloadOPTIONS, whether to repeat the automatic download program and its



Figure 3-1control center



 $2, You \ can \ observe \ whether \ the \ code \ path, \ check \ code, \ and \ size \ are \ correct \ in \ the \ program \ code \ option$

```
代码选项
                       保护设置
                                                   烧写页设置 ◁ ▶
     程序代码
                                客户信息
                                         擦除页设置
文件名称: HC89S003F4_12K.bin
文件大小: 0x3000 Bytes
创建时间: 2019-12-13 09:15:37
修改时间: 2019-12-13 09:15:37
访问时间: 2019-12-13 09:15:37
文件路径: C:\Users\Administrator\Desktop\HC89S003F4_12K.bin
代码大小: 0x3000 Bytes 12K CRC16: 0xE445
000000: B4 CB A4 2F FC 37 CD A7 F6 60 4E 72 EE B1 F3 F9
000010: 35 84 C1 FE 19 42 8A DD 14 CB BE 11 44 18 84 F9
000020: 1B 1F 09 DC 58 F6 18 2C 36 3C EC 07 E3 B5 42 03
000030: 33 34 B2 2B 96 BE 3E 45 48 EC 2C 57 C7 91 11 69
000040: 8A 9D 2F 8B F0 41 00 1A 77 54 13 40 2E F6 17 BA
000050: 6D 73 36 DE C3 6A A4 DC 30 2E 77 44 94 6C B9 C8
000060: 68 0E BB 44 AC 60 AD FB 20 71 6C 23 B7 BD 9B A5
000070: 49 08 F5 1E 88 8D E1 29 35 58 47 E0 94 F1 A3 A0
000080: 1D 3A 58 0D 74 9A 46 56 9B 5B 9E BB 67 51 F5 4C
000090: 30 BD 98 F3 CD 70 20 B4 BF 34 46 34 AD 67 F8 78
0000A0: 11 E9 AC F0 30 39 F4 B4 4F DA 52 0D 24 FC 4E 37
0000B0: 8B 58 C7 65 7A 5C 87 06 37 88 1A 47 C8 18 DF D9
0000C0: AC E3 5F F4 C8 83 DE 9C A4 B6 30 23 D7 04 CE EF
```

Figure 3-2code



3, Click the code option, select the corresponding configuration in the code option $\,$



Figure 3-3code option



6, In the protection configuration tab, different sectors can be protected $% \left(1\right) =\left(1\right) \left(1\right)$

禁止MOVC指令读取FLASH							
禁止IAP擦写FLASH							

Figure 3-4protection settings



 $7, in the \, Customer \, Information \, tab, you \, can \, configure \\ SN_DATA as \, well \, as ID_DATA configure$



Figure 3-5Customer Information



9, In the erase page settings, the user can choose the desired address to erase, the default is full erase, and it is also recommended for users to erase all when programming.



Figure 3-6Erase Page Settings



10, In the programming page settings, the user can select the desired address for programming. By default, the corresponding sector is programmed according to the code capacity, which can reduce the Less burning time.



Figure 3-7Burn page settings



11, After the configuration is complete, select the port, click download, the status window and LOGThe burning status can be displayed in the window.



Figure 3-8work area



4, Precautions

1. When the capacitance on the user's target board is large, please adjust the resistance value of the resistor in the red box in the figure below. The larger the capacitance, the smaller the solder resistance, and it is best do itR*CThe value of 0.2 Sinside, for example: 2200 uFweld 100 Europe below.

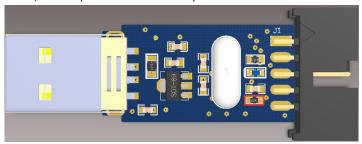


Figure 4-1 HC ISP Auto Programmer



5, release notes

Version	date	describe		
V1.00	2018/5/24	first edition		
V1.01	2018/8/22	againstHC-ISP V2.0.0.0rewrite		
V1.02	2018/9/13	againstHC-ISP V2.0.1.0rewrite		
V1.03	2018/10/18	IncreaseISPofMCUmodel		
V1.05		Add configuration save		
V1.04	2018/11/13	Add power-off power supply time interval configuration		
	2019/12/13	againstHC-ISP V2.0.4.0andHC-ISP V2.0.5.0re-write increase		
V1.05		ISP_V01,ISP_V02Two versions with select function added to		
V1.03		theHC-LINKsupport		
		Added loading and savinghcffile function		

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