# SmartPRO Programmer programs SillconLAB's EFM32ZG210F32

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nullProduct Application Notes

#### File information

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picknullto	This article describes how to use SmartPRO 5000U-PLUS to burn writing
	SillconLAB chip



Revised history

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		typos			



#### Orders, nullrecord

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# 1 Introduction to SmartPRO 5000U-PLUS Universal Programmer

SmartPRO 5000U-PLUS is known for its reliable burning, innovative engineering encryption technology, and ultra-fast programming. Win a good reputation in the industry. It supports off-line programming and cluster mass production, making it easier to create high efficiency. At the same time, it has an independent ICP download line interface, which can program the chip on the circuit board online, which is more convenient for engineers to debug on site. Humanized software interface and friendly visibility off-line programming control, it is more cordial. Below is a product reference image.



Figure 1. 1 SmartPRO 5000U Universal programmer picture

Product series: SmartPRO Series

Intelligent universal programmer

Model: SmartPRO 5000U-PLUS

Product features: Support "online" and "offline" two modes of work, with "offline mass production" and "remote control" functions.

Offline engineering storage media: internal FLASH electronic disk (4MByte), extended large capacity CF card.

For more and more complete information about SmartPRO 5000U-PLUS, please visit our company website:

https://www.chinaobd2.com/wholesale/smartpro-5000u-plus-universal-usb-programmer-3059.html

# 2 Burn Perform the burn steps

### 2.1 Run the software

Install the SmartPRO 2008 software, after confirming that the programmer power and USB cable are connected, double-click the desktop icon "SmartPRO 2008"



open the programming software.

How to change the Launage of SmartPro.

File(P) Project(P) Device(C) Option(Q) View(V) Tool(T) Language(L) Help(H)	
🌽 General Option 📓 Device Option 🏂 Operation Option 🋞 Batch Edit	
Sy vorktable	
Select Device ZHIYUAN, SMI@TQFP64, 10000H Bytes	Device *
Open Project         SmartPR0 50000 条         Connect          は按摘程器: 1.5martPR0 50000-PLUS 1.5martPR0 5000-PLUS 1.5martPR0 5000-PLUS	Device::SM1@TQPP64 Manufacture::2r1(TUAN Device:Size64.0K:1bybe Algo:VRS513_SPIN48_sSk.al [2007-12-13 10:33:05] Buffer
00:00:00	File * File Name: File Path: Adapter * ZY508A
	Production statistics     A       Su Fa Yield     0       0     0       0     0%       No limit     Reset       Reset     Target Count
Read Erase BlankCheck Program Verify Batch Auto	Capita Num Discopre 🖨 🐲

Click lauguage, choose English. Smartpro only support Chinese and English.

### 2.2 Select the chip

Click on "Select Chip 选择芯片 ;English version, click Select Device

Enter the chip model EFM32ZG210F32 in the device name input box; Check EFM32ZG210F32@QFN32 in the "Devices" list and click "Select."

Product

Select		×
-Select Device		
Device EFM32ZG210	732	<b>~</b>
Wannfagturar:	Device	
EFM32ZGxxx	EFM32ZG210F32@QFN32	Type <ul> <li>All</li> <li>MCU</li> <li>Serial EEPROM</li> <li>E(E)PROM/FLASH</li> <li>SRAM</li> <li>PLD/GAL</li> </ul>
<b>达择芯片</b> 选择器件		Select Cancel
器件名称: EFM322G210F3;	2	
「商: ■ m energy ● EFM32ZGxxx	₩7件: EFM327.0210F3280FN32	类型 ● All ● MCU ● Serial EEFROM ● E (E) FROM/FLASH ● SRAM ● PLD/GAL
	ĺ	选择取消

Figure 2.2. 1 Select the chip

d, pop up the chip "special information" dialog box, briefly introduce the chip when burning

特殊信息	K
特殊信息提示   DLW[0]=0,调试端口锁定,访问AP时将访问AAP。   ULW[0]=0,调试端口锁定,访问AP时将访问AAP。   ULW[0]=0,将锁定Lock Page。   提示1: 若芯片已经加密,重新操作芯片,请先解除保护!   提示2: 需要芯片加密请勾上芯片配置中的DLW(debug   lock);	
确定	
precautions.	



## 2.3 Load file

a. Click on "Open File" in the toolbar P打开文件

SaartPRO 50000-PLUS 文件(E) 工程(E) 芯片(G) 选项(G) 视程 分打开文件 保存文件 分打开工程 》通用配置 氢 芯片配置 論 操作配置	图(Y) 工具(T) Language(L) 帮助(H) 翻保存工程 🧟 缓冲区 🚵 制作脱机工程 🌠 关于 🕎 添加器件申请 🌊 组合定制 🏊 特殊信息
快建操作合 选择芯片 ENERGY, EFM3 打开工程	12ZG210F32@QFN32, 8400H Bytes 打开 ?X
SmartPRO 5000U-PLI 注接 断开 NC脚 忽略	查找范围(I): @ 桌面
₩ 0.00.00	文件名 (M): EFM32ZG.hex 打开 (D) 文件类型 (I): Intel Hex File (*. HEX)

Figure 2.3. 1 Select the burned file

B. After the file is imported, the following information will be displayed in the main information bar

<b>选择芯片</b> 芯片厂商:ENERGY 芯片名称:EFM32ZG210F32@Q 芯片容量:8400H	FN32
<b>打开文件</b> 打开文件: C:\Documents and Setting 文件起始地址:00000000 文件调入长度:00008400 打开文件完毕!	s\lizengjia\桌面\EFM32ZG.hex

of the software.

Figure 2.3. 2 After the file is opened, the information of the file is displayed

c. Check whether the file is correct can be verified by comparing the checksum of the software buffer.

緩冲区	۲
起始地址:00000000 结束地址:0FE041FF 器件校验和:00437A41	

Figure 2.3. 3 Prompts the check sum of the file to be called

At this point, the file import file is complete.
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## 2.4 Burn write chip

a. Operate the configuration and select the chip burn area



Figure 2.4. 2 User "Operation Configuration"

b, chip configuration, configure encryption to the chip:

操作台		<b>_</b>						
选择芯片	Consta							
打开工程	PLW[0] PL	V[1] PLW[2]	PLW[3] PLW	[4] PLW[5]	PLW[6] PLW[7	1)		
	Page0	Page16	Page32	Page48	Page64	Page80	Page96	Page112
SmartPRO	50 Page1	Page17	Page33	Page49	Page65	Page81	Page97	Page113
■■ 连接	Page2	Page18	Page34	Page50	Page66	Page82	Page98	Page114
■■ 断开	Page3	Page19	Page35	Page51	Page67	Page83	Page99	Page115
I NC牌	Page4	Page20	Page36	Page52	Page68	Page84	Page100	Page116
	Page5	Page21	Page37	Page53	Page69	Page85	Page101	Page117
8	Page6	Page22	Page38	Page54	Page70	Page86	Page102	Page118
8	Page7	Page23	Page39	Page55	Page71	Page87	Page103	Page119
	Page8	Page24	Page40	Page56	Page72	Page88	Page104	Page120
	00 Page9	Page25	Page41	Page57	Page73	Page89	Page105	Page121
Image: A start and a start	Page10	Page26	Page42	Page58	Page74	Page90	Page106	Page122
	Page11	Page27	Page43	Page59	Page75	Page91	Page107	Page123
	Page12	Page28	Page44	Page60	Page76	Page92	Page108	Page124
	Page13	Page29	Page45	Page61	Page77	Page93	Page109	Page125
	Page14	Page30	Page46	Page62	Page78	Page94	Page110	Page126
	Page15	Page31	Page47	Page63	Page79	Page95	Page111	Page127
		0 (0 ~ 127)						
	All PLW[	0] (0~127)	+ " /" #	经济片锁定	调试按口			

Figure 2.4. 2 Chip configuration, hit the " $\checkmark$ " on DLW(debuglock), will be encrypted to the chip"

Product

c, complete the operation configuration and chip configuration, and perform the combination or mass



production operation



d, the encrypted chip, read data will be all 0x00, to prevent user application leakage



Figure 2.4. 4 After the chip is encrypted and the data is read, all zeros will be cleared

e, need to update the chip program, need to decrypt the chip first

			SmartPRO	5000T-PLL 🕴	2014-07-09 00.01.00 再交 1151 成市
		ĕ	Jan	00000 120	2014-07-09 09:01:00 田村:00分:0703 套秒
			■ 進拔		
			■ 断开		2014-07-09 09:01:00 正在编程
8		8	■ NC脚		2014-07-09 09:01:01 编程前解保护成功
8		8	■ 忽略		2014-07-09 09:01:04 编程 CODE FLASH 成功
					2014-07-09 09:01:04 编程 USER ID 成功
					2014-07-09 09:01:04 编程 LockBit 成功
					2014-07-09 09:01:04 用时:00分:04秒:000毫秒
					编程成功
		8			2014-07-09 09:01:04 止在校验
	~			00:00:01	2014-07-09 09:01:05 Wes CODE FLASH AQUO
	<b>v</b>				2014-07-09 09:01:05 竹類 U-bbk ID 例知
					2014-07-09 09:01:05 田时:00分10秒 734 秦秋
					A Sector
					操作成功
					2014-07-09 09:01:05 总共用时:00分:08秒:031毫秒
					成功: 3,失败: 0
					请取出芯片
					已退出批童编程模式!
					法的
					芯片ID: 0BC11477
					2014-07-09 09:01:12 正在读取
					2014-07-09 09:01:13 读取 CODE FLASH 成功
					2014-07-09 09:01:13 读取 USER ID 成功
					2014-07-09 09:01:13 读取 LockBit 成功
					2014-07-09 09:01:13 用时:00分:00秒:735毫秒
					读取成功
					聖州 校政全和,00000000
					4WIT12.02.49:0000000
					解除保护
					芯片ID: 08C11477
					解除保护成功
_					
4			× 🖂	E	8 🖬 🚜 🚽
	-	1			V 👘 🕅 🕅
读	取	扨	験 査空	编程 校務	☆ 解除保护 组合 量产

Figure 2.4. 5 Update chip program, need to decrypt the operation first

f, after decryption, re-import the user burn file, you can re-execute the chip erase, programming,

			■artPRO 连接 断开 NC脚 忽略	5000 <b>0-PLT</b>	2014-07-09 09:01:13 2014-07-09 09:01:13 2014-07-09 09:01:13 读取成功 器件校验和:00000000	读取 USER ID 成功 读取 LockBit 成功 用时:00分:00秒:735毫秒
	<i>©</i>			00:00:08	<b> 群時味な</b> 芯片ID: 0BC11477 解除保护成功 器件校验和:0042BF5F	
					钮 i 芯片ID: 0BC11477 2014-07-09 09:06:11 2014-07-09 09:06:12 2014-07-09 09:06:14 2014-07-09 09:06:14 2014-07-09 09:06:14 2014-07-09 09:06:17 2014-07-09 09:06:18 2014-07-09 09:06:19 成功: 4, 失败: 0	正在擦除 擦除 成功 用时:00分:02秒:187毫秒 正在编程 编程前解保护成功 编程 CODE FLASH 成功 编程 LOCE FLASH 成功 编程 LOCE FLASH 成功 编程 LOCAB11 成功 下在校验 校验 CODE FLASH 成功 校验 LOCE FLASH 成功 校验 LOCE FLASH 成功 校验 LOCE FLASH 成功 校验 LOCE HD 成功
	读取	<mark>ì</mark> 擦	「 建立	编程 校3	A Land A Lan	
verifica	ation					

Figure 2.4. 6 After decryption of the chip, you can continue to burn the program to the chip

#### 2.5 Note on burning

A. Before mass production, be sure to confirm that the Settings are correct, put the first chip burned in the mass production system for testing, and then mass produce and burn other chips to avoid unnecessary losses.

b, when encrypting the chip, only need to encrypt DLW(debug lock), you can achieve encryption effect.

#### 2.6 Engineering mode operation

For the convenience of operation, we can save the operation environment such as the loaded files and the customized Settings of the combined operation

The form of the process. The next time you need to burn, directly open the project can be, do not choose the chip, do not load the file, do not set the combination of custom operations.Directly click "Mass production" to burn. Here's how to do it:

- a. Click in the toolbar 🗐 保有式程;
- b. Click "OK" after entering the project name and selecting the location where the project is saved; (For the setting of "Confidential information", please refer to the

	the second se
人密码:	
1ক্ষম :	
小田大田	
饭宜り用 10: -145→□	1
程"切能可用 - 日本 - 元453	] _* ==
∖重广″切能	可用 - 二方状辺界
09:25	0
	<b>以密码:</b> 功能可用 设置可用 程"功能可用 、量产"功能可用

content of "Help" in the menu bar of our software SmartPRO 2008 );

Figure 2.5. 1 Save the project

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www.chinaobo	12. com	SartPRO programmer programs
		SillconLAB's M3 chip
c. Next	time you burn, c	elick "Open Project" in the toolbarnull.
文件(E) エ	〔程(P) 芯片( <u>C</u> ) 选项( <u>O</u> )	视图(Y) 工具(I) Language(L) 帮助(H)
🔁 打开文件	🕈 🧖 保存文件 💁 打开工	程 🚰 保存工程 🧕 缓冲区 🚵 制作脱机工程 🌠 关于 🕎 添加器件申请
🎺 通用配置	置 🔣 芯片配置 🍌 操作配	置 🆧 組合定制 💼 特殊信息
快捷操作台		
选择	芯片 ENERGY, EH	M32ZG210F32@QFN32, 8400H Bytes
打开	工程	
	SmartPRO 50000-PLL	20 打开 ? 🗙
	■ 连接 ■ 断开	20 读 查找范围 ①: 📄 EFM32ZG210F32@QFN32 🔽 🕜 🎲 📂 🛄-
	■ NC脚 ■ 忽略	쯃 EFM32ZG210F32@QFN32. spj
		<b>#</b>
		#C5 角容
	00:00:01	
		芯 文件名 (2): EFM32Z6210F32E9FN32.spj 打开 (2)
		20 文件突型 ①· 工程文件 (*. sp.), *. zp.)
		擦除成功

Figure 2.5. 2 Open project

d. Once the project file is open, click on "Mass Production", you can burn the chip according to the operation steps set in the combination customization, without any setting.

# 2.7 Off-line programming

Offline is to download the file to the programmer, key operation;

a. Click "Make offline project" in the toolbar whether ;

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b. Fill in the relevant information, click download to download the project to the

视图(ሧ) 工具(Ţ) Lan	guage(L) 帮助(H)				
工程 🙀保存工程 🧕	缓冲区 🚵 制作脱机	工程 🌠 关于	🕎 添加器	<b>}</b> 件申请	
記置 🍭 組合定制 🛅	特殊信息				
EFM32ZG210F32@QFN32	保存脱机工程				
	工程名称	EFM32ZG210F32@0	FN32	(建议不超过16个	·字符)
1 2014-07-09 09.07	工程密码			(必须为空或6位)	数字)
2014-07-09 09:07 这形式中	确认密码			(必须为空或6位)	数字)
要你你心心	产量控制			(为空表示不限制	产量)
4¥1+1χ∂ <u>∞</u> Λμ:000000	备注信息			🗌 只允许"量产/	/组合"
	选择存贮介质				
芯片ID: 0BC1147 解除保护成功	你希望将脱机工	程存储在哪一个。	盘?		
	⊙内置电子盘				
<b>孫际</b> 芯片ID: 0BC1147	OCF₩				
2014-07-09 09:07 2014-07-09 09:07	○磁盘文件				
2014-07-09 09:07 2014-07-09 09:07					
擦除成功					
 读取	查看工程			下载(保存)	退出
芯片ID: 0BC1147 2014-07-09 09:07	:10 旧行谋职				
2014-07-09 09:07 2014-07-09 09:07	:16 读取 CODE FL. :16 读取 USER ID	ASH 成功 成功			
ogrammer.	12 25 Ho I I D'I	┍╄╌┯┶			

Figure 2.6. 1 Making the offline function

c. After the download is complete, power off the programmer, iffy out the USB cable, and restart the programmer. When the programmer enters the offline state, the standby screen is displayed, as shown in Figure 2.7.2.



Figure 2.7. 2 Offline interface

d. Press any key on the control panel to enter the main menu as shown in Figure 2.7.3:



Figure 2.7. 3 Operation interface

e. Load a project before performing any chip-related operations.Method: Press the up and down arrow keys to move the cursor to "Load Project", then press the "OK" key, the system prompts you for the source of the project you want to load, as shown in 2.7.4.



Figure 2.7. 4 Load project

- f. Enter the internal electronic disk or CF card, select the corresponding project file, and press "OK" to load the project. After loading, press ESC to return to the main menu. When the project is successfully loaded, the chip operation is ready. Move the cursor to "Chip Operation" and press "OK" to enter.
- g. The programmer supports batch burning of chips and is suitable for mass production. Move your cursor to "Mass Production" and press "OK" to enter mass production mode.
- h. When a chip is programmed, the display will prompt you to remove the chip, at which point you can remove the chip. After the chip is removed, the system prompts you to insert the next chip. When you need to exit "mass production" after finishing the last chip, you can press "ESC". At this time, the system will send a confirmation message, asking you whether you are sure to exit "mass production", press "OK" to confirm the exit, and press "ESC" to return to "mass production" mode.

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