

GeehyProg User Manual

APM32Xxxx Series Upper Computer Software

Version: V1.0.3

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1 Introduction

This document mainly describes how the upper computer software performs such operations as burning, reading, erasing, and model selection on the APM32Xxxx series chips, and how to read and rewrite the option bytes of each chip.

The upper computer software introduced in this document can perform operation on the chip in three ways, including DFU mode, ISP mode, and PROG mode. Users only need to switch the connection method and replace different connection lines, and do not need to switch between different upper computer software, and it is simple and fast. PROG mode supports online and offline operation of the chip. The upper computer software introduced in this document is available in both Chinese and English, hence convenient for users to use.

The upper computer software introduced in this document will be continuously upgraded and updated as needed, and user requirements are put in the first place.



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2 Software operating environment

(1) Operating systems of Win7 and later versions;

(2) Win7 operating systems require installation of Microsoft .NET Framework 4.6 or later versions.



3 **Software installation**

(1) Chinese operating system is installed using GeehyProg_SetUp_Chinese.msi;

(2) Operating systems in English or other languages are installed using GeehyProg_SetUp_English.msi.



4 **Connection mode**

4.1 Supported connection modes

- (1) DFU mode: USB connection;
- (2) ISP mode: serial port connection;
- (3) PROG mode: burner connection.

4.2 **PROG interface description**

ARM JTAG protocol

VTref	1	•	٠	2	NC
nTRST	3	•	•	4	GND
TDI	5	•	•	6	GND
TMS	7	•	٠	8	GND
тск	9	•	•	10	GND
RTCK	11	•	•	12	GND
TDO	13	•	•	14	GND
RESET	15	•	•	16	GND
DBGRQ	17	•	•	18	GND
5V-Supply	19			20	GND

VTref	1	•	• 2	NC
Not used	3	•	• 4	GND
Not used	5	٠	• 6	GND
SWDIO	7	•	• 8	GND
SWCLK	9	•	• 10	GND
Not used	11	•	• 12	GND
SWO	13	•	• 14	GND
RESET	15	•	• 16	GND
Not used	17	•	• 18	GND
5V-Supply	19	•	• 20	GND

ARM SWD protocol

Notes:

When burning with SWD or JTAG interface disabled, the RESET pin of the chip must be first connected to the RESET pin of the burner.



5 Supported products

Chip model	DFU mode	ISP mode	PROG mode
APM32A091	/	/	Yes
APM32A103	/	/	Yes
APM32A407	Yes	Yes	Yes
APM32E030	/	Yes	Yes
APM32E103	/	Yes	Yes
APM32F003	/	/	Yes
APM32F030	/	Yes	Yes
APM32F035	/	Yes	Yes
APM32F051	/	Yes	Yes
APM32F072	Yes	Yes	Yes
APM32F091	/	Yes	Yes
APM32F101	/	Yes	Yes
APM32F102	/	Yes	Yes
APM32F103	/	Yes	Yes
APM32F107	Yes	Yes	Yes
APM32F403	Yes	Yes	Yes
APM32F403	Yes	Yes	Yes
APM32F405	/	Yes	Yes
APM32F407	Yes	Yes	Yes
APM32F411	Yes	Yes	Yes
APM32F415	/	Yes	Yes
APM32F417	/	Yes	Yes
APM32H407	Yes	Yes	Yes
APM32M3514	/	Yes	Yes
G32A1445	/	/	Yes
G32A1465	/	/	Yes
G32R501	/	/	Yes



6 Software interface

Language English 🔻 1	5	Update 6 B≣ Option Bytes 7	a oexi
COM Connect 2	Start Address 0x08000000 12 Size 0x0400	▲ Read Save State State Save State State Action State	
COM LINK		9 10	
Port COM1 🔻 🔂			
Baudrate 115200 💌	1,19		
TimeOut 2 S			
Туре			
Product ID			
FW Version			
3			
	Log		
	A 22	1. N. V.	
	24-14	2024	~~~
Automatic Operation <u>17</u>	16	000	15
🗍 User Manual 🛛 🔒	0 ^{12°}	8000	
- 01 ⁰			

Figure 1 Main Interface

Notes:

- 1. Switching between Chinese and English;
- 2. Connection method selection: Serial port connection by default, i.e. ISP mode;
- 3. Configuration information of serial port connection;
- 4. Click the button to display the User Manual;
- 5. Read and display chip data;
- 6. Update and burn the chip;
- 7. Update and read the configuration related to option bytes;
- 8. Erase chip operation;
- 9. Read chip data;
- 10. Save the read chip data;
- 11. Display the read chip data in 32bit, 16bit, or 8bit format;
- 12. Read the start address of chip data;



- 13. Read the length of chip data;
- 14. Save operation record information;
- 15. Clear operation record information;
- 16. Display area for operation record information;
- 17. Click the button to switch to automatic operation mode.



7 Connect device

7.1 **ISP mode**



Figure 2 Select Connection Mode

	30				be Option Bytes	<u>O</u> Erasing	
▼ MOX	い DisConnect	Start Address 0x08000000	Size 0x400	① L Rea	ad 🛛 🖺 Save	🔘 8 bit 🔘 16	5 bit O 32 bit
COM		Address	0	4	8	с	ASSCII
Port	COM6 🔻 🖸	C 0000080x0	20000430	080000CD	08000269	08000267	0 ?ig
Baudrate	115200 🔻	0x08000010	0000000	0000000	0000000	0000000	2023
TimeOut	2 S	0x08000020	0000000	0000000	0000000	080002F9	3
Туре	APM32F030xC/09X_2	0x08000030	0000000	0000000	080002E5	080002FD	22
Product ID	0x0442	0x08000040	080000DF	0000000	080000DF	080000DF	777
FW Version	1.1	0x08000050	080000DF	080000DF	080000DF	080000DF	7777
	4	0x08000060	00000000	080000DF	080000DF	080000DF	777
		0x08000070	080000DF	080000DF	080000DF	0000000	???
		Log			2		
Automatic User I	c Operation	[2025-02-13 16:33:45.8689] IN [2025-02-13 16:33:46.1521] INF	IFO Successfully conn O Finished reading the	ected device! data!	6		() () () () () () () () () () () () () (

Figure 3 ISP Mode Connection

Notes:

1. Select the connection mode and select COM for ISP mode;



- 2. Click Refresh button to find the currently connected serial port;
- 3. Click "Connect device" button to connect the selected serial port number;
- 4. Display the connected chip model, ID, and firmware version number;

5. Display the read data, the start address is 0x08000000, the data length is 0x0400, and the data is displayed in 32bit format;

6. The operation record shows that the device is already connected.

7.2 **DFU mode**

nguage En	iglish 🔻		ப் Read	🕁 Update	🔠 Option Bytes	🔗 Erasing	
JSB 🔻	い DisConnect 1	Start Address 0x08000000	Size 0x400	1 Read	🛱 Save	O 8 bit O 16	5 bit O 32 bit
USB		Address 3	0	4	8	с	ASSCII
Port	USB1	0x08000000	20000448	080001A9	0800048B	08000483	H ???
VID	0x314B	0x08000010	08000487	08000391	080008F5	0000000	???
Device	APM32 ISP DFU mode	0x08000020	00000000	0000000	00000000	080005D1	?
Product ID	0x433	0x08000030	08000395	00000000	0800048D	080005ED	???
Flash Size	0x80000	0x08000040	080001C3	080001C3	080001C3	080001C3	????
Version	2.0	0x08000050	080001C3	080001C3	080001C3	080001C3	????
Factory Serial Num	Geehy 65403624865D	0x08000060	080001C3	080001C3	080001C3	080001C3	????
Туре	APM32F411	0x08000070	080001C3	080001C3	080001C3	080001C3	????
Size	64	Log	.3				
Automatic User	c Operation Manual	[2025-02-13 16:49:53.9455] [2025-02-13 16:49:53.9455] IN	INFO Successfully cor	nnected device! ne data! 4			2025 0

Figure 4 DFU Mode Connection

Notes:

1. Select USB for DFU mode, click Refresh button to find the currently connected USB, and click "Connect device" button to connect the selected USB;

2. Display the information of connected chip such as model, ID, and Flash;

3. Display the data read, the start address is 0x08000000, the data length is 0x0400, and the data is displayed in 32bit format;

4. The operation record shows that the device is already connected.



7.3 **PROG mode**

ROG 🔻	ហ Connect 1	Configuration Info	34
PROG Serial Num Pro-Series Type Ext-Power Protocol Reset Speed Base-Addr Flash Size	4E51335438 2 APM32F411 APM32F411CET6 Power Off SWD Software Reset Normal 0x0800000 0x80000	Operation Mode Program • Erase-All • Page-Erase Offline-DownLoad-Configuration • Offline-DownLoad-Times • Ox01 • Remain-Times • SN-Configuration • Serial-Number Start Address • Ox08000000 • Ox080000000 • Ox08000000 • Ox080000	Latest-FW-Version 00.29 4 Current-FW-Version 00.29 5 FW-Version FW-Version FW-Version FW-Version FW-Version FW-Version FW-Version FW-Version Current-FW-Version Current-FW-Versin Current-FW-Version Current-FW-Version Current-FW-V
Product ID Automati User	0x433 3 ic Operation Manual	[2024-04-02 18:31:16.0471] INFO The PROG device is co [2024-04-02 18:31:17.0675] INFO Prog: 4E513354330000	nnected successfully. 00400400032; FW Version: 00.29 6

Figure 5 PROG Mode Connection

Notes:

1. Select PROG; this mode does not require clicking "Connect device" and supports automatic device identification;

- 2. Click Refresh button to find the currently connected burner;
- 3. Switch chip model to display relevant chip information;
- 4. Display the latest firmware version of the burner;
- 5. Display the firmware version of currently connected burner;
- 6. Display the information about burner connection.



8 Read

8.1 Read data

	亡 Re	ad 🕁 Update	聞 Option Bytes 🛛 🖉	Erasing	
Start Address 0x08000000	Size 0x0400	🗘 Read 🛛 🖺 Sa	ve 💿 8 bit 💽 16	5 bit O 32 bit	
Address	0	4	8	с	ASSCII
0x08000000 K	20000760	080007D1	080003B9	080003BB 🔸	`???
0x08000010	080003BF	080003C3	080003C7	00000000	???
0x08000020	00000000	00000000	00000000	080003CB	?
0x08000030	080003CD	00000000	080003CF	080003D1	???
0x08000040	080007EB	080007EB	080007EB	080007EB	????
0x08000050	080007EB	080007EB	080007EB	080007EB	????
0x08000060	080007EB	080007EB	080007EB	080007EB	????
0x08000070	080007EB	080007EB	080007EB	080007EB	????
0x08000080	080007FB	080007FB	080007FB	080007FB	????

Figure 6 32bit Display Data

			⊥ Read	业 Update	B Option Byte	es 🖉 Erasir	ig		
Start Address 0x08000	000	Size 0x0400	Read	i 🗅 S	ave 💿	8 bit O 16 bit	32 bit		
Address	0	2	4	6	8	A	с	E	ASSCII
0x8000000	0760	2000	07D1	0800	03B9 🔺	0800	03BB	0800	`???
0x8000010	03BF	0800	03C3	0800	03C7	0800	0000	0000	???
0x8000020	0000	0000	0000	0000	0000	0000	03CB	0800	?
0x8000030	03CD	0800	0000	0000	03CF	0800	03D1	0800	???
0x8000040	07EB	0800	07EB	0800	07EB	0800	07EB	0800	????
0x8000050	07EB	0800	07EB	0800	07EB	0800	07EB	0800	????
0x8000060	07EB	0800	07EB	0800	07EB	0800	07EB	0800	????
0x8000070	07EB	0800	07EB	0800	07EB	0800	07EB	0800	????
0x8000080	07FB	0800	07FB	0800	07FB	0800	07FB	0800	7777

Figure 7 16bit Display Data

					ப் Read	d √	י Update	8	Option	Bytes	🔗 Er	asing					
Start Address 0x08000	0000	s	ize 0x04	00	🗘 Read 🖺 Save 🔗 8 t					0 8 bit	bit 💿 16 bit 💿 32 bit						
Address	0	1	2	3	4	5	6	7	8	9	А	В	С	D	E	F	ASSCII
0x8000000	60	07	00	20	D1	07	00	08	B9 🕨	03	00	08	BB	03	00	08	`???
0x8000010	BF	03	00	08	C3	03	00	08	C7	03	00	08	00	00	00	00	???
0x8000020	00	00	00	00	00	00	00	00	00	00	00	00	СВ	03	00	08	?
0x8000030	CD	03	00	08	00	00	00	00	CF	03	00	08	D1	03	00	08	???
0x8000040	EB	07	00	08	EB	07	00	08	EB	07	00	08	EB	07	00	08	????
0x8000050	EB	07	00	08	EB	07	00	08	EB	07	00	08	EB	07	00	08	????
0x8000060	EB	07	00	08	EB	07	00	08	EB	07	00	08	EB	07	00	08	????
0x8000070	EB	07	00	08	EB	07	00	08	EB	07	00	08	EB	07	00	08	????
0x8000080	FB	07	00	08	FB	07	00	08	FB	07	00	08	FB	07	00	08	2222

Figure 8 8bit Display Data

8.2 Save data

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Start Address 0x08000000	Size 0x0400	🗘 Read 🖺 Save	1 0 8 bit 0 16 bit	t O 32 bit		
Address	0	4	8 0	:	ASSCII	
0x0800000	Save As				×	
0x08000010	← → × ↑ 🕹 > TI	nis PC → Local Disk (C:)	ٽ ~	Search Local Disk (C:)	م	
0x08000020	Organize • New fold	er		Į=	- 0	
0x08000030	Downloads ^	Name	Date modified	Туре	Size	
0~09000040	Music	GeehyCuboProg	5/3/2023 2:56 PM	File folder		
0x08000040	Pictures	📕 Intel	5/3/2023 12:57 PM	File folder		
0x08000050	Videos	LenovoDrivers	4/20/2023 2:39 PM	File folder		
	🐛 Local Disk (C:)	PerfLogs	12/7/2019 5:14 PM	File folder		
0x08000060	Local Disk (D:)	📜 Program Files	4/27/2023 1:25 PM	File folder		
0x08000070	Local Disk (E:)	📕 Program Files (x86)	4/18/2023 2:26 PM	File folder		
	iso	Users	1/29/2023 4:36 PM	File folder		
0x08000080	, vm	WCH.CN	3/7/2023 4:54 PM	File folder		
g	VMware	Windows	4/17/2023 3:13 PM	File folder		
[2023-05-03 14:57:37 8187] INEO Succes		<			<u> </u>	
	File name: test	2				
[2023-05-03 14:57:37.8277] INFO Finishe	Save as type: Files	(*.bin)			~	

Figure 9 Save File

Notes:

- 1. Click "Save";
- 2. Select the name and path to save the file;
- 3. Click "Save".



9 Update

9.1 .bin, .hex and .s19 updates

C:\Users\Administrator\Desktop\测试用文件\L072\Wri	.e_Flash_file.bin	Select File
Erase the space Used	Verify programming Run after updating the firmware	
	لع Update 4	
Log [2023-05-03 15:14:29.3128] INFO File parsing completed	C:\Users\Administrator\Desktop\测试用文件\L072\Write_Flash_file.bin 5	

Figure 10 Update File

Notes:

1. Select the files to be updated, which can be in the format of . bin, . hex, . s19, and. dfu; .dfu can only be selected in DFU mode;

- 2. The start address can be entered only by selecting .bin file;
- 3. Check as required;
- 4. Click "Update" to start execution;
- 5. Display the operation results.



9.2 .dfu file update

, <u>↑</u> , Read	せ Update 器 Option Bytes <i>査</i> Erasing	
C:\Users\Administrator\Desktop\测试用文件\test.dfu Start Address 0x08000000 2		1 Select File
• Erase the space Used	Verify programming	
Before updating the.dfu file, select the address space to be updated Ox8000040-0x800095C Log	لل Update 5	
[2023-05-03 15:41:06.0507] INFO File parsing completed:C:\Users\Admin	istrator\Desktop\测试用文件\test.dfu	₽ \$\$

Figure 11 Update .dfu File

Notes:

- 1. Select the .dfu files to be updated, which can be selected only in DFU mode;
- 2. Select .dfu file. The start address cannot be entered;
- 3. Check as required;
- 4. Select the address to be updated;
- 5. Click "Update" to start execution.



10 **Option byte**

		슈 Read 🛛 🕁 Update	B Option Bytes 🖉 Erasing				
Read Out Protection	Unprotect 3		Jser Data Data0: 0xFF Data1: 0xFF		1	↑ _{Read}	2
User Configuration UDG_SW Unchecked: H Checked: Soft	InRST_STOP ardware watchdog: ware watchdog:	nRST_STDBY					
Write Protection							
WRP_0_1_0	WRP_0_1_1	WRP_0_1_2	WRP_0_1_3	WRP_0_1_4			
WRP_0_1_5	WRP_0_1_6	WRP_0_1_7	WRP_0_1_8	WRP_0_1_9			
WRP_0_1_10	WRP_0_1_11	WRP_0_1_12	WRP_0_1_13	WRP_0_1_14	ŀ		
WRP_0_1_15	WRP_2_3_0	WRP_2_3_1	WRP_2_3_2	WRP_2_3_3			
	M/DD 2 2 5	MIDD 2 2 6		MINDD 2 2 0			
							Ч
							v



Notes:

1. After the device is connected, click "Read" option byte data and display the content of the option byte on the interface;

2. Check, uncheck, or enter on the interface, and click "Apply" to modify the chip option byte data;

3. Click "Cancel read protection" to modify the chip read protection;

4. When the mouse hovers over a certain configuration item, there will be a prompt message for this configuration item.



<∜

11 Erase

1 (e.g.0x08000000)	2 Inverse 3 ⊉ Erase Select	ted			
0x08000000-0x080007FF	✓ 0x08000800-0x08000FFF	0x08001000-0x080017FF	0x08001800-0x08001FFF	0x08002000-0x080027FF	
V0x08002800-0x08002FFF	🗸 0x08003000-0x080037FF	V0x08003800-0x08003FFF	V 0x08004000-0x080047FF	0x08004800-0x08004FFF	
0x08005000-0x080057FF	0x08005800-0x08005FFF	V 0x08006000-0x080067FF	Vx08006800-0x08006FFF	Vx08007000-0x080077FF	
V 0x08007800-0x08007FFF	Vx08008000-0x080087FF	V0x08008800-0x08008FFF	Vx08009000-0x080097FF	Vx08009800-0x08009FFF	
V 0x0800A000-0x0800A7FF	🔽 0x0800A800-0x0800AFFF	🗸 0x0800B000-0x0800B7FF	0x0800B800-0x0800BFFF	0x0800C000-0x0800C7FF	
0x0800C800-0x0800CFFF	Vx0800D000-0x0800D7FF	V 0x0800D800-0x0800DFFF	0x0800E000-0x0800E7FF	0x0800E800-0x0800EFFF	
0x0800F000-0x0800F7FF	0x0800F800-0x0800FFFF	V0x08010000-0x080107FF	Vx08010800-0x08010FFF	🔽 0x08011000-0x080117FF	
V 0x08011800-0x08011FFF	Vx08012000-0x080127FF	0x08012800-0x08012FFF	Vx08013000-0x080137FF	V 0x08013800-0x08013FFF	
V 0x08014000-0x080147FF	🔽 0x08014800-0x08014FFF	V0x08015000-0x080157FF	0x08015800-0x08015FFF	V 0x08016000-0x080167FF	
V 0x08016800-0x08016FFF	0x08017000-0x080177FF	0x08017800-0x08017FFF	0x08018000-0x080187FF	V 0x08018800-0x08018FFF	
V 0x08019000-0x080197FF	0x08019800-0x08019FFF	🗸 0x0801A000-0x0801A7FF	0x0801A800-0x0801AFFF	🗸 0x0801B000-0x0801B7FF	
0x0801B800-0x0801BFFF	0x0801C000-0x0801C7FF	0x0801C800-0x0801CFFF	0x0801D000-0x0801D7FF	V 0x0801D800-0x0801DFFF	
q					

Figure 13 Erase Interface

Notes:

1. Enter the address needing to be erased for search, and once it is found, this address will be in the selected state;

2. Click "Invert selection" and the selected and unselected addresses will be put in the opposite state;

- 3. Click "Erase selected" to erase the selected address;
- 4. Click 'Erase all' to erase all chips.



12 **PROG operation**

ROG	Un Connect	Configuration Info	200	5 Default-Config	6	7	50
PROG	38	Operation Mode Program		Delaute-Coning	Wille-Coning	L Read-Com	
Serial Num	4E51335435	O Erase-All O Page-Erase	Latest-FW-Version	00.29		🕁 FW-Upgra	ide 8
Type	APM32F411	Office Developed Configuration	Current-FW-Version	00.29		亡 FW-Versio	on 9
Ext-Power	Power Off 🔹	Offline-DownLoad-Times					
Protocol	SWD	1 Remain-Times	Start Address 0x080	000000	ak of		
Reset	Software Reset 🔻	SN-Configuration	D:\桌面\xx\0728(.bir	文件)\APM32F4	L. 11_BootLoader_测试方案	2 【写入 ── Select F	File
Speed	Normal	Siv-Coniguration	Start Address1 0x080	000000	28	12	_
		Sorial Number				1.0	
Base-Addr	0x08000000	Start Address	D:\桌面\xx\0728(.bir	文件)\APM32F4	11_BootLoader_测试方案	、写入 🔄 Select F	File
Base-Addr Flash Size	0x08000000 0x80000	Start Address 0x08000000 4 Start-SN 0x01 4	D:\桌面\xx\0728(.bir	文件)\APM32F4	11_BootLoader_测试方案	\$\写入 ── Select F	File
Base-Addr Flash Size Product ID	0x08000000 0x80000 0x433	Start Address 0x08000000 4 Start-SN 0x01 Increment 0x01	D:\桌面\xx\0728(.bir	文件)\APM32F4	11_BootLoader_测试方案 とOffline-Download	● Select F ▲ Online-Operation	File ion
Base-Addr Flash Size Product ID	0x08000000 0x80000 0x433 1	Start Address 0x08000000 4 Start-SN 0x01 Increment 0x01	D:\桌面\xx\0728(.bir	文件)\APM32F4	11_BootLoader_测试方率 上 Offline-Download 14	▲写入 ⊡ Select F ▲ Online-Operat 15	ion
Base-Addr Flash Size Product ID	0x08000000 0x80000 0x433 1 c Operation	Start Address 0x08000000 4 Start-SN 0x01 1 Increment 0x01 1 Log (2024-04-02 18:31:16.0471) 1	D:\桌面\xx\0728(.bir	文件) \APM32F4	11_BootLoader_测试方案 4_Offline-Download 14	▲ Online-Operat 15	ion
Base-Addr Flash Size Product ID Automatic	0x08000000 0x80000 0x433 1 c Operation Manual	Start Address 0x08000000 4 Start-SN 0x01 1 Increment 0x01 1 Log [2024-04-02 18:31:16.0471] INFO The PROG device is of [2024-04-02 18:31:17.0675] INFO Prog: 4E5133543300	D:\桌面\xxx\0728(.bir connected successfully. 000400400032; FW Version: 0	○文件) \APM32F4	11_BootLoader_测试方案 <u> 上</u> Offline-Download 14	ম্⊊λ ि Select F	ion
Base-Addr Flash Size Product ID Automatic	0x08000000 0x80000 0x433 1 c Operation Manual	Start Address 0x08000000 4 Start-SN 0x01 1 Increment 0x01 1 2024-04-02 18:31:16.0471] INFO The PROG device is of [2024-04-02 [2024-04-02 18:31:17.0675] INFO Prog: 4E51335433000 [2024-04-02 18:34:12.6194] INFO File parsing complete	D:\桌面\xx\0728 (.bir connected successfully. 000400400032; FW Version: 00 ed:D:\桌面\xx\0728 (.bir文件)	文件) \APM32F4	11_BootLoader_则试方案 <u> - Offline-Download</u> 14 tLoader 例试方案\写入文	私写入 ⊡ Select F よOnline-Operat 15 2件Uump_file.bin	ion
Base-Addr Flash Size Product ID Automatio	0x08000000 0x80000 0x433 1 c Operation Manual	Start Address 0x08000000 4 Start-SN 0x01 1 Increment 0x01 1 Log (2024-04-02 18:31:16.0471) INFO The PROG device is of (2024-04-02 18:31:17.0675) [2024-04-02 18:31:17.0675] INFO Prog: 4E51335433000 (2024-04-02 18:34:12.6194) [2024-04-02 18:34:15.6327] INFO File parsing complete (2024-04-02 18:34:15.6327) INFO File parsing complete (2024-04-02 18:34:15.6327)	D:\桌面\xx\0728 (.bir connected successfully. 000400400032; FW Version: 00 ed:D:\桌面\xx\0728 (.bin文件) ed:D:\桌面\xx\0728 (.bin文件)	1文件)(APM32F4)	11_BootLoader_测试方案 <u> Offline-Download</u> <u>14</u> tLoader_测试方案\写入文 tLoader_测试方案\写入文	秋写入 ⊡ Select F せ Online-Operat 15 2件 Jump_file.bin 2件 Jump_file.bin	ion
Base-Addr Flash Size Product ID R Automatio	0x0800000 0x80000 0x433 1 c Operation Manual	Start Address 0x08000000 4 Start-SN 0x01 1 Increment 0x01 1 Log [2024-04-02 18:31:16.0471] INFO The PROG device is of [2024-04-02 18:31:17.0675] INFO Prog: 4E5133543300i [2024-04-02 18:34:12.6194] INFO File parsing completed [2024-04-02 18:34:15.6327] [2024-04-02 18:34:15.6327] [2024-04-02 18:34:15.6327] [2024-04-02 18:34:15.6327] [2024-04-02 18:34:15.6327] [2024-	D:\桌面\vox\0728 (.bir connected successfully. 000400400032; FW Version: 0i ed:D:\桌面\vox\0728 (.bin文件) ed:D:\桌面\vox\0728 (.bin文件)	文件) \APM32F41 0.29 \APM32F411_Boo \APM32F411_Boo	11_BootLoader_则试方案 <u>4_Offline-Download</u> 14 tloader_则试方案\写入文 tloader_则试方案\写入文	秋写入 ⊡ Select F L Online-Operat 15 2件Uump_file.bin 2件Uump_file.bin	ion
Base-Addr Flash Size Product ID Ø Automatio	0x08000000 0x80000 0x433 1 c Operation Manual	Start Address 0x08000000 4 Start-SN 0x01 1 Increment 0x01 1 2024-04-02 18:31:16.0471] INFO The PROG device is of [2024-04-02 18:31:17.0675] [2024-04-02 18:31:17.0675] INFO Prog: 4E5133543300 [2024-04-02 18:34:12.6194] [2024-04-02 18:34:12.6194] INFO File parsing complete [2024-04-02 18:34:15.6327]	D:\桌面\xx\0728 (.bir connected successfully. 000400400032; FW Version: 0 ed:D:\桌面\xx\0728 (.bin文件) ed:D:\桌面\xx\0728 (.bin文件)	3文件)(APM32F4)	11_BootLoader_则试方案 <u>4_Offline-Download</u> <u>14</u> tLoader_ 例试方案\写入文 tLoader_ 例试方案\写入文	秋写入 ⊡ Select f	ion

Figure 14 PROG Operation Interface

Notes:

1. Chip model selection, burner configuration selection, Flash start address, Flash size, ID, and other information;

2. Burning method, and erasing method;

3. Setting of the number of offline burning times and query of the number of remaining offline burning times;

4. Setting of information such as serial number writing address;

5. Click "Restore default configuration" and the default configuration information will be displayed on the interface;

6. Click "Write configuration information" and the configuration information set on the interface will be written to the burner;

7. Click "Read configuration information" to read the configuration information of the burner and display it on the interface;

8. Click "Firmware upgrade" to upgrade the firmware of the burner;



- 9. Click "Firmware version" to read the firmware version of the burner.
- 10. Increase the number of files to be burned, up to 5 files can be selected;
- 11. Reduce the number of files to be burned;
- 12. Example, the first file to be burned and the start address;
- 13. Example, the second file to be burned and the start address;

14. Click "Offline download" to write the ".bin" or ".hex", ".s19" files selected by "Select file" button to the burner;

15. Click "Online operation" and operate the chip online according to the operation method selected in "Configuration information" and the ".bin" or ".hex" or ".s19" files selected by "Select file" button.



13 Automatic Operation

1. In this mode, according to the connected device type and the selected operation options, the automatic cycle of erasure, file download update, option byte update operations;

2. At the end of each current operation, the software will prompt the user to replace the device;

3. When the software detects that the device is connected, it will automatically perform the operations in item 1 until the user "Stop" or "Exit-Automatic";

4. If the two connected devices are the same device, the last connected device will not perform the operation in item 1, and the software will continue to wait for the detection device connection;

5. If the type of the connected device is different from that detected when the device enters the automatic operation mode, the connected device will not perform the operation in item 1, and the software will continue to wait for the detection device connection.

13.1 Automatic Operation in ISP or DFU Mode

Language Er	nglish 🔻		டி Read	止 Update	88 Option Bytes	🖉 Erasing	
COM 💌	O DisConnect	Start Address 0x08000000	Size 0x400	ட் Rea	d 🗋 Save	0 8 bit 0 1	6 bit O 32 bit
COM		Address	0	4	8	с	ASSCII
Port	соме 🔻 💽	0x08000000	20000430	080000CD	08000269	08000267	0 ?ig
Baudrate	115200 🔻	0x08000010	00000000	00000000	00000000	00000000	2023
TimeOut	2 S	0x08000020	00000000	00000000	00000000	080002F9	?
Туре	APM32F030xC/09X_2	0x08000030	00000000	00000000	080002E5	080002FD	??
Product ID	0x0442	0x08000040	080000DF	00000000	080000DF	080000DF	???
FW Version	1.1	0x08000050	080000DF	080000DF	080000DF	080000DF	????
		0x08000060	00000000	080000DF	080000DF	080000DF	777
		0x08000070	080000DF	080000DF	080000DF	00000000	???
		Log					
Automati	ic Operation 2 Manual	(2025-02-13 16:33:45.8689) II (2025-02-13 16:33:46.1521) INF	NFO Successfully conn O Finished reading the	ected device! data!			*

Figure 15 Connecting device

Language Er	nglish 🔻	skoc	8a Option Bytes	
COM V	In DisConnect		Erase all space Update file	rt -
Port Baudrate TimeOut	COM6 • •	• •	Update Option Bytes	2025-0
Type Product ID FW Version	APM32F030xC/09 0x0442	X	Start Address 0x0800000	File
	3		The state one space over The remy programming the number of space of the minimum of the second state of th	
Exit-A	utomatic Manual	4	1025-02-13 16:33:45.8689] INFO Successfully connected device! 025-02-13 16:33:46.1521] INFO Finished reading the data!	6) (\$)

Geehy

Figure 16 Enter automatic operation mode

Notes:

(The ISP is used as an example to enter the automatic operation mode, and the DFU mode is the same.)

1. Only one device can be connected at a time, otherwise when entering the automatic mode, the software will prompt you to connect multiple devices at the same time, and will not perform automatic operations. That is, only one serial port can be connected to the device in ISP mode, only one USB cable can be connected to the device in DFU mode, and only one burner can be connected to the device in PROG mode;

2. Click "Automatic operation" to switch to automatic operation mode;

- 3. One and only one device is successfully connected, and device related information is displayed;
- 4. Click "Exit-Automatic", return to the previous operation interface.

13.2 Automatic Operation in PROG Mode

Language En	iglish 🔻		Automatic Operation	
PROG PROG Serial Num Pro-Series	ባ Connect 4E51335439 APM32F407		I C Erase all space C Update file C Update Option Bytes 2	
Type Ext-Power Protocol Reset	APM32F407IET6 Power Off SWD Software Reset	* * *	D\desktop\测试文件\文件\2023.03.31 GeehyCuboProg测试文件\测试用文件\F407\write_Flash_file.bin Start Address 0x08000000 Erase the space Used Verify programming Run after updating the firmware 3	le
Speed Base-Addr Flash Size	Normal 0x08000000 0x80000 0x80000		log	
Exit-Ar	utomatic Manual		[2023-10-09 15:56:00.6381] INFO Successfully connected device! [2023-10-09 15:56:00.7733] INFO Finished reading the datal [2023-10-09 16:15:46:2919] INFO Device is disconnected. [2023-10-09 16:15:46:3807] INFO Prog: 4E5133543300000600450053; FW Version: 00.28 [2023-10-09 16:16:40.3783] INFO File parsing completed:D:\desktop\調武文件\文件\2023.03.31 GeehyCuboProg剛武文件\调試用文件\F407 \write_Flash_file.bin	61 (\$)

Figure 17 Enter automatic operation mode

			-		
Language Er	nglish 🔻			間 Option Bytes	③ Automatic Operation
PROG 🔻	ហ Connect			4	
PROG			Erase all space		
Serial Num	4551225420		Vpdate file		
Jenarryani	4651555455		Update Option Bytes 5		
Pro-Series	APM32F003	× .			
Type	APM32F003F4M6	w.		a 100-00-00-00-00-00-00-00-00-00-00-00-00-	
Ext-Power	Power Off	Ŧ	D:\desktop\测II,X1+\X1+\2023.03.31 GeenyCut	ooProg测试义什\测试/	用文件\F407\write_Hash_file.bin
Protocol	SWD	Ŧ	Start Address 0x00000000		
Reset	Software Reset	Ŧ	Erase the space Used Verify progr	amming 💦 💟 Run	n after updating the firmware
Speed	Normal	Ŧ			
Base-Addr	0x00000000				
Flash Size	0x4800		a		
Product ID	0x000		5		
		([2023-10-09 15:56:00.7733] INFO Finished reading t	he data!	
		([2023-10-09 16:15:46.2919] INFO Device is disconne	ected.	
🛞 Exit-A	utomatic	([2023-10-09 16:15:46.3807] INFO Prog: 4E51335433	00000600450053; FW	Version: 00.28
🗍 User	Manual	Į	[2023-10-09 16:16:04.3783] INFO File parsing comp \write_Flash_file.bin	leted:D:\desktop\测试。	文件\文件\2023.03.31 GeehyCuboProg测试文件\测试用文件\F407

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Figure 18 Enter automatic operation mode

Notes:

1. Enter the automatic operation mode in PROG mode to display the interface; The configuration information will use the information already configured when switching to automatic operation mode;

2. "Update Option Bytes", available only when model APM32F003/ APM32S003 is selected;

3. The configuration information will use the information that has been configured when switching to the automatic operation mode, and the check box here is not optional;

4. When the model APM32F003/ APM32S003 is selected, the "Option Bytes" interface is displayed.

5. Select "Update Option Bytes" to switch to the option byte interface, you can modify the option byte as required.

13.3 Operating interface

	8≣ Option Bytes	Automatic Operation	
 ✓ Erase all space 1 ✓ Update file 2 ✓ Update Option Bytes 3 	4		11 ি Start
D:\desktop\测试文件\文件\2023.03.31 Geehy Start Address 0x08000000 7	CuboProg测试文件\测试	用文件\F407\write_Flash_file.bin	6 Select File
Erase the space Used Verify pro 8 9	ogramming 🔍 Ru	n after updating the firmware 10	5

Log

[2023-10-09 16:41:46.8786] INFO File parsing completed:D:\desktop\测试文件\文件\2023.03.31 GeehyCuboProg测试文件\测试用文件\F407 \write_Flash_file.bin



Figure 19 Automatic operation mode interface

Notes:

- 1. Select "Erase all space", then perform the erase operation after "Start";
- 2. Select "Update file", you can operate the options in item 5;
- 3. If you select "Update Option bytes", it will automatically jump to the corresponding option byte interface www.geehy.com Page 23



in item 4, and you can configure the option byte;

4. Click to switch to the option byte interface;

5. "Update file" option;

6. Click "Select File" to select the file to be downloaded and updated. The file formats you can select include .bin, .hex, .s19;

7. You can enter the start address for downloading updates only when you select the .bin file.

8. Select "Erase the space Used", then perform the erase operation after "Start";

9. If this option is selected, verify the data after the data download and update is completed;

10. Select "Run after updating the firmware", then run the program after the data download and update is completed;

11. Click "Start", start the automatic operation, in the order of item 1, 2, 3 to perform the cycle.

13.4 **Operating process**

Language English 💌	Bar Option Bytes	
COM COM COM Port COM12	 Erase all space Update file Update Option Bytes 	1 O Stop
TimeOut2STypeAPM32F035_64K▼Product ID0x0001FW Version1.0	D:\desktop\测试文件\文件\2023.03.31 GeehyCuboProg测试文件\测试用文件\F407\write_Flash_file.bin Start Address 0x0800000 C Erase the space Used Verify programming 10% 4 Log	Select File
Exit-Automatic 2 User Manual	[2023-10-09 16:55:01.0400] INFO Enter automatic operation mode [2023-10-09 16:55:01.0400] INFO Erase all space [2023-10-09 16:55:01.0520] INFO Erasing the entire address space is complete! [2023-10-09 16:55:01.0520] INFO Update file [2023-10-09 16:55:01.0520] INFO Start updating firmware 3	*



Figure	20	Automatic	operation	mode	interface

Language En	glish 🔻	器 Option Bytes		
COM 💌	In DisConnect	Erase all space		
COM Port Baudrate	COM12 ▼	Update file		
TimeOut Type	2 APM32F035_64K	D:\desktop\测试文件\文件\2023.03.31 GeehyCuboProg测试文件\测试用文件\F407\write_Flash_file.bin III Select File		
Product ID FW Version	0x001 1.0	Start Address 0x08000000		
🛞 Exit-At	ıtomatic	Log [2023-10-09 16:55:18.5101] INFO Firmware update completed! [2023-10-09 16:55:18.5101] INFO Update Option Bytes [2023 10 09 16:55:18 5191] INFO Enich updating Option Bytes [2023 10 09 16:55:18 5191] INFO Enich updating Option Bytes[2023 10 09 109 1	€) ≪	
🗍 User Manual		[2023-10-09 16:55:19.5731] WARN This execution is complete, disconnect this device and connect to the next one! [2023-10-09 16:55:19.5731] WARN Waiting for the next device to connect		

Figure 21 Automatic operation mode interface

Notes:

1. Click "Stop" to stop the detection device after the completion of this operation;

2. Click "Exit-Automatic", that is, after the completion of this operation to stop the detection device, and switch to the previous operation interface;

- 3. Operation process record;
- 4. Operation progress display;
- 5. After the previous operation is completed, wait for the test device.



14 Upgrades

14.1 Client update

Every time the client program is opened, the client automatically checks if there is a new version of the client that needs to be updated. If there is, the client will display the following prompt:

New Version	\times
The client has a new version. Do you want to upgrade it?	
是(Y) 否(N)	

Figure 22 Client update prompt

Notes:

1. Click "Yes": The client automatically downloads the corresponding latest version from the server and opens the latest version of the client after completion.

2. Click "No": The client does not update and remains at the current version.

Tip: The automatic update function of the client requires the computer to be connected to the internet.

14.2 Firmware upgrade

Every time the client program is opened and the programming tool is inserted, the client will check if there is a new version of the firmware that needs to be updated. If there is, the client will display the following prompt:

New Version	\times
The Firmware has a new version, do you need to upgrade?	
是(Y) 否(N)	

Figure 23 Firmware upgrage prompt

Notes:

1. Click "Yes": The client will upgrade the firmware version of the programmer to the latest firmware



version.

2. Click 'No': The firmware will not be upgraded and will remain at the current firmware version.



15 Version history

Date	Version	Revision History	
May 4, 2023	1.0.0	New edition	
		(1) Added support for APM32F035 series and APM32F411 series	
Contombox 20	1.0.1	chips;	
September 26,		(2) In PROG operation mode, the function of subsection burning	
2023		different data files is added;	
		(3) Added features related to automatic operation mode, Chapter 13.	
	1.0.2	(1) Added support for G32A1465 series chips and APM32M3514	
		series chips;	
		(2)Firmware version V0.29;	
		(3) In PROG operation mode: 1. The start of the configuration	
		information area is deleted on the Prog operation interface Address;	
		2. Cancel the address of the read data with the write file;	
		(4) Resolved parsing time that was too long when parsing large hex	
April 12, 2024		files;	
April 12, 2024		(5)The binding between ISP and DFU when reading data and the	
		address of the loss file is removed.;	
		(6)Solve the problem of inconsistent grid height caused by carriage	
		return and line feed in the ASSCI code of the reading interface.	
		(7)Solve the problem that after each read, the saving progress has	
		been 100%, and the data will be stuck;	
		(8)Optimized prog mode: When the connected chip id is different	
		from the selected chip ID, the read interface will be cleared.	
	1.0.3	(1)Added support for APM32E030 series , APM32F402 series ,	
		APM32F403 series chips and G32R501 series chips;	
		(2)Firmware version V0.30;	
		(3)In PROG operation mode, due to the characteristics of the	
February 7,2025		G32R501 series chips, a new DCS KEY page has been added.	
		When performing offline downloads or online operations, a window	
		will pop up to confirm the configuration of the DCS KEY;	
		(4) Fix the issue where the hex file parses successfully in version	
		V1.0.1 but fails to parse in version V1.0.2.	
		(5) Added new client-side automatic update functionality.	

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