

# megawin ICP32\_Programmer User Manual

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# Index

Use	r Manual	1
1.	Introduction	3
2.	Update Programmer	4
3.	Update Target	10
4.	Note :	11
5.	Revision History	12



#### 1. Introduction

The "ICP32\_Programmer.exe" is a software designed for megawin's MLink . Users can update the application code under the software tool without removing the mounted MCU chip from the actual end product. In addition, because the programming data to be programmed to the target can be saved in the non-volatile storage of MLink, this stand-alone programmer is able to work without host(PC) intervention. This feature is especially useful in the field without a PC.



#### 2. Update Programmer

The following figure shows the GUI (Graphic User Interface) of the PC-site application program. The following sections will demonstrate how this tool can be used very easily.

Step 1: Choose a "MCU Part No".

ICP32_Programmer (v0.70) FW = v0.70		
	5 6	2142
Programmer Type     MCU Part No     Update H/W Option       C ISP     ISP     ISP     MG32F02A132     ▼     C No     © Yes	Load File	Update Target
Programming Area	Save *.MPJ	Update Programmer
C User Define Address : 0x	Exit	Insert ISP-Code
H/W Option Setting       BOOT_MS         ISP-memory       Application Flash         Set None       IWDT_EN         IAP-memory       IWDT_DIV         Set None       IAPLB: N/A	LOCK BOD0_WE BOD1_WE WDT_EN WDT_WP WDT_WE	☐ IWDT_SLP ☐ IWDT_STP ☐ RST_PIN ☐ SWD_PIN ☐
Binary Code Buffer		*

(Figure 1)



Step 2 : Click "Load File" and choose loading AP(Code) or IAP(Data). "Load File" can be clicked repeatedly to load different files. While loading IAP(Data), user have to key in Address. HEX and BIN data formats are supported for file loading.

ICP32_Programmer (v0.70) FW =	v0.70		<u> </u>
	M. Low	5 6	
Programmer Type MCU Part N C ISP © ICP MG32F02A	Dupdate H/W Option	Load File	Update Target
Programming Area	Whole-chip	Save *.MPJ	Update Programmer
H/W Option Setting	BOOT_MS	Exit	
Set None	Select AP/IAP area	D0_WE	
Set None IAPLB: N/A	<ul> <li>AP (Code)</li> <li>IAP (Data)</li> </ul>	IT_WP	
Binary Code Buffer	Address : 0x 20000		*
			Ŧ
<			Auto Reload Code

(Figure 2)



Step 3: Click "Insert ISP-Code" may choose to insert megawin-provided ISP code or User-defined ISP Code. If ISP function is not needed, Step 3 can be omitted.

ICP32_Programmer (v0.70)	FW = v0.70	X
	win Williams	
Programmer Type MCL	Part No     Update H/W Option       Update H/W Option     Load File       C No<	Update Target
Programming Area	Save *.MPJ	Update Programmer
O User Define Address	: 0x © Whole-chip Exit	Insert ISP-Code
H/W Option Setting		
Set: None	Insert ISP Code 23	☐ IWDT_SLP ☐ IWDT_STP
IAP-memory Set None V IAPLB:	megawin-provided ISP code     User-defined ISP code	☐ RST_PIN ☐ SWD_PIN ☐
Binary Code Buffer	Browse	
0000h 28 04 00 20 0010h FF FF FF FF FF 0020h FF FF FF FF FF	Insert Exit	?
0030h FF FF FF FF 5 0040h 09 01 00 00	09 01 00 00 00 00 00 00 09 01 00 00	
0050h 09 01 00 00	09 01 00 00 09 01 00 00 09 01 00 00	
0060h 09 01 00 00 0	00 00 00 00 09 01 00 00 09 01 00 00	
0080h 09 01 00 00		
0090h 09 01 00 00	09 01 00 00 00 00 00 00 00 00 00	
00A0h 09 01 00 00	00 00 00 00 00 00 00 00 00 00 00 00	
00B0h 09 01 00 00	09 01 00 00 00 00 00 00 00 00 00 00	
00C0h 03 48 85 46	DO FO 56 F8 00 48 00 47 79 12 00 00 .H . >	Gy
4	14 20 /1 40 08 42 02 DU EF F3 05 60 ( qF.E	- //F : •
1.		
		Auto Reload Code
:\Work\PC Win7 HD\XP Temp	CustomProblem\MG32F132_IAP\Objects\. Size = 5032 Byte	s Checksum = 0xDBFF

(Figure 3)



Step 4: H/W Option setting

The hardware option defines the chip default behavior those are not volatile after power off. For details of the hardware options, please refer to user guide.

ICP32_Programmer (v0.70) FW = v0.70		_ <b>-</b> ×
megawin make you win	5 6	
Programmer Type         MCU Part No         Update H/W Option           C ISP	Load File	Update Target
Programming Area	Save *.MPJ	Update Programmer
C User Define Address : 0x • Whole-chip	Exit	Insert ISP-Code
HW Option Setting ISP-memory Set 2 K IAP-memory Set None V IAPLB: 20800h IWDT_DIV F/4096 V IWDT_DIV F/4096 V	LOCK BOD0_WE BOD1_WE WDT_EN WDT_WP WDT_WE	☐ IWDT_SLP ☐ IWDT_STP ☐ RST_PIN ☐ SWD_PIN ☐
Binary Code Buffer		
00000h 28 04 00 20 F1 00 00 00 89 07 00 00 D5 00 00	00 ( ??	? 🔺
00010h FF	FF 00 00	
00010h         FF         FF <th< td=""><td>FF 00 00 00</td><td></td></th<>	FF 00 00 00	
00010h         FF         FF <th< td=""><td>FF 00 00 00  00 00 00</td><td></td></th<>	FF 00 00 00  00 00 00	
00010h         FF         FF <th< td=""><td>FF 00 00 00 00 00 00 00 00 00</td><td>·····</td></th<>	FF 00 00 00 00 00 00 00 00 00	·····
00010h         FF         FF <th< td=""><td>FF 00 00 00 00 00 00 00 00 00 00 00</td><td></td></th<>	FF 00 00 00 00 00 00 00 00 00 00 00	
00010h         FF         FF <th< td=""><td>FF 00 00 00 00 00 00 00 00 00 00 00 00 0</td><td></td></th<>	FF 00 00 00 00 00 00 00 00 00 00 00 00 0	
00010h         FF         FF <th< td=""><td>FF 00 00 00 00 00 00 00 00 00 00 00 00 0</td><td>    Gy EE2</td></th<>	FF 00 00 00 00 00 00 00 00 00 00 00 00 0	    Gy EE2
00010h FF	FF 00 00 00 00 00 00 00 00 00 00 00 00 0	······ ······ ······ ······ ······ ·····
00010h         FF         FF <th< td=""><td>FF 00 00 00 00 00 00 00 00 00 00 00 00 0</td><td></td></th<>	FF 00 00 00 00 00 00 00 00 00 00 00 00 0	
00010h FF	FF 00 00 00 00 00 00 00 00 00 00 00 00 0	Gy

(Figure 4)



ICP32_Programm	er (v0.70) FW = v0.70			_ <b>_</b> X
	gawin 🥆	and and	6	
Programmer Type	MCU Part No MG32F02A132	Update H/W Option	Load File	Update Target
Programming Area			Save *.MPJ	Update Programmer
C User Define	Address : Ox	Whole-chip	Exit	Insert ISP-Code
H/W Option Setting ISP-memory Set 2 K IAP-memory Set None	▼ IAPLB: 20800h	BOOT_MS Boot Flash	LOCK BOD0_WE BOD1_WE INDT_EN INDT_WP INDT_WE	☐ IWDT_SLP ☐ IWDT_STP ☐ RST_PIN ☐ SWD_PIN ☐
Binary Code Buffer				
00000h 28 04 00010h FF FI 00020h FF FI 00030h FF FI 00040h 09 00 00050h 09 00 00060h 09 00 00080h 09 00	4         00         20         F1         00         00         00           F         FF         FT         00 <td>0         89         07         00         00         D5         00         00           F         FF         FF<td>00 【?.?.?. FF 00 00 00 00 00 00 00 00 00</td><td>· · · · · · · · · · · · · · · · · · ·</td></td>	0         89         07         00         00         D5         00         00           F         FF         FF <td>00 【?.?.?. FF 00 00 00 00 00 00 00 00 00</td> <td>· · · · · · · · · · · · · · · · · · ·</td>	00 【?.?.?. FF 00 00 00 00 00 00 00 00 00	· · · · · · · · · · · · · · · · · · ·
				Auto Reload Code
D:\Work\PC Win7 HD\	KP Temp\CustomProble	em\MG32F132_IAP\Objects\	Size = 135168 Bytes	Checksum = 0xD8ED

Step 5 : Click "Update Programmer" to download programming data to the MLink.

(Figure 5)



Step 6 : Setup "Max Counter" and "Serial Number".

The "Max Counter" will be used to limit the number of off-line programming. The Serial Number will be programmed along with the code. If the function is not needed, just press "**OK**" to update the MLink.

et Max Counter &	Serial Number	×
Max Counter		-
	0	
Enable SerialN		
String	Number	
	<b>0</b> ×0000000	
🔲 Auto Increment Number		Ok
Start Address	End Address	
0x 00020FF0	0x 00020FFF	Cancel
,	,	

(Figure 6)

How to user the Serial Number :

- (1) Enable the Serial Number function and totally 16 bytes.(12 bytes for **String** and 4 bytes for **Number**) will be used.
- (2) Totally 12 bytes for the String and it could be used for manufactory or product string
- (3) Totally 4 bytes for the **Number** and the value could be from 0x00000000 to 0xFFFFFFF.
- (4) The Number (as set in step 3) will be automatically added one when finish the "Download".
- (5) **Start Address** for the Serial Number. It is limited from the chip size minus sixteen, please make sure this range from start to end is unused.



## 3. Update Target

How to update the target? User may:

3.1. Click "Update Target" to program on-line update, referring to steps 1 through 4 of 2. Update Programmer, or

3.2. Click "Download" of MLink to program off-line update, referring to 2. Update Programmer.





#### 4. Note :

4.1. After using ICP32\_Programmer to update the target, the chip normally is unlock.

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## 5. Revision History

Revision	Description	Date
v1.00	Release version	2019/07/16