



Elprotronic MSP430 Flash Programmer User Guide

[Home](#) » [Elprotronic](#) » Elprotronic MSP430 Flash Programmer User Guide 

Contents

- [1 Elprotronic MSP430 Flash Programmer](#)
- [2 Product Information](#)
- [3 Product Usage Instructions](#)
- [4 Copyright](#)
- [5 END USER LICENSE AGREEMENT](#)
 - [5.1 FCC STATEMENT](#)
- [6 FlashPro430 Command Line interpreter](#)
- [7 List of command line instructions](#)
- [8 Documents / Resources](#)
 - [8.1 References](#)
- [9 Related Posts](#)



Elprotronic MSP430 Flash Programmer



Product Information

- The MSP430 Flash Programmer is a software tool designed by Elprotronic Inc. for programming MSP430 microcontrollers.
- The software is licensed and may only be used or copied in accordance with the terms of such a license.
- This device complies with Part 15 of the FCC Rules and has been tested and found to comply with the limits for a Class B digital device.
- Elprotronic Inc. assumes no responsibility for any errors or omissions in the information contained in the document.
- The product is not to be used with a programming adapter (hardware) that is not a product of Elprotronic Inc.

Product Usage Instructions

1. Install the MSP430 Flash Programmer software on your computer.
2. Connect your MSP430 microcontroller to your computer using a suitable programming adapter.
3. Launch the MSP430 Flash Programmer software.
4. Select the appropriate settings for your microcontroller and programming adapter.
5. Load the program or firmware you wish to program onto your microcontroller into the MSP430 Flash Programmer software.
6. Program your microcontroller using the MSP430 Flash Programmer software.

Note:

It is important to follow the instructions provided in the user manual carefully and to use the product only as intended to avoid any damage or harm.

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FCC STATEMENT

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

1. this device may not cause harmful interference and
2. this device must accept any interference received, including interference that may cause undesired operation.

NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Warning:

Changes or modifications not expressly approved by Elprotronic Inc. could void the user's authority to operate the equipment.

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

FlashPro430 Command Line interpreter

The FlashPro430 Multi-FPA API-DLL can be used with the command line interpreter shell. This shell allows to use the standard Command Prompt windows or script files to execute the API-DLL functions. See the FlashPro430 Multi-FPA API-DLL User's Guide (PM010A05) for detailed descriptions of the API-DLL functions.

When the standard software package is installed then all required files are located in the directory

- C:\Program Files\Elprotronic\MSP430\USB FlashPro430\CMD-line

and contains

- FP430-commandline.exe -> command line shell interpreter
- MSP430FPA.dll -> standard API-DLL files
- MSP430FPA1.dll -> —,.,.,.,——
- MSPlist.ini -> initialization file

All API-DLL files should be located in the same directory where the FP430-commandline.exe is located. To start the command line interpreter, the FP430-commandline.exe should be executed.

Command Syntax:

instruction_name (parameter1, parameter2,) parameter:

1. string (file name etc.) – "filename"
2. numbers
 - integer decimal eg. 24
 - or integer hex eg. 0x18

Note: Spaces are ignored

Instructions are not case sensitive

- F_OpenInstancesAndFPAs("*"# "*")
- and f_openinstancesandfpas("*"# "*") are the same

Example-1:

Run the FP430-commandline.exe

Type:

F_OpenInstancesAndFPAs("*"# "*") // open instances and find the first adapter (any SN) Press ENTER – result ->1 (OK)

Type:

F_Initialization() //initialization with config taken from the config.ini//setup taken from the FlashPro430 – with defined MSP430 type, code file etc.

- Press ENTER – result ->1 (OK)

Type:

F_AutoProgram(0)

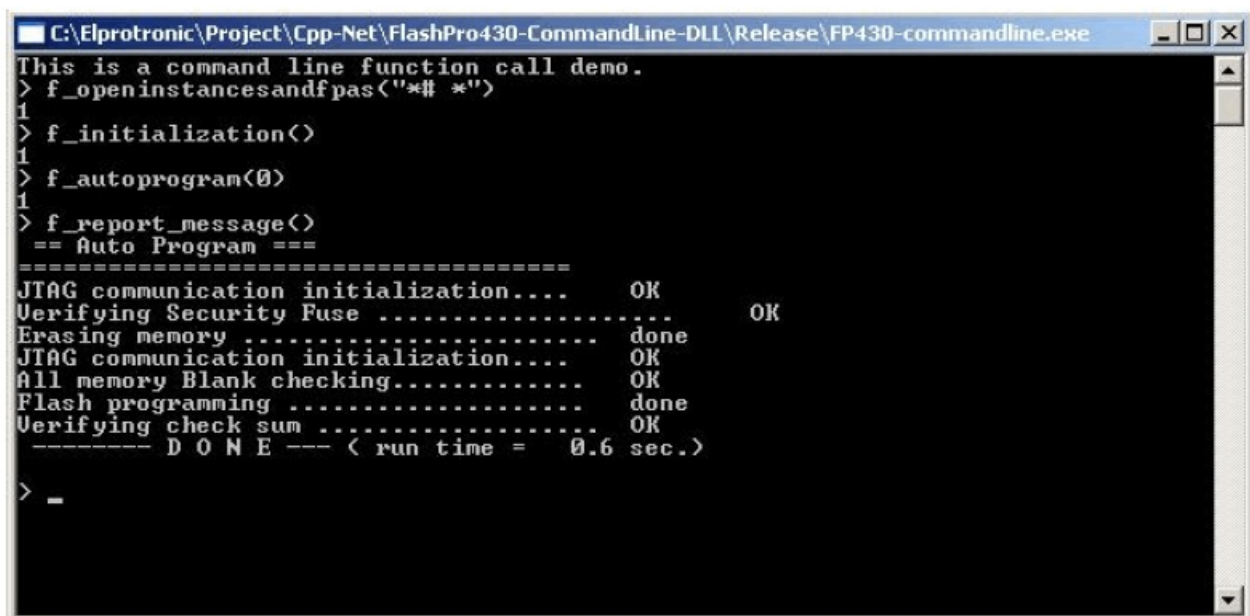
Press ENTER – result ->1 (OK)

Type:

F_Report_Message()

Press ENTER – result -> displayed the last report message (from the F_Autoprogram(0))

See Figure A-1 for the result:



```
C:\Elprotronic\Project\Cpp-Net\FlashPro430-CommandLine-DLL\Release\FP430-commandline.exe
This is a command line function call demo.
> f_openinstancesandfpas( "*"# "*" )
1
> f_initialization()
1
> f_autoprogram(0)
1
> f_report_message()
== Auto Program ==
=====
JTAG communication initialization.... OK
Verifying Security Fuse ..... OK
Erasing memory ..... done
JTAG communication initialization.... OK
All memory Blank checking..... OK
Flash programming ..... done
Verifying check sum ..... OK
----- D O N E --- < run time = 0.6 sec.>

> _
```

Figure A-1

Type quit() and press ENTER to close the FP430-commandline.exe program.

Example-2:

Run the FP430-commandline.exe and type the following instructions:

- F_OpenInstancesAndFPAs("*"# "*") // open instances and find the first adapter (any SN)

- F_Initialization()
- F_Report_Message()
- F_ConfigFileLoad("filename") //put valid path and config file name
- F_ReadCodeFile(1, "FileName") //put valid path and code file name (TI.txt format)
- F_AutoProgram(0)
- F_Report_Message()
- F_Put_Byte_to_Buffer(0x8000, 0x11)
- F_Put_Byte_to_Buffer(0x8001, 0x21)
- F_Put_Byte_to_Buffer(0x801F, 0xA6)
- F_Open_Target_Device()
- F_Segment_Erase(0x8000)
- F_Copy_Buffer_to_Flash(0x8000, 0x20)
- F_Copy_Flash_to_Buffer(0x8000, 0x20)
- F_Get_Byte_from_Buffer(0x8000)
- F_Get_Byte_from_Buffer(0x8001)
- F_Get_Byte_from_Buffer(0x801F)
- F_Close_Target_Device() quit()

List of command line instructions

- quit(); close the command interpreter program
- help() ;display list below
- F_Trace_ON()
- F_Trace_OFF()
- F_OpenInstances(no)
- F_CloseInstances()
- F_OpenInstancesAndFPAs("FileName")
- F_Set_FPA_index(fpa)
- F_Get_FPA_index()
- F_LastStatus(fpa)
- F_DLLTypeVer()
- F_Multi_DLLTypeVer()
- F_Check_FPA_access(index)
- F_Get_FPA_SN(fpa)
- F_APIDLL_Directory("APIDLLpath")
- F_Initialization()
- F_DispSetup()
- F_Close_All()
- F_Power_Target(OnOff)
- F_Reset_Target()
- F_Report_Message()
- F_ReadCodeFile(file_format, "FileName")
- F_Get_CodeCS(dest)

- F_ReadPasswFile(file_format, "FileName")
- F_ConfigFileLoad("filename")
- F_SetConfig(index, data)
- F_GetConfig(index)
- F_Put_Byte_to_Buffer(addr, data)
- F_Copy_Buffer_to_Flash(start_addr, size)
- F_Copy_Flash_to_Buffer(start_addr, size)
- F_Copy_All_Flash_to_Buffer()
- F_Get_Byte_from_Buffer(addr)
- F_GetReportMessageChar(index)
- F_Clr_Code_Buffer()
- F_Put_Byte_to_Code_Buffer(addr, data)
- F_Put_Byte_to_Password_Buffer(addr, data)
- F_Get_Byte_from_Code_Buffer(addr)
- F_Get_Byte_from_Password_Buffer(addr)
- F_AutoProgram(0)
- F_VerifyFuseOrPassword()
- F_Memory_Erase(mode)
- F_Memory_Blank_Check()
- F_Memory_Write(mode)
- F_Memory_Verify(mode)
- F_Open_Target_Device()
- F_Close_Target_Device()
- F_Segment_Erase(address)
- F_Sectors_Blank_Check(start_addr, stop_addr)
- F_Blow_Fuse()
- F_Write_Word(addr, data)
- F_Read_Word(addr)
- F_Write_Byte(addr, data)
- F_Read_Byte(addr)
- F_Copy_Buffer_to_RAM(start_addr, size)
- F_Copy_RAM_to_Buffer(start_addr, size)
- F_Set_PC_and_RUN(PC_addr)
- F_Synch_CPU_JTAG()
- F_Get_Targets_Vcc()

Note:

Not all instructions listed in Chapter 4 are implemented in the command line interpreter. For example – all instructions using pointers are not implemented, however, this is not limiting the access to all features of the API-DLLs, because all instructions using pointers are implemented also in a simpler way without pointers.

Documents / Resources



[Elprotronic MSP430 Flash Programmer](#) [pdf] User Guide
MSP430 Flash Programmer, MSP430, Flash Programmer, Programmer

References

- [Elprotronic Inc. | Provider of Flash and Gang Programmers](#)