

***GangPro430 Flash Programmer***  
***for the TI's MSP430Fxx microcontrollers***  
***Command Line Interpreter User's Guide***

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*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.*



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

*Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.*

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# ***1. GangPro430 Command Line interpreter***

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The **GangPro430 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 file to execute the API-DLL functions. See the **GangPro430 Multi-FPA API-DLL User's Guide ( PM025A02 )** 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 GangPro430\CMD-line**

and contains

GP430-commandline.exe	-> command line shell interpreter
GangPro430FPA.dll	-> standard API-DLL files
GangPro430FPA1.dll	-> ----,----,-----
MSPlist.ini	-> initialization file

All API-DLL files should be located in the same directory where the **GP430-commandline.exe** is located. To start the command line interpreter, the **GP430-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 **GP430-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 GangPro430 - with defined MSP430 type, code file etc.
```

Press ENTER - result ->1 (OK)

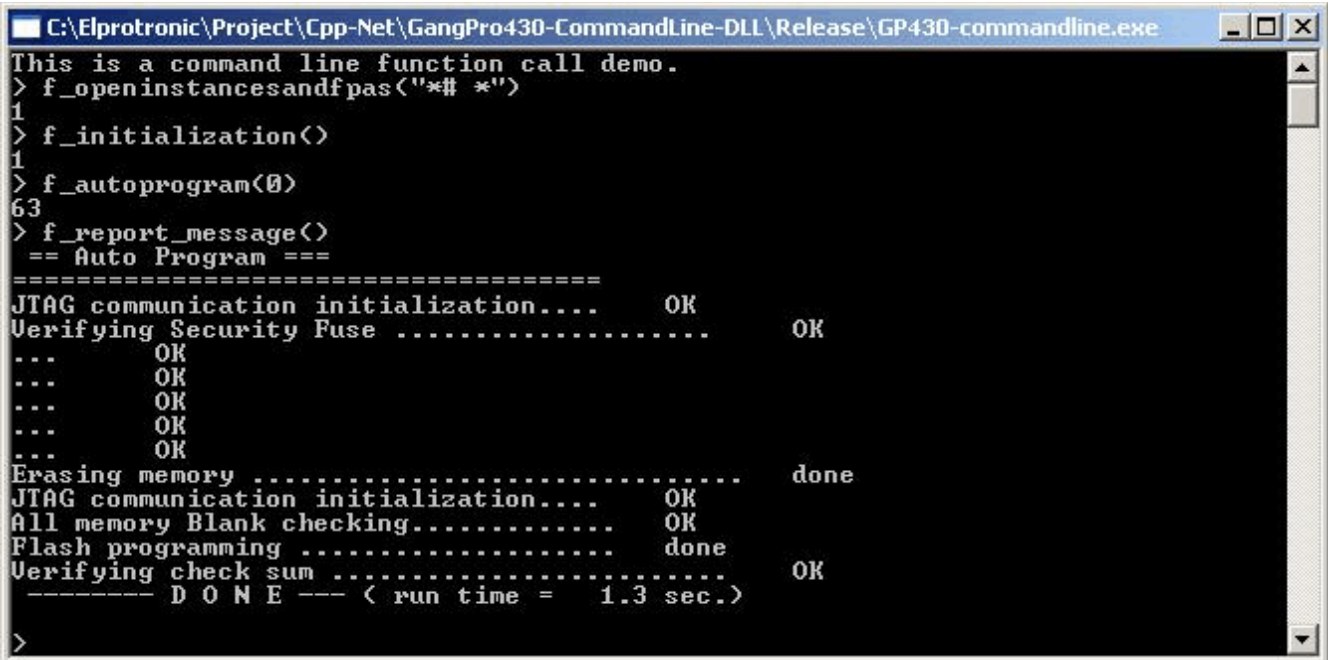
Type:

```
F_AutoProgram( 0 )
```

Press ENTER - result ->63 ( 63-> 0011 1111 -> programmed six targets -> OK )

Type:

```
F_Report_Message()
```



```
C:\Elprotronic\Project\Cpp-Net\GangPro430-CommandLine-DLL\Release\GP430-commandline.exe
This is a command line function call demo.
> f_openinstancesandfpas("&# *")
1
> f_initialization()
1
> f_autoprogram(0)
63
> f_report_message()
== Auto Program ==
=====
JTAG communication initialization.... OK
Verifying Security Fuse ..... OK
... OK
... OK
... OK
... OK
... 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 = 1.3 sec.)
>
```

Figure A-1

Press ENTER - result -> displayed the last report message (from the F\_Autoprogram(0))

See figure A-1 for result:

Type **quit()** and press ENTER to close the **GP430-commandline.exe** program.

## Example-2:

```
F_OpenInstancesAndFPAs( "*#*" ) // open instances and find the first adapter (any SN)
F_Initialization()
F_Report_Message()
F_ConfigFileLoad( "filename" ) //put vaild path and config file name
F_ReadCodeFile( 1, "FileName" ) //put vaild path and code file name (TI.txt format)
F_AutoProgram( 0 )
F_Report_Message()
.....
.....
F_Put_Byte_to_Gang_Buffer( 1, 0x8000, 0x11 )
F_Put_Byte_to_Gang_Buffer( 1, 0x8001, 0x21 )
.....
F_Put_Byte_to_Gang_Buffer( 1, 0x801F, 0xA6 )
F_Open_Target_Device()
F_Segment_Erase( 0x8000 )
F_Copy_Buffer_to_Flash( 0x8000, 0x20 )
F_Copy_Flash_to_Gang_Buffer( 0x8000, 0x20 )
F_Get_Byte_from_Gang_Buffer( 1, 0x8000 )
F_Get_Byte_from_Gang_Buffer( 2, 0x8000 )
F_Get_Byte_from_Gang_Buffer( 1, 0x8001 )
F_Get_Byte_from_Gang_Buffer( 2, 0x8001 )
.....
F_Get_Byte_from_Gang_Buffer( 1, 0x801F )
F_Get_Byte_from_Gang_Buffer( 2, 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 )\n" );  
F\_ReadPasswFile( file\_format, "FileName" )  
F\_ConfigFileLoad( "filename" )  
F\_SetConfig( index, data )  
F\_GetConfig( index )  
F\_Put\_Byte\_to\_Gang\_Buffer( target\_no, addr, data )  
F\_Get\_Byte\_from\_Gang\_Buffer( target\_no, addr )  
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\_Gang\_Flash\_Read()  
 F\_Open\_Target\_Device()  
 F\_Close\_Target\_Device()  
 F\_Segment\_Erase( address )  
 F\_Sectors\_Blank\_Check( start\_addr, stop\_addr )  
 F\_Copy\_Buffer\_to\_Flash( start\_addr, size )  
 F\_Copy\_Gang\_Buffer\_to\_Flash( start\_addr, size )  
 F\_Flash\_to\_Gang\_Buffer( start\_addr, size )  
 F\_Blow\_Fuse()  
 F\_Write\_Word( addr, data )  
 F\_Write\_Byte( addr, data )  
 F\_Copy\_Buffer\_to\_RAM( start\_addr, size )  
 F\_Copy\_Gang\_Buffer\_to\_RAM( start\_addr, size )  
 F\_Copy\_RAM\_to\_Gang\_Buffer( start\_addr, size )  
 F\_Set\_PC\_and\_RUN( PC\_addr )  
 F\_Synch\_CPU\_JTAG()  
 F\_Get\_Targets\_Vcc()  
 F\_Get\_Targets\_Result()  
 F\_Get\_Active\_Targets\_Mask()  
 F\_Disable\_FPA\_index( fpa )  
 F\_Enable\_FPA\_index( fpa )  
 F\_Customize( dest, data )

See chapter 4 for detailed description of the instructions listed above.

**Note:** *Not all instructions listed in the chapter 4 are implemented in the command line interpreter. For example - all instructions uses pointers are not implemented, however this is not limiting the access to all features of the API-DLLs, because all*

*instructions uses pointers are implemented also in the simpler way without pointers.*