

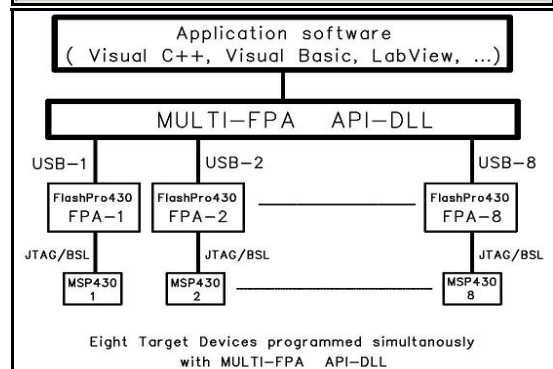
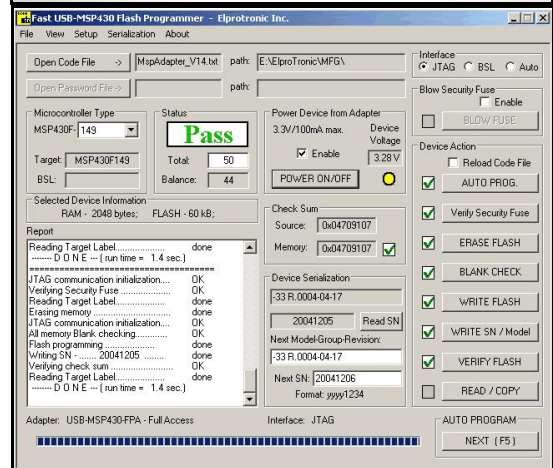
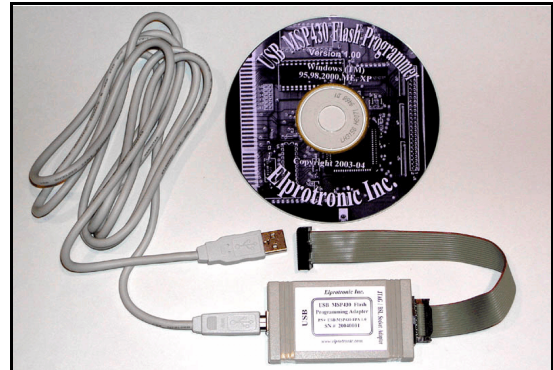
FlashPro430 - Fast MSP430 Flash Programmers



- * **60 kB Flash - can be programmed in 2 seconds.**
- * **Can be erased, blank checked, programmed and verified in less than 4 seconds.**
- * **8 pcs of the MSP430 - 60kB flash each can be programmed simultaneously in 3 seconds using Multi-FPA API-DLL and eight USB-FPAs.**

- * Support all MSP430Fxx microcontrollers from TI.
- * Our programmers are professionally made and are **recommended by Texas Instruments** as the Third Party Tools source.
- * Our programmers are currently **the fastest programmers** on the market.
- * Programmer has a **unique feature** - two interfaces in one package allows to program the target device via **JTAG** or **BSL** Interface.
- * To speed up production process optimized programming algorithms are used to significantly reduce programming time. Our proprietary Fast BSL algorithms allow to communicate with the target devices over **35 times faster** than standard TI BSL (9.6kb/s) reducing programming time from few minutes to few seconds.
- * Communication procedures via JTAG interface are **2-6 times faster** than competitor's programmers.
- * Blow the JTAG security fuse capability.
- * No code size limitations.
- * Target device can be powered from the programming adapter or from external source.
- * Easy to use Windows™ based software.
- * Programmer accept TI (*.txt), Motorola (*.s19) and Intel (*.hex) data files for programming.
- * Combine code files capability.
- * Lock setup capability, useful in production.
- * Software package can assign and automatically increment **serial number**, model type and revision. Serial Number with or without an automatically inserted current date can be stored in the FLASH memory in HEX, BCD or ASCII format. Log file capability allowing to review information about the flashed target devices.
- * **Serial number** can be read from the bar code using **Bar Code Scanner** and saved in the target's device FLASH.
- * **Multi-FPA API-DLL** software package can control up to eight programmers working simultaneously from other programs.
- * **MSP430.DLL** allows to use USB-FPA as a FET with the IAR, CrossWork or Quadravox debugging software.
- * Programmer has been fully tested to comply with the **FCC** and **CE** requirements.
- * Our programmers are inexpensive - for users interested in basic features we provide limited, or lite software version. Even in the lite software version you can get more features than are provided by competitor's programmers.

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Elprotrotronic Inc.
91 Alpine Crescent
Richmond Hill, Ontario
L4S-1V9, CANADA

Email: info@elprotrotronic.com
Voice: 905-780-5789
Fax: 905-780-2414
www.elprotrotronic.com

The Fast MSP430 Flash Programmer is dedicated to programming the Texas Instruments MSP430Fxx family microcontrollers. Using the Fast MSP430 Flash Programmer the target device can be programmed via the JTAG Interface, or via the BSL (Boot Strap Loader) Interface. MSP430Fxx microcontrollers can be programmed via the JTAG Interface as long, as the Security Fuse is not blown. When the Security Fuse is blown then the MSP430Fxx microcontrollers still can be accessible, but only via the BSL Interface.

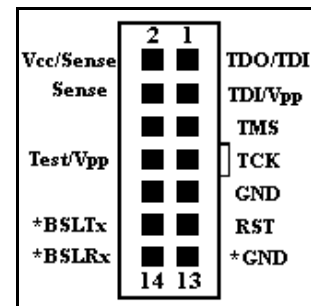
Each programmer package consists of a microcontroller based adapter, Windows™ based software and a cable used to connect the adapter with the computer's USB or parallel port. The internal adapter software allows communication with the programmed device at a high speed. The effective speed using the JTAG interface is around **29 kbytes/s** (for USB model) or **20kbytes/s** (for Parallel Port models). Our proprietary Fast Bootstrap Loader (Fast BSL) Interface (Bootloader) allows communication with the programmed device at a speed of **up to 350 kb/s**, which is **over 35 times faster** than with standard BSL (communication speed 9.6 kb/s). Due to the high speed of the programmer, it can be effectively utilized to program flash devices in the production process. For example, a microcontroller with **60 kB Flash**, such as MSP430F149, can be programmed in **3.5 seconds** via the JTAG Interface, or in **6 seconds** via the BSL Interface. This time includes initialization, erasing memory, blank checking, programming and fast verification.

To simplify the production process, the programming software package can assign serial numbers (SN), model types, and revisions. Each serial number is unique for each programmed device and is assigned automatically. Several serial number formats are available. The SN are stored in the target's device Flash memory and in the log file. Log file contain all assigned SN, models, used SN formats, used code file names, time, date and so on.

There are a number of erase/write options available. All or just specified fragments of flash memory can be erased/written. This feature saves time when only specific parts of data/code need to be changed. For example this feature can be used to download the serial number, calibration data or personality data without losing existing program code.

Programmers are available with USB (1.1) and Parallel Port Interface.

USB-MSP430-FPA	USB version model with JTAG and BSL Interface
PE010X01-04	Parallel Port version with JTAG and BSL Interface
PE010X01-01	Parallel Port version with BSL Interface only (10-pins connector)



Programmers use 14-pins standard JTAG connector with added BSL connection to unused pins.

Programming / reading times for a target microcontroller with **60 kbytes** of Flash Memory

Interface type => Communication Speed [kb/s] =>	USB - JTAG ----	USB - BSL 350 kb/s	PP - JTAG ----	PP - BSL 300 kb/s
1. Flash Programming time	2.3 s	5 s	3.8 s	6.5 s
2. Flash Reading time	1.4 s	5.2 s	3.8 s	9 s
3. Flash Erasing time	0.4 s	0.5 s	0.5 s	0.8 s
4. Flash Blank Checking time	0.4 s	1.4 s	0.5 s	1.4 s
5. Verification time	1.2 s	5.2 s	4.0 s	9 s
6. Auto Program with fast verification time	3.5 s	6.3 s	5.0 s	7.5 s
7. Auto Program with standard verification time	4.0 s	10 s	8.5 s	15 s
8. Blowing the Security Fuse time	0.3 s	-	0.7 s	-

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 Voice: 905-780-5789
 Fax: 905-780-2414
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