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Fast and Reliable Production Flash and Gang Programmers for MCUs

Programmer Selection

Programmers for ARM MCUs from Multiple Vendors:

FlashPro-ARM, GangPro-ARM

- **Texas Instruments**
- **ST Microelectronics**
- **Silicon Labs**
- **Renesas Electronics**
- **NXP / Freescale**
- **Nordic Semiconductors**
- **Maxim Integrated**
- **Microchip / Atmel**
- **Marvell Tech.**
- **Cypress Semiconductor (coming soon)**
- **Active Semi**

Programmers for MCUs from Texas Instruments only:

FlashPro430, GangPro430, FET-Pro430   - supports all MSP430 MCUs

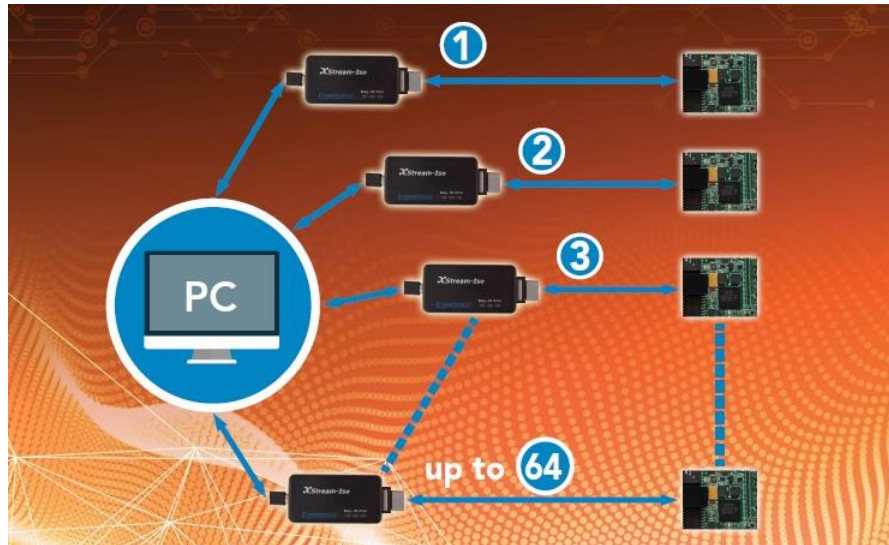**FlashPro-CC, GangPro-CC** - supports *all Wireless Solution (Chipcon) MCUs*

FlashPro-2000 - *supports C*2000 MCUs
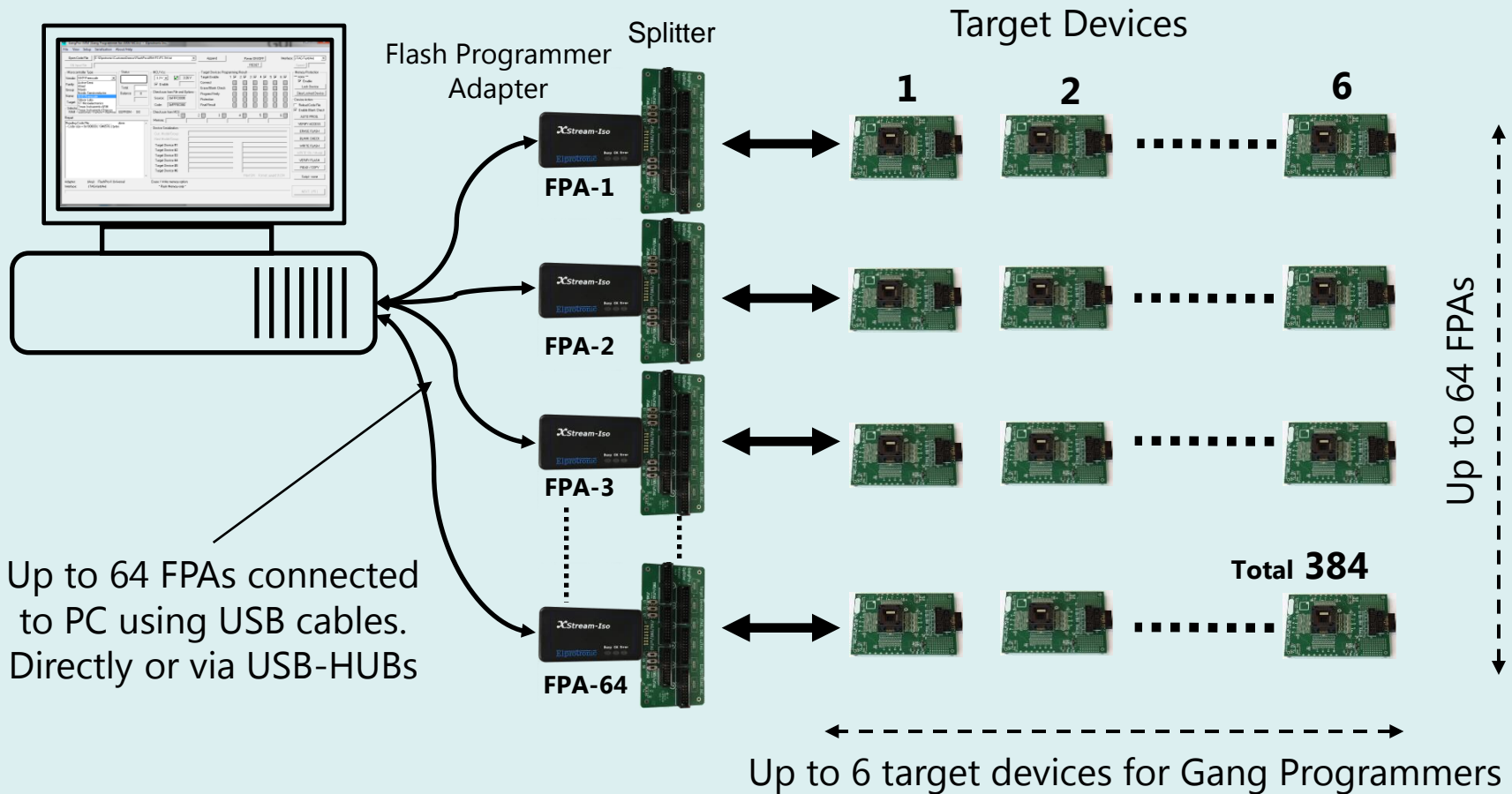
Programmers for 8-32b MCUs:

FlashPro-M - supports *STM-8 from ST Microelectronics, AVR and PIC from Microchip / Atmel*
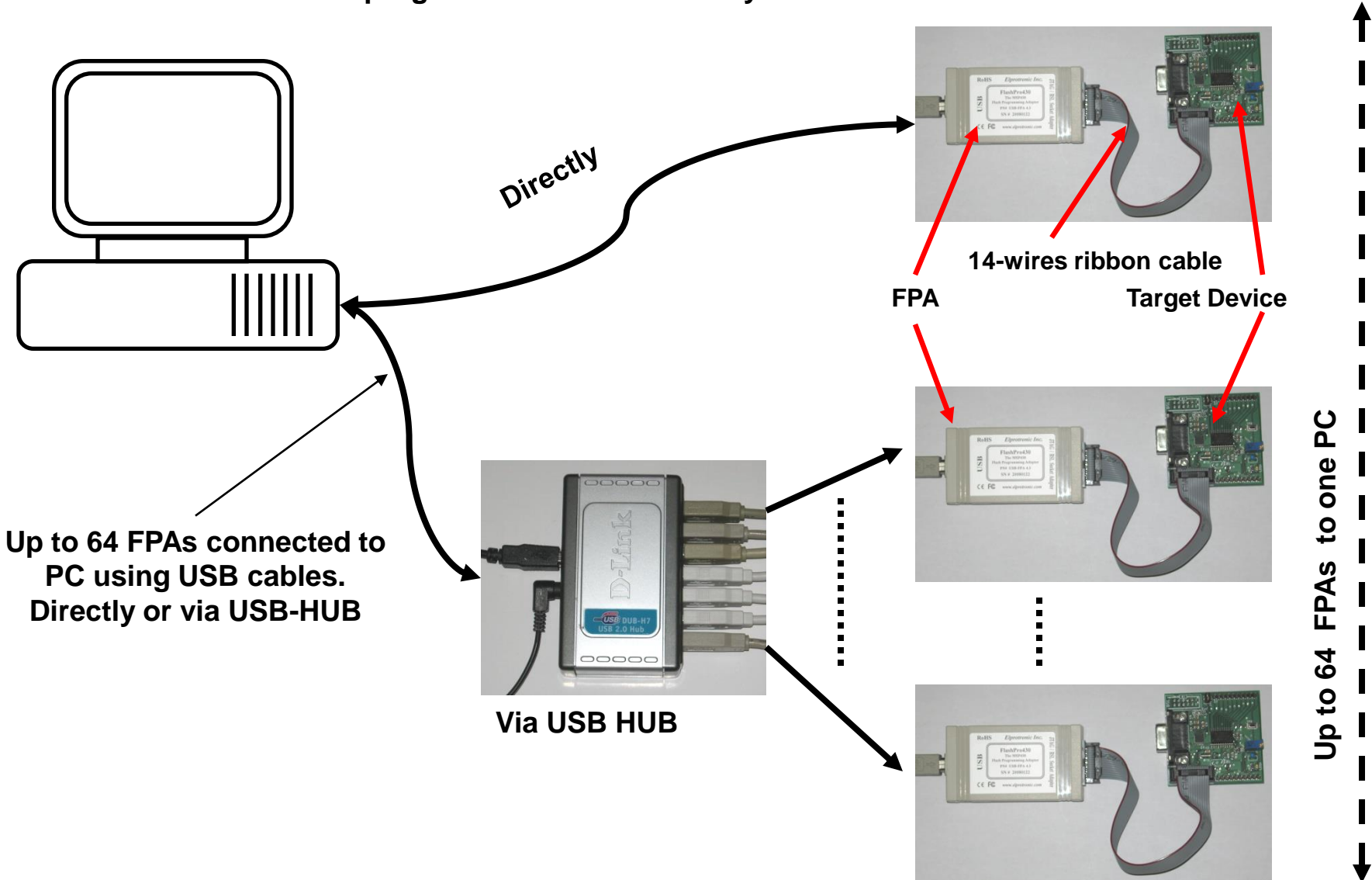
General Features

- Up to 64 Flash Programming Adapters (FPAs) can be connected to one PC.
- Supports JTAG, cJTAG, SWD, SBW, BSL, UART communication interfaces (interface list depends on supported devices)
- Programmable JTAG communication speed (if applicable) up to 20 MHz with *Xstream-Iso* and *XstreamPro-Iso* adapters and up to 4 MHz with old *USB-FPA* adapter
- Transfer speed up to 1 MBytes/s with *Xstream-Iso* and *XstreamPro-Iso* adapters and up to 50 kBytes/s with old *USB-FPA* adapter
- Full memory or page memory erase capability
- Check Sum verification
- No code size limitations
- Target device can be powered from the programming adapter or from external source
- Easy to use Windows™ based software. For *Xstream-Iso* and *XstreamPro-Iso* adapters also Debian Linux support (amd64/armhf) . Also runs on Raspberry Pi.
- Accepts TI (*.txt), Motorola (*.s19, *.s28, *.s37, *.srec) and Intel (*.hex) data files
- Lock setup capability, useful in production
- Software package can assign and automatically increment a serial number, model type and revision. Serial Number with or without an automatically inserted current date can be stored in Flash memory in HEX, BCD or ASCII format
- DLL software package can control up to 64 FPAs from user application
- USB-2.0 Full-Speed to communication between PC and programming adapter. The *XstreamPro-Iso* adapter also provide communication via LAN
- Programming adapter has been fully tested to comply with FCC and CE requirements

Multiple Gang Programmers Setup

Splitter

Target Devices

Flash Programmer Adapter

1   2   6

FPA-1

FPA-2

FPA-3

FPA-64

Up to 64 FPAs connected to PC using USB cables. Directly or via USB-HUBs

Total **384**

Up to 64 FPAs

Up to 6 target devices for Gang Programmers

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Flash Programmer

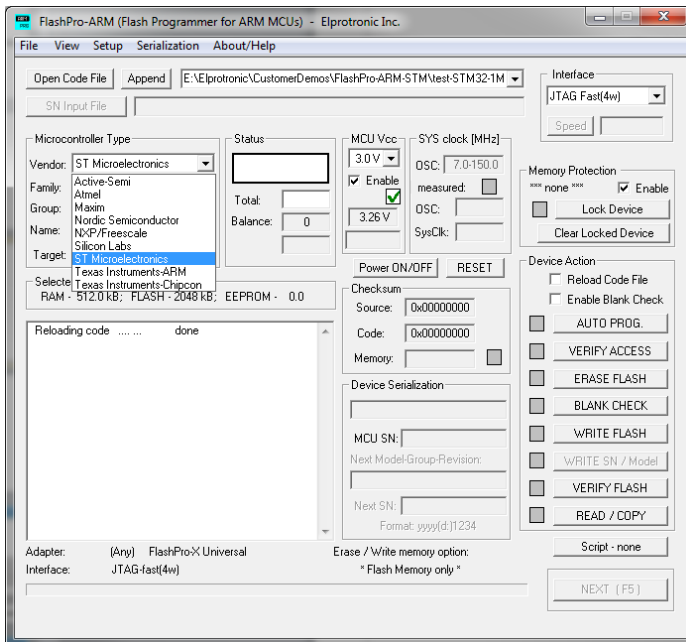**Single Target: Each FPA programs one target. Up to 64 target devices can be programmed simultaneously**

Directly

14-wires ribbon cable

FPA   **Target Device**

Up to 64 FPAs connected to PC using USB cables. Directly or via USB-HUB

Via USB HUB

Up to 64 FPAs to one PC

Gang Programmer

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Multiple Targets: Each FPA programs up to 6 targets. Up to 384 target devices in panel can be programmed simultaneously

Directly
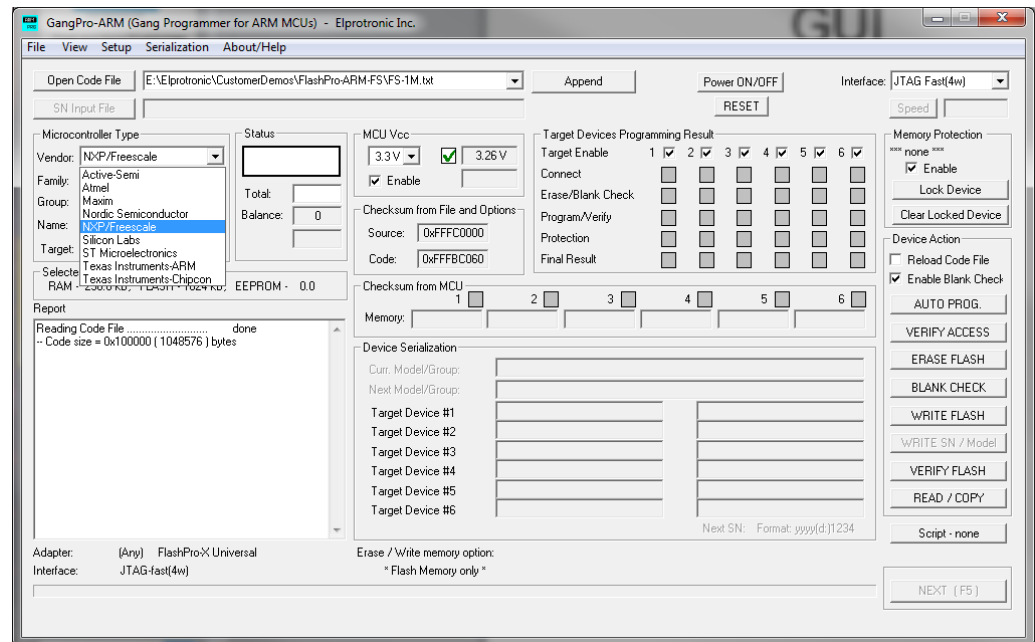
Via USB HUB

PCB Panel

Access to boards via nails
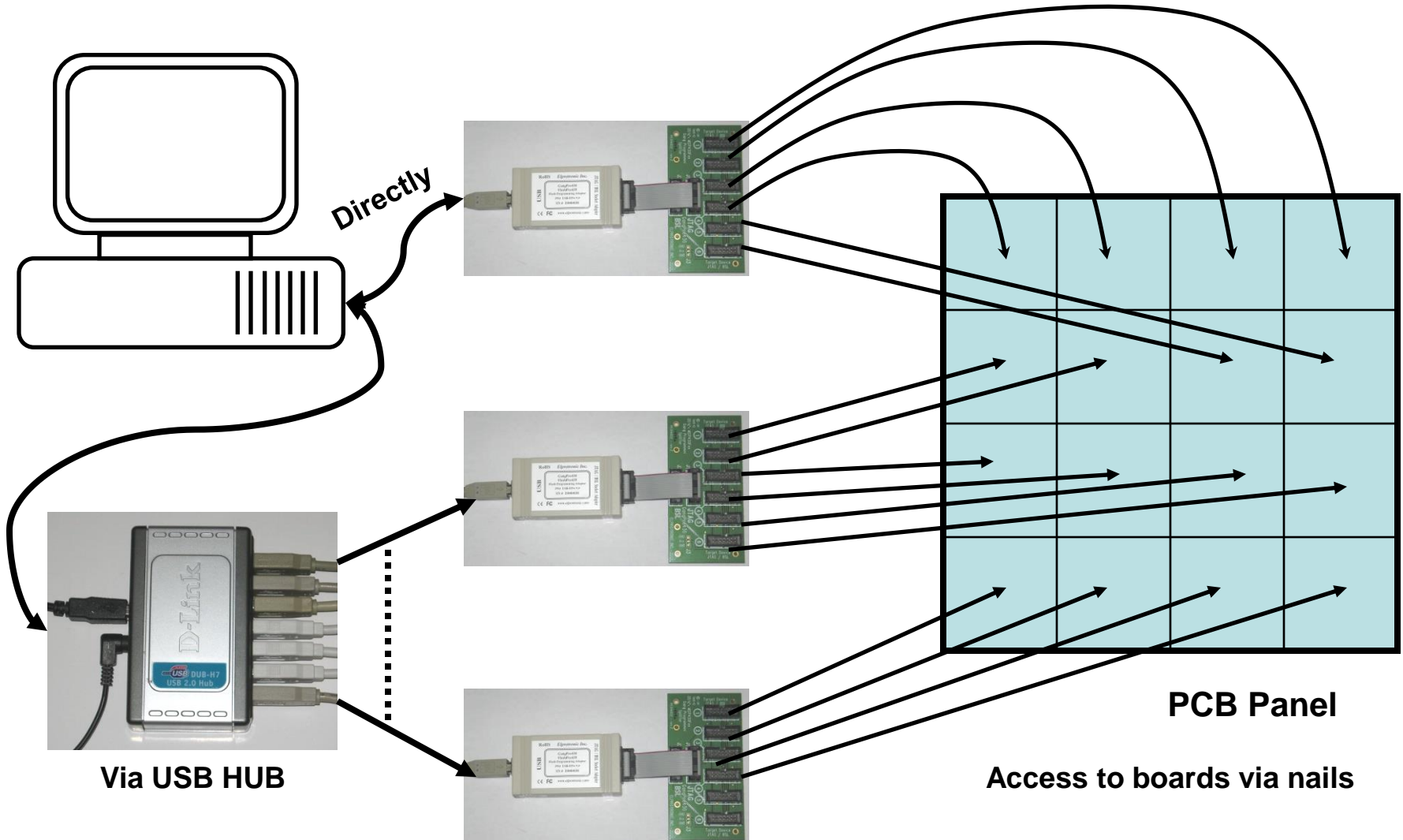
GUI – Main Screen

* Software package contains ready to use GUI for FlashPro-xx and GangPro-xx.

* One GUI controls one adapter only.

* Easy to use setup, serialization, MCU protection and more.

FlashPro-ARM GUI　　　　　**GangPro-ARM GUI**

GUI - Serialization

- **7 fixed serialization formats**

- **Custom defined format**

- **Programmable serialization location**

- **Serialization log file**

- **Supported Bar Code Scanner**

Control all FPAs using one DLL via Application

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Use only one DLL: Thread-safe Generic DLL or broadcast-style Multi-FPA DLL

Application Software (C++, C#, LabVIEW etc.)

Generic DLL or Multi-FPA API-DLL   *(FlashPro – DLL)*

Multi-FPA DLL Selector and Task Manager

API-DLL   **API-DLL** · · · · · · · · · · **API-DLL**

Simultaneous execution

USB-1   **USB-2**   **USB-64**

FPA-1   **FPA-2** · · · · · · · · · · **FPA-64**

Device-1   **Device-2** · · · · · · · · · · **Device-64**

Control all FPAs using one DLL via Application

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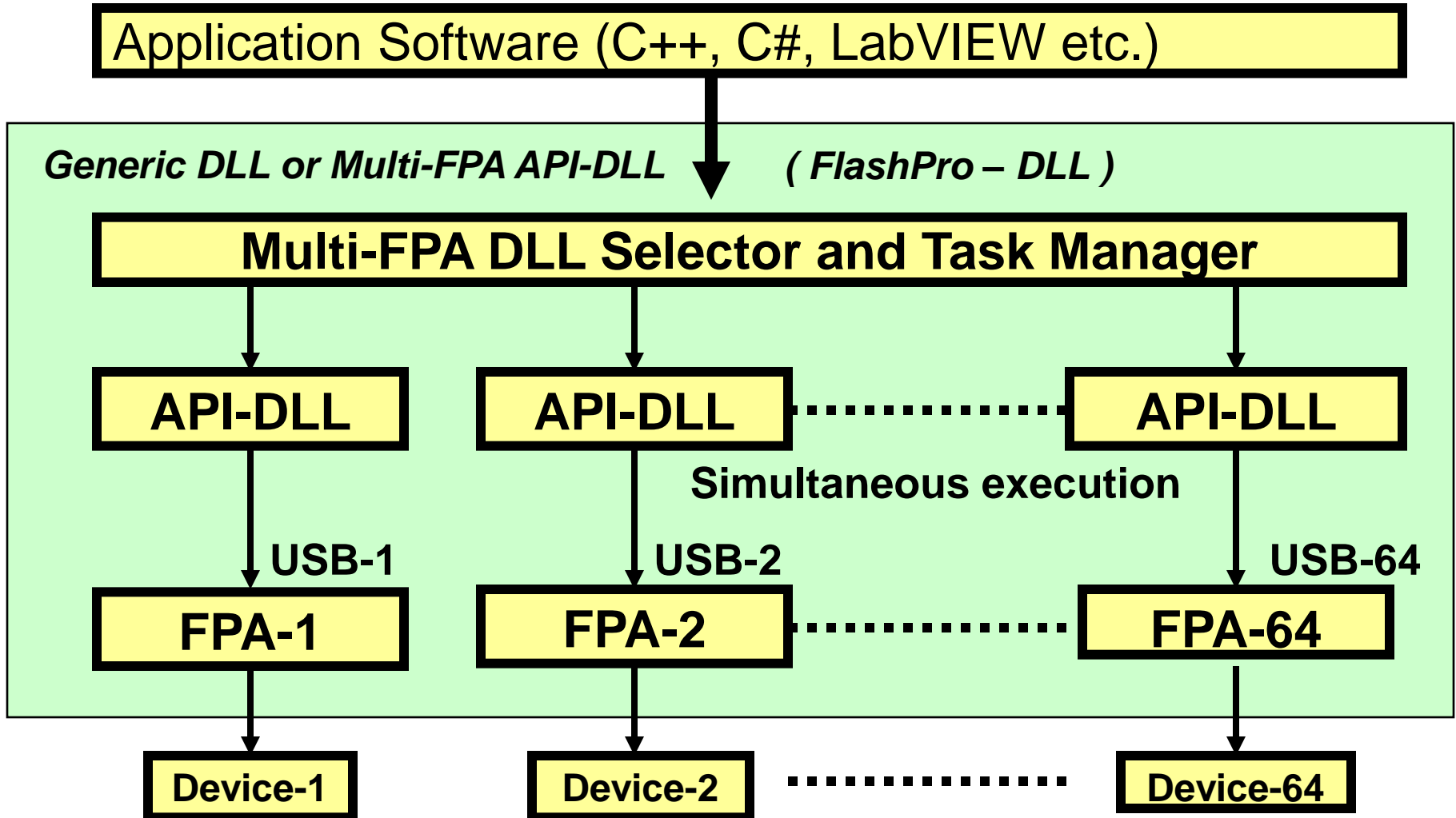
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Application Software (C++, C#, LabVIEW, etc.)

Generic DLL or Multi-FPA API-DLL   *(GangPro – DLL)*

Generic DLL or Multi-FPA DLL Selector and Task Manager

API-DLL .... **API-DLL** .... **API-DLL**

Simultaneous execution

USB-1   **USB-2**   **USB-64**

FPA-1 .... **FPA-2** **FPA-64**

Device-6   **Device-12** **Device-384**

Programming Adapters

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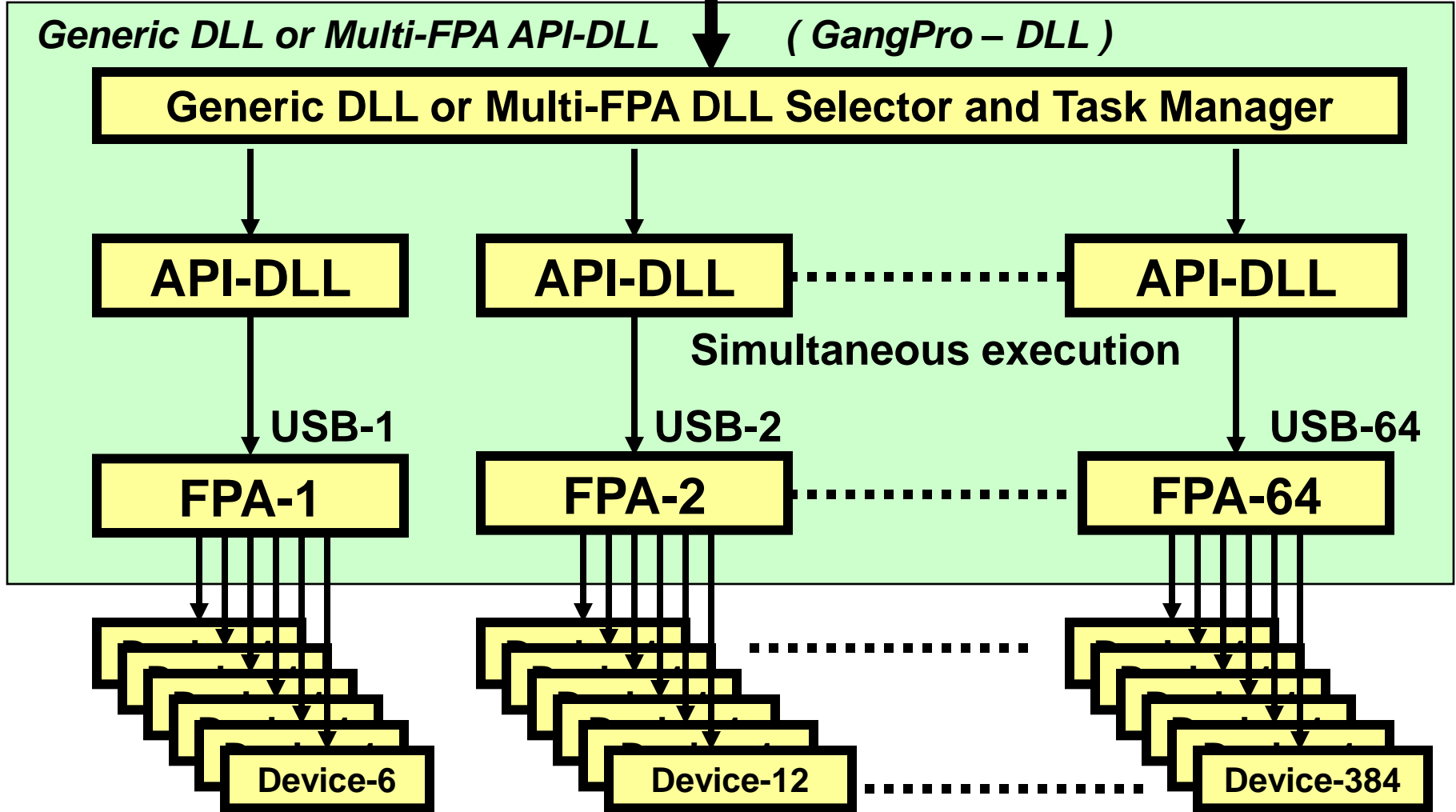
Features	USB-FPA	XStream-Iso	XStreamPro-Iso NEW
Suffix in the Product Part Number	none e.g. FP-ARM	XS- e.g. XS-FP-ARM	X2S- e.g. X2S-FP-ARM
Data transfer speed to / from Target Device	Up to 100 kbytes/s	Up to 1 Mbytes/s	Up to 1 Mbytes/s
JTAG / SWD Hi Speed	Fixed ~ 1.5MHz	Prog. 1-20MHz	Prog. 1-20MHz
JTAG / SWD Med / Low Speed	800kHz / 400kHz	800kHz / 400kHz	800kHz / 400kHz
Supported Comm. Interfaces (vary by software)	JTAG, cJTAG, SWD, SBW, BSL, DD, UART ..	JTAG, cJTAG, SWD, SBW, BSL, DD, UART ..	JTAG, cJTAG, SWD, SBW, BSL, DD, UART ..
DLL for debugging	MSP430	MSP430, ARM (IAR EW-ARM)	MSP430, ARM (IAR EW-ARM)
Image Memory (for Standalone, Security)	-	-	24 MB Flash
RAM Buffer for real time monitoring (current, voltage)	-	32 kB RAM	32 kB RAM
Galvanic Isolation between PC and Target Device	-	YES	YES
Vcc and I/O range	1.65 - 4.0 V	1.65 - 4.0 V	1.2 - 4.0 V
Vcc supplied from Adapter to Target Device	1.65-4.0 V /up to 200mA	1.65-4.0 V /up to 200mA	1.2-4.0 V /up to 200mA
Icc Current measurements	-	20 uA – 200 mA	50 nA – 200 mA
Communication via USB 2.0 Full Speed	YES	YES	YES
Communication via LAN (Ethernet)	-	-	YES
Adapter powered from	USB +5V	USB +5V	USB +5V or PoE +48V
I/O lines in 3-state	YES. Pullup 1M to Vcc	YES. Pullup 1M to Vcc	YES
Power line in 3-state	-	-	YES
Up to 64 adapters can be connected to one PC	YES	YES	YES
FCC / CE test certification	YES	YES	YES
OS	Windows ™ 32-b applications	Windows ™ 32,64-b applications, Linux	Windows ™ 32,64-b applications, Linux
Size	79 * 42 * 21 mm	79 * 42 * 21 mm	79 * 42 * 21 mm

XStreamPro-Iso Programming Adapter

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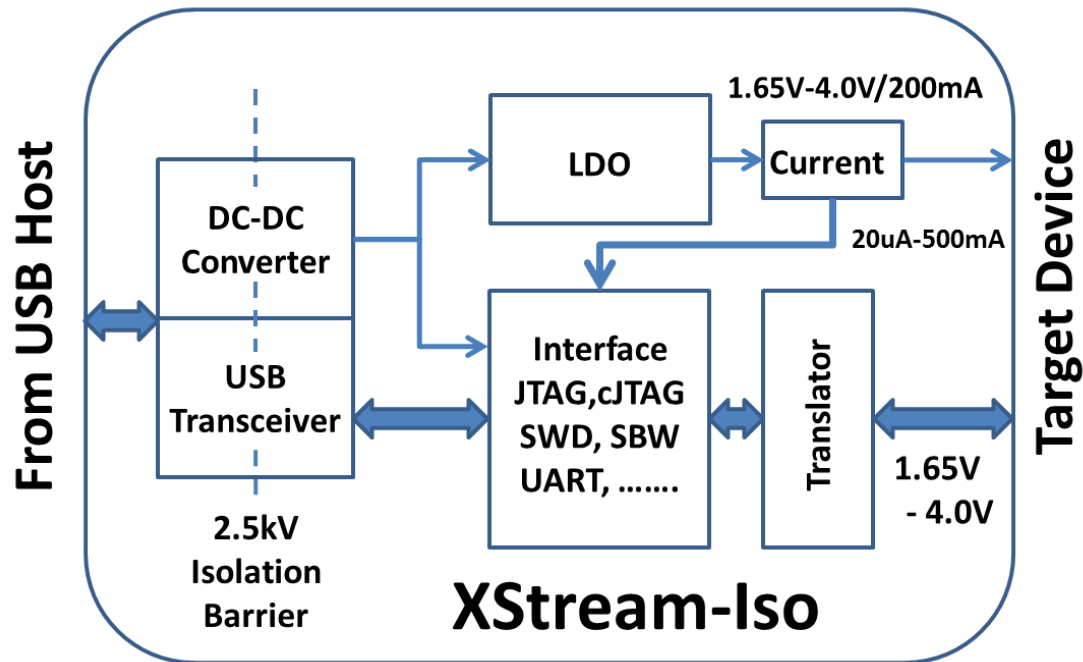www.elprotronic.com
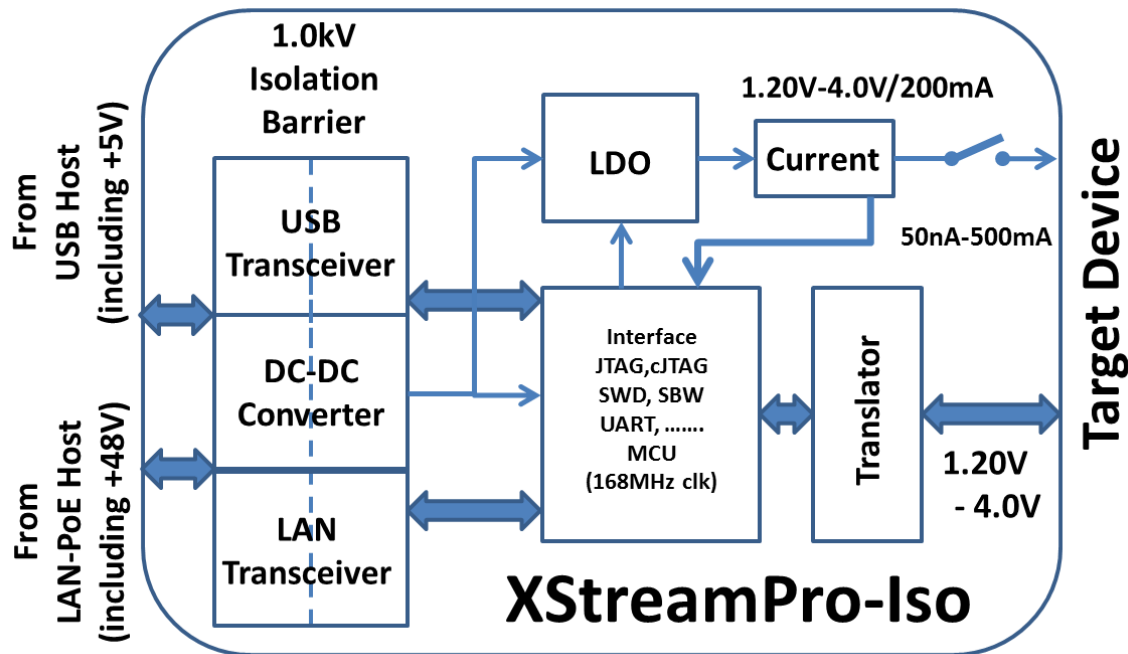
Features:

- Data transfer up to 1 Mbytes/s
- JTAG/SWD speed up to 20 MHz
- Galvanic Isolation 1.0 kV
- Vcc: 1.2 – 4.0 V, current up to 200 mA
- Current measurements 50nA – 200 mA
- Communication via USB 2.0 or LAN. Power from USB (5V) or from LAN PoE (48V)
- I/O lines and Power line are isolated from target device if XStreamPro-Iso is in idle mode
- Up to 64 adapters can be connected to one PC
- Image Memory for project storage (in the future) – 24 MB
- Size 79 * 42 * 21 mm
- Software compatible with the old USB-FPA (FlashPro430, FlashPro-ARM……)
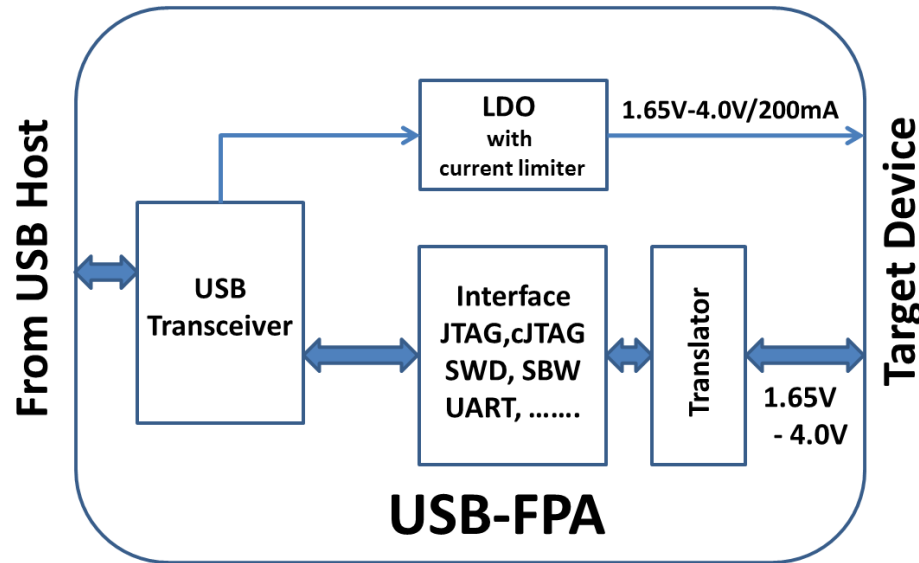- FCC / CE test certification

NEW

XStream-Iso Programming Adapter

Features:

- Data transfer up to 1 Mbytes/s
- JTAG/SWD speed up to 20 MHz
- Galvanic Isolation 2.5 kV
- Vcc: 1.65 – 4.0 V, current up to 200 mA
- Current measurements 20uA – 500 mA
- Up to 64 adapters can be connected to one PC
- Size 79 * 42 * 21 mm
- Software compatible with the old USB-FPA (FlashPro430, FlashPro-ARM……)
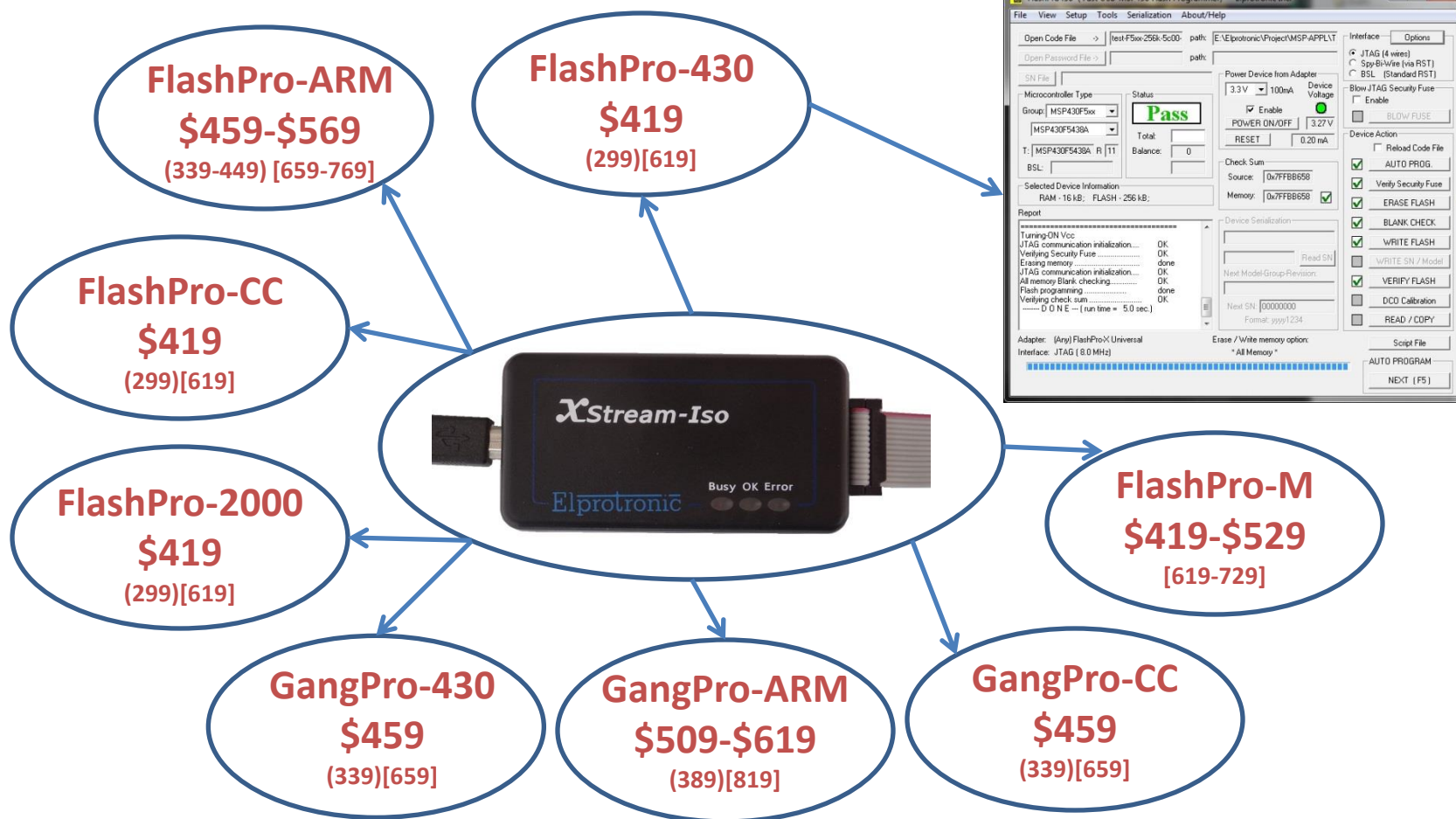- FCC / CE test certification

USB-FPA Programming Adapter

Features:

- Data transfer up to 50 kbytes/s
- JTAG speed up to 4 MHz. SWD speed up to 1.5 MHz
- Vcc: 1.65 – 4.0 V, current up to 200 mA
- Up to 64 adapters can be connected to one PC
- Size 79 * 42 * 21 mm
- FCC / CE test certification

XStream-Iso Package

FlashPro-ARM
$459-$569
(339-449) [659-769]

FlashPro-430
$419
(299)[619]

FlashPro-CC
$419
(299)[619]

FlashPro-2000
$419
(299)[619]

FlashPro-M
$419-$529
[619-729]

GangPro-430
$459
(339)[659]

GangPro-ARM
$509-$619
(389)[819]

GangPro-CC
$459
(339)[659]

Note: Price of package with **USB-FPA** adapter is **($120)** lower than with **XStream-Iso**.
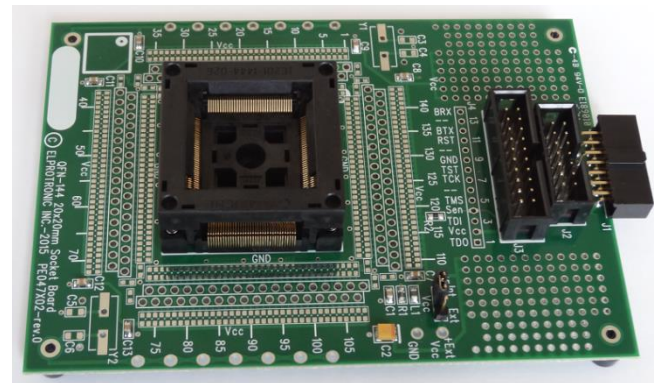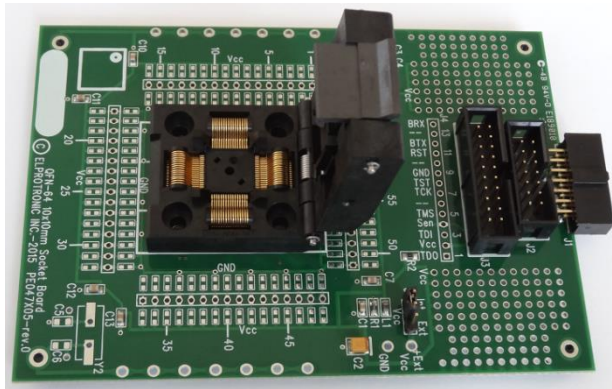Price of package with **XStreamPro-Iso** adapter is **[$200]** higher than with **XStream-Iso**.

Other Products

USB Full Speed Isolator
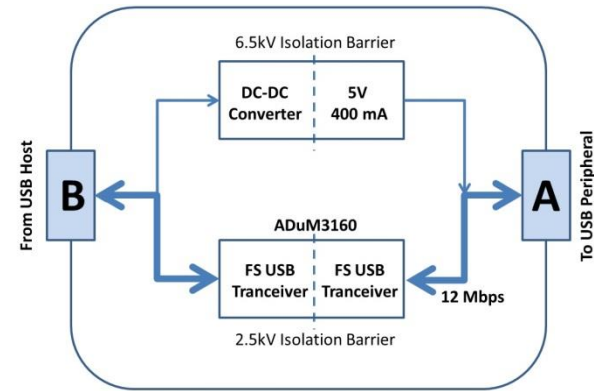
Universal Socket Boards:

QFN-32, QFN-48, QFN-64, QFP-32, QFP-48, QFP-64, QFP-80, QFP-100, QFP-144

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Elprotronic Inc.:
X2S-FP-ARM-1V X2S-FP-X X2S-FP-MSP X2S-GP-ARM XS-GP-CC XS-FP-M XS-FP-M-1V X2S-GP-ARM-1V X2S-FP-430 X2S-FP-ARM XS-FP-CC

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Elprotronic Inc.](#):

[X2S-GP-430](#) [XS-GP-M-1V](#) [X2S-FP-M](#) [X2S-GP-M-1V](#) [X2S-FP-CC](#) [X2S-FP-M-1V](#) [X2S-GP-CC](#)