



Flash Emulation Tools

A powerful tool that includes the hardware and software required to complete much of your application development work. The flash memory can be erased and programmed in seconds with only a few keystrokes, and since the MSP430 Flash is extremely low power, no external power supply is required. The tool has an integrated software environment and connects directly to the PC which greatly simplifies the set-up and use of the tool.

MSP-FET430P120:

Applications: MSP430F11x1, MSP430F12x, MSP430F11x2 and MSP430F12x2 product families **Includes:** • MSP430F12x FET development board with 28 SOIC ZIF socket, LED indicator, FET to PC cable and header pinouts for prototyping • Two F1232 flash devices • Two MSP430F123 flash devices • Integrated IAR Kickstart user interface which includes assembler, linker, simulator, source-level debugger and limited C-compiler • Full documentation on CD-ROM

MSP-FET430P140:

Applications: MSP430F13x, MSP430F14x, MSP430F15x and MSP430F16x product families **Includes:** • MSP430F13x/14x FET development board with 64 QFP ZIF socket • LED indicator • FET to PC adapter • Header pinouts for prototyping • Two MSP430F149 flash devices • Integrated IAR Kickstart user interface which includes assembler, linker, simulator, source-level debugger and limited C-compiler • Full documentation on CD-ROM **Features:** • JTAG based real-time-in-system emulation • CD-ROM

MSP-FET430X110:

The Flash Emulation Tool (FET) supports complete in-system development and is available for all MSP430Fxx Flash devices. Programming, assembler/C-source level debug, single includes IAR Kickstart IDE, assembler, linker, simulator and 2-kb C-compiler **Includes:** • MSP430F11x(1) FET development board with 20-SOIC ZIF socket, LED indicator, FET to PC cable, and header pinouts for prototyping • Two MSP430F1121 flash devices • Integrated IAR Kickstart user interface which includes assembler, linker, simulator, source-level debugger and function limited C-compiler • Full documentation on CD-ROM

MSP-FET430UIF:

This is a USB interface pod (does not include target board) that is used to program and debug MSP430 FET tools and test boards through the JTAG interface. Similar to the Parallel Port interface pod included in our previous FET tools, the USB pod uses a USB PC port to communicate to the Debugger Software (IAR Kickstart software included) running on the PC.

The USB interface pod uses the standard 14 pin header to communicate to the MSP430 device either using the standard JTAG or pin saving Spy Bi-Wire (2-wire JTAG) protocol (information about which protocol is supported by the MSP430 derivative can be found in the device specific data sheet). The tool has an integrated software environment and connects directly to the PC. The flash development tool supports development with all MSP430 flash parts.

MSP-FET430UXX:

This includes the hardware and software required to complete much of your application development work. The tool has an integrated software environment and connects directly to the USB port of a PC which greatly simplifies the set-up and use of the tool. **Includes:** • FET development board • LED indicator • USB to JTAG adapter • Cables and header pinouts for prototyping • Two MSP430F2274IDA flash devices • Integrated IAR Kickstart user interface which includes assembler, linker, simulator, source-level debugger and limited C-compiler • Full documentation on CD-ROM

MSP-FET430U5X100:

This flash emulation tool (FET) includes the hardware and software required to quickly begin application development on the MSP430 MCU. It includes a ZIF socket target board (MSP-TS430PZ5X100) and a USB debugging interface (MSP-FET430UIF) used to program and debug the MSP430 in-system through the JTAG interface or the Spy Bi-Wire (2-wire JTAG) protocol.

MSP-GANG430:

This in-system gang programmer tool can be used to program up to 8 MSP430 FLASH devices simultaneously. These devices can be programmed in-circuit or in stand-alone sockets and software is included to facilitate device programming. The programming can be done with a PC or standalone. Since the graphical user interface (GUI) is DLL-based the DLL can be used independently from the GUI. Several examples show how the DLL could be applied at various high level languages (C, C++, VisualBasic, LabView) **Includes:** • In circuit gang programmer • One Cable Sub-D 9 Pin and one Cable Sub-D 25 Pin • Target expansion board • Eight 14-pin cables for connectivity of up to 8 targets • Read Me First • CD-ROM with MSP-GANG430 SW and MSP-GANG430 User's Guide.

External power supply is required and not included with MSP-GANG430. The voltage of the power supply must be between 9Vdc and 15Vdc and must be capable of providing a minimum current of 300mA.

296-16696-ND	MSP-FET430P120	\$101.00	296-22910-ND	MSP-FET430U28 (20 and 28 pin SOWB)	\$152.00
296-13850-ND	MSP-FET430X110	\$50.00	296-22904-ND	MSP-FET430U38 (38 pin TSSOP)	\$152.00
296-22900-ND	MSP-FET430UIF	\$101.00	296-22902-ND	MSP-FET430U64 (64 pin QFP)	\$152.00
296-22908-ND	MSP-FET430U14 (14 pin TSSOP)	\$152.00	296-23448-ND	NEW! MSP-TS430PZ5X100	\$49.38
296-23115-ND	MSP-FET430U23X0 (40-pin RHA)	\$152.00	296-23449-ND	NEW! MSP-FET430U5X100	\$150.17
			296-22901-ND	MSP-GANG430	\$203.00

MSP430 USB Development Stick



Complete Development Tool including all the hardware and software to evaluate the MSP430F2013 and develop a complete project in a convenient USB stick form factor. The USB port provides enough power to operate the ultra-low-power MSP430 so no external power supply is required

Features: • Development Tool including a USB debugging interface and detachable target board • LED indicator • Removable USB stick enclosure • Debugging interface supports development with all MSP430F20xx devices • Integrated IAR Kickstart user interface which includes an assembler, linker, simulator, source-level debugger and limited C-compiler • Full documentation on CD-ROM

296-20630-ND EZ430-F2013 \$20.40

MSP-EVK430S320 Evaluation Kit

The MSP-EVK430S320 evaluation kit supports the MSP430x32x family of devices and comes with the PMS430E325FZ (UV EPROM) assembled in a socket

Kit Includes: • MSP430 EVK board with UV erasable EPROM, LCD, PC connector • MSP-PRGS430 serial programming adapter • IAR Kickstart IDE, assembler, linker and limited C-compiler • CD-ROM with software tools and complete documentation

296-13849-ND MSP-EVK430S320 \$407.00

MSP-PRGS430 Serial Programmer

This serial programming adapter is a second-generation programming tool that can be used to program any MSP430 Flash, OTP or UV-EPROM device. These devices can be programmed in-circuit or in stand-alone sockets and software is included to facilitate device programming • Power supply not included. Recommend T924-P5P-ND

Applications: • MSP430 Flash • OTP or UV-EPROM device
Includes: • MSP-PRGS430 programmer • Serial cable • Target cable • CD-ROM • Documentation

296-16698-ND MSP-PRGS430 \$203.00

MSP-CCE430PRO Software Code Composer

Kit Includes: • MSP430 C compiler, assembler and linker • Source Code Debugger • Integrated Visual Project Manager • Virtual and hardware breakpoints • Integrated editor: Highlights syntax errors, Auto parameter information, and Code completion.

296-23001-ND MSP-CCE430PRO \$509.00

MSP-FET430PIF Interface Debug for MSP430 FET

Kit Includes: • One READ ME FIRST document • One MSP430 CD-ROM • One MSP-FET430PIF interface module • One 25-conductor cable • One 14-conductor cable.

296-23000-ND MSP-FET430PIF \$50.00

MSP-FET430U80 Programmer/Debug Kit

This powerful flash emulation tool includes the hardware and software required to begin application development on the MSP430 MCU. It includes a ZIF socket target board and a USB debugging interface (MSP-FET430UIF) used to program and debug the MSP430 in-system through the JTAG interface or Spy Bi-Wire (2-wire JTAG) protocol. The debugging tool interfaces the MSP430 to the included integrated software environment and includes code to start your design. The MSP-FET430U80 supports all MSP430 flash parts in an 80-pin LQFP package.

296-23005-ND MSP-FET430U80 \$152.00

Experimenter Board for MSP430

The MSP430FG4618/F2013 experimenter's board is based on the ultra-low power MSP430 family of microcontrollers.

296-23006-ND MSP-EXP430FG4618 \$101.00

Target Board for EZ430-F2013

Features:

• Three eZ430-T2012 target boards with a 4-pin connector to fit the eZ430-F2013 USB Development Tool MSP430F2012-based target board • Fully accessible pins • LED indicator

296-23007-ND EZ430-T2012 \$10.20

Development Wireless Tool for MSP430/CC2500

Features:

• USB debugging and programming interface featuring a driverless installation and application backchannel • 21 available development pins • Highly integrated, ultra-low power MSP430 MCU with 16MHz performance • Two general-purpose digital I/O pins connected to green and red LEDs for visual feedback • Interruptible push button for user feedback.

296-23031-ND EZ430-RF2500 \$50.00

Adapter mini-B USB Interface EVM

This EVM serves as an interface adapter or a bridge between a host PC (IBM™ compatible) and one or multiple slave devices via a standard type-A to mini-B USB cable. The communication between the USB interface adapter and the host PC is via USB, communication between the USB interface adapter and the slave device (s) is via an inter-integrated circuit (I²C), SMBus, PMBus and/or general-purpose inputs/outputs GPIOs.

296-23114-ND USB-TO-GPIO \$152.00

TMS370C756A 8-Bit Microcontroller

The TMS370Cx5x family of single-chip 8-bit microcontrollers provides cost-effective real-time system control through integration of advanced peripheral function modules and various on-chip memory configurations. This device is implemented using high-performance silicon-gate CMOS, EPROM and EEPROM technologies. The low-operating power, wide-operating temperature range, and noise immunity of CMOS technology, coupled with the high performance and

extensive on-chip peripheral functions, make the TMS370Cx5x devices attractive in system designs for automotive electronics, industrial motor control, computer peripheral control, telecommunications and consumer application.

• **Maximum Clock Frequency:** 20MHz
• **Operating Temperature:** -40°C - 85°C

Memory Size		I/O	Timer (16-Bit)	ADC	V _{CC}	Package	Digi-Key Part No.	1	Price Each 25	100	Texas Instruments Part No.
Program EPROM	Data RAM/EEPROM										
TMS370 Family											
16K	512/512	46	2	8-Ch., 8-Bit	5V ±10%	68-PLCC	296-10770-5-ND	16.43	15.33	14.24	TMS370C756AFNT

More Product Available Online: www.digkey.com

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(T091) 695