# MSP430 LaunchPad Value Line Development kit

**(ACTIVE) MSP-EXP430G2**



## Key Document

- MSP-EXP430G2 Software Examples (Rev. F) (ZIP 12075 KB)
  29 Sep 2014 14,379 views
- MSP-EXP430G2 LaunchPad Evaluation Kit User's Guide (Rev. F) (PDF 754 KB)
  12 Jan 2015 25,088 views
- MSP-EXP430G2 Hardware Design Files (Rev. C) (ZIP 599 KB)
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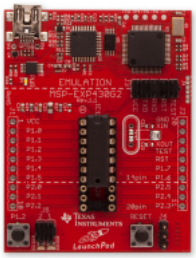

MSP-EXP430G2 LaunchPad for MSP430 16-Bit Microcontroll

**Start developing on MSP platforms quickly and easily**

Learn more about MSP430 Ultra-Low Power 16-bit and Power + Performance 32-bit MCU development tools a available to you.

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## Description

The MSP-EXP430G2 LaunchPad Development Kit is an easy-to-use microcontroller development board for the low-power and low-cost MSP430G2x MCUs. It has on-board emulation for programming and debugging and features a 14/20-pin DIP socket, on-board buttons and LEDs & BoosterPack Plug-in Module pinouts that support a wide range of modules for added functionality such as wireless, displays & more.

The MSP-EXP430G2 LaunchPad also comes with 2 MSP430 devices, with up to 16kB Flash, 512B RAM, 16MHz CPU speed and integrated peripherals such as 8ch 10-bit ADC, timers, serial communication (UART, I2C & SPI) & more!

You can browse all documentation online with TI Resource Explorer and start development with the online CCS Cloud IDE. Other professional development environments are also available, such as TI's Eclipse-based Code Composer Studio and IAR Embedded Workbench.

More information about the LaunchPad, as well as supported BoosterPacks, can be found at the TI LaunchPad website.

**Featured Hardware and Software Files**

- MSP-EXP430G2 LaunchPad User Experience Software
- MSP-EXP430G2 LaunchPad Hardware Design Files

## Features

- The LaunchPad development board features:
  o 14-/20-pin DIP (N) socket
  o Built-in flash emulation for debugging and programming
  o 2 programmable LEDs
  o 1 power LED
  o 1 programmable button
  o 1 reset button
- Supports MSP430G2xx2, MSP430G2xx3, and MSP430F20xx devices in PDIP14 or PDIP20 packages
- The LaunchPad's integrated emulator interface connects flash-based MSP430 Value Line devices to a PC for real-time, in-system programming and debugging via USB.
- Includes one mini USB cable to interface with a PC.
- Included MSP430G2xx device features:
  - MSP430G2553IN20 – 16kB Flash, 512B RAM, interruptible GPIOs (capacitive sense-capable), 16-bit timers, 8ch 10-bit ADC, Comparator, Serial Communication (USCI – I2C, SPI & UART) & more
  - MSP430G2452IN20 – 8kB Flash, 256B RAM, interruptible GPIOs (capacitive sense-capable), 16-bit timers, 8ch 10-bit ADC, Comparator, Serial Communication (USI – I2C & SPI) & more
- Included MSP430G2xx devices feature preloaded sample programs.
- Free downloadable versions of IAR Kickstart and Code Composer Studio Version 5 integrated development environments are available and include an assembler, linker, simulator, source-

level debugger, and C-compiler. These free IDEs are unrestricted on MSP430 Value Line devices.

- RoHS compliant

## What's Included

- MSP430G2553IN20 flash device (preloaded with sample program
- MSP430G2452IN20 flash device (preloaded with sample program
- 10-pin PCB Connector (2 male/2 female)
- 32kHz crystal
- LaunchPad Development board (MSP-EXP430G2)
- LaunchPad sticker
- Mini USB cable
- QuickStart Guide

## Order Now

| Part Number | Buy from Texas Instruments or Third Party | Buy from Authorized Distributor | Status | RoHS |
|---|---|---|---|---|
| MSP-EXP430G2: MSP430 LaunchPad Value Line Development kit | $9.99(USD) Buy from TI | Pricing may vary. Buy from distributor | ACTIVE | Yes |
| Contact a Distributor California Go | | | | |

TI's Standard Terms and Conditions for Evaluation Modules apply.

## Technical Documents

### Application notes (4)

| Title | Abstract | Type | Size (KB) | Date | Views |
|---|---|---|---|---|---|
| MIFARE DESFire EV1 AES Authentication With TRF7970A | Read Abstract | Multiple Files | | 30 Dec 2014 | 3,289 |
| Build Your Own LaunchPad or LaunchPad BoosterPack Development Kit | Read Abstract | PDF | 406 | 19 Dec 2012 | 4,846 |
| Launchpad-Based MSP430 UART BSL Interface (Rev. A) | Read Abstract | Multiple Files | | 02 Aug 2012 | 4,074 |
| EKG-Based Heart-Rate Monitor Implementation on the LaunchPad Using MSP430G2xx (Rev. A) | Read Abstract | Multiple Files | | 11 Mar 2011 | 2,654 |

### User guides (3)

| Title | Abstract | Type | Size (KB) | Date | Views | TI Recommends |
|---|---|---|---|---|---|---|
| MSP Debuggers User's Guide | | PDF | 3247 | 28 Jul 2015 | 407 | |
| MSP430 Hardware Tools User's Guide (Rev. V) | | PDF | 7870 | 20 May 2015 | 70,265 | |
| MSP-EXP430G2 LaunchPad Evaluation Kit User's Guide (Rev. F) | | PDF | 754 | 12 Jan 2015 | 25,088 | ✓ |

### Selection guides (1)

| Title | Abstract | Type | Size (KB) | Date | Views |
|---|---|---|---|---|---|
| Lift-off with the LaunchPad Ecosystem (Rev. A) | | PDF | 4948 | 01 Dec 2014 | 14,567 |

## White papers (1)

| Title | Abstract | Type | Size (KB) | Date | Views |
|---|---|---|---|---|---|
| MSP430 Value Line LaunchPad Development Kit | | PDF | 1061 | 18 Jun 2010 | 3,179 |

## More literature (5)

| Title | Abstract | Type | Size (KB) | Date | Views |
|---|---|---|---|---|---|
| Browse MSP-EXP430G2 Documentation on TI Resource Explorer | | | 30 Jul 2015 | | |
| Sensor Hub BoosterPack (Rev. A) | | PDF | 105 | 10 Dec 2013 | 2,750 |
| RFID BoosterPack TRF7970ABP With MSP430G2 LaunchPad (PPT) | | PDF | 2227 | 10 Dec 2013 | 1,322 |
| Grace Graphical User Interface for enabling MSP430 MCU peripherals (Rev. A) | | PDF | 2175 | 05 Mar 2012 | 1,353 |
| MSP-EXP430G2 LaunchPad Quick Start Guide (Rev. A) | | PDF | 2656 | 19 Dec 2011 | 6,330 |

## Related Products

## Software (5)

MSP430F20x1, MSP430F20x2, MSP430F20x3 Code Examples (Rev. M)
(ZIP, 485 KB) 3425 views, 18 May 2015

MSP-EXP430G2 Hardware Design Files (Rev. C)
(ZIP, 599 KB) 9018 views, 29 Sep 2014

MSP-EXP430G2 Software Examples (Rev. F)
(ZIP, 12075 KB) 14379 views, 29 Sep 2014

MSP-EXP430G2 LaunchPad Driver
(ZIP, 26 KB) 2962 views, 15 May 2012

MSP430 schematic symbols and footprints library for use with the Eagle CAD tool (Rev. E)
(ZIP, 97 KB) 5441 views, 11 Mar 2011

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## Development Tools (2)

| Name | Part Number | Tool Type |
|---|---|---|
| Code Composer Studio (CCS) Integrated Development Environment (IDE) for MSP Microcontrollers | CCSTUDIO-MSP | SW Development Tools, IDEs, Comp |
| GCC - Open Source Compiler for MSP430 Microcontrollers | MSP430-GCC-OPENSOURCE | SW Development Tools, IDEs, Comp |

## Design Kits & Evaluation Modules (4)

| Name | Part Number | Tool Type |
|---|---|---|
| ADS1118 BoosterPack | 430BOOST-ADS1118 | Evaluation Modules & Boards |
| MSP430 14-Pin Target Board | MSP-TS430PW14 | Evaluation Modules & Boards |
| MSP430 14-Pin Target Board and USB Programmer | MSP-FET430U14 | Evaluation Modules & Boards |
| MSP430 Capacitive Touch BoosterPack | 430BOOST-SENSE1 | Evaluation Modules & Boards |

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## TI Design Network (1)

View all TIDN products and services for Microcontrollers (MCU)

| Name | Part Number | Company | Headquarters Location | Tool Type |
|---|---|---|---|---|
| RF430CL330H NFC BoosterPack | | DLP Design, Inc. | United States | Evaluation Modules & Boards |

## TI Devices (43)

| Part Number | Name | Product Family |
|---|---|---|
| MSP430F2001 | 16-bit Ultra-Low-Power Microcontroller, 1kB Flash, 128B RAM, Comparator | Ultra-low Power |
| MSP430F2002 | 16-bit Ultra-Low-Power Microcontroller, 1kB Flash, 128B RAM, 10-Bit SAR A/D, USI for SPI/I2C | Ultra-low Power |
| MSP430F2003 | 16-bit Ultra-Low-Power Microcontroller, 1kB Flash, 128B RAM, 16-Bit Sigma-Delta A/D, USI for SPI/I2C | Ultra-low Power |
| MSP430F2011 | 16-bit Ultra-Low-Power Microcontroller, 2kB Flash, 128B RAM, Comparator | Ultra-low Power |
| MSP430F2012 | 16-bit Ultra-Low-Power Microcontroller, 2kB Flash, 128B RAM, 10-Bit SAR A/D, USI for SPI/I2C | Ultra-low Power |
| MSP430F2013 | 16-bit Ultra-Low-Power Microcontroller, 2kB Flash, 128B RAM, 16-Bit Sigma-Delta A/D, USI for SPI/I2C | Ultra-low Power |
| MSP430G2102 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2112 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2132 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2133 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2152 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2153 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2202 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2203 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2212 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2213 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2232 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2233 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2252 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2252-DIE | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2253 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2302 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2303 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2312 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2313 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2332 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2333 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2333-Q1 | MSP430™ Ultra-Low-Power Microcontrollers for Automotive Applications | Ultra-low Power |
| MSP430G2352 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2353 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2402 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2403 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2412 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2413 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2432 | MSP430G2x32, MSP430G2x02 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2433 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2444 | MSP430G2x44 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2452 | MSP430G2x52, MSP430G2x12 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2453 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2513 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2533 | MSP430G2x33, MSP430G2x03 Mixed Signal Microcontroller | Ultra-low Power |
| MSP430G2553 | MSP430G2x53, MSP430G2x13 Mixed Signal Microcontroller | Ultra-low Power |

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|---|---|---|
| MSP430G2553-Q1 | MSP430™ Ultra-Low-Power Microcontrollers for Automotive Applications | Ultra-low Power |

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## Videos

### TI @ Maker Faire Bay Area 2015

Take a quick tour of the LaunchPad showcase in the Texas Instruments Booth at Maker Faire Bay Area 2015! Call to Action: Learn more about the LaunchPad

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Duration: 01:05

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