MSP430™ Ultra-Low-Power Microcontrollers

Texas Instruments

ti.com/msp430

1H14

MSP430™ Microcontrollers

MSP430™ microcontrollers *(MCUs) from Texas Instruments (TI) are 16-bit, RISC-based, mixed-signal processors designed for ultra-low power. Our MCUs offer the lowest power consumption and the perfect mix of integrated peripherals for thousands of applications – including yours. We also provide all of the hardware and software tools you need to get started today! Not only that, TI has a plethora of complementary components to meet your needs. Learn more today at* **ti.com/msp430**.

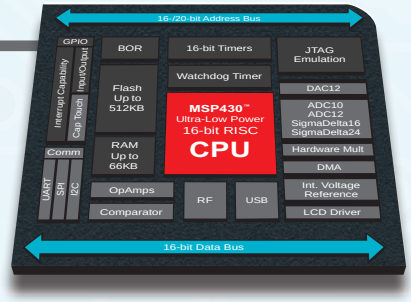
Ultra-low power

Battery Life > 20 Years

- <100 µA/MHz
- 0.1µA RAM Retention
- <1µA RTC Mode

More Performance Without Sacrificing Battery Life

- 7 Low-Power Modes
- Instant Wakeup
- Autonomous Peripherals



Integration

Advanced Peripherals

- High-Performance Analog
- Optimized Serial Communications
- Operate in Low-Power Modes

Minimize Physical Footprint and Bill of Materials

- USB
- LCD Drivers
- Sigma Delta ADCs

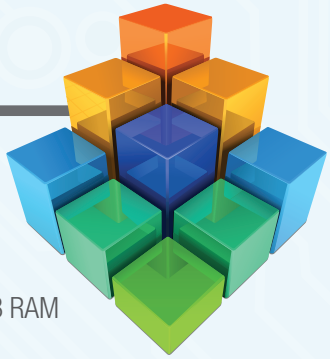
Ease of Use

Development

- Start with MSP430 LaunchPad Evaluation Kit
- Comprehensive Software Portfolio
- Application-Specific Ecosystem

Support

- Code Examples
- Direct Support Available at **ti.com/e2e-msp430**
- Developer Community at **43oh.com**



Grow with MSP

Scale Your Applications

- 400+ Devices
- Up to 512 KB Flash and 64 KB RAM
- 25+ Package Options

Unlimited Possibilities with TI

- Data Collection
- Wireless Connectivity
- Power Solutions

Everyone says their MCUs are ultra-low power. So what makes us different? Ultra-low power is in our DNA! MSP430 MCUs are designed from the ground up specifically for ultra-low-power applications.

Multiple low-power modes

The MSP430 MCU clock system has the ability to enable and disable various clocks and oscillators which allow the device to enter several low-power modes (LPMs). The flexible clocking system optimizes overall current consumption by only enabling the required clocks when appropriate. This means that MSP430 MCUs can operate for decades on a single coin cell battery.

Autonomous peripherals

Intelligent analog and digital peripherals can run autonomously in low-power modes. This allows our MCUs to operate as efficiently as possible.

Instant wakeup

The ultra-fast digitally controlled oscillator (DCO), with start-up times as fast as 1 µs, allows MSP430-based systems to remain in low-power modes for the longest possible interval – extending battery life. The DCO is fully user programmable.

Real-time clock

The low-power real-time clock (RTC), available on select MSP430 MCUs, precisely keeps real time and enables wakeup at specified intervals. Some variants also include a switchable battery backup system that maintains operations when the primary power supply fails.

Direct memory access

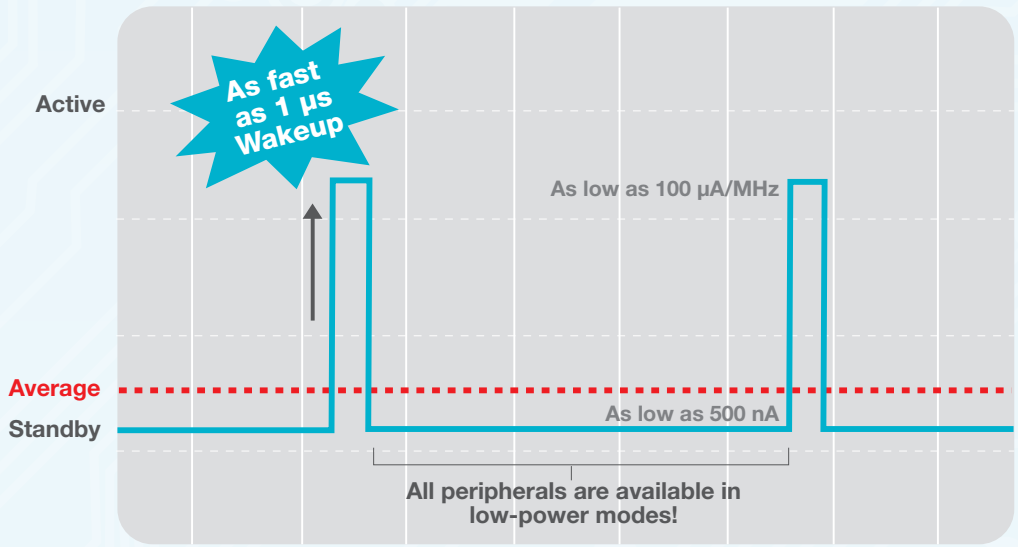
MSP430 MCUs also feature a direct memory access controller, enabling memory transfer with no CPU intervention. This means higher throughput of peripheral data and lower system power.

Embedded FRAM enables lowest power

- Industry-leading active power consumption (<100 µA/MHz)
- 250× less power than Flash writes
- Fast non-volatile writes

Learn more about MSP430 MCUs with embedded, non-volatile FRAM memory on page 10 or on the web at **ti.com/fram**

Ultra-Low Power is in Our DNA



Productive Low-Power Modes Allow:

- Take ADC samples
- Transfer data throughout memory range
- Output PWM signal
- Update LCD
- Send and receive serial communication

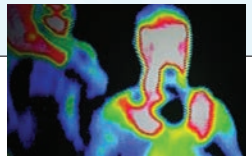
Integration

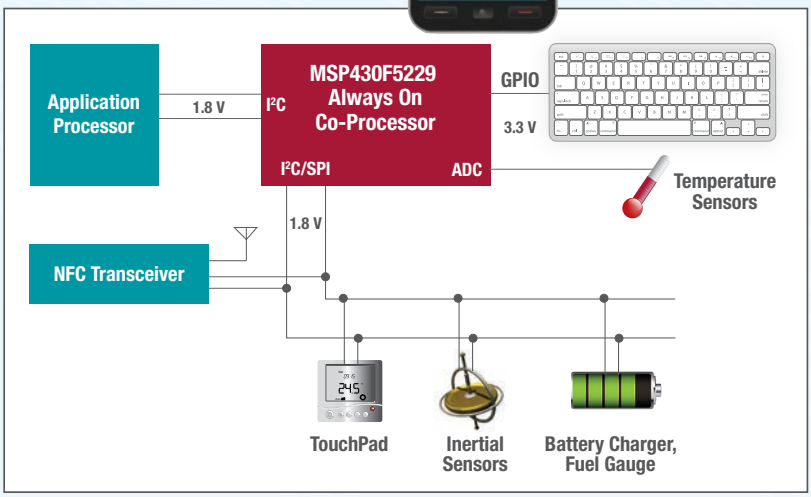
Did you know that our MCUs offer integration designed with your applications in mind? The 400+ MSP430 devices offer high-performance peripherals including USB, RF, LCD controllers and Sigma-Delta ADCs. This allows designers to find the appropriate MSP430 device for many low power applications. This integration enables solutions with smaller physical footprints and reduced bill of materials costs.

Energy Harvesting Sensor Network

The MSP430FR59xx MCU with FRAM technology can control wireless sensor networks by harnessing the body heat of the user

- Differential ADC – connect directly to sensors and limit interference
- Industry-standard communication protocols
- AES module – protect your important data





Co-Processor for Smart Devices

The MSP430F52xx MCU can operate as an always on ultra-low-power co-processor to an applications processor. The MSP430 MCU can be used to offload functions such as sensor hub, keyboard control, battery and power management, capacitive touch, haptics and proximity detection.

- Split rail 1.8 V/3.3 V – directly connect to applications processors and sensors alike

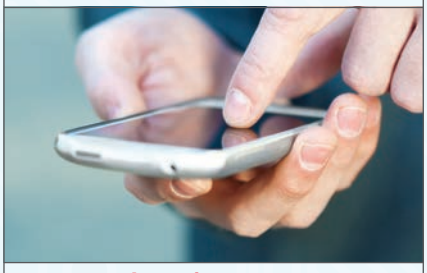
Energy Harvesting

ti.com/energy

Industrial

ti.com/industrial

Consumer and Portable Electronics



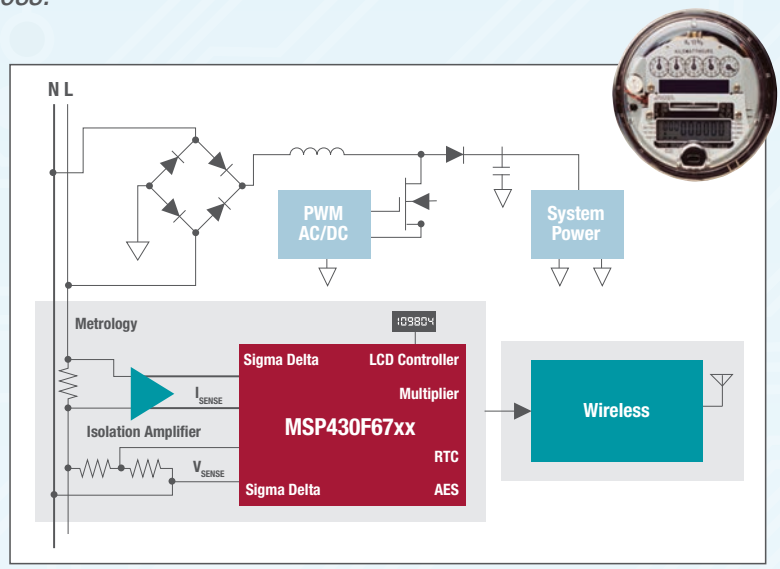
ti.com/consumer

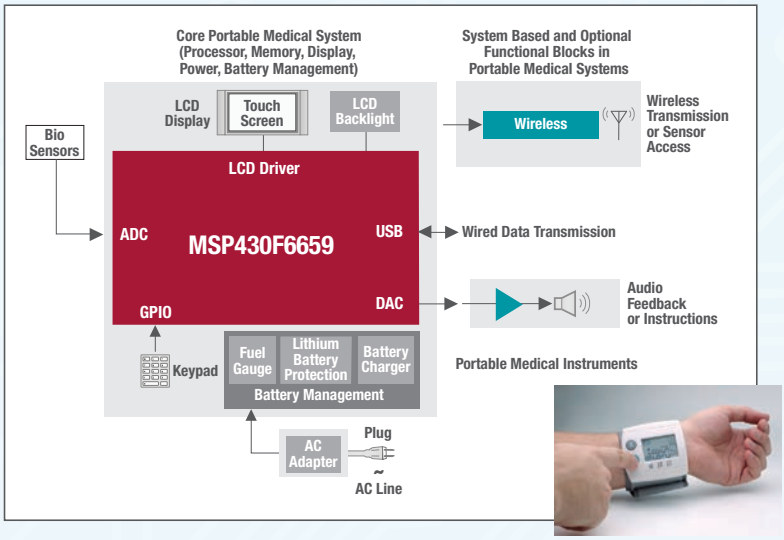
Our peripherals have been designed to give you maximum functionality and provide system-level interrupts, resets and bus arbitration at the lowest power. Many peripherals function autonomously, thereby minimizing CPU time spent in active mode. This means that MSP430 MCUs offer more performance with less power. The potential applications are endless!

Intelligent Utility Meter

The MSP430F67xx MCU is perfect for precisely measuring electricity usage.

- Up to 7 24-bit Sigma-Delta ADCs – 2000:1 dynamic range
- Multiplier – accelerate calculations
- RTC Module – reliable meter readings
- Auxiliary power supply – back up system support
- Meets or exceeds global regulatory requirements





Portable Medical Devices

The MSP430F6659 MCU has integrated peripherals to meet the needs of many portable medical applications.

- 512 KB Flash – run virtually any wireless stack and enable over-the-air updates
- USB and LCD controllers
- 6 serial ports
- 16-channel, 12-bit ADC – directly interface with analog sensors
- DAC – drive speakers; generate bias for sensors

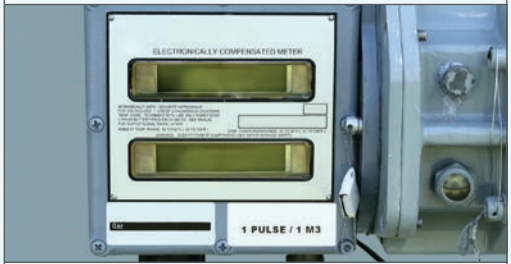
Medical

ti.com/medical

Security and Safety

ti.com/security

Smart Grid



ti.com/smartgrid

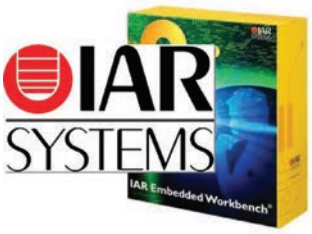
Ease of Use

Software

Our software ecosystem can help you tap into the ultra-low-power performance and intelligent peripherals of your MSP430 MCU. Support is available for a variety of professional and open-source integrated development environments. Using our complete suite of software tools, you can quicken time to market and maximize code efficiency. This means you can get started quicker with MSP430 MCUs!

Integrated Development Environments

TI's Code Composer Studio™ IDE: Free code-limited version

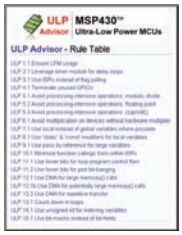


IAR Embedded Workbench®: Free code-limited version

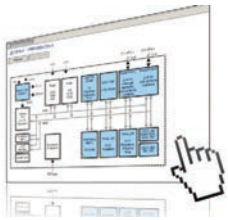
MSPGCC and Energia: Free, open source, community driven and supported

Software Support Tools

MSP430Ware™ software: Driver library and a collection of code, data sheets and user guides



ULP Advisor™ software: Ensures code is optimized for ultra-low power



Grace™ software: Easy-to-use GUI for enabling and configuring peripherals

Don't Forget to Check Out Our Royalty-Free Software Libraries

Peripheral Driver Library: Intuitive function calls for configuring and using integrated peripherals

Capacitive Touch Library: Support for buttons, sliders, wheels and proximity sensors. Touch Pro GUI now available to evaluate, diagnose and tune capacitive touch sensors.

Math Library: Newly optimized to increase performance in your applications

NFCLink: Quickly and easily create NFC applications for TRF79xx NFC transceivers using an MSP430 MCU

Energy Library: Designed for quick ramp-up in metering, smart grid, energy monitoring and home/building automation applications where precise measurements are essential.

SimpliciTI™: Open-source software for building a network with battery-operated devices when pairing an MSP430 MCU and a TI RF transceiver such as the CC1101.

Bluetooth® Stack: Software stack for standard profiles like SPP and GATT provided when pairing an MSP430 MCU with a TI *Bluetooth* transceiver such as the CC256x.

Get started now at **ti.com/msp430tools**

Hardware

Now, let's talk hardware! MSP430 MCUs are supported by a broad collection of hardware development tools for beginners as well as experienced engineers. Our tools range from low-cost development kits like the MSP430 LaunchPad Evaluation Kit to highly-integrated, application-specific platforms and target boards for integrating MSP430 into your designs.

MSP430 LaunchPad and BoosterPack Ecosystem

LaunchPad Evaluation Kits provide customers everything needed to get started, at $9.99.

Try it out with Energia for the simplified user experience! Learn more about this easy-to-use IDE at **energia.nu/**

BoosterPacks are plug-in modules for the LaunchPad, which enable customers to stack additional functionality such as wireless, capacitive touch and more.

Explore the ecosystem at **ti.com/launchpad**

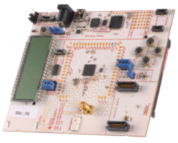
MSP-EXP430F5529LP connected to the CC3000-BOOST

Full-Featured Development Kits

eZ430-CHRONOS
CC430-based RF wireless development kit in a sports watch form factor in 433, 868 and 915 MHz frequencies
Price: $58

MSP-EXP430FG4618
Featuring MSP430FG4618 and MSP430F2013 on-board segmented display, buzzer, RS-232, capacitive touch, microphone, RF headers, JTAG
Price: $117

MSP-EXP430F5529
Featuring MSP430F5529 complete USB development platform, on-board dot matrix display, JTAG, RF headers, on-board emulation, accelerometer, microSD, capacitive touch
Price: $149



MSP-EXPCC430RF
Featuring CC430F6137 and CC430F5137 on-board emulation, segmented LCD, light sensor, includes F6137-based motherboard and F5137-based satellite board
Price: $175

Hardware Support Tools

One tool to rule them all. The MSP430 Flash Emulation Tool (MSP-FET) supports all MSP430 devices when paired with the appropriate target board.

Production Programmer

The MSP-GANG can program up to eight identical MSP430 Flash or FRAM devices at the same time and allows the user to fully customize the process.

We're Here for You!

- Reference designs available for many applications
- Direct support through our E2E™ Forum at **ti.com/e2e-msp430**

Learn more at **ti.com/msp430tools**

Grow with MSP

MSP430™ MCUs and TI can scale with your applications. The MSP430 portfolio consists of over 400 devices ranging from the MSP430 Value Line to our revolutionary, highly integrated microcontrollers with embedded FRAM memory.

Series	Ultra-Low Power					Low Power + Performance	Security + Communications	
Part Number	L09x Low Voltage	G2x/I2x	F1x	F2x/F4x	FRxx FRAM	F5x/6x	RF-430	CC430
Max speed (MHz)	4	16	16	16	24	25	4	20
NVM (max KB)	0	56	120	120	128	512	ROM Fixed Function	32
SRAM (max KB)	2	4	10	8	2	67	4	4
GPIO	11	4–32	10–48	14–80	17–40	29–90	Up to 8	30–44
Comparator	●	●	●	●	●	●	●	●
Timer	●	●	●	●	●	●	●	●
ADC	●	●	●	●	●	●	On select	●
DAC	●		●	●		●		
UART		●	●	●	●	●	●	●
I²C		●	●	●	●	●	●	●
SPI		●	●	●	●	●	●	●
Capacitive touch		●			●			
Multiplier		●	●	●	●	●		●
DMA			●	●	●	●		●
Op amps			●	●				
LCD				●	●	●		●
RTC				●	●	●		●
PMM					●	●	●	●
1.8-V I/O						●		
CRC					●	●	●	●
High-resolution timer						●		
USB						●		
Hardware encryption (AES)					●	●		●
FRAM					●		On select	
RF							13.56 MHz (ISO 15693 or ISO 14443B interface)	Sub-1GHz

Check out the other great products from TI and unlock the full potential of your applications:

Collect data

Sensors – The TMP006 sensor measures the temperature of an object without the need to make contact with the object.
ti.com/sensorproducts

Analog Front Ends – Devices like the LMP91000 bridge the gap between sensors and the MSP430 MCU which can significantly simplify a system.
ti.com/analog

Power the system

Power – TI offers regulators, fuel gauges, and battery monitors. The TPS709 linear drop out regulator can regulate voltage to the MCU, while devices such as the TPS3839 reset IC can accurately track battery activity to ensure the MSP430 MCU remains in a safe state.
ti.com/power

Transmit and receive data

Wireless – TI offers radios ranging from sub-1 GHz to Wi-Fi®. The CC1101 is a highly integrated RF transceiver for low-power wireless applications in the 315-/433-/868-/915-MHz ISM bands. Devices like the high-performance TRF7970 13.56-MHz transceiver enable low-power NFC solutions. The CC2564 paired with an MSP430 MCU offer a dual-mode solution for *Bluetooth*® connectivity. The CC3000 is a self-contained Wi-Fi solution that simplifies Internet connectivity. **ti.com/wireless**

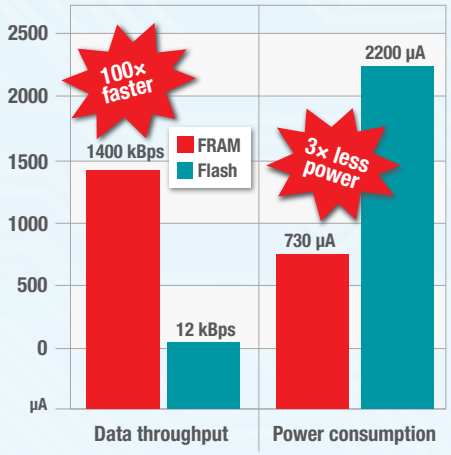
Technology	Hardware	Software	Additional information
NFC	TRF7970	NFC*Link*	ti.com/nfclink
Sub-1 GHz	CC1101	SimpliciTI™	ti.com/simpliciti
Bluetooth®/BLE	CC256x	Stonestreet One BT Stacks	ti.com/tool/stonestreetone-bt-sdk
Wi-Fi®	CC3000	SimpleLink	ti.com/simplelink
GPS	CC4000	SimpleLink	ti.com/simplelink

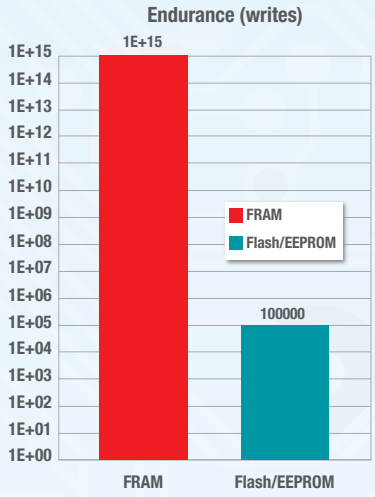
FRAM: The Future of Embedded Memory

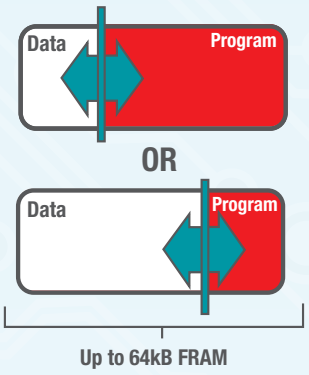
FRAM, or Ferroelectric Random Access Memory, is a non-volatile memory that combines the speed, ultra-low-power, endurance and flexibility of SRAM with the reliability and stability of Flash to combine program and data into one unified memory space for the lowest power and easiest-to-use microcontroller architecture. **ti.com/fram**

What does this mean for you?

- Lower power
- Faster data throughput
- Virtually unlimited write endurance
- Configurable as program or data memory







FR57x Performance Data

MSP430 FRAM Series – Up to 24 MHz

Part Number	FRAM (KB)	SRAM (B)	CPU Speed (MHz)	GPIO (max)	16-Bit Timers	Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	I²C	SPI	UART	DMA	MPY	Comp E	Temp Sensor	ADC Ch/Res	Additional Features†	Pin/Package	1 ku Price (U.S. $)
FR2x																		
MSP430FR2032	8.5	1	16	60	2	●	●	2	1	2	—	—	—	●	14 ch ADC10	IR	TSSOP48/56, LQFP64/48	1.60
MSP430FR2033	15.5	2	16	60	2	●	●	2	1	2	—	—	—	●	14 ch ADC10	IR	TSSOP48/56, LQFP64/48	1.60
FR4x																		
MSP430FR4131	4.5	0.5	16	60	2	●	●	2	1	2	—	—	—	●	14 ch ADC10	LCD, IR	TSSOP48/56, LQFP64/48	1.60
MSP430FR4132	8.5	1	16	60	2	●	●	2	1	2	—	—	—	●	14 ch ADC10	LCD, IR	TSSOP48/56, LQFP64/48	1.60
MSP430FR4133	15.5	2	16	60	2	●	●	2	1	2	—	—	—	●	14 ch ADC10	LCD, IR	TSSOP48/56, LQFP64/48	1.60
FR572x																		
MSP430FR5720	4	512	8	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	1.75
MSP430FR5721	4	512	8	32	5	●	●	1	3	2	●	●	●	●	14 ch ADC10	MPU	38TSSOP, 40QFN	1.80
MSP430FR5722	8	1024	8	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	1.85
MSP430FR5723	8	1024	8	32	5	●	●	1	3	2	●	●	●	●	—	MPU	38TSSOP, 40QFN	1.90
MSP430FR5724	8	1024	8	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	1.95
MSP430FR5725	8	1024	8	32	5	●	●	1	3	2	●	●	●	●	14 ch ADC10	MPU	38TSSOP, 40QFN	2.05
MSP430FR5726	16	1024	8	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	2.00
MSP430FR5727	16	1024	8	32	5	●	●	1	3	2	●	●	●	●	—	MPU	38TSSOP, 40QFN	2.20
MSP430FR5728	16	1024	8	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	2.10
MSP430FR5729	16	1024	8	32	5	●	●	1	3	2	●	●	●	●	14 ch ADC10	MPU	38TSSOP, 40QFN	2.15
FR573x																		
MSP430FR5730	4	512	24	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	1.90
MSP430FR5731	4	512	24	32	5	●	●	1	3	2	●	●	●	●	14 ch ADC10	MPU	38TSSOP, 40QFN	1.95
MSP430FR5732	4	1024	24	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	2.00
MSP430FR5733	8	1024	24	32	5	●	●	1	3	2	●	●	●	●	—	MPU	38TSSOP, 40QFN	2.05
MSP430FR5734	8	1024	24	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	2.10
MSP430FR5735	8	1024	24	32	5	●	●	1	3	2	●	●	●	●	14 ch ADC10	MPU	38TSSOP, 40QFN	2.20
MSP430FR5736	16	1024	24	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	2.19
MSP430FR5737	16	1024	24	32	5	●	●	1	3	2	●	●	●	●	—	MPU	38TSSOP, 40QFN	2.30
MSP430FR5738	16	1024	24	21	3	●	●	1	2	1	●	●	●	●	6 ch ADC10	MPU	24QFN, 28TSSOP	2.35
MSP430FR5739	16	1024	24	32	5	●	●	1	3	2	●	●	●	●	14 ch ADC10	MPU	38TSSOP, 40QFN	2.45

[1]Prices are quoted in U.S. dollars and represent year 2014 suggested resale price. **Represents number of capture/compare registers per timer.* *New products are listed in **bold red**.*

[†]MPU: Memory Protection Unit is used for memory segmentation and access management for code protection. ESI represents extended scan interface which is an integrated dual analog front end.

Industry's Lowest Power MCU Platform

Ultra-low-leakage process technology

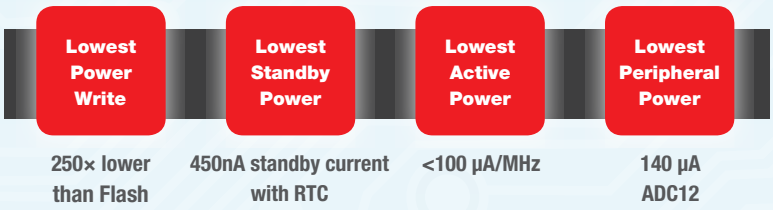
- Unique mixed-signal ultra-low-leakage process technology
- Enables variety of new low-power peripherals
- Consistent low power over entire temperature range

Unparalleled performance with unified FRAM

- World's lowest-power write to a non-volatile memory is 250× less energy per bit
- Speed and flexibility of traditional RAM
- Near infinite endurance and 100% non-volatile

MSP430™ DNA evolved

- Continuing to pioneer the low-power landscape
- Leading power efficiency over entire system architecture
- Industry leading analog integration
- Complete software package for easiest development



MSP430 FRAM Series – Up to 24 MHz (continued)

Part Number	FRAM (KB)	SRAM (B)	CPU Speed (MHz)	GPIO (max)	16-Bit Timers	Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	I²C	SPI	UART	DMA	MPY	Comp E	Temp Sensor	ADC Ch/Res	Additional Features†	Pin/Package	1 ku Price (U.S. $)
FR58xx																		
MSP430FR5847	32	1	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.05
MSP430FR58471	32	1	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	VQFN40	2.05
MSP430FR5848	48	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.15
MSP430FR5849	64	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.20
MSP430FR5857	32	1	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.05
MSP430FR5858	48	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.15
MSP430FR5859	64	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.20
MSP430FR5867	32	1	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.20
MSP430FR58671	32	1	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.15
MSP430FR5868	48	2	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.30
MSP430FR5869	64	2	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.30
MSP430FR5887	64	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.19
MSP430FR5888	96	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.27
MSP430FR5889	128	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.35
MSP430FR58891	128	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.35
FR59xx																		
MSP430FR5947	32	1	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.10
MSP430FR59471	32	1	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	VQFN40	2.10
MSP430FR5948	48	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.20
MSP430FR5949	64	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.25
MSP430FR5957	32	1	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.10
MSP430FR5958	48	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.20
MSP430FR5959	64	2	16	33	5	●	●	1	3	2	●	●	●	●	16 ch ADC12	AES	TSSOP38, VQFN40	2.25
MSP430FR5967	32	1	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.20
MSP430FR5968	48	2	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.25
MSP430FR5969	64	2	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.35
MSP430FR59691	64	2	16	40	5	●	●	1	3	2	●	●	●	●	18 ch ADC12	AES	VQFN48	2.35
MSP430FR5986	48	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.18
MSP430FR5987	64	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.24
MSP430FR5988	96	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.32
MSP430FR5989	128	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.40
MSP430FR59891	128	2	16	48	5	●	●	2	4	2	●	●	●	●	12 ch ADC12	ESI, AES	LQFP64, VQFN64	4.40

[1]Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.
**Represents number of capture/compare registers per timer.*
[†]MPU: Memory Protection Unit is used for memory segmentation and access management for code protection. ESI represents extended scan interface which is an integrated dual analog front end.
*New products are listed in **bold red**.*

Device Catalog

MSP430 FRAM Series – Up to 24 MHz (continued)

Part Number	FRAM (KB)	SRAM (B)	CPU Speed (MHz)	GPIO (max)	16-Bit Timers	Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	I²C	SPI	UART	DMA	MPY	Comp E	Temp Sensor	ADC Ch/Res	Additional Features†	Pin/Package	1 ku Price (U.S. $)
FR68xx																		
MSP430FR6877	64	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP80, LQFP100	3.79
MSP430FR6879	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP80, LQFP100	3.95
MSP430FR68791	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP80, LQFP100	3.95
MSP430FR6887	64	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.29
MSP430FR6888	96	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.37
MSP430FR6889	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.45
MSP430FR68891	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.45
FR69xx																		
MSP430FR6927	64	2	16	52	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP64, VQFN64	3.79
MSP430FR69271	64	2	16	52	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP64, VQFN64	3.79
MSP430FR6928	96	2	16	52	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP64, VQFN64	3.87
MSP430FR6977	64	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP80, LQFP100	3.84
MSP430FR6979	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP80, LQFP100	4.00
MSP430FR69791	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, AES	LQFP80, LQFP100	4.00
MSP430FR6987	64	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.34
MSP430FR6988	96	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.42
MSP430FR6989	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.50
MSP430FR69891	128	2	16	83	5	●	●	2	4	2	●	●	●	●	18 ch ADC12	LCD, ESI, AES	LQFP80, LQFP100	4.50

[1]Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.
**Represents number of capture/compare registers per timer.*
[†]MPU: Memory Protection Unit is used for memory segmentation and access management for code protection. ESI represents extended scan interface which is an integrated dual analog front end.
*New products are listed in **bold red**.*

Value Line

High performance for cost-sensitive applications

The MSP430G2xx 16-bit microcontroller features Flash-based ultra-low-power MCUs up to 16 MIPS with 1.8V – 3.6V operation. Includes the very-low power oscillator (VLO), internal pull-up/pull-down resistors and low-pin-count options.

Device parameters

- Flash options: 0.5 KB – 56 KB
- RAM options: 128 B – 4 KB
- GPIO options: 10, 16, 24, 32 pins
- ADC options: Slope, 10-bit SAR
- Other integrated peripherals: Capacitive Touch I/O (CT), High Frequency Oscillator (HF)

MSP430G2xx Value Line Series – Up to 16 MHz

Part Number	Flash (KB)	SRAM (B)	I/O (max)	Timers			Watchdog and RTC	BOR	USI: I²C/SPI	USCI: I²C/SPI/ UART	Comp_A+	Temp Sensor	ADC Ch/Res	Additional Features	Packages	1ku Price[1] (U.S. $)
				Total	A*	B*										
G2xx0																
MSP430G2210	2	128	4	1	2	—	●	●	—	—	●	—	Slope	—	8SOIC	0.35
MSP430G2230	2	128	4	1	2	—	●	●	●	—	—	●	4 ch ADC10	—	8SOIC	0.40
G2xx1																
MSP430G2001	0.5	128	10	1	2	—	●	●	—	—	—	—	—	—	14TSSOP, N; 16QFN	0.34
MSP430G2101	1	128	10	1	2	—	●	●	—	—	—	—	—	—	14TSSOP, N; 16QFN	0.44
MSP430G2121	1	128	10	1	2	—	●	●	●	—	—	—	—	—	14TSSOP, N; 16QFN	0.46
MSP430G2201	2	128	10	1	2	—	●	●	—	—	—	—	—	—	14TSSOP, N; 16QFN	0.47
MSP430G2221	2	128	10	1	2	—	●	●	●	—	—	—	—	—	14TSSOP, N; 16QFN	0.49
MSP430G2111	1	128	10	1	2	—	●	●	—	—	●	—	Slope	—	14TSSOP, N; 16QFN	0.46
MSP430G2211	2	128	10	1	2	—	●	●	—	—	●	—	Slope	—	14TSSOP, N; 16QFN	0.49
MSP430G2131	1	128	10	1	2	—	●	●	●	—	—	●	8 ch ADC10	—	14TSSOP, N; 16QFN	0.49
MSP430G2231	2	128	10	1	2	—	●	●	●	—	—	●	8 ch ADC10	—	14TSSOP, N; 16QFN	0.55
G2xx2																
MSP430G2102	1	256	16	1	3	—	●	●	●	—	—	—	—	CT	14TSSOP; 20TSSOP, N; 16QFN	0.48
MSP430G2202	2	256	16	1	3	—	●	●	●	—	—	—	—	CT	14TSSOP; 20TSSOP, N; 16QFN	0.50
MSP430G2302	4	256	16	1	3	—	●	●	●	—	—	—	—	CT	14TSSOP; 20TSSOP, N; 16QFN	0.55
MSP430G2402	8	256	16	1	3	—	●	●	●	—	—	—	—	CT	14TSSOP; 20TSSOP, N; 16QFN	0.65
MSP430G2112	1	256	16	1	3	—	●	●	●	—	●	—	Slope	CT	14TSSOP; 20TSSOP, N; 16QFN	0.49
MSP430G2212	2	256	16	1	3	—	●	●	●	—	●	—	Slope	CT	14TSSOP; 20TSSOP, N; 16QFN	0.55
MSP430G2312	4	256	16	1	3	—	●	●	●	—	●	—	Slope	CT	14TSSOP; 20TSSOP, N; 16QFN	0.60
MSP430G2412	8	256	16	1	3	—	●	●	●	—	●	—	Slope	CT	14TSSOP; 20TSSOP, N; 16QFN	0.65
MSP430G2132	1	256	16	1	3	—	●	●	●	—	—	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.55
MSP430G2232	2	256	16	1	3	—	●	●	●	—	—	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.55
MSP430G2332	4	256	16	1	3	—	●	●	●	—	—	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.60
MSP430G2432	8	256	16	1	3	—	●	●	●	—	—	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.70
MSP430G2152	1	256	16	1	3	—	●	●	●	—	●	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.55
MSP430G2252	2	256	16	1	3	—	●	●	●	—	●	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.60
MSP430G2352	4	256	16	1	3	—	●	●	●	—	●	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.65
MSP430G2452	8	256	16	1	3	—	●	●	●	—	●	●	8 ch ADC10	CT	14TSSOP; 20TSSOP, N; 16QFN	0.70
G2xx3																
MSP430G2203	2	256	24	2	3	—	●	●	—	●	—	—	—	CT	20TSSOP, N; 28TSSOP; 32QFN	0.60
MSP430G2303	4	256	24	2	3	—	●	●	—	●	—	—	—	CT	20TSSOP, N; 28TSSOP; 32QFN	0.65
MSP430G2403	8	512	24	2	3	—	●	●	—	●	—	—	—	CT	20TSSOP, N; 28TSSOP; 32QFN	0.75
MSP430G2213	2	256	24	2	3	—	●	●	—	●	●	—	Slope	CT	20TSSOP, N; 28TSSOP; 32QFN	0.60
MSP430G2313	4	256	24	2	3	—	●	●	—	●	●	—	Slope	CT	20TSSOP, N; 28TSSOP; 32QFN	0.65
MSP430G2413	8	512	24	2	3	—	●	●	—	●	●	—	Slope	CT	20TSSOP, N; 28TSSOP; 32QFN	0.75
MSP430G2513	16	512	24	2	3	—	●	●	—	●	●	—	Slope	CT	20TSSOP, N; 28TSSOP; 32QFN	0.90
MSP430G2133	1	256	24	2	3	—	●	●	—	●	—	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	—
MSP430G2233	2	256	24	2	3	—	●	●	—	●	—	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.60
MSP430G2333	4	256	24	2	3	—	●	●	—	●	—	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.65
MSP430G2433	8	512	24	2	3	—	●	●	—	●	—	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.75
MSP430G2533	16	512	24	2	3	—	●	●	—	●	—	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.90
MSP430G2153	1	256	24	2	3	—	●	●	—	●	●	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.60
MSP430G2253	2	256	24	2	3	—	●	●	—	●	●	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.65
MSP430G2353	4	256	24	2	3	—	●	●	—	●	●	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.70
MSP430G2453	8	512	24	2	3	—	●	●	—	●	●	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.80
MSP430G2553	16	512	24	2	3	—	●	●	—	●	●	●	8 ch ADC10	CT	20TSSOP, N; 28TSSOP; 32QFN	0.90
G2xx4																
MSP430G2444	8	512	32	2	3	3	●	●	—	●	—	●	12 ch ADC10	HF	38TSSOP, 40QFN, 49DSBGA	1.05
MSP430G2544	16	512	32	2	3	3	●	●	—	●	—	●	12 ch ADC10	HF	38TSSOP, 40QFN, 49DSBGA	1.10
MSP430G2744	32	1024	32	2	3	3	●	●	—	●	—	●	12 ch ADC10	HF	38TSSOP, 40QFN, 49DSBGA	1.14
G2xx5																
MSP430G2755	32	4094	32	3	3	3	●	●	—	●	●	●	12 ch ADC10	CT, HF	38TSSOP, 40QFN	1.20
MSP430G2855	48	4094	32	3	3	3	●	●	—	●	●	●	12 ch ADC10	CT, HF	38TSSOP, 40QFN	1.24
MSP430G2955	56	4094	32	3	3	3	●	●	—	●	●	●	12 ch ADC10	CT, HF	38TSSOP, 40QFN	1.30

[1]*Prices are quoted in U.S. dollars and represent year 2014 suggested resale price for TSSOP package.*

*New products are listed in **bold red**.*

**Represents number of capture/compare registers per timer.*

Device Catalog

F – Family

Ultra-low power with increased integration and performance

Our largest family of devices, offers ultra-low power with options featuring unmatched analog and digital integration.

Device parameters

- Up to 25 MHz
- Flash options: 0.5 KB – 512 KB
- RAM options: 128 B – 64 KB
- GPIO options: Up to 90 pins

MSP430F1xx Series – Up to 8 MHz

Part Number	Flash (KB)	SRAM (B)	I/O (max)	Timers			Watchdog and RTC	BOR	SVS	USART (UART/SPI)	DMA	MPY	Comp_A	Temp Sensor	ADC Ch/Res	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*												
F11x1																		
MSP430F1101A	1	128	14	1	3	—	●	—	—	—	—	—	●	—	Slope	—	20TVSOP, SOIC, TSSOP; 24QFN	1.06
MSP430F1111A	2	128	14	1	3	—	●	—	—	—	—	—	●	—	Slope	—	20TVSOP, SOIC, TSSOP; 24QFN	1.22
MSP430F1121A	4	256	14	1	3	—	●	—	—	—	—	—	●	—	Slope	—	20TVSOP, SOIC, TSSOP; 24QFN	1.56
F11x2																		
MSP430F1122	4	256	14	1	3	—	●	●	—	—	—	—	—	●	5 ch ADC10	—	20SOIC, TSSOP; 32QFN	1.67
MSP430F1132	8	256	14	1	3	—	●	●	—	—	—	—	—	●	5 ch ADC10	—	20SOIC, TSSOP; 32QFN	1.78
F12x																		
MSP430F122	4	256	22	1	3	—	●	—	—	1	—	—	●	—	Slope	—	28SOIC, TSSOP; 32QFN	1.67
MSP430F123	8	256	22	1	3	—	●	—	—	1	—	—	●	—	Slope	—	28SOIC, TSSOP; 32QFN	1.72
F12x2																		
MSP430F1222	4	256	22	1	3	—	●	●	—	1	—	—	—	●	8 ch ADC10	—	28SOIC, TSSOP; 32QFN	1.72
MSP430F1232	8	256	22	1	3	—	●	●	—	1	—	—	—	●	8 ch ADC10	—	28SOIC, TSSOP; 32QFN	1.83
F13x																		
MSP430F133	8	256	48	2	3	3	●	—	—	1	—	—	●	●	8 ch ADC12	—	64LQFP, TQFP, QFN	2.94
MSP430F135	16	512	48	2	3	3	●	—	—	1	—	—	●	●	8 ch ADC12	—	64LQFP, TQFP, QFN	3.28
F13x1																		
MSP430F1331	8	256	48	2	3	3	●	—	—	1	—	—	●	—	Slope	—	64LQFP, QFN	—
MSP430F1351	16	512	48	2	3	3	●	—	—	1	—	—	●	—	Slope	—	64LQFP, QFN	—
F14x																		
MSP430F147	32	1024	48	2	3	7	●	—	—	2	—	16×16	●	●	8 ch ADC12	—	64LQFP, TQFP, QFN	4.00
MSP430F148	48	2048	48	2	3	7	●	—	—	2	—	16×16	●	●	8 ch ADC12	—	64LQFP, TQFP, QFN	4.33
MSP430F149	60	2048	48	2	3	7	●	—	—	2	—	16×16	●	●	8 ch ADC12	—	64LQFP, TQFP, QFN	4.66
MSP430F1471	32	1024	48	2	3	7	●	—	—	2	—	16×16	●	—	Slope	—	64LQFP, QFN	4.55
MSP430F1481	48	2048	48	2	3	7	●	—	—	2	—	16×16	●	—	Slope	—	64LQFP, QFN	5.11
MSP430F1491	60	2048	48	2	3	7	●	—	—	2	—	16×16	●	—	Slope	—	64LQFP, QFN	5.11
F15x																		
MSP430F155	16	512	48	2	3	3	●	●	●	1 with I²C	●	—	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	5.38
MSP430F156	24	1024	48	2	3	3	●	●	●	1 with I²C	●	—	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	5.61
MSP430F157	32	1024	48	2	3	3	●	●	●	1 with I²C	●	—	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	5.95
F16x																		
MSP430F167	32	1024	48	2	3	7	●	●	●	2 with I²C	●	16×16	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	6.88
MSP430F168	48	2048	48	2	3	7	●	●	●	2 with I²C	●	16×16	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	7.61
MSP430F169	60	2048	48	2	3	7	●	●	●	2 with I²C	●	16×16	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	8.16
MSP430F1610	32	5120	48	2	3	7	●	●	●	2 with I²C	●	16×16	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	8.72
MSP430F1611	48	10240	48	2	3	7	●	●	●	2 with I²C	●	16×16	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	9.16
MSP430F1612	55	5120	48	2	3	7	●	●	●	2 with I²C	●	16×16	●	●	8 ch ADC12	(2) DAC12	64LQFP, QFN	9.50

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*
**Represents number of capture/compare registers per timer.*

Analog Front End (MSP430AFE2xx) Series – Up to 12 MHz

Part Number	Flash (KB)	SRAM (B)	I/O (max)	Timers			Watchdog and RTC	BOR	SVS	USART (UART/SPI)	MPY	Temp Sensor	ADC Ch/Res	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*										
AFE2xx																
MSP430AFE221	4	256	11	1	3	—	●	●	●	●	●	●	(1) SD24	—	24TSSOP	1.80
MSP430AFE222	4	256	11	1	3	—	●	●	●	●	●	●	(2) SD24	—	24TSSOP	1.95
MSP430AFE223	4	256	11	1	3	—	●	●	●	●	●	●	(3) SD24	—	24TSSOP	2.10
MSP430AFE231	8	512	11	1	3	—	●	●	●	●	●	●	(1) SD24	—	24TSSOP	1.85
MSP430AFE232	8	512	11	1	3	—	●	●	●	●	●	●	(2) SD24	—	24TSSOP	2.00
MSP430AFE233	8	512	11	1	3	—	●	●	●	●	●	●	(3) SD24	—	24TSSOP	2.10
MSP430AFE251	16	512	11	1	3	—	●	●	●	●	●	●	(1) SD24	—	24TSSOP	1.90
MSP430AFE252	16	512	11	1	3	—	●	●	●	●	●	●	(2) SD24	—	24TSSOP	2.05
MSP430AFE253	16	512	11	1	3	—	●	●	●	●	●	●	(3) SD24	—	24TSSOP	2.20

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

MSP430F2xx Series – Up to 16 MHz

Part Number	Flash (KB)	SRAM (B)	I/O (max)	Timers			Watchdog and RTC	BOR	SVS	USI: (I²C/SPI)	USCI		DMA	MPY	Comp_A+	Temp Sensor	ADC Ch/Res	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*					Ch A: UART/LIN/ IrDA/SPI	Ch B: I²C/SPI								
F20xx																				
MSP430F2001	1	128	10	1	2	—	●	●	—	—	—	—	—	—	●	—	Slope	105 °C	14TSSOP, DIP; 16QFN	0.45
MSP430F2011	2	128	10	1	2	—	●	●	—	—	—	—	—	—	●	—	Slope	105 °C	14TSSOP, DIP; 16QFN	0.55
MSP430F2002	1	128	10	1	2	—	●	●	—	●	—	—	—	—	—	●	8 ch ADC10	105 °C	14TSSOP, DIP; 16QFN	0.65
MSP430F2012	2	128	10	1	2	—	●	●	—	●	—	—	—	—	—	●	8 ch ADC10	105 °C	14TSSOP, DIP; 16QFN	0.85
MSP430F2003	1	128	10	1	2	—	●	●	—	●	—	—	—	—	—	●	4 ch, SD16_A	105 °C	14TSSOP, DIP; 16QFN	0.99
MSP430F2013	2	128	10	1	2	—	●	●	—	●	—	—	—	—	—	●	4 ch, SD16_A	105 °C	14TSSOP, DIP; 16QFN	1.10
F21xx																				
MSP430F2101	1	128	16	1	3	—	●	●	—	—	—	—	—	—	●	—	Slope	105 °C	20TVSOP, SOIC, TSSOP; 24QFN	0.60
MSP430F2111	2	128	16	1	3	—	●	●	—	—	—	—	—	—	●	—	Slope	105 °C	20TVSOP, SOIC, TSSOP; 24QFN	0.70
MSP430F2121	4	256	16	1	3	—	●	●	—	—	—	—	—	—	●	—	Slope	105 °C	20TVSOP, SOIC, TSSOP; 24QFN	0.90
MSP430F2131	8	256	16	1	3	—	●	●	—	—	—	—	—	—	●	—	Slope	105 °C	20TVSOP, SOIC, TSSOP; 24QFN	1.20
MSP430F2112	2	256	22	2	3, 2	—	●	●	—	—	1	1	—	—	●	●	8 ch ADC10	105 °C	28TSSOP; 32QFN, QFN	1.10
MSP430F2122	4	512	22	2	3, 2	—	●	●	—	—	1	1	—	—	●	●	8 ch ADC10	105 °C	28TSSOP; 32QFN, QFN	1.40
MSP430F2132	8	512	22	2	3, 2	—	●	●	—	—	1	1	—	—	●	●	8 ch ADC10	105 °C	28TSSOP; 32QFN, QFN	1.50
F22x2																				
MSP430F2232	8	512	32	2	3	3	●	●	—	—	1	1	—	—	—	●	12 ch ADC10	105 °C	38TSSOP; 40QFN; 49DSBGA	1.65
MSP430F2252	16	512	32	2	3	3	●	●	—	—	1	1	—	—	—	●	12 ch ADC10	105 °C	38TSSOP; 40QFN; 49DSBGA	1.95
MSP430F2272	32	1024	32	2	3	3	●	●	—	—	1	1	—	—	—	●	12 ch ADC10	105 °C	38TSSOP; 40QFN; 49DSBGA	2.00
F22x4																				
MSP430F2234	8	512	32	2	3	3	●	●	—	—	1	1	—	—	—	●	12 ch ADC10	(2) OPAMP, 105 °C	38TSSOP; 40QFN; 49DSBGA	1.85
MSP430F2254	16	512	32	2	3	3	●	●	—	—	1	1	—	—	—	●	12 ch ADC10	(2) OPAMP, 105 °C	38TSSOP; 40QFN; 49DSBGA	2.15
MSP430F2274	32	1024	32	2	3	3	●	●	—	—	1	1	—	—	—	●	12 ch ADC10	(2) OPAMP, 105 °C	38TSSOP; 40QFN; 49DSBGA	2.25
F23x0																				
MSP430F2330	8	1024	32	2	3	3	●	●	—	—	1	1	—	16×16	●	—	Slope	105 °C	40QFN; 49DSBGA	1.60
MSP430F2350	16	2048	32	2	3	3	●	●	—	—	1	1	—	16×16	●	—	Slope	105 °C	40QFN; 49DSBGA	1.80
MSP430F2370	32	2048	32	2	3	3	●	●	—	—	1	1	—	16×16	●	—	Slope	105 °C	40QFN; 49DSBGA	1.95
F23x																				
MSP430F233	8	1024	48	2	3	3	●	●	●	—	1	1	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP, QFN	2.15
MSP430F235	16	2048	48	2	3	3	●	●	●	—	1	1	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP, QFN	2.60
F24x/10																				
MSP430F247	32	4096	48	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP, QFN	2.75
MSP430F248	48	4096	48	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP, QFN	3.40
MSP430F249	60	2048	48	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP, QFN	3.70
MSP430F2410	56	4096	48	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP, QFN	4.60
F24x1																				
MSP430F2471	32	4096	48	2	3	7	●	●	●	—	2	2	—	16×16	●	—	Slope	105 °C	64LQFP, QFN	3.15
MSP430F2481	48	4096	48	2	3	7	●	●	●	—	2	2	—	16×16	●	—	Slope	105 °C	64LQFP, QFN	3.00
MSP430F2491	60	2048	48	2	3	7	●	●	●	—	2	2	—	16×16	●	—	Slope	105 °C	64LQFP, QFN	3.80
F241x																				
MSP430F2416	92	4096	48/64	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP; 80LQFP; 113BGA	4.70
MSP430F2417	92	8192	48/64	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP; 80LQFP; 113BGA	4.80
MSP430F2418	116	8192	48/64	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP; 80LQFP; 113BGA	5.00
MSP430F2419	120	4096	48/64	2	3	7	●	●	●	—	2	2	—	16×16	●	●	8 ch ADC12	105 °C	64LQFP; 80LQFP;113BGA	5.30
F261x																				
MSP430F2616	92	4096	48/64	2	3	7	●	●	●	—	2	2	●	16×16	●	●	8 ch ADC12	(2) DAC12, 105 °C	64LQFP; 80LQFP; 113BGA	5.85
MSP430F2617	92	8192	48/64	2	3	7	●	●	●	—	2	2	●	16×16	●	●	8 ch ADC12	(2) DAC12, 105 °C	64LQFP; 80LQFP; 113BGA	6.05
MSP430F2618	116	8192	48/64	2	3	7	●	●	●	—	2	2	●	16×16	●	●	8 ch ADC12	(2) DAC12, 105 °C	64LQFP; 80LQFP; 113BGA	6.35
MSP430F2619	120	4096	48/64	2	3	7	●	●	●	—	2	2	●	16×16	●	●	8 ch ADC12	(2) DAC12, 105 °C	64LQFP; 80LQFP; 113BGA	6.65

[1]*Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

**Represents number of capture/compare registers per timer.*

Device Catalog

MSP430F4xx Series – Up to 16 MHz with LCD

Part Number	Flash (KB)	SRAM (B)	I/O (max)	Timers			Watchdog and RTC	BOR	SVS	USART (UART/SPI)	USCI		LCD Segments	DMA	MPY	Comp_A	Temp Sensor	CPU Speed (MIPS)	ADC Ch/Res	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*					Ch A: UART/LIN/ IrDA/SPI	Ch B: I²C/SPI										
F41x																						
MSP430F412	4	256	48	1	3	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	—	64LQFP, QFN	1.30
MSP430F413	8	256	48	1	3	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	—	64LQFP, QFN	1.35
MSP430F415	16	512	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	—	64LQFP, QFN	1.50
MSP430F417	32	1024	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	—	64LQFP, QFN	1.75
F41x2																						
MSP430F4132	8	512	56	2	3, 5	—	●	●	●	—	1	1	144	—	—	●	●	8	8 ch ADC10	—	48QFN; 64LQFP	1.50
MSP430F4152	16	512	56	2	3, 5	—	●	●	●	—	1	1	144	—	—	●	●	8	8 ch ADC10	—	48QFN; 64LQFP	1.70
F42x																						
MSP430F423A	8	256	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	●	8	(3) SD16	—	64LQFP	2.04
MSP430F425A	16	512	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	●	8	(3) SD16	—	64LQFP	2.30
MSP430F427A	32	1024	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	●	8	(3) SD16	—	64LQFP	2.47
FW42x																						
MSP430FW423	8	256	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	SCAN_IF	64LQFP	2.50
MSP430FW425	16	512	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	SCAN_IF	64LQFP	2.80
MSP430FW427	32	1024	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	SCAN_IF	64LQFP	3.10
MSP430FW428	48	2048	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	SCAN_IF	64LQFP	3.30
MSP430FW429	60	2048	48	2	3, 5	—	●	●	●	—	—	—	96	—	—	●	—	8	Slope	SCAN_IF	64LQFP	3.55
FE42x																						
MSP430FE423A	8	256	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(3) SD16	ESP430	64LQFP	3.78
MSP430FE425A	16	512	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(3) SD16	ESP430	64LQFP	5.12
MSP430FE427A	32	1024	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(3) SD16	ESP430	64LQFP	4.39
MSP430FE4232	8	256	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(2) SD16	ESP430	64LQFP	2.15
MSP430FE4242	12	512	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(2) SD16	ESP430	64LQFP	2.25
MSP430FE4252	16	512	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(2) SD16	ESP430	64LQFP	2.35
MSP430FE4272	32	1024	14	1	3	—	●	●	●	1	—	—	128	—	16×16	—	—	8	(2) SD16	ESP430	64LQFP	2.45
F42x0																						
MSP430F4250	16	256	32	1	3	—	●	●	—	—	—	—	56	—	—	—	—	8	5 ch, SD16_A	DAC12	48SSOP, QFN	3.05
MSP430F4260	24	256	32	1	3	—	●	●	—	—	—	—	56	—	—	—	—	8	5 ch, SD16_A	DAC12	48SSOP, QFN	3.40
MSP430F4270	32	256	32	1	3	—	●	●	—	—	—	—	56	—	—	—	—	8	5 ch, SD16_A	DAC12	48SSOP, QFN	3.65
FG42x0																						
MSP430FG4250	16	256	32	1	3	—	●	●	—	—	—	—	56	—	—	—	●	8	5 ch, SD16_A	DAC12, (2) OPAMP	48SSOP, QFN	3.30
MSP430FG4260	24	256	32	1	3	—	●	●	—	—	—	—	56	—	—	—	●	8	5 ch, SD16_A	DAC12, (2) OPAMP	48SSOP, QFN	3.60
MSP430FG4270	32	256	32	1	3	—	●	●	—	—	—	—	56	—	—	—	●	8	5 ch, SD16_A	DAC12, (2) OPAMP	48SSOP, QFN	4.00
F43x																						
MSP430F435	16	512	48	2	3	3	●	●	●	1	—	—	128/160	—	—	●	●	8	8 ch ADC12	—	80LQFP; 100LQFP	3.40
MSP430F436	24	1024	48	2	3	3	●	●	●	1	—	—	128/160	—	—	●	●	8	8 ch ADC12	—	80LQFP; 100LQFP	3.70
MSP430F437	32	1024	48	2	3	3	●	●	●	1	—	—	128/160	—	—	●	●	8	8 ch ADC12	—	80LQFP; 100LQFP	3.90
MSP430F438	48	2048	48	2	3	3	●	●	●	1	—	—	128	●	—	●	●	8	8 ch ADC12	—	80LQFP	5.40
MSP430F439	60	2048	48	2	3	3	●	●	●	1	—	—	128	●	—	●	●	8	8 ch ADC12	—	80LQFP	5.95
F43x1																						
MSP430F4351	16	512	48	2	3	3	●	●	●	1	—	—	128/160	—	—	●	—	8	Slope	—	80LQFP; 100LQFP	2.65
MSP430F4361	24	1024	48	2	3	3	●	●	●	1	—	—	128/160	—	—	●	—	8	Slope	—	80LQFP; 100LQFP	3.50
MSP430F4371	32	1024	48	2	3	3	●	●	●	1	—	—	128/160	—	—	●	—	8	Slope	—	80LQFP; 100LQFP	3.60
FG43x																						
MSP430FG437	32	1024	48	2	3	3	●	●	●	1	—	—	128	●	—	●	●	8	12 ch ADC12	(2) DAC12, (3) OPAMP	80LQFP	3.85
MSP430FG438	48	2048	48	2	3	3	●	●	●	1	—	—	128	●	—	●	●	8	12 ch ADC12	(2) DAC12, (3) OPAMP	80LQFP	4.50
MSP430FG439	60	2048	48	2	3	3	●	●	●	1	—	—	128	●	—	●	●	8	12 ch ADC12	(2) DAC12, (3) OPAMP	80LQFP	5.25
F44x																						
MSP430F4481	48	2048	48	2	3	7	●	●	●	2	—	—	160	—	16×16	●	—	8	—	—	100LQFP	4.05
MSP430F4491	60	2048	48	2	3	7	●	●	●	2	—	—	160	—	16×16	●	—	8	—	—	100LQFP	4.40
MSP430F447	32	1024	48	2	3	7	●	●	●	2	—	—	160	—	16×16	●	●	8	8 ch ADC12	—	100LQFP	4.05
MSP430F448	48	2048	48	2	3	7	●	●	●	2	—	—	160	—	16×16	●	●	8	8 ch ADC12	—	100LQFP	4.35
MSP430F449	60	2048	48	2	3	7	●	●	●	2	—	—	160	—	16×16	●	●	8	8 ch ADC12	—	100LQFP	4.65

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

* *Represents number of capture/compare registers per timer.*

MSP430F4xx Series – Up to 16 MHz with LCD (continued)

Part Number	Flash (KB)	SRAM (B)	I/O (max)	Timers			Watchdog and RTC	BOR	SVS	USART (UART/SPI)	USCI		LCD Segments	DMA	MPY	Comp_A	Temp Sensor	CPU Speed (MIPS)	ADC Ch/Res	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*					Ch A: UART/LIN/ IrDA/SPI	Ch B: I²C/SPI										
G461x																						
MSP430FG4616	92	4096	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	(2) DAC12, +RTC (3) OPAMP	100LQFP; 113BGA	7.45
MSP430FG4617	92	8192	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	(2) DAC12, +RTC (3) OPAMP	100LQFP; 113BGA	7.95
MSP430FG4618	116	8192	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	(2) DAC12, +RTC (3) OPAMP	100LQFP; 113BGA	8.35
MSP430FG4619	120	4096	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	(2) DAC12, +RTC (3) OPAMP	100LQFP; 113BGA	7.95
F461x																						
MSP430F46161	92	4096	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	—	8	—	—	100LQFP	5.40
MSP430F46171	92	8192	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	—	8	—	—	100LQFP	5.80
MSP430F46181	116	8192	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	—	8	—	—	100LQFP	6.20
MSP430F46191	120	4096	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	—	8	—	—	100LQFP	5.80
MSP430F4616	92	4096	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	—	100LQFP	6.30
MSP430F4617	92	8192	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	—	100LQFP	6.70
MSP430F4618	116	8192	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	—	100LQFP	7.10
MSP430F4619	120	4096	80	2	3	7	●	●	●	1	1	1	160	●	16×16	●	●	8	12 ch ADC12	—	100LQFP	6.70
F47xx																						
MSP430F4783	48	2048	72	2	3	3	●	●	●	—	2	2	160	—	32×32‡	●	●	16	(3) SD16_A	—	100LQFP	4.00
MSP430F4793	60	2560	72	2	3	3	●	●	●	—	2	2	160	—	32×32‡	●	●	16	(3) SD16_A	—	100LQFP	4.30
MSP430F4784	48	2048	72	2	3	3	●	●	●	—	2	2	160	—	32×32‡	●	●	16	(4) SD16_A	—	100LQFP	4.00
MSP430F4794	60	2560	72	2	3	3	●	●	●	—	2	2	160	—	32×32‡	●	●	16	(4) SD16_A	—	100LQFP	4.30
F471xx																						
MSP430F47163	92	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(3) SD16_A	RTC_C	100LQFP	5.00
MSP430F47173	92	8192	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(3) SD16_A	RTC_C	100LQFP	5.10
MSP430F47183	116	8192	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(3) SD16_A	RTC_C	100LQFP	5.30
MSP430F47193	120	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(3) SD16_A	RTC_C	100LQFP	5.50
MSP430F47126	56	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(6) SD16_A	RTC_C	100LQFP	5.10
MSP430F47166	92	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(6) SD16_A	RTC_C	100LQFP	5.70
MSP430F47176	92	8192	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(6) SD16_A	RTC_C	100LQFP	5.90
MSP430F47186	116	8192	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(6) SD16_A	RTC_C	100LQFP	7.40
MSP430F47196	120	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(6) SD16_A	RTC_C	100LQFP	7.70
MSP430F47127	56	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(7) SD16_A	RTC_C	100LQFP	5.20
MSP430F47167	92	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(7) SD16_A	RTC_C	100LQFP	4.75
MSP430F47177	92	8192	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(7) SD16_A	RTC_C	100LQFP	4.85
MSP430F47187	116	8192	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(7) SD16_A	RTC_C	100LQFP	6.10
MSP430F47197	120	4096	68	2	3	3	●	●	●	—	2	2	160	●	32×32‡	●	●	16	(7) SD16_A	RTC_C	100LQFP	6.35
FG47x																						
MSP430FG477	32	2048	48	2	3	3	●	●	●	—	1	1	128	—	—	●	●	8	(5) SD16_A	DAC12, (2) OPAMP	80LQFP; 113BGA	4.75
MSP430FG478	48	2048	48	2	3	3	●	●	●	—	1	1	128	—	—	●	●	8	(5) SD16_A	DAC12, (2) OPAMP	80LQFP; 113BGA	5.55
MSP430FG479	60	2048	48	2	3	3	●	●	●	—	1	1	128	—	—	●	●	8	(5) SD16_A	DAC12, (2) OPAMP	80LQFP; 113BGA	6.20
F47x																						
MSP430F477	32	2048	48	2	3	3	●	●	●	—	1	1	128	—	—	●	●	8	(5) SD16_A	DAC12	80LQFP; 113BGA	4.60
MSP430F478	48	2048	48	2	3	3	●	●	●	—	1	1	128	—	—	●	●	8	(5) SD16_A	DAC12	80LQFP; 113BGA	5.00
MSP430F479	60	2048	48	2	3	3	●	●	●	—	1	1	128	—	—	●	●	8	(5) SD16_A	DAC12	80LQFP; 113BGA	5.35

[1]*Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

‡*Supports 64-bit result length.*

**Represents number of capture/compare registers per timer.*

Device Catalog

MSP430F5xx Series – Up to 25 MHz

Part Number	Program (KB)	SRAM (KB)	I/O (max)	Timers			Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	USCI		DMA	MPY	Comp B	Temp Sensor	ADC Ch/Res	DAC	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*			Ch A: UART/ LIN/IrDA/SPI	Ch B: I²C/SPI									
F51xx																			
MSP430F5131	8	1	29 27	3	3	3, 3	●	●	1	1	3 ch	32×32‡	16 ch	—	—	—	HiRes PWM, 5V I/Os	40QFN, 38TSSOP, 40DSBGA	1.20
MSP430F5132	8	1	29 27	3	3	3, 3	●	●	1	1	3 ch	32×32‡	16 ch	●	8 ch ADC10_A	—	HiRes PWM, 5V I/Os	40QFN, 38TSSOP, 40DSBGA	1.25
MSP430F5151	16	2	29 27	3	3	3, 3	●	●	1	1	3 ch	32×32‡	16 ch	—	—	—	HiRes PWM, 5V I/Os	40QFN, 38TSSOP, 40DSBGA	1.35
MSP430F5152	16	2	29 27	3	3	3, 3	●	●	1	1	3 ch	32×32‡	16 ch	●	8 ch ADC10_A	—	HiRes PWM, 5V I/Os	40QFN, 38TSSOP, 40DSBGA	1.50
MSP430F5171	32	2	29 27	3	3	3, 3	●	●	1	1	3 ch	32×32‡	16 ch	—	—	—	HiRes PWM, 5V I/Os	40QFN, 38TSSOP, 40DSBGA	1.60
MSP430F5172	32	2	29 27	3	3	3, 3	●	●	1	1	3 ch	32×32‡	16 ch	●	8 ch ADC10_A	—	HiRes PWM, 5V I/Os	40QFN, 38TSSOP, 40DSBGA	1.70
F52xx																			
MSP430F5212	64	8	37	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	1.8V I/O	48QFN	2.05
MSP430F5213	96	8	37	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	1.8V I/O	48QFN	—
MSP430F5214	128	8	37	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	1.8V I/O	48QFN	2.45
MSP430F5217	64	8	53	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	1.8V I/O	64DSBGA, 64QFN, 80BGA	2.10
MSP430F5219	128	8	53	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	1.8V I/O	64DSBGA, 64QFN, 80BGA	2.50
MSP430F5222	64	8	37	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	8 ch ADC10	—	1.8V I/O	48QFN	2.20
MSP430F5223	96	8	37	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	10 ch ADC10	—	1.8V I/O	48QFN	—
MSP430F5224	128	8	37	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	8 ch ADC10	—	1.8V I/O	48QFN	2.60
MSP430F5227	64	8	53	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	10 ch ADC10	—	1.8V I/O	64DSBGA, 64QFN, 80BGA	2.25
MSP430F5229	128	8	53	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	10 ch ADC10	—	1.8V I/O	64DSBGA, 64QFN, 80BGA	2.65
MSP430F5232	64	8	37	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	—	—	—	48VQFN	1.65
MSP430F5234	128	8	37	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	—	—	—	48VQFN	2.05
MSP430F5237	64	8	53	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	—	—	—	64VQFN, 80BGA	1.7
MSP430F5239	128	8	53	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	—	—	—	64VQFN, 80BGA	2.1
MSP430F5242	64	8	37	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	10-bit SAR	—	—	48VQFN	1.8
MSP430F5244	128	8	37	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	10-bit SAR	—	—	48VQFN	2.2
MSP430F5247	64	8	53	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	10-bit SAR	—	—	64VQFN, 80BGA	1.85
MSP430F5249	128	8	53	4	5, 3, 3	7	●	●	2	2	3	32×32‡	●	●	10-bit SAR	—	—	64VQFN, 80BGA	2.25
MSP430F5252	128	16	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	—	—	1.8V I/O	64VQFN, 80BGA	2.61
MSP430F5253	128	16	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	10-bit SAR	—	1.8V I/O	64VQFN, 80BGA	2.72
MSP430F5254	128	32	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	—	—	1.8V I/O	64VQFN, 80BGA	2.89
MSP430F5255	128	32	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	10-bit SAR	—	1.8V I/O	64VQFN, 80BGA	2.99
MSP430F5256	128	16	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	—	—	1.8V I/O	64VQFN, 80BGA	2.61
MSP430F5257	128	16	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	10-bit SAR	—	1.8V I/O	64VQFN, 80BGA	2.72
MSP430F5258	128	32	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	—	—	1.8V I/O	64VQFN, 80BGA	2.89
MSP430F5259	128	32	53	4	5, 3, 3	7	●	●	4	4	3	32×32‡	●	●	10-bit SAR	—	1.8V I/O	64VQFN, 80BGA	2.99
F53x																			
MSP430F5304	8	6	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	—	●	8 ch (6/2) ADC10	—	—	48QFN , 48LQFP	1.55
MSP430F5308	16	6	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	12 ch (10/2) ADC10	—	—	48QFN, 48LQFP, 64QFN, 80BGA	1.65
MSP430F5309	24	6	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	12 ch (10/2) ADC10	—	—	48QFN, 48LQFP, 64QFN, 80BGA	1.75
MSP430F5310	32	6	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	12 ch (10/2) ADC10	—	—	48QFN, 48LQFP, 64QFN, 80BGA	1.85
MSP430F5324	64	6	48	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	—	64QFN, 80BGA	2.10
MSP430F5325	64	6	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	—	80LQFP	2.20
MSP430F5326	96	8	48	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	—	64QFN, 80BGA	2.45
MSP430F5327	96	8	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	—	80LQFP	2.46
MSP430F5328	128	10	48	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	—	64QFN, 80BGA	2.55
MSP430F5329	128	10	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	—	80LQFP	2.60
MSP430F5333	128	10	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	Battery backup	100LQFP, 113BGA	3.00

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*
† *Additional 2K of SRAM available if USB is disabled.*
‡ *Supports 64 bit result length.*
**Represents number of capture/compare registers per timer.*
*New products are listed in **bold red**.*

MSP430F5xx Series – Up to 25 MHz (continued)

Part Number	Program (KB)	SRAM (KB)	I/O (max)	Timers			Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	USCI		DMA	MPY	Comp B	Temp Sensor	ADC Ch/Res	DAC	Additional Features	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*			Ch A: UART/ LIN/IrDA/SPI	Ch B: I²C/SPI									
F53x (continued)																			
MSP430F5335	256	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	Battery backup	100LQFP, 113BGA	3.35
MSP430F5336	128	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	Battery backup	100LQFP, 113BGA	3.45
MSP430F5338	256	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	Battery backup	100LQFP, 113BGA	3.85
MSP430F5340	64	6	38	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	9 ch ADC12 A	—	—	48QFN	2.15
MSP430F5341	96	8	38	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	9 ch ADC12 A	—	—	48QFN	2.45
MSP430F5342	128	10	38	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	9 ch ADC12 A	—	—	48QFN	2.60
MSP430F5358	384	32 + 2†	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	—	100LQFP, 113BGA	6.00
MSP430F5359	512	64 + 2†	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	—	100LQFP, 113BGA	6.00
F54x																			
MSP430F5418A	128	16	87	3	5, 3	7	●	●	2	2	3 ch	32×32‡	—	●	16 ch ADC12 A	—	—	80LQFP	2.65
MSP430F5419A	128	16	87	3	5, 3	7	●	●	4	4	3 ch	32×32‡	—	●	16 ch ADC12 A	—	—	100LQFP, 113BGA	2.50
MSP430F5435A	192	16	87	3	5, 3	7	●	●	2	2	3 ch	32×32‡	—	●	16 ch ADC12 A	—	—	80LQFP	3.80
MSP430F5436A	192	16	87	3	5, 3	7	●	●	4	4	3 ch	32×32‡	—	●	16 ch ADC12 A	—	—	100LQFP, 113BGA	4.10
MSP430F5437A	256	16	87	3	5, 3	7	●	●	2	2	3 ch	32×32‡	—	●	16 ch ADC12 A	—	—	80LQFP	4.30
MSP430F5438A	256	16	87	3	5, 3	7	●	●	4	4	3 ch	32×32‡	—	●	16 ch ADC12 A	—	—	100LQFP, 113BGA	4.55
F55xx																			
MSP430F5500	8	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	4	—	—	—	USB	48QFN	1.45
MSP430F5501	16	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	4	—	—	—	USB	48QFN	1.60
MSP430F5502	24	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	4	—	—	—	USB	48QFN	1.65
MSP430F5503	32	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	4	—	—	—	USB	48QFN	1.75
MSP430F5504	8	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	—	●	8 ch (6/2) ADC10	—	USB	48QFN, 48LQFP	1.70
MSP430F5505	16	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	—	●	8 ch (6/2) ADC10	—	USB	48QFN	1.75
MSP430F5506	24	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	—	●	8 ch (6/2) ADC10	—	USB	48QFN	1.80
MSP430F5507	32	4 + 2†	31	4	5, 3, 3	7	●	●	1	1	3 ch	32×32‡	—	●	8 ch (6/2) ADC10	—	USB	48QFN	1.90
MSP430F5508	16	4 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	8	●	12 ch (10/2) ADC10	—	USB	48QFN, 48LQFP, 64QFN, 80BGA	1.80
MSP430F5509	24	4 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	8	●	12 ch (10/2) ADC10	—	USB	48QFN, 48LQFP, 64QFN, 80BGA	1.85
MSP430F5510	32	4 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	8	●	12 ch (10/2) ADC10	—	USB	48QFN, 48LQFP, 64QFN, 80BGA	1.90
MSP430F5513	32	4 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	USB	64QFN, 80BGA	3.25
MSP430F5514	64	4 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	USB	64QFN, 80BGA	3.55
MSP430F5515	64	4 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	USB	80LQFP	3.35
MSP430F5517	96	6 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	USB	80LQFP	3.75
MSP430F5519	128	8 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	—	—	—	USB	80LQFP	3.90
MSP430F5521	32	6 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	USB	80LQFP	3.35
MSP430F5522	32	8 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	12 ch ADC12 A	—	USB	64QFN, 80BGA	3.40
MSP430F5524	64	4 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	12 ch ADC12 A	—	USB	64QFN, 80BGA	3.55
MSP430F5525	64	4 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	USB	80LQFP	3.70
MSP430F5526	96	6 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	12 ch ADC12 A	—	USB	64QFN, 80BGA	3.80
MSP430F5527	96	6 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	USB	80LQFP	3.90
MSP430F5528	128	8 + 2†	47	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	USB	64QFN, 80BGA	3.95
MSP430F5529	128	8 + 2†	63	4	5, 3, 3	7	●	●	2	2	3 ch	32×32‡	●	●	16 ch ADC12 A	—	USB	80 LQFP	4.00
F563x																			
MSP430F5630	128	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	—	—	—	USB, Backup battery switch	100LQFP, 113BGA	3.65
MSP430F5631	192	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	—	—	—	USB, Backup battery switch	100LQFP, 113BGA	4.10
MSP430F5632	256	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	—	—	—	USB, Backup battery switch	100LQFP, 113BGA	4.50
MSP430F5633	128	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	USB, Backup battery switch	100LQFP, 113BGA	4.20
MSP430F5634	192	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	USB, Backup battery switch	100LQFP, 113BGA	4.45
MSP430F5635	256	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	USB, Backup battery switch	100LQFP, 113BGA	4.75
MSP430F5636	128	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	USB, Backup battery switch	100LQFP, 113BGA	4.85
MSP430F5637	192	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	USB, Backup battery switch	100LQFP, 113BGA	5.10
MSP430F5638	256	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	USB, Backup battery switch	100LQFP, 113BGA	5.35
F565x																			
MSP430F5658	384	32 + 2*	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	USB	100LQFP, 113BGA	6.00
MSP430F5659	512	64 + 2*	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	USB	100LQFP, 113BGA	6.00

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† *Additional 2K of SRAM available if USB is disabled.*

‡ *Supports 64 bit result length.*

* *Represents number of capture/compare registers per timer.*

New products are listed in ***bold red****.*

Device Catalog

MSP430F6xx Series – Up to 25 MHz with LCD

Part Number	Flash (KB)	SRAM (KB)	I/O (max)	16- Bit Timers			Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	USCI		DMA	MPY	Comp B	Temp Sensor	ADC Ch/Res	DAC	Additional Features	Packages	1 ku Price[1] (U.S. $)
				Total	A*	B*			Ch A: UART/ LIN/IrDA/SPI	Ch B: I²C/SPI									
F663x																			
MSP430F6630	128	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	—	—	—	USB, LCD	100LQFP, 113BGA	4.60
MSP430F6631	192	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	—	—	—	USB, LCD	100LQFP, 113BGA	4.80
MSP430F6632	256	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	—	—	—	USB, LCD	100LQFP, 113BGA	5.10
MSP430F6633	128	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	USB, LCD	100LQFP, 113BGA	4.65
MSP430F6634	192	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	USB, LCD	100LQFP, 113BGA	4.95
MSP430F6635	256	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	USB, LCD	100LQFP, 113BGA	5.15
MSP430F6636	128	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	USB, LCD	100LQFP, 113BGA	4.90
MSP430F6637	192	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	USB, LCD	100LQFP, 113BGA	5.15
MSP430F6638	256	16 + 2†	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	USB, LCD	100LQFP, 113BGA	5.42
F643x																			
MSP430F6433	128	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	LCD	100LQFP, 113BGA	3.65
MSP430F6435	256	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	—	LCD	100LQFP, 113BGA	4.05
MSP430F6436	128	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	LCD	100LQFP, 113BGA	4.20
MSP430F6438	256	18	74	4	5, 3, 3	7	●	●	2	2	6 ch	32×32‡	●	●	16 ch ADC12 A	●	LCD	100LQFP, 113BGA	4.70
F645x																			
MSP430F6458	384	34	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	LCD	100LQFP, 113BGA	7.20
MSP430F6459	512	66	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	LCD	100LQFP, 113BGA	7.20
F665x																			
MSP430F6658	384	32 + 2†	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	USB, LCD	100LQFP, 113BGA	7.20
MSP430F6659	512	64 + 2†	74	4	5, 3, 3	7	●	●	3	3	6 ch	32×32‡	●	●	16 ch ADC12	●	USB, LCD	100LQFP, 113BGA	7.20
F67xx																			
MSP430F6720	16	1	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.00
MSP430F6721	32	2	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.10
MSP430F6723	64	4	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.30
MSP430F6724	96	4	72	4	5, 3, 3	7	●	●	3	1	6 ch	32x32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.45
MSP430F6725	128	4	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.60
MSP430F6726	128	8	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.70
MSP430F6730	16	1	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.45
MSP430F6731	32	2	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.55
MSP430F6733	64	4	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	2.75
MSP430F6734	96	4	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	3.00
MSP430F6735	128	4	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	3.15
MSP430F6736	128	8	72	4	5, 3, 3	7	●	●	3	1	6 ch	32×32‡	—	●	8 ch ADC10	—	LCD	100LQFP, 80LQFP	3.25
MSP430F6745	128	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.13
MSP430F67451	128	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	3.86
MSP430F6746	256	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.94
MSP430F67461	256	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	4.67
MSP430F6747	256	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.06
MSP430F67471	256	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	4.79
MSP430F6748	512	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.18
MSP430F67481	512	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	5.91
MSP430F6749	512	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.49
MSP430F67491	512	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	6.02

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† *Additional 2K of SRAM available if USB is disabled.*
‡ *Supports 64-bit result length.*
New products are listed in ***bold red****.*

MSP430F6xx Series – Up to 25 MHz with LCD (continued)

Part Number	Flash (KB)	SRAM (KB)	I/O (max)	16- Bit Timers			Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	USCI		DMA	MPY	Comp B	Temp Sensor	ADC Ch/Res	DAC	Additional Features	Packages	1 ku Price[1] (U.S. $)
				Total	A*	B*			Ch A: UART/ LIN/IrDA/SPI	Ch B: I²C/SPI									
F67xx (continued)																			
MSP430F6765	128	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.36
MSP430F67651	128	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	4.09
MSP430F6766	256	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.17
MSP430F67661	256	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	4.90
MSP430F6767	256	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.29
MSP430F67671	256	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	5.02
MSP430F6768	512	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.41
MSP430F67681	512	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	6.14
MSP430F6769	512	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.52
MSP430F67691	512	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	6.25
MSP430F6775	128	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.59
MSP430F67751	128	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	4.32
MSP430F6776	256	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.40
MSP430F67761	256	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	5.13
MSP430F6777	256	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.52
MSP430F67771	256	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	5.25
MSP430F6778	512	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.64
MSP430F67781	512	16	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	6.37
MSP430F6779	512	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.76
MSP430F67791	512	32	90	4	5, 3, 3	7	●	●	4	2	6 ch	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	128LQFP, 100LQFP	6.48
MSP430F6779A	512	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.76
MSP430F6778A	512	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.64
MSP430F6777A	256	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.52
MSP430F6776A	256	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.40
MSP430F6775A	128	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.59
MSP430F6769A	512	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.52
MSP430F6768A	512	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.41
MSP430F6767A	256	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.29
MSP430F6766A	256	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	5.17
MSP430F6765A	128	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.36

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*
**Represents number of capture/compare registers per timer.*
† *Additional 2K of SRAM available if USB is disabled.*
‡ *Supports 64-bit result length.*
New products are listed in ***bold red****.*

Device Catalog

MSP430F6xx Series – Up to 25 MHz with LCD (continued)

Part Number	Flash (KB)	SRAM (KB)	I/O (max)	16- Bit Timers			Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	USCI		DMA	MPY	Comp B	Temp Sensor	ADC Ch/Res	DAC	Additional Features	Packages	1 ku Price[1] (U.S. $)
				Total	A*	B*			Ch A: UART/ LIN/IrDA/SPI	Ch B: I²C/SPI									
MSP430F6749A	512	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.49
MSP430F6748A	512	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	6.18
MSP430F6747A	256	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.79
MSP430F6746A	256	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.94
MSP430F6745A	128	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD, AES	100LQFP, 128LQFP	4.13
MSP430F67791A	512	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	6.48
MSP430F67781A	512	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	6.37
MSP430F67771A	256	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	5.25
MSP430F67761A	256	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	5.13
MSP430F67751A	128	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 7 ch SD24	—	LCD	100LQFP, 128LQFP	4.32
MSP430F67691A	512	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	6.25
MSP430F67681A	512	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	6.14
MSP430F67671A	256	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	5.02
MSP430F67661A	256	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	4.90
MSP430F67651A	128	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 6 ch SD24	—	LCD	100LQFP, 128LQFP	4.09
MSP430F67491A	512	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	6.02
MSP430F67481A	512	16	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	5.91
MSP430F67471A	256	32	90	4	5, 3, 3	7	●	●	4	2	3	32×32‡	●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	4.79
MSP430F67461A	256	16	90	4	5, 3, 3	7	●	●	4	2	3		●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	4.67
MSP430F67451A	128	16	90	4	5, 3, 3	7	●	●	4	2	3		●	●	8 ch ADC10/ 4 ch SD24	—	LCD	100LQFP, 128LQFP	3.86
MSP430F67621	64	4	72	4	5, 3, 3	7	●	●	3	1	3	32×32‡	—	●	8 ch ADC10/ 3 ch SD24	—	LCD	100LQFP, 80LQFP	2.70
MSP430F67641	128	8	72	4	5, 3, 3	7	●	●	4	1	3	32×32‡	—	●	8 ch ADC10/ 3 ch SD24	—	LCD	100LQFP, 80LQFP	2.90

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**Represents number of capture/compare registers per timer.*
† *Additional 2K of SRAM available if USB is disabled.*
‡ *Supports 64-bit result length.*
New products are listed in ***bold red****.*

Differentiated Performance: If you need low-voltage operation, industrial temperature range, or embedded RF, then you have come to the right place!

Application-Specific MSP430 Devices

Application	Part Number	Flash (KB)	SRAM (KB)	16-Bit Timers			ADC	Additional Features	Related Devices	Package(s)	1 ku Price[1] (U.S. $)
				Total	A*	B*					
NFC	RF430CL330H	—	—	—	—	—	—	Dynamic NFC interface transponder, NFC tag type 4	—	14TSSOP	0.85
Low Voltage (0.9V)	MSP430L092	—	2	2	2	—	ADC8	DAC8, COMP, SVS, temp. sensor, 11 I/Os, ROM-version available	—	14TSSOP	1.00
Contactless Power	MSP430BQ1010	—	—	—	—	—	—	Fixed-function, Qi-certified software for contactless power applications (receiver). Compliant with the Wireless Power Consortium. Comes pre-loaded by default.	BQ25046, BQ500110	32QFN	1.80
Haptics	MSP430TCH5E	—	—	—	—	—	—	Haptics-enabled device authenticated to run Immersion Touchsense technology	—	28TSSOP, 32QFN	1.80

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

**Represents number of capture/compare registers per timer.*

Enhanced Performance

Part Number	Frequency (MHz)	Flash (KB)	SRAM (B)	GPIO	16-bit Timers	Watchdog and RTC	Brown Out Reset	USI (I^2C/SPI)	DMA	MPY	Comp	Temp Sensor	ADC	Temp Range (°C)	Additional Features	Pin/Package	1 ku Price[1] (U.S. $)
Auto and EP																	
MSP430F2619S-HT	16	120	4096	48	2	●	●	2	—	—	●	●	8 ch ADC12	–55 to 150	DAC12	64LQFP	68.75/100 u
MSP430F2013-EP	16	2	128	10	1	●	●	1	—	—	●	●	4 ch SD16	–40 to 125	—	16QFN	1.75/100 u
MSP430F2274-EP	16	32	1024	32	2	●	●	2	—	—	●	●	12 ch ADC12	–55 to 125	(2) Op Amp	38TSSOP, 40QFN	6.75
MSP430F249-EP	16	60	2048	48	2	●	●	2	—	16×16	●	●	8 ch ADC12	–55 to 125	—	64LQFP	11.88/100 u
MSP430F2618-EP	16	116	8192	48	2	●	●	2	●	16×16	●	●	8 ch ADC12	–40 to 105	DAC12	113BGA	26.00/100 u
MSP430G2230-EP	16	2	128	4	1	●	●	1	—	—	—	●	4 ch SAR10	–40 to 125	—	8SOIC	0.52
MSP430G2231-EP	16	2	128	10	1	●	●	1	—	—	—	●	8 ch SAR10	–40 to 125	—	14TSSOP	1.05
MSP430G2302-EP	16	—	128	16	1	●	●	1	—	—	—	●	—	–40 to 85	—	14TSSOP	0.85

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

Note: Additional 105°C devices available on page 14.

MSP430i20xx I-Series – Up to 16 MHz

Part Number	Flash (KB)	SRAM (B)	I/O (Max)	Timers			Watchdog and RTC	Brown Out Reset	SVS	USART (UART/SPI)	MPY	Temp Sensor	ADC Ch/Res	Temp Range (°C)	Pin/Package	1 ku Price[1] (U.S. $)
				Total	A*	B*										
i20xx																
MSP430i2020	16	1	16	1	3	—	●	●	●	●	●	●	2 ch SD24	–40 to 105	28TSSOP, 32QFN	1.50
MSP430i2021	32	2	16	1	3	—	●	●	●	●	●	●	2 ch SD24	–40 to 105	28TSSOP, 32QFN	1.58
MSP430i2030	16	1	16	1	3	—	●	●	●	●	●	●	3 ch SD24	–40 to 105	28TSSOP, 32QFN	1.60
MSP430i2031	32	2	16	1	3	—	●	●	●	●	●	●	3 ch SD24	–40 to 105	28TSSOP, 32QFN	1.70
MSP430i2040	16	1	16	1	3	—	●	●	●	●	●	●	4 ch SD24	–40 to 105	28TSSOP, 32QFN	1.70
MSP430i2041	32	2	16	1	3	—	●	●	●	●	●	●	4 ch SD24	–40 to 105	28TSSOP, 32QFN	1.75

[1] *Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*

**Represents number of capture/compare registers per timer.*

*New products are listed in **bold red**.*

Device Catalog

CC430 Family

Sub-1GHz RF + MSP430™ MCU

The CC430 16-bit RF microcontroller family provides tight integration between the microcontroller core, peripherals, software, and RF transceiver, creating true system-on-chip solutions that are easy to use. Features <1GHz RF transceiver, with 1.8V–3.6V operation.

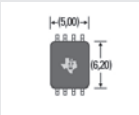
CC430 (Sub-1GHz RF + MSP430 Microcontroller) Series – Up to 20 MHz

Part Number	Flash (KB)	SRAM (KB)	I/O (max)	16-Bit Timers			Watchdog and RTC	PMM: BOR, SVS, SVM, LDO	USCI		DMA	MPY	Comp B	Temp Sensor	ADC Ch/Res	Additional Features	Package(s)	1ku Price[1] (U.S. $)	Common Features
				Total	A*	B*			Ch A: UART/ LIN/IrDA/SPI	Ch B: I²C/SPI									
F51xx																			• AES HW encryption • Max RF data rate 500 kbps • Best sensitivity: 110 dBm† • Frequency ranges: 300–348 MHz 389–464 MHz 779–929 MHz
CC430F5123	8	2	30	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	6 ch	—	48QFN	2.50	
CC430F5125	16	2	30	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	6 ch	—	48QFN	2.60	
CC430F5133	8	2	30	2	5	3	●	●	1	1	3 ch	32×32‡	●	●	6 ch ADC12	—	48QFN	4.15	
CC430F5135	16	2	30	2	5	3	●	●	1	1	3 ch	32×32‡	●	●	6 ch ADC12	—	48QFN	4.30	
CC430F5137	32	4	30	2	5	3	●	●	1	1	3 ch	32×32‡	●	●	6 ch ADC12	—	48QFN	5.00	
CC430F5143	8	2	30	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	6 ch	—	48QFN	2.60	
CC430F5145	16	2	30	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	6 ch	—	48QFN	2.70	
CC430F5147	32	4	30	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	6 ch	—	48QFN	2.80	
F61xx																			
CC430F6125	16	2	44	2	5	3	●	●	1	1	3 ch	32×32‡	●	—	—	96 seg LCD	64QFN	4.35	
CC430F6126	32	2	44	2	5	3	●	●	1	1	3 ch	32×32‡	●	—	—	96 seg LCD	64QFN	4.60	
CC430F6127	32	4	44	2	5	3	●	●	1	1	3 ch	32×32‡	●	—	—	96 seg LCD	64QFN	5.05	
CC430F6135	16	2	44	2	5	3	●	●	1	1	3 ch	32×32‡	●	●	8 ch ADC12	96 seg LCD	64QFN	4.65	
CC430F6137	32	4	44	2	5	3	●	●	1	1	3 ch	32×32‡	●	●	8 ch ADC12	96 seg LCD	64QFN	5.35	
CC430F6143	8	2	44	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	8 ch	—	64QFN	3.00	
CC430F6145	16	2	44	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	8 ch	—	64QFN	3.10	
CC430F6147	32	4	44	2	5	3	●	●	1	1	3 ch	32×32‡	—	●	8 ch	—	64QFN	3.20	

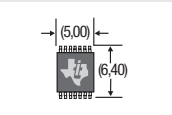
[1]*Prices are quoted in U.S. dollars and represent year 2014 suggested resale price.*
**Represents number of capture/compare register per timer.*
†*At 1.2 kBaud, 868 MHz, 1% packet error rate.*
‡*Supports 64-bit result length.*

Ultra-Low-Power MSP430 MCU Selected Package Options

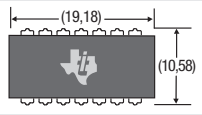
8-pin D (SOIC)



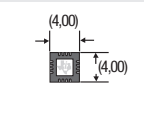
14-pin PW (TSSOP)



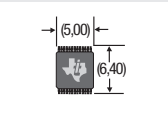
14-pin N (DIP)



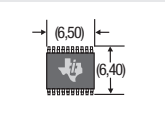
16-pin RSA (QFN)



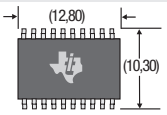
20-pin DVG (TVSOP)



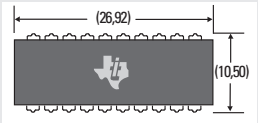
20-pin PW (TSSOP)



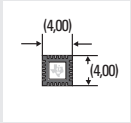
20-pin DW (SOIC)



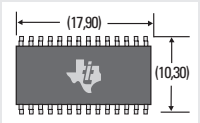
20-pin N (PDIP)



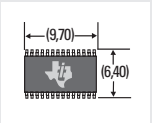
24-pin RGE (QFN)



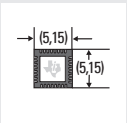
28-pin DW (SOIC)



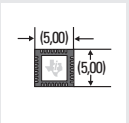
28-pin PW (TSSOP)



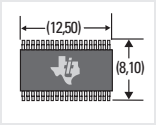
32-pin RTV (QFN)



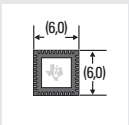
32-pin RHB (QFN)



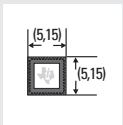
38-pin DA (TSSOP)



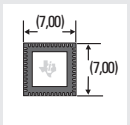
40-pin RHA (QFN)



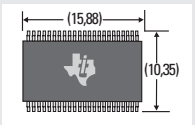
40-pin RSB (QFN)



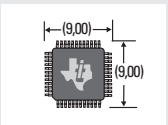
48-pin RGZ (QFN)



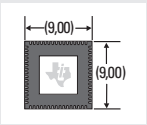
48-pin DL (SSOP)



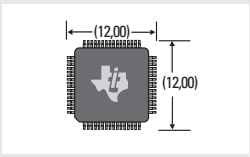
48-pin PT (LQFP)



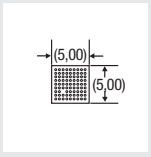
64-pin RGC, RTD (QFN)



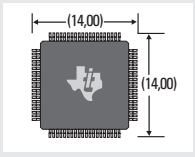
64-pin PM, PAG (LQFP/TQFP)



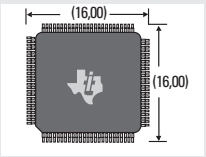
80-pin ZQE (BGA)



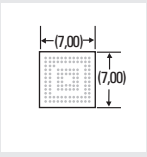
80-pin PN (LQFP)



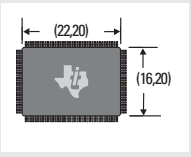
100-pin PZ (LQFP)



113-pin ZQW (BGA)

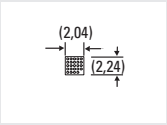


128-pin PEU (LQFP)

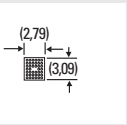


Die-Size BGA Packages

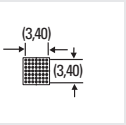
24-pin YQD (DSBGA)
MSP430FR5739



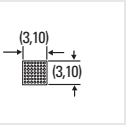
40-pin YFF (DSBGA)
MSP430F51xx



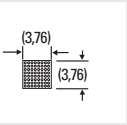
49-pin YFF (DSBGA)
MSP430F22xx



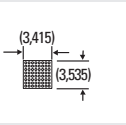
49-pin YFF (DSBGA)
MSP430F23xx



64-pin YFF (DSBGA)
MSP430F55xx

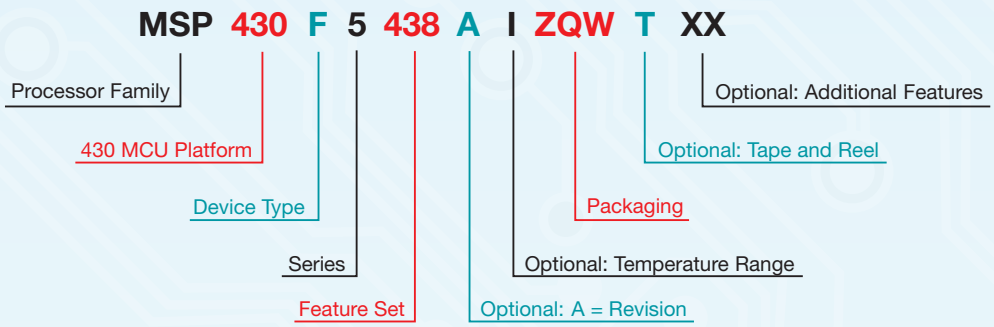


64-pin YFF (DSBGA)
MSP430F5229



*More information on package dimensions available in the datasheets or at **ti.com/packaging**.*

Microcontroller Part Number Decoder



Processor Family	CC = Embedded RF Radio MSP = Mixed Signal Processor XMS = Experimental Silicon	
430 MCU Platform	TI's Low Power Microcontroller Platform	
Device Type	**Memory Type** C = ROM F = FLASH FR = FRAM G = Flash (Value Line) L = No nonvolatile memory	**Specialized Application** AFE = Analog front end BT = Pre-programmed with *Bluetooth*® BQ = Contactless power CG = ROM medical FE = Flash energy meter FG = Flash medical FW = Flash electronic flow meter
Series	1 Series = Up to 8 MHz 2 Series = Up to 16 MHz 3 Series = Legacy OTP 4 Series = Up to 16 MHz w/ LCD	5 Series = Up to 25 MHz 6 Series = Up to 25 MHz w/ LCD 0 = Low-voltage series
Feature Set	Various levels of integration within a series	
Optional: A = Revision	N/A	
Optional: Temperature Range	S = 0°C to 50°C C = 0°C to 70°C I = –40°C to 85°C T = –40°C to 105°C	
Packaging	ti.com/packaging	
Optional: Tape and Reel	T = Small reel (7 in) R = Large reel (11 in) No markings = Tube or tray	
Optional: Additional Features	EP = Enhanced product (–40°C to 105°C) HT = Extreme temperature parts (–55°C to 150°C)	

Embedded Processing Portfolio

TI Embedded Processors

Code Composer Studio™ IDE

Microcontroller (MCU)

16-Bit Ultra-Low Power MCUs

MSP430™

- Up to 25 MHz
- Up to 512 KB Flash
- Analog I/O, ADC, LCD, USB, FRAM

Measurement, Sensing, General purpose

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ARM®-Based Processor

32-Bit ARM MCUs

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- Flash 256 KB to 3 MB
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ARM Processors

Sitara™
ARM Cortex-A8/A9/A15

- 300-MHz A8 to 1.5-GHz dual A15
- LPDDR, DDR2/3
- 1Gb Ethernet, Display, 3D graphics, HD video, DSP accel., PCIe, CAN, SATA, USB 2/3, PR-ICSS

Industrial automation, HMI, IoT gateway, POS, Smart grid, Consumer

$5.00 – $50s

Digital Signal Processor (DSP)

Singlecore DSPs

C5000™ C6000™

- Up to 800-MHz DSPs
- SDRAM, DDR2
- I^2C, I^2S, UHPI, McASP/McBSP, Display, USB 2.0, Ethernet

Patient monitoring, Biometric security, Audio

$2.00 – $20s

Multicore Processors

KeyStone™
ARM Cortex-A15 + C6000 DSP

- Up to 8 core 1.4-GHz DSP + 4 core 1.4-GHz Cortex-A15
- DDR2/3 Up to 10 MB SL2
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Analytics, Telecom, Mission critical, High-performance compute

$20s – $300s

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Russian Support	+7 (4) 95 98 10 701

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	Domestic	www.tij.co.jp/pic

Asia

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Note: Toll-free numbers may not support mobile and IP phones.	
Australia	1-800-999-084
China	800-820-8682
Hong Kong	800-96-5941
India	000-800-100-8888
Indonesia	001-803-8861-1006
Korea	080-551-2804
Malaysia	1-800-80-3973
New Zealand	0800-446-934
Philippines	1-800-765-7404
Singapore	800-886-1028
Taiwan	0800-006800
Thailand	001-800-886-0010
International	+86-21-23073444
Fax	+86-21-23073686
Email	tiasia@ti.com or ti-china@ti.com
Internet	support.ti.com/sc/pic/asia.htm

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TEXAS INSTRUMENTS

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