

# Microcontroller Development Tools

## Development Kits

Complete development/prototyping system includes the following:

- Prototyping/demonstration board
- USB adapter for in-system programming and debugging
- Silicon Laboratories IDE
- MCU configuration wizard



Buy Online  
[www.silabs.com](http://www.silabs.com)

Buy online at [www.silabs.com/DevKits](http://www.silabs.com/DevKits)

## Integrated Development Environment

4 kB C compiler included

Source code editor

Project manager

Keil 8051 macro assembler and linker

Device programmer

Supports full-speed, non-intrusive, in-circuit debug logic

Source-level debug

Variable watch window

Real-time breakpoints

Conditional memory watchpoints

Memory and register inspect/modify

Supports third-party development tools

Single-step and animated execution modes

## Third Party Tool Support

A broad range of third-party compilers and development tools are available including a free Small Device C Compiler (SDCC) supported by App Note 198, "Integrating SDCC 8051 Tools into the Silicon Labs IDE." Device programming and source-level debug of OMF-51 object files is fully supported.

## Design Support at [www.silabs.com/MCU](http://www.silabs.com/MCU)

Silicon Laboratories' Reference Designs, Application Notes and source code examples address a wide range of applications and markets. Visit our website at [www.silabs.com/MCU](http://www.silabs.com/MCU) for complete access to all of our design resources.

## Product Support at [www.silabs.com/support](http://www.silabs.com/support)

💡 MCU Knowledge Base: answers to common technical questions about the MCU product line and product use.

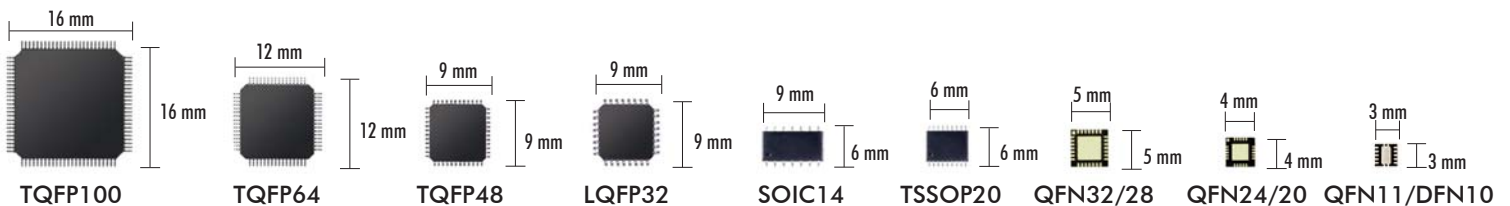
MCU User's Forum: where C8051 MCU users can share experiences and technical questions with other users.

Microcontroller support email:

Americas: [mcuapps@silabs.com](mailto:mcuapps@silabs.com)

Europe and Asia: [eumcuapps@silabs.com](mailto:eumcuapps@silabs.com)

Development Kit or IDE support email: [mcutools@silabs.com](mailto:mcutools@silabs.com)



Pricing and availability:  
[www.silabs.com/sales](http://www.silabs.com/sales)

### Corporate Headquarters

400 West Cesar Chavez  
Austin, TX 78701  
512.416.8500  
877.444.3032 (toll free)  
Fax: 512.416.9669

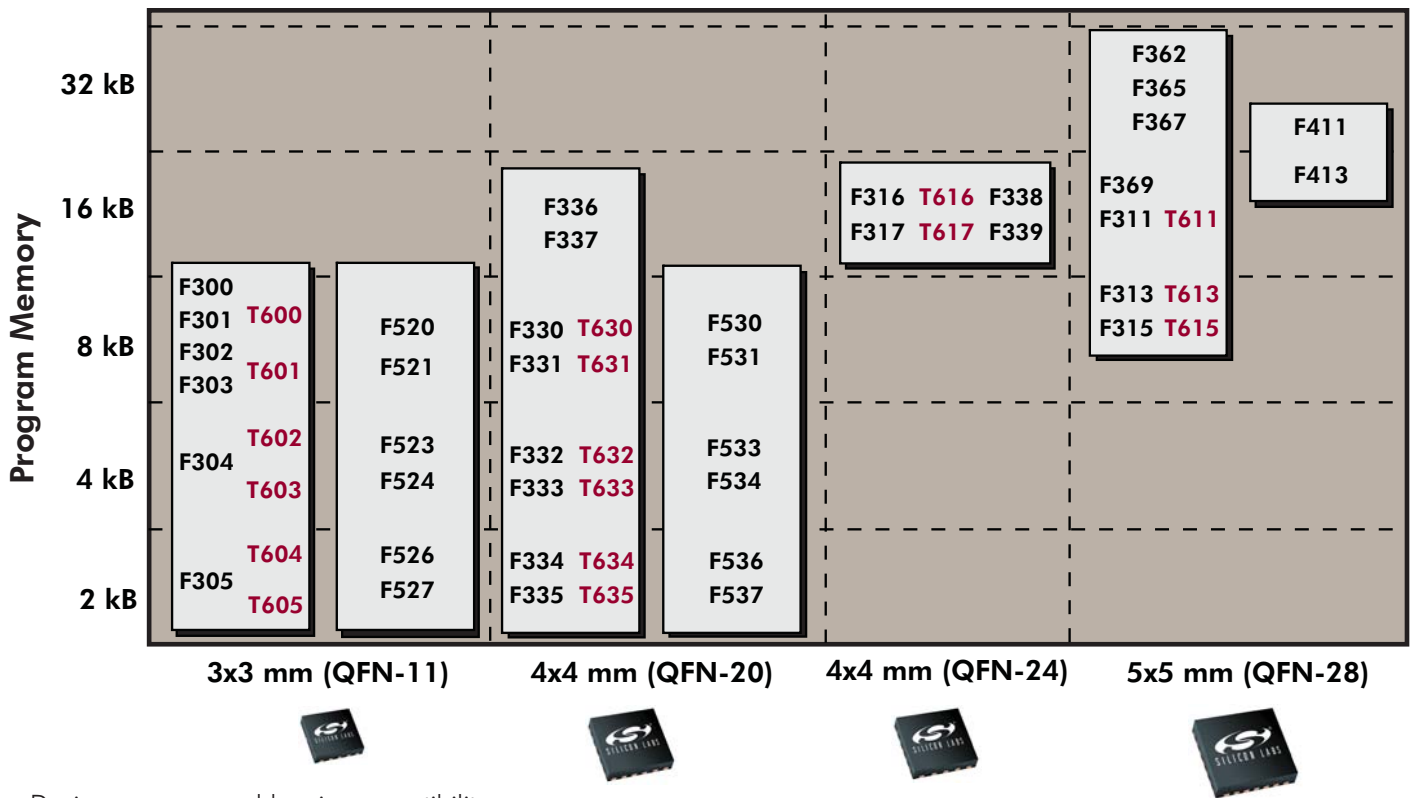
[www.silabs.com](http://www.silabs.com)

## Mixed-Signal MCU Selector Guide

- Highest Performance Integrated Analog
  - Up to 24-bit ADCs
  - Up to 1 Msps ADCs
- 0.5% Internal Oscillator
  - 16-bit capacitive to digital converter
- World's Fastest 8-bit MCU
  - Up to 100 MIPS
- Smallest Mixed-Signal MCU Footprint
  - 2 mm x 2 mm
- World's Lowest-Voltage/Low-Power MCUs
  - Operates down to 0.9 V



## Small Form Factor and OTP-EPROM Pin-for-Pin Compatibility



- Devices are grouped by pin compatibility
- Flash memory devices are listed in black
- OTP-EPROM memory devices are listed in red

## Small Form Factor OTP-EPROM Based MCUs (Pin Compatible with Flash)

Part Number	EPROM Memory	MIPS (peak)	RAM (bytes)	Dig. I/O	Serial Buses	Timers (16-bit)	PCA Chnls	Internal Osc	ADC	DAC	Temp Sensor	VREF Comp.	Other	Package	Flash Version	Dev Kit	
C8051T610	16 kB	25	1280	29	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 21-ch., 500 ksps	—	•	2	VREG	LQFP32	F310	C8051T610DK	
C8051T611	16 kB	25	1280	25	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 21-ch., 500 ksps	—	•	2	VREG	QFN28	F311	C8051T610DK	
C8051T612	8 kB	25	1280	29	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 21-ch., 500 ksps	—	•	2	VREG	LQFP32	F312	C8051T610DK	
C8051T613	8 kB	25	1280	25	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 21-ch., 500 ksps	—	•	2	VREG	QFN28	F313	C8051T610DK	
C8051T614	8 kB	25	1280	29	I <sup>2</sup> C, SPI, UART	4	5	±2%	—	—	—	2	VREG	LQFP32	F314	C8051T610DK	
C8051T615	8 kB	25	1280	25	I <sup>2</sup> C, SPI, UART	4	5	±2%	—	—	—	2	VREG	QFN28	F315	C8051T610DK	
C8051T616	16 kB	25	1280	21	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 17-ch., 500 ksps	—	•	2	VREG	QFN24	F316	C8051T610DK	
C8051T617	16 kB	25	1280	21	I <sup>2</sup> C, SPI, UART	4	5	±2%	—	—	—	2	VREG	QFN24	F317	C8051T610DK	
C8051T600	8 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	10-bit, 8-ch., 500 ksps	—	•	1	VREG	QFN11/ SOIC14	F300	C8051T600DK	
C8051T601	8 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	—	—	—	1	VREG	QFN11/ SOIC14	F301	C8051T600DK	
C8051T602	4 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	10-bit, 8-ch., 500 ksps	—	•	1	VREG	QFN11/ SOIC14	F300	C8051T600DK	
C8051T603	4 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	—	—	—	1	VREG	QFN11/ SOIC14	F301	C8051T600DK	
C8051T604	2 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	10-bit, 8-ch., 500 ksps	—	•	1	VREG	QFN11/ SOIC14	F300	C8051T600DK	
C8051T605	2 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	—	—	—	1	VREG	QFN11/ SOIC14	F301	C8051T600DK	
C8051T606	1.5 kB	25	128	6	I <sup>2</sup> C, UART	3	3	±2%	—	—	—	1	VREG	QFN10/ QFN11/ MSOP11	F301	C8051T606DK	
C8051T630	8 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 500 ksps	10-bit, 1-ch.	•	•	1	VREG, LFO	QFN20	F330	C8051T630DK
C8051T631	8 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	1	VREG, LFO	QFN20	F331	C8051T630DK
C8051T632	4 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 500 ksps	10-bit, 1-ch.	•	•	1	VREG, LFO	QFN20	F330	C8051T630DK
C8051T633	4 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	1	VREG, LFO	QFN20	F331	C8051T630DK
C8051T634	2 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 500 ksps	10-bit, 1-ch.	•	•	1	VREG, LFO	QFN20	F330	C8051T630DK
C8051T635	2 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	1	VREG, LFO	QFN20	F331	C8051T630DK

# Small Form Factor Mixed-Signal MCUs

Part Number	Flash Memory	MIPS (peak)	RAM (bytes)	Dig. I/O	Serial Buses	Timers (16-bit)	PWM/PCA	Internal Osc	ADC	DAC	Temp Sensor	VREF	Comp.	Other	Package	OTP-EPROM Version	Dev Kit
C8051F360	32 kB	100	1280	39	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	TQFP48	—	C8051F360DK
C8051F361	32 kB	100	1280	27	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	LQFP32	—	C8051F360DK
C8051F362	32 kB	100	1280	24	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	QFN28	—	C8051F360DK
C8051F363	32 kB	100	1280	39	I <sup>2</sup> C, SPI, UART	4	6	±2%	—	—			2	16x16 MAC	TQFP48	—	C8051F360DK
C8051F364	32 kB	100	1280	27	I <sup>2</sup> C, SPI, UART	4	6	±2%	—	—			2	16x16 MAC	LQFP32	—	C8051F360DK
C8051F365	32 kB	100	1280	24	I <sup>2</sup> C, SPI, UART	4	6	±2%	—	—			2	16x16 MAC	QFN28	—	C8051F360DK
C8051F366	32 kB	50	1280	29	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	LQFP32	—	C8051F360DK
C8051F367	32 kB	50	1280	25	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	QFN28	—	C8051F360DK
C8051F368	16 kB	50	1280	29	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	LQFP32	—	C8051F360DK
C8051F369	16 kB	50	1280	25	I <sup>2</sup> C, SPI, UART	4	6	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	2	16x16 MAC	QFN28	—	C8051F360DK
C8051F410	32 kB	50	2304	24	I <sup>2</sup> C, SPI, UART	4	6	±2%	12-bit, 24-ch., 200 ksp/s	12-bit, 2-ch.	•	•	2	VREG, smartClock	LQFP32	—	C8051F410DK
C8051F411	32 kB	50	2304	20	I <sup>2</sup> C, SPI, UART	4	6	±2%	12-bit, 20-ch., 200 ksp/s	12-bit, 2-ch.	•	•	2	VREG, smartClock	QFN28	—	C8051F410DK
C8051F412	16 kB	50	2304	24	I <sup>2</sup> C, SPI, UART	4	6	±2%	12-bit, 24-ch., 200 ksp/s	12-bit, 2-ch.	•	•	2	VREG, smartClock	LQFP32	—	C8051F410DK
C8051F413	16 kB	50	2304	20	I <sup>2</sup> C, SPI, UART	4	6	±2%	12-bit, 20-ch., 200 ksp/s	12-bit, 2-ch.	•	•	2	VREG, smartClock	QFN28	—	C8051F410DK
C8051F310	16 kB	25	1280	29	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 21-ch., 200 ksp/s	—	•		2	—	LQFP32	T610	C8051F310DK
C8051F311	16 kB	25	1280	25	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 17-ch., 200 ksp/s	—	•		2	—	QFN28	T611	C8051F310DK
C8051F312	8 kB	25	1280	29	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 21-ch., 200 ksp/s	—	•		2	—	LQFP32	T612	C8051F310DK
C8051F313	8 kB	25	1280	25	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 17-ch., 200 ksp/s	—	•		2	—	QFN28	T613	C8051F310DK
C8051F314	8 kB	25	1280	29	I <sup>2</sup> C, SPI, UART	4	5	±2%	—	—			2	—	LQFP32	T614	C8051F310DK
C8051F315	8 kB	25	1280	25	I <sup>2</sup> C, SPI, UART	4	5	±2%	—	—			2	—	QFN28	T615	C8051F310DK
C8051F316	16 kB	25	1280	21	I <sup>2</sup> C, SPI, UART	4	5	±2%	10-bit, 13-ch., 200 ksp/s	—	•		2	—	QFN24	T616	C8051F310DK
C8051F317	16 kB	25	1280	21	I <sup>2</sup> C, SPI, UART	4	5	±2%	—	—			2	—	QFN24	T617	C8051F310DK
C8051F336	16 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.			1	LFO	QFN20	—	C8051F336DK
C8051F337	16 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—			1	LFO	QFN20	—	C8051F336DK
C8051F338	16 kB	25	768	21	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.			1	LFO	QFN24	—	C8051F336DK
C8051F339	16 kB	25	768	21	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—			1	LFO	QFN24	—	C8051F336DK
C8051F206	8 kB	25	1280	32	SPI, UART	3	-	±20%	12-bit, 32-ch., 100 ksp/s	—			2	—	TQFP48	—	C8051F206DK
C8051F220	8 kB	25	256	32	SPI, UART	3	-	±20%	8-bit, 32-ch., 100 ksp/s	—			2	—	TQFP48	—	C8051F226DK
C8051F221	8 kB	25	256	22	SPI, UART	3	-	±20%	8-bit, 32-ch., 100 ksp/s	—			2	—	LQFP32	—	C8051F226DK
C8051F226	8 kB	25	1280	32	SPI, UART	3	-	±20%	8-bit, 32-ch., 100 ksp/s	—			2	—	TQFP48	—	C8051F226DK
C8051F230	8 kB	25	256	32	SPI, UART	3	-	±20%	—	—			2	—	TQFP48	—	C8051F226DK
C8051F231	8 kB	25	256	22	SPI, UART	3	-	±20%	—	—			2	—	LQFP32	—	C8051F226DK
C8051F236	8 kB	25	1280	32	SPI, UART	3	-	±20%	—	—			2	—	TQFP48	—	C8051F226DK
C8051F300	8 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	8-bit, 8-ch., 500 ksp/s	—	•		1	—	QFN11/SOIC14	T600	C8051F300DK
C8051F301	8 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±2%	—	—			1	—	QFN11/SOIC14	T601	C8051F300DK
C8051F302	8 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±20%	8-bit, 8-ch., 500 ksp/s	—	•		1	—	QFN11/SOIC14	T600	C8051F300DK
C8051F303	8 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±20%	—	—			1	—	QFN11/SOIC14	T601	C8051F300DK
C8051F304	4 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±20%	—	—			1	—	QFN11/SOIC14	T603	C8051F300DK
C8051F305	2 kB	25	256	8	I <sup>2</sup> C, UART	3	3	±20%	—	—			1	—	QFN11/SOIC14	T605	C8051F300DK
C8051F330	8 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 200 ksp/s	10-bit, 1-ch.	•	•	1	LFO	QFN20	T630	C8051F330DK
C8051F331	8 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—			1	LFO	QFN20	T631	C8051F330DK
C8051F332	4 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 200 ksp/s	—	•	•	1	LFO	QFN20	T632	C8051F330DK
C8051F333	4 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—			1	LFO	QFN20	T633	C8051F330DK
C8051F334	2 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit, 16-ch., 200 ksp/s	—	•	•	1	LFO	QFN20	T634	C8051F330DK
C8051F335	2 kB	25	768	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—			1	LFO	QFN20	T635	C8051F330DK

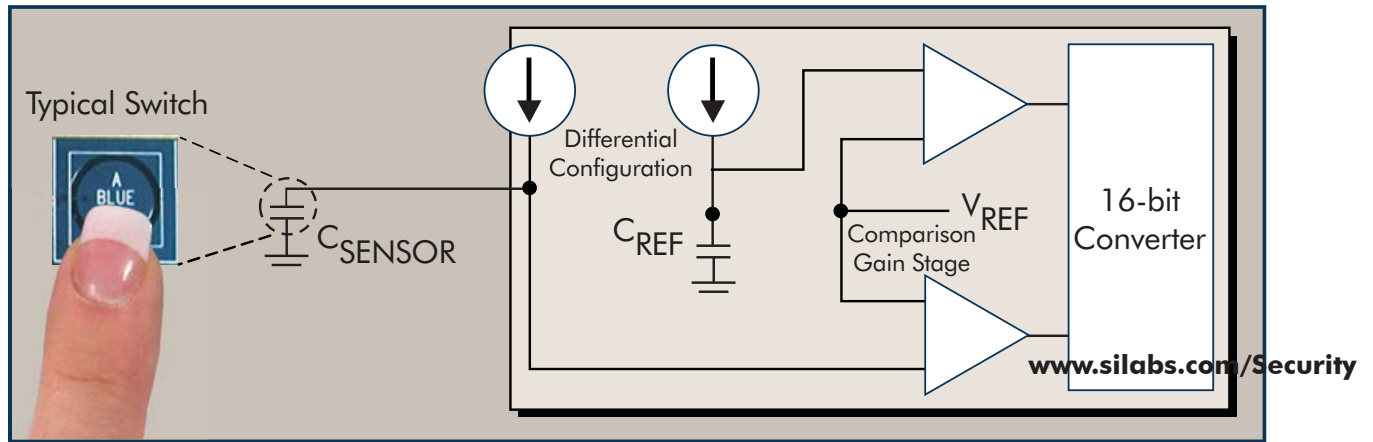
## Low-Voltage/Low-Power MCUs

Part Number	Flash Memory	MIPS (peak)	RAM (bytes)	Dig. I/O	Serial Buses	Timers (16-bit)	PCA Chnls	Internal Osc	ADC	DAC	Temp Sensor	VREF	Comp.	Other	Package	Dev Kit
C8051F930	64 kB	25	4352	24	EMIF, I <sup>2</sup> C, 2 x SPI, UART	4	6	±2%	10-bit, 23-ch., 300 ksp/s	6-bit, 1-ch.	•	•	2	smarTClock; up to 23 touch sense inputs	QFN32/LQFP32	C8051F930DK
C8051F931	64 kB	25	4352	16	I <sup>2</sup> C, 2 x SPI, UART	4	6	±2%	10-bit, 15-ch., 300 ksp/s	6-bit, 1-ch.	•	•	2	smarTClock; up to 15 touch sense inputs	QFN24	C8051F930DK
C8051F920	32 kB	25	4352	24	EMIF, I <sup>2</sup> C, 2 x SPI, UART	4	6	±2%	10-bit, 23-ch., 300 ksp/s	6-bit, 1-ch.	•	•	2	smarTClock; up to 23 touch sense inputs	QFN32/LQFP32	C8051F930DK
C8051F921	32 kB	25	4352	16	I <sup>2</sup> C, 2 x SPI, UART	4	6	±2%	10-bit, 15-ch., 300 ksp/s	6-bit, 1-ch.	•	•	2	smarTClock; up to 15 touch sense inputs	QFN24	C8051F930DK

## Capacitive Touch Sense Solutions

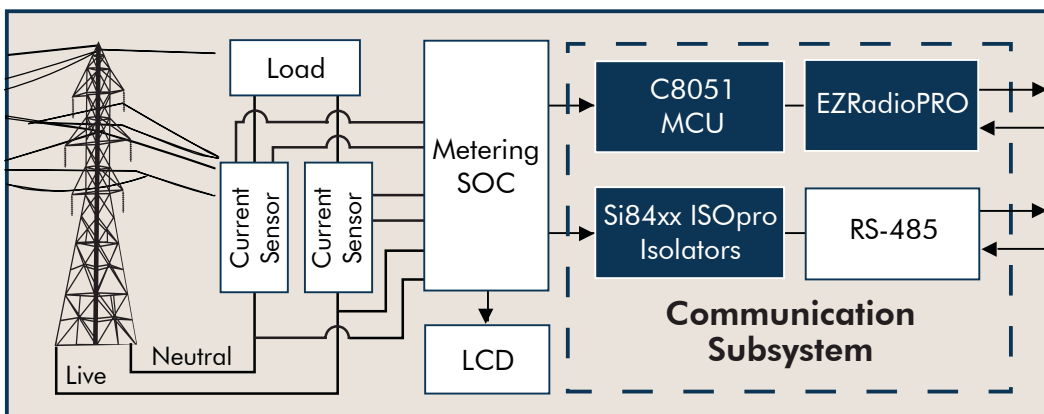
Silicon Labs' C8051F7xx family of MCUs enables a rich set of capacitive sensing interfaces including capacitive buttons, sliders, wheels, proximity sensing and liquid level sensing. Silicon Labs innovative sensing technology offers the world's fastest capacitance to digital converter (CDC) with excellent accuracy and sensitivity, no external components, 1.8 to 3.6 V support, and Silicon Labs' classic high-performance 25 MHz 8051 and best-in-class ADC. In addition, All Silicon Labs MCUs support the widely adopted relaxation oscillator capacitive sensing technique.

16-bit Capacitive-to-Digital Converter Block Diagram



## Example Solution: Electricity Meter

Electricity Meters measure the kilowatt hours consumed, the power factor of the load and the time of the electricity consumption to support multi-rate metering. The communications system in these meters requires reliability and range which Silicon Labs provides with its EZRadioPRO embedded wireless receivers, C8051F9xx MCUs and ISOpro digital isolators.



[www.silabs.com/Metering](http://www.silabs.com/Metering)



Electricity Meters

### Featured Products

- EZRadioPRO
- Mixed-Signal MCUs
- Si84xx ISOpro Isolators

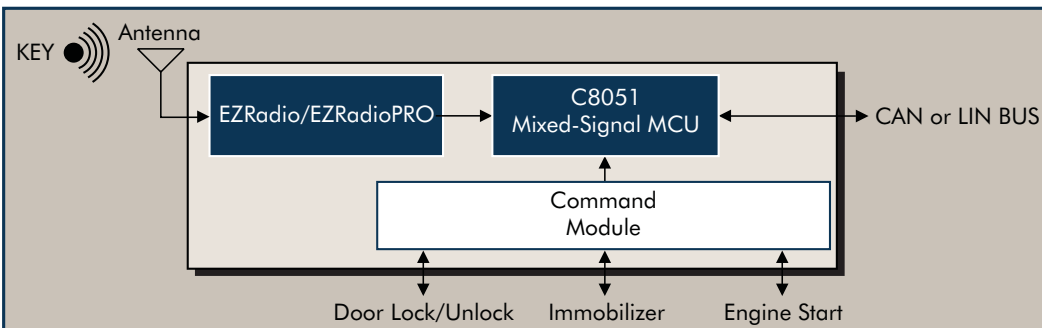
# Industrial and Automotive Qualified MCUs

• All products are AEC-Q100 qualified.

Part Number	Flash Memory	MIPS (peak)	RAM (bytes)	Dig. I/O	Serial Buses	Timers (16-bit)	PWM/PCA	Internal Osc	ADC	Temp Sensor	VREF	Comp.	Other	Package	Dev Kit
C8051F580	128 kB	50	8192	40	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP48/QFN48	C8051F580DK
C8051F581	128 kB	50	8192	40	I <sup>2</sup> C, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP48/QFN48	C8051F580DK
C8051F582	128 kB	50	8192	25	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP32/QFN32	C8051F580DK
C8051F583	128 kB	50	8192	25	I <sup>2</sup> C, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP32/QFN32	C8051F580DK
C8051F588	128 kB	50	8192	33	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFN40	C8051F580DK
C8051F589	128 kB	50	8192	33	I <sup>2</sup> C, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFN40	C8051F580DK
C8051F584	96 kB	50	8192	40	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP48/QFN48	C8051F580DK
C8051F585	96 kB	50	8192	40	I <sup>2</sup> C, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP48/QFN48	C8051F580DK
C8051F586	96 kB	50	8192	25	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP32/QFN32	C8051F580DK
C8051F587	96 kB	50	8192	25	I <sup>2</sup> C, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFP32/QFN32	C8051F580DK
C8051F590	96 kB	50	8192	33	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFN40	C8051F580DK
C8051F591	96 kB	50	8192	33	I <sup>2</sup> C, SPI, 2 x UART	6	2x6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	3	-40 to 125 °C, Volt. Reg.	QFN40	C8051F580DK
C8051F500	64 kB	50	4096	40	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP48/QFN48	C8051F500DK
C8051F501	64 kB	50	4096	40	I <sup>2</sup> C, SPI, UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP48/QFN48	C8051F500DK
C8051F502	64 kB	50	4096	25	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, 2 x UART	4	6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP32/QFN32	C8051F500DK
C8051F503	64 kB	50	4096	25	I <sup>2</sup> C, SPI, UART	4	6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP32/QFN32	C8051F500DK
C8051F508	64 kB	50	4096	33	CAN 2.0, I <sup>2</sup> C LIN 2.1, SPI, UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C, Volt. Reg.	QFN40	C8051F500DK
C8051F509	64 kB	50	4096	33	I <sup>2</sup> C, SPI, 2xUART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C, Volt. Reg.	QFN40	C8051F500DK
C8051F504	32 kB	50	4096	40	CAN 2.0, I <sup>2</sup> C, LIN 2.1, SPI, UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP48/QFN48	C8051F500DK
C8051F505	32 kB	50	4096	40	I <sup>2</sup> C, SPI, UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP48/QFN48	C8051F500DK
C8051F506	32 kB	50	4096	25	CAN 2.0, I <sup>2</sup> C, LIN 2.1, SPI, UART	4	6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP32/QFN32	C8051F500DK
C8051F507	32 kB	50	4096	40	SPI, UART, I <sup>2</sup> C	4	6	±0.5%	12-bit, 25-ch., 200 kspss	•	•	2	-40 to 125 °C	QFP32/QFN32	C8051F500DK
C8051F510	32 kB	50	4096	33	CAN 2.0, I <sup>2</sup> C, LIN 2.1, SPI, UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C, Volt. Reg.	QFN40	C8051F500DK
C8051F511	32 kB	50	4096	33	I <sup>2</sup> C, SPI, UART	4	6	±0.5%	12-bit, 32-ch., 200 kspss	•	•	2	-40 to 125 °C, Volt. Reg.	QFN40	C8051F500DK
C8051F520A	8 kB	25	256	6	LIN 2.1, SPI, UART	3	3	±0.5%	12-bit, 6-ch., 200 kspss	•	•	1	-40 to 125 °C	DFN10	C8051F530DK
C8051F521A	8 kB	25	256	6	SPI, UART	3	3	±0.5%	12-bit, 6-ch., 200 kspss	•	•	1	-40 to 125 °C	DFN10	C8051F530DK
C8051F523A	4 kB	25	256	6	LIN 2.1, SPI, UART	3	3	±0.5%	12-bit, 6-ch., 200 kspss	•	•	1	-40 to 125 °C	DFN10	C8051F530DK
C8051F524A	4 kB	25	256	6	SPI, UART	3	3	±0.5%	12-bit, 6-ch., 200 kspss	•	•	1	-40 to 125 °C	DFN10	C8051F530DK
C8051F526A	2 kB	25	256	6	LIN 2.1, SPI, UART	3	3	±0.5%	12-bit, 6-ch., 200 kspss	•	•	1	-40 to 125 °C	DFN10	C8051F530DK
C8051F527A	2 kB	25	256	6	SPI, UART	3	3	±0.5%	12-bit, 6-ch., 200 kspss	•	•	1	-40 to 125 °C	DFN10	C8051F530DK
C8051F530A	8 kB	25	256	16	LIN 2.1, SPI, UART	3	3	±0.5%	12-bit, 16-ch., 200 kspss	•	•	1	-40 to 125 °C	QFN20/TSSOP20	C8051F530DK
C8051F531A	8 kB	25	256	16	SPI, UART	3	3	±0.5%	12-bit, 16-ch., 200 kspss	•	•	1	-40 to 125 °C	QFN20/TSSOP20	C8051F530DK
C8051F533A	4 kB	25	256	16	LIN 2.1, SPI, UART	3	3	±0.5%	12-bit, 16-ch., 200 kspss	•	•	1	-40 to 125 °C	QFN20/TSSOP20	C8051F530DK
C8051F534A	4 kB	25	256	16	SPI, UART	3	3	±0.5%	12-bit, 16-ch., 200 kspss	•	•	1	-40 to 125 °C	QFN20/TSSOP20	C8051F530DK
C8051F536A	2 kB	25	256	16	LIN 2.1, SPI, UART	3	3	±0.5%	12-bit, 16-ch., 200 kspss	•	•	1	-40 to 125 °C	QFN20/TSSOP20	C8051F530DK
C8051F537A	2 kB	25	256	16	SPI, UART	3	3	±0.5%	12-bit, 16-ch., 200 kspss	•	•	1	-40 to 125 °C	QFN20/TSSOP20	C8051F530DK

## Example Solution: Remote Keyless Entry

Silicon Labs' compact, highly-integrated RF solutions and expertise in high-performance, mixed-signal MCUs enable customers to quickly develop reliable, cost effective RKE and remote control solutions. This combined RF and MCU expertise provides a one-stop solution for your embedded wireless needs.



**Keyless Entry Pad**

### Featured Products

- EZRadio/EZRadioPRO
- Mixed-Signal MCUs

# Precision Mixed-Signal MCUs

Part Number	Flash (bytes)	MIPS (peak)	RAM (bytes)	Ext Mem I/F	Dig. I/O	Serial Buses	Timers (16-bit)	PWM/PCA	Internal Osc	ADC1	ADC2	DAC	Temp Sensor	VREF	Comp.	Other	Package	Dev Kit
C8051F120	128 kB	100	8448	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	12-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	16x16 MAC	TQFP100	C8051F120DK
C8051F121	128 kB	100	8448	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	12-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	16x16 MAC	TQFP64	C8051F120DK
C8051F122	128 kB	100	8448	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	16x16 MAC	TQFP100	C8051F120DK
C8051F123	128 kB	100	8448	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	16x16 MAC	TQFP64	C8051F120DK
C8051F124	128 kB	50	8448	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	12-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP100	C8051F120DK
C8051F125	128 kB	50	8448	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	12-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F120DK
C8051F126	128 kB	50	8448	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP100	C8051F120DK
C8051F127	128 kB	50	8448	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F120DK
C8051F130	128 kB	100	8448	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	—	—	•	•	2	16x16 MAC	TQFP100	C8051F120DK
C8051F131	128 kB	100	8448	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	—	—	•	•	2	16x16 MAC	TQFP64	C8051F120DK
C8051F132	64kB	100	8448	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	—	—	•	•	2	16x16 MAC	TQFP100	C8051F120DK
C8051F133	64kB	100	8448	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	10-bit, 8-ch., 100 ksps	—	—	•	•	2	16x16 MAC	TQFP64	C8051F120DK
C8051F060	64 kB	25	4352	•	59	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	12-bit, 2-ch.	•	•	3	10-bit, 8-ch., 200 ksps, DMA	TQFP100	C8051F060DK
C8051F061	64 kB	25	4352	•	24	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	12-bit, 2-ch.	•	•	3	10-bit, 8-ch., 200 ksps, DMA	TQFP64	C8051F060DK
C8051F062	64 kB	25	4352	•	59	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	12-bit, 2-ch.	•	•	3	10-bit, 8-ch., 200 ksps, DMA	TQFP100	C8051F060DK
C8051F063	64 kB	25	4352	•	24	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	12-bit, 2-ch.	•	•	3	10-bit, 8-ch., 200 ksps, DMA	TQFP64	C8051F060DK
C8051F064	64 kB	25	4352	•	59	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	—	•	•	3	DMA	TQFP100	C8051F060DK
C8051F065	64 kB	25	4352	•	24	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	—	•	•	3	DMA	TQFP64	C8051F060DK
C8051F066	32 kB	25	4352	•	59	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	—	•	•	3	DMA	TQFP100	C8051F060DK
C8051F067	32 kB	25	4352	•	24	I <sup>2</sup> C, SPI, 2 x UART	5	6	±2%	16-bit, 1-ch., 1 Msps	16-bit, 1-ch., 1 Msps	—	•	•	3	DMA	TQFP64	C8051F060DK
C8051F020	64 kB	25	4352	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	5	±20%	12-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP100	C8051F020DK
C8051F021	64 kB	25	4352	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	5	±20%	12-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F020DK
C8051F022	64 kB	25	4352	•	64	I <sup>2</sup> C, SPI, 2 x UART	5	5	±20%	10-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP100	C8051F020DK
C8051F023	64 kB	25	4352	•	32	I <sup>2</sup> C, SPI, 2 x UART	5	5	±20%	10-bit, 8-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F020DK
C8051F040	64 kB	25	4352	•	64	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	12-bit, 13-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	3	±60 V PGA	TQFP100	C8051F040DK
C8051F041	64 kB	25	4352	•	32	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	12-bit, 13-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	3	±60 V PGA	TQFP64	C8051F040DK
C8051F042	64 kB	25	4352	•	64	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	10-bit, 13-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	3	±60 V PGA	TQFP100	C8051F040DK
C8051F043	64 kB	25	4352	•	32	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	10-bit, 13-ch., 100 ksps	8-bit, 8-ch., 500 ksps	12-bit, 2-ch.	•	•	3	±60 V PGA	TQFP64	C8051F040DK
C8051F044	64 kB	25	4352	•	64	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	10-bit, 13-ch., 100 ksps	—	—	•	•	3	±60 V PGA	TQFP100	C8051F040DK
C8051F045	64 kB	25	4352	•	32	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	10-bit, 13-ch., 100 ksps	—	—	•	•	3	±60 V PGA	TQFP64	C8051F040DK
C8051F046	32 kB	25	4352	•	64	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	10-bit, 13-ch., 100 ksps	—	—	•	•	3	±60 V PGA	TQFP100	C8051F040DK
C8051F047	32 kB	25	4352	•	32	CAN2.0B, I <sup>2</sup> C SPI, 2 x UART	5	6	±2%	10-bit, 13-ch., 100 ksps	—	—	•	•	3	±60 V PGA	TQFP64	C8051F040DK
C8051F000	32 kB	20	256	•	32	I <sup>2</sup> C, SPI, UART	4	5	±20%	12-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F005DK
C8051F001	32 kB	20	256	•	16	I <sup>2</sup> C, SPI, UART	4	5	±20%	12-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP48	C8051F005DK
C8051F002	32 kB	20	256	•	8	I <sup>2</sup> C, SPI, UART	4	5	±20%	12-bit, 4-ch., 100 ksps	—	12-bit, 2-ch.	•	•	1	—	LQFP32	C8051F005DK
C8051F005	32 kB	25	2304	•	32	I <sup>2</sup> C, SPI, UART	4	5	±20%	12-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F005DK
C8051F006	32 kB	25	2304	•	16	I <sup>2</sup> C, SPI, UART	4	5	±20%	12-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP48	C8051F005DK
C8051F007	32 kB	25	2304	•	8	I <sup>2</sup> C, SPI, UART	4	5	±20%	12-bit, 4-ch., 100 ksps	—	12-bit, 2-ch.	•	•	1	—	LQFP32	C8051F005DK
C8051F010	32 kB	20	256	•	32	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F005DK
C8051F011	32 kB	20	256	•	16	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP48	C8051F005DK
C8051F012	32 kB	20	256	•	8	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 4-ch., 100 ksps	—	12-bit, 2-ch.	•	•	1	—	LQFP32	C8051F005DK
C8051F015	32 kB	25	2304	•	32	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP64	C8051F005DK
C8051F016	32 kB	25	2304	•	16	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 8-ch., 100 ksps	—	12-bit, 2-ch.	•	•	2	—	TQFP48	C8051F005DK
C8051F017	32 kB	25	2304	•	8	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 4-ch., 100 ksps	—	12-bit, 2-ch.	•	•	1	—	LQFP32	C8051F005DK
C8051F018	16 kB	25	1280	•	32	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 8-ch., 100 ksps	—	—	•	•	2	—	TQFP64	C8051F005DK
C8051F019	16 kB	25	1280	•	16	I <sup>2</sup> C, SPI, UART	4	5	±20%	10-bit, 8-ch., 100 ksps	—	—	•	•	2	—	TQFP48	C8051F005DK
C8051F702	16 kB	25	512	•	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFP64	C8051F500DK
C8051F703	16 kB	25	512	•	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	•	•	1	—	QFP64	C8051F500DK

# Precision Mixed-Signal MCUs (continued)

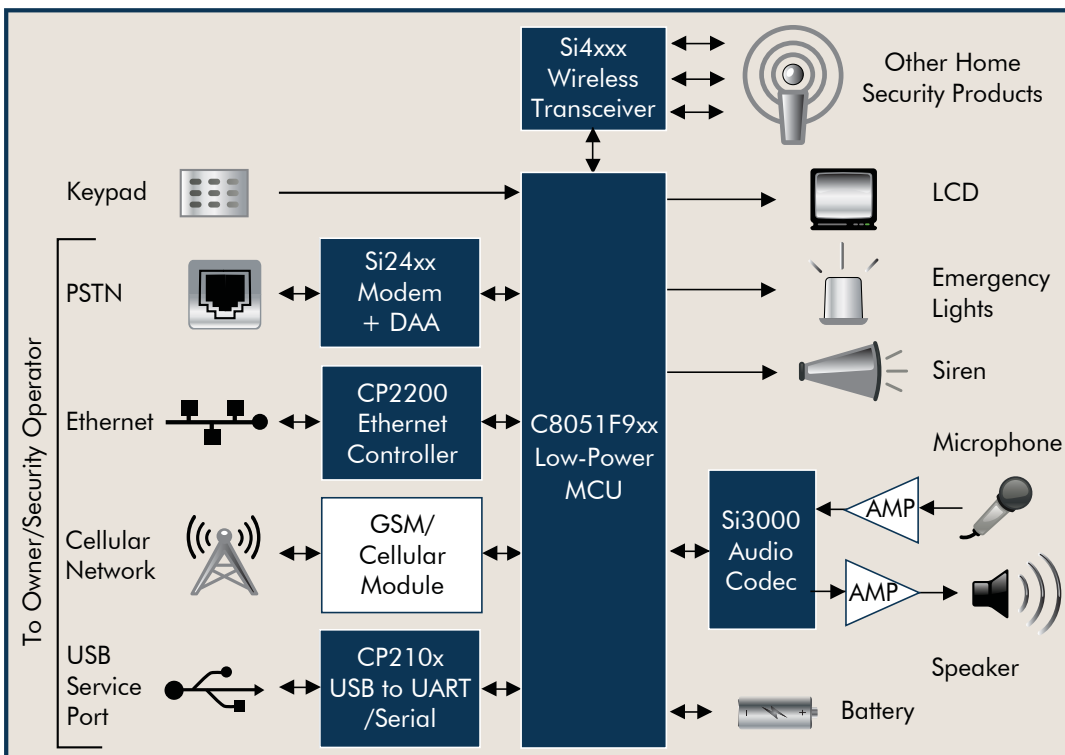
Part Number	Flash (bytes)	MIPS (peak)	RAM (bytes)	Ext Mem I/F	Dig. I/O	Serial Buses	Timers (16-bit)	PWM/PCA	Internal Osc	ADC1	ADC2	DAC	Temp Sensor	VREF	Comp.	Other	Package	Dev Kit
C8051F706	16 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFN48/QFP48	C8051F500DK
C8051F707	16 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFN48/QFP48	C8051F500DK
C8051F700	15 kB	25	512	—	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFP64	C8051F500DK
C8051F701	15 kB	25	512	—	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFP64	C8051F500DK
C8051F704	15 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFN48/QFP48	C8051F500DK
C8051F705	15 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFN48/QFP48	C8051F500DK
C8051F708	8 kB	25	512	—	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFP64	C8051F500DK
C8051F709	8 kB	25	512	—	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFP64	C8051F500DK
C8051F710	8 kB	25	512	—	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFP64	C8051F500DK
C8051F711	8 kB	25	512	—	54	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFP64	C8051F500DK
C8051F712	8 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFN48/QFP48	C8051F500DK
C8051F713	8 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFN48/QFP48	C8051F500DK
C8051F714	8 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	10-bit	—	—	•	•	1	—	QFN48/QFP48	C8051F500DK
C8051F715	8 kB	25	512	—	39	I <sup>2</sup> C, SPI, UART	4	3	±2%	—	—	—	—	—	1	—	QFN48/QFP48	C8051F500DK
C8051F350	8 kB	50	768	—	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	24-bit, 8-ch., 1 ksp/s	—	8-bit, 2-ch.	•	•	1	—	LQFP32	C8051F350DK
C8051F351	8 kB	50	768	—	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	24-bit, 8-ch., 1 ksp/s	—	8-bit, 2-ch.	•	•	1	—	QFN28	C8051F350DK
C8051F352	8 kB	50	768	—	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	16-bit, 8-ch., 1 ksp/s	—	8-bit, 2-ch.	•	•	1	—	LQFP32	C8051F350DK
C8051F353	8 kB	50	768	—	17	I <sup>2</sup> C, SPI, UART	4	3	±2%	16-bit, 8-ch., 1 ksp/s	—	8-bit, 2-ch.	•	•	1	—	QFN28	C8051F350DK

## Example Solution: Intelligent Home Security

Intelligent Home Security merges security and home automation by leveraging innovations in sensing, connectivity and embedded computing. Silicon Labs offers enabling technology for this growing market: microcontrollers, wireless transmitters and receivers, voice DAAs and codecs, ethernet controllers and modems.

### Alarm Panels

Alarm panels are increasingly becoming wirelessly networked to other home security products, providing for a centrally managed system with the panel to acting as a hub/central alarm system.



**Wireless Alarm**

### Featured Products

- Si4xxx Wireless Transceiver
- C8051F9xx MCU
- Si24xx Modem + DAA
- CP2200 Ethernet Controller
- CP210x USB to UART
- Si3000 Audio Codec

# Embedded USB Made Easy

- Extensive hardware and software reference designs
- Full range of single-chip USB MCUs
- Device and host drivers



Part Number	Flash Memory	MIPS (peak)	RAM (bytes)	Ext Mem I/F	Dig. I/O	Serial Buses	Timers (16-bit)	PWM/PCA	Internal Osc	ADC1	Temp Sensor	VREF	Comp.	Other	Package	Dev Kit
C8051F340	64 kB	48	5376	•	40	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	TQFP48	C8051F340DK
C8051F341	32 kB	48	3328	•	40	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	TQFP48	C8051F340DK
C8051F342	64 kB	48	5376	•	25	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F340DK
C8051F343	32 kB	48	3328	•	25	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F340DK
C8051F344	64 kB	25	5376	•	40	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	TQFP48	C8051F340DK
C8051F345	32 kB	25	3328	•	40	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	TQFP48	C8051F340DK
C8051F346	64 kB	25	5376	•	25	I <sup>2</sup> C, SPI, UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F340DK
C8051F347	32 kB	25	3328	•	25	I <sup>2</sup> C, SPI, UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F340DK
C8051F348	32 kB	25	3328	•	40	I <sup>2</sup> C, SPI, 2 x UART	4	5	±1.5%	—	—	—	2	Volt. Reg., EMIF	TQFP48	C8051F340DK
C8051F349	32 kB	25	3328	•	25	I <sup>2</sup> C, SPI, UART	4	5	±1.5%	—	—	—	2	Volt. Reg.	LQFP32/QFN32	C8051F340DK
C8051F34A	64 kB	48	5376	•	25	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F340DK
C8051F34B	32 kB	48	3328	•	25	I <sup>2</sup> C, SPI, 2 x UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F340DK
C8051F320	16 kB	25	2304	•	25	I <sup>2</sup> C, SPI, UART, USB 2.0	4	5	±1.5%	10-bit, 17-ch., 200 ksps	•	•	2	—	LQFP32/QFN32	C8051F320DK
C8051F321	16 kB	25	2304	•	21	I <sup>2</sup> C, SPI, UART, USB 2.0	4	5	±1.5%	10-bit, 13-ch., 200 ksps	•	•	2	—	QFN28	C8051F320DK
C8051F326	16 kB	25	1536	•	15	UART, USB 2.0	2	—	±1.5%	—	—	—	—	Separate I/O Supply Pin	QFN28	C8051F326DK
C8051F327	16 kB	25	1536	•	15	UART, USB 2.0	2	—	±1.5%	—	—	—	—	Fixed I/O Supply	QFN28	C8051F326DK

## USB-to-UART Bridge

Part Number	EEPROM (bytes)	FIFO (bytes)	Digital Port I/O Pins	Serial Buses	Internal Osc	Other	Package	Eval Kit
CP2103	1024	1 kB	4	UART to USB Bridge	•	Volt Reg, RS485, Split V <sub>DDIO</sub>	QFN28	CP2103EK
CP2102	1024	1 kB	—	UART to USB Bridge	•	Volt Reg	QFN28	CP2102EK



Easily update legacy RS-232 and RS-485 designs to USB. The CP210x single-chip solution provides a full-speed USB-to-UART bridge in a 5 x 5 mm package with no crystal, voltage regulator, EEPROM, or other external components required. System development is simplified by the Evaluation Kit, which includes a complete evaluation board and royalty-free device drivers.

**CP2103-EK**

[www.silabs.com/USB](http://www.silabs.com/USB)

# Ethernet Controllers

Part Number	Flash	Parallel Host Interface	Parallel Host Interface Speed	Auto -Negotiation	Pre-Programmed MAC Address	RAM Size	LEDs	Temp Range	Transceiver	Package	Eval Kit	Dev Kit
CP2200	8 kB	8-bit non-multiplexed EMIF	30 Mbps	•	•	2 kB TX and 4 kB RX buffer	Separate link and activity	-40 to +85	Included	TQFP48	CP2201EK	ETHERNETDK
CP2201	8 kB	8-bit multiplexed EMIF	25 Mbps	•	•	2 kB TX and 4 kB RX buffer	Combined link and activity	-40 to +85	Included	QFN28	CP2201EK	ETHERNETDK



**PoE-Voice-RD**

## Power over Ethernet Voice Reference Design

This reference design includes an IEEE 802.3af compliant Power over Ethernet (PoE) circuit, 8 kHz voice/speech sampling system and an IEEE 802.3 embedded Ethernet connection. The board provides a platform for evaluating and developing software for embedded systems. The software uses the TCP/IP Configuration Wizard, which generates starter firmware based on the industry standard CMX™ Micronet Stack.

- C8051F340 Main Controller
- CP2201 Ethernet Controller
- Si340x PoE Controller



**CP2201EK**

## Ethernet Evaluation Kit

- Demonstrates embedded Ethernet connectivity
- Remote temperature and light sensing from web browser
- Sensor data transmission via email
- Automatic network configuration using net finder utility

# ToolStick Development Platform

The USB ToolStick platform is a fully contained evaluation and development system in a USB stick that demonstrates Silicon Labs' easy-to-use development tools. The ToolStick, along with only a PC with a USB port, allows designers to develop and debug application firmware directly on the target microcontroller using the Silicon Labs Integrated Development Environment (IDE). Once complete, designers can replace the Daughter Card with a Programming Adapter and program devices for use in their actual system.

## Base Adapter

The Base Adapter connects to the PC using a USB connector and supports any Daughter Card or Programming Adapter.

## Daughter Card

The target MCU and application circuitry are located on the Daughter Card; the IDE interfaces with this MCU. The Daughter Card plugs into the Base Adapter.

## Programming Adapter

The Programming Adapter provides the appropriate mechanical socket to program a blank device. The Programming Adapter plugs into the Base Adapter.

[www.silabs.com/ToolStick](http://www.silabs.com/ToolStick)

