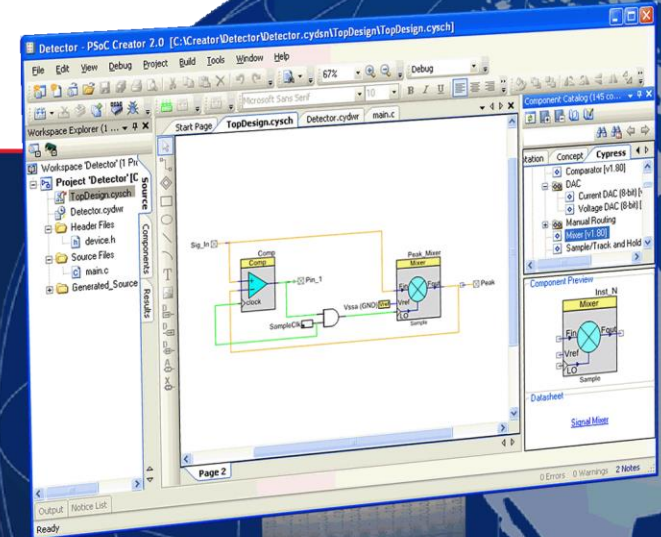


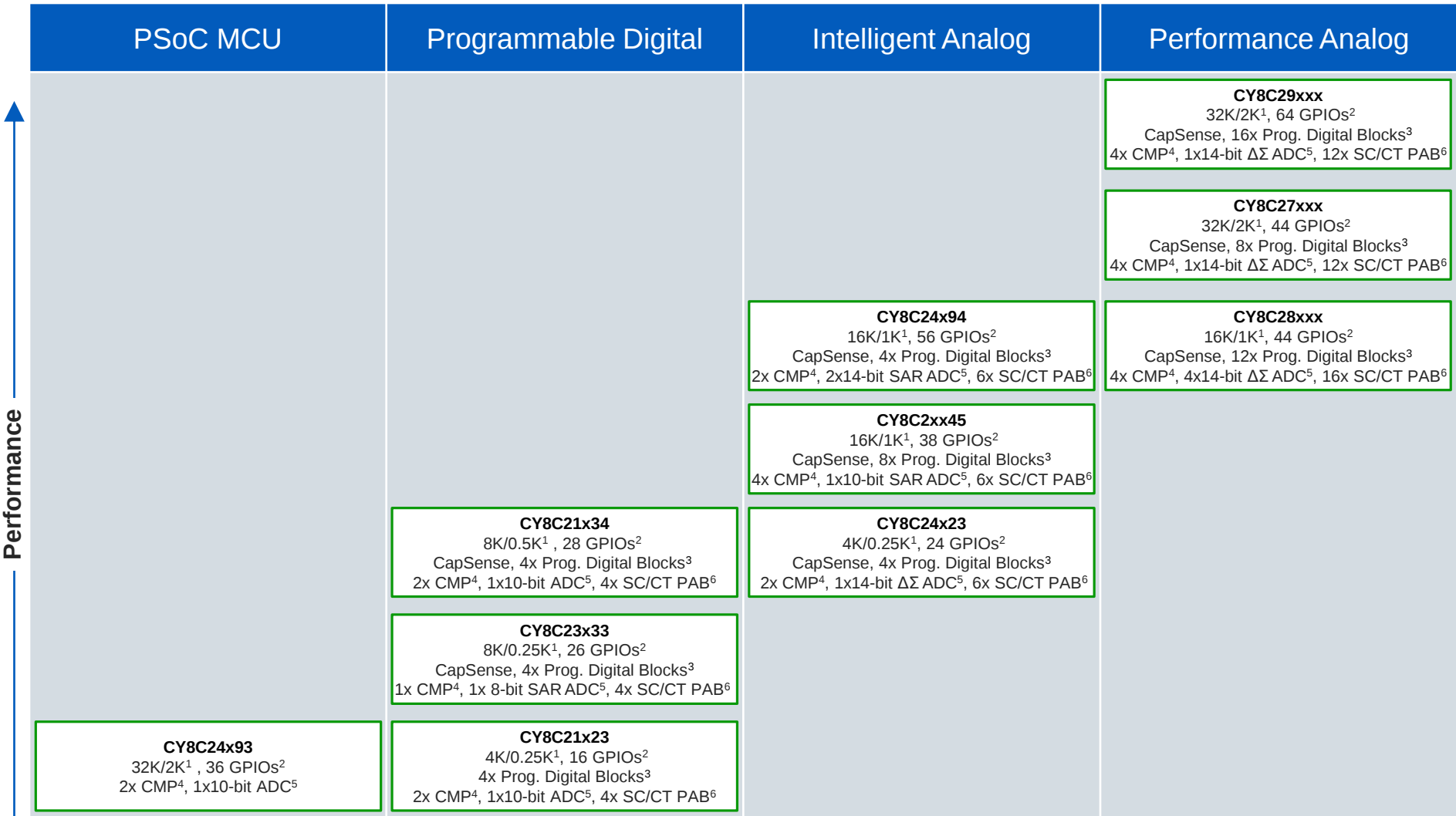
Cypress Roadmap: Platform PSoC®

Q1 2015



PSoC® 1 Portfolio

M8C Core | 24 MHz



¹ Flash KB/SRAM KB

² General-purpose input output pins

³ Programmable digital block

⁴ Comparator

⁵ Analog-to-digital converter (incremental, successive approximation (SAR) or Delta-Sigma (ΔΣ))

⁶ Switched capacitor/continuous time programmable analog block

Status
 Availability

Production
 QQYY

Sampling
 QQYY

Development
 (Orange box)

Concept
 (Black box)

PSoC® 3 Portfolio

8051 | CapSense® | DMA | LCD | RTC | 4x Timer/Counter/PWM



Performance	Programmable Digital PSoC 3200	Intelligent Analog PSoC 3400	Performance Analog PSoC 3600	Precision Analog PSoC 3800
	Analog: $\Delta\Sigma$ ADC ¹ , 1x DAC ² , 2x CMP ³ , 0.9% Vref Interfaces: FF ⁴ I ² C	Analog: $\Delta\Sigma$ ADC ¹ , 2x DAC ² , 4x CMP ³ , 2x Opamps, 2x SC/CT PAB ⁵ , 0.9% Vref Interfaces: FF ⁴ I ² C	Analog: $\Delta\Sigma$ ADC ¹ , 2x/4x DAC ² , 0x/2x/4x CMP ³ , 0x/2x/4x Opamps, 0x/2x/4x SC/CT PAB ⁵ , 0.1% Vref Interfaces: USB, FF ⁴ I ² C	Analog: $\Delta\Sigma$ ADC ¹ , 2x/4x DAC ² , 0x/2x/4x CMP ³ , 0x/2x/4x Opamps, 0x/2x/4x SC/CT PAB ⁵ , 0.1% Vref Interfaces: USB, FF ⁴ I ² C
			CY8C3666 67 MHz, 64K/8K/2K ⁶ 0x/1x DFB ⁷ , 12b ADC ¹ 20x/24x UDB ⁸ , CAN ⁹	NEW CY8C3866 67 MHz, 64K/8K/2K ⁶ DFB ⁷ , 20b ADC ¹ 20x/24x UDB ⁸ , CAN ⁹ , 72-CSP¹⁰
			NEW CY8C3665 67 MHz, 32K/4-8K/1K ⁶ 0x/1x DFB ⁷ , 12b ADC ¹ 16x/20x UDB ⁸ , 72-CSP¹⁰	CY8C3865 67 MHz, 32K/4-8K/1K ⁶ 0x/1x DFB ⁷ , 20b ADC ¹ 16x/20x UDB ⁸
	NEW CY8C3246 50 MHz, 64K/8K/2K ⁶ 12b ADC ¹ 24x UDB ⁸ , USB, 72-CSP¹⁰	CY8C3446 50 MHz, 64K/8K/2K ⁶ 12b ADC ¹ 24x UDB ⁸ , USB, CAN ⁹		
	NEW CY8C3245 50 MHz, 32K/4K/1K ⁶ 12b ADC ¹ 20x UDB ⁸ , USB, 72-CSP¹⁰	CY8C3445 50 MHz, 32K/4K/1K ¹⁰ 12b ADC ¹ 20x UDB ⁸ , USB		
	CY8C3244 50 MHz, 16K/2K/0.5K ⁶ 12b ADC ¹ 16x UDB ⁸	CY8C3444 50 MHz, 16K/2K/0.5K ⁶ 12b ADC ¹ 16x UDB ⁸		

Integration

¹ Delta-Sigma analog-to-digital converter

² Digital-to-analog converter

³ Comparator

⁴ Fixed function

⁵ Switched capacitor/continuous time programmable analog block

⁶ Flash KB/SRAM KB/EEPROM KB

⁷ Digital filter block

⁸ Universal digital block

⁹ Controller area network

¹⁰ Chip scale package

Status
Availability

Production

Sampling

Development

Concept

QQYY

QQYY

QQYY

QQYY

PSoC® 4 Portfolio

ARM® Cortex™-M0 | CapSense®



	PSoC MCU PSoC 4000	Intelligent Analog PSoC 4100	Programmable Digital PSoC 4200		Programmable Analog PSoC 4400	
Performance ↑		CY8C4128-BL Q115 24 MHz, 256K/32K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶, BLE⁷	CY8C4248-BL Q115 48 MHz, 256K/32K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶, BLE⁷, UDB⁸			
		NEW CY8C4127-M 24 MHz, 128K/16K¹ NDA Required Contact Sales	NEW CY8C4127-BL 24 MHz, 128K/16K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶, BLE⁷	NEW CY8C4247-M 48 MHz, 128K/16K¹ NDA Required Contact Sales	NEW CY8C4247-L 48 MHz, 128K/16K¹ NDA Required Contact Sales	NEW CY8C4247-BL 48 MHz, 128K/16K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶, BLE⁷, UDB⁸
		NEW CY8C4126-M 24 MHz, 64K/8K¹ NDA Required Contact Sales		NEW CY8C4246-M 48 MHz, 64K/8K¹ NDA Required Contact Sales	NEW CY8C4246-L 48 MHz, 64K/8K¹ NDA Required Contact Sales	CY8C44x6 48 MHz, 64K/16K¹ NDA Required Contact Sales
		CY8C4125 24 MHz, 32K/4K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶		CY8C4245 48 MHz, 32K/4K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶, UDB⁸		CY8C44x5 48 MHz, 32K/8K¹ NDA Required Contact Sales
	CY8C4014 16 MHz, 16K/2K¹, CMP², I²C, IDAC⁵, TCPWM⁶	CY8C4124 24 MHz, 16K/4K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶	CY8C4244 48 MHz, 16K/4K¹, CMP², Opamp, ADC³, SCB⁴, IDAC⁵, TCPWM⁶, UDB⁸			
	CY8C4013 16 MHz, 8K/2K¹, CMP², I²C, IDAC⁵, TCPWM⁶					

Integration

¹ Flash KB/SRAM KB

² Comparator

³ Analog-to-digital converter

⁴ Serial communication block programmable as I²C/SPI/UART

⁵ Current-output digital-to-analog converter

⁶ Timer/counter/PWM block

⁷ Bluetooth Low Energy

⁸ Universal digital block

Status Production Sampling Development Concept
 Availability QYY QYY

Applications

- MCU and discrete analog replacement
- User interface for button replacement
- User interface for heating, ventilation, air conditioning

Features

32-bit MCU Subsystem

- 16-MHz ARM[®] Cortex[™]-M0 CPU
- Up to 16KB flash and 2KB SRAM

Programmable Analog

- Two IDACs¹ (7-bit and 8-bit), digitally controlled current source
- One comparator (CMP)

CapSense[®] with SmartSense[™] Auto-tuning

- One Cypress Capacitive Sigma-Delta[™] (CSD) controller
- Capacitive sensing supported on up to 16 pins

Programmable Digital

- One configurable 16-bit timer, counter or pulse-width modulator (TCPWM) block
- One I²C master or slave

Packages

- 8-pin SOIC, 16-pin SOIC, 16-QFN, 24-pin QFN

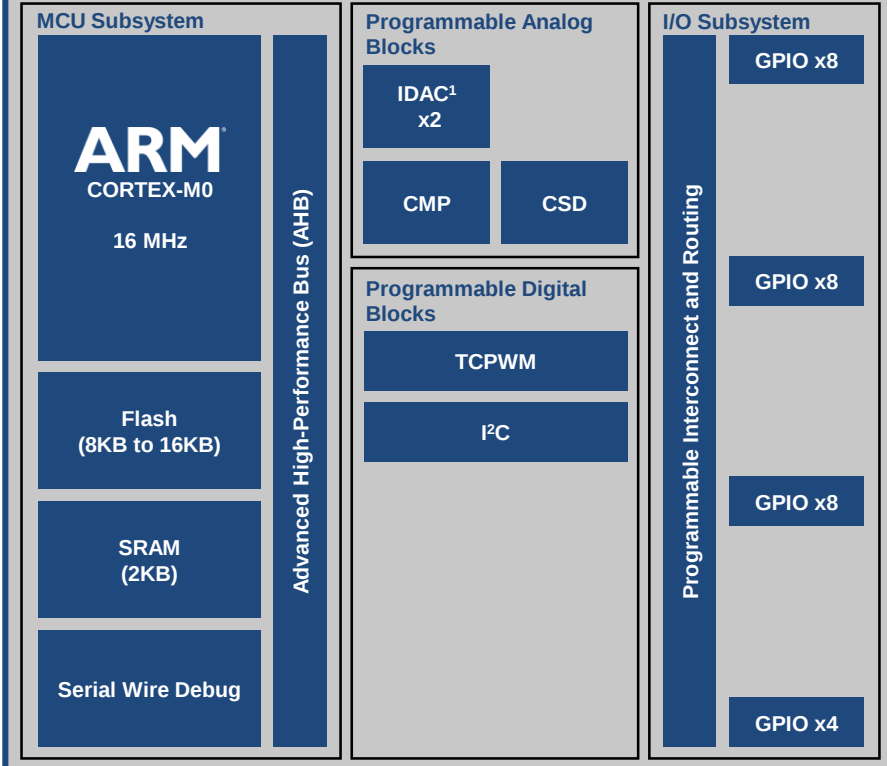
Collateral

Datasheet: [PSoC 4000](#)

Technical Reference Manual: [PSoC 4000](#)

Block Diagram

PSoC 4 One-Chip Solution



Availability

Sampling: Now
Production: Now

¹ Current-output digital-to-analog converter

Applications

User interface for home appliances
Digital and analog sensor hub
MCU and discrete analog replacement

Features

32-bit MCU Subsystem

24-MHz ARM[®] Cortex[™]-M0 CPU
Up to 32KB flash and 4KB SRAM

CapSense[®] with SmartSense[™] Auto-tuning

Cypress Capacitive Sigma-Delta[™] (CSD) controller
CapSense supported on up to 36 pins

Programmable Analog Blocks

Two comparators (CMP)
Two opamps, programmed as PGAs, CMPs, filters, etc.
One 12-bit, 1-Msps SAR¹ ADC
Two IDACs² (2x 8-bit, 2x 7-bit)

Programmable Digital Blocks

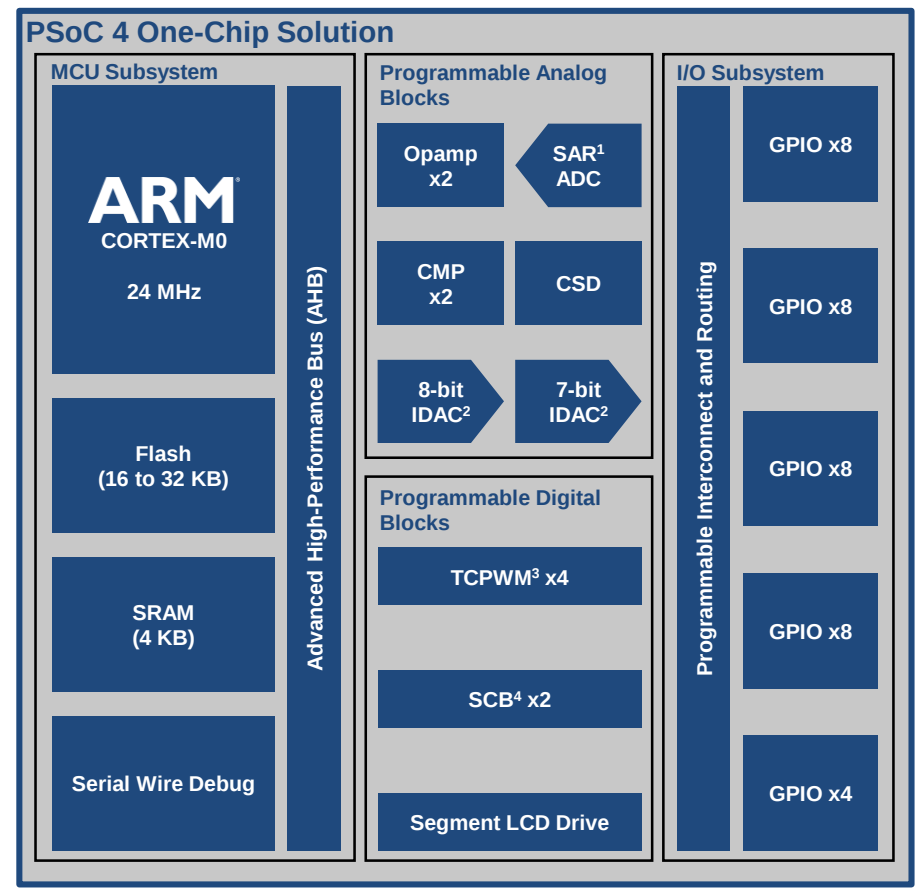
Four programmable 16-bit TCPWM³ blocks
Two SCBs⁴: I²C master or slave, SPI master or slave, or UART

Packages: 28-pin SSOP, 40-pin QFN, 44-pin TQFP, 48-pin LQFP

Collateral

Datasheet: [PSoC 4 \(CY8C4100\)](#)
Technical Reference Manual: [PSoC 4](#)

Block Diagram



Availability

Sampling: Now
Production: Now

¹ Successive approximation register

² Current-output digital-to-analog converter

³ Timer, counter, PWM block

⁴ Serial communication block

PSoC[®] 4200

Programmable Digital Family



Applications

User interface for home appliances
Digital and analog sensor hub
MCU and discrete analog replacement

Features

32-bit MCU Subsystem

48-MHz ARM[®] Cortex[™]-M0 CPU
Up to 32KB flash and 4KB SRAM

CapSense[®] with SmartSense[™] Auto-tuning

Cypress Capacitive Sigma-Delta[™] (CSD) controller
CapSense supported on up to 36 pins

Programmable Analog Blocks

Two comparators (CMP)
Two opamps, programmed as PGAs, CMPs, filters, etc.
One 12-bit, 1-Msps SAR¹ ADC
Two IDACs² (2x 8-bit, 2x 7-bit)

Programmable Digital Blocks

Four Universal Digital Blocks (UDBs³): custom digital peripherals
Four programmable 16-bit TCPWM⁴ blocks
Two SCBs⁵: I²C master or slave, SPI master or slave, or UART

Packages: 28-pin SSOP, 40-pin QFN, 44-pin TQFP, 48-pin LQFP

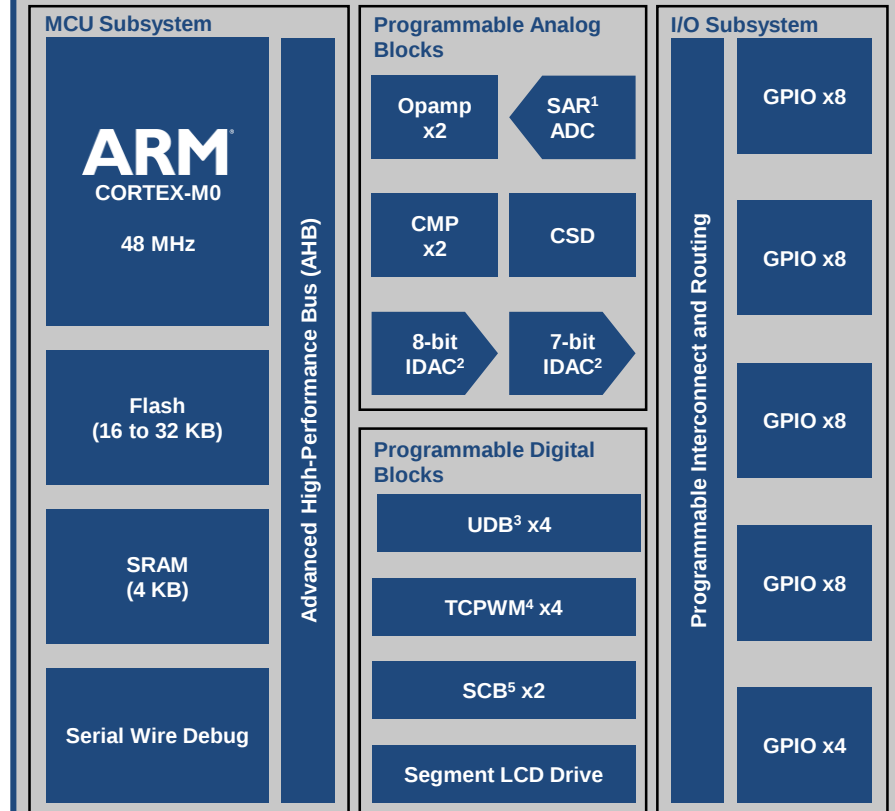
Collateral

Datasheet: [PSoC 4 \(CY8C4200\)](#)

Technical Reference Manual: [PSoC 4](#)

Block Diagram

PSoC 4 One-Chip Solution



Availability

Sampling: Now
Production: Now

⁵ Serial communication block

¹ Successive approximation register

² Current-output digital-to-analog converter

³ Universal digital block

⁴ Timer, counter, PWM block

PSoC[®] 4100 BLE-Series

Intelligent Analog Family with Bluetooth Low Energy



Applications

Sports and fitness monitors, wearable electronics, medical devices, home automation solutions, game controllers, sensor-based low-power systems for the Internet of Things (IoT)

Features

32-bit MCU subsystem

24-MHz ARM[®] Cortex[™]-M0 CPU
Up to 256KB flash and 32KB SRAM

Programmable AFE¹

Four opamps, configurable as PGAs, comparators, filters, etc.
One 12-bit, 1-Msps SAR² ADC

CapSense[®] with SmartSense[™] Auto-tuning

One Cypress Capacitive Sigma-Delta[™] (CSD) controller with touchpad capability

Programmable digital logic

Four configurable TCPWM³ blocks: 16-bit timer, counter or PWM
Two configurable serial communication blocks (SCBs):
I²C master or slave, SPI master or slave, or UART

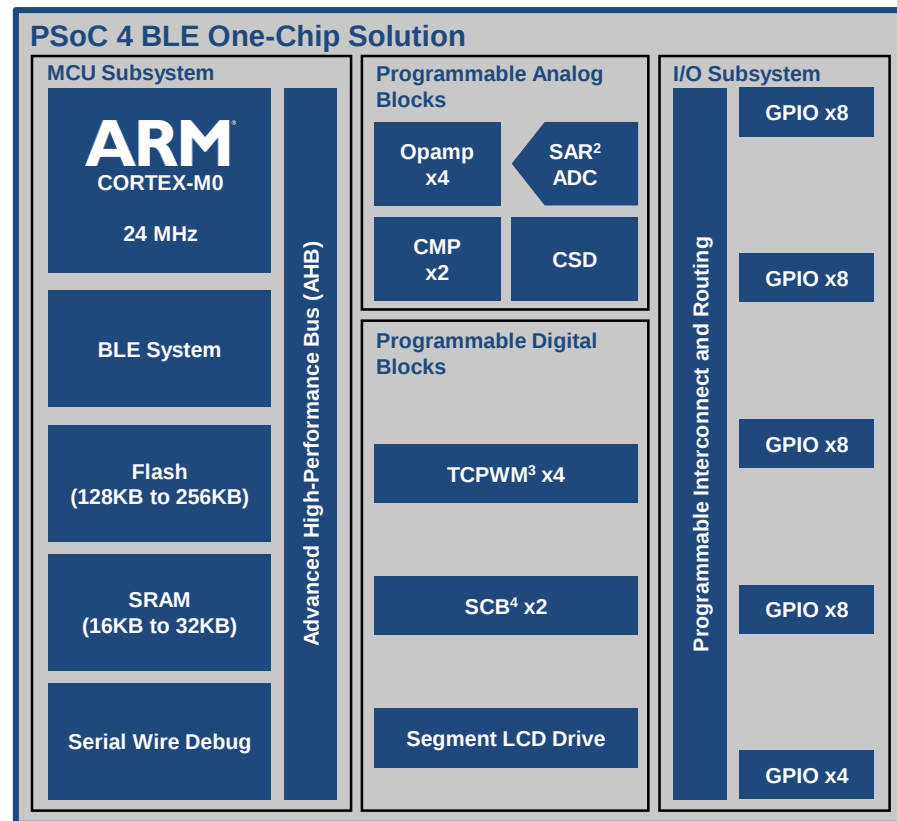
Packages

56-pin QFN, 68-pin CSP

Bluetooth Smart connectivity with Bluetooth 4.1

2.4-GHz BLE radio with integrated Balun

Block Diagram



Collateral

Datasheet: [PSoC 4 BLE \(CY8C4XX7 BLE\)](#)

Availability

Sampling: Now
Production: 128KB Now, 256KB Q2 2015

¹ Analog front end(s)

³ Timer/counter/PWM block

² Successive approximation register

⁴ Serial communication block programmable as I²C/SPI/UART

PSoC[®] 4200 BLE-Series

Programmable Digital Family with Bluetooth Low Energy



Applications

Sports and fitness monitors, wearable electronics, medical devices, home automation solutions, game controllers, sensor-based low-power systems for the Internet of Things (IoT)

Features

32-bit MCU subsystem

48-MHz ARM[®] Cortex[™]-M0 CPU
Up to 256KB flash and 32KB SRAM

Programmable AFE¹

Four opamps, configurable as PGAs, comparators, filters, etc.
One 12-bit, 1-Msps SAR² ADC

CapSense[®] with SmartSense[™] Auto-tuning

One Cypress Capacitive Sigma-Delta[™] (CSD) controller with touchpad capability

Programmable digital logic

Four Universal Digital Blocks (UDBs³): custom digital peripherals
Four configurable TCPWM⁴ blocks: 16-bit timer, counter or PWM
Two configurable serial communication blocks (SCBs⁵):
I²C master or slave, SPI master or slave, or UART

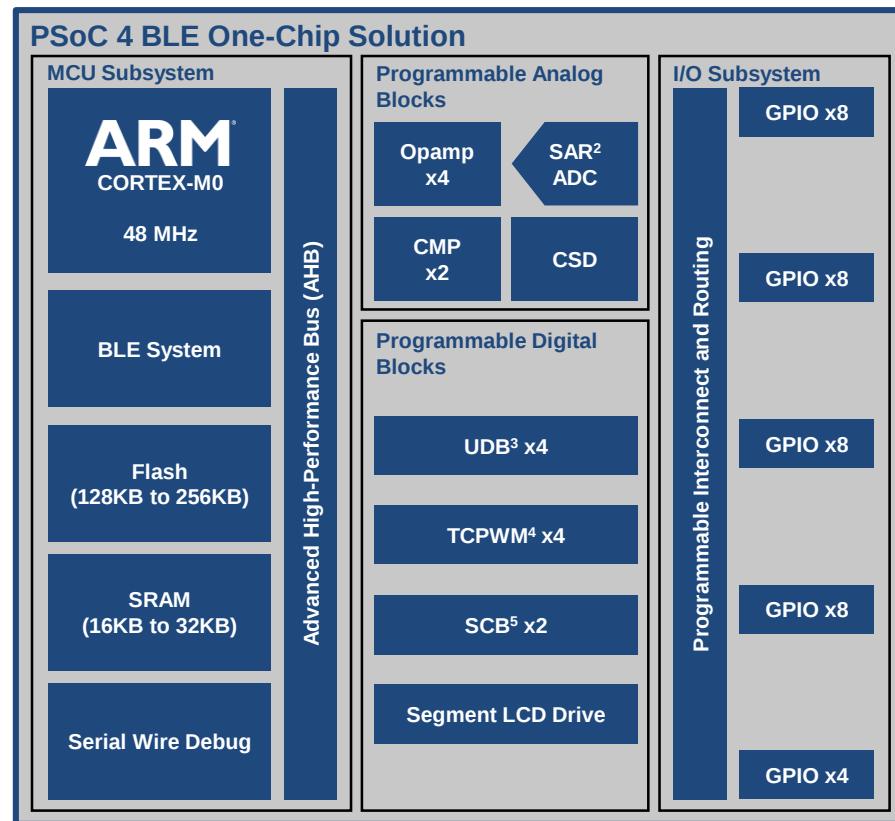
Packages

56-pin QFN, 68-pin CSP

Bluetooth Smart connectivity with Bluetooth 4.1

2.4-GHz BLE radio with integrated Balun

Block Diagram



Collateral

Datasheet: [PSoC 4 BLE \(CY8C4XX7 BLE\)](#)

Availability

Sampling: Now
Production: 128KB Now, 256KB Q2 2015

¹ Analog front end(s)

³ Universal digital block

⁵ Serial communication block programmable as I²C/SPI/UART

² Successive approximation register

⁴ Timer/counter/PWM block

PSoC® 5LP Portfolio

ARM® Cortex™-M3 | CapSense® | DMA | LCD | RTC | 4x Timer/Counter/PWM



Performance ↑	Programmable Digital PSoC 5200	Intelligent Analog PSoC 5400	Performance Analog PSoC 5600	Precision Analog PSoC 5800
	Analog: 1x ADC ¹ , 1x DAC ² , 2x CMP ³ , 0.9% Vref Interfaces: USB, FF ⁴ I ² C	Analog: 1x ADC ¹ , 2x DAC ² , 4x CMP ³ , 2x Opamps, 2x SC/CT PAB ⁵ , 0.9% Vref Interfaces: USB, FF ⁴ I ² C	Analog: 2x ADC ¹ , 4x DAC ² , 4x CMP ³ , 4x Opamps, DFB ⁶ , 4x SC/CT PAB ⁵ , 0.9% Vref Interfaces: USB, FF ⁴ I ² C, CAN ⁷	Analog: 2x/3x ADC ¹ , 4x DAC ² , 4x CMP ³ , 4x Opamps, DFB ⁶ , 4x SC/CT PAB ⁵ , 0.1% Vref Interfaces: USB, FF ⁴ I ² C, CAN ⁷
	NEW CY8C5288 80 MHz, 256K/64K/2K ⁸ 12b SAR ADC ¹ 24x UDB ⁹ , 99-CSP¹⁰	NEW CY8C5488 80 MHz, 256K/64K/2K ⁸ 12b SAR ADC ¹ 24x UDB ⁹ , 99-CSP¹⁰	NEW CY8C5688 80 MHz, 256K/64K/2K ⁸ 2x 12b SAR ADC ¹ 24x UDB ⁹ , 99-CSP¹⁰	NEW CY8C5888 80 MHz, 256K/64K/2K ⁸ 20b ΔΣ ADC ¹¹ , 2x 12b SAR ADC ¹ 24x UDB ⁹ , 99-CSP¹⁰
	CY8C5268 67 MHz, 256K/64K/2K ⁸ 12b SAR ADC ¹ 24x UDB ⁹	CY8C5468 67 MHz, 256K/64K/2K ⁸ 12b SAR ADC ¹ 24x UDB ⁹	CY8C5668 67 MHz, 256K/64K/2K ⁸ 12b ΔΣ ADC ¹¹ , 12b SAR/2x 12b SAR ADC ¹ 24x UDB ⁹	CY8C5868 67 MHz, 256K/64K/2K ⁸ 20b ΔΣ ADC ¹¹ , 2x 12b SAR ADC ¹ 24x UDB ⁹
	CY8C5267 67 MHz, 128K/32K/2K ⁸ 12b SAR ADC ¹ 24x UDB ⁹	CY8C5467 67 MHz, 128K/32K/2K ⁸ 12b SAR ADC ¹ 24x UDB ⁹	CY8C5667 67 MHz, 128K/32K/2K ⁸ 12b ΔΣ ADC ¹¹ , 12b SAR/2x 12b SAR ADC ¹ 24x UDB ⁹	CY8C5867 67 MHz, 128K/32K/2K ⁸ 20b ΔΣ ADC ¹¹ , 12b SAR ADC ¹ 24x UDB ⁹
	CY8C5266 67 MHz, 64K/16K/2K ⁹ 12b SAR ADC ¹ 20x UDB ⁹	CY8C5466 67 MHz, 64K/16K/2K ⁸ 12b SAR ADC ¹ 20x UDB ⁹	CY8C5666 67 MHz, 64K/16K/2K ⁸ 12b ΔΣ ADC ¹¹ , 12b SAR ADC ¹ 20x UDB ⁹	CY8C5866 67 MHz, 64K/16K/2K ⁸ 20b ΔΣ ADC ¹¹ , 12b SAR ADC ¹ 20x UDB ⁹
	CY8C5265 67 MHz, 32K/8K/2K ⁸ 12b SAR ADC ¹ 20x UDB ⁹	CY8C5465 67 MHz, 32K/8K/2K ⁸ 12b SAR ADC ¹ 20x UDB ⁹		

Integration

¹ Analog-to-digital converter
² Digital-to-analog converter
³ Comparator

⁴ Fixed function
⁵ Switched capacitor/continuous time programmable analog block

⁶ Digital filter block
⁷ Controller area network
⁸ Flash KB/SRAM KB/EEPROM KB

⁹ Universal digital block
¹⁰ Chip scale package
¹¹ Delta-Sigma ADC

Status Availability
Production ☒ QQQY
Sampling ☐ QQQY
Development ☐
Concept ☐

PSoC Platform Packages



Package	LQFP	PDIP			QFN							SOIC			
Pins	48	8	20	28	16	24	32	40	48	56	68	8	16	20	28
PSoC 1		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
PSoC 3									✓		✓				
PSoC 4	✓				✓	✓		✓		✓		✓	✓		
PSoC 5LP											✓				
CapSense					✓	✓	✓		✓			✓	✓		
Package	SSOP							TQFP		WLCSP					
Pins	8	16	20	24	28	32	48	44	100	30	68	72	99		
PSoC 1	✓	✓	✓	✓	✓	✓	✓	✓	✓						
PSoC 3							✓		✓			✓			
PSoC 4					✓			✓			✓				
PSoC 5LP									✓				✓		
CapSense			✓				✓			✓					