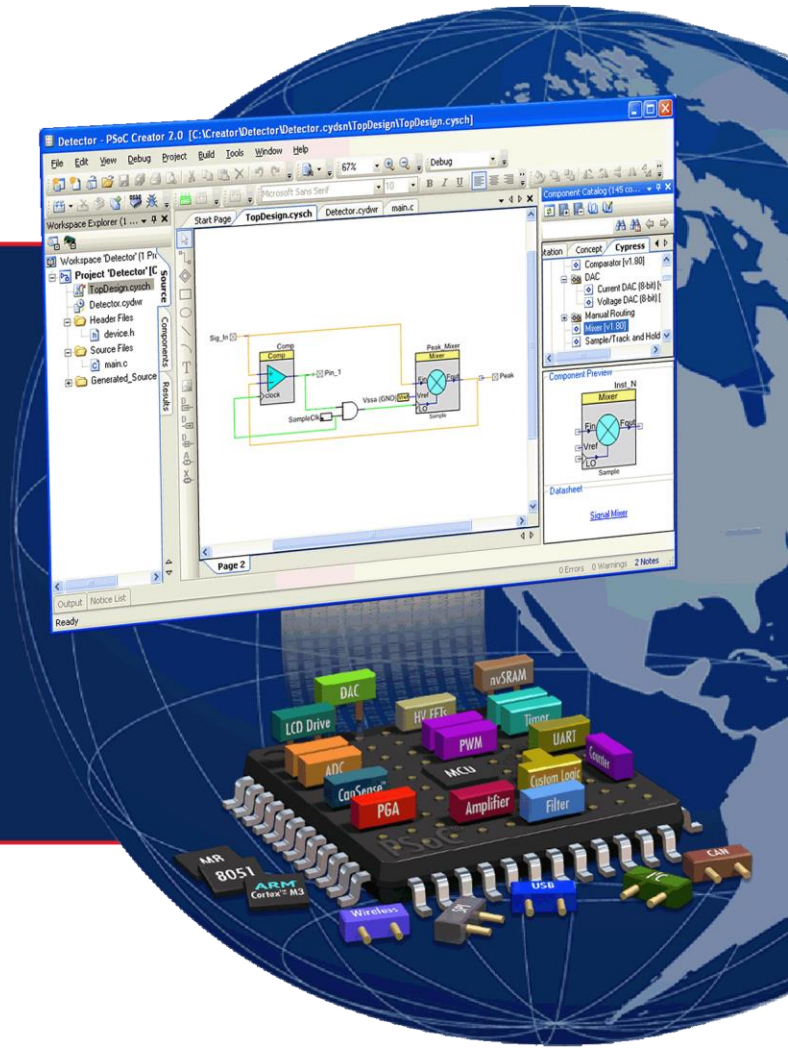
Cypress Roadmap:

Wireless Solutions for The IoT

IoT = Internet of Things



Q4 2016

Wireless Portfolio

Integration and Performance

Bluetooth	Wi-Fi	Wi-Fi + Bluetooth Combo	Automotive
		IEEE 802.11a/b/g/n/ac WLAN[1] + Bluetooth Up to 867 Mbps Wi-Fi, 1-3 Mbps Bluetooth Dual Band (2.4/5 GHz), 2x2 MIMO[2]	**IEEE 802.11a/b/g/n/ac WLAN + Bluetooth** Up to 867 Mbps, Dual Band (2.4/5 GHz), 2x2 MIMO, 1+1RSDB[3]
	IEEE 802.11a/b/g/n WLAN + MCU Up to 150 Mbps ARM® Cortex®-R4/-M3 MCU	**IEEE 802.11a/b/g/n WLAN + Bluetooth** Up to 300 Mbps Wi-Fi, 1-3 Mbps Bluetooth Dual Band (2.4/5 GHz), 2x2 MIMO	**IEEE 802.11a/b/g/n/ac WLAN + Bluetooth** Up to 433 Mbps PHY rate Dual Band (2.4/5 GHz), 1x1
Bluetooth (BR[4] + EDR[5] + BLE[6]) + MCU 1-3 Mbps, Class 1/2/3[7], ARM Cortex®-M4/-M3 MCU	**IEEE 802.11a/b/g/n WLAN** Up to 150 Mbps 2x2 MIMO		**Bluetooth (BR + EDR)** 1-3 Mbps Class 1/2/3
PSoC BLE 1-2 Mbps, CapSense®, AFE[8], Opamp, TIA[9] ARM Cortex®-M0/-M4/-M4 and M0+ MCU			
PRoC BLE 1 Mbps, CapSense® ARM Cortex®-M0 MCU			
Bluetooth Low Energy (BLE) + MCU 1-2 Mbps, ARM Cortex®-M3 MCU			

[1] Wireless Local Area Network
[2] Multiple-input multiple-output
[3] Read simultaneous dual band
[4] Basic Rate
[5] Enhanced Data Rate
[6] Bluetooth Low Energy
[7] Class 1 (100 m)/2 (10 m)/3 (1 m)
[8] Analog front end
[9] Transimpedance amplifier

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

Wireless Solutions for The Internet of Things (IoT) Roadmap

BLE PORTFOLIO

Bluetooth Low Energy (BLE) Portfolio

WICED™	PSoC® Creator™	
BLE + MCU	**PRoC™ BLE (MCU + Touch[1])**	**PSoC 4 BLE (MCU + Touch + Mixed-Signal)**
BCM20719 Q416 CM4[2], SPI, UART, I²C[3], IR TX/RX[4], ADC, 6 PWM, KB Scanner[5], Mouse QD[6], Crypto[7], 4 TRIAC Control, 40 GPIO, 1MB Flash, 512KB RAM, BT[8] 4.2, 2 Mbps support, WICED SDK[9]	**CYBL1117x** CM0, DMA, 2 SCB, I²S 4 TCPWM, 4 PWM, ADC, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.2, PSoC Creator	**CYBL1147x/57x** CM0, DMA, 2 SCB, I²S 2-Finger[1], 4 TCPWM, 4 PWM, ADC, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.2, PSoC Creator
		CY8C41x8-BL5xx CM0, DMA, 2 SCB, 4 Opamp, 2 CMP, ADC, 4 TCPWM, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.2, PSoC Creator
		CY8C42x8-BL5xx CM0, DMA, 2 SCB, 4 Opamp, 2 CMP, 4 UDB, ADC, 4 TCPWM, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.2, PSoC Creator
BCM20737 CM3, SPI, UART, I²C, IR TX/RX, ADC, 4 PWM, LE Audio, NFC[15], Crypto, 14 GPIO, 60KB RAM, BT 4.1, WICED SDK		**CYBL1057x** CM0, 2 SCB, I²S 2-Finger, 4 TCPWM, 4 PWM, ADC, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.1, PSoC Creator
		CY8C41x8-BL4xx CM0, 2 SCB, ADC, 4 Opamp, 2 CMP, 4 TCPWM, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.1, PSoC Creator
		CY8C42x8-BL4xx CM0, 2 SCB, ADC, 4 Opamp, 2 CMP, 4 UDB, 4 TCPWM, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.1, PSoC Creator
BCM20736 CM3, SPI, UART, I²C, IR TX/RX, ADC, A4WP[16], 4 PWM, 40 GPIO, 60KB RAM, BT 4.1, WICED SDK	**CYBL1016x** CM0, 2 SCB, I²S, 4 TCPWM, 4 PWM, ADC, 36 GPIO, 128KB Flash, 16KB RAM, BT 4.1, PSoC Creator	**CYBL1046x/57x** CM0, 2 SCB, I²S, 2-Finger, 4 TCPWM, 4 PWM, ADC, 36 GPIO, 256KB Flash, 32KB RAM, BT 4.1, PSoC Creator
		CY8C41x7-BL4xx CM0, 2 SCB, ADC, 4 Opamp, 2 CMP, 4 TCPWM, 36 GPIO, 128KB Flash, 16KB RAM, BT 4.1, PSoC Creator
		CY8C42x7-BL4xx CM0, 2 SCB, ADC, 4 Opamp, 2 CMP, 4 UDB, 4 TCPWM, 36 GPIO, 128KB Flash, 16KB RAM, BT 4.1, PSoC Creator

Integration and Flexibility

[1] Touch-sensing technology with up to 2-finger gestures
[2] ARM® Cortex®-M0/M0+/M3/M4
[3] Broadcom serial communications block
[4] Infrared transmit and receive
[5] Keyboard scanner
[6] Mouse quadrature decoder
[7] Cryptographic accelerator block for security
[8] Bluetooth Specification
[9] Software development kit
[10] Direct memory access
[11] Serial communication block (SPI/I²C/UART)
[12] Comparator
[13] Universal digital block
[14] Timer/Counter/PWM
[15] Out-of-Band pairing with NFC
[16] Alliance for Wireless Power BLE Profile

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

BCM20737

Bluetooth Low Energy Connectivity MCU with Security and Wireless Charging

Applications

Wearables, medical, home automation, toys

Features

Industry's Most-Widely-Deployed BLE Stack

Bluetooth Low Energy (BLE) Features

Bluetooth 4.1 compliant
Simultaneous multiple Master and Slave (1M, 3S)
Alliance for Wireless Charging (A4WP) support
Proprietary low-energy audio (LE Audio) support
Out-of-band (OOB) pairing using near-field communication (NFC)
Secure over-the-air (OTA) firmware upgrade

Security Engine

RSA, X.509, SHA, AES128

Packages

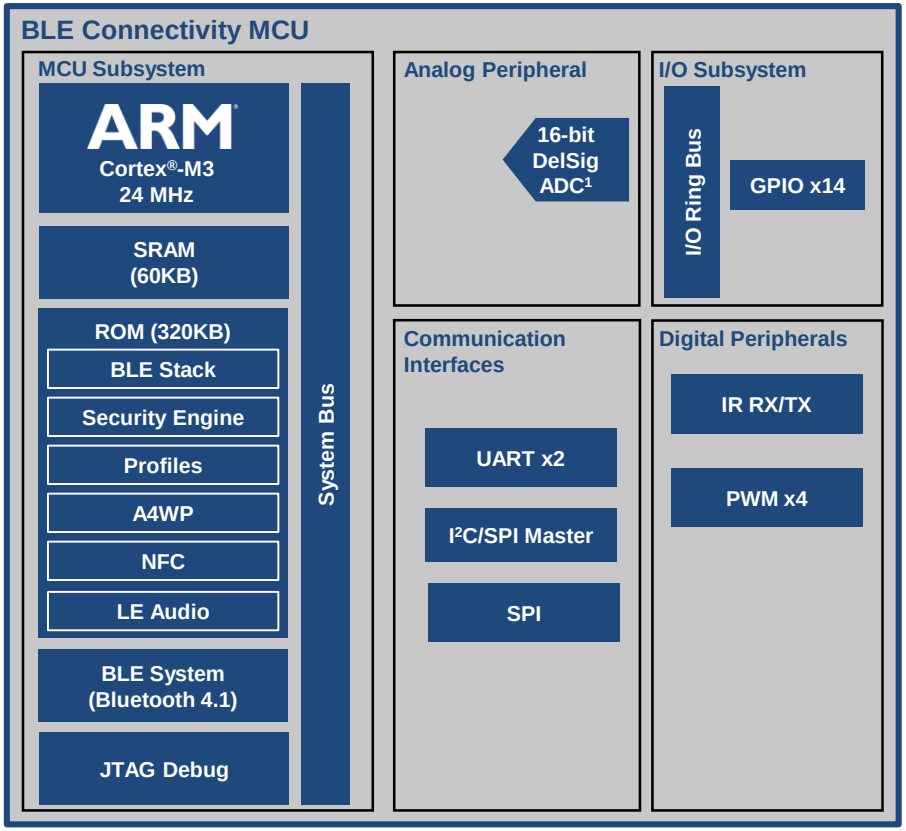
32-pin QFN (5 x 5 mm), 80-ball WLCSP (2.2 x 2.2 mm)
FCC and CE-certified 6.5 x 6.5 x 1.2-mm modules with antenna

WICED™ SMART SDK 2.1 (and later)

Collateral

Datasheet:	BCM20737
Software:	WICED SMART SDK
Quick Start Guide:	WICED SMART SDK 2.x
	BCM92073x_LE_TAG4

Block Diagram



Availability

Production: Now

[1] Effective number of bits is 10 at 187 ksps

BCM20736

Bluetooth Low Energy Connectivity MCU with Wireless Charging

Applications

Beacons, tags, toys, industrial/home automation

Features

Industry's Most-Widely-Deployed BLE Stack

Bluetooth Low Energy (BLE) Features

Bluetooth 4.1 compliant
Support for all standard Bluetooth 4.1 low-energy profiles including Alliance for Wireless Charging (A4WP)
Simultaneous multiple Master and Slave (1M, 1S)
Pre-standard BLE mesh
Over-the-air (OTA) firmware upgrade

Packages

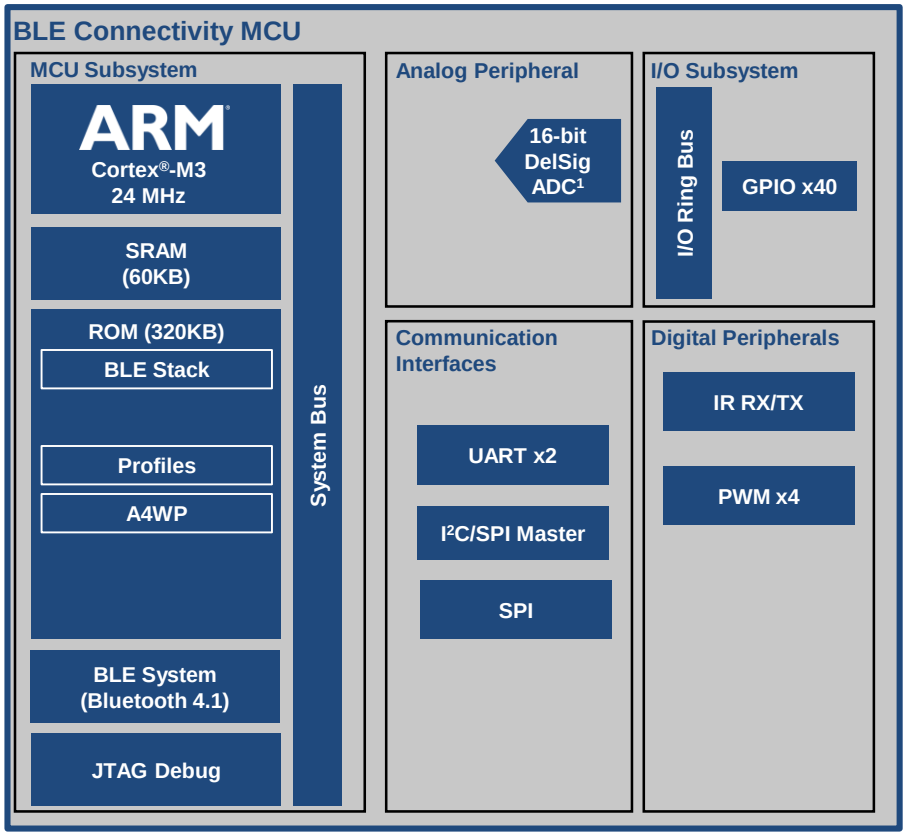
32-pin QFN (5 x 5 mm)
80-ball WLCSP (2.2 x 2.2 mm)
FCC and CE-certified 6.5 x 6.5 x 1.2-mm modules with antenna

WICED™ SMART SDK 2.1 (and later)

Collateral

Datasheet:	BCM20736
Software:	WICED SMART SDK
Quick Start Guide:	WICED SMART SDK 2.x
	BCM92073x_LE_TAG4

Block Diagram



Availability

Production: Now

[1] Effective number of bits is 10 at 187 ksps

BCM20719

Ultra Low Power Bluetooth Smart Ready Connectivity Secure MCU

Applications

Medical, home automation, wearables, POS

Features

Industry's Most-Widely-Deployed Bluetooth Stack

Bluetooth Low Energy (BLE) Features
Bluetooth 4.2-compliance with LE privacy 1.2, LE data length extension, LE secure connections
Industry's lowest-power radio
Proprietary low energy audio (LE Audio) support
2-Mbps proprietary BLE support

ARM® Cortex®-M4 CPU with Floating-Point Unit, Digital-Signal Processing Logic and 1MB Flash

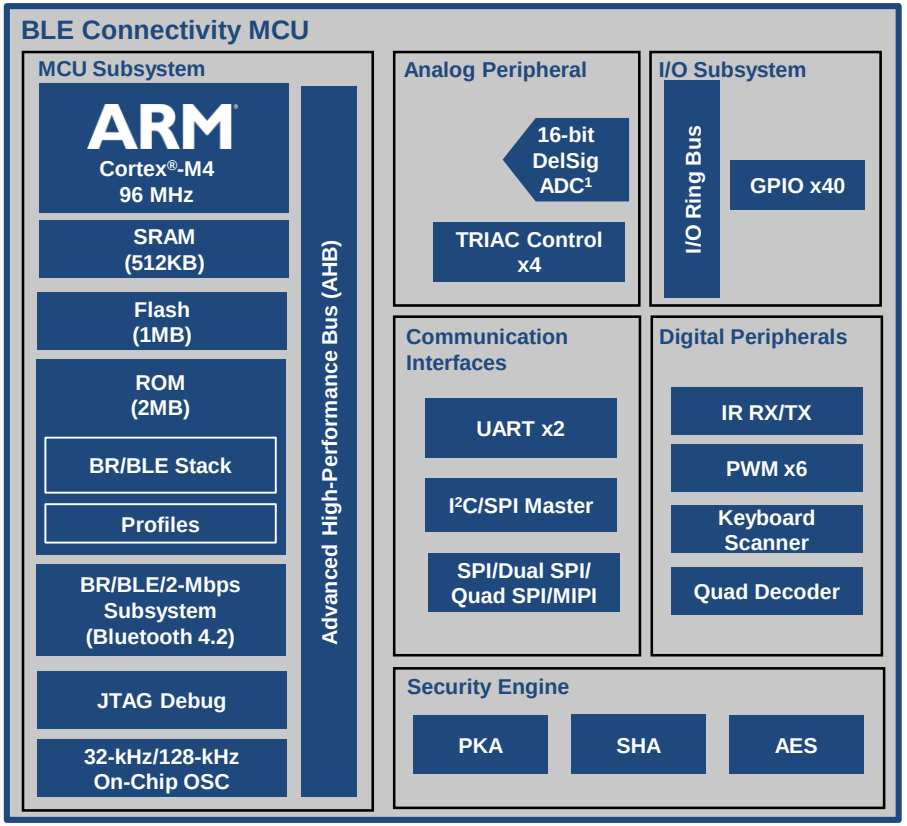
MIPI-Compliant Display Driver

Security Engine
Public key accelerator (PKA), SHA, AES, RSA, Elliptic Curve Diffie Hellman (ECDH)

Packages
40-pin QFN (5 x 5 mm)
80-ball WLCSP (2.2 x 2.2 mm)

WICED™ SMART Ready SDK

Block Diagram



Collateral

Datasheet: BCM20719 (Contact Sales)
Software: WICED SMART Ready SDK (Contact Sales)

Availability

Sampling: Q416
Production: Q117

[1] Effective number of bits is 10 at 187 ksps

PSoC® 4 BLE (CY8C4xxx-BL)

Programmable System-on-Chip with Bluetooth Low Energy

Applications

Sports and fitness monitors, wearable electronics, medical devices, home automation solutions, game controllers, sensor-based low-power systems for IoT

Features

32-bit MCU subsystem
ARM® Cortex®-M0 with DMA, 256KB flash and 32KB SRAM

Programmable Analog Front End
Four opamps, configurable as PGAs, comparators, filters, etc.
One 12-bit, 1-Msps SAR ADC

CapSense® with SmartSense™ Auto-tuning
One Cypress Capacitive Sigma-Delta™ (CSD) controller with touchpad capability

Programmable Digital Logic
Four universal digital blocks (UDBs): custom digital peripherals
Four configurable TCPWM[1] blocks: 16-bit timer, counter or PWM
Two configurable serial communication blocks (SCBs)[2]
I²C master or slave, SPI master or slave, or UART

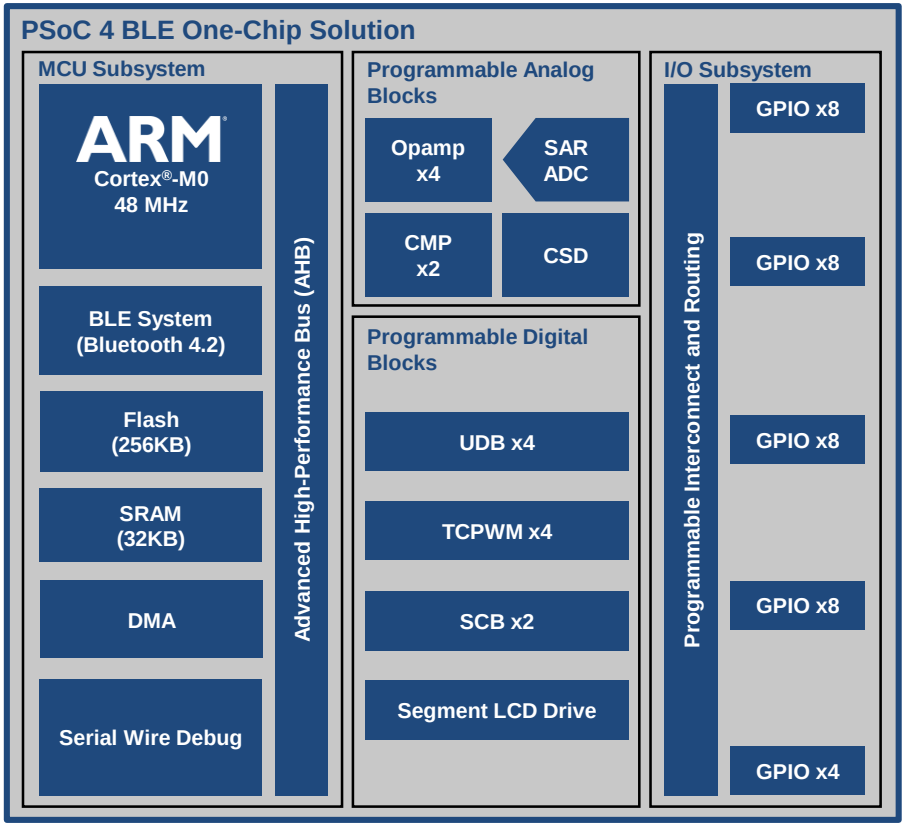
Packages
56-pin QFN, 68/76-ball CSP and thin CSP[3]

Bluetooth Smart Connectivity with Bluetooth 4.2
2.4-GHz BLE radio with integrated balun

Collateral

Datasheet:	CY8C4xxx-BL
Software:	PSoC Creator IDE
Application Note:	Getting Started With PSoC 4 BLE

Block Diagram



Availability

	128KB	256KB	256KB with BLE 4.2
Sampling:	Now	Now	Now
Production:	Now	Now	Now

[1] Timer/Counter/Pulse-Width modulator
[2] Serial communication block configurable as I²C/SPI/UART
[3] A thinner CSP package, 0.38 mm thick as compared to 0.55 mm for a regular CSP package

PRoC™ BLE (CYBL1x1x/4x/5xx)

Programmable Radio-on-Chip with Bluetooth Low Energy

Applications

BLE connectivity, wireless touch mice, wireless keyboards with trackpads, wireless trackpads, wireless remote control with trackpads, wireless toys

Features

32-bit MCU subsystem
ARM® Cortex®-M0 with DMA, 256KB flash and 32KB SRAM

CapSense® with SmartSense™ Auto-tuning
One Cypress Capacitive Sigma-Delta™ (CSD) controller with touchpad capability

Analog and Digital Peripherals
One 12-bit, 1-Msps SAR ADC
Four configurable TCPWM[1] blocks: 16-bit timer, counter or PWM
Two configurable serial communication blocks (SCBs)[2]
I²C master or slave, SPI master or slave, or UART
Dedicated I²S Tx/Rx interface
Up to four additional PWMs

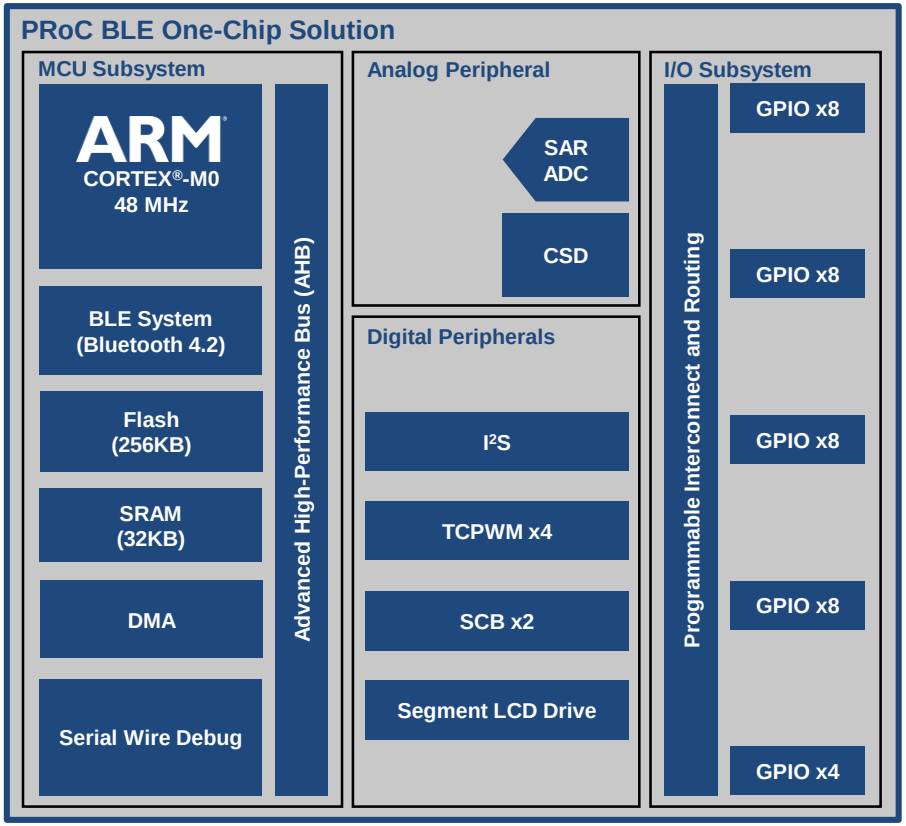
Packages
56-pin QFN, 68/76-ball CSP and thin CSP[3]

Bluetooth Smart Connectivity With Bluetooth 4.2
2.4-GHz BLE radio with integrated Balun

Collateral

Datasheet:	CYBL1x1x/4x/5xx
Software:	PSoC Creator IDE
Application Note:	Getting Started With PRoC BLE

Block Diagram



Availability

	128KB	256KB	256KB with BLE 4.2
Sampling:	Now	Now	Now
Production:	Now	Now	Now

[1] Timer, Counter, Pulse-Width Modulator
[2] Serial communication block configurable as I²C/SPI/UART
[3] A thinner CSP package, 0.38 mm thick as compared to 0.55 mm for a regular CSP package

PSoC® 6 BLE (NDA)

Energy-Efficient One-Chip Wearable Solution

Applications

Wearables, wireless connectivity modules, gaming accessories

Features

MCU Subsystem
150-MHz ARM® Cortex®-M4 with SP FPU[1] and 8KB I-Cache[2]
100-MHz ARM® Cortex®-M0+
Up to 1MB flash, 256KB dual-bank SRAM with DMA[3], eFUSE[4]
Advanced cryptographic accelerator block (CRYPTO)

Programmable Analog Blocks
2x opamps, 2x low-power comparators (CMP)
1x 12-bit SAR[5] ADC @ 5 Msps, 2x 12-bit DAC
1x CapSense® block (capacitive-sensing solution)

Programmable Digital Blocks
12x universal digital blocks (UDBs): custom digital peripherals
32x timer, counter, PWM (TCPWM[6]) blocks

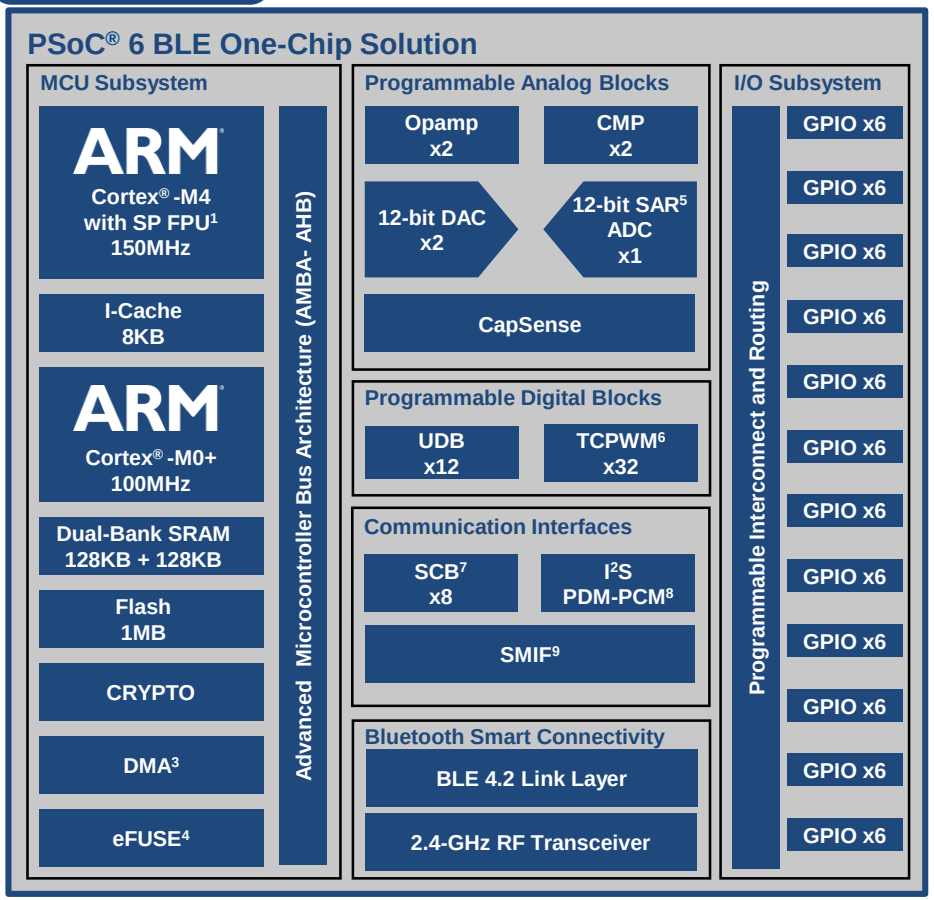
Communication Interfaces
8x serial communication blocks (SCBs[7])
I²S and PDM-PCM[8] converter
Serial memory interface (SMIF[9])

Bluetooth Smart Connectivity
Bluetooth 4.2 radio with 2-Mbps data throughput support

I/O Subsystem: Up to 72 GPIOs

Packages: 89-WLCSP, 56-QFN, 124-BGA

Block Diagram



Collateral

Preliminary Datasheet: Contact Sales

Availability

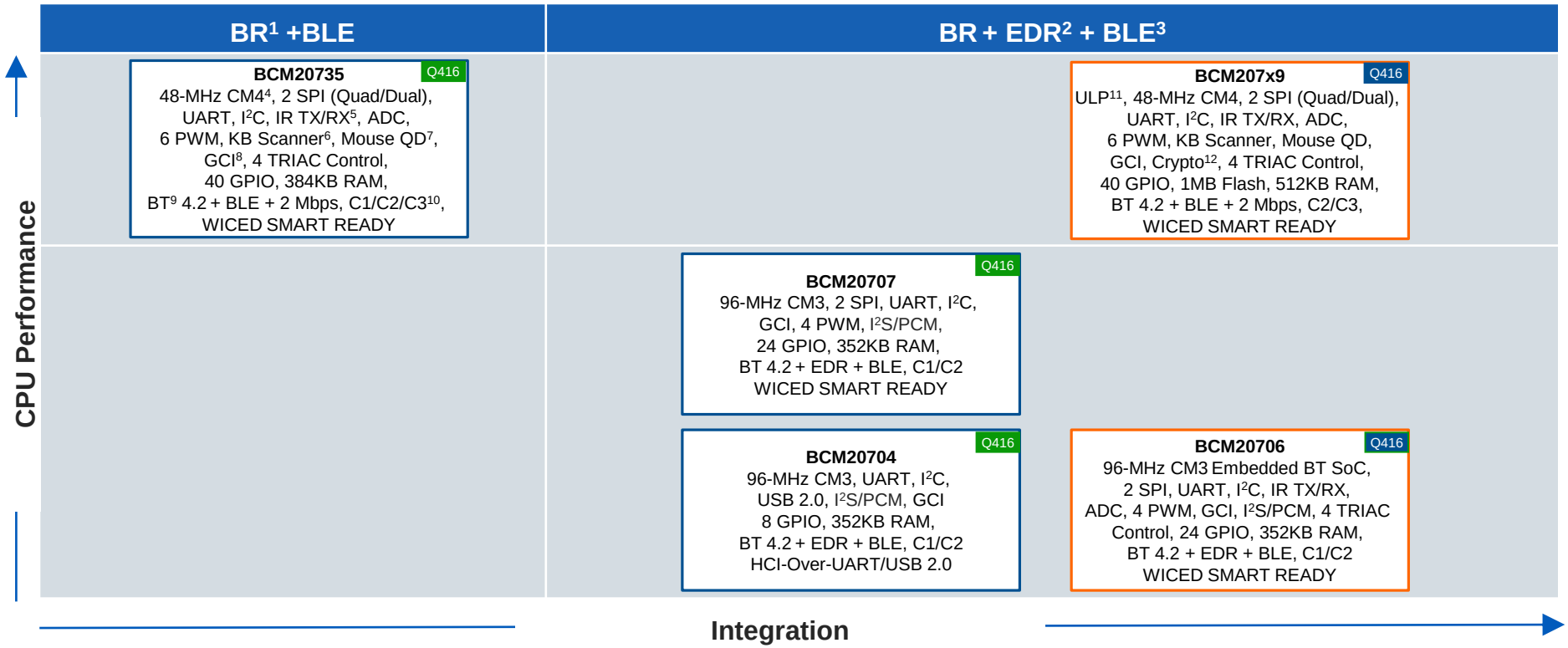
Sampling: Q416 Production: Q117

[1] Single-Precision Floating-Point Unit
[2] Four-way set associative instruction cache
[3] Direct Memory Access controller
[4] One-time programmable bits for secure key storage
[5] Successive Approximation Register
[6] Configurable as a 16-bit timer, counter or PWM
[7] Configurable as a UART, SPI or I²C interface
[8] Digital microphone interface
[9] Configurable as a Quad SPI, HyperBus or SD-Card

Wireless Solutions for The Internet of Things (IoT) Roadmap

BLUETOOTH CLASSIC + BLE PORTFOLIO

Bluetooth Classic + BLE Portfolio



[1] Basic Rate
[2] Enhanced data rate
[3] Bluetooth Low Energy
[4] ARM® Cortex®-M3/M4
[5] Infrared transmit and receive
[6] Keyboard scanner
[7] Mouse quadrature decoder
[8] Global coexistence interface
[9] Bluetooth Specification 3.0/4/1/4.2
[10] Class 1 (100 m)/2 (10 m)/3 (1 m)
[11] Ultra-low power
[12] Cryptographic accelerator block for security
[13] 3D Glass shutter control
[14] Application Development Kit

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

BCM20707
Bluetooth Connectivity MCU

Applications

HCI-based Bluetooth and dongles

Features

Industry's Most-Widely-Deployed Bluetooth Stack

Bluetooth Features
Bluetooth 4.2 + high-speed stack with BR[1]/EDR[2]/BLE[3]
Class 1 (100 meters), Class 2 (10 meters) support
Global coexistence interface (GCI)
Wideband speech (16K) support
Up to 16 LE connections
Host controller interface (HCI) over UART

Application Specific Peripherals
Two independent half-duplex PCM/I²S interfaces

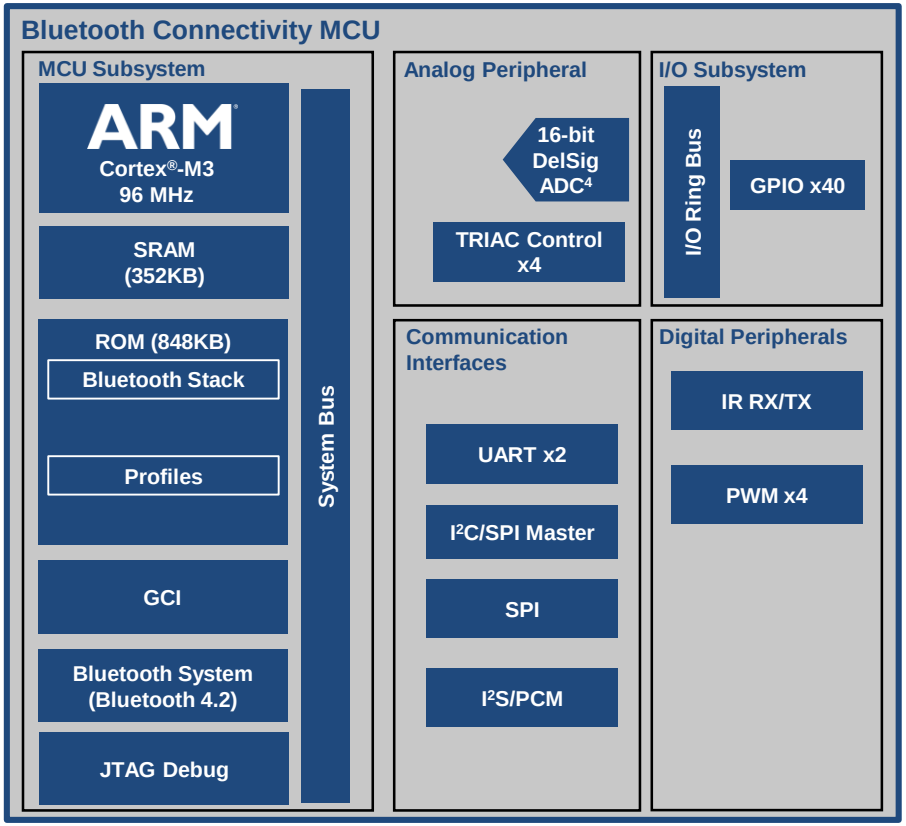
Package
49-pin FBGA (4.5 x 4.0 mm)

WICED™ SMART READY SDK

Collateral

Datasheet: BCM20707
Software: WICED SMART READY SDK (Contact Sales)

Block Diagram



Availability

Sampling: Now
Production: Q416

[1] Basic Rate
[2] Enhanced Data Rate
[3] Bluetooth Low Energy
[4] Effective number of bits is 10 at 187 ksps

BCM20704

Bluetooth Connectivity MCU

Applications

HCI-based Bluetooth and dongles

Features

Industry's Most-Widely-Deployed Bluetooth Stack

Bluetooth Features

Bluetooth 4.2 + high-speed stack with BR[1]/EDR[2]/BLE[3]
Class 1 (100 meters), Class 2 (10 meters) support
Global coexistence interface (GCI)
Host controller interface (HCI) over UART and USB

Package

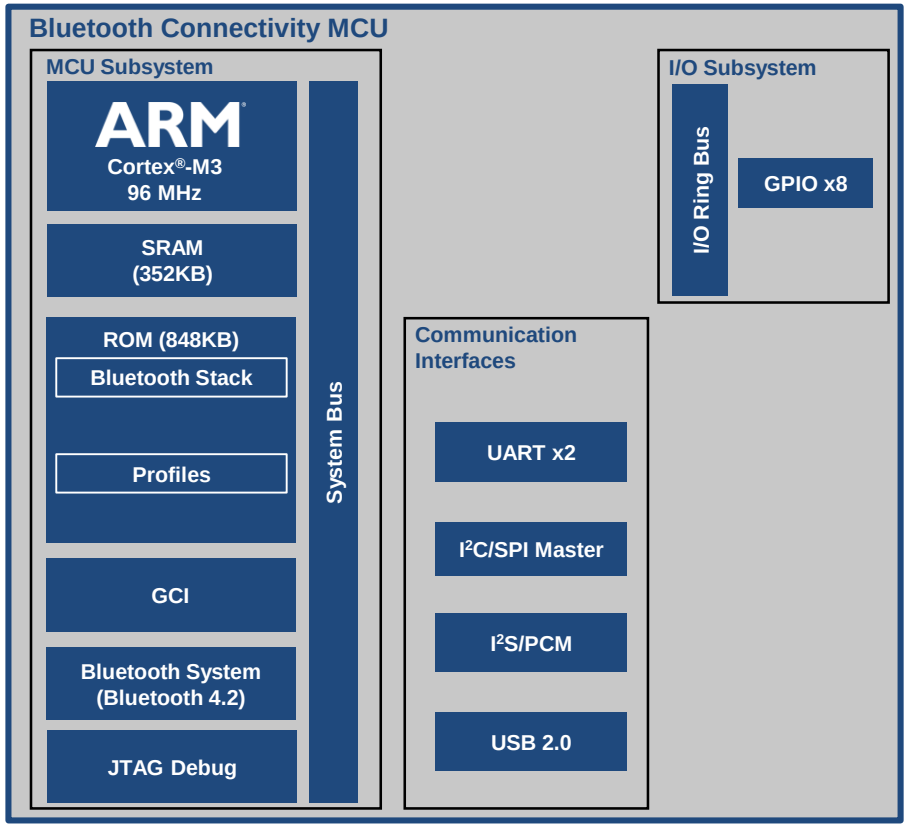
49-pin FCBGA (4.5 x 4.0 mm)

WICED™ SMART READY SDK

Collateral

Datasheet: BCM20704
Software: WICED SMART READY SDK (Contact Sales)

Block Diagram



Availability

Sampling: Now
Production: Q416

[1] Basic Rate
[2] Enhanced Data Rate
[3] Bluetooth Low Energy

BCM20706
Bluetooth Connectivity MCU

Applications

Speaker/Headset, Bluetooth gateway, automation gateway

Features

Industry's Most-Widely-Deployed Bluetooth Stack

Bluetooth Features
Hostless, complete system-on-chip
Bluetooth 4.2 stack with BR[1]/EDR[2]/BLE[3]
Class 1 (100 meters), Class 2 (10 meters) support
A2DP, AVRCP, SPP, GATT support
Global coexistence interface (GCI)

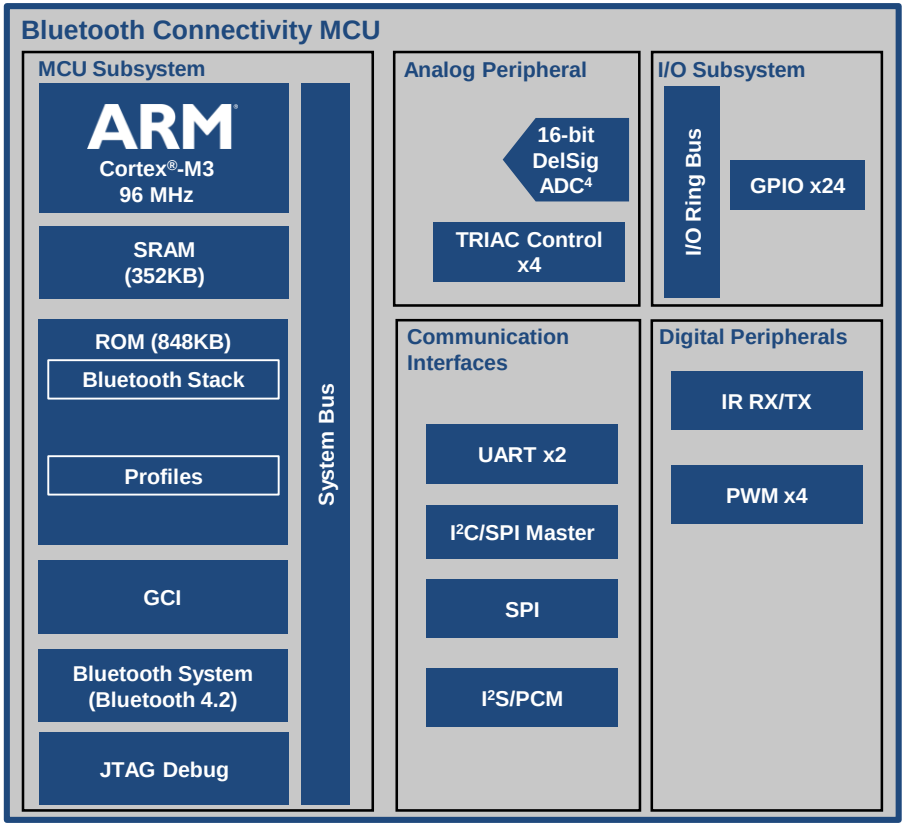
Package
49-pin FBGA (4.5 x 4.0 mm)

WICED™ SMART READY SDK

Collateral

Datasheet: BCM20706
Software: WICED SMART READY SDK (Contact Sales)

Block Diagram



Availability

Sampling: Q416
Production: Q416

[1] Basic Rate
[2] Enhanced Data Rate
[3] Bluetooth Low Energy
[4] Effective number of bits is 10 at 187 ksps

BCM20735

Bluetooth Smart and Basic Rate Connectivity MCU

Applications

Remote controls, BR-gateways

Features

Industry's Most-Widely-Deployed Bluetooth Stack

Bluetooth Features
Bluetooth 4.2 stack with basic rate and Bluetooth Low Energy (BLE)
All new Bluetooth 4.2 features: LE privacy 1.2, LE data length extension, LE secure connections
2-Mbps proprietary BLE support
Integrated power amplifier (up to 10 dBm)

ARM® Cortex®-M4 CPU With Floating-Point Unit (FPU) and Digital-Signal Processing (DSP) Logic

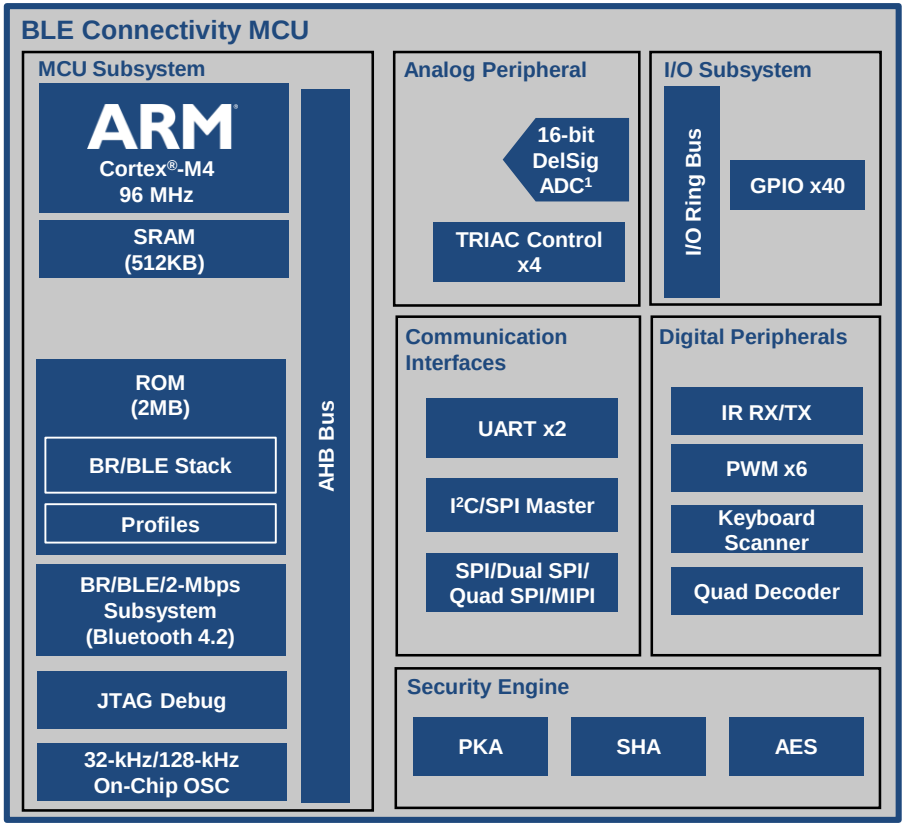
MIPI-Compliant Display Driver

Security Engine
PKA, SHA, AES

Packages
60-pin QFN (7 x 7 mm)
111-ball FBGA (9 x 9 mm)

WICED™ SMART READY SDK

Block Diagram



Collateral

Datasheet: BCM20735
Software: WICED SMART READY SDK (Contact Sales)

Availability

Sampling: Now
Production: Q416

[1] Effective number of bits is 10 at 187 ksps

BCM207x9

Ultra Low Power Multi-Protocol Connectivity MCU

Applications

Medical, home automation, wearables, POS input devices

Features

Industry's Most-Widely-Deployed Bluetooth Stack

Bluetooth Features
Industry's lowest power Bluetooth radio
Bluetooth 4.2 stack with BR[1]/EDR[2]/BLE[3]
All new, Bluetooth 4.2 features: LE privacy 1.2, LE data length extension, LE secure connections
2-Mbps proprietary BLE support
LE audio

802.15.4 ZigBee and Thread Support

ARM® Cortex®-M4 CPU With Floating-Point Unit (FPU), Digital-Signal Processing (DSP) Logic and 1MB Flash

MIPI-Compliant Display Driver

Security Engine
PKA, SHA, AES, RSA, ECDH[4]

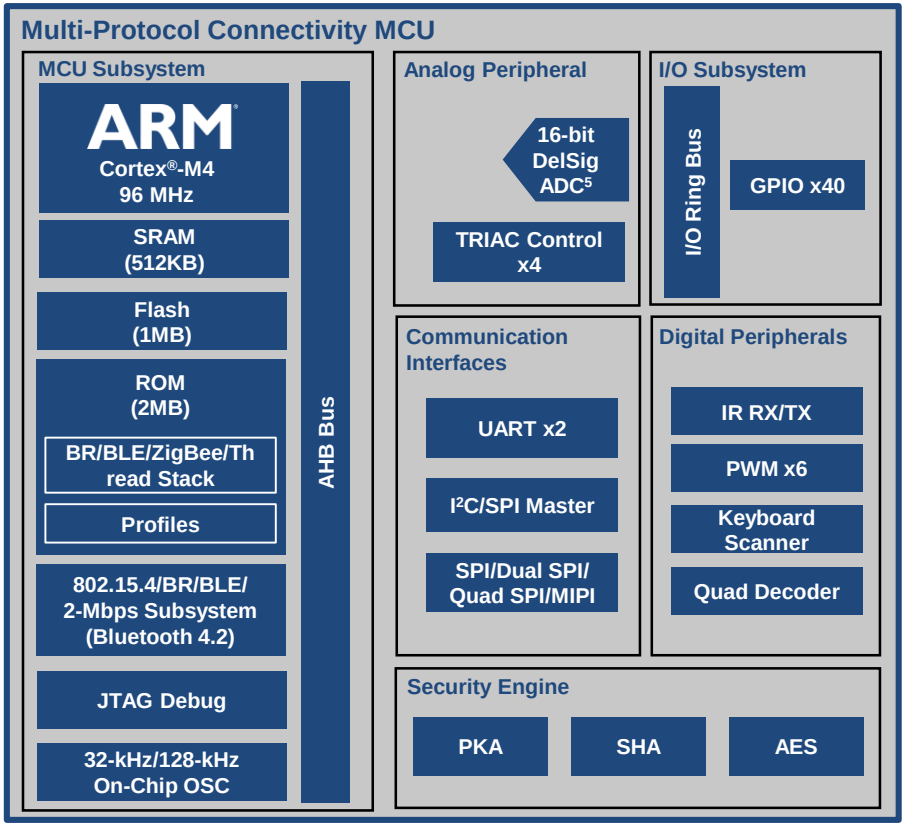
Packages
40-pin QFN (5 x 5 mm)
80-ball WLCSP (2.2 x 2.2 mm)

WICED™ SMART READY SDK

Collateral

Datasheet: BCM207x9 (Contact Sales)
Software: WICED SMART READY SDK (Contact Sales)

Block Diagram



Availability

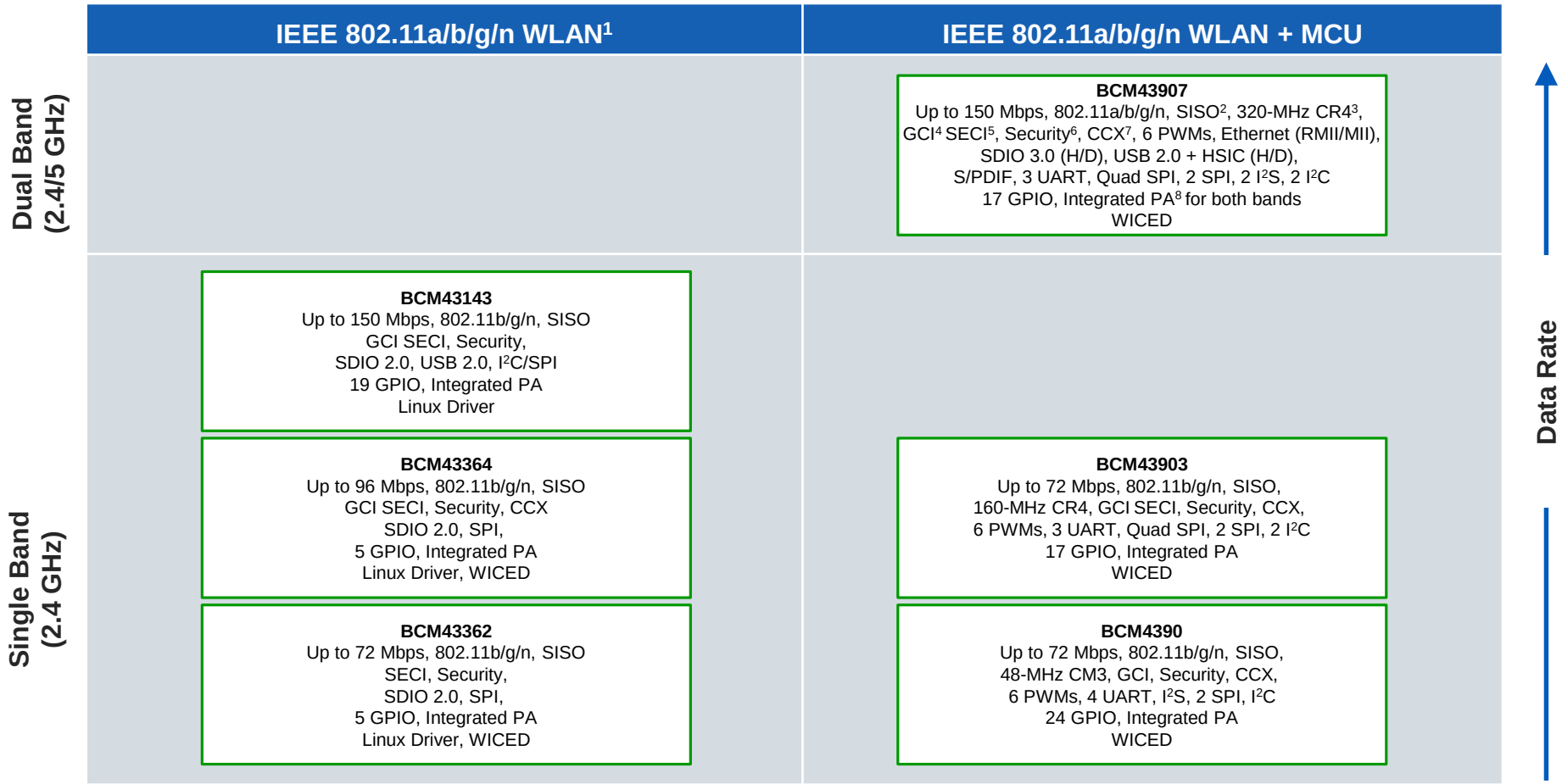
	BCM20719	BCM20729	BCM20739
Sampling:	Q416	Q117	Q117
Production:	Q117	Q217	Q217

[1] Basic Rate
[2] Enhanced Data Rate
[3] Bluetooth Low Energy
[4] Elliptic-Curve Diffie Hellman
[5] Effective number of bits is 10 at 187 ksps

Wireless Solutions for The Internet of Things (IoT) Roadmap

Wi-Fi PORTFOLIO

Wi-Fi Portfolio



[1] Wireless Local Area Network
[2] Single-input single-output
[3] ARM® Cortex®-M3/R4
[4] Global coexistence interface
[5] Serial-enhanced coexistence interface
[6] WPA, WAPI STA, WPA2, AES, TKIP security features
[7] Cisco-compatible extensions
[8] Power amplifier

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

BCM43362

Single-Chip IEEE 802.11n MAC/Baseband/Radio + SDIO Connectivity Solution

Applications

Consumer and commercial internet-of-things (IoT), sensors and control

Features

Industry's Most-Widely-Deployed Wi-Fi IP

Wi-Fi Features
802.11b/g/n compliant
72-Mbps data rate
Single band (2.4 GHz)
SDIO 2.0 and SPI support
3-/4-wire serial enhanced coexistence interface (SECI)

Security Engine[1]
WPA and WPA2
AES in hardware

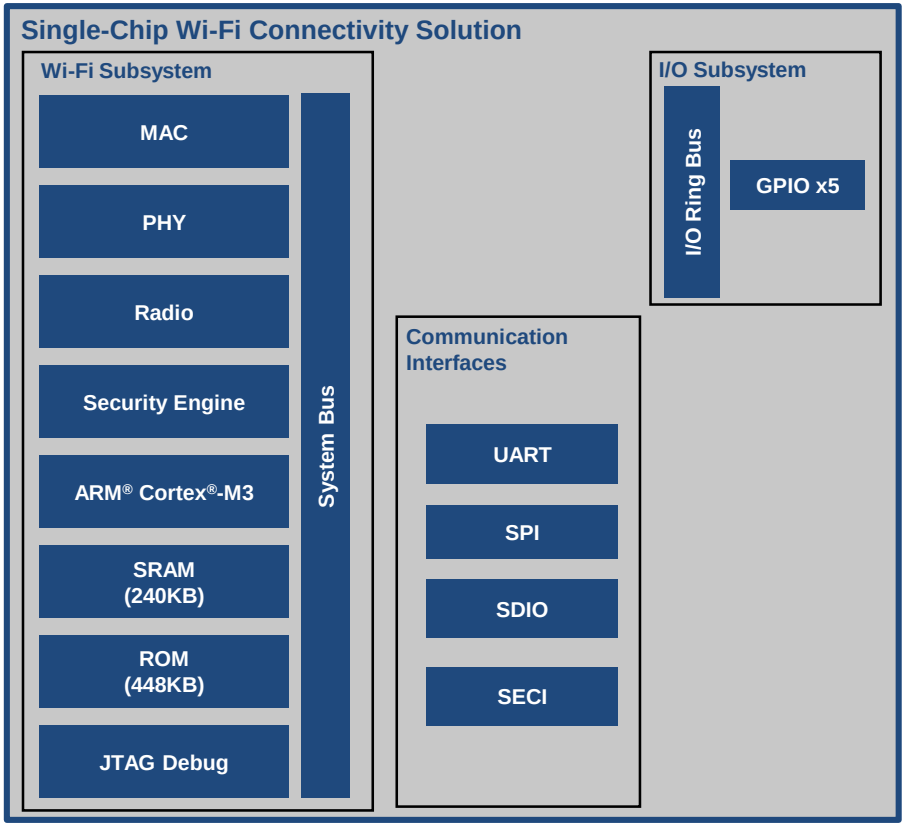
Packages
69-ball WLBGA (4.52 x 2.92 mm)

WICED™ Wi-Fi SDK, Linux Driver

Collateral

Datasheet: BCM43362
Software: WICED Wi-Fi SDK
Linux Driver
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM43364

Single-Chip IEEE 802.11n MAC/Baseband/Radio

Applications

Low-cost WLAN connectivity for consumer/commercial IoT

Features

Industry's Most-Widely-Deployed Wi-Fi IP

Wi-Fi Features
802.11b/g/n compliant
96-Mbps data rate
Single band (2.4 GHz)
SDIO 2.0 and SPI support
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

Security Engine[2]
WPA and WPA2
AES in hardware
Cisco-compatible extensions

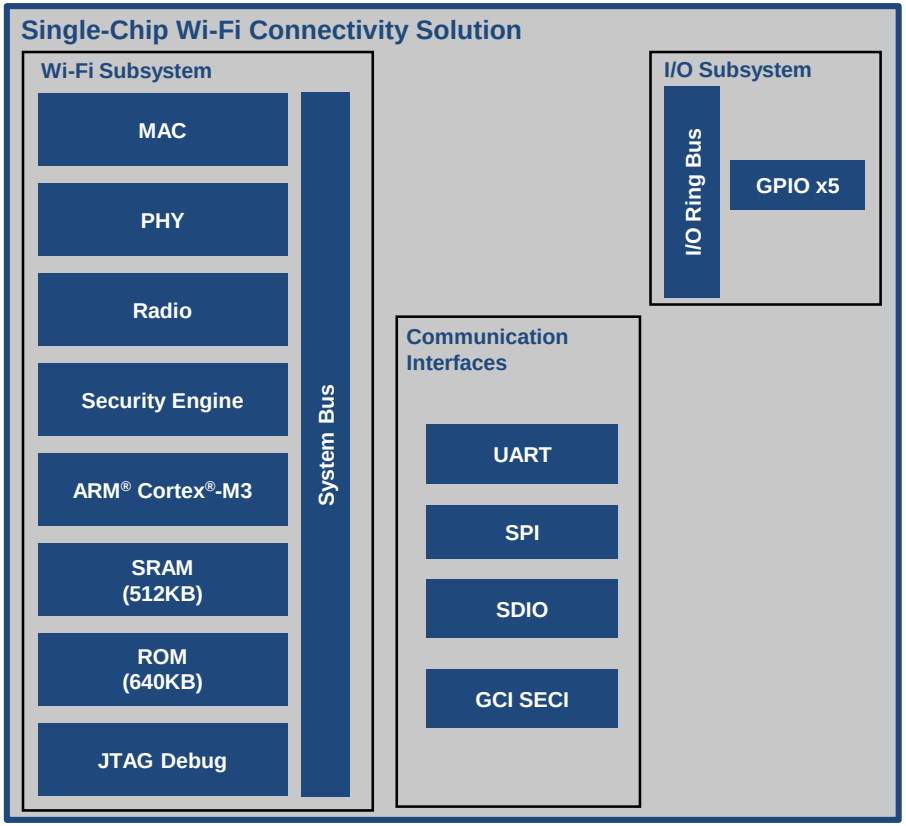
Packages
74-ball WLBGA (4.87 x 2.87 mm)

WICED™ Wi-Fi SDK, Linux Driver

Collateral

Datasheet: BCM43364
Software: WICED Wi-Fi SDK
Linux Driver
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM43143

Single-Chip IEEE 802.11n MAC/Baseband/Radio + SDIO/USB Connectivity Solution

Applications

Consumer electronics, printers

Features

Industry's Most-Widely-Deployed Wi-Fi IP

Wi-Fi Features
802.11b/g/n compliant
150-Mbps data rate
Single band (2.4 GHz)
SDIO 2.0 and USB 2.0 support
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

Security Engine[2]
WPA and WPA2
AES in hardware
Cisco-compatible extensions

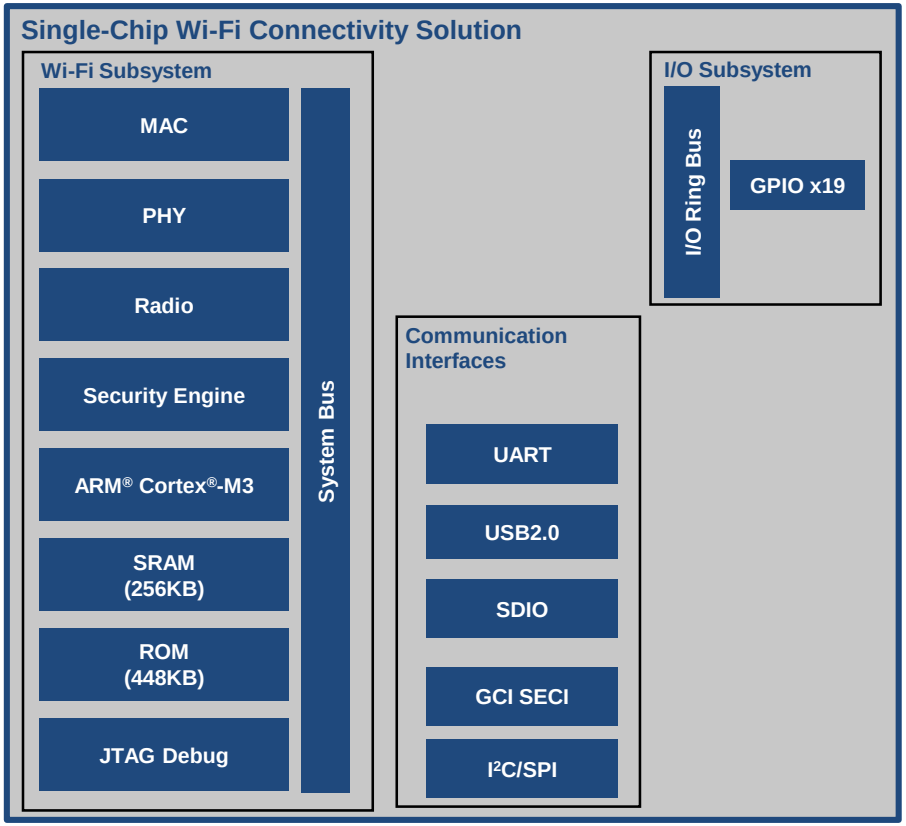
Packages
56-pin QFN (7 x 7 mm)

Linux Driver

Collateral

Datasheet: BCM43143
Software: Linux Driver
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM4390

IEEE 802.11n System-on-Chip with Embedded Application Processor

Applications

Consumer, home automation, health, smart energy

Features

Industry's Most-Widely-Deployed Wi-Fi IP

Wi-Fi Features
802.11b/g/n compliant
72-Mbps data rate
Single band (2.4 GHz)
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

32-bit ARM Cortex-M3 Application MCU Subsystem

Security Engine[2]
WPA and WPA2
AES in hardware
Cisco-compatible extensions

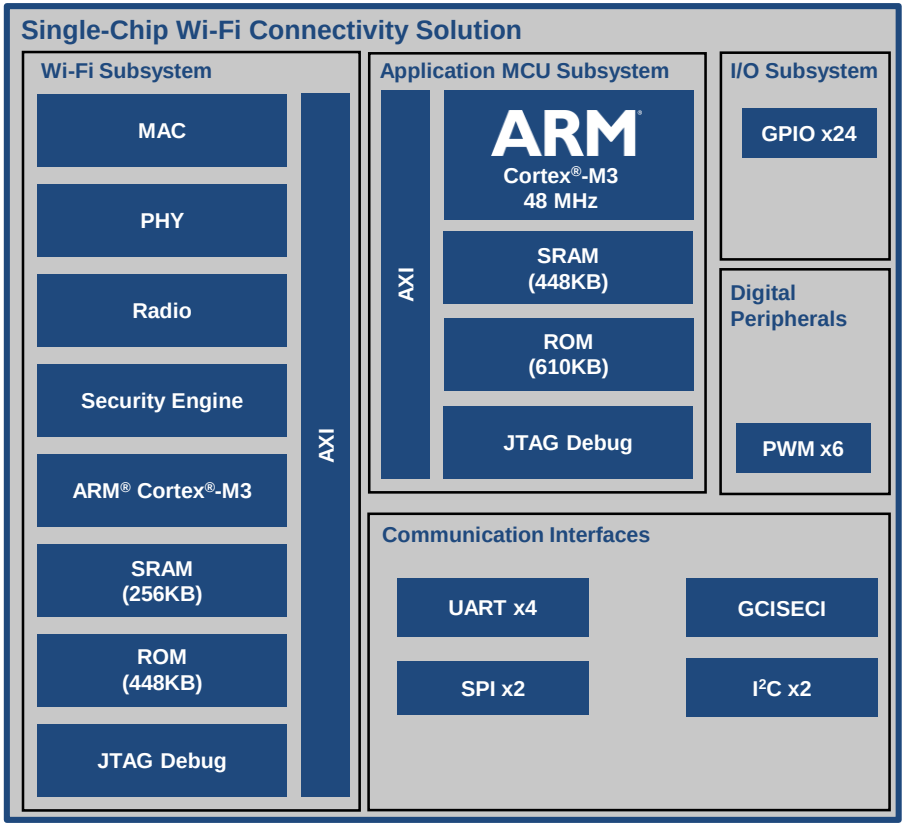
Packages
286-ball WLCSP (4.87 x 5.413 mm)

WICED™ Wi-Fi SDK

Collateral

Datasheet: BCM4390
Software: WICED Wi-Fi SDK
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM43907

IEEE 802.11n System-on-Chip with Embedded Application Processor

Applications

Appliances, HID, embedded audio, health/medical

Features

Industry's Most-Widely-Deployed Wi-Fi IP

Wi-Fi Features
802.11a/b/g/n compliant
150-Mbps data rate
Dual band (2.4/5 GHz)
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

32-bit ARM Cortex-R4 Application MCU Subsystem

Ethernet (RMII/MII)

Security Engine[2]
WPA and WPA2
AES in hardware
Cisco-compatible Extensions

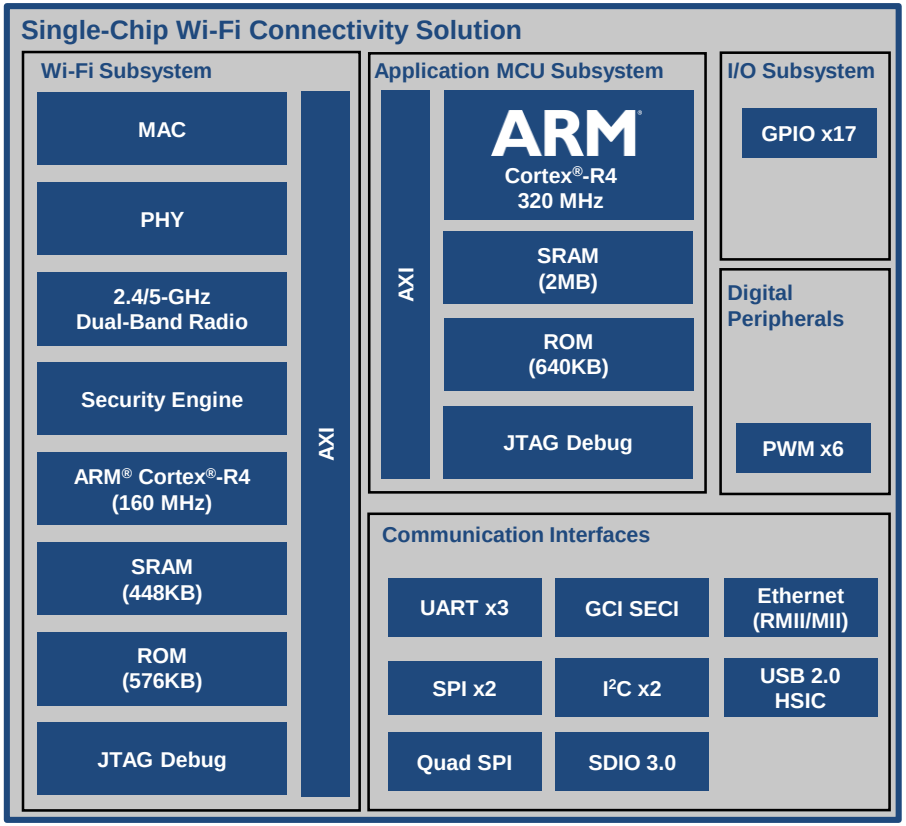
Packages
316-ball WLCSP (4.58 x 5.53 mm)

WICED™ Wi-Fi SDK

Collateral

Datasheet: BCM43907
Software: WICED Wi-Fi SDK
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM43903

IEEE 802.11n System-on-Chip with Embedded Application Processor

Applications

Consumer/home appliances, HID

Features

Industry's Most-Widely-Deployed Wi-Fi IP

Wi-Fi Features
802.11b/g/n compliant
72-Mbps data rate
Single band (2.4 GHz)
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

32-bit ARM Cortex-R4 Application MCU Subsystem

Security Engine[2]
WPA and WPA2
AES in hardware
Cisco-compatible extensions

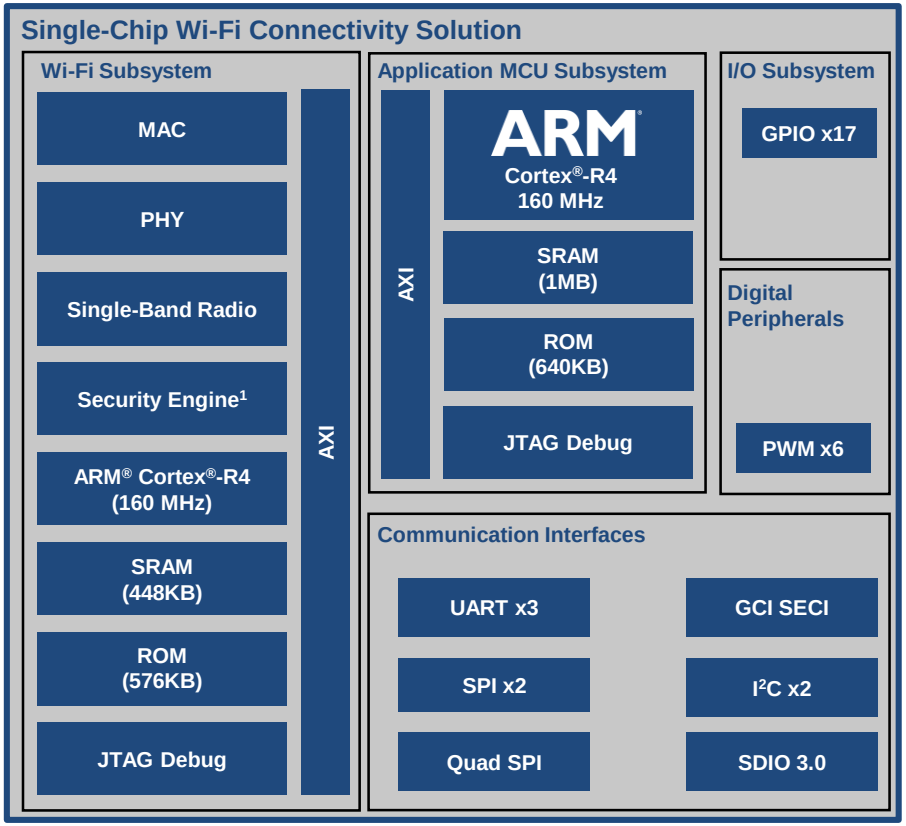
Packages
151-ball WLBGA (4.91 x 5.85 mm)

WICED™ Wi-Fi SDK

Collateral

Datasheet: BCM43903
Software: WICED Wi-Fi SDK
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

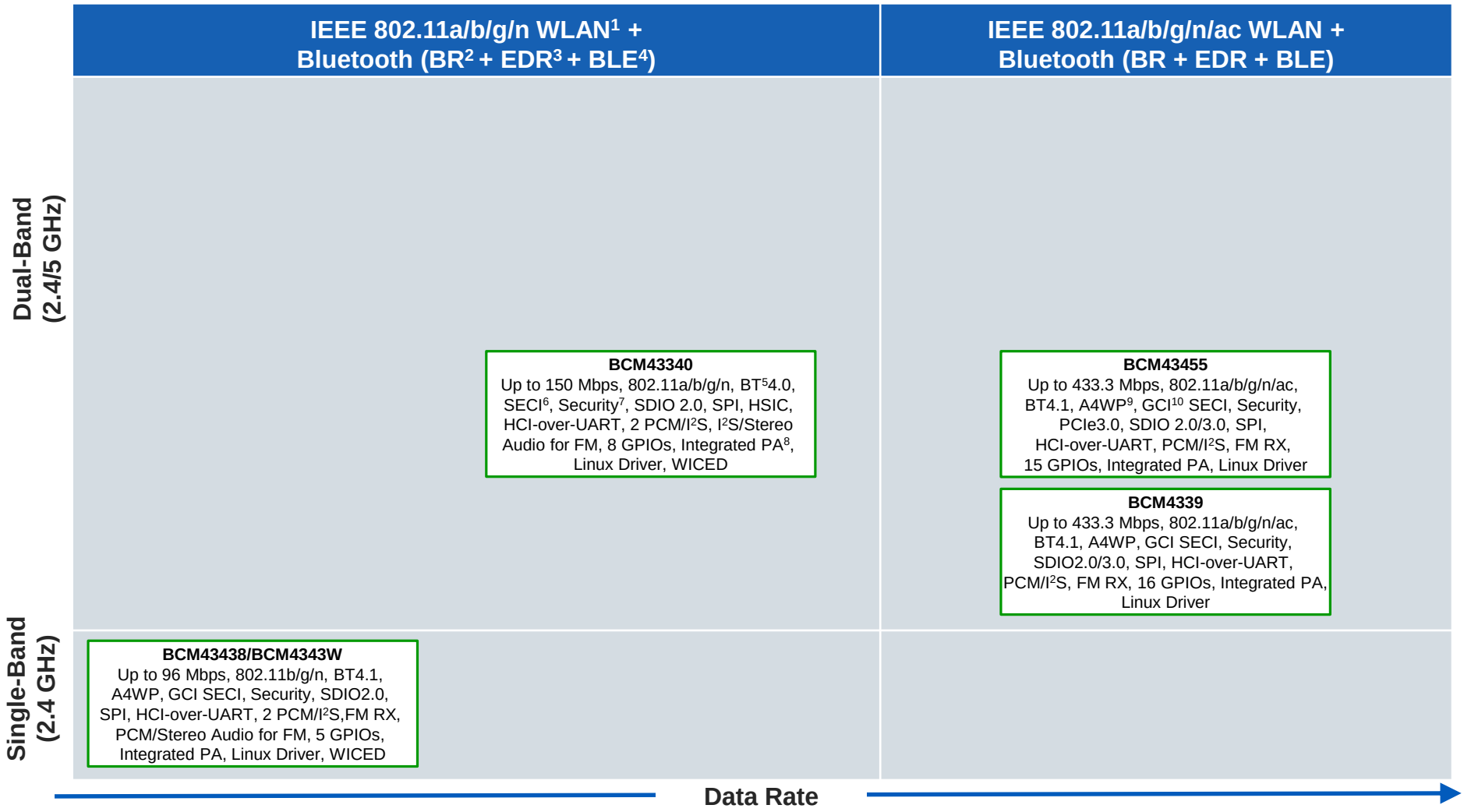
[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

Wireless Solutions for The Internet of Things (IoT) Roadmap

Wi-Fi + BLUETOOTH COMBO PORTFOLIO

Wi-Fi + Bluetooth Combo Portfolio



[1] Wireless Local Area Network
[2] Basic Rate
[3] Enhanced Data Rate
[4] Bluetooth Low Energy
[5] Bluetooth Specification
[6] Serial-enhanced coexistence interface
[7] WPA, WAPI STA, WPA2, AES, TKIP
[8] Power amplifier
[9] Alliance for Wireless Power BLE Profile
[10] Global coexistence interface

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

BCM43438/BCM4343W

Single chip IEEE 802.11n with Integrated Bluetooth 4.1 and FM Receiver

Applications

Portable consumer/commercial IoT and wearables

Features

Industry's Most-Widely-Deployed Wi-Fi IP and Bluetooth Stack

Wi-Fi Features
802.11b/g/n compliant
96-Mbps data rate
SDIO 2.0 and SPI support
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

Bluetooth Features
Bluetooth 4.0 compliant
Class 1 (100 m) and Class 2 (10 m) operation
Host controller interface (HCI)-over-UART

FM Features
FM receiver

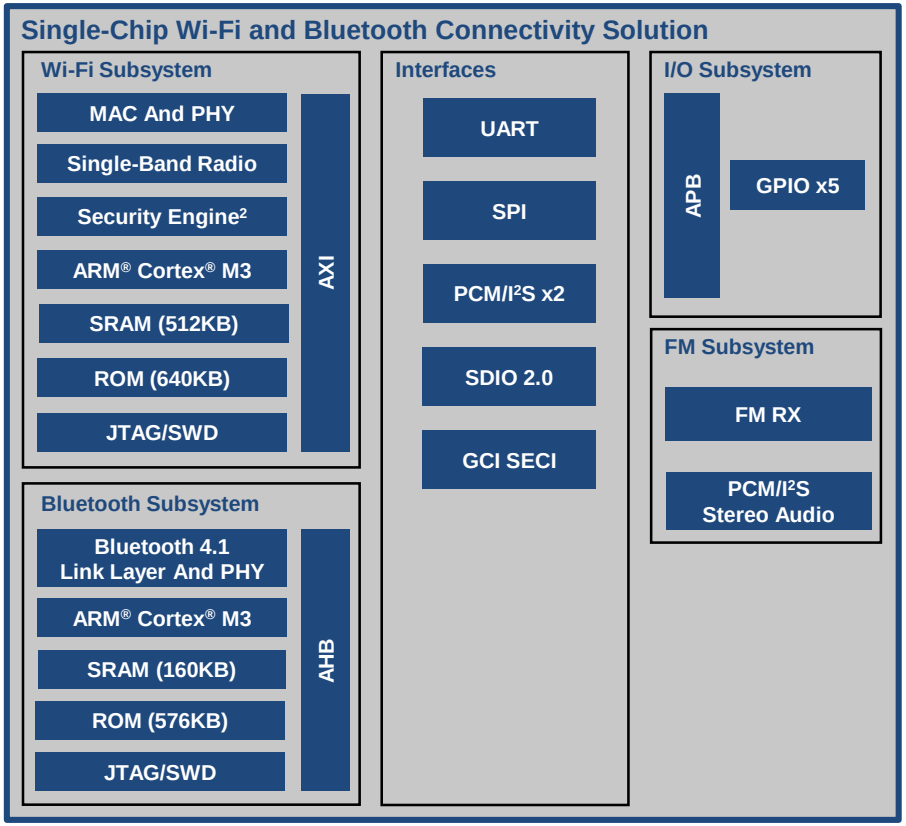
Packages
63-ball WLBGA (4.87 x 2.87 mm)
74-ball WLBGA (4.87 x 2.87 mm)
153-ball WLCSP (4.87 x 2.87 mm)

WICED™ Wi-Fi SDK, Linux driver

Collateral

Datasheets: BCM43438, BCM4343W
Software: WICED Wi-Fi SDK
Linux Driver
Modules: IoT Solutions Guide

Block Diagram



Availability

	BCM43438	BCM4343W
Production:	Now	Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM43340

Single chip IEEE 802.11n with Integrated Bluetooth 4.0 and FM Receiver

Applications

Portable consumer/commercial IoT applications

Features

Industry's Most-Widely-Deployed Wi-Fi IP and Bluetooth Stack

Wi-Fi Features
802.11a/b/g/n compliant
150-Mbps data rate
Dual band (2.4/5 GHz)
SDIO 2.0, SPI, HSIC support

Bluetooth Features
Bluetooth 4.0 compliant
Class 1 (100 m) and Class 2 (10 m) operation
Host controller interface (HCI)-over-UART

FM Features
FM receiver

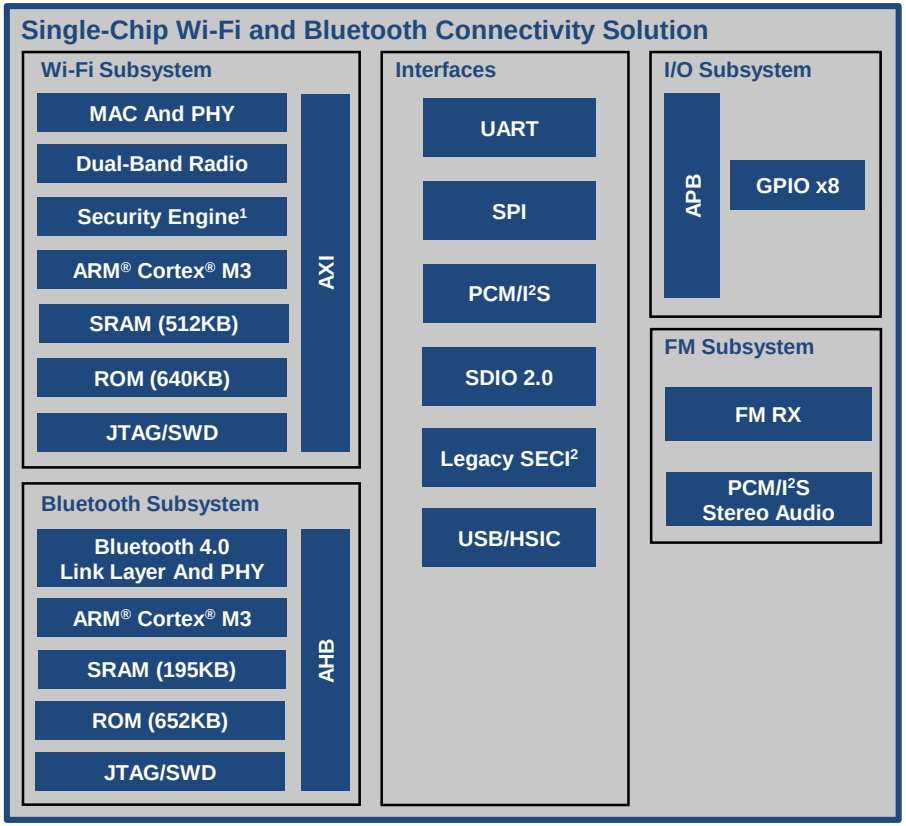
Package
141-ball WLBGA (5.67 x 4.47 mm)

WICED™ Wi-Fi SDK, Linux Driver

Collateral

Datasheet: BCM43340
Software: WICED Wi-Fi SDK
Linux Driver
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] WPA, WAPI STA, WPA2, AES, TKIP security features

[2] Serial-enhanced coexistence interface

BCM4339

Single-Chip IEEE 802.11ac with Integrated Bluetooth 4.1 and FM Receiver

Applications

High-performance, space-constrained consumer IoT applications

Features

Industry's Most-Widely Deployed Wi-Fi IP and Bluetooth Stack

Wi-Fi Features
802.11b/g/n/ac compliant
433.3-Mbps data rate
Dual band (2.4/5 GHz)
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

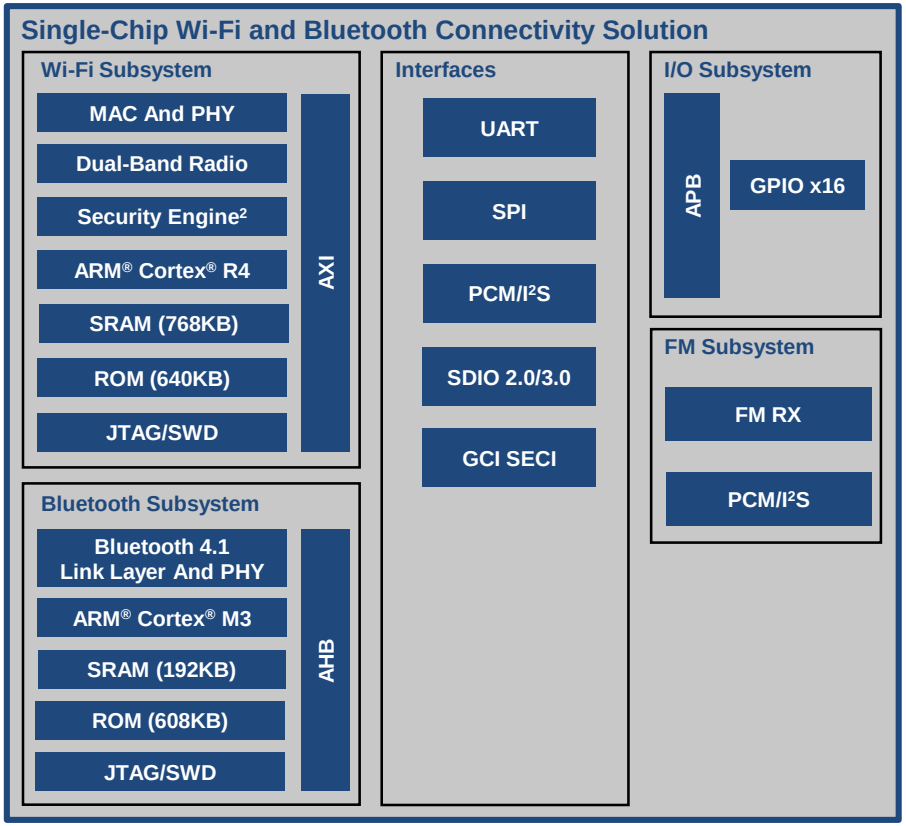
Bluetooth Features
Bluetooth 4.1 compliant
Class 1 (100 m) and Class 2 (10 m) operation
Host controller interface (HCI)-over-UART

FM Receiver

Packages
160-ball FCFBGA (8 x 8 mm)
145-ball WLBGA (4.87 x 5.41 mm)
286-ball WLCSP (4.87 x 5.41 mm)

Linux Driver

Block Diagram



Collateral

Datasheet: BCM4339
Software: Linux Driver
Modules: IoT Solutions Guide

Availability

Production: Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

BCM43455

Single-Chip IEEE 802.11ac with Integrated Bluetooth 4.1 and FM Receiver

Applications

High-performance, space-constrained consumer/commercial IoT

Features

Industry's Most-Widely-Deployed Wi-Fi IP and Bluetooth Stack

Wi-Fi Features
802.11b/g/n/ac compliant
433.3-Mbps data rate
Dual band (2.4/5 GHz)
2-/3-/4-wire global coexistence interface (GCI) SECI[1]

Bluetooth Features
Bluetooth 4.1 compliant
Class 1 (100 m) and Class 2 (10 m) operation
Host controller interface (HCI)-over-UART

FM Receiver

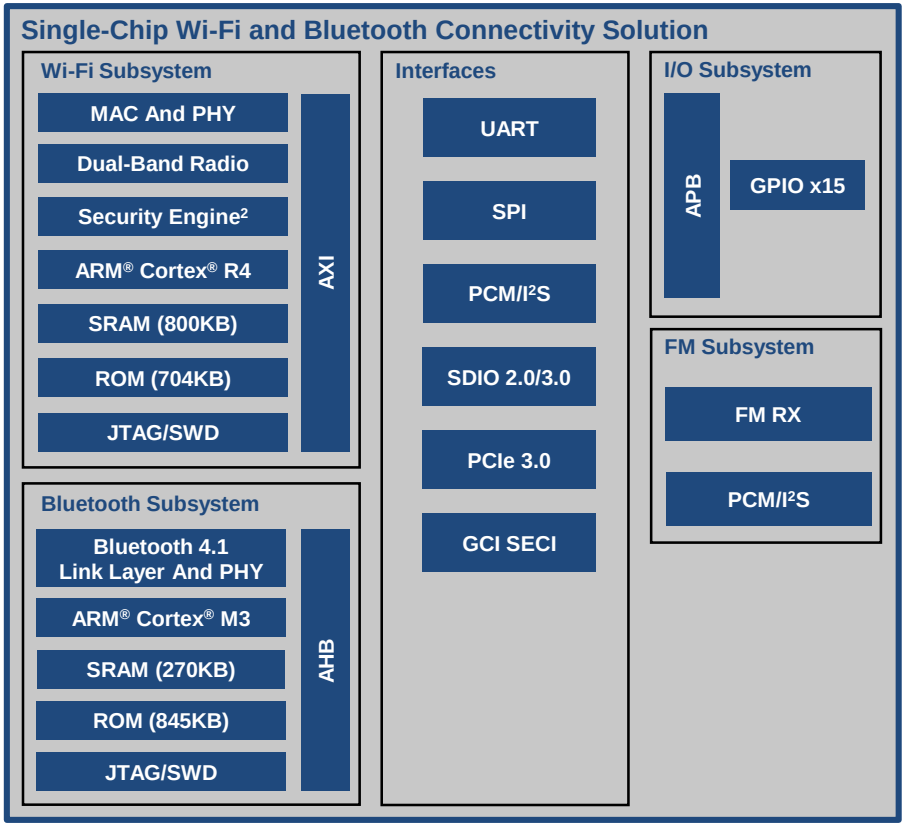
Package
140-ball WLBGA (4.47x5.27 mm)

Linux Driver

Collateral

Datasheet: BCM43455
Software: Linux Driver
Modules: IoT Solutions Guide

Block Diagram



Availability

Production: Now

[1] Serial-enhanced coexistence interface

[2] WPA, WAPI STA, WPA2, AES, TKIP security features

Wireless Solutions for The Internet of Things (IoT) Roadmap

AUTOMOTIVE WIRELESS PORTFOLIO

Automotive Wireless Portfolio

Performance/Integration

Bluetooth (BR[1] + EDR[2])	IEEE 802.11a/b/g/n/ac WLAN[3] + Bluetooth
NEW **BCM89071** 24-MHz ARM7TDMI-S[4], SPI, UART, I²C, I²S/PCM, GCI[5] SECI[6], HCI[7]-over-UART/SPI, 8 GPIO, 112KB RAM, BT[8] 4.1 BR + EDR, C1/C2/C3[9]	NEW Q416 **BCM89359** Up to 867 Mbps, 802.11a/b/g/n/ac, 2x2 MIMO[10] w/RSDB[11], BT 4.2 BR + EDR + BLE, GCI SECI, SDIO 3.0, PCIe, UART, USB, I²C, SPI, HCI-over-UART, PCM/I²S, Security[12], 20 GPIO, C1/C2, Linux Driver
NEW **BCM20713** 24-MHz ARM7TDMI-S, SPI, UART, I²C, I²S/PCM, GCI SECI, HCI-over-UART/SPI, 8 GPIO, 16KB RAM, BT 4.0 BR + EDR, C1/C2/C3	NEW **BCM88335/BCM89359** Up to 433.3 Mbps, 802.11a/b/g/n/ac, SISO[13], BT4.1 BR + EDR + BLE, GCI SECI, SDIO2.0/3.0, SPI, HCI-over-UART, PCM/I²S, Security, 9 GPIO, C1/C2, Linux Driver

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

[1] Basic Rate
[2] Enhanced Data Rate
[3] Wireless Local Area Network
[4] ARM 7 Family CPU
[5] Global coexistence interface
[6] Serial-enhanced coexistence interface
[7] Host controller interface
[8] Bluetooth Specification
[9] Class 1 (100 m)/2 (10 m)/3 (1 m)
[10] Multiple-input multiple-output
[11] Real Simultaneous Dual Band
[12] WPA, WAPI STA, WPA2, AES, TKIP, Cisco Compatible Extensions security features
[13] Single-input single-output

Wireless Solutions for The Internet of Things (IoT) Roadmap

PROPRIETARY WIRELESS PORTFOLIO

Proprietary Wireless Portfolio

	2.4-GHz RF Transceiver	Programmable Radio-on-Chip (PRoC™)		
		MCU	CapSense®	TrueTouch®[1]
GFSK[4]	**CYRF8935** **WUSB[2]-NL** 1 Mbps, TX 18 mA, RX 18 mA	**CYRF89135** **PRoC-Embedded** WUSB-NL, M8C[3], 35 GPIO, 32KB Flash **CYRF89235** **PRoC-USB** WUSB-NL, M8C, USB, 13 GPIO, 32KB Flash	**CYRF89435** **PRoC-CS** WUSB-NL, M8C, 35 GPIO, 32KB Flash	**CYRF89535** **PRoC-TT** WUSB-NL, M8C, 2-Finger, 35 GPIO, 32KB Flash
GFSK + DSSS[5]	**CYRF6936** **WUSB-LP** 1 Mbps, TX 26 mA, RX 21 mA	**CYRF69xx3** **PRoC-LP** WUSB-LP, M8C, USB, 14 GPIO, 8KB Flash		

Integration

	Concept	Development	Sampling	Production
Status				
Availability			QQYY	QQYY

[1] Touch-sensing technology with 2-finger gestures
[2] WirelessUSB™
[3] Cypress proprietary 8-bit MCU
[4] Gaussian frequency shift keying
[5] Direct sequence spread spectrum