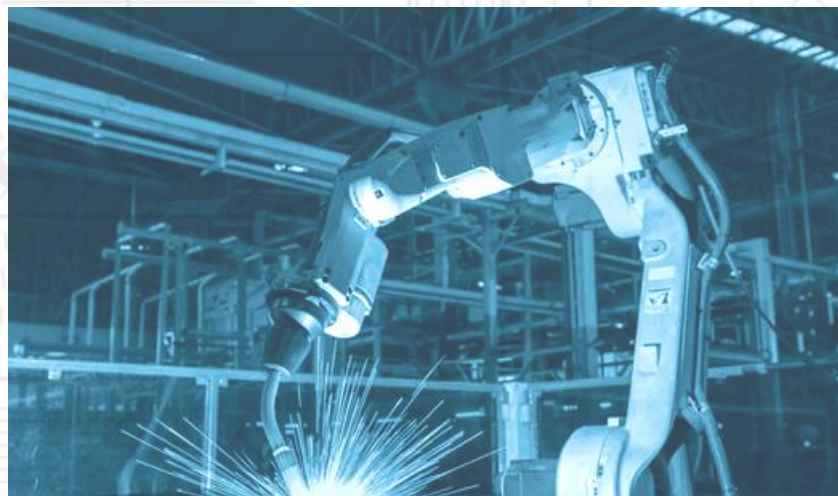




Wireless Solutions for The IoT

IoT = Internet of Things

Cypress Roadmap



Wireless Portfolio

	Bluetooth	Wi-Fi	Wi-Fi + Bluetooth Combo	Automotive
Integration and Performance ↑			IEEE 802.11ac WLAN¹ + Bluetooth 433.3 Mbps Wi-Fi, BT 4.1 Dual Band ² , SISO ³	IEEE 802.11ac WLAN + Bluetooth 867 Mbps Wi-Fi, Dual Band, 2x2 MIMO ⁴ , Bluetooth 4.2
			IEEE 802.11n WLAN + Bluetooth Up to 150 Mbps Wi-Fi, Single ⁵ /Dual Band, Bluetooth 4.0/4.1, 1–3 Mbps Bluetooth	IEEE 802.11ac WLAN + Bluetooth 433 Mbps Wi-Fi, Dual Band, SISO Bluetooth 4.1
		IEEE 802.11n WLAN + MCU Up to 150 Mbps Single/Dual Band, ARM [®] Cortex [®] -R4-MCU		
		IEEE 802.11n WLAN Up to 96 Mbps, SDIO 2.0, SISO		
	Bluetooth (BR⁶ + EDR⁷ + BLE⁸) + MCU 1–3 Mbps, Class 1/2 ⁹ , ARM Cortex [®] -M3 MCU	Cypress has developed an extensive Partner Ecosystem and supports Wi-Fi and Wi-Fi Combo modules from our partners for all customer applications. Module details are available in IoT Solutions Guide .		Bluetooth (BR + EDR) 1–3 Mbps Class 1/2/3
Bluetooth Low Energy (BLE) + MCU 1 Mbps, ARM Cortex [®] -M3 MCU				

¹ Wireless Local Area Network ⁴ Multiple-input multiple-output
² 2.4/5-GHz Band ⁵ 2.4-GHz Band
³ Single-input single-output ⁶ Basic Rate
⁷ Enhanced Data Rate
⁸ Bluetooth Low Energy
⁹ Class 1 (100 m)/2 (10 m)/3 (1 m)

Status Availability

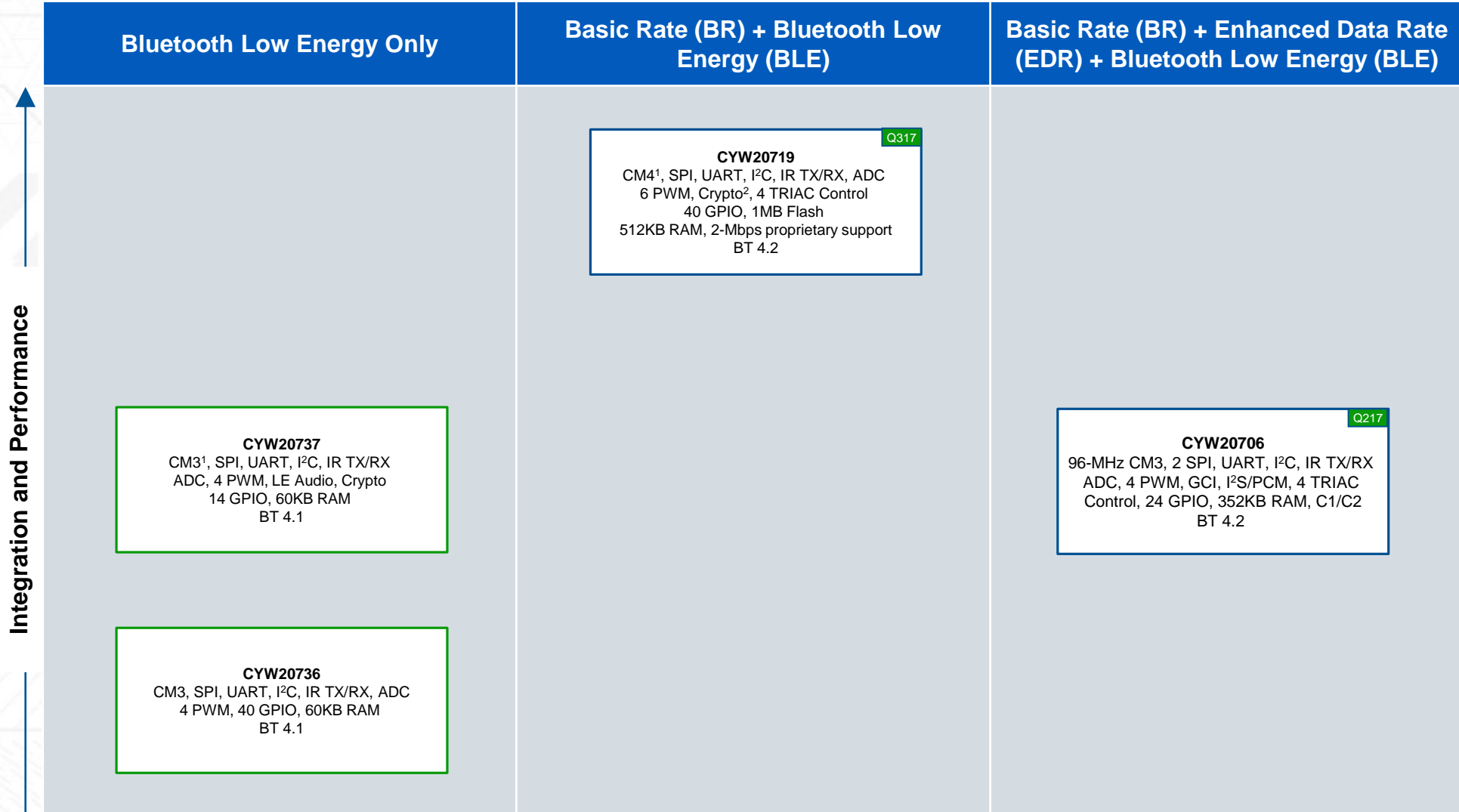
Concept	Development	Sampling	Production



Bluetooth Portfolio



Bluetooth Portfolio



¹ ARM® Cortex®-M3/M4

² Cryptographic accelerator block for security

Status Availability

Concept	Development	Sampling	Production

CYW20737

Bluetooth Low Energy Connectivity MCU w/Security

Applications

Wearables, medical, home automation, toys

Features

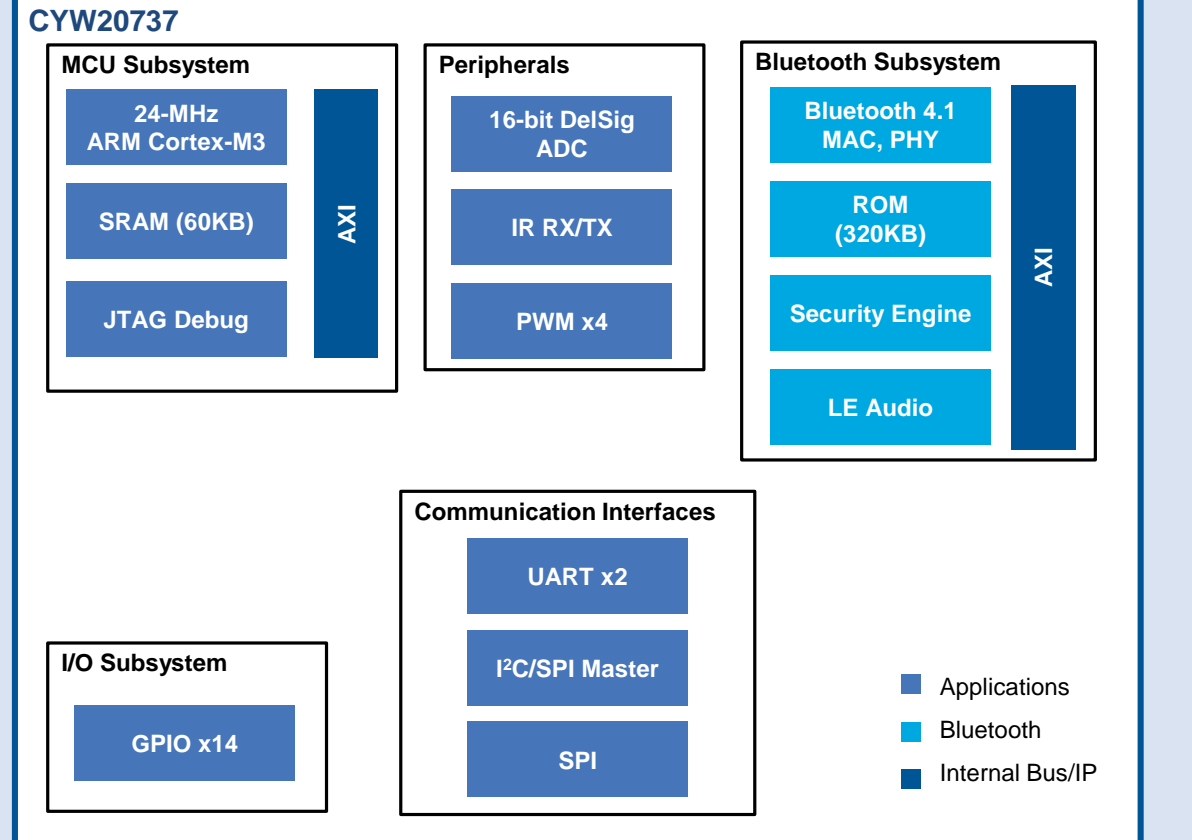
- **Bluetooth Low Energy v4.1**
 - Industry's most widely deployed BLE stack
 - Simultaneous multiple master and slave (1M, 3S)
 - Proprietary Low Energy (LE) audio support
 - Secure over-the-air (OTA) firmware upgrade
 - RSA, X.509, SHA, AES128
- **Packages**
 - 32-pin QFN (5 x 5 mm)
 - 80-ball CSP (2.2 x 2.2 mm)
- **FCC- and CE-certified Modules From Cypress**
 - 6.5 x 6.5 x 1.2 mm
- **Supported in WICED SMART SDK**

Collateral

Datasheet: [CYW20737 Silicon](#)
[CYW20737L Module](#)

Software: [WICED SMART SDK](#)

CYW20737: Bluetooth Low Energy Connectivity MCU w/Security



Availability

Production: Now

CYW20736

Bluetooth Low Energy Connectivity MCU

Applications

Beacons, tags, toys, industrial/home automation

Features

- **Bluetooth Low Energy v4.1**
 - Industry's most widely deployed BLE stack
 - Simultaneous multiple master and slave (1M, 3S)
 - Over-the-air (OTA) firmware upgrade
- **Packages**
 - 32-pin QFN (5 x 5 mm)
 - 80-ball CSP (2.2 x 2.2 mm)
- **FCC- and CE-certified Modules From Cypress**
 - 5 x 6.5 x 1.2 mm
- **Module Partner**
 - Alinket
- **Supported in WICED SMART SDK**

Collateral

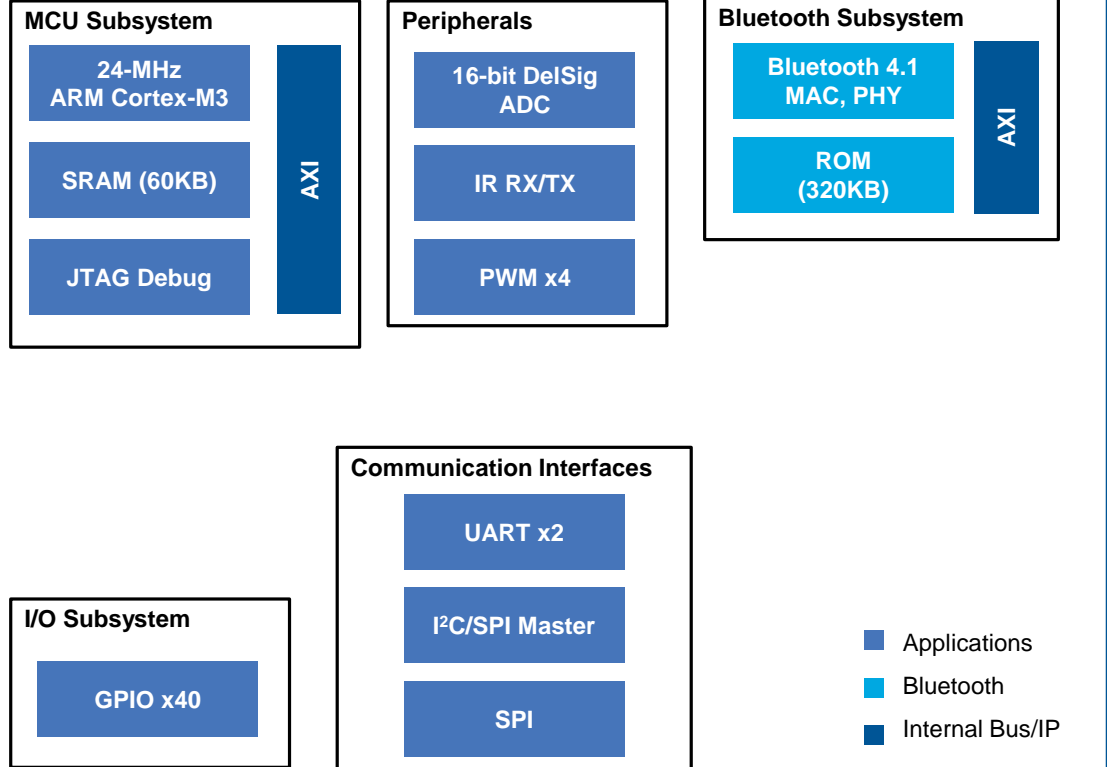
Datasheet: [CYW20736 Silicon](#)
[CYW20736S Module](#)

Module Selector Guide: [IoT Solutions Guide](#)

Software: [WICED SMART SDK](#)

CYW20736: Bluetooth Low Energy Connectivity MCU

CYW20736



Availability

Production: Now

CYW20706

Embedded Bluetooth MCU

Applications

Speaker/Headset, Bluetooth gateway, automation gateway

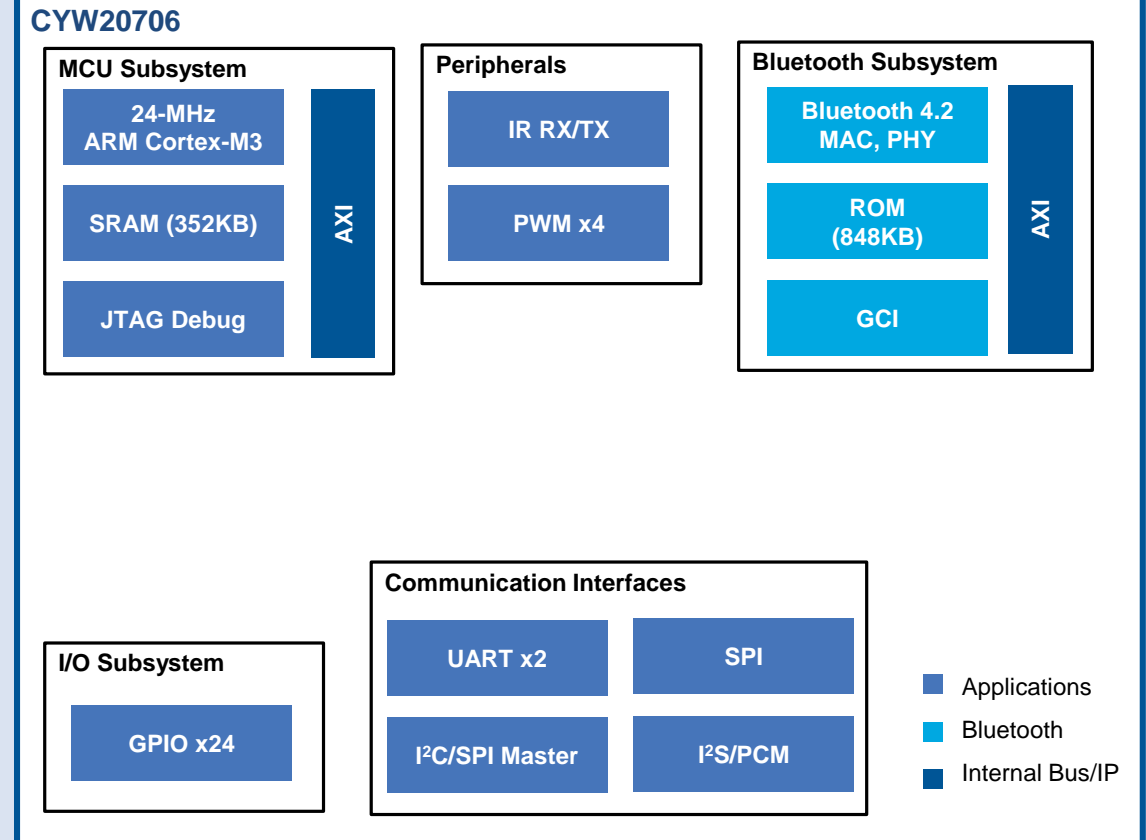
Features

- **Bluetooth v4.2, Basic Rate/Enhanced Data Rate/Bluetooth Low Energy**
 - Industry's most widely deployed Bluetooth stack
 - Global coexistence interface (GCI)
 - Class 1 (100 meters), Class 2 (10 meters) support
- **Packages**
 - 49-pin FBGA (4.5 x 4.0 mm)
- **Module Partner**
 - SPIL, Alinket
- **Supported in WICED SMART SDK**

Collateral

Datasheet: [CYW20706 Silicon](#)
Module Selector Guide: [IoT Solutions Guide](#)
Software: [WICED STUDIO](#)

CYW20706: Embedded Bluetooth MCU



Availability

Samples: Now **Production:** Q2 2017

CYW20719

High-Performance Bluetooth MCU w/ Security

Applications

Medical, home automation, wearables, POS, audio

Features

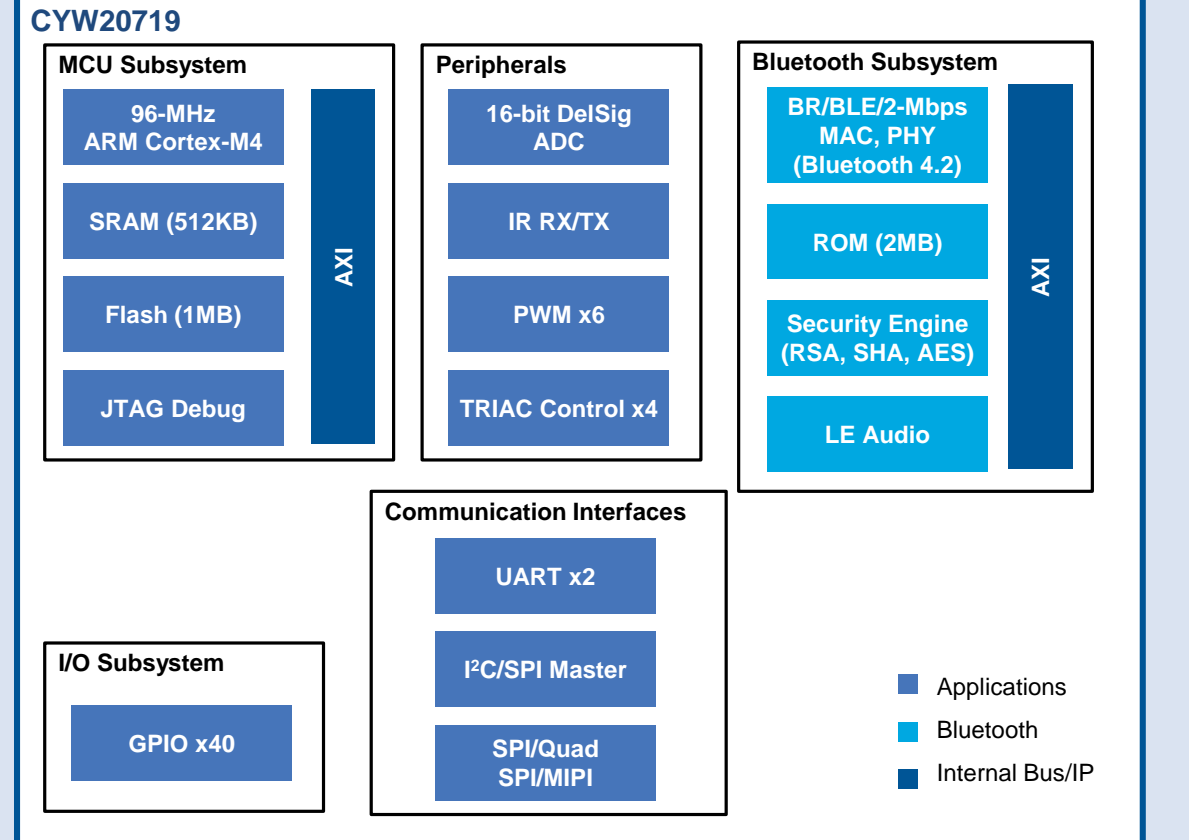
- **Bluetooth v4.2, Basic Rate + Bluetooth Low Energy**
 - Industry's most widely deployed Bluetooth stack
 - Industry's lowest-power radio
 - Proprietary low energy audio (LE Audio) support
 - 2-Mbps proprietary BLE support
 - Secure over-the-air (OTA) firmware upgrade
 - RSA, X.509, SHA, AES128
- **MCU Subsystem**
 - 96-MHz Cortex-M4
 - 512KB SRAM, 1MB Flash
- **Packages**
 - 40-pin QFN (5 x 5 mm)
 - 80-ball WLCSP (2.2 x 2.2 mm)
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW207x9 \(Contact Sales\)](#)

Software: [WICED STUDIO](#)

CYW20719: High-Performance Bluetooth MCU w/Security



Availability

Samples: Now **Production:** Q3 2017

Wi-Fi Portfolio



Wi-Fi Portfolio

	IEEE 802.11n WLAN ¹	IEEE 802.11n WLAN + MCU
Dual Band (2.4/5 GHz)		<div data-bbox="1472 379 2046 568" style="border: 1px solid green; padding: 5px;"> <p>CYW43907 Up to 150 Mbps, SISO², 320-MHz CR4³ GCI⁴ SECI⁵, Security⁶, CCX⁷, 6 PWMs, Ethernet (RMII/MII) SDIO 3.0 (H/D), USB 2.0 + HSIC (H/D), S/PDIF, 3 UART, Quad SPI, 2 SPI, 2 I²S, 2 I²C 17 GPIO, Integrated PA⁸ for both bands WICED STUDIO</p> </div>
Single Band (2.4 GHz)	<div data-bbox="547 626 1121 815" style="border: 1px solid green; padding: 5px;"> <p>CYW43364 Up to 96 Mbps, SISO GCI SECI, Security, CCX SDIO 2.0 5 GPIO, Integrated PA Linux Driver, WICED STUDIO</p> </div>	<div data-bbox="1472 833 2046 1022" style="border: 1px solid green; padding: 5px;"> <p>CYW43903 Up to 72 Mbps, SISO 160-MHz CR4, GCI SECI, Security, CCX 6 PWMs, 3 UART, Quad SPI, 2 SPI, 2 I²C 17 GPIO, Integrated PA WICED STUDIO</p> </div>
	<div data-bbox="547 1038 1121 1226" style="border: 1px solid green; padding: 5px;"> <p>CYW43362 Up to 72 Mbps, SISO SECI, Security SDIO 2.0 5 GPIO, Integrated PA Linux Driver, WICED STUDIO</p> </div>	

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

Status Availability

Concept	Development	Sampling	Production
			
		QQYY	QQYY

CYW43907

802.11n Dual Band Wi-Fi System-on-Chip with Embedded Application Processor

Applications

Embedded audio, medical, home-automation/industrial-automation gateways

Features

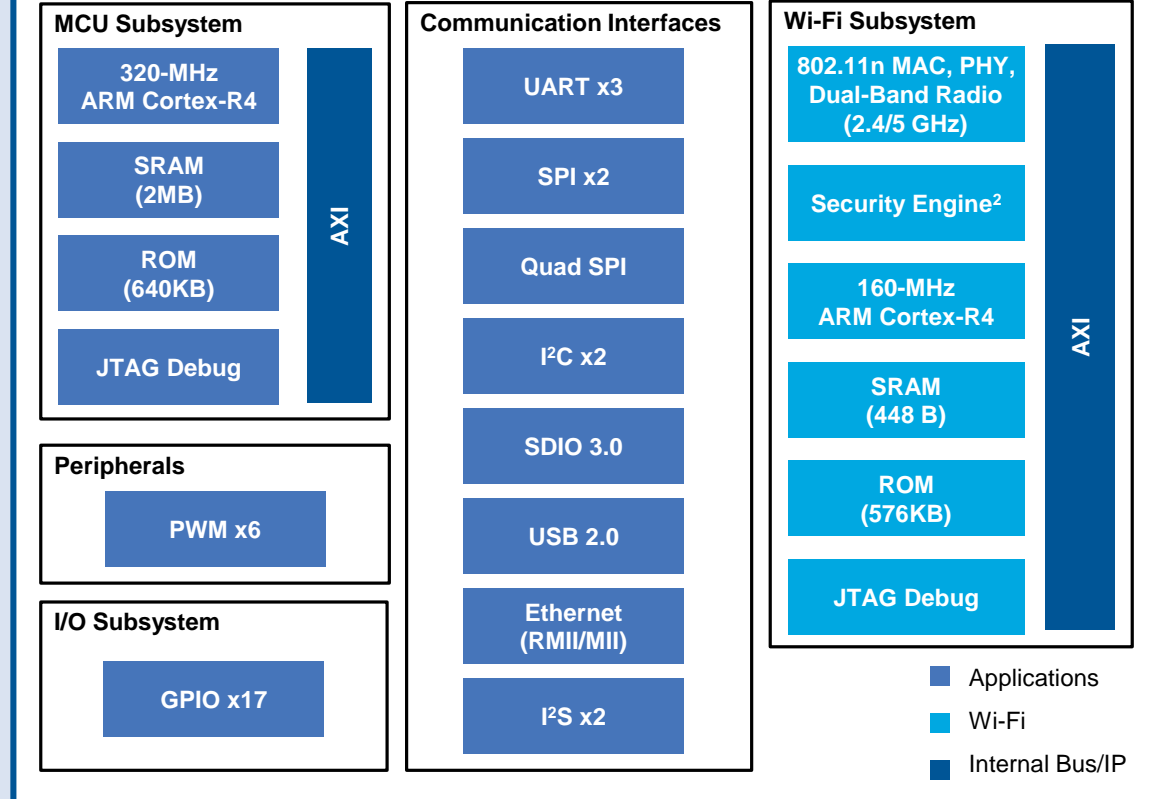
- **802.11n-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP]
 - 150-Mbps data rate
 - Dual band (2.4/5 GHz)
 - 2-/3-/4-wire global coexistence interface (GCI) SECI¹
- **High-performance MCU Subsystem**
 - 320-MHz Cortex-R4
 - 2MB SRAM
- **Rich set of Communication Interfaces**
 - Quad-SPI interface with 40-Mbps transfer rate
 - USB2.0, Ethernet (RMII/MII), SDIO 3.0
- **Module Partners**
 - Murata, SPIL, USI, Inventek
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW43907](#)
Module Selector Guide: [IoT Solutions Guide](#)
Software: [WICED STUDIO](#)

CYW43907: Dual-Band Wi-Fi SoC with Embedded Application Processor

CYW43907



Availability

Production: Now

¹ Serial-enhanced coexistence interface

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

CYW43903

802.11n Single Band Wi-Fi System-on-Chip with Embedded Application Processor

Applications

Consumer, home appliances, HID

Features

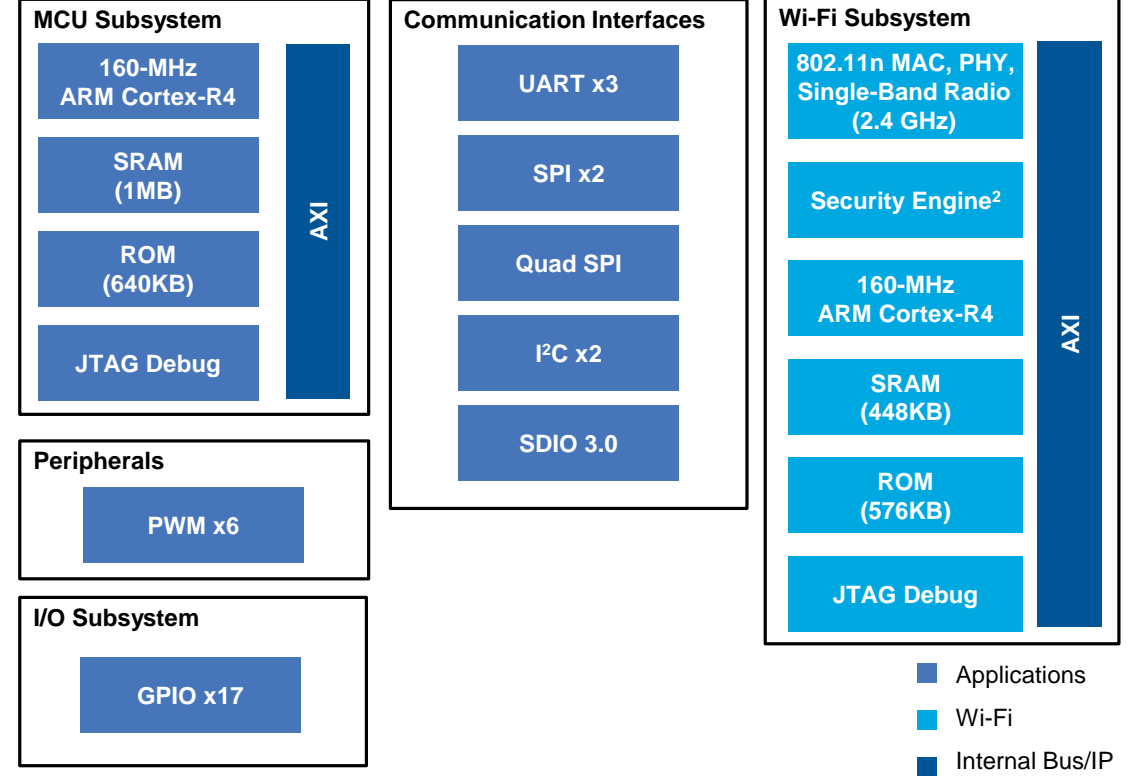
- **802.11n-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 72-Mbps data rate
 - Single band (2.4 GHz)
 - 2-/3-/4-wire global coexistence interface (GCI) SECI¹
- **High-performance MCU Subsystem**
 - 160-MHz Cortex-R4
 - 1MB SRAM
- **Rich-set of Communication Interfaces**
 - Quad-SPI interface with 40 Mbps transfer rate
 - SDIO 3.0
- **Module Partners**
 - Inventek
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW43903](#)
Module Selector Guide: [IoT Solutions Guide](#)
Software: [WICED STUDIO](#)

CYW43903: Single-Band Wi-Fi SoC with Embedded Application Processor

CYW43903



Availability

Production: Now

¹ Serial-enhanced coexistence interface

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

CYW43364

802.11n Low-Power Wi-Fi Connectivity

Applications

Low-cost WLAN connectivity for consumer/commercial IoT

Features

- **802.11n-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 96-Mbps data rate
 - Single band (2.4 GHz)
 - 2-/3-/4-wire global coexistence interface (GCI) SECI¹
- **Communication Interfaces**
 - SDIO 2.0
 - UART
- **Module Partners**
 - Murata, Inventek, Anaren, SPIL, USI
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW43364](#)

Module Selector Guide: [IoT Solutions Guide](#)

Software: [WICED STUDIO](#)

CYW43364: 802.11n low-power Wi-Fi connectivity

CYW43364

Communication Interfaces

UART

SDIO 2.0

Wi-Fi Subsystem

802.11n MAC, PHY,
Single-Band Radio
(2.4 GHz)

Security Engine²

ARM Cortex-M3

SRAM
(512KB)

ROM
(640KB)

JTAG Debug

AXI

I/O Subsystem

GPIO x5

- Applications
- Wi-Fi
- Internal Bus/IP

Availability

Production: Now

¹ Serial-enhanced coexistence interface

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

CYW43362

802.11n Widely-Adapted Wi-Fi Connectivity

Applications

Low-cost WLAN connectivity for consumer/commercial IoT

Features

- **802.11n-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 72-Mbps data rate
 - Single band (2.4 GHz)
 - 3-/4-wire serial enhanced coexistence interface (SECI)
- **Communication Interfaces**
 - SDIO 2.0
 - UART
- **Module Partners**
 - Murata, Inventek, Lantronix, Azureware, MXCHIP, SPIL, USI, Alinket
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW43362](#)

Module Selector Guide: [IoT Solutions Guide](#)

Software: [WICED STUDIO](#)

CYW43362: 802.11n Widely Adapted Wi-Fi Connectivity

CYW43362

Communication Interfaces

UART

SDIO 2.0

Wi-Fi Subsystem

802.11n MAC, PHY,
Single-Band Radio
(2.4 GHz)

Security Engine¹

ARM Cortex-M3

SRAM
(512KB)

ROM
(640KB)

JTAG Debug

AXI

I/O Subsystem

GPIO x5

- Applications
- Wi-Fi
- Internal Bus/IP

Availability

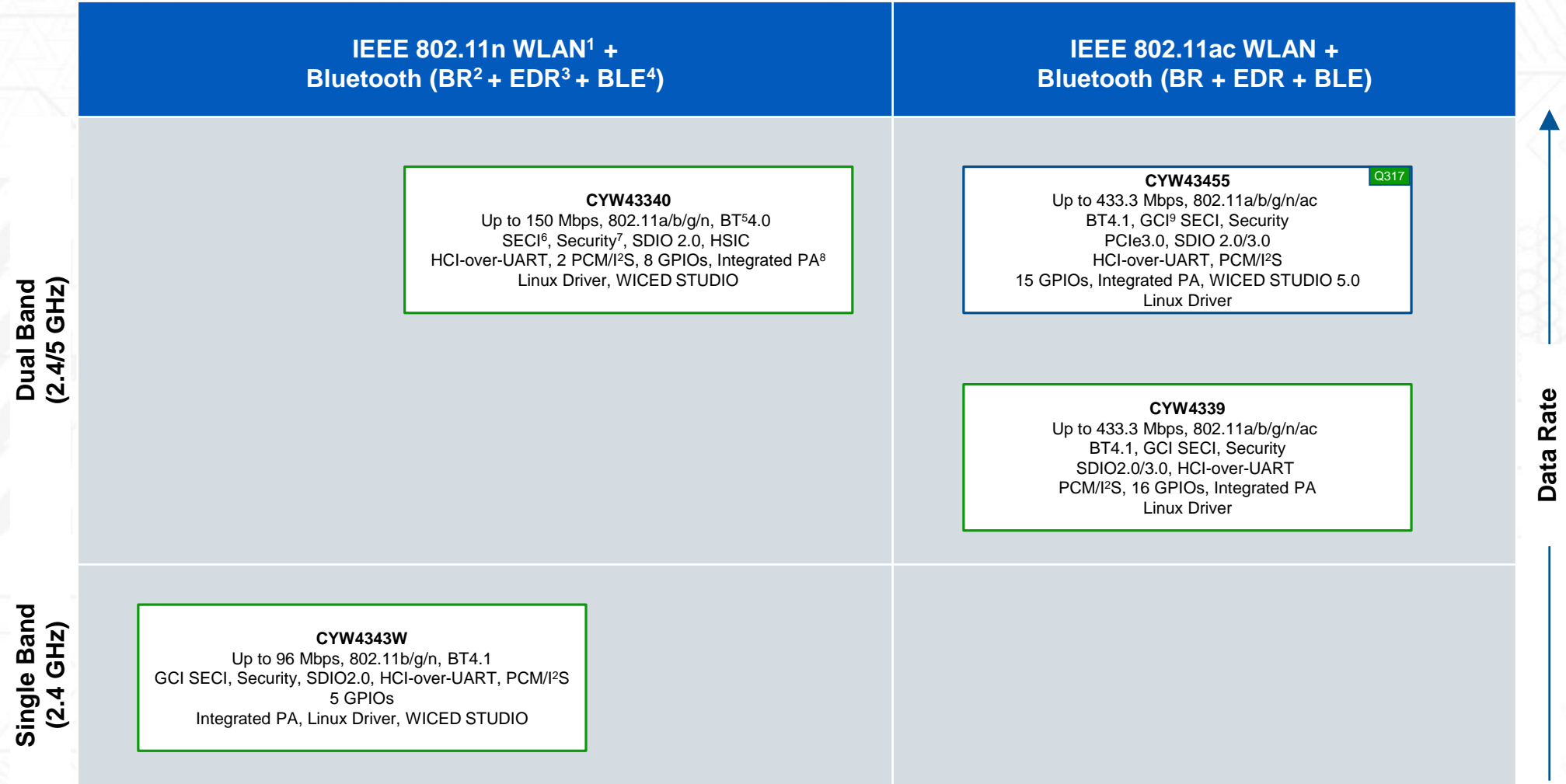
Production: Now

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

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 Global coexistence interface

Status Availability

Concept	Development	Sampling	Production

CYW4343W

802.11n Wi-Fi and Bluetooth 4.1 Low-Power Combo

Applications

Portable consumer/commercial IoT and wearables

Features

- **802.11n-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 96-Mbps data rate
 - Single band (2.4 GHz)
 - SDIO 2.0
 - 2-/3-/4-wire global coexistence interface (GCI) SECI¹
- **Bluetooth 4.1**
 - Class 1 (100 m) and Class 2 (10 m) operation
 - HCI-over-UART
 - PCM/I²S for audio
- **Module Partners**
 - Murata, Inventek, LSR, SPIL
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW4343W](#)

Module Selector Guide: [IoT Solutions Guide](#)

Software: [WICED STUDIO](#)

CYW4343W: 802.11n Wi-Fi and Bluetooth 4.1 Low-Power Combo

CYW4343W

Bluetooth Subsystem

BT4.1 Link Layer,
PHY

ARM Cortex-M3

SRAM
(160KB)

ROM
(576KB)

JTAG/SWD
Debug

AXI

Communication Interfaces

Wi-Fi: SDIO 2.0

BT: UART

BT: I²S

Wi-Fi Subsystem

802.11n MAC, PHY,
Single-Band Radio
(2.4 GHz)

Security Engine²

ARM Cortex-M3

SRAM
(512KB)

ROM
(640KB)

JTAG/SWD Debug

AXI

I/O Subsystem

GPIO x5

- Applications
- Bluetooth/Wi-Fi
- Internal Bus/IP

Availability

Production: Now

¹ Serial-enhanced coexistence interface

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

CYW43340

802.11n Dual-Band Wi-Fi and Bluetooth 4.0 Widely-Adapted Combo

Applications

Portable consumer/commercial IoT and wearables

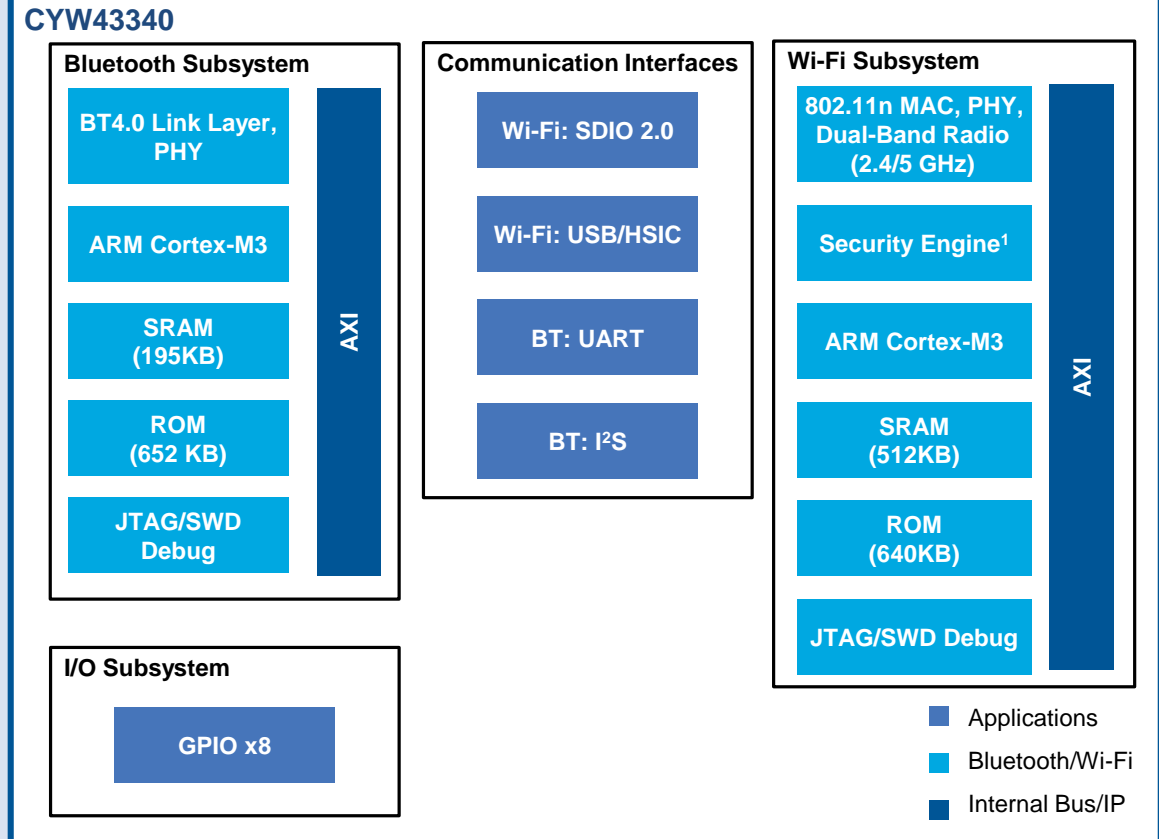
Features

- **802.11n-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 150-Mbps data rate
 - Dual band (2.4/5 GHz)
 - SDIO 2.0
 - USB/HSIC
- **Bluetooth 4.0**
 - Class 1 (100 m) and Class 2 (10 m) operation
 - HCI-over-UART
 - PCM/I²S for audio
- **Module Partners**
 - Murata, Inventek, USI, Alinket
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW43340](#)
Module Selector Guide: [IoT Solutions Guide](#)
Software: [WICED STUDIO](#)

CYW43340: 802.11n Dual-Band Wi-Fi and BT 4.0 Widely-Adapted Combo



Availability

Production: Now

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

CYW43455

802.11ac Dual-Band Wi-Fi and Bluetooth 4.1 High-Performance Combo

Applications

High-performance, space-constrained consumer/commercial IoT

Features

- **802.11ac-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 433.3-Mbps data rate
 - Dual band (2.4/5 GHz)
 - SDIO 3.0
 - PCIe 3.0
 - 2-/3-/4-wire global coexistence interface (GCI) SECI¹
- **Bluetooth 4.1**
 - Class 1 (100 m) and Class 2 (10 m) operation
 - HCI-over-UART
 - PCM/I²S for audio
- **Module Partners**
 - USI, Azureware
- **Supported in WICED STUDIO**

Collateral

Datasheet: [CYW43455](#)
Module Selector Guide: [IoT Solutions Guide](#)
Software: [WICED STUDIO 5.0](#)
[Linux Driver](#)

CYW43455: 802.11ac Dual-Band Wi-Fi and BT 4.1 High-Performance Combo

CYW43455

Bluetooth Subsystem

BT4.1 Link Layer,
PHY

ARM Cortex-M3

SRAM
(270KB)

ROM
(845KB)

JTAG/SWD
Debug

AXI

Communication Interfaces

Wi-Fi: SDIO 3.0

Wi-Fi: PCIe 3.0

BT: UART

BT: I²S

Wi-Fi Subsystem

802.11ac MAC, PHY,
Dual-Band Radio
(2.4/5 GHz)

Security Engine²

ARM Cortex-R4

SRAM
(800KB)

ROM
(704KB)

JTAG/SWD Debug

AXI

I/O Subsystem

GPIO x15

- Applications
- Bluetooth/Wi-Fi
- Internal Bus/IP

Availability

Samples: Now **Production:** Q3 2017

¹ Serial-enhanced coexistence interface

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

CYW4339

802.11ac Dual-Band Wi-Fi and Bluetooth 4.1 Combo

Applications

High-performance, space-constrained consumer/commercial IoT

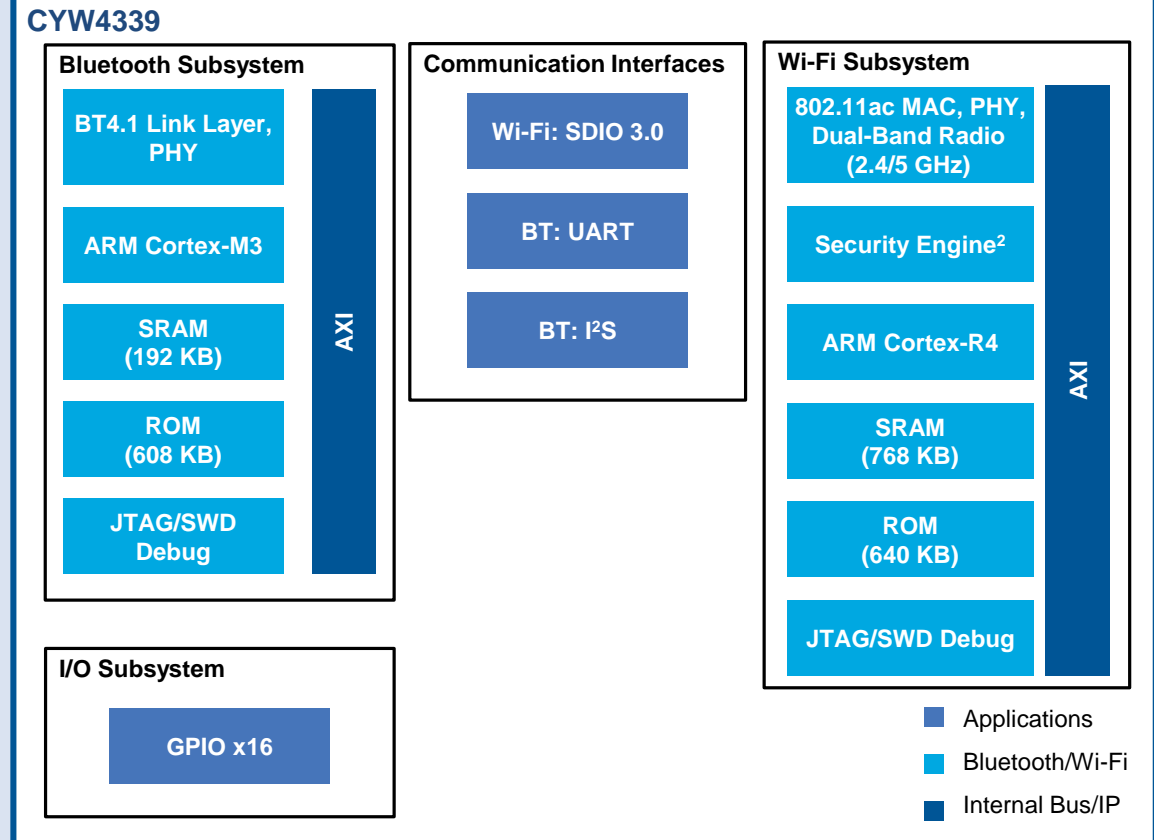
Features

- **802.11ac-compliant Wi-Fi**
 - Industry's most widely deployed Wi-Fi IP
 - 433.3-Mbps data rate
 - Dual band (2.4/5 GHz)
 - SDIO 3.0
 - 2-/3-/4-wire global coexistence interface (GCI) SECI¹
- **Bluetooth 4.1**
 - Class 1 (100 m) and Class 2 (10 m) operation
 - HCI-over-UART
 - PCM/I²S for audio
- **Module Partners**
 - Murata, USI

Collateral

Datasheet: [CYW2339](#)
Module Selector Guide: [IoT Solutions Guide](#)
Software: [Linux Driver](#)

CYW4339: 802.11ac Dual-Band Wi-Fi and BT 4.1 Combo



Availability

Production: Now

¹ Serial-enhanced coexistence interface

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

Automotive Wireless Portfolio



Automotive Wireless Portfolio

	Bluetooth (BR ¹ + EDR ²)	IEEE 802.11ac WLAN ³ + Bluetooth	IEEE 802.11ac with 1+1 RSDB ⁴ WLAN + Bluetooth
Performance/Integration	<p>CYW89072 Q317</p> <p>96-MHz CM⁵, HCI⁶-over-UART, SPI I²C/I²S/PCM, GCI⁷ SEC⁸ 8 GPIO, 352KB RAM BT⁹ 4.2 BR¹ + EDR² + BLE, C1/C2¹⁰, 49-ball rFCFBGA</p>		<p>CYW89359</p> <p>Up to 867 Mbps, 802.11a/b/g/n/ac 2x2 MIMO¹¹ with RSDB⁴, BT 4.2 BR¹ + EDR² + BLE GCI⁷ SEC⁸, SDIO 3.0 and PCIe 3.0 for WLAN, BT: HCI⁶-over-UART, PCM/I²S Security¹², 20 GPIO, C1/C2¹⁰ Linux Driver, 194-ball WLBGA</p>
	<p>CYW89071</p> <p>24-MHz ARM7TDMI-S¹³, HCI⁶-over-UART, SPI I²C/I²S/PCM, GCI⁷ SEC⁸ 8 GPIO, 112KB RAM BT 4.1 BR¹ + EDR², C1/C2/C3¹⁰, 42-ball WLBGA</p>	<p>CYW89335</p> <p>Up to 433.3 Mbps, 802.11a/b/g/n/ac, SISO¹⁴ BT 4.1 BR¹ + EDR² + BLE, GCI⁷ SEC⁸ WLAN: SDIO v2.0/3.0 BT: HCI⁶-over-UART, PCM/I²S Security¹², 9 GPIO, C1/C2¹⁰ Linux Driver, 145-ball WLBGA</p>	<p>CYW89342 Q317</p> <p>Up to 867 Mbps, 802.11a/b/g/n/ac 2x2 MIMO¹¹ with RSDB⁴, BT 4.2 BR¹ + EDR² + BLE GCI⁷ SEC⁸, PCIe 3.0 for WLAN, BT: HCI⁶-over-UART, PCM/I²S Security¹², 20 GPIO, C1/C2¹⁰ Linux Driver, 248-ball rFCFBGA</p>

¹ Basic rate

² Enhanced data rate

³ Wireless Local Area Network

⁴ Real Simultaneous Dual Band

⁵ ARM® Cortex®-M3/M4

⁶ Host controller interface

⁷ Global coexistence interface

⁸ Serial-enhanced coexistence interface

⁹ Bluetooth Specification

¹⁰ Class 1 (100 m)/2 (10 m)/3 (1 m)

¹¹ Multiple-input multiple-output

¹² WPA, WAPI STA, WPA2, AES, TKIP

¹³ ARM 7 Family CPU

¹⁴ Single-input single-output





CYPRESS[®]
EMBEDDED IN TOMORROW[™]