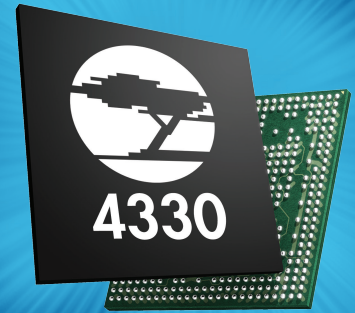


CYPRESS

CYW4330: WIRELESS CONNECTIVITY

SINGLE-CHIP IEEE 802.11 ABGN/BLUETOOTH/FM (RX AND TX)



PRODUCT OVERVIEW

OVERVIEW

Cypress CYW4330 is a third-generation combo device that provides the highest level of integration for a mobile or handheld wireless system, with integrated IEEE 802.11 a/b/g and single-stream IEEE 802.11n (MAC/ baseband/radio), Bluetooth 4.0 + HS, and FM radio receiver and transmitter.

An integrated Power Management Unit (PMU), Power Amplifiers (PA), and Low Noise Amplifier (LNA) address the needs of mobile devices that require minimal power consumption and compact size. The CYW4330 provides a small form-factor solution with minimal external components to keep the cost down for mass volumes and allows flexibility in size, form, and function.

The CYW4330 implements the industry's most advanced radio coexistence algorithms and hardware mechanisms to allow an extremely collaborative WLAN and Bluetooth coexistence scheme, along with coexistence support for external radios (such as GPS and WiMax). The result is an enhanced overall quality for simultaneous voice, video, and data transmission on a handheld system.

HIGHLIGHTS

- Single-band 2.4GHz IEEE 802.11 b/g/n or dual-band 2.4 GHz and 5 GHz 802.11 a/b/g/n
- Bluetooth Core Specification Version 4.0 + HS compliant with provisions for supporting future specifications
- FM receiver: 65 MHz to 108 MHz FM bands support the European Radio Data Systems (RDS) and the North American Radio Broadcast Data System (RBDS) standards
- Integrated WLAN and Bluetooth power amplifiers, LNA, and PMU
- Supports standard HSIC 1.0, SDIO v2.0 (50MHz, 4-bit, and 1-bit), gSPI (48MHz), and UART host interfaces

IEEE 802.11™ FEATURES

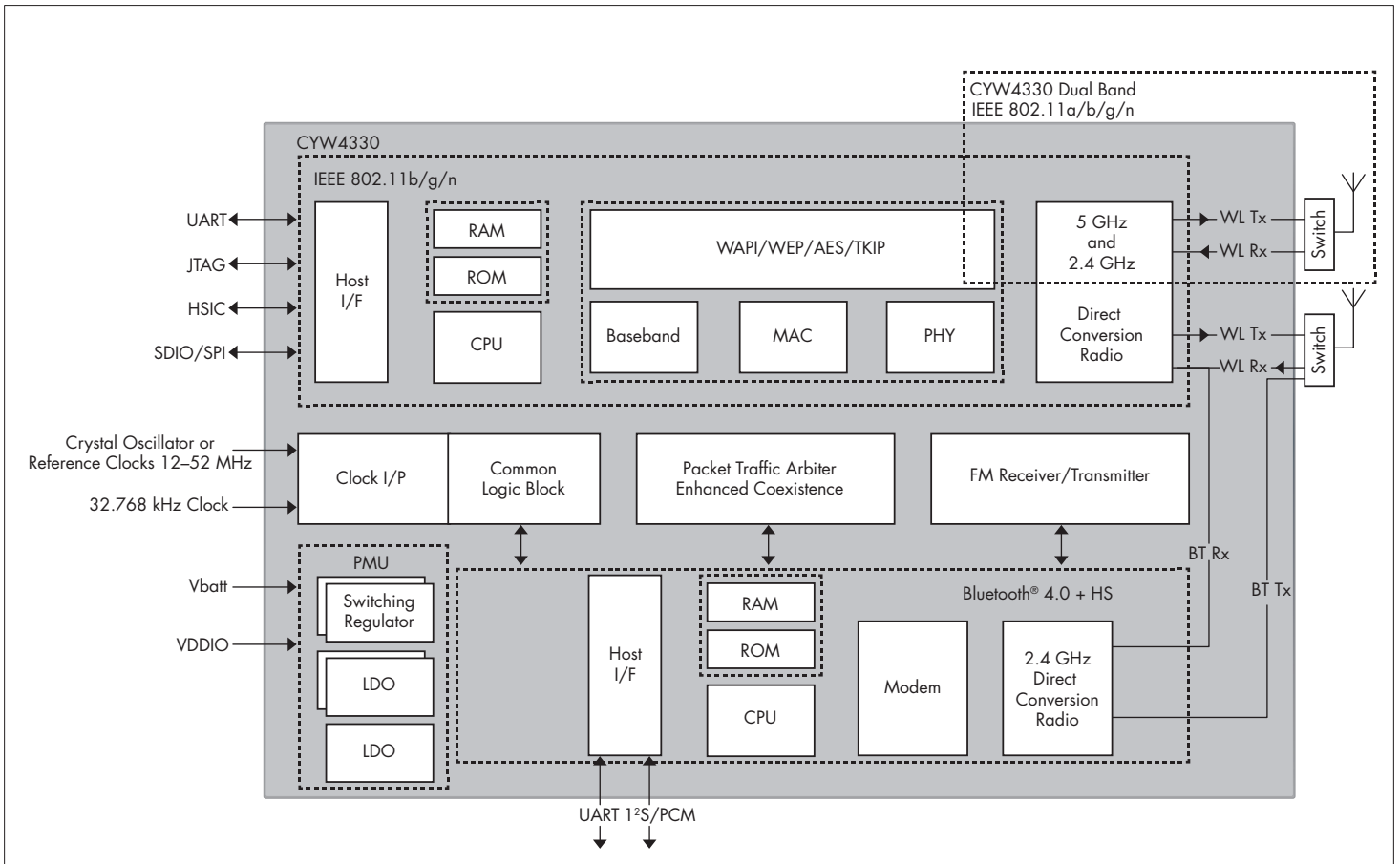
- Single-stream IEEE 802.11n support for 20MHz channels provides PHY layer rates up to MCS7 (72 Mbps) for typical upper-layer throughput in excess of 45 Mbps
- Supports a single antenna shared between WLAN 5G, WLAN 2.4G, and Bluetooth blocks
- Supports optional external antenna diversity
- Shared Bluetooth and WLAN receive signal path eliminates the need for an external power splitter while maintaining excellent sensitivity for both Bluetooth and WLAN
- Internal fractional nPLL allows support for a wide range of reference clock frequencies.
- Supports IEEE 802.15.2 external 3-wire coexistence scheme to support additional wireless technologies such as GPS, WiMax, or UWB
- Integrated ARM® Cortex™-M3 processor and on-chip memory for complete WLAN subsystem functionality, minimizing the need to wake up the application processor for standard WLAN functions. This allows for further minimization of power consumption, while maintaining the ability to field upgrade with future features
- OneDriver™ software architecture for easy migration from existing embedded WLAN and Bluetooth devices as well as future devices
- WPA™ and WPA2™ (personal) support for powerful encryption and authentication
- Full WAPI support
- Hardware accelerators support faster data encryption and 802.11i compatibility in WAPI, AES, and TKIP modes
- Reference WLAN subsystem provides Cisco® Compatible Extension (CCX, CCX 2.0, CCX 3.0, CCX 4.0, CCX 5.0) certified
- Reference WLAN subsystem provides Wi-Fi Protected Setup™ (WPS)
- Worldwide regulatory support: global products supported with worldwide homologated design



BENEFITS

- Low power consumption
- Small solution area
- Low BOM count and cost
- Best-in-class coexistence
- Multiple packages to meet requirements for different form factors

CYW4330	
✓	Mobile Phones
✓	Handheld Devices
✓	Tablets



CYW4330 Block Diagram

CYW4330: Product Family	CYW4330FKFFBG CYW4330FKUBG CYW4330FKWBG	CYW4330GKFFBG CYW4330GKUBG CYW4330GKWBG	CYW4330XKFFBG CYW4330XKUBG CYW4330XKWBG
2.4G WLAN	X	X	X
5G WLAN	–	–	X
Bluetooth 4.0	X	X	X
FM	X	–	X

CYW4330: Ordering Information	Package	Ambient Operating Tem
CYW4330FKFFBG	144-ball FCBGA (6.5 mm × 6.5 mm, 0.5 mm pitch)	– 30°C to +85°C
CYW4330FKUBG	133-ball WLBGA (4.89 mm × 5.33 mm, 0.4 mm pitch)	– 30°C to +85°C
CYW4330FKWBG	225-bump WLCSP (4.89 mm × 5.33 mm, 0.2 mm pitch)	– 30°C to +85°C
CYW4330GKFFBG	144-ball FCBGA (6.5 mm × 6.5 mm, 0.5 mm pitch)	– 30°C to +85°C
CYW4330GKUBG	133-ball WLBGA (4.89 mm × 5.33 mm, 0.4 mm pitch)	– 30°C to +85°C
CYW4330GKWBG	225-bump WLCSP (4.89 mm × 5.33 mm, 0.2 mm pitch)	– 30°C to +85°C
CYW4330XKFFB	144-ball FCBGA (6.5 mm × 6.5 mm, 0.5 mm pitch)	– 30°C to +85°C
CYW4330XKUBG	133-ball WLBGA (4.89 mm × 5.33 mm, 0.4 mm pitch)	– 30°C to +85°C
CYW4330XKWBG	225-bump WLCSP (4.89 mm × 5.33 mm, 0.2 mm pitch)	– 30°C to +85°C

BLUETOOTH AND FM FEATURES

- Integrated class 1 PA for extended range.
- SmartAudio® technology dramatically improves voice quality in Bluetooth headsets.
- Simultaneous A2DP music streaming to up to five Bluetooth stereo headsets.
- Interface support—host controller interface (HCI) uses a high-speed UART interface and PCM/I²S for audio data.
- The FM unit supports HCI for communication and stereo analog output.
- Supports external or internal FM antenna configurations.
- Automatic frequency detection for standard crystal and TCXO values.
- FM transmitter, 76–108 MHz bands, supports both RDS and RBDS standards, as well as programmable output power

GENERAL FEATURES

- Supports a battery voltage range of 2.3–5.5V supplies, with internal switching regulator.
- Programmable dynamic power management.
- OTP to store board parameters.
- Package options:
 - 144-ball FCBGA (6.5mm×6.5mm, 0.5mm pitch)
 - 133-ball WLBGA (4.92mm× 5.16mm, 0.4mm pitch)
 - 225-bump WLCSP (4.92mm×5.16mm, 0.2 mm pitch)

ORDERING INFORMATION

Contact your local Cypress Representative

For additional information on WICED modules currently in production, go to:

<https://community.cypress.com/community/wiced-wifi>

Cypress Semiconductor Corporation

198 Champion Court, San Jose CA 95134

phone +1 408.943.2600

toll free +1 800.858.1810 (U.S. only)

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