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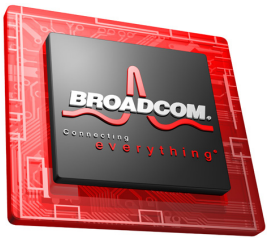
BCM4329 PRODUCT Brief

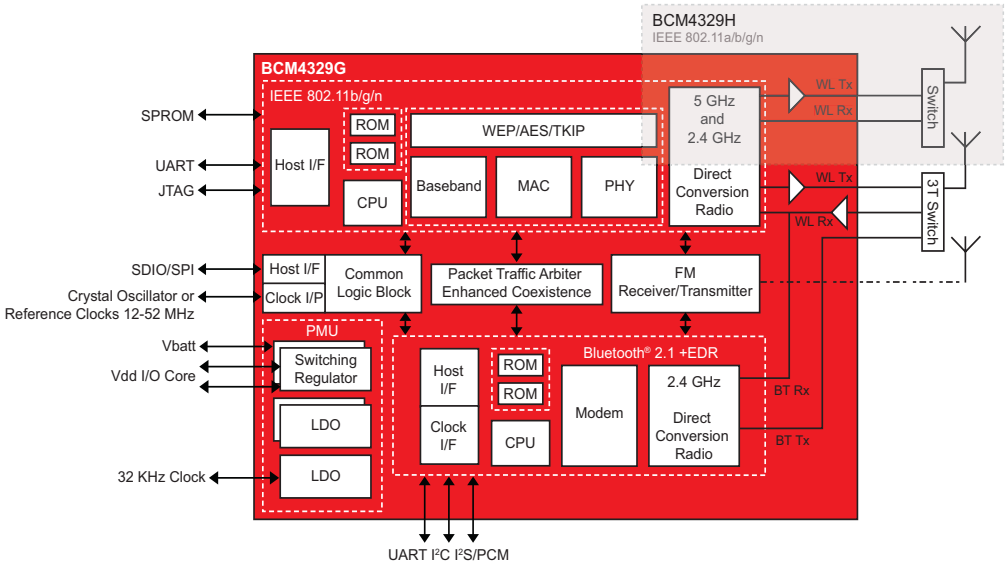


SINGLE-CHIP 802.11n/BLUETOOTH®/FM (Rx AND Tx)

FEATURES

- **System Level Features**
  - Industry's most integrated 65 nm single-chip combo device
    - Single-band (2.4 GHz) 802.11b/g/n or dual-band (2.4 GHz and 5 GHz) 802.11a/b/g/n with Bluetooth 2.1 + EDR and FM receiver and transmitter
    - Lowest overall cost solution
  - Full featured, on-chip Power Management Unit
    - Supports direct battery (2.3V to 5.5V) connection
  - Single driver software architecture for easy migration from existing to future embedded WLAN and Bluetooth devices
  - Integrates InConcert™ collaborative BT-WLAN coexistence with the industry's most robust coexistence performance
    - Supports IEEE 802.15.2 external three-wire coexistence scheme enabling support for additional wireless technologies like WiMax®
  - Shared Bluetooth and WLAN receive signal path (eliminates the need for an external power splitter while maintaining excellent sensitivity for both Bluetooth and WLAN)
- **Bluetooth and FM Key Features**
  - Bluetooth Core Specification Version 2.1 + EDR compliant with provisions supporting future specifications
  - Bluetooth Class 1 or Class 2 transmitter operation
  - Supports extended Synchronous Connections-Oriented (eSCO) transport for enhanced voice quality (by allowing retransmission of dropped packets)
  - Host Interface support
    - Host Controller Interface (HCI): High-speed UART
    - Audio: PCM
    - FM Control: HCI and BSC (I^2C-compliant) ports
    - FM Audio: Stereo analog input and output, bidirectional I^2S, and PCM ports
  - Increased battery life (reduced in power consumption in all operating modes)
  - FM receiver and transmitter (76 MHz to 108 MHz FM bands); Standards supported:
    - European Radio Data Systems (RDS)
    - North American Radio Broadcast Data System (RBDS)
  - Programmable FM transmit output power
  - Supports two simultaneous Advanced Audio Distribution Profiles (A2DP) for sharing music between two stereo Bluetooth headsets
  - Wideband speech support
  - Packet Loss Concealment (PLC) for improved RF link budget to headsets

BCM4329 Block Diagram



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FEATURES (Continued)

- **WLAN Key Features**
  - 802.11 a/b/g/n compliant
  - Supports a variety of 802.11n optional features such as Space Time Block Coding (STBC), Short Gual Interval (SGI), A-MPDU aggregation, Block Ack, Greenfield, RIFS
  - Industry-leading low-active transmit and receive power consumption and ultralow power in standby and idle modes
  - Supports IEEE 802.11d/e (WMM, QoS, WMM-PS), h, i, j (upgrades available for k, r, w)
  - Supports standard host interfaces SDIO v1.2 (50 MHz, 4-bit and 1-bit) and SPI (48 MHz)
  - Integrated CPU with on-chip memory for a complete WLAN subsystem (minimizes the need to wake up the applications processor)
  - Internal fractional nPL, allowing support for a wide range of reference clock frequencies
  - Security
    - WPA and WPA2 (personal) for powerful encryption and authentication
    - AES and TKIP in hardware for faster data encryption and 802.11i compatibility
    - Supports Cisco® Compatible Extensions (CCX - CCX4.0)
    - SecureEasySetup™ for simple Wi-Fi setup and WPA2/ WPA security configuration
  - Worldwide regulatory support (global products supported with worldwide homologated design)
  - Integrated power amplifier, baluns and LNA to meet the requirements of most handheld system (option to support external FEM)

The Broadcom® BCM4329 family of single chip devices provide the optimum integration of IEEE 802.11™ a/b/g and 802.11n (MAC/ baseband/radio) handheld device classes, Bluetooth® 2.1 + EDR (Enhanced Data Rate), and FM radio receiver and transmitter features in mobile and handheld wireless systems.

The BCM4329 addresses the needs of compact mobile devices that require minimal power consumption. The BCM4329's integrated 2.4 GHz and 5 GHz WLAN CMOS power amplifiers offer the lowest cost dual-band solution in the industry. The BCM4329 utilizes advanced design techniques and process technologies to reduce active and idle power consumption and extend battery life, while maintaining robust connectivity and providing a rich set of features.

The BCM4329's highly sophisticated InConcert radio coexistence algorithms and hardware mechanisms allow for an extremely collaborative coexistence scheme and provide coexistence support for a single shared antenna and external radios (including WiMax™ and cellular radio technologies). As a result, the BCM4329 enhances the overall quality of simultaneous voice, video, and data transmission of handheld systems, while minimizing the footprint.

The BCM4329's integrated power management unit simplifies the power topology, enabling operation directly from the mobile's platform battery. Along with the integrated power amplifiers, the BCM4329 includes integrated transmit and receive baluns to further reduce overall cost.

TECHNICAL SPECIFICATIONS

WLAN

Host Interface:	SDIO (4 wire, 1 wire, SPI), UART
Standard:	IEEE 802.11n, IEEE 802.11a, IEEE 802.11g
Data Rate:	802.11n: Up to MCS7 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11b:11, 5.5, 2, 1 Mbps
Modulation:	OFDM, CCK, DQPSK, DBPSK
Network Architectures:	Infrastructure and ad hoc
Operating Frequencies:	2.4 – 2.497 GHz 4.9 – 5.85 GHz
RF Output Power:	2.4 GHz: 18 dBm 5 GHz: 15 dBm (higher power options available)
Operating Channels:	11 (North America) 13 (Europe) 14 (Japan)
Security:	802.1x; WEP, WEP2, WPA, WPA2 (Personal) TKIP and AES hardware acceleration 802.11i

Bluetooth

Host Interface:	HCI over high speed UART, Audio over PCM or I^2S
Standard:	Bluetooth 2.1 + EDR
Data Rate:	1, 2, 3 Mbps
Modulation:	GFSK, DQPSK, 8-DPSK
Operating Frequency:	2402 – 2480 MHz
Receive Sensitivity:	Up to –90 dBm
Output power:	Class 1, Class 2

FM

Host Interface:	High-speed UART, I^2C for control
Standard:	RDS (Europe) RBDS (North America)
Operating Frequency:	76 – 108 MHz
Search Frequency Step:	50 KHz
Transmit Output Power:	117 dbuV
Receive Sensitivity:	–107 dBm

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