



BCM4328 PRODUCT Brief



AirForce One™ SINGLE-CHIP IEEE 802.11a/b/g™ MAC/BASEBAND/RADIO WITH INTEGRATED CPU

FEATURES

- Highly integrated one-chip MAC, baseband, dual-band direct conversion radio and ARM7™ processor for low-power embedded applications.
- Designed to meet exacting requirements of mobile devices, including small form factor, ultra-low power consumption, and low cost.
- Footprint-compatible with BCM4326 single-chip IEEE 802.11b/g™ 2.4-GHz band MAC/baseband/radio with integrated CPU.
- Support for multiple interface options popular in embedded designs: SDIO (1- and 4-bit) and USB 2.0.
- Embedded ARM7 CPU that executes the full WLAN driver, eliminating the need for complicated wireless LAN integration into the host platform.
- Portable streamlined software interface for easy migration to embedded operating systems.
- Support for advanced Bluetooth® coexistence algorithms with hardware interface targeted at voice and multimedia applications.
- On-chip boot ROM and SRAM for a complete WLAN subsystem.
- Internal fractional nPLL allows support for a wide range of reference clock frequencies.
- Requires only a single 3.3V external supply voltage.
- 3.3V/1.8V-tolerant I/O.
- Support for 2.5V–5.5V VBAT supplies with a single external switching regulator.
- On-chip UART and JTAG interfaces for ease of debugging.
- Available in FBGA (0.5-mm pitch) and WLCSP (0.25-mm pitch) packages.
- Integrated power amplifier for medium-transmit power embedded devices; interface to external power amplifier for high-power applications.

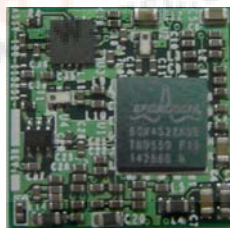
POWER MANAGEMENT

- DSP architecture reduces the power required to transmit data by 30 percent.
- Low power consumption improves battery life of Wi-Fi® devices, including handheld devices and consumer electronics.
- Integrated CPU; designed for low CPU usage to ensure that system resources are available for handheld applications.
- Dynamic power management through on-board PMU.
- Only a single 3.3V external supply voltage is required.

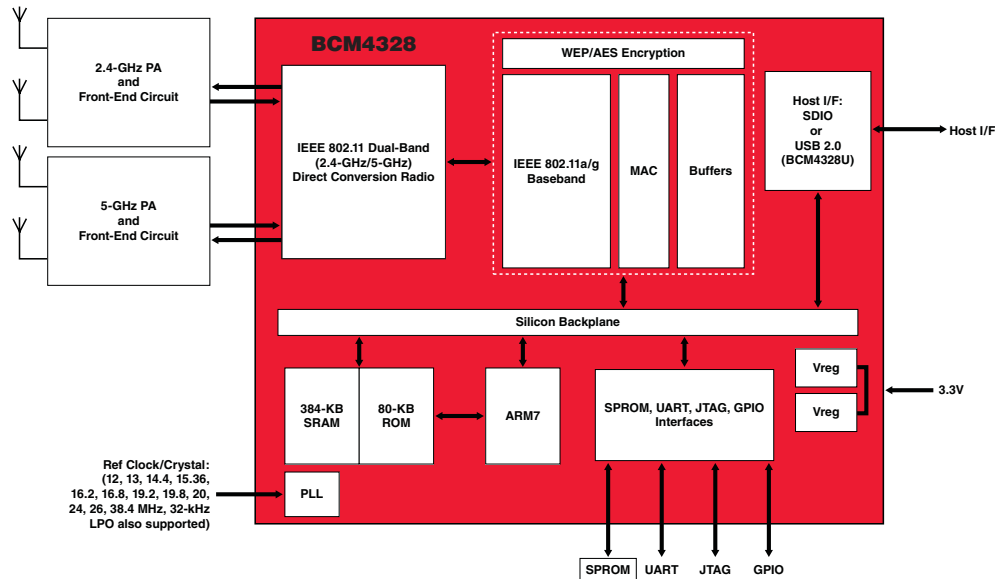
AirForce™ FEATURE SET

- SmartRadio™: continuous calibration reduces test time and improves manufacturability.
- Xpress™ technology: standards-based frame bursting improves overall network efficiency.
- 125 High Speed Mode™: standards-plus performance enhancement delivers best real-world performance when both client and AP support high-speed mode.
- Enhanced BroadRange™ technology: standards-compliant features increase receive sensitivity to improve range and distance performance at higher data rates.
- Security:
 - WPA™ (personal) and WPA2™ (personal) certified for powerful encryption and authentication
 - AES and TKIP in hardware for faster data encryption and IEEE 802.11i™ compatibility
 - Cisco® Compatible Extensions (CCX, CCX2.0, CCX3.0, CCX4.0) certified
 - SecureEasySetup™ for simple Wi-Fi setup and WPA2/WPA security configuration
- Worldwide support: global products supported with worldwide homologated design.
- OneDriver™: single driver across all platforms—IEEE 802.11a/b/g/n—simplifies driver update process and improves customer satisfaction.

BCM94328 Sample Module



BLOCK DIAGRAM AND SPECIFICATIONS



| | |
|-----------------------|--|
| Interface | SDIO (4-wire, 1-wire, SPI), USB 2.0 (BCM4328U) |
| System Bus Support | SDIO, USB 2.0 |
| Standard | IEEE 802.11a, IEEE 802.11b, IEEE 802.11g |
| Data Rate | IEEE 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps; IEEE 802.11b: 11, 5.5, 2, 1 Mbps |
| Modulation | OFDM, CCK, DQPSK, DBPSK |
| Network Architectures | Infrastructure and ad hoc |
| Operating Frequencies | 2.4 GHz to 2.497 GHz, 4.9 GHz to 5.85 GHz |
| Operating Channels | 802.11g: 11 for North America; 13 for Europe; 14 for Japan 802.11a: 12 non-overlapping channels |
| RF Output Power | 20 dBm maximum |
| Antenna Connectors | Hardware diversity support—transmit and receive |
| Power Requirements | 3.3V (2.5V to 5.5V VBAT power supplies provided by using a single external switching regulator) |
| Power Consumption | Receive: < 295 mW Transmit: < 425 mW (at 7 dBm), < 625 mW (at 15 dBm; varies depending on external power amplifier) |
| Security | IEEE 802.11X; WEP, WEP2, WPA (personal), WPA2 (personal); TKIP and AES hardware acceleration, IEEE 802.11i |
| Dimensions | FBGA: 10 mm x 10 mm |
| Software Support | <ul style="list-style-type: none"> Windows® CE 5.0, Linux®, Windows® XP Portable software interface for easy migration to other embedded operating systems including Symbian, Rex, iTRON, VxWorks® |
| Certifications | IEEE 802.11-compliant; Wi-Fi CERTIFIED™ |

For ordering information, contact your Broadcom Sales Representative.

Broadcom®, the pulse logo, Connecting everything®, the Connecting everything logo, AirForce™, AirForce One™, SecureEasySetup™, OneDriver™, BroadRange™, SmartRadio™, 125 High Speed Mode™, and Xpress™ are among the trademarks of Broadcom Corporation and/or its affiliates in the United States, certain other countries and/or the EU. Bluetooth® is a trademark of the Bluetooth SIG. Any other trademarks or trade names mentioned are the property of their respective owners.

Connecting
everything®



BROADCOM CORPORATION
16215 Alton Parkway, P.O. Box 57013
Irvine, California 92619-7013

© 2006 by BROADCOM CORPORATION. All rights reserved.

Phone: 949-450-8700
Fax: 949-450-8710
E-mail: info@broadcom.com
Web: www.broadcom.com