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Connecting
e v e r y t h i n g®

BCM94318
PRODUCT Brief

AIRFORCE ONE™ CHIP 802.11 REFERENCE DESIGN

KEY FEATURES

- Industry's smallest IEEE 802.11b/g solution makes wireless LAN connectivity practical for pocket-sized electronic devices.
- Extreme integration includes radio, baseband, MAC, and all other radio frequency (RF) components found on a typical wireless LAN board—making small mobile devices easier, less expensive and faster to manufacture.
- Innovative power management reduces power consumption by up to 97% in standby mode, providing greatly extended battery life for mobile devices.
- Cost-effective architecture with single-sided, all-CMOS design eliminates over 100 components, providing more affordable wireless connectivity for consumer electronics.
- High-performance features standard across the AirForce product line:
  - OneDriver™
  - SmartRadio™
  - WPA, WPA2
  - Cisco® Compatible Extensions (CCX)
  - AES in hardware
  - WMM for advanced Quality of Service
  - Xpress™ technology
  - 125 High Speed Mode™
- Reference designs include Secure Digital I/O, MiniPCI, CardBus, and Compact Flash.
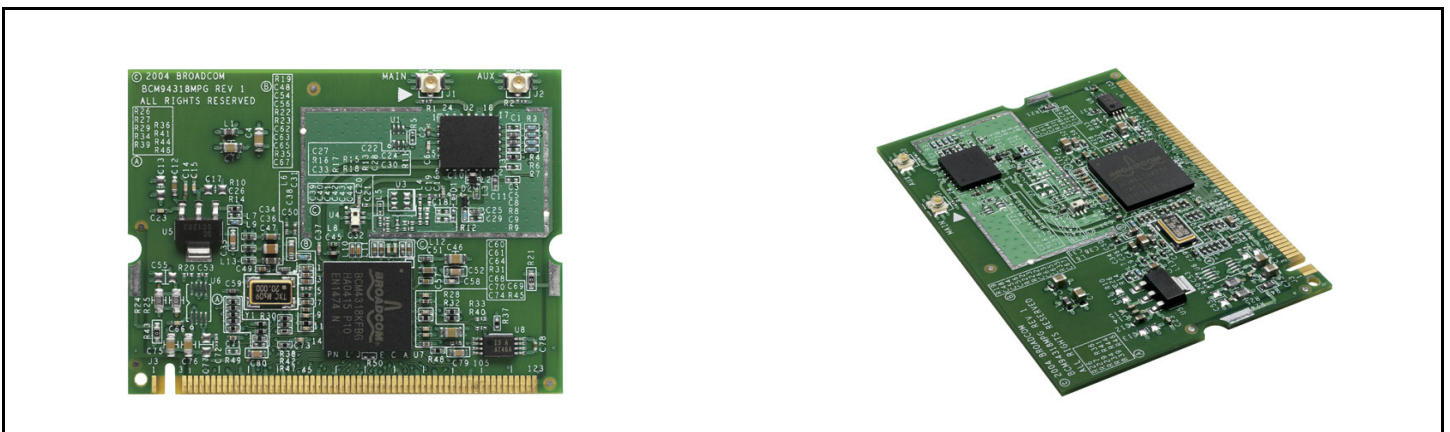
POWER MANAGEMENT

- Innovative power management techniques improve battery life by creating deep sleep state when device is in stand-by mode.
- Designed for low CPU utilization to ensure CPU resources are available for handheld applications.
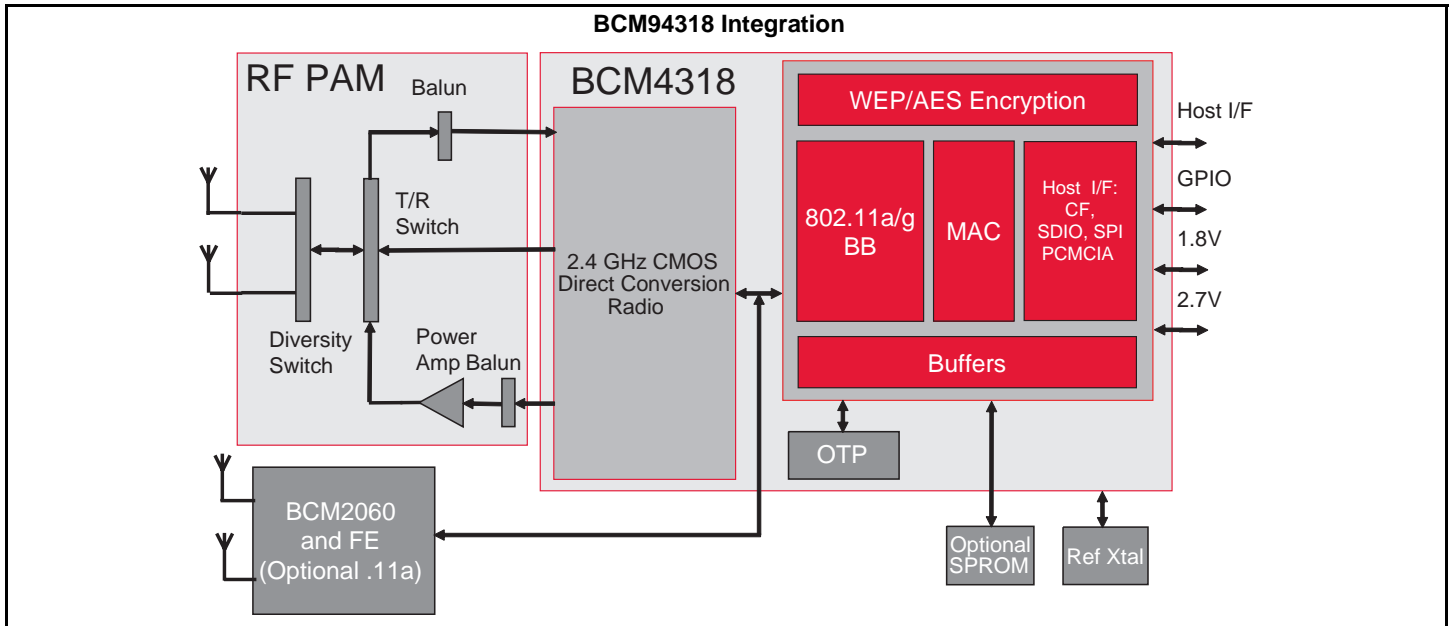
AIRFORCE FEATURE SET

- 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.
- Security:
  - WPA- and WPA2-CERTIFIED for powerful encryption and authentication
  - AES in hardware for faster data encryption and 802.11i compatibility
  - Cisco Compatible Extensions (CCX, CCX 2.0) certified
  - SecureEZSetup™ for simple Wi-Fi setup and WPA security configuration
- Worldwide support: Global products supported with worldwide homologated design.
- OneDriver: Single driver across all platforms—802.11a/b/g—simplifies driver update process and improves customer satisfaction.

BCM94318 MP Reference Design

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BCM94318 Integration

BCM94318 Specifications

Interface	PCI, SDIO/SPI
System Bus Support	PCI, CardBus, Compact Flash, EBI
Standard	IEEE 802.11g, 802.11a with external radio BCM2060
Data Rate, Mbps	54, 48, 36, 24, 18, 12, 9, 6/11, 5.5, 2, 1
Modulation	PSK/CCK, DQPSK, DBPSK, OFDM
Network Architectures	Infrastructure and ad hoc
Operating Frequencies	2.4 GHz—2.497 GHz, 4.9 GHz —5.85 GHz with 2060 option
Operating Channels	11 for North America; 13 for Europe, and 14 for Japan
RF Output Power	20 dBm maximum
Antenna Connectors	Hardware diversity support - Transmit and Receive
Power Requirements	1.8V (3.3V for ref designs)
Power Consumption	Average Standby < 20 mW
Security	802.1x; WEP; WEP2; WPA, WPA2; TKIP; Weak-key avoidance; CCX, CCX 2.0; 128-bit OCB mode AES, 802.11i
Dimensions	12mm x 12mm 196-pin pkg., 10mm x 10mm 144-pin pkg
Software Support	Microsoft WHQL certified for Windows XP, Windows 2000, Windows Me, and WindowsSE operating systems. Embedded drivers for Linux and VxWorks operating systems
Certifications	IEEE 802.11 compliant; Wi-Fi CERTIFIED; ACPI power management

Ordering Information:

• BCM94318 SD (2.4 GHz 802.11b/g Secure Digital Client Production Design), 144-pin BGA package

• BCM94318 MPG 802.11b/g MiniPCI

• BCM94318 MPAG 802.11a/g MiniPCI

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