

## 802.11n DRAFT 2.0 SINGLE-CHIP SOLUTION

### FEATURES

- Single-chip all-in-one die Baseband/MAC/Radio for 2x2 802.11n applications
- Advanced 65 nm CMOS process for lowest power consumption and highest integration
- 802.11n Draft 2.0 compliant Wi-Fi® solution. Fully compatible with IEEE 802.11n Draft 1.0 and 802.11a/b/g legacy devices.
- Two transmitters and two receivers with optional 802.11n Draft 2.0 modes allow data rates supporting 300 Mbps.
- Flexible two and three antenna configurations for improved range and performance
- Support for optional 802.11n features for improved rate, range performance
  - Greenfield preamble
  - Space Time Block Code (STBC)
  - Short Guard Interval
- Multiple Host Interfaces supported: PCIe™, PCI, mini PCI, USB 2.0 (BCM94323 only)
- Integrated ARM® Cortex-M3™ CPU for USB host offload
- Low RBOM count and optimal packaging for cost-effective PCB designs
- High-performance 802.11a/b/g/n features standard across the Intensi-fi™ and AirForce® product lines
  - OneDriver™
    - Single driver across platforms simplifies driver update process and improves customer satisfaction
  - BroadRange™
  - Afterburner™ high-speed modes
  - High-performance whole home coverage
  - SecureEasySetup® and Wi-Fi protected setup for simple Wi-Fi setup and security configuration
  - WPA™/WPA2™
  - Cisco® Compatible Extensions (CCXv4, CCXv5)
  - Full-rate AES engine in hardware
  - WMM® for quality of service

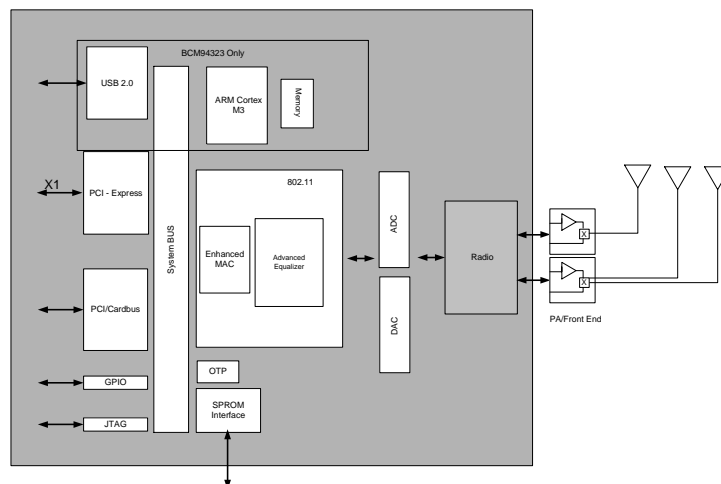
### SYSTEM/CHIP BENEFITS

- Single-chip 65-nm solution and high system integration drives down the cost of 802.11n solutions to enable a new generation of media/consumer applications
- CMOS integration and low power modes results in a 50% power reduction compared to previous generation solutions
- Ultra-low RBOM count is 40% lower than previous generation Broadcom 802.11n solutions for small form-factor modules
- Upgradable architecture reduces manufacturing test time and to address the 802.11n standardization process
- Increased rate/range provides user satisfaction and reduces product support call volume
- Self-calibrating architecture allows high yield board manufacturing
- 2x2 antenna structure maintains form-factor compatibility with high volume 802.11a/g industrial designs
- Low-cost CMOS implementation for MAC, Baseband and Radio allows integration with Broadcom's Cable/DSL/Set-top/VoIP chipsets
- Designs meet Pb-free/RoHS worldwide requirements



**BCM4322 PCI Express Half Mini Card Implementation**

# OVERVIEW



**BCM94322/BCM94323 System Block Diagram**

## BCM94322/BCM94323 Specifications

<b>Host Interfaces</b>	PCI/CardBus/PCIe USB (BCM4323)
<b>Standard</b>	IEEE 802.11n, 802.11b/g, 802.11a
<b>Data Rate, Mbps</b>	54, 48, 36, 24, 18, 12, 9, 6, 11, 5.5, 2, 1 20 MHz BW: 150, 130, 117, 104, 78 * 40 MHz BW: 300, 270, 243, 216, 162, 108 * *Many other data rates are supported by the hardware. Above specifies only the higher rates for each bandwidth.
<b>Modulation</b>	PSK/CCK, DQPSK, DBPSK, OFDM
<b>Network Architecture</b>	Infrastructure and ad hoc
<b>Operating Frequencies</b>	2.4 GHz—2.497 GHz, 4.9 GHz—5.85 GHz
<b>Operating Channels</b>	11 for North America, 13 for Europe, 14 for Japan
<b>RF Output Power</b>	2.4 GHz: 18 dBm, 5 GHz: 15 dBm. Higher power options available.
<b>Antenna Connectors</b>	Two or more antennas allowing transmission or reception on both, simultaneously
<b>Power Requirements and Consumption</b>	3.3V, Average standby <75 mW (@3.3V)
<b>Security</b>	802.1x, WEP/WEP, WPA/WPA2, TKIP, Weak-key avoidance, CCX, CCX 2.0, CCX 3.0, 128-bit OCB mode AES, 802.11i
<b>Software Support</b>	Windows® XP, Windows 2000, Windows Vista®, Linux®, VxWorks®
<b>Certifications</b>	IEEE 802.11 compliant, Wi-Fi 802.11n Draft 2.0 and 802.11a/b/g certified, PCIe 1.1
<b>Product ordering information</b>	BCM94703NR—10/100 AP/Router Reference Design BCM94322MP—Mini PCI Reference Design BCM94322MC—PCIe MiniCard Reference Design BCM94322HMC—PCIe Half-MiniCard Reference Design BCM94323USB—USB 2.0 Reference Design

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