

# AirFORCE™

**The Force in Wireless Networking**



The AirForce family of wireless LAN chipsets from Broadcom offers unique advantages that help drive leading marketshare for our partners: superior performance, reliability, industry-leading roadmap and faster time to market.

**BROADCOM®**  
Connecting everything®

The numbers are compelling. In 2002, more than 15 million wireless LAN nodes were purchased by consumers and businesses.

The consumer market for wireless LANs has grown at least 100% per year since 1999.

By 2005, more than 100 million nodes will be in use.

It takes an innovative, strong technology partner to keep up with this type of demand.



in the home



in public places



in the enterprise

## Broadcom Delivers

Broadcom is your one-stop-shop for wireless LAN solutions. With a solid track record of delivering highly integrated silicon solutions in wired environments, Broadcom announces AirForce™, the broadest line of wireless LAN reference design solutions in the industry.

Wireless technology is evolving rapidly. Future standards will include speeds of 54 Mbps and beyond, with features such as voice support, video support, and advanced security. Wireless technology will be required in everything from personal computers, access points and residential gateways, to handhelds, mobile telephones, printers, and web cameras. Eventually, even entertainment equipment, automobiles, and trains will be equipped with wireless connectivity.

Partnering with Broadcom gives you a competitive edge. We provide high-performance, full-featured, and flexible wireless technology for your product line, without adding prohibitive costs to the design, extending the product development cycle, or jeopardizing the core functionality of the product.

## What is AirForce™?

AirForce is the name of Broadcom's family of wireless LAN solutions. AirForce supports all of the mandatory 802.11 signaling standards, in a variety of client and infrastructure form factors for the home, business, and public network segments. AirForce solutions combine 802.11b, 802.11a, and new 54g™ (802.11g) wireless technologies with SmartRadio™ performance, first-to-market silicon integration and a common architecture that makes it easier to add wireless capabilities once and then leverage that investment efficiently as new technologies emerge.

## AirForce Key Benefits

**Best-in-class performance**—Broadcom is the first vendor to deliver products that support the full suite of 802.11b, 802.11a, and 54g™ wireless technologies. The AirForce SmartRadio™ design delivers higher throughput, greater range, and lower CPU utilization than competitors, giving your customers the best wireless LAN experience available.

**Leading-edge features**—AirForce goes beyond raw speed to provide support for today's and tomorrow's applications, such as multi-layer quality-of-service support, support for the global configuration and management. Security concerns are met with hardware encryption (WEP 128, AES OCB, and AES CCM) as well as WPA and 802.1x software support. AirForce products are designed for seamless interoperability with Broadcom's Bluetooth® and GPRS solutions.



54g™ is the new high-speed, compatible wireless LAN technology for home, office and public networks. The 54g logo ensures that products are completely interoperable with other 54g products and are compatible with the draft IEEE 802.11g specification. 54g will quickly become the next mainstream wireless LAN technology because it is faster, works farther, is backwards compatible—and is affordable.

### Faster

54 Mbps data rates, nearly five times faster than the current 802.11b standard of 11 Mbps






















### Farther

Coverage of up to 200 meters from access points, 60% further than current 54 Mbps 802.11a networks

### Backwards-Compatible

Meets 802.11b specifications and works with any 802.11b product.

## AirForce provides the industry's broadest wireless LAN technology portfolio

	All-CMOS WLAN Transceiver Solutions	Customizable, Complete Client Software	Wireless Network Processors	Wireless Router Software and/or SDK	Production Ready Reference Designs	Software Tools for High-Volume Manufacturing	Integrated Wireless Comms Solutions
802.11b							
802.11b/g							
802.11a/b/g							

**Lowest-cost approach**—Broadcom extends its established silicon leadership to wireless LAN, with highly-integrated, standard all CMOS process, two-chip 11 Mbps and 54 Mbps 2.4 GHz solutions and a three-chip 54 Mbps dual band solution that provides low unit costs and low power consumption. This architecture allows highly manufacturable, single-sided reference designs and puts Broadcom on the path to AirForce One™ single-chip wireless LAN solutions.

**Built for the future**—AirForce is built to provide manufacturers with the simplest deployment and migration path in the industry. Microsoft® WHQL certification, SmartRadio™ continuous calibration and a fully digital CMOS process assure a fast deployment and production ramp. The use of a common MAC architecture and OneDriver™ software across the family provides manufacturers a seamless, low-cost migration to new technologies. AirForce architecture supports upgradeability to future IEEE standards such as security and quality of service.

### The AirForce Wireless Reference Design Architecture

The AirForce family of reference designs produces highly integrated solutions.

#### • Client

BCM20XX Series direct conversion single-chip radios provide leading receiver sensitivity, throughput and range. BCM43XX Series Baseband/MAC chips use a common MAC architecture and OneDriver™ software to create a highly leverageable wireless platform. The BCM43XX Baseband/MAC, a BCM20XX radio, an antenna, and a minimum of external components create client devices such as Mini PCI, CardBus, or USB.

#### • Infrastructure

BCM47XX Series Wireless Network Processors, BCM33XX Series Broadband Gateway Cable Modems, and BCM63XX Single Chip ADSL CPE Modems combine with wireless client solutions to create wireless LAN infrastructure devices such as access points or broadband residential gateways.

#### • Software

OneDriver™ software provides maximum stability and flexibility. For both client and infrastructure products, customers can use the identical software across wireless LAN technologies. AirForce client software requires zero configuration and includes advanced utilities for Microsoft XP operating systems and provides a common user interface for legacy operating systems. In addition, AirForce software is customizable for performance and differentiation.

### SmartRadio™

SmartRadio is Broadcom's suite of radio and signal processing innovations that improve the performance of AirForce™ wireless LAN devices, including:

- Continuous Calibration, which tunes the wireless LAN radio on-the-fly, providing optimal performance.
- Wireless Echo Reduction, which uses sophisticated equalization techniques to improve delay spread tolerance and 802.11b range in environments with complex surfaces, such as partitioned office spaces, airports, warehouses, and homes.
- Advanced OFDM, which improves throughput in 54g and 802.11a systems by dynamically adapting to radio noise conditions during the signal decoding process.

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Connecting  
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AirForce-BR100-R-11.14.02

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