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Connecting **everything**®

BCM94712
PRODUCT Brief

AIRFORCE™ INTEGRATED WIRELESS ACCESS POINT

HARDWARE FEATURES

- Compact, sophisticated, and low-cost access point includes chipset: BCM4712, BCM2050, and AC101L.
- 10/100 Ethernet LAN port with Auto-MDIX.
- Integrated MAC/baseband.
- 2.4 GHz PCB patch antenna.
- Antenna diversity supports both integrated and external antennas.
- RF test point footprint supports characterization.
- Provides USB device functionality and USB 1.1 host for print server and camera server functionality.
- Supports flash memory from 256 KB to 2 MB, plus 4-MB or 8-MB SDRAM.
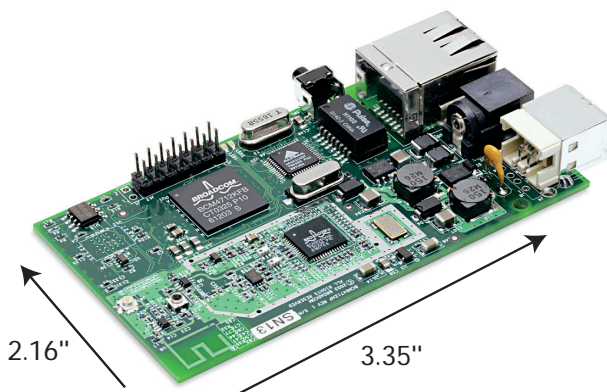
SOFTWARE FEATURES

- Production-quality reference code provides a turnkey solution and compatibility with BCM47XX wireless network processors.
- Fully tested kernel, BSP, and driver packages.
- Intuitive browser-based configuration and management tools.
- Low minimum memory requirement.
- Wireless distribution system (WDS) supports mesh networking, point-to-point, point-to-multipoint, and repeater applications.
- Wireless Ethernet bridging software connects any Ethernet device to the wireless network including Xbox, Macintosh and Set-Top Box.
- Bridging between 10/100 LAN and wireless LAN.
- Software support for Linux® and VxWorks® operating systems yields fast time-to-market.

AIRFORCE FAMILY FEATURES

- **Advanced high performance baseband processor with integrated medium access controller (MAC)** supports upcoming IEEE standards and Wi-Fi Alliance initiatives such as Wireless Multimedia Extensions (WME), 802.11i Security and 802.11e QoS for built-in future proof designs.
- **SmartRadio technology** improves wireless LAN throughput and range with advanced signal processing techniques. The all-CMOS solutions are capable of self-calibrating based on usage temperature and other environmental conditions, reconfiguring constantly for optimum performance.
- **OneDriver™** works with all AirForce™ 802.11a/b/54g solutions, simplifying the upgrade/update process for customers and end users. Driver certification and extensive operating system support, including WHQL certified Microsoft® Windows® drivers for clients, Zero configuration with Microsoft XP, and embedded drivers for Linux® and VxWorks®.
- **Comprehensive security portfolio** for both client and AP, including Cisco Compatible Extensions (CCX and CCX 2.0-client only), Wi-Fi Protected Access (WPA and WPA2) CERTIFIED, built-in hardware support for Advanced Encryption Standard (AES) protocol, Wired Equivalent Privacy (WEP) weak key avoidance, TKIP, and 802.1x.
- **Performance enhancements** including standards-based Xpress™ Technology which increases aggregate bandwidth and improves overall network performance by up to 75%, and 125 High Speed Mode™, which further increases throughput and delivers best real-world performance when the technology resides on both client and AP/Router.
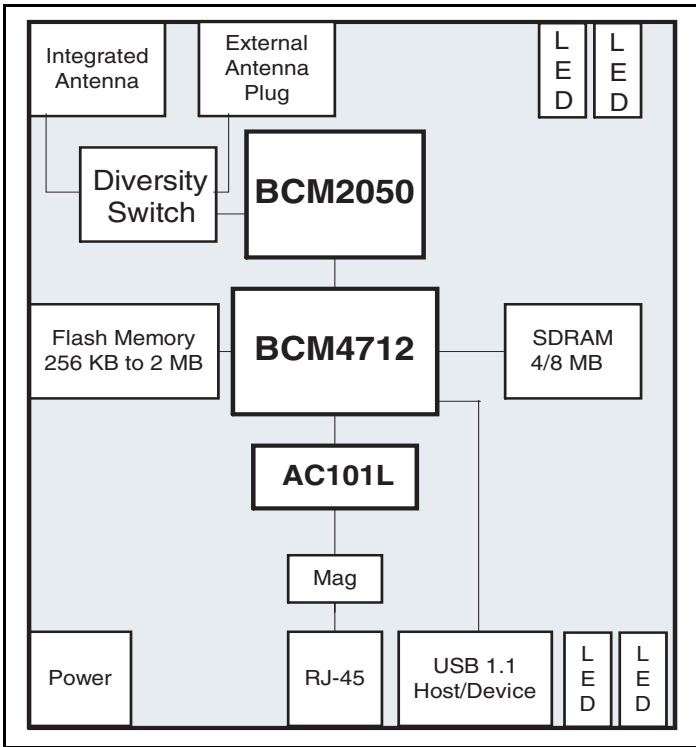
BCM94712 Reference Design

2.16"   3.35"

Wireless Management Software

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The BCM94712 reference design is a fully integrated access point that combines small size, rich features, and advanced components into the most cost effective access point in the AirForce™ product family and the wireless LAN industry. As small as a credit card, this AP incorporates an integrated antenna, an integrated IEEE 802.11g MAC/baseband, and USB host/device functions enabling manufacturers to build highly functional and low-cost Wi-Fi® access points.

The production-ready BCM94712 reference design includes the richest set of software features in the industry and 100% software compatibility with the AirForce product family. The turnkey, customizable software is code compatible with the BCM4702 and BCM4704 devices allowing OEMs to quickly migrate proprietary features built into IEEE 802.11a/b/g access points and routers into the BCM94712. Software features include advanced security protocols such as WPA, WPA2, TKIP, WEP, IEEE 802.11i, and IEEE 802.1x; browser-based network management tools, and the ability to simultaneously run WDS (wireless distribution system), Ethernet, and client functions.

Broadcom's superior technology and innovation benefit manufacturers with faster time-to-market, lower system costs, and end products that are differentiated from the competition through rich features and exceptional range and reliability. SmartRadio™ technology in the BCM2050 radio chip gives this product superior multipath performance, greater range and reliability, and tolerance to harsh system environments such as airports and other public access sites. The BCM94712 is the smallest, most feature-rich access point that serves as the core for a variety of reliable, flexible, and competitive end products that carry low overall system costs.

BCM94712 Specifications:

Radio Standards	IEEE Std 802.11g 2003, IEEE Std 802.11b 1999
Radio Power	Transmit power configurable up to +15 dBm (802.11g), +20 dBm (802.11b)
Data Rates	802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps; 802.11b, 11, 5.5, 2, 1 Mbps
Frequencies Supported	2.4-2.497 GHz
Modulation	OFDM, CCK, DQPSK, DBPSK
Range	54 Mbps; up to 50m LOS and 20m indoors; 11 Mbps: up to 200m LOS and 80m indoors; 1 Mbps: up to 425m LOS and 150m indoors
Antenna	Integrated antenna
Sensitivity	-95 dBm at 1 Mbps; -87 dBm at 11 Mbps; -70 dBm at 54 Mbps
Delay Tolerance	>250-ns delay tolerance at 11 Mbps
Channels	11 channels in US/Canada/New Zealand; 13 channels in Europe; 4 channels in France/Singapore; 14 channels in Japan
Available Ports	10/100 Ethernet LAN, IEEE 802.11b, USB Host/Device
Processor Speed	200 MHz
Memory	Flash: 256 KB to 2 MB; SDRAM: 4 MB or 8 MB
Security	Platform support for WPA, WPA2, AES engine, WEP 40/128, weak key avoidance, closed networks, MAC address filtering
Manageability	Link status, browser-based management, HTTP software upgrade, UPnP IGD 1.0
Protocols	Roaming, DHCP client, DHCP server, logging, IEEE 802.11D bridging, spanning tree, TFTP, WDS, wireless Ethernet bridging
Operating System	Linux (kernel version 2.4), VxWorks Tornado 2.1
LEDs	Power; WLAN: link/activity; LAN 10/100: link/activity
Power Supply	External 5V; less than 2W
Size	2.16" x 3.35"

Ordering Information: BCM94712 56g™ IEEE 802.11g Integrated Wireless Access Point Reference Design

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