Wireless Solutions

Libertas™
Wireless LAN 802.11b Client Chipset
88W8000 and 88W8300

Libertas™

PRODUCT OVERVIEW

The Marvell® Libertas™ 88W8000 and 88W8300 Wireless LAN (WLAN) chipset comprises the world's first true, 2-chip 802.11b CMOS client solution. The 88W8000 product performs all of the functions of an RF transceiver by integrating a 20 dBm power amplifier, low noise amplifier, voltage-controlled oscillator, frequency synthesizer, as well as other necessary RF and analog functions onto one chip. The 88W8300 device is a single chip that combines the functions of the Direct Sequence Spread Spectrum (DSSS) baseband processor, Medium Access Control (MAC) processor, on-chip CPU, on-chip memory, advanced encryption, and various host interfaces. The high level of integration, close interaction of RF and digital functions, and a full implementation of the power management functions specified in IEEE 802.11 minimize system power requirements. Together, the Libertas 88W8000 and 88W8300 chipset supports IEEE 802.11b data rates of 1, 2, 5.5 and 11 Mbps, as well as a proprietary data rate of 22 Mbps for client applications.

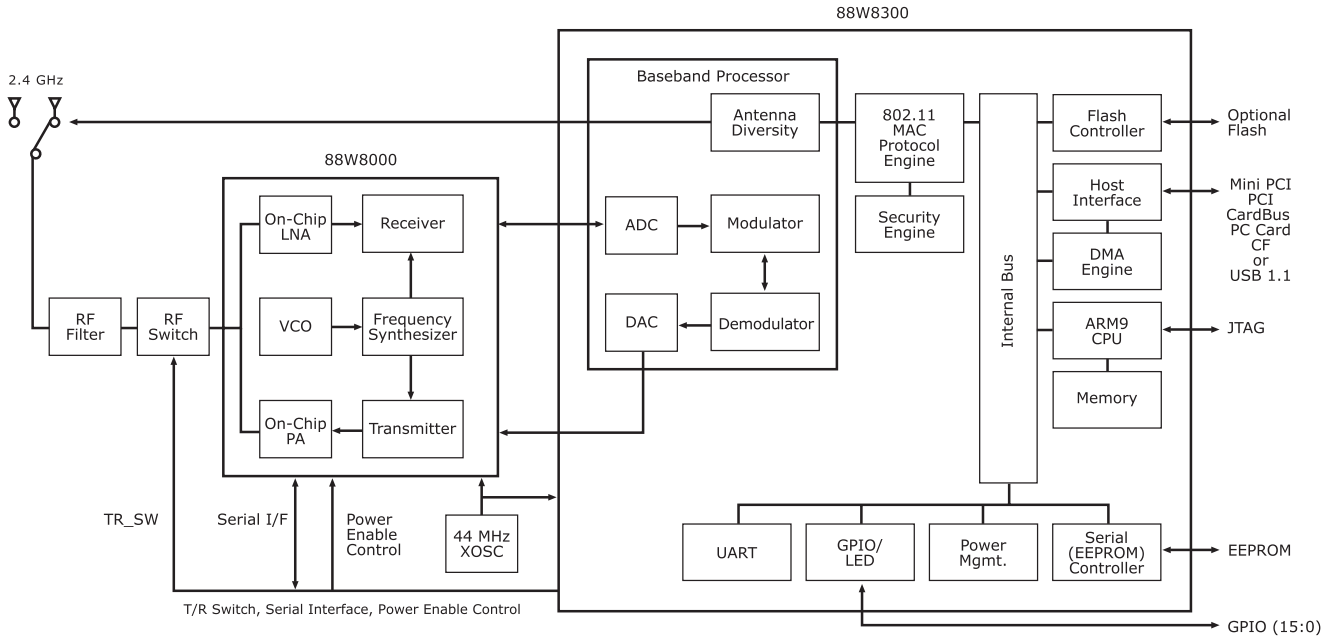

Fig 1. Libertas WLAN 802.11b Client Chipset (88W8000 and 88W8300) Block Diagram

88W8000 FEATURES	BENEFITS
• 2.4 GHz ISM Band Radio	• One single chip supports all RF to analog baseband functions of the popular 802.11b standard
• Integration of all RF to analog baseband transmit and receive functionalities	• Reduces BOM cost, simplifies board layout and provides smaller form factor
• On-chip power amplifier with 20 dBm output power at the antenna connector	• Reduces cost and increases range
• On-chip power amplifier is programmable from 0 dBm to 20 dBm	• Allows transmit power control to be implemented for power savings and extended battery life for host system
• Integrated power loop control	• Stabilizes power amplifier output at user designated values across temperature, voltage supply and semiconductor variations
• 2x higher receiver sensitivity	• Improves detection of weak signals and increases range
• Programmable frequency synthesizers with integrated VCOs and I/Q generation	• Provide for longer range in terms of adaptive gain adjustments for best signal reception

MARVELL®

Libertas™ Wireless LAN 802.11b Client Chipset

MOVING FORWARD FASTER®

88W8300 FEATURES	BENEFITS
• Up to 4x better multi-path delay spread tolerance	• Longer range and better link robustness (reduces drop-outs)
• Packet-based antenna diversity	• Longer range and better transmit and receive performance
• Marvell custom DSP design	• Lower system power and provides better immunity to 2.4 GHz jammers and interferers
• Hardware security implementation for WEP and IEEE 802.11i AES encryption and decryption	• Provides the most secure wireless connections
• On-chip MAC supports 802.11b standard data rates (1, 2, 5.5, and 11 Mbps) and the Marvell proprietary 22 Mbps high data rate mode	• Fully compliant to 802.11b standard and also provides a 'boost' for high data rate applications
• On-chip, embedded ARM CPU core	• Provides easy WLAN integration into ultra mobile devices with low-speed CPUs and guards against any potential IEEE standards modifications
• On-chip SRAM memory	• Reduces BOM cost and reduces power consumption
• Host interfaces include: 16-bit PC Card, Compact Flash, PCI, Mini PCI, 32-bit CardBus, and USB 1.1	• One chip supports all major client interfaces

APPLICATIONS

The Marvell Libertas 88W8000 and 88W8300 chipset supports the following client adapter cards: PCMCIA (16-bit PC Card), CardBus (32-bit), Mini PCI, Compact Flash, PCI adapter cards, and USB 1.1.

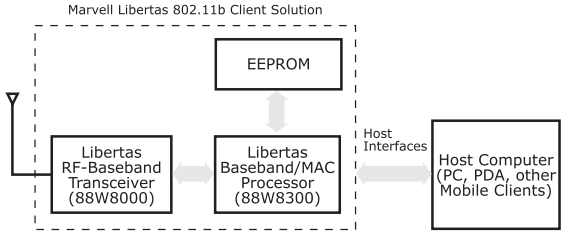

Fig 2. Libertas WLAN 802.11b Client (88W8000 and 88W8300) Applications Diagram

THE MARVELL ADVANTAGE: The Libertas 802.11b WLAN client chipset also comes with complete reference designs which include such items as board layout designs, firmware, software, documentation, and other items to assist customers with product evaluation and production. Marvell's worldwide field applications engineers collaborate closely with end customers to develop and deliver new competitive products to market on time. Marvell utilizes recognized world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low cost total solutions.

For more information, visit our website at www.marvell.com.

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