BROADCOM®

Connecting **e v e r y t h i n g** ®

BCM4705
PRODUCT Brief

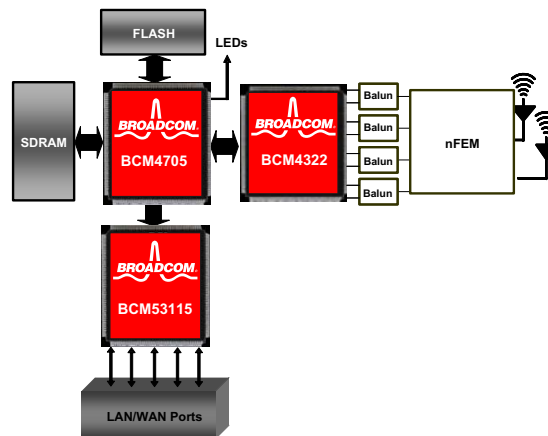# INTENSI-FI® GIGABIT ETHERNET DRAFT-802.11N PROCESSOR

FEATURES

- **Advanced 500 DMIPS/300-MHz MIPS32® core**
  - 4-way set associative 32-KB I-Cache
  - 2-way set associative 32-KB D-Cache
  - 4-KB Read-Ahead Cache
  - MMU/TLB support for Linux®

- **Advanced Gigabit Ethernet MAC**
  - Hardware TCP segmentation offload (TSO)
  - GMII, RGMII, and MII PHY connectivity

- **Two USB2.0 high-speed host ports**

- **One USB2.0 high-speed device port**

- **DDR SDRAM controller**
  - 16/32-bit DDR266 and 133-MHz SDRAM support
  - 8 MB to 512 MB capacity
  - Support for 8/16/32-bit wide memory devices

- **PCI 2.3 host interface (32 bit/33–37 MHz)**
  - Supports four PCI bus masters
  - Optional 5V-tolerant operation (PCI 2.2 support)

- **Advanced GPIO interface**
  - All GPI supports interrupt triggering capability

- **Dual RS232 UART**

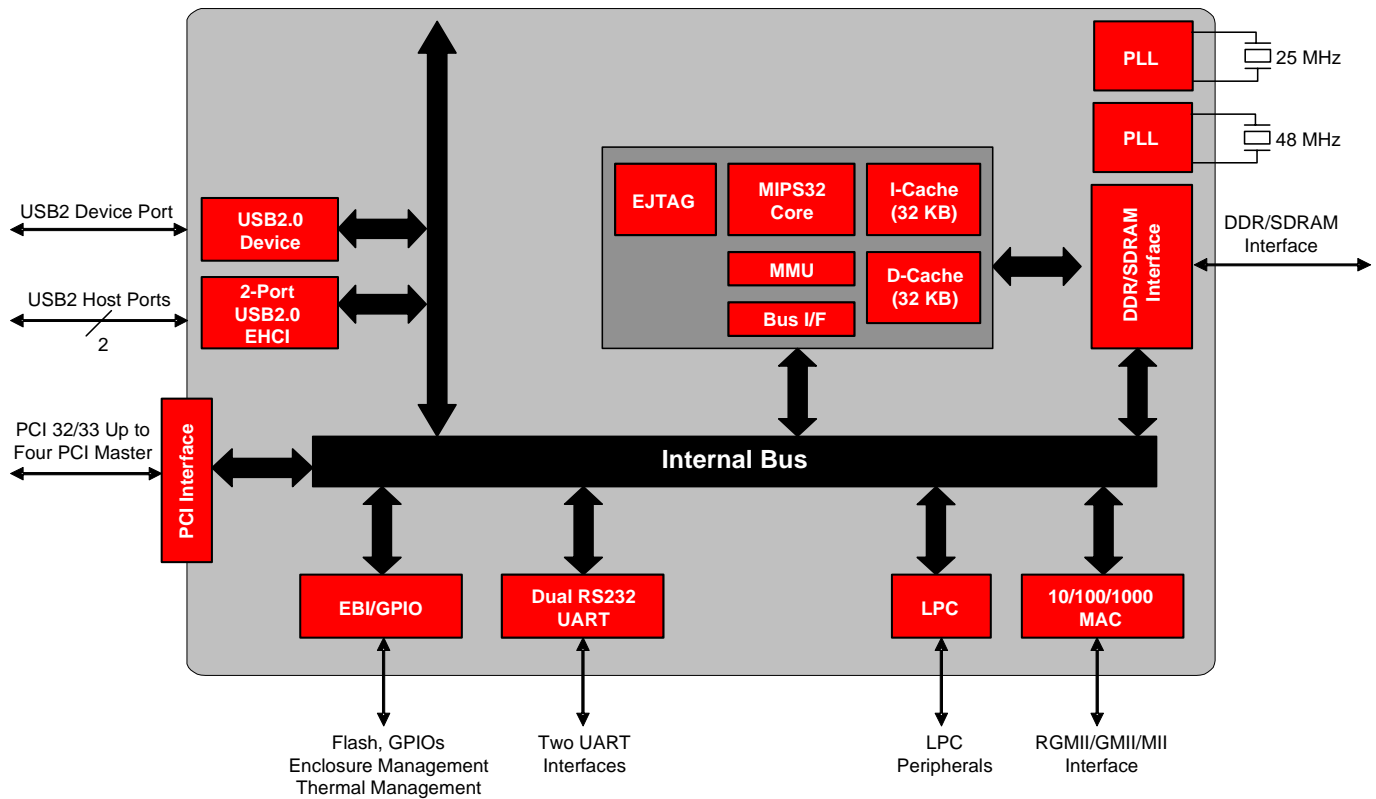- **2.4W low-power design**

SUMMARY OF BENEFITS

- **Flexible single-band, dual-band, and simultaneous dual-band platform support**

- **Maximum performance and high throughput**
  - Gigabit Ethernet LAN speeds
  - Over 170 Mbps TCP/IP Gigabit Ethernet to Wi-Fi® bridging in single-band configuration
  - Up to 250 Mbps TCP/IP Gigabit Ethernet to Wi-Fi bridging in simultaneous dual-band configuration

- **Turnkey hardware and software platform**
  - Extremely rapid development of draft 802.11n Wi-Fi Access Point/Routers.
  - Full Linux router stack and software package

- **Two- and three-antenna MIMO configurations supported**

- **Flexible architecture for low cost and alternative designs**
  - Allows connection to external 10/100 switches for ultra low cost applications
  - Platform expansion through USB2.0
  - Platform expansion through PCI/Cardbus

- **Networked Attached Storage (NAS)**
  - Easily build NAS routers with included NAS software module

- **Turnkey hardware and software platform**
  - Extremely rapid development of draft 802.11n Wi-Fi Access Point/Routers.
  - Full Linux router stack and software package

BCM4705 System Diagram

BROADCOM®

USB2 Device Port

USB2.0 Device

USB2 Host Ports / 2

2-Port USB2.0 EHCI

PCI 32/33 Up to Four PCI Master

PCI Interface

EJTAG | MIPS32 Core | I-Cache (32 KB)

MMU | D-Cache (32 KB)

Bus I/F

PLL — 25 MHz

PLL — 48 MHz

DDR/SDRAM Interface — DDR/SDRAM Interface

Internal Bus

EBI/GPIO

Dual RS232 UART

LPC

10/100/1000 MAC

Flash, GPIOs
Enclosure Management
Thermal Management

Two UART Interfaces

LPC Peripherals

RGMII/GMII/MII Interface

BCM4705 Block Diagram

The Broadcom BCM4705 processor integrates a powerful 300 MHz/500 DMIPS (*estimated) MIPS32 core with 4-way set associative 32 KB instruction cache, a 32 KB 2-way set associative data cache, and a 4 KB prefetch cache. An enhanced 10/100/1000 Gigabit Ethernet MAC controller with TCP segmentation offload hardware acceleration engine substantially enhances system throughput.

The BCM4705 integrates two USB2.0 EHCI host ports and one USB2.0 device port. The USB2.0 device port allows connectivity to PC or consumer electronics (CE) devices equipped with USB host ports.

The BCM4705 supports a PCI 2.3 host interface and a USB host/device interface for adding application-specific peripherals including BCM4322 2x2 MIMO, BCM4318 single-chip 802.11g, BCM4309 802.11 a/b/g, BCM4320 USB2.0 WLAN, BCM53115 Gigabit Ethernet switch, and future generations of Broadcom wired, wireless, audio/video codec, and multimedia processing devices.

Connecting
everything®

BROADCOM®