BROADCOM®

C o n n e c t i n g
e v e r y t h i n g ®

BCM5411
PRODUCT Brief

BCM5411 10/100/1000BASE-T TRANSCEIVER

BCM5411 FEATURES

- **Fully integrated 10BASE-T/100BASE-TX/1000BASE-T Gigabit Ethernet transceiver compliant with IEEE 802.3, 802.3u, and 802.3ab standards**
- **Low power**
  - Less than 2W per port
  - Advanced power management
  - Wake on LAN support–less than 600 mW
  - Standby power mode with energy detect
- **MII, GMII, RGMII, TBI and RTBI interface options**
- **Ethernet@WireSpeed ™ automatically selects maximum speed based on channel conditions**
- **Cable plant diagnostic**
  - Cable plant analyzer capability to detect cable plant impairments
  - Link quality indication (LED)
  - Automatic detection and correction of wiring pair swaps, pair skew, and pair polarity
  - Automatic MDI/MDIX crossover at all speeds
- **Internal 125-MHz low-jitter clock generation**
- **Support for jumbo packets up to 9 KB**
- **IEEE 1149.1 (JTAG) boundary scan**
- **128-pin MQFP package or 117-pin BGA package**

SUMMARY OF BENEFITS

- **Compatible with IEEE standard operation at 10, 100, and 1000 Mbps at half- and full-duplex.**
- **No airflow or heatsink required.**
- **Wake on LAN mode for low-power, PC'99-compliant adapters (less than 600 mW).**
- **Auto-Network detection places unconnected ports into low power state.**
- **Automatically configures the link to support the highest possible speed based on link partner capability and characteristics of the channel.**
- **RGMII/RTBI reduces I/O pin requirement over GMII and TBI by more than 50%.**
- **Cable diagnostic function characterizes cable plant condition and immediately indicates cabling issues.**
  - Prevents erroneous equipment return due to bad cable plants.
  - Prevents manufacturing fall-out due to bad cable plants.
- **125-MHz clock eliminates costly external clocking circuitry for the MAC/ASIC.**
- **Operates with larger packets for wider range of packet protocol support and for improved efficiency.**
- **High density package options without heatsink requirement provides improved testability.**

BCM5411 System Diagram

| 10/100/1000Mbps Ethernet MAC | ⟷ | BCM5411 10/100/1000BASE-T Gigabit Ethernet Transceiver | ⟷ | Transformer | ⟷ | RJ-45 |