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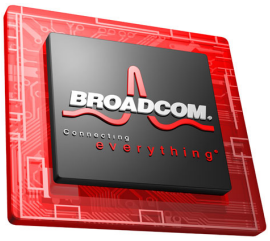
BCM5461S PRODUCT Brief



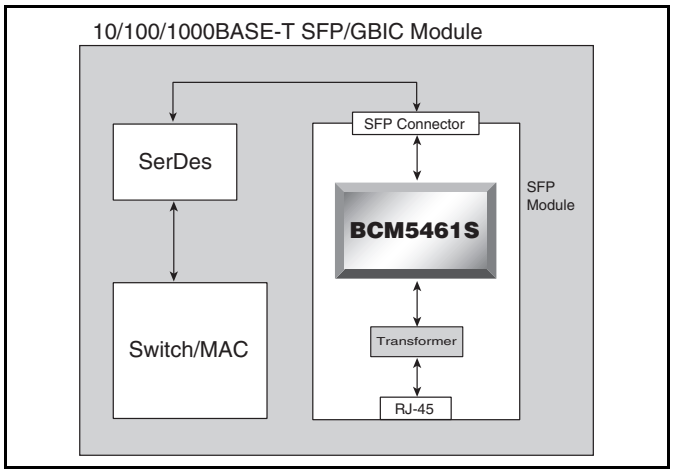
10/100/1000BASE-T Gigabit Copper Transceiver

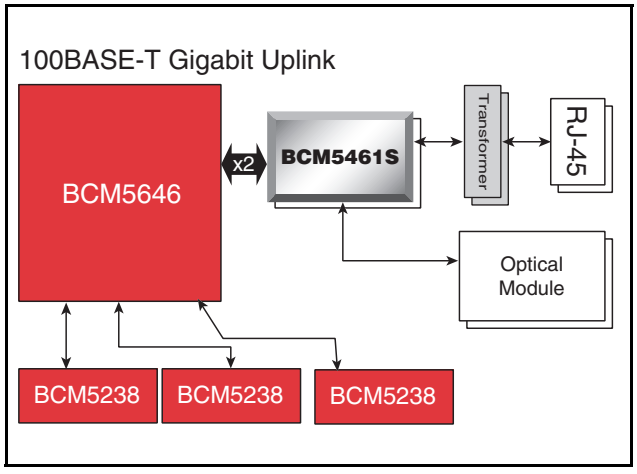
FEATURES

- **Fully integrated 10BASE-T/100BASE-TX/1000BASE-T Gigabit Ethernet transceiver**
- **GMII, RGMII, SGMII, SerDes, RTBI and MII MAC Interface options**
- **Line-side copper and fiber interfaces**
- **On-chip low-voltage regulators**
- **Fully compliant with IEEE 802.3, 802.3u, and 802.3ab standards**
- **0.13µ CMOS — low power and cost**
- **Low power**
  - Less than 700 mW per port
  - Wake on LAN support
  - Advanced power management
- **Trace matched output impedance**
- **Line side loopback**
- **Low EMI emissions**
- **Cable plant diagnostic**
  - Cable plant analyzer function detects 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
- **Robust CESD tolerance**
- **Support for jumbo packets up to 9 KB**
- **IEEE 1149.1 (JTAG) boundary scan**
- **128-pin MQFP, 117-pin BGA, and 100-pin FBGA packages**

SUMMARY OF BENEFITS

- **Simplifies system and board design**
  - Reduced I/O pin requirements with RGMII (over 50%), SGMII (over 75%), and SerDes (over 80%)
  - Clock timing can be adjusted to eliminate board trace delays required by the RGMII specification
- **Flexibility for copper or fiber applications**
- **Lowers system BOM cost and simplifies system design**
- **Provides interoperability with IEEE standard devices operating at 10, 100, and 1000 Mbps at half- and full-duplex**
- **Requires no airflow or heatsink**
- **Provides compliance with PCI 2.2 and PC99/PC2000**
- **Eases system level debug**
- **Reduces system design constraints to meet EMI emissions standards.**
- **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.
- **High CESD tolerance prevents equipment damage and return.**
- **Operates with larger packets for wider range of packet protocol support and improved efficiency.**
- **Ease of manufacturing with JTAG support, simplified power supply, and multiple MAC interfaces.**





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