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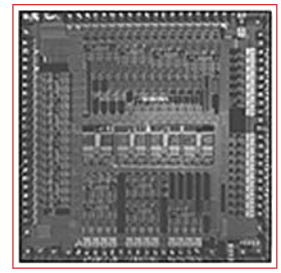
BCM5424 PRODUCT Brief



QUAD-PORT GIGABIT COPPER TRANSCEIVER WITH RGMII AND RTBI INTERFACE

BCM5424 FEATURES

- **Four fully integrated 10BASE-T/100BASE-TX/ 1000BASE-T Gigabit Ethernet transceivers**
- **RGMII and RTBI interface options**
- **Fully compliant with IEEE 802.3, 802.3u, and 802.3ab standards**
- **0.13 um CMOS — low power and cost**
- **Low power**
  - 1W per port
  - Advanced power management
- **Low EMI emissions**
- **Ethernet@WireSpeed™ logic automatically selects the maximum speed based on channel conditions**
- **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**

SUMMARY OF BENEFITS

- **Low power quad-port integration enables single-row, high port density switches.**
  - Lowers system costs by eliminating PCB layers required for routing high density solutions
  - Clock timing can be adjusted to eliminate board trace delays required by the RGMII specification.
  - Lowers MAC/switch costs by reducing the number of pins required to interface to the PHY.
- **Provides compatibility with IEEE standard devices operating at 10, 100, and 1000 Mbps at half- and full-duplex.**
- **Requires no airflow or heatsink.**
- **Reduces design constraints in high-density applications that have higher EMI emissions.**
- **Automatically configures the link to support the highest possible speed based on link partner capability and characteristics of the channel.**
- **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.**
- **Supports jumbo packets for wider range of packet protocol compatibility.**
- **Ease of manufacturing with JTAG support, simplified power supply, and multiple MAC interfaces.**

BCM5424 System Diagram