

# VSC8244

#### Quad Port 10/100/1000BASE-T PHY with RGMII / RTBI MAC Interfaces

The VSC8244 is the industry's smallest, lowest power quad port Gigabit Ethernet transceiver for low-cost RGMII and RTBI switch and router applications.

In 1000BASE-T mode, the VSC8244's power consumption is 30% lower than the next best competitor. The device's compact 19 mm x 19 mm BGA package is ideal for high-density switch applications.

Microsemi's mixed signal and DSP architecture yields robust performance, supporting both full and half duplex 10BASE-T, 100BASE-TX, and 1000BASE-T over >140 m of Category 5, unshielded twisted pair (UTP) cable, with industry leading tolerance to NEXT, FEXT, Echo, and system noise.

#### PMA (DSP Data Pump) and Autonegotiation TX FIR HYBRID DAC ENCODER PAM-5 SYMBOL MAPPER, SCRAMBLER TXVP A n TXVN \_A\_n NC2 NC3 TX D[3:0] r TXVP\_B\_n RGMI TX\_C TL\_i TXVN \_B\_n TX\_C LK\_r or Selection TXVP\_C\_n RXD[3:0]\_r PCS TRELLIS FFE VGA TXVN C n DECODER DECODER RX\_CTL\_n RTBI RX\_CLK\_r TXVP\_D\_n PAM-5 SYMBOL Interface DE-MAPPER, DESCRAMBLER TXVN\_D\_r TIMING RECOVERY CMODE[7:0 XTAL1/2 RESE CONTROL REF FILT SYSTEM REF\_REXT TEST CLK125<sub>MAC</sub> MANAGER CLK125\_.. MDO MDIO MANAGEMENT MDINT LED INTERFACE INTERFACE LED[4:0]\_n EEDA" 70K

### **Applicationss**

- High density 10/100/100BASE-T LAN & MAN switches and routers
- Workgroup LAN switches and routers
- PICMG 2.16 and 3.0 backplane applications
- Gigabit Ethernet-based SAN, NAS, and MAN systems
- High performance workstations and multiport server NICs

### **Specifications**

- Steady state power consumption per port
- I/O power supply voltage options
- Analog supply voltage
- Core power supply voltage
- Crystal parallel resonant frequency (± 100 ppm tolerance)

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#### **Features**

- Lowest power consumption in the industry at less than 640 mw/port (1000BASE-T mode)
- Patented, low EMI line driver with integrated line side termination resistors
- Supports RGMII v1.3 (2.5 V & 3.3 V) & v2.0 (1.5 V HSTL), 1.8 V (SSTL compatible)
- User-programmable RGMII timing compensation
- Compliant with IEEE 802.3 (10BASE-T, 100BASE-TX, 1000BASE-T) specifications
- >10 kB jumbo frame support with programmable synchronization FIFOs
- Five direct drive LEDs with on-chip liltering interface option
- Serial LED interface option
- Three user configuration options: 1) Optional serial EEPROM, 2)
   Hardware configuration pins, or 3) Serial Management Interface
   (SMI)
- Full suite of BIST, MAC, and far-end loopback modes
- VeriPHY™ link cable diagnostics software suite
- Automatic detection and correction of cable pair swaps, pair skew and pair polarity, along with HP auto MDI/MDI-X crossover function
- Manufactured in advanced 0.13 μm, 3.3 V/1.2 V digital CMOS process

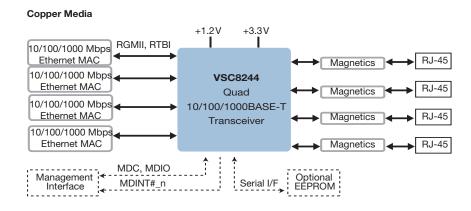
#### **Benefits**

Eliminates heatsinks and fans for Gigabit to the desktop LAN switches

- Removes 576 passive components in 48-port switch applications
- Compatible with a wide variety of parallel I/F switch ICs
- Simplifies PCB layout; eliminates PCB trombones
- Ensures seamless deployment throughout copper networks with industry's highest tolerance to noise and substandard cable plants
- Provides for maximum jumbo frame sizes in custom SAN and LAN systems
- Eliminates external components and EMI issues
- Provides maximum system design flexibility
- Offers design engineer a solution to fit any unmanaged or managed system requirement
- Simplifies comprehensive in-system test to ensure the highest product quality
- Enables network manufacturers to simplify deployment and improve network management capabilities of Gigabit Ethernet links
- Compatible with 1st generation 1000BASE-T PHYs; supports auto MDI/MDI-X even when autonegotiation is disabled
- Most cost effective technology eliminates more expensive analog process variants

#### **Related Products**

Visit www.microsemi.com for information about other related products.





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