10/100/1000BASE-T PHY with RGMII and GMII MAC Interface

Designed for high -performance, low -power, and low -cost Gigabit Ethernet, the VSC8641 is the industry's lowest -power and most highly integrated Gigabit Ethernet (GbE) PHYs. The VSC8641 is optimized for Gigabit Ethernet Passive Optical Network (GE -PON) applications. The device features integrated, line side termination to simplify PCB design, maximize board space, and create a cleaner, higher -performance product. To further reduce complexity, component count, and system cost, it includes an internal 1.2 V power regulator that operates on a single 3.3 V supply.

Key Features

- Industry's lowest power consumption 10/100/1000BASET PHY at 600 mW
- Powered by a single 3.3 V supply by using the optional on-chip switching regulator; eliminates the need for 1.2 V supply
- Advanced power management complies with Wake-on-LAN and PCI2.2 power requirements

Applications

- iSCSI and TOE applications
- Network-enabled devices such as printers, IP phones, and gaming applications
- Gigabit Ethernet SAN, NAS, and MAN systems
- Broadband CPE and wireless routers
- LAN-on-Motherboards, mobile PCs, and single-port RGMII applications

Related Products

- Ethernet Switches
- Ethernet MACs

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Product Variants	Description
VSC8641XJF	88-pin, 10 mm x 10 mm QFN, 0 °C to 90 °C, lead-free second -level interconnect
VSC8641XKO	100-pin, 12 mm x 12 mm LQFP, 0 °C to 90 °C, lead-free second -level interconnect
VSC8641XKO-03	100-pin, 12 mm x 12 mm LQFP, -40 °C to 90 °C, lead-free second -level interconnect

Category	Title	Access	Revision	Posted	Type	Size
Product Brief	Energy Efficient Solutions for Ethernet Electronics		1.1	10/01/2008		460 kB
Product Brief	VSC8601 and VSC8641 Product Brief		1.0	11/01/2007		460 kB
Datasheet	VSC8641 Datasheet		4.2	06/27/2008		937 kB
Datasheet	VSC8641XJF Datasheet		2.0	03/17/2009		850 kB
Application Note	ActiPHY Power Management		1.0	11/18/2008		76 kB
Application Note	Magnetics Guide		1.2	11/18/2008		373 kB
Application Note	Memory Map Differences Between the VSC8201 and VSC8601/41		1.0	01/08/2009		132 kB
Application Note	PMA Testing for 100/1000BASE-T		1.0	10/01/2008		231 kB
Application Note	SimpliPHY VSC8641 and VSC8601 PerfectReach Power Management		2.0	03/17/2009		81 kB
Application Note	Transformerless Ethernet Designs		1.1	11/18/2008		81 kB
Application Note	VeriPHY Cable Diagnostics		1.0	01/08/2009		108 kB
Application Note	VSC8641 Design and Layout Guide		1.2	01/08/2009		230 kB
Evaluation System	VSC8601 and VSC8641 Evaluation Platform		1.0	01/08/2009		3 MB
Model	VSC8641 BSDL Model		1.1	01/08/2009		3 kB
Model	VSC8641 IBIS Model		1.0	01/08/2009		49 kB
Model	VSC8641 OrCAD Symbol for EP-LQFP Package		1.0	01/08/2009		3 kB
Software	PHY API Software and Programmers Guide		2.44	03/09/2009		109 kB
White Paper	SimpliPHY Architecture Advantages		1.0	06/19/2006		149 kB
Reports	UNH Test Report		1.0	01/08/2009		6 MB
Reports	VSC8641KO Material Composition Declaration		1.0	03/07/2007		609 kB
Reports	VSC8641XKO Material Composition Declaration		2.0	03/11/2008		1 MB
Reports	First Level Product Qualification Report for VSC8641KO		1.0	03/27/2009		26 kB
Reports	First Level Product Qualification Report for VSC8641XKO		1.0	03/27/2009		26 kB
Reports	First Level Product Qualification Report for VSC8641XKO-03		1.0	04/14/2009		26 kB

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