



Quad Port Dual Media QSGMII/SGMII GbE PHY with VeriTime™

Part of the SynchroPHY suite of 1GE, 10GE and 10GE OTN devices, the VSC8574 is the next-generation Carrier Ethernet Gigabit PHY transceiver designed to simplify the support of fully traceable timing across Gigabit Ethernet backhaul devices, cellular base stations, and other timing-critical platforms. The device features VeriTime, Vitesse's patent-pending distributed timing technology that delivers the industry's most accurate IEEE 1588v2 timing implementation. VSC8574 supports four dual media copper/fiber ports with SGMII and QSGMII MAC interfaces. Recovered clock outputs and an integrated VeriTime IEEE 1588v2 timing packet engine enable the VSC8574 device to meet the demands of applications requiring highly precise timing, without adding unnecessary complexity or increased cost to the design. To meet Carrier demands for redundancy, the VSC8574 device has dual recovered clock outputs for primary and secondary timing references for Synchronous Ethernet solutions. Programmable clock squelch control is included for inhibiting undesirable clocks from propagating and preventing timing loops. In addition to identifying PTP Y1731 in Ethernet and IPv4/6 over Ethernet per IEEE1588, VSC8574 supports various encapsulation links including iPower MPLS, Ethernet pseudowire over MPLS/MPLS-TP, QinQ, and MAC-in-MAC. VSC8574 supports ring resiliency, a feature that enables PHY ports to switch between master and slave timing without interrupting the 1000BASE-T link. VSC8574 has integrated temperature monitoring and is ideal for high-temperature applications. Vitesse's innovative EcoEthernet 2.0 technology supports Energy Efficient Ethernet (EEE) through ActiPHY™ automatic link powerdown and the PerfectReach™ intelligent algorithm that adjusts power based on cable length. VSC8574 further supports reduced power consumption in all link operating speeds.

Product Variants	Description
VSC8574XKS-01	Latest generation 256-pin 17 x 17 mm BGA lead-free second-level interconnect
VSC8574XKS-04	Latest generation 256-pin 17 x 17 mm BGA lead-free second-level interconnect with extended temperature range

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<input type="checkbox"/>	Datasheet	VSC8574-01 Datasheet		4.0	12/21/2012		3 MB
<input type="checkbox"/>	Application Note	Magnetics Guide		2.0	02/06/2014		626 kB
<input type="checkbox"/>	Application Note	PMA Testing for 100/1000BASE-T		1.0	05/30/2011		231 kB
<input type="checkbox"/>	Application Note	Distributed Transparent Clock over Microwave		1.0	11/01/2012		193 kB
<input type="checkbox"/>	Application Note	Encapsulation Support in Vitesse IEEE 1588v2 PHYs		1.0	05/12/2014		196 kB
<input type="checkbox"/>	Application Note	How to Use Resilient Ring Features		1.1	02/04/2014		194 kB
<input type="checkbox"/>	Application Note	IEEE 1588v2 Support in the Vitesse PHY API		1.0	05/12/2014		480 kB
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<input type="checkbox"/>	Application Note	SimpliPHY Fast Link Fail Indication		2.0	02/06/2014		82 kB
<input type="checkbox"/>	Application Note	Synchronizing Local Time in Vitesse 1588v2 PHYs		1.0	05/12/2014		175 kB
<input type="checkbox"/>	Application Note	VSC8572/VSC8574 Transition Design Guide		2.0	10/08/2012		57 kB
<input type="checkbox"/>	Application Note	VSC8664 to VSC8574 Migration Design Guide		1.03	05/30/2011		222 kB
<input type="checkbox"/>	Evaluation System	VSC8574 Evaluation Board Schematic		1.0	12/23/2013		326 kB
<input type="checkbox"/>	User Guide	VSC8574 Evaluation Board User Guide		1.0	06/27/2012		248 kB
<input type="checkbox"/>	Model	VSC8574 BSDL Model		1.4	01/23/2013		5 kB
<input type="checkbox"/>	Model	VSC8574 IBIS Model		1.4	09/23/2013		111 kB
<input type="checkbox"/>	Model	VSC8574XKS QSGMII IBIS-AMI Model		2.1	08/21/2013		1 MB
<input type="checkbox"/>	Reference Design	VSC8574 Orcad Library		1.0	09/13/2012		175 kB
<input type="checkbox"/>	Software	VSC8574 Evaluation Board GUI		4.65	06/27/2012		1 MB
<input type="checkbox"/>	White Paper	Precise Timing for Base Stations in the Evolution to LTE		00-04	02/19/2013		4 MB
<input type="checkbox"/>	Reports	Material Composition Declaration VSC8504XKS-01, VSC8504XKS-04, VSC8552XKS-01, VSC8552XKS-04, VSC8572XKS-01, VSC8572XKS-04, VSC8574XKS-01, VSC8574XKS-04 - ASE Cu Wire		2.0	11/15/2013		20 kB
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Key Features

- Single and two-step IEEE1588 v2 time stamping over encapsulated links including MPLS and PBB
- MPLS and Ethernet Y.1731 OAM support
- EcoEthernet™ 2.0 green technology for energy efficiency

Applications

- Industrial automation systems
- Wireless backhaul solutions
- Carrier Ethernet cellular base stations














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