

Agilent Technologies HDMP-3002 Multi-rate Ethernet Over SONET IC

- Fast Ethernet and Gigabit Ethernet to OC-3, OC-12 or OC-48
- Virtual concatenation for flexible bandwidth partitioning
- Integrated SerDes, CDR and framer reduce design time, board space, power consumption and cost
- Network management and monitoring without costly layer-3 processing
- Up to four GbE feeds into one STS-48/STM-16, four STS-12/STM-4 or four STS-3/STM-1 channels.

Agilent's HDMP-3002 IC is the industry's first single-chip Ethernet over SONET (EoS) mapper with integrated SerDes, clock data recovery, and framer. With these key functions integrated onto a single chip, the HDMP-3002 reduces design and test time, board space, power consumption and system costs. The new chip frame maps higher-layer client signals (such as IP/PPP or Ethernet MAC) and maps it into SONET/SDH, providing a simple solution for loading Enterprise data traffic onto a SONET/SDH Metro infrastructure.

The HDMP-3002 provides full-duplex mapping of Fast Ethernet and Gigabit Ethernet frames encapsulated into STS-48/12/3 SONET/SDH payloads using the generic framing procedures (GFP), frame delineated HDLC (per RFC 1662/2615), or the link access procedure-SDH (LAPS) protocol. Its virtual concatenation feature provides "bandwidth on demand," allocating bandwidth data streams as small as STS-1 (51.8 Mb/s). Virtual concatenation eliminates the bandwidth inefficiency and long provisioning delays of legacy SONET/SDH transport networks. Agilent's EoS mapper provides access to SONET/SDH overhead collection, allowing carriers to manage their networks. It also offers the performance monitoring carriers require without the need for costly layer-3 processing.



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HDMP-3002 Features

- Mapping of Ethernet frames into SONET/SDH payload using the GFP or LAPS protocol
- Integrated multi-rate SONET/SDH frames that terminates and generates the SONET/SDH overhead
- Integrated multi-rate SerDes and CDR allow direct connections to optics
- System interface consists of four independent Gigabit/Fast Ethernet (GMII/MII) or TBI/SerDes
- Line side is configurable to one SONET STS-48/STM-16, four STS-12/STM-4, or four STS-3/STM-1
- Four-channel virtual concatenation for efficient SONET/SDH bandwidth usage
- Port to external SDRAM memory which allows 200 ms differential virtual concatenation delay
- Supports 802.3x Ethernet flow control at the ingress, plus optional frame buffering in external SDRAM
- One Ethernet port can be multicasted to multiple SONET/SDH channels
- Remote management enabled through a SONET/SDH overhead channel
- 664-pin ceramic ball grid array (CBGA) package
- Provides SONET statistical data collection without additional network processing and software code of layer-3 processing.

Applications

- ADM backplane applications
- Edge router to SONET network
- WAN switches to Long Haul network
- Direct interface to DWDM optics

The Agilent HDMP-3002 is part of Agilent's METRAK family of fiber optic transceivers and ICs aimed at metropolitan network applications.



Summary

The HDMP-3002 helps to reduce system costs for corporate users and lifecycle costs for service providers by exploiting existing Ethernet/ SONET/SDH infrastructures. The device maps large chunks of Ethernet bandwidth into smaller containers which can be sent and received independent of each other over SONET infrastructure, providing flexibility/granularity to rigid SONET infrastructure and scaling from OC-3 to OC-48 speeds.

The HDMP-3002 is the industry's only fully integrated Ethernet over SONET solution, so it saves design time, board space, power consumption, and cost.



To find out more visit www.agilent.com/view/networking

