Intel® IXF6192

Quad 2.5Gbps/10Gbps SONET/SDH Overhead Terminator (Mux/Demux)

Intel® Internet Exchange Architecture

Product Description

In today's rapidly evolving optical communications industry, gaining competitive advantage requires network components that enable quick design and immediate, full production for faster time-to-market.

The Intel® IXF6192 bandwidth manager is a highly integrated, low-power solution for next-generation optical transport and multi-service networks. Featuring a single-chip interface, the IXF6192 overhead terminator (Mux/Demux) is a flexible solution for full section/line overhead termination and monitoring of selected Path Overhead (POH) bytes for 2.5Gbps/10Gbps optical networks.

In the transmit direction, the IXF6192 multiplexes 4x STS-48, 16x STS-12 tributaries or a combination of STS-48 and 4x STS-12 tributaries into a single STS-192 or quad STS-48. In the receive direction, the IXF6192 demultiplexes either 4x STS-48, 16x STS-12 or a combination of STS-48 and 4x STS-12 tributaries from a single STS-192 or quad STS-48. The Intel IXF6192 is capable of fully managing bandwidth down to the STS-1 level.

Supporting both non-concatenated and concatenated payloads of STS-1 and STS-3c to STS-48c, the IXF6192 provides 192x192 cross connect function in the transmit and receive direction for grooming at the STS-1 level. The IXF6192 also performs a full 384x384 cross connect function with an STS-1 level loop back. For testing purposes, the Intel IXF6192 provides an IEEE 1149.1 JTAG (Boundary Scan) test port; a Pseudo Random Bit Sequence (PRBS) generator and analyzer for each tributary; B2 Bit Error Rate (BER) measurements; programmable Bit Interleaved Parity (BIP) error mask generation; and remote, line, and tributary loop backs.

Integrated Design for Added Flexibility

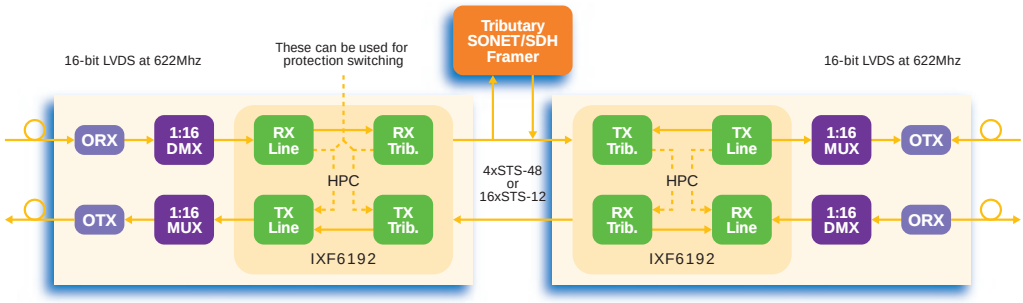
The Intel® IXF6192 offers a powerful solution for a variety of applications including long-haul DWDM, SONET/SDH terminal multiplexers, Add/Drop Multiplexers (ADM) and cross

connect systems. The flexibility built into the IXF6192 enables a new level of integration in line card solutions, reducing system cost. Software can be moved from one application to another, and customers can manage their configurations and network connectivity with Application Program Interface (API) provisioning and bandwidth management software provided by Intel.

The IXF6192 can be used to multiplex 4x STS-48, 16x STS-12 tributaries, or a combination of STS-48 and 4x STS-12 tributaries into a single STS-192 or quad STS-48. Similarly, the IXF6192 can be used to demultiplex 4x STS-48, 16x STS-12, or a combination of STS-48 and 4x STS-12 tributaries from a single STS-192 or quad STS-48.

Full STS-1 level pointer processing enables inter-network connectivity and retiming, allowing full implementation of cross connects and add/drop multiplexer functions with one device instead of multiple chips for 2.5Gbps/10Gbps capacity SONET/SDH networks. The Intel IXF6192 offers greater flexibility in designing the next-generation network with 384x384 internal cross connect at STS-1 level.

When combined with an Intel® IXF30001, IXF30003, IXF30005, or IXF30007 Forward Error Correction (FEC) device, the IXF6192 supports full provisioning for SONET/SDH applications, delivering competitive solutions for next-generation optical transport networks.



Features / Benefits

Features	Benefits
■ Full STS-1 level pointer processing in both directions	■ High level of integration that enables system realignment on a single clock domain. Ideal in public networks.
■ Fully bidirectional (implements both transmit and receive)	■ Complete cross connect and multiplexing for I/O tributaries. Reducing board space and system complexity.
■ 384x384 internal cross connect at the STS-1 level	■ Connection management at the STS-1 level. An STS-1 within the OC-192 bandwidth can be connected via the internal cross point switch, allowing full connectivity and configurability of the tributaries.
■ Built-in programmable overhead and alarm ports in both the line and system side	■ Dedicated section DCC, line DCC, order wire and section alarm bus (determined by system application).
■ 622MHz Low Voltage Differential Signaling (LVDS)	■ Standard OIF compliant (SFI-4) interface and system interface I/O on the system and line sides for complete inter-network or multiplexer applications.
■ SONET/SDH compliant	■ Total configurability for SONET or SDH applications.
■ Serial access to overhead bytes	■ Provides real-time processing for network management system.

Support Collateral/Tools

Item	Description	Order Number
FAQs	■ IXF6192 Frequently Asked Questions	249494
Software Drivers	■ IXF6192 Software Drivers	Contact local sales rep
Evaluation Board	■ IXF6192 Evaluation Board	Contact local sales rep
Application Briefs	■ SONET/SDH Aggregation to OTN	249504
	■ Building Blocks for SONET/SDH Network Elements and Aggregation	249508
	■ Aggregation for Ultra Long Transmissions	249507

Key Applications

- SONET/SDH add/drop multiplexers, terminal multiplexers and digital cross connects
- SONET/SDH digital loop carrier (DLC) systems
- DWDM Mux/Demux applications
- Channelized routers and switches
- SONET/SDH test equipment

Intel® Internet Exchange Architecture

Intel® Internet Exchange Architecture is an end-to-end family of high-performance, flexible and scalable hardware and software development building blocks designed to meet the growing performance requirements of today's networks. Based on programmable silicon and software building blocks, Intel® IXA solutions enable faster development, more cost-effective deployment and future upgradability of network and communications systems. Additional information can be found at www.intel.com/IXA

Intel Access

Developer's Site	http://developer.intel.com
Intel® Internet Exchange Architecture Home Page	http://www.intel.com/IXA
Networking Components Home Page	http://developer.intel.com/design/network
Other Intel Support: Intel Literature Center	http://developer.intel.com/design/litcentr (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

UNITED STATES AND CANADA
Intel Corporation
Robert Noyce Bldg.
2200 Mission College Blvd.
P.O. Box 58119
Santa Clara, CA 95052-8119
USA

EUROPE
Intel Corporation (UK) Ltd.
Pipers Way
Swindon
Wiltshire SN3 1RJ
UK

ASIA-PACIFIC
Intel Semiconductor Ltd.
32/F Two Pacific Place
88 Queensway, Central
Hong Kong

JAPAN
Intel Japan (Tsukuba HQ)
5-6
Tokodai Tsukuba-shi
300-2635 Ibaraki-ken
Japan

SOUTH AMERICA
Intel Semicondutores do Brasil Ltda
Av. Dr. Chucri Zaidan, 940-10° andar
04583-904 São Paulo, SP
Brazil

Order Number: 249475-002 Printed in USA/0401/5K/MGS/DC