



Intel® LXT16726/727

Serializer/Deserializer Chipset

Intel® optical components are modular building blocks that enable networking equipment manufacturers to create standards-based products with shorter time-to-market and reduced development costs. Developers can use these opto-electronic components to build optical network solutions to meet a variety of high-bandwidth requirements in SONET/SDH, Optical Transport Network or Ethernet networks.

Product Overview

The Intel® LXT16726 and Intel® LXT16727 form a high-performance multiplexer/demultiplexer (MUX/DeMUX) chipset for use in SDH STM 64 and SONET OC-192 telecommunications systems, Optical Transport Network (OTN) systems with Forward Error Correction (FEC, submarine systems, 10 Gigabit Ethernet systems, and fiber-optic test equipment.

The Intel® LXT16726/727 chipset is manufactured using a well-proven silicon bipolar technology that offers the performance, stability, and reliability customers require for optical communication systems.

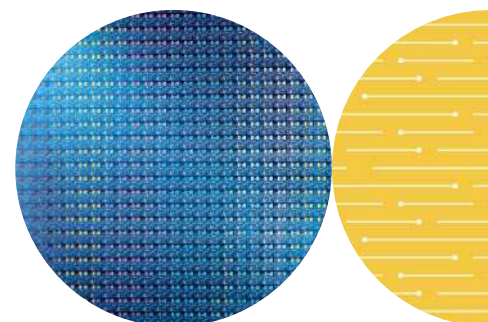
The devices are operated from a single +3.3V or dual +1.8/+3.3V power supply. The chipset has a low power dissipation of 1.8W.

The Intel LXT16726 features an integrated Limiting Amplifier (LIA) with high input sensitivity, a Clock and Data Recovery unit (CDR), and a 1:16 DeMUX.

The Intel LXT16727 features a 16:1 transmitter with integrated clock generation, Phase Locked Loop (PLL) circuits, and 16:1 MUX. The integrated transmitter ensures simple board design. The high output swing of the transmitter ensures compatibility with a wide range of laser drivers. The Intel LXT16727 is available in two versions, the original Intel LXT16727 and the newer Intel LXT16727A which features improved jitter performance.



The Intel LXT16726/727 chipset features two concepts for timing alignment of clock and data signals. The first, Dynamic Phase Alignment (DPA), is based on integrated PLLs to eliminate any skew between clock and data signals between ASIC and MUX. The continuous handling of round trip delay variations by the source synchronous clocking ensures easy external optimization of jitter. The second scheme is based on a 9-bit FIFO to ensure critical timing alignment between clock and data signals. When the latter scheme is used, an integrated PLL



Product Overview (Cont'd)

together with an external VCXO can be used to clean the reference clock coming from the framer. In order to support multiple line speeds without using external selection components, the transmitter has been equipped with three VCXO clock inputs.

In order to facilitate board design, the Intel LXT16726/727 chipset has been equipped with bit swap and bit inversion. These features flip the polarity and/or position of the individual data I/Os to ensure flexible PCB routing.

The devices allow operation at any line rate between 9.95 and 11.1Gbps. This provides for a flexible module with reduced design and production costs.

Features	Benefits
Combined power dissipation of 1.8W	Ideal for MSA Module applications where performance and power are key
Integrated LIA with high input sensitivity	Helps eliminate the need for an external LIA therefore reducing cost
Single or dual power supply	Helps increase design flexibility and ensures lowest possible power dissipation
High output swing	Ensures compatibility with a wide range of laser drivers
Multi-rate 9.95 - 11.1Gbps	For SONET and OTN transfer rates; seamless shift between rates
132-pin 13x13mm (LXT16726, LXT16727, LXT16727A) or 142-pin 10x10mm (LXT16726, LXT16727) PBGA package	Small physical form factor simplifies design and helps reduce board space
Three VCXO clock inputs	Ensures seamless support for multiple line speeds without using external components
OIF SFI-4 compliant interface	Ensures interoperability between SerDes chips and framer
9-bit FIFO and DPA	Ensures alignment of data and clock signals coming from the framer

Key Applications

- Optical line cards for SDH STM 64, SONET OC-192, OTN, and 10 Gigabit Ethernet
- Optical test equipment
- MSA modules for SDH STM 64, SONET OC-192, OTN, and 10 Gigabit Ethernet
- FEC systems

Intel Advantage

Intel is a leading supplier of communications building blocks, adding value at many levels of integration. Through continuous innovations and advancements in connectivity and processing in the network, Intel is delivering, along with its customers and developer community, a wide choice of solutions that enable faster time-to-market, longer time-in-market, and increased revenue opportunity.

Optical Line Card Block Diagram



Support Collateral and Tools

Item	Description	Order Number
LXT16726	DeMUX Datasheet	250838
LXT16727	MUX Datasheet	250837
LXD90726/727	LXT16726/727 Evaluation Board Datasheet	251298
LXT16727A	MUX Datasheet	300139
LXD90726/727	LXT16726/727A Evaluation Board Datasheet	251298

Intel Access

Developer Web Site	http://developer.intel.com
Networking Components Home Page	http://developer.intel.com/design/network
Intel® Technical Documentation Center	http://intel.com/go/techdoc (800) 548-4725 7am - 7pm CST (USA and Canada) International Locations please call your local sales office.
General Information Hotline	(800) 628-8686 or (916) 356-3104 5am - 5pm PST

For more information, visit the Intel Web site at: developer.intel.com

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, SAR

JAPAN

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

SOUTH AMERICA

Intel Semiconductores do Brasil LTDA
Av. Dr. Chucri Zaidan, 940-10^o andar
04583-904 Sao Paulo, SP
Brazil

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