

XPIO 110GXS

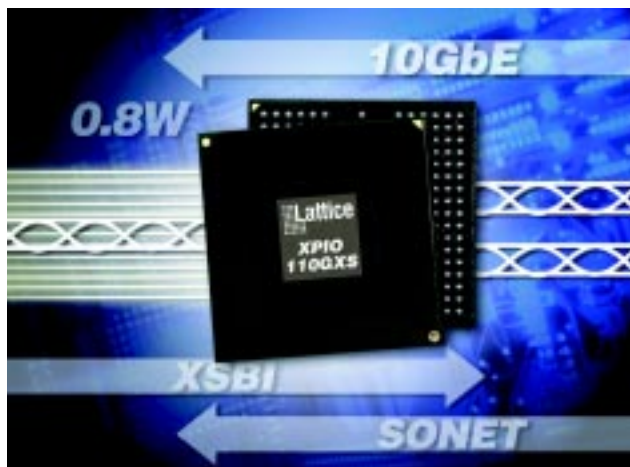
Fully Integrated 10Gbps Serializer/Deserializer

Lattice's XPIO™ 110GXS is a fully integrated 10Gbps serializer/deserializer designed for optical systems and transponder modules that require very low power budget and a small footprint. Centering on the 10Gbps speed range, the XPIO 110GXS is a versatile chip capable of supporting various applications such as OC-192 (9.95Gbps) and 10GE (10.31Gbps). On-chip low jitter PLL generates all required clocks based on an external reference clock at 155.52MHz or 622.08MHz. An integrated Limiting Amplifier allows flexibility in the placement of transponders and improves Bit-Error Rate (BER).

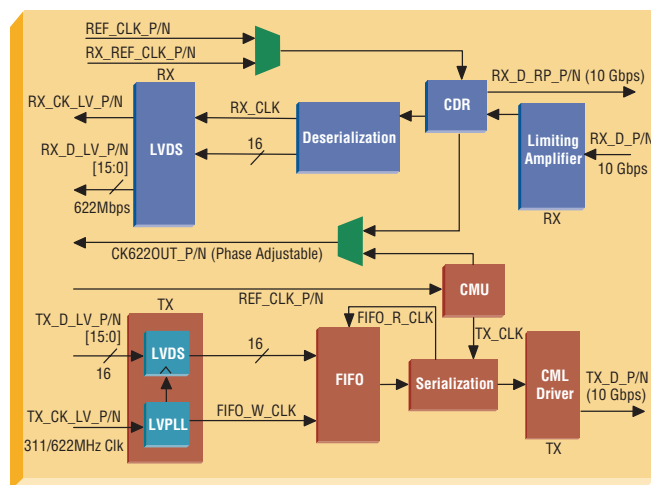
Fabricated with 0.13-micron CMOS technologies, the XPIO 110GXS performs all necessary functions for serial-to-parallel and parallel-to-serial conversions, and consumes less than one third of the power consumed by the more conventional SiGe or GaAs designs.

Key Features and Benefits

- Single chip SERDES solution with integrated transmitter and receiver
- Serial interface compliant to Telcordia GR253, IEEE 802.3ae and XFP
- Continuous serial operation range from 9.953Gbps to 10.312Gbps
- Parallel interface compliant to OIF SFI-4.1 and IEEE 802.3ae XSBI
- Parallel LVDS data range from 622Mbps to 644Mbps
- Low power consumption (800mW typical)



- Performs 16:1 serialization and 1:16 deserialization
- Embedded limiting amplifier
- Low-jitter PLL for clock generation
- On-chip Clock Data Recovery circuit
- On-chip FIFO to decouple transmit clocks
- Bit order swap for 10GE operations
- Programmable 4-phase LVDS clock output for easy system design
- Repeating serial data output
- Line loopback, diagnostic loopback, and simultaneous loopback modes
- Frequency Lock Alarm Output
- Programmable differential output swing on both Serial driver and Parallel LVDS driver
- 1.3V core voltage and 2.5V I/O voltage
- 269-pin flip-chip BGA (15 x 15 mm body size, 0.8 mm pitch)
- -40 to 85°C operating temperature
- Applications
 - 10Gbps optical transponder/transceiver modules
 - 10Gbps Ethernet LAN, MAN and WAN systems
 - SONET OC-192 and SDH STM-64 systems
 - 10Gbps Fibre Channel systems
 - XFP and coax cable interconnect

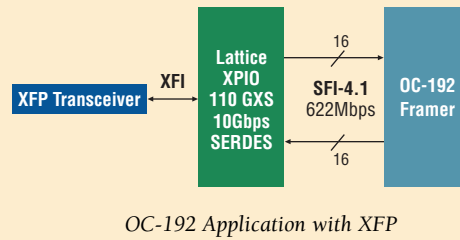
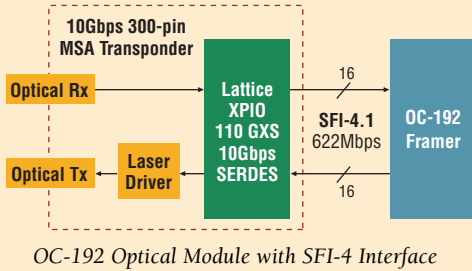
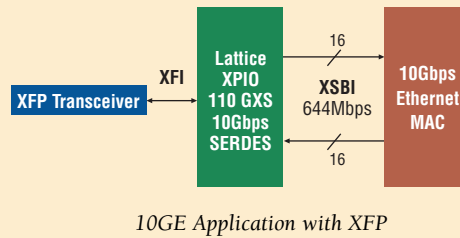
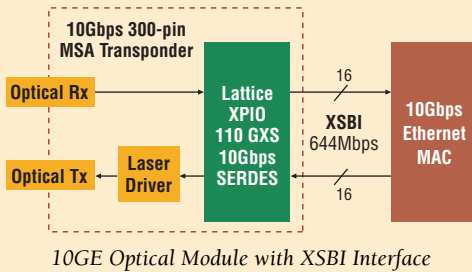


XPIO 110GXS Block Diagram

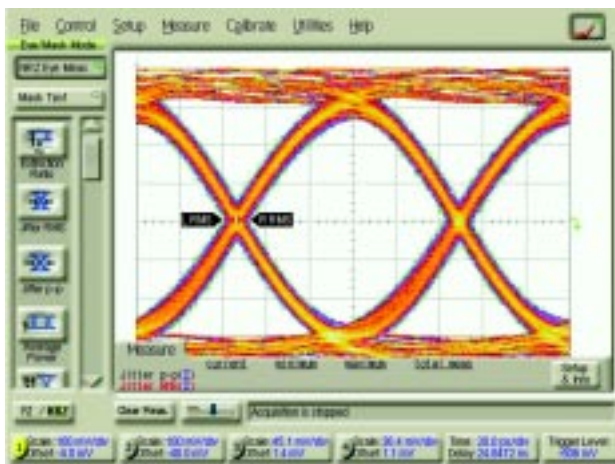
XPIO 110GXS Attributes

Family Member	Supported Data Rates	Protocols Supported	Standard Compliance	Voltage	Power Consumption	Package
XPIO 110GXS	9.95Gbps 10.31Gbps	OC-192 10GE	GR-253, IEEE 802.3ae & XFP	1.3V/2.5V	0.8W	269-Ball fcBGA

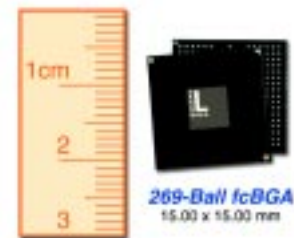
XPIO 110GXS Applications



XPIO 110GXS Eye Diagram Measurements



XPIO 110GXS Advanced Packaging



Package shown actual size. Dimensions refer to package body size.

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