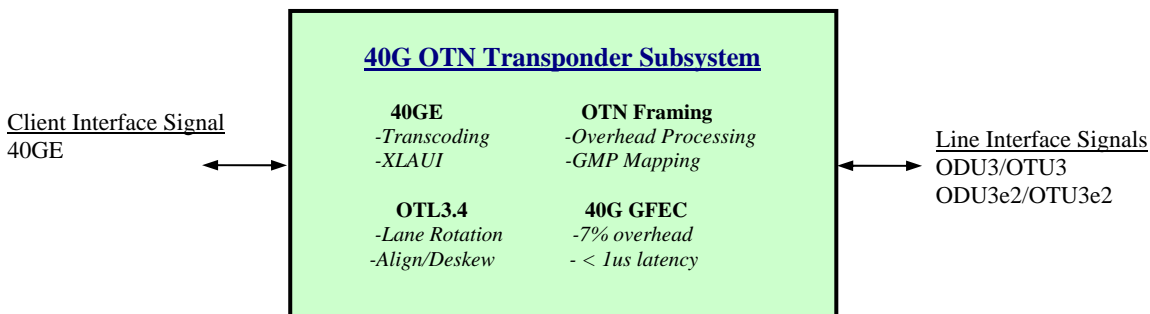


GENERAL DESCRIPTION

The Xelic 40G Optical Transport Network (OTN) Transponder provides the flexible transport of signals through a configurable highly integrated subsystem. A 40GE client signal is supported with line side ODU3/OTU3 and ODU3e2/OTU3e2 signals configurable through internal register control. The subsystem contains independent 40G OTN Framer, OTL3.4, 40GE, and 40G GFEC core processors with configurable options and a comprehensive programmable feature set. Independent interfaces are provided for framer GMP payload insertion/extraction control and external overhead port insertion/extraction. Optional loopbacks bypass modes, counters, and programmable consequential actions are available for debug and system integration purposes. A flexible 256-bit architecture is implemented with a data valid scheme and a high speed system clock operating at a rate up to 185MHz. The 40G Optical Transport Network (OTN) Transponder subsystem is targeted for both ASIC and FPGA applications.



FEATURES

General

- Implements 16-bit register interface for programming of internal registers.
- Complies with ITU-T G.709 and ITU-T G.798 specifications.

40G Ethernet Processing

- Supports Transcoding/Transdecoding operations.
- Provides alignment of incoming PCS blocks for all four incoming lanes.
- Optionally generates link fault indication for signal fault detection.
- Supports incoming performance monitoring with optional error block insertion.
- Contains optional PCS descrambling and 1027B scrambling functions.
- Performs lane marker alignment and deskew.

40G GFEC

- Contains 7% parity overhead
- Encoder includes single bit error insertion for diagnostic purposes.
- Provides outputs for scrambled line values of corrected ones and corrected zeroes
- Provides corrected symbols and uncorrected codewords outputs.
- Provides a configurable High BER alarm.
- Overall latency of less than 1us.

OTL3.4

- Provides optional OTUk AIS insertion.
- Supports OTU3 lane rotation for OTL3.4 multichannel parallel interfacing.
- Detects FAS OOF/OOM and LOF/LOL conditions with optional interrupt generation.
- Detects OTL AIS and OTUk-AIS error condition with optional interrupt generation.
- Supports Alignment and deskew of incoming lane data.
- Provides inverse multiplexing (lane rotation) of incoming OTL3.4 signals into OTU3 frames

40G OTN Framing

- Provides programmable PM/TCMi Delay Measurement capability.
- Flexible insertion and extraction of OTUk, ODUk, and OPUk overhead byte information.
- Inserts OTUk SM, GCC0, RES, ODUk RES, TCM ACT, FTFL, PM, EXP, GCC1, GCC2, and APS/PCC overhead through internal register control or an external overhead port.
- Supports GMP payload mapping with external justification control.
- Optionally inserts ODU AIS, ODU LCK, ODU OCI and client generic AIS maintenance signals.
- Interprets and extracts OUT SM, GCC0, RES, ODU RES, TCM ACT, TCM (support for up to 6 levels of tandem connection monitoring), PM, EXP, GCC1, GCC2, and APS/PCC overhead information to internal register locations with programmable accept and inconsistent maskable interrupt capability.

REGISTER INTERFACE

The 40G OTN Transponder Subsystem implements a 16 bit generic register interface for access and configuration of internal memory mapped locations. The generic register interface implementation allows for easy integration with other cores that may be contained in a customer application.

CONFIGURATION OPTIONS

The 40G OTN Transponder Subsystem was designed using a flexible architecture that allows users to customize the functions and features of the internal cores required for their application to optimize resource utilization.

APPLICATIONS

- OTN Transponder
- OTN Subsystem
- Line cards
- Test equipment

LICENSING AND SUPPORT

The XS701 subsystem is available under flexible single use or perpetual licensing terms with netlist or source code deliverables. Subsystem modifications, integration support, and maintenance is available upon request.

ORDERING INFORMATION

The Xelic XS701 subsystem is available under flexible licensing terms. Please contact Xelic for pricing and licensing options available.

CONTACT INFORMATION

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