

CB64ERCAA-Type 10.3 Gbits/s Lightwave 300-Pin Transponder with 16-Ch. 644 Mbits/s Multiplexer/Demultiplexer



Features

- Supports long-reach 10GBASE-ER optical Ethernet at data rate of 10.3125 Gbits/s, with reaches up to 40 km
- Cooled 1.5 μ m EML laser transmitter and PIN receiver
- Provides 16-channel, 644 Mbits/s electrical tributary access
- Compatible with *IEEE*[®] 802.3ae and 300-pin, 10 GbE transponder MSA
- Supports selectable OC-192/STM-64 data rate of 9.9532 Gbits/s and FEC of 10.6642 Gbits/s
- Optional internal reference clock cleanup circuit for improved jitter performance
- Differential LVDS data interface
- Automatic transmitter optical power control
- Laser bias monitor output
- Optical transmitter enable input
- Laser degrade alarms

- Laser back-facet monitor output
- Laser temperature monitor/alarm output
- Receiver loss-of-power (LOP) analog output
- Transponder alarm interrupt
- Selectable MUX reference input clock:
161 MHz or 644 MHz
- Provides 10 GHz electrical system diagnostics loopback
- Operating case temperature range:
— 0 °C to 65 °C, continuous
— 0 °C to 70 °C, in accordance with NEBS GR63¹
- Compact size: 4 in. x 3.5 in. x 0.53 in.
- Pigtailed, low-profile package with choice of industry-standard connectors

Applications

- High-speed data communications:
 - Premise
 - Access
 - Metropolitan area networks
 - Wide area networks
- 10 GbE LAN/WAN architectures
- Other applications to be determined

Note: This document is provided to help in the evaluation of samples that are under development and undergoing reliability testing. The samples described should be used only for evaluation. Agere Systems Inc. reserves the rights to change specifications, features, functions, capabilities, release schedule, and prices, and to discontinue development, manufacture, or delivery.

1. NEBS GR63 requirements of operation at 70 °C for 14 days (max) per year, or 96 hours of continuous operation.

Description

The CB64ERCAA 10 GbE transponder is a bidirectional module designed to provide a 10GBASE-ER Ethernet compliant electro-optical interface between the photonic physical media dependent layer and the electrical coding sublayer. The module contains a 10.3 Gbits/s optical transmitter and a 10.3 Gbits/s optical receiver in the same physical package along with the electronics necessary to multiplex and demultiplex sixteen 644 Mbits/s electrical channels. Clock synthesis and clock recovery circuits are also included within the module.

In the transmitting direction, the transponder module multiplexes sixteen 644.53 Mbits/s differential LVDS compatible electrical data signals into an optical signal at 10.3125 Gbits/s for launching into optical fiber. The optical transmitter is available with a cooled, field-proven 1.55 μm EML laser for up to 40 km, 10GBASE-ER applications. The optical output signal is compliant to *IEEE* 802.3ae specifications.

In the receiving direction, the transponder module receives a 10.3125 Gbits/s optical signal and converts it to an electrical signal, extracts a clock signal, then demultiplexes the data into sixteen 644.53 Mbits/s differential LVDS compatible data signals. The receiver operates over the wavelength range of 1.1 μm to 1.6 μm , and is fully compliant to *IEEE* 802.3ae specifications.

Characteristics

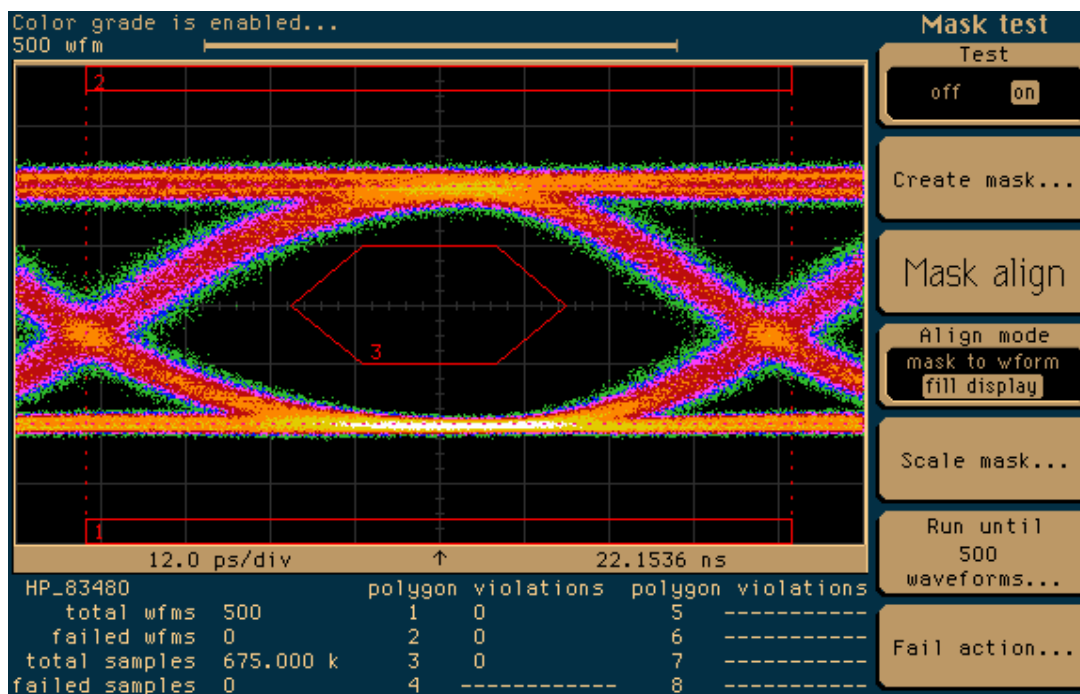
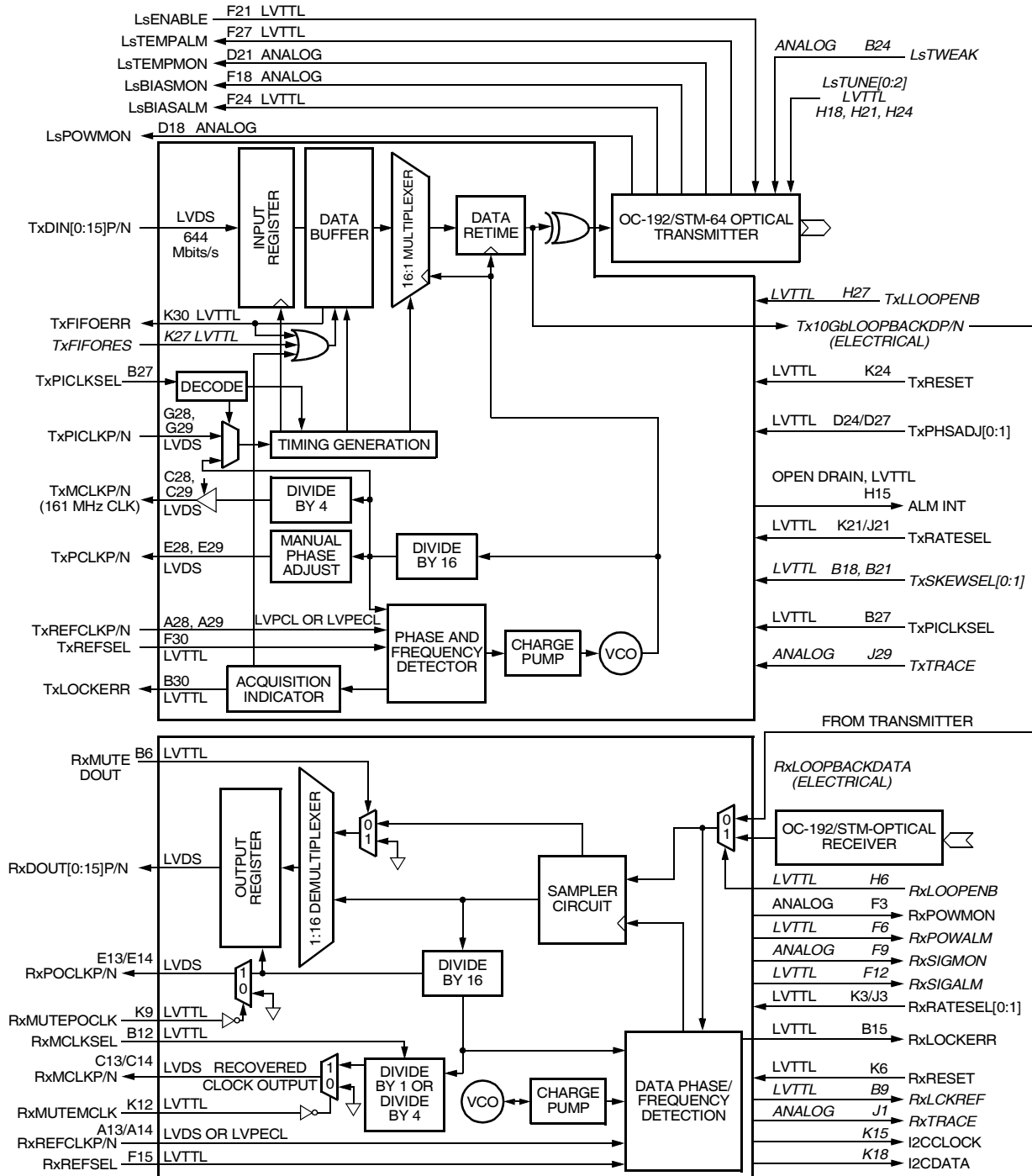


Figure 1. Typical CB64ERCAA Eye Diagram at 10.3 Gbits/s Rate with the Proposed 10 GbE Mask Test. The Test Indicates No 10 GbE Mask Violations After 500 Waveforms.

Block Diagram*



* Signals referenced in italics are for future use.

Ordering Information

Table 1. Ordering Information

Device Code	Comcode	Connector Type	Device Description
CB64ERCAA	700013078	SC	10.3125 Gbits/s Ethernet 1550 nm transponder, SFI-4 interface, with SC duplex receptacle, 300-pin connector, 40 km reach, standard configuration
CB64ERFAA	TBD	FC	10.3125 Gbits/s Ethernet 1550 nm transponder, SFI-4 interface, with FC duplex receptacle, 300-pin connector, 40 km reach, standard configuration
CB64ERTAA	TBD	ST	10.3125 Gbits/s Ethernet 1550 nm transponder, SFI-4 interface, with ST duplex receptacle, 300-pin connector, 40 km reach, standard configuration
CB64ERWAA	700017637	LC	10.3125 Gbits/s Ethernet 1550 nm transponder, SFI-4 interface, with LC duplex receptacle, 300-pin connector, 40 km reach, standard configuration

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