Description

The HXT44100 is a single channel, low power, Linear PAM4 Directly-Modulated Laser (DML) driver for LR applications. It supports signaling rates up to 28GBuad or 56Gbps PAM4. In conjunction with an individual DML, the HXT44100 handles the complete electrical-to-optical conversion, including CML input with equalization, laser bias and modulations, laser power control and supervision.

The HXT44100 also integrates a number of functions required for Automatic Power Control (APC), as well as internal and module temperature measurements and reporting. With an additional RSSI input, one can directly measure the module receive optical power and report it.

HXT44100 is designed as a directly DC-coupled die used in a TOSA application. Thus, one can reduce the number of discrete components for better RF performance, cost-effective and compact assemblies.

Typical Applications

- Up to 10km Ethernet SFP56 modules for datacenter applications
- Fiber Channel Modules
- Infiniband EDR optical modules

Features

- 410mW power dissipation per channel
- Supports up to: I_{MOD} = 60mA$_{PP}$ & I_{BIAS} = 60mA with V_{CC} = 2.8V
- Integrated 12-bit ADC with 6 channel analog multiplexor front-end
- Programmable 8-bit laser modulation and bias current control
- Integrated bias monitor, transmit and receive power monitor capability
- Automatic power control (APC)
- Programmable input LOS and Squelch function with disable, transmit disable, and transmit fault indication
- Programmable input CTLE
- Integrated temperature sensor and input for external module temperature sensor
- Interrupts with user selectable mask control
- Input polarity inversion
- Laser disable for I_{MOD} and I_{BIAS}
- Integrated OTP for calibration
- 2-wire interface control

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Device Diagram

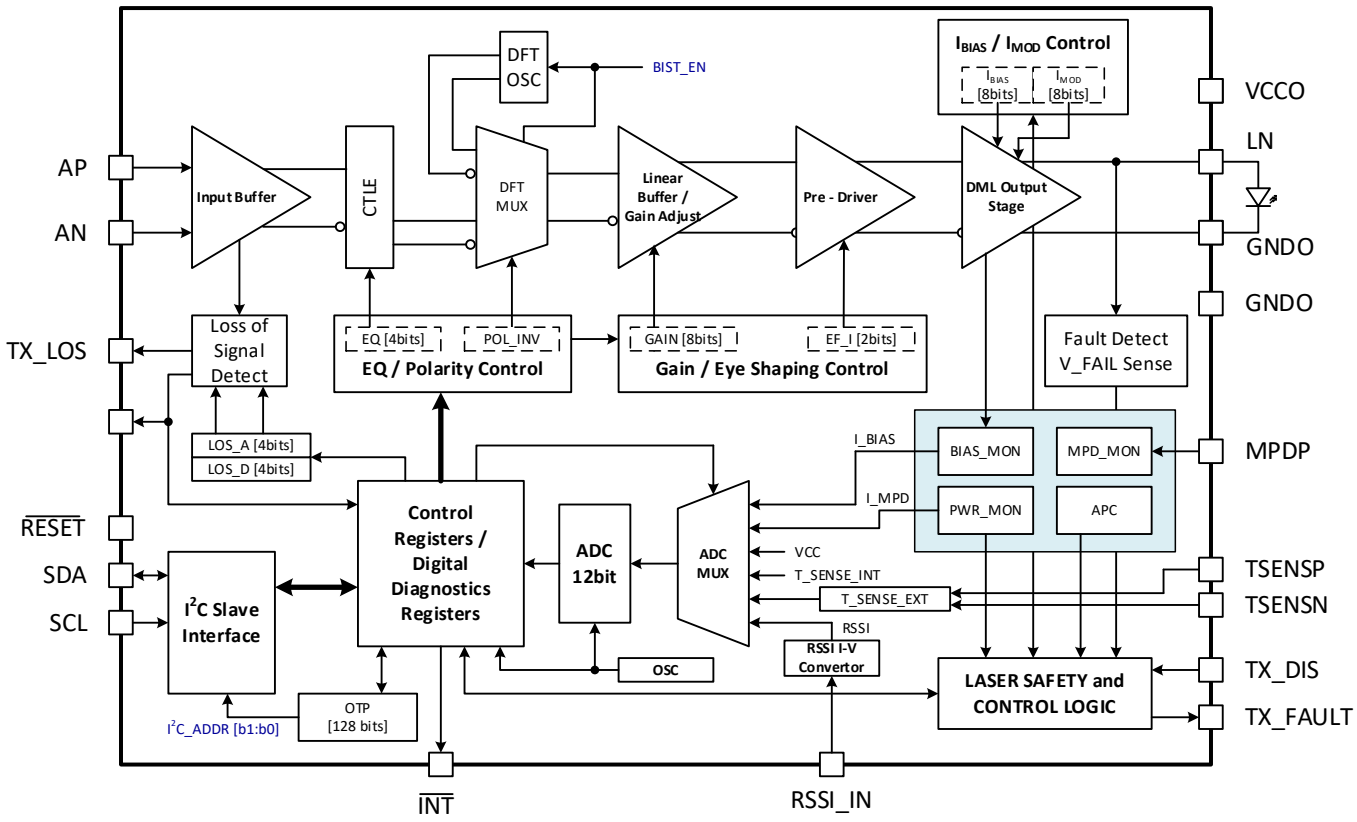


Figure 1: Functional Block Diagram of a single channel