

HXT44420

56G Quad Channel PAM4 DML Driver

The HXT44420 is a quad, low power, Linear PAM4 Directly-Modulated Laser (DML) driver for LR applications. It supports signaling rates up to 28GBaud or 56Gbps PAM4. In conjunction with an individual DML, the HXT44420 handles the complete electrical-to-optical conversion, including CML input with equalization, laser bias and modulations, laser power control and supervision.

The HXT44420 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, the user can directly measure the module receive optical power and report it.

The HXT44420 is designed as a directly DC-coupled die used in a TOSA application. Thus, the number of discrete components can be reduced for better RF performance, cost-effective and compact assemblies.

Applications

- Up to 10km 200G QSFP56 Ethernet modules for datacenter applications
- Fiber Channel modules
- Infiniband EDR optical modules

Features

- 290mW power dissipation per channel
- Supports up to:  $I_{MOD} = 60mA_{PP}$  and  $I_{BIAS} = 60mA$  with  $V_{CC} = 3.3V$  for lower power
- 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

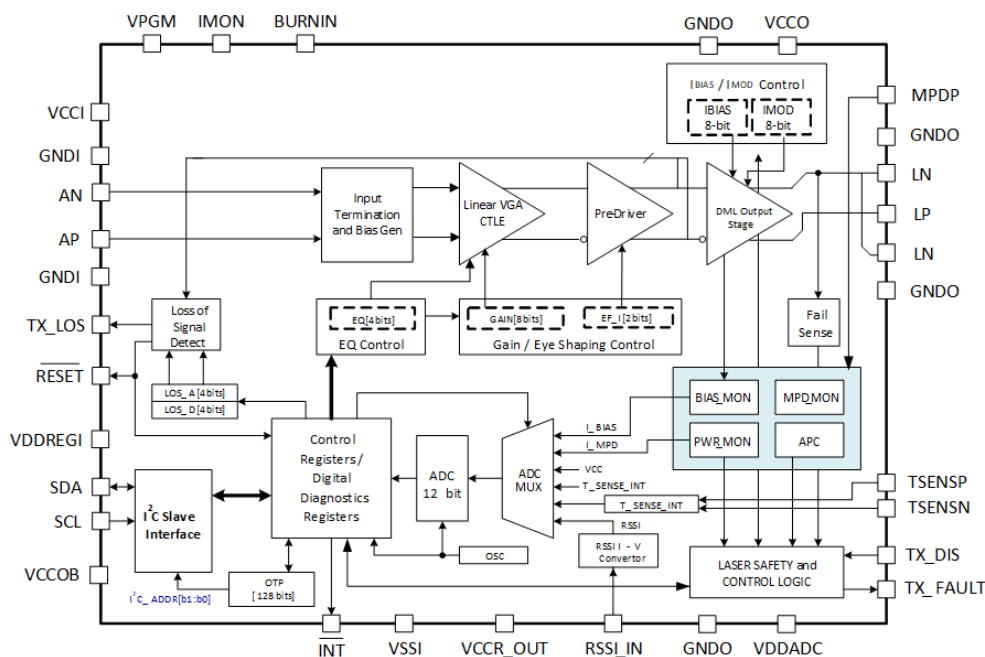


Figure 1. Block Diagram – Single Channel

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