Description

The HXT14400 is a quad-channel, low power, Linear PAM4 VCSEL driver for SR optical applications that supports signaling rates up to 28Gbaud or 56Gbps PAM4. In conjunction with an individual DFB laser diode, the device handles the complete digital-to-optical conversion, including CML input with equalization, laser driver, drive control and supervision.

The HXT14400 also integrates a number of functions required for Automatic Power Control (APC), as well as internal and module temperature measurements and reporting. Using the included RSSI input, the module receive optical power can also be measured and reported.

Designed for direct DC-coupled die in TOSA applications with a small number of additional components for cost-effective and compact assemblies. Available in die form.

Typical Applications

- 200G QSFP56 Ethernet modules for datacenter application
- 400G CFP8 Ethernet SR16
- Fiber channel modules
- Infiniband EDR optical modules

Features

- 230mW per channel power dissipation typical
- Supports up to: I_{MOD} = 12mA$_{PP}$ and I_{BIAS} = 12mA with V_{CC} = 3.3V
- 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 equalization
- 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

Ordering Information

Part	Temperature Range	Dimensions
HXT14400-DNU[1] HXT14400-TNU[2]	-5°C to +95°C	Nominal Die Size: 1650 x 2370 μm
HXT14400-EVB	Room Temp	Evaluation Board

Notes: Product Shipping Carrier Type: [1] – Waffle Pack; [2] – Blue Tape

For price, delivery schedules, and to place orders, please contact IDT: www.IDT.com/go/sales
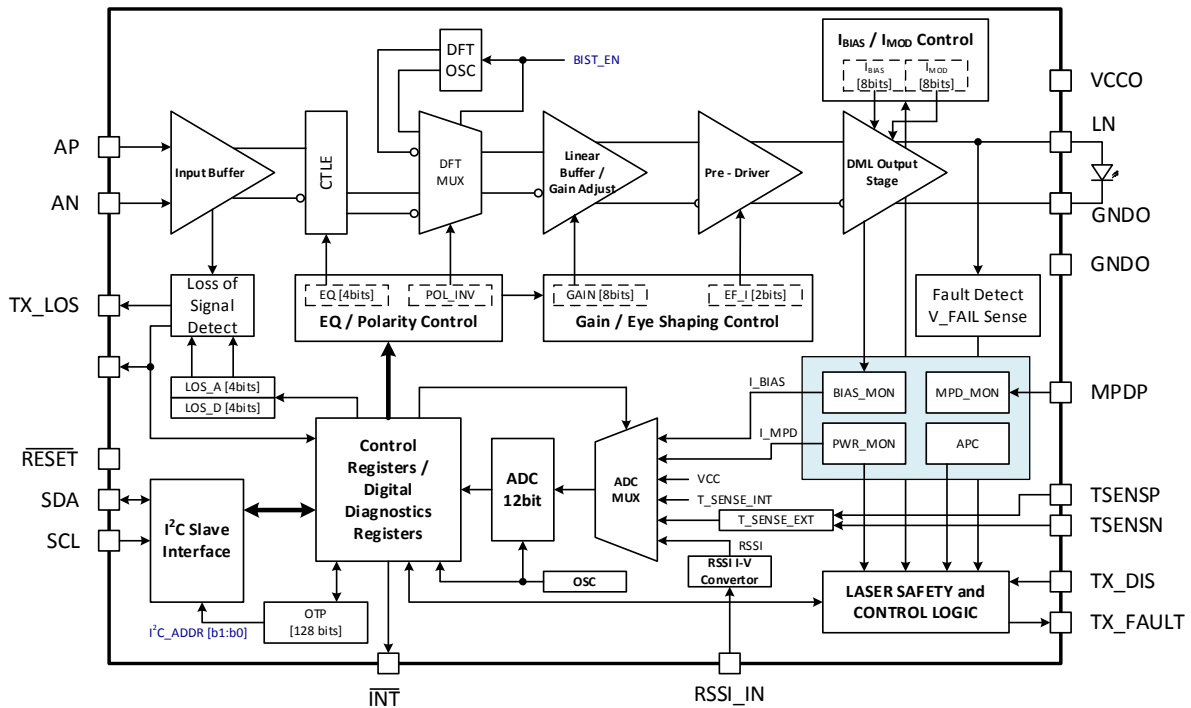
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Device Diagram

Figure 1: Functional Block Diagram of a Single Channel