

## HXT14100

56Gbps – Single Channel PAM4 VCSEL Driver

The HXT14100 is a single channel, low power, Linear PAM4 VCSEL driver for SR optical applications that supports signaling rates up to 29GBuad PAM4. In conjunction with a VCSEL laser, the device handles the complete electrical-to-optical conversion. It includes CML input with equalization, linear multi-stage drivers, plus a digital interface to a driver control and supervision.

The HXT14100 integrates a number of functions like Automatic Power Control (APC), internal and module temperature monitoring and reporting. With RSSI input, the driver can directly synchronize with the input from a receiver.

HXT14100 is a direct DC-coupled die designed for a chip-on-board (COB) transmitter and in TOSA applications. It offers a cost-effective and compact solution.

### Applications

- SFP56 Ethernet SR modules
- 50G Ethernet SR AOC
- 64G Fiber Channel modules
- Infiniband EDR modules

### Features

- 230mW per channel Power Dissipation typical
- Supports up to:  $I_{MOD} = 12\text{mAPP}$  and  $I_{BIAS} = 12\text{mA}$  with  $V_{CC} = 3.3\text{V}$
- 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                        | Temp. Range   | Dimensions                 |
|-----------------------------|---------------|----------------------------|
| HXT14100-DNU <sup>[1]</sup> | -5°C to +95°C | Bare Die:<br>1350 x 1120µm |
| HXT14100-TNU <sup>[2]</sup> |               |                            |
| HXT14100-EVB                | Room Temp.    | Evaluation Board           |

1. Carrier type is waffle pack.
2. Carrier type is blue tape.

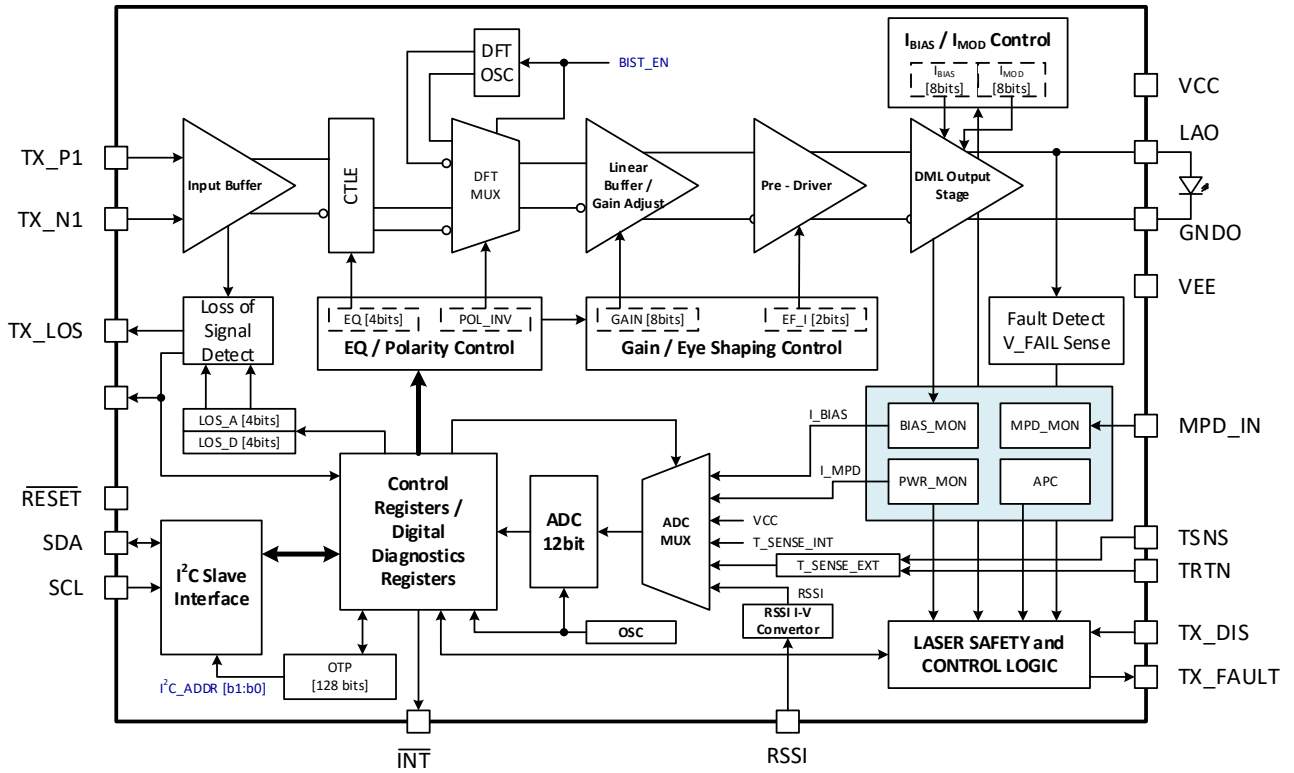


Figure 1. Block Diagram

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