The HXT14450 is a quad-channel, low power, linear vertical-cavity surface-emitting laser (VCSEL) driver with an integrated clock and data recovery (CDR) unit. The chip is designed for MMF PMD Short-Reach applications that support 200G per port with a signaling rate up to 56Gbps PAM4 modulation. In conjunction with the HXR14450 – a quad-channel transimpedance amplifier (TIA) receiver with an integrated CDR, one can produce compact quad small form factor QSFP-type modules to serve high speed optical interconnects in data center applications.

The HXT14450 has a built-in auto-adaptive continuous-time linear equalizer (CTLE) and a decision-feedback equalizer (DFE), which can work in chip-to-module and chip-to-chip interconnects. The chipsets provide on-chip testability such as PRBS generator and error checker.

**Applications**
- 200G QSFP56 SR4 and 400G QSFP-DD or OSFP SR8 Ethernet Modules and AOC
- 400G OBO Modules
- Support CEI-56G-VSR-PAM4

**Features**
- Quad 56Gb/s PAM4 VCSEL Driver integrated with a low latency CDR
- Low power – typical 490 mW per channel
- Supports up to 11mA modulation current to VCSEL
- Programmable 8-bit IMOD and IBIAS control
- Auto-Adaptive CTLE and DFE
- Support reference-less and reference clock modes
- On-chip testability: eye opening monitor (EOM), jitter tolerance (JTOL), PRBS generator, error checker
- Integrated temperature sensor
- Input and output polarity inversion
- Programmable TX test pattern generation
- TX Disable, programmable loss of signal (LOS) and output de-emphasis
- I²C interface control: standard and fast modes

![Figure 1. Block Diagram](image-url)
## HXT14450 Short-Form Datasheet

<table>
<thead>
<tr>
<th>Orderable Part Number</th>
<th>Temperature Range</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>HXT14450-DNU[1]</td>
<td>-5°C to +95°C</td>
<td>Die: 3320.1 x 1265.4μm</td>
</tr>
<tr>
<td>HXT14450-TNU[2]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HXX14450-EVB</td>
<td>Room Temperature</td>
<td></td>
</tr>
</tbody>
</table>

1. Waffle pack
2. Blue tape

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