Complete reference design for TI's ONET parts in a 10G SFP+ LR Optical Module compatible form factor

(ACTIVE) TIDA-00088

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Description

This Texas Instruments Reference Design was designed to demonstrate the optical performance of the ONET1151L Laser Driver, the ONET8551T high gain Transimpedance Amplifier (TIA) and the ONET1151P Limiting Amplifier. It is available in a form factor that is compatible with 10.3125Gbps SFP+ LR Optical module and reduces customer evaluation time by offering a SFP+ host board as well as a User-friendly GUI. In addition to the ONET parts, the reference design contains an MSP430FR5728 microcontroller (MCU) to control the setup and a high-efficiency MicroSiP step-down converter TPS82693 that is used to supply 2.85V to the ICs to reduce the module power dissipation.

ONET 10G SFP+ LR Optical Module

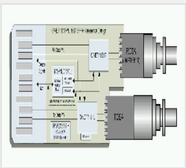
Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

Features

- **Enables <1W 10GBASE LR SFP+ Transceiver**
  - Reduced component power consumption (<1W)
  - Low power supply voltage (2.85V)
  - High mask margin for both receiver and transmitter
- **Reduces Customer Evaluation Time**
  - Includes SFP+ Host Board and User-Friendly GUI

Schematic/Block Diagram

Quickly understand overall system functionality.



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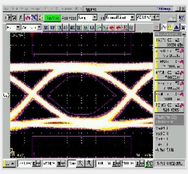

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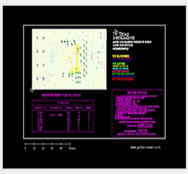
Design Files

Download ready-to-use system files to speed your design process. Get Viewer.



Download Design File

Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

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Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
MSP430FR5728	MSP430FR573x,MSP430FR572x Mixed Signal Microcontroller	MSP430 Ultra-Low Power 16-bit MCUs	Sample & Buy	View Design Kits & Evaluation Modules
ONET1151L	11.3Gbps Low Power Laser Diode Driver	Optical Module IC	Sample & Buy	View Design Kits & Evaluation Modules
ONET1151P	11.3Gbps Limiting Amplifier	Optical Module IC	Sample & Buy	View Design Kits & Evaluation

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CAD/CAE Symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
MSP430FR5728	VQFN (RGE) | 24	Download	-
	TSSOP (PW) | 28	Download	Download

Texas Instruments and Accelerated Designs Inc. have collaborated together to provide TI customers with schematic symbols and PCB layout footprints for TI products.

Step 1: Download and install the Ultra Librarian software ZIP: 62MB

Step 2: Download the Symbol and Footprint .bxl file.

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Technical Documents

User Guides (1)

Title	Abstract	Type	Size (KB)	Date	Views
TIDA-00088 Test Results		PDF	716	05 Mar 2014	701

Design Files (2)

Title	Abstract	Type	Size (KB)	Date	Views
TIDA-00088 BOM		PDF	32	04 Mar 2014	518
TIDA-00088 Schematic		PDF	51	04 Mar 2014	1,191

Related Tools & Software

Software (1)

TIDA-00088 Cadence Design File
(ZIP, 248 KB) 910 views, 04 Mar 2014

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