LMH0302 Evaluation Board User Guide

National Semiconductor
User Guide

Overview

The SD302EVK evaluation board provides a typical application for the evaluation of the LMH0302 3Gbps HD/SD Cable Driver.

Specifications

DC Input Power: 3.3V ± (3.6V maximum)

Serial Data Input: Conn3 & Conn4 (SDI), 100Ωdifferential or 50Ω single-ended signals

Serial Data Output: Conn5 & Conn6 (SDO), 75Ω, 800mVp-p single-ended signals (SMPTE 424M, 292M, or 259M standard levels and impedances).

Input Voltage (all other inputs): -0.3V to VCC+0.3V

Control Pins and Jumper Settings

Table 1 – LMH0302 Cable driver Controls

REF. DES.	REF. PINS	DESCRIPTION
J1	SD/HD	Sets the slew rate of the LMH0302 output. The output complies with SMPTE 259M when high and SMPTE 424M / 292M when low.
J2	ENABLE	Enables / Disables the cable driver output. Set this jumper to disable the cable driver; leave this jumper open for normal operation.

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Notes

Please note that a 0.3pF cap has been added to the board shunting L1 and L2 to improve the Output Return Loss characteristic. This capacitor is not shown on the schematic (Rev B).

Typical Performance Plots

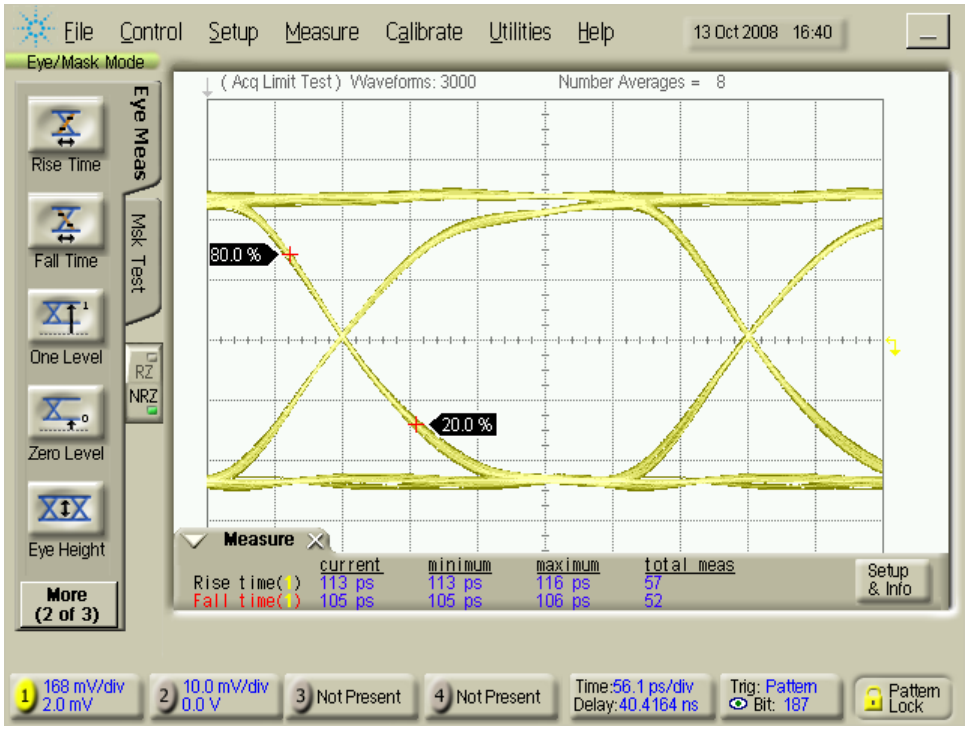


FIGURE 1. Rise and Fall Times at 2.97Gbps

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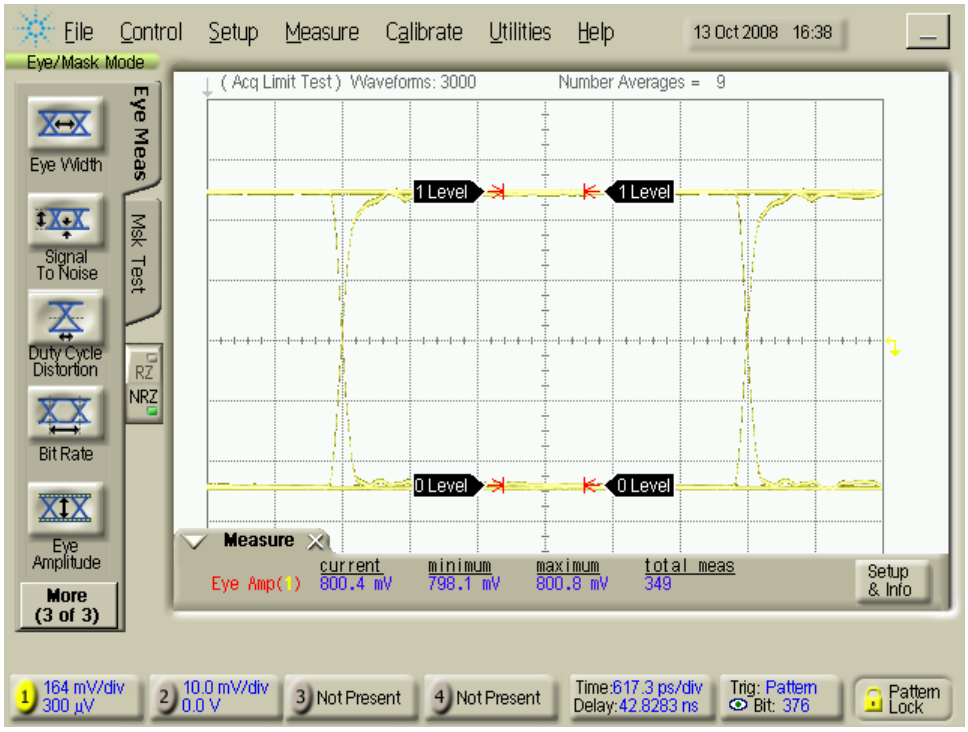


FIGURE 2. 270Mbps, PRBS10, Output Swing

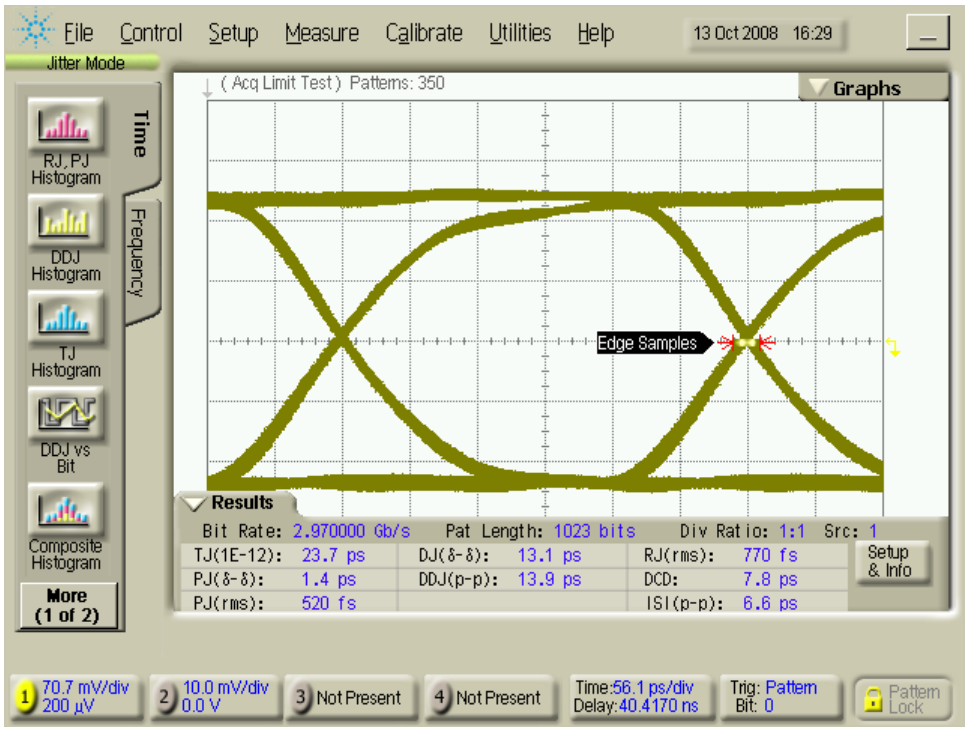


FIGURE 3. Jitter at 2.97Gbps

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FIGURE 4. Output Return Loss (ORL) on SDO (plus)

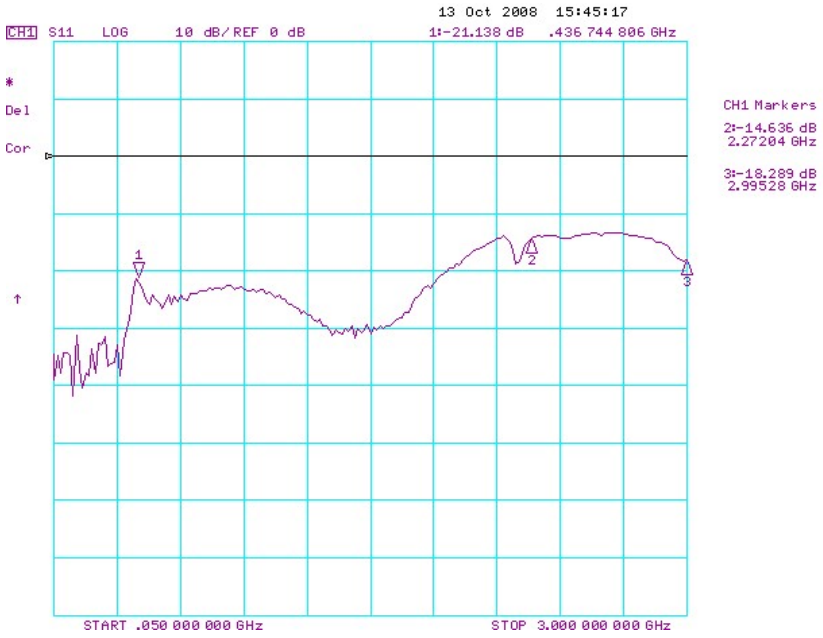


FIGURE 5. Output Return Loss (ORL) on SDO (minus)

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