

# 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  $\pm$  (3.6V maximum)

**Serial Data Input:** Conn3 & Conn4 (SDI), 100 $\Omega$  differential or 50 $\Omega$  single-ended signals

**Serial Data Output:** Conn5 & Conn6 (SDO), 75 $\Omega$ , 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.

## 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

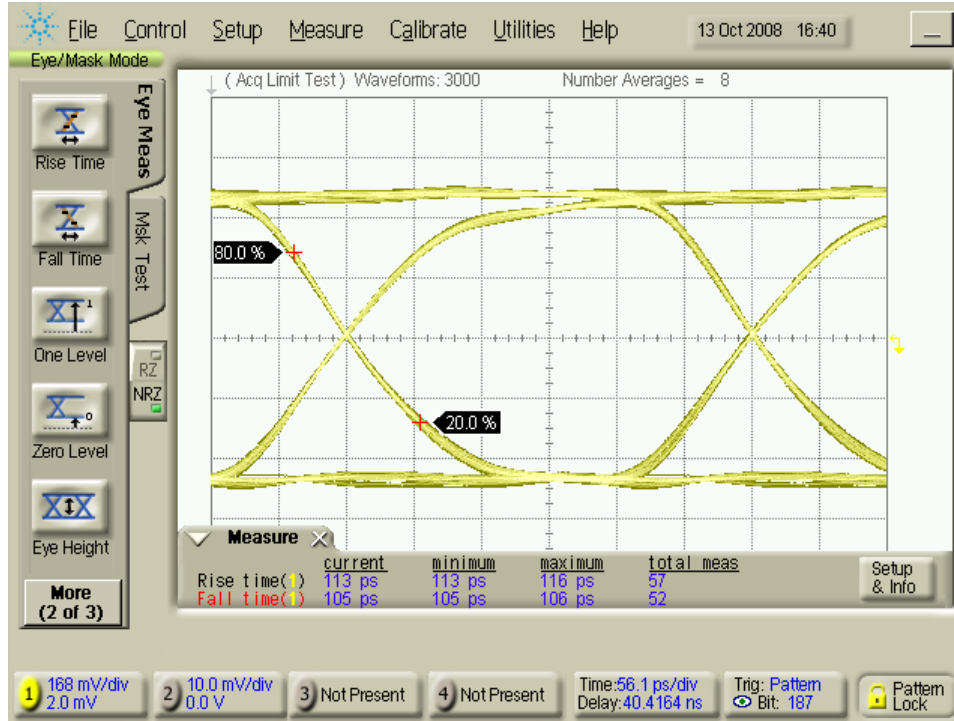


FIGURE 1. Rise and Fall Times at 2.97Gbps

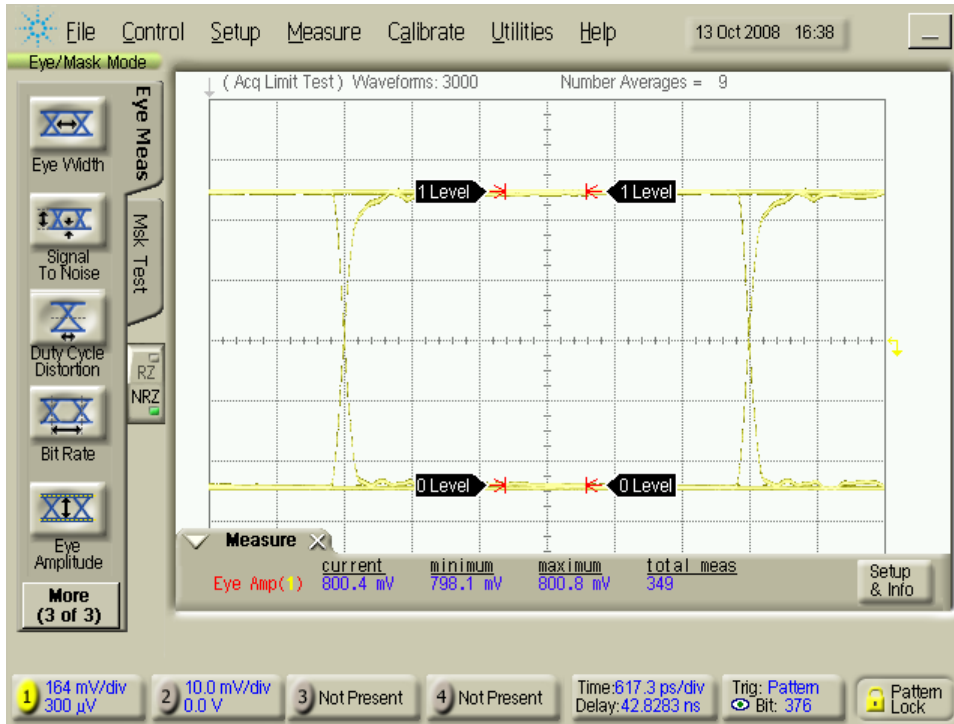


FIGURE 2. 270Mbps, PRBS10, Output Swing

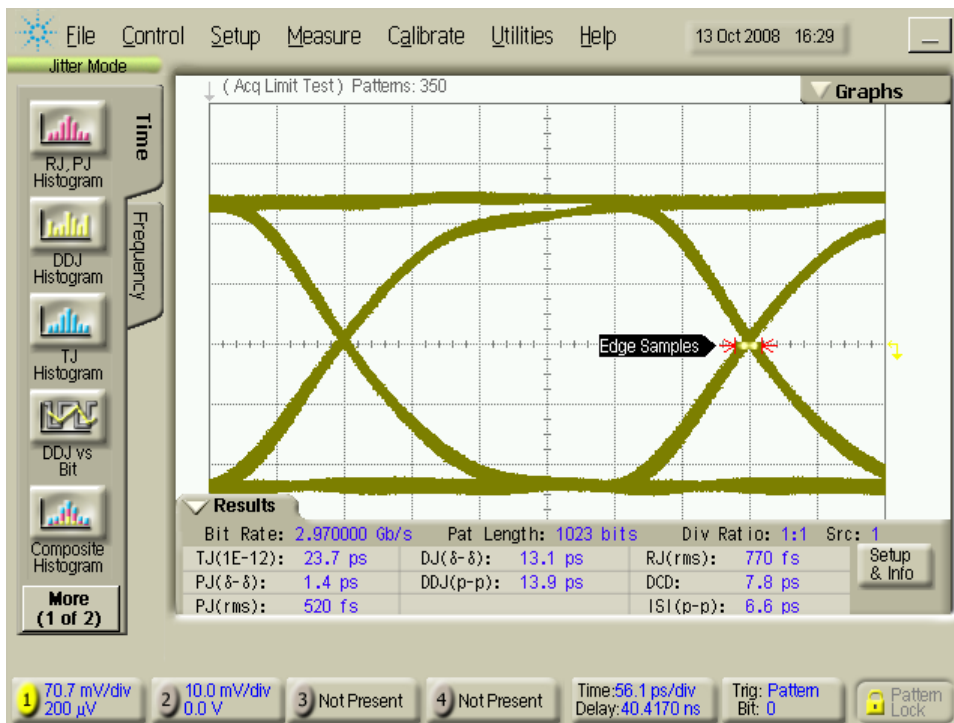
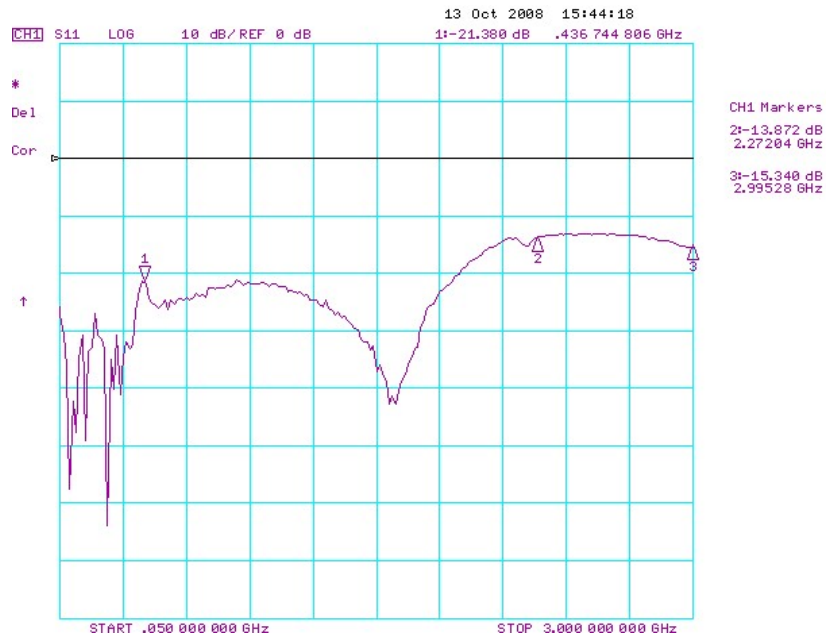
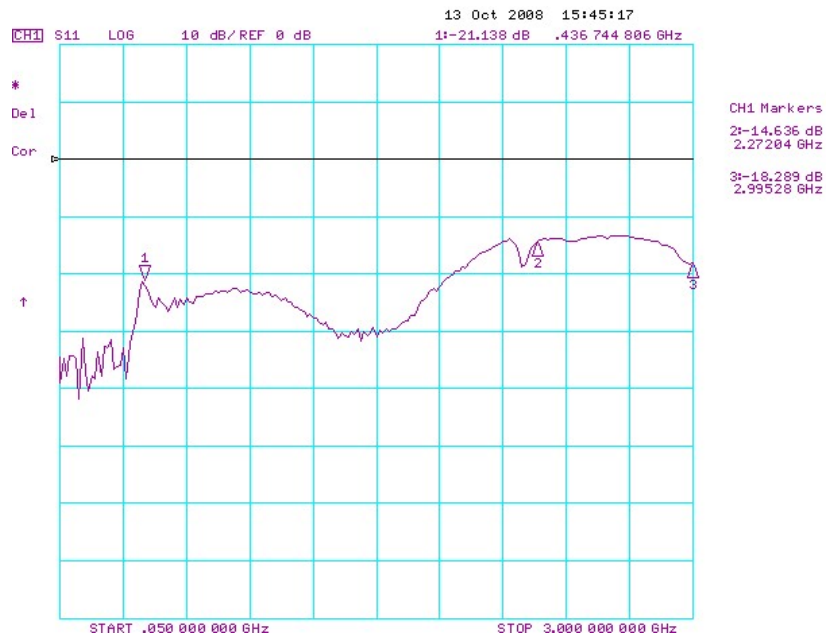


FIGURE 3. Jitter at 2.97Gbps



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



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