

ISL36111 Evaluation Board User Guide

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Introduction to the ISL36111DRZ-EVALZ Evaluation Kit

The ISL36111 Evaluation Board is a versatile stand-alone printed circuit board developed to evaluate the performance of the Intersil ISL36111 Lane Extender.

The evaluation kit includes:

- ISL36111 evaluation board
- Power cable

The key features of the Evaluation board are:

- ISL36111 IC.
- Connection to external 5V power supply.
- On board DC/DC converter that provides the 1.2V supply to the IC.
- On board boost selection through a set of headers.
- SMA connectors to access differential input and output.

Operation of the ISL36111 Evaluation Board

This section describes how to simply setup your ISL36111 evaluation board making sure proper power is applied, describing connection to high speed RF input and output and finally describing how to easily set the equalizer boost. The board is shown in Figure 1.

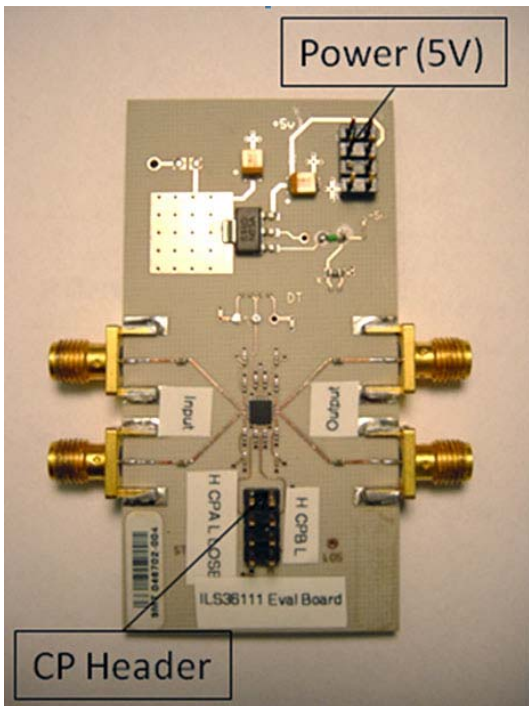


FIGURE 1. ISL36111 EVALUATION BOARD

Power Supply

The board needs to be powered by an independent external 5.0V power supply via the power header located at the top of the board using the power cable provided. The typical current consumption of the board is 68mA when no signal is applied and 91mA when a signal applied to the board input

High Speed Data I/O Interface Connectors

Intersil Lane Extender is intended to be used at the receive end of a lossy channel. Therefore, the input of the ISL36111 should be connected to the end of the channel (board trace or twinax cable). This connection should be done using the input SMA connectors labeled as such on the board. We recommend using length or phase matched cables in order to preserve the fidelity of the differential signal. The output SMA connectors provide access to the output differential signal of the ISL36111 and can be connected to a scope or error tester for characterization. Make sure proper torque is applied on the SMA connectors for reliable measurements and prevent damage to the connectors.

Boost Setting Control

The ISL36111 offers nine different levels of boost. The level is set by positioning jumpers on header JMP1 as illustrated in Figure 2. CPA and CPB can each be set to one of three values (High, Low, Open). Table 1 describes jumper positions to achieve the various boost levels. As an example, Figure 2 depicts the jumper position to achieve boost 8 (CPA Low and CPB High).

TABLE 1. JUMPER POSITIONS FOR BOOST SETTINGS

CPA	CPB	BOOST LEVEL
No Jumper	No Jumper	0
No Jumper	Jumper to Low	1
Jumper to Low	Jumper to High	2
No Jumper	Jumper to High	3
Jumper to High	No Jumper	4
Jumper to Low	No Jumper	5
Jumper to Low	Jumper to Low	6
Jumper to Low	Jumper to Low	7
Jumper to Low	Jumper to High	8

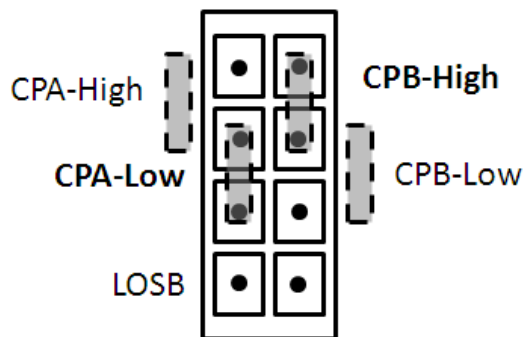


FIGURE 2. JUMPER CONFIGURATION TO ACHIEVE BOOST 8

LOSSB indicator

The ISL36111 offers a Loss Of Signal Bar (LOSSB) indicator located on header JMP1 as illustrated in Figure 2. When the high speed outputs are off LOSSB is low (<250mV). When the ISL36111 output is on the LOSSB is high (>1V).

Baseline Performance

Figure 3 shows the performance improvement provided by the ISL36111 evaluation board at 10Gbps. After transmission through an 10m 28AWG SPC cable, the eye diagram is closed (Figure 3A) and the information totally lost. The ISL36111 is able to compensate for the degradation occurring in the cable and recover the signal (Figure 3B).

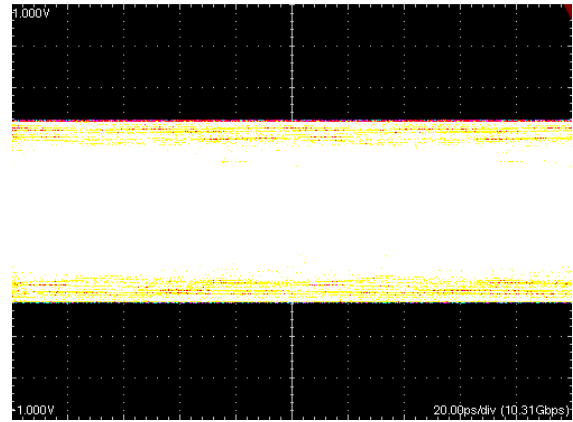


FIGURE 3A.

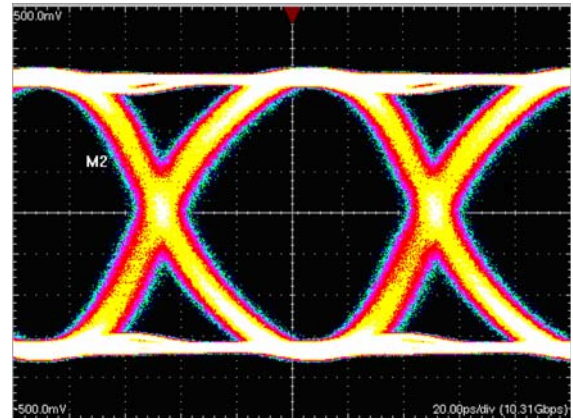


FIGURE 3B.

FIGURE 3. ISL36111 PERFORMANCE WITH A 10M 28AWG SPC CABLE, EYE DIAGRAMS AT THE INPUT (A) AND OUTPUT (B) OF THE ISL36111

Schematic

The ISL36111 evaluation board schematic is shown in Figure 4.

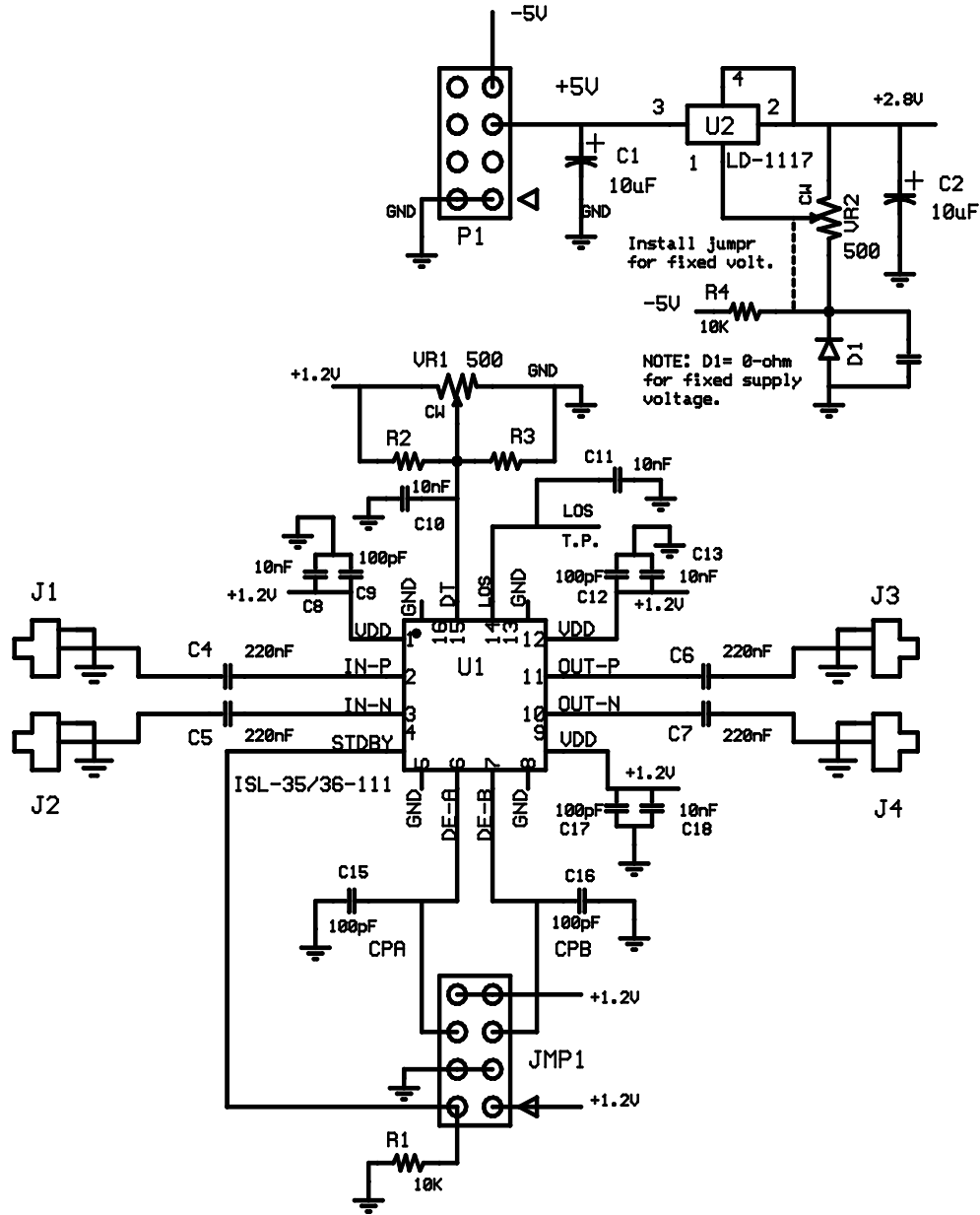


FIGURE 4. ISL36111 EVALUATION BOARD SCHEMATIC

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Intersil specializes in analog components that improve the performance and functionality of electronic equipment. By removing channel impairments and interference noise, Intersil achieves dramatic improvements in high-speed channel performance across multiple industry segments, thus greatly enhancing the functionality of end-user applications.

Intersil is based in Santa Clara, California with additional sales and engineering centers in Atlanta, Georgia and Tokyo, Japan.

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