



CAT3637 LED Driver Demonstration Board

INTRODUCTION

This document describes the CAT3637DB1 demonstration board for the CAT3637 high efficiency Quad-Mode LED driver. Boards are equipped with an on board microcontroller to demonstrate the brightness levels via the 1-wire EZDim interface. A 9V battery is required to run this demonstration.

The CAT3637 is a high efficiency Quad-Mode fractional charge pump LED driver from Catalyst Semiconductor. This device is designed to drive up to six white LEDs in parallel up to 30mA. The LED brightness is programmable through the one wire digital interface. More information about the CAT3637 can be found in the [CAT3637 data sheet](#).

OPERATION PROCEDURE

The CAT3637DB1 board is configured to drive up to six white LEDs in parallel. The CAT3637 can be powered from either on-board 5V or 3.3V supplies, or from an external supply applied between test points T1 (VEXT) and T2 (GND). Use jumper J8 to select the VIN for the CAT3637. Putting J8 in the “high” position (pin1 and pin6 shunt) selects 5V, the “middle” position (pin2 and pin5 shunt) selects 3.3V, and the “low” position (pin3 and pin4 shunt) selects the VEXT applied to T1.

The one wire dimming interface for the CAT3637 is available through the EN/SET input. Jumper J9 selects the input for the EN/SET pin. In the “high” position (pin1

and pin2 shunt) the EN/SET input is connected to the microcontroller which is programmed to continuously cycle through the LED brightness levels. In the “low” position (pin2 and pin3 shunt) the EN/SET pin is connected to the T3 (EXT_GEN) test point. Apply a programming signal between test points T3 and T4 (GND) to set the LED current.

The total LED current can be measured by substituting jumper J7 with a current meter. Jumpers J1 through J6 can be used to measure LED current for each channel. Jumpers in the “high” position (pin1 and pin2 shunt) connect the LED cathodes to the LED pins of the CAT3637. Jumpers in the “low” position (pin2 and pin3 shunt) short the LED pins on the CAT3637 to VOUT. For applications using less than six LEDs, connect unused channels to VOUT.

DEVICE DEMONSTRATION

To set up the CAT3637DB1 for demonstrations, move switch K2 in the off position and place a 9V battery securely in the battery holder. Set the VIN of the CAT3637 to either the 5V or 3.3V supply, the EN/SET pin to the microcontroller and move switch K2 in the on position. The LED brightness levels will cycle up between 0mA and 30mA and back down pausing at each level for one second. Switch K2 off when the demonstration is complete.

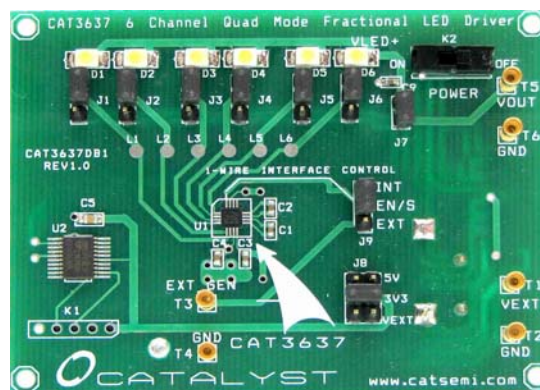


Figure 1. CAT3637DB1 Board

REVISION HISTORY

Date	Revision	Description
02/07/08	A	Initial Issue
7-Aug-08	B	Changed "Quad-Mode™" to "Quad-Mode®"

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