

Using the LM2776EVM Evaluation Module

User's Guide



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LM2776EVM User's Guide2

1 Introduction

The Texas Instruments LM2776EVM evaluation module (EVM) helps designers evaluate the operation and performance of the LM2776 Switched Capacitor Inverter.

The EVM contains one LM2776 switched capacitor unregulated inverter (See [Table 1](#)). For more details and electrical characteristics of this device, see the LM2776 device data sheet ([SNVSA56](#)).

Table 1. Device and Package Configurations

FLASH LED DRIVER	IC	PACKAGE
U1	LM2776	SOT23-6

2 Setup

This section describes the jumpers and connectors on the EVM as well as how to properly connect, set up, and use the LM2776EVM.

2.1 Input/Output Connector Description

VIN / GND - These are the power input pins for the driver. The pins provides a power (VIN) and ground (GND) connection to allow the user to attach the EVM to a cable harness.

EN - This is the jumper used to enable the boost converter (EN pin). The driver will be enabled when the EN pin is high (+) and disabled when it is low (–).

VOUT- This is the output pin for the LM2776EVM. Currents up to 200 mA can be drawn from this terminal when the input voltage is higher than 2.7 V and lower than 5.5 V

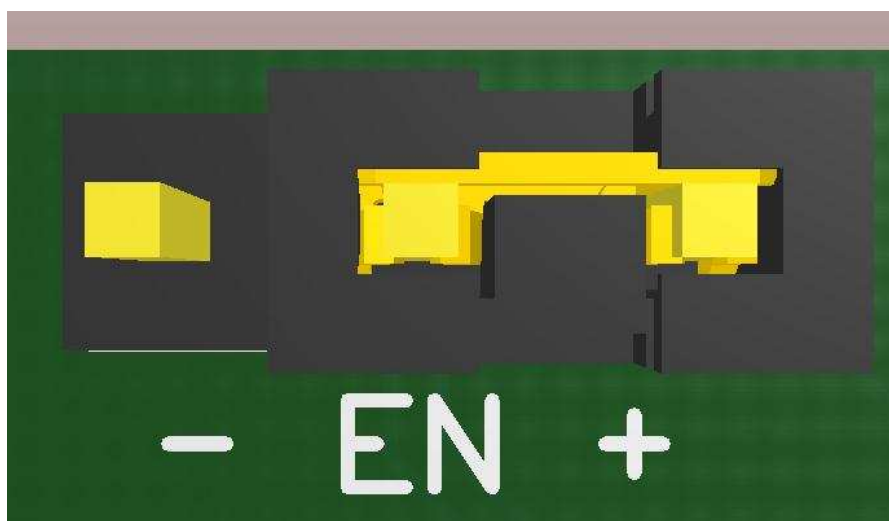


Figure 1. Enable Jumper Settings

2.2 Setup

The input voltage range for the flash driver is 2.7 V to 5.5 V.

2.3 Operation

For proper operation of the LM2776EVM, the jumpers should be properly configured. The recommended setting, using shorting blocks is:

EN to +

In this configuration, the device will power up when an input voltage is applied. Once running, current can be pulled from the VOUT connector. Test points are provided for voltage measuring when current is drawn from the LM2776EVM.

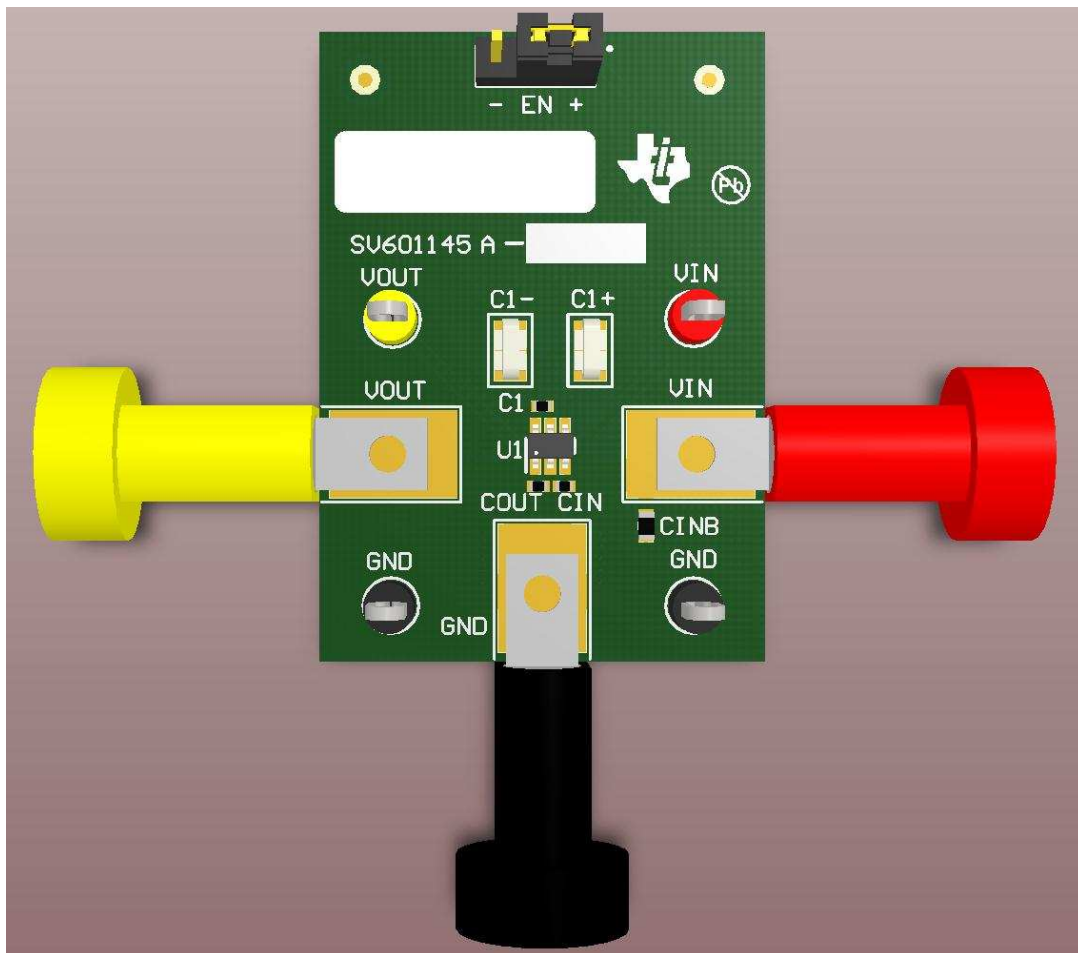


Figure 2. Jumper Configuration

3 Board Layout

Figure 3 and Figure 4 show the board layout for the LM2776EVM. The EVM offers capacitors and jumpers to enable the device and to configure it as desired.

The LM2776 will dissipate power, especially during high current and high input voltage operation. The EVM layout is designed to minimize temperature rise during operation.

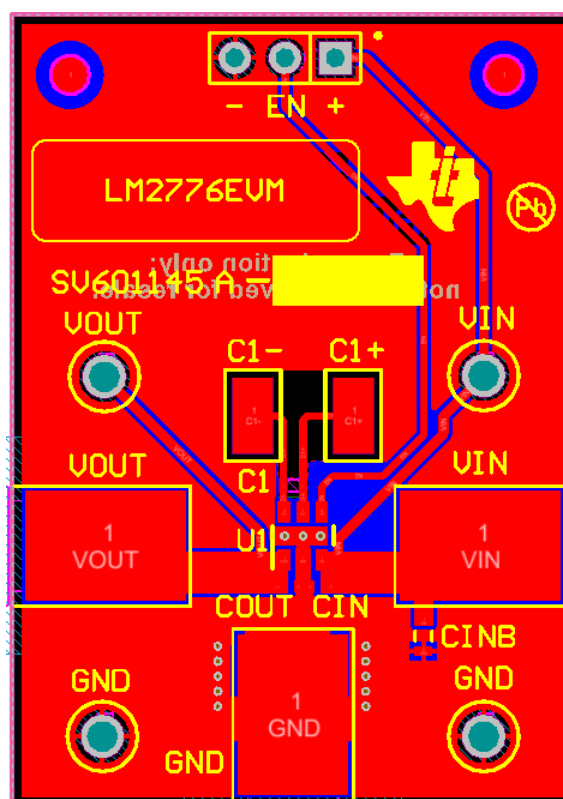


Figure 3. Top Assembly Layer

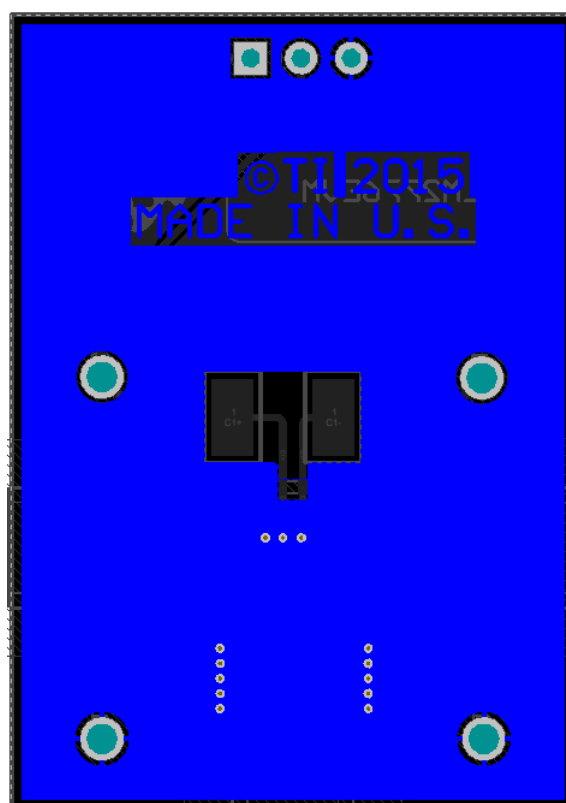


Figure 4. Bottom Assembly Layer (UNMIRRORED)

4 Schematic

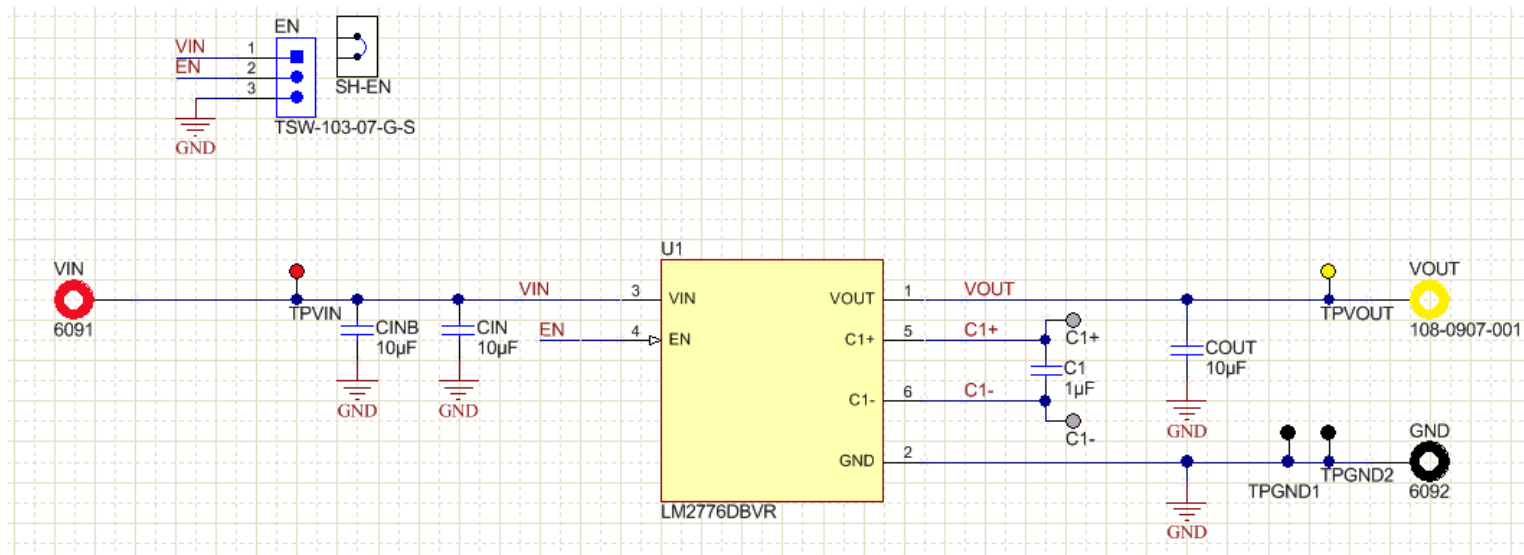


Figure 5. LM2776EVM Schematic

5 Bill of Materials

Bill of Materials

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DESIGNATOR	DESCRIPTION	MANUFACTURER	PART NUMBER	QUANTIT Y
U1	Switched Capacitor Inverter, DBV0006A	Texas Instruments	LM2776DBVT	1
!PCB1	Printed Circuit Board	Any	SV601145	1
CIN, COUT	CAP, CERM, 10 μ F, 10 V, +/- 20%, X5R, 0402	Samsung	CL05A106MP5NUNC	2
C1	CAP, CERM, 1 μ F, 35 V, +/- 10%, JB, 0402	TDK	C1005JB1V105K050BC	1
CINB	CAP, CERM, 10 μ F, 10 V, +/- 20%, X5R, 0603	TDK	C1608X5R1A106M	1
EN	Header, 100mil, 3x1, Gold, TH	Samtec	TSW-103-07-G-S	1
VIN	Standard Banana Jack, Insulated, Red	Keystone	6091	1
VOUT	BANANA JACK, 15A, Insulated, Nylon, Yellow	Emerson Network Power	108-0907-001	1
GND	Standard Banana Jack, Insulated, Black	Keystone	6092	1
SH-EN	Shunt, 100mil, Gold plated, Black	3M	969102-0000-DA	1
TPVIN	Test Point, Multipurpose, Red, TH	Keystone	5010	1
TPVOUT	Test Point, Multipurpose, Yellow, TH	Keystone	5014	1
TPGND1, TPGND2	Test Point, Multipurpose, Black, TH	Keystone	5011	2

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- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help.*

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Concernant les EVMs avec antennes détachables

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