

IS31FL3726 16-BIT COLOR LED DRIVER WITH PWM CONTROL

DESCRIPTION

The IS31FL3726 is comprised of constant-current drivers designed for color LEDs. The output current value can be set using an external resistor. The output current value can be adjusted from 5mA to 60mA through the external resistor.

As a result, all outputs will have virtually the same current levels.

This driver incorporates 16-bit constant t-current outputs, a 16-bit shift register, a 16-bit latch and a 16-bit AND-gate circuit.

FEATURES

- Supply voltage range from 3.3V to 5.5V
- Constant current range: 5mA to 60mA
- Application output voltage: $\geq 0.4V$
- For anode-common LEDs
- Serial and parallel data transfer rate: 20MHz (Max. cascade connection)
- Package: QFN-24(4mm \times 4mm) available in DFN-10 (3mm \times 3mm) package

QUICK START

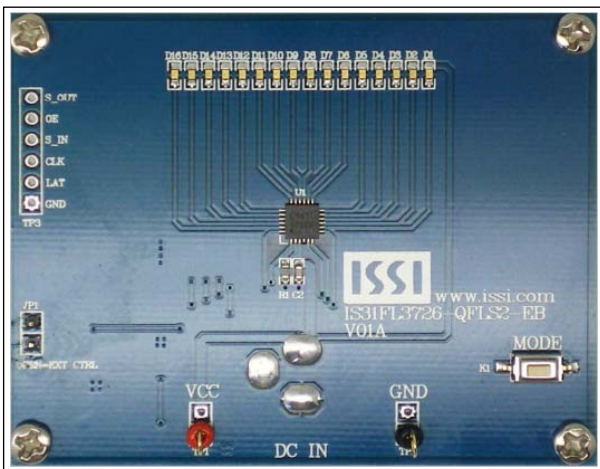


Figure 1: Photo of IS31FL3726 Evaluation Board

RECOMMENDED EQUIPMENT

- 5.0V, 2A power supply

ABSOLUTE MAXIMUM RATINGS

- $\leq 5.5V$ power supply

Caution: Do not exceed the conditions listed above, otherwise the board will be damaged.

PROCEDURE

The IS31FL3726 evaluation board is fully assembled and tested. Follow the steps listed below to verify board operation.

Caution: Do not turn on the power supply until all connections are completed.

- 1) Connect the ground terminal of the power supply to the GND and the positive terminal to the VCC. Or connect the DC power to the connector (DC IN).
- 2) Turn on the power supply and pay attention to the supply current. If the current exceeds 500mA, please check for circuit fault.
- 3) Enter the desired mode of display by toggling the MODE button.

ORDERING INFORMATION

Part No.	Temperature Range	Package
IS31FL3726-QFLS2-EB	-40°C to +85°C (Industrial)	QFN-24, Lead-free

Table 1: Ordering Information

For pricing, delivery, and ordering information, please contact Lumissil's analog marketing team at analog@lumissil.com or (408) 969-6600.

IS31FL3726 16-BIT COLOR LED DRIVER WITH PWM CONTROL

EVALUATION BOARD OPERATION

The IS31FL3726 evaluation board has two display modes. Press MODE button to switch configurations.

- 1) (Default mode) Blue LEDs turn on and off one by one from right to left.
- 2) Blue LEDs turn on from middle to two sides and trun off from two sides to middle.

Note: IS31FL3726 solely controls the FxLED function on the evaluation board.

SOFTWARE SUPPORT

JP1 default setting is close circuit. If it is set to open, the on-board MCU will stop working. The serial control signal pins are set to High Impedance. External serial control signals can be connected to TP3 to control the IS31FL3726 LED driver.

Please refer to the datasheet to get more information about IS31FL3726.

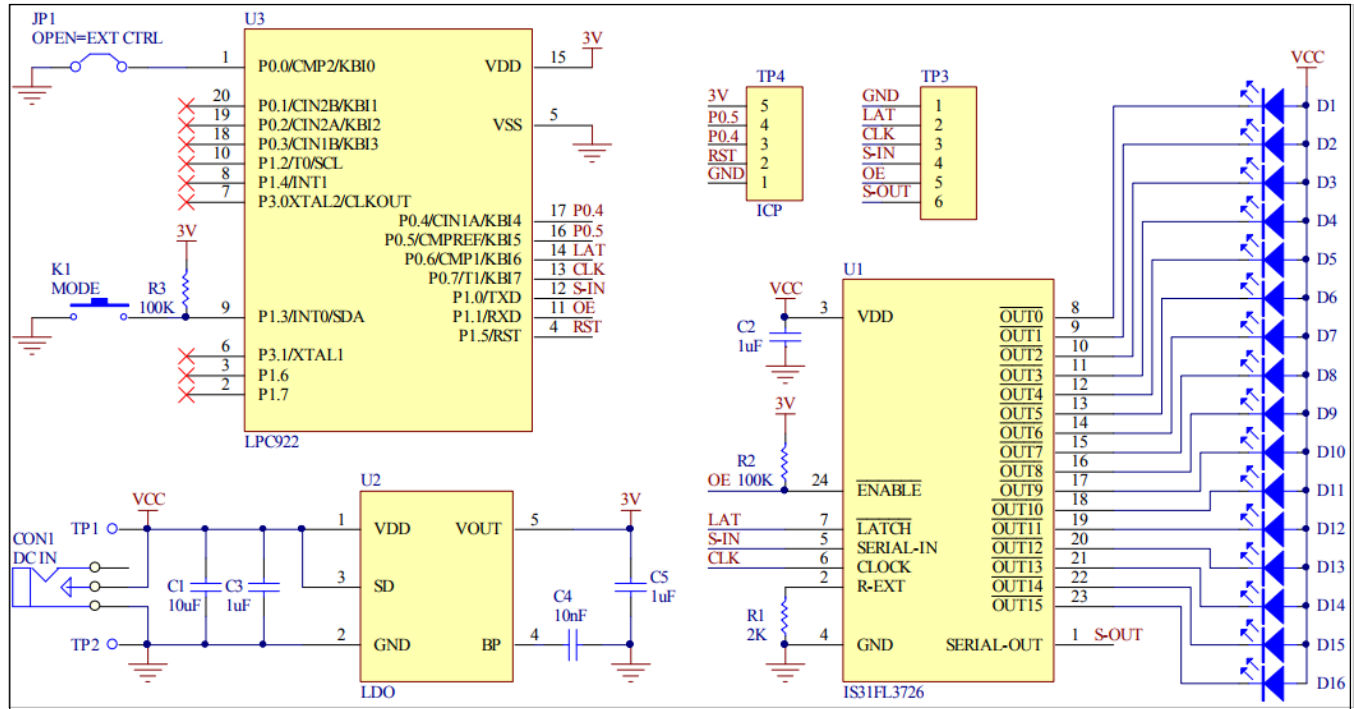


Figure 2: IS31FL3726 Application Schematic

IS31FL3726 16-BIT COLOR LED DRIVER WITH PWM CONTROL

BILL OF MATERIALS

Name	Symbol	Description	Qty	Supplier	Part No.
LED Driver	U1	16CH FxLED Driver	1	Lumissil	IS31FL3726
LDO	U2	Low-dropout Regulator	1	PAM	PAM3101
MCU	U3	Microcontroller	1	NXP	LPC922
Diode	D1~D16	Diode, LED Blue, SMD	16	Everlight	19-217/BHC-ZL1M2RY/3T
Resistor	R1	RES,2k,1/16W,±5%,SMD	1		
Resistor	R2,R3	RES,100k,1/16W,±5%,SMD	2		
Capacitor	C1	CAP,10µF,16V,±20%,SMD	1		
Capacitor	C2,C3,C5	CAP, 1µF,16V,±20%,SMD	3		
Capacitor	C4	CAP,10nF,16V,±20%,SMD	1		
Button	K1	Button SMD	1		

Bill of Materials, refer to Figure 2 above.

IS31FL3726 16-BIT COLOR LED DRIVER WITH PWM CONTROL

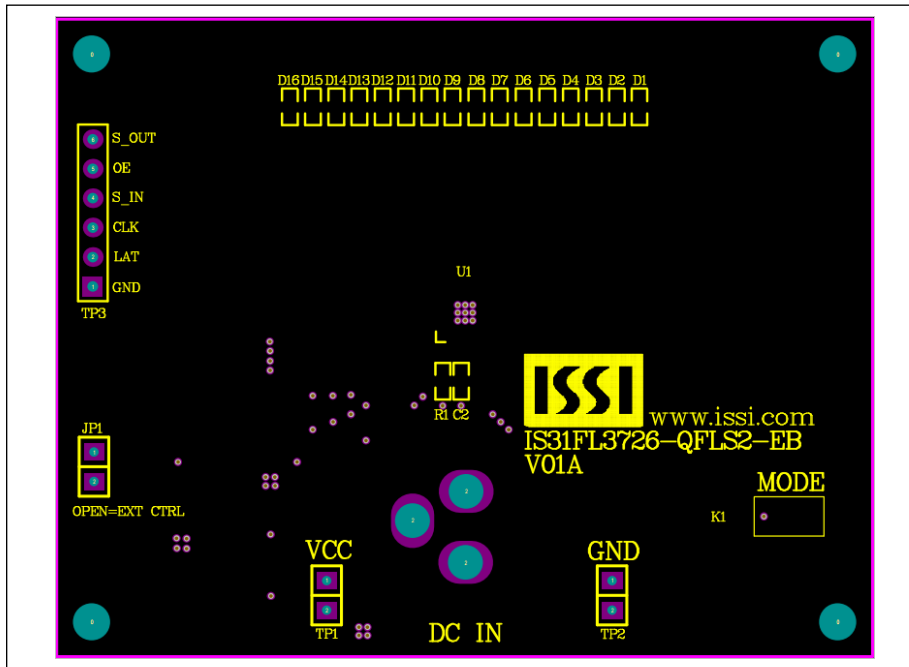


Figure 3: Board Component Placement Guide - Top Layer

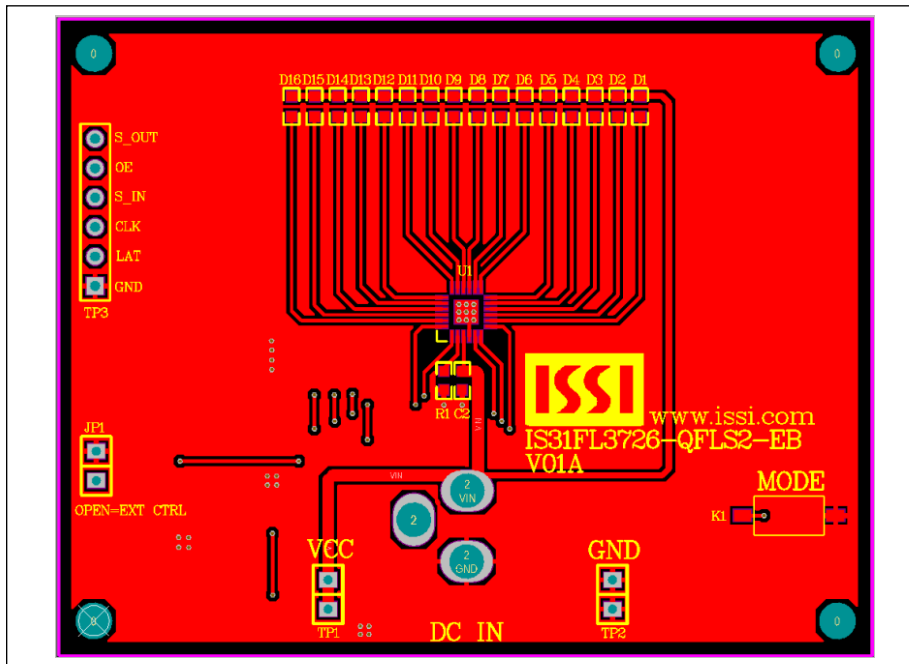


Figure 4: Board PCB Layout - Top Layer

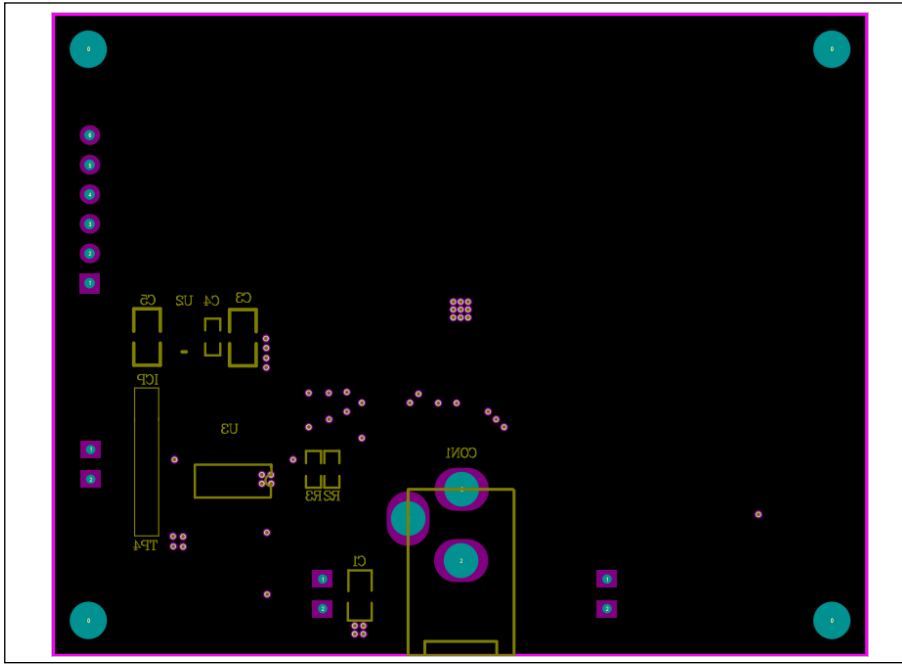


Figure 5: Board Component Placement Guide - Bottom Layer

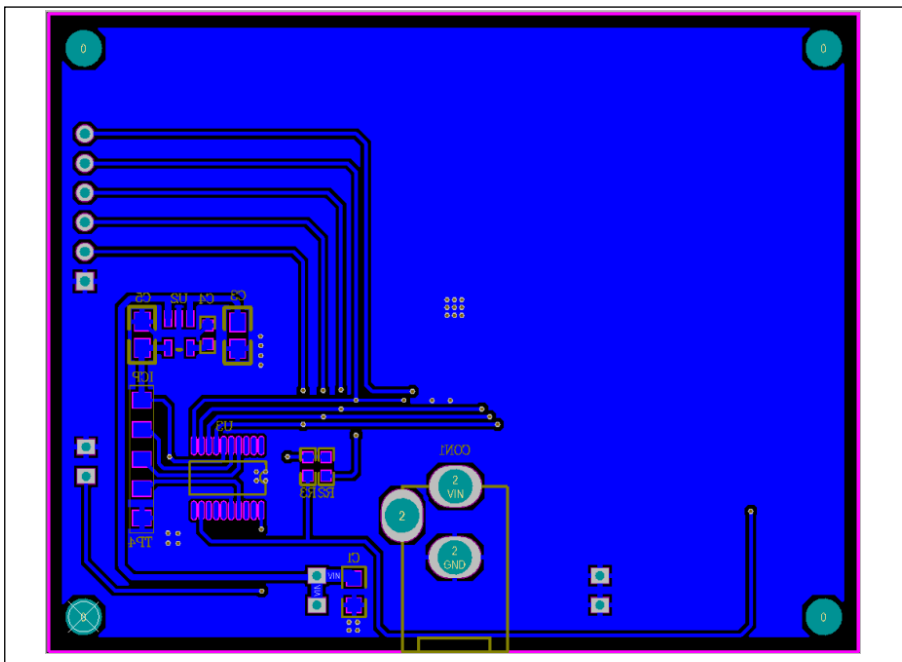


Figure 6: Board PCB Layout - Bottom Layer

Copyright © 2012 Lumissil Microsystems. All rights reserved. Lumissil Microsystems reserves the right to make changes to this specification and its products at any time without notice. Lumissil Microsystems assumes no liability arising out of the application or use of any information, products or services described herein. Customers are advised to obtain the latest version of this device specification before relying on any published information and before placing orders for products.

Lumissil Microsystems does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of the life support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications unless Lumissil Microsystems receives written assurance to its satisfaction, that:

- a.) the risk of injury or damage has been minimized;
- b.) the user assume all such risks; and
- c.) potential liability of Lumissil Microsystems is adequately protected under the circumstances