

36 CHANNELS LED DRIVER EVALUATION BOARD GUIDE

DESCRIPTION

IS31FL3236A is comprised of 36 constant current channels each with independent PWM control, designed for driving LEDs, PWM frequency can be 3kHz or 22kHz. The output current of each channel can be set at up to 38mA (Max.) by an external resistor and independently scaled by a factor of 1, 1/2, 1/3 and 1/4. The average LED current of each channel can be changed in 256 steps by changing the PWM duty cycle through an I2C interface.

FEATURES

- 2.7V to 5.5V supply
- I2C interface, automatic address increment function
- Modulate LED brightness with 256 steps PWM
- Each channel can be scaled independently by 1, 1/2, 1/3 and 1/4
- PWM frequency selectable
- QFN-44 (5mm × 5mm) package

QUICK START



Figure 1: Photo of IS31FL3236A Evaluation Board

RECOMMENDED EQUIPMENT

- Micro-USB 5V

ABSOLUTE MAXIMUM RATINGS

- $\leq 5.5V$ power supply

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

PROCEDURE

The IS31FL3236A 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) Plug in the USB power input micro-USB.
- 2) Enter the desired mode of display by toggling the MODE button.

EVALUATION BOARD OPERATION

The IS31FL3236A evaluation board has five display modes. Press MODE button to switch configurations.

- 1) (Default mode) Rainbow loops mode.
- 2) Four colors change.
- 3) Full color change.
- 4) Half round rainbow mode.
- 5) Running LED change.

Note: IS31FL3236A solely controls the FxLED function on the evaluation board.

ORDERING INFORMATION

Part No.	Temperature Range	Package
IS31FL3236A-QFLS2-EBCYCLE	-40°C to +85°C (Industrial)	QFN-44, 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.

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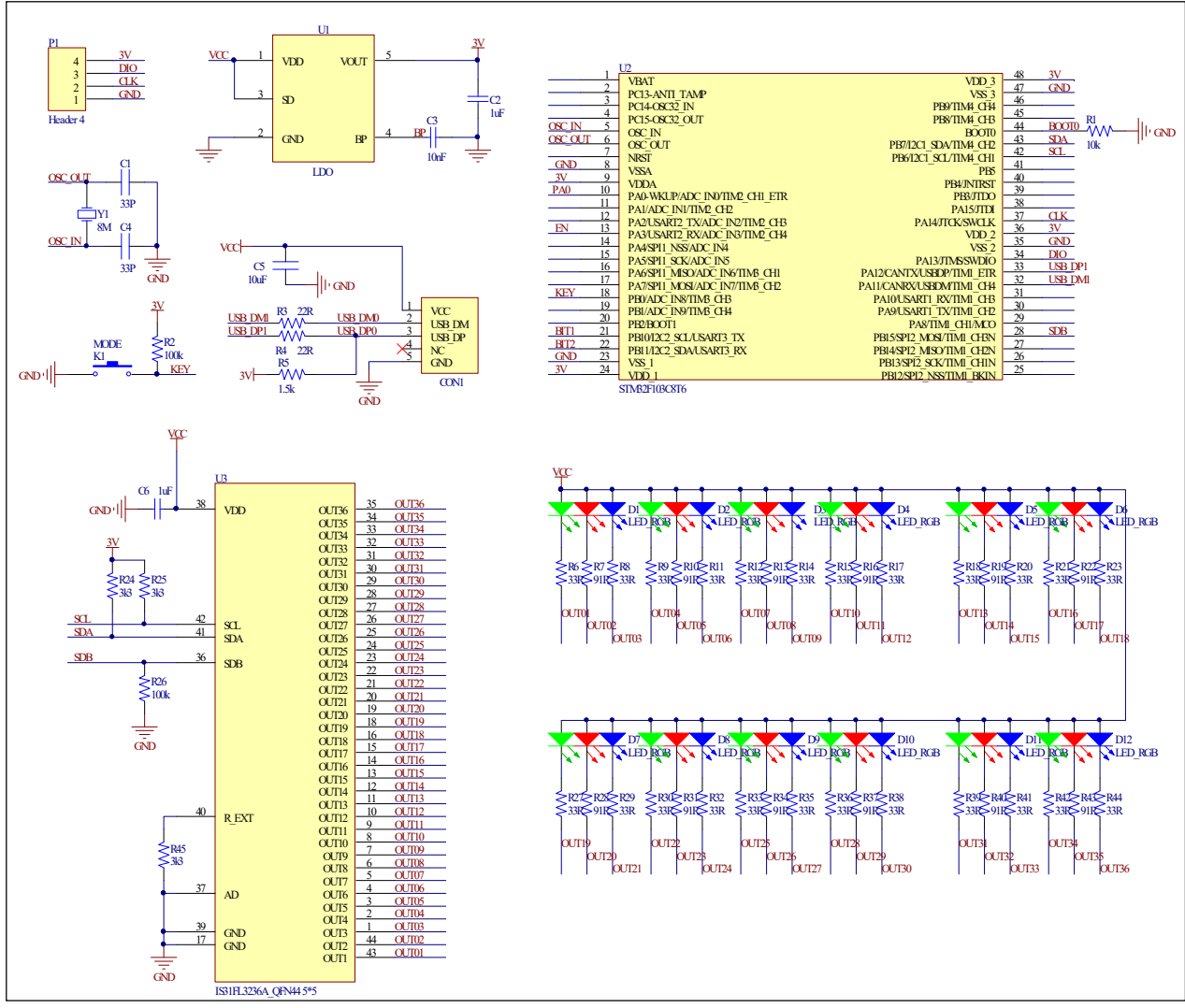


Figure 2: IS31FL3236A Application Schematic

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BILL OF MATERIALS

Name	Symbol	Description	Qty	Supplier	Part No.
LDO	U1	Low-dropout Regulator	1	PAM	PAM3101
MCU	U2	Microcontroller	1	STM	STM32F103C6
LED Driver	U3	36-CH FxLED Driver	1	Lumissil	IS31FL3236A
Diode	D1~D12	Diode, LED RGB, SMD	12	Everlight	99-235/RSGBB7C-A22/2D or 99-235/RGBC/TR8
Crystal	Y1	Crystal, 8MHz	1	JB	HC-49S
Resistor	R1	RES,10k,1/16W,±5%,SMD	1	Yageo	RC0603JR-0710KL
Resistor	R2, R26	RES,100k,1/16W,±5%,SMD	2	Yageo	RC0603JR-07100KL
Resistor	R3, R4	RES,22R,1/16W,±5%,SMD	2	Yageo	RC0603JR-0722RL
Resistor	R5	RES,1.5k,1/16W,±5%,SMD	1	Yageo	RC0603JR-071K5L
Resistor	R6,R8,R9,R11,R12, R14,R15,R17,R18, R20,R21,R23,R27, R29,R30,R32,R33, R35,R36,R38,R39, R41,R42,R44	RES,33R,1/16W,±5%,SMD	24	Yageo	RC0603JR-0733RL
Resistor	R7,R10,R13,R16, R19,R22,R28,R31, R34,R37,R40,R43	RES,91R,1/16W,±5%,SMD	12	Yageo	RC0603JR-0791RL
Resistor	R24,R25,R45	RES,3.3k,1/16W,±5%,SMD	3	Yageo	RC0603JR-073K3L
Capacitor	C1,C4	CAP,33pF,16V,±20%,SMD	2	Yageo	CC0603KKX7R9BB330
Capacitor	C2,C6	CAP,1µF,16V,±20%,SMD	2	Yageo	CC0603KKX7R9BB105
Capacitor	C3	CAP, 10nF,16V,±20%,SMD	1	Yageo	CC0603KKX7R9BB103
Capacitor	C5	CAP,10µF,16V,±20%,SMD	1	Yageo	CC0603KKX7R9BB106
Button	K1	Button SMD	1		

Bill of Materials, refer to Figure 2 above.

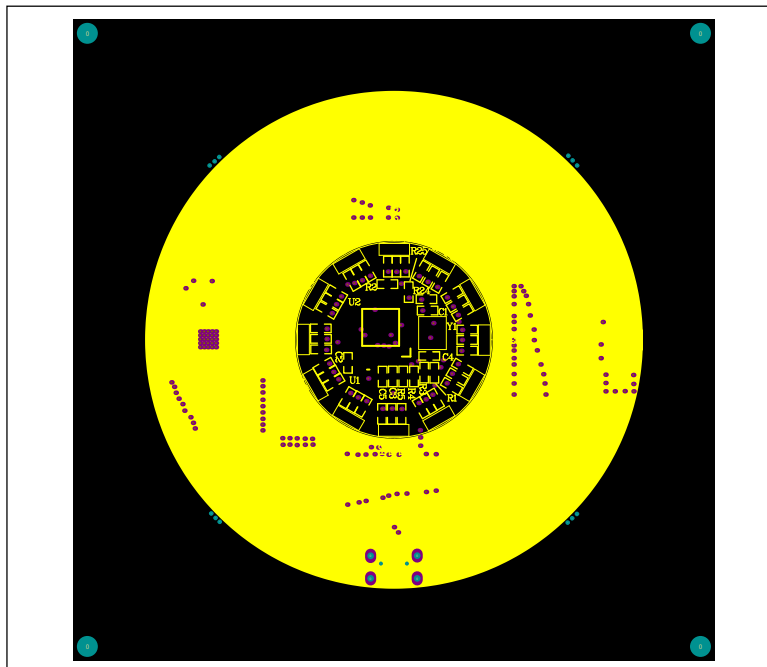


Figure 3: Board Component Placement Guide - Top Layer

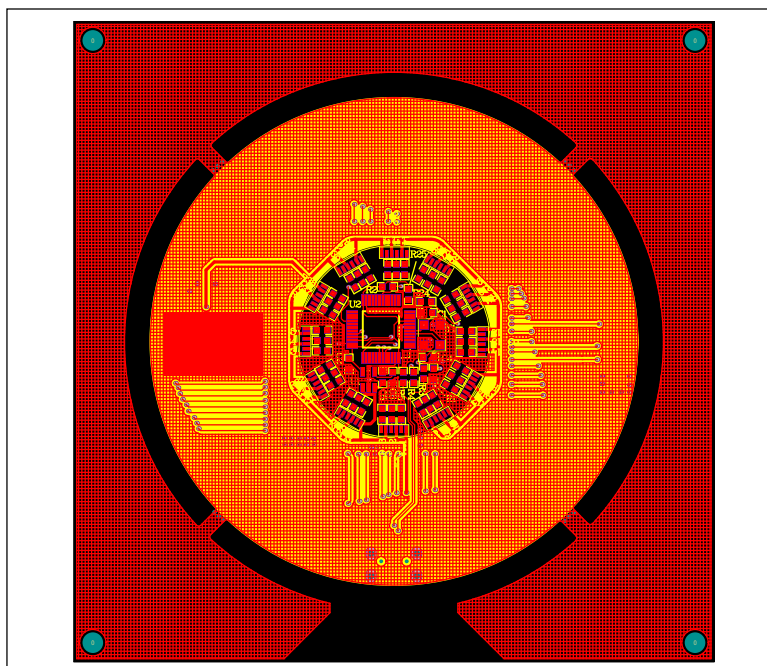


Figure 4: Board PCB Layout - Top Layer

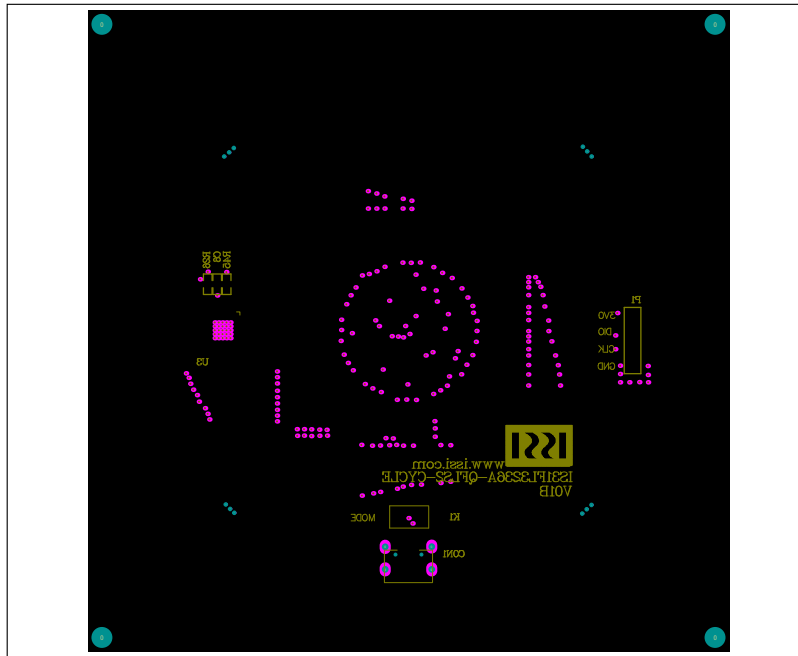


Figure 5: Board Component Placement Guide - Bottom Layer

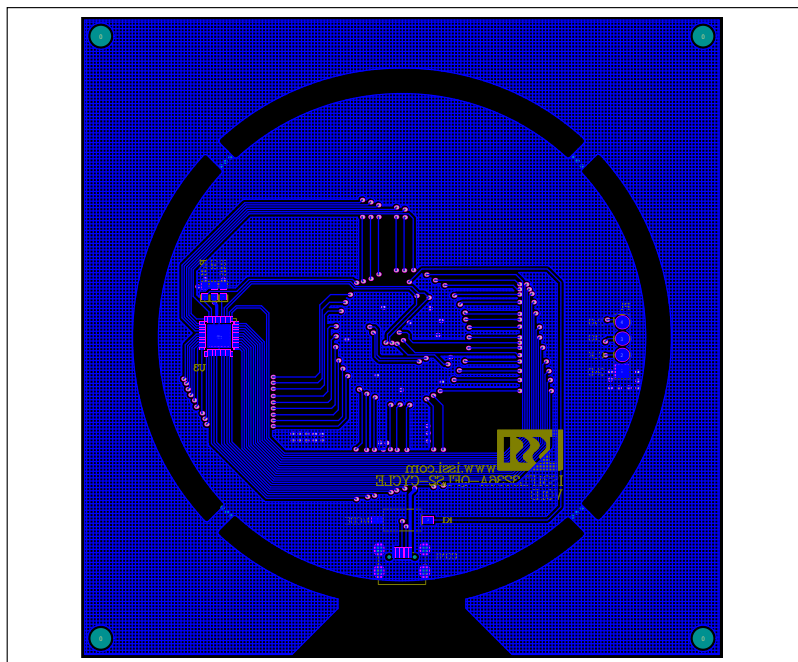


Figure 6: Board PCB Layout - Bottom Layer

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REVISION HISTORY

Revision	Detail Information	Data
C	Initial Release	2017.08.22
D	Update the BOM	2021.05.08