ISL97676IRZ-EVAL Quick Start Guide

FIGURE 1. ISL97676 EVALUATION BOARD

This quick start guide pertains to the ISL97676IRZ-EVAL. This board comes populated with 72 LED's in a 6P12S configuration to simplify evaluation and testing.

1. Apply input voltage to the VIN and GND post on the top left corner of the evaluation board.
2. Apply a 100% duty-cycle PWM signal to PWM (J13) and GND post.
3. Insert WR jumper.
4. To power-up the evaluation board in 6P12S configuration, make sure jumpers JP8-14 are inserted.
5. To power-up in 6P10S configuration, jumpers JP15-20 should be inserted.
6. Jumper JP5 should be inserted in the lower position. See Figure 1.
7. Jumper J12 should be inserted in the top position. See Figure 1.
8. LED current can be programmed by connecting a current meter across J8 and varying R12.

ILED = 724/R12

The measured current divided by 6 is the LED current per channel. For example, 120mA measured current will correspond to 20mA/channel.

9. Floating jumper JP7 will provide direct PWM mode such that the dimming frequency follows the input PWM signal without frequency modulation. See ISL97676 data sheet for more details (FN7600). Note that equal phase shift feature is disabled in this mode.
10. Inserting JP7 allows the dimming frequency to be programmed with a resistor, R12 to GND. The dimming frequency is calculated by Equation 1:

$$FPWM = 6.67 \times 10^{7} / RFPWM \quad \text{(EQ. 1)}$$

11. Switches SW1 and SW2 are used to program the switching frequency and enable the equal phase shift feature per Table 1. For additional information, please consult the ISL97676 data sheet.

TABLE 1.

SW2	SW1	
Up	Up	F_{SW} = 1.2MHz, Equal Phase Shift Enabled
Up	Down	F_{SW} = 570kHz, No Phase Shift
Down	Up	F_{SW} = 1.2MHz, No Phase Shift
Down	Down	F_{SW} = 570kHz, Equal Phase Shift Enabled

12. After following Steps 1 through 9, all 72 LEDs should light up at 100% duty-cycle or full brightness.
13. Jumper JP1 can be inserted if the external fault MOSFET Q1 is not used. See data sheet for additional information.
14. Jumpers JP4, JP3, JP30 and the 10-pin white connector in the bottom left are not used.

The ISL97676 evaluation board schematic and top and bottom silkscreen layers are shown in Figures 2 through 4.

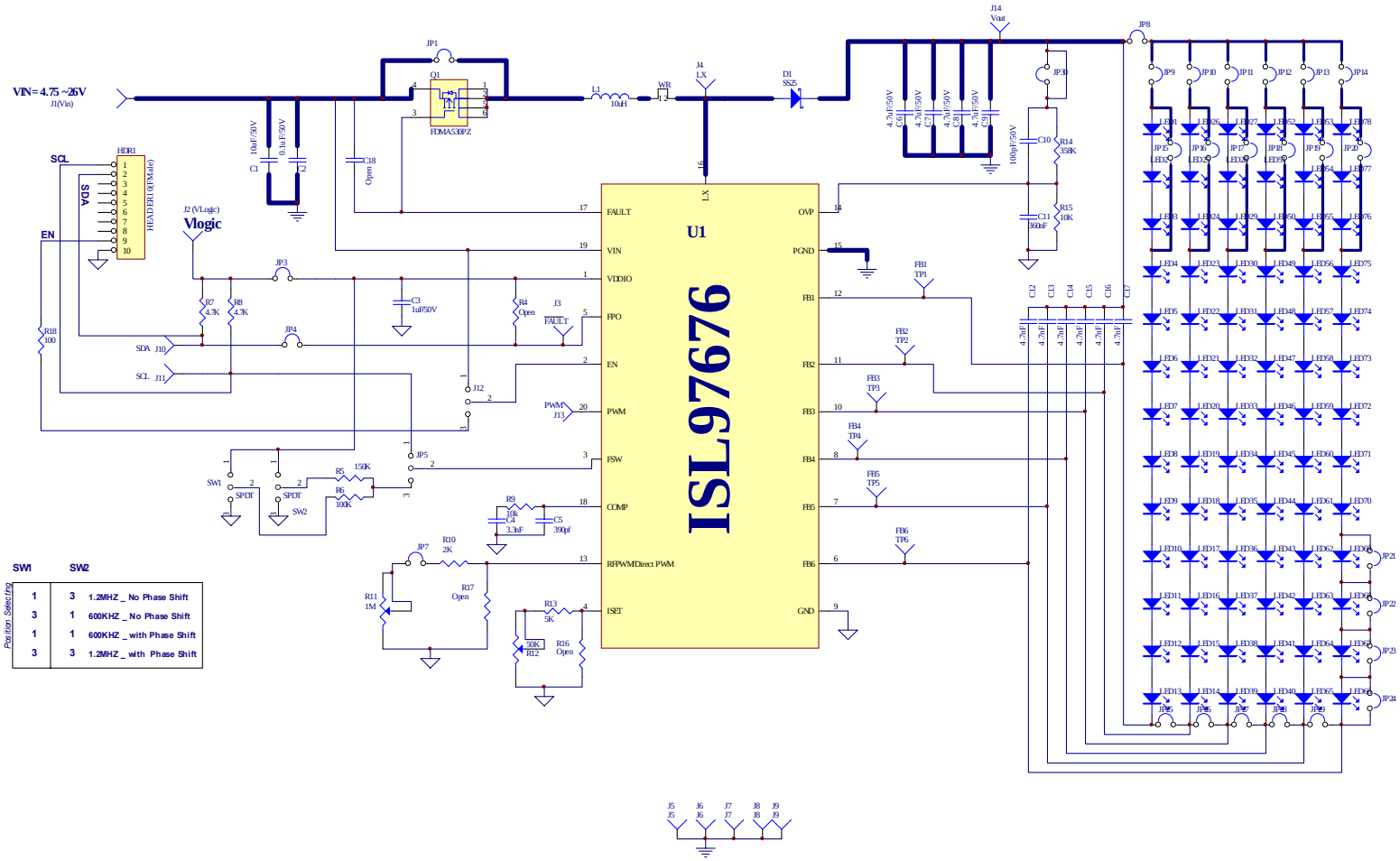

FIGURE 2. ISL97676 EVALUATION BOARD SCHEMATIC

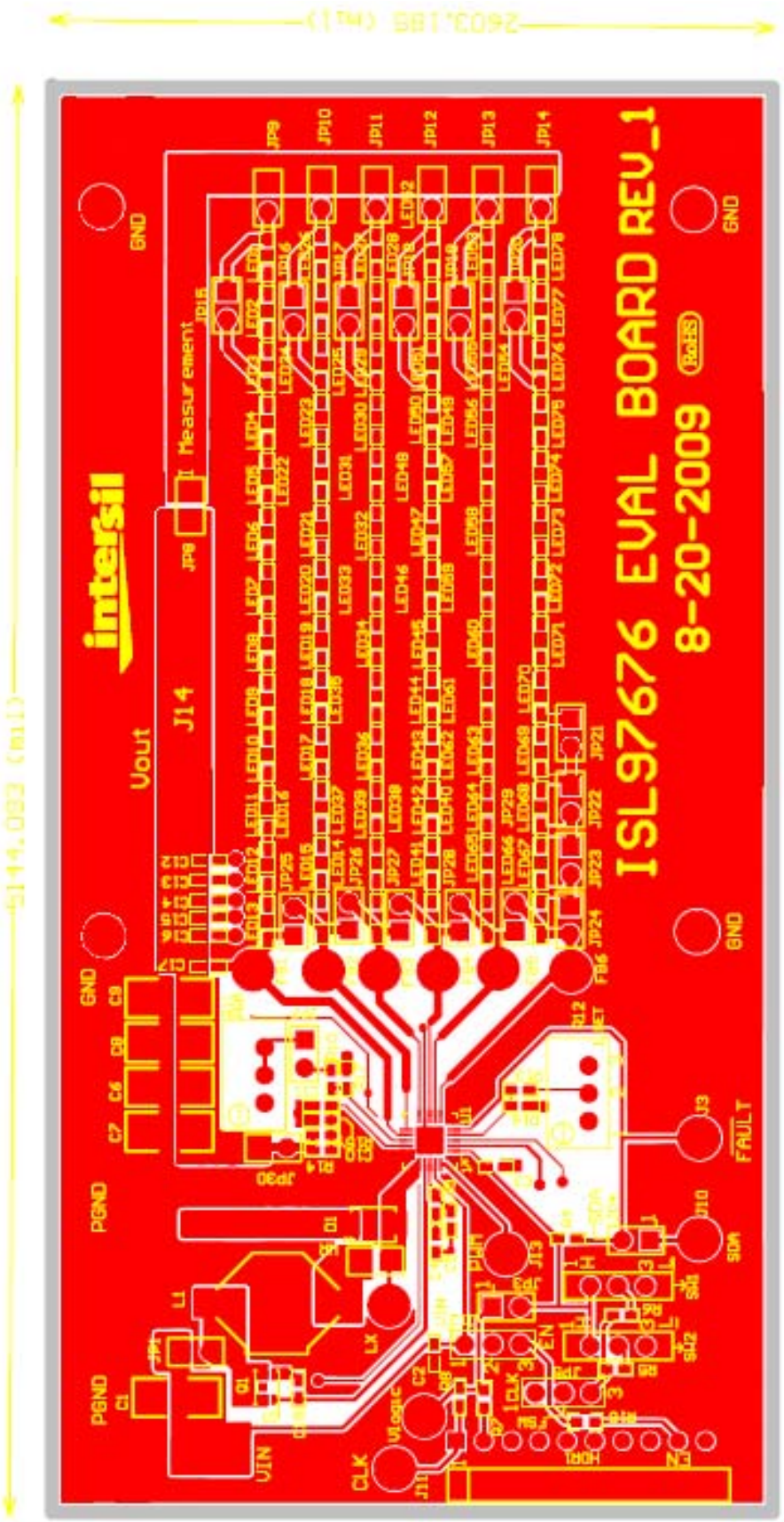

FIGURE 3. EVALUATION BOARD TOP LAYER

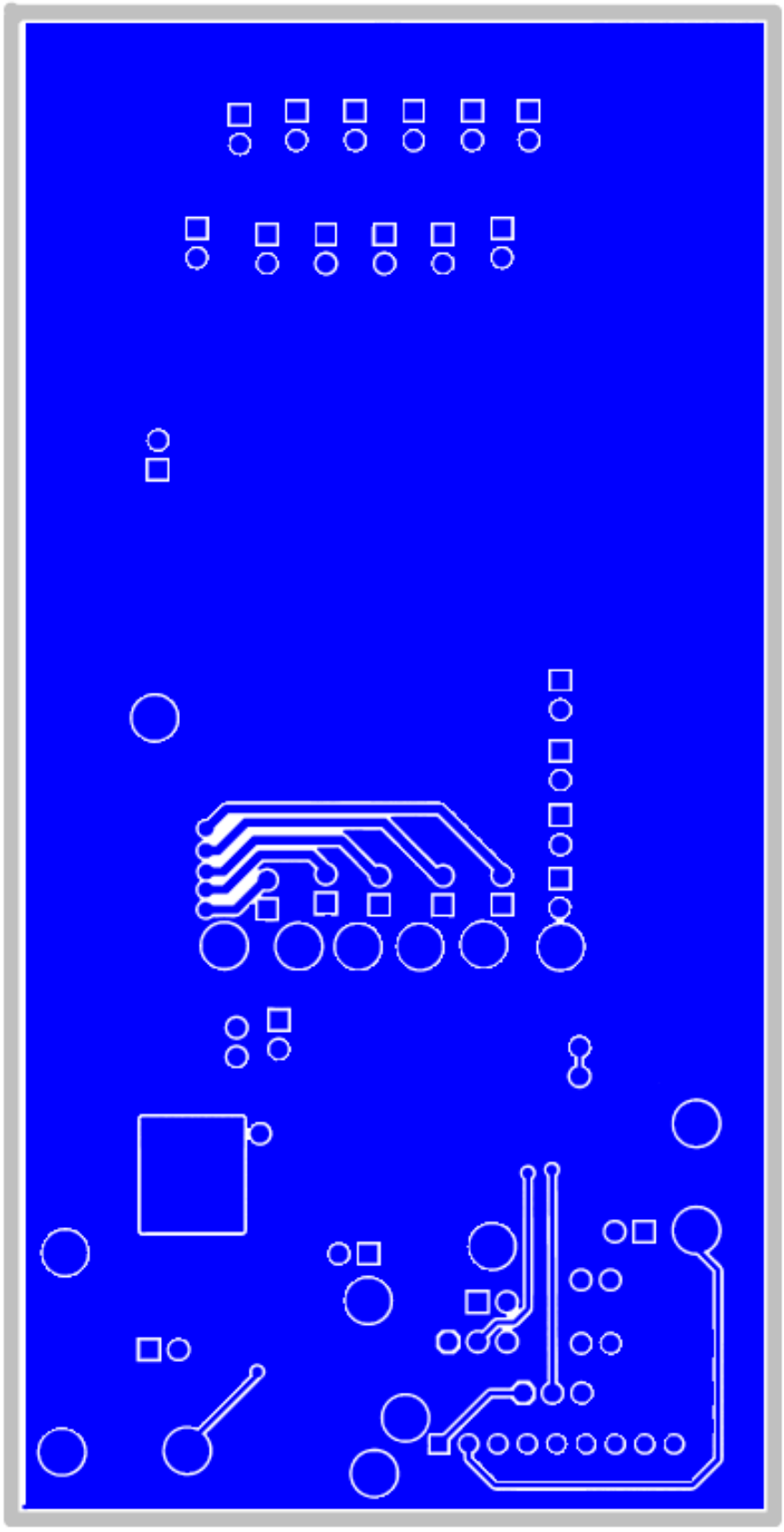

FIGURE 4. EVALUATION BOARD BOTTOM LAYER