

**Evaluation Board for the AAT2862
Backlight LED Driver and Multiple LDO Lighting Management Unit**

Introduction

The AAT2862 evaluation board demonstrates the functionality of the AAT2862 and its application as a highly integrated lighting management unit. The device provides excellent efficiency for both flash and movie modes. All backlight LED channels are provided with excellent current matching.

Through the I²C interface, the AAT2862 can be programmed with 30mA to 0.48mA per channel backlight current and the four LDOs' output voltages are programmable from 1.2V to 3.3V.

This document describes the evaluation board and its accompanying user interface. In addition, a brief "Getting Started" section is included to help the user begin operating the evaluation board. A schematic of the complete circuit is shown in Figures 1 and 2. The actual board layout is also provided in Figures 3 and 4. For additional information, please consult the AAT2862 product datasheet.

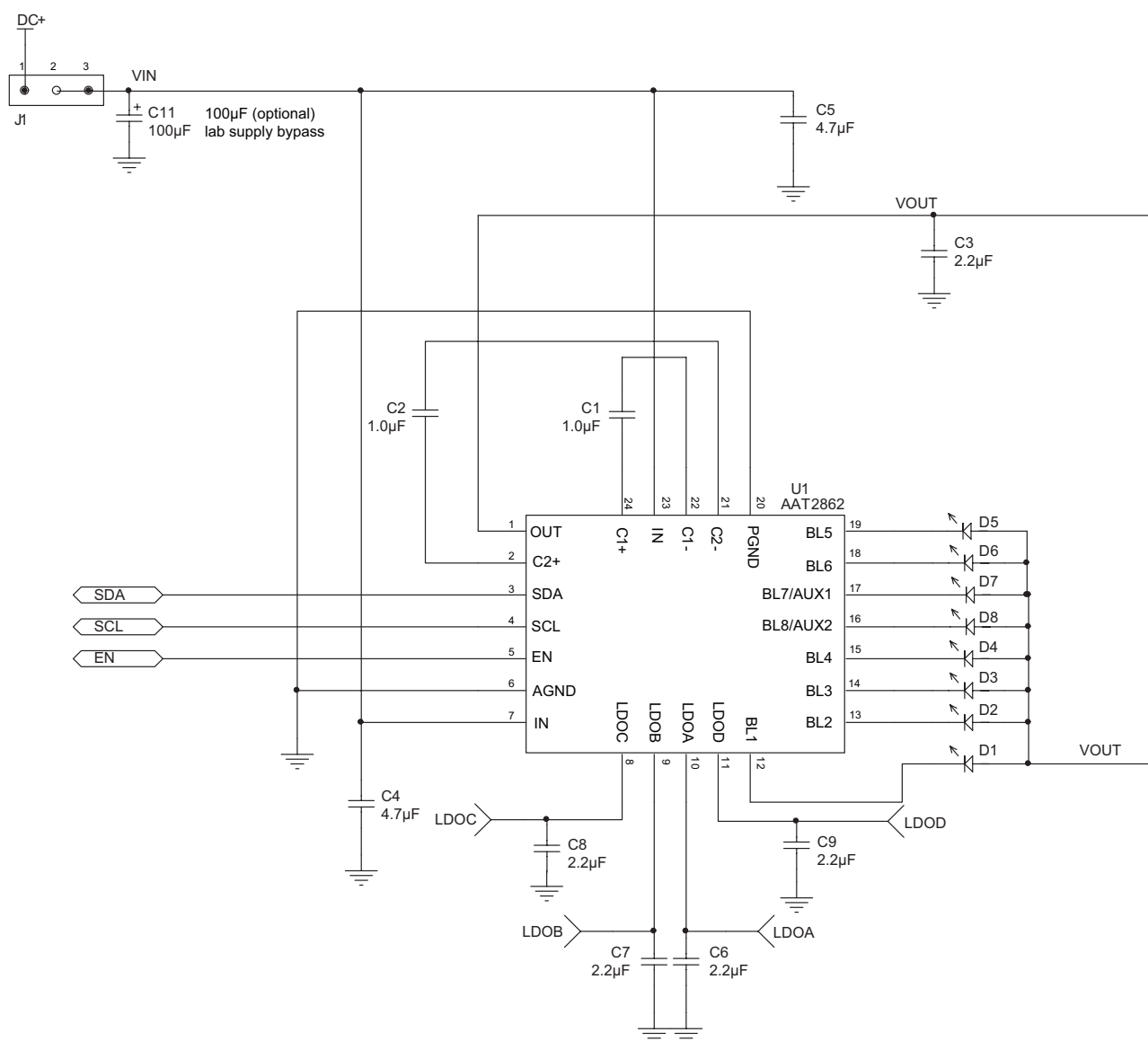


Figure 1: AAT2862 Schematic.

Evaluation Board for the AAT2862 Backlight LED Driver and Multiple LDO Lighting Management Unit

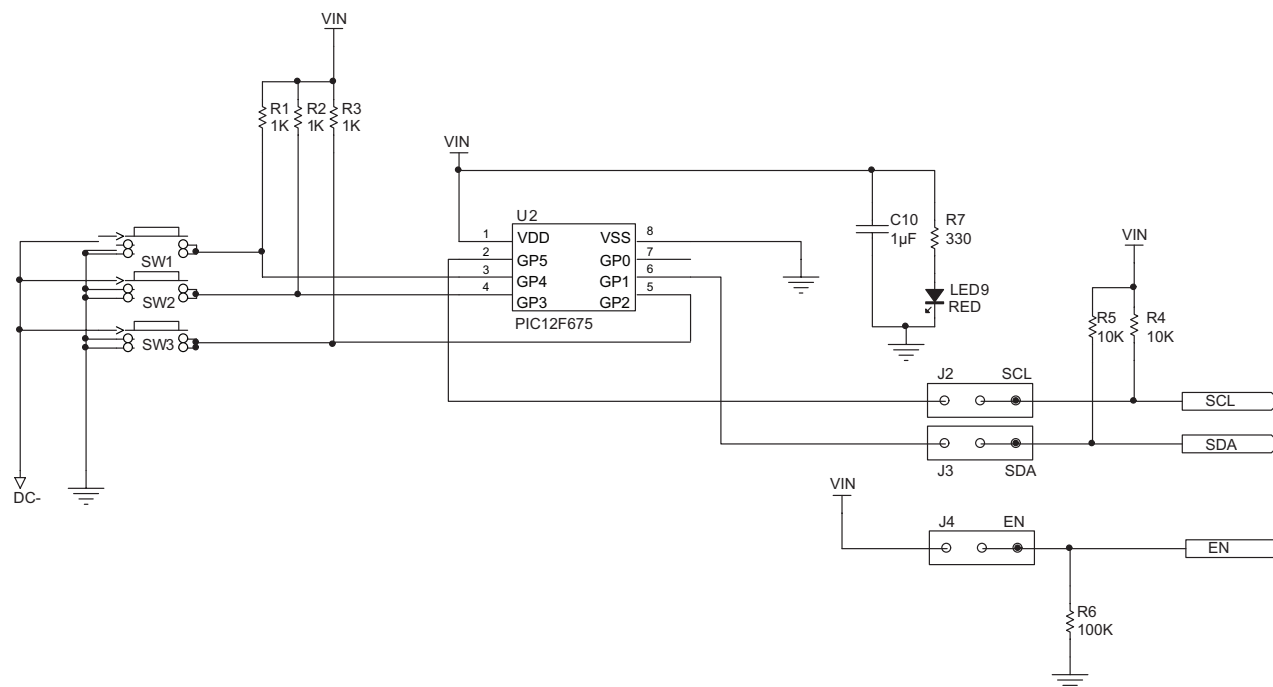


Figure 2: AAT2862 Microcontroller Schematic.

Getting Started

Connect the external power (3.6V - 4.2V, typical battery operational range) to the DC+ and DC- terminals. A jumper labeled J1 is inline with the terminal VIN to turn power ON/OFF. The red LED9 should illuminate, indicating that power has been connected. The two jumpers J2 and J3 are the clock SCL and data SDA lines for the I²C interface. There is an additional jumper J4 that connects the enable signal EN to the AAT2862.

The user interface is provided by three buttons: SW1, SW2, and SW3. The modes of operation are detailed in Table 1. The SW1 button controls the four LDOs. The SW2 button controls the MAIN backlight. The SW3 button controls the SUB channels. The SW1 and SW2 buttons pressed together control MAIN+SUB backlight fade-out. The SW1 and SW3 buttons pressed together control MAIN+SUB backlight fade-in. All three buttons (SW1, SW2, and SW3) pressed together reset the registers of the AAT2862 and turn off the LEDs.

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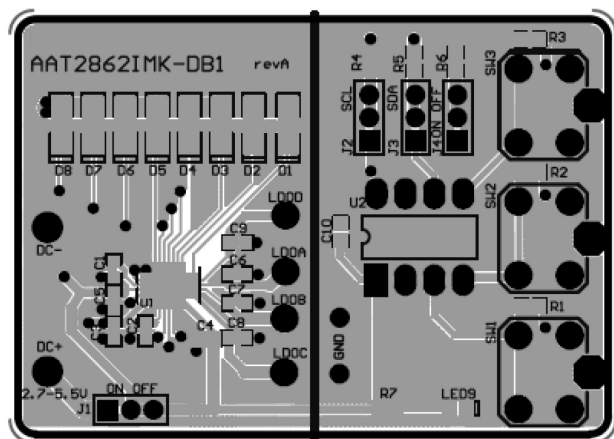


Figure 3: AAT2862 Evaluation Board Top Layer.

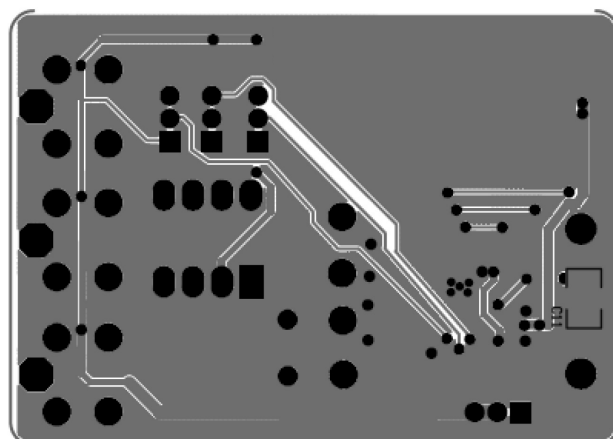


Figure 4: AAT2862 Evaluation Board Bottom Layer.

AAT2862 Evaluation Board User Interface Functionality

Button(s) Pushed	Description
SW1 (LDOs)	[Push/Release once] All LDOs will be turned on with default output voltage 1.2V. Every push release will increment output voltage according to datasheet table.
SW2 (MAIN)	[Push/Release once] Turning on the MAIN backlight LEDs with default current 30mA per channel. Every push release will decrement the current according to datasheet table.
SW3 (SUB)	[Push/Release once] Turning on the SUB backlight LEDs with default current 30mA. Every push release will decrement the current according to datasheet table.
SW1 + SW2	[Push/Release once] Turning on all MAIN+SUB backlight LEDs with default current 30mA. The current starts to fade-out automatically down to 0.48mA per channel.
SW1 + SW3	[Push/Release once] Turning on the all MAIN+SUB backlight LEDs with default current 0.48mA. The current will increase automatically up to 30mA per channel.
SW1 + SW2 + SW3	[Push/Release once] Reset all registers to default.

Table 1: AAT2862 Evaluation Board User Interface Functionality.

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AAT2862 Evaluation Board Component Listing

Component	Part Number	Description	Manufacturer
U1	AAT2862IMK	Backlight LED driver with 4 LDOs	Skyworks
U2	PIC12F675	8-bit CMOS, FLASH-based μ C; 8-pin PDIP package	Microchip
SW1 – SW3	PTS645TL50	Switch Tact, SPST, 5mm	ITT Industries
R1, R2, R3	Chip Resistor	1k Ω , 5%, 1/4W; 0603	Vishay
R4, R5	Chip Resistor	10k Ω , 5%, 1/4W; 0603	Vishay
R6	Chip Resistor	100k Ω , 5%, 1/4W; 0603	Vishay
R7	Chip Resistor	330 Ω , 5%, 1/4W; 0603	Vishay
C3, C6, C7, C8, C9	GRM188R71A225KE15	2.2 μ F, 10V, X7R, 0603	MuRata
C1, C2, C10	GRM216R61A105KA01	1 μ F, 10V, X5R, 0603	MuRata
C4, C5	GRM18x	4.7 μ F, 10V, X5R, 0603	MuRata
D1-D8	LW M673	Mini TOPLED White LED; SMT	Lumileds, Philips
LED9	CMD15-21SRC/TR8	Red LED; 0603	Chicago Miniature Lamp
J1, J2, J3, J4	PRPN401PAEN	Conn. Header, 2mm zip	Sullins Electronics

Table 2: AAT2862 Evaluation Board Component Listing.

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