

S6SAL211A94SA1001

4ch 10W LED Driver Board Operation Guide

Doc. No. 002-08727 Rev. *A

Cypress Semiconductor 198 Champion Court San Jose, CA 95134-1709 Phone (USA): 800.858.1810

Phone (Intnl): +1 408.943.2600

www.cypress.com



© Cypress Semiconductor Corporation, 2015-2016. This document is the property of Cypress Semiconductor Corporation and its subsidiaries, including Spansion LLC ("Cypress"). This document, including any software or firmware included or referenced in this document ("Software"), is owned by Cypress under the intellectual property laws and treaties of the United States and other countries worldwide. Cypress reserves all rights under such laws and treaties and does not, except as specifically stated in this paragraph, grant any license under its patents, copyrights, trademarks, or other intellectual property rights. If the Software is not accompanied by a license agreement and you do not otherwise have a written agreement with Cypress governing the use of the Software, then Cypress hereby grants you a personal, non-exclusive, nontransferable license (without the right to sublicense) (1) under its copyright rights in the Software (a) for Software provided in source code form, to modify and reproduce the Software solely for use with Cypress hardware products, only internally within your organization, and (b) to distribute the Software in binary code form externally to end users (either directly or indirectly through resellers and distributors), solely for use on Cypress hardware product units, and (2) under those claims of Cypress's patents that are infringed by the Software (as provided by Cypress, unmodified) to make, use, distribute, and import the Software solely for use with Cypress hardware products. Any other use, reproduction, modification, translation, or compilation of the Software is prohibited.

TO THE EXTENT PERMITTED BY APPLICABLE LAW, CYPRESS MAKES NO WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, WITH REGARD TO THIS DOCUMENT OR ANY SOFTWARE OR ACCOMPANYING HARDWARE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. To the extent permitted by applicable law, Cypress reserves the right to make changes to this document without further notice. Cypress does not assume any liability arising out of the application or use of any product or circuit described in this document. Any information provided in this document, including any sample design information or programming code, is provided only for reference purposes. It is the responsibility of the user of this document to properly design, program, and test the functionality and safety of any application made of this information and any resulting product. Cypress products are not designed, intended, or authorized for use as critical components in systems designed or intended for the operation of weapons, weapons systems, nuclear installations, life-support devices or systems, other medical devices or systems (including resuscitation equipment and surgical implants), pollution control or hazardous substances management, or other uses where the failure of the device or system could cause personal injury, death, or property damage ("Unintended Uses"). A critical component is any component of a device or system whose failure to perform can be reasonably expected to cause the failure of the device or system, or to affect its safety or effectiveness. Cypress is not liable, in whole or in part, and you shall and hereby do release Cypress from any claim, damage, or other liability arising from or related to all Unintended Uses of Cypress products. You shall indemnify and hold Cypress harmless from and against all claims, costs, damages, and other liabilities, including claims for personal injury or death, arising from or related to any Unintended Uses of Cypress products.

Cypress, the Cypress logo, Spansion, the Spansion logo, and combinations thereof, PSoC, CapSense, EZ-USB, F-RAM, and Traveo are trademarks or registered trademarks of Cypress in the United States and other countries. For a more complete list of Cypress trademarks, visit cypress.com. Other names and brands may be claimed as property of their respective owners.

Preface



This manual explains how to use the evaluation board. Be sure to read this manual before using the product. For this product, please consult with sales representatives or support representatives.

Handling and Use

Handling and use of this product and notes regarding its safe use are described in the manuals.

Follow the instructions in the manuals to use this product.

Keep this manual at hand so that you can refer to it anytime during use of this product.

Notice on this Document

All information included in this document is current as of the date it is issued. Such information is subject to change without any prior notice.

Please confirm the latest relevant information with the sales representatives.

Cautions



Caution of the Products Described in this Document

The following precautions apply to the product described in this manual.

 ⚠ WARNING	Indicates a potentially hazardous situation which could result in death or serious injury and/or a fault in the user's system if the product is not used correctly.
MARNING	Do not look directly at LED. There is a possibility that your eye is hurt.

Electric shock,	Before performing any operation described in this manual, turn off all the power supplies to the system. Performing such an operation with the power on may cause an electric shock or device fault.
Electric shock,	Once the product has been turned on, do not touch any metal part of it. Doing so may cause an electric shock or device fault.

1 CAUTION	Indicates the presence of a hazard that may cause a minor or moderate injury, damages to this product or devices connected to it, or may cause to loose software resources and other properties such as data, if the device is not used appropriately.
-----------	--

Cuts, Damage	Before moving the product, be sure to turn off all the power supplies and unplug the cables. Watch your step when carrying the product. Do not use the product in an unstable location such as a place exposed to strong vibration or a sloping surface. Doing so may cause the product to fall, resulting in an injury or fault.				
Cuts	The product contains sharp edges that are left unavoidably exposed, such as jumper plugs.				
Outs	Handle the product with due care not to get injured with such pointed parts.				
Damage	Do not place anything on the product or expose the product to physical shocks. Do not carry the product after the power has been turned on.				
	Doing so may cause a malfunction due to overloading or shock.				
Damage Since the product contains many electronic components, keep it away from direct sunlight, high ter and high humidity to prevent condensation. Do not use or store the product where it is exposed to or a strong magnetic or electric field for an extended period of time. Inappropriate operating or store environments may cause a fault.					
	Use the product within the ranges given in the specifications.				
Damage	Operation over the specified ranges may cause a fault.				
Damage	To prevent electrostatic breakdown, do not let your finger or other object come into contact with the metal parts of any of the connectors. Before handling the product, touch a metal object (such as a door knob) to discharge any static electricity from your body.				
Damage	When turning the power on or off, follow the relevant procedure as described in this document. Before turning the power on, in particular, be sure to finish making all the required connections. Furthermore, be sure to configure and use the product by following the instructions given in this document. Using the product incorrectly or inappropriately may cause a fault.				
Damage	Because the product has no casing, it is recommended that it be stored in the original packaging. Transporting the product may cause a damage or fault. Therefore, keep the packaging materials and use them when reshipping the product.				

Contents



1.	Description	6
2.	Evaluation Board Specification	7
3.	Pin Descriptions	8
	3.1 Input/Output Connecter Descriptions	
4.	Setup and Verification	9
	 4.1 Contents in a Package	9 13
5.	Layout	18
	5.1 Component Layout	
6.	Circuit Schematic	20
7.	Component List	23
8.	Property Data	26
9.	Board Picture	29
10.	Ordering Information	30
Rev	vision History	31
	Document Revision History	31

1. Description



S6SAL211A94SA1001 is the starter kit tool for BLE (*1) communication.

The tool has one evaluation board, this board implements S6AL211A94, and LED driver controlled by BLE communication.

It is necessary to prepare AC power cable, Android terminal (*2), Application software, LED module and connection cable.

- *1: BLE: Bluetooth® Low Energy
- *2: Prepare an Android terminal with Android OS 4.4.2 or 4.4.4.

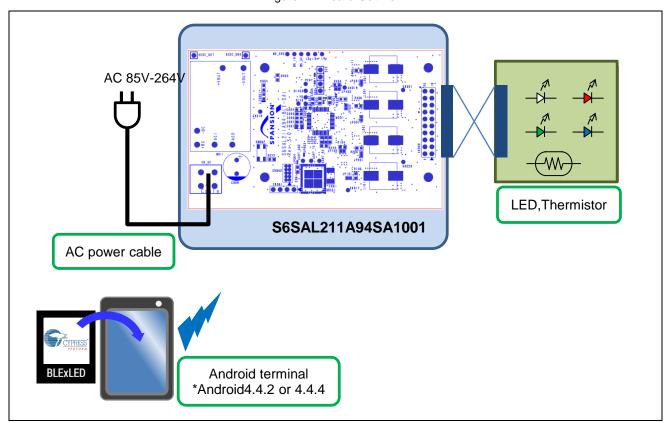


Figure 1-1 Board Outline

2. Evaluation Board Specification



Figure 2-1 Evaluation Board Specification

Item	Symbol	Min.	Тур.	Max.	Unit
Input voltage (with TUHS10F24)	VINAC	85		264	VRMS
Output LED voltage	VLEDout	0	18	24	V
Output LED current	ILEDout(W) ILEDout(R) ILEDout(G) ILEDout(B)	-	-	290 140 180 90	mA
Board size	-	58 × 93			mm

.

3. Pin Descriptions



3.1 Input/Output Connecter Descriptions

Table 3-1 Input/Output Pin Descriptions

Connecter Symbol	I/O	Function Description
CN_AC	1	AC power supply terminal
ACDC_OUT	0	24V AC/DC module output
ACDC_GND	-	GND
CN009	I/O	CH1 - CH4 LED , thermistor terminal
MS_3V	0	3V power supply terminal for motion sensor
MS_IN	1	Input terminal for motion sensor
MS_GND	-	GND terminal for motion sensor
LSp	0	3V power supply terminal for Illumination sensor
LSm	1	Input terminal for Illumination sensor
LSg	-	GND terminal for Illumination sensor
CN061	I/O	JTAG terminal for BLE module

3.2 Switch Descriptions

Table 3-2 Switch Descriptions

Switch	Description			
SW062	Reset push switch for BLE module			

4. Setup and Verification



4.1 Contents in a Package

Table 4-1 S6SAL211A94SA1001 Contents List

No.	Contents	ents Description		Notes
1	S6SAL211A94-BLE-SA1	Evaluation board of 4CH 10W with S6AL211A94	1	-
2	Leaflet	Described startup information	2	English, Japanese

Figure 4-1 Contents Picture



4.2 Evaluation with BLE Communication

Using Items for Evaluation with I²C Control

	Evaluation board	1pic (*1)
•	AC power cable	1pic (*2)
•	Android terminal with Android OS 4.4.2 or 4.4.4.	1pic (*2)
•	Application software	1pic (*3)
	LED module(5 series × 4ch)	1set (*2)
	Connection cable	1set (*2)



- *1: Included in a package.
- *2: Please prepare. Refer to 4.2.1 Operation
- *3: Please download it from our device home page.

URL: http://www.cypress.com/S6AL211A

S6AL211A94: BLE Application software file BLExLED.apk in S6AL211_BLExLED.cab

4.2.1 Operation

WARNING Do not look directly at LED. There is a possibility that your eye is hurt.

- 1. Connect CN009 of the evaluation board and LED by connection cable. (*1)
- 2. Set some attributes in the application of Android terminal. (*2)
- 3. Connect AC plug of the evaluation board to AC power supply.
- 4. Connect Android terminal to BLE module by BLE communication. (*2)
- 5. When connection succeeds, it is possible to make them do various movement by application. (*3)
- 6. When ending operation, make the brightness level of the LED "0" and tap "Disconnect" button of "HOME" tab and cut power supply.

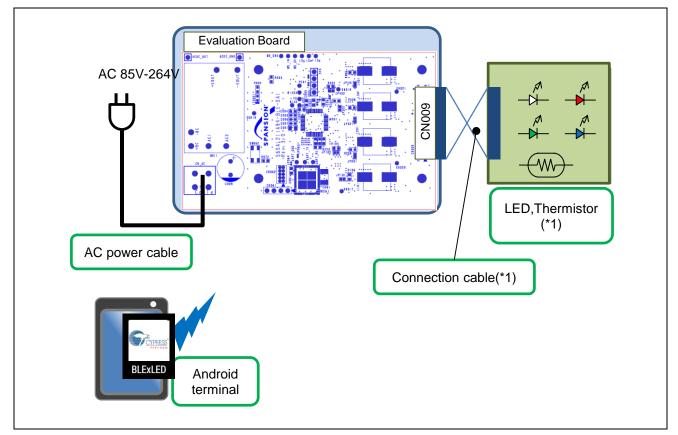


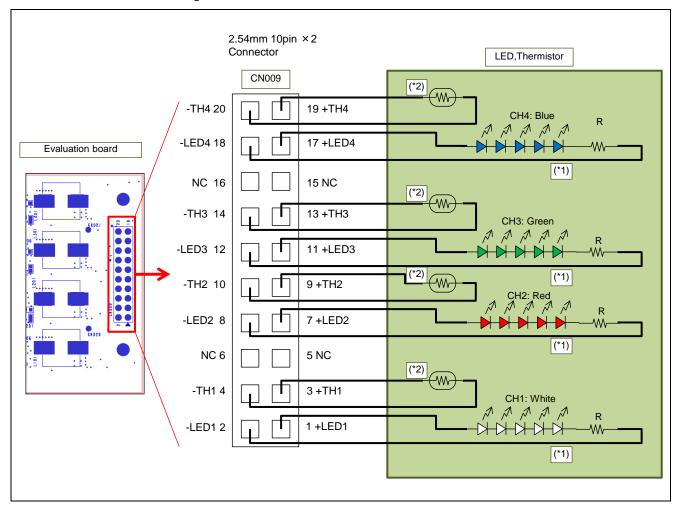
Figure 4-2 Board Connection

- *1: Connect LED to all CH from CN009. Refer to 4.2.1.1 Connection of the Evaluation Board and LED.
- *2: Refer to 4.2.1.2 Setup with BLE Communication.
- *3: Refer to 4.3 Function of Application.



4.2.1.1 Connection of the Evaluation Board and LED

Figure 4-3 Connection of the Evaluation Board and LED



*1: Connect LED to CN009.

Driver's output channel and color of LED are fixing by application software.

To indicate correct color, connect each channel exactly.

Specification of LED module and resistor: LED (5-series) + resistor White: IF \geq 1A, VF \approx 3 V Ex: LUW CR7P(OSRAM) Red: IF \geq 1A, VF \approx 2.2 V Ex: LR CP7P(OSRAM) Green: IF \geq 1A, VF \approx 3.2 V Ex: LT CP7P(OSRAM) Blue: IF \geq 1A, VF \approx 3.2 V Ex: LB CP7P(OSRAM)

 $R: 10\Omega \ 2W$

Be careful about polarity.

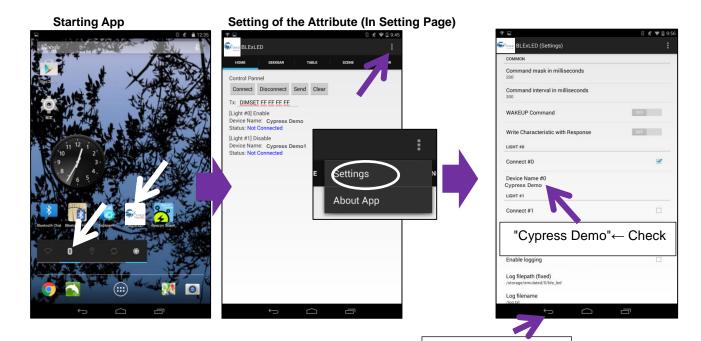
*2: Thermistor (+TH,-TH) is an option. Even if that isn't connected, a board operates.

Ex: NTCG104EF104FT1 (TDK)



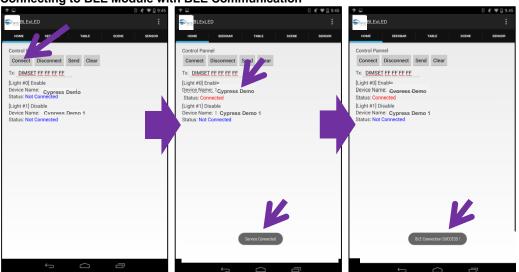
4.2.1.2 Setup with BLE Communication

- Start "BLExLED" by tapping icon in android tablet. (In advance, set on Bluetooth in Android OS)
 Set some attributes in the application. (Device Name #0)
- 2. Connect AC plug to AC power supply.
- Tap "Connect" button in "HOME" tab. If connection succeeds, "BLE Connection SUCCESS!" is indicated in the display.
- 4. Refer to 4.3 Function of Application and operate.



Return to "HOME" tab

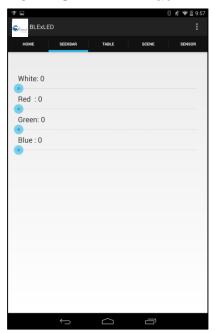
Connecting to BLE Module with BLE Communication





4.3 Function of Application

4.3.1 "SEEKBER" Tab



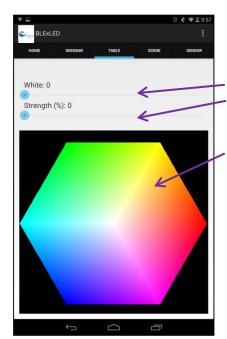
It is possible to change the brightness of each LED by swiping level of seek bar.

When releasing a finger, brightness of LED changes.

Maximum supply power of AC/DC module is 10.8W.Total maximum Output power is over 10W.

When lighting White LED, make the lighting level of RGB LED "0". When lighting RGB LED, make the lighting level of White LED "0".

4.3.2 "TABLE" Tab



It's possible to change the brightness of the White LED by swiping level of White Seek bar.

It's possible to change color brightness of the RGB LED by swiping level of Strength Seek bar.

It's possible to change the color of LED by tapping color table.

When Strength Seek bar level is "0", RGB LED goes out.

Maximum supply power of AC/DC module is 10.8W.Total maximum Output power is over 10W.

When lighting White LED, make the lighting level of RGB LED "0". When lighting RGB LED, make the lighting level of White LED "0".



4.3.3 "SCENE" Tab



"Preset Lighting" is operated by this table.

Reading: Bright white lighting
Dinner: Warm white lighting
CYPRESS: Cypress blue color

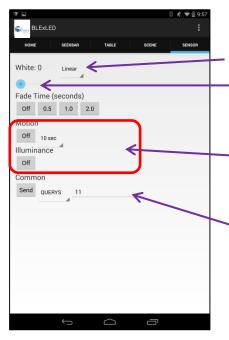
ALERT: Switching white and red (Sequence per second)

Wakeup: gradually brighter (5 seconds sequence)

Rainbow: Automatic color control

Stop: Stop sequence of "ALERT", "Wake up" and "Rainbow".

4.3.4 "SENSOR" Tab



It's possible to set a sensor setting and dimming curve at this table.

Dimming curve type select "Linear" or "Log"

It's possible to change the brightness of the white LED by swiping level of white seek bar.

Fade Time: Setting of fade time

When installing a sensor, below is used. (*1)

Motion: Motion sensor on/off, stand-by detection time select "10sec" or "5min"

Illuminance: Illuminance sensor on/off (*2)

Common: It's used for setting change. The following item can be chosen by a pulldown.

QUERYS: S6Al211A94 memory reading command (*3) MEMSET: S6Al211A94 memory writing in command (*3) BLEGET: BLE module memory reading command (*4) BLESET: BLE module memory writing in command (*4)

- *1: Refer to 4.3.4.1. Example of Sensor Use
- *2: When using a motion sensor, illumination sensor can not be used.
- *3: Refer to 4.3.4.2 S6Al211A94 Control Command
- *4: Refer to 4.3.4.3. BLE Module Control Command

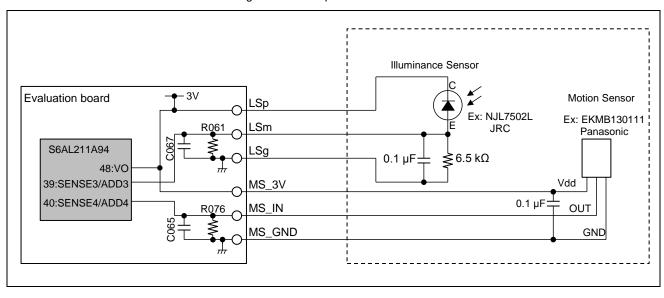


4.3.4.1 Example of Sensor Use

When using the sensor function of the application, prepare the outside sensor parts.

The recommended parts are as follows.

Figure 4-4 Example of Sensor Use



4.3.4.2 S6Al211A94 Control Command

QUERYS: "1st argument: read address" is input, and "Send" button is pushed.

Data or "TRUE" or "FALSE" of memory is indicated.

MEMSET: "1st argument: write address" and "2nd argument: write data" is input, and "Send" button is pushed. "OK" is indicated.

Note: Refer to hardware manual of S6AL211A94 for details of the address and write data.

Ex: QUERYS

Ex: MEMSET

Common
Send QUERYS

Read address

Read data

Data transmission completion

S6SAL211A94SA1001 4ch 10W LED Driver Board Operation Guide, Doc. No. 002-08727 Rev. *A



4.3.4.3 BLE Module Control Command

Table 4-2 BLEGET Command

Command	1st Argument Address	2nd Argument Data	Function	Response	Initial Value
	00	00	Turning on the lights threshold reading of illumination sensor	HH LL <cr><lf></lf></cr>	00 02
BLEGET		01	Turning off the lights threshold reading of illumination sensor	(*1)	00 08
	01	-	Reply interval time reading of illumination sensor	HH LL <cr><lf> (*2)</lf></cr>	00 05

Table 4-3 BLESET Command

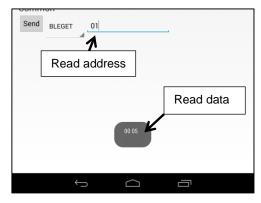
Comman d	1st Argument Address	2nd Argument Address/Dat a	3rd Argument Data	4th Argument Data	Function	Response
BLESET	00 01		HH (*1)	LL (*1)	Turning on the lights threshold writing of illumination sensor	OK <cr><lf< td=""></lf<></cr>
		01			Turning off the lights threshold writing of illumination sensor	>
	01	HH (*2)	LL (*2)	-	Reply interval time writing of illumination sensor	OK <cr><lf< td=""></lf<></cr>

^{*1:} Threshold (hexadecimal number). HH: Upper 2bit data, LL: Lower 8bit data Only lower rank 2bit is effective for HH data.

Set Turning on the lights threshold smaller than Turning off the lights threshold.

*2: Reply interval time (hexadecimal number). HH: Upper 2bit data, LL: Lower 8bit data Unit: 0.1 ms, Setting area: 0.1 ms to 6553.5 ms

Ex: BLEGET



Ex: BLESET





4.4 How to Do When LED Lighting can not be Controlled.

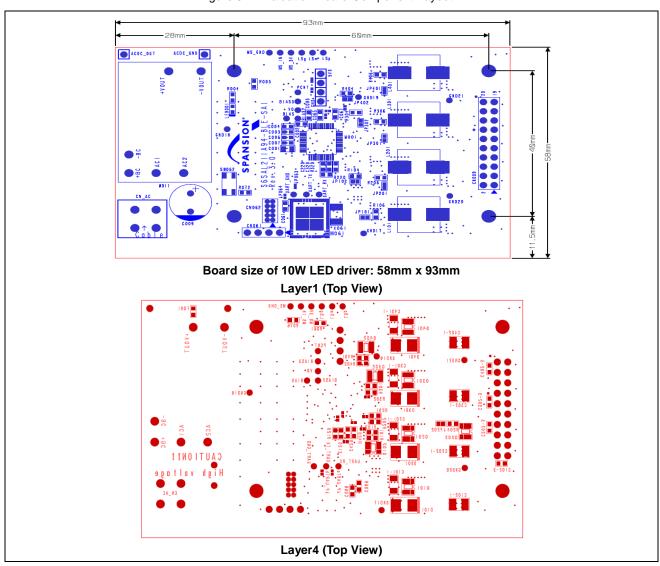
- 1. Pull out AC plug
- 2. Exit "BLExLED" application
- 3. Turn off Bluetooth indicator in Android OS.
- 4. Turn on Bluetooth indicator in Android OS.
- 5. Connect AC plug to electrical outlet.
- 6. Start "BLExLED". (Continue as above-mentioned)

5. Layout



5.1 Component Layout

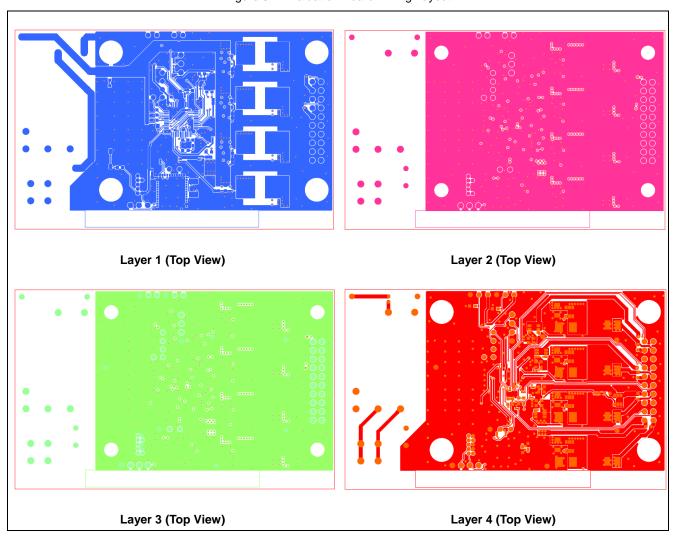
Figure 5-1 Evaluation Board Component Layout





5.2 Wiring Layout

Figure 5-2 Evaluation Board Wiring Layout



6. Circuit Schematic



VO VIN1 VIN2 BIAS @-BIAS BIAS2 BIAS2® BIAS3 AC1 F001 -BC +VOUT Th[1:4] TEMP1 M011 TEMP2 -⊚ACDC_OUT -⊚ACDC_GND TEMP3 TEMP4 PWM[1:4] DRV1 DRV2 SENSE1 DRV3 SENSE2/ADD2 ADD3 SENSE3/ADD3 DRV4 40 SENSE4/ADD4 41 ADD5 SH1 ADD6 SH2 ADD7 SH3 ADD8 SH4 RSp[1:4] DIN1 CS1P DIN2 CS1N CS2P UART_RX©____ +5VD CS2N UART_TX® IF2 CS3P UART_GND © CS3N CS4P SDA CS4N ⊚5VD JP005 SP -@SP AGND1 PCNT AGND2 TEST -⊚TEST __⊚GND AGND3 AGND4 DGND M001

Figure 6-1 Evaluation Board Circuit Schematic



28 26 PIOO_RTS VDD JP_UARTa 25 PIO1_TX CN062 ← HART RX 24 PIO2_CTS VDD1r8 SWDIO 23 PIO3_RX SWDCLK 22 PIO4 RF 21 PIO5 20 PIO6 40 SWDCLK 34 PIO7 SWDCLK 35 PIO8 Motion Sencer 39 SWDIO 36 CN061 PIO9 SWDIO_RESET# 37 PIO10 JP_MS_ADD4 R072 MS_3V⊚-38 PIO11 GND1 MS IN @-12 PIO12 MS GND @-GND2 _______PIO13 15 GND3 10 PIO14 27 GND4 9 29 PIO15 GND5 LUX 8 PIO16 41 GND6 4 PIO17 GND7 +3r0V 43 PIO19 GND8 LSp⊚— PIO18 44 GND9 LSm_©-7 PIO20 GND10 45 16 PIO21 GND11 ₽, ADD3 GND12 47 18 PIO23 GND13 48 GND14 49 _________PIO24 LSa⊚ GND15 50 30 PIO25 GND16 52 14 PIO26 EP1 53 13 PIO27 32 PIO28 54 X061 EP2 31 PIO29 55 EP3 EP4 56 33 PIO30 M061 RSp[1:4] RSp[1:4] SH[1:4] RSm[1:4] SH[1:4] PWM[1:4] Th[1:4] LEDp1 _LEDp1 +LED1 LEDpf 2 LEDm1 _LEDm1 LEDmf -LED1 Th1 _Th1 3 THp +TH1 Thm1 _Thm1 DRV THm -TH1 RSp1 NC1 RSp 6 NC2 RSm1 RSm _LEDp2 LEDp2 +LED2 CH₂ LEDm2 LEDpf 8 -LED2 LEDm2 LEDmf 9 Th2 Th2 +TH2 10 TH2 THp Thm2 Thm2 PWM2 11 +LED3 /DRV THm _LEDp3 12 -LED3 RSp2 RSp LEDm3 RSm2 SH2 Th3 13 RSm +TH3 14 -TH3 LEDp3 Thm3 CH₃ LEDpf LEDm3 15 NC3 16 NC4 17 LEDmf Th3 THp Thm3 _LEDp4 PWM3 +LED4 DRV THm 18 -LED4 _LEDm4 RSp3 RSp 19 +TH4 Th4 SH3 RSm 20 -TH4 Thm4 LEDp4 CH4 LEDpf LEDm4 CN009 Th4 LEDmf ТНр Thm4 PWM4 /DRV THm RSp4 RSp SH4 RSm4 RSm SH

Figure 6-2 Evaluation Board Circuit Schematic



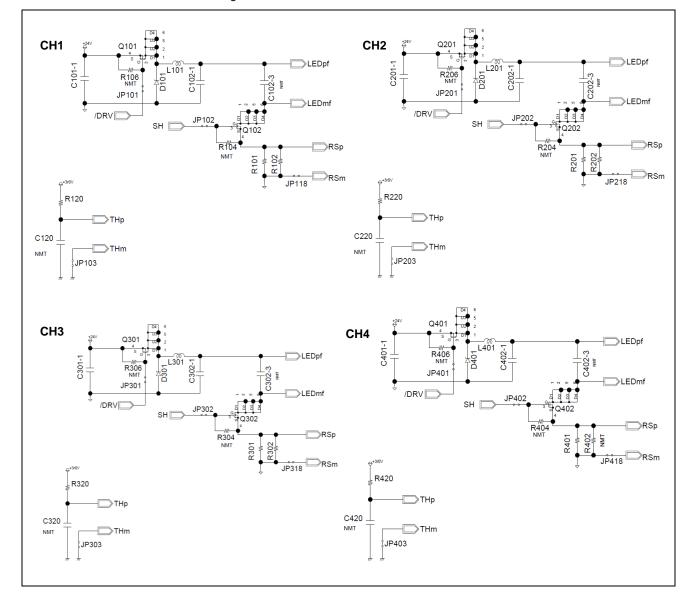


Figure 6-3 Evaluation Board Circuit Schematic

7. Component List



Table 7-1 Evaluation Board Component List

No.	Component	Parts Number	Vendor	Value	Rated Voltage(V)	Rated Current(A)	Remarks
1	C001	C2012X5R1V106K125AC	TDK	10 μF	35	-	-
2	C002	C1608X5R1V475K	TDK	4.7 µF	35	-	-
3	C003	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	-
4	C004	C1608X5R1V475K	TDK	4.7 μF	35	-	-
5	C005	C1608X5R1V475K	TDK	4.7 µF	35	-	-
6	C006	C1608CH1H101J	TDK	100 pF	50	-	-
7	C007	C1608CH1H101J	TDK	100 pF	50	-	-
8	C009	EKMG350ELL471MJ16S	NIPPON-CHEMI-CON	470 μF	35	-	-
9	C061	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	-
10	C065	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	NMT
11	C067	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	-
12	C068	C1608CH1H010C	TDK	1 pF	50	-	-
13	C069	C1608CH1H010C	TDK	1 pF	50	-	-
14	C101-1	C3216X5R1V475K160AB	TDK	4.7 µF	35	-	-
15	C102-1	C3225X5R1H106K	TDK	10 μF	50	-	-
16	C102-3	C1608CH1H102J	TDK	0.001 μF	50	-	NMT
17	C120	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	NMT
18	C201-1	C3216X5R1V475K160AB	TDK	4.7 µF	35	-	-
19	C202-1	C3225X5R1H106K	TDK	10 μF	50	-	-
20	C202-3	C1608CH1H102J	TDK	0.001 μF	50	-	NMT
21	C220	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	NMT
22	C301-1	C3216X5R1V475K160AB	TDK	4.7 μF	35	-	-
23	C302-1	C3225X5R1H106K	TDK	10 μF	50	-	-
24	C302-3	C1608CH1H102J	TDK	0.001 μF	50	-	NMT
25	C320	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	NMT
26	C401-1	C3216X5R1V475K160AB	TDK	4.7 µF	35	-	-
27	C402-1	C3225X5R1H106K	TDK	10 μF	50	-	-
28	C402-3	C1608CH1H102J	TDK	0.001 μF	50	-	NMT
29	C420	C1608X5R1H104K080AA	TDK	0.1 μF	50	-	NMT
30	CN009	M20-9981045	Harwin Inc	2×10 pin	-	3	-



No.	Component	Parts Number	Vendor	Value	Rated Voltage(V)	Rated Current(A)	Remarks
31	CN061	TSW-104-14-L-S	Samtec	-	550	7.6	-
32	CN062	FTSH-105-01-F-D-K-ND	Samtec	-	=	-	NMT
33	CN_AC	ML-2100-2P	SATOPARTS	-	300	7	-
34	D101	SS23	FAIRCHILD	-	30	2	-
35	D201	SS23	FAIRCHILD	-	30	2	-
36	D301	SS23	FAIRCHILD	=	30	2	-
37	D401	SS23	FAIRCHILD	-	30	2	-
38	F001	RK73Z1J	KOA	0Ω	-	1	-
39	L101	CLF10040T-221M	TDK	220 µH	-	700 m	-
40	L201	CLF10040T-221M	TDK	220 μH	-	700 m	-
41	L301	CLF10040T-221M	TDK	220 µH	-	700 m	-
42	L401	CLF10040T-221M	TDK	220 µH	-	700 m	-
43	LED001	OSHR1608C1A	OptoSupply	-	-	30 m	NMT
44	M001	S6AL211A94	Cypress	-	-	-	-
45	M011	TUHS10F24	COSEL	24 V	-	-	-
46	M061	MBH7BTZ02	FUJITSU	-	-	-	-
47	Q101	FDC658AP	FAIRCHILD	-	30	4	-
48	Q102	FDC8886	FAIRCHILD	-	30	6.5	-
49	Q201	FDC658AP	FAIRCHILD	-	30	4	-
50	Q202	FDC8886	FAIRCHILD	-	30	6.5	-
51	Q301	FDC658AP	FAIRCHILD	-	30	4	-
52	Q302	FDC8886	FAIRCHILD	-	30	6.5	-
53	Q401	FDC658AP	FAIRCHILD	-	30	4	-
54	Q402	FDC8886	FAIRCHILD	=	30	6.5	-
55	R003	RR0816P-104-D	SSM	100 kΩ	=	-	-
56	R004	RR0816P-123-D	SSM	12 kΩ	=	-	NMT
57	R072	RR0816P-101-D	SSM	100Ω	-	-	-
58	R076	RR0816P-274-D	SSM	270 kΩ	-	-	-
59	R101	RK73H1JTTD2R20F	KOA	2.2Ω	-	-	-
60	R102	RK73H1JTTD1R00F	KOA	1Ω	-	-	-
61	R103	RK73Z1J	KOA	0Ω	-	1	-
62	R104	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
63	R106	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
64	R107	RK73Z1J	KOA	0Ω	-	1	-
65	R120	RR0816P-752-D	SSM	7.5 kΩ	-	-	-
66	R201	RK73H1JTTD2R20F	KOA	2.2Ω	-	-	-
67	R202	RK73H1JTTD3R90F	KOA	3.9Ω	-	-	-
68	R203	RK73Z1J	KOA	Ω0	-	1	-
69	R204	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
70	R206	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
71	R207	RK73Z1J	KOA	Ω0	-	1	-
72	R220	RR0816P-752-D	SSM	7.5 kΩ	-	-	-



No.	Component	Parts Number	Vendor	Value	Rated Voltage(V)	Rated Current(A)	Remarks
73	R301	RK73H1JTTD2R20F	KOA	2.2Ω	-	-	-
74	R302	RK73H1JTTD2R20F	KOA	2.2Ω	-	-	-
75	R303	RK73Z1J	KOA	0Ω	-	1	-
76	R304	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
77	R306	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
78	R307	RK73Z1J	KOA	0Ω	-	1	-
79	R320	RR0816P-752-D	SSM	7.5 kΩ	-	-	-
80	R401	RK73H1JTTD2R20F	KOA	2.2Ω	-	-	-
81	R402	RK73H1JTTD2R20F	KOA	2.2Ω	-	-	NMT
82	R403	RK73Z1J	KOA	0Ω	-	1	-
83	R404	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
84	R406	RK73H1JTTD1004F	KOA	1 ΜΩ	-	-	NMT
85	R407	RK73Z1J	KOA	0Ω	-	1	-
86	R420	RR0816P-752-D	SSM	7.5 kΩ	-	-	-
87	R421	RK73Z1J	KOA	0Ω	-	1	-
88	SW062	SKRPACE010	ALPS	-	-	50 m	-
89	X061	ABS10-32r768kHz	ABRACON	32.768 kHz	-	-	-

TDK : TDK Corporation

NIPPON-CHEMI-CON : Nippon Chemi-Con Corporation

Harwin Inc : Harwin Inc Samtec : Samtec, Inc.

SATOPARTS : SATO PARTS CO.,LTD

FAIRCHILD : Fairchild Semiconductor International, Inc.

KOA : KOA Corporation
SSM : Susumu Co., Ltd
OptoSupply : OptoSupply Limited

OptoSupply : OptoSupply Limited
Cypress : Cypress Semiconductor Corp

COSEL : COSEL CO., LTD.

FUJITSU : FUJITSU COMPONENT LIMITED

ALPS : Alps Electric Co., Ltd. ABRACON : Abracon Corporation

NMT: No mount.

These components are compliant with RoHS, and please ask each vendor for details if necessary.

8. Property Data



Figure 8-1 Switching Waveform

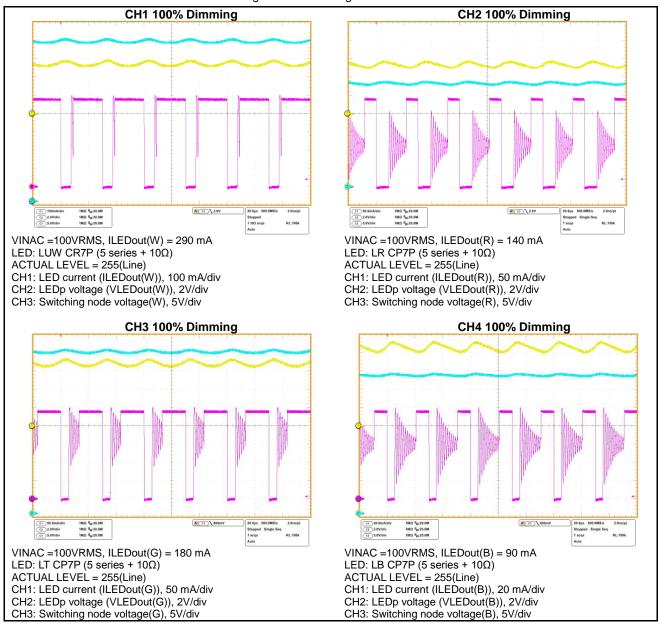




Figure 8-2 Switching Waveform

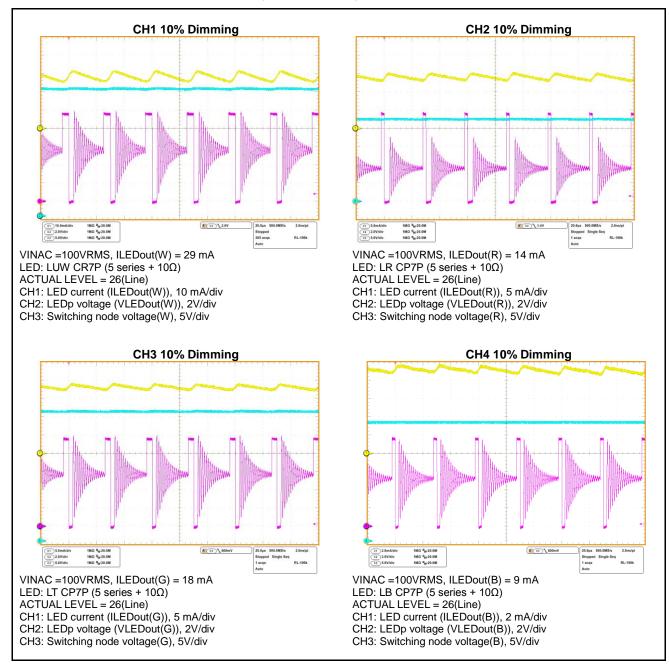
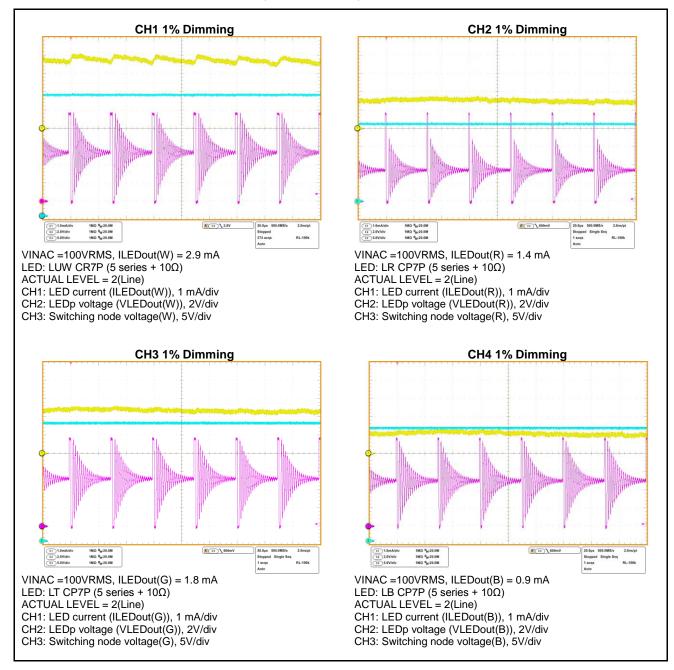




Figure 8-3 Switching Waveform



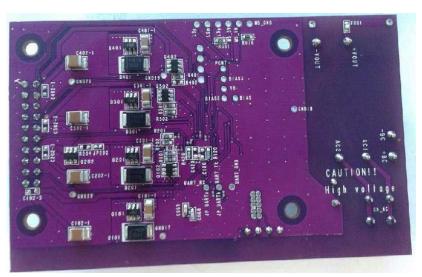
9. Board Picture



Figure 9-1 Evaluation Board Picture



(Top View)



(Bottom View)

10. Ordering Information



Table 10-1 Ordering Information

Part Number	EVB Revision	Note
S6SAL211A94SA1001	S6SAL211A94-BLE-SA1 Rev3.0	-

Revision History



Document Revision History

	Document Title: S6SAL211A94SA1001 4ch 10W LED Driver Board Operation Guide Document Number: 002-08727				
Revision Issue Date Origin of Change Change			Description of Change		
**	06/12/2015	HSAT	Initial release		
*A	04/25/2016	HSAT	Migrated Spansion Guide from S6SAL211A94SA1001_SS901-00039-1v0-E,to Cypress format		

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Gate Drivers category:

Click to view products by Cypress manufacturer:

Other Similar products are found below:

00028 00053P0231 8967380000 56956 CR7E-30DB-3.96E(72) 57.404.7355.5 LT4936 57.904.0755.0 5801-0903 5803-0901 5811-0902 5813-0901 58410 00576P0030 00581P0070 5882900001 00103P0020 00600P0005 00-9050-LRPP 00-9090-RDPP 5951900000 01-1003W-10/32-15 LTILA6E-1S-WH-RC-FN12VXCR1 0131700000 00-2240 LTP70N06 LVP640 0158-624-00 5J0-1000LG-SIL 020017-13 LY1D-2-5S-AC120 LY2-0-US-AC120 LY2-US-AC240 LY3-UA-DC24 00-5150 00576P0020 00600P0010 LZNQ2M-US-DC5 LZNQ2-US-DC12 LZP40N10 00-8196-RDPP 00-8274-RDPP 00-8275-RDNP 00-8609-RDPP 00-8722-RDPP 00-8728-WHPP 00-8869-RDPP 00-9051-RDPP 00-9091-LRPP 00-9291-RDPP