


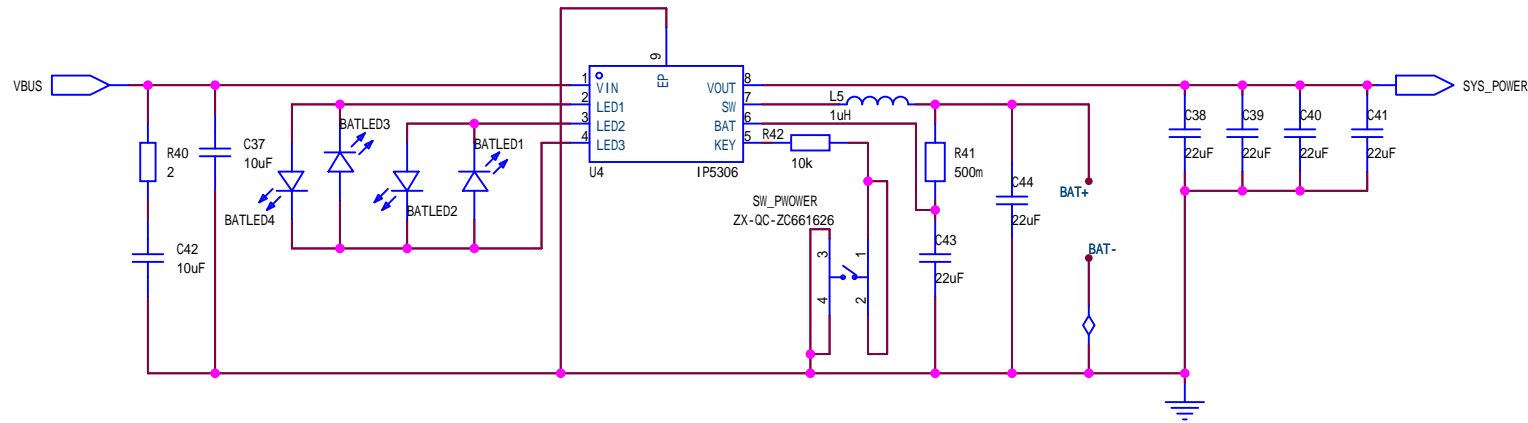
ENCODER1_A	SW1_A	ENCODER1_A&B
GPIO1	MIXEDLIGHT_CHANGE	- Adjust output
ENCODER1_B	SW1_B	GPIO1
		- Change adjustment target:
		Brightness/Color temperature

GPIO4	MODE_CHANGE	GPIO4
GPIO5	BEEP	- Change working mode
GPIO6		GPIO5
		- BEEP

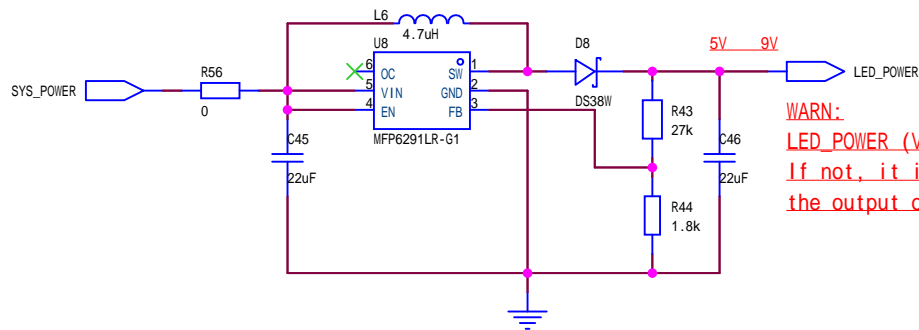
GPIO7	FAN_CTRL	GPIO7
		- Control fan status

GPIO8	PANEL_TYPE_DETECT	GPIO8
		- Detec panel type: CW or RGB

 <h2>Cuculus Band</h2>		Light Box	
Schematic	Main Board	Board	Light Box Main Board
Drawing No.	Y25-PJ03-B01	Create Date	2025-07-25
Designed by	Cuculus Band	Update Date	2025-09-27
Reviewed by	Cuculus Band	Size	Version
Page	1 of 4	A4	1.00.00



SYS\_POWER → +5V



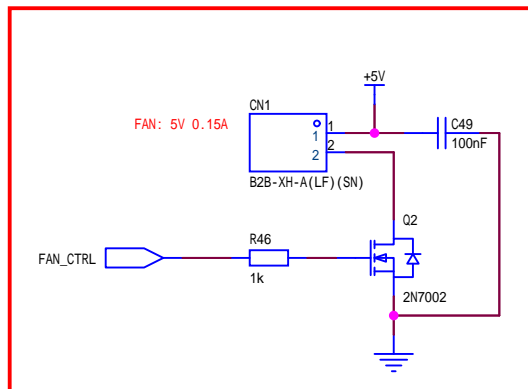
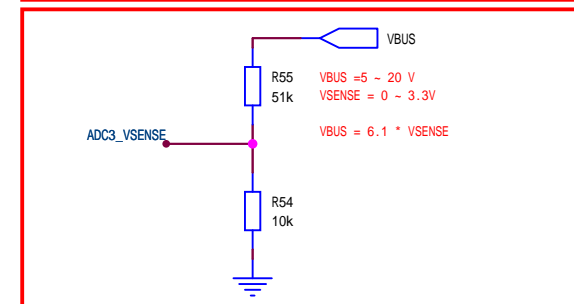
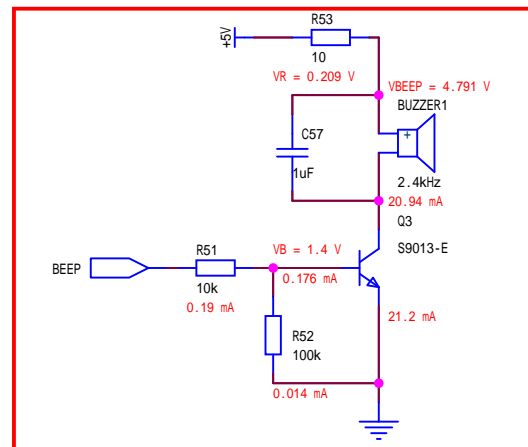
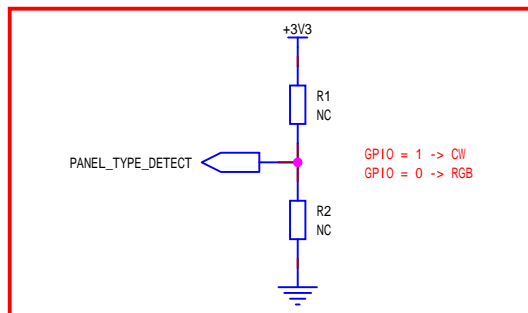
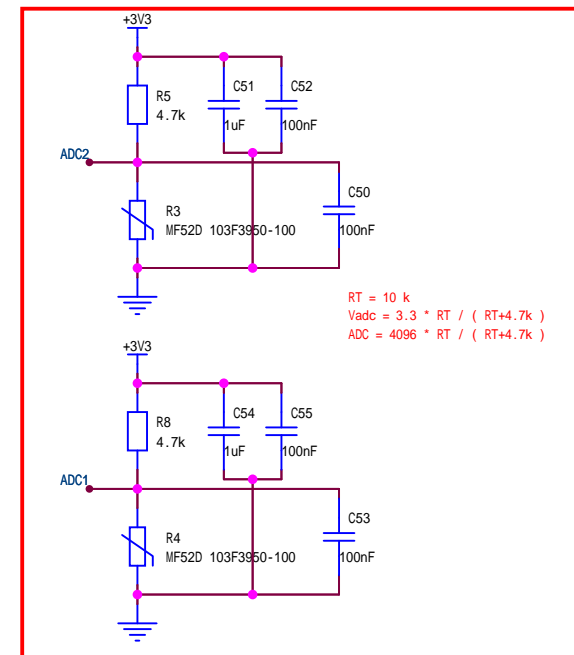
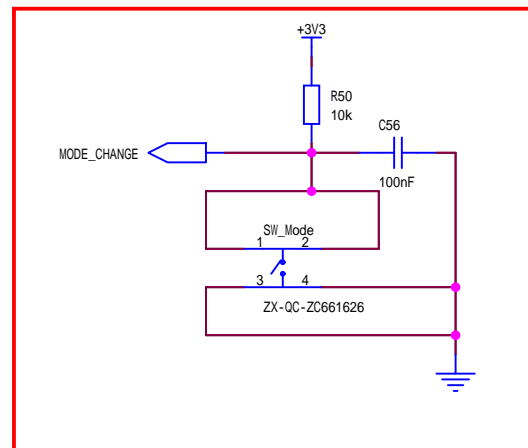
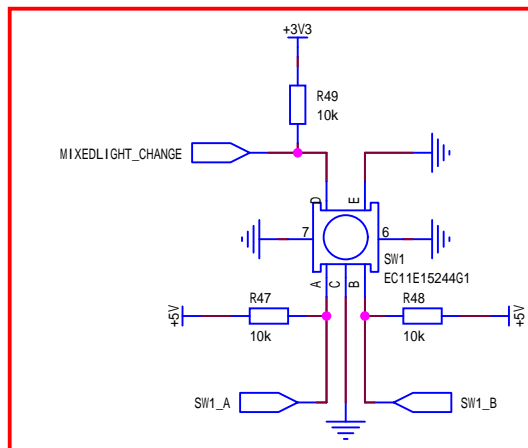
**WARN:**  
LED\_POWER (Vin of LGS63032) shall be lower than the LED+ (Vout of LGS63032).  
If not, it is unable to control the LGS63032's output with the EN pin, and  
the output of the chip will always be on.



Cuculus Band

Light Box

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Page	2 of 4	A4	1.00.00



## Cuculus Band

Light Box

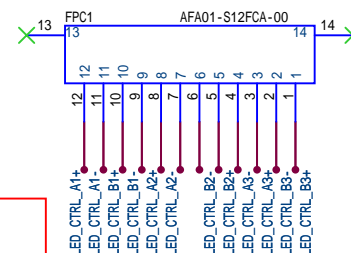
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Page	3 of 4	A4	1.00.00

9V Input K = 35%	$L = ( 9/15 )^2 * (15-9) / ( 1.2e6 * 0.189 * 35\% )$ $= 0.36 * 6 / 79380$ $= 27.21 \mu H$
9V Input K = 50%	$L = ( 9/15 )^2 * (15-9) / ( 1.2e6 * 0.189 * 50\% )$ $= 0.36 * 6 / 113400$ $= 19.48 \mu H$

5V Input K = 35%	$L = (5/15)^2 * (15-5) / (1.2e6 * 0.189 * 35\%)$ $= 0.111 * 10 / 79380$ $= 13.983 \mu H$
5V Input K = 50%	$L = (5/15)^2 * (15-5) / (1.2e6 * 0.189 * 50\%)$ $= 0.111 * 10 / 113400$ $= 9.788 \mu H$

$$\begin{aligned} I_{\text{peak}} &= (15/9) * 0.189 + (9/15)^2 * (15-9) / (2 * 1.2e6 * 22e-6) \\ L &= 22 \text{ uH} \\ &= 1.667 * 0.189 + 0.6^2 * 6 / 52.8 \\ &= 0.3151 + 0.0409 \\ &= 0.356 \text{ A} \end{aligned}$$

9V Input       $I_{\text{peak}} = (15/9) * 0.189 + (9/15)^2 * (15-9) / (2 * 1.2\text{e}6 * 10\text{e-}6)$   
 L = 10 uH       $= 1.667 * 0.189 + 0.6^2 * 6 / 24$   
                   $= 0.3151 + 0.09$   
                   $= 0.405 \text{ A}$



A1+	A1-	B1+	B1-	A2+	A2-	B2+	B2-	A3+	A3-	B3+	B3-
C 1	C 1	W 1	W 1	C 2	C 2	W 2	W 2	C 3	C 3	W 3	W 3
R 1	R 1	G 1	G 1	B 1	B 1	R 2	R 2	G 2	G 2	B 2	B 2

WLED & WLED

LIGHT\_CH1+ → LED → LIGHT\_CH1-

C28 10uF

C27 10uF

R20 200k

R21 10k

D2 SS34

L2 22uH

DRIVER1 LG563032

SW 1

GND 2

FB 3

VIN 6

OVP 5

EN 4

R19 10k

C26 4.7uF

C25 4.7uF

PWM\_CH1

LED\_POWER

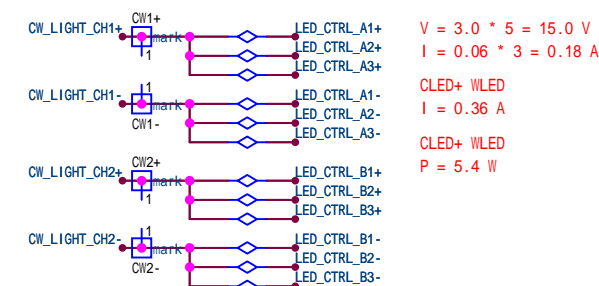
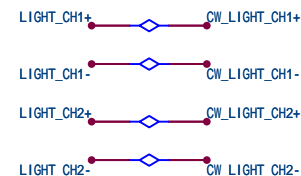
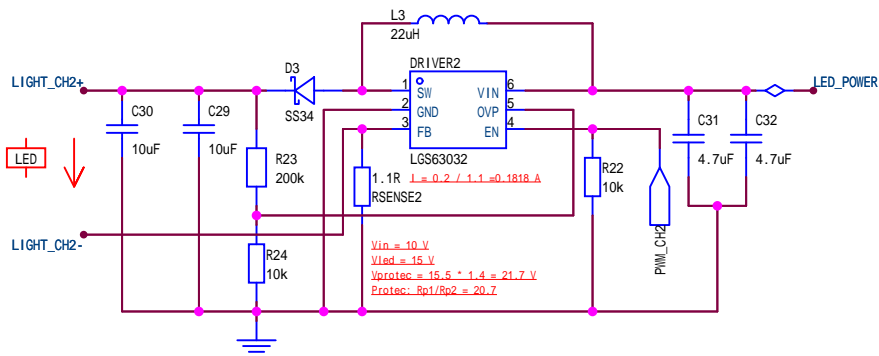
$I_{in} = 10V$

$V_{led} = 15V$

$V_{protec} = 15.5 \cdot 1.4 = 21.7V$

$Protec = R_{p1}/R_{p2} = 20.7$

$I_{s} = 0.2 / 1.1 = 0.1818A$



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Page	4 of 4	A4	1.00.00