

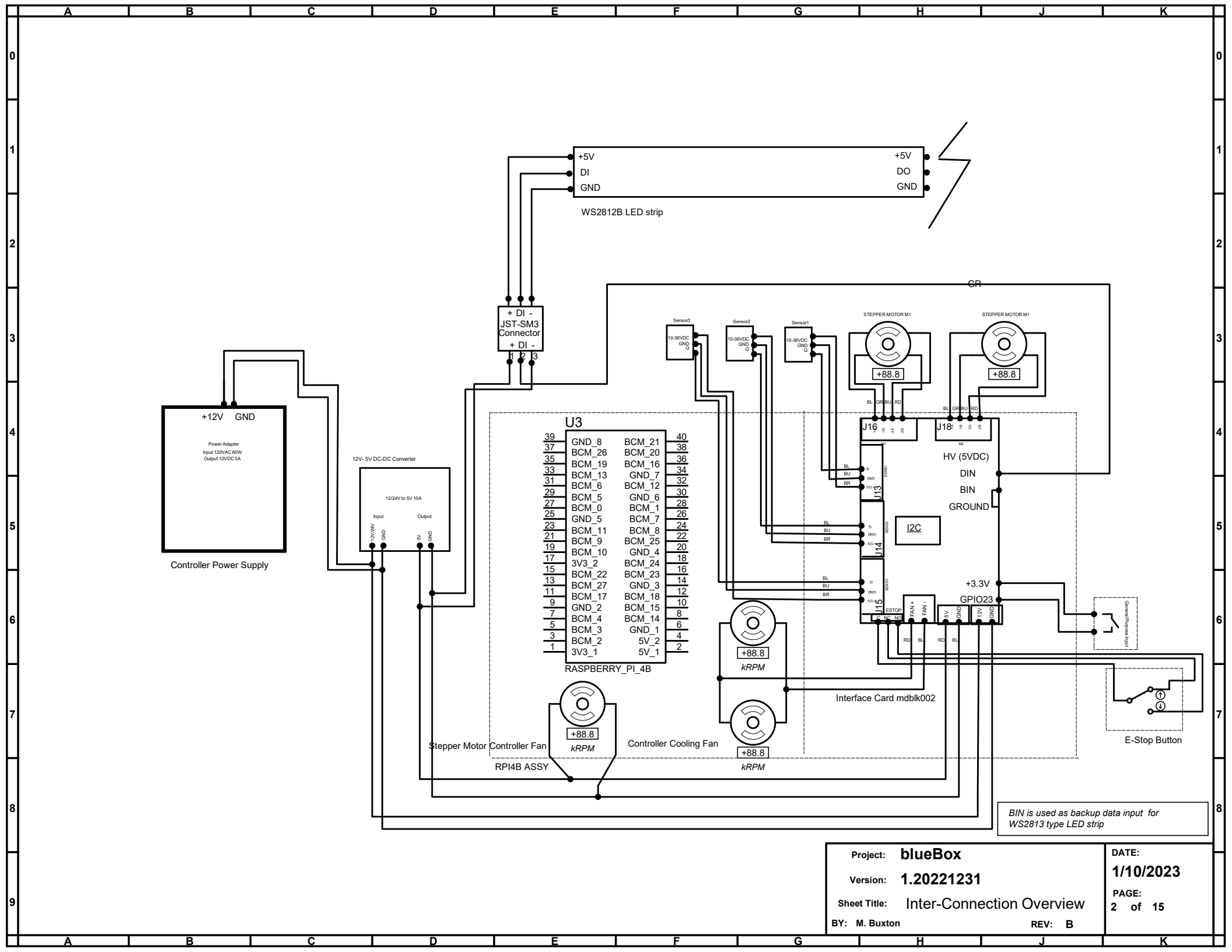
MANUFACTURER: SCDDesign,LLC
PO Box 924, Roseland, FL 32957

PROJECT: blueBox

Power Input
Supply Voltage: 12VDC
Supply Current: 5A
Max Load: 60W

Person Responsible for Project: MBuxton

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Sheet Title: Title Page	REV: B
BY: M. Buxton	



U3

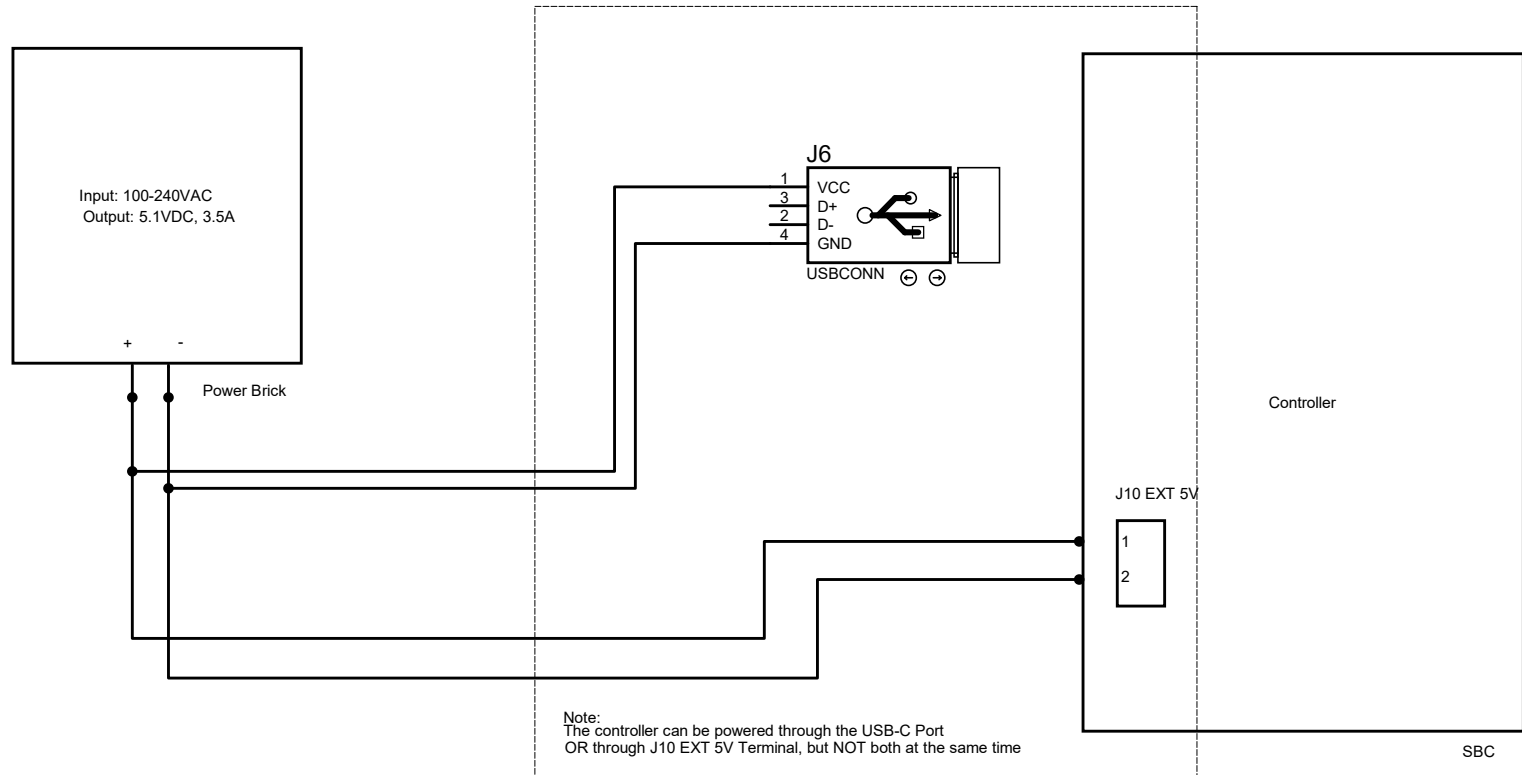
39	GND_8	BCM_21	40
37	BCM_26	BCM_20	38
35	BCM_19	BCM_16	36
33	BCM_13	GND_7	34
31	BCM_6	BCM_12	32
29	BCM_5	GND_6	30
27	BCM_0	BCM_1	28
25	GND_5	BCM_7	26
23	BCM_11	BCM_8	24
21	BCM_9	BCM_25	22
19	BCM_10	GND_4	20
17	3V3_2	BCM_24	18
15	BCM_22	BCM_23	16
13	BCM_27	GND_3	14
11	BCM_17	BCM_18	12
9	GND_2	BCM_15	10
7	BCM_4	BCM_14	8
5	BCM_3	GND_1	6
3	BCM_2	5V_2	4
1	3V3_1	5V_1	2

RASPBERY_PI_4B

BIN is used as backup data input for WS2813 type LED strip

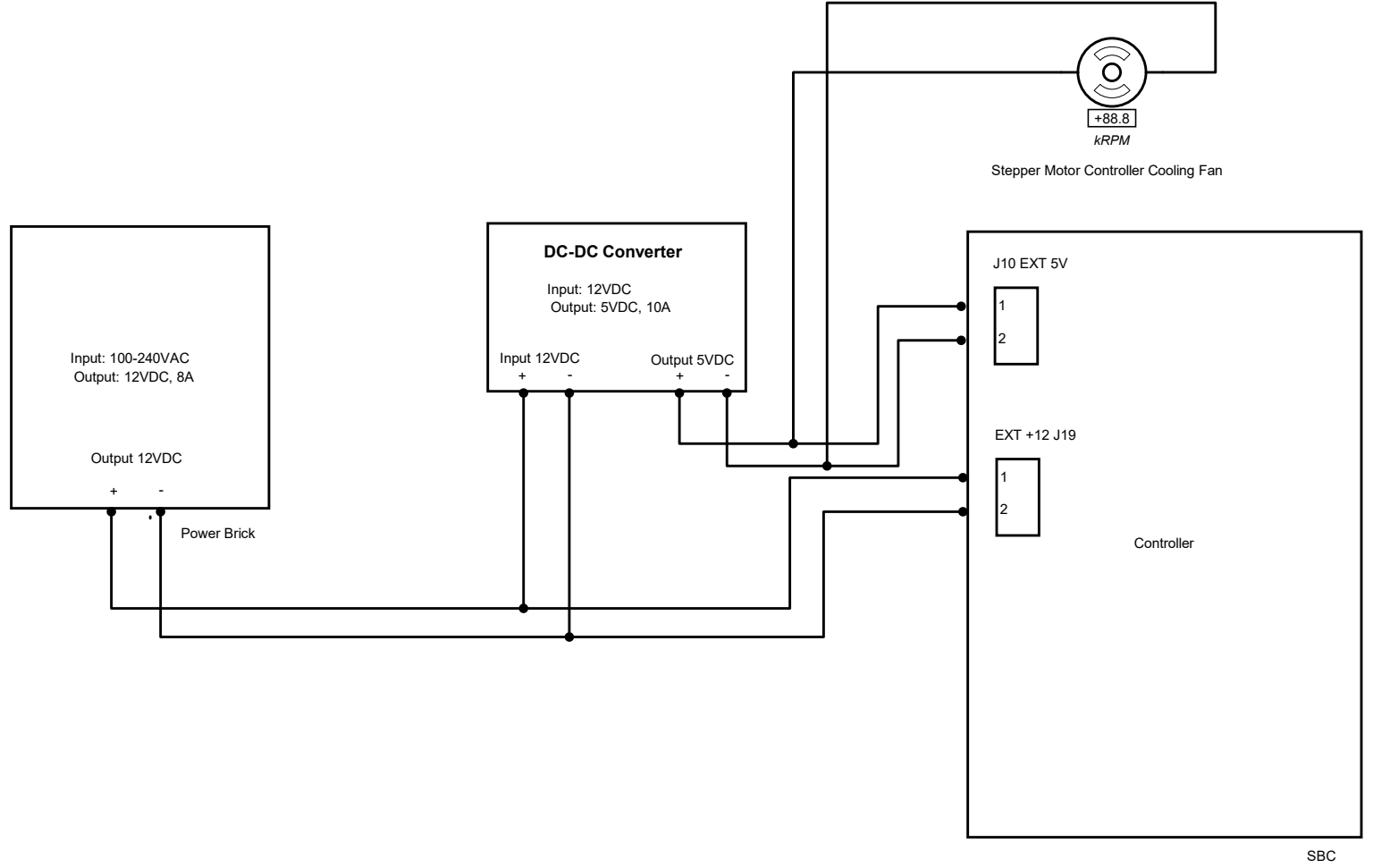
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Sheet Title: Inter-Connection Overview	REV: B
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OBSOLETE - USED BY OLD STANDARD VARIANTS OF THE blueBox



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Sheet Title: Power, Standard Variance	BY: M. Buxton
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mdb-measureKit variant only

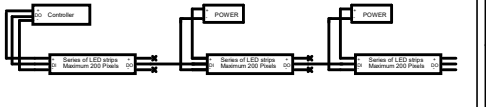
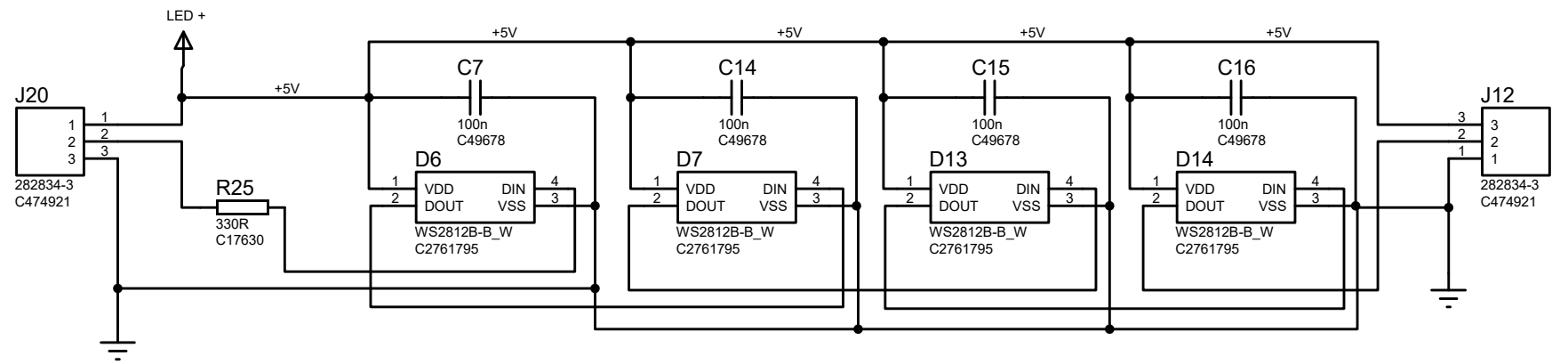


mdb-measureKit variant only

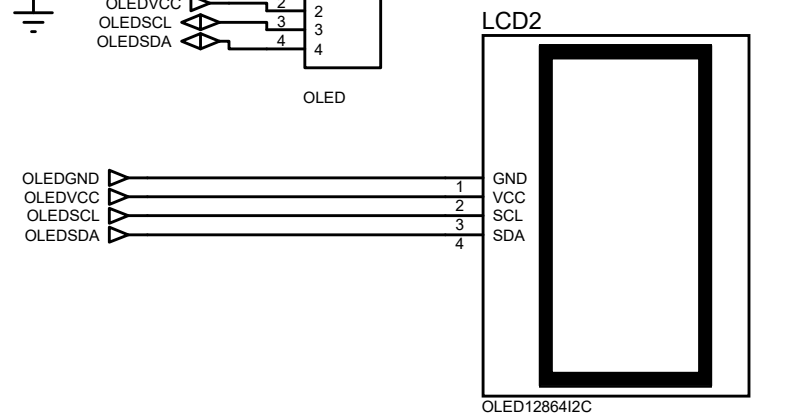
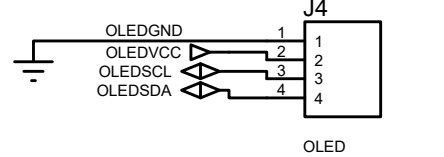
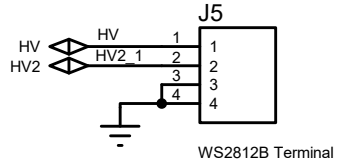
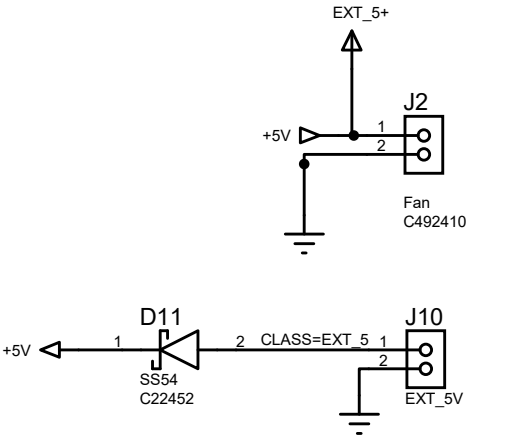
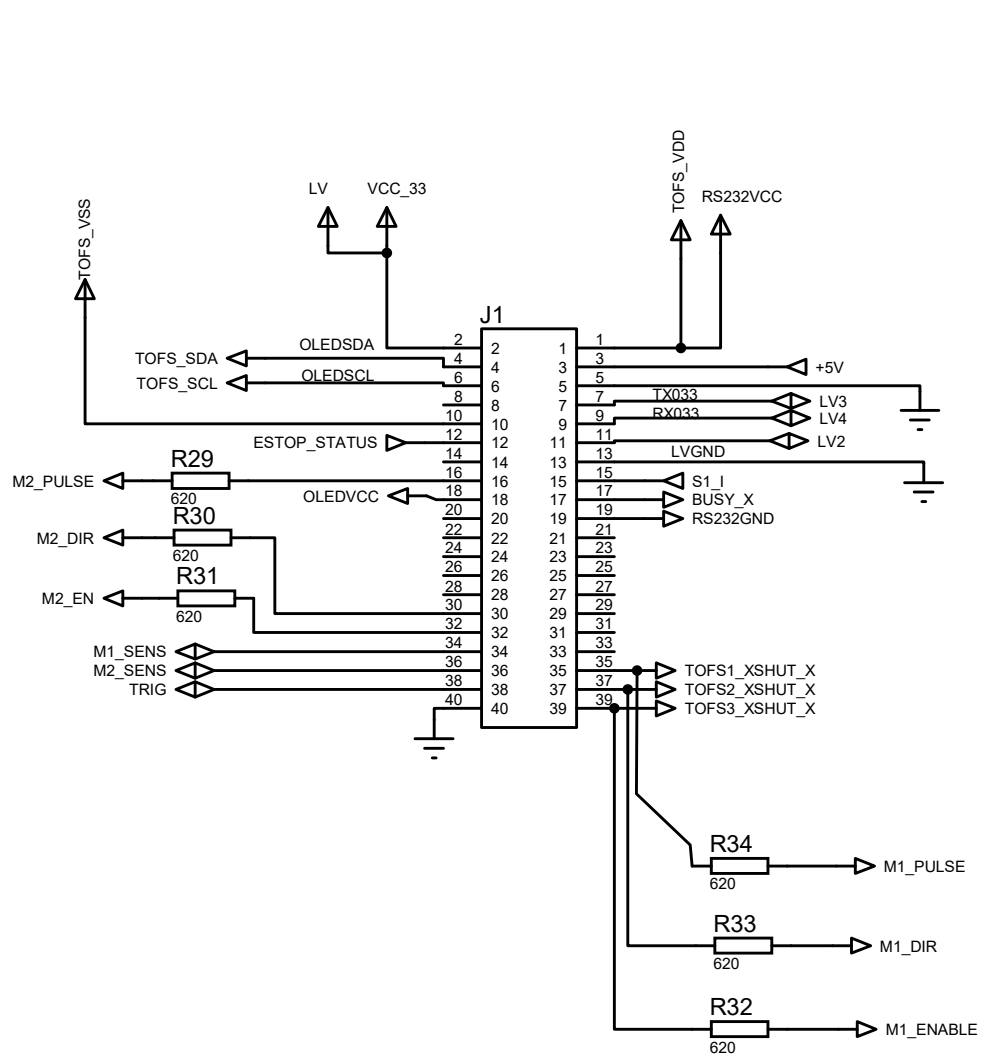
Note:
 Supply Voltage: 5V DC
 Supply Current: 5A
 Max rated current: 36mA per pixel
 Red = 12mA, Green = 12mA, Blue = 12mA
 Operating current: 25mA per pixel

Maximum number of strips should not exceed 200 pixels per 5A power supply - max current per pixel limited to 25mA. If more strips are required, an additional power supply should be supplied.

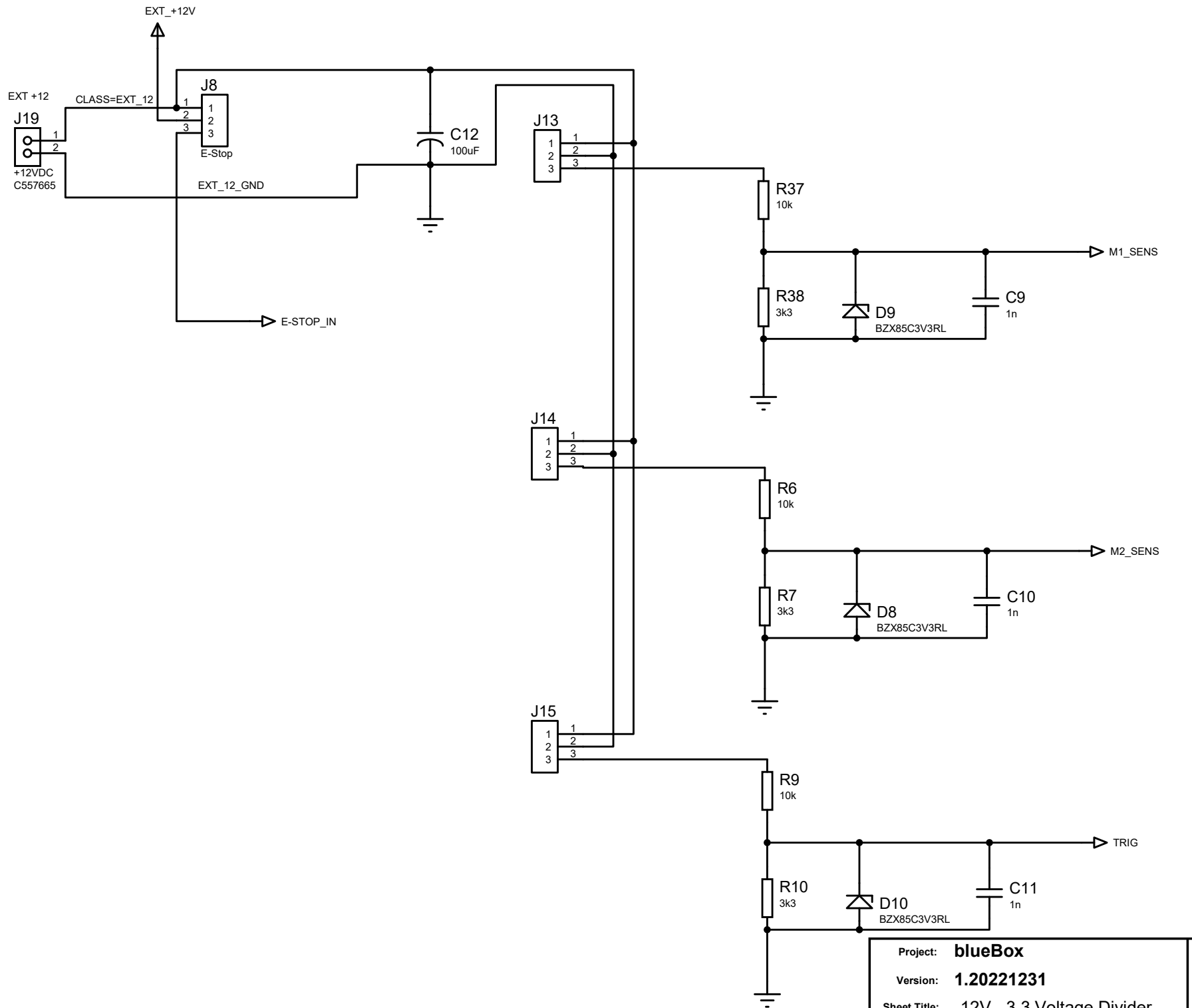
When additional power supply is supplied, It should be isolated from the other power supplies by not connecting the power wires from the previous or following power supplies

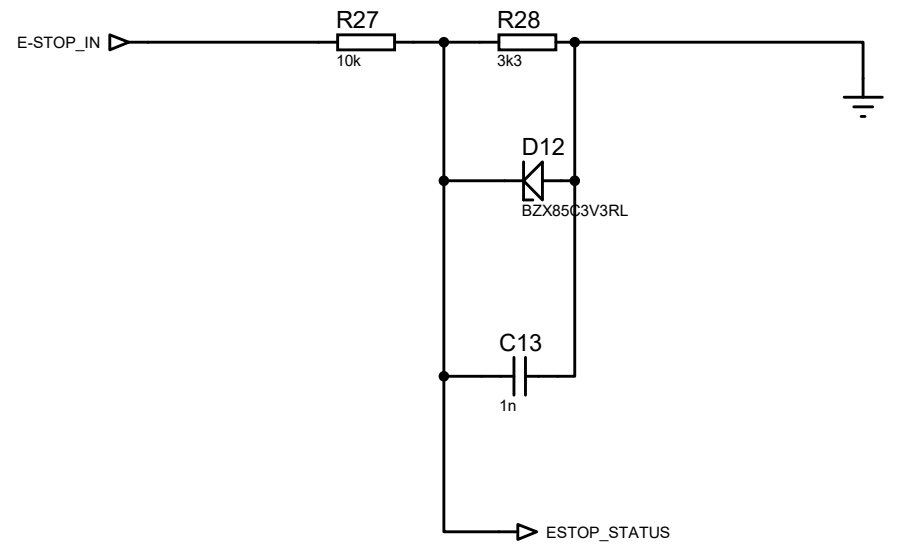
Number of WS2812B LEDs vary (6 LEDs or 4 LEDs)



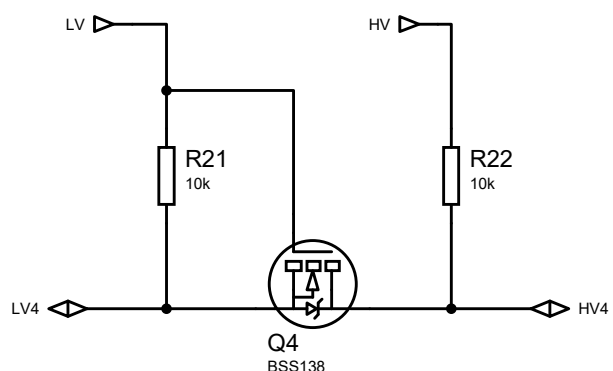
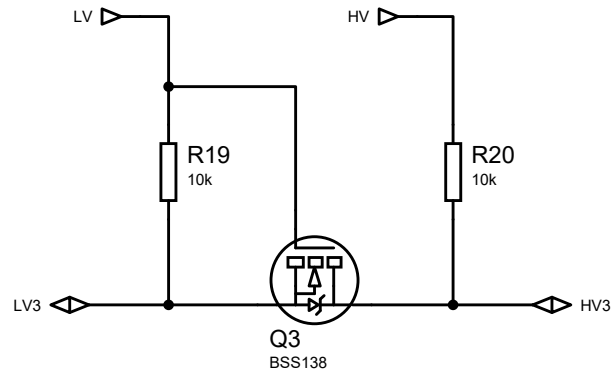
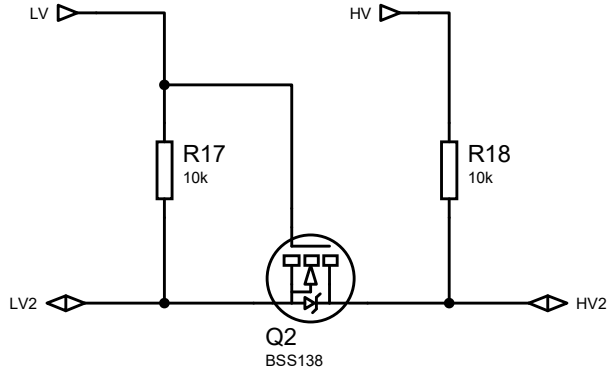
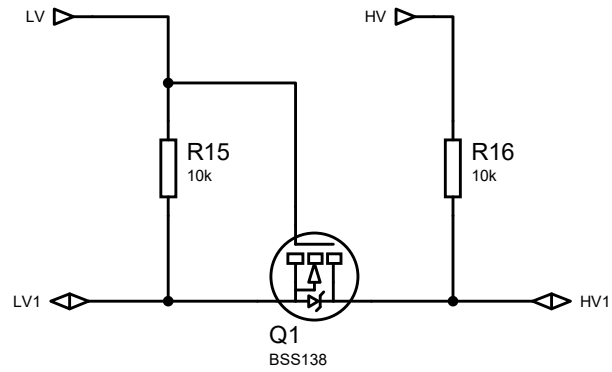
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Sheet Title: Main Controller	REV: B
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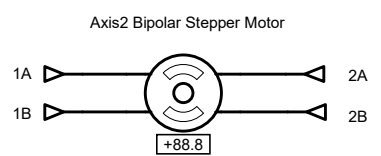
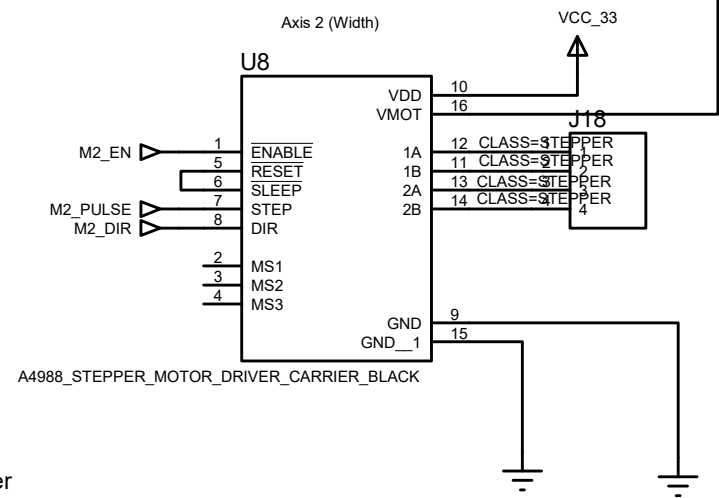
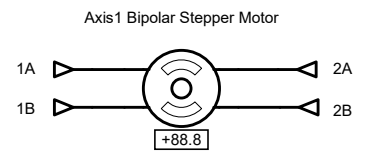
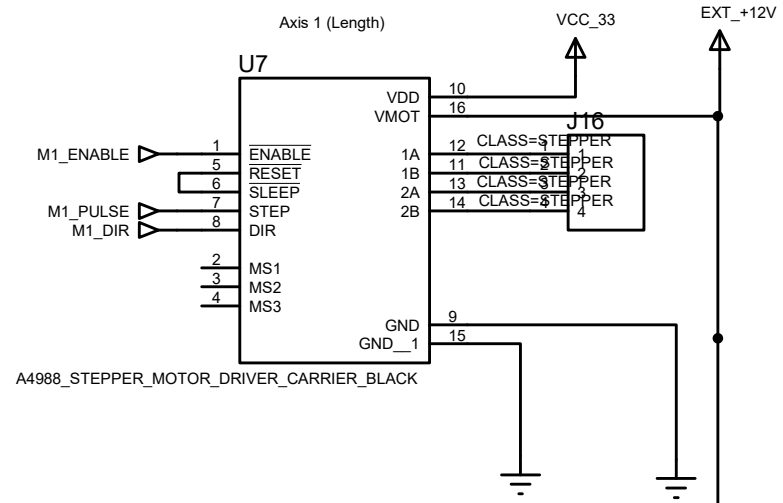
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Sheet Title: 12V - 3.3 Voltage Divider	REV: B
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Sheet Title: Emergency Stop	REV: B
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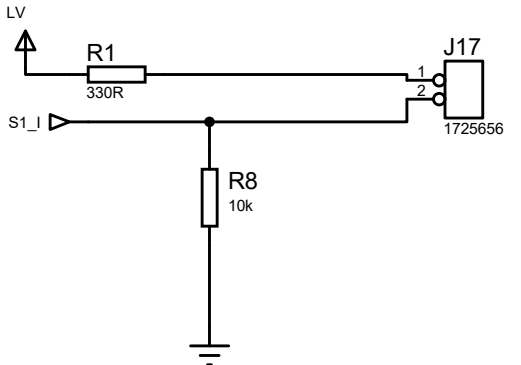
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Sheet Title: Logic Level Shifter	PAGE: 9 of 15
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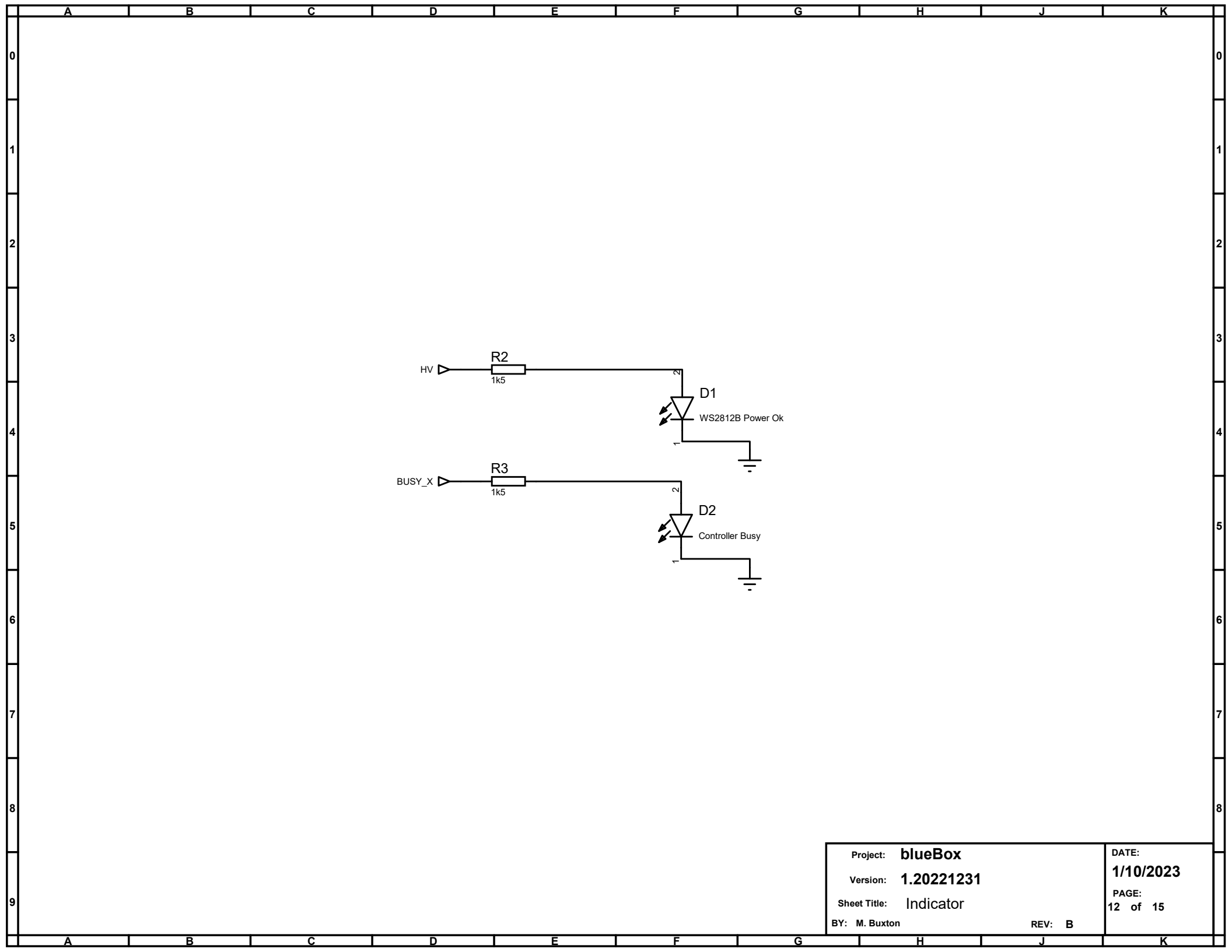
To set the maximum current limit on the stepper motor driver
 $I_{max} = V_{REF} \times 8 \times RCS$
 Default V_{REF} for I_{max} of 1A = 544 mV

$RCS = 0.068$ ohms
 $I_{max} = 1.2$ A without additional cooling, $I_{max} = 1.5$ A with additional cooling

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Sheet Title: Stepper Motor Control	BY: M. Buxton REV: B

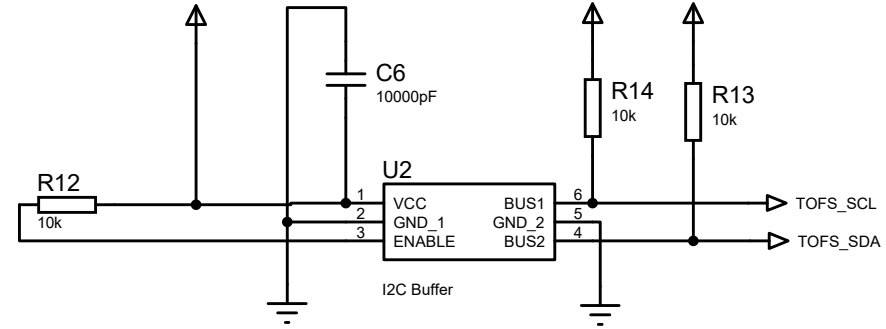


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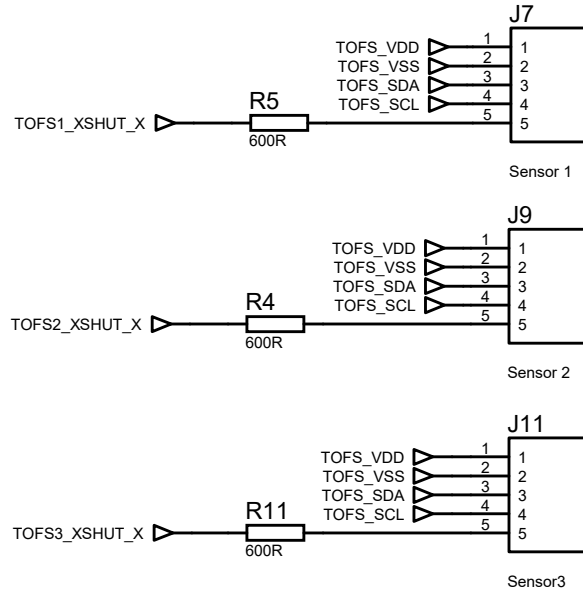
OBSOLETE 03MARCH2022



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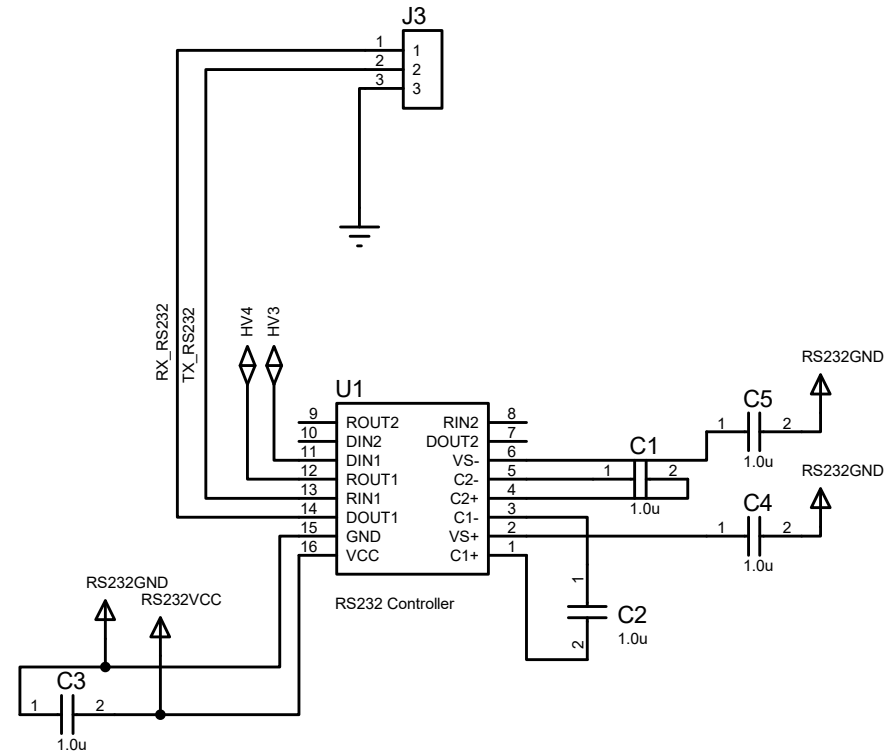
OBSOLETE 31DEC2022

EXCLUDED FOR STEPPER MOTOR VERSION



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OBSOLETE 03March2022



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