

Gear Display Board

Block Diagram

Power Supply



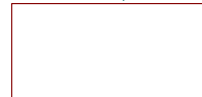
File: psu.kicad_sch

Mechanical



File: mechanical.kicad_sch

Revision History



File: rev_history.kicad_sch

USB



File: usb.kicad_sch

J1
1x04



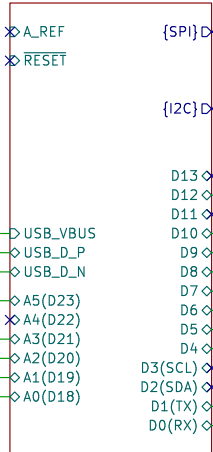
R34
4k7

Brightness Control



File: buttonui.kicad_sch

MCU



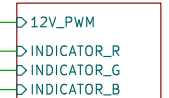
File: main.kicad_sch

Interfaces



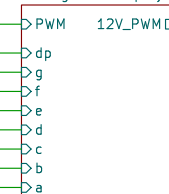
File: interfaces2.kicad_sch

Shift Indicator



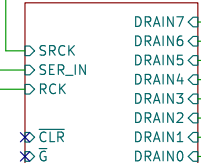
File: indicators.kicad_sch

7-Segment Display



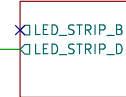
File: 7seg_display.kicad_sch

LED Driver 3



File: led_driver.kicad_sch

RPM Bar



File: rpm_bar.kicad_sch

J2
1x04



Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	Page 1/12
		Designer	Date of issue
		PCB part number	Assembly part number
		000065	2023-04-06
			000064

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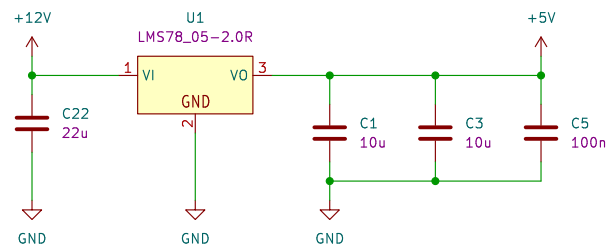
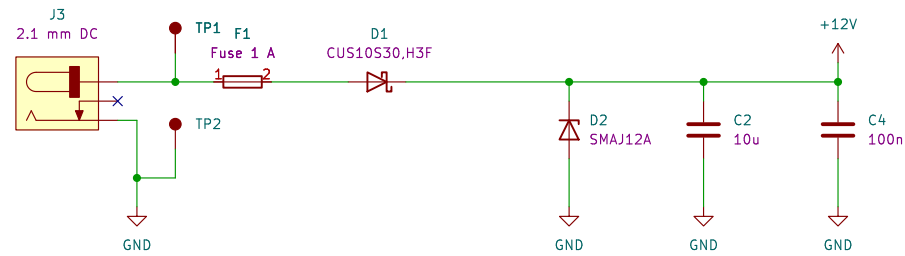
A

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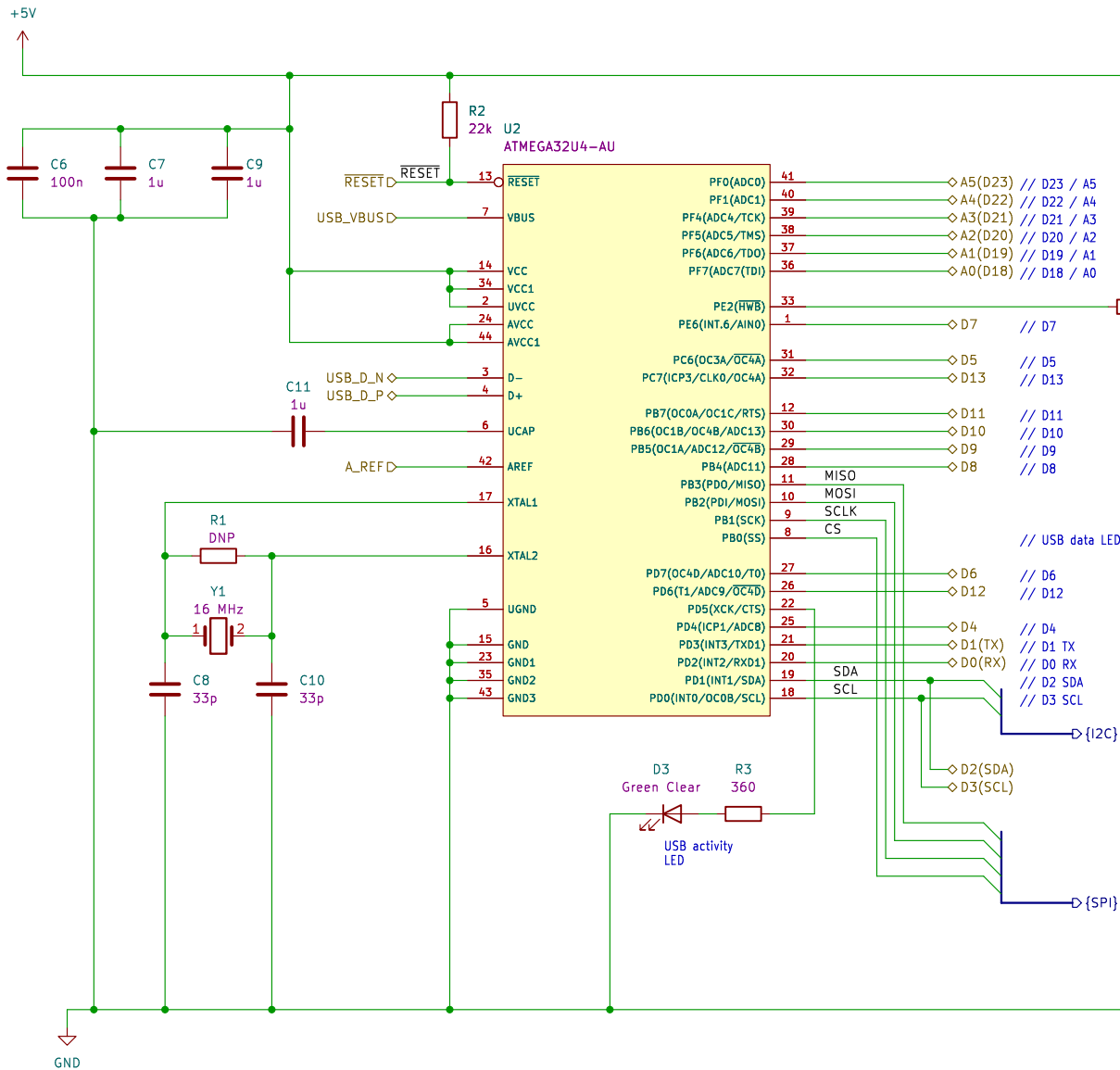
C

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Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	Page
		Power Supply	2/12
		Designer	Date of issue
PCB part number		Assembly part number	
000065		000064	



Programming connectors

Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	MCU
		Designer	Teemu Latonen
		Date of issue	2023-04-06
		PCB part number	000065
		Assembly part number	000064

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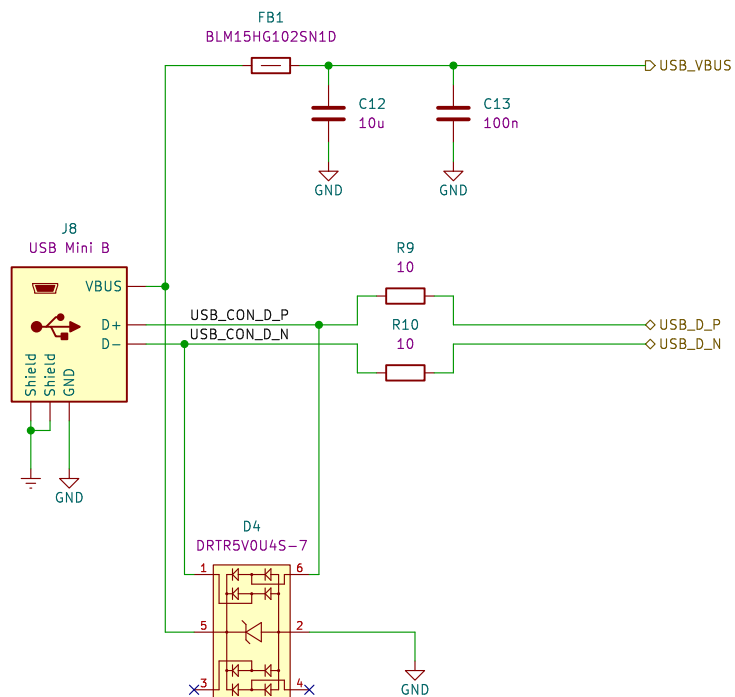
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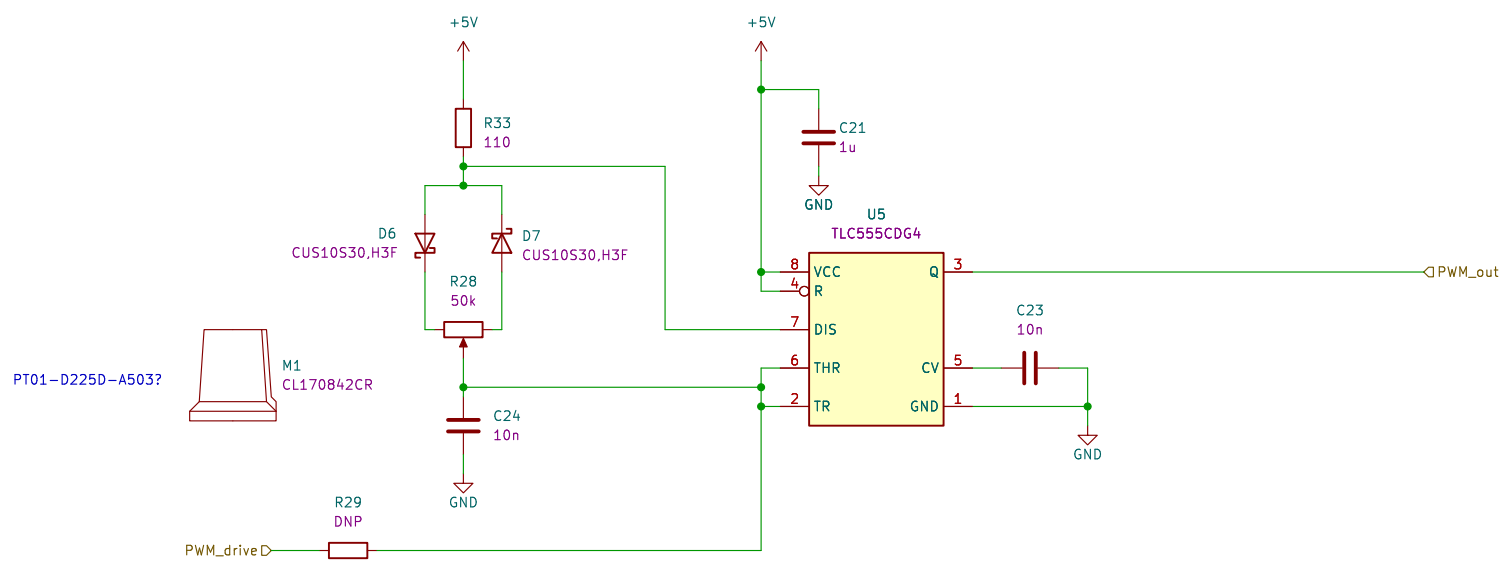
E



Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	Page
		USB	4/12
		Designer	Date of issue
PCB part number		Assembly part number	
000065		000064	

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1 2 3 4 5 6 7



Size	Title, Supplementary title		Revision
	Gear Display Board		3.0
Kallio Designs Oy	Sheet name		Page
	Brightness Control		5/12
	Designer	Date of issue	
PCB part number		Assembly part number	
000065		000064	
Teemu Latonen		2023-04-06	

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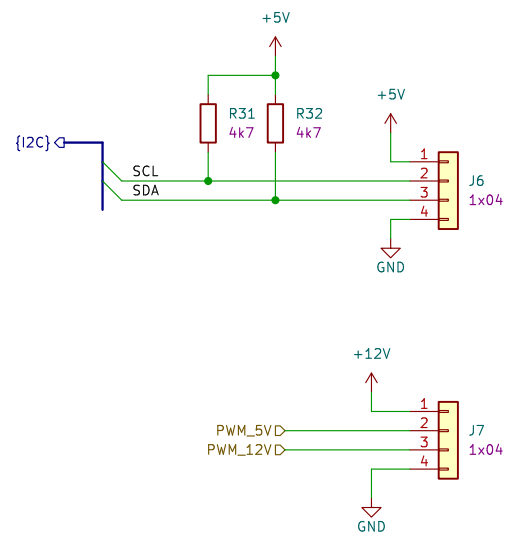
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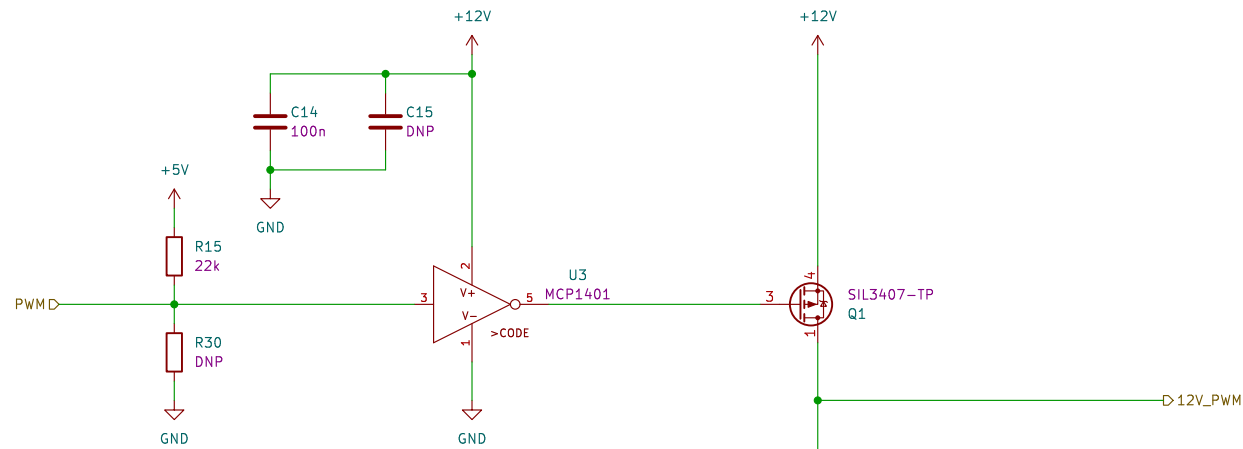
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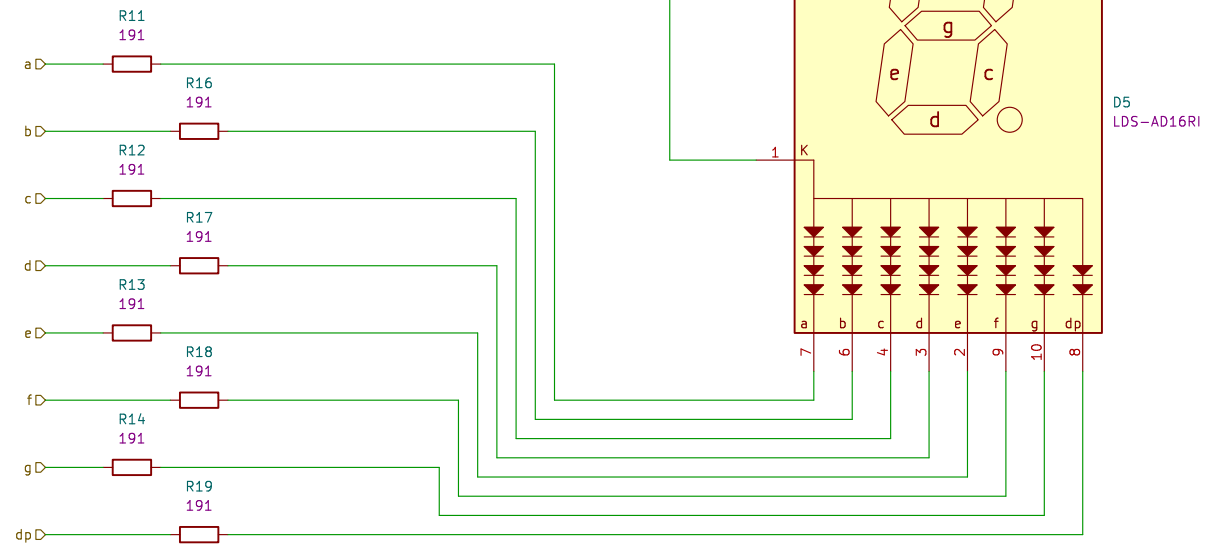
E



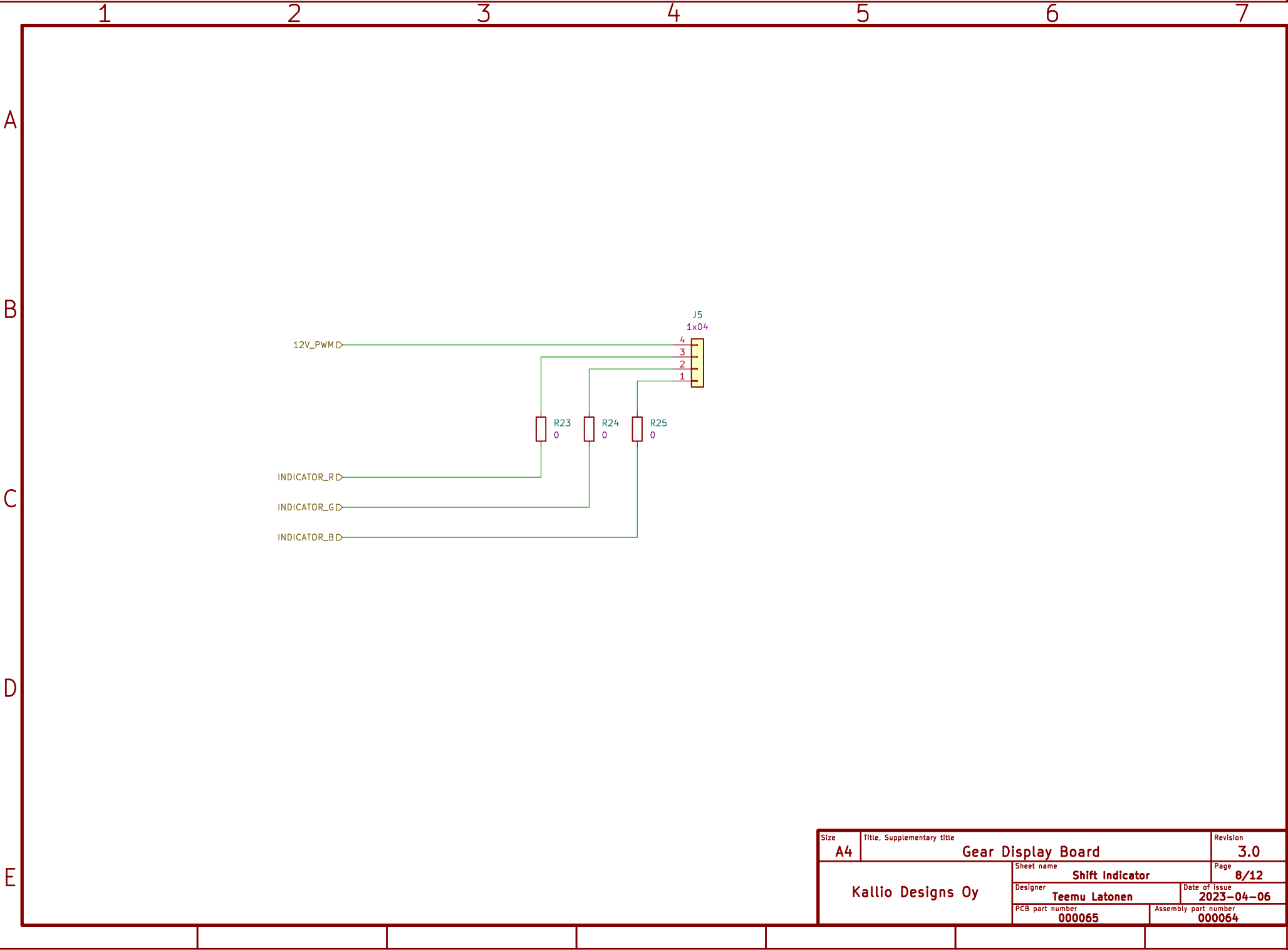
Size	Title, Supplementary title		Revision	
A4	Gear Display Board		3.0	
Kallio Designs Oy		Sheet name	Page	
		Interfaces	6/12	
		Designer	Date of issue	
		Teemu Latonen	2023-04-06	
PCB part number		Assembly part number		
000065		000064		



Pitäiskö vaihtaa MCP1402, jotta säätö olis 0–50 %



Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	7-Segment Display
		Designer	Teemu Latonen
		Date of issue	2023-04-06
		PCB part number	000065
		Assembly part number	000064



Size	Title, Supplementary title		Revision	
			3.0	
A4	Gear Display Board		Sheet name	
			Shift Indicator	
	Kallio Designs Oy		Designer	Date of issue
			Teemu Latonen	2023-04-06
		PCB part number	Assembly part number	
		000065	000064	

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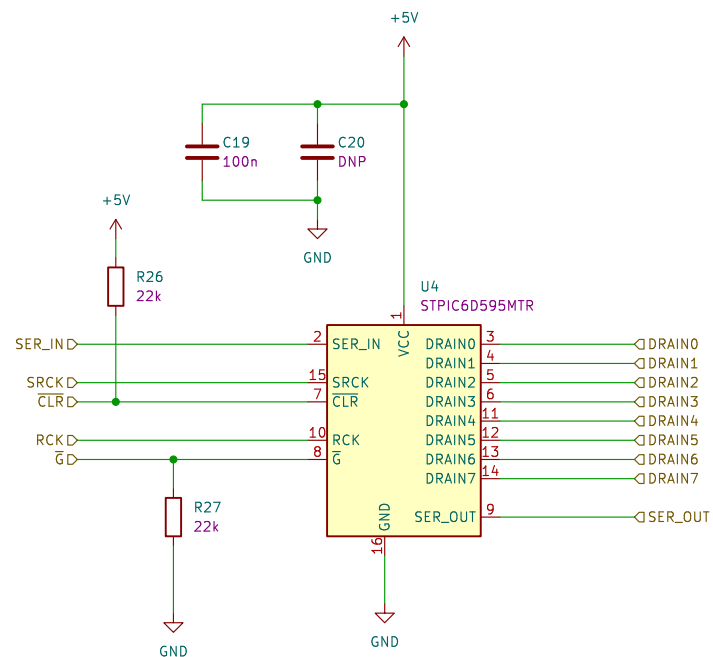
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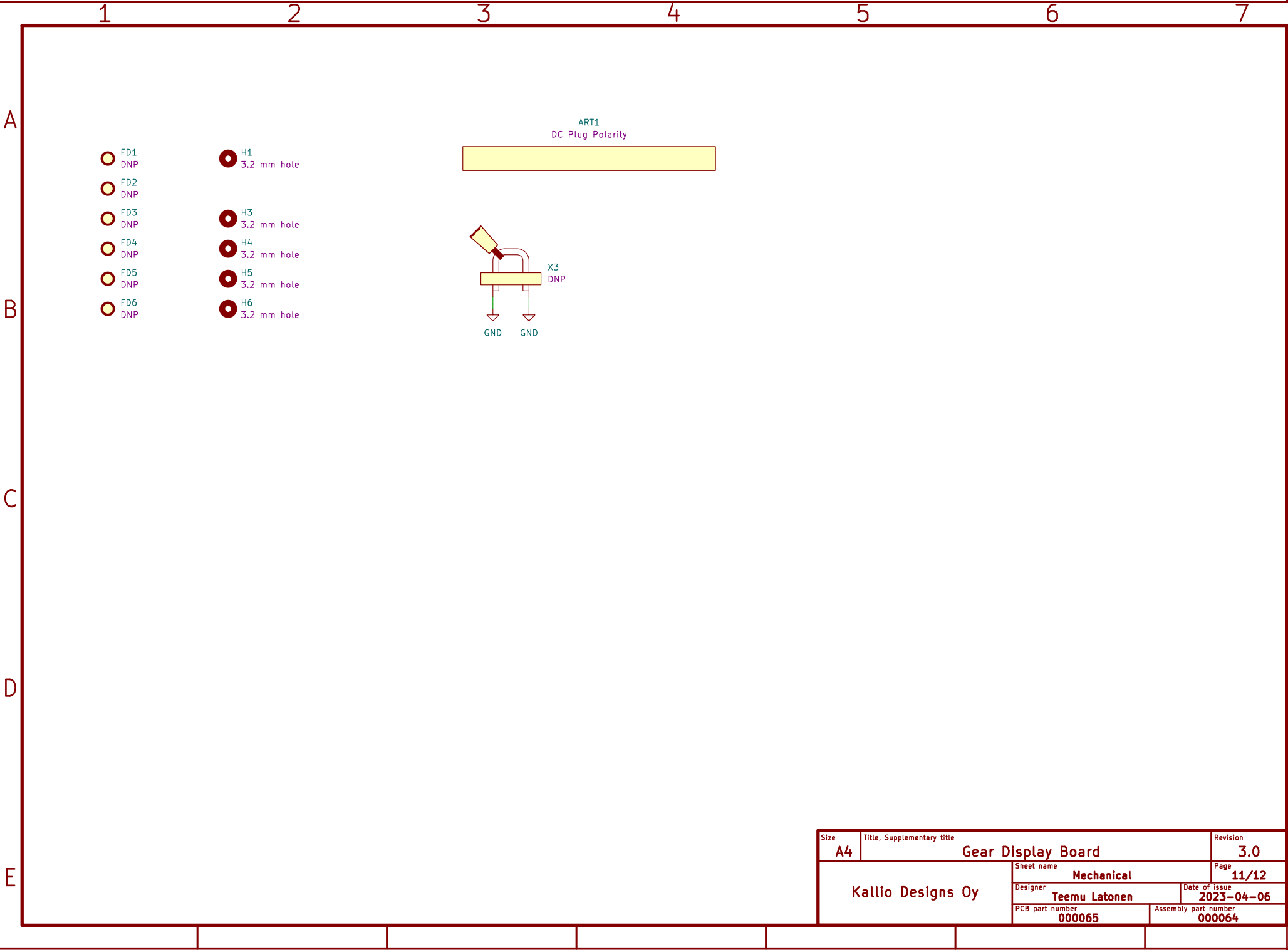
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Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	LED Driver 3
		Designer	Teemu Latonen
		Date of issue	2023-04-06
PCB part number		Assembly part number	
000065		000064	



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REVISION HISTORY			
REV	DATE	DESCRIPTION	DESIGNER
1.0	13.08.2022	Initial	Teemu Latonen
2.0	01.03.2023	Buffer U8 added for LED strip	Teemu Latonen
		7-segment display configuration changed	Teemu Latonen
		External dimmer circuit added	Teemu Latonen
3.0	27.03.2023	Resistor added to PWM feedback for safety	Teemu Latonen
		Q1 circuit changed for PWM control on 7-segment display	Teemu Latonen
		R33 changed to 110 ohm for brightness scaling	Teemu Latonen
		Reversed R28 potentiometer action	Teemu Latonen

Size	Title, Supplementary title		Revision
A4	Gear Display Board		3.0
Kallio Designs Oy		Sheet name	Page
		Revision History	12/12
		Designer	Date of issue
		Teemu Latonen	2023-04-06
		PCB part number	Assembly part number
		000065	000064