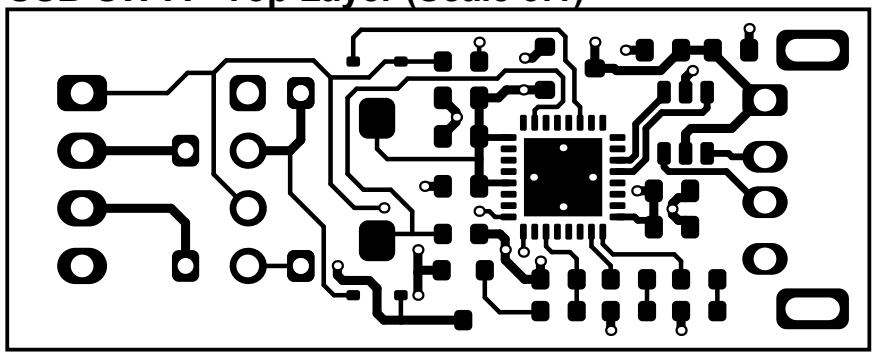
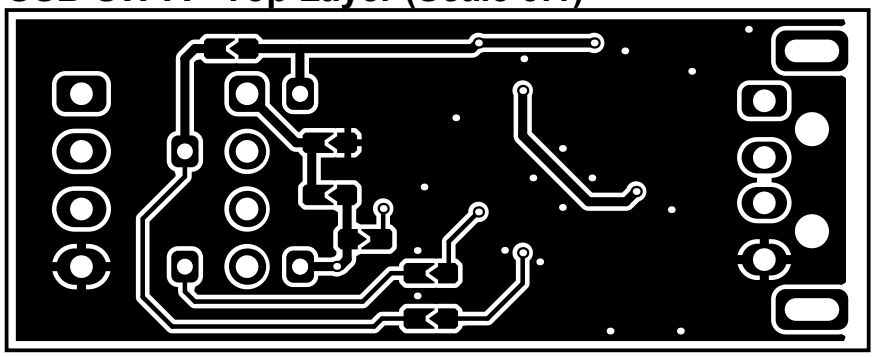
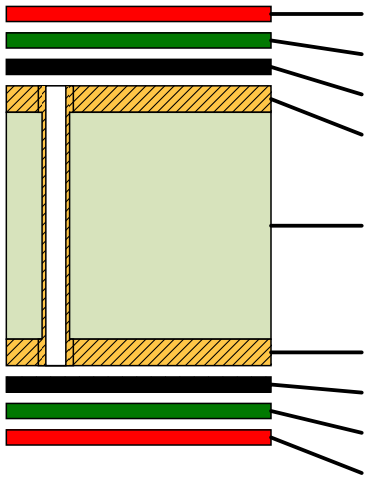
USB-SW-A - Top Layer (Scale 3:1)



USB-SW-A - Top Layer (Scale 3:1)



Layer Stack Legend



Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.0100mm	SM-001	Solder Mask	GTS
PbSn	Top Copper Plating	0.0200mm		Surface Finish	
CF-004	**Top Layer**	**0.0350mm**		**Signal**	**GTL**
Core		***1.5000mm***	***FR-4 TG140***	***Dielectric***	
CF-004	**Bottom Layer**	**0.0350mm**		**Signal**	**GBL**
PbSn	Bottom Copper Plating	0.0200mm		Surface Finish	
Surface Material	Bottom Solder	0.0100mm	SM-001	Solder Mask	GBS
	Bottom Overlay			Legend	GBO

Total thickness: 1.6300mm

Board Specification

Minimum Track	0.2 mm	Solder Mask Color	**Black**
Minimum Gap	0.2 mm	Silkscreen	**White**
VIA Process	Tented	Board Finish	HASL - LEAD

Project: *USB Controlled Relay*		Revision: *A*
Title: **Board Specifications**		
Sheet 1 of 2	Date: Mar-01-2025	Author: Alfredo Cortellini

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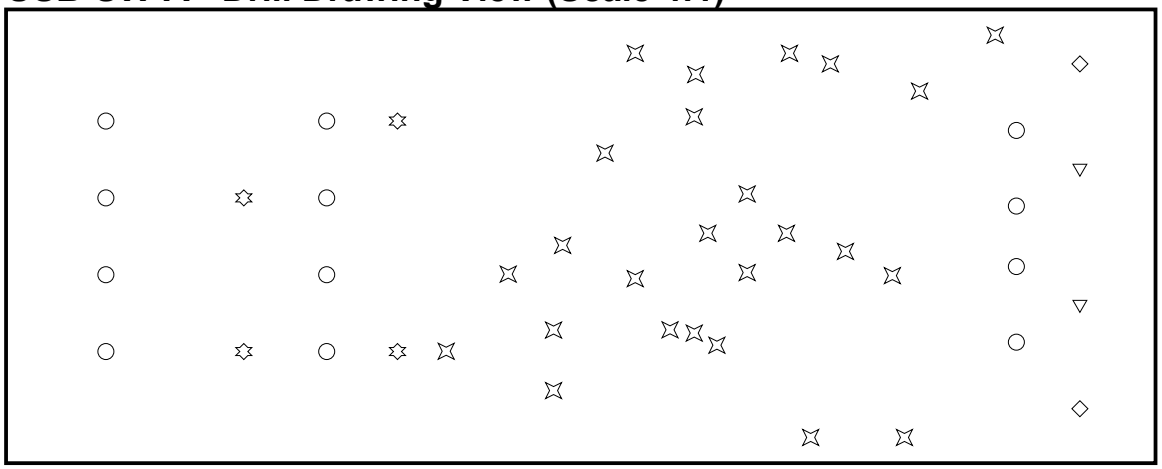
USB-SW-A - Drill Drawing View (Scale 4:1)



Drill Table

Symbol	Count	Hole Size	Plated	Hole Type	Via / Pad	Hole Tolerance
☆	25	0.30mm	Plated	Round	Via	
✡	4	0.70mm	Plated	Round	Pad	
○	12	1.00mm	Plated	Round	Pad	
▽	2	1.10mm	Non-Plated	Round	Pad	
◇	2	2.40mm	Plated	Slot	Pad	
	45 Total					

Project: *USB Controlled Relay*			Revision: *A*
Title: **Board Specifications**			
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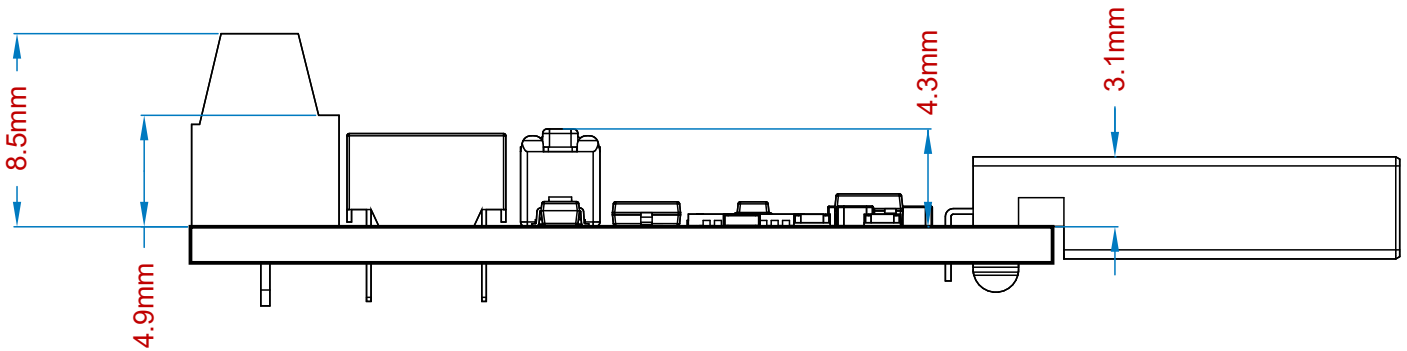
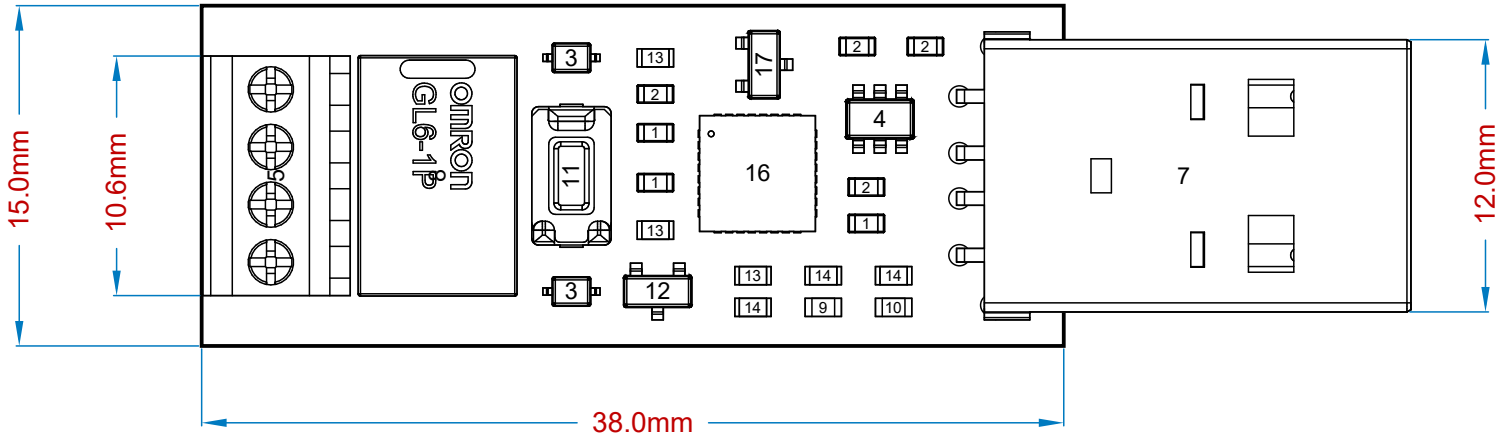
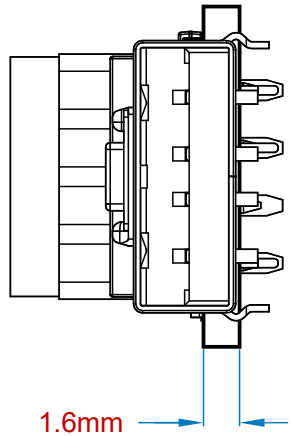
Front side (Scale 3:1)



USB-SW-A - View from Top side (Scale 3:1)



Right side (Scale 3:1)



Project: *USB Controlled Relay*		Revision: *A*
Title: **Board Dimensions**		
Sheet 1 of 1	Date: Mar-01-2025	Author: Alfredo Cortellini

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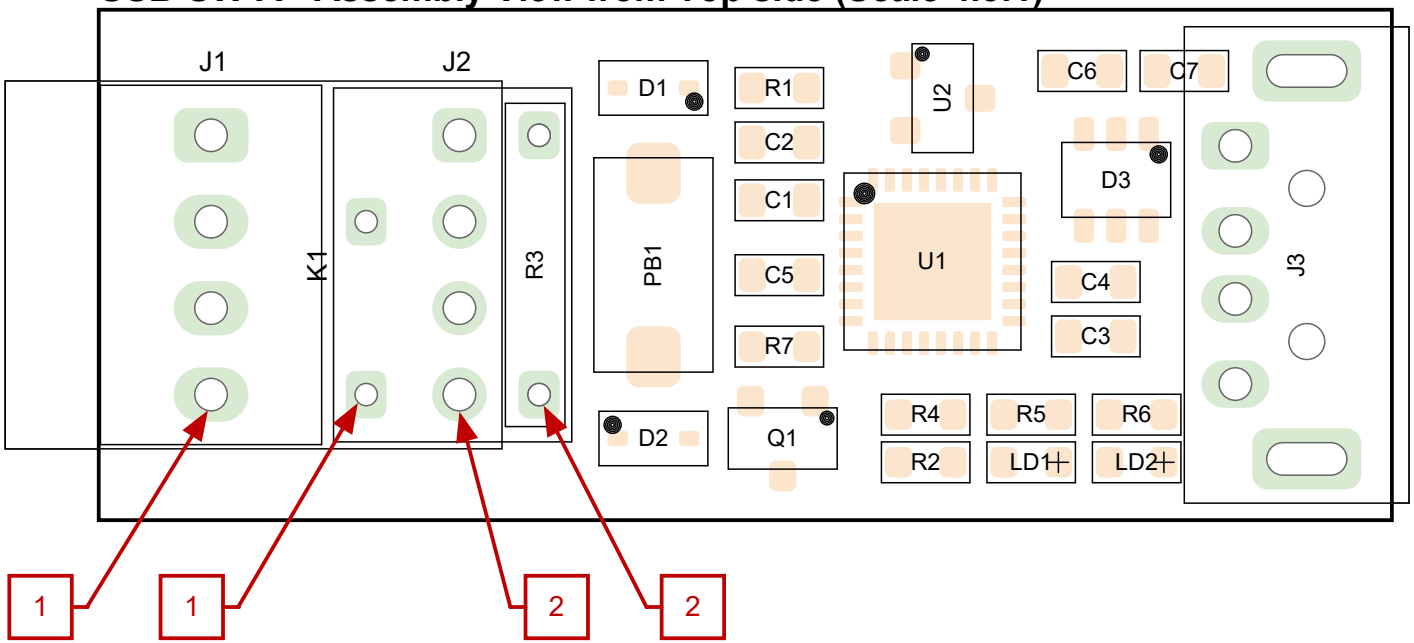
USB-SW-A - Assembly View from Top side (Scale 4.5:1)



Bill Of Materials

Line #	Designator	Quantity	Manufacturer Part Number
1	C1, C3, C5	3	CGA3E2X7R1H104K080AA
2	C2, C4, C6, C7	4	GRM188Z71C475KE21D
3	D1, D2	2	BAT54WS-7-F
4	D3	1	USBLC6-4SC6
5	J1	1	691210910004
6	J2	1	CO975
7	J3	1	USB-AP-S-RA
8	K1	1	G6L-1P-DC5
9	LD1	1	LTST-C191KRKT
10	LD2	1	LTST-C191KGKT
11	PB1	1	SKQMAQE010
12	Q1	1	BSS138-7-F
13	R1, R4, R7	3	RC0603FR-0710KL
14	R2, R5, R6	3	RC0603FR-07470RL
15	R3	1	RNF18FTD10K0
16	U1	1	STM32F042K6U6TR
17	U2	1	AP7313-33SRG-7

Assembly Notes

1. Install K1 and J1 if you want to use the relay ON-Off feature.
   Do NOT install J2 and R3

2. Install J2 if you want to use the fan control or servo feautre.
   Follow the instructions on the back if you have a regular or a PWM fan. Install R3 if you have PWM FAN.
   Do NOT install K1 and J1

Project: *USB Controlled Relay*		Revision: *A*
Title: **Board Assembly**		
Sheet 1 of 1	Date: Mar-01-2025	Author: Alfredo Cortellini

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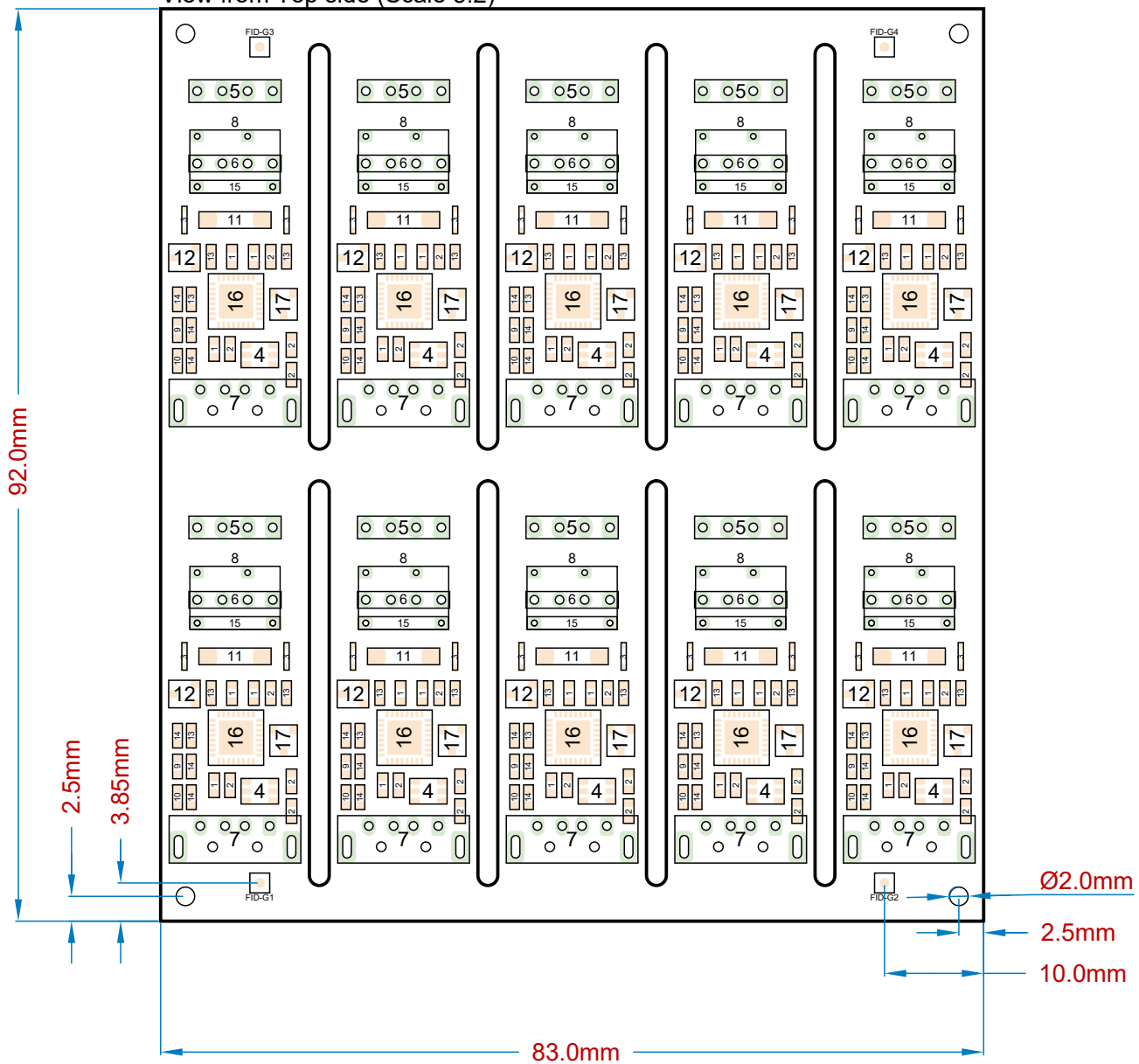
View from Top side (Scale 3:2)



Project: *USB Controlled Relay*		Revision: *A*
Title: **Panel Dimensions**		
Sheet 1 of 1	Date: Mar-01-2025	Author: Alfredo Cortellini

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