

Title **MCU & Motor Interface**

Size: **A4**

Number:*

Revision:**A**

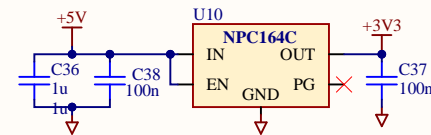
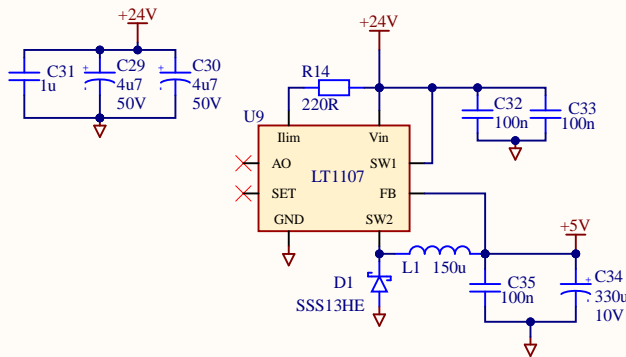
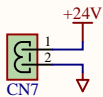
Date: **8. 01. 2022**

Time: **20:01:34**

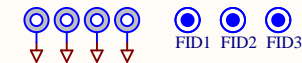
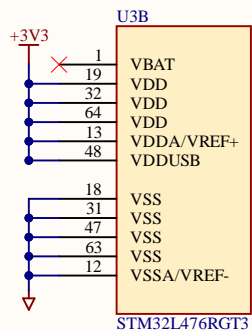
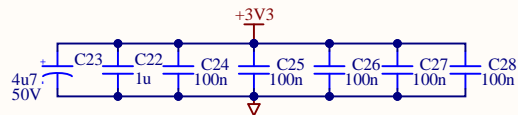
Sheet **1** of **2**

File: **C:\Users\Uporabnik\Documents\pcbDevelopment\STM32_BOARD_1\ver_A\Schematics\STM32_BOARD_v1a_main.SchT**





MCU Power Supply:



PCB Assembly:

Variant Name: **Main**

Pcb Name: **STM32_BOARD**

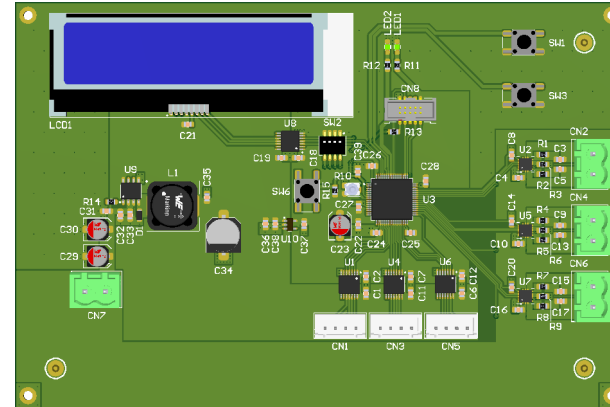
Pcb Version: **v1A**

Author: **Aljaž Murovec**

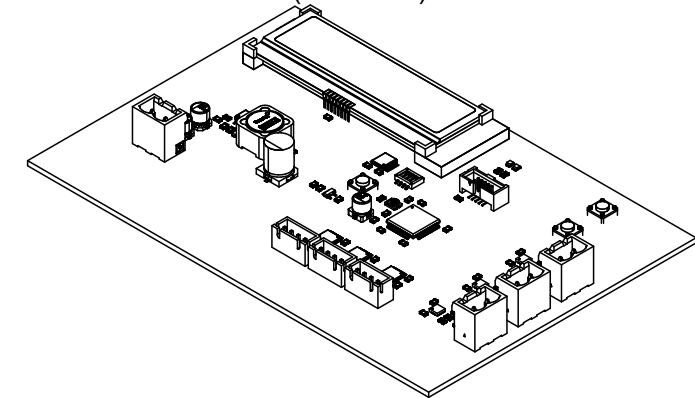
Date: **2022-1-8**

-Components placed only on Top side.

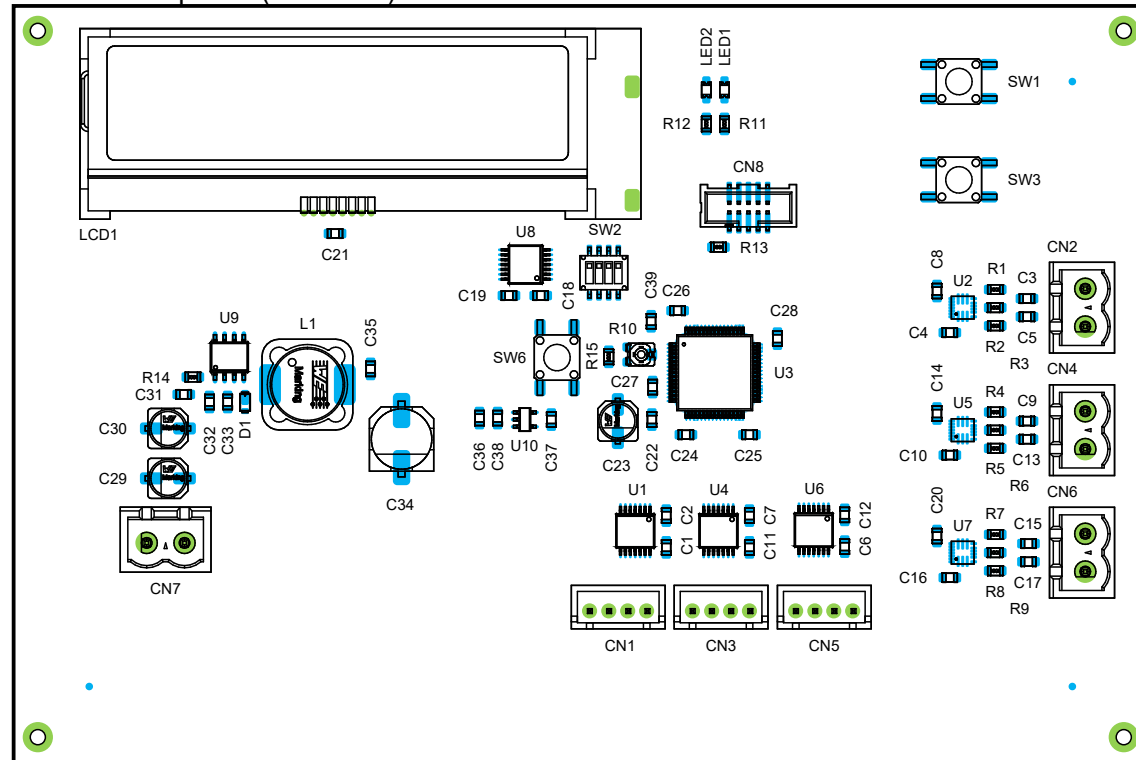
Realistic View



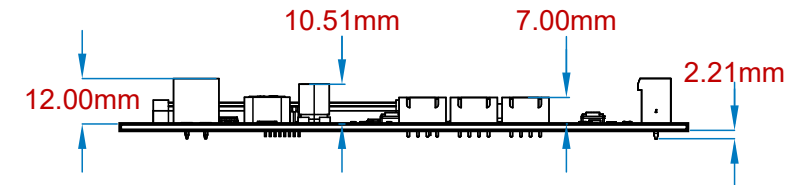
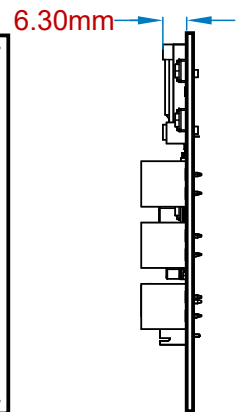
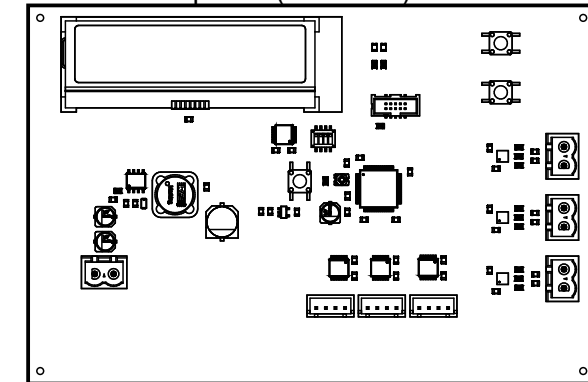
View from Front side (Scale 1:2)



View from Top side (Scale 1:1)



View from Top side (Scale 1:2)

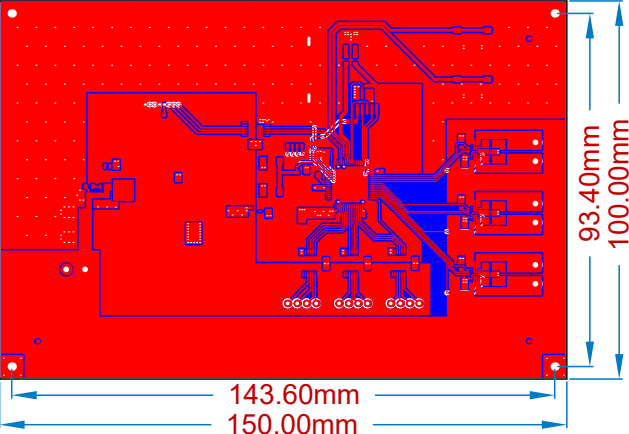


PCB Fabrication:

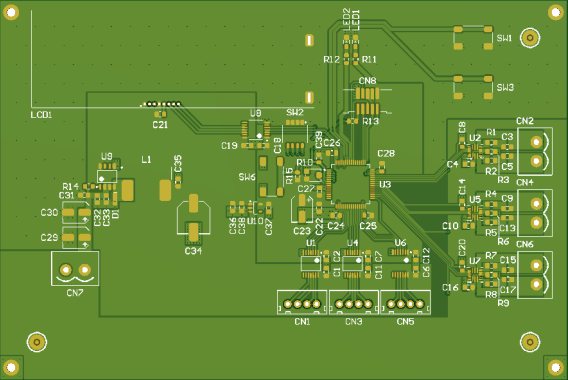
Pcb Name: STM32_BOARD
Pcb Version: v1A
Author: Aljaž Murovec
Date: 2022-1-8

- Gerber File GM1 shows PCB Shape.
- Surface Finish: HASL Pb, 0.02mm Thickness.
- Silkscreen printed on top, color: White.
- Soldermask Color: Green

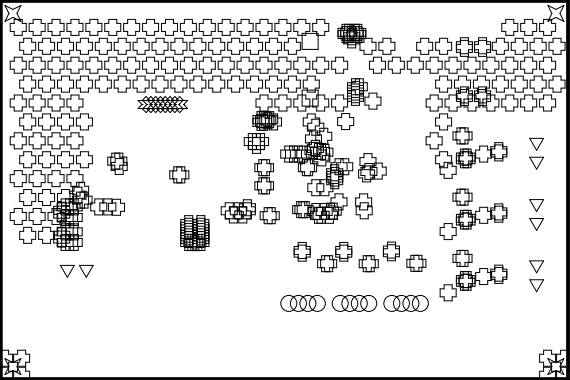
Top View (Scale 1:2)



Realistic View



Drill Drawing View (Scale 1:2)



Layer Stack Legend

	Thickness	Dielectric Material	Gerber	Layer	Material
			GTO	Top Overlay	
	0.01mm	Solder Resist	GTS	Top Solder	Surface Material
	0.02mm			Top Surface Finish	PbSn
	0.04mm		GTL	Top Layer	Copper
	1.60mm	FR-4			
	0.04mm		GBL	Bottom Layer	Copper
	0.02mm			Bottom Surface Finish	PbSn
	0.01mm	Solder Resist	GBS	Bottom Solder	Surface Material
Total thickness: 1.73mm					

Drill Table

Symbol	Count	Hole Size	Plated
+	326	0.30mm	Plated
*	8	0.60mm	Plated
□	2	0.80mm	Plated
○	12	1.00mm	Plated
▽	8	1.50mm	Plated
⊗	4	2.20mm	Non-Plated
	360 Total		

Designator	Comment	Manufacturer	Description	Quantity
C1, C2, C4, C6, C7, C8, C10, C11, C12, C14, C16, C18, C19, C20, C21, C24, C25, C26, C27, C28, C32, C33, C35, C37, C38, C39	100n			26
C3, C5, C9, C13, C15, C17	10n			6
C22, C31, C36	1u			3
C23, C29, C30	4u7	Würth Elektronik	SMD Aluminium Electrolytic Capacitor, Radial Can - SMD, 4.7 µF, 50 V, 5000 hours @ 105°C, Polar	3
C34	330u	Kemet	SMD Aluminium Electrolytic Capacitor, Radial Can - SMD, 4.7 µF, 50 V, 5000 hours @ 105°C, Polar	1
CN1, CN3, CN5	JST XH 4	JASO	JST XH 4 Pin Connector	3
CN2, CN4, CN6, CN7	PHOENIX_CONTACT_2x1_	Phoenix Contact	Pin header, straight, Straight, 5mm Pitch, 2 Poles, Phoenix Contact	4
CN8	SHF-105-01-L-D-SM	Samtec	Pin Header, Vertical, Wire-to-Board, 1.27 mm, 2 Rows, 10 Contacts, Surface Mount, SHF	1
D1	SSS13HE	ON Semiconductor	Surface Mount Schottky Barrier Rectifier.	1
L1	150u	Würth Elektronik	Power Inductor (SMD), 150 µH, 1.8 A, Shielded, 1.8 A, WE-PD, 12mm x 12mm x 8mm	1
LCD1	MCCOG21605C6W-BNMLWI	MIDAS	Alphanumeric LCD, 16 x 2, White on Blue, 3V to 5V, I2C, English, Japanese, Transmissive	1
LED1, LED2	LED_SMD_GREEN			2
R1, R2, R4, R5, R7, R8	100R			6
R3, R6, R9, R11, R12	200R			5
R10	TC33X-2-502E	Bourns	Trimpot, Single Turn, Cermet, Top Adjust, 5 kohm, Surface Mount, 1 Turns	1
R13	0R			1
R14	220R			1
R15	10k			1
SW1, SW3, SW6	PTS645SM43SMTR92LFS	C&K Components	Tactile Switch, PT645, Top Actuated, Surface Mount, Round Button, 160 gf, 50mA at 12VDC	3
SW2	A6H-4101	Omron	DIP / SIP Switch, 4 Circuits, Slide, Surface Mount, SPST, 24 VDC, 25 mA	1
U1, U4, U6, U8	TXS0104EPWR	Texas Instruments	Voltage Level Translator, 4 Input, 50 mA, 4.6 ns, 1.65 V to 5.5 V, TSSOP-14	4
U2, U5, U7	MP6619GQ-P	MPS	H-Bridge Motor driver	3
U3	32-bit Microcontroller	STMicroelectronics	STM32 Arm-based 32-bit Microcontroller	1
U9	LT1107	Linear technology	Micropower DC/DC Converter Adjustable and Fixed 5V, 12V	1
U10	NCP164C	On Semiconductor	LDO Regulator, 300mA, Low Dropout Voltage, Ultra Low Noise, High PSRR with Power Good	1