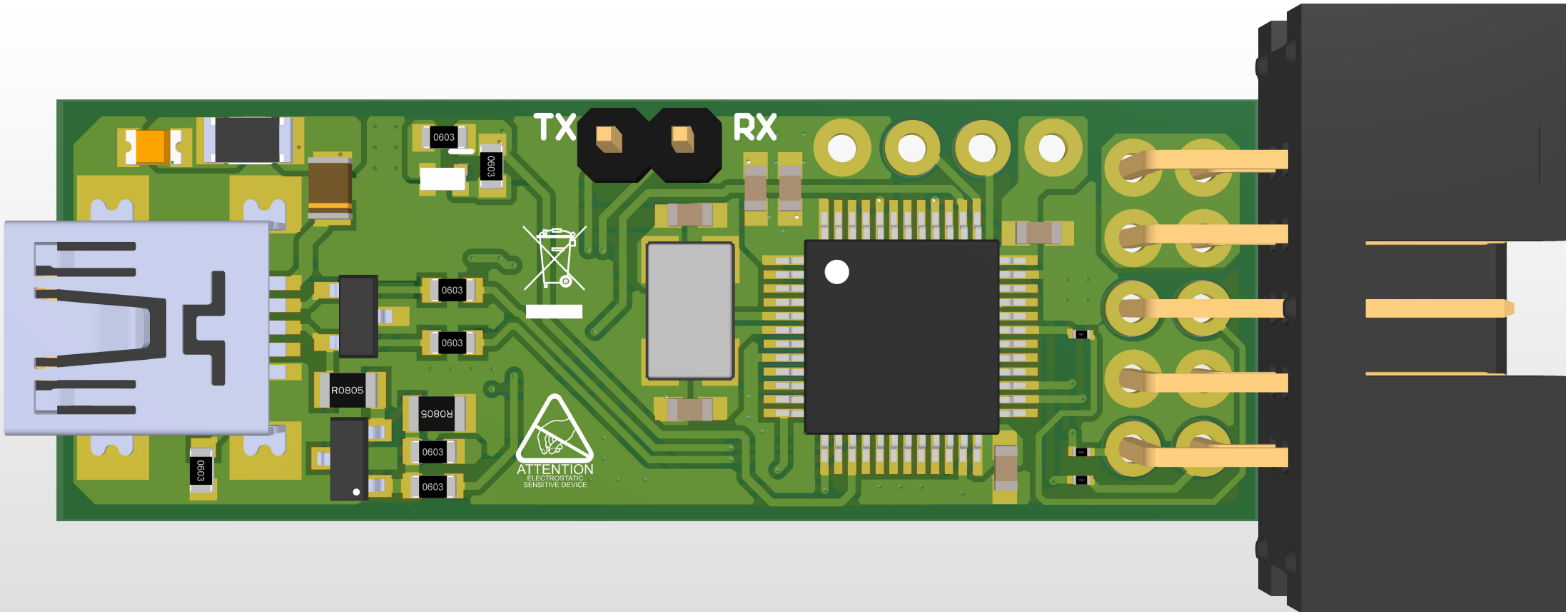
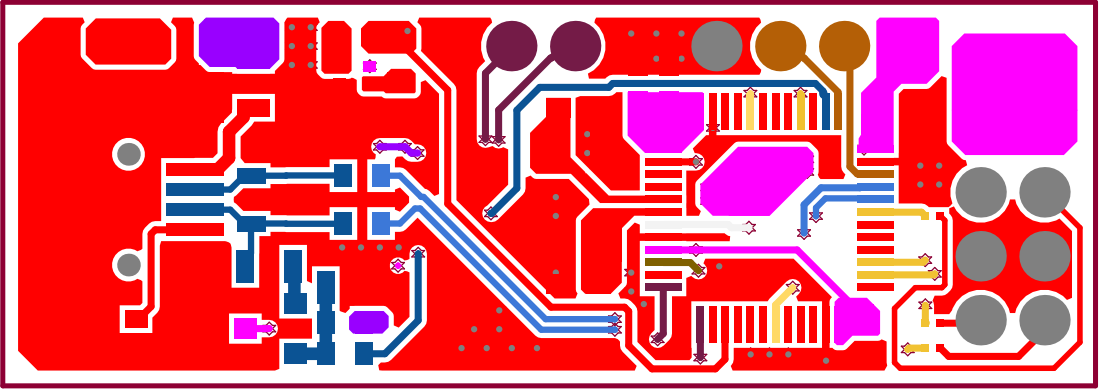
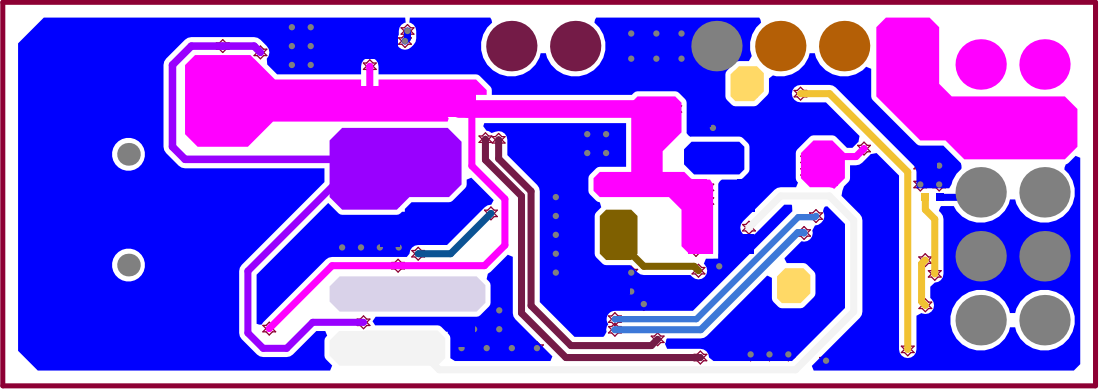

TX
RX
0603
0603
0603
0603
R0805
R0805
0603
0603
0603
ATTENTION
ELECTROSTATIC
SENSITIVE DEVICE





İÇİNDEKİLER / CONTENTS

REVİZYON / REVISION

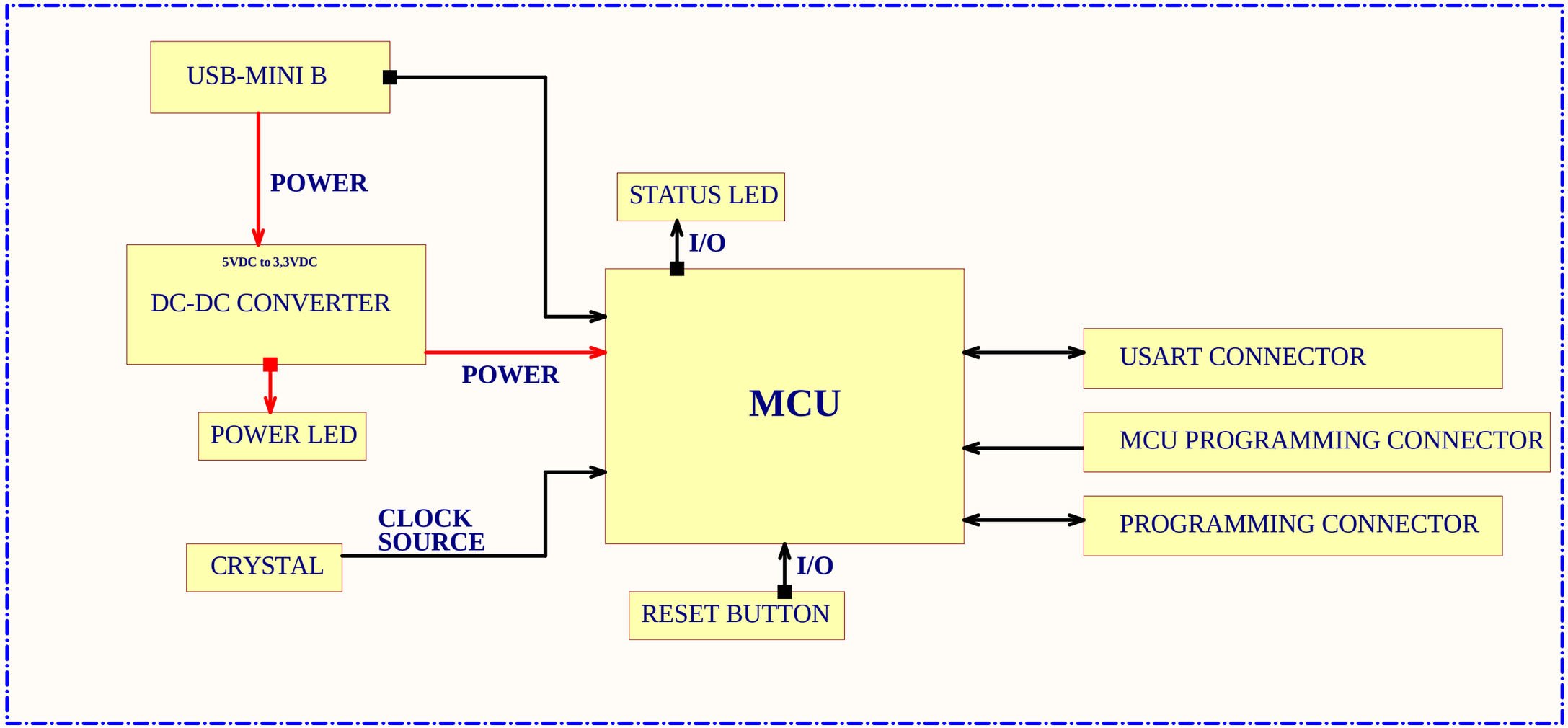
Sayfa Nu. Page No	Tarih Date	Açıklama / Description
1~5	30.10.2024	İlk Yayın

ÜRETİM NOTLARI / PRODUCTION NOTES

	Açıklama / Description
Kart Özellikleri Board Features	
Üretim Çıktıları Gerber Files	
Ekler Attachments	

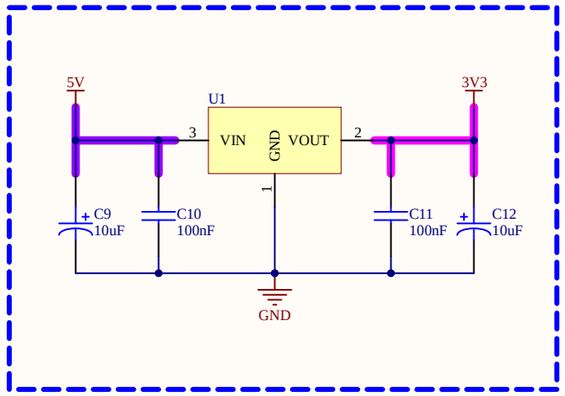
İLETİŞİM / CONTACT

DOSYA ADI / FILE NAME	Cover.SchDoc
TANIM / DESCRIPTION	STLINK_V2
HAZIRLAYAN / PREPARED BY	Aslı Kurt
YAYIN TARİHİ / REL. DATE	30.10.2024
BOYUT / SIZE	A3
SAYFA / SHEET	1 / 5



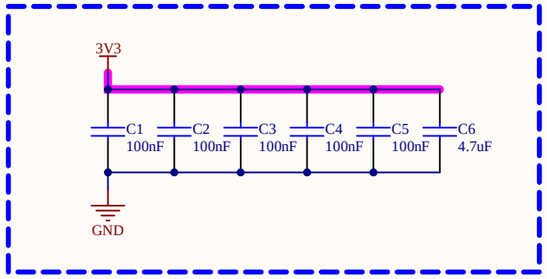
DOSYA ADI / FILE NAME: BlockDiagram.SchDoc	TANIM / DESCRIPTION: STLINK_V2
Aslı Kurt	HAZIRLAYAN / PREPARED BY: Aslı Kurt
	YAYIN TARİHİ / REL. DATE: 30.10.2024 · BOYUT / SIZE: A3 · SAYFA / SHEET: 2 / 5

REGULATOR CIRCUIT

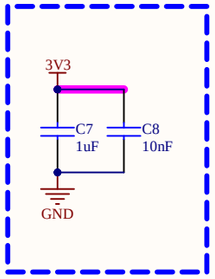


5V IN - 3.3V OUT

POWER CAPACITORS



VDD

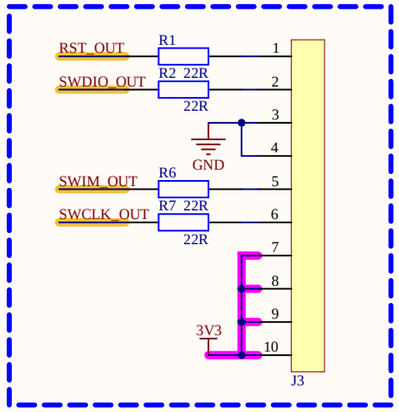


VDDA

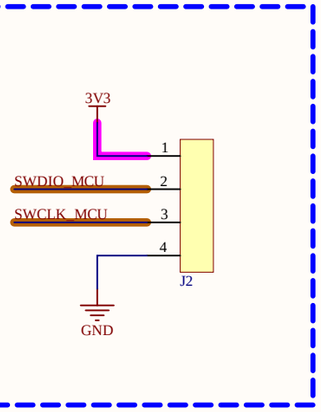
Decoupling capacitors should be placed as close to the MCU as possible.

Configuration of all capacitors have made from the datasheet used as reference.

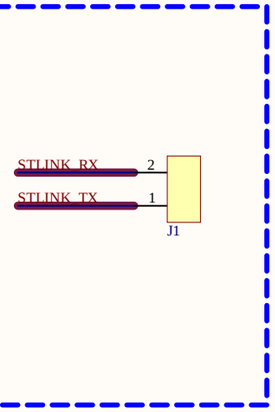
TERMINALS



STLINK OUT

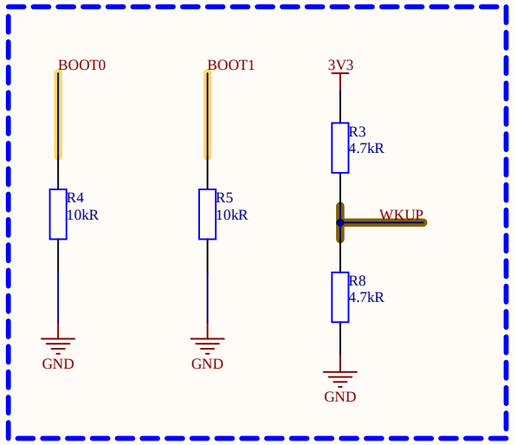


MCU PROGRAMMING



STLINK COM.

PULL UP&DOWN VOLTAGE DIVIDER RESISTORS

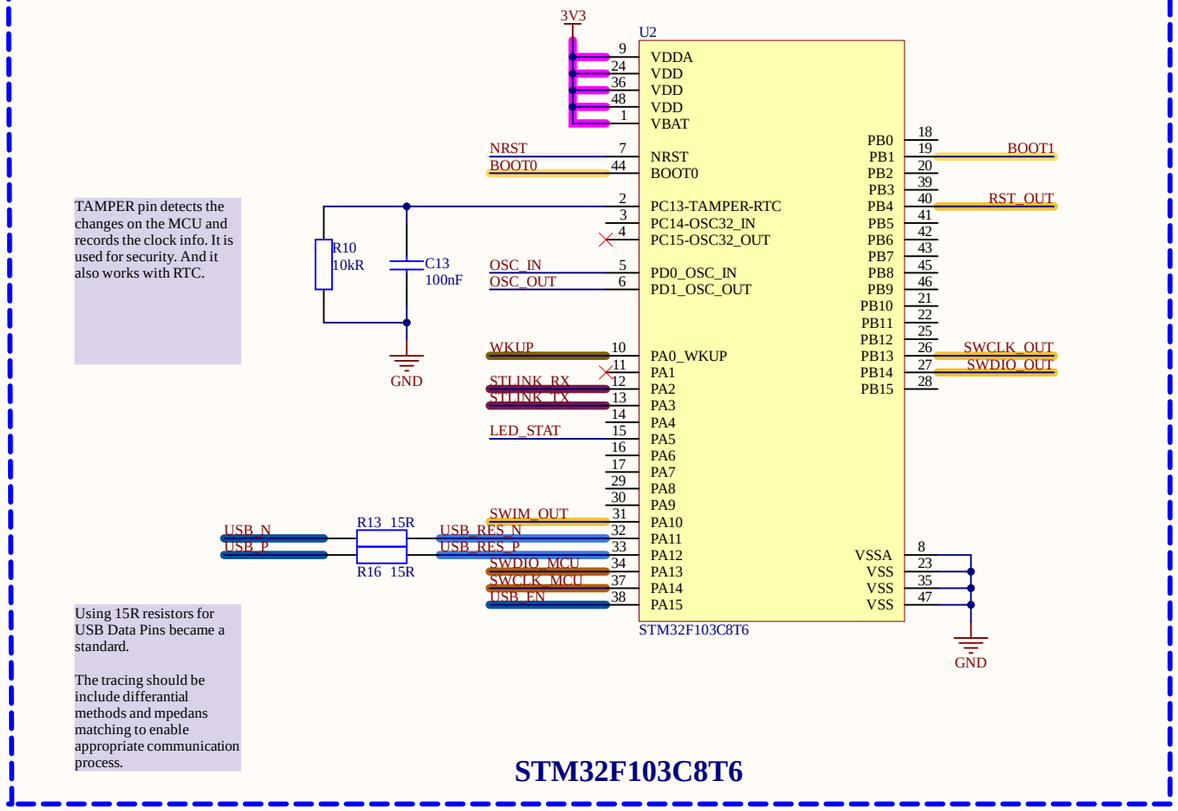


BOOT & WAKEUP PIN

The original design includes 10kR pull-down resistors for BOOTx pins. These pins are about the memory using.

DOSYA ADI / FILE NAME: PowerManagement.SchDoc	TANIM / DESCRIPTION: STLINK_V2
Aslı Kurt	HAZIRLAYAN / PREPARED BY: Aslı Kurt
	YAYIN TARİHİ / REL. DATE: 30.10.2024 · BOYUT / SIZE: A3 · SAYFA / SHEET: 3 / 5

STM32 CIRCUIT



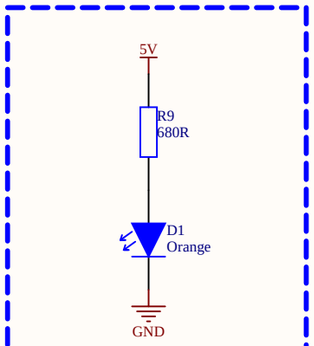
TAMPER pin detects the changes on the MCU and records the clock info. It is used for security. And it also works with RTC.

Using 15R resistors for USB Data Pins became a standard.

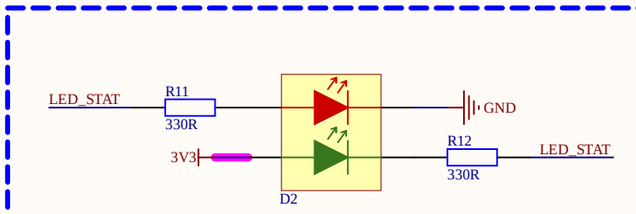
The tracing should be include differantial methods and mpedans matching to enable appropriate communication process.

STM32F103C8T6

OUTPUTS

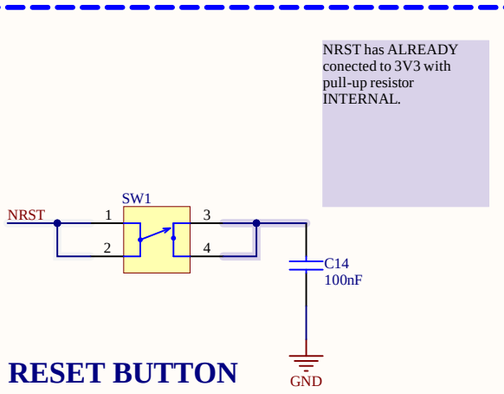


POWER LED



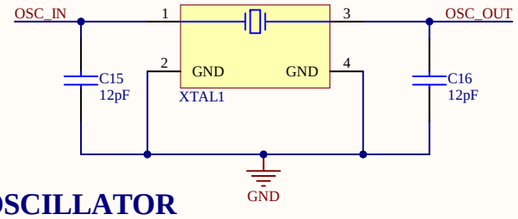
STATUS LED

BUTTON & OSCILLATOR



NRST has ALREADY conected to 3V3 with pull-up resistor INTERNAL.

RESET BUTTON



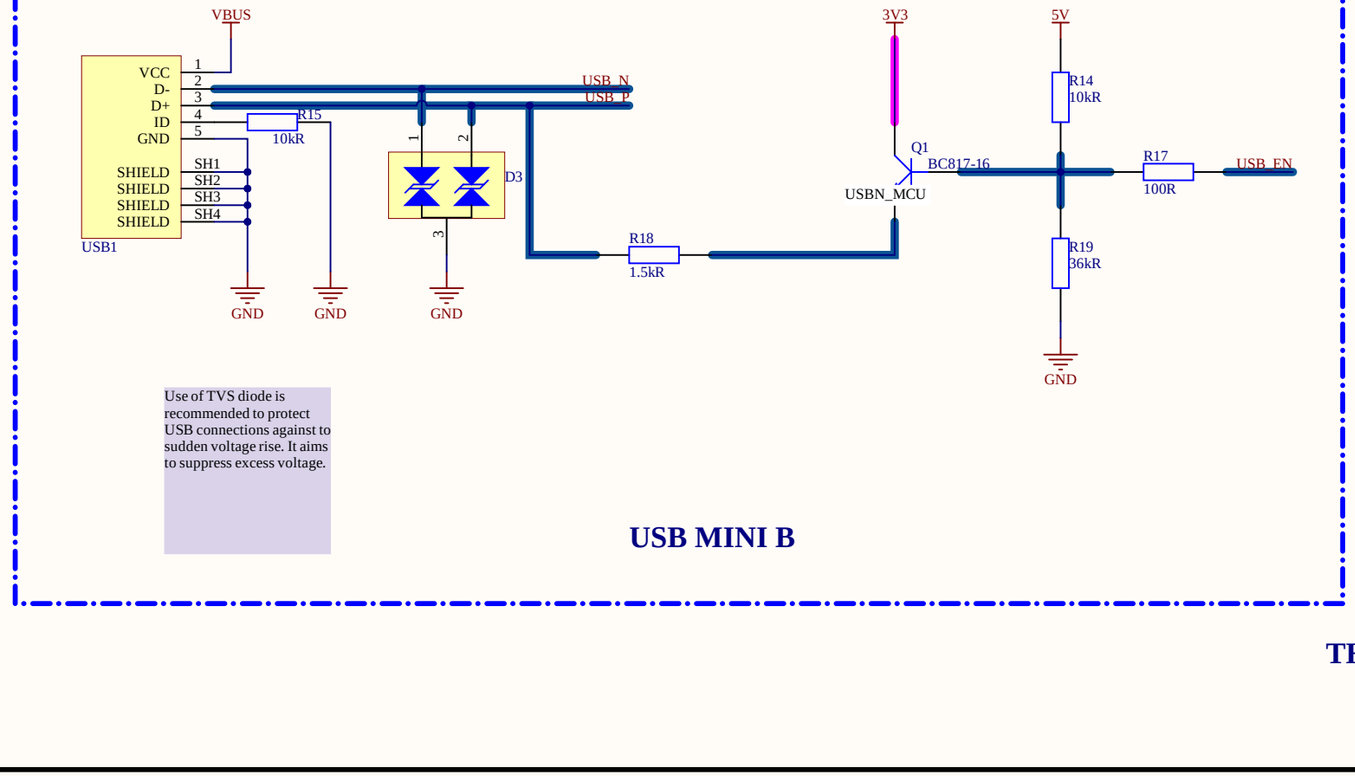
ECS-80-10-30B-CWN-TR is selected.

fs=8Mhz
CL=10pF
CL1=CL2= 12pF
(CLx=2*(CL-Cp)
where Cp is selected 4pF

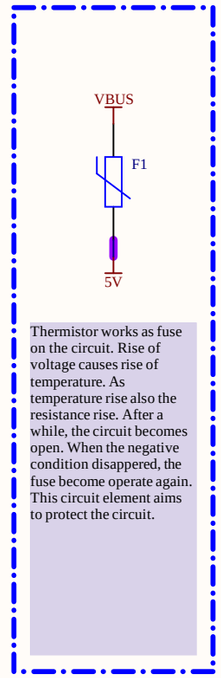
OSCILLATOR

DOSYA ADI / FILE NAME: MCU.SchDoc	TANIM / DESCRIPTION: STLINK_V2
Aslı Kurt	HAZIRLAYAN / PREPARED BY: Aslı Kurt
	YAYIN TARİHİ / REL. DATE: 30.10.2024 · BOYUT / SIZE: A3 · SAYFA / SHEET: 4 / 5

USB CONNECTION - MINI B

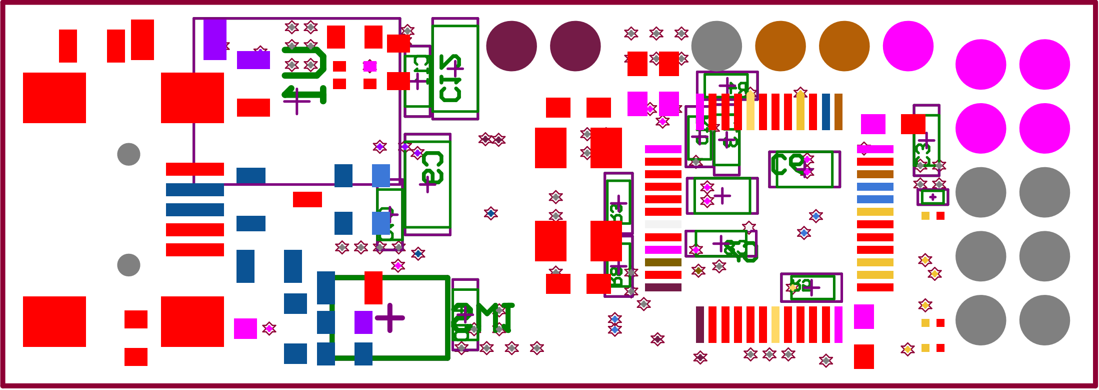


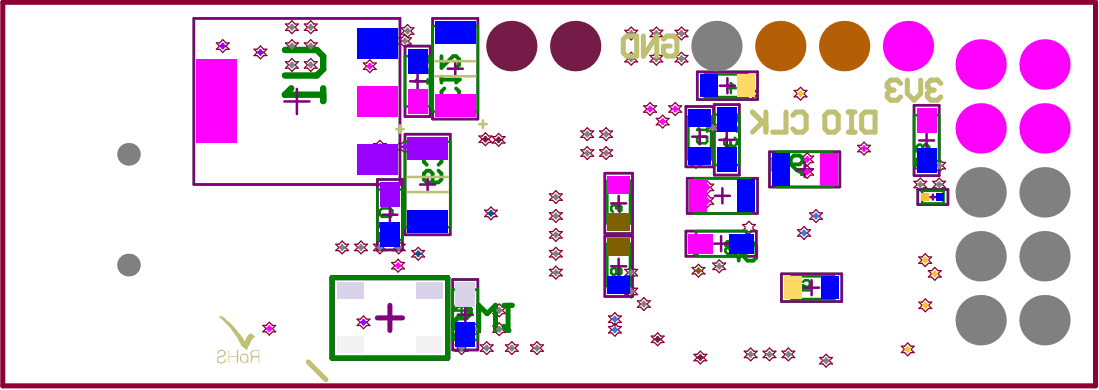
USB MINI B

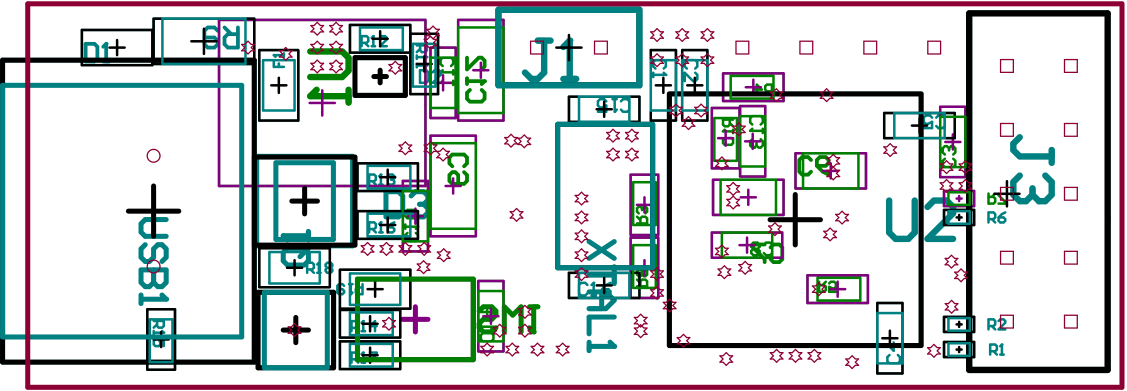


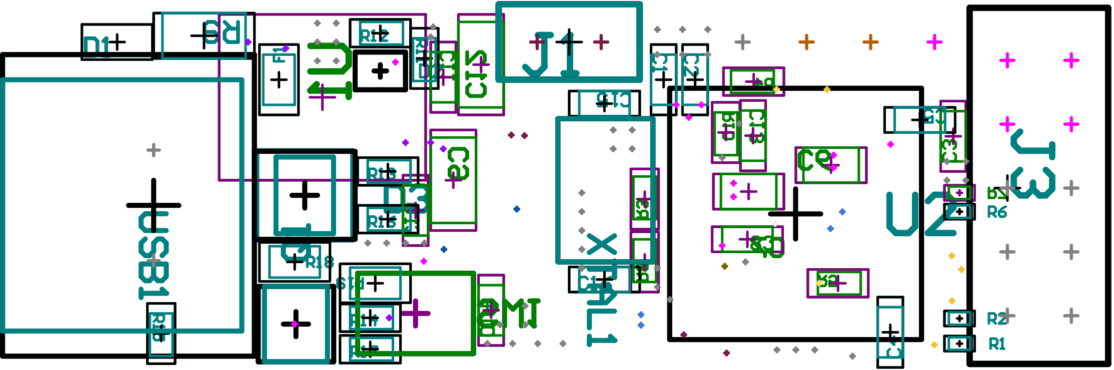
THERMISTOR PTC

DOSYA ADI / FILE NAME: USB.SchDoc	TANIM / DESCRIPTION: STLINK_V2
Aslı Kurt	HAZIRLAYAN / PREPARED BY: Aslı Kurt
	YAYIN TARİHİ / REL. DATE: 30.10.2024 · BOYUT / SIZE: A3 · SAYFA / SHEET: 5 / 5


C15


GND
DIO CLK
3V3
RoHS


D1
R9
R12
C15
J1
U1
R13
C3
R15
USB1
R18
XTAL1
C6
U2
J3
R6
R2
R1


D1
R9
F1
U1
R12
C15
J1
C1
C2
C9
C6
U2
J3
R6
R2
R1
USB1
R13
R16
R18
R19
EMI
XTAL1

Comment	Description	Designator	Footprint	LibRef	Quantity
C0603C104K5RACTU	CAP CER 100nF %10 0603 SMD	C1, C2, C3, C4, C5, C10, C11, C13, C14	CAP_0603	CAP CER 100nF 0603	9
CL21A475KAQNNNE	CAP CER 4.7uF %10 0805	C6	CAP_0805	CAP CER 4.7uF 0805	1
CL21B105KBFNNNE	CAP CER 1uF %10 0805	C7	CAP_0805	CAP CER 1uF 0805	1
0603B103K160CT	CAP CER 10nF %10 0603	C8	CAP_0603	CAP CER 10nF 0603	1
T491A106K010AT	Cap Tant Solid 10uF 10V A CASE 10%(3.2 X 1.6 X 1.6mm) SMD 3216-18 4 Ohm 125 C T/R	C9, C12	CAP_1206_TANT	CAP TANT 10uF 1206	2
CC0603FRNPO9BN120	Multilayer Ceramic Capacitor, 12 pF, 50 V, ¡¿½1%, C0G (NP0), 0603 [1608 Metric]	C15, C16	CAP_0603	CAP CER 12pF 0603	2
LTST-C170KFKT	LED Uni-Color Orange 611nm 2-Pin Chip LED T/R/ LED ORANGE CLEAR 0805 SMD	D1	LED_ORANGE_0805	LED ORANGE 0805	1
APHB1608CGKSURKC	Green/Red 0603 130° Clear 50/250 mcd 2.1/1.95 V Surface Mount Flat Top LED	D2	LED_INDP_GREENRED_0603	LED_INDP_GREENRED_0603	1
SM712	7V/12V Tvs, Package SOT-23, Tvs A	D3	SOT-23	SM712	1
PRG21BC1R0MM1RA	Thermistor PTC 1 Ohm 20% 2-Pin 0805 Surface Mount Solder Pad Embossed T/R	F1	FUSE_0805	PRG21BC1R0MM1RA	1
61300211121		J1	2x1 Male Header 2.54mm	2x1 Male Header 2.54mm	1
2.54mm		J2	4x1 Pinout	4x1 Pinout	1
SBH11-PBPC-D05-RA-BK	Conn Shrouded Header (4 Sides) HDR 10 POS 2.54mm Solder RA Side Entry Thru-Hole	J3	5x2 Male Header 2.54mm Shrouded - 4 Wall	5x2 Male Header 2.54mm Shrouded - 4 Wall	1
BC817-16	ON Semi BC817-16LT1G NPN Bipolar Transistor, 0.5 A, 45 V, 3-Pin SOT-23	Q1	SOT23	BC817-16	1
AC0201FR-0722RL	SMD Chip Resistor, 22 Ohm, ± 1%, 50 mW, 0201 [0603 Metric], Thick Film, General Purpose	R1, R2, R6, R7	RES_0201	RES 22 OHM 0201	4
RC0603JR-074K7L	RES 4K7 %5 OHM 0603 SMD	R3, R8	RES_0603	RES 4K7 OHM 0603	2
RC0603FR-0710KL	RES 10K %1 OHM 0603 SMD	R4, R5, R10, R14, R15	RES_0603	RES 10K OHM 0603	5
RC1206FR-07680RL	SMD Chip Resistor, 680 Ohm, ¡¿½1%, 250 mW, 1206 [3216 Metric], Thick Film, General Purpose	R9	RES_1206	RES 680 OHM 1206	1
ERJ-H3EF3300V	RES, 330R, 1%, 0.125W, 0603;	R11, R12	RES_0603	RES 330 OHM 0603	2
RC0603JR-0715RL	RES 15 %5 OHM 0603 SMD	R13, R16	RES_0603	RES 15 OHM 0603	2
RC0603JR-07100RL	RES 100 %5 OHM 0603 SMD	R17	RES_0603	RES 100 OHM 0603	1
RC0805FR-071K5L	SMD Chip Resistor, 1.5 kOhm, ¡¿½1%, 125 mW, 0805 [2012 Metric], Thick Film, General Purpose	R18	RES_0805	RES 1K5 OHM 0805	1
RC0805FR-0736KL	SMD Chip Resistor, 36 kOhm, ± 1%, 125 mW, 0805 [2012 Metric], Thick Film, General Purpose	R19	RES_0805	RES 36K OHM 0805	1
PTS810 SJG 250 SMTR LFS	Switch Tactile N.O. SPST Button J-Bend 0.05A 16VDC 100000Cycles 3.92N SMD T/R	SW1	BUTTON_SMD_BLUE	PTS810 SJG 250 SMTR LFS	1
LM1117MPX-33NOPB	800-mA 15-V linear voltage regulator ; 4-SOT-223 0 to 125	U1	SOT223	LM1117MPX-33NOPB	1
STM32F103C8T6	ARM Cortex-M3 STM32 F1 Microcontroller 32-Bit 72MHz 64kB FLASH LQFP48 STM32F103C8T6	U2	LQFP48-STM	STM32F103C8T6	1
690-005-299-043	Conn Mini USB 2.0 Type B RCP 5 POS 0.8mm Solder RA SMD 5 Terminal 1 Port	USB1	MINI_USB_B	690-005-299-043	1
ECS-80-10-30B-CWN-TR	Crystal 8MHz ±10ppm (Tol) ±15ppm (Stability) 10pF FUND 100Ohm 4-Pin Mini-SMD T/R	XTAL1	4-SMD, No Lead	ECS-80-10-30B-CWN-TR	1

Design Rules Verification Report

Filename : C:\Users\asli\Desktop\Hardware Design\Project Files\InProgress\PCB_Project_

Warnings 0
Rule Violations 3

Warnings	
Total	0

Rule Violations	
Clearance Constraint (Gap=0.2mm) (All),(All)	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Un-Routed Net Constraint ((All))	0
Modified Polygon (Allow modified: No), (Allow shelved: No)	0
Width Constraint (Min=0.1mm) (Max=30mm) (Preferred=0.7mm) (All)	0
Power Plane Connect Rule(Direct Connect)(Expansion=0.508mm) (Conductor Width=0.254mm) (Air Gap=0.254mm)	0
Hole Size Constraint (Min=0.15mm) (Max=6.3mm) (All)	0
Hole To Hole Clearance (Gap=0.1mm) (All),(All)	0
Minimum Solder Mask Sliver (Gap=0.1mm) (All),(All)	1
Silk To Solder Mask (Clearance=0.15mm) (IsPad),(All)	1
Silk to Silk (Clearance=0.15mm) (All),(All)	0
Net Antennae (Tolerance=0mm) (All)	0
Board Clearance Constraint (Gap=0mm) (All)	1
Height Constraint (Min=0mm) (Max=25.4mm) (Prefered=12.7mm) (All)	0
Total	3

Minimum Solder Mask Sliver (Gap=0.1mm) (All),(All)
Minimum Solder Mask Sliver Constraint: (0.025mm < 0.1mm) Between Pad J2-4(28.39mm,13.5mm) on Multi-Layer And Pad

Silk To Solder Mask (Clearance=0.15mm) (IsPad),(All)
Silk To Solder Mask Clearance Constraint: (Collision < 0.15mm) Between Pad R12-2(14.75mm,13.85mm) on Top Layer And Track

Board Clearance Constraint (Gap=0mm) (All)
Board Outline Clearance(Outline Edge): (0.143mm < 0.2mm) Between Board Edge And Track (12.15mm,0.95mm)(12.857mm,0.243mm) on Bottom

Electrical Rules Check Report

Class	Document	Message
		Successful Compile for STLINKV2.PrjPcb