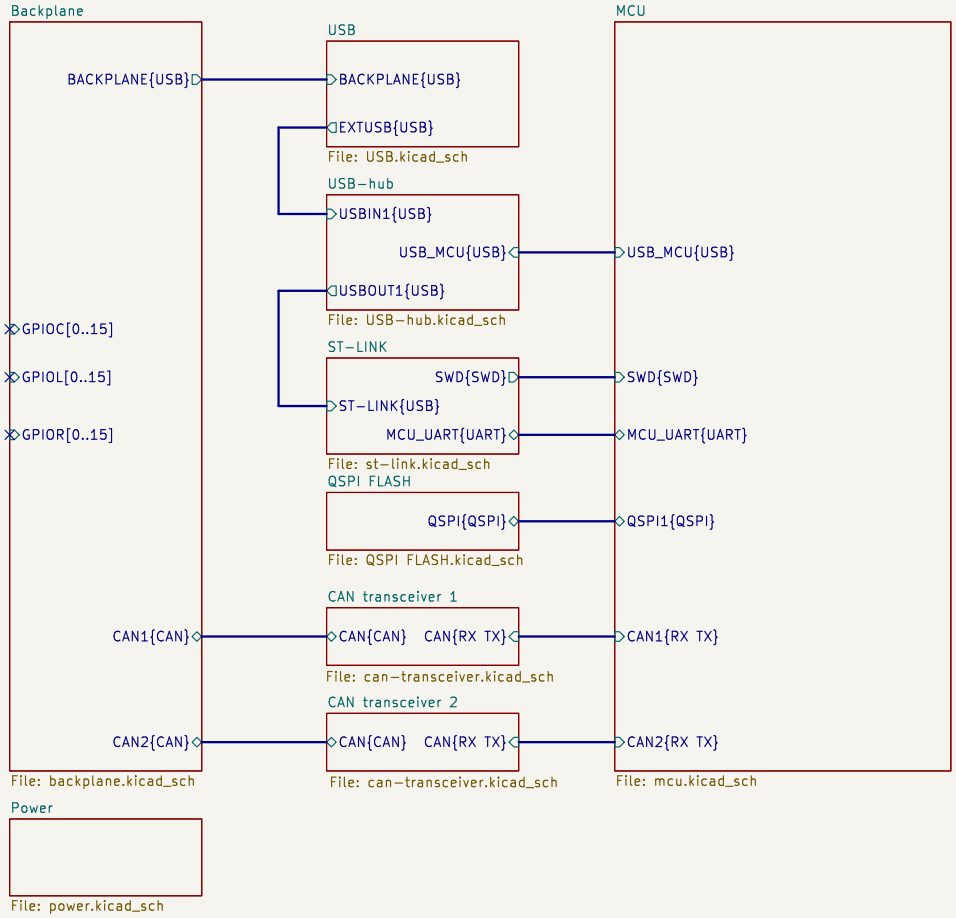
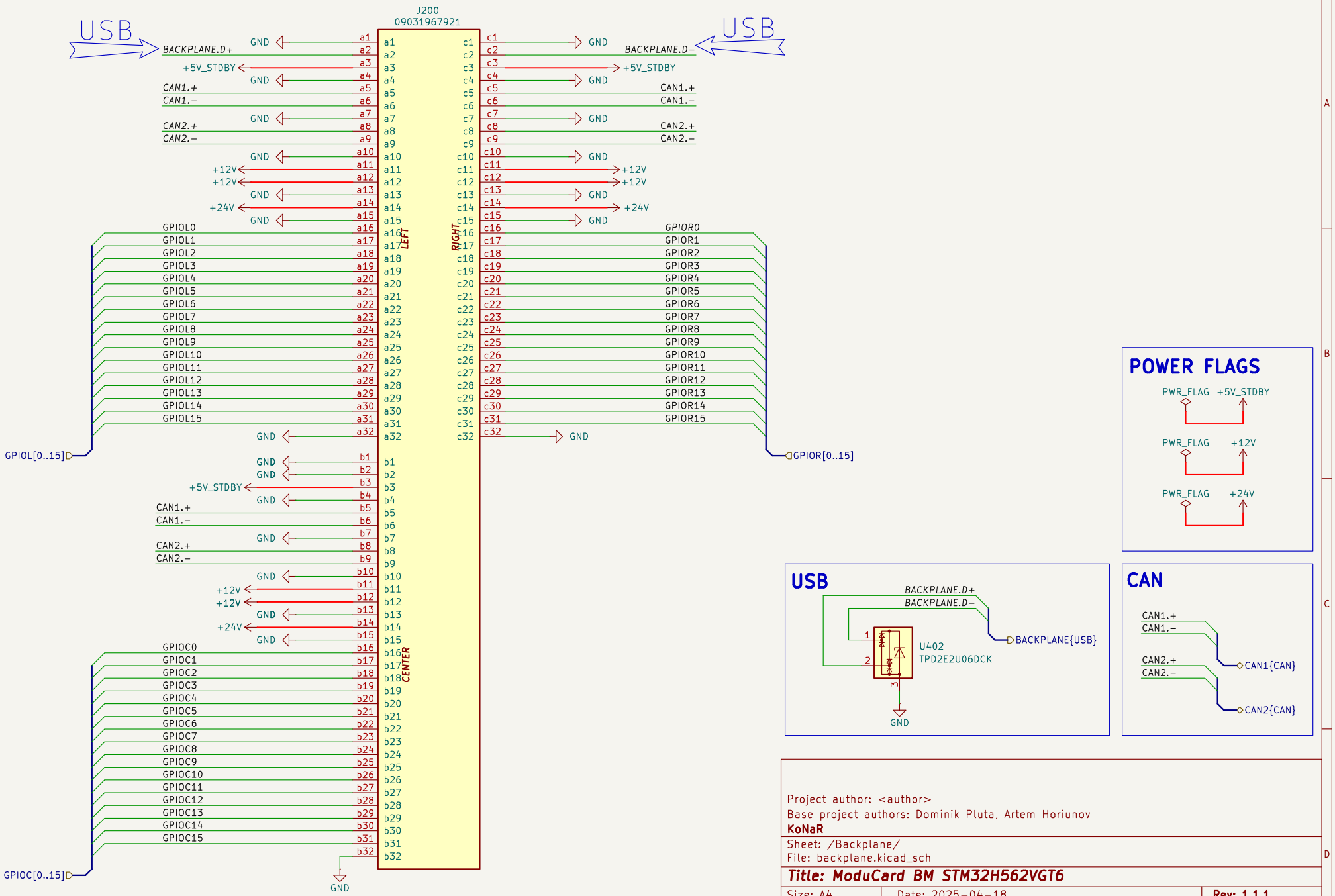


Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /
File: base-module.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 1/10



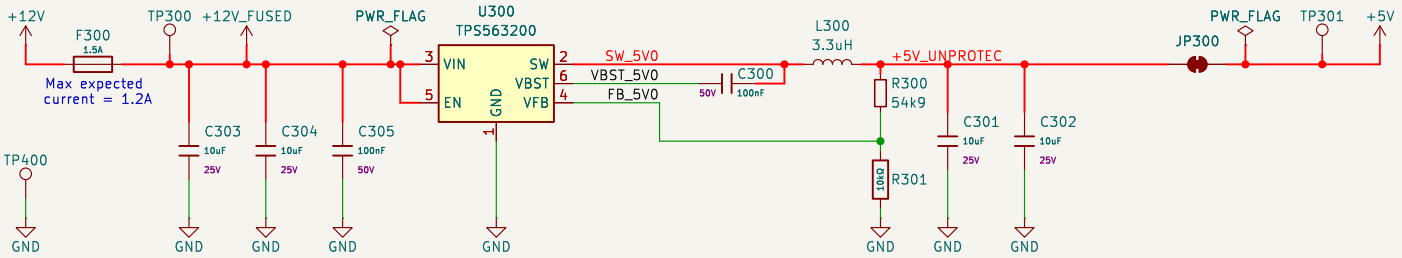
Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /Backplane/
File: backplane.kicad_sch

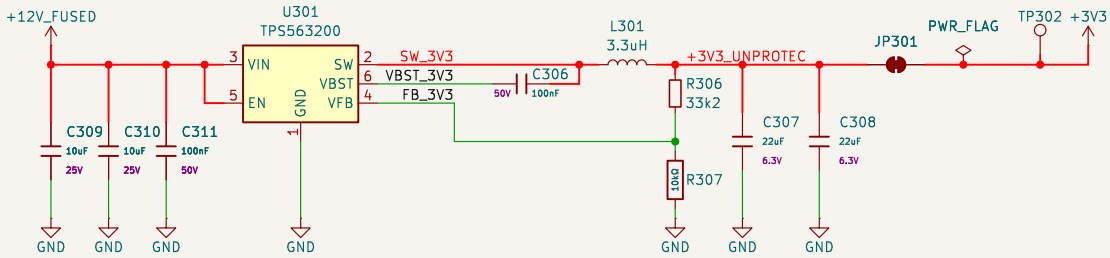
Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 2/10

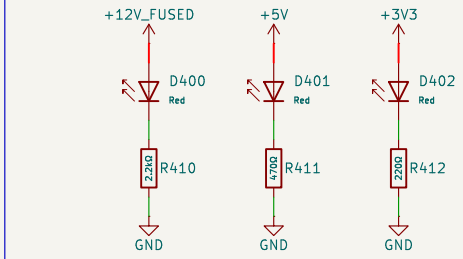
5V DC/DC CONVERTER



3V3 DC/DC CONVERTER



POWER INDICATOR LEDs



Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /Power/
File: power.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 3/10

NOTE: PLACE CAPACTITOR AT PWR PIN

BULK C400 10uF 6.3V

C401 100nF 50V
C402 100nF 50V
C403 10uF 6.3V
C404 100nF 50V
C405 100nF 50V
C420 100nF 50V
C421 100nF 50V
C422 100nF 50V

+3V3

GND

C406 100nF 50V

VREF+
VREF−

BOOT_EN R401 1kΩ
R402 10kΩ
C410 4.7uF 10V
BOOT0

NOTICE: Boot EN can be pulled up with BOOT_EN pin
C412 will retain voltage on boot0 pin during MCU reboot routine

Design choice due: es0565, sec 2.2.3

U400 STM32H563VGTx

	6	VBAT	
	11	VDD	
	28	VDD	
	50	VDD	
	75	VDD	
	100	VDD	
VDDA	22	VDDA	
	73	VDDUSB	
SWD.RST	14	NRST	
BOOT0	94	BOOT0	
VREF+	21	VREF+	
VREF−	20	VREF−	
OSC_IN	12	PH0	
	13	PH1	
QSPI1.IO2	97	PE0	
USER_LED_1	1	PE2	
USER_LED_2	2	PE3	
STATUS_LED	3	PE4	
USR_BUTTON	4	PE5	
	5	PE6	
	38	PE7	
	39	PE8	
	40	PE9	
	41	PE10	
	42	PE11	
	43	PE12	
	44	PE13	
	45	PE14	
	46	PE15	
CAN1.RX	81	PD0	
CAN1.TX	82	PD1	
	83	PD2	
	84	PD3	
	85	PD4	
	86	PD5	
	87	PD6	
	88	PD7	
	55	PD8	
	56	PD9	
	57	PD10	
QSPI1.IO0	58	PD11	
QSPI1.IO1	59	PD12	
QSPI1.IO3	60	PD13	
	61	PD14	
	62	PD15	
VCAP_1	48	VCAP	
VCAP_2	98	VCAP	
	10	VSS	
	19	VSSA	
	23	PA0	
	24	PA1	
	25	PA2	
	26	PA3	
	29	PA4	
	30	PA5	
	31	PA6	
	32	PA7	
	67	PA8	
	68	PA9	
	69	PA10	
USB_MCU.D−	70	PA11	
USB_MCU.D+	71	PA12	
SWD.SWDIO	72	PA13(JTMS	
SWD.SWCLK	76	PA14(JTCK	
	77	PA15(JTDI)	
	35	PB0	
	36	PB1	
QSPI1.SCLK	37	PB2	
	89	PB3(JTDO	
	90	PB4(NJTRST)	
MCU_UART.RX	91	PB5	
MCU_UART.TX	92	PB6	
BOOT_EN	93	PB7	
I2C1.SCL	95	PB8	
I2C1.SDA	96	PB9	
QSPI1.CS	47	PB10	
CAN2.RX	51	PB12	
CAN2.TX	52	PB13	
	53	PB14	
	54	PB15	
	15	PC0	
	16	PC1	
	17	PC2	
	18	PC3	
	33	PC4	
	34	PC5	
	63	PC6	
	64	PC7	
	65	PC8	
	66	PC9	
	78	PC10	
	79	PC11	
	80	PC12	
	7	PC13	
OSC32_IN	8	PC14	
OSC32_OUT	9	PC15	

C427 2.2uF 6.3V
C434 2.2uF 6.3V

AVDD

PWR_FLAG
VDDA
FB401 200mA
+3V3
C423 10uF 6.3V
C424 100nF 50V
C425 10uF 6.3V
C426 100nF 50V

QSPI1.IO0
QSPI1.IO1
QSPI1.IO2
QSPI1.IO3
QSPI1.CS
QSPI1.SCLK
→ QSPI1{QSPI}

USB_MCU.D+
USB_MCU.D−
→ USB_MCU{USB}

SWD.SWDIO
SWD.SWCLK
SWD.RST
→ SWD{SWD}

POWER INDICATOR AND USER LEDs

+3V3
STATUS_LED
USER_LED_1
USER_LED_2
R414 220Ω
R415 220Ω
R416 220Ω
R407 220Ω
LED301B FixLed307
LED301A FixLed307
LED300A FixLed307
LED300B FixLed307
GND

Target I_{LED} = 5mA

MCU DEBUG UART

MCU_UART.RX
MCU_UART.TX
→ MCU_UART{UART}

CRYSTAL RESONATORS

X300 32.768kHz
OSC32_OUT
OSC32_IN
C313 18pF 50V
C314 18pF 50V

+3V3
Y400 ASE−xxxMHz
C432 100nF 50V
EN GND Vdd OUT
OSC_IN

Design choice due: es0565, sec 2.2.3

CAN

CAN2.TX
CAN2.RX
→ CAN2{RX TX}

CAN1.TX
CAN1.RX
→ CAN1{RX TX}

USER BUTTON

+3V3
R405 10Ω
USR_BTN
R406 100Ω
USR_BUTTON
C416 100nF 50V
BTN400A TL2243
GND

RESET BUTTON

+3V3
R403 10Ω
NRST
R404 100Ω
SWD.RST
C415 100nF 50V
BTN400B TL2243
GND

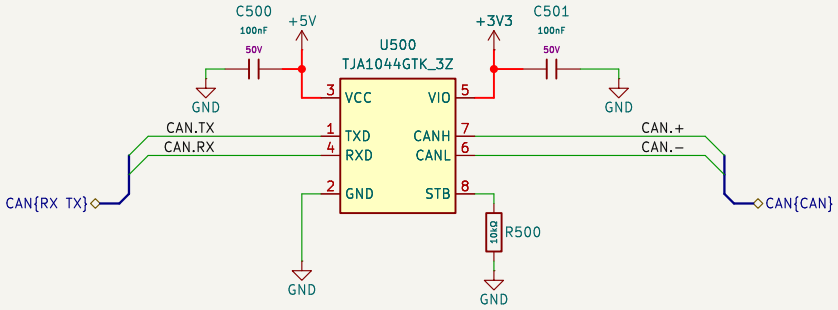
Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /MCU/
File: mcu.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A3	Date: 2025−04−18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 4/10

CAN TRANSCEIVER



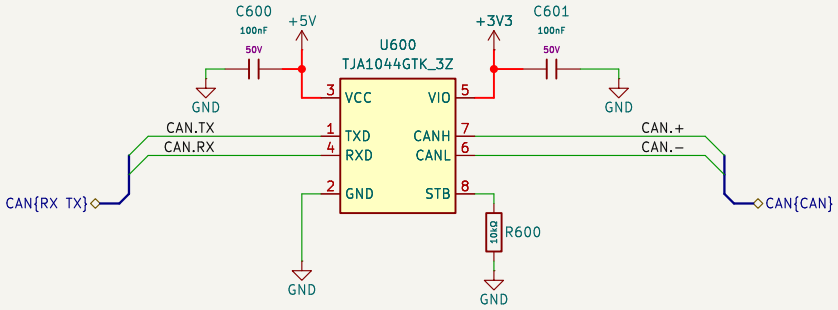
Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /CAN transceiver 1/
File: can-transceiver.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 5/10

CAN TRANSCEIVER

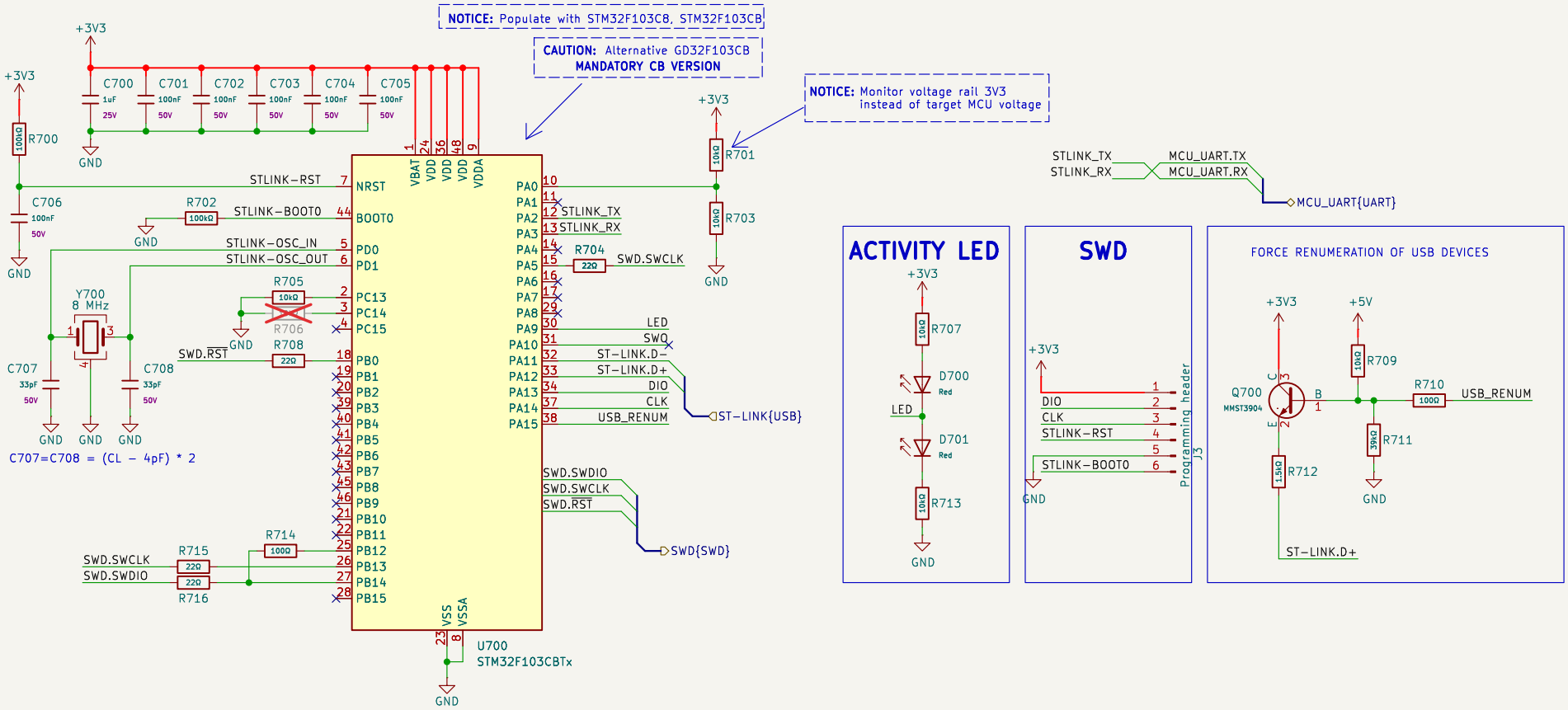


Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /CAN transceiver 2/
File: can-transceiver.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 6/10



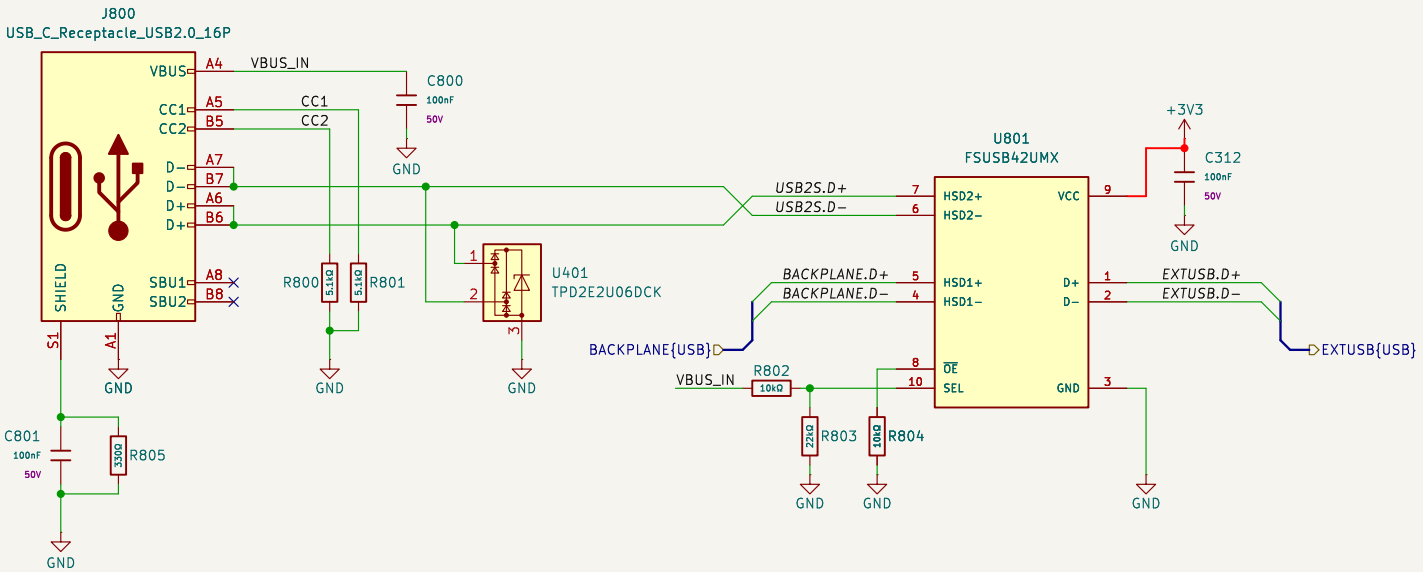
Credit to:
https://github.com/lbthomsen/st-link/tree/master
https://stm32world.com/wiki/DIY_STM32_Programmer_(ST-Link/V2-1)
for providing amazing reverse engeenering of ST-link

Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /ST-LINK/
File: st-link.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 7/10

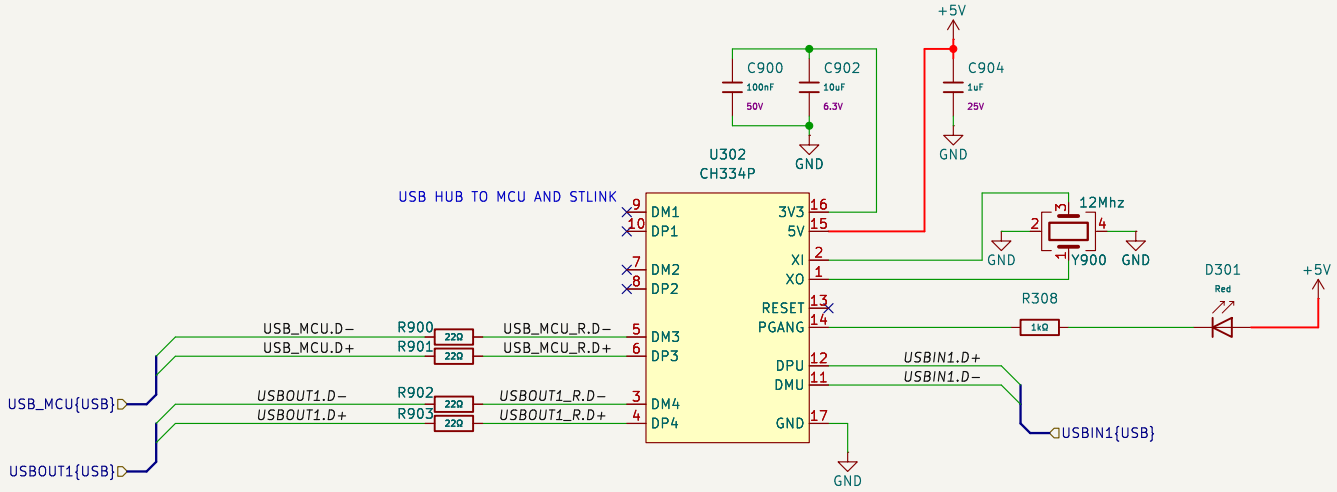


Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /USB/
File: USB.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 8/10

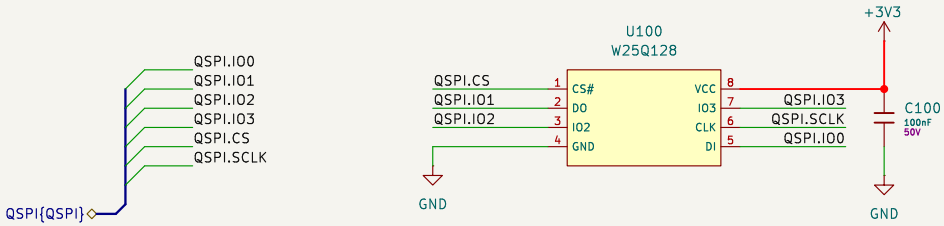


Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /USB−hub/
File: USB−hub.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025−04−18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 9/10



Project author: <author>
Base project authors: Dominik Pluta, Artem Horiunov
KoNaR

Sheet: /QSPI FLASH/
File: QSPI FLASH.kicad_sch

Title: ModuCard BM STM32H562VGT6

Size: A4	Date: 2025-04-18	**Rev: 1.1.1**
KiCad E.D.A. 9.0.4		Id: 10/10