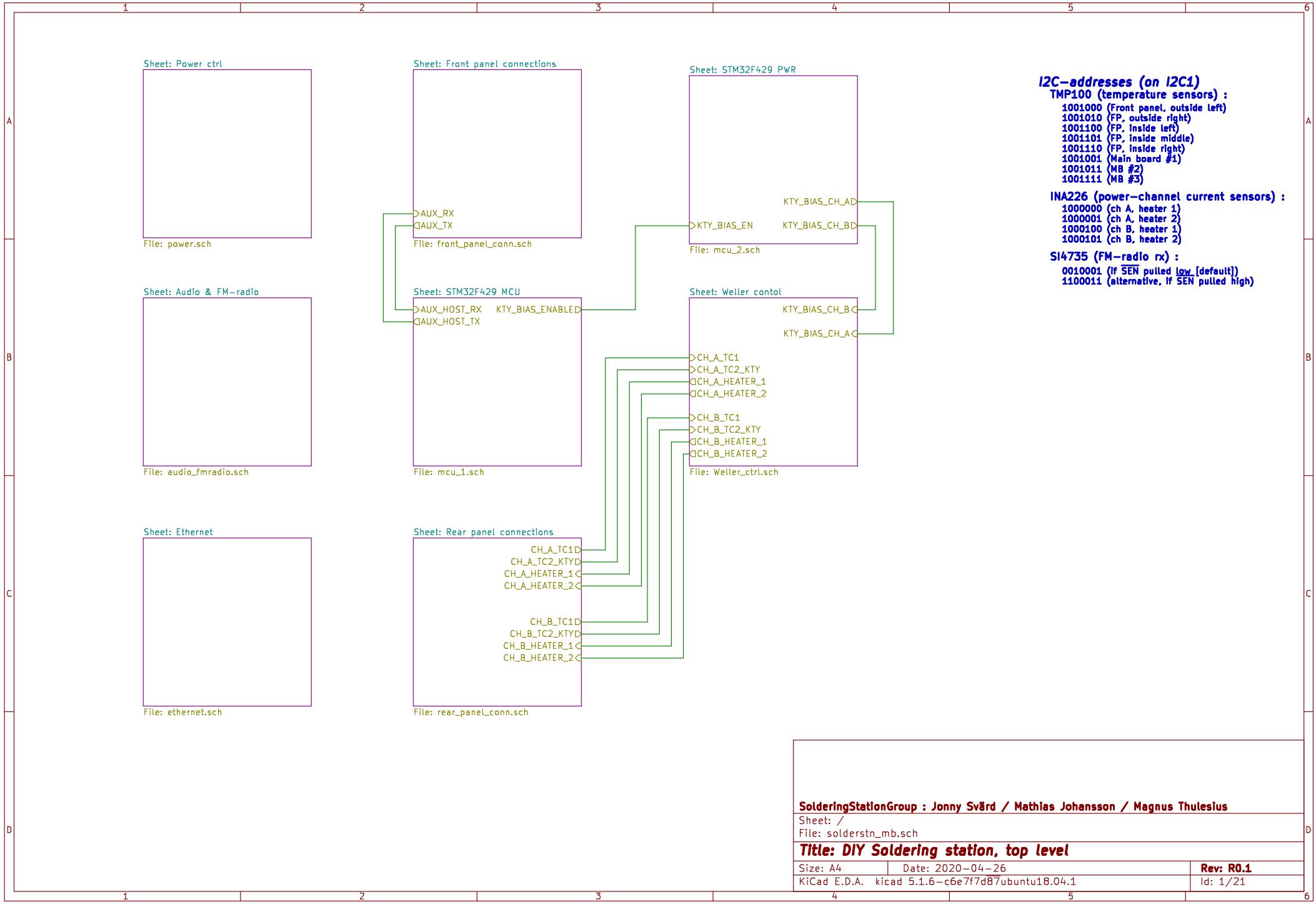


I2C-addresses (on I2C1)

TMP100 (temperature sensors) :

- 1001000 (Front panel, outside left)
- 1001010 (FP, outside right)
- 1001100 (FP, inside left)
- 1001101 (FP, inside middle)
- 1001110 (FP, inside right)
- 1001001 (Main board #1)
- 1001011 (MB #2)
- 1001111 (MB #3)

INA226 (power-channel current sensors) :

- 1000000 (ch A, heater 1)
- 1000001 (ch A, heater 2)
- 1000100 (ch B, heater 1)
- 1000101 (ch B, heater 2)

SI4735 (FM-radio rx) :

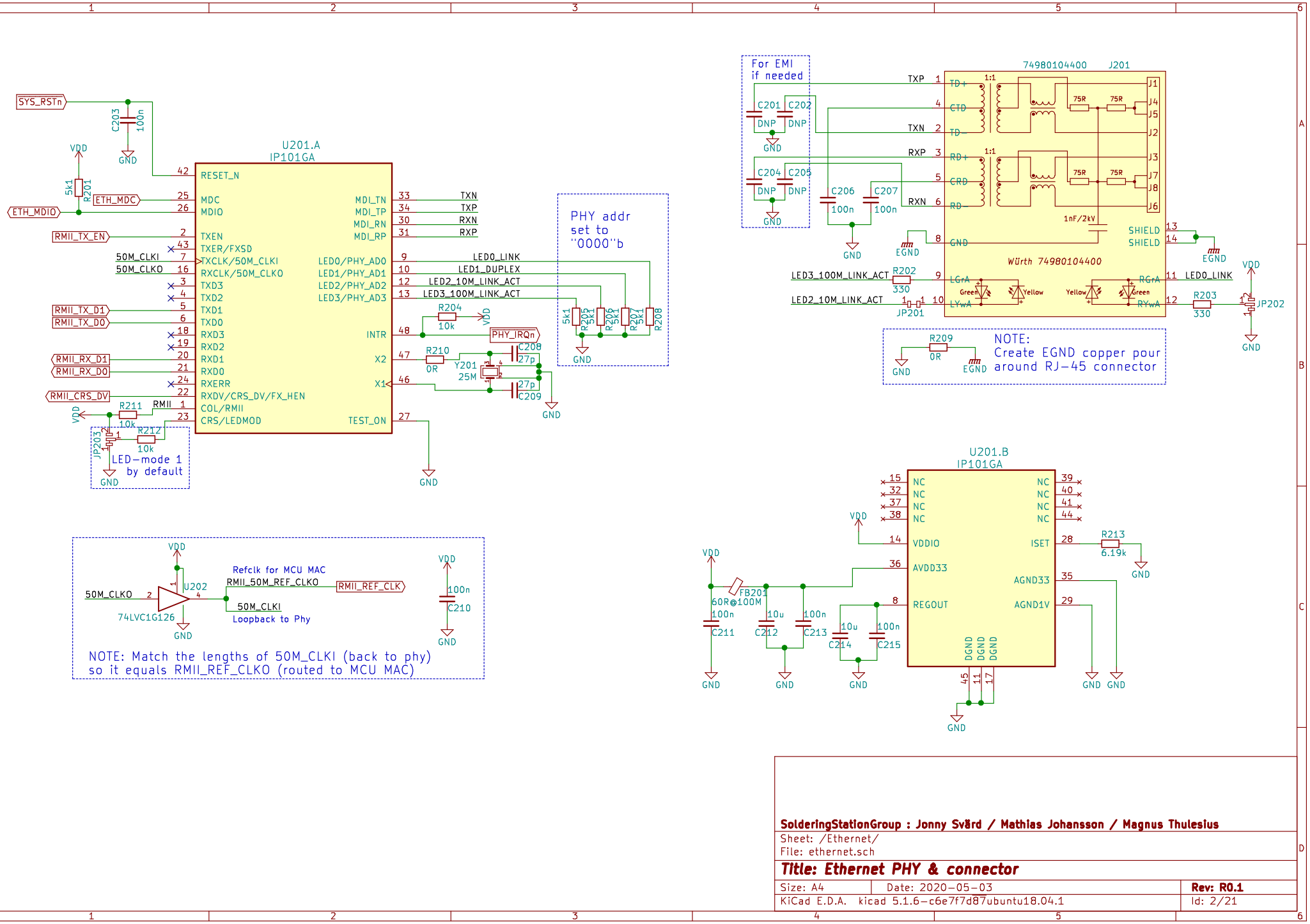
- 0010001 (if $\overline{\text{SEN}}$ pulled low [default])
- 1100011 (alternative, if SEN pulled high)

SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

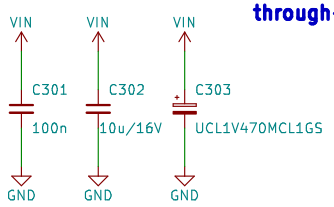
Sheet: /
File: solderstn_mb.sch

Title: DIY Soldering station, top level

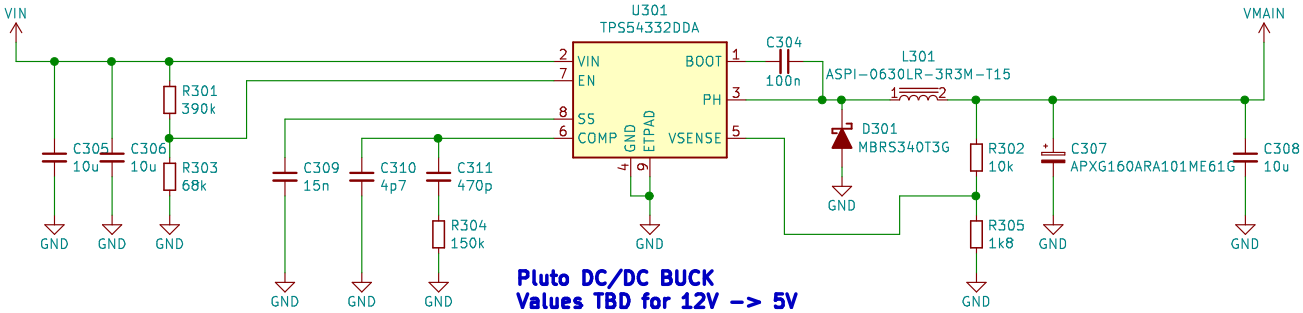
Size: A4	Date: 2020-04-26	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 1/21


U201.A
IP101GA
RESET_N
MDC
MDIO
TXEN
TXER/FXSD
TXCLK/50M_CLKI
RXCLK/50M_CLKO
TXD3
TXD2
TXD1
TXD0
RXD3
RXD2
RXD1
RXD0
RXERR
RXDV/CRS_DV/FX_HEN
COL/RMII
CRS/LEDMOD
MDI_TN
MDI_TP
MDI_RN
MDI_RP
LED0/PHY_AD0
LED1/PHY_AD1
LED2/PHY_AD2
LED3/PHY_AD3
INTR
X2
X1
TEST_ON
SYS_RSTn
ETH_MDC
ETH_MDIO
RMII_TX_EN
50M_CLKI
50M_CLKO
RMII_TX_D1
RMII_TX_D0
RMII_RX_D1
RMII_RX_D0
RMII_CRS_DV
TXN
TXP
RXN
RXP
LED0_LINK
LED1_DUPLEX
LED2_10M_LINK_ACT
LED3_100M_LINK_ACT
PHY_IRQn
PHY addr
set to
"0000"b
LED-mode 1
by default
RMII
Refclk for MCU MAC
RMII_50M_REF_CLKO
RMII_REF_CLK
50M_CLKI
Loopback to Phy
74LVC1G126
NOTE: Match the lengths of 50M_CLKI (back to phy)
so it equals RMII_REF_CLKO (routed to MCU MAC)
For EMI
if needed
74980104400 J201
Würth 74980104400
NOTE:
Create EGND copper pour
around RJ-45 connector
U201.B
IP101GA
VDDIO
AVDD33
REGOUT
ISET
AGND33
AGND1V
DGND
NC
FB201
60R@100M
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius
Sheet: /Ethernet/
File: ethernet.sch
Title: Ethernet PHY & connector
Size: A4
Date: 2020-05-03
Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1
Id: 2/21

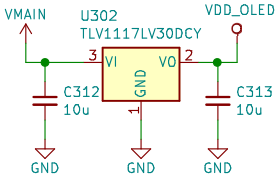
ToDo: VIN connector? Screw terminals? Solderable through-holes? Cable-shoe spades?



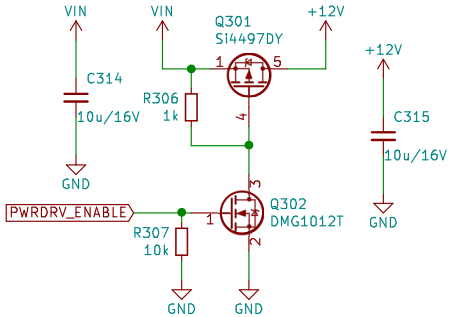
12V Board supply input



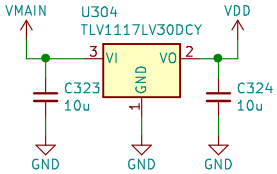
Pluto DC/DC BUCK
Values TBD for 12V -> 5V



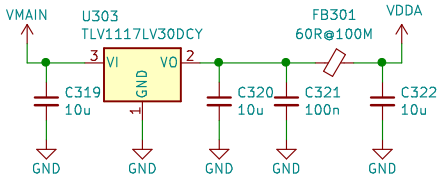
VDD_OLED - Place LDO near the frontpanel FFC connectors



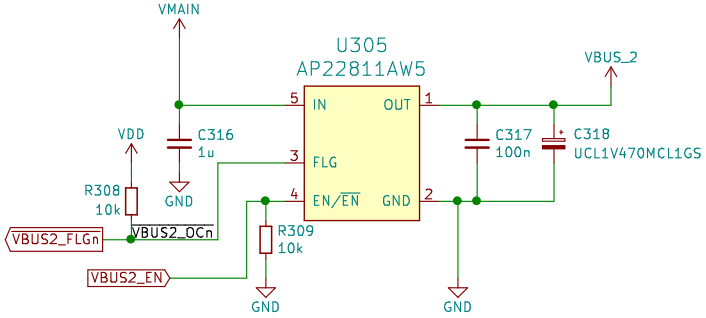
High-side PFET master-switch for the +12V PWM rail



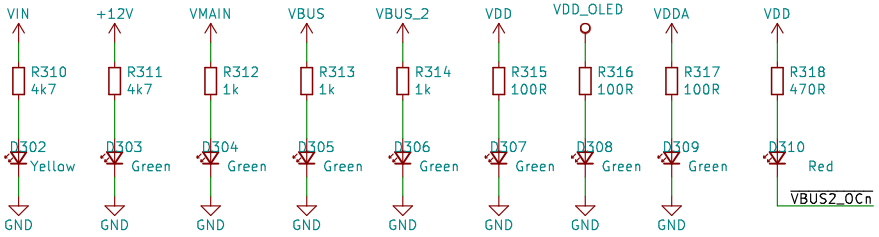
3.0V digital (MCU etc)



3.0V analog (Vref, Vadc, Vop, etc)

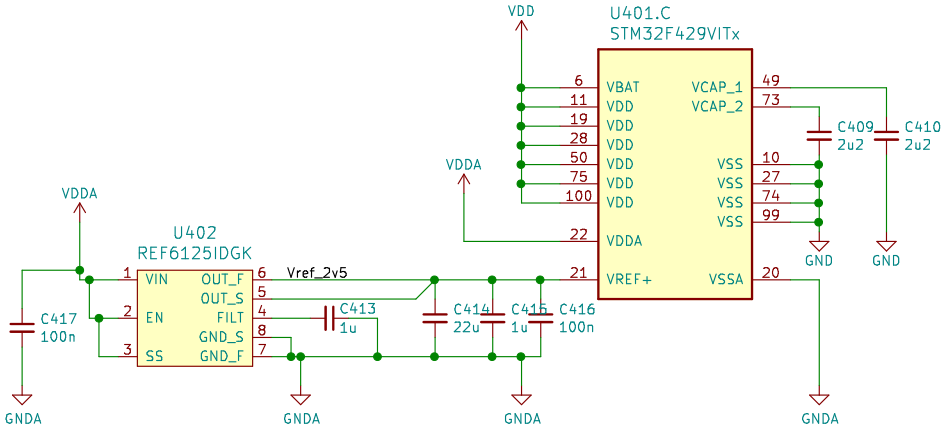


USB-2 VBUS

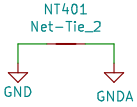


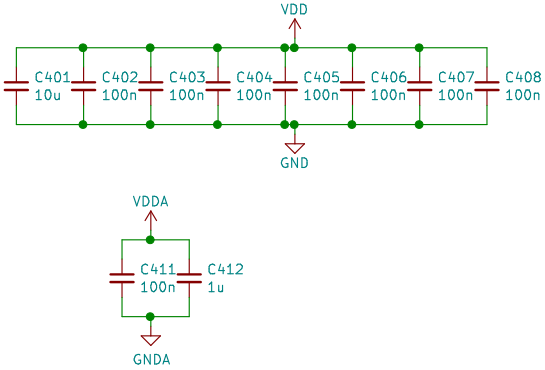
Power LED indicators

SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius		
Sheet: /Power ctrl/ File: power.sch		
Title: DC/DC Buck, LDOs & master load-switches		
Size: A4	Date: 2020-05-08	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 3/21

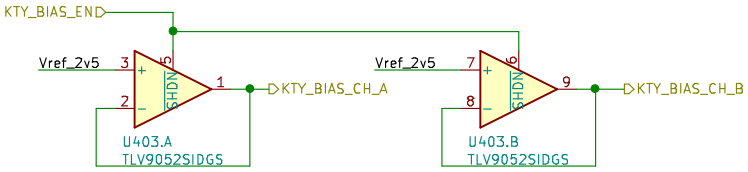


Precisin Vref. Place close to MCU. See REF6125 ds for layout suggestions.





MCU decoupling – place close to MCU power pins



Switchable Vref for biasing KTY sensors (for cold-junction compensation), one per channel. The KTY's can then be meassured through the ordinary TC amps.

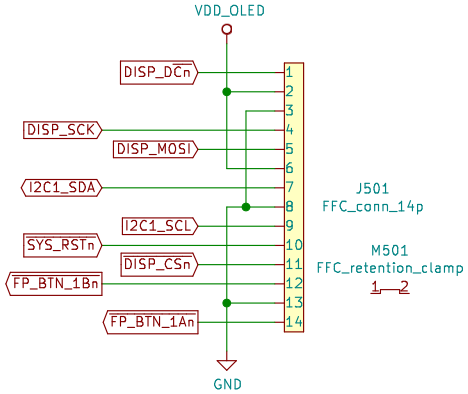
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

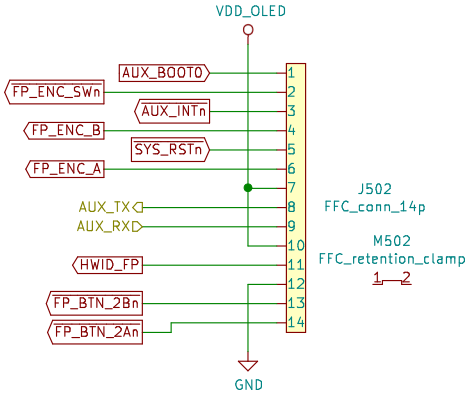
Sheet: /STM32F429 PWR/
File: mcu_2.sch

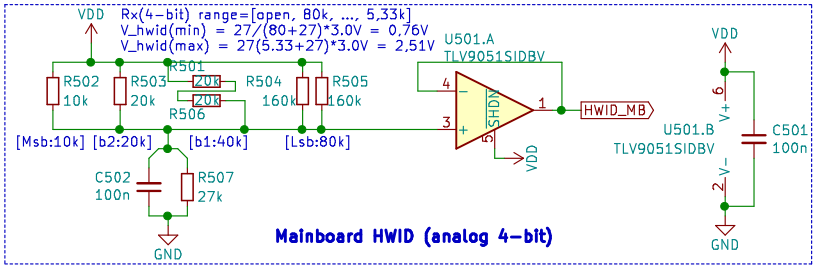
Title: STM32F429 MCU power, decoupling, Vref

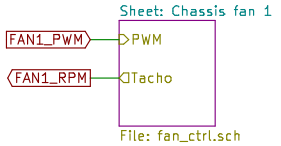
Size: A4	Date: 2020-04-26	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 4/21

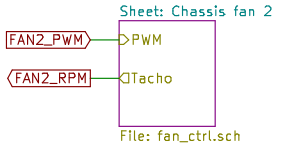
TODO: TBD – VDD_OLED or VDD for frontpanel 3V..?
Or send over Vmain 5V and put local 3.0V LDO on the fp?

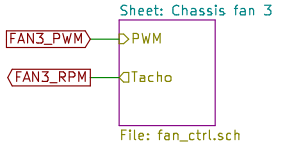


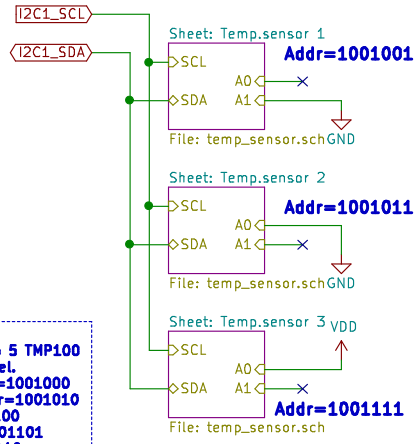






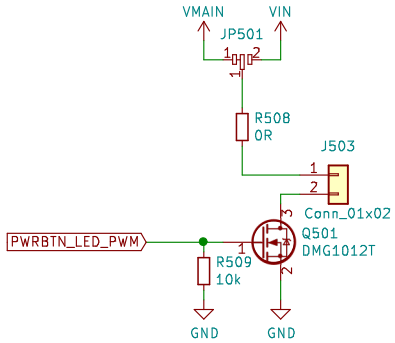






Note:
There're additional up-to 5 TMP100 sensors on the front panel.
Display-side, left : addr=1001000
Display-side, right : addr=1001010
inside, left : addr=1001100
inside, middle : addr=1001101
inside, right: addr=1001110

Ambient temperature sensors (TMP100)



TODO: TBD contacts – cable shoe blades, or Pluto 2p Power-connector..?

FancyBtn LED connector (PWM ctrl low-side; 5V or 12V selectable V+)

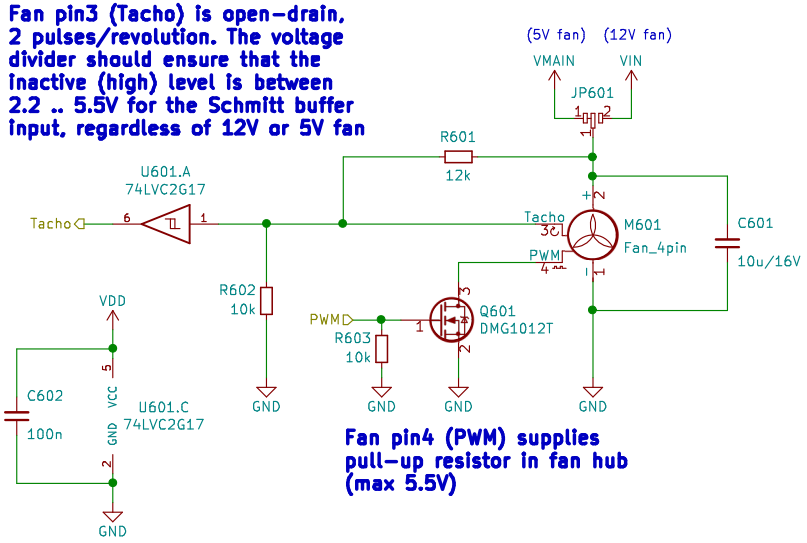
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Front panel connections/
File: front_panel_conn.sch

Title: Front-side and internal connectors

Size: A4	Date: 2020-08-03	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 5/21

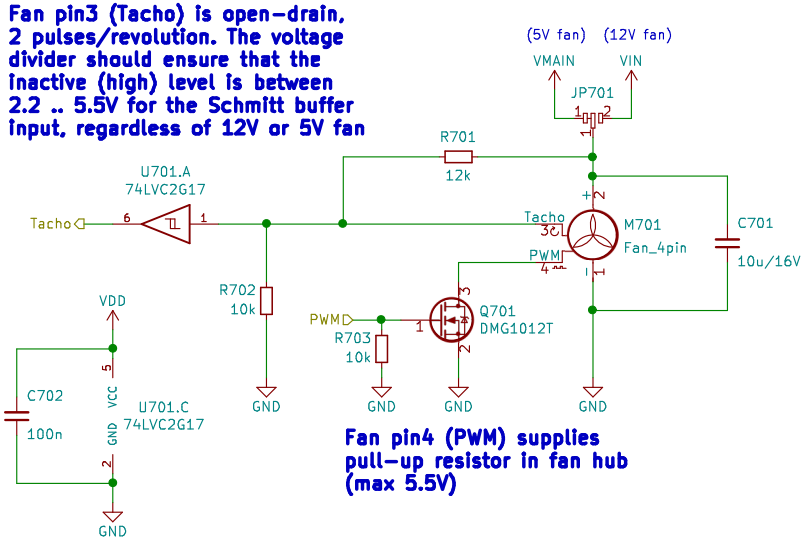
Fan pin3 (Tacho) is open-drain, 2 pulses/revolution. The voltage divider should ensure that the inactive (high) level is between 2.2 .. 5.5V for the Schmitt buffer input, regardless of 12V or 5V fan



Fan pin4 (PWM) supplies pull-up resistor in fan hub (max 5.5V)

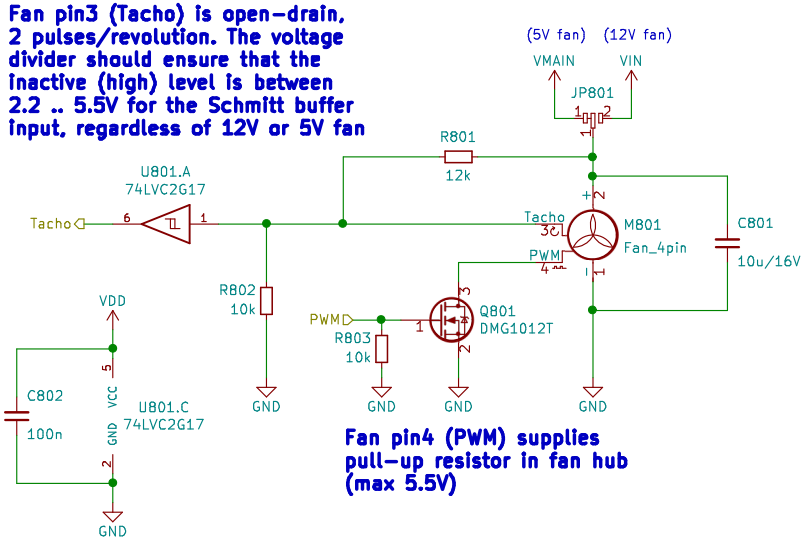
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius		
Sheet: /Front panel connections/Chassis fan 1/		
File: fan_ctrl.sch		
Title: Fan controller		
Size: A4	Date: 2020-08-09	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 6/21

Fan pin3 (Tacho) is open-drain,
2 pulses/revolution. The voltage
divider should ensure that the
inactive (high) level is between
2.2 .. 5.5V for the Schmitt buffer
input, regardless of 12V or 5V fan



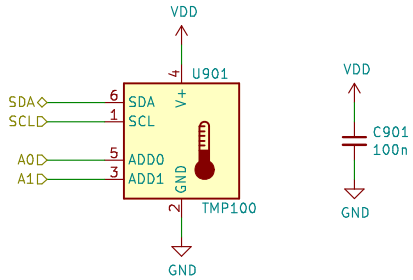
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius		
Sheet: /Front panel connections/Chassis fan 2/ File: fan_ctrl.sch		
Title: Fan controller		
Size: A4	Date: 2020-08-09	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 7/21

Fan pin3 (Tacho) is open-drain,
2 pulses/revolution. The voltage
divider should ensure that the
inactive (high) level is between
2.2 .. 5.5V for the Schmitt buffer
input, regardless of 12V or 5V fan



Fan pin4 (PWM) supplies
pull-up resistor in fan hub
(max 5.5V)

SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius		
Sheet: /Front panel connections/Chassis fan 3/ File: fan_ctrl.sch		
Title: Fan controller		
Size: A4	Date: 2020-08-09	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 8/21

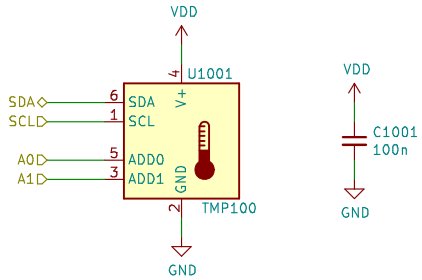


SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Front panel connections/Temp.sensor 1/
File: temp_sensor.sch

Title:

Size: A4	Date:	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 9/21

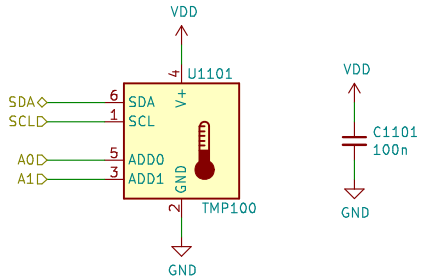


SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Front panel connections/Temp.sensor 2/
File: temp_sensor.sch

Title:

Size: A4	Date:	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 10/21



SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Front panel connections/Temp.sensor 3/
File: temp_sensor.sch

Title:

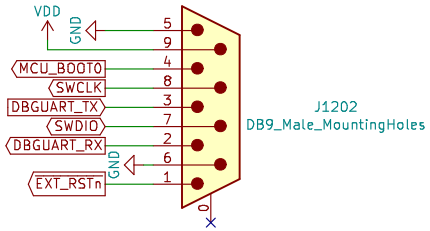
Size: A4	Date:	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 11/21

Notes:
Audio-jack 3.5mm - located on audio page
RJ45 ethernet - located on ethernet page

DBGUART / SWD (dsub-9?)
FM-ant? (AM-ferrit extern..?)
USB1 (device)
USB2 (host)
Force Bootloader/rst
2x Amphenol Weller-jacks!

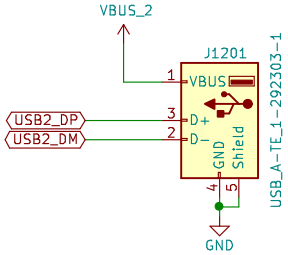
CH_A_HEATER_1
CH_A_HEATER_2
CH_A_TC1
CH_A_TC2_KTY

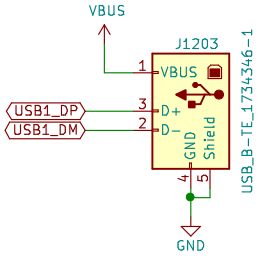
CH_B_HEATER_1
CH_B_HEATER_2
CH_B_TC1
CH_B_TC2_KTY

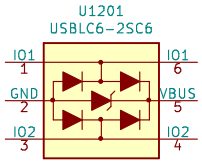


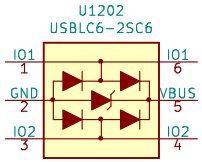
TODO:
* Add 74HC*-buffer for the external signals
* Also ESD TVSs

D1201 SLESD5Z5V
D1202 SLESD5Z5V
D1203 SLESD5Z5V









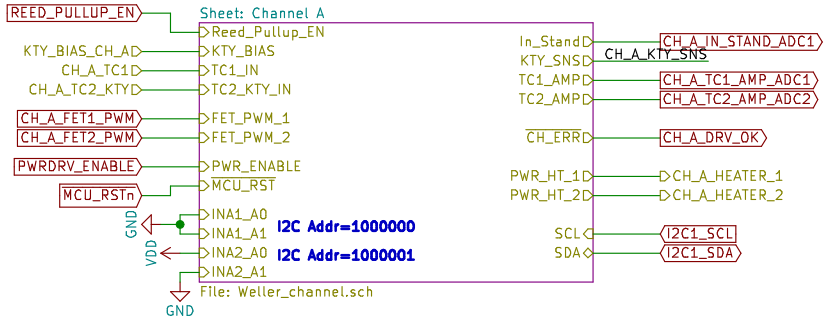
TODO:
* ESD for USBs

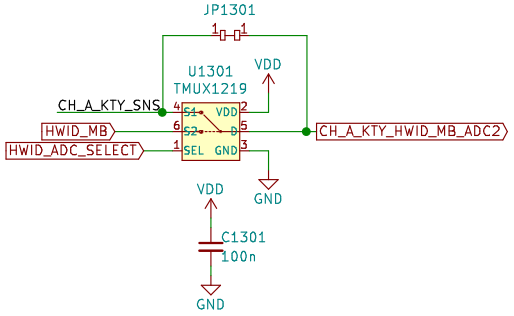
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

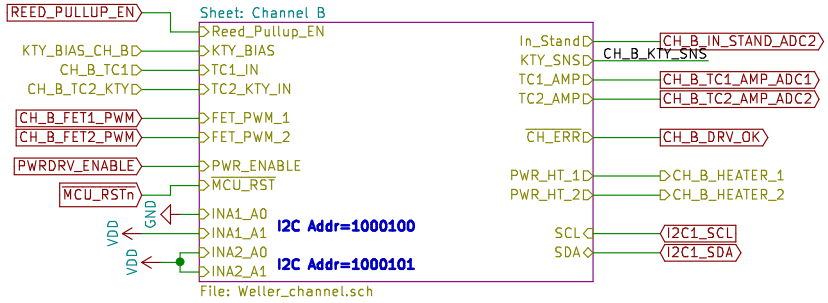
Sheet: /Rear panel connections/
File: rear_panel_conn.sch

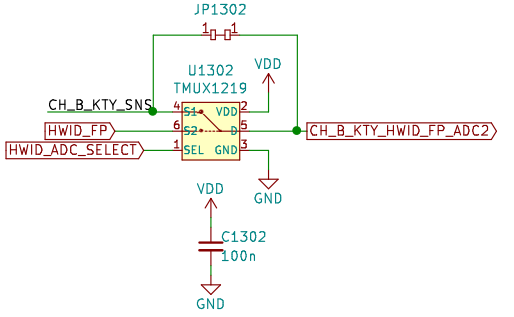
Title: Backside connectors

Size: A4	Date: 2020-08-14	Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 12/21







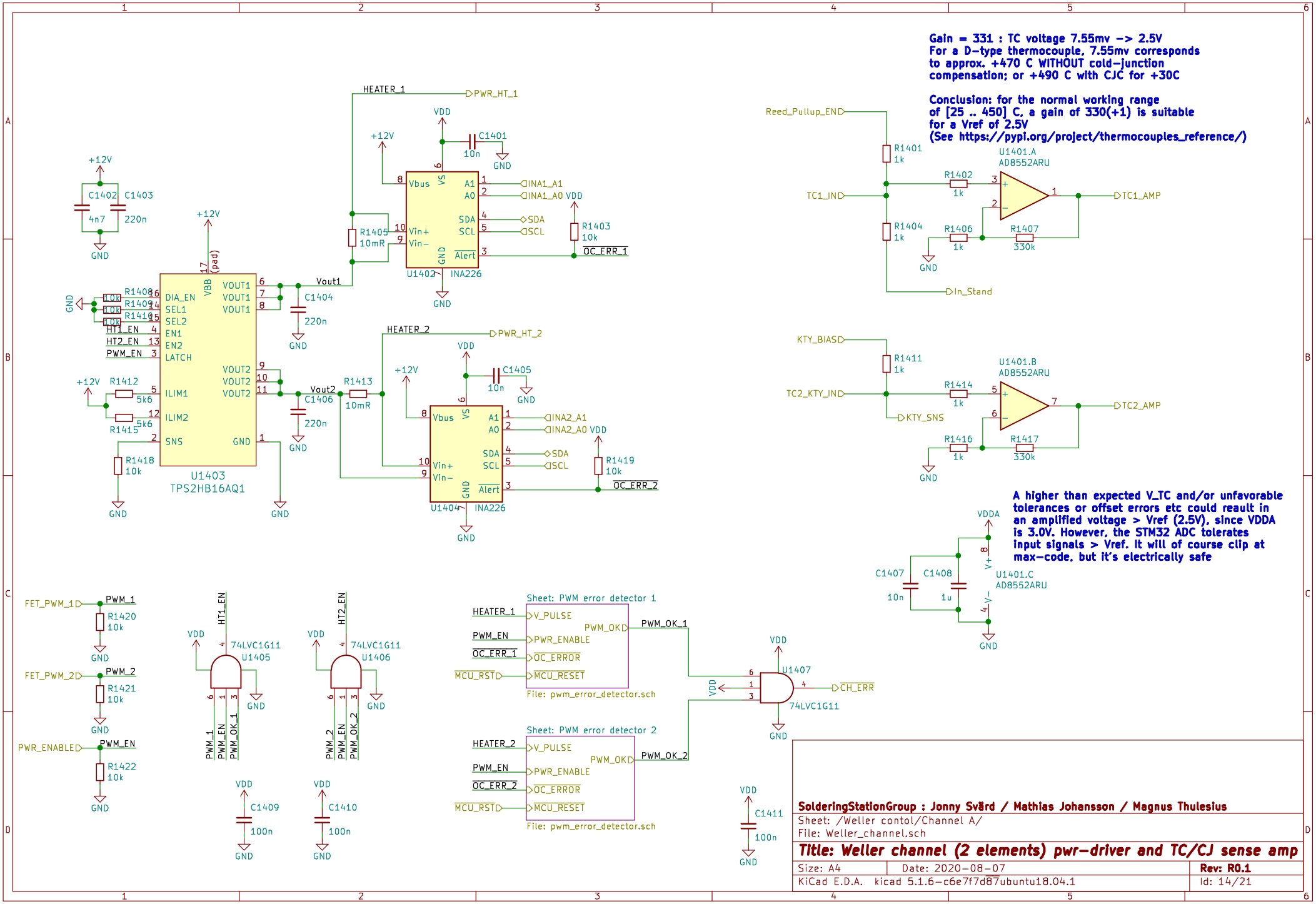


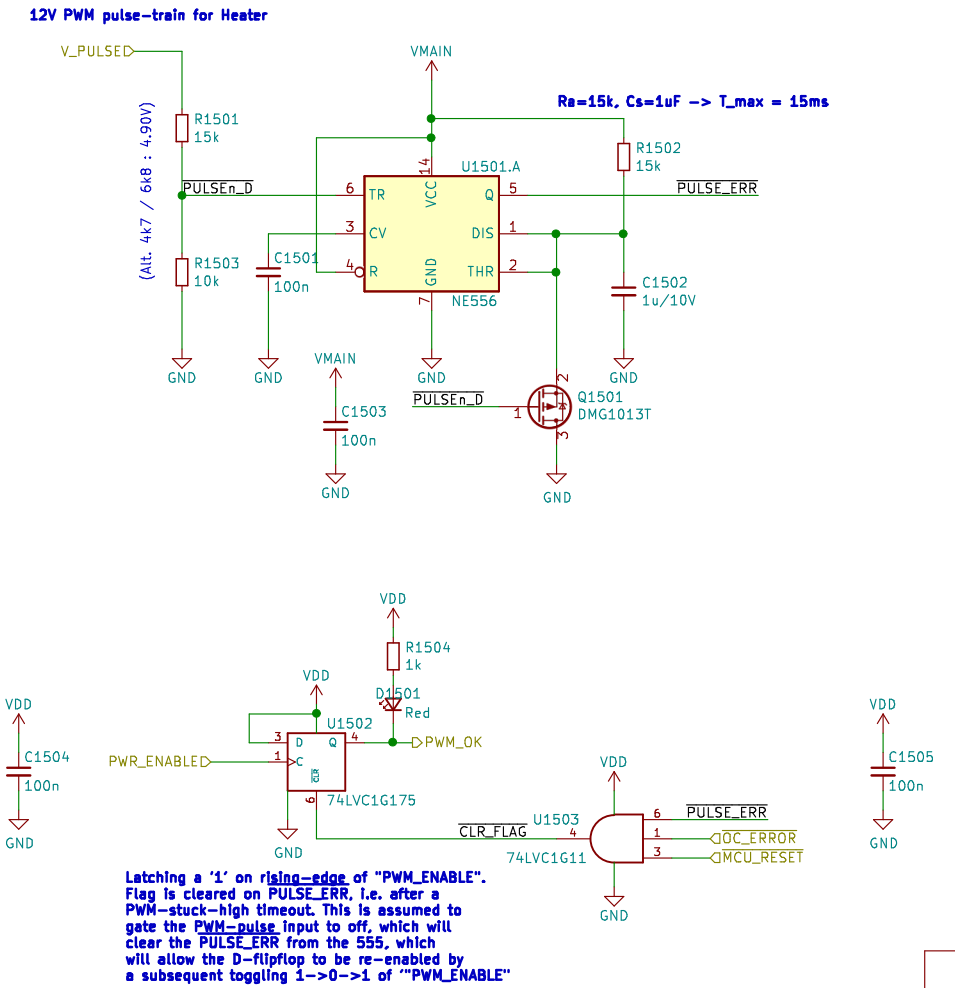
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Weller contol/
File: Weller_ctrl.sch

Title: Dual Weller WMRP or WMRT capable channels

Size: A4	Date: 2020-08-07	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 13/21


Gain = 331 : TC voltage 7.55mv -> 2.5V
For a D-type thermocouple, 7.55mv corresponds to approx. +470 C WITHOUT cold-junction compensation; or +490 C with CJC for +30C
Conclusion: for the normal working range of [25 .. 450] C, a gain of 330(+1) is suitable for a Vref of 2.5V
(See https://pypi.org/project/thermocouples_reference/)
A higher than expected V_TC and/or unfavorable tolerances or offset errors etc could reault in an amplified voltage > Vref (2.5V), since VDDA is 3.0V. However, the STM32 ADC tolerates input signals > Vref. It will of course clip at max-code, but it's electrically safe
U1403
TPS2HB16AQ1
U1402
INA226
U1404
INA226
U1401.A
AD8552ARU
U1401.B
AD8552ARU
U1401.C
AD8552ARU
U1405
74LVC1G11
U1406
74LVC1G11
U1407
74LVC1G11
Sheet: PWM error detector 1
File: pwm_error_detector.sch
Sheet: PWM error detector 2
File: pwm_error_detector.sch
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius
Sheet: /Weller contol/Channel A/
File: Weller_channel.sch
Title: Weller channel (2 elements) pwr-driver and TC/CJ sense amp
Size: A4
Date: 2020-08-07
Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1
Id: 14/21



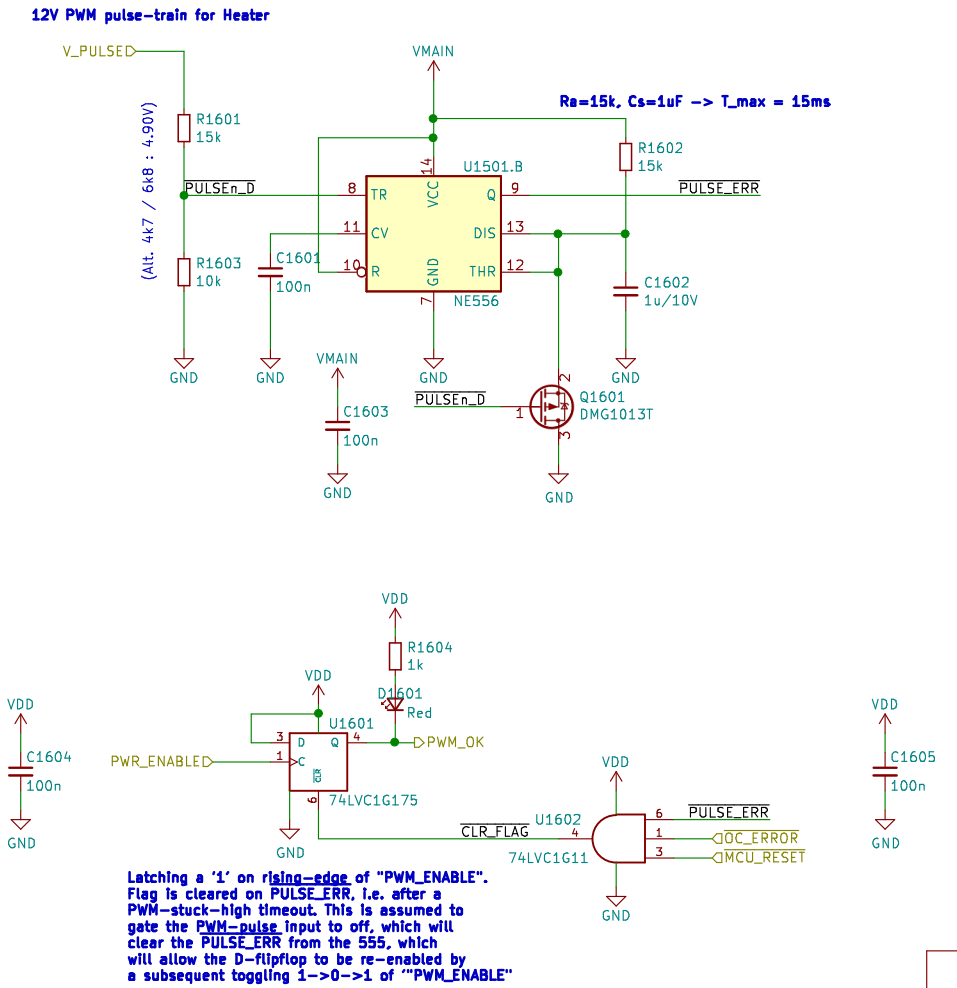
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Weller contol/Channel A/PWM error detector 1/

File: pwm_error_detector.sch

Title: HW PWM stuck-high detection with latched flag

Size: A4	Date: 2020-08-12	Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 15/21



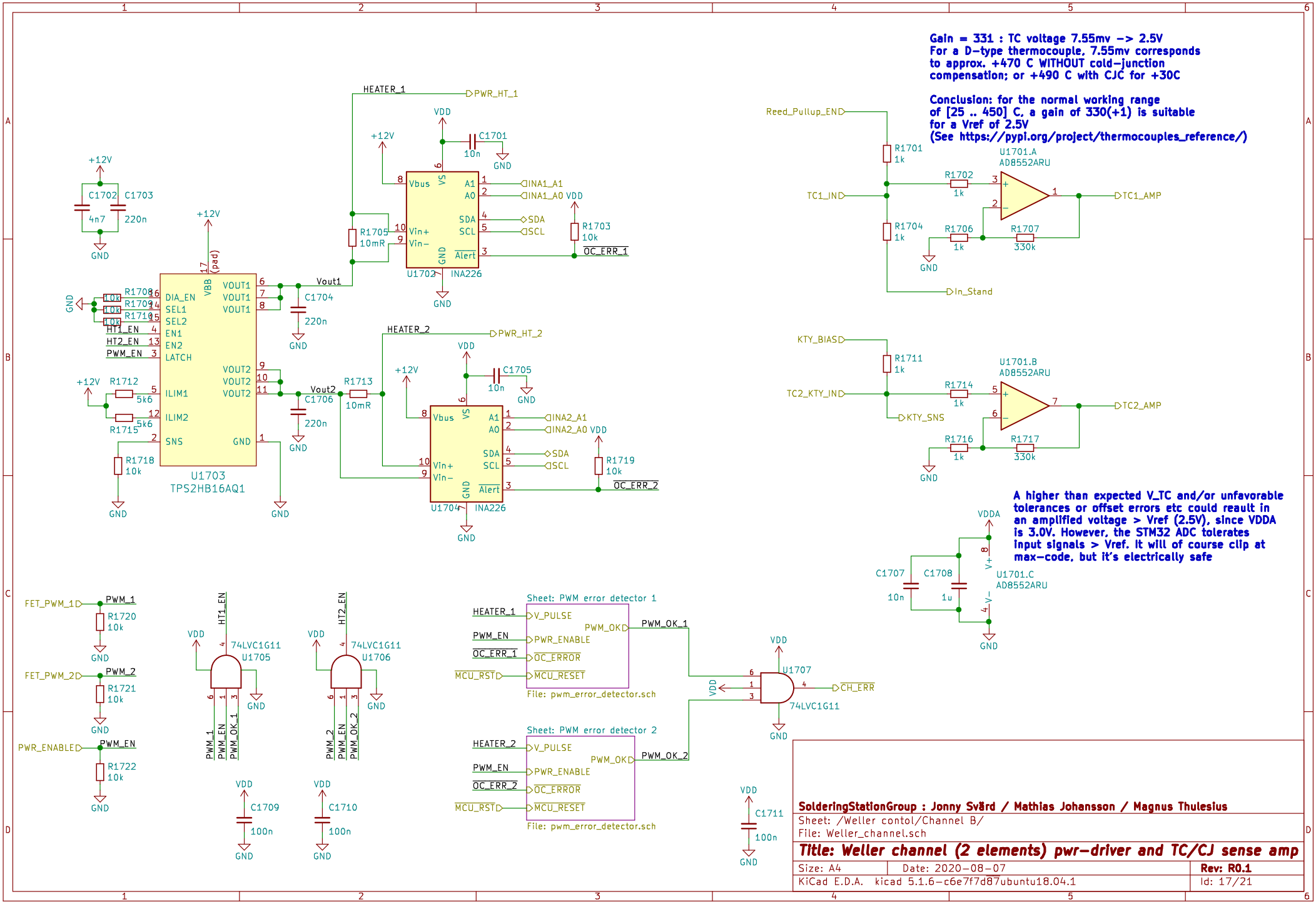
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

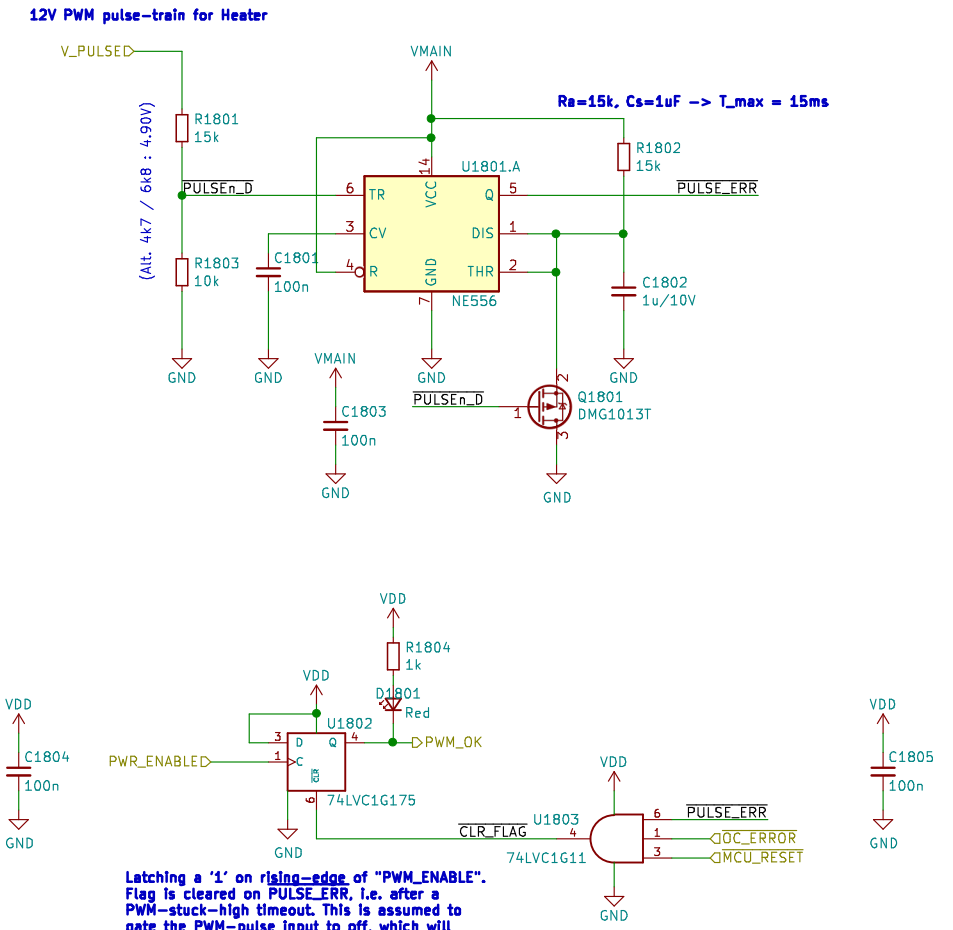
Sheet: /Weller contol/Channel A/PWM error detector 2/

File: pwm_error_detector.sch

Title: HW PWM stuck-high detection with latched flag

Size: A4	Date: 2020-08-12	Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 16/21


Gain = 331 : TC voltage 7.55mv -> 2.5V
For a D-type thermocouple, 7.55mv corresponds to approx. +470 C WITHOUT cold-junction compensation; or +490 C with CJC for +30C
Conclusion: for the normal working range of [25 .. 450] C, a gain of 330(+1) is suitable for a Vref of 2.5V
(See https://pypi.org/project/thermocouples_reference/)
A higher than expected V_TC and/or unfavorable tolerances or offset errors etc could reault in an amplified voltage > Vref (2.5V), since VDDA is 3.0V. However, the STM32 ADC tolerates input signals > Vref. It will of course clip at max-code, but it's electrically safe
U1703
TPS2HB16AQ1
U1702
INA226
U1704
INA226
U1701.A
AD8552ARU
U1701.B
AD8552ARU
U1701.C
AD8552ARU
U1705
74LVC1G11
U1706
74LVC1G11
U1707
74LVC1G11
Sheet: PWM error detector 1
File: pwm_error_detector.sch
Sheet: PWM error detector 2
File: pwm_error_detector.sch
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius
Sheet: /Weller contol/Channel B/
File: Weller_channel.sch
Title: Weller channel (2 elements) pwr-driver and TC/CJ sense amp
Size: A4
Date: 2020-08-07
Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1
Id: 17/21

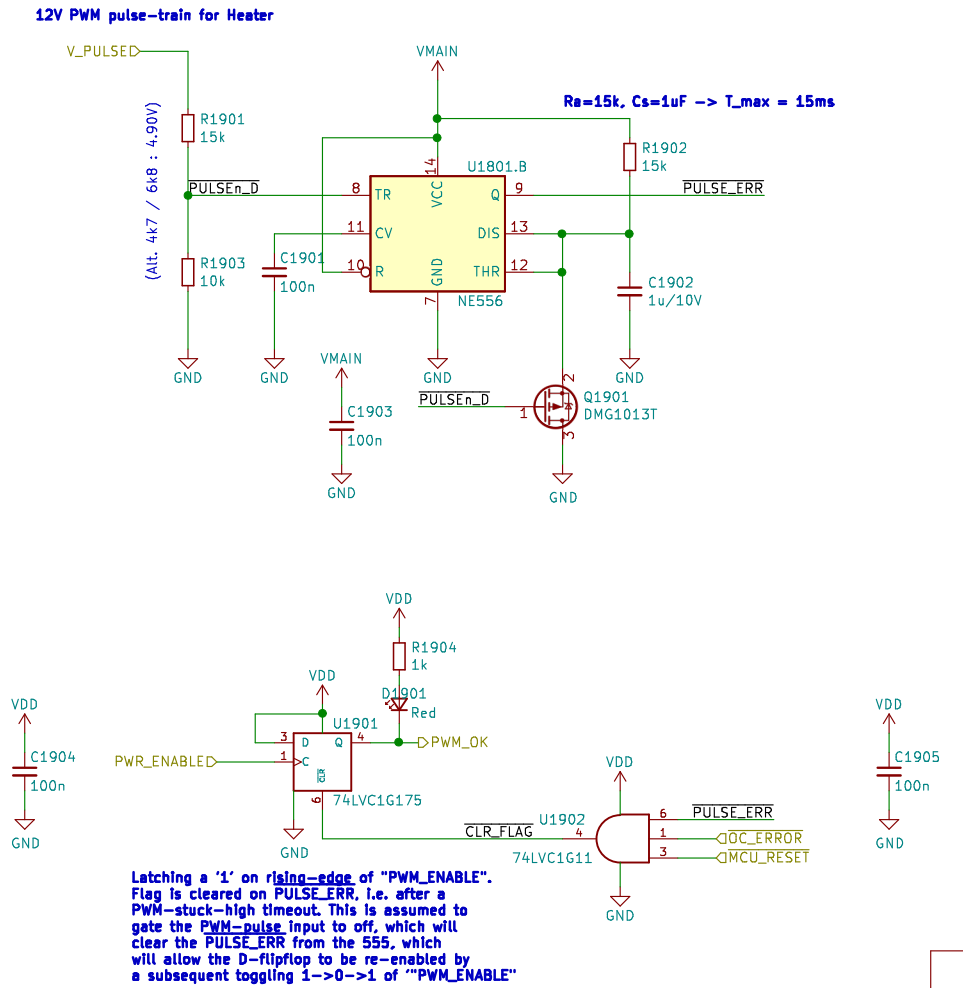


SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

Sheet: /Weller contol/Channel B/PWM error detector 1/
File: pwm_error_detector.sch

Title: HW PWM stuck-high detection with latched flag

Size: A4	Date: 2020-08-12	Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 18/21



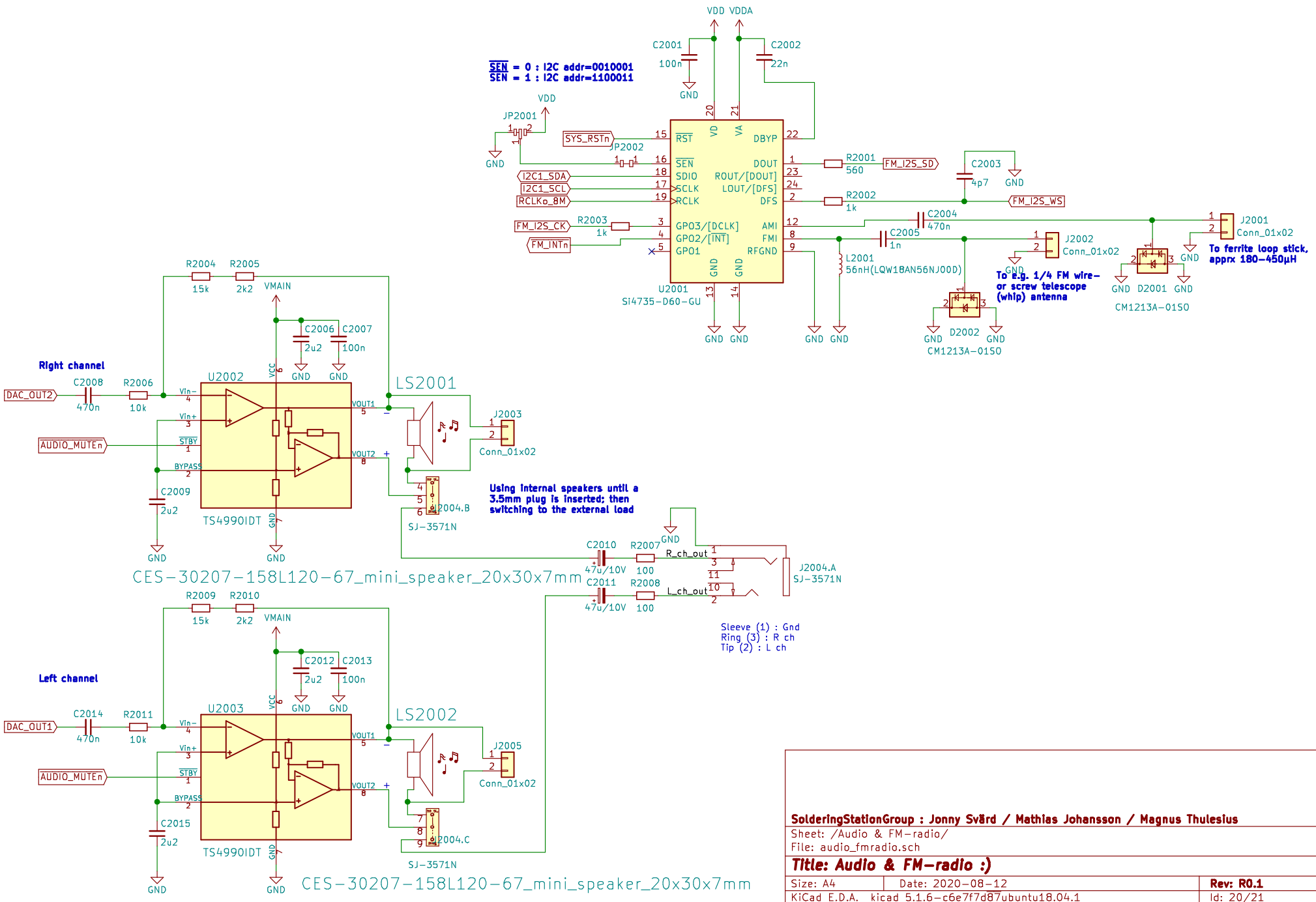
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius

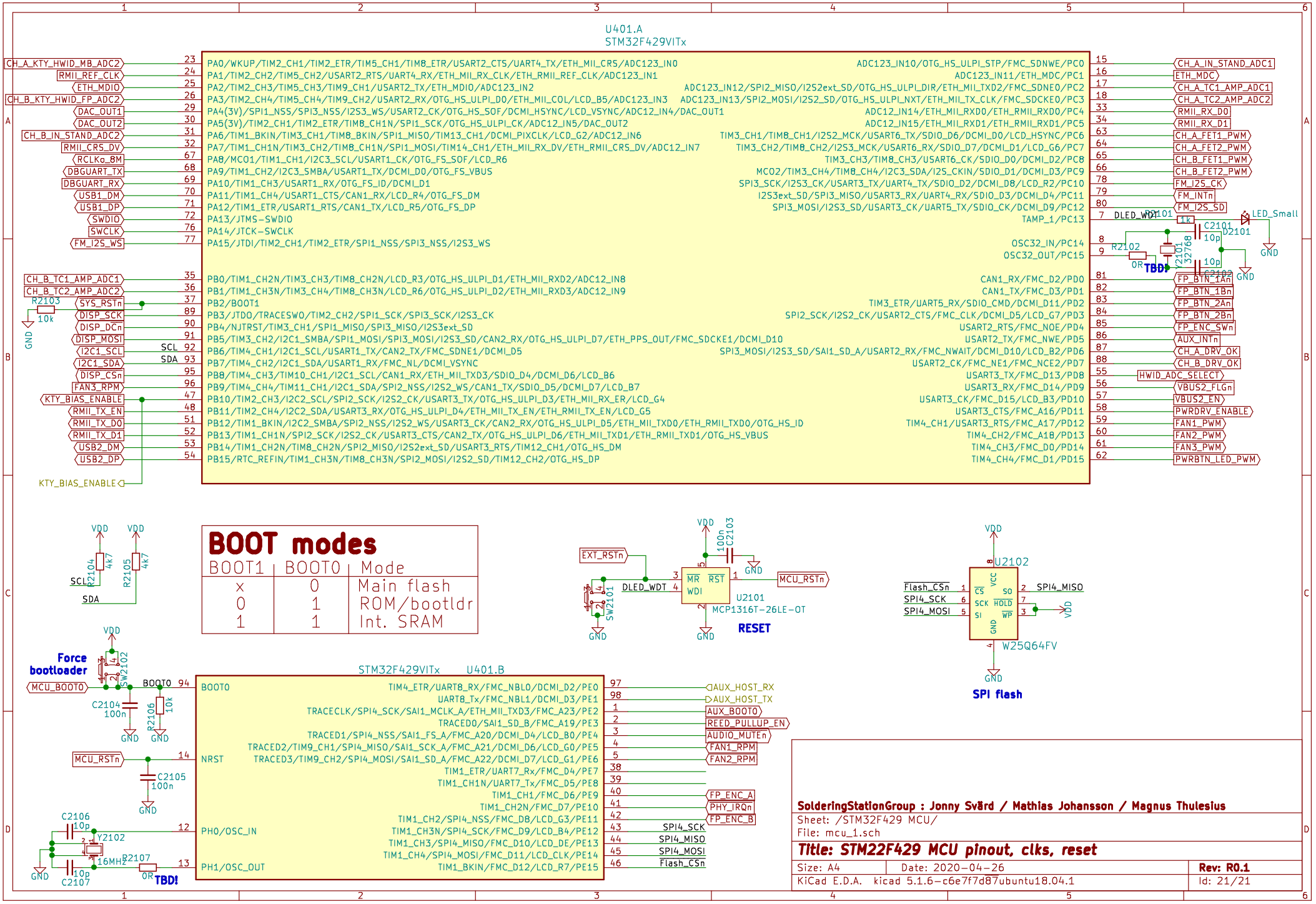
Sheet: /Weller contol/Channel B/PWM error detector 2/

File: pwm_error_detector.sch

Title: HW PWM stuck-high detection with latched flag

Size: A4	Date: 2020-08-12	**Rev: R0.1**
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1		Id: 19/21


SEN = 0 : I2C addr=0010001
SEN = 1 : I2C addr=1100011
VDD
VDDA
C2001
100n
C2002
22n
JP2001
JP2002
SYS_RSTn
I2C1_SDA
I2C1_SCL
RCLKo_8M
FM_I2S_CK
FM_INTn
U2001
SI4735-D60-GU
R2001
560
FM_I2S_SD
R2002
1k
FM_I2S_WS
R2003
C2003
4p7
C2004
470n
C2005
1n
L2001
56nH(LQW18AN56NJ00D)
J2001
Conn_01x02
To ferrite loop stick, apprx 180-450µH
J2002
To e.g. 1/4 FM wire- or screw telescope (whip) antenna
D2001
CM1213A-0150
D2002
Right channel
R2004
15k
R2005
2k2
VMAIN
C2006
2u2
C2007
100n
C2008
470n
R2006
10k
DAC_OUT2
AUDIO_MUTEn
C2009
2u2
TS4990IDT
LS2001
J2003
Conn_01x02
J2004.B
SJ-3571N
Using internal speakers until a 3.5mm plug is inserted; then switching to the external load
C2010
47u/10V
R2007
100
R_ch_out
C2011
47u/10V
R2008
100
L_ch_out
J2004.A
SJ-3571N
Sleeve (1) : Gnd
Ring (3) : R ch
Tip (2) : L ch
CES-30207-158L120-67_mini_speaker_20x30x7mm
Left channel
R2009
15k
R2010
2k2
C2012
2u2
C2013
100n
C2014
470n
R2011
10k
DAC_OUT1
C2015
2u2
LS2002
J2005
Conn_01x02
J2004.C
SJ-3571N
CES-30207-158L120-67_mini_speaker_20x30x7mm
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius
Sheet: /Audio & FM-radio/
File: audio_fmradio.sch
Title: Audio & FM-radio :)
Size: A4
Date: 2020-08-12
Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1
Id: 20/21


U401.A
STM32F429VITx
PA0/WKUP/TIM2_CH1/TIM2_ETR/TIM5_CH1/TIM8_ETR/USART2_CTS/UART4_TX/ETH_MII_CRS/ADC123_IN0
PA1/TIM2_CH2/TIM5_CH2/USART2_RTS/UART4_RX/ETH_MII_RX_CLK/ETH_RMII_REF_CLK/ADC123_IN1
PA2/TIM2_CH3/TIM5_CH3/TIM9_CH1/USART2_TX/ETH_MDIO/ADC123_IN2
PA3/TIM2_CH4/TIM5_CH4/TIM9_CH2/USART2_RX/OTG_HS_ULPI_D0/ETH_MII_COL/LCD_B5/ADC123_IN3
PA4(3V)/SPI1_NSS/SPI3_NSS/I2S3_WS/USART2_CK/OTG_HS_SOF/DCMI_HSYNC/LCD_VSYNC/ADC12_IN4/DAC_OUT1
PA5(3V)/TIM2_CH1/TIM2_ETR/TIM8_CH1N/SPI1_SCK/OTG_HS_ULPI_CK/ADC12_IN5/DAC_OUT2
PA6/TIM1_BKIN/TIM3_CH1/TIM8_BKIN/SPI1_MISO/TIM13_CH1/DCMI_PIXCLK/LCD_G2/ADC12_IN6
PA7/TIM1_CH1N/TIM3_CH2/TIM8_CH1N/SPI1_MOSI/TIM14_CH1/ETH_MII_RX_DV/ETH_RMII_CRS_DV/ADC12_IN7
PA8/MCO1/TIM1_CH1/I2C3_SCL/USART1_CK/OTG_FS_SOF/LCD_R6
PA9/TIM1_CH2/I2C3_SMBA/USART1_TX/DCMI_D0/OTG_FS_VBUS
PA10/TIM1_CH3/USART1_RX/OTG_FS_ID/DCMI_D1
PA11/TIM1_CH4/USART1_CTS/CAN1_RX/LCD_R4/OTG_FS_DM
PA12/TIM1_ETR/USART1_RTS/CAN1_TX/LCD_R5/OTG_FS_DP
PA13/JTMS-SWDIO
PA14/JTCK-SWCLK
PA15/JTDI/TIM2_CH1/TIM2_ETR/SPI1_NSS/SPI3_NSS/I2S3_WS
ADC123_IN10/OTG_HS_ULPI_STP/FMC_SDNWE/PC0
ADC123_IN11/ETH_MDC/PC1
ADC123_IN12/SPI2_MISO/I2S2ext_SD/OTG_HS_ULPI_DIR/ETH_MII_TXD2/FMC_SDNE0/PC2
ADC123_IN13/SPI2_MOSI/I2S2_SD/OTG_HS_ULPI_NXT/ETH_MII_TX_CLK/FMC_SDCKE0/PC3
ADC12_IN14/ETH_MII_RXD0/ETH_RMII_RXD0/PC4
ADC12_IN15/ETH_MII_RXD1/ETH_RMII_RXD1/PC5
TIM3_CH1/TIM8_CH1/I2S2_MCK/USART6_TX/SDIO_D6/DCMI_D0/LCD_HSYNC/PC6
TIM3_CH2/TIM8_CH2/I2S3_MCK/USART6_RX/SDIO_D7/DCMI_D1/LCD_G6/PC7
TIM3_CH3/TIM8_CH3/USART6_CK/SDIO_D0/DCMI_D2/PC8
MCO2/TIM3_CH4/TIM8_CH4/I2C3_SDA/I2S_CKIN/SDIO_D1/DCMI_D3/PC9
SPI3_SCK/I2S3_CK/USART3_TX/UART4_TX/SDIO_D2/DCMI_D8/LCD_R2/PC10
I2S3ext_SD/SPI3_MISO/USART3_RX/UART4_RX/SDIO_D3/DCMI_D4/PC11
SPI3_MOSI/I2S3_SD/USART3_CK/UART5_TX/SDIO_CK/DCMI_D9/PC12
TAMP_1/PC13
OSC32_IN/PC14
OSC32_OUT/PC15
PB0/TIM1_CH2N/TIM3_CH3/TIM8_CH2N/LCD_R3/OTG_HS_ULPI_D1/ETH_MII_RXD2/ADC12_IN8
PB1/TIM1_CH3N/TIM3_CH4/TIM8_CH3N/LCD_R6/OTG_HS_ULPI_D2/ETH_MII_RXD3/ADC12_IN9
PB2/BOOT1
PB3/JTDO/TRACESWO/TIM2_CH2/SPI1_SCK/SPI3_SCK/I2S3_CK
PB4/NJTRST/TIM3_CH1/SPI1_MISO/SPI3_MISO/I2S3ext_SD
PB5/TIM3_CH2/I2C1_SMBA/SPI1_MOSI/SPI3_MOSI/I2S3_SD/CAN2_RX/OTG_HS_ULPI_D7/ETH_PPS_OUT/FMC_SDCKE1/DCMI_D10
PB6/TIM4_CH1/I2C1_SCL/USART1_TX/CAN2_TX/FMC_SDNE1/DCMI_D5
PB7/TIM4_CH2/I2C1_SDA/USART1_RX/FMC_NL/DCMI_VSYNC
PB8/TIM4_CH3/TIM10_CH1/I2C1_SCL/CAN1_RX/ETH_MII_TXD3/SDIO_D4/DCMI_D6/LCD_B6
PB9/TIM4_CH4/TIM11_CH1/I2C1_SDA/SPI2_NSS/I2S2_WS/CAN1_TX/SDIO_D5/DCMI_D7/LCD_B7
PB10/TIM2_CH3/I2C2_SCL/SPI2_SCK/I2S2_CK/USART3_TX/OTG_HS_ULPI_D3/ETH_MII_RX_ER/LCD_G4
PB11/TIM2_CH4/I2C2_SDA/USART3_RX/OTG_HS_ULPI_D4/ETH_MII_TX_EN/ETH_RMII_TX_EN/LCD_G5
PB12/TIM1_BKIN/I2C2_SMBA/SPI2_NSS/I2S2_WS/USART3_CK/CAN2_RX/OTG_HS_ULPI_D5/ETH_MII_TXD0/ETH_RMII_TXD0/OTG_HS_ID
PB13/TIM1_CH1N/SPI2_SCK/I2S2_CK/USART3_CTS/CAN2_TX/OTG_HS_ULPI_D6/ETH_MII_TXD1/ETH_RMII_TXD1/OTG_HS_VBUS
PB14/TIM1_CH2N/TIM8_CH2N/SPI2_MISO/I2S2ext_SD/USART3_RTS/TIM12_CH1/OTG_HS_DM
PB15/RTC_REFIN/TIM1_CH3N/TIM8_CH3N/SPI2_MOSI/I2S2_SD/TIM12_CH2/OTG_HS_DP
CH_A_KTY_HWID_MB_ADC2
RMII_REF_CLK
ETH_MDIO
CH_B_KTY_HWID_FP_ADC2
DAC_OUT1
DAC_OUT2
CH_B_IN_STAND_ADC2
RMII_CRS_DV
RCLKo_8M
DBGUART_TX
DBGUART_RX
USB1_DM
USB1_DP
SWDIO
SWCLK
FM_I2S_WS
CH_A_IN_STAND_ADC1
ETH_MDC
CH_A_TC1_AMP_ADC1
CH_A_TC2_AMP_ADC2
RMII_RX_D0
RMII_RX_D1
CH_A_FET1_PWM
CH_A_FET2_PWM
CH_B_FET1_PWM
CH_B_FET2_PWM
FM_I2S_CK
FM_INTn
FM_I2S_SD
DLED_WDT
R2101
1k
C2101
10p
D2101
LED_Small
R2102
0R
TBD!
Y2101
32768
C2102
10p
GND
CH_B_TC1_AMP_ADC1
CH_B_TC2_AMP_ADC2
R2103
10k
SYS_RSTn
DISP_SCK
DISP_DCn
DISP_MOSI
I2C1_SCL
I2C1_SDA
DISP_CSn
FAN3_RPM
KTY_BIAS_ENABLE
RMII_TX_EN
RMII_TX_D0
RMII_TX_D1
USB2_DM
USB2_DP
SCL
SDA
FP_BTN_1An
FP_BTN_1Bn
FP_BTN_2An
FP_BTN_2Bn
FP_ENC_SWn
AUX_INTn
CH_A_DRV_OK
CH_B_DRV_OK
HWID_ADC_SELECT
VBUS2_FLGn
VBUS2_EN
PWRDRV_ENABLE
FAN1_PWM
FAN2_PWM
FAN3_PWM
PWRBTN_LED_PWM
VDD
R2104
4k7
R2105
4k7
BOOT modes
BOOT1 | BOOT0 | Mode
x | 0 | Main flash
0 | 1 | ROM/bootldr
1 | 1 | Int. SRAM
EXT_RSTn
C2103
100n
SW2101
DLED_WDT
MR
RST
WDI
U2101
MCP1316T-26LE-OT
MCU_RSTn
RESET
U2102
Flash_CSn
SPI4_SCK
SPI4_MOSI
SPI4_MISO
W25Q64FV
SPI flash
Force bootloader
SW2102
MCU_BOOT0
BOOT0
C2104
100n
R2106
10k
STM32F429VITx U401.B
BOOT0
NRST
PH0/OSC_IN
PH1/OSC_OUT
TIM4_ETR/UART8_RX/FMC_NBL0/DCMI_D2/PE0
UART8_Tx/FMC_NBL1/DCMI_D3/PE1
TRACECLK/SPI4_SCK/SAI1_MCLK_A/ETH_MII_TXD3/FMC_A23/PE2
TRACED0/SAI1_SD_B/FMC_A19/PE3
TRACED1/SPI4_NSS/SAI1_FS_A/FMC_A20/DCMI_D4/LCD_B0/PE4
TRACED2/TIM9_CH1/SPI4_MISO/SAI1_SCK_A/FMC_A21/DCMI_D6/LCD_G0/PE5
TRACED3/TIM9_CH2/SPI4_MOSI/SAI1_SD_A/FMC_A22/DCMI_D7/LCD_G1/PE6
TIM1_ETR/UART7_Rx/FMC_D4/PE7
TIM1_CH1N/UART7_Tx/FMC_D5/PE8
TIM1_CH1/FMC_D6/PE9
TIM1_CH2N/FMC_D7/PE10
TIM1_CH2/SPI4_NSS/FMC_D8/LCD_G3/PE11
TIM1_CH3N/SPI4_SCK/FMC_D9/LCD_B4/PE12
TIM1_CH3/SPI4_MISO/FMC_D10/LCD_DE/PE13
TIM1_CH4/SPI4_MOSI/FMC_D11/LCD_CLK/PE14
TIM1_BKIN/FMC_D12/LCD_R7/PE15
AUX_HOST_RX
AUX_HOST_TX
AUX_BOOT0
REED_PULLUP_EN
AUDIO_MUTEn
FAN1_RPM
FAN2_RPM
FP_ENC_A
PHY_IRQn
FP_ENC_B
SPI4_SCK
SPI4_MISO
SPI4_MOSI
Flash_CSn
MCU_RSTn
C2105
100n
C2106
10p
Y2102
16MHz
C2107
10p
R2107
0R
TBD!
SolderingStationGroup : Jonny Svärd / Mathias Johansson / Magnus Thulesius
Sheet: /STM32F429 MCU/
File: mcu_1.sch
Title: STM22F429 MCU pinout, clks, reset
Size: A4
Date: 2020-04-26
Rev: R0.1
KiCad E.D.A. kicad 5.1.6-c6e7f7d87ubuntu18.04.1
Id: 21/21