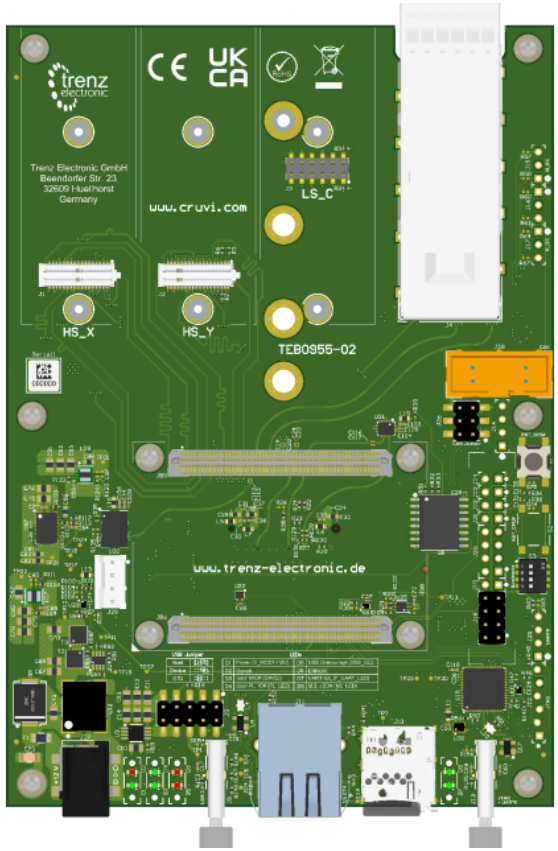
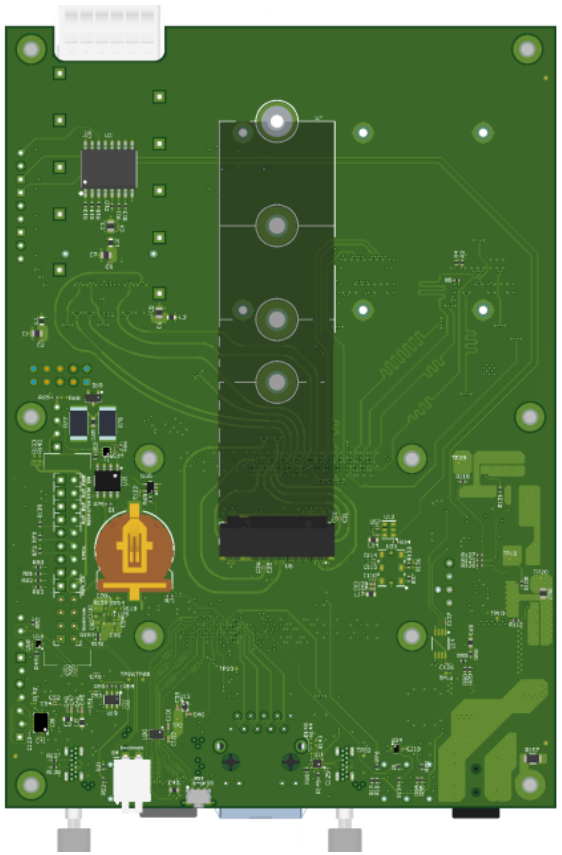




Picutres shows REV02 Variant A (default), other assembly variants may differ.

Regarding the usage of our schematics and alike documentation for Trenz baseboard TEB0955.

Baseboard is Open Source Hardware and therefore free to use, adapt and can be modified to suit your needs as described in the "The MIT License".

Permission is hereby granted, free of charge, to any person obtaining a copy of this hardware and associated documentation files (the "Product"), to deal in the Product without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Product, and to permit persons to whom the Product is furnished to do so.

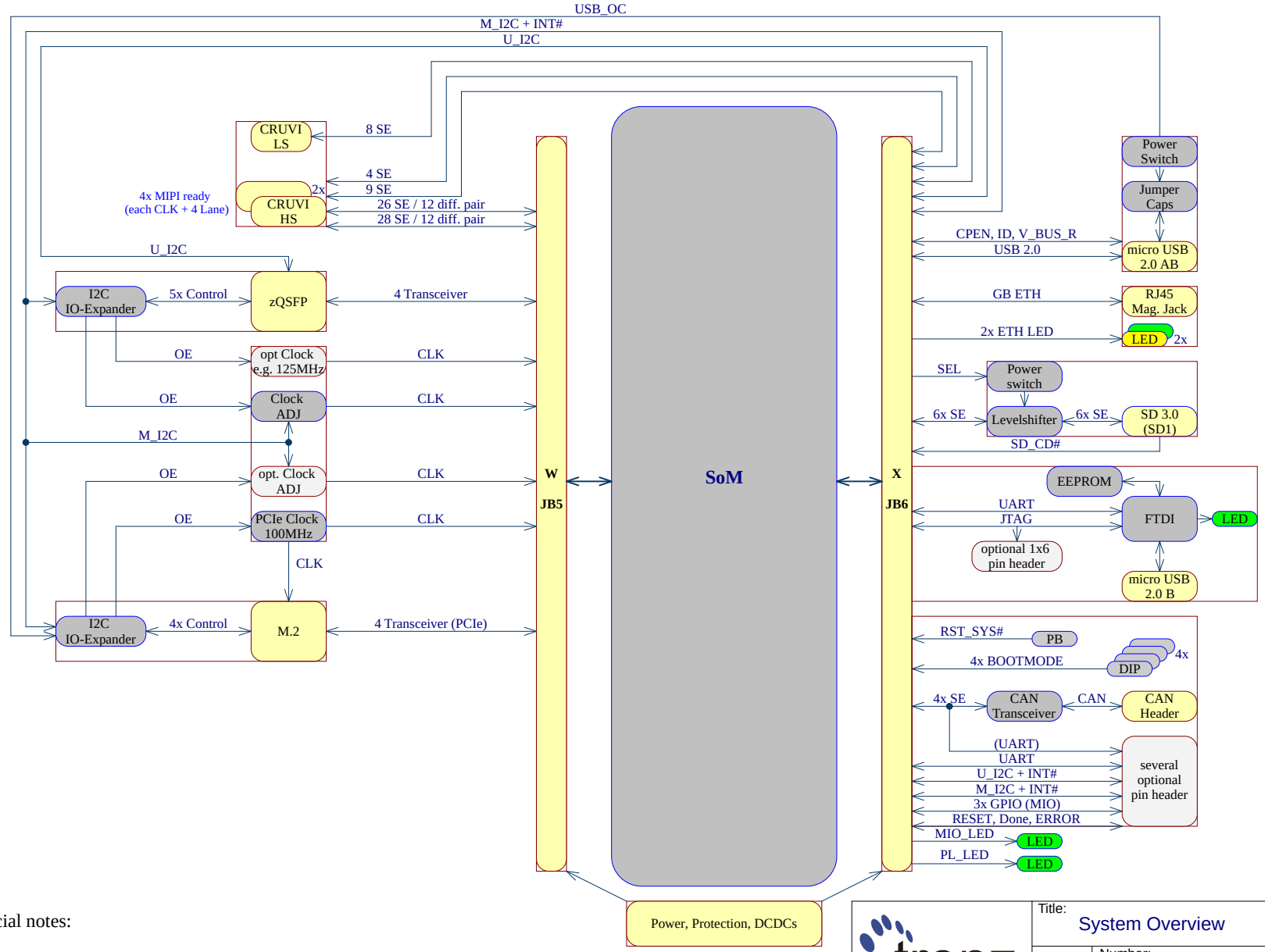
Drawn by	MR
Checked by	
Assembly variant	A
Created by	MR
Modified by	MR
Modified at	2025-03-03

Title: Legal Notices		
A4	Number: TEB0955 A	Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 1 of 18
Filename: Legal Notices TEB0955.SchDoc		

REV	Description	
-01	Initial revision	MR
-02	1. Corrected DIR pin connection of Levelshifter U9 and removed patch label. 2. Removed UART and JTAG test points. 3. Changed J9 and J13 from micro USB to USB-C. Therefore also added U11, optional I2C Levelshifter U14 and corresponding circuits. 4. Changed J5 from 8 pin to 10 pin header, to set PORT connection of U11 via jumper. 5. Changed MP1.. MP6 to 10mm version and removed from schematic, will be added manually to BOM when nedded. 6. Added zero Ohms R150, R151 and set power switch U29 to default not fitted. 7. Changed default assembly option for PCIe Reset: R29 fitted, R30 not fitted. 8. Changed J11 to 74991114411, replaced C43 by 0R R152. 9. Added C43. 10. Changed SD 3.0 level shifter pin compatible from NXS0506GUX to NVT4858HKZ.	MR

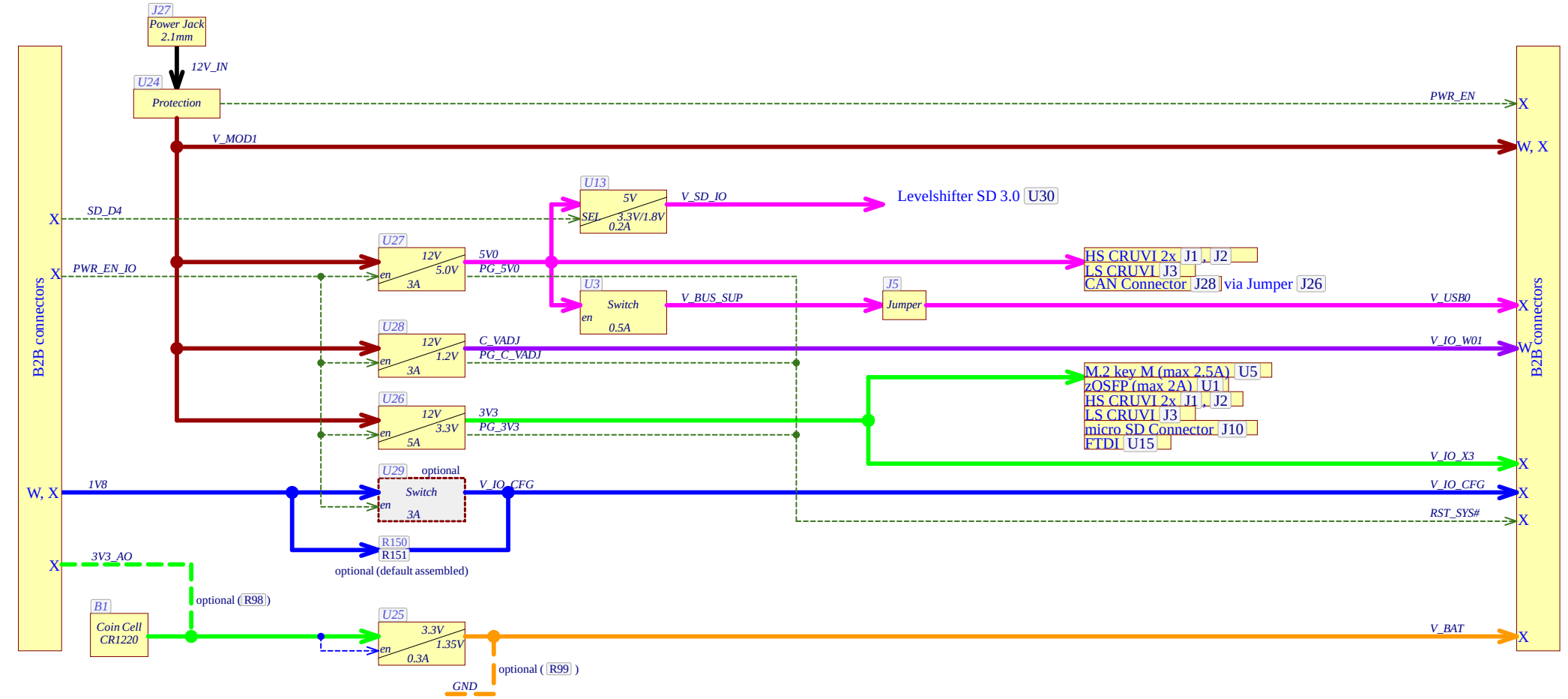
trenz electronic

Title: Revision History		
A4	Number: TEB0955 A	Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 2 of 18
Filename: Revision Changes.SchDoc		



Special notes:

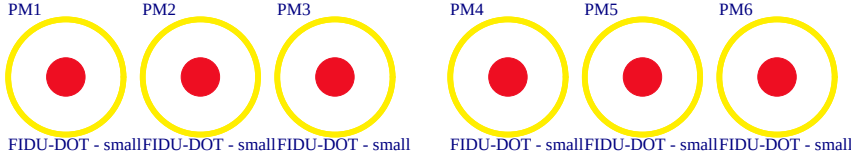
trenz electronic	Title: System Overview		
A4	Number: TEB0955 A		Rev. 02
Date: 13.04.2026	Copyright: Trenz Electronic GmbH		Page 3 of 18
Filename: Overview.SchDoc			



trenz electronic

Title: Power Diagram		
A4	Number: TEB0955 A	Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 4 of 18
Filename: Power_Diagram.SchDoc		

PM1 PM2 PM3 PM4 PM5 PM6



FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small FIDU-DOT - small

MECH1

TE Address Overlay

LOGO ADDRESS

CE1

CE Logo on Top Overlay

CE-TOPOVERLAY

Serial1

Serial

Serialnumber 6,3 x 6.3mm

LOGO1

TE Logo PRINT Layer

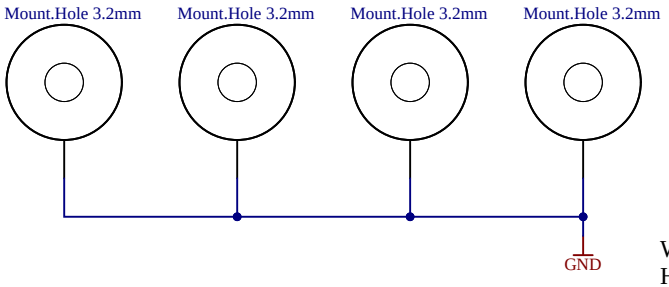
LOGO PRINT

UKCA1

UKCA Logo on Top Overlay

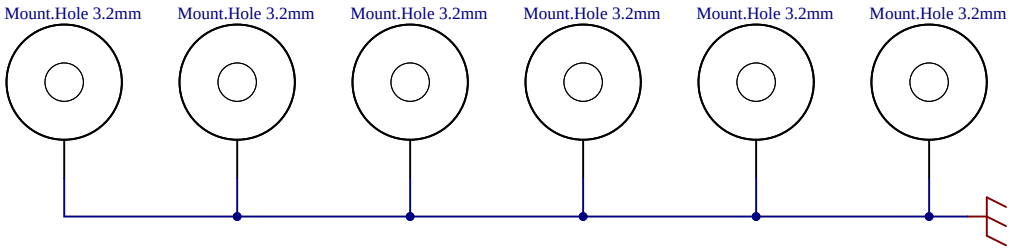
UKCA-TOPOVERLAY

Module Mounting Holes



When using full size CRUVI extension on HS_X port, mountinghole in upper left corner of the board can not be used with distance bolt in top direction.

Carrier Mounting Holes



I2C Addresses:

Device	Bus	Address	Note
-	U_I2C	- -	Depends on modul
zQSFP	U_I2C	- -	Depends on QSFP modul

-	M_I2C	- -	Depends on modul
PCF8574DWR	M_I2C	0100110 26H	I2C IO expander for QSFP control signals
PCF8574DWR	M_I2C	0100101 25H	I2C IO expander for M.2 control signals
LMK61E2BAA	M_I2C	1011000 58H	Programmable Clock MGT103 (QSFP)
PTN5150A	M_I2C	0111101 3DH	USB-C Logic Chip, connection optional via Levelshifter U14 (default not fitted)
LMK61E2BAA	M_I2C	1011010 5AH	Optional Programmable Clock MGT104 (M.2)

Supported Voltage Ranges:

Power Rail	Direction	Range	Tolerance	Description	Note
12V_IN	IN	12V	+/-5%	Board Power	-
V_MOD1	OUT	5V .. 12V	+/-5%	Module main power supply	-
3V3_AO	IN	3.3V	+/-3%	Always On rail from Module	Max additional (low ESR) capacitance: 18µF
1V8	IN	1.8V	+/-3%	Periphery supply from Module	Max additional (low ESR) capacitance: 30µF
V_IO_W01	OUT	1.0V .. 1.5V	+/-5%	IO supply to Module	Depends on Module: TE0955: XPIO Bank
V_IO_X3	OUT	1.8V .. 3.3V	+/-3%	IO supply to Module	Depends on Module: TE0955: HD Bank
V_IO_CFG	OUT	1.8V	+/-5%	IO CFG supply to Module	-
V_BAT	OUT	1.35V	+/-10%	Supply for BB RAM and RTC	If not used connect to GND

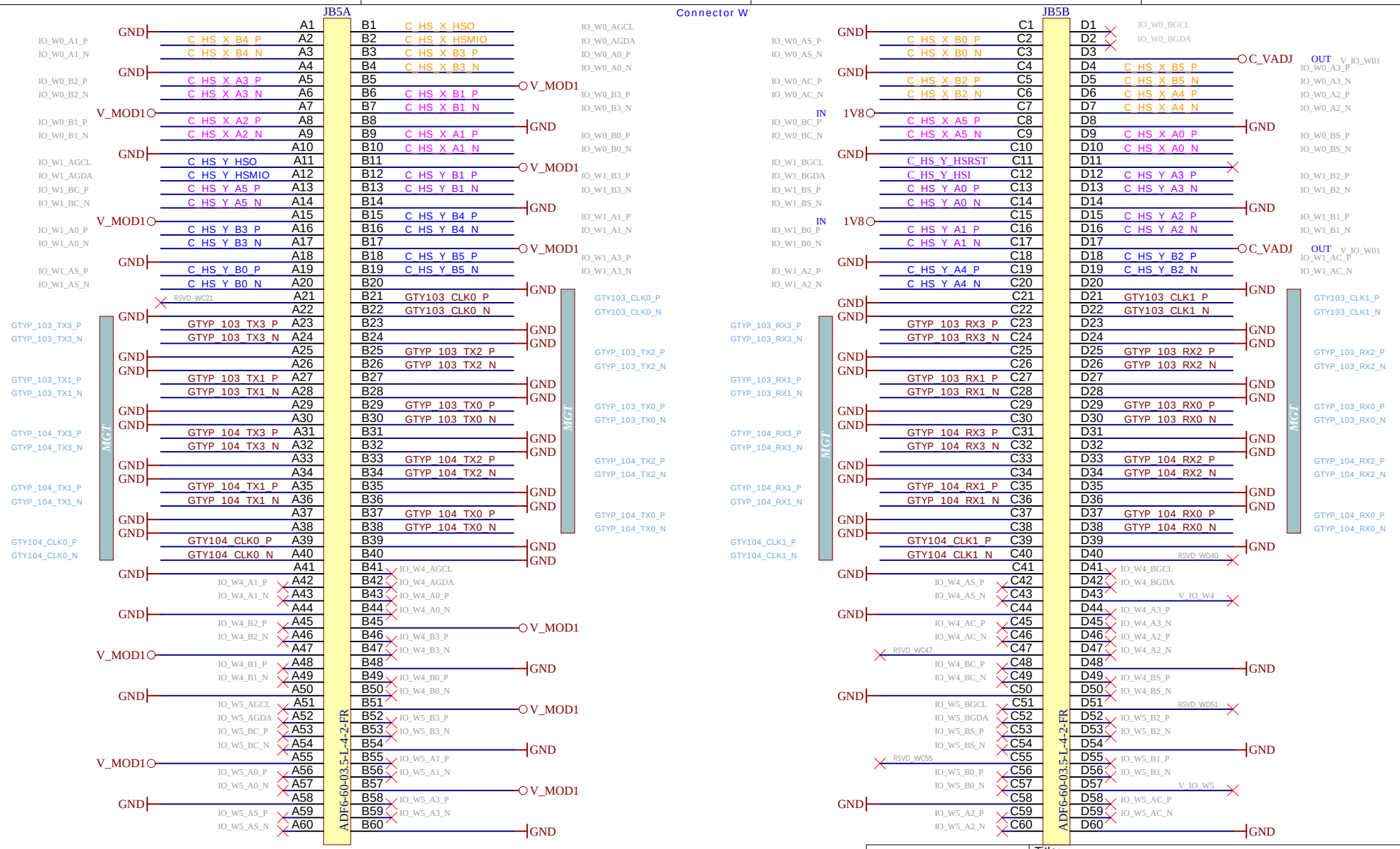
trenz electronic

Title: TEB0955

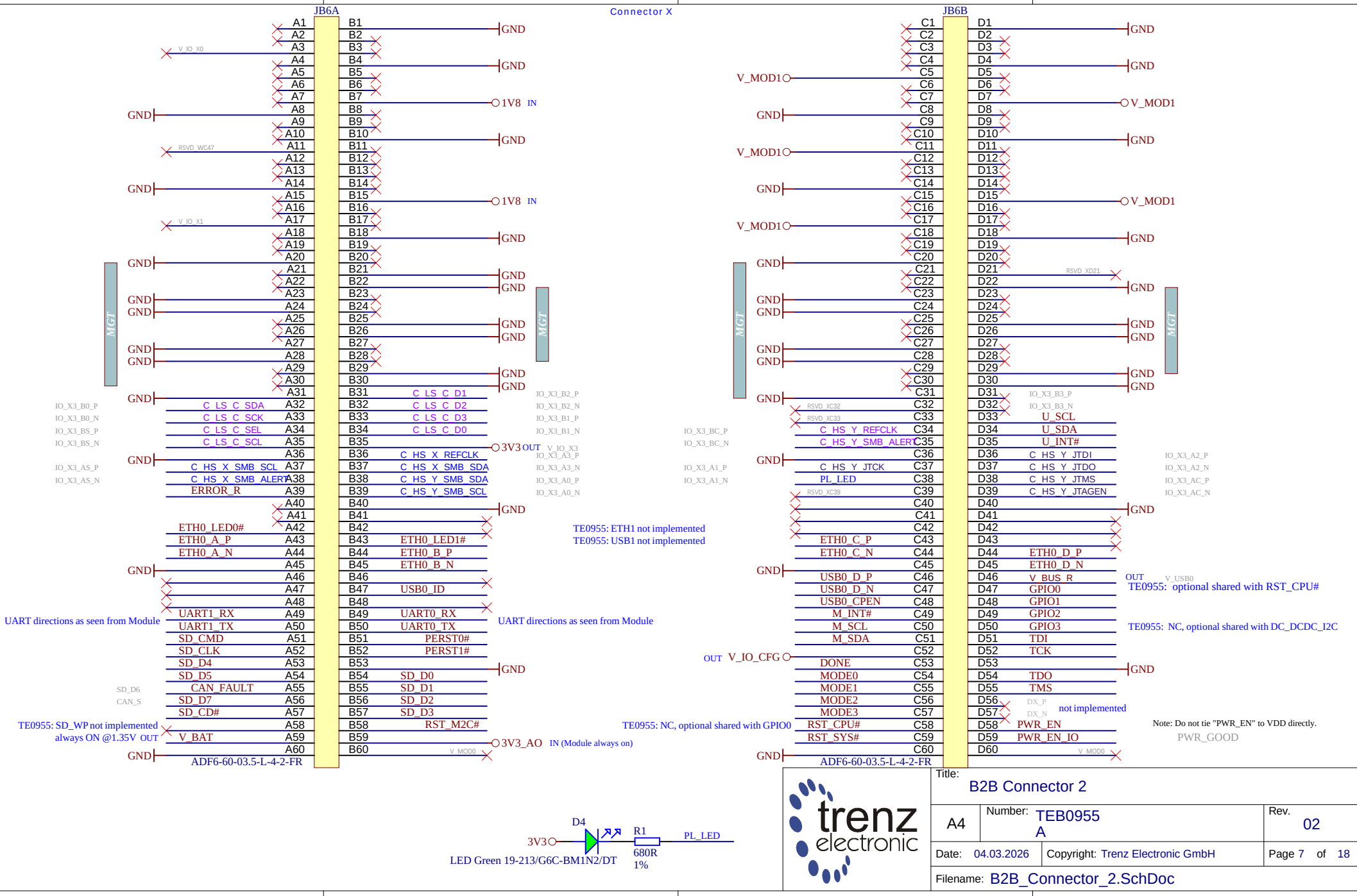
A4 | Number: TEB0955 A | Rev. 02

Date: 24.06.2026 | Copyright: Trenz Electronic GmbH | Page 5 of 18

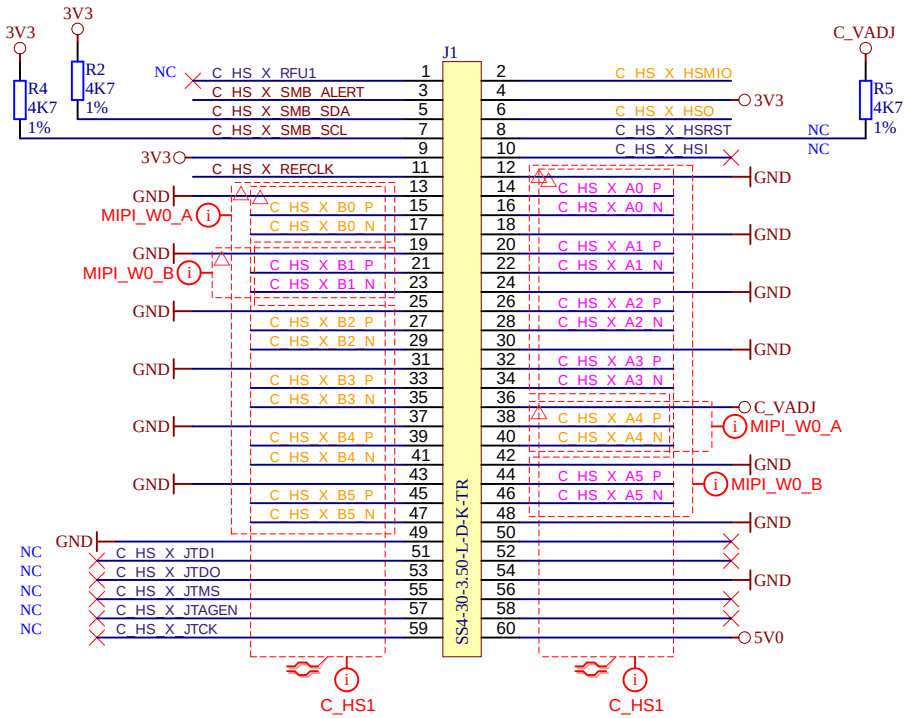
Filename: TEB0955.SchDoc

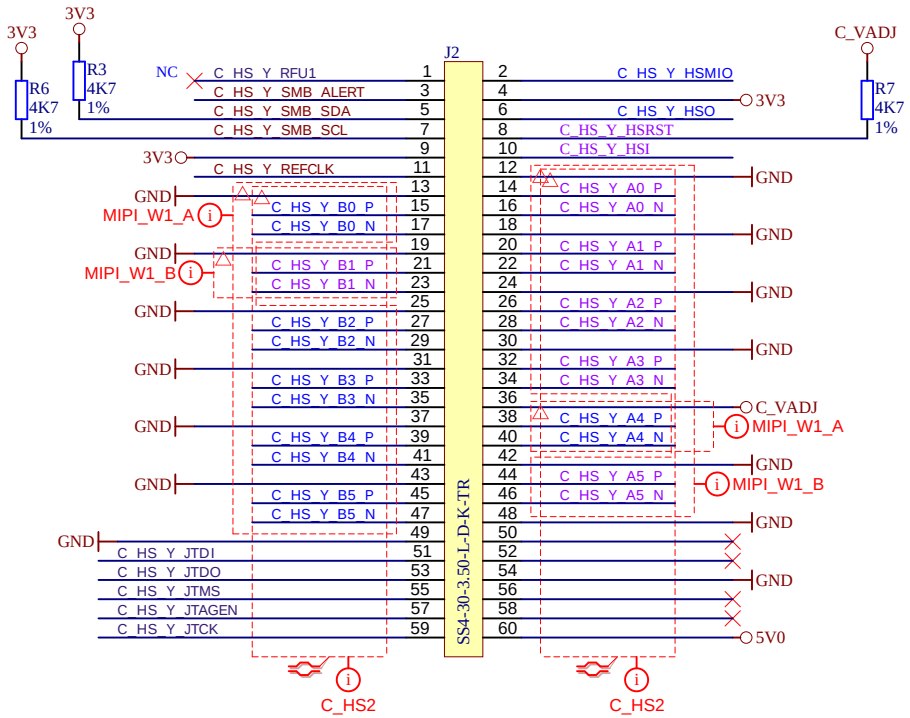


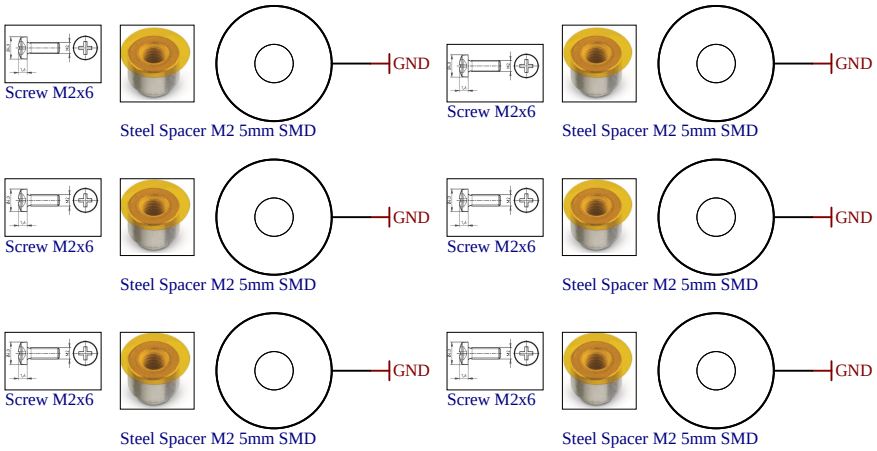
Title: B2B Connector 1			
A4	Number: TEB0955 A		Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH		Page 6 of 18
Filename: B2B_Connector_1.SchDoc			

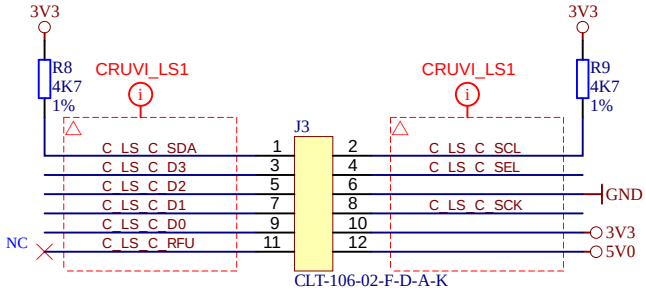


Title: B2B Connector 2			
A4	Number: TEB0955 A		Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH		Page 7 of 18
Filename: B2B_Connector_2.SchDoc			







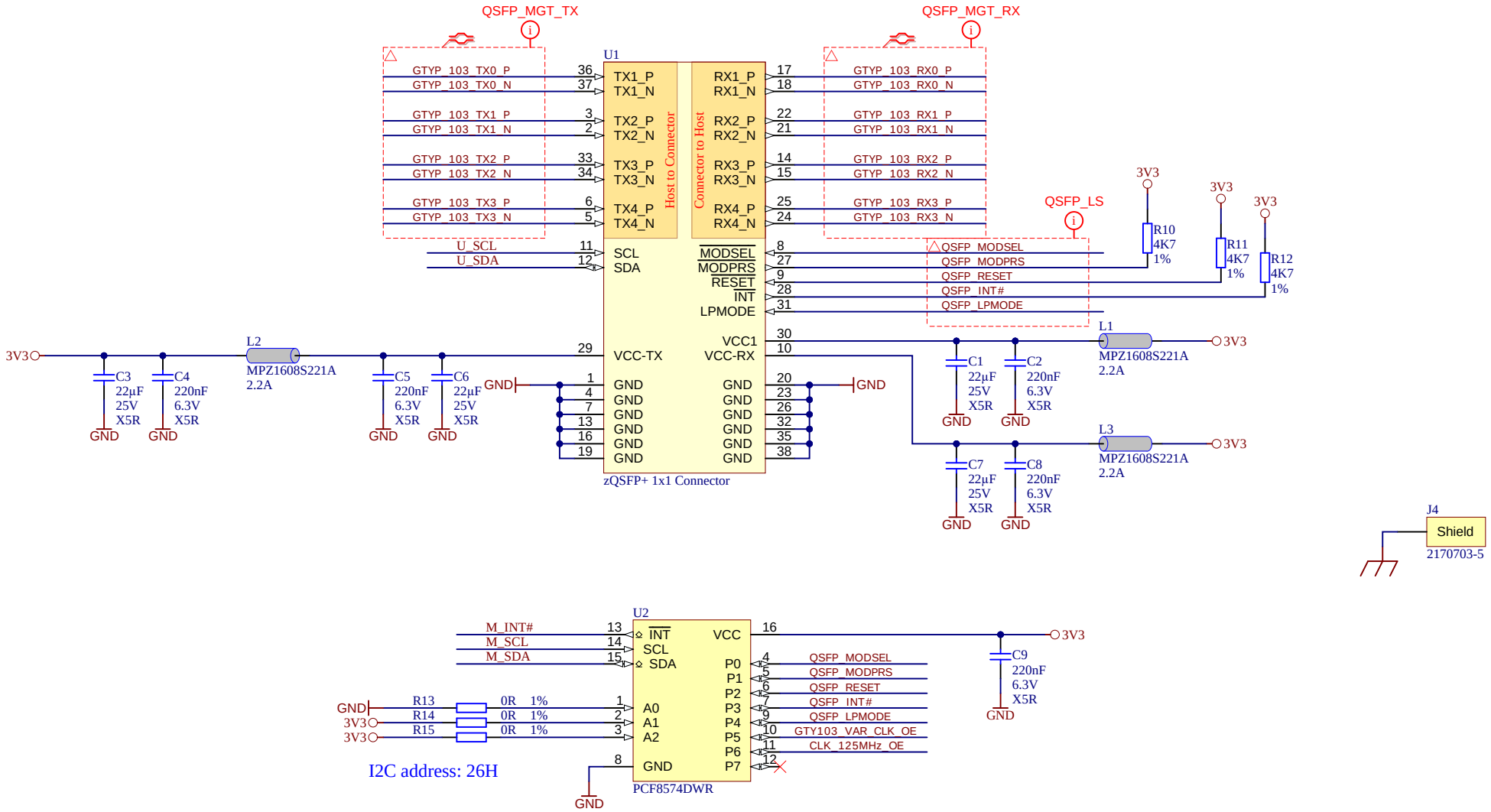


SNAP1

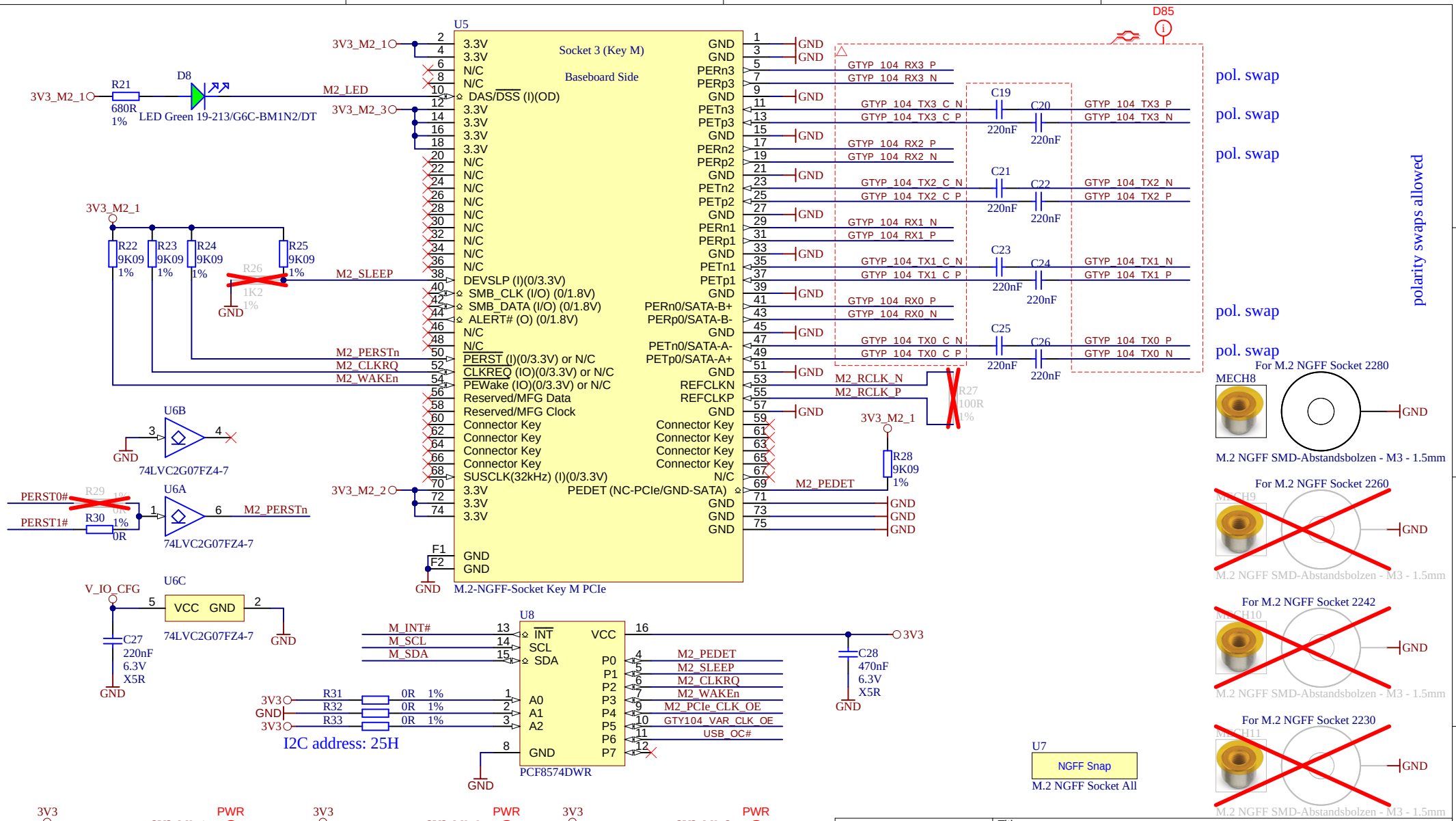
SNAP CRUVI 3x

trenz electronic

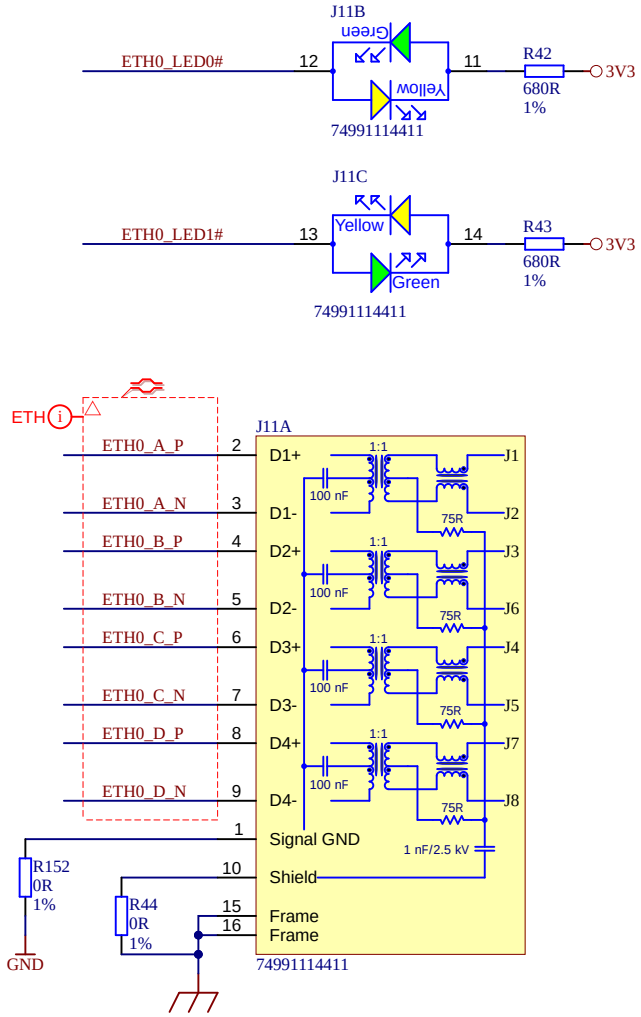
Title: CRUVI			
A4	Number: TEB0955 A		Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH		Page 8 of 18
Filename: CRUVI.SchDoc			



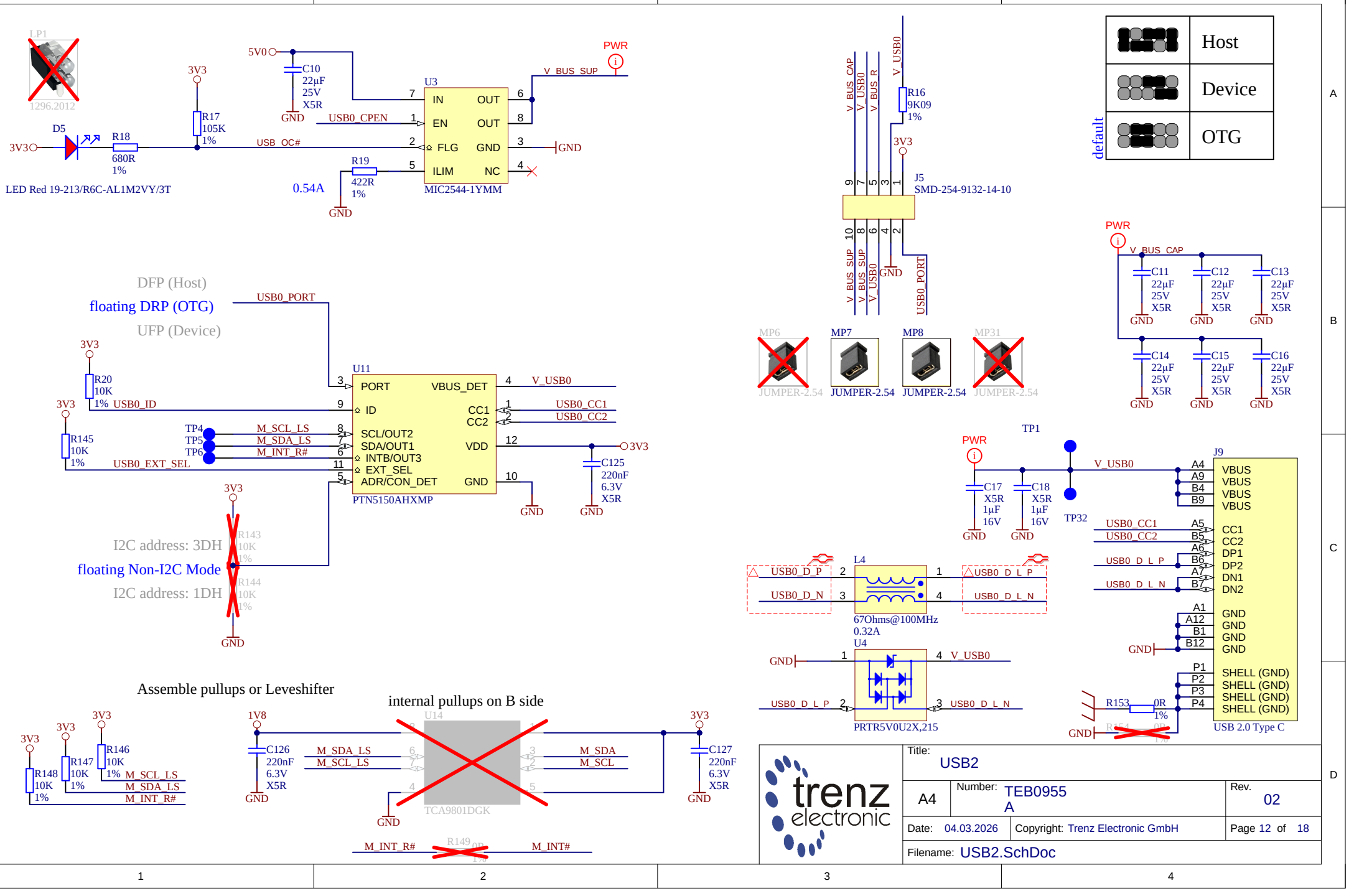
trenz electronic	Title: QSFP		
	A4	Number: TEB0955 A	Rev. 02
	Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 9 of 18
	Filename: QSFP.SchDoc		



trenz electronic	Title: M2_M		
	A4	Number: TEB0955 A	Rev. 02
	Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 10 of 18
	Filename: M2_M.SchDoc		

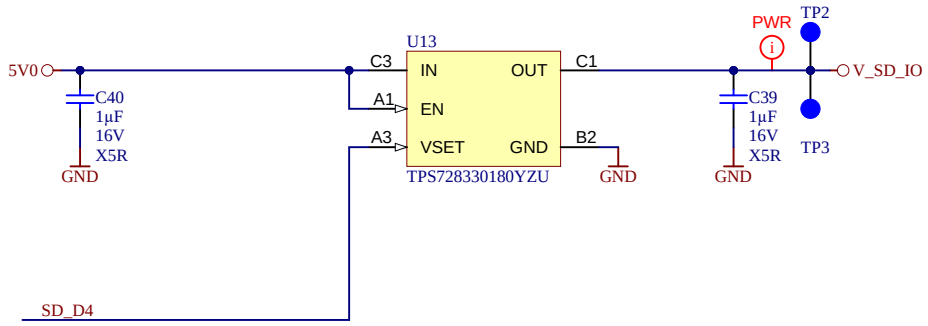


trenz electronic	Title: GB_ETH		
	A4	Number: TEB0955 A	Rev. 02
	Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 11 of 18
	Filename: GB_ETH.SchDoc		

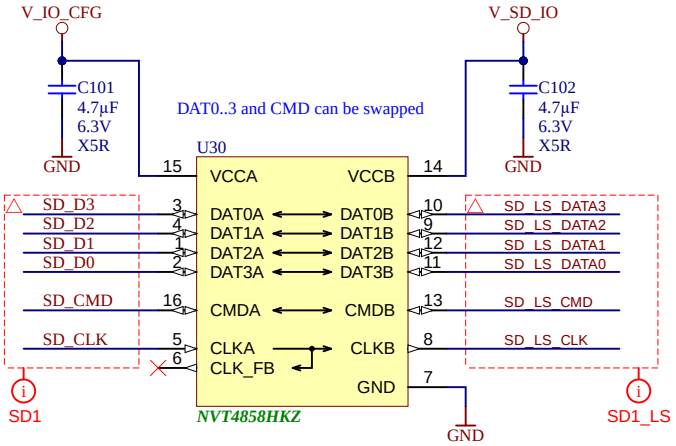

LP1
1296.2012
D5
R18
680R
1%
LED Red 19-213/R6C-AL1M2VY/3T
3V3
R17
105K
1%
USB_OC#
5V0
C10
22µF
25V
X5R
GND
USB0_CPEN
R19
422R
1%
0.54A
U3
IN
EN
FLG
ILIM
OUT
OUT
GND
NC
MIC2544-1YMM
PWR
V_BUS_SUP
V_BUS_CAP
V_USB0
V_BUS_R
R16
9K09
1%
J5
SMD-254-9132-14-10
V_BUS_SUP
USB0_PORT
MP6
MP7
MP8
MP31
JUMPER-2.54
C11
C12
C13
C14
C15
C16
22µF
25V
X5R
DFP (Host)
floating DRP (OTG)
UFP (Device)
USB0_PORT
U11
PORT
ID
SCL/OUT2
SDA/OUT1
INTB/OUT3
EXT_SEL
ADR/CON_DET
VBUS_DET
CC1
CC2
VDD
GND
PTN5150AHXMP
R20
10K
1%
USB0_ID
R145
10K
1%
USB0_EXT_SEL
TP4
TP5
TP6
M_SCL_LS
M_SDA_LS
M_INT_R#
V_USB0
USB0_CC1
USB0_CC2
C125
220nF
6.3V
X5R
I2C address: 3DH
floating Non-I2C Mode
I2C address: 1DH
R143
R144
10K
1%
TP1
TP32
C17
C18
1µF
16V
X5R
L4
67Ohms@100MHz
0.32A
USB0_D_P
USB0_D_N
USB0_D_L_P
USB0_D_L_N
U4
PRTR5V0U2X,215
J9
VBUS
CC1
CC2
DP1
DP2
DN1
DN2
GND
SHELL (GND)
USB 2.0 Type C
R153
0R
1%
Assemble pullups or Leveshifter
R146
R147
R148
10K
1%
internal pullups on B side
1V8
C126
C127
220nF
6.3V
X5R
U14
TCA9801DGK
M_SDA_LS
M_SCL_LS
M_SDA
M_SCL
M_INT_R#
R149
M_INT#
default
Host
Device
OTG
trenz electronic
Title: USB2
A4
Number: TEB0955 A
Rev. 02
Date: 04.03.2026
Copyright: Trenz Electronic GmbH
Page 12 of 18
Filename: USB2.SchDoc

SD IO Power

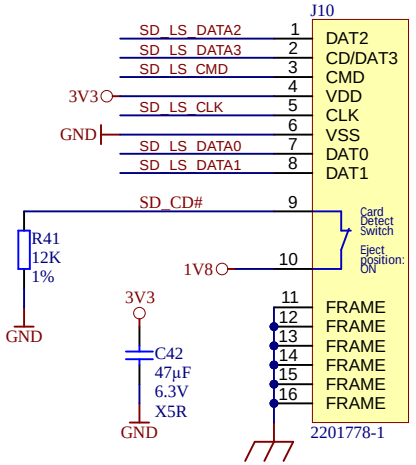
SD_D4 is SEL
SEL 'low'=3.3V, SEL 'high' =1.8V



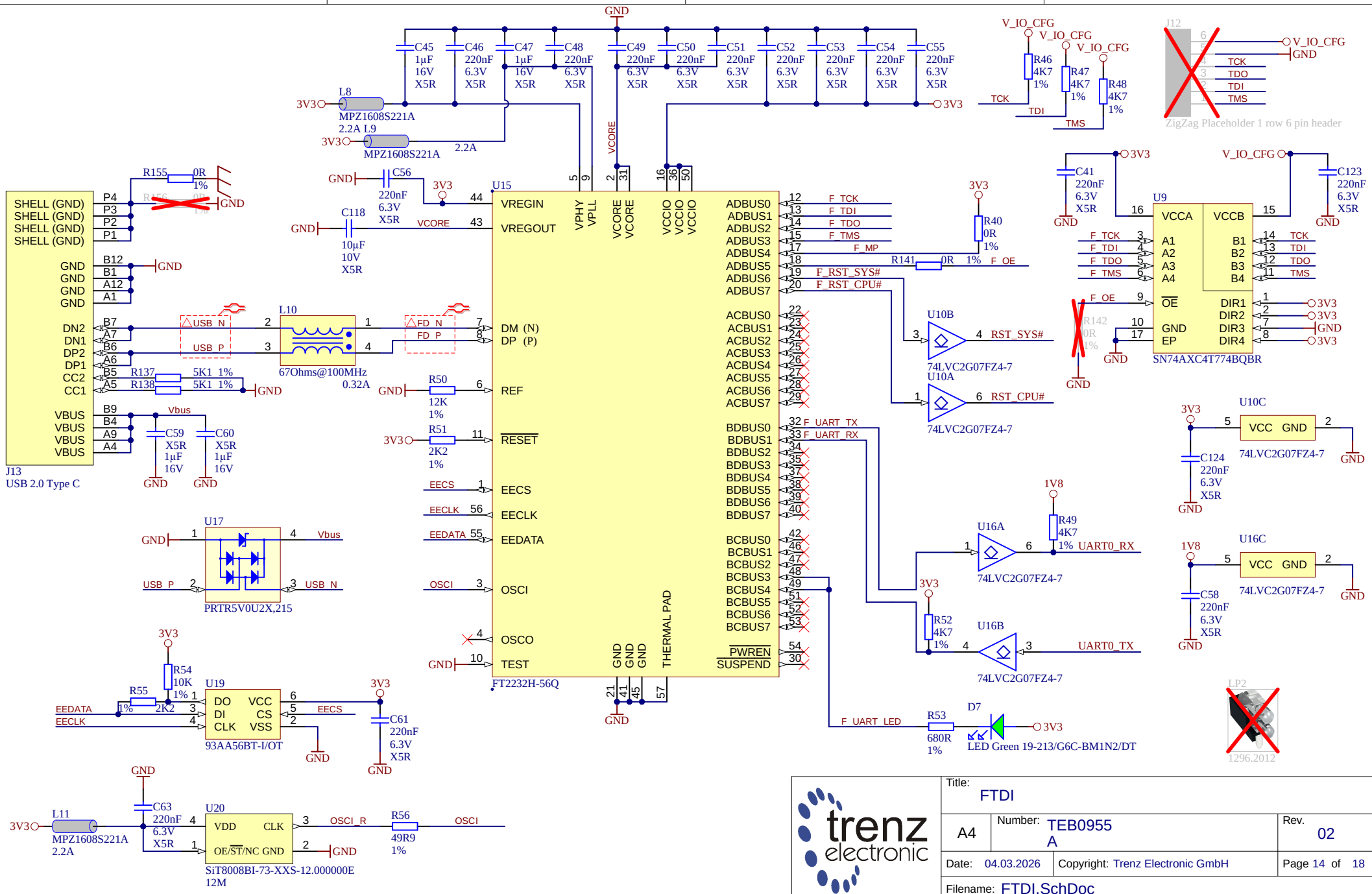
SD Levelshift



SD Connector

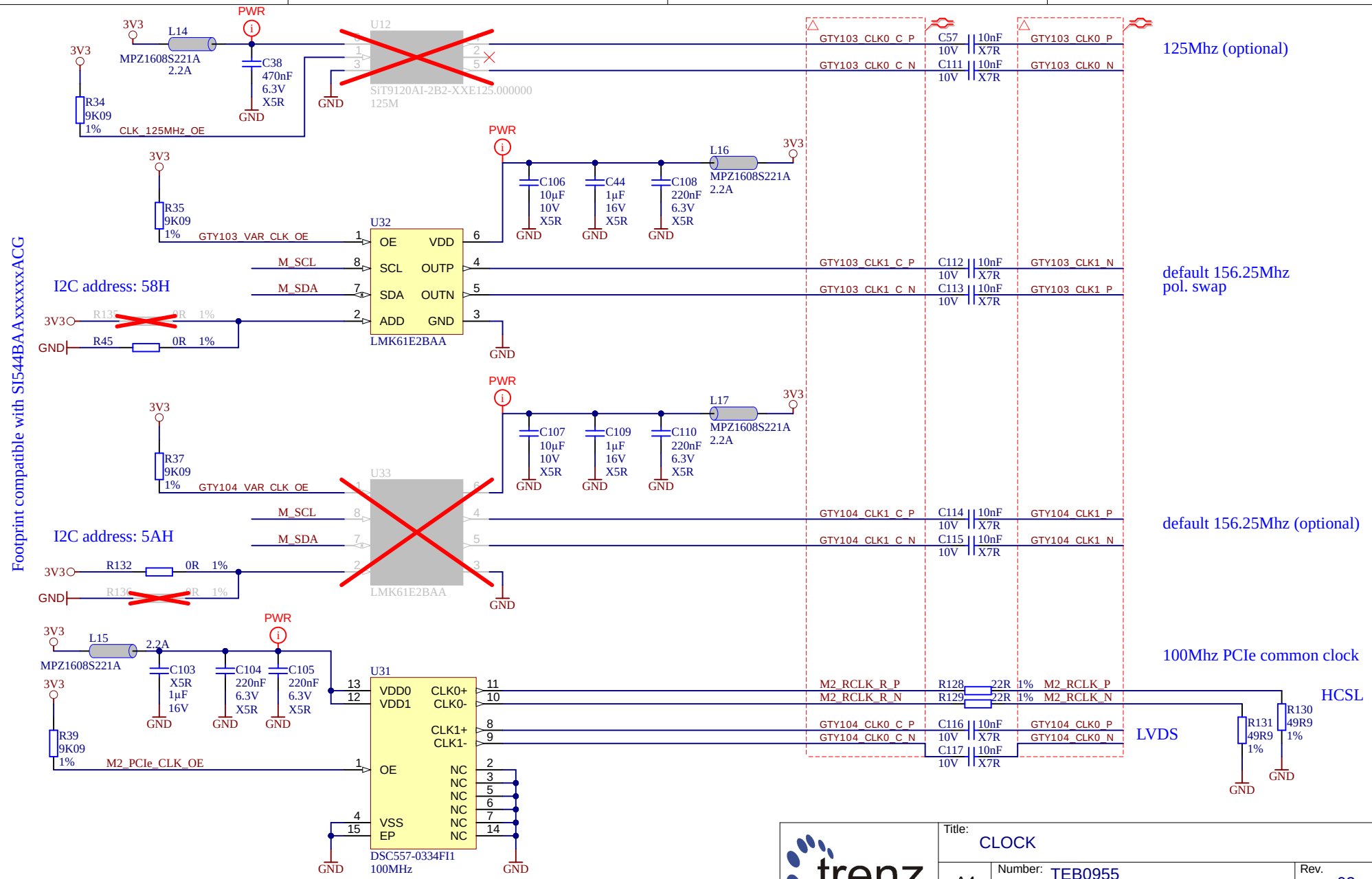


trenz electronic	Title: SD		
A4	Number: TEB0955 A		Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH		Page 13 of 18
Filename: SD.SchDoc			



trenz electronic

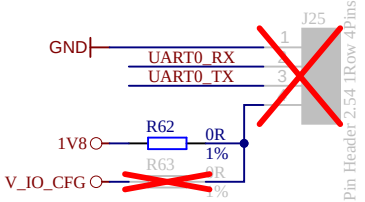
Title: FTDI			
A4	Number: TEB0955 A		Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH		Page 14 of 18
Filename: FTDI.SchDoc			



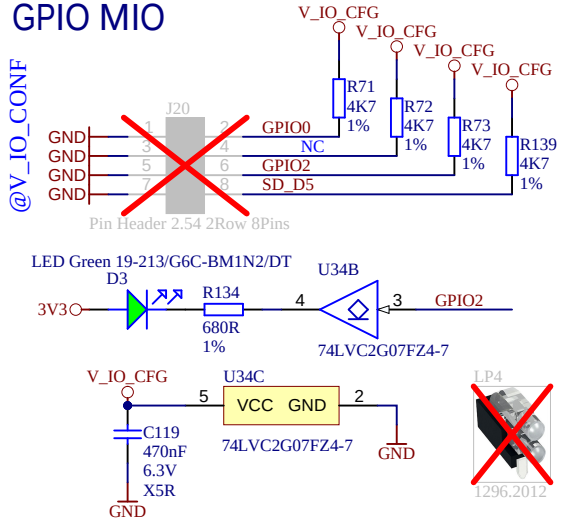
Title: CLOCK			
A4	Number: TEB0955 A		Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH		Page 15 of 18
Filename: Clock.SchDoc			

UART

2.54 mm pitch pin headers J12 and J25 can be combined into one 1x10 pin header.

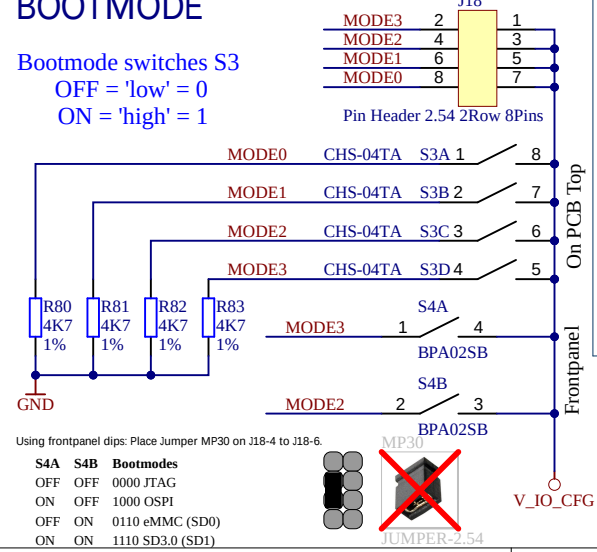


GPIO MIO



BOOTMODE

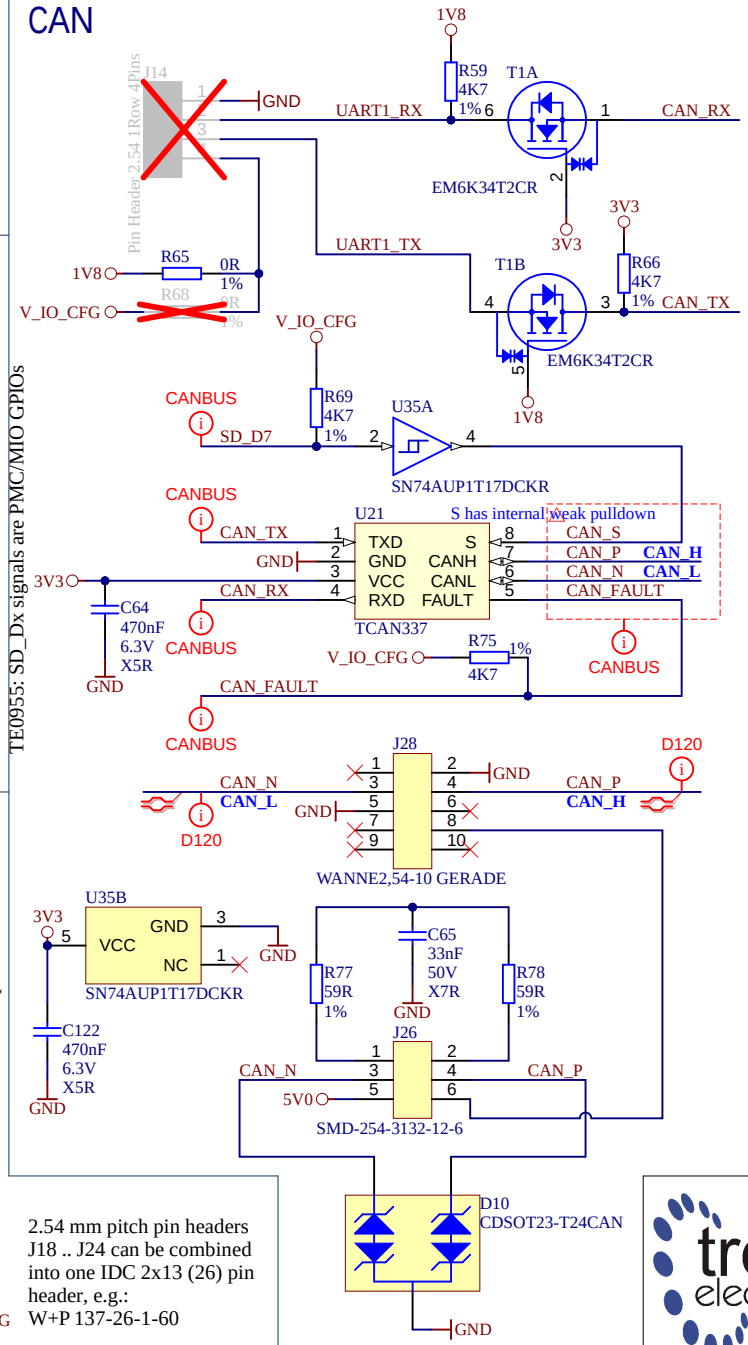
Bootmode switches S3
OFF = 'low' = 0
ON = 'high' = 1



Using frontpanel dips: Place Jumper MP30 on J18-4 to J18-6.

S4A	S4B	Bootmodes
OFF	OFF	0000 JTAG
ON	OFF	1000 OSPI
OFF	ON	0110 eMMC (SD0)
ON	ON	1110 SD3.0 (SD1)

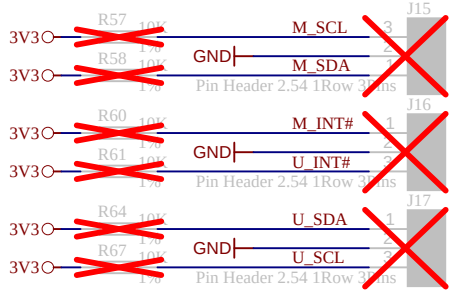
CAN



2.54 mm pitch pin headers J18 .. J24 can be combined into one IDC 2x13 (26) pin header, e.g.:
W+P 137-26-1-60

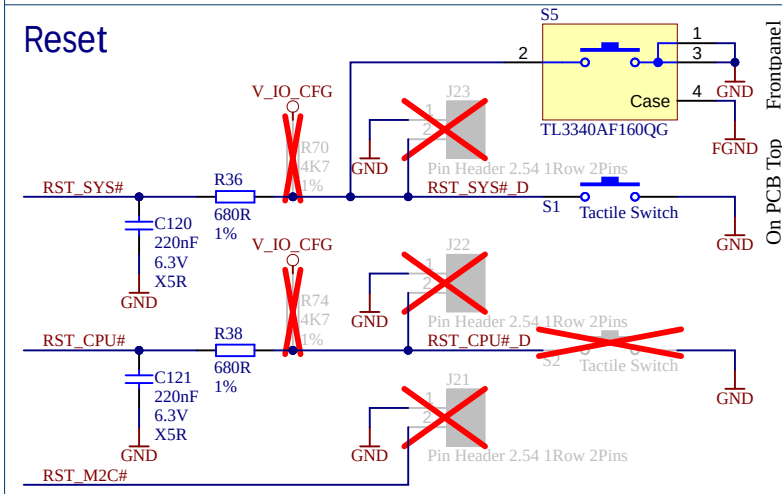
I2C

@3V3
pullups on module

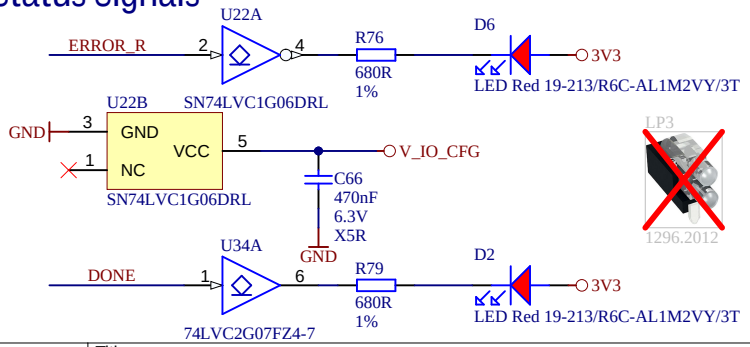


2.54 mm pitch pin headers J15, J16 and J17 can be combined depending on needs. E.g.: 1x4 pinheader for U_I2C + U_INT#.

Reset

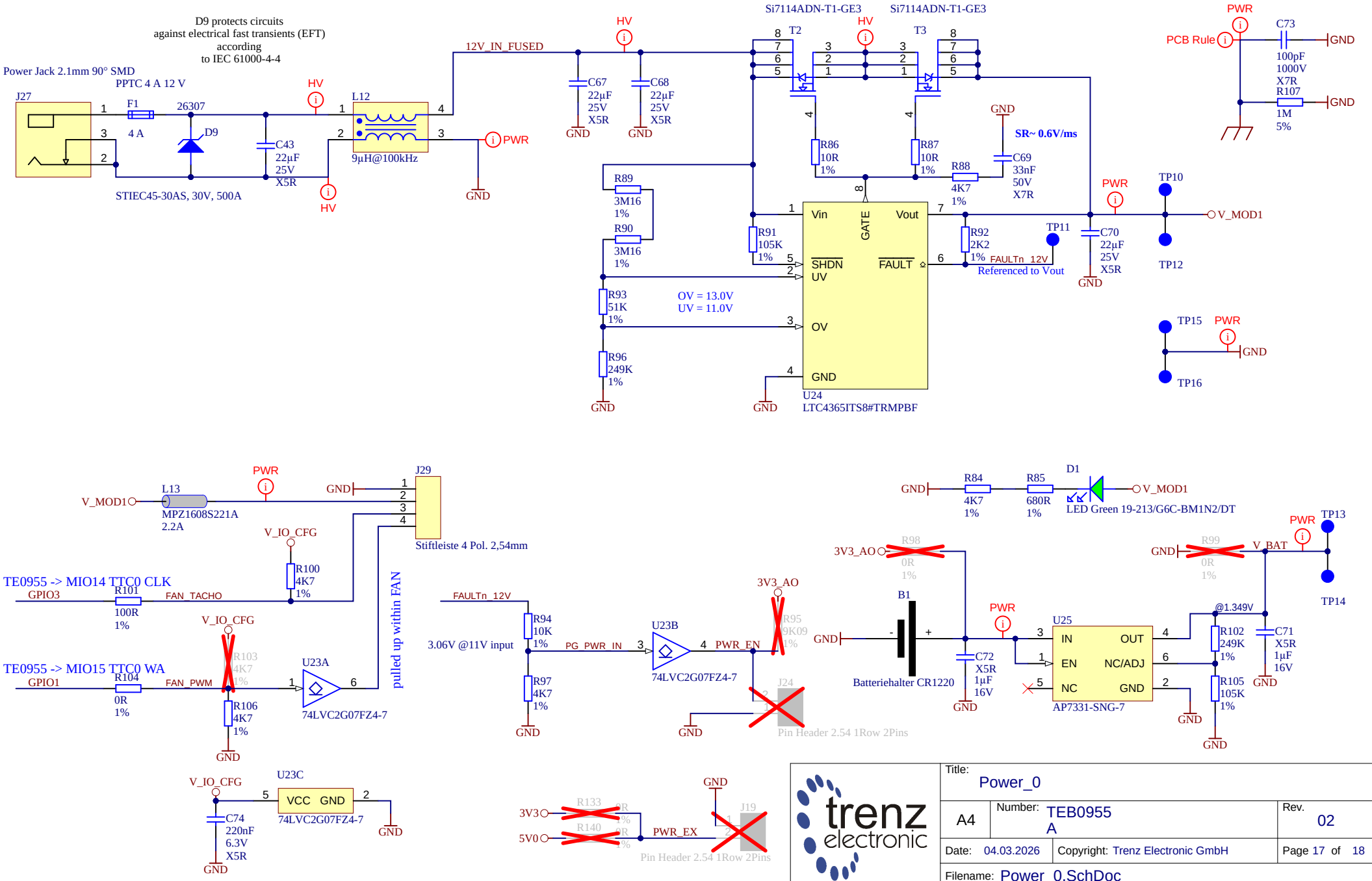


Status Signals

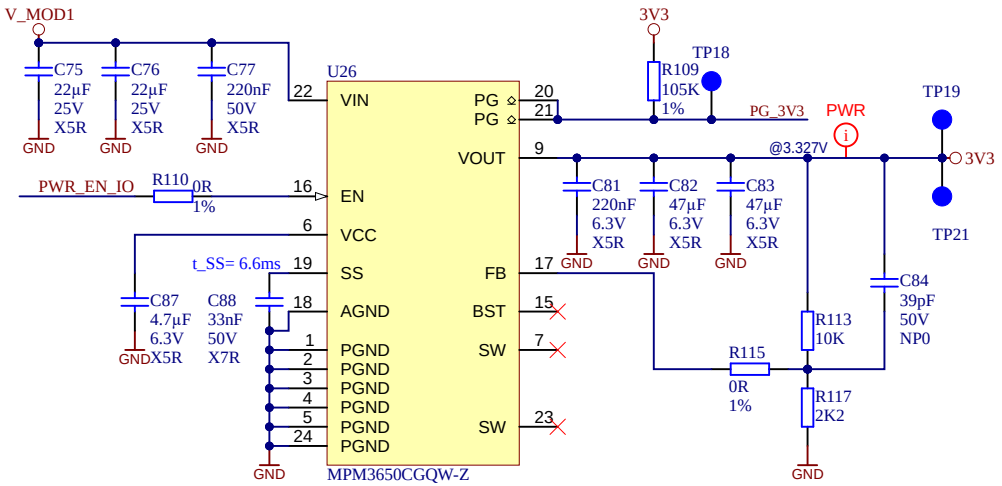


Title: MISC

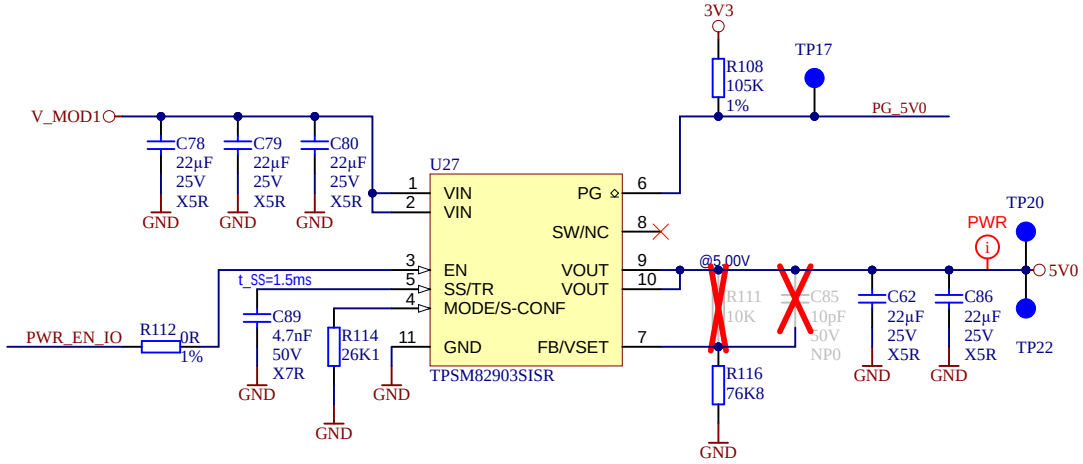
A4	Number: TEB0955 A	Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 16 of 18
Filename: MISC.SchDoc		


D9 protects circuits
against electrical fast transients (EFT)
according
to IEC 61000-4-4
Power Jack 2.1mm 90° SMD
PPTC 4 A 12 V
J27
F1
4 A
26307
D9
C43
22µF
25V
X5R
STIEC45-30AS, 30V, 500A
HV
L12
9µH@100kHz
12V_IN_FUSED
PWR
GND
C67
22µF
25V
X5R
C68
22µF
25V
X5R
Si7114ADN-T1-GE3
T2
T3
R86
10R
1%
R87
10R
1%
R88
4K7
1%
C69
33nF
50V
X7R
SR~ 0.6V/ms
R89
3M16
1%
R90
3M16
1%
R91
105K
1%
R92
2K2
1%
R93
51K
1%
R96
249K
1%
OV = 13.0V
UV = 11.0V
Vin
Vout
GATE
SHDN
UV
FAULT
OV
GND
U24
LTC4365ITS8#TRMPBF
FAULTn_12V
Referenced to Vout
TP11
C70
22µF
25V
X5R
TP10
TP12
V_MOD1
PCB Rule
C73
100pF
1000V
X7R
R107
1M
5%
TP15
TP16
L13
MPZ1608S221A
2.2A
V_MOD1
J29
Stiftleiste 4 Pol. 2,54mm
V_IO_CFG
R100
4K7
1%
TE0955 -> MIO14 TTC0 CLK
GPIO3
R101
100R
1%
FAN_TACHO
pulled up within FAN
TE0955 -> MIO15 TTC0 WA
GPIO1
R104
0R
1%
R103
4K7
1%
R106
4K7
1%
U23A
74LVC2G07FZ4-7
FAULTn_12V
3.06V @11V input
R94
10K
1%
R97
4K7
1%
PG_PWR_IN
U23B
74LVC2G07FZ4-7
PWR_EN
3V3_AO
R95
9K09
1%
J24
Pin Header 2.54 1Row 2Pins
R84
4K7
1%
R85
680R
1%
D1
LED Green 19-213/G6C-BM1N2/DT
R98
0R
1%
B1
Batteriehalter CR1220
C72
X5R
1µF
16V
U25
IN
OUT
EN
NC/ADJ
NC
GND
AP7331-SNG-7
R99
0R
1%
V_BAT
TP13
TP14
@1.349V
R102
249K
1%
R105
105K
1%
C71
X5R
1µF
16V
U23C
VCC GND
74LVC2G07FZ4-7
C74
220nF
6.3V
X5R
3V3
5V0
R133
0R
1%
R140
0R
1%
PWR_EX
J19
Pin Header 2.54 1Row 2Pins
trenz electronic
Title: Power_0
A4
Number: TEB0955 A
Rev. 02
Date: 04.03.2026
Copyright: Trenz Electronic GmbH
Page 17 of 18
Filename: Power_0.SchDoc

3V3 Supply



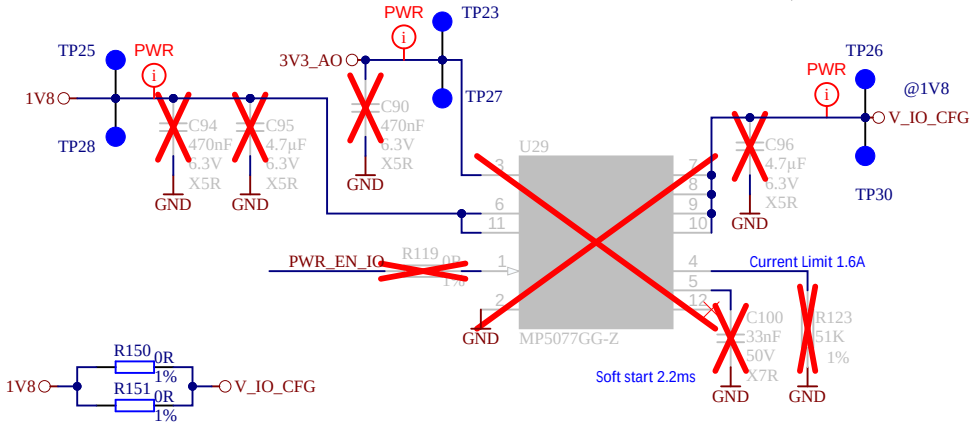
5V Supply



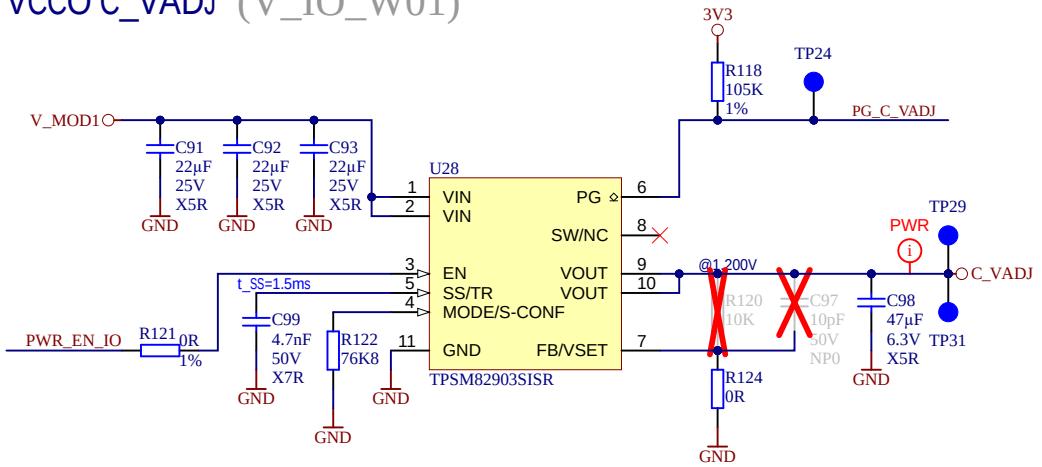
Vset; Auto PFM/PWM with AEE; output discharge; f_SW=2.5MHz

VCCO V_IO_CFG

If 1V8 from module is within VCCO power seqeunzing group, power switch not needed. Use zero Ohms R150, R151.

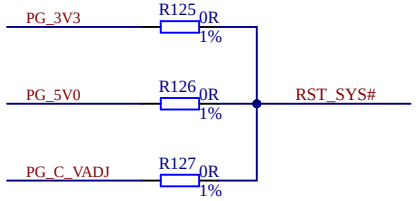


VCCO C_VADJ (V_IO_W01)



Vset; forced PWM; output discharge; f_SW=1.0MHz

PG -> Reset



trenz electronic

Title: Power_1		
A4	Number: TEB0955 A	Rev. 02
Date: 04.03.2026	Copyright: Trenz Electronic GmbH	Page 18 of 18
Filename: Power_1.SchDoc		