

PCM-937-L

FPSC Featureset 24A.0

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Project: FPSC Featureset 24A.0		Department : F&E Author: M.Poschmann, T.Metz	
27.11.2024	PCB-No.: 1618.1	Revision : 002	Sheet 1 of 30

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Default I2C2 addresses	
STUSB4500QTR (U21)	0x28
M.2 Key-M (X54)	-
Expansion connector (X56)	-
User EEPROM (U57)	-

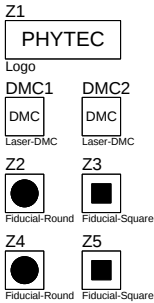
Default I2C3 addresses	
TUSB8042A (U21)	0x44
phyCAM-M CSI1 connector (X32)	-
LVDS 1 connector (X43)	-
mPCIe (X52)	-
PCA9533/01 (U55)	0x62

Default I2C4 addresses	
phyCAM-M CSI2 connector (X34)	-
MIPI-DSI connector (X39)	-
LVDS 2 connector (X50)	-
TCA6416ARTWR (U58)	0x20

Default I2C5 addresses	
P3T1750DPZ (U56)	0x4F

Default MDIO addresses	
ETH0 Carrier Board PHY	0x8
ETH0 Carrier Board PHY	0x1
ETH1 SOM on-board PHY	0x0

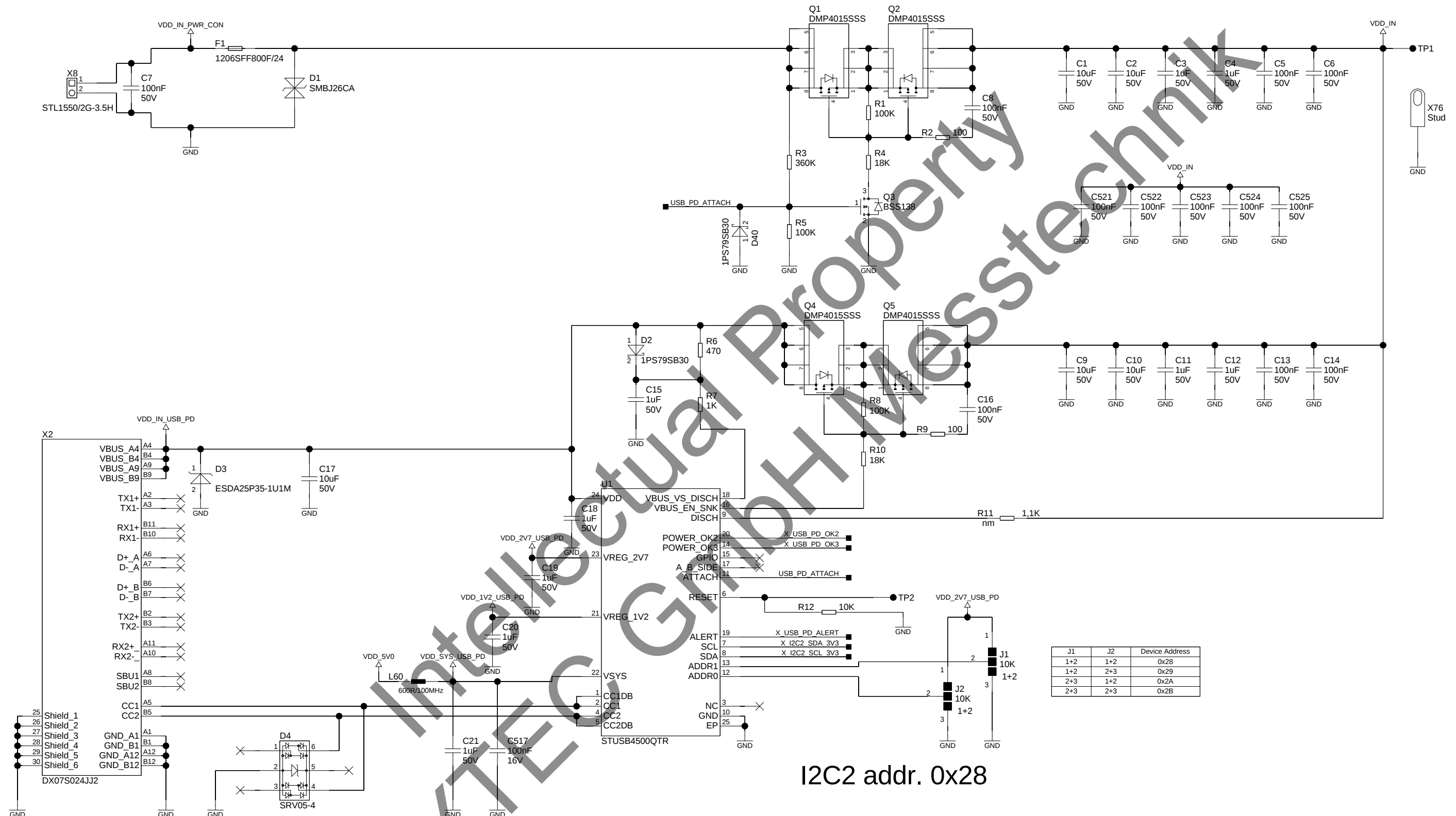
Notes:
Operating input power supply voltage: +15 V to +24 V DC
Operating temperature range: -40 °C to +85 °C unless noted otherwise
Parts with property 'nm' are not mounted on PCB



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VDD_IN via Power Connector

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J1	J2	Device Address
1+2	1+2	0x28
1+2	2+3	0x29
2+3	1+2	0x2A
2+3	2+3	0x2B

I2C2 addr. 0x28

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VDD_IN to VDD_12V0

Switching Frequency	526 kHz
VDD_12V0 nominal	11,99 V
VDD_12V0 tolerance +	12,21 V
VDD_12V0 tolerance -	11,77 V
Soft start	3 ms
Off time	3,45 ms
UVLO threshold	15 V

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Place along trace

12V to VDD_SOM

VDD_SOM	3.3 V	5 V
R28	43k	22k
R29	9,53k	3k
Tolerance +	3,396 V	5,089 V
Tolerance -	3,221 V	4,913 V

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27.11.2024

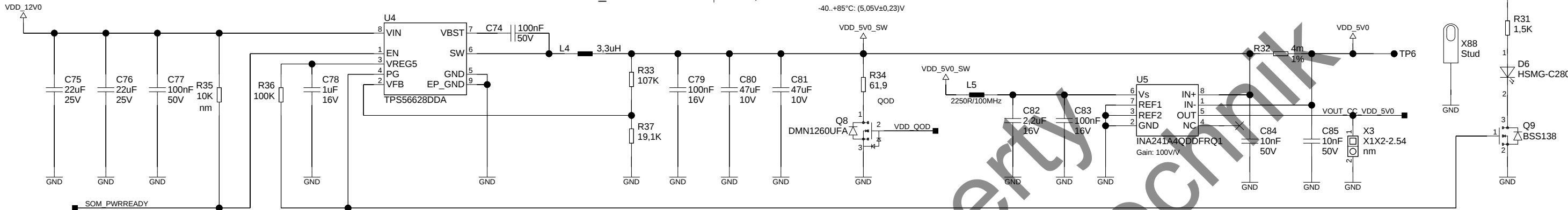
PCB-No.: 1618.1

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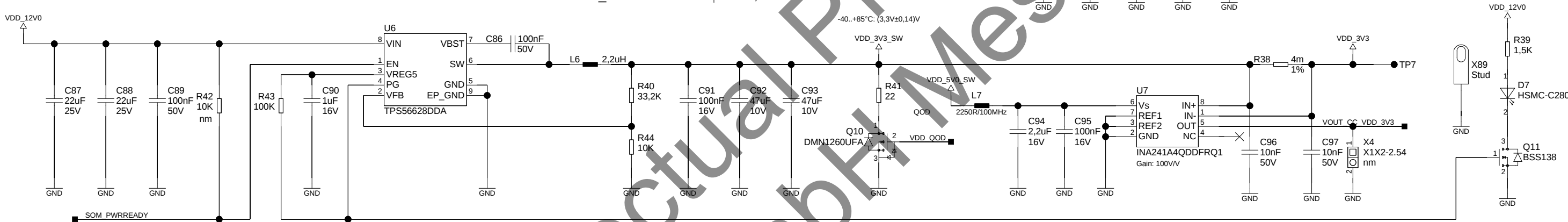
Peripheral VDD_5V0

Switching Frequency	650 kHz
VDD_5V0 nominal	5,05 V
VDD_5V0 tolerance +	5,14 V
VDD_5V0 tolerance -	4,97 V



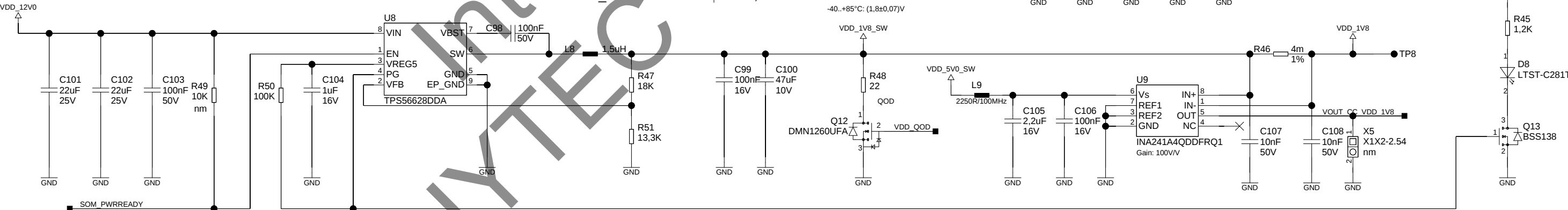
Peripheral VDD_3V3

Switching Frequency	650 kHz
VDD_3V3 nominal	3,30 V
VDD_3V3 tolerance +	3,36 V
VDD_3V3 tolerance -	3,25 V



Peripheral VDD_1V8

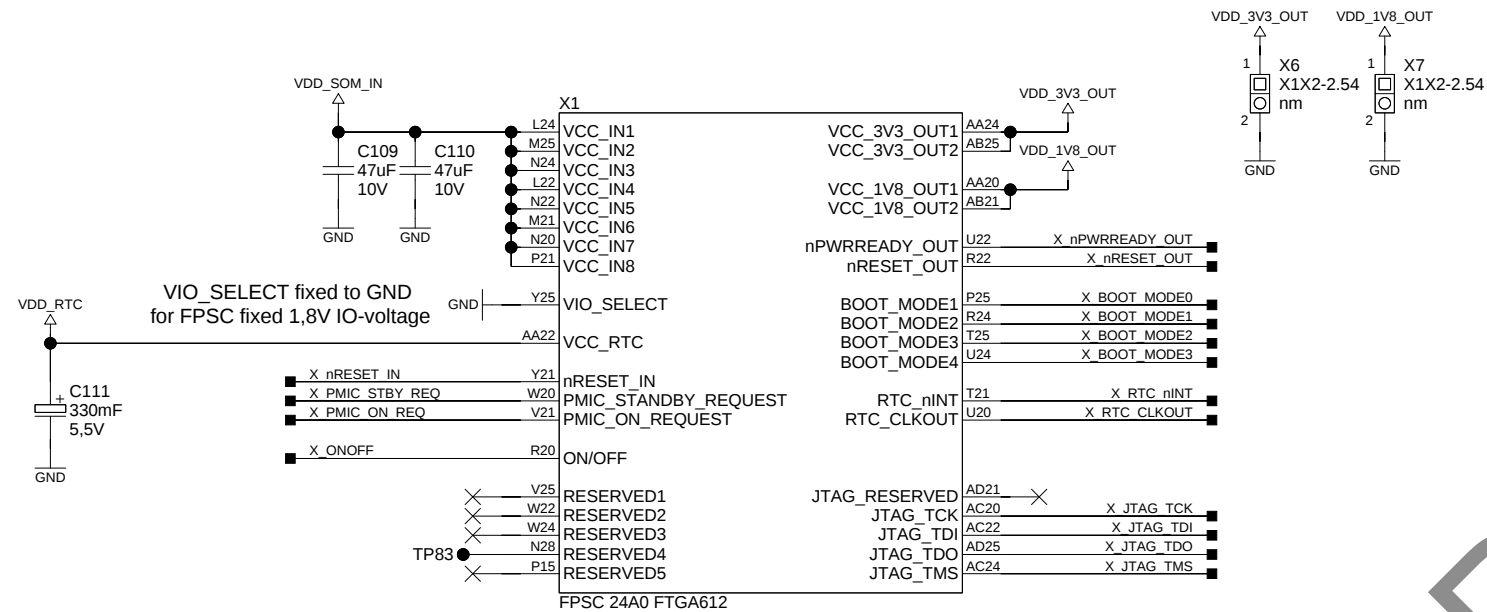
Switching Frequency	650 kHz
VDD_1V8 nominal	1,80 V
VDD_1V8 tolerance +	1,82 V
VDD_1V8 tolerance -	1,78 V



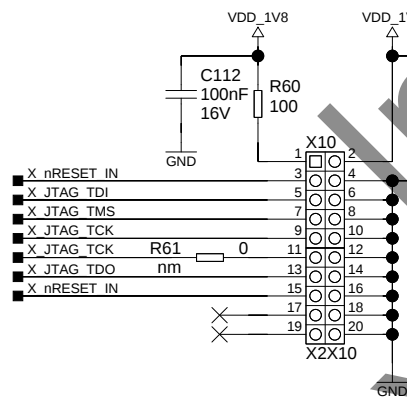
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Power SOM / Boot / Misc



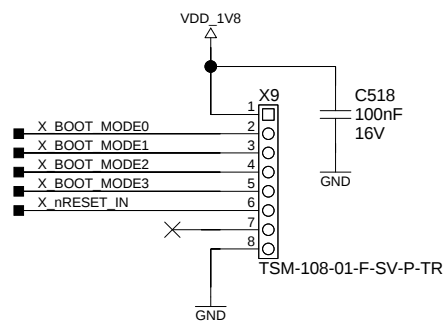
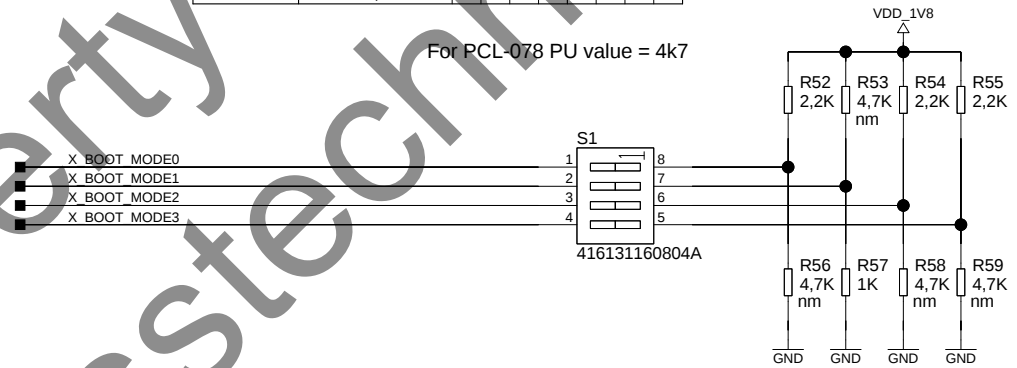
JTAG 1V8



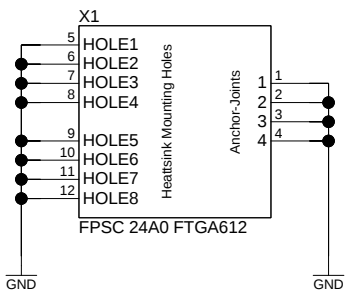
Boot switch

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	Boot location	BOOT_MODE				S1 switch no.			
		3	2	1	0	4	3	2	1
PCL-078	eMMC (SOM default)	0	0	1	0	0	0	0	0
	SD-Card (SD2)	0	0	1	1	0	0	0	1
	QSPI NOR	0	1	1	0	0	1	0	0
	USB serial download	0	0	0	1	0	0	1	1
	Fuse boot	0	0	0	0	0	0	1	0
PCL-079	JTAG mode	1	1	1	1	1	1	0	1
	eMMC (SOM default)	X	0	1	0	0	0	0	0
	SD-Card (SD2)	X	0	1	1	0	0	0	1
	QSPI NOR	X	1	0	0	0	0	1	0
	USB serial download	X	0	0	1	0	0	1	1
	Fuse boot	X	0	0	0	0	0	1	0
	M33 low power boot	X	X	X	X	1	0	0	0



SOM mechanical



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1

2

3

4

5

6

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A

B

C

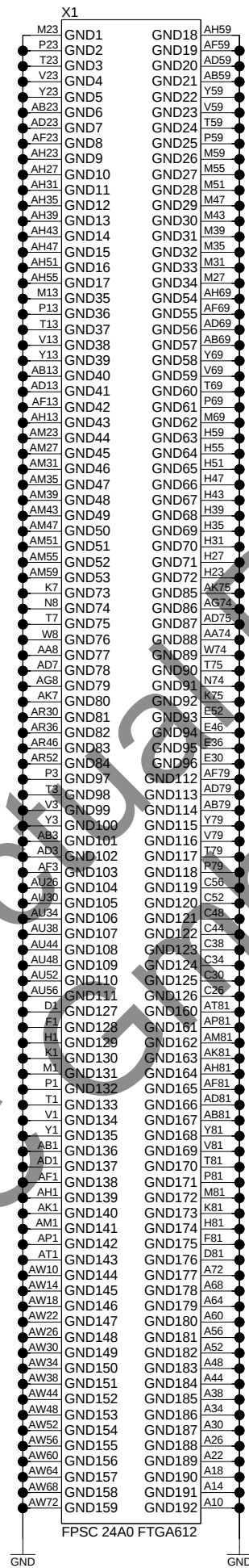
D

A

B

C

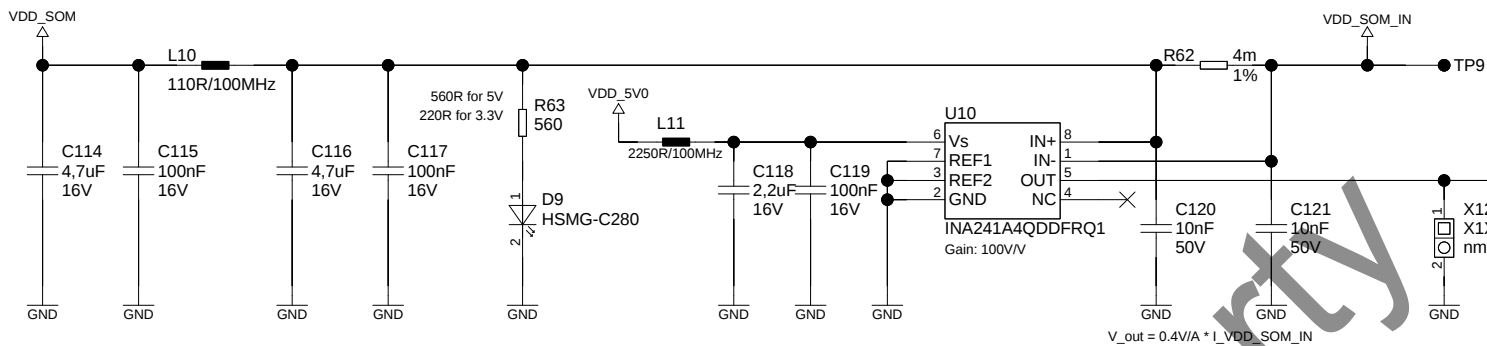
D



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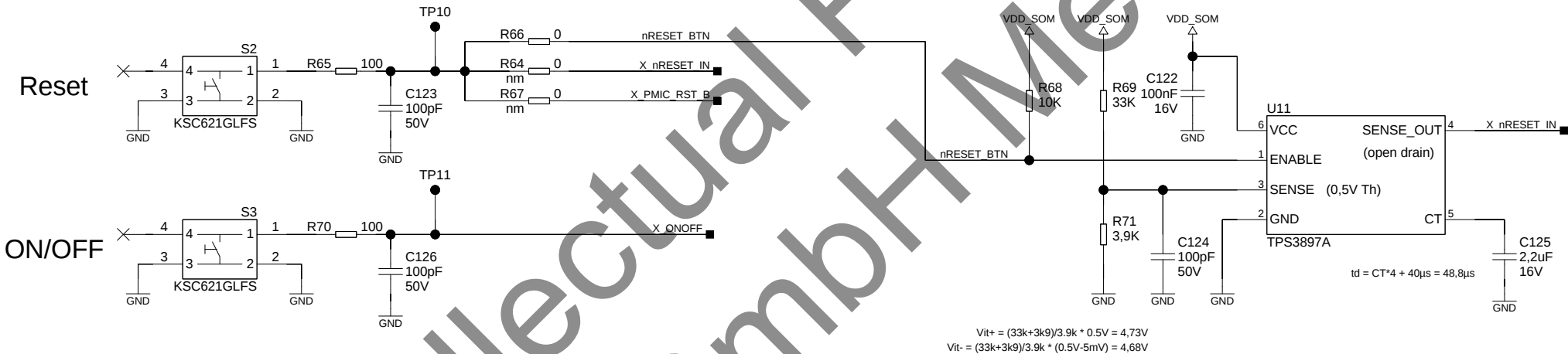
SOM voltage current measuring

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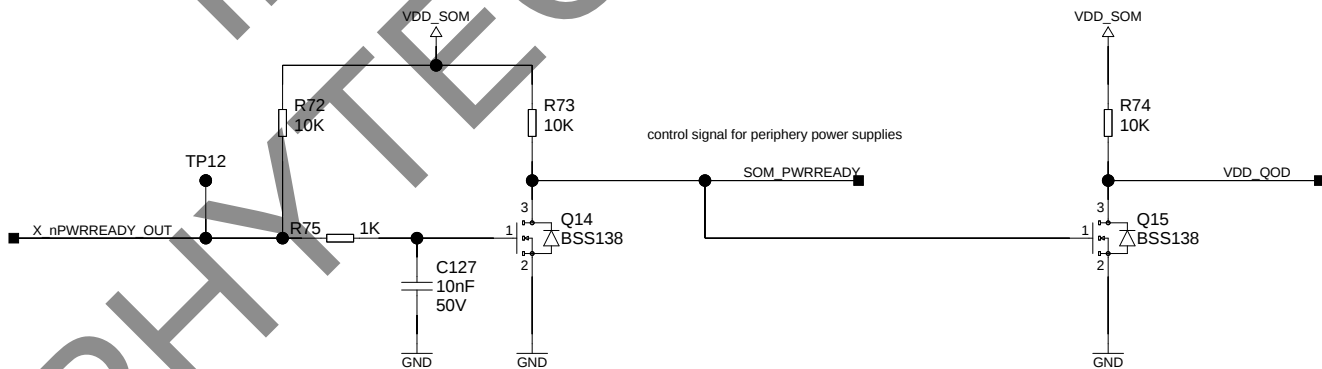


Buttons

Voltage Supervisor



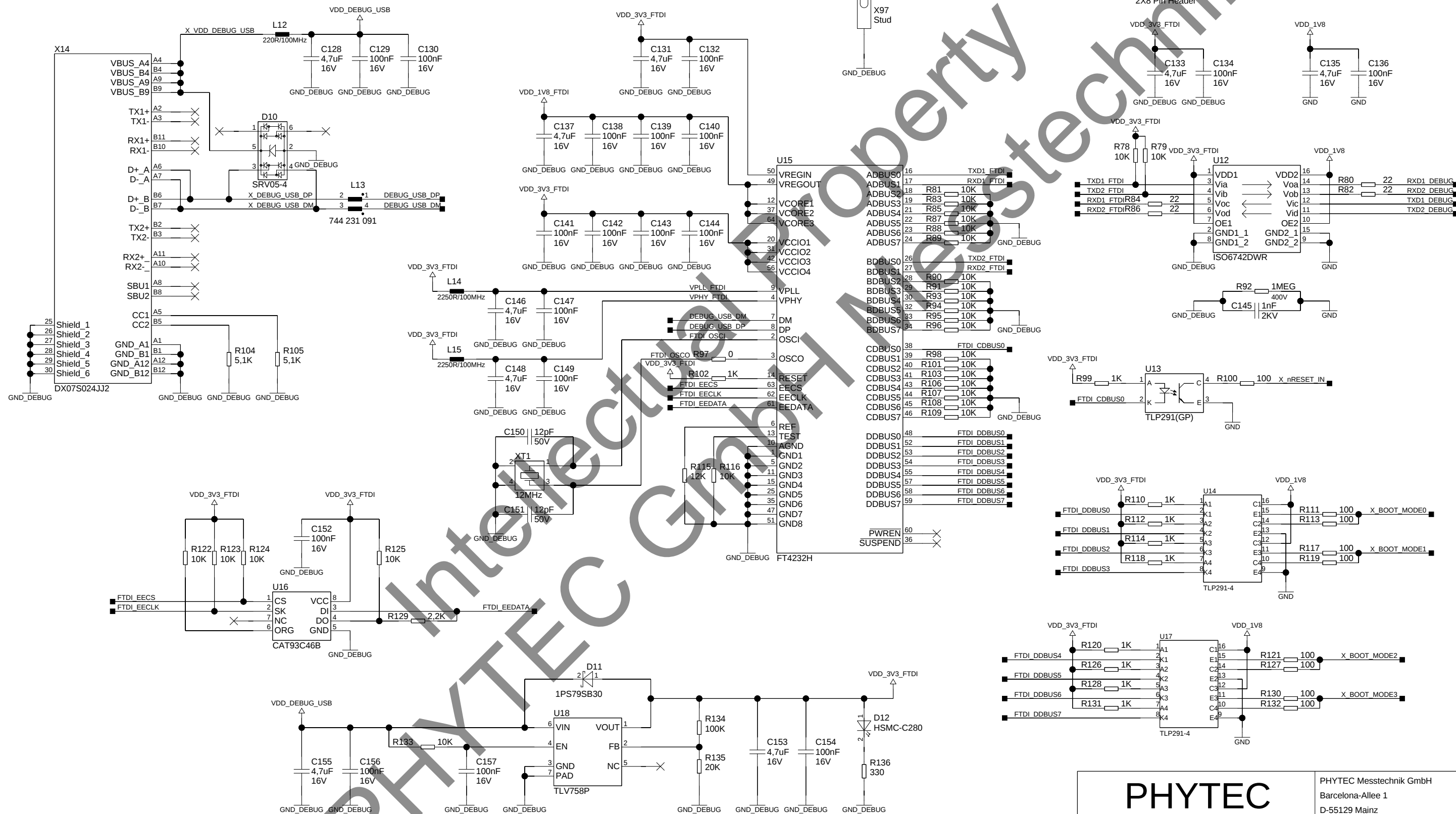
SOM voltage power ready signal



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USB Debug

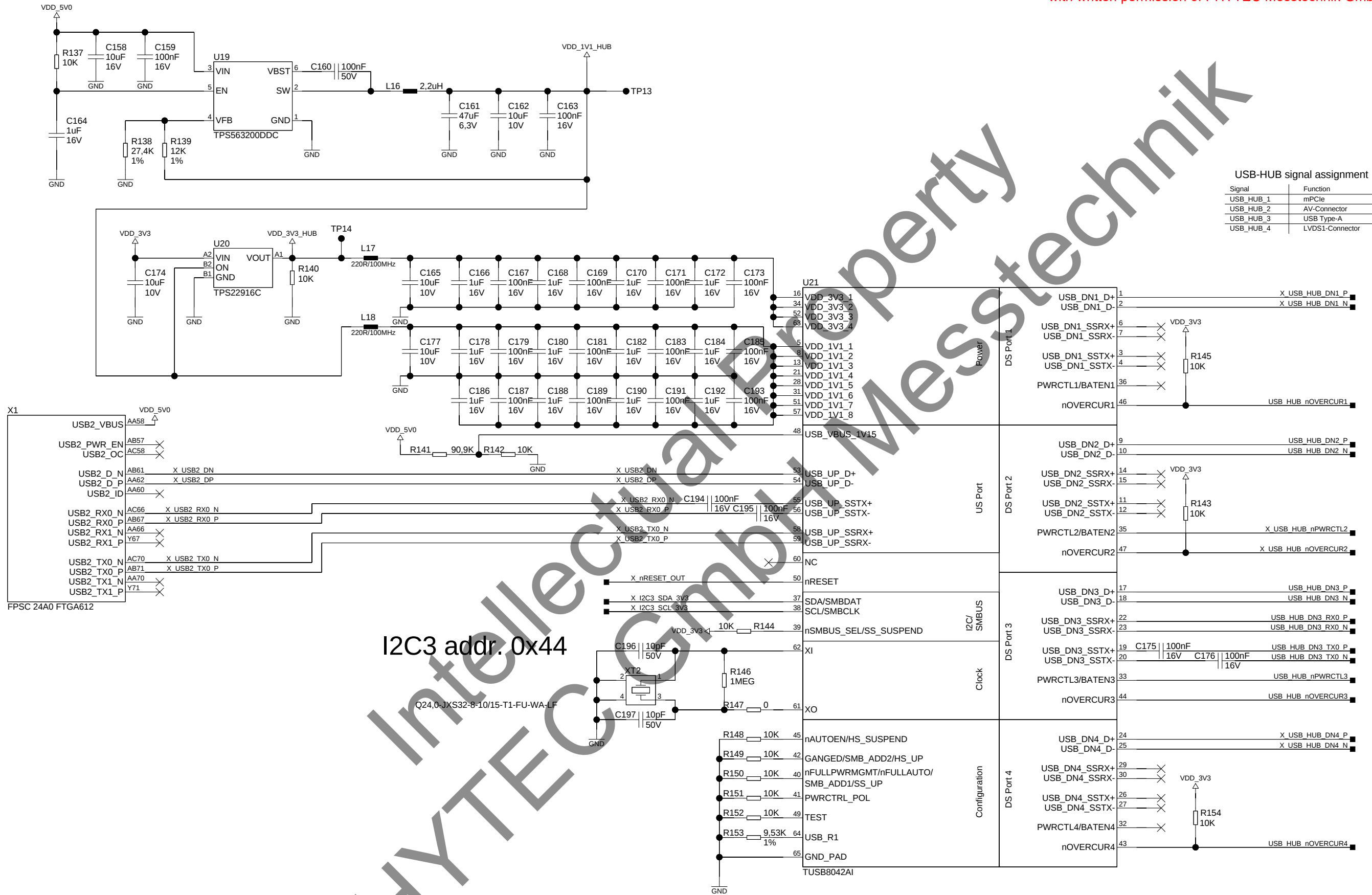
Channel 1: A55 debug
Channel 2: M7 or M33 debug



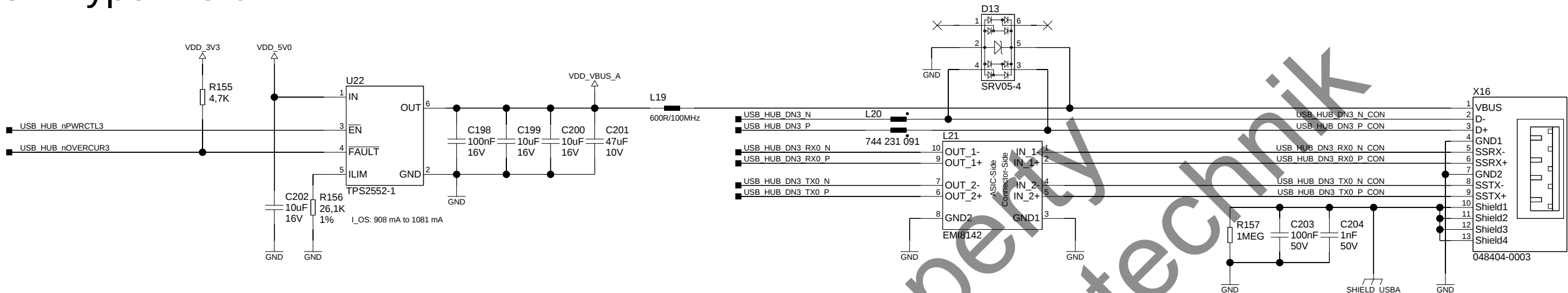
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USB Hub

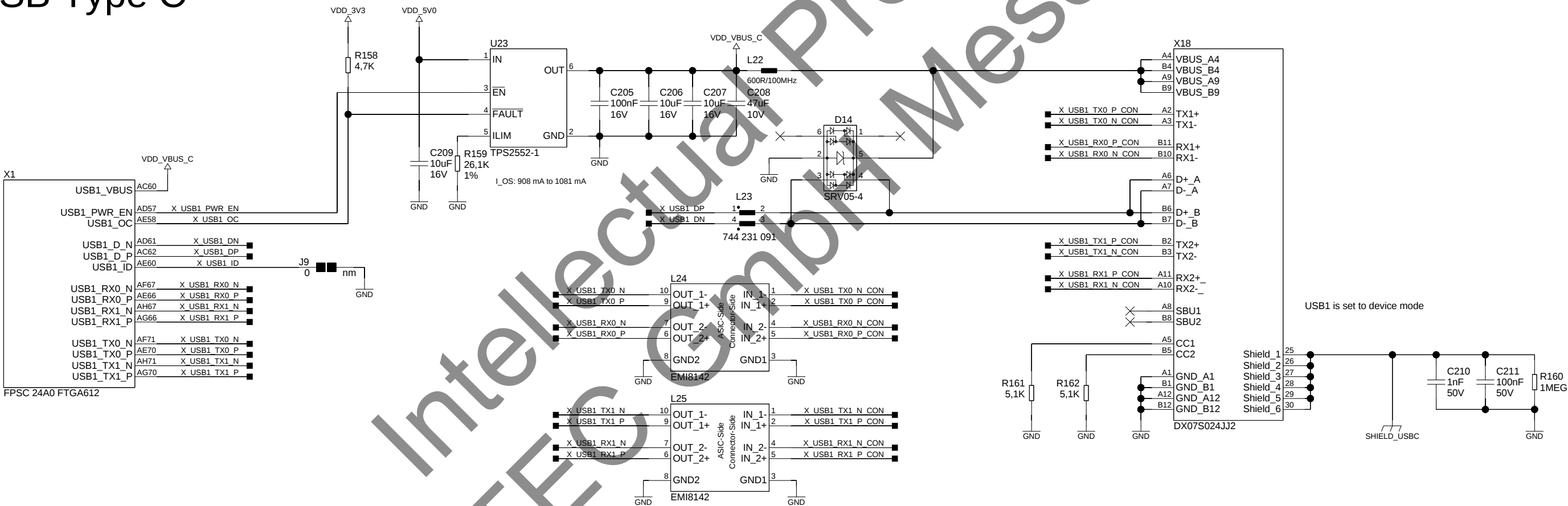
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USB Type A 3.0



USB Type C

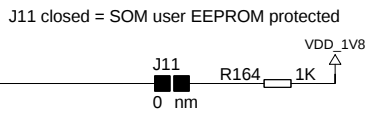
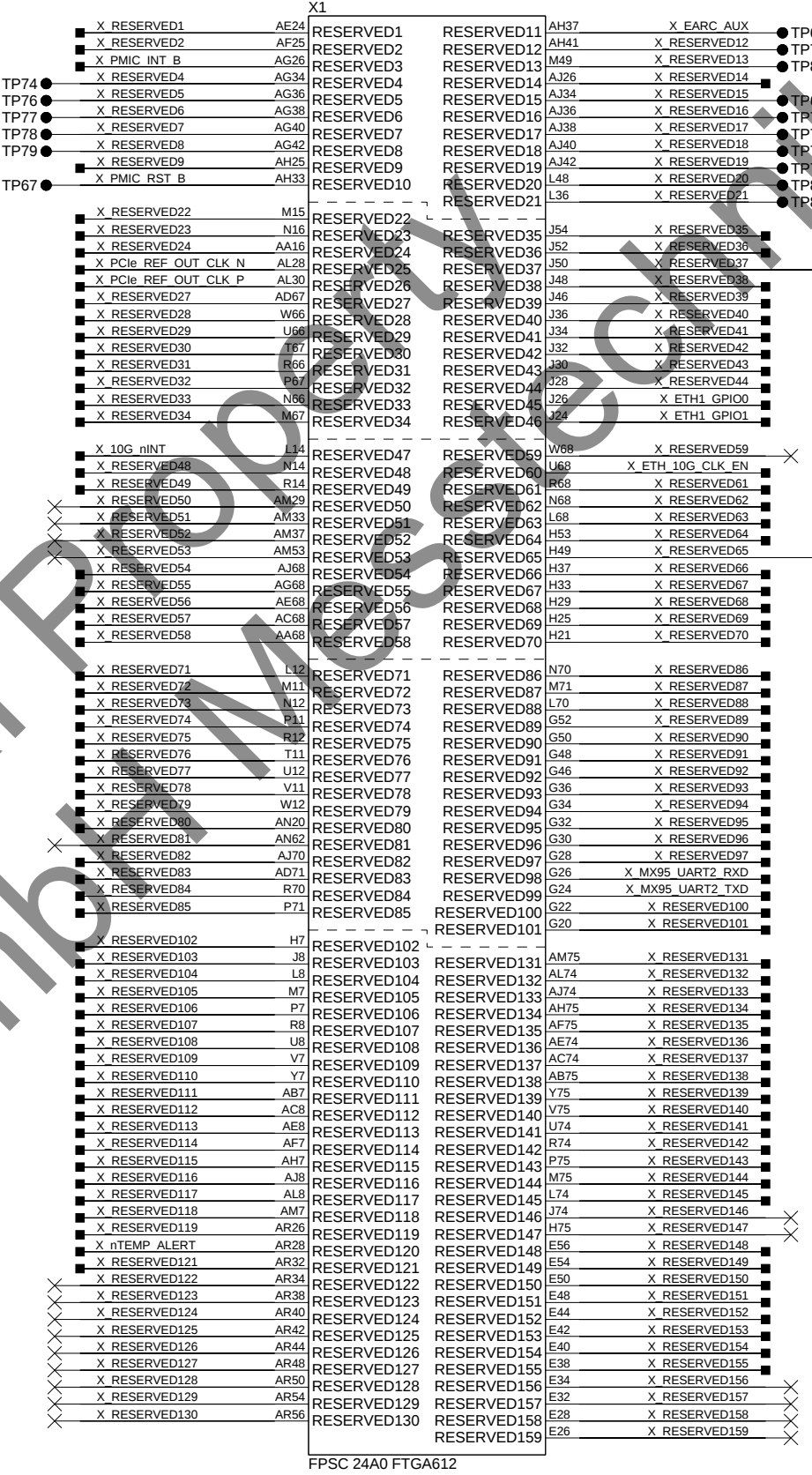
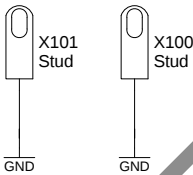
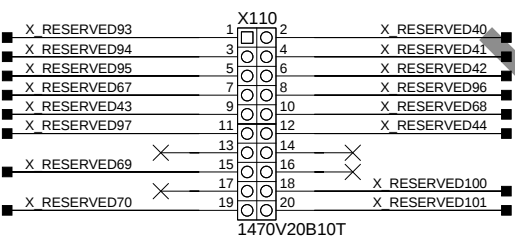
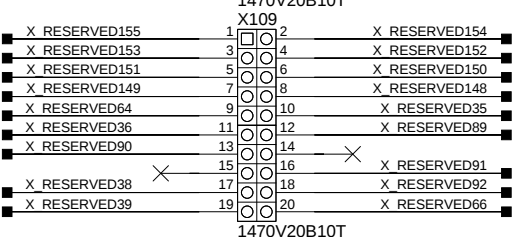
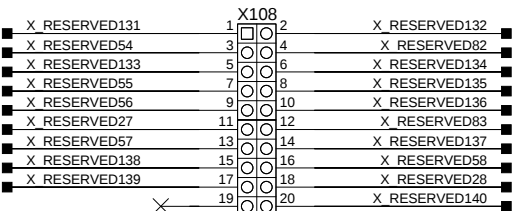
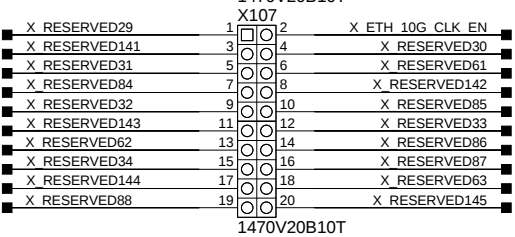
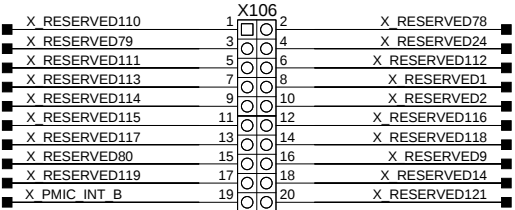
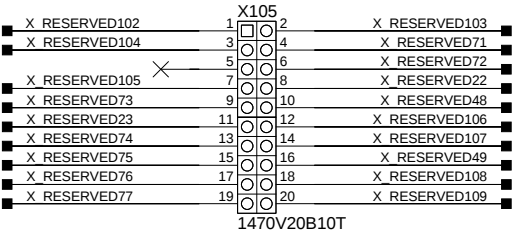


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FPSC reserved/test pins

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Reserved headers

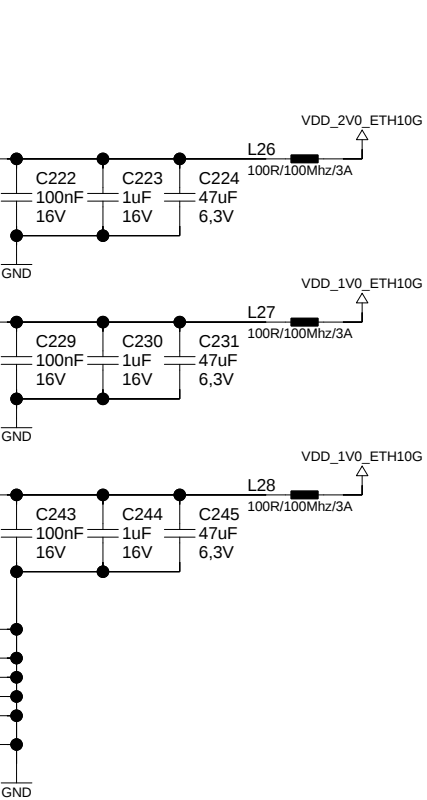
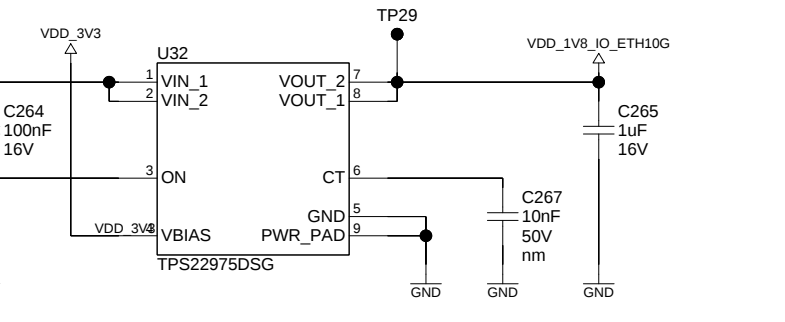
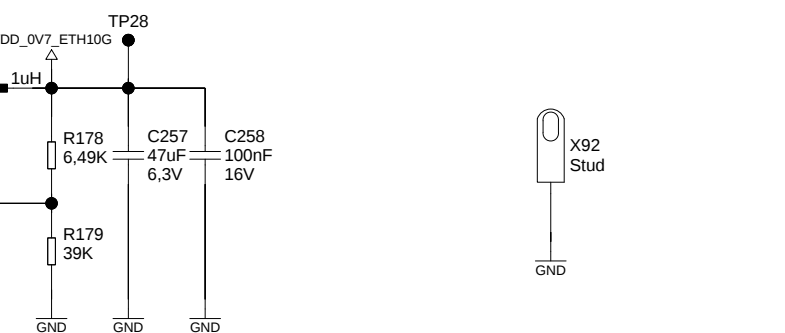
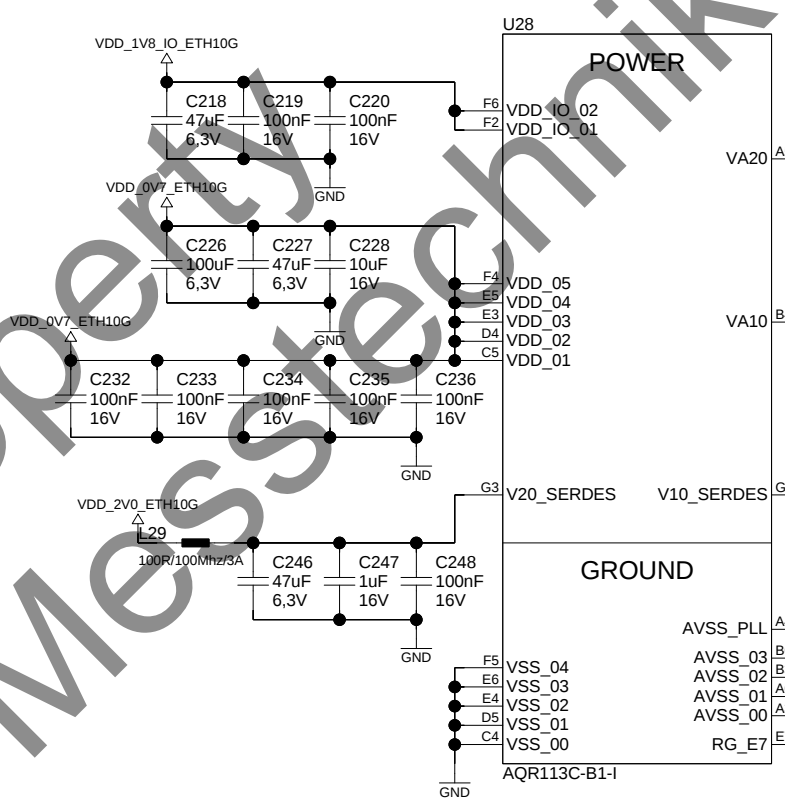
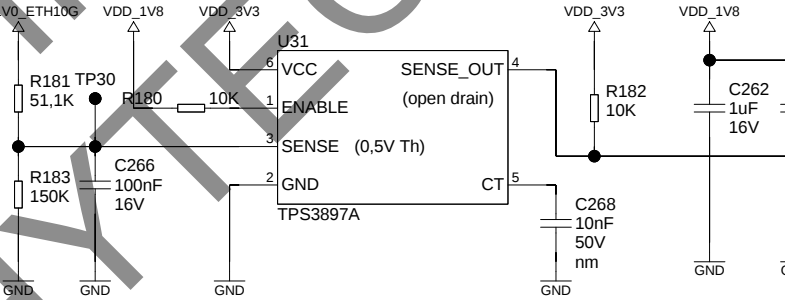
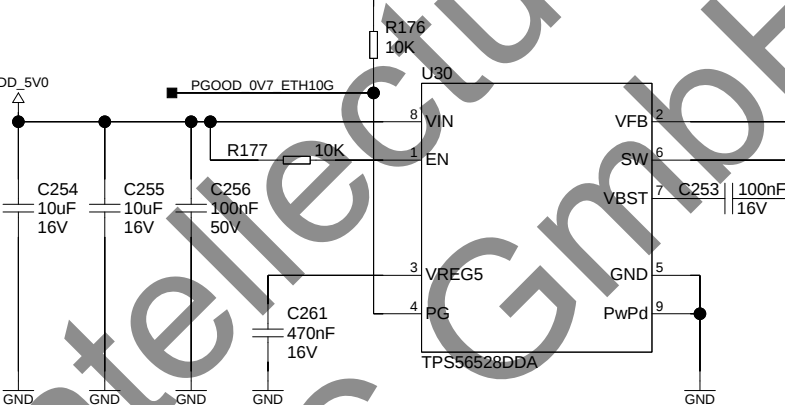
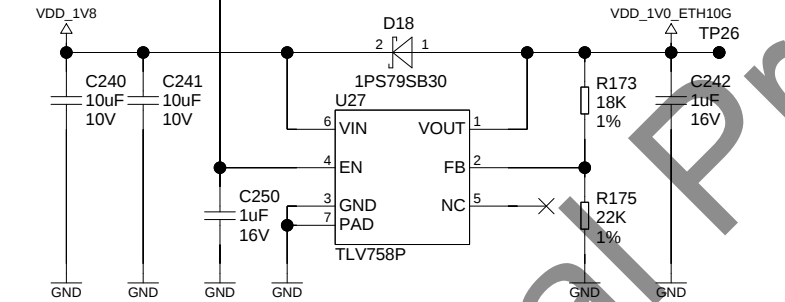
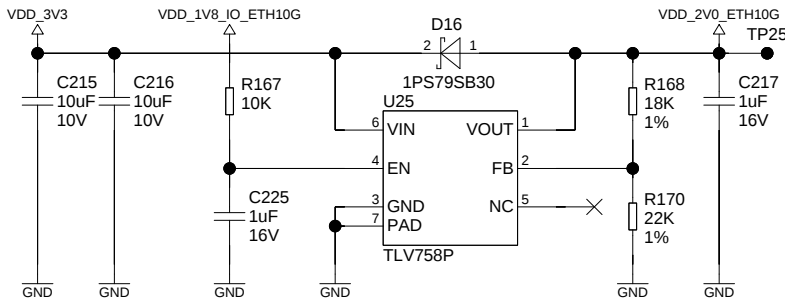
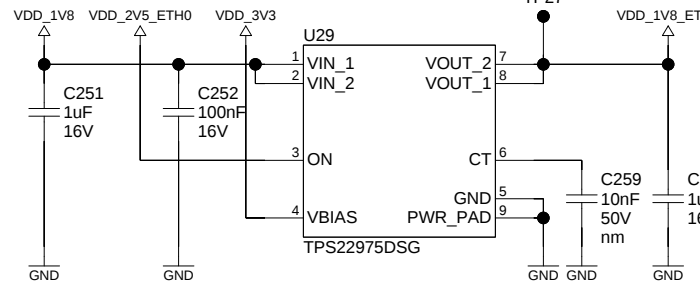
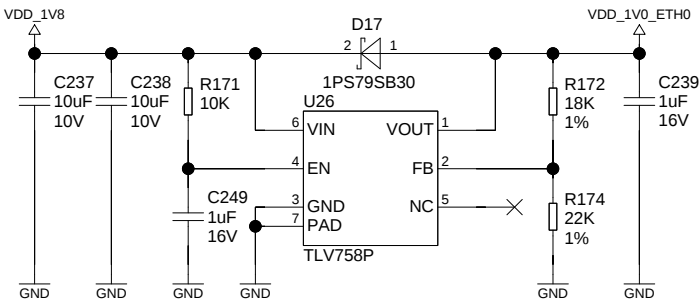
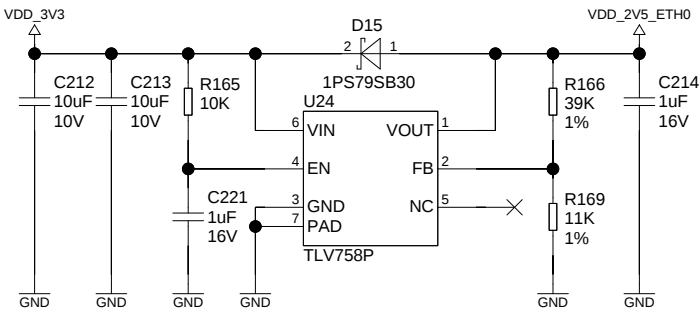


Gigabit ETH0

Power on sequence:
0V7 -> 1V0 -> IO -> 2V0

ETH10G

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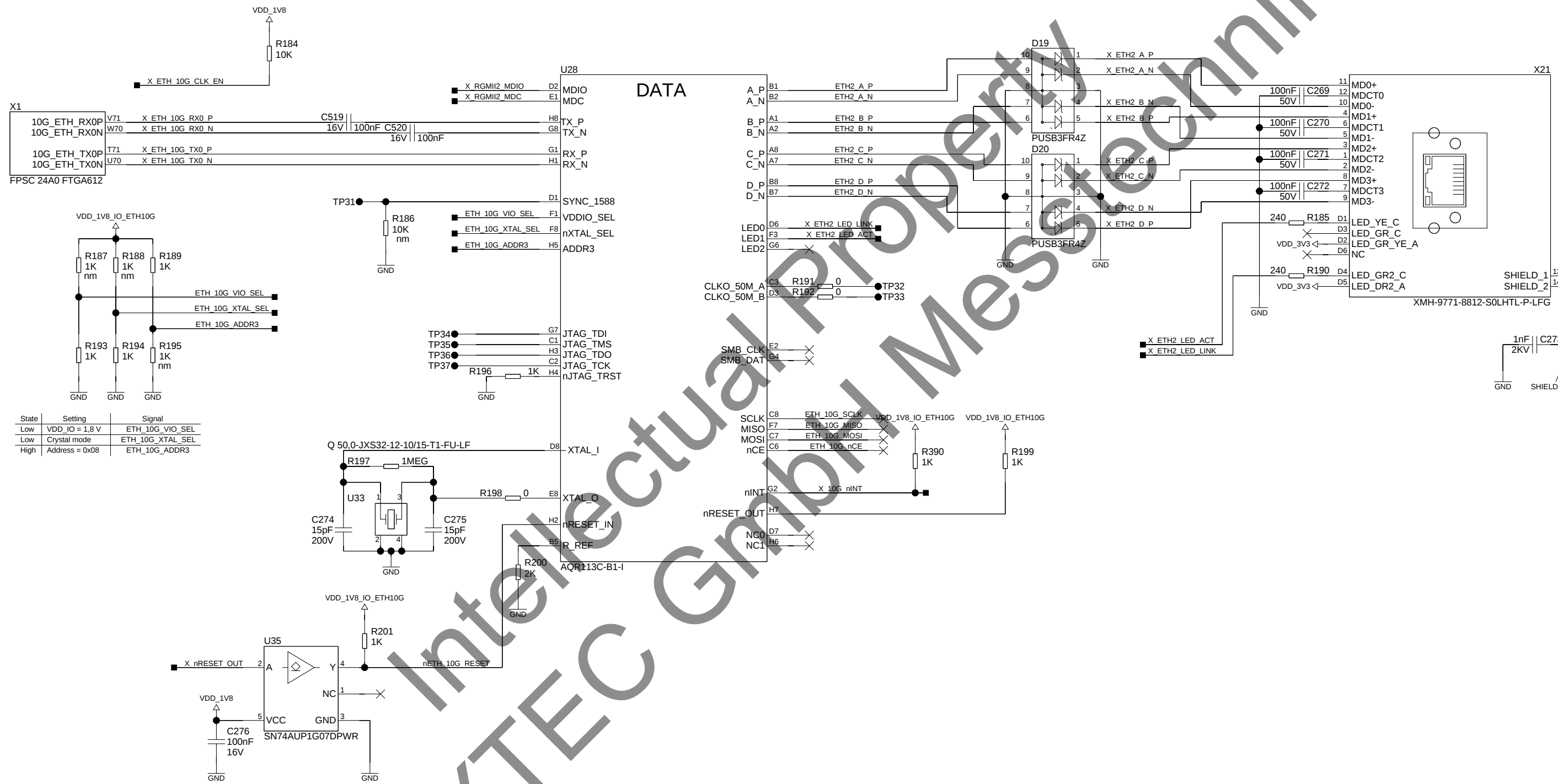
VDD_1V0_ETH10G threshold: 746 mV

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Ethernet 10G

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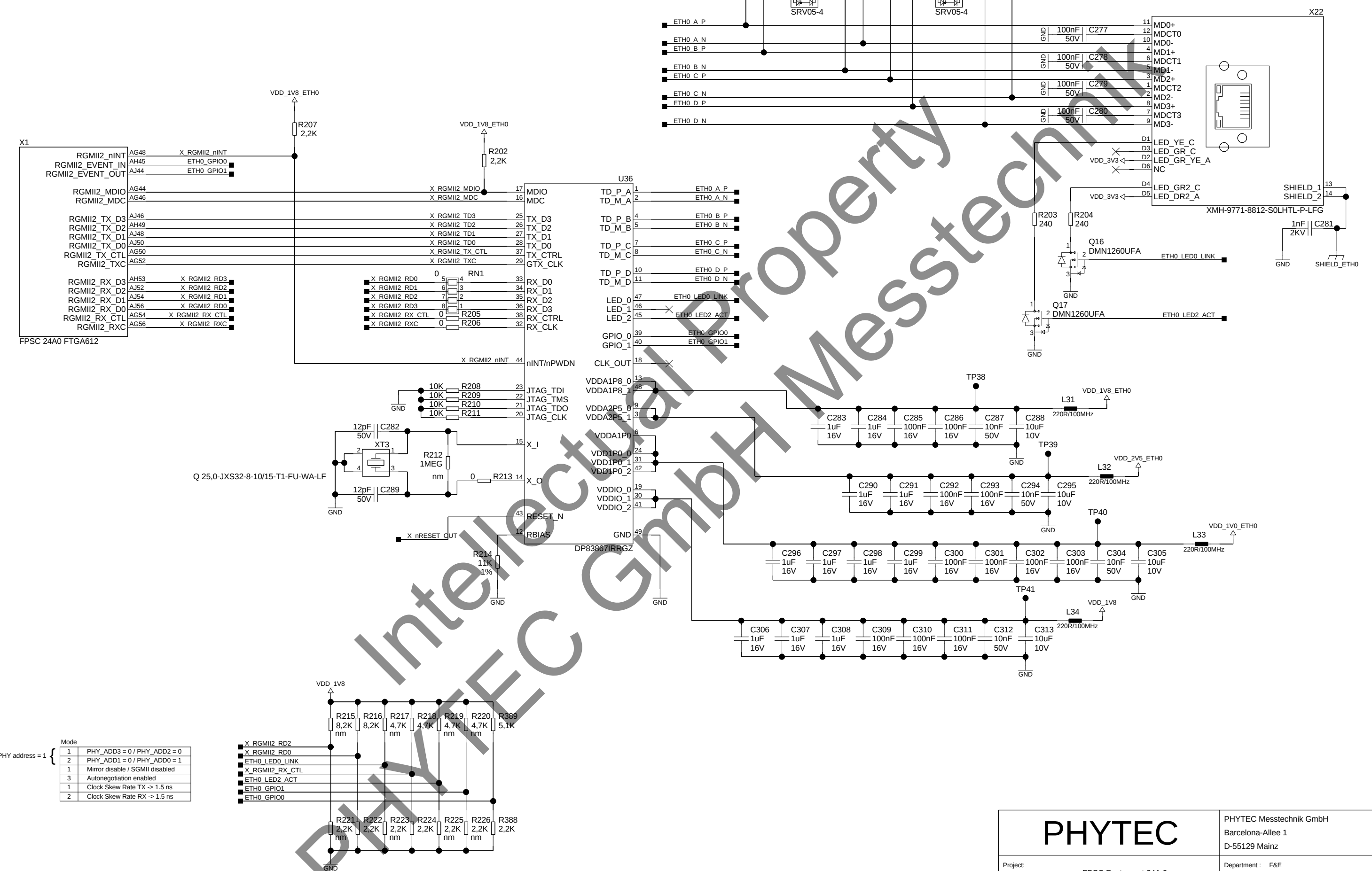


State	Setting	Signal
Low	VDD_IO = 1.8 V	ETH_10G_VIO_SEL
Low	Crystal mode	ETH_10G_XTAL_SEL
High	Address = 0x08	ETH_10G_ADDR3

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Ethernet0

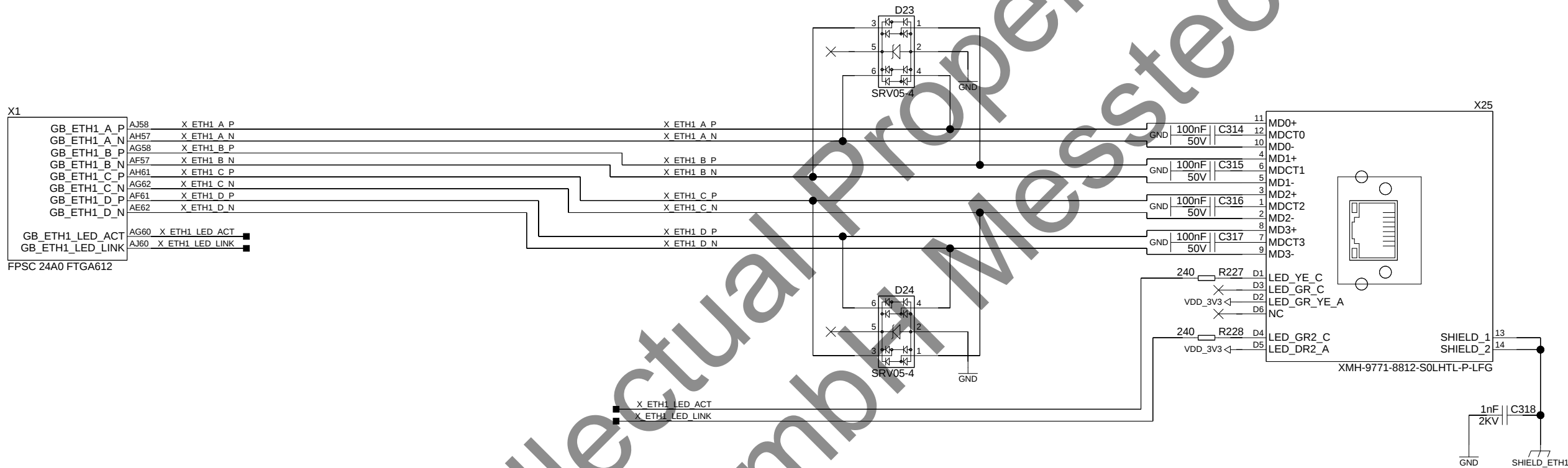
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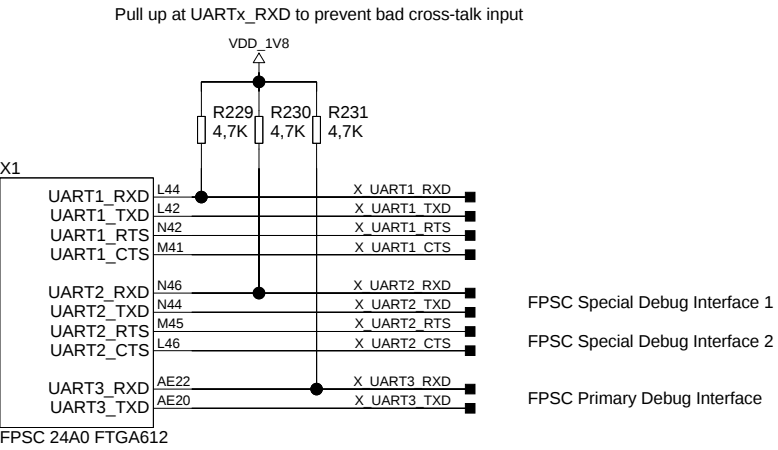
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Ethernet1

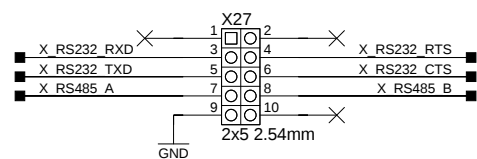
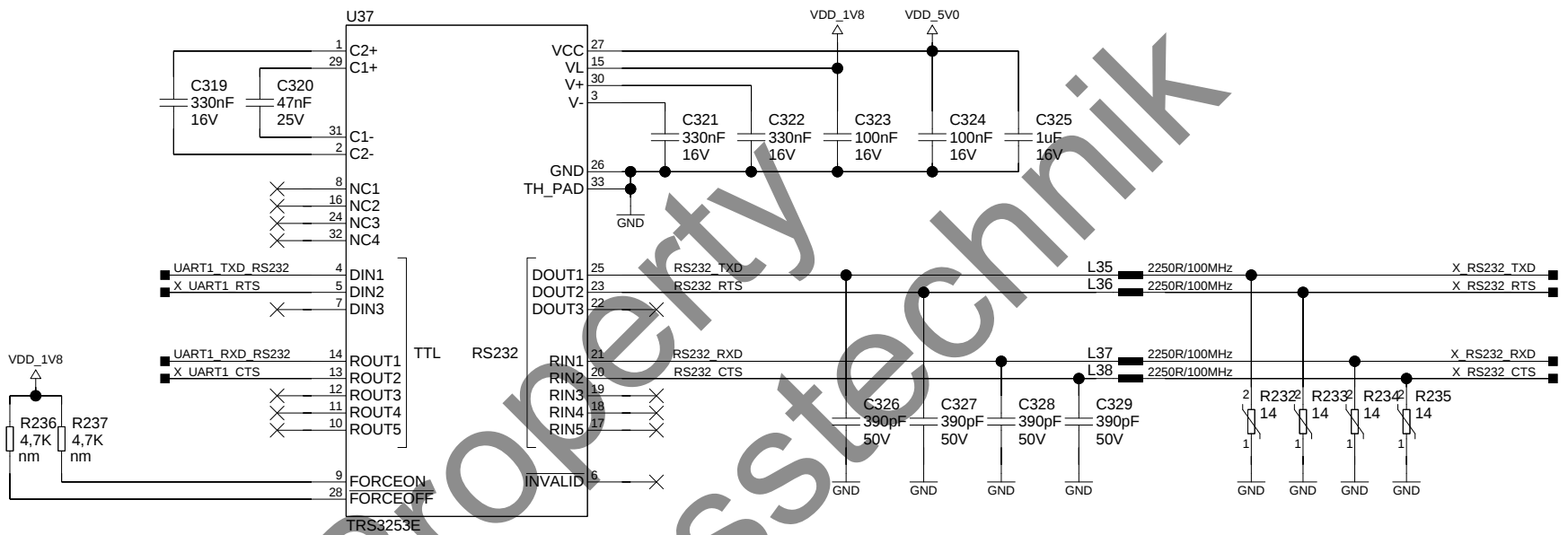
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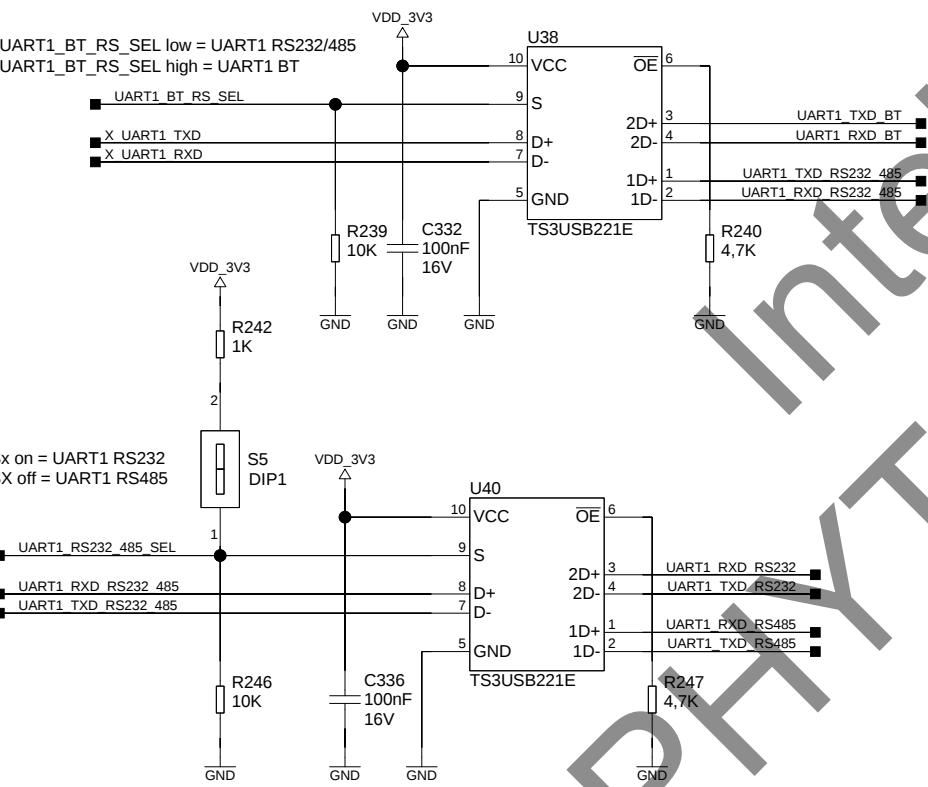
RS-232 / RS-485



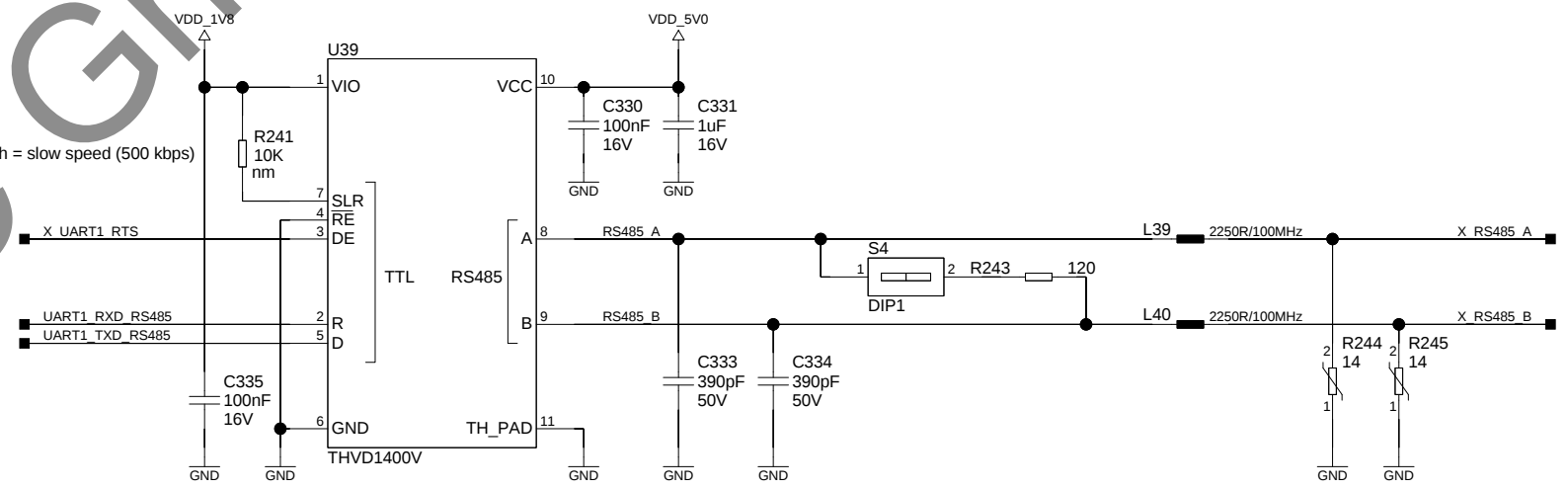
RS 232



UART1 routing

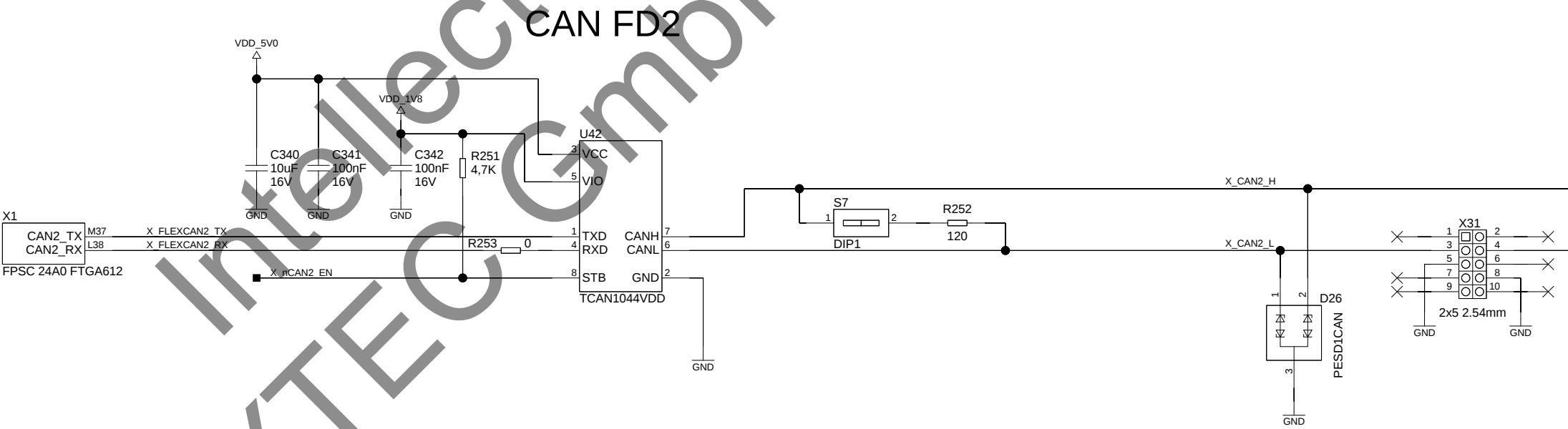
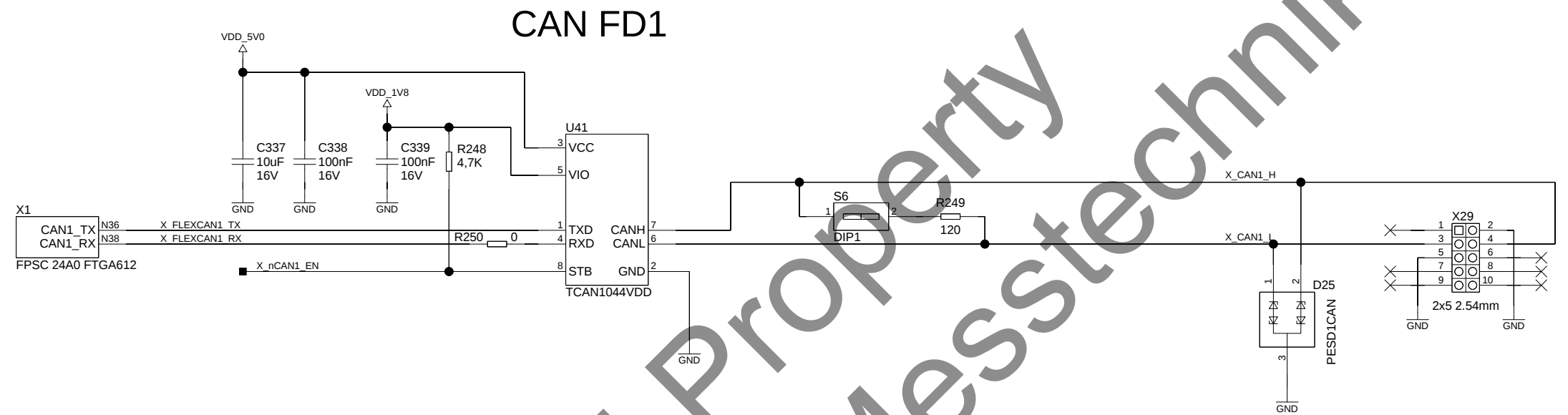


RS 485

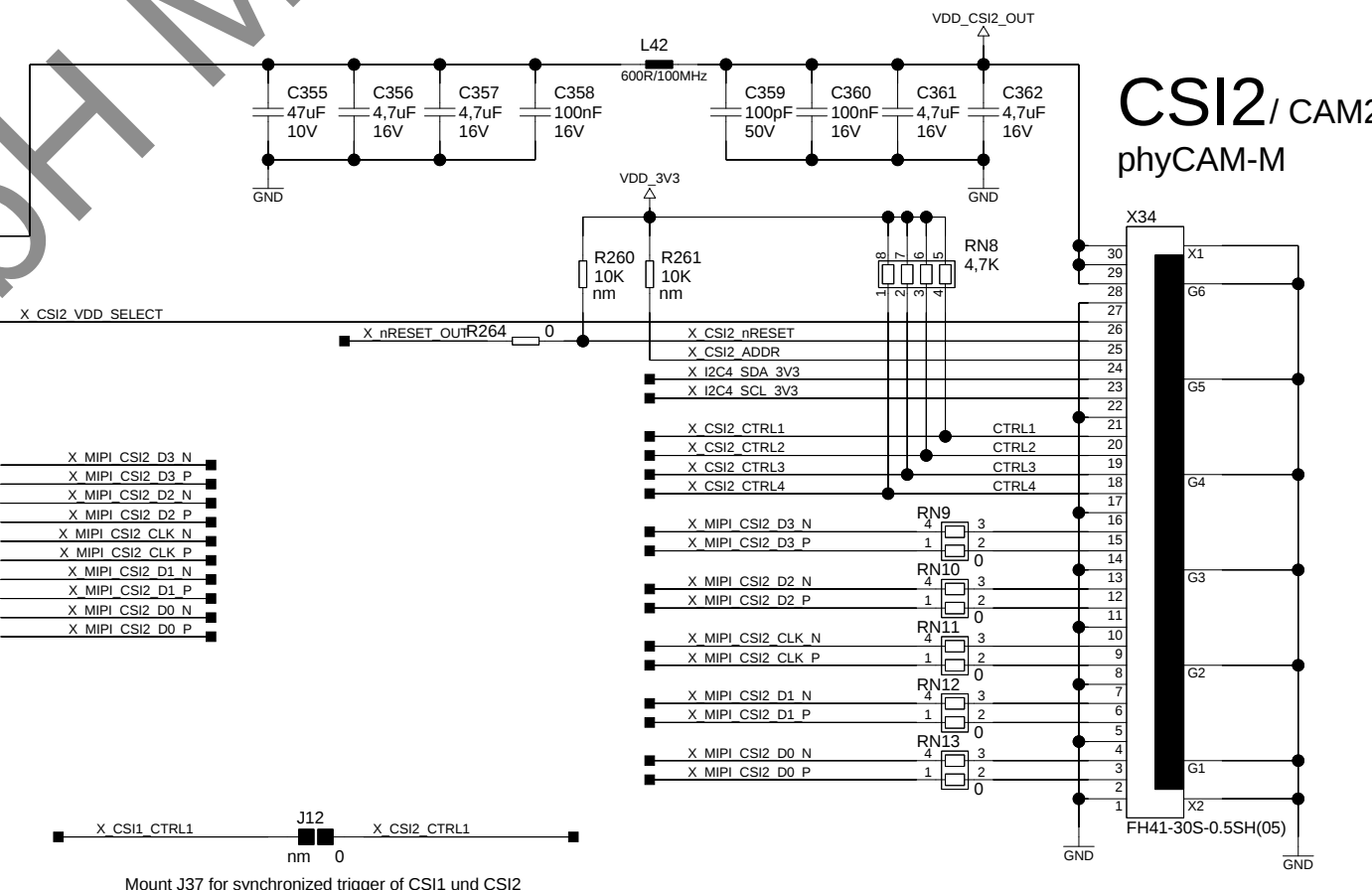
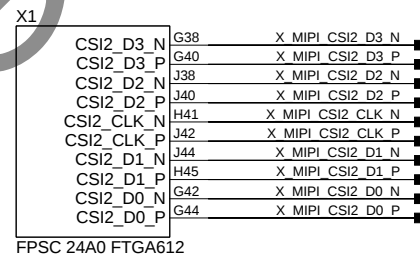
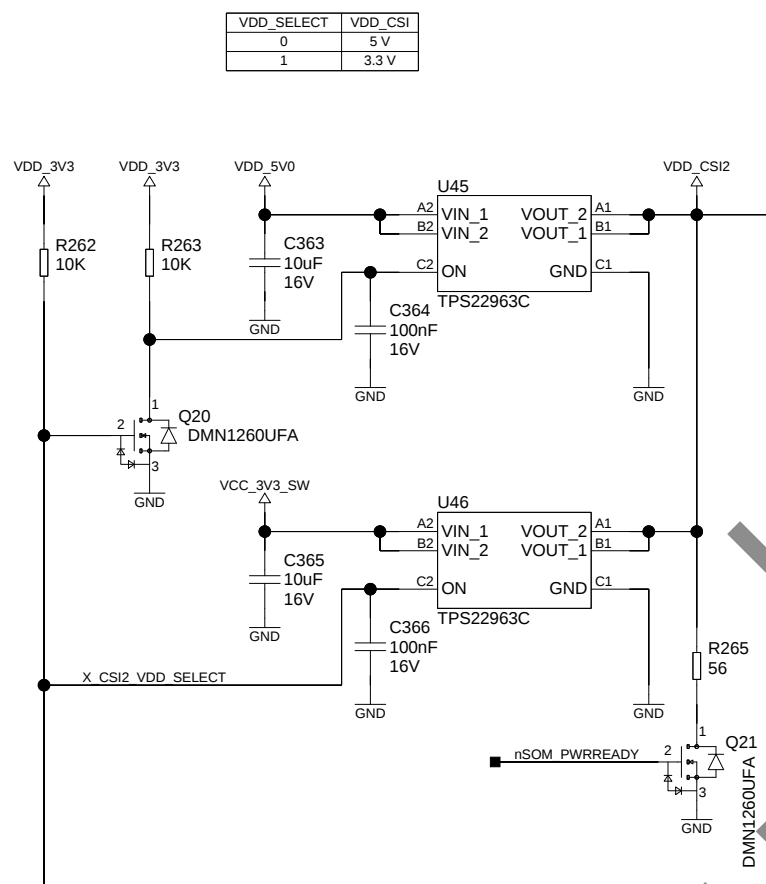
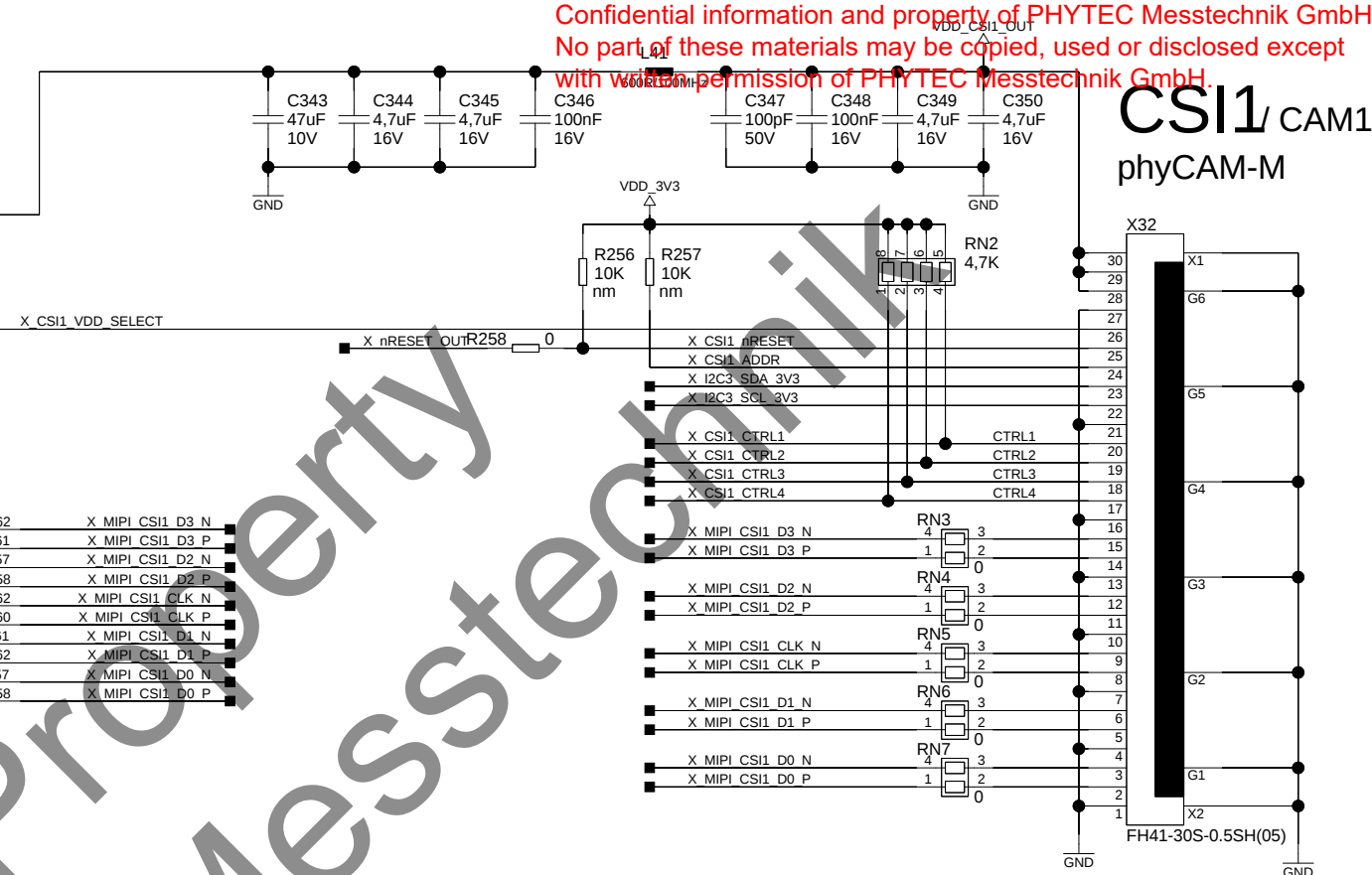
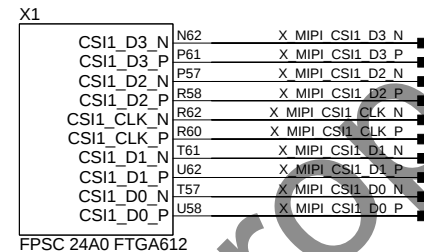
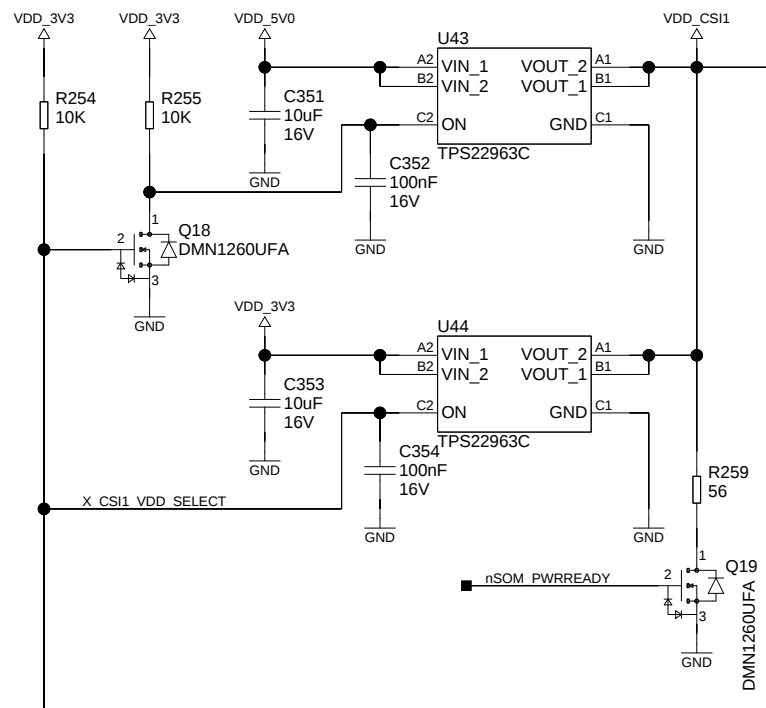


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Project: FPSC Featureset 24A.0		Department : F&E Author: M.Poschmann, T.Metz	
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CAN FD1/2



phyCAM-M



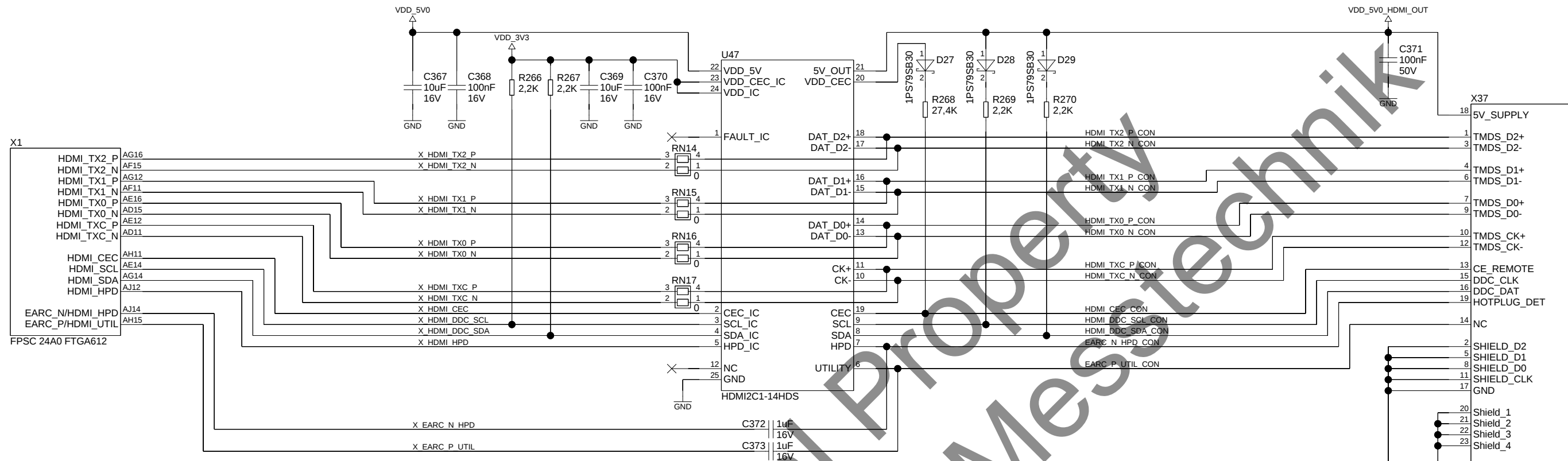
Mount J37 for synchronized trigger of CSI1 und CSI2

PHYTEC

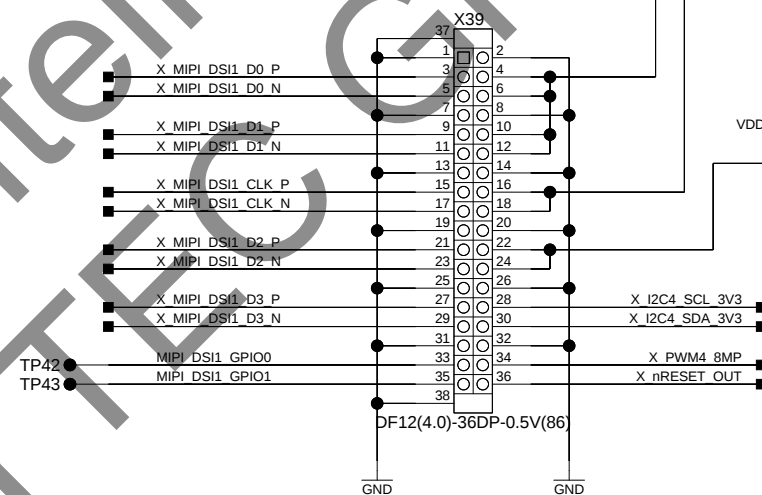
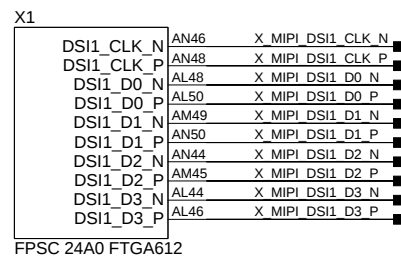
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Project:		Department : F&E	
FPSC Featureset 24A.0		Author: M.Poschmann, T.Metz	
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HDMI



MIPI-DSI

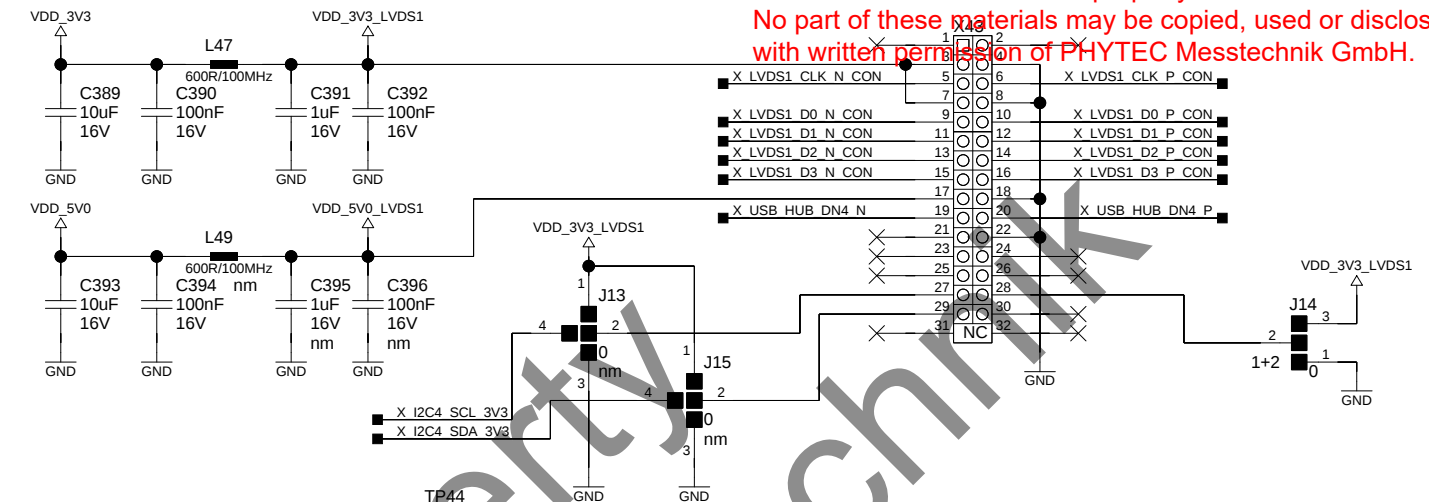
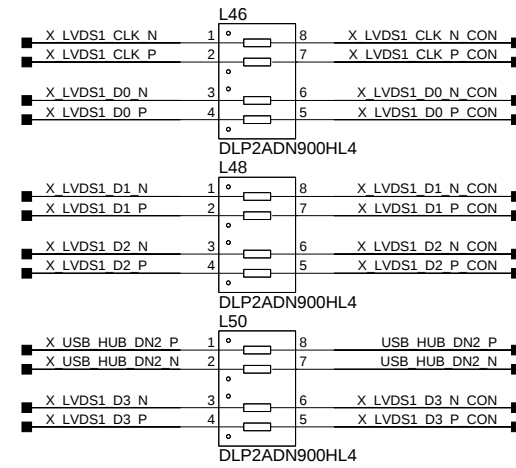


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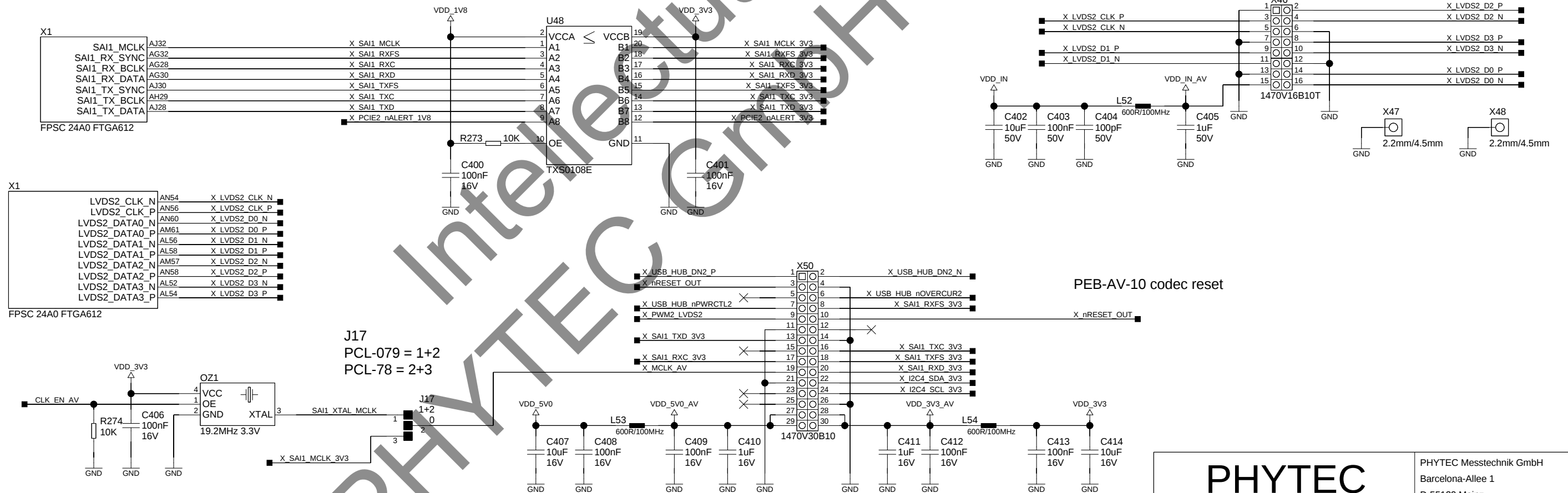
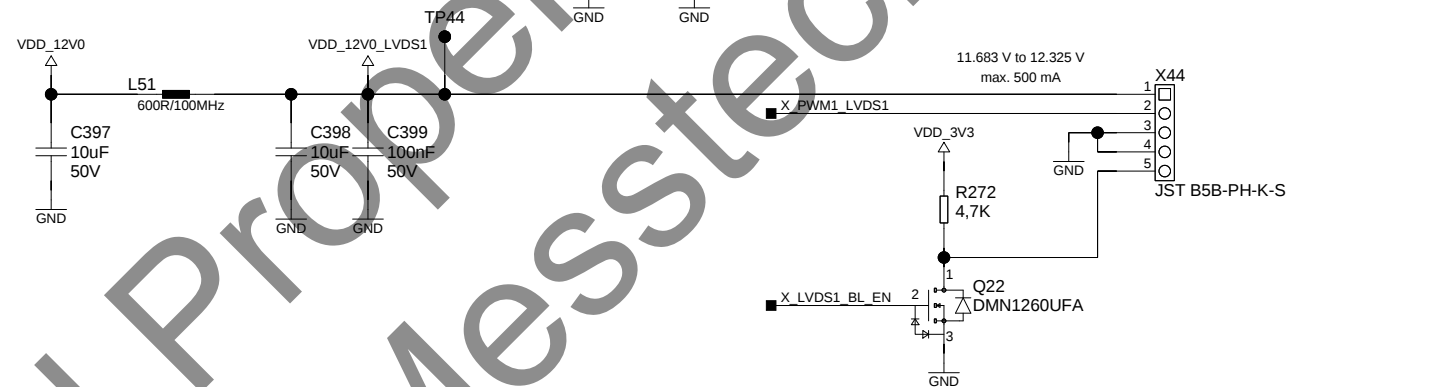
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Project: FPSC Featureset 24A.0	Department : F&E Author: M.Poschmann, T.Metz
27.11.2024	PCB-No.: 1618.1
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LVDSD1_CLK_N	N52	X	LVDSD1_CLK_N	
LVDSD1_CLK_P	N50	X	LVDSD1_CLK_P	
LVDSD1_DATA0_N	L52	X	LVDSD1_D0_N	
LVDSD1_DATA0_P	L50	X	LVDSD1_D0_P	
LVDSD1_DATA1_N	L54	X	LVDSD1_D1_N	
LVDSD1_DATA1_P	M53	X	LVDSD1_D1_P	
LVDSD1_DATA2_N	N56	X	LVDSD1_D2_N	
LVDSD1_DATA2_P	N54	X	LVDSD1_D2_P	
LVDSD1_DATA3_N	M57	X	LVDSD1_D3_N	
LVDSD1_DATA3_P	L56	X	LVDSD1_D3_P	

SC 24A0 FTGA612



AV-Connector



J17
PCL-079 = 1+2
PCL-78 = 2+3

PEB-AV-10 codec reset

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Project:	FPSC Featureset 24A.0
----------	-----------------------

Department : F&E
Author: M.Poschmann, T.Metz

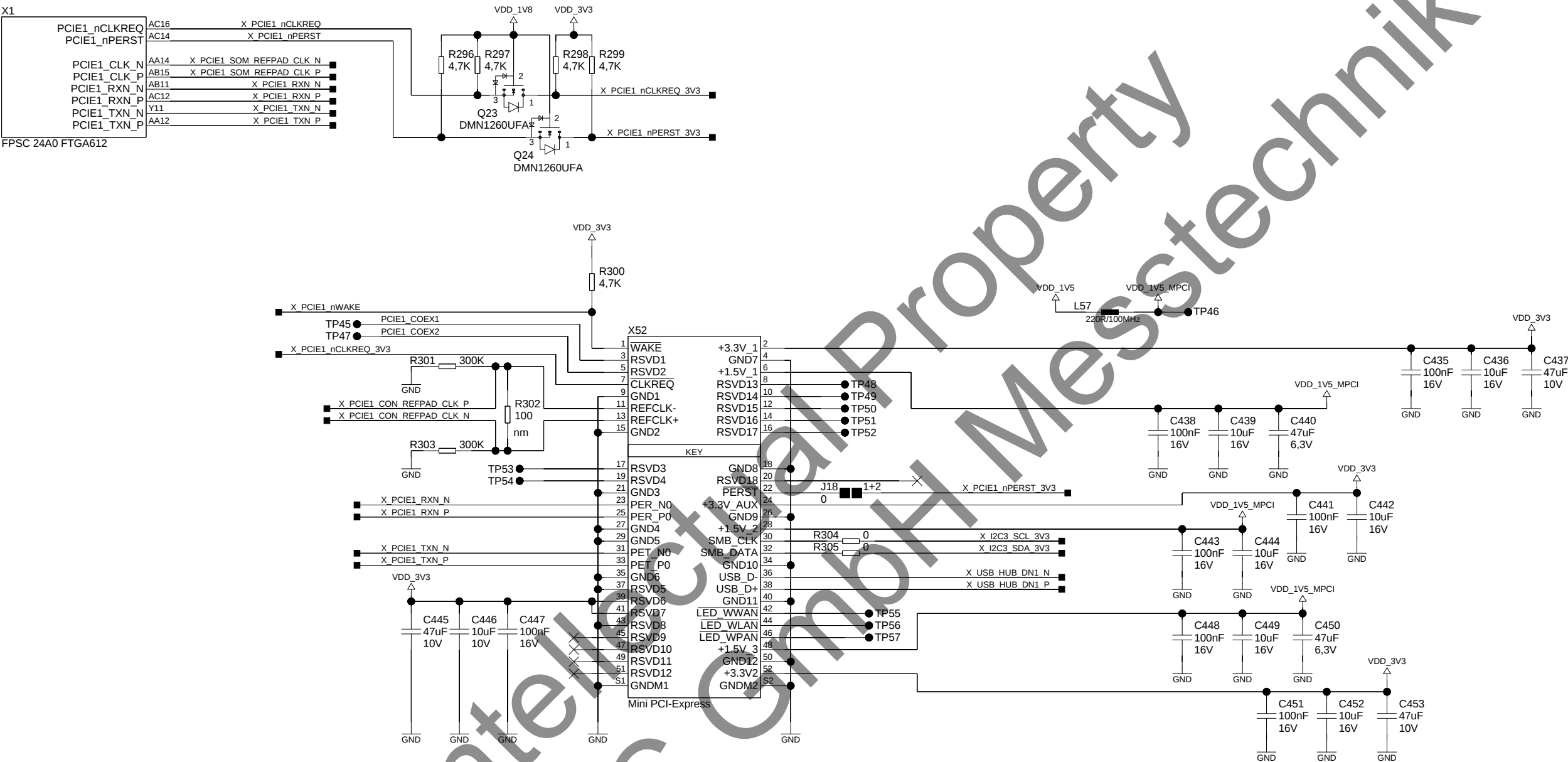
27.11.2024

PCB-No.:	1618.1
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Revision : 002

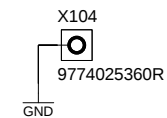
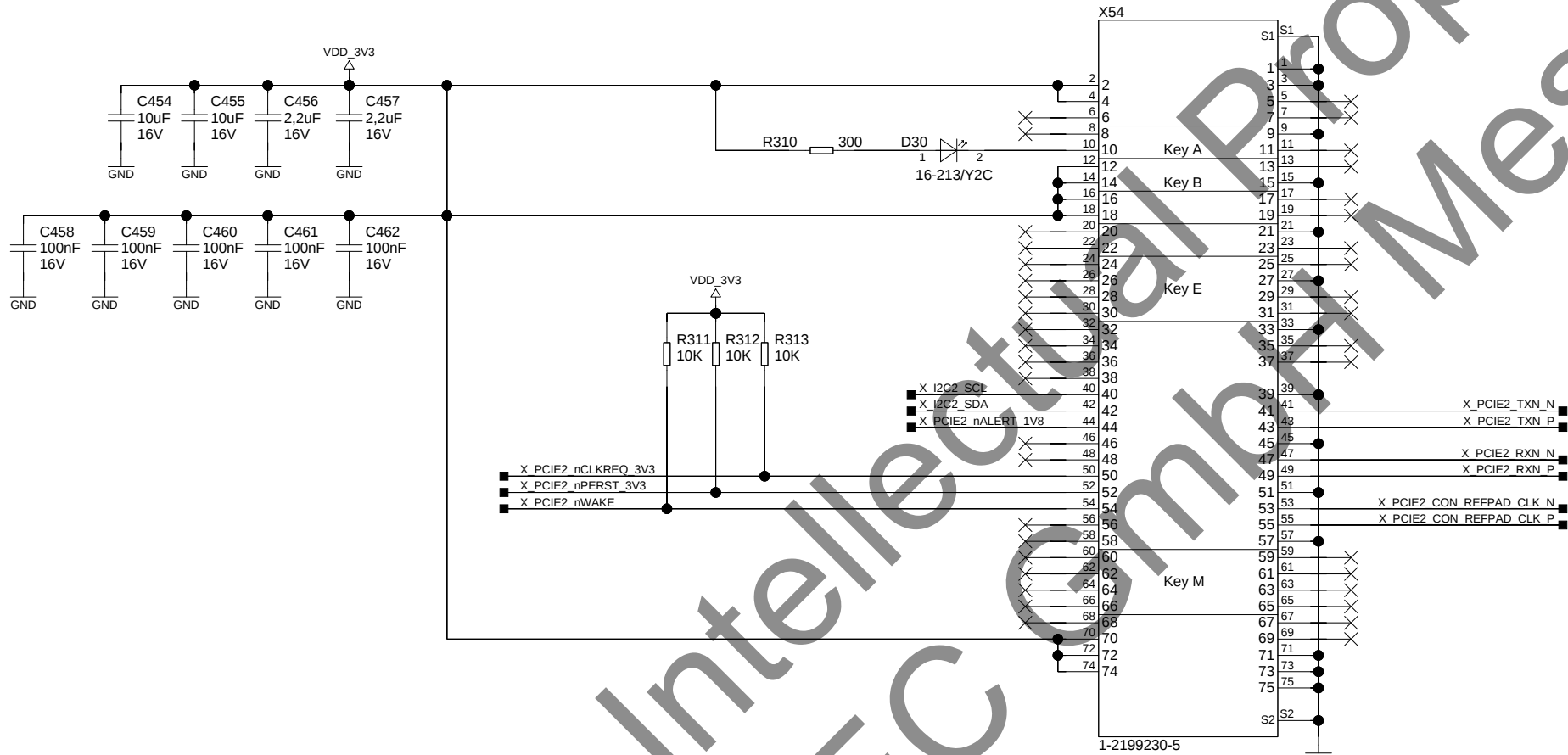
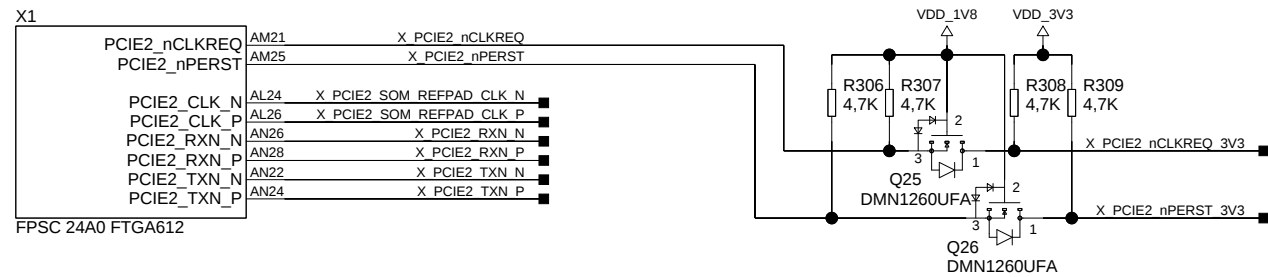
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Mini PCIe



M.2 Key M

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Project:
FPSC Featureset 24A.0

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27.11.2024

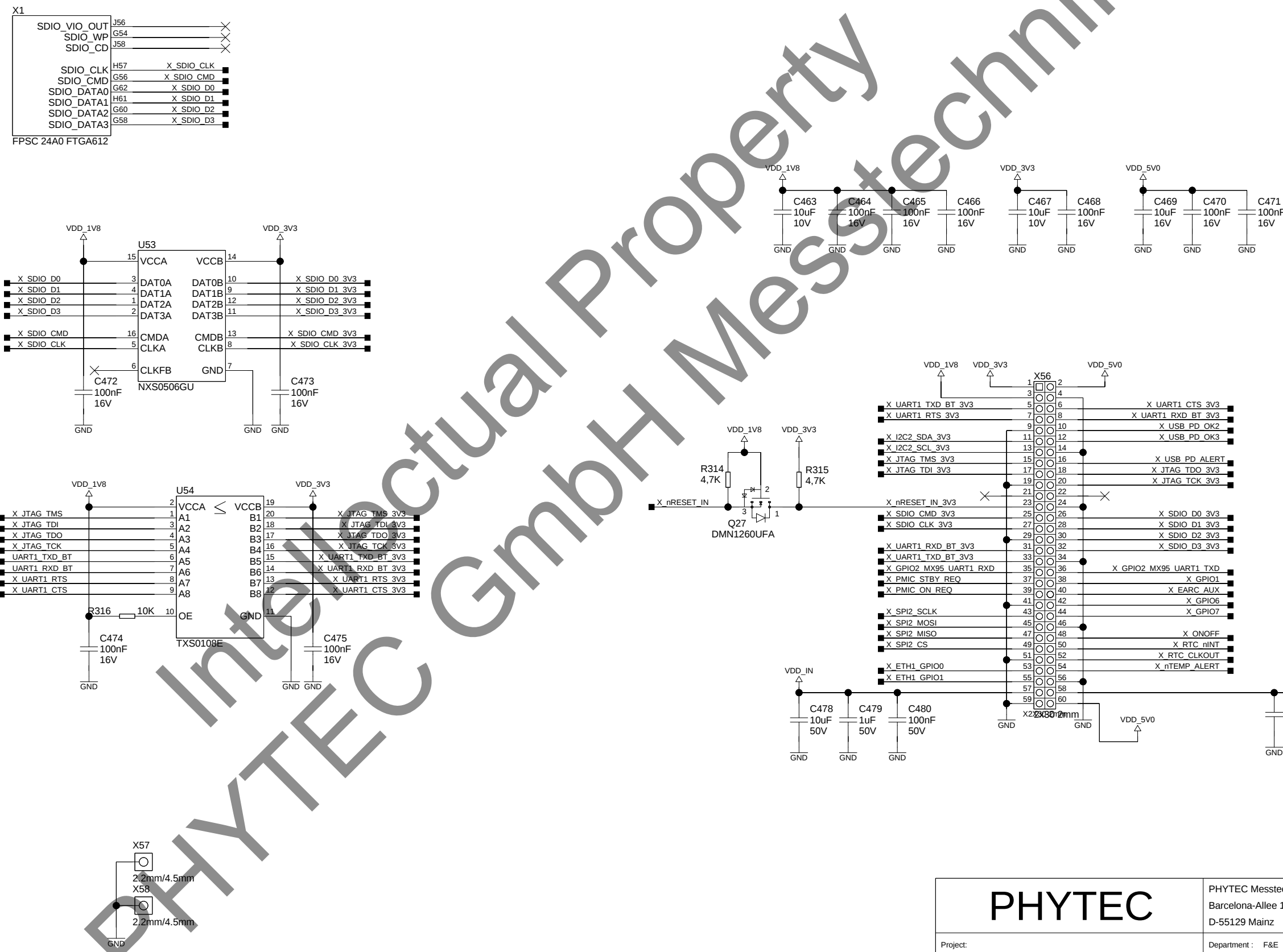
PCB-No.: 1618.1

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Expansion Connector

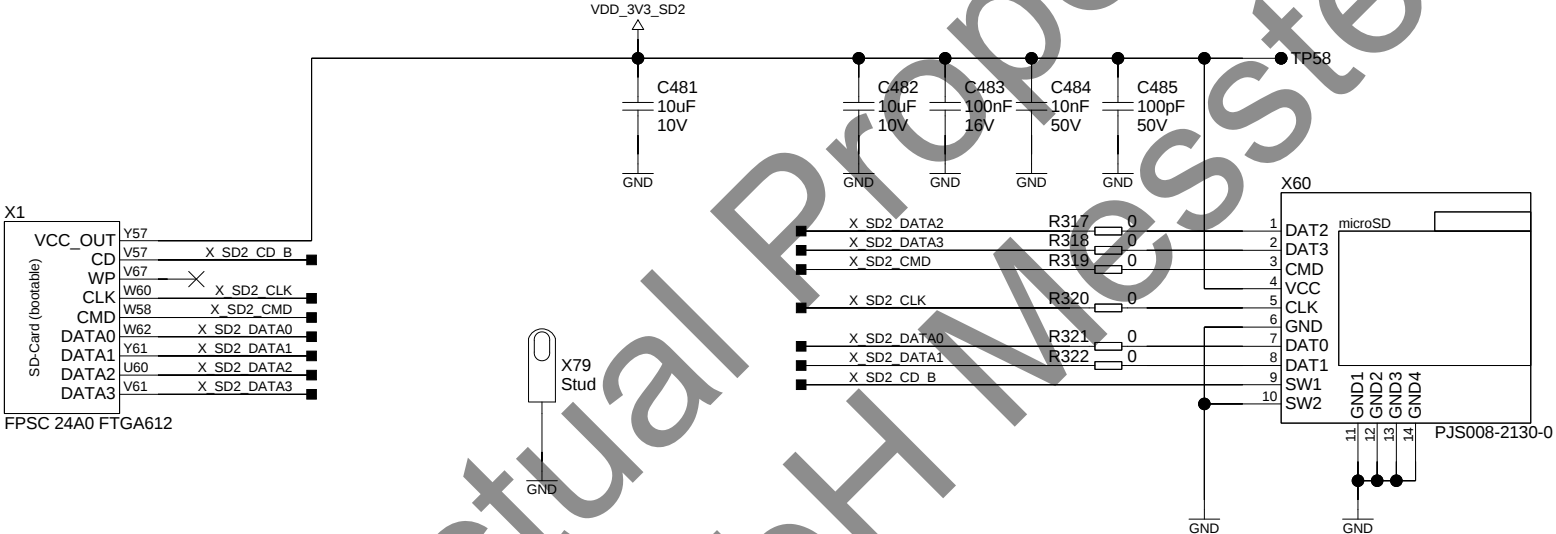
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μSD-Card

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Project: EPSC Featureset 24A

Department : F&E
Author: M.Poschmann, T.Metz

27.11.202

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GPIO/PWM

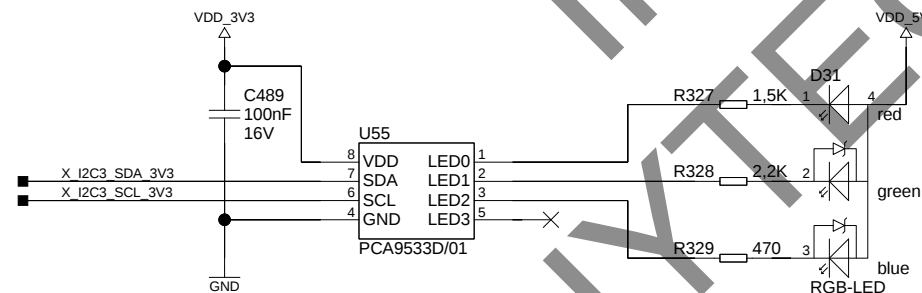
X1	
GPIO1	AL32 X GPIO1
GPIO2	AN30 X GPIO2 MX95 UART1 TXD
GPIO3	AN32 X GPIO2 MX95 UART1 RXD
GPIO4	L40 X nINT EXP
GPIO5	N40 X FAN GPIO
GPIO6	AL34 X GPIO6
GPIO7	AN34 X GPIO7
PWM1	N48 X PWM1 LVDS1
PWM2	N58 X PWM2 LVDS2
PWM3	AL42 X PWM FAN 8MP
PWM4	AN52 X PWM4 8MP

FPSC 24A0 FTGA612

FPSC Pin BD6 is PCL-078 exclusive

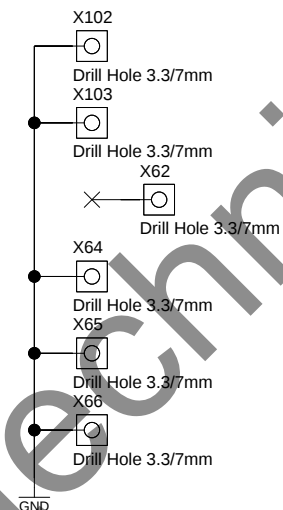
FPSC Pin BD16 is PCL-078 exclusive
FPSC Pin BF16 is PCL-078 exclusive

RGB LED

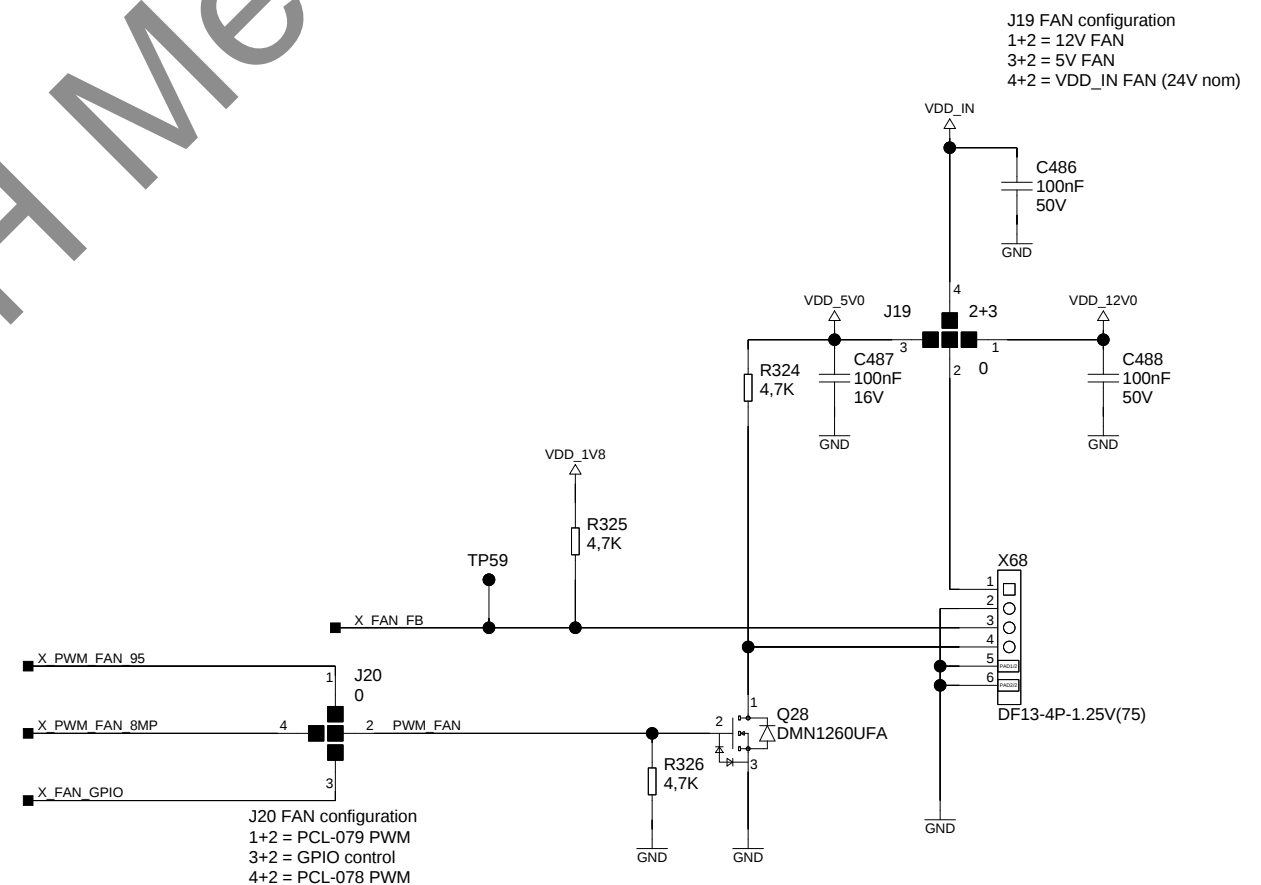


I2C Addr: 0x62

Mounting holes

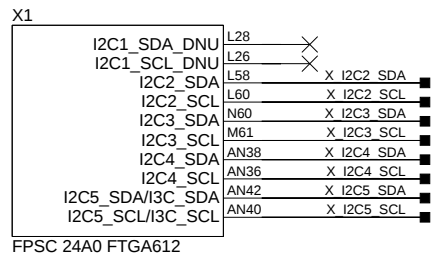


Fan Connector

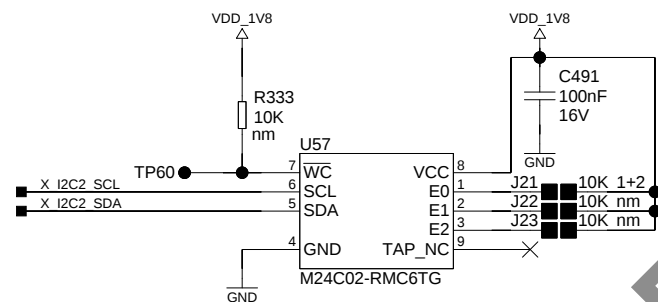


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I2C / I3C

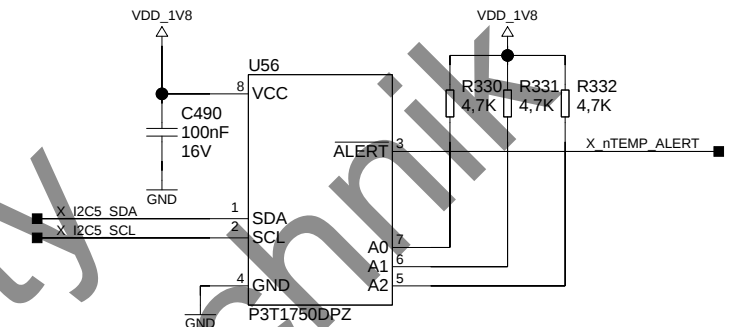


EEPROM



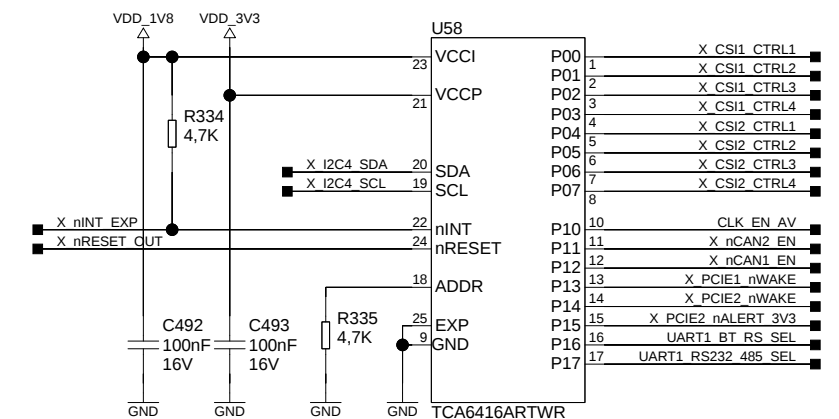
I2C2 addr. 0x51

Temperature sensor



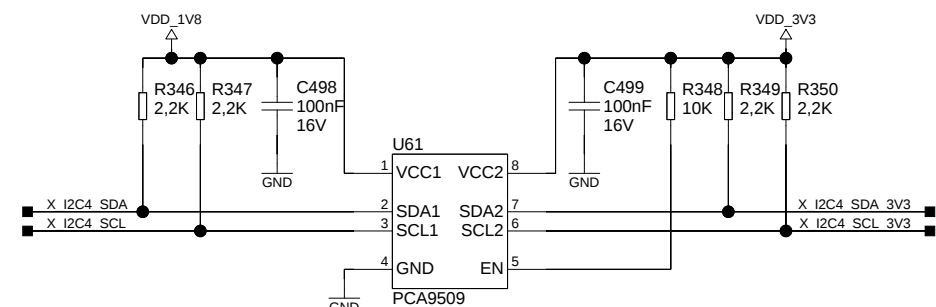
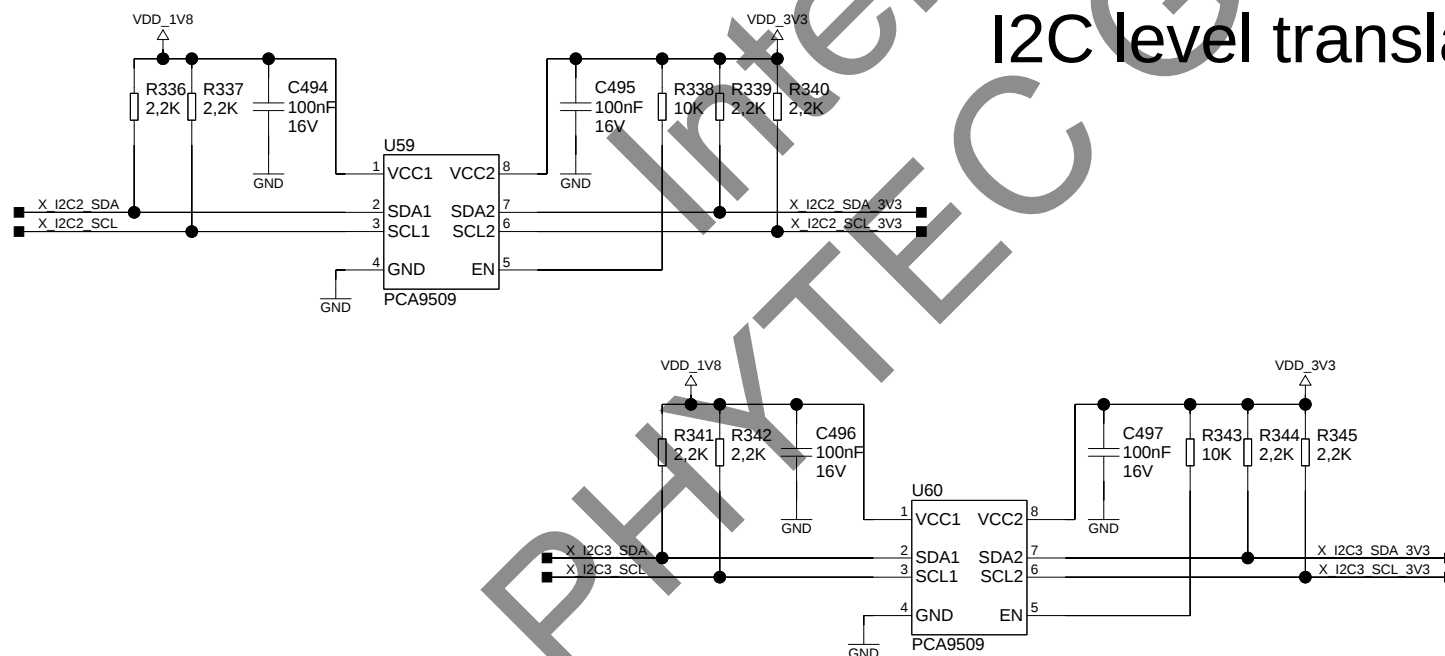
I2C5 I2C addr. 0x4F
I2C5 provisional I3C ID 0x9E

I2C GPIO expander



I2C4 addr. 0x20

I2C level translation



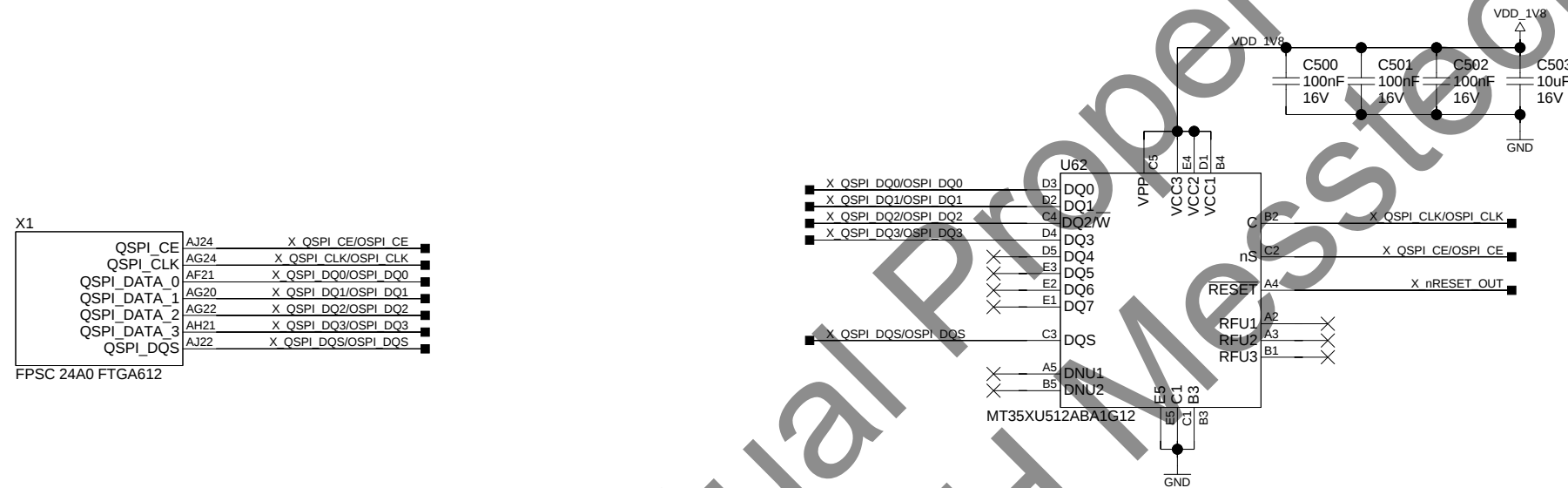
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Revision : 002	Sheet 28 of 30		

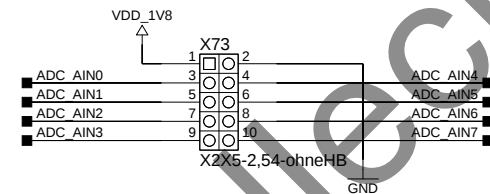
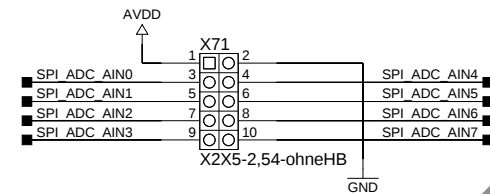
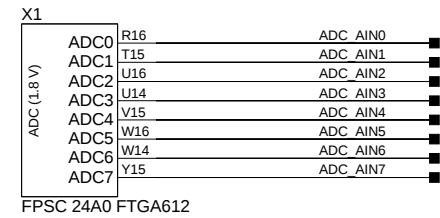
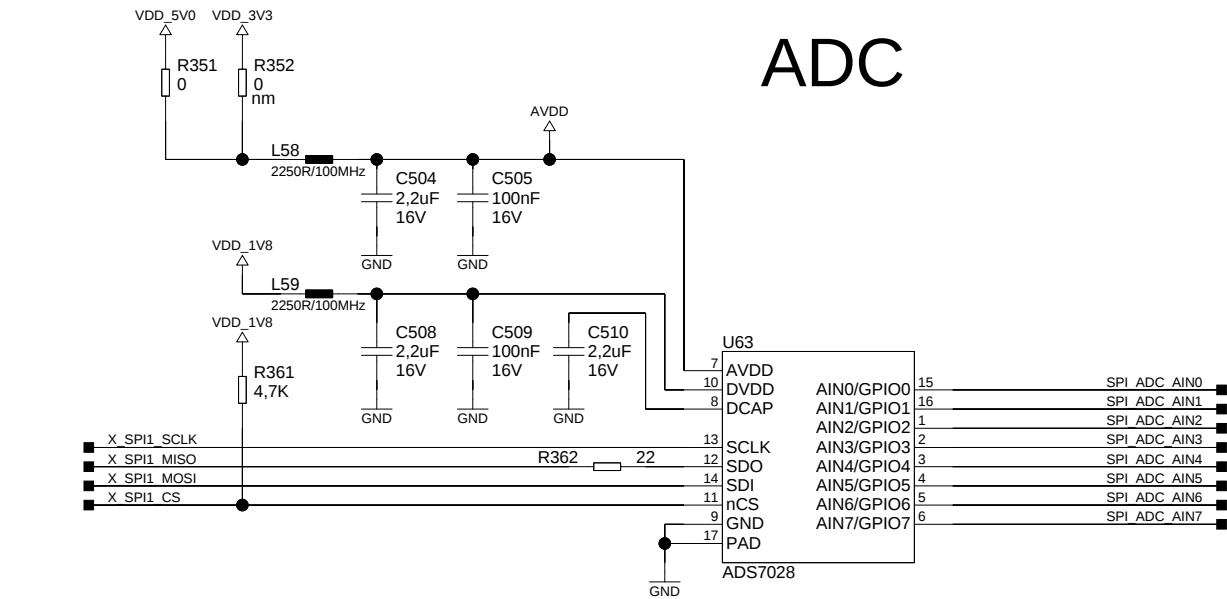
QSPI NOR

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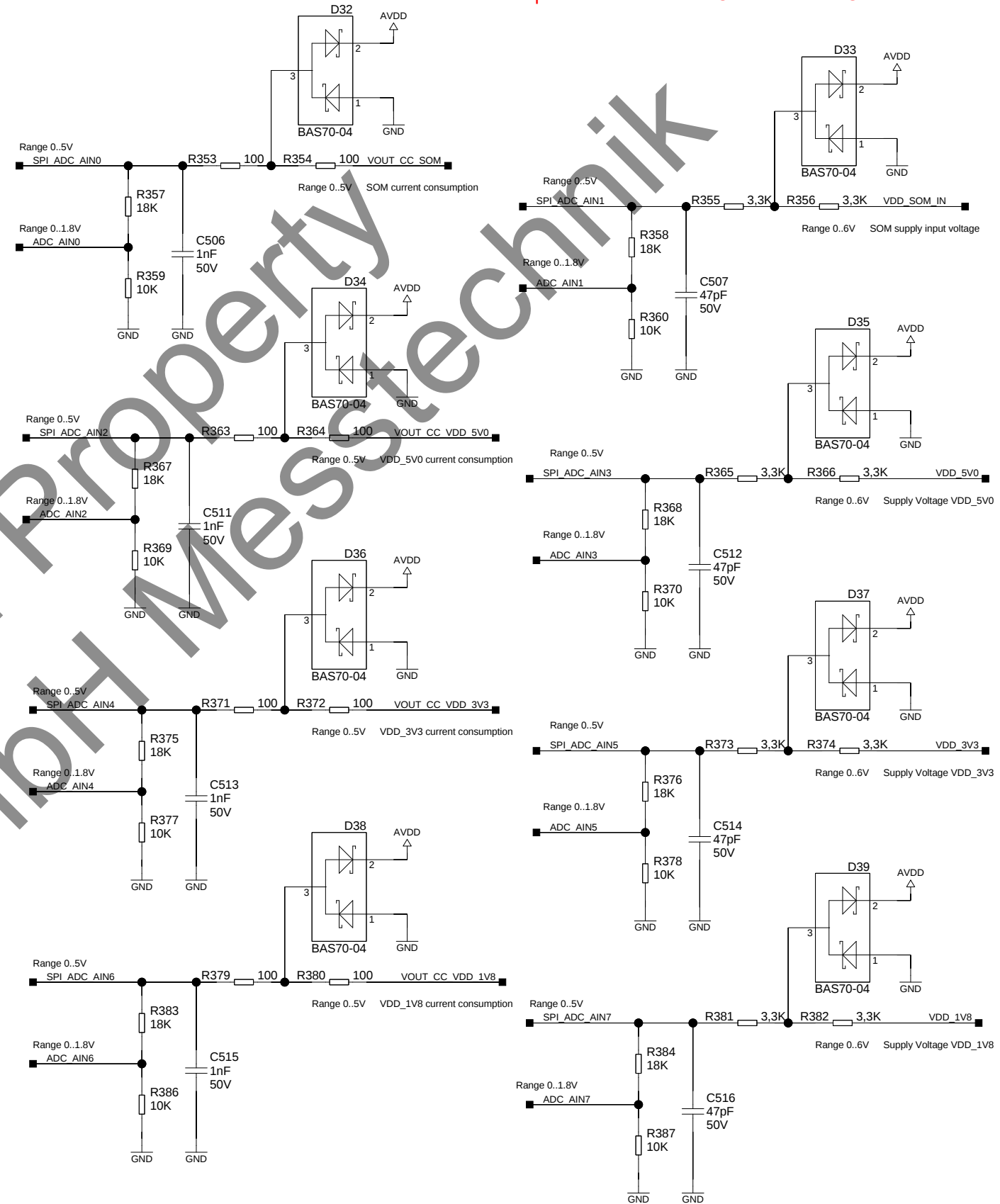
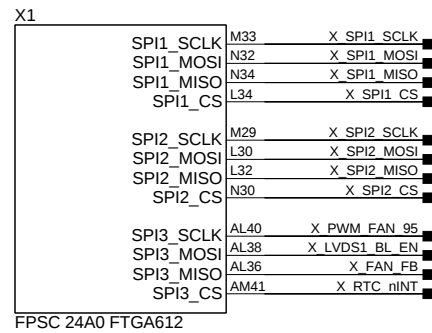


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ADC



SPI



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