

PCM-937-L

FPSC Featureset Gamma

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Project: FPSC Featureset Gamma		Department : F&E Author: M.Poschmann, T.Metz, B.Schwillig	
15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 1 of 30

A

B

C

D

A

B

C

D

Overview

Page	Content
1	Cover
2	Overview
3	Power In
4	Power 1
5	Power 2
6	Power SOM / Boot / Misc
7	Ground SOM
8	Power Sequencing / Reset
9	USB Debug
10	USB HUB
11	USB Connector
12	Reserved
13	Power ETH 1G / 10G
14	ETH 10G
15	ETH0
16	ETH1
17	UART / RS232 / RS485
18	CAN FD
19	phyCAM-M
20	HDMI / MIPI-DSI
21	LVDS / AV-Connector
22	PCIe Power / CLK
23	mPCIe
24	M.2 Key-M
25	Expansion Connector
26	Micro SD-Card
27	GPIO / PWM / FAN / LED
28	I2C / I3C
29	QSPI NOR
30	SPI / ADC

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

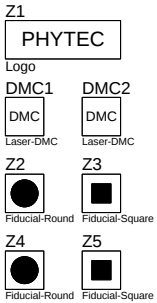
P3T1750DPZ (U56)	0x4F
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Default MDIO addresses

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

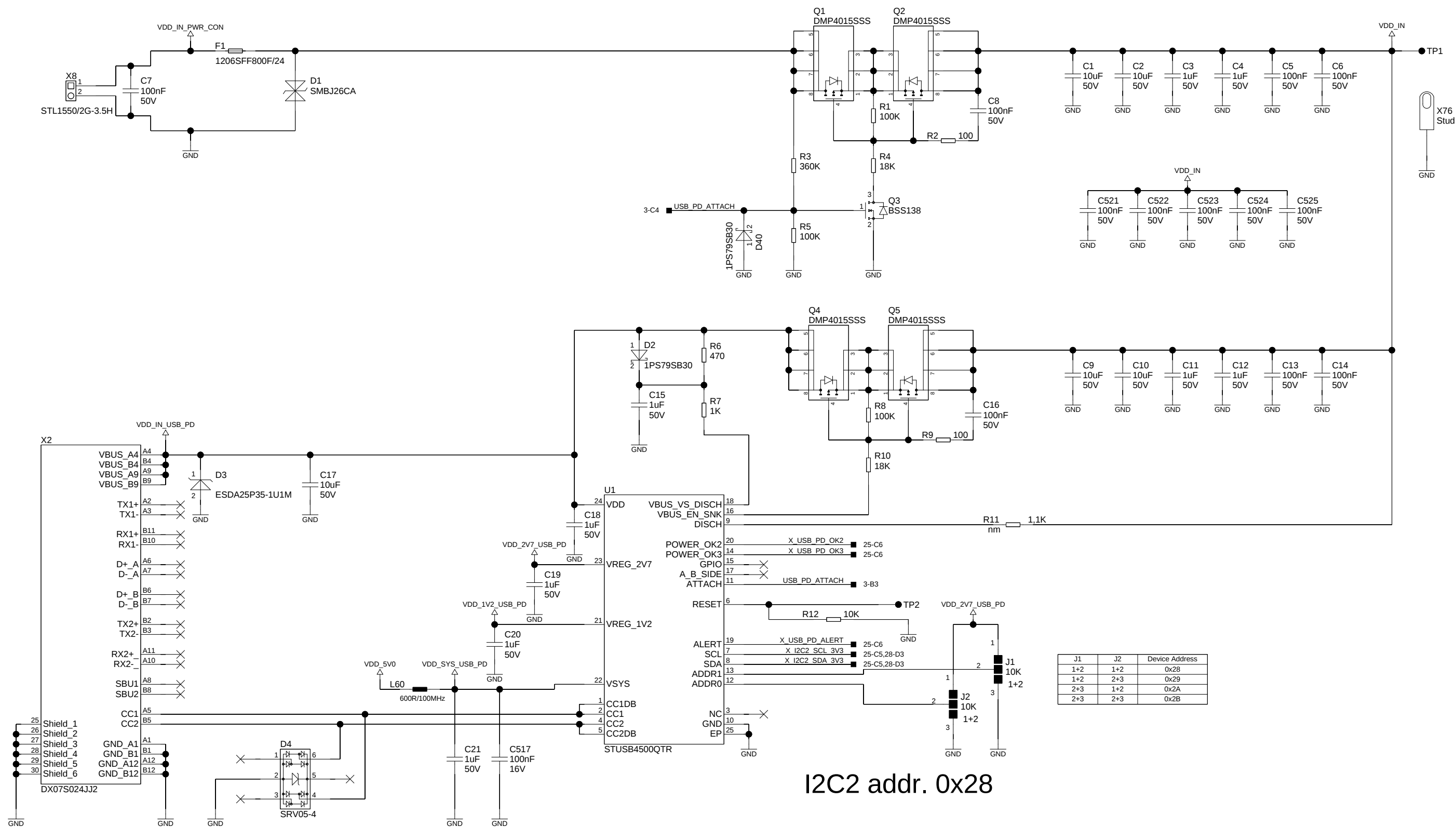
Notes:

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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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet	2	of 30

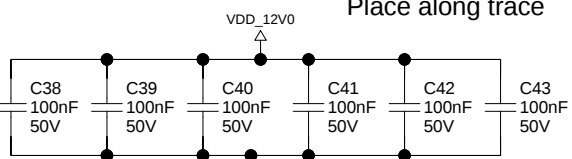
VDD_IN via Power Connector



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

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

1

2

3

4

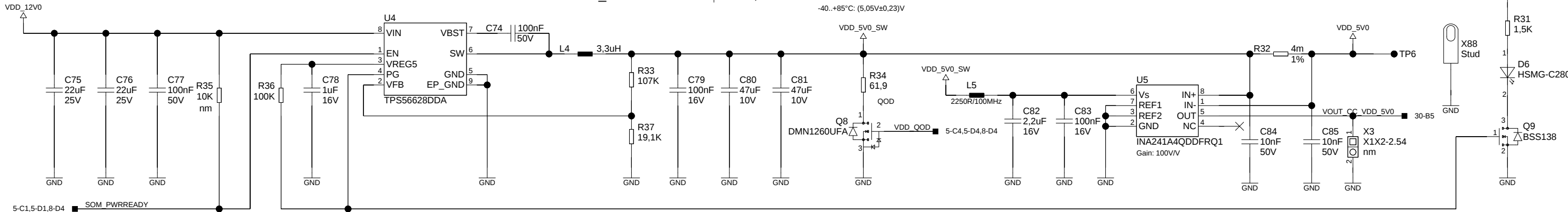
5

6

A

Periphery VDD_5V0

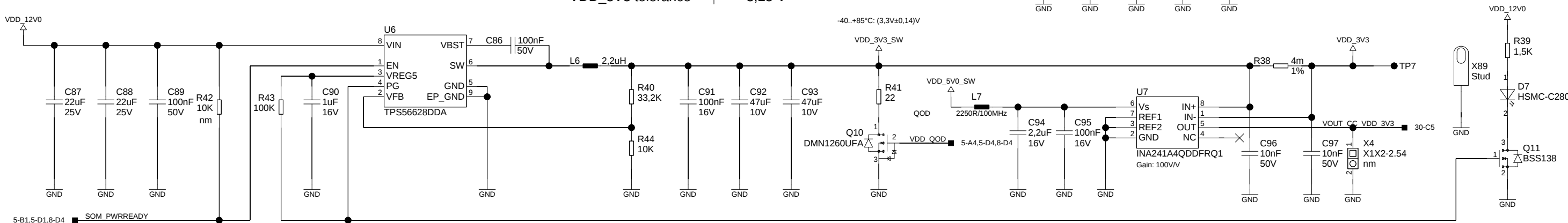
Switching Frequency	650 kHz
VDD_5V0 nominal	5,05 V
VDD_5V0 tolerance +	5,14 V
VDD_5V0 tolerance -	4,97 V



B

Periphery VDD_3V3

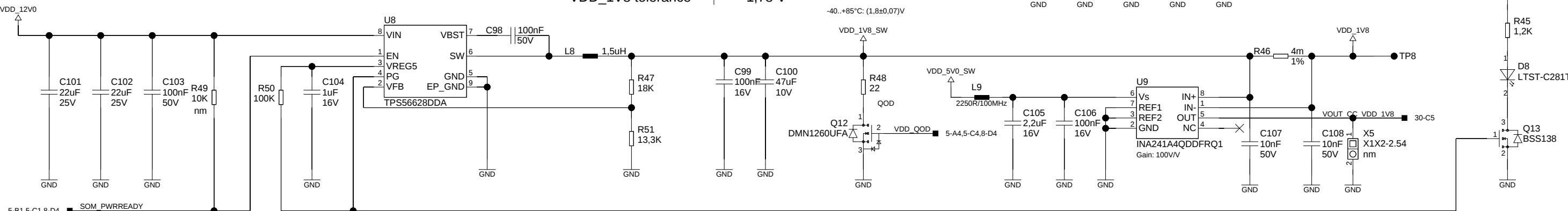
Switching Frequency	650 kHz
VDD_3V3 nominal	3,30 V
VDD_3V3 tolerance +	3,36 V
VDD_3V3 tolerance -	3,25 V



C

Periphery 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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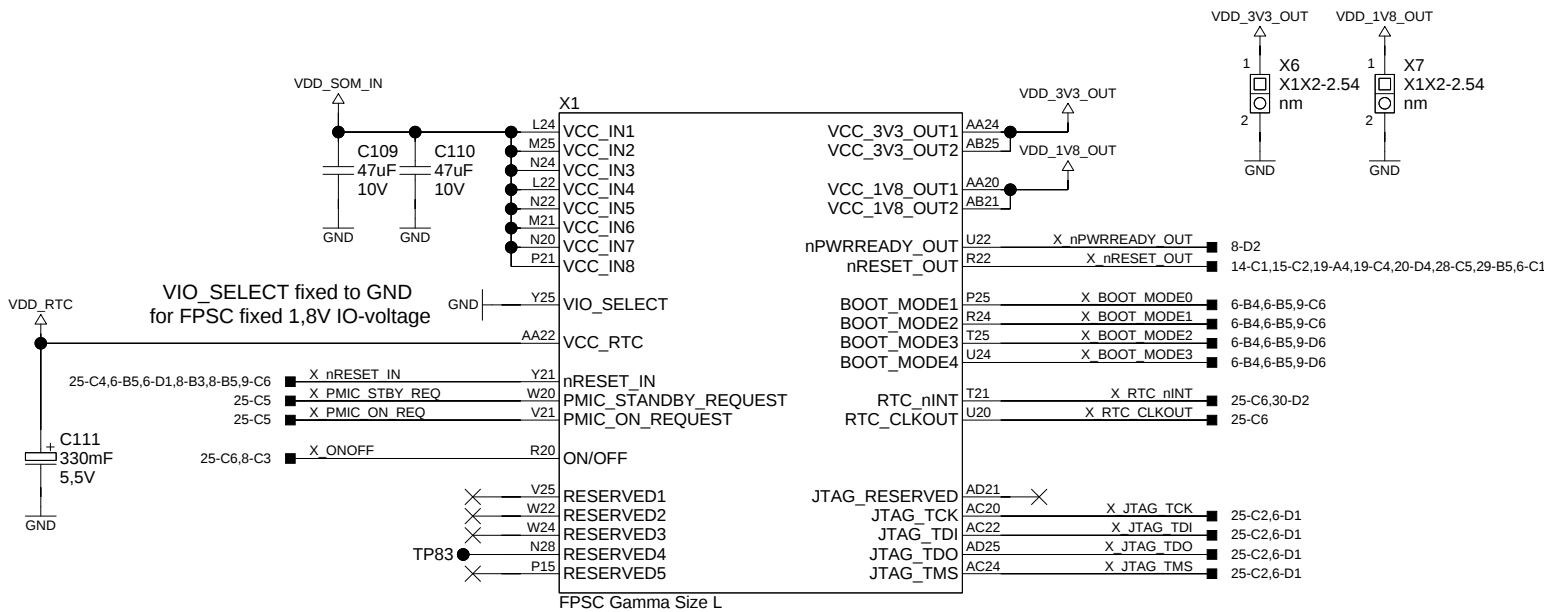
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PCB-No.: 1618.1a

Revision : 001

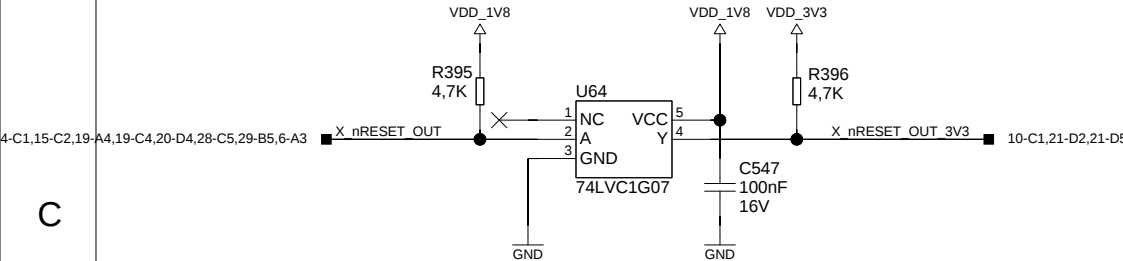
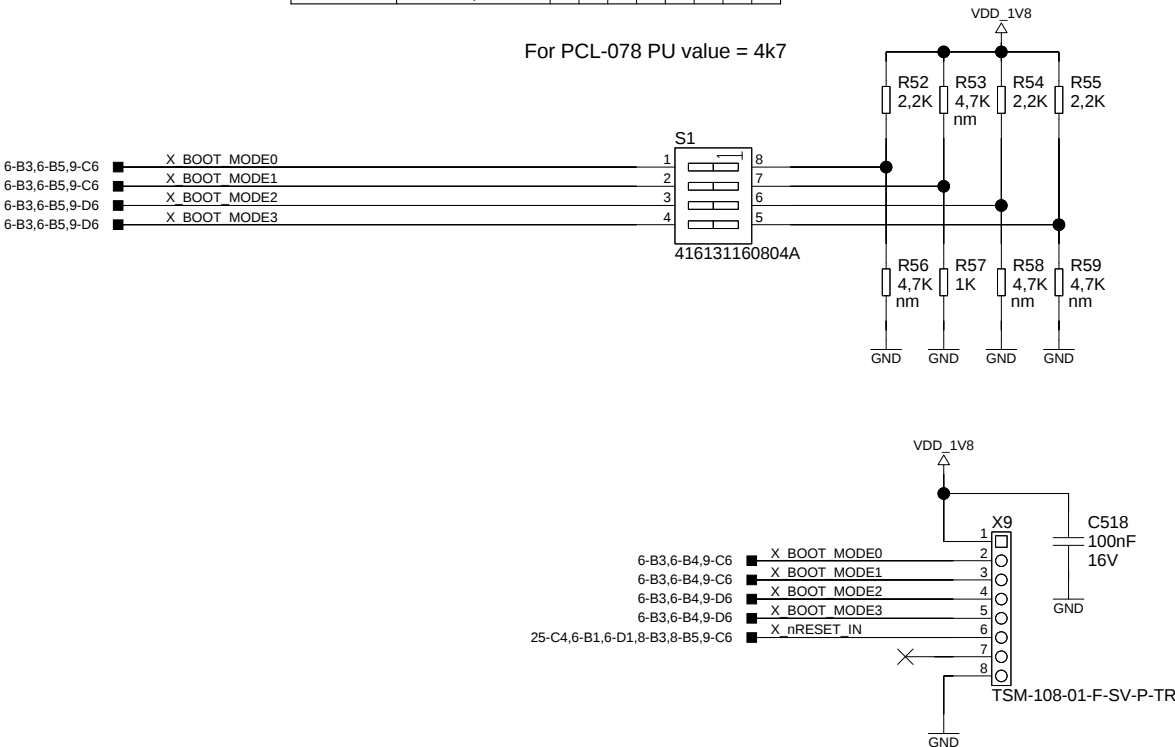
Sheet 5 of 30

Power SOM / Boot / Misc

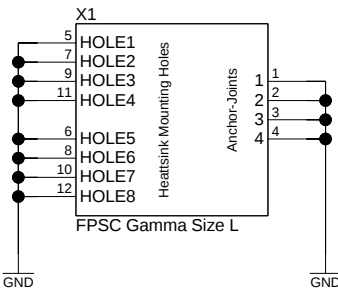


Boot switch

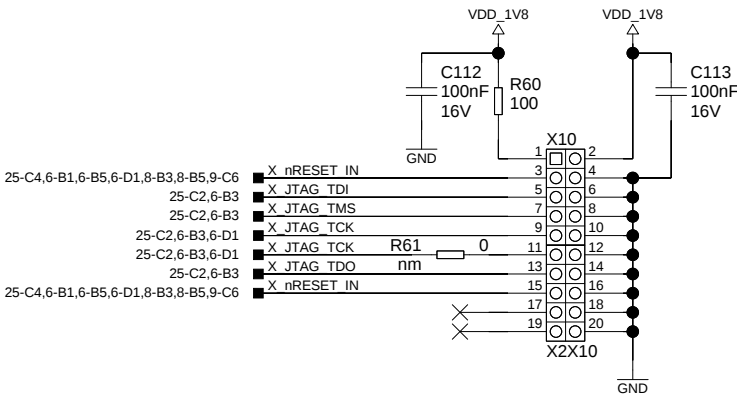
	Boot location	BOOT_MODE				S1 switch no.		
		3	2	1	0	4	3	2
PCL-078	eMMC (SOM default)	0	0	1	0	0	0	0
	SD-Card (SD2)	0	0	1	1	0	0	0
	QSPI NOR	0	1	1	0	0	1	0
	USB serial download	0	0	0	1	0	0	1
	Fuse boot	0	0	0	0	0	0	1
PCL-079	JTAG mode	1	1	1	1	1	1	0
	eMMC (SOM default)	X	0	1	0	0	0	0
	SD-Card (SD2)	X	0	1	1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



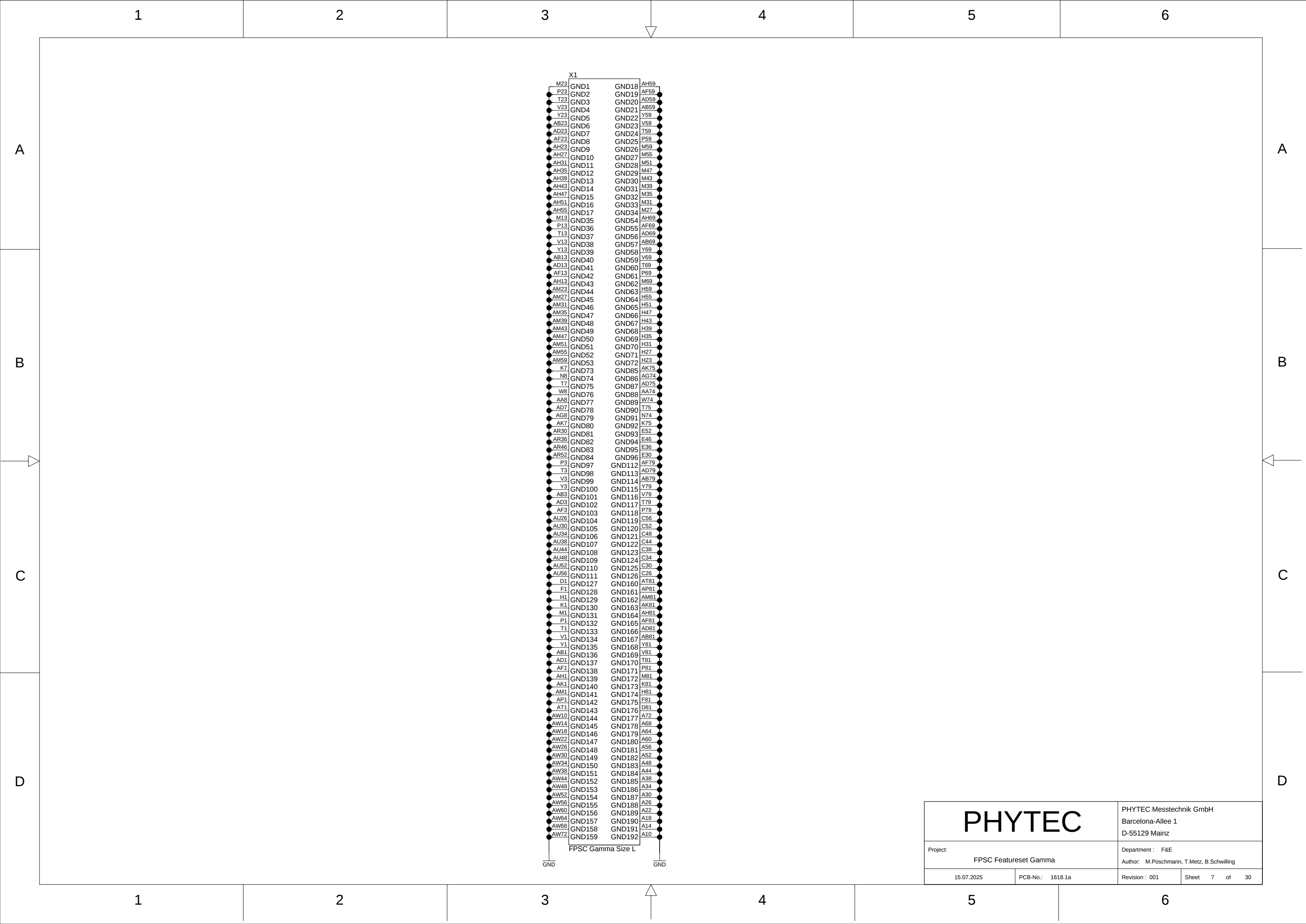
SOM mechanical



JTAG 1V8



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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 6 of 30



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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 7 of 30

A



B



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D

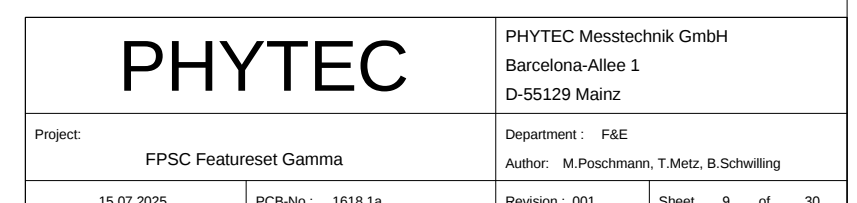


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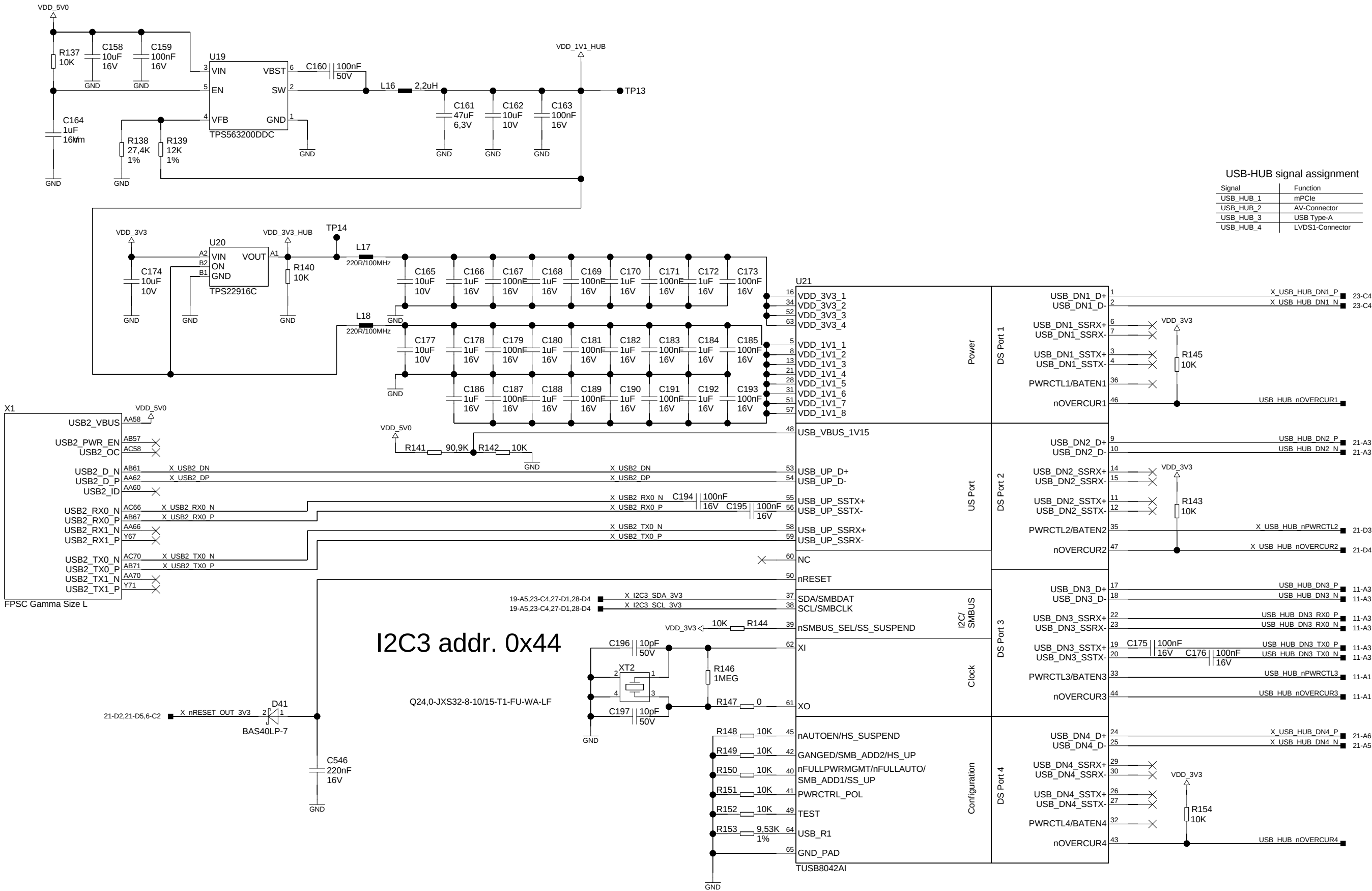
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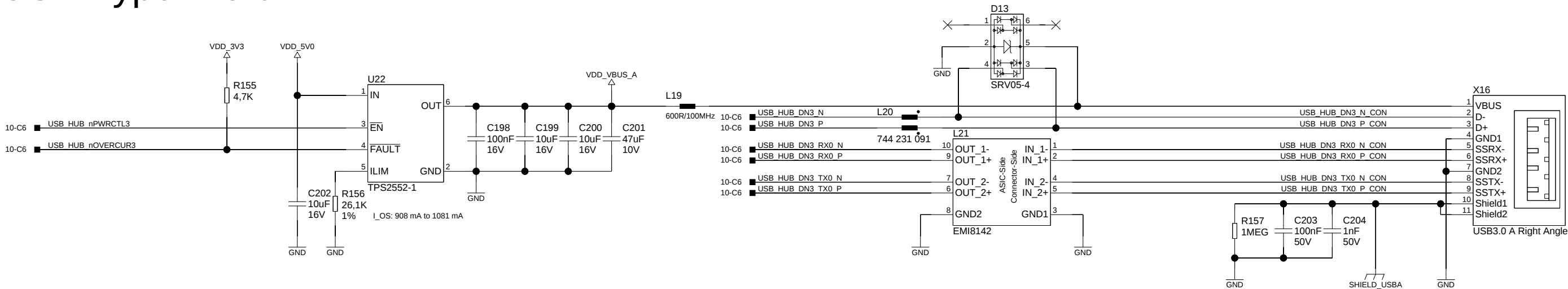
D



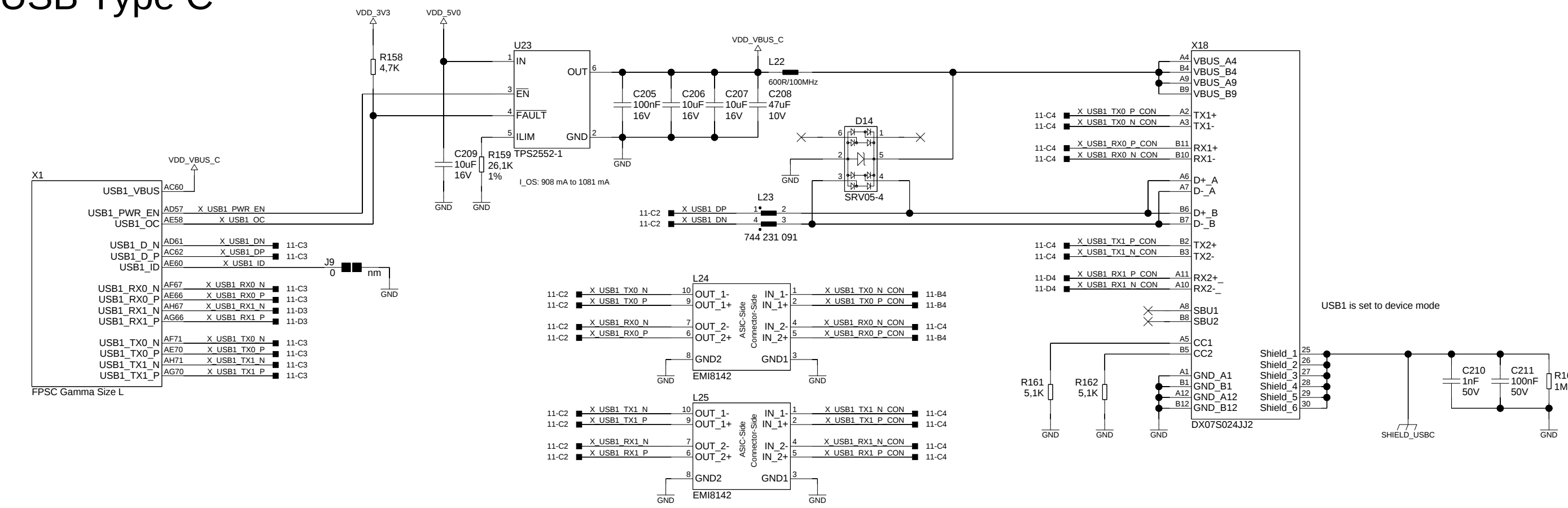
USB Hub



USB Type A 3.0

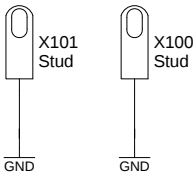
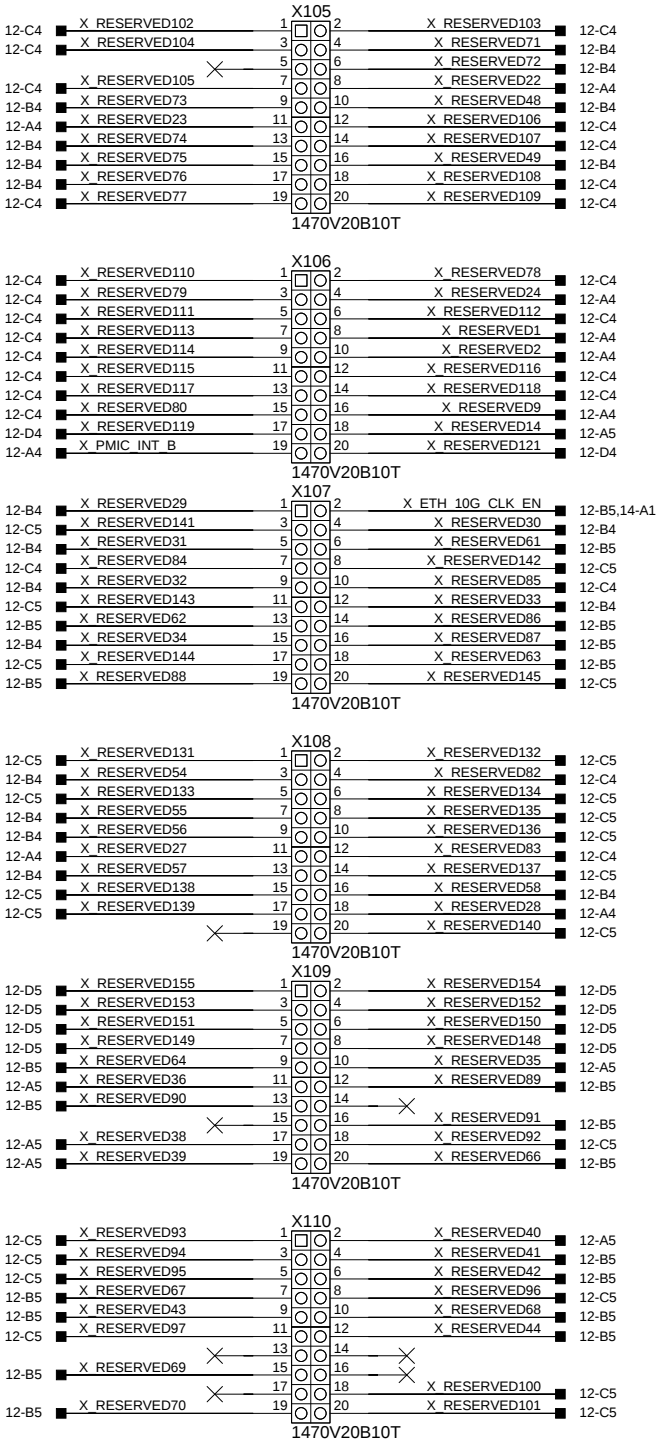


USB Type C

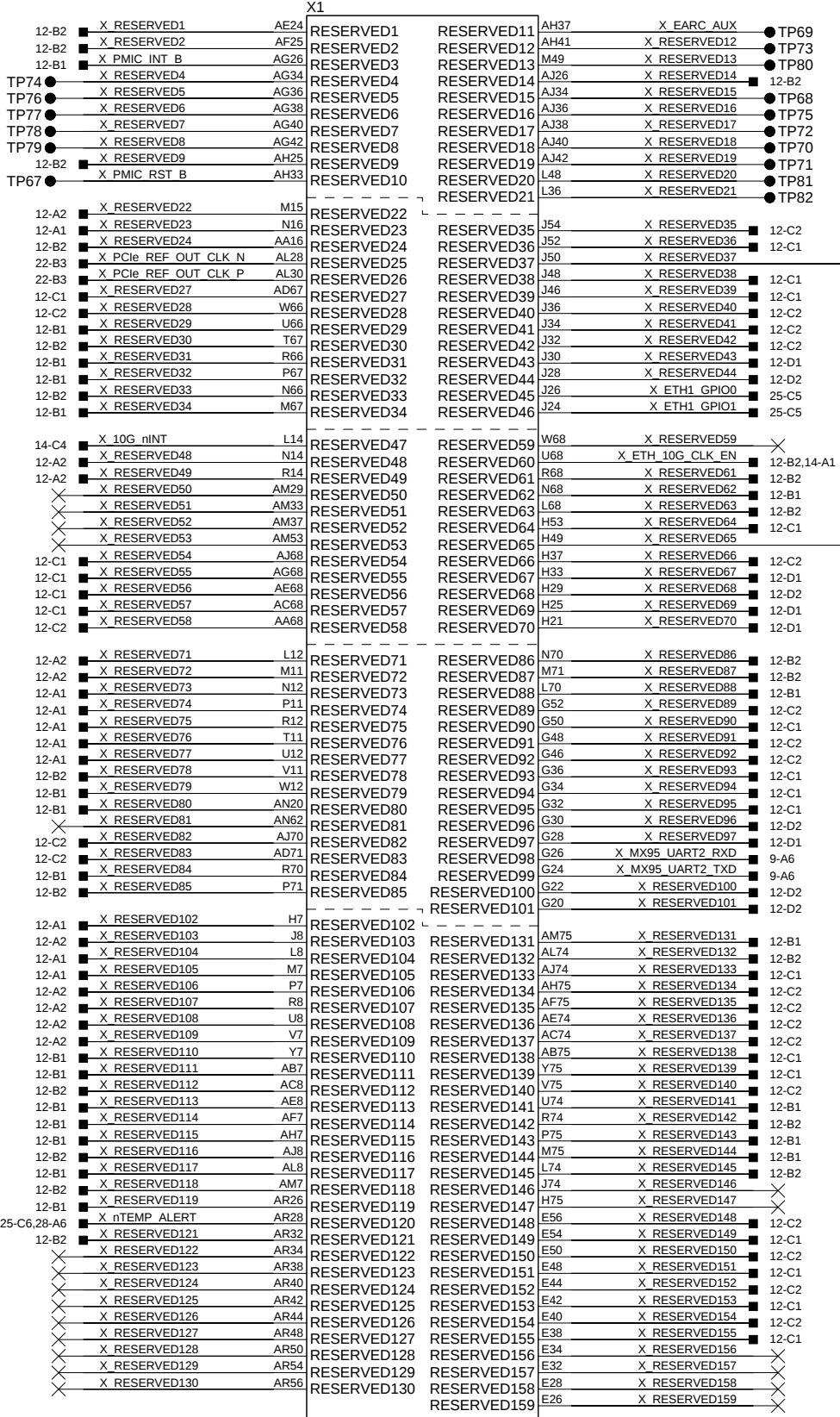


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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 11 of 30

Reserved headers



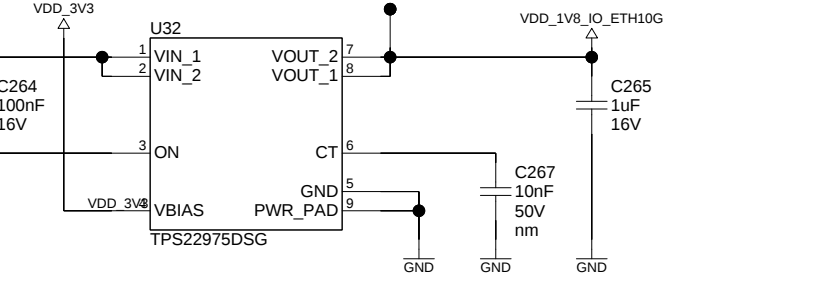
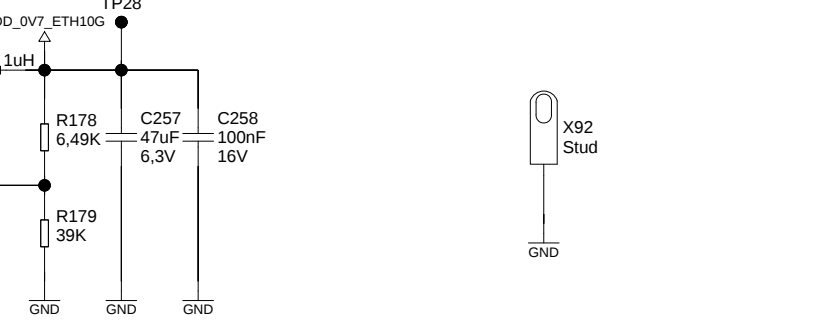
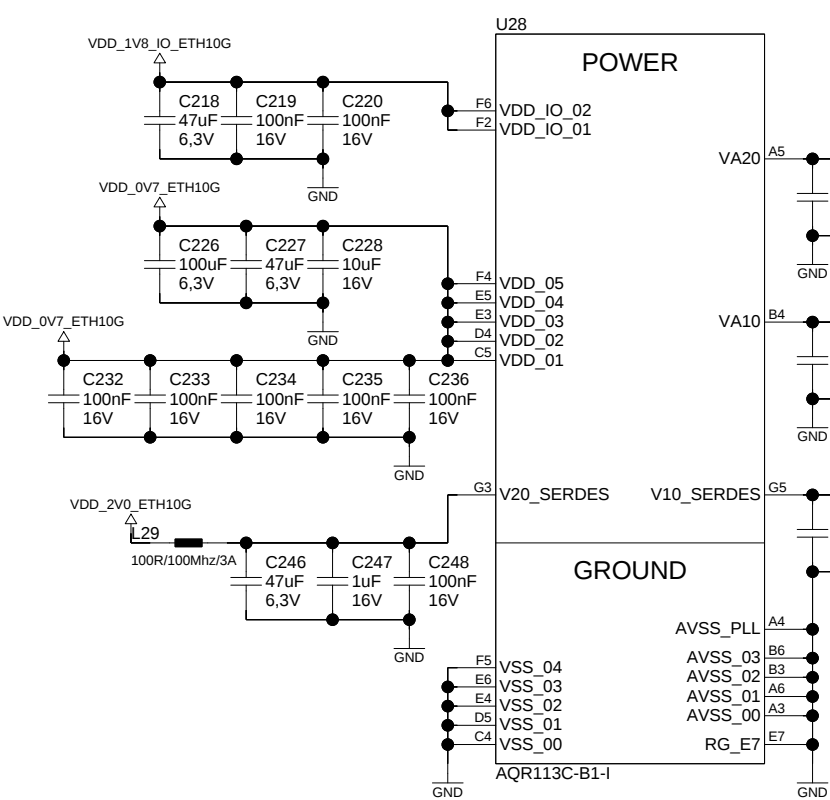
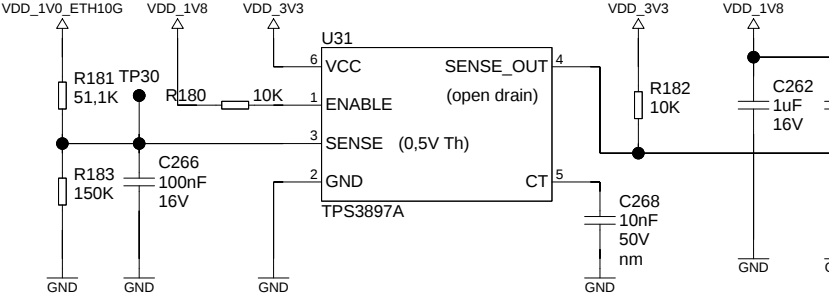
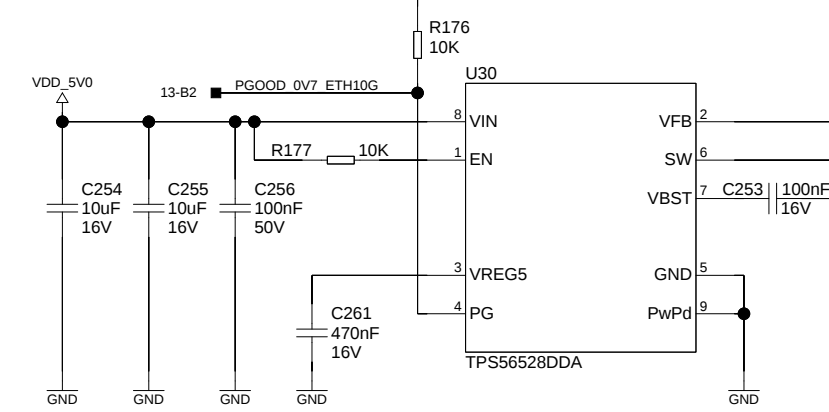
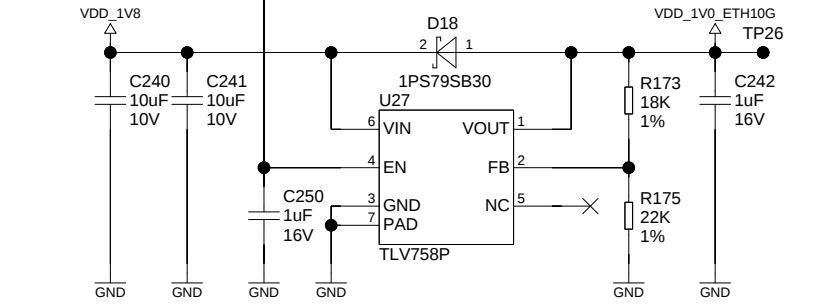
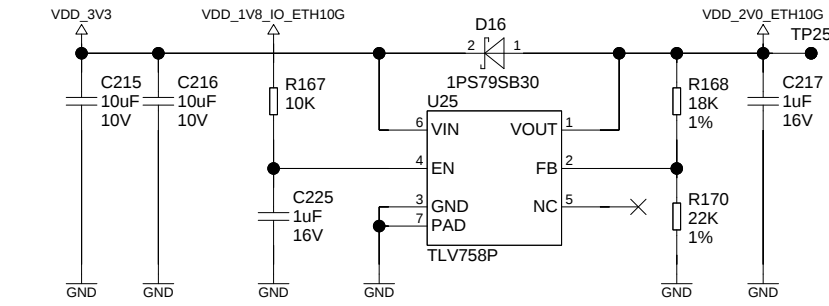
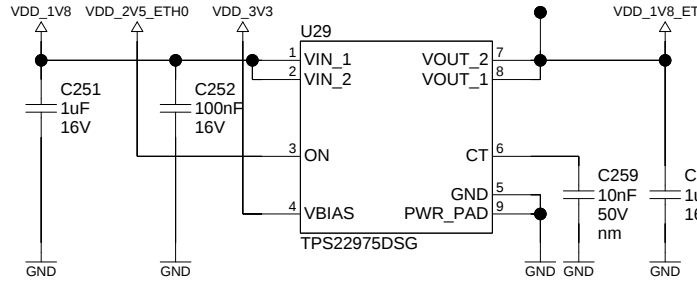
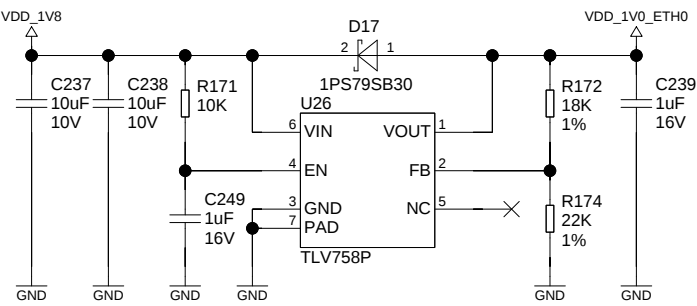
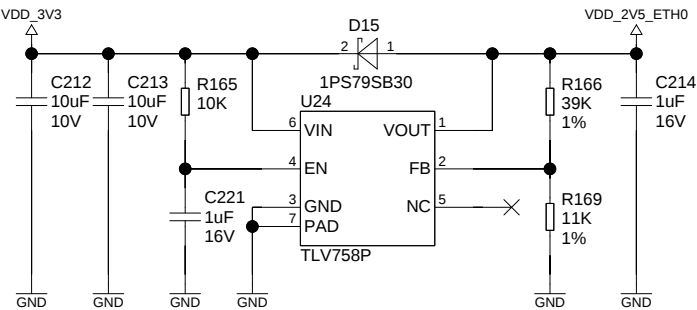
FPSC reserved/test pins



Gigabit ETH0

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

ETH 10G



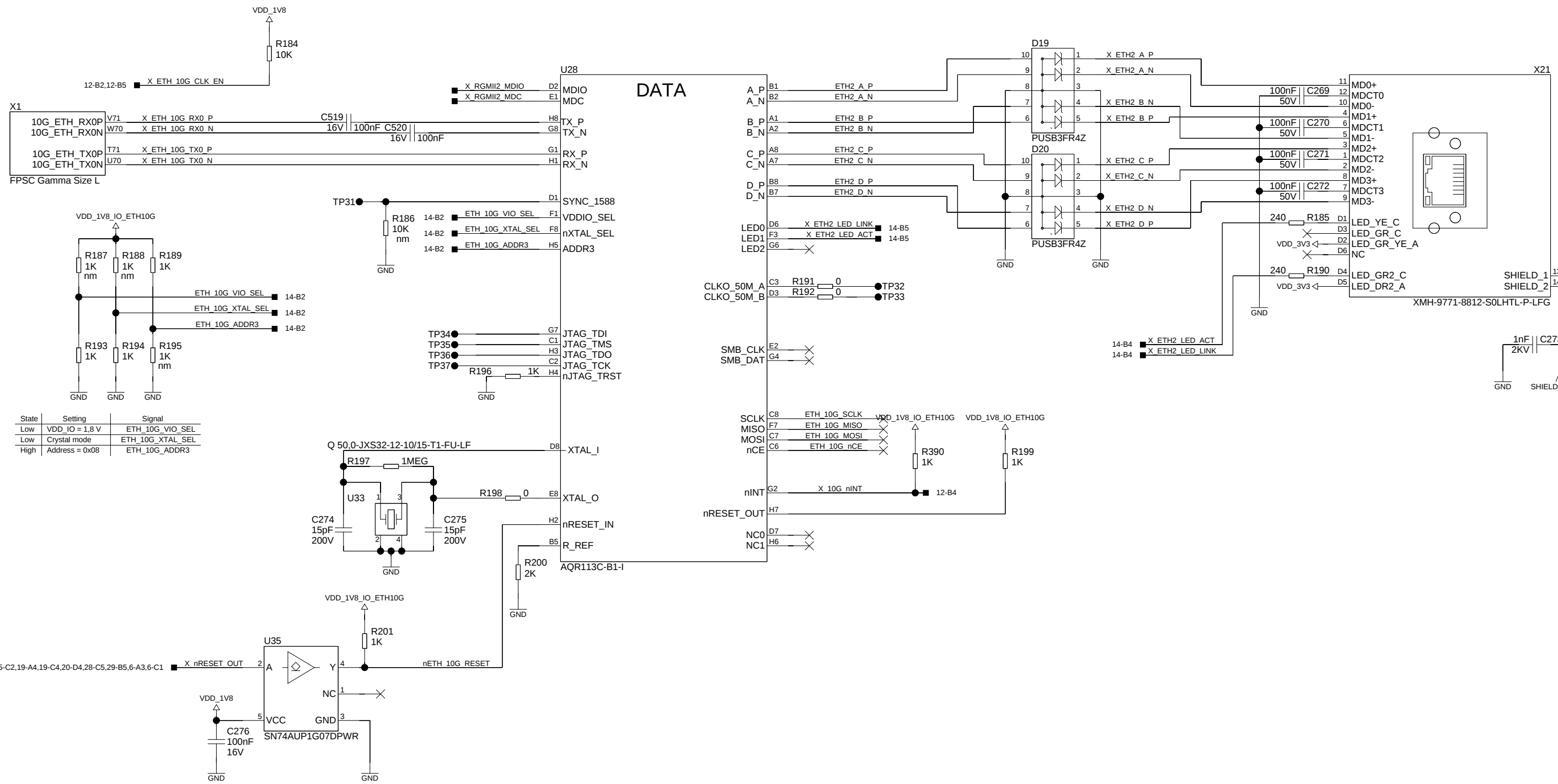
VDD_1V0_ETH10G threshold: 746 mV

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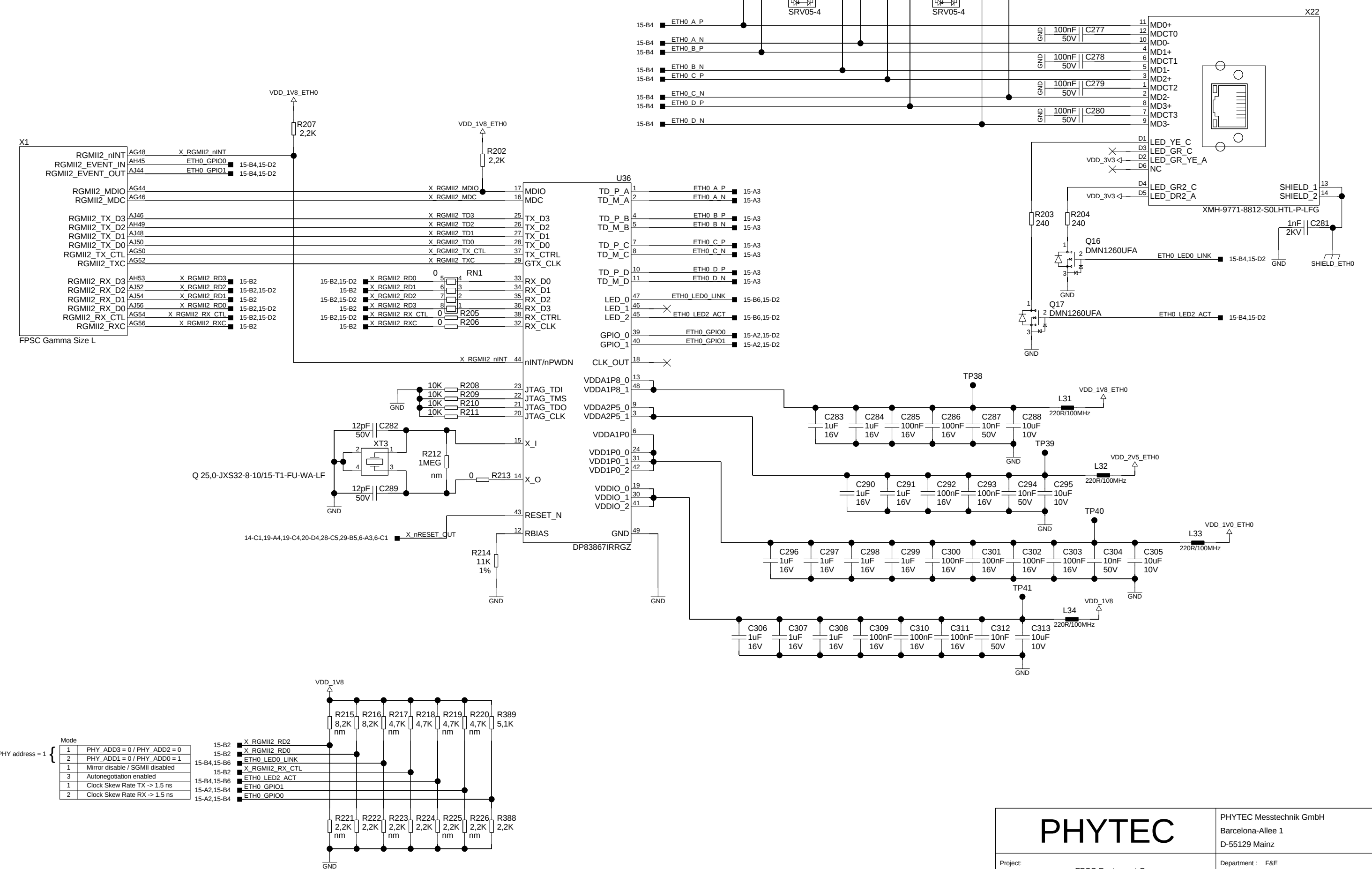
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Department: F&E
Author: M.Poschmann, T.Metz, B.Schwillig
Revision: 001
Sheet 13 of 30

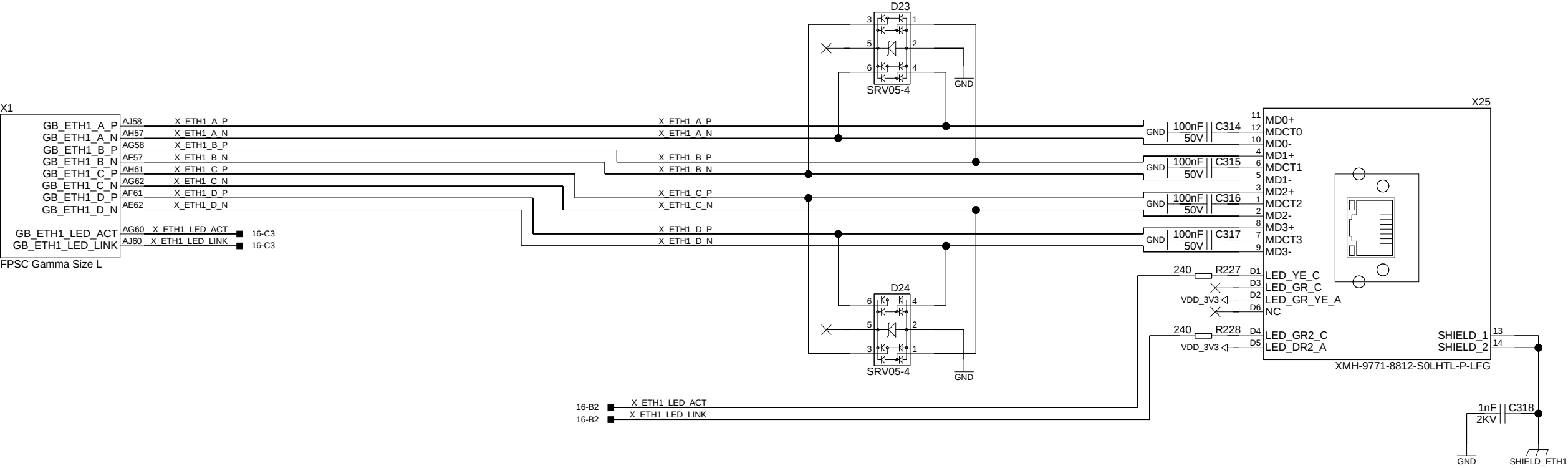
Ethernet 10G



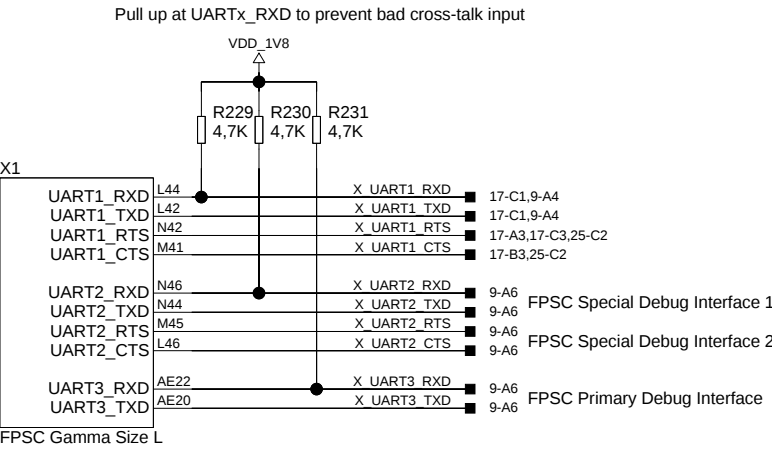
Ethernet0



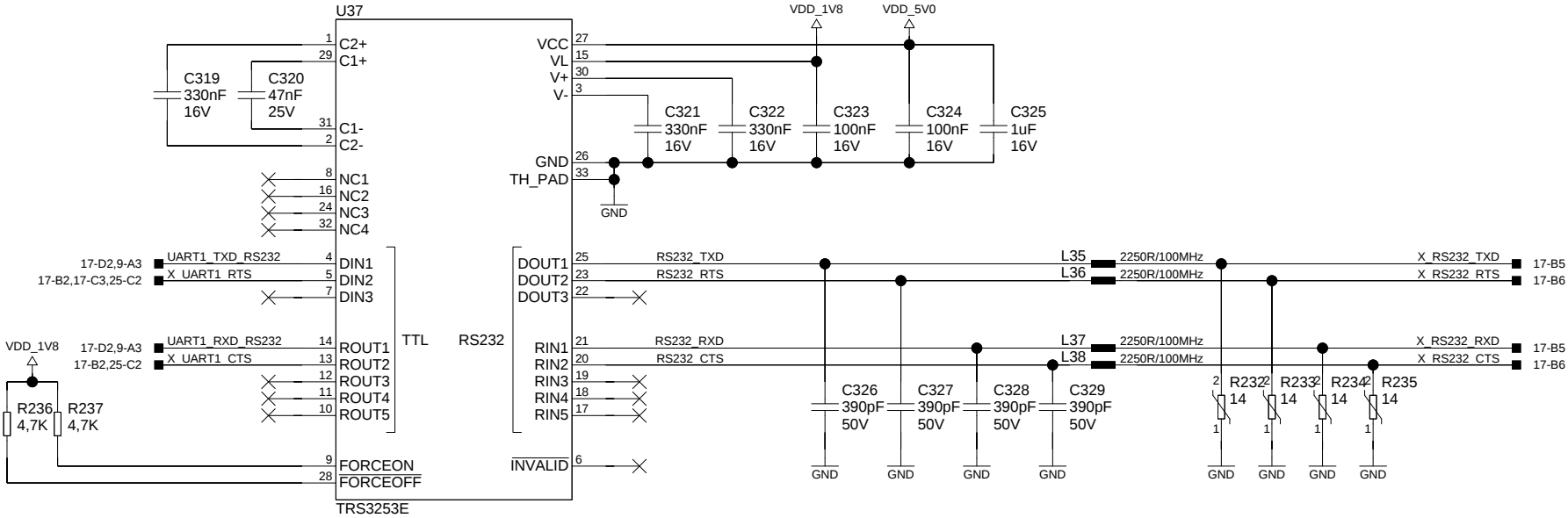
Ethernet1



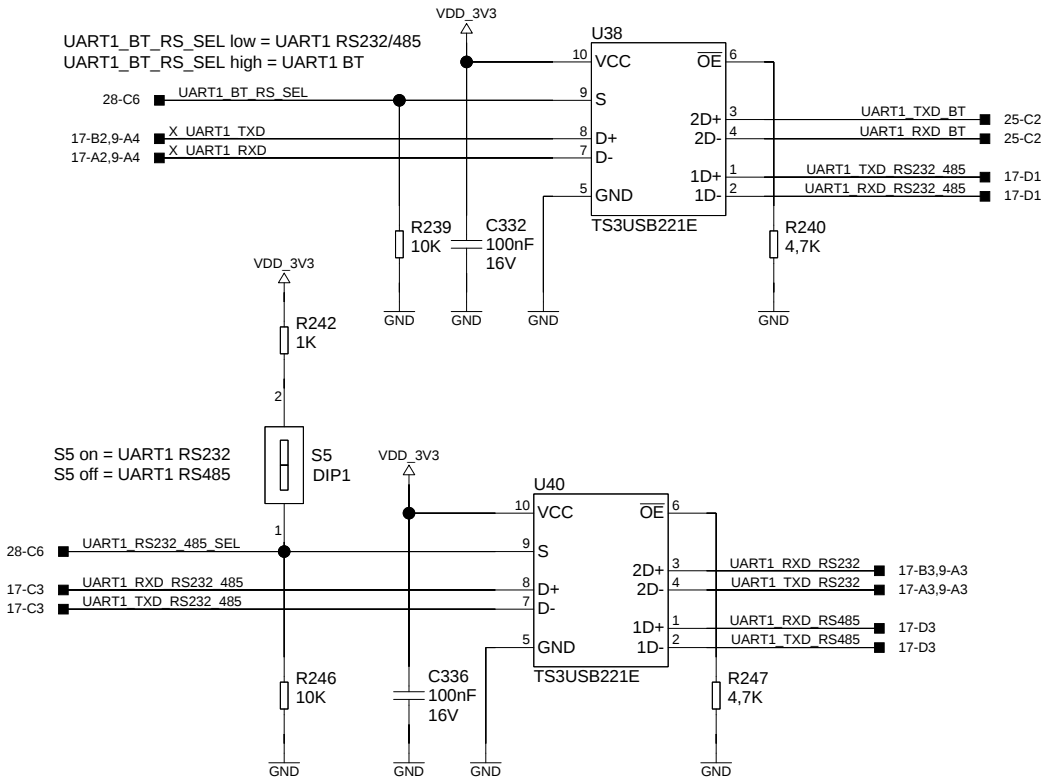
RS-232 / RS-485



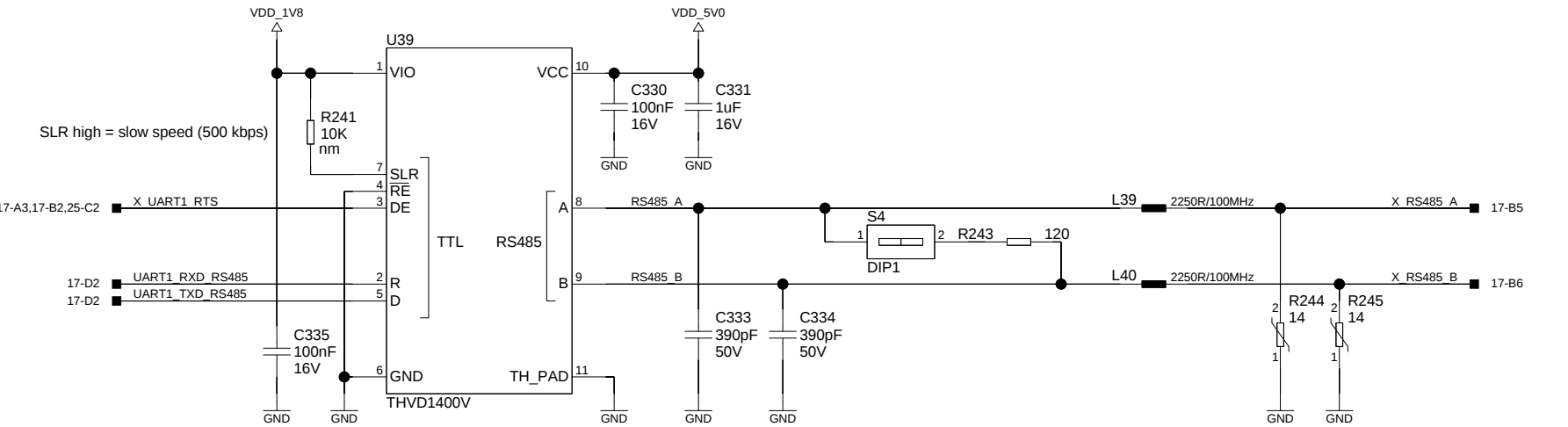
RS 232



UART1 routing



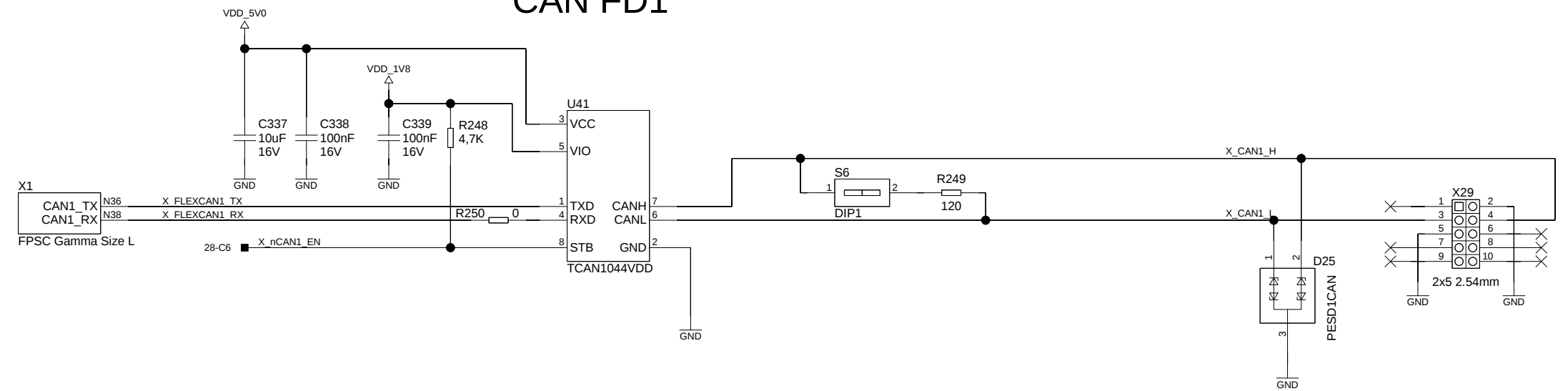
RS 485



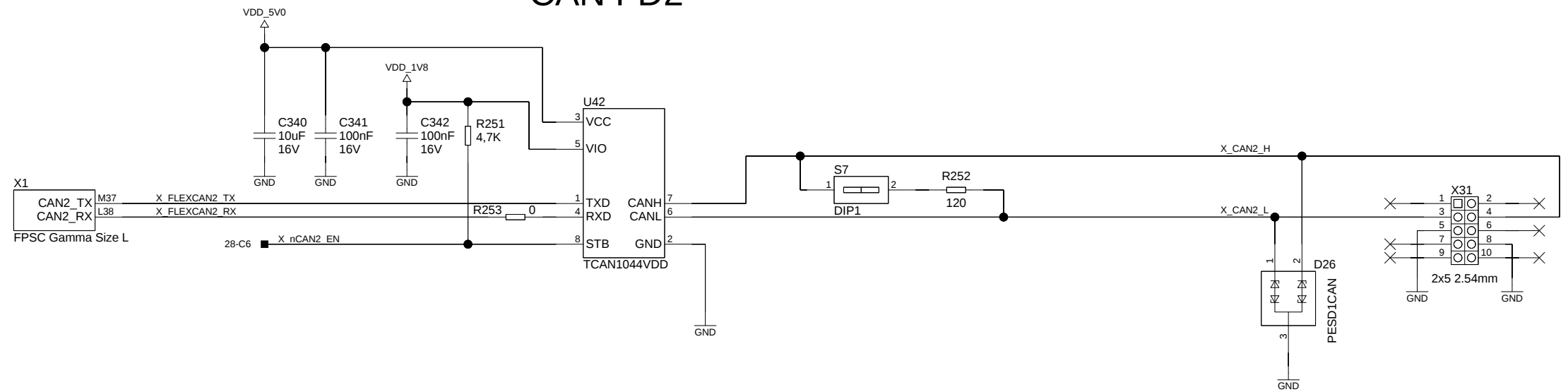
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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 17 of 30

CAN FD1/2

CAN FD1

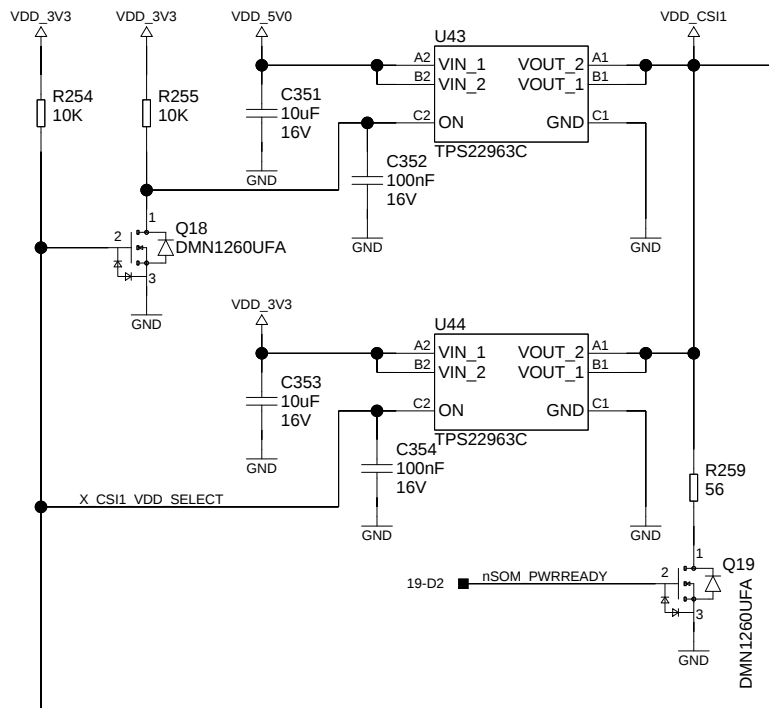


CAN FD2

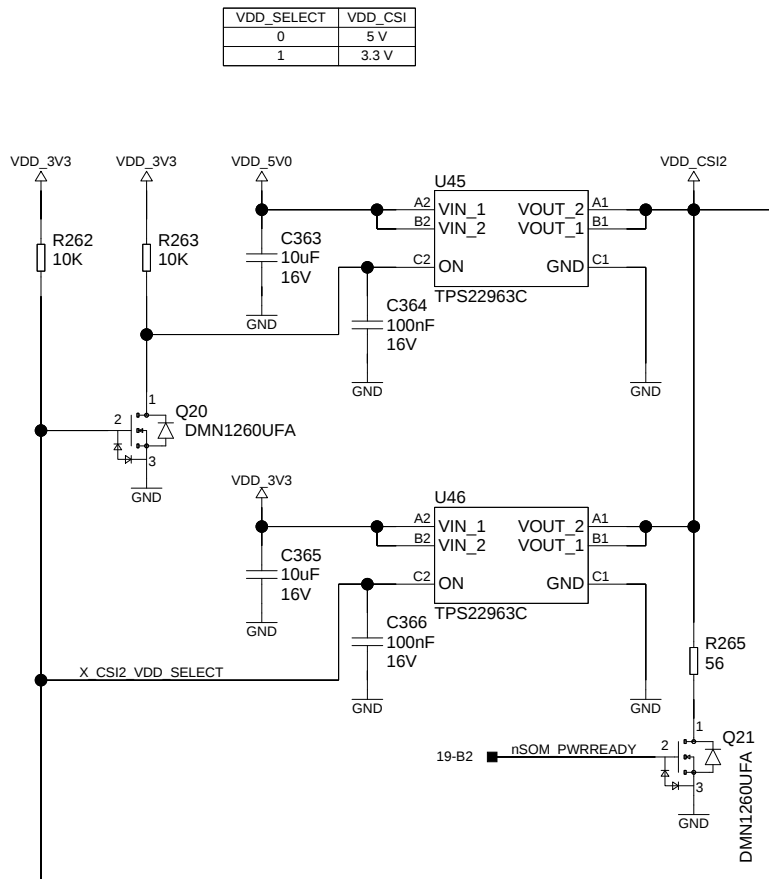
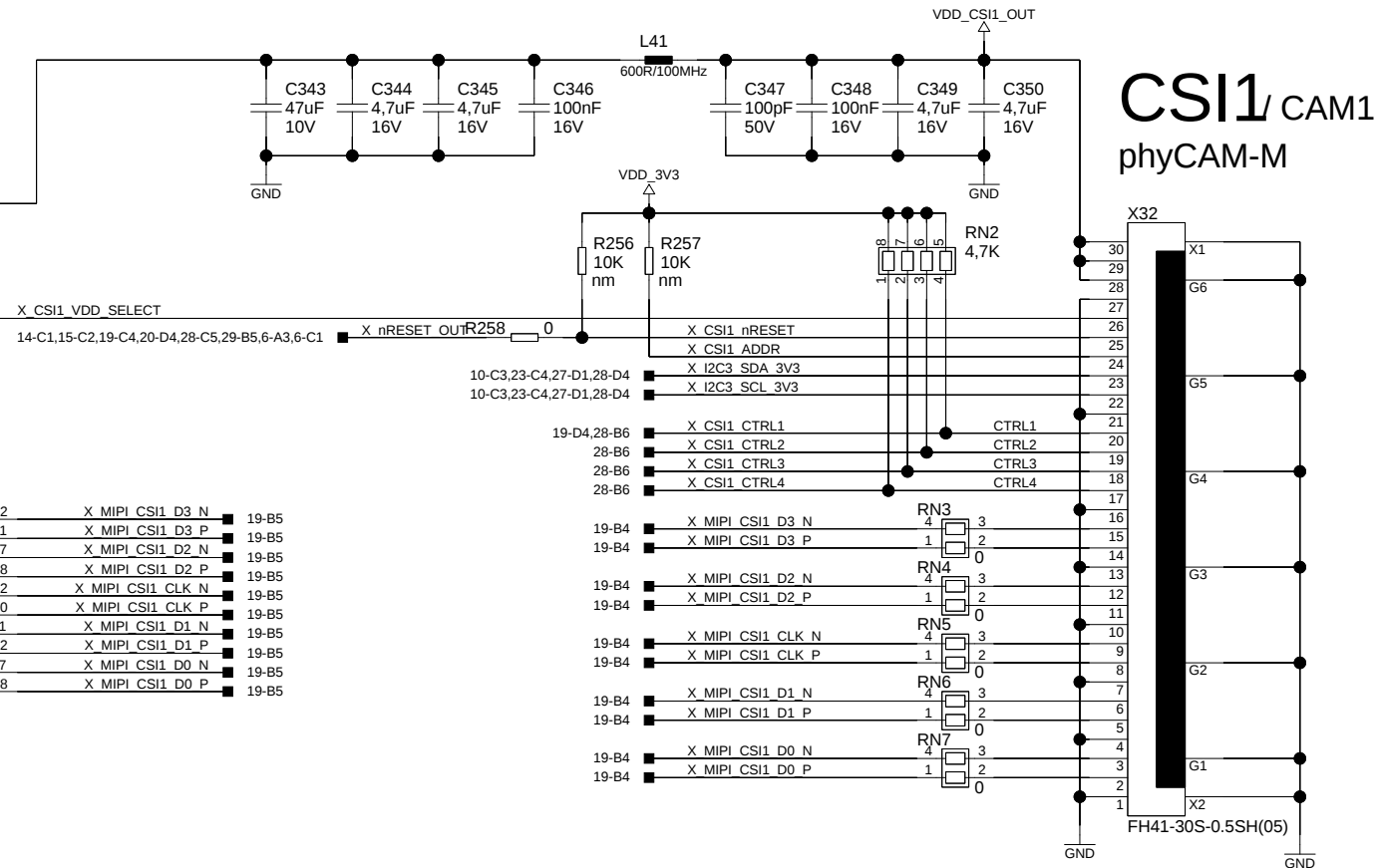


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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 18 of 30

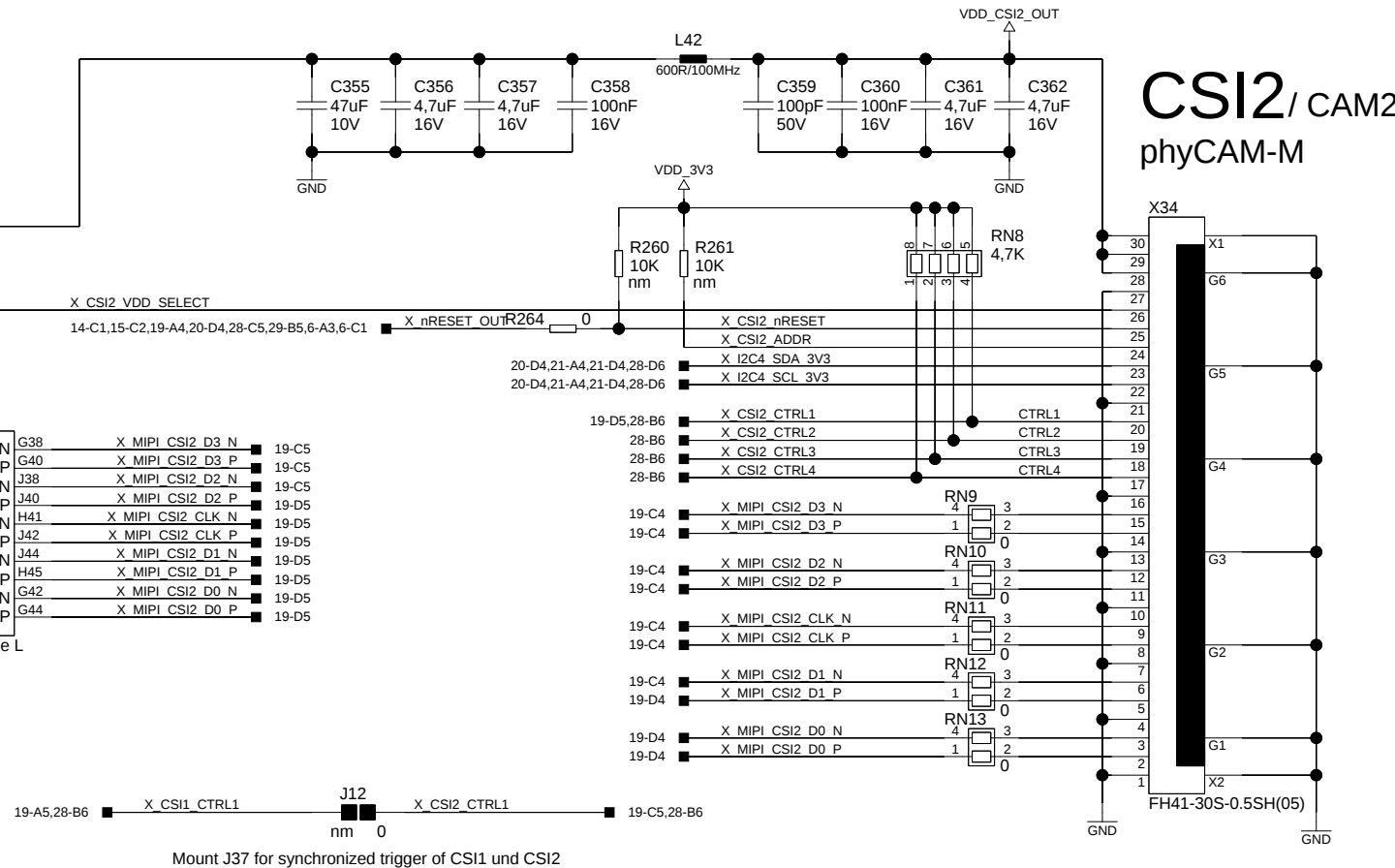
phyCAM-M



X1		FPSC Gamma Size L	
CSI1_D3_N	N62	X MIPI CSI1 D3 N	19-B5
CSI1_D3_P	P61	X MIPI CSI1 D3 P	19-B5
CSI1_D2_N	P57	X MIPI CSI1 D2 N	19-B5
CSI1_D2_P	R58	X MIPI CSI1 D2 P	19-B5
CSI1_CLK_N	R62	X MIPI CSI1 CLK N	19-B5
CSI1_CLK_P	R60	X MIPI CSI1 CLK P	19-B5
CSI1_D1_N	T61	X MIPI CSI1 D1 N	19-B5
CSI1_D1_P	U62	X MIPI CSI1 D1 P	19-B5
CSI1_D0_N	T57	X MIPI CSI1 D0 N	19-B5
CSI1_D0_P	U58	X MIPI CSI1 D0 P	19-B5



X1		FPSC Gamma Size L	
CSI2_D3_N	G38	X MIPI CSI2 D3 N	19-C5
CSI2_D3_P	G40	X MIPI CSI2 D3 P	19-C5
CSI2_D2_N	J38	X MIPI CSI2 D2 N	19-C5
CSI2_D2_P	J40	X MIPI CSI2 D2 P	19-D5
CSI2_CLK_N	H41	X MIPI CSI2 CLK N	19-D5
CSI2_CLK_P	J42	X MIPI CSI2 CLK P	19-D5
CSI2_D1_N	J44	X MIPI CSI2 D1 N	19-D5
CSI2_D1_P	H45	X MIPI CSI2 D1 P	19-D5
CSI2_D0_N	G42	X MIPI CSI2 D0 N	19-D5
CSI2_D0_P	G44	X MIPI CSI2 D0 P	19-D5

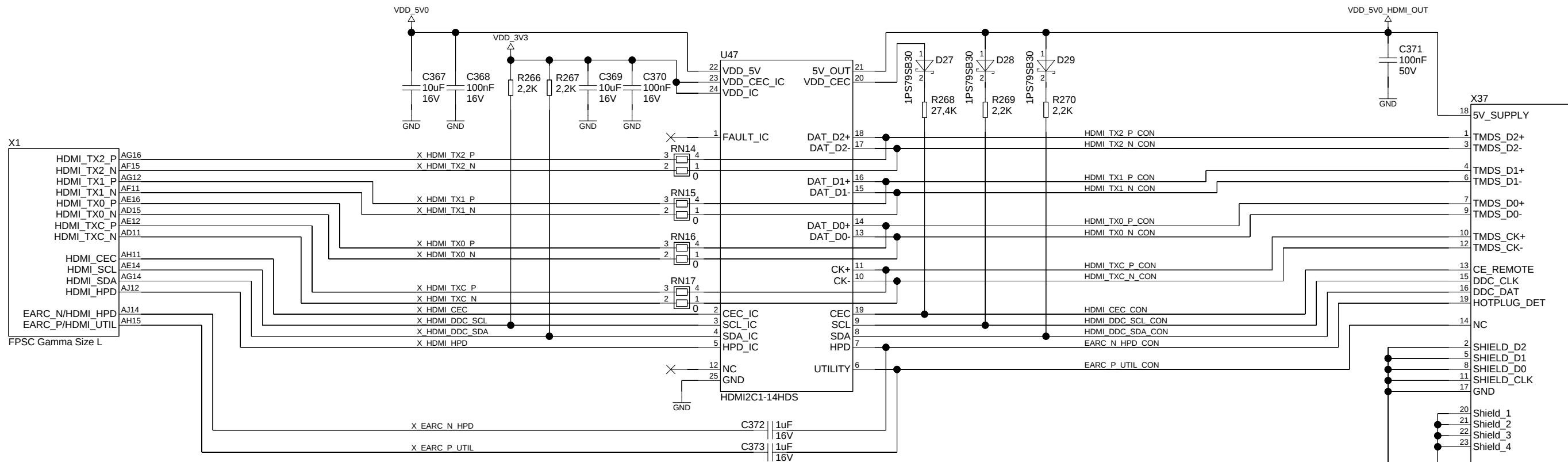


Mount J37 for synchronized trigger of CSI1 und CSI2

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Author: M.Poschmann, T.Metz, B.Schwilling
Revision : 001
Sheet 19 of 30

HDMI

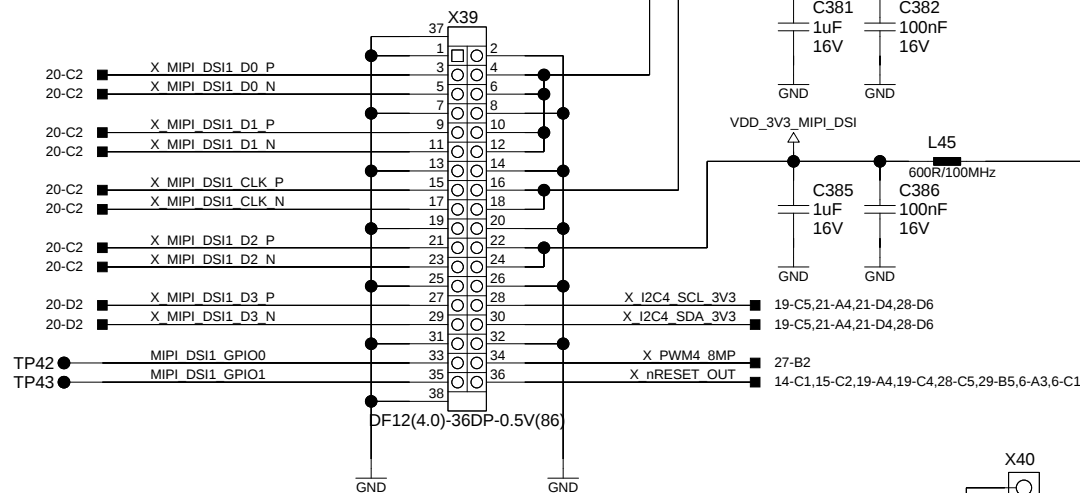


MIPI-DSI

X1

DSI1_CLK_N	AN46	X MIPI DSI1 CLK N	20-C3
DSI1_CLK_P	AN48	X MIPI DSI1 CLK P	20-C3
DSI1_D0_N	AL48	X MIPI DSI1 D0 N	20-C3
DSI1_D0_P	AL50	X MIPI DSI1 D0 P	20-C3
DSI1_D1_N	AM49	X MIPI DSI1 D1 N	20-C3
DSI1_D1_P	AN50	X MIPI DSI1 D1 P	20-C3
DSI1_D2_N	AN44	X MIPI DSI1 D2 N	20-D3
DSI1_D2_P	AM45	X MIPI DSI1 D2 P	20-D3
DSI1_D3_N	AL44	X MIPI DSI1 D3 N	20-D3
DSI1_D3_P	AL46	X MIPI DSI1 D3 P	20-D3

FPSC Gamma Size L

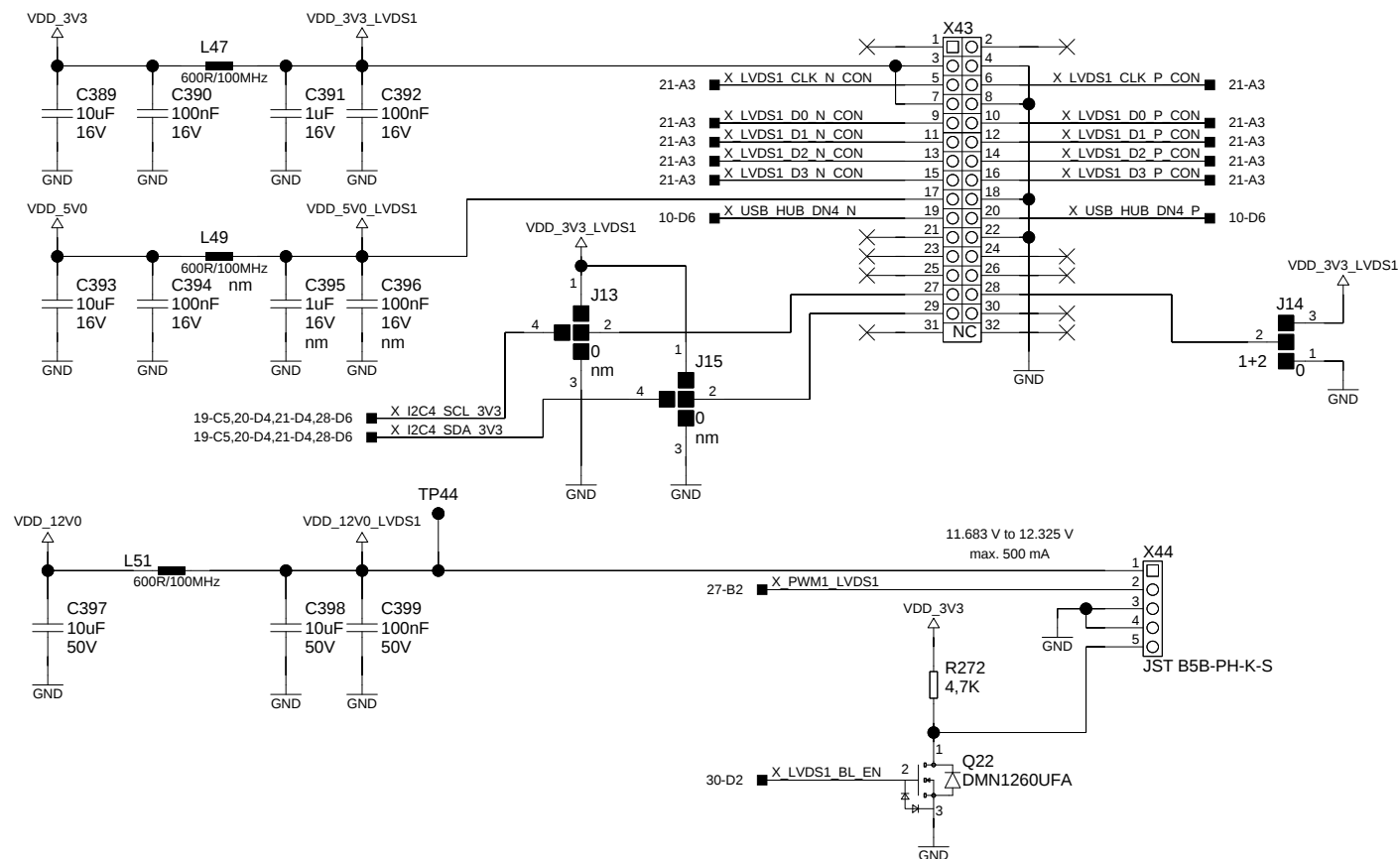
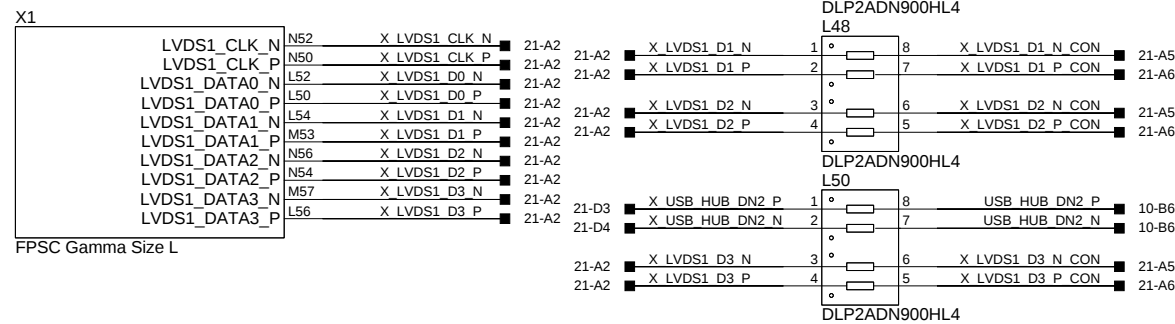


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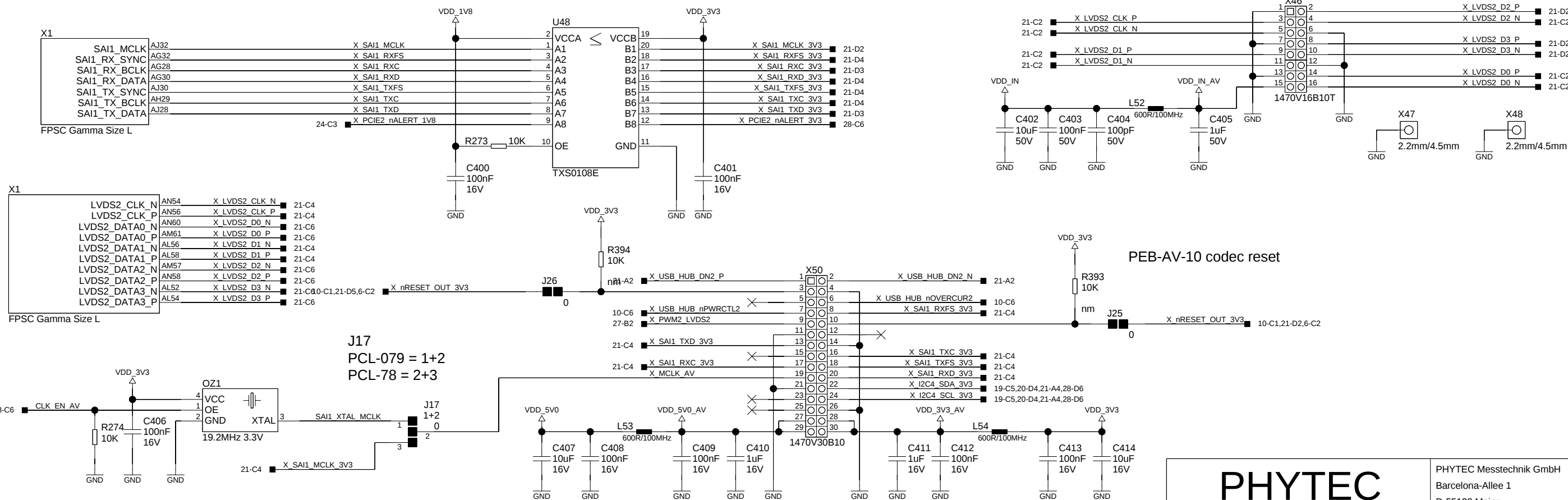
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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 20 of 30

LVDS1



AV-Connector

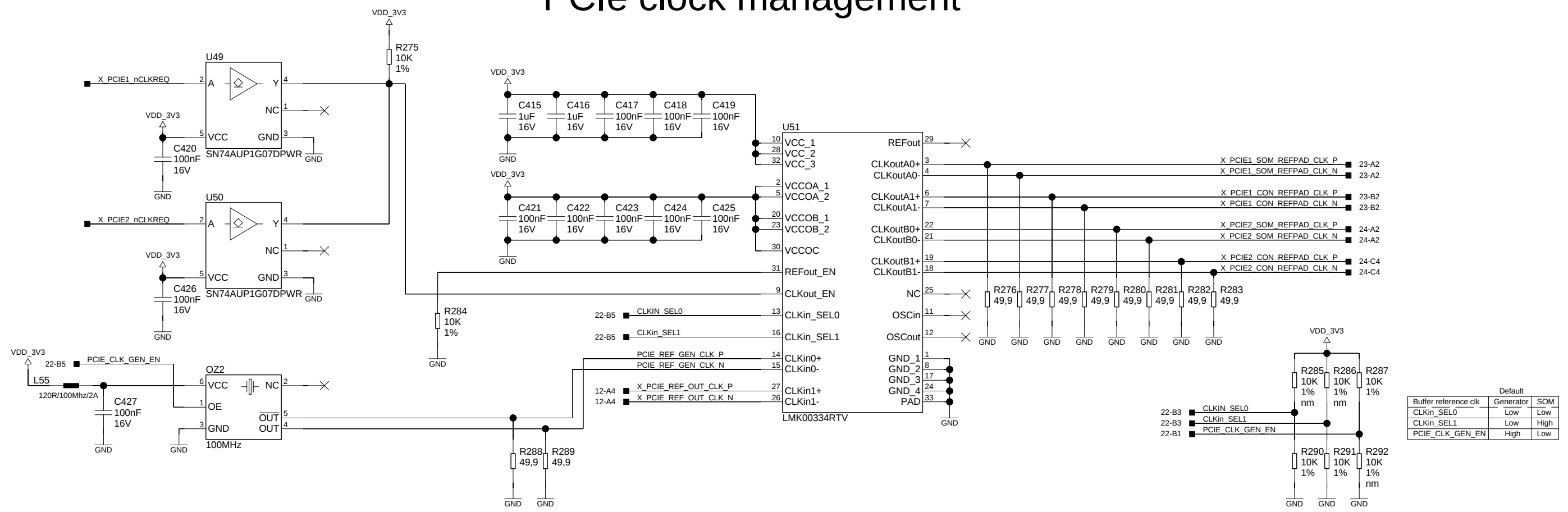


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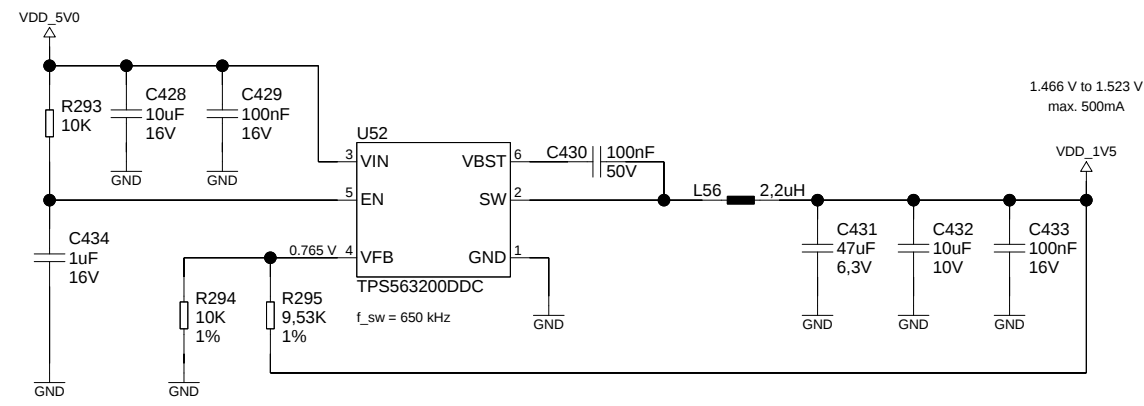
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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 21 of 30

PCie clock management



Buffer reference clk	Default	SOM
CLKin_SEL0	Low	Low
CLKin_SEL1	Low	High
PCIE_CLK_GEN_EN	High	Low

PCie peripheral power



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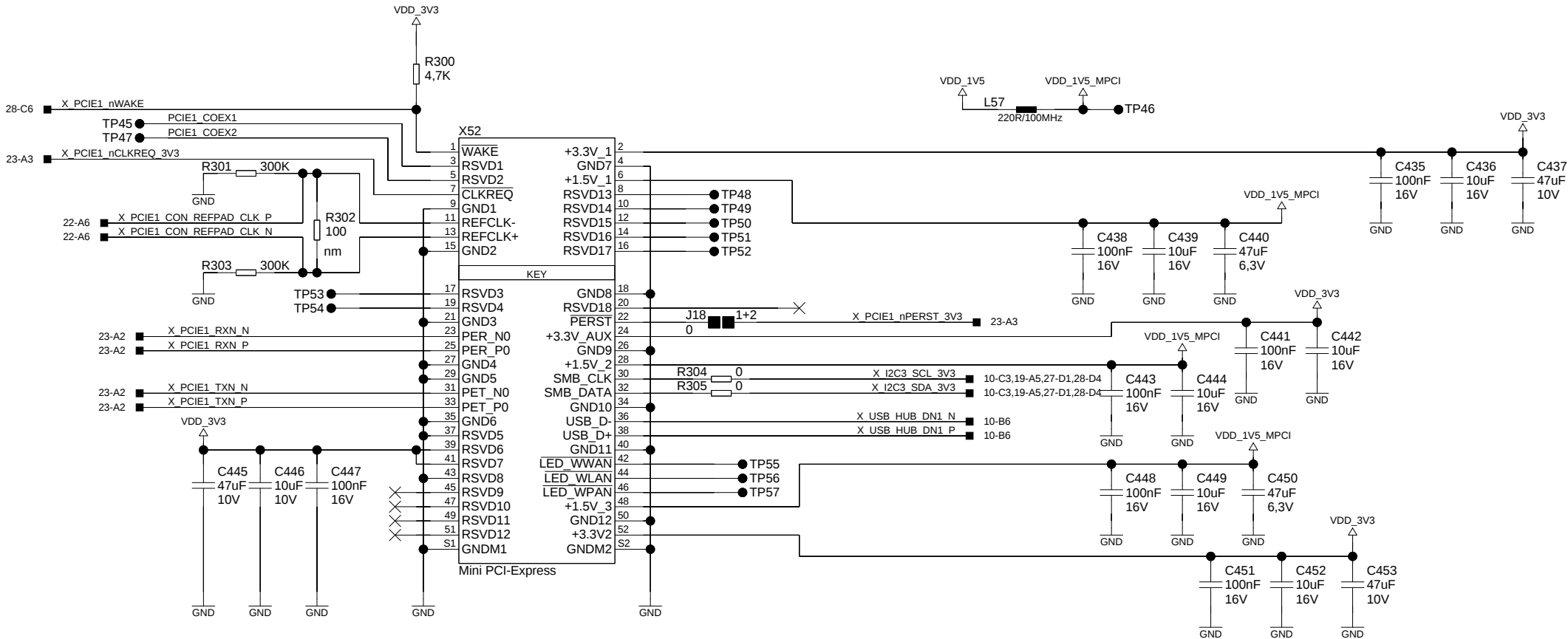
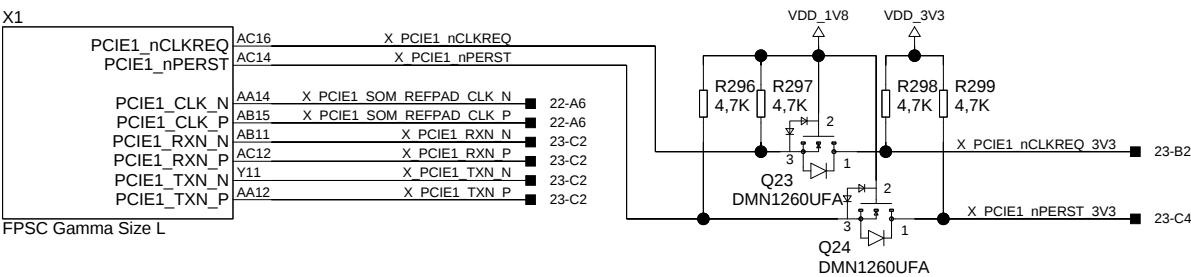
Department : F&E

Author: M.Poschmann, T.Metz, B.Schwilling

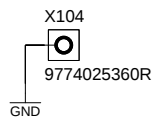
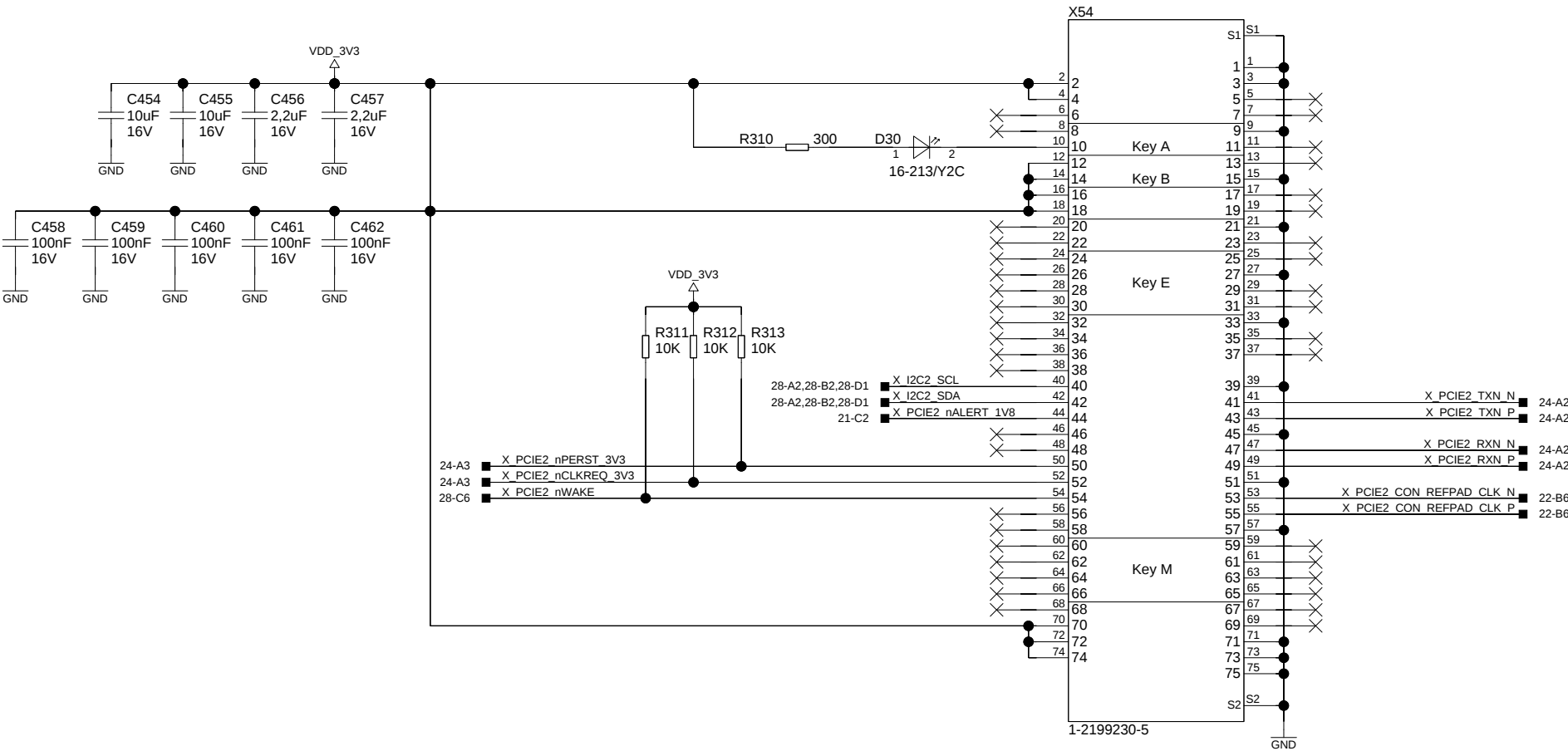
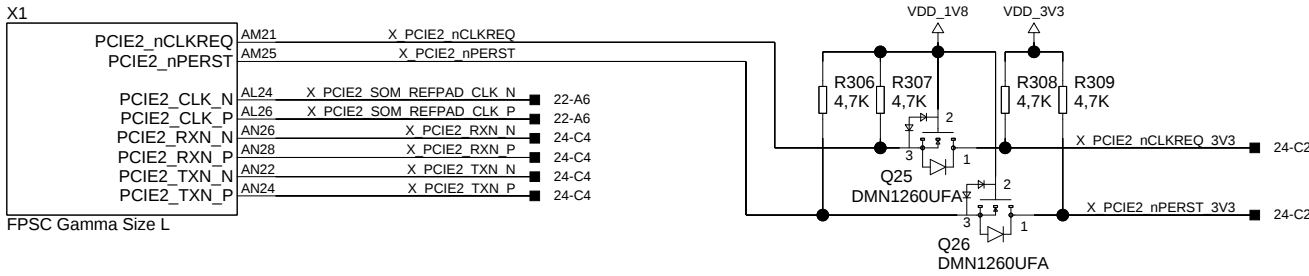
Revision : 001

Sheet 22 of 30

Mini PCIe



M.2 Key M



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Barcelona-Allee 1
D-55129 Mainz

Project:
FPSC Featureset Gamma

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

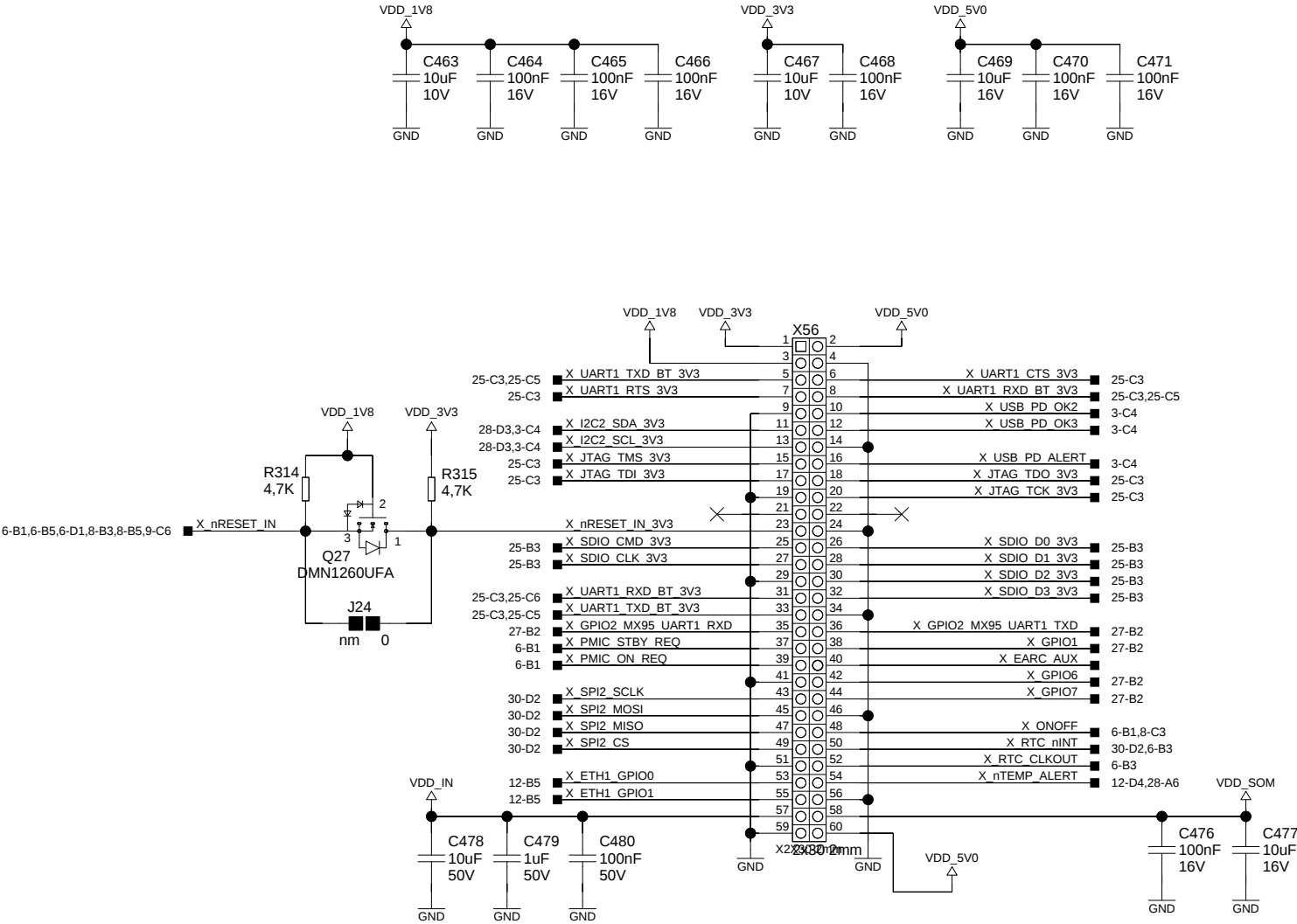
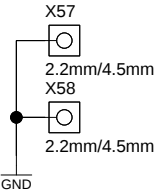
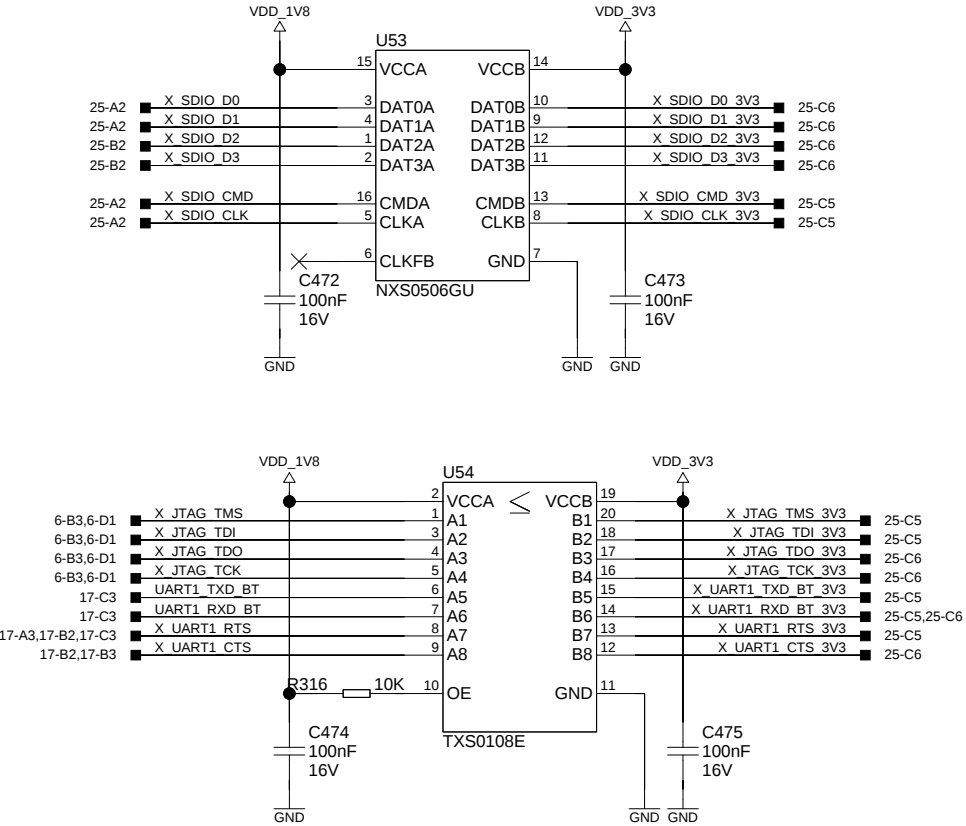
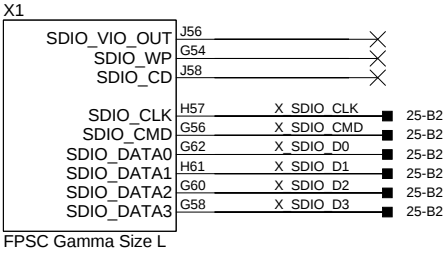
15.07.2025

PCB-No.: 1618.1a

Revision : 001

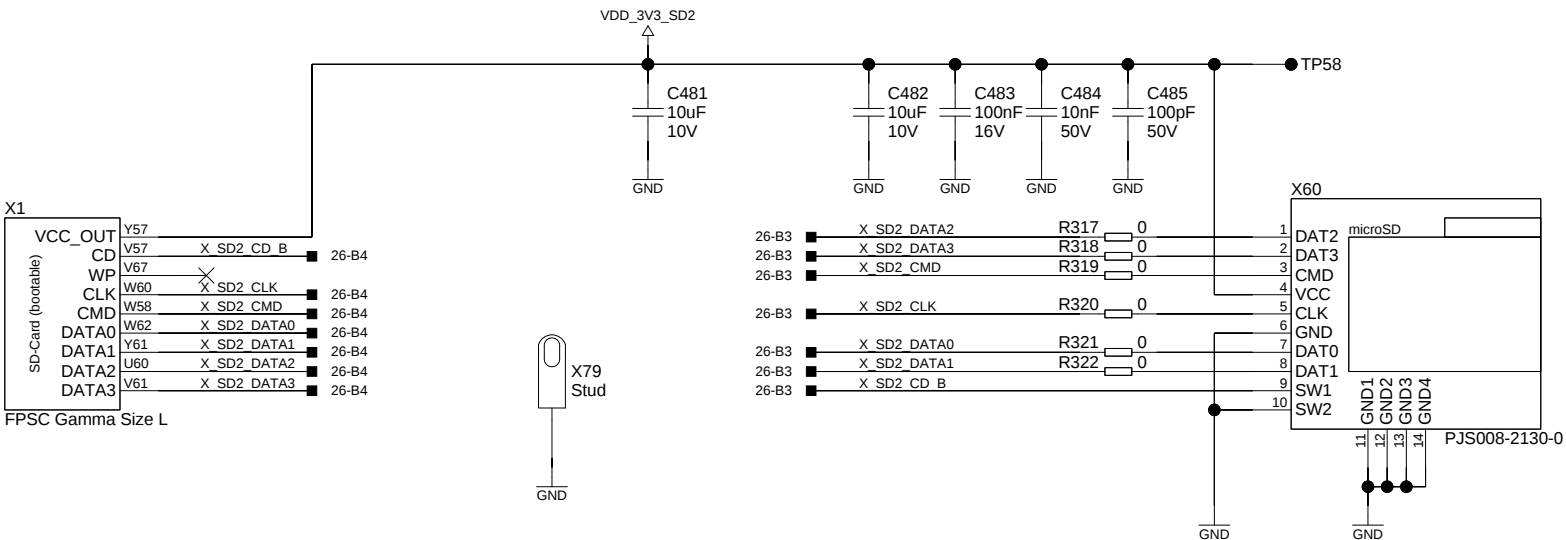
Sheet 24 of 30

Expansion Connector

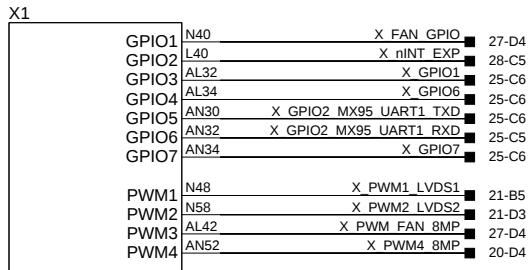


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15.07.2025	PCB-No.: 1618.1a	Revision : 001	Sheet 25 of 30

μSD-Card



GPIO/PWM

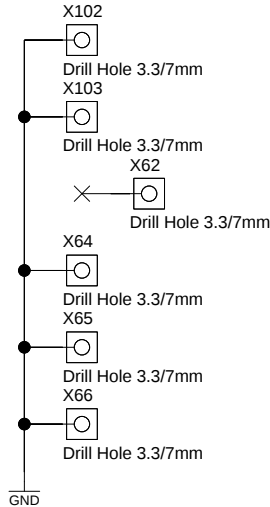


FPSC Gamma Size L

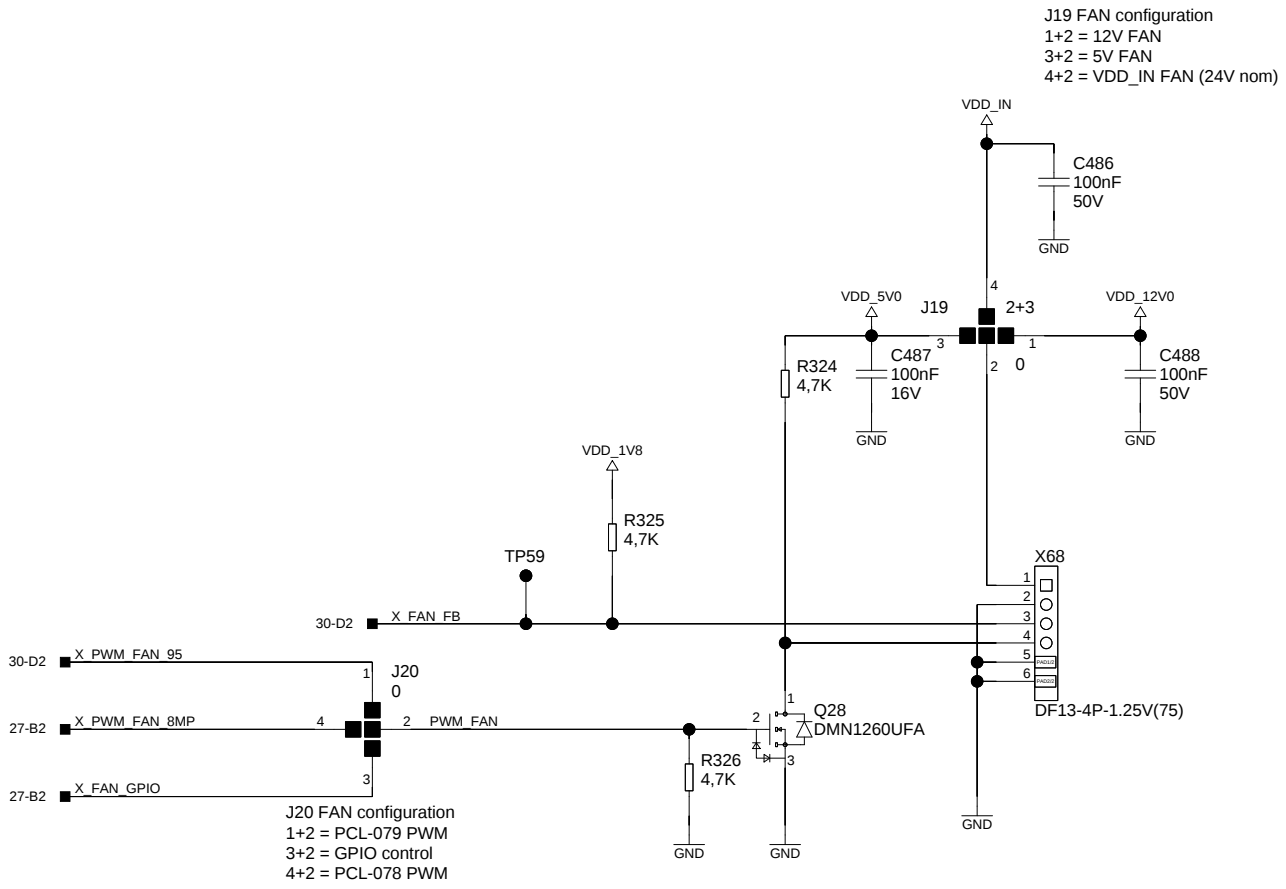
FPSC Pin BD6 is PCL-078 exclusive

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

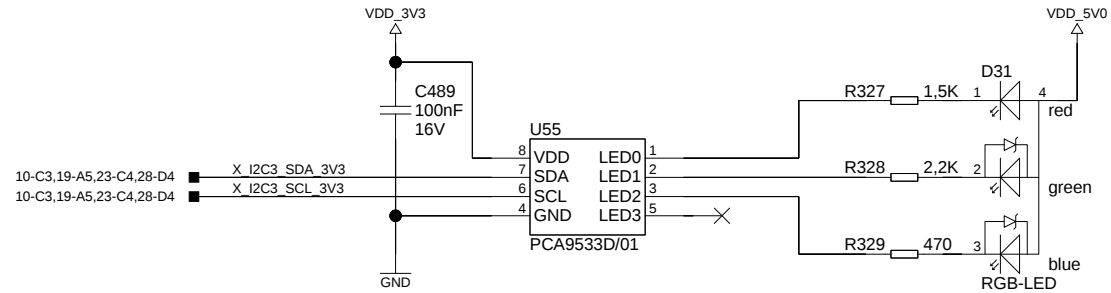
Mounting holes



Fan Connector



RGB LED

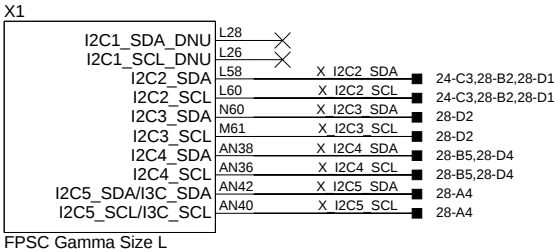


I2C Addr: 0x62

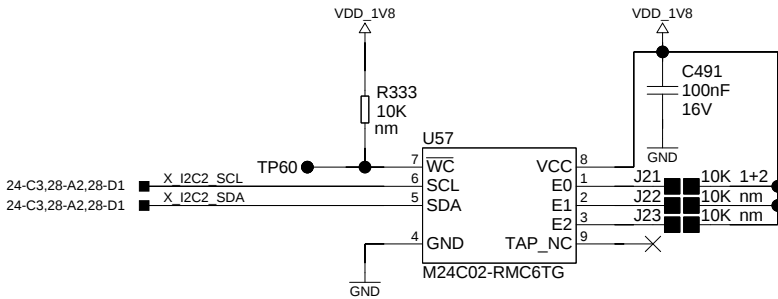
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Project: FPSC Featureset Gamma	Department : F&E Author: M.Poschmann, T.Metz, B.Schwilling
15.07.2025	PCB-No.: 1618.1a
Revision : 001	Sheet 27 of 30

I2C / I3C

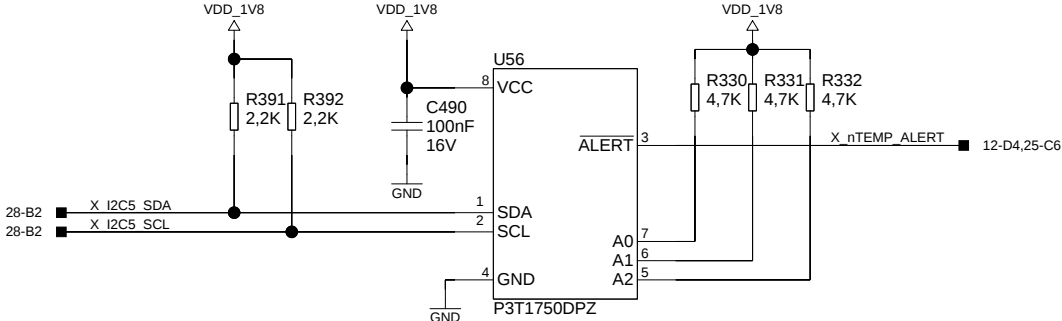


EEPROM



I2C2 addr. 0x51

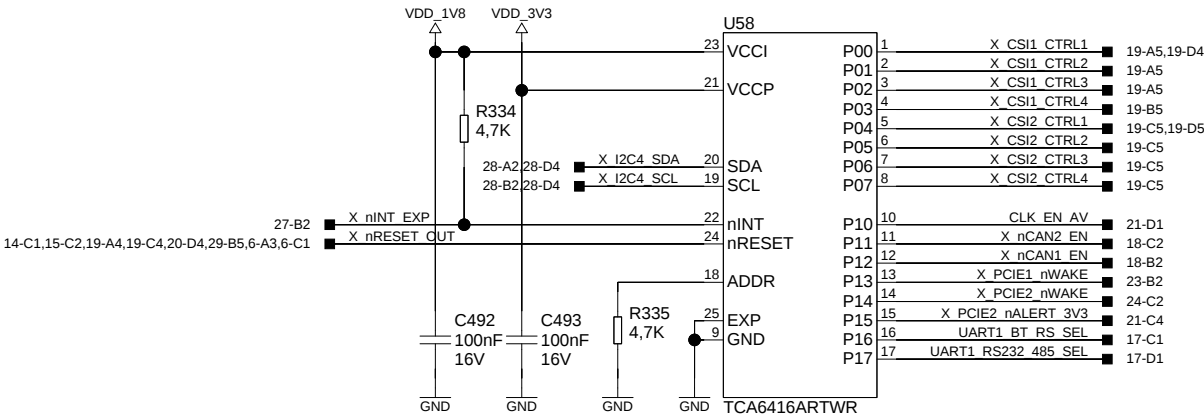
Temperature sensor



I2C5 I2C addr. 0x4F

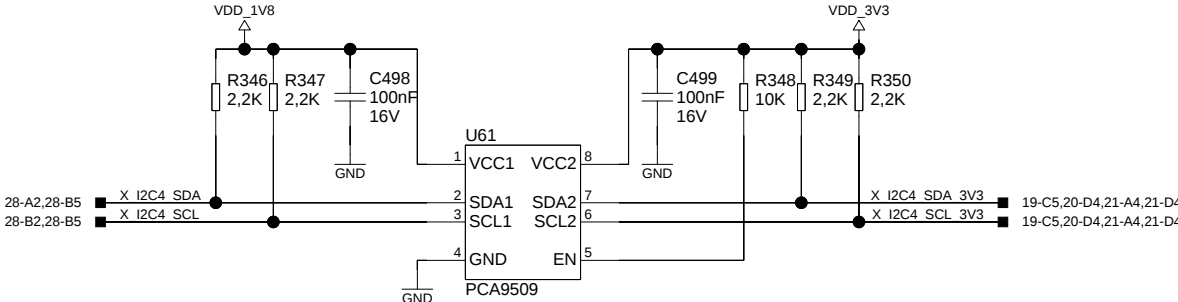
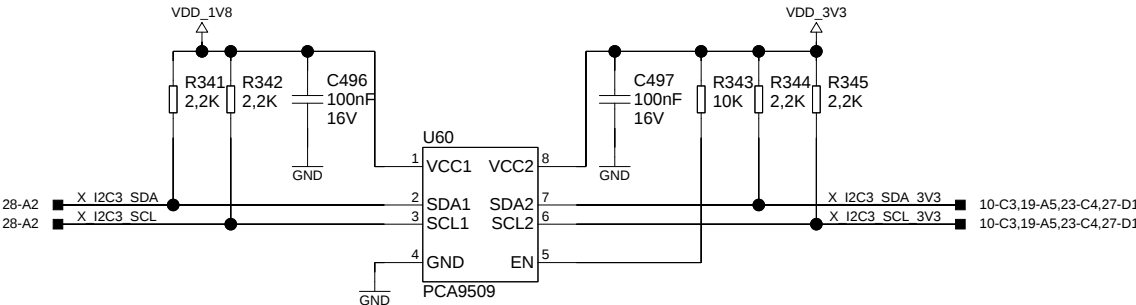
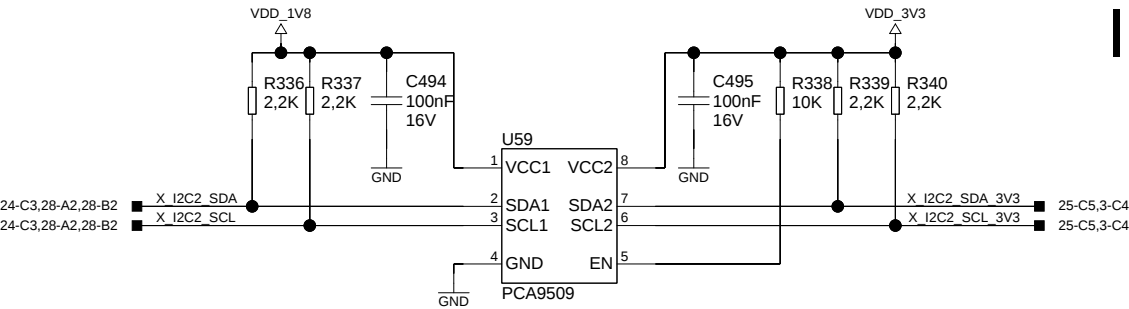
I2C5 provisional I3C ID 0x9E

I2C GPIO expander



I2C4 addr. 0x20

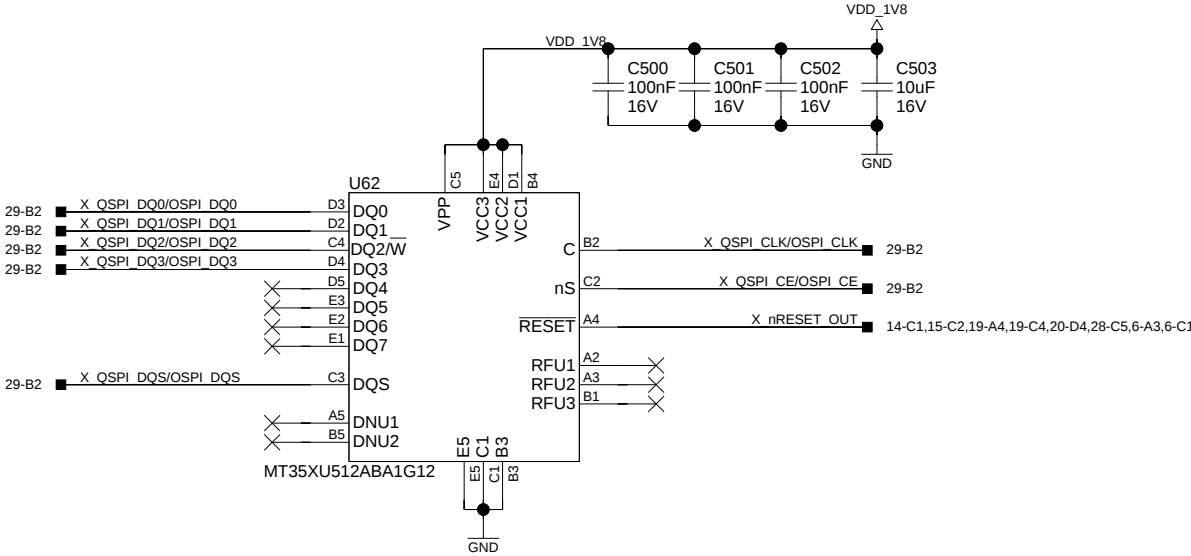
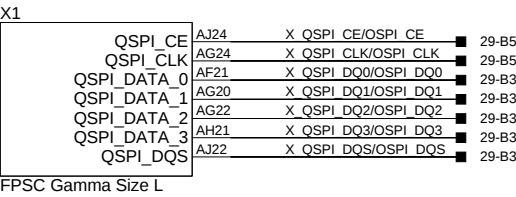
I2C level translation



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FPSC Featureset Gamma	Author: M.Poschmann, T.Metz, B.Schwillig
15.07.2025	PCB-No.: 1618.1a
Revision : 001	Sheet 28 of 30

QSPI NOR



A

B

C

D

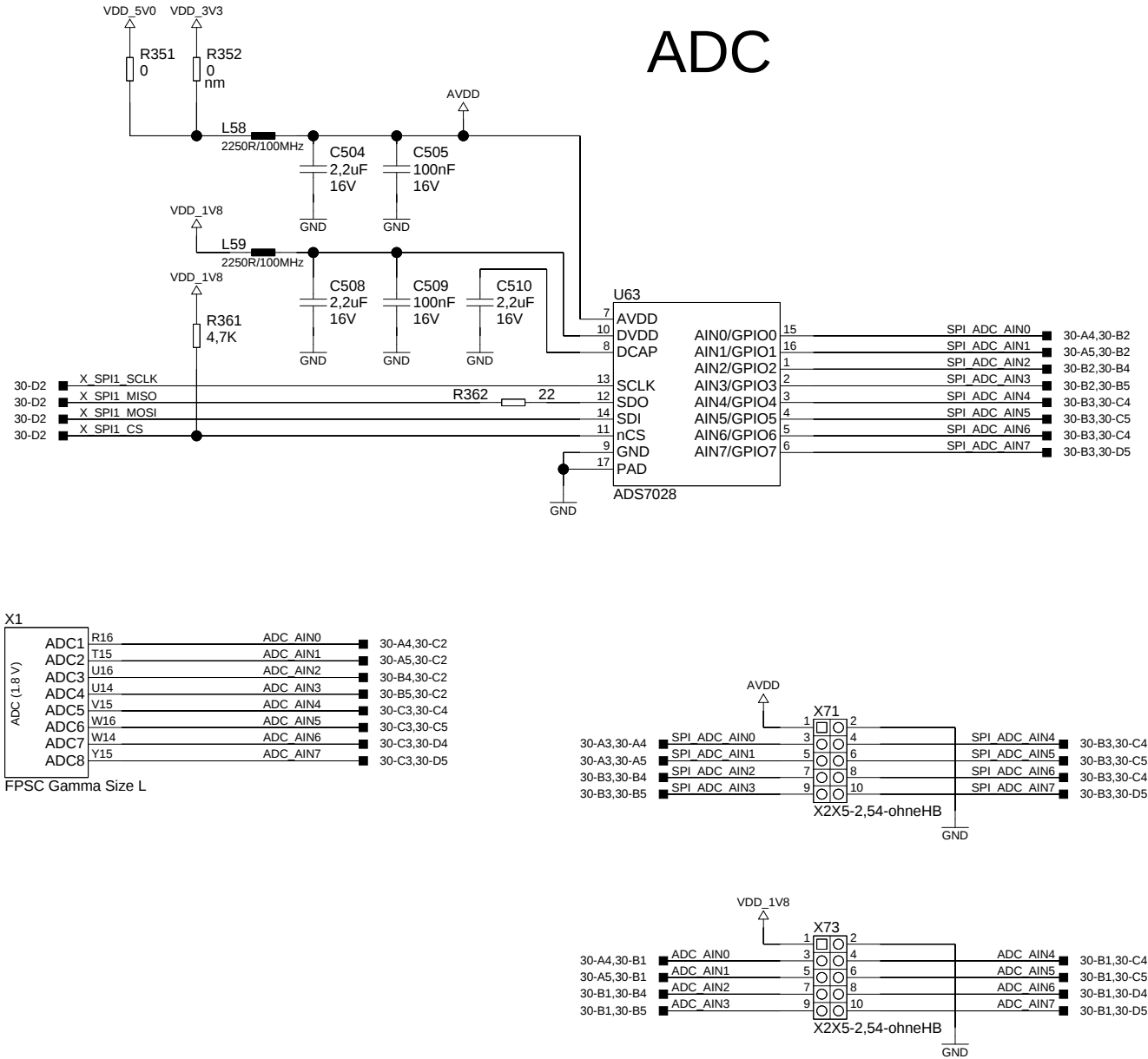
A

B

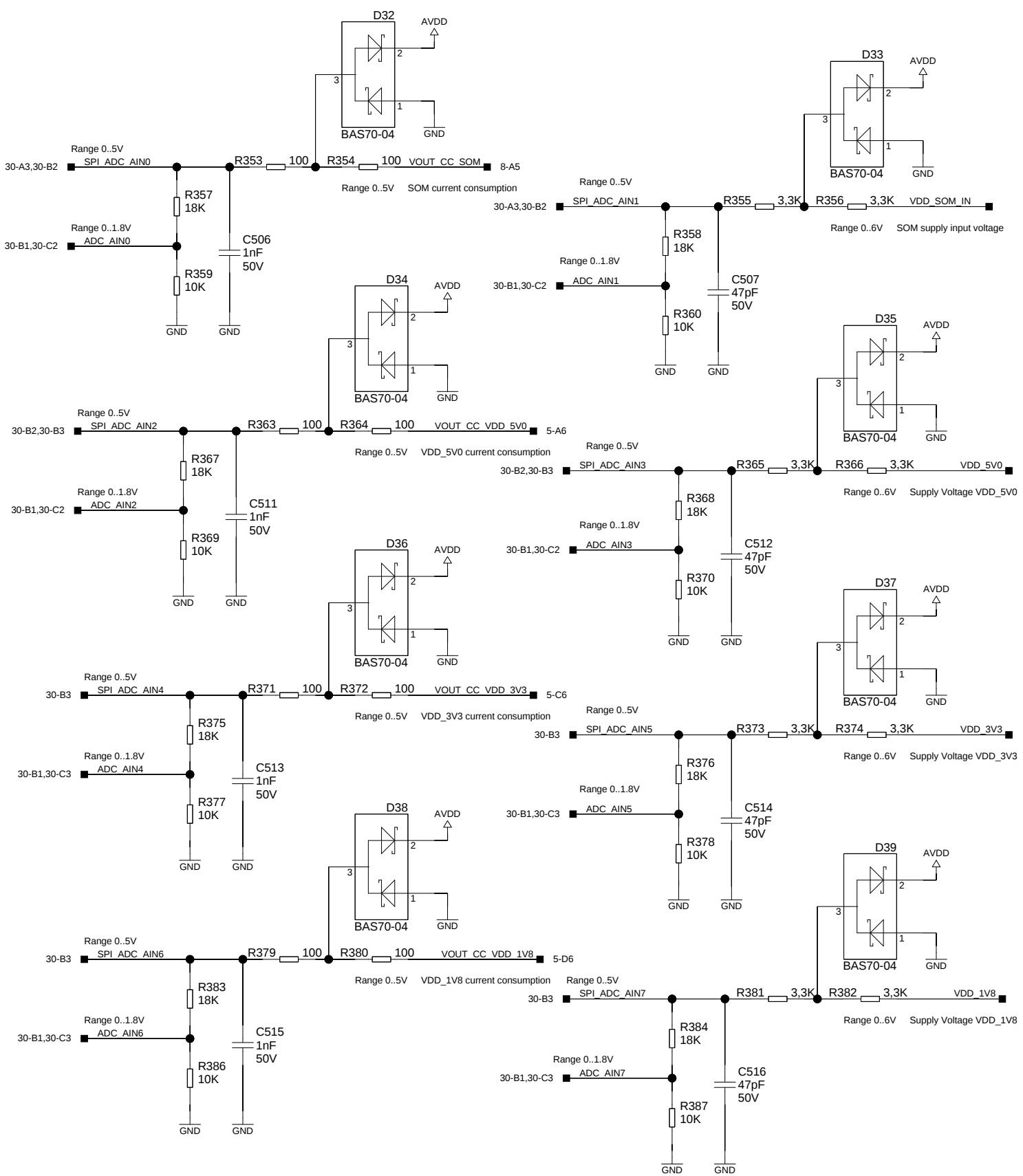
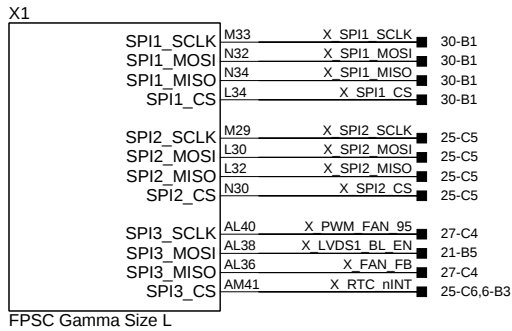
C

D

ADC



SPI



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Project: FPSC Featureset Gamma	15.07.2025	PCB-No.: 1618.1a	Revision : 001
Sheet 30 of 30			