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Revisions			
Rev	Description	Date	Approved
AX1	Added CG5317 and Switch	11-28-2022	Banwari Lal
A	Final release	12-02-2022	Banwari Lal
AX2	A055 PPL release	10-05-2023	Biswanath Pal
AX3	Updated the pilot Circuit and U14 with LM358DR A055 release	16-05-2023	Biswanath Pal
AX3	A070 release	16-05-2023	Biswanath Pal
B	A085 release	26-05-2023	Biswanath Pal
B1	Updated Jumper defaults: J8, J47, J10, J14,J17, J19, J21,J22: 1-2 and J18, J20: 2-3	22-06-2023	Biswanath Pal
B2	Replaced U1 with PPF5020CMMAYES	24-04-2024	Biswanath Pal

X-EVSE-SIG-BRD1X

		Microcontroller Solutions Group 6501 William Cannon Drive West Austin, TX 78735-8598	
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Designer: Nikhil	Drawing Title: X-EVSE-SIG-BRD1X		
Drawn by: Nikhil	Page Title: Title		
Approved: Biswanath Bhowmick	Size B	Document Number SCH-89042 PDF: SPF-89042	Rev B2
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Jumper Table

REF DES	JUMPER(DEFAULT)	JUMPER FUNCTION	PAGE NAME
J2	2-3: ENABLE +5V ARD_EXP_CN	LOW	05 - System Power
J3	2-3: ENABLE 3V3_ARD_EXP_CN	LOW	05 - System Power
J5	ON: ENABLE -12V0_ISO	LOW	05 - System Power
J4	ON: ENABLE 12V0_ISO	LOW	05 - System Power
J8,J10,J47	1-2		07 - CP & PP
J7	OPEN	LOW	07 - CP & PP
J13	ON: ENABLE 3.3VA	LOW	08 - CG5317 HPGP
J11	ON: ENABLE 3V3_CG5317	LOW	08 - CG5317 HPGP
J12	ON: ENABLE VCORE	LOW	08 - CG5317 HPGP
J14,J17,J19,J21,J22	1-2		09 - CG5317 Analog Interface
J18,J20	2-3		09 - CG5317 Analog Interface
J23	OPEN	LOW	10 - GFCI & Relay Drive
J27	ON: ENABLE MCU_MAIN		11 - LPC5536
J28	ON: ENABLE MCU_VBAT	LOW	11 - LPC5536
J26	ON: ENABLE MCU_VDDA	LOW	11 - LPC5536
J25	ON: ENABLE MCU_VDD	LOW	11 - LPC5536
J29	ON: Flash Boot	LOW	11 - LPC5536
J31	ON: ENABLE VCC_3V3_S	LOW	13 - Switch Power
RU1,RU2,RU3,RU4,RU5	1-2	LOW	14 - Switch Ports & SPI
J38	1-2: Connect HPGP Chip select	LOW	16 - Host Connector
J43	1-2: Connect HPGP IRQ	LOW	16 - Host Connector
J41	1-2: Connect LPC Uart	LOW	16 - Host Connector
J42	1-2: Connect LPC Uart		16 - Host Connector

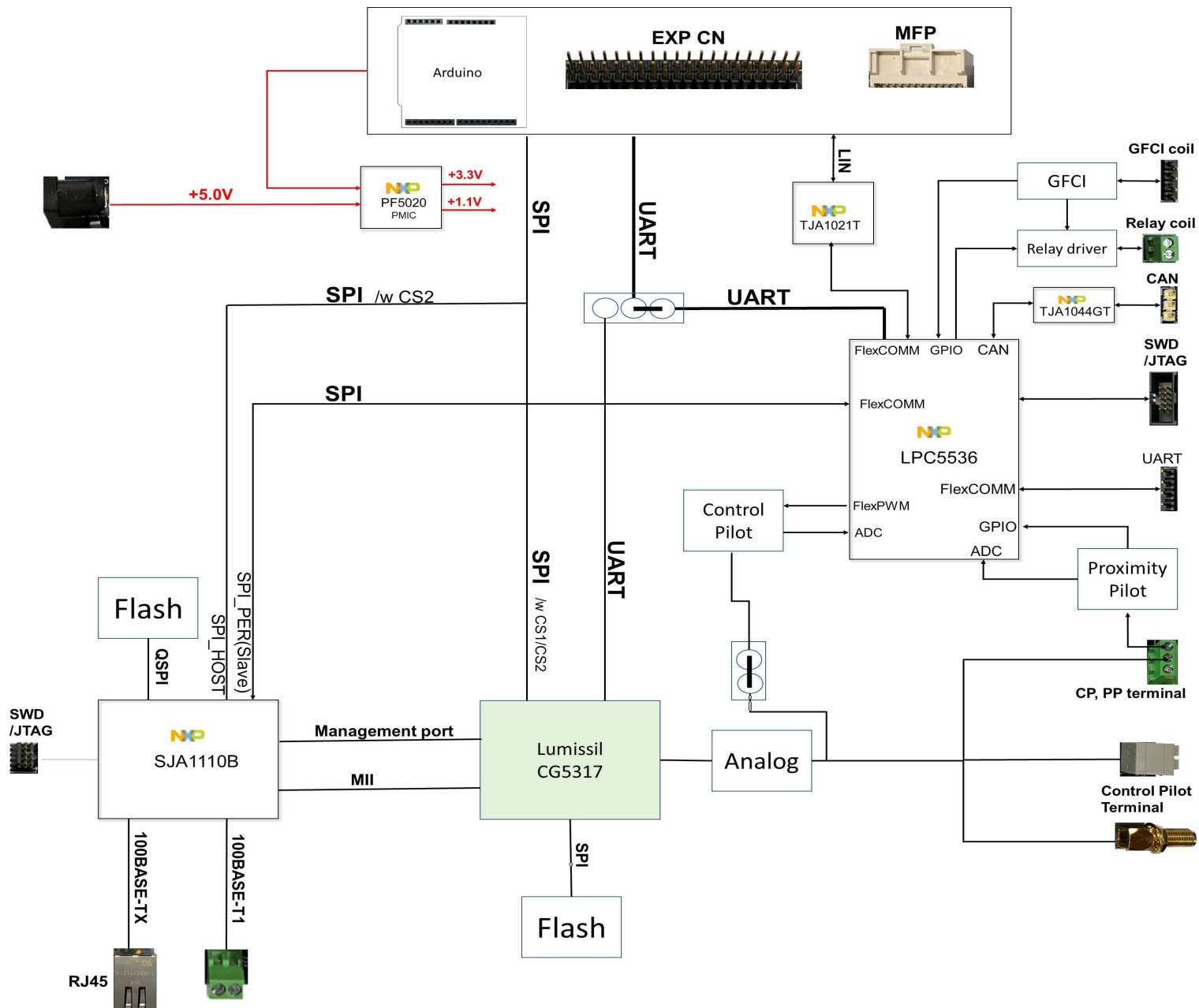
DNP Table

REF DES	ASSY_OPT	PAGE NAME
C24	DNP	05 - System Power
D6,R19,R24,R25,R26,R27	DNP	06 - CAN & LIN
C873,R55	DNP	07 - CP & PP
C79	DNP	08 - CG5317 HPGP
R83,R85	DNP	09 - CG5317 Analog Interface
R116	DNP	10 - GFCI & Relay Drive
C132,C133,C134,C135,R134	DNP	11 - LPC5536
R180	DNP	14 - Switch Ports & SPI
R769,R776,R777	DNP	16 - Host Connector

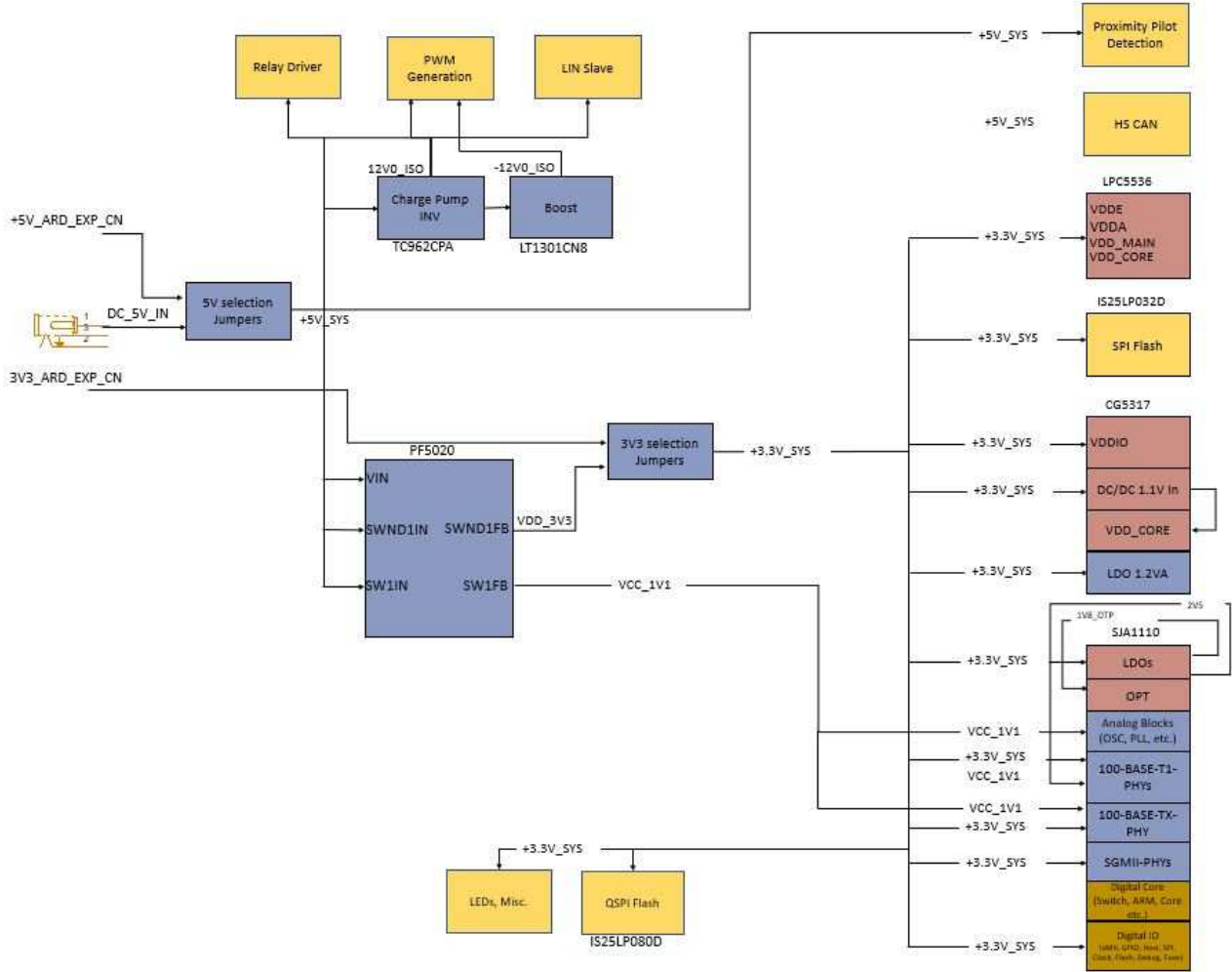


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Block Diagram



POWER TREE



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Page Title:

Power Tree

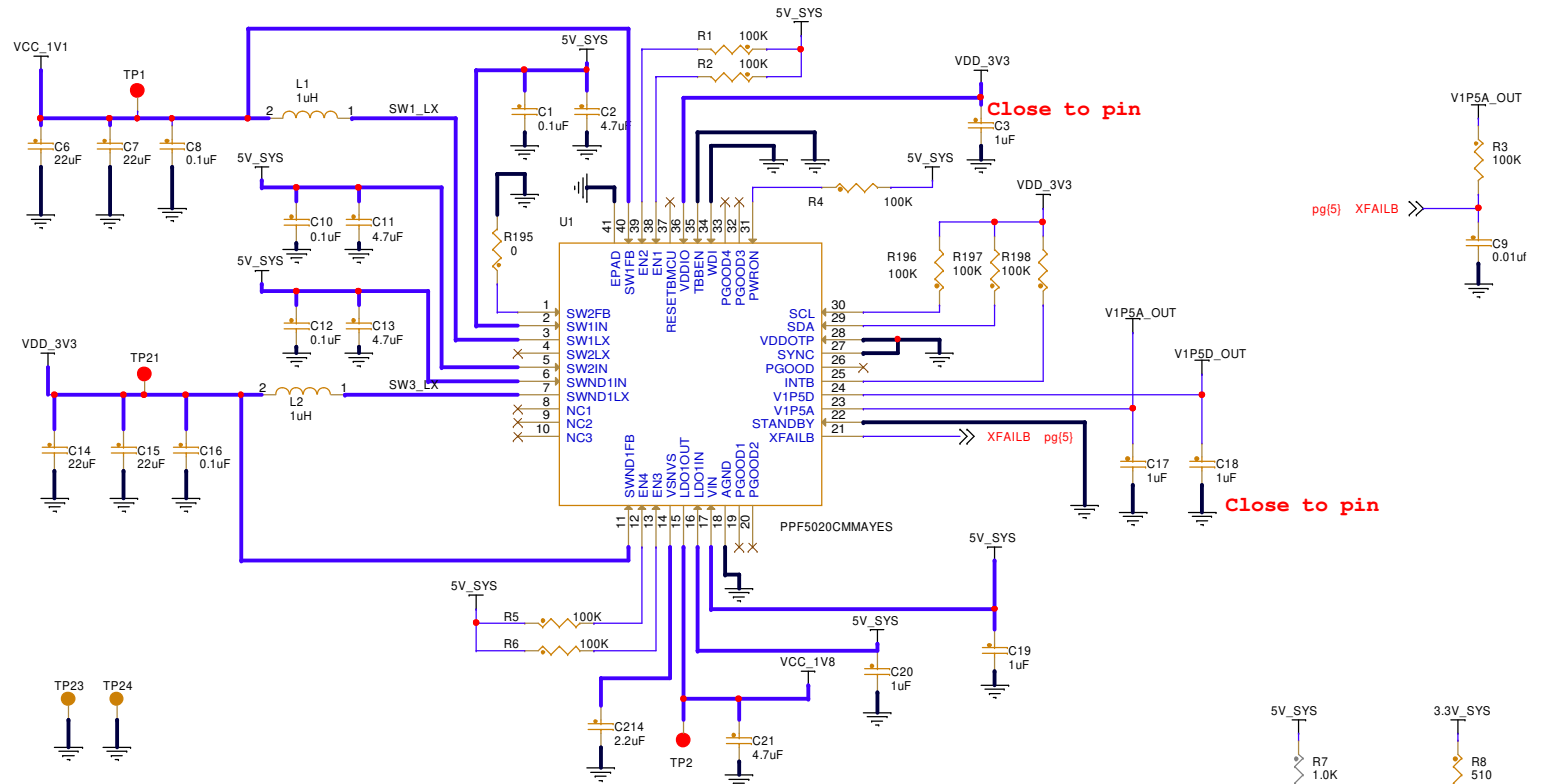
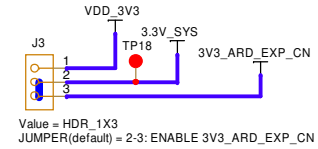
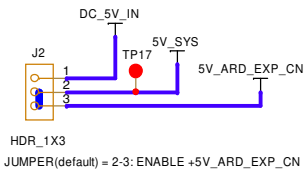
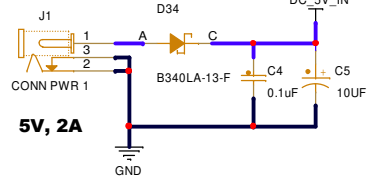
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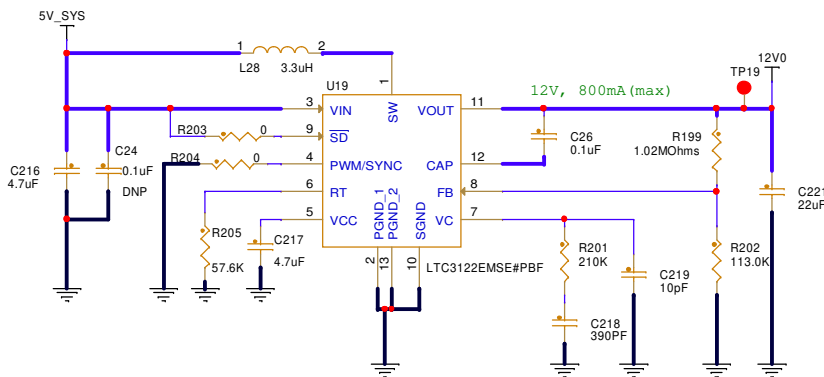
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POWER SUPPLY INPUT

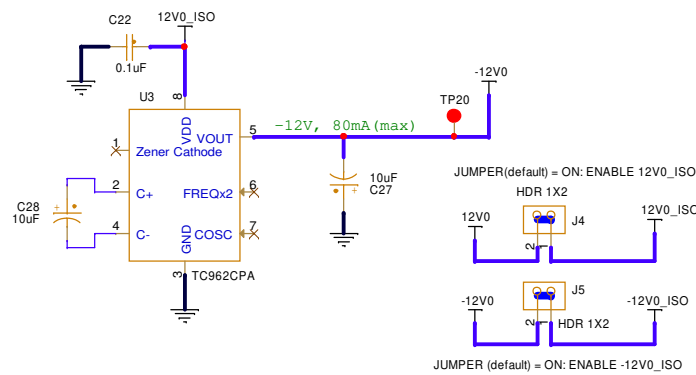
Barrel Connector



BOOST CONVERTER



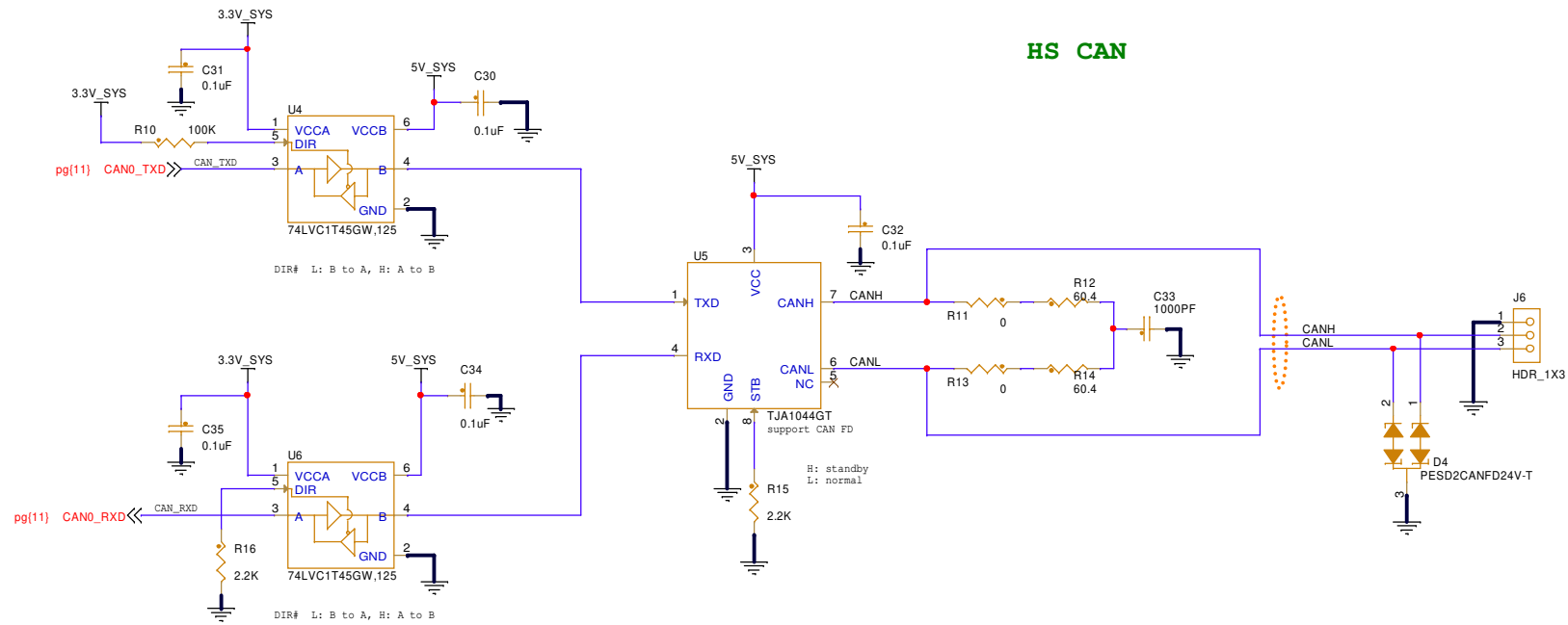
CHARGE PUMP INVERTER



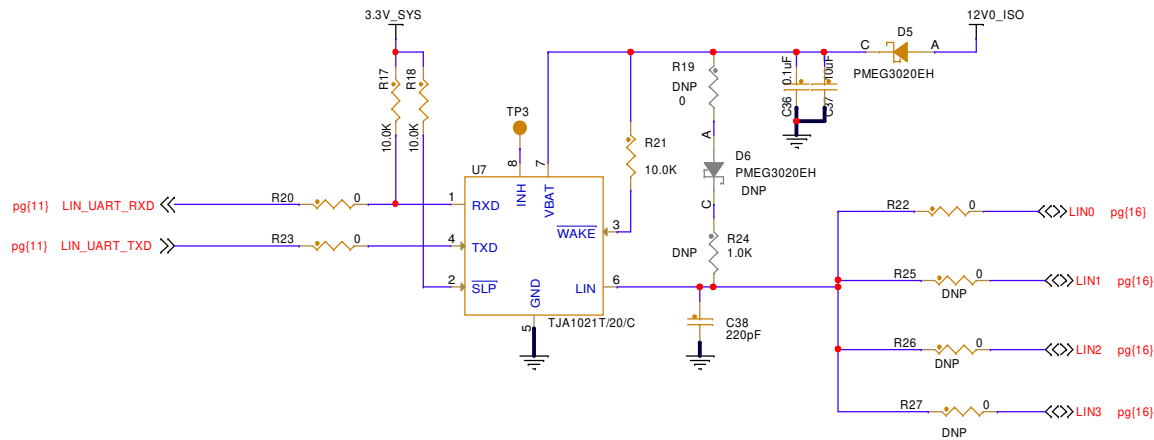
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HS CAN

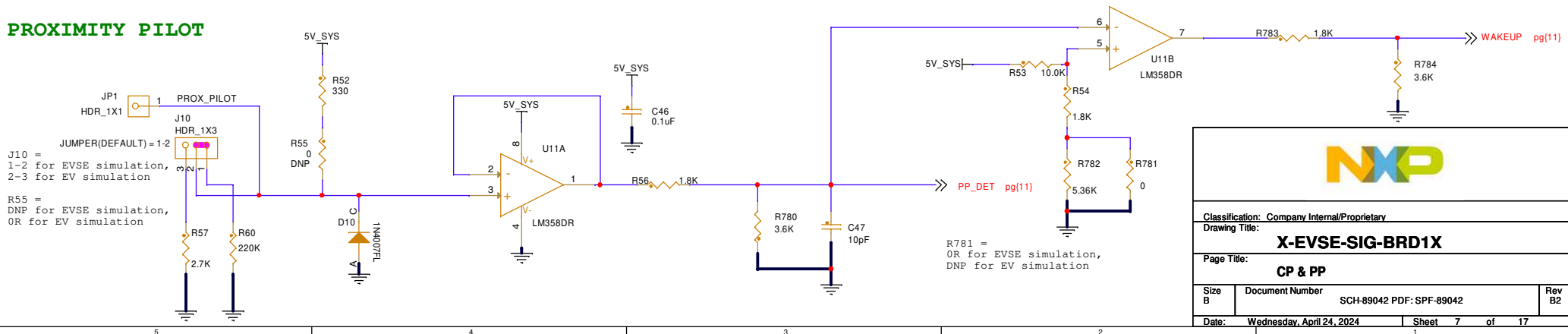


LIN SLAVE



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J1772 PWM generation and detection



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CP & PP

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HPGP_MII_RXD_0	STRAP5	pg(9,14)
HPGP_MII_RXD_1	STRAP4	pg(9,14)
HPGP_MII_RXD_2	STRAP3	pg(9,14)
HPGP_SPI_IRQ	STRAP2	pg(9,16)
HPGP_GP_IRQ	STRAP1	pg(9,16)
MFIO_2_SPIM_MOSI	STRAP0	pg(9)

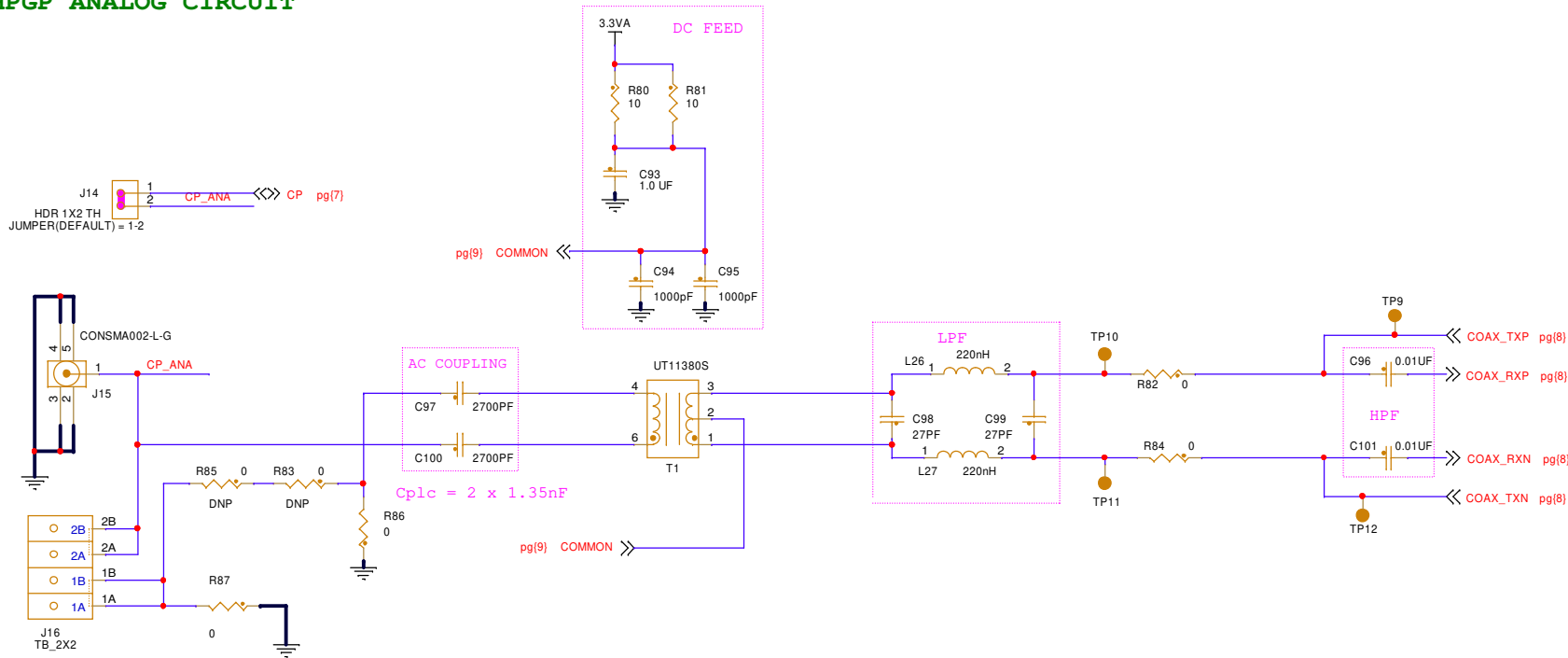


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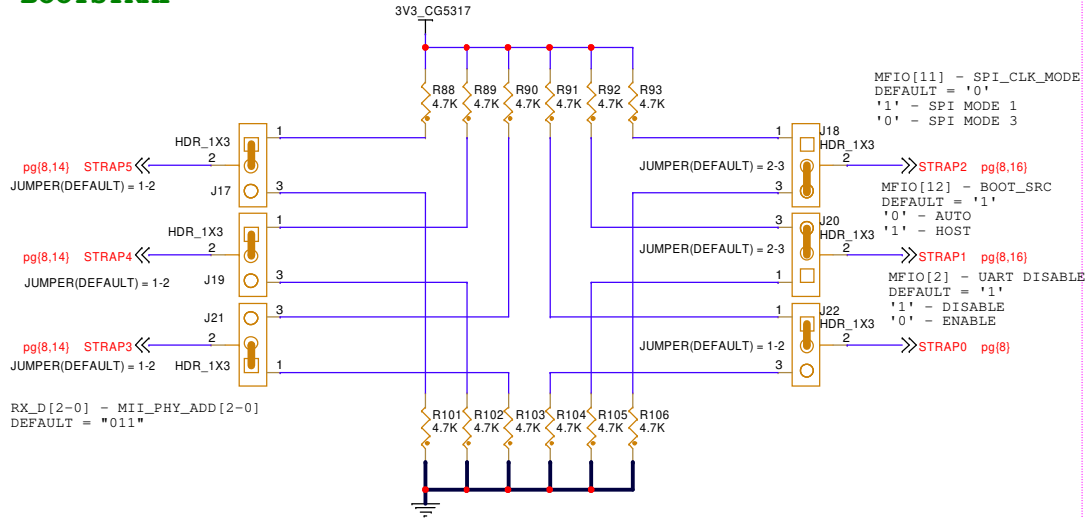
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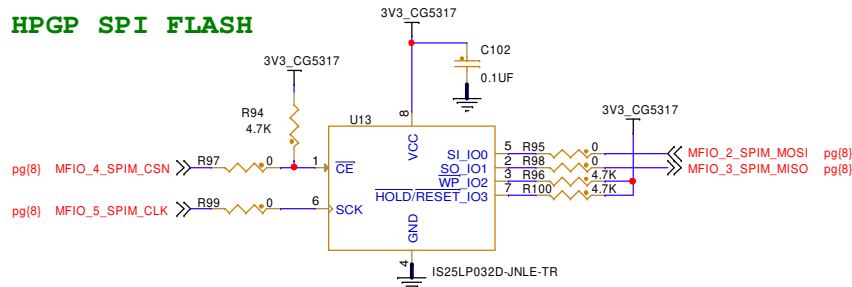
HPGP ANALOG CIRCUIT



HPGP BOOTSTRAP

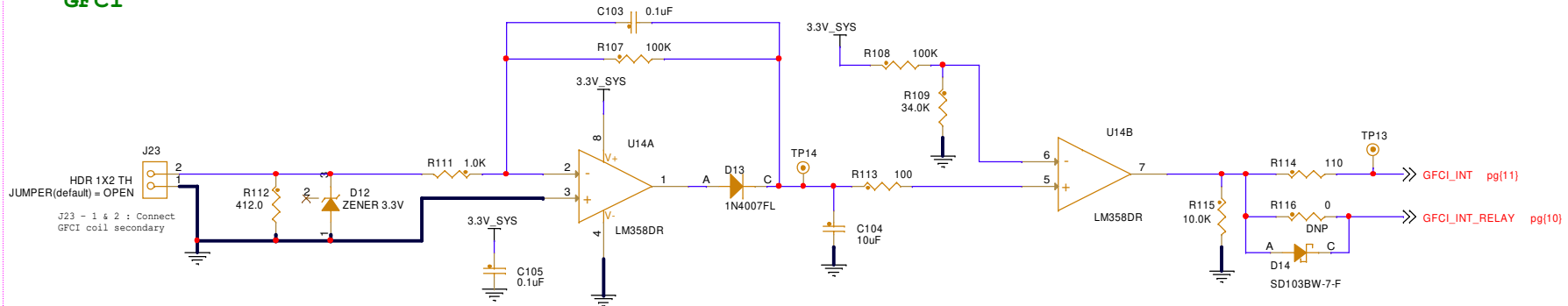


HPGP SPI FLASH

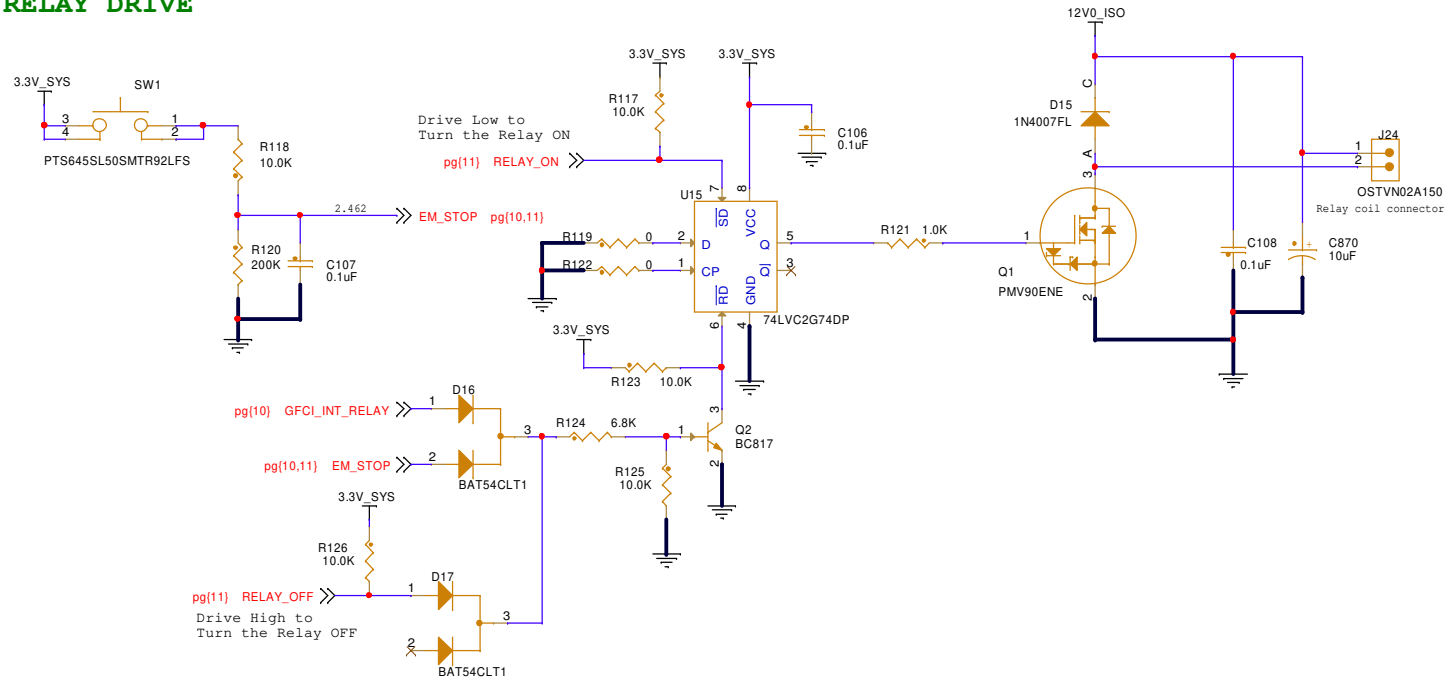


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GFCI

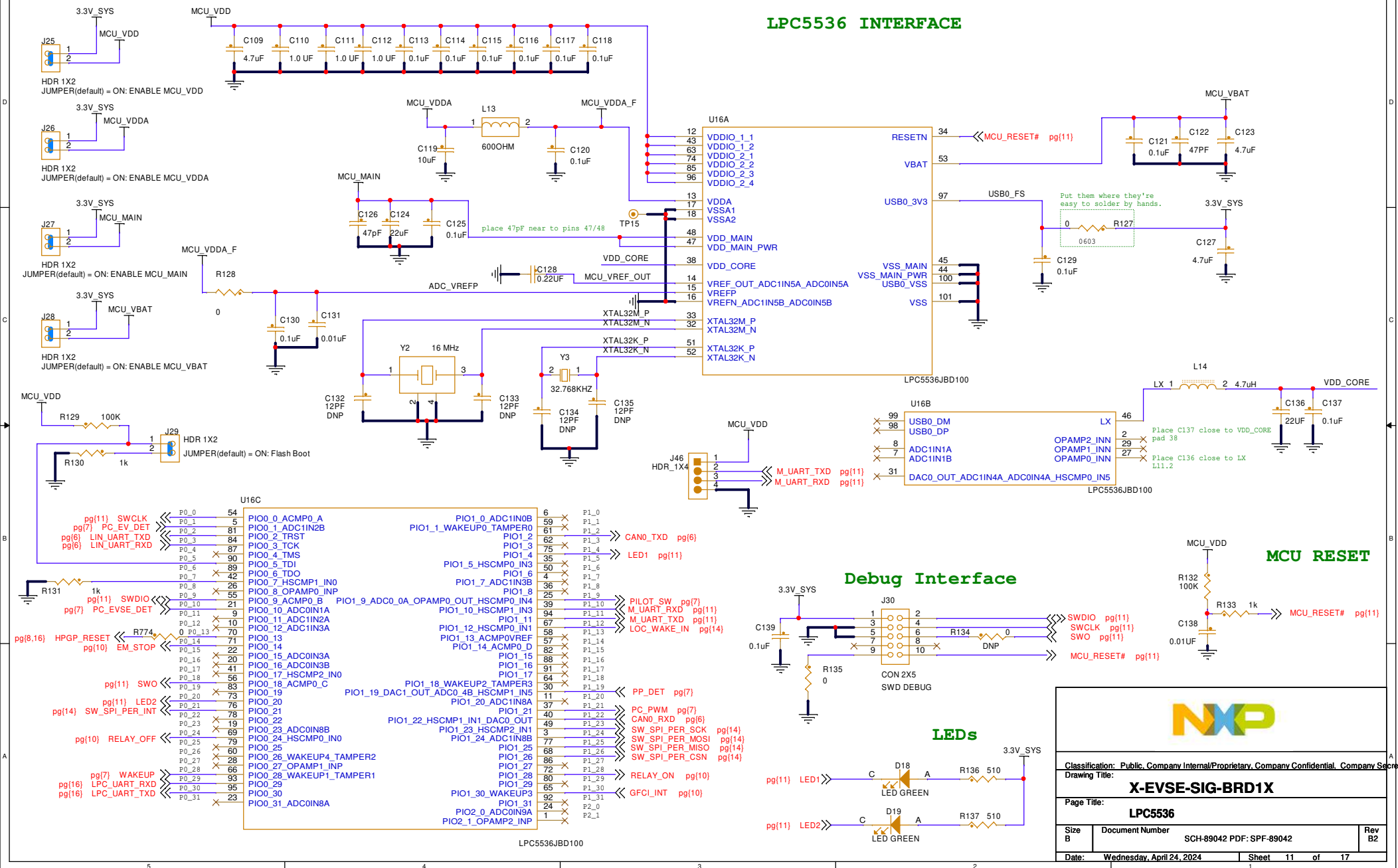


RELAY DRIVE

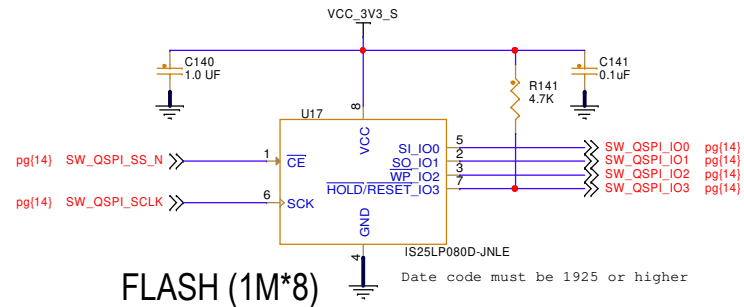


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Page Title: GFCI & RELAY DRIVE		
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LPC5536 INTERFACE



SWITCH QSPI



U17 (ISSI flash):
Date Code must be 1925 or higher
use hand selected devices



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Switch (Power, GND)

U18C

U18D

SJA1110BEL

SJA1110ABC

LDO output

Layout Note:
The 10uF shall be mounted close to the LDO output, the 100nF shall be mounted at each 100BT input.

VCC_1V1

VCC_3V3_S

VCC_3V3_AO

VCC_3V3_SYS

3.3V_SYS

J31 HDR 1X2 TH

JUMPER (default) = ON: ENABLE VCC_3V3_S

R148 0

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Page Title: SWITCH POWER

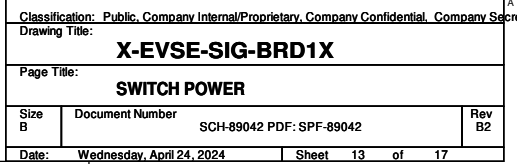
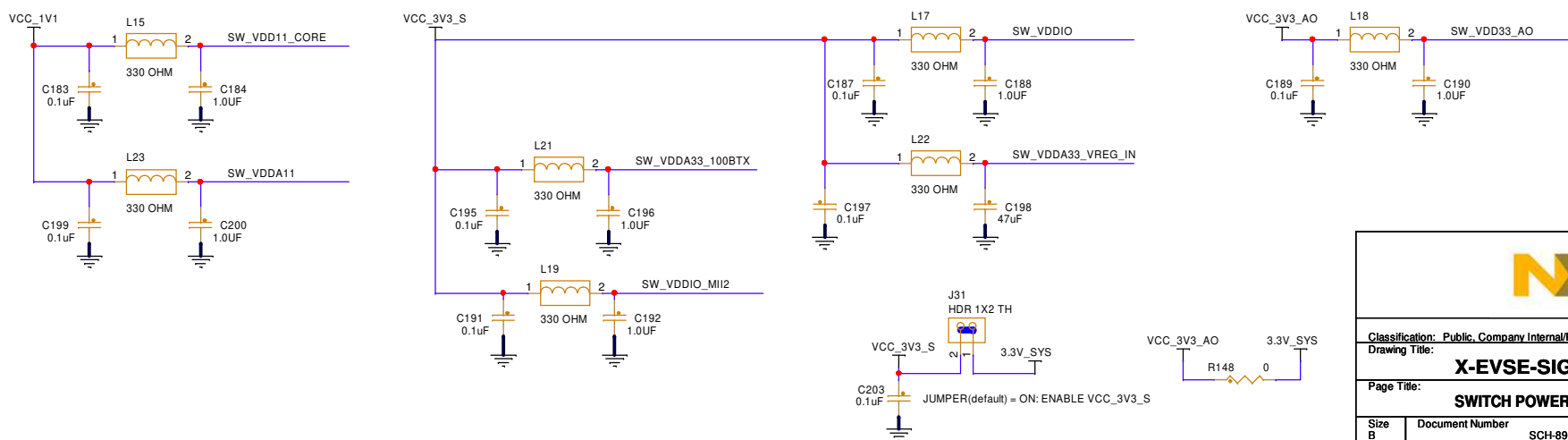
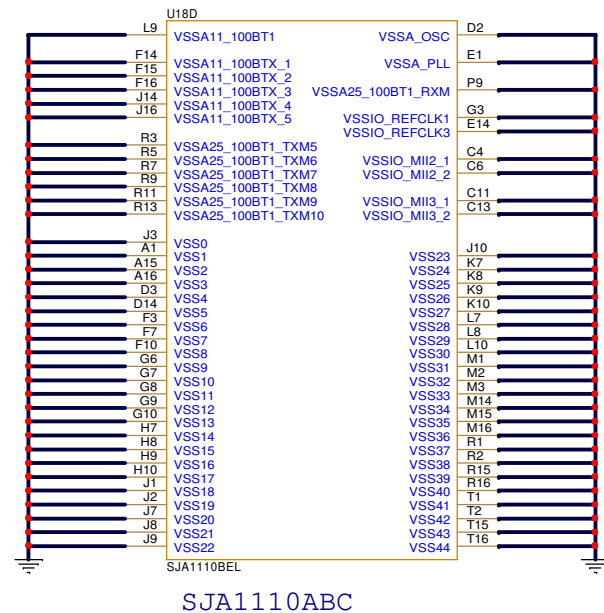
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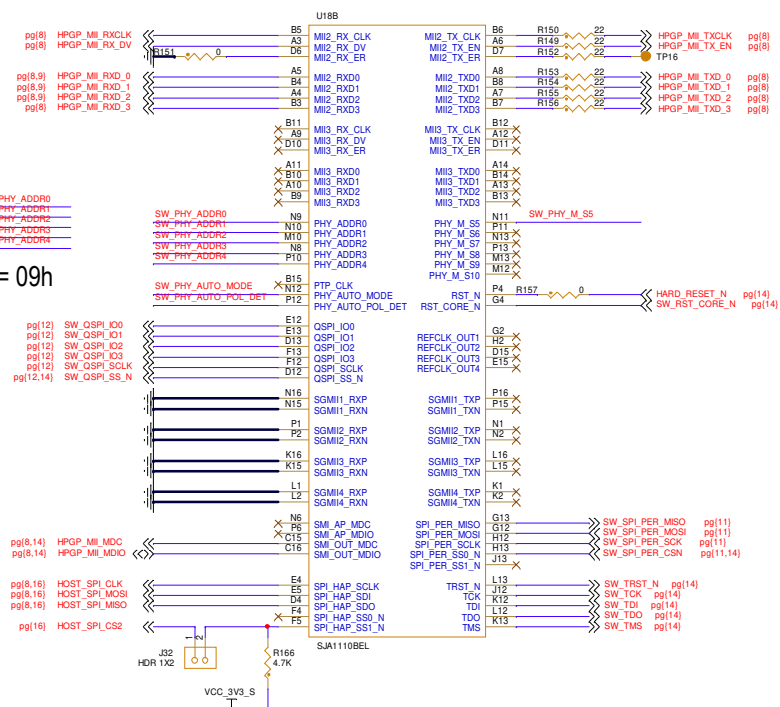
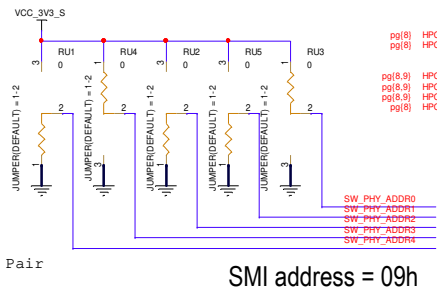
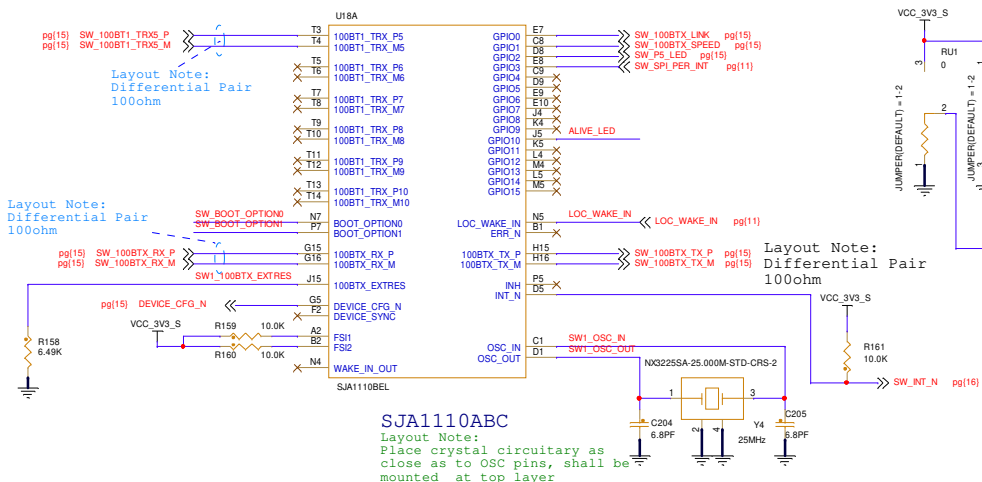
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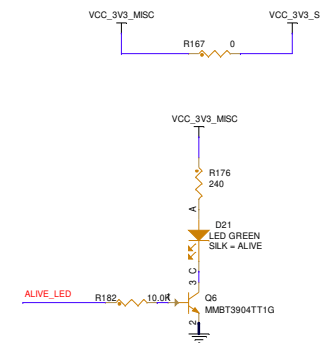
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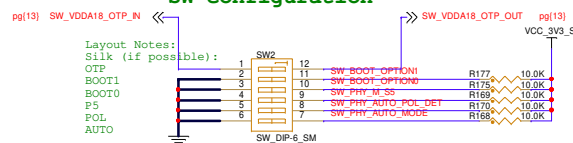
Switch (Ports, SPI, SMI, Config, JTAG)



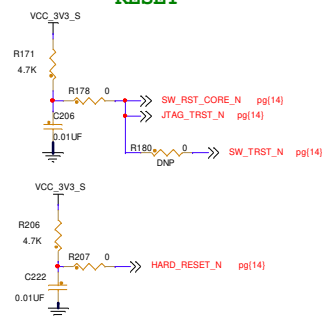
ALIVE



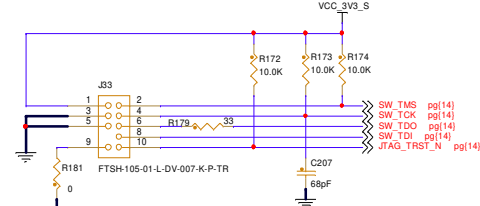
SW configuration



RESET



SWITCH debug header



Layout Notes:
The distance from debug header to DUT shall not be longer than 10cm.



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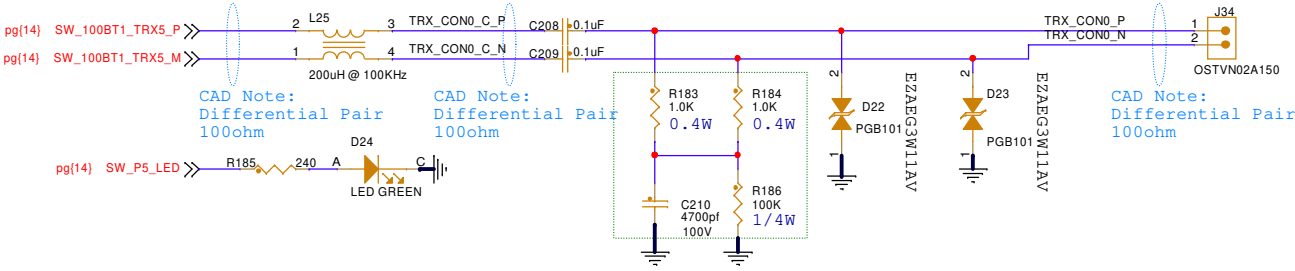
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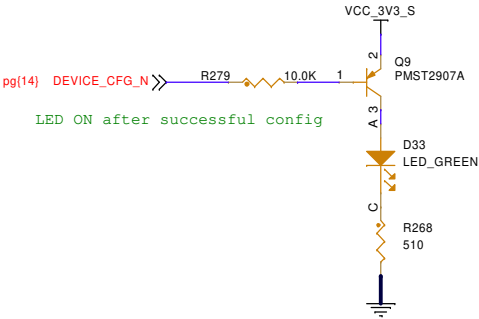
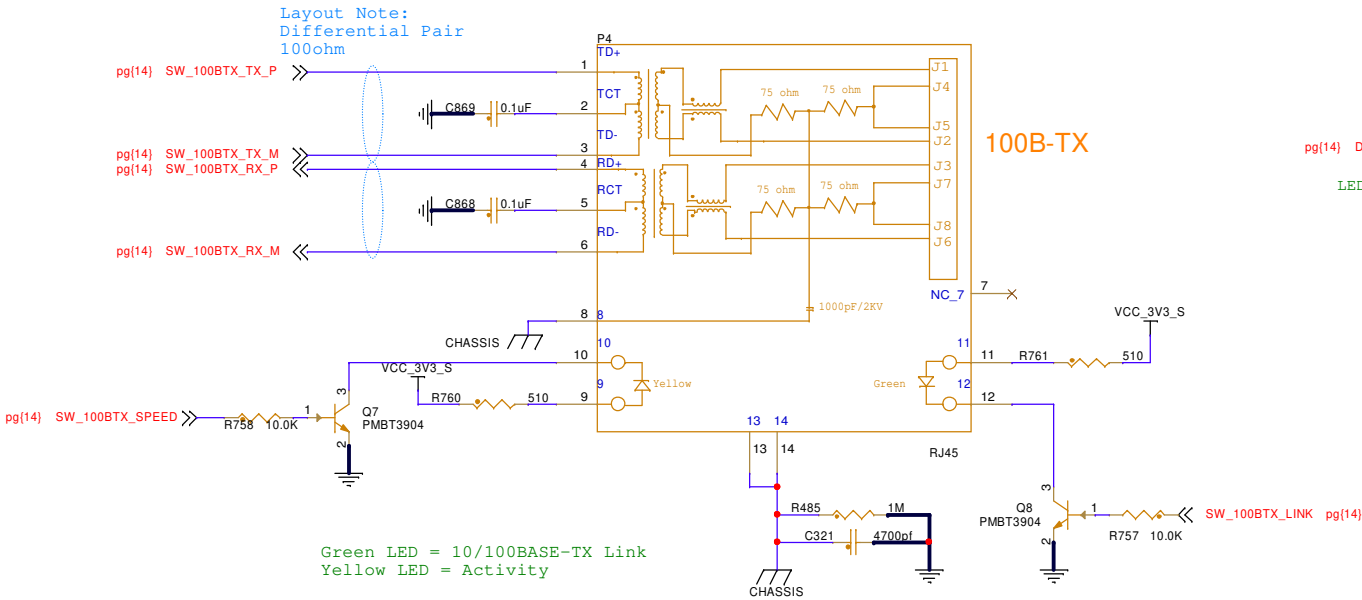
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100BASE-T1

Layout Notes:
Place on bottom side components inside of the marked area

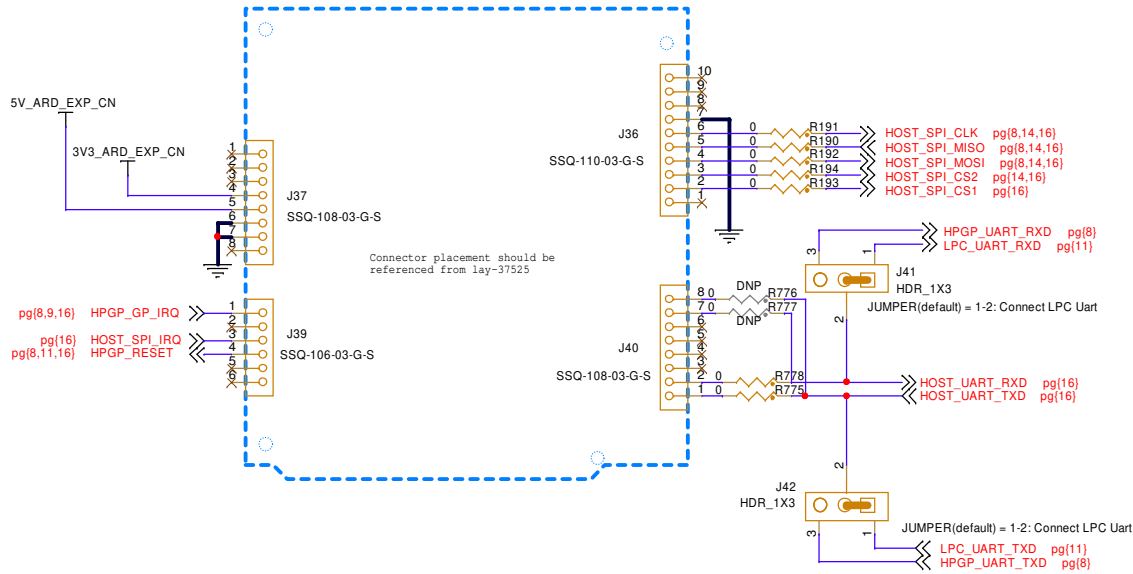


100BASE-TX

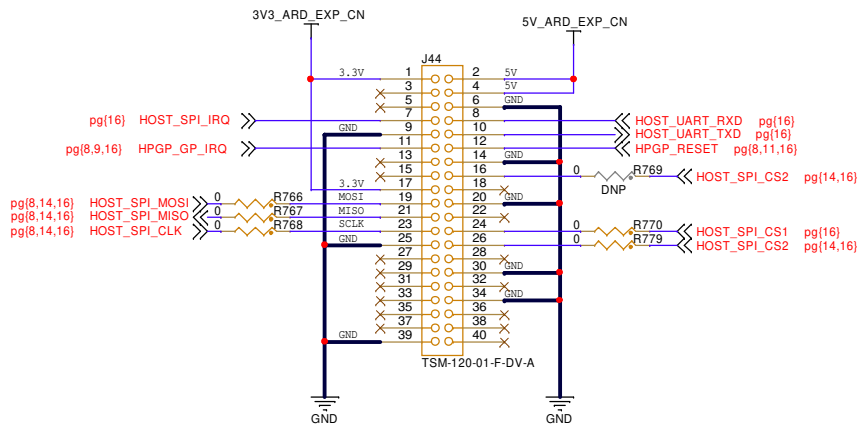


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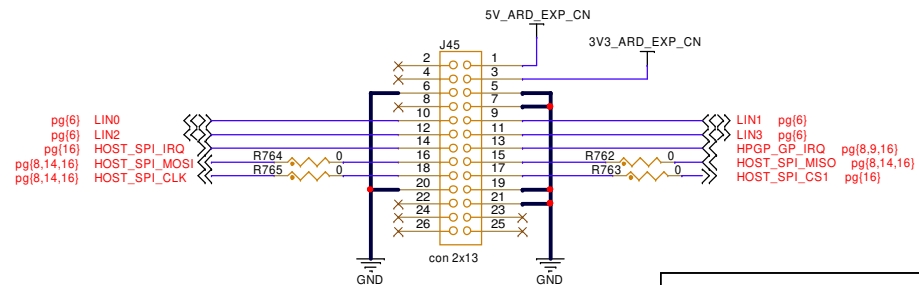
Arduino Connectors



EXP CN



Multi Function Port



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