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Revision History			
Rev.	Date	By	Description
X0-X9	2025-09-11	YT (CTO SI)	Initial schematic development and format changes.
A	2025-09-26	YT (CTO SI)	Schematic is released.
BX1-BX5	2026-01-13	JvE (CTO SI)	Schematic revision, see last page for changelog
B	2026-01-19	JvE (CTO SI)	Schematic is released



X-MR-NAVQ95E-IO

NOTES:

1. Interrupted lines coded with the same letter or letter combinations are electrically connected.
2. Device type number is for reference only.
The number varies with the manufacturer.
3. Greyed out components indicate
Do Not Populate (DNP) during assembly.
4. Special signal usage:
 - _B denotes an active-low signal.
 - _P and _N denote a differential signal.
5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.
6. All SILK display properties will be in this color
7. All schematic annotations will be in this color

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Designer: Jari van Ewijk	Drawing Title: X-MR-NAVQ95E-IO	Page Title: Cover	
Drawn by: Jari van Ewijk	Approved: Yours Truly	Size: C	Document Number: SCH-96099 PDF: SPF-96099
		Rev: B	Date: Monday, January 19, 2026
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DNP Table

REF DES	ASSY_OPT	PAGE NAME
R5,R8,R12	DNP	04 - I/O EXP & CAN TRX
R50	DNP	05 - Sensors & Connectors
C592,C593,C594,R1234,R1235	DNP	06 - Audio
C545,R114,R118,R119,R1259, R1260	DNP	07 - Console

Switch Table

REF DES	SWITCH	PAGE NAME
S1	OPEN	05 - Sensors & Connectors



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Drawing Title: X-MR-NAVQ95E-IO

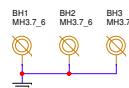
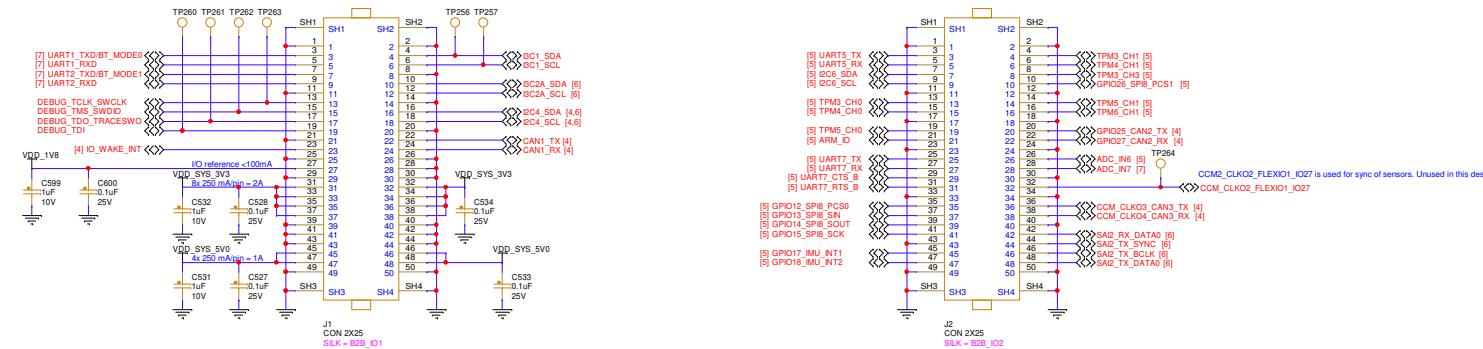
Page Title: Tables

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B2B Interface



BH1 BH2 BH3
MU0,7,2 MU0,7,2 MU0,7,2

MHS.7_6 MHS.7_6 MHS.7_6

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X-MR-NAVQ95E-IU

Page Title: B2B Interface

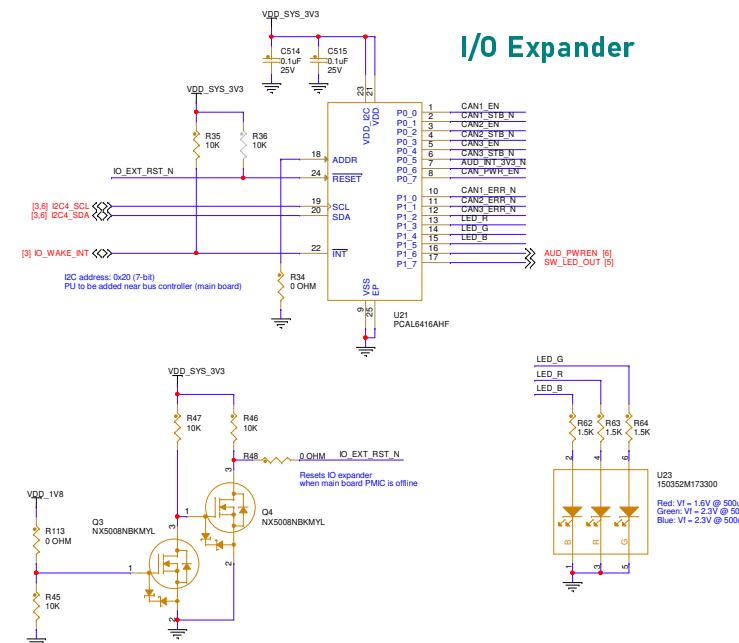
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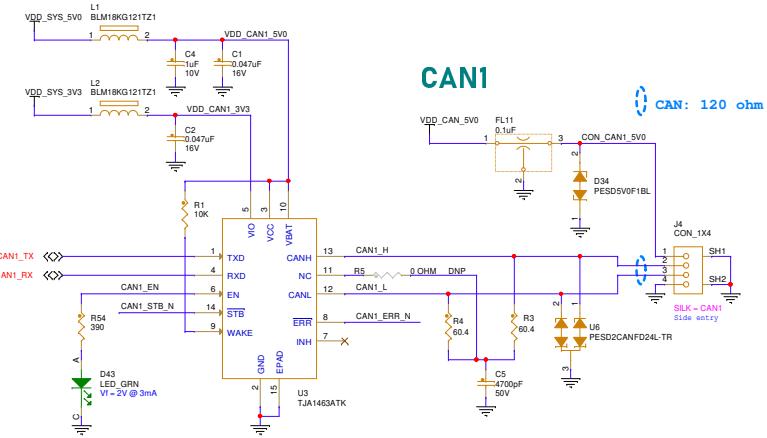
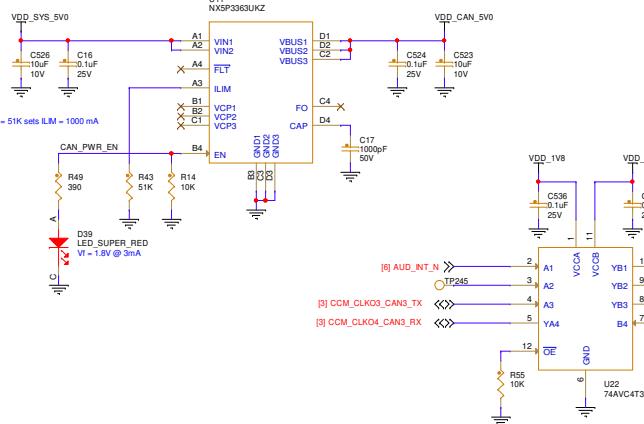
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I/O EXP & CAN TRX

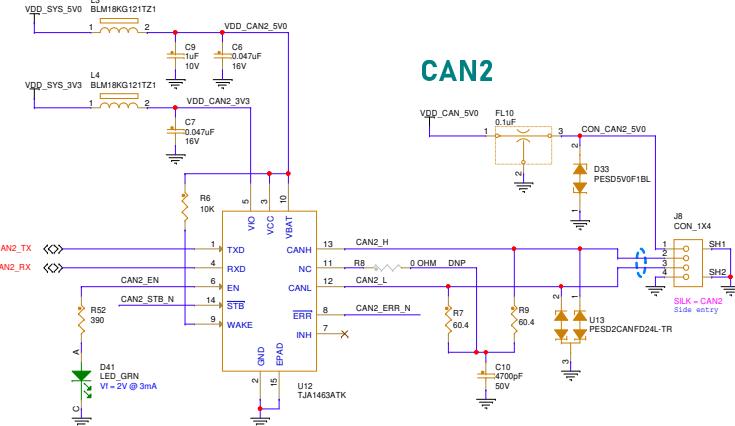
I/O Expander



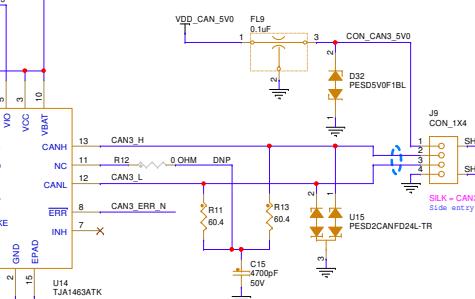
CAN Bus Current Limiting



CAN2



CAN3



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Drawing Title:

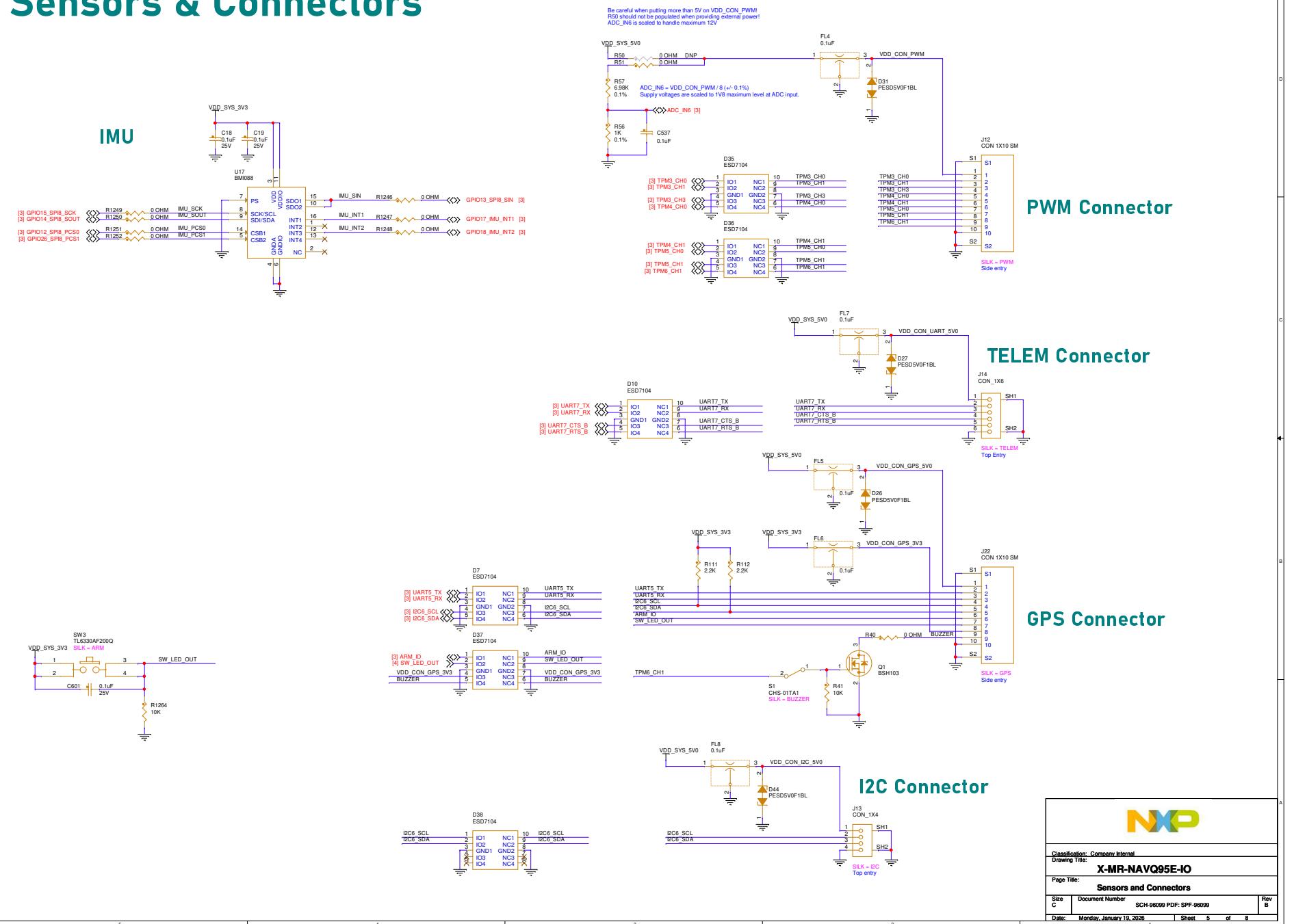
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I/O EXP & CAN TRX

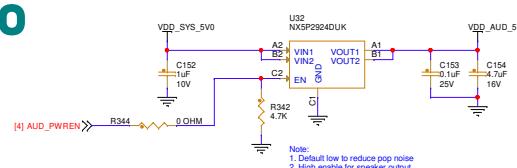
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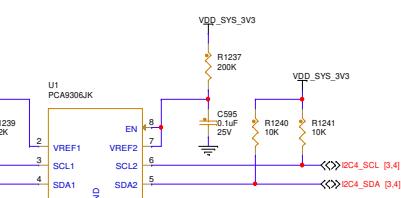
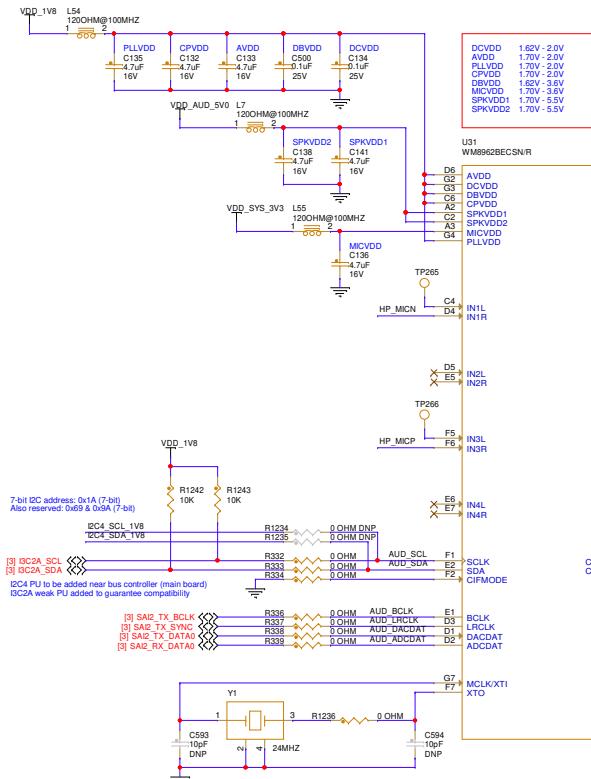
Sensors & Connectors



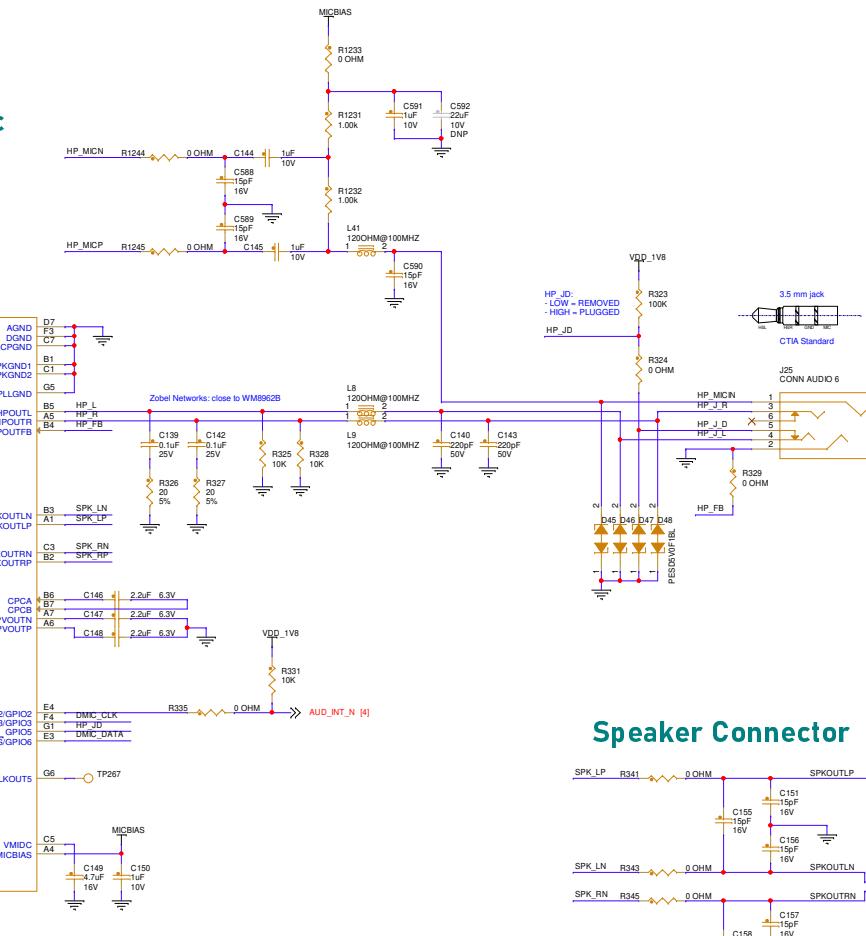
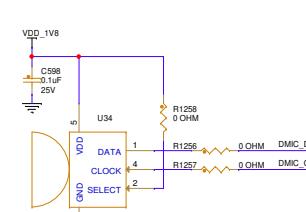
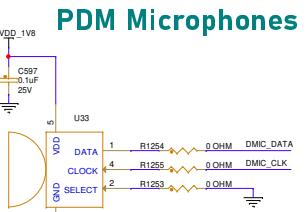
Audio



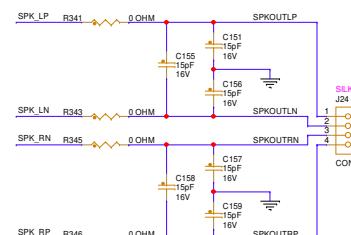
Audio Codec



PDM Microphones



Speaker Connector



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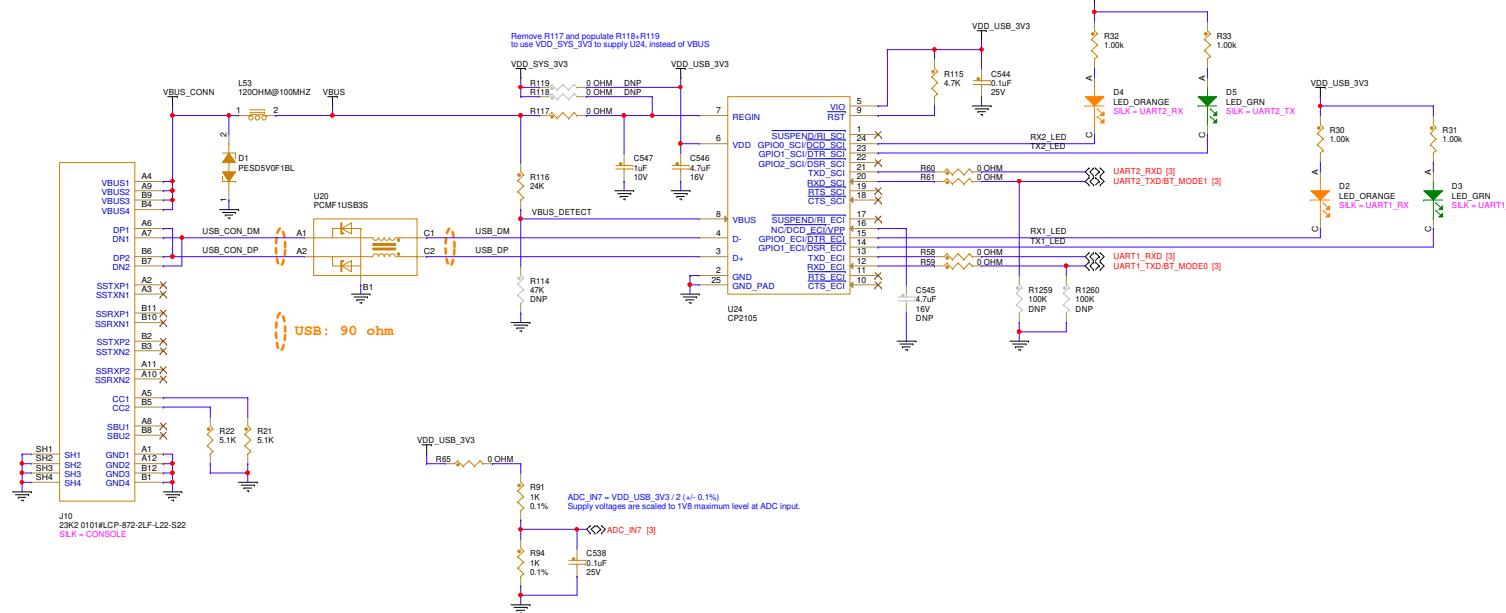
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Audio

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Console



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Changelog			
Rev.	Date	By	Description
X0-X4	2025-09-11	YT (CTO SI)	Initial schematic development and format changes
X5	2025-09-12	YT (CTO SI)	Changed 10p GPS connector to right-angle
X6	2025-09-16	YT (CTO SI)	Removed 100nF at CAN VDD. Replaced TVS diodes near GPS and I2C connector with ESD7104. Limit USB current to 1A. Wired IO_WAKE_INT to IO extender. IO extender is now reset when main board PMIC is offline. Added net names to USB data lines. DNP part 93LC66B
X7	2025-09-25	YT (CTO SI)	Corrected USB_DM net label. Added net labels to unnamed nets.
X8	2025-09-25	YT (CTO SI)	Added RGB LED to CAN IO extender unused pins. Connected ADC_INx to PWM VDD and USB VDD. Added 0 ohm resistors at UART TX and RX. Added level shifter for CAN3 RX and TX lines. Added LEDs to CAN enable lines. Added toggle switch to GPS buzzer output.
X9	2025-09-25	YT (CTO SI)	Added 0R resistor between VDD_USB_3V3 and ADC_IN7
BX1	2025-12-16	JvE (CTO SI)	Rename VDD_SYS_1V8 to VDD_1V8 Replace R57 with 6.98K Mark R50 as DNP Add R91/R94/C538 for ADC_IN7 Populate U19 and R23/R24/R25 by default Replace & redraw USB-to-serial converter (console) Add audio subsystem
BX2	2026-01-05	JvE (CTO SI)	Remove TP258+TP259 (I3C2A). Remove TP265-TP268 (SAI2), TP269+270 (IMU) Remove redundant D38 ESD protection Replace J24 with JST PH connector Change U31 DBVDD from 3V3 to 1V8 Add U1 levelshifter for I2C4 Add R1244+R1245 Add TP265-TP267 Connect HP_JD to codec Reassign codec GPIO pins Change codec digital IO supply to 1V8
BX3	2026-01-06	JvE (CTO SI)	Remove R38+R39 (redundant I2C4 PU) Change R1240-R1243 (I2C4 & I3C2A PU) to 10K Remove TP253+TP254 Add 0 ohm series resistors for IMU signals Change J24 to top entry part Add PDM microphones General cleanup & BOM optimizations
BX4	2026-01-09	JvE (CTO SI)	Add R1259/R1260 (DNP by default) Fix ESD protection diode connections Add back D38 (ESD protection) Add SW3 arming switch
BX5	2026-01-13	JvE (CTO SI)	Change J24 to through-hole version



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