



AM4 LINUX USER INTERFACE Variant:LINUX_AM4_DUALCAN

Change Log:

REV B

- Page 2
 - Move C200 to page 3 to become C368
 - Pin 6 of J3 is now HR_METER_OUT instead of NC
 - Add R203, R204, C208
 - C201 moved to page 14 to become C1403
 - Add page 14 and 15 sheet symbols
 - Add J18, J19, J20

- Page 3
 - Change D301 to be bidirectional TVS diode
 - Change R310 and R313 100k and 52.3k, respectively values

- Page 4
 - Added 70mA current mirror

- Page 7
 - Added additional signals related to new inputs and outputs. No existing pins were changed
 - Added UART 5 to pins D16 and A15
 - Changed U703 to FSUSB30MUX

- Page 8
 - Delete R802 and R803
 - GPIO_SPARE_1 moved to pin B7 to accommodate PWM signal on pin E10
 - Delete R808 and reduce HWD REV bits to 3 total instead of 4.
 - Added additional input signals: Digin4 through Digin 10
 - Add new Ain pins to AA16 and AB15

- Page 11
 - Move Digin 3 circuit to page 14
 - Added U1105, C1108, C1109, C1110, C1111, C1112

- Page 12
 - Add R1226 through R1257

- Add Page 14
 - 7 new digins and 2 new Ains

- Add Page 15
 - 8 new 0.5A LSDs
 - 4 new 2A LSDs
 - 1 new 5V HSD for HR meters

REV C

- Page 7
 - Swap SPI Data lines. SPI_0_MISO now on Pin T22 and SPI_0_MOSI now on Pin T21
- Page 10
 - added pins C1, A2, and N1 to ease breakout of the eMMC part

REV D

- Page 3
 - Change R338, R339, and R340 to 2Meg ohm
- Page 5
 - Add R504
 - Add B501

- Page 7
 - Add R717 and R718
 - Net LED_YEL_CAN1 added to pin N23
 - Net GPIO_SPARE_1 moved to pin T24

- Page 8
 - Change pin B7 connection to net name FSTN_LCD_A0
 - Add second Yellow LED for second CAN port
 - Add R818, R819, R820, Q802, D802.

- Page 11
 - Add R1118
 - Add R1119
- Page 13
 - Add connection to pin 3 of J14, FSTN_LCD_A0
 - Add Q1303, U1304, R1380 to control dot matrix LCD backlight
 - Add J21
 - Flipped J14 to fix connections to dot matrix LCD

- page 15
 - D1505, D1503, D1512, D1509, D1519, D1516, D1523, and D1521 changed to 3A parts : SK310A-LTP

Added U1506 and C1520

REV F

- Page 2
 - Update PCB number to Q25098-005
- Page 8
 - Populate R811 bringing HW REV to 3
 - Depop R820
 - Change Q802 to 2N7002-7-F
- Layout Consideration
 - Update footprints of MS920T-FL27E and ML-1220/F1AN. Increase copper keepouts to include the entire bottom surface of the batteries

REV G

- Page 8
 - Update D800 to be Q14001-007

REV H

- Page 11
 - Depop R1105 and R1104 on AM4 BASIC Variant

REV J

- Page 5
 - Depop R517 and BT500 on AM4 BASIC and AM4 DUAL CAN
 - Populate R504 and B501 on AM4 BASIC and AM4 DUAL CAN

REV K

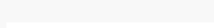
- Page 2
 - Add R205 and C200 for ESD protection
- Page 5
 - Remove R517 and BT500 due to BT500 being EOL
- Page 8
 - Update HW Bits to REV 4
 - Populate R809 on AM4 BASIC and AM4 DUAL CAN
 - Depop R810 and R811 on AM4 BASIC and AM4 DUAL CAN
- Page 15
 - Update U1501 and U1502 to be Q19071-005
 - Update U1503 and U1505 to be Q19080-013
 - Update R1502, R1510, R1516, R1523 to be Q10015-289
 - Add U1507, U1508, U1509
 - Add C1521, C1522, C1523, C1205, C1206, C1207, C1208
 - Add D1525 and D1526
 - Add R1534, R1535, R1536, R1537, R1538, R1539, R1540, R1541, R1542, R1543, R1544, R1545, R1546, R1547, R1548, R1549

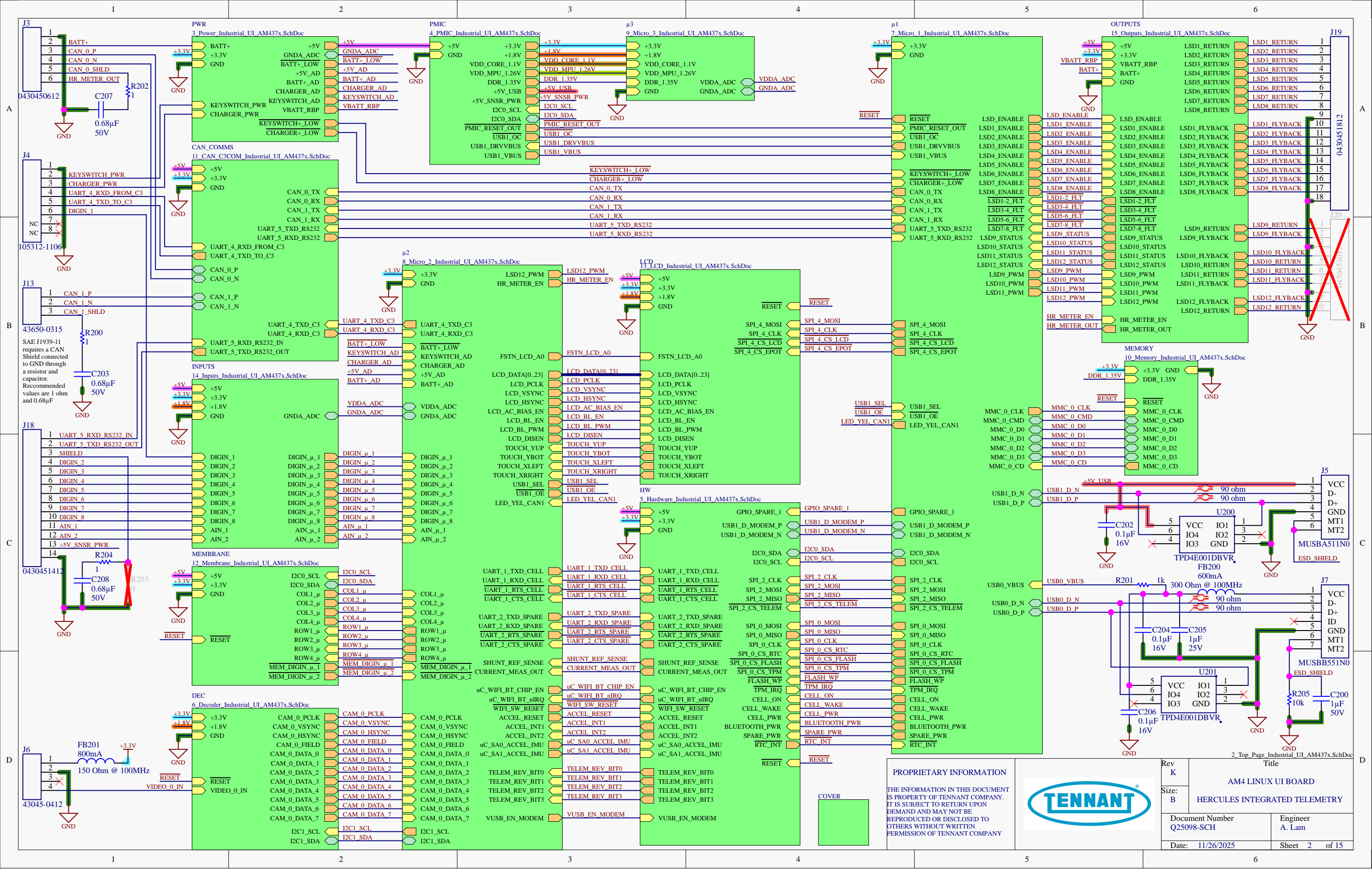
7-bit I2C addresses (I2C0)				
SA0 for IMU/Accel	0	1	0	1
SA1 for IMU/Accel	0	0	1	1
BMI270	0x68	0x69		
LSM6DSMTR	0x6A	0x6B		
ISM330DLC	0x6A	0x6B		
ISM330DHC	0x6A	0x6B		
ISM330DHCX	0x6A	0x6B		
BNO055	0x29	0x28		
Accel - FXLS8471QR1	0x1E	0x1D	0x1C	0x1F
LED Driver 0 - TLC59116FIRHBR	0x61			
LED Driver 1 - TLC59116FIRHBR	0x62			
EEPOT - ISL90728WIE627Z	0x3E			
PMIC - TPS65218D0	0x24			
7-bit I2C addresses (I2C1)				
Video Decoder - TW9990	0x45			

BOM ITEMS:



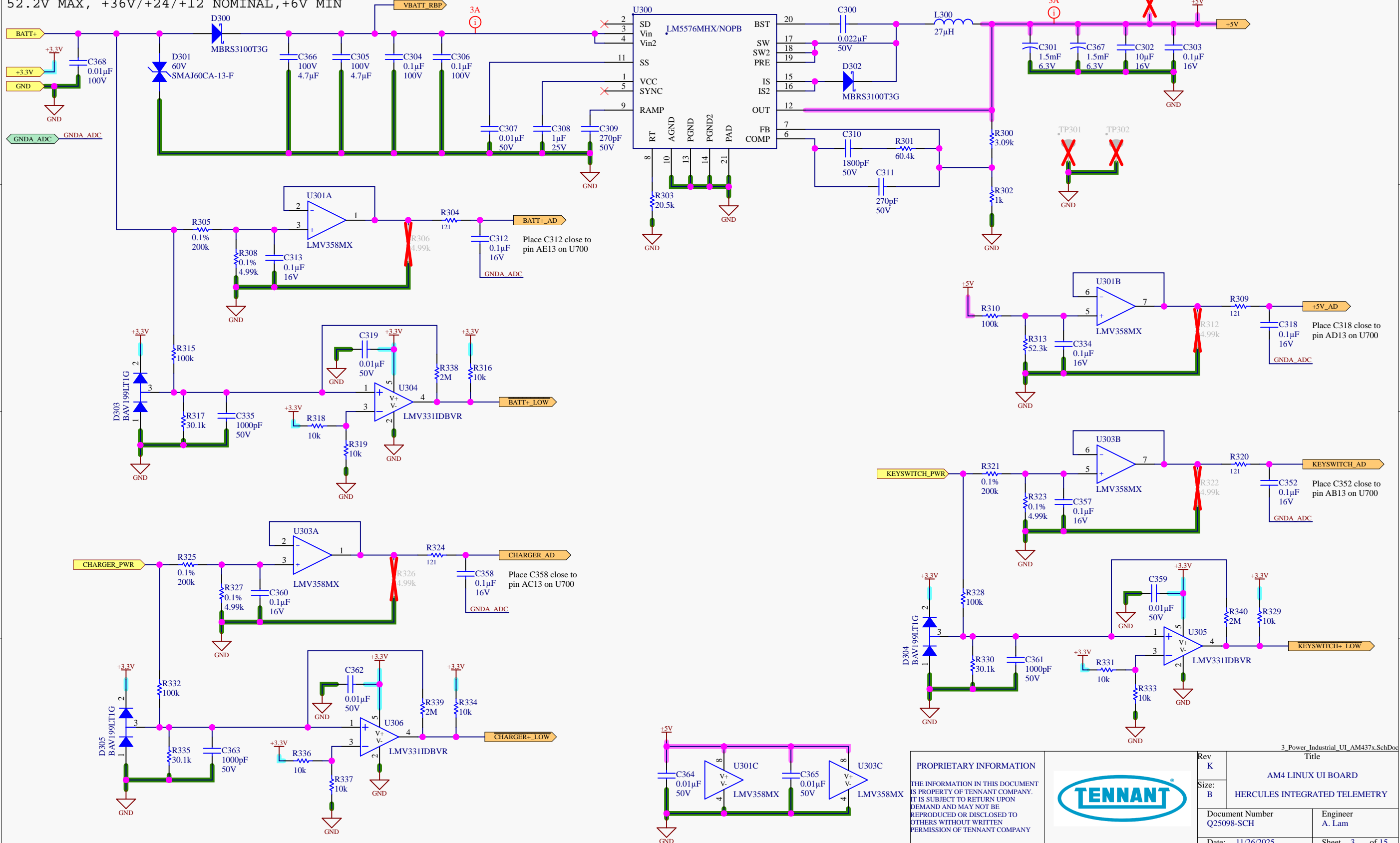
PCB	Q25098-PCB_revF
BOM	PCB, AM4 LINUX
FW1	Q30124 Firmware-Application, U1001
FW2	Q30125 Firmware-Bootloader, U500

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			HERCULES INTEGRATED TELEMETRY		
			Document Number Q25098-SCH		Engineer A. Lam
			Date: 11/26/2025		Sheet 1 of 15



POWER INPUT
52.2V MAX, +36V/+24/+12 NOMINAL, +6V MIN

POWER SUPPLY +5V, 75VIN, 3A

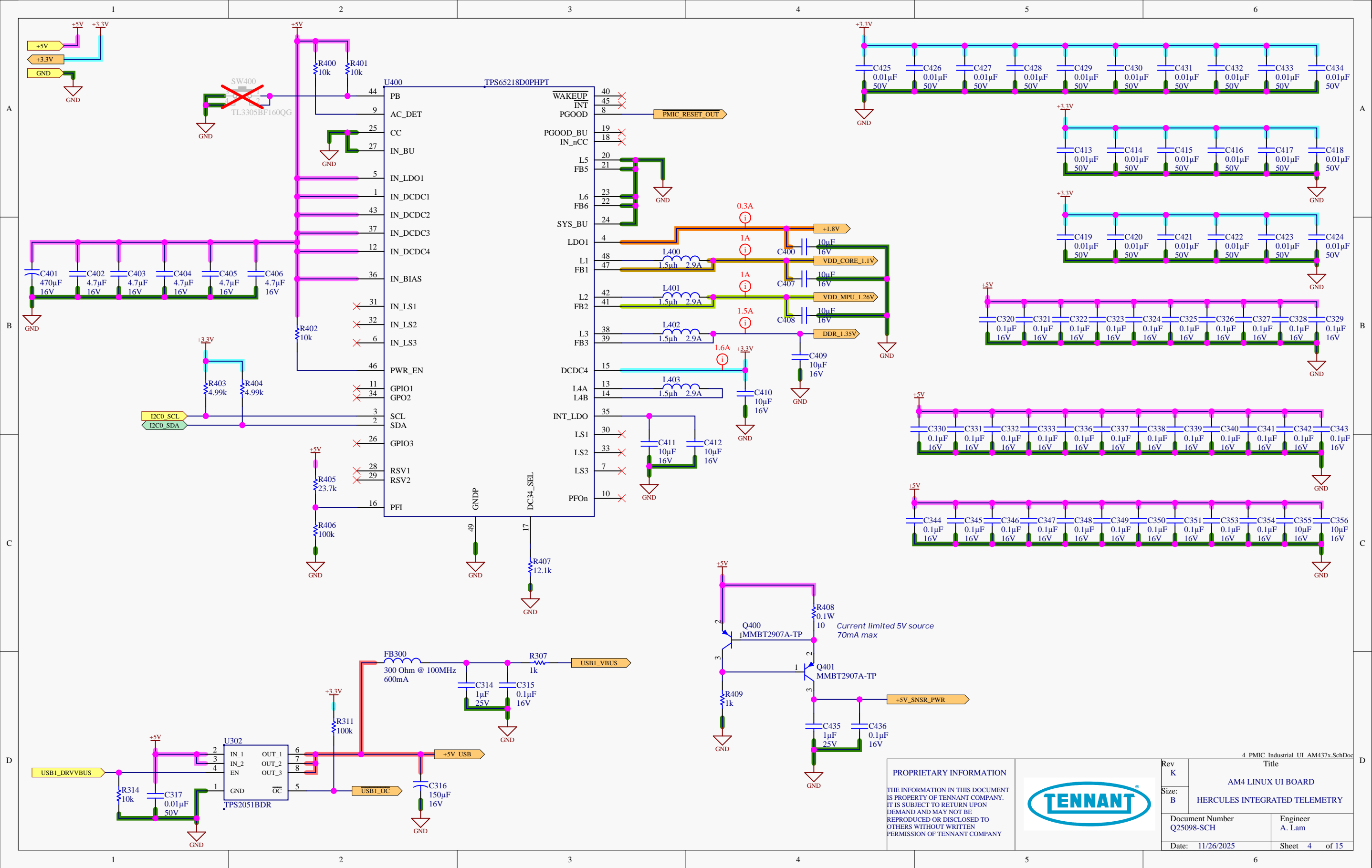


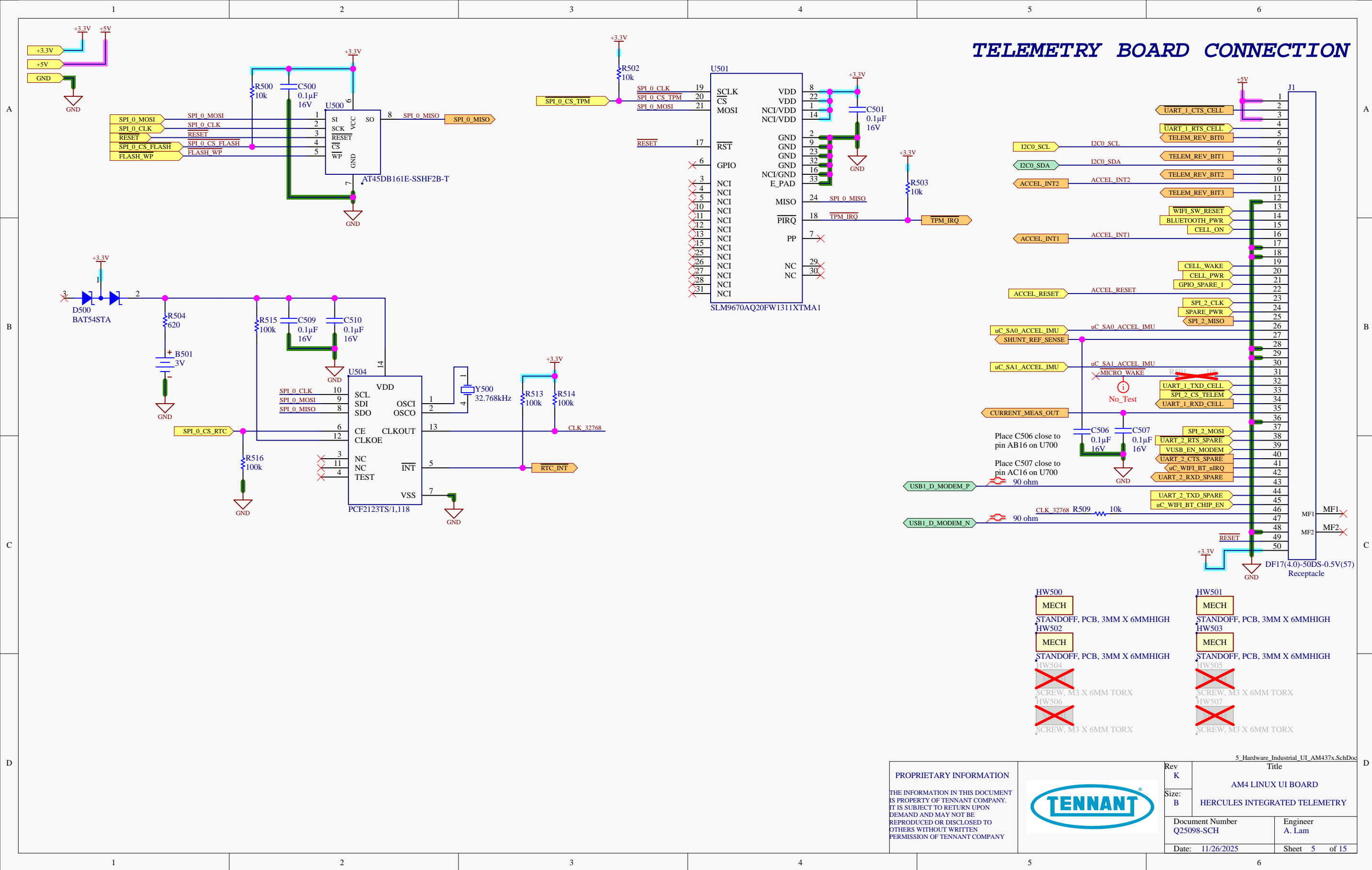
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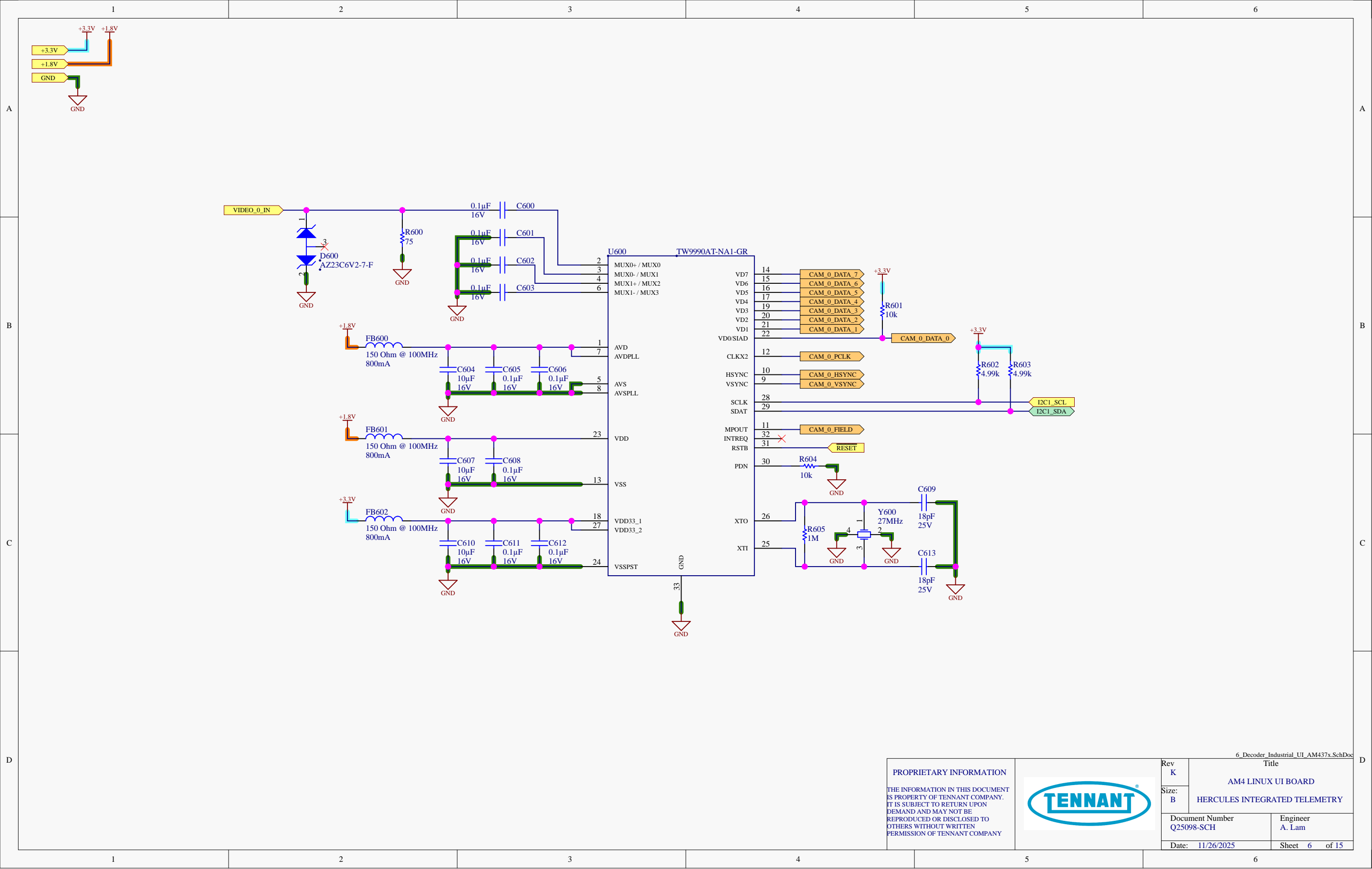
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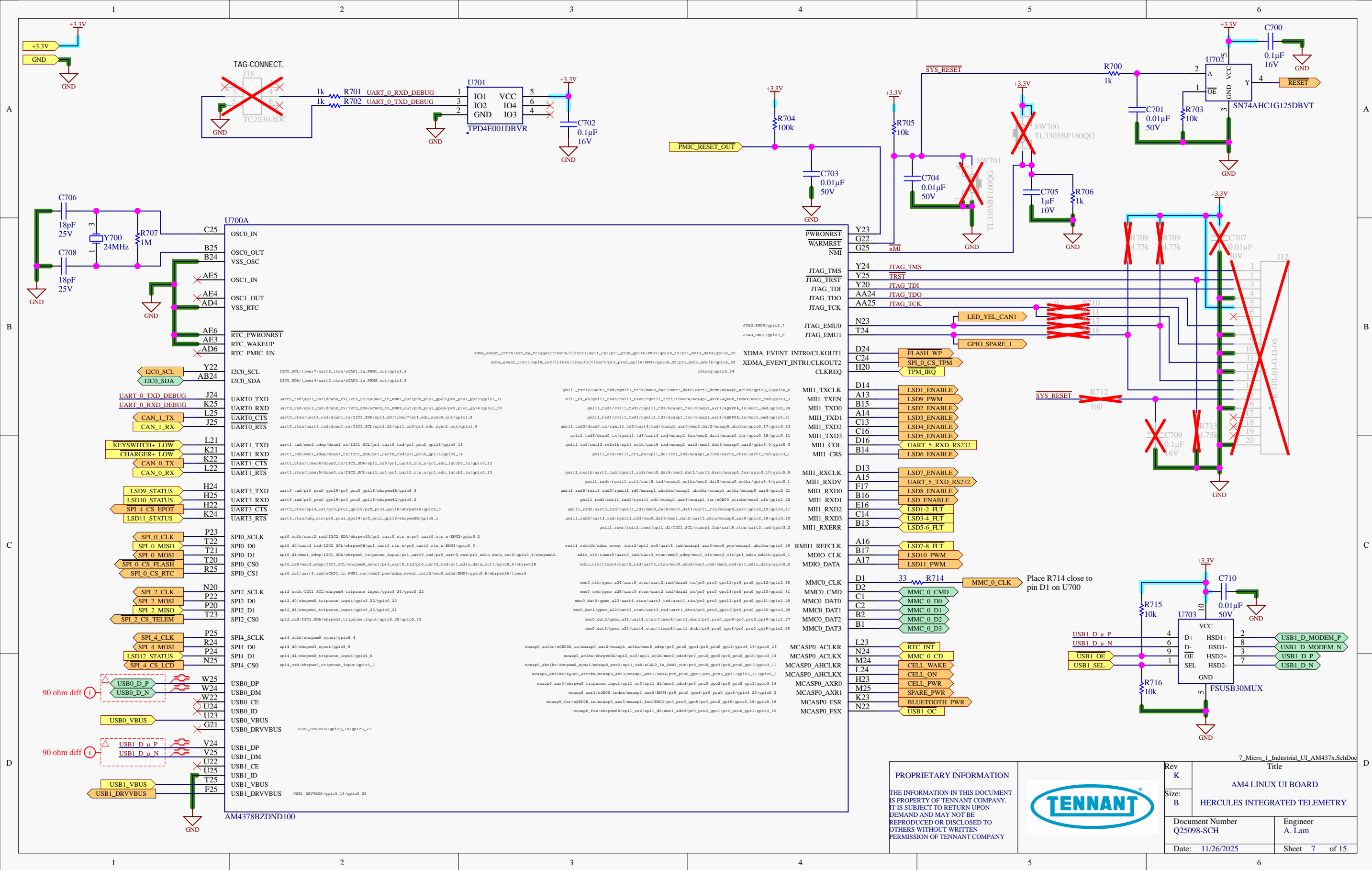


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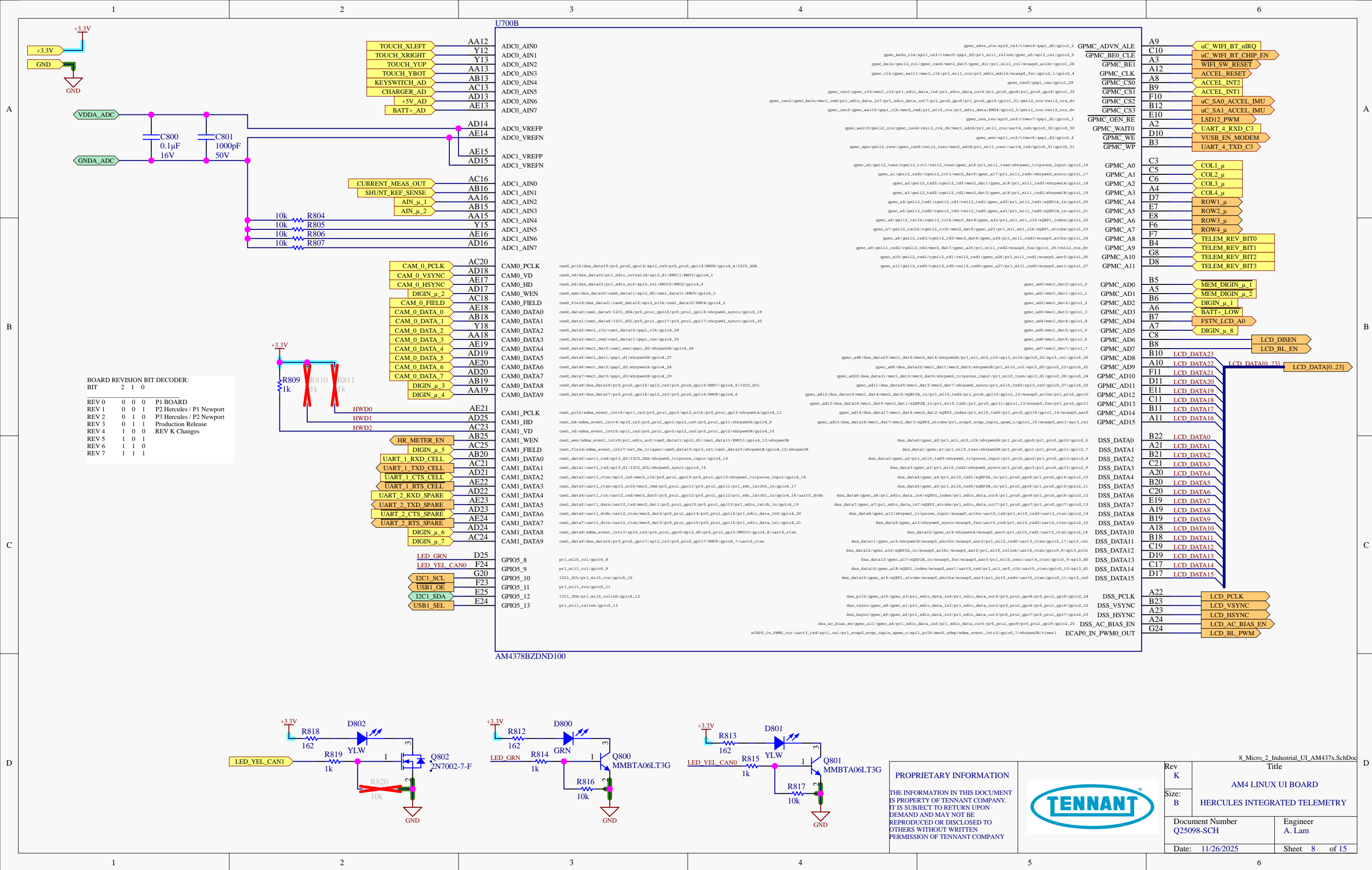


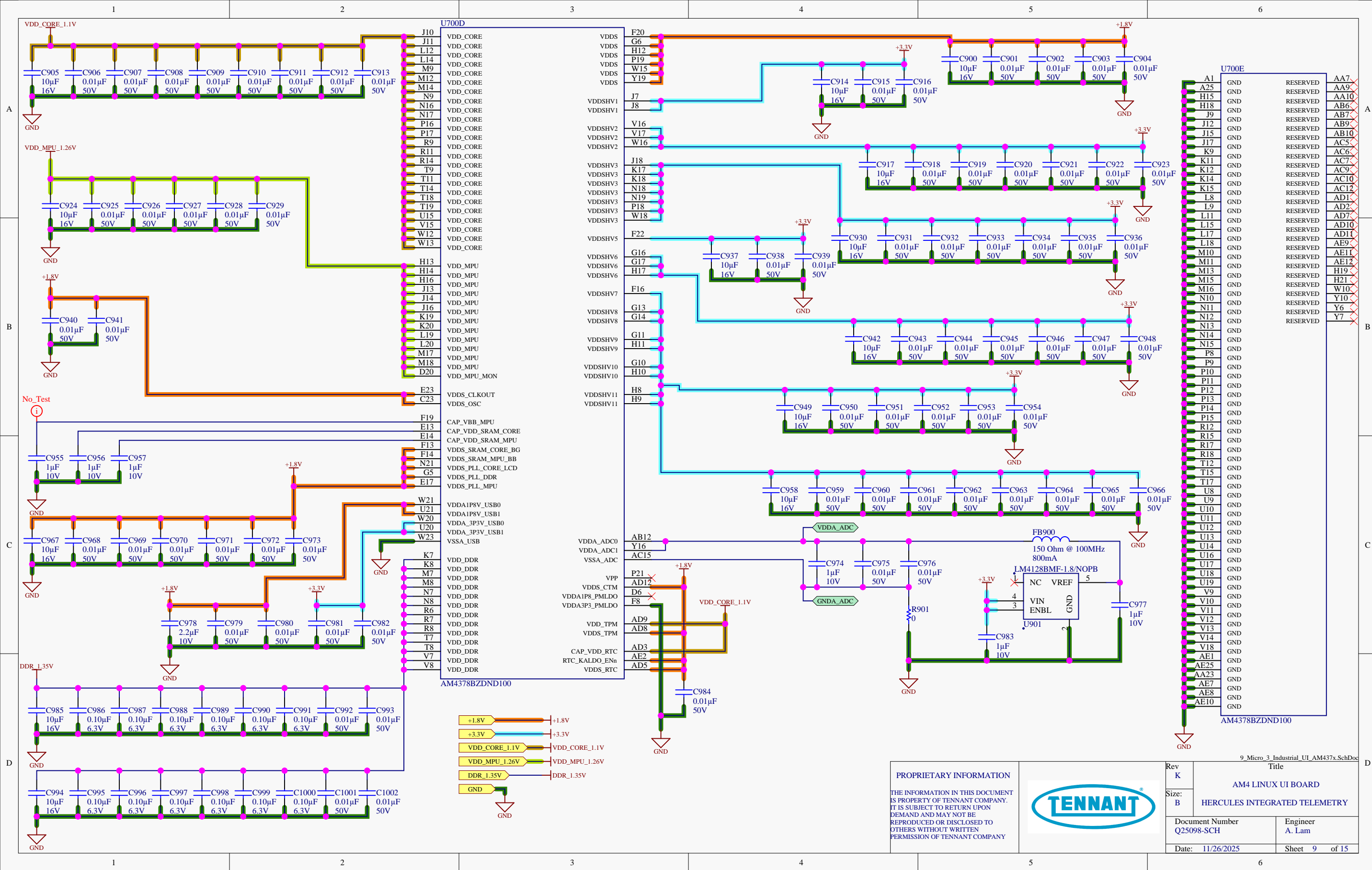
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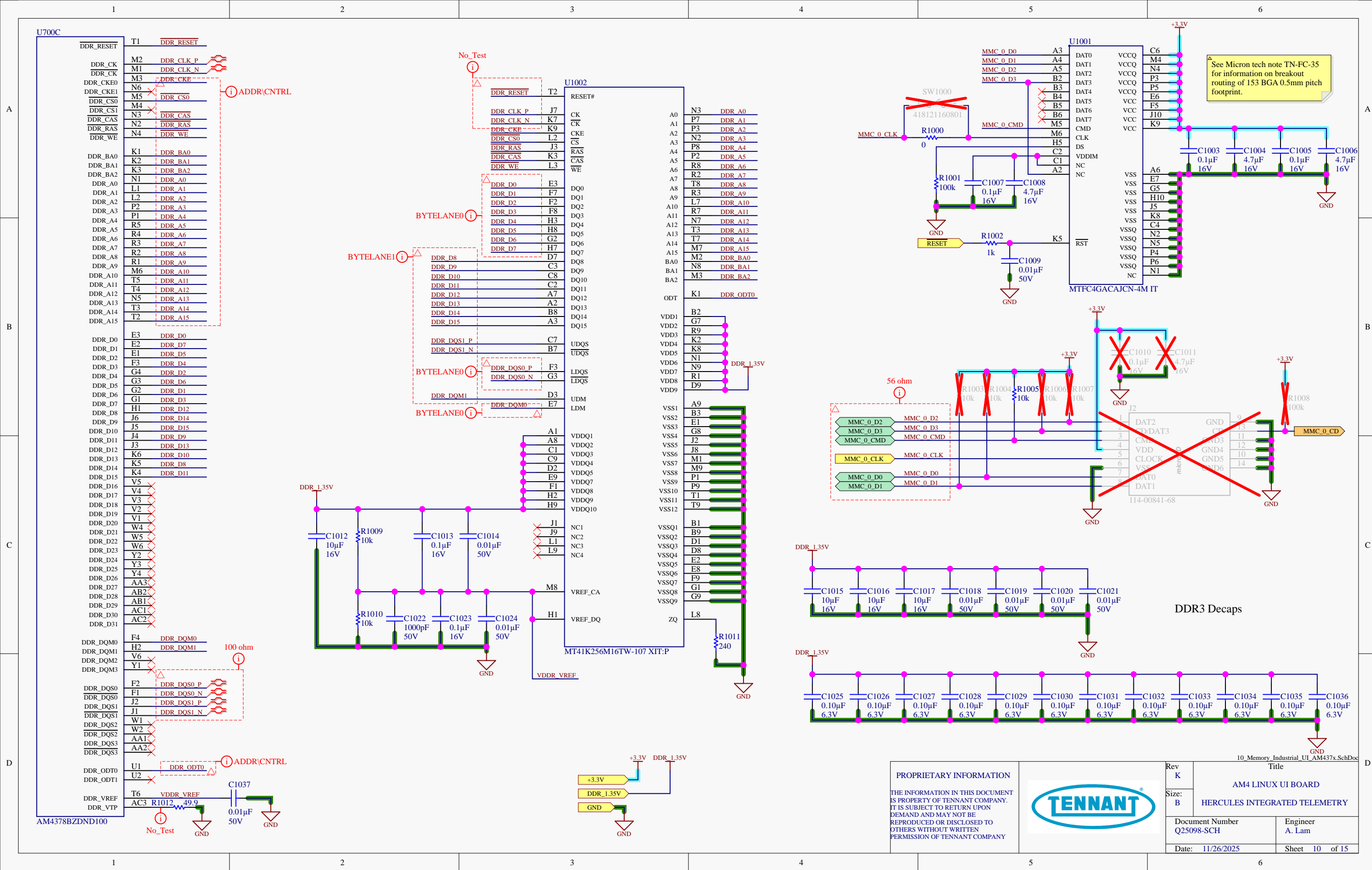
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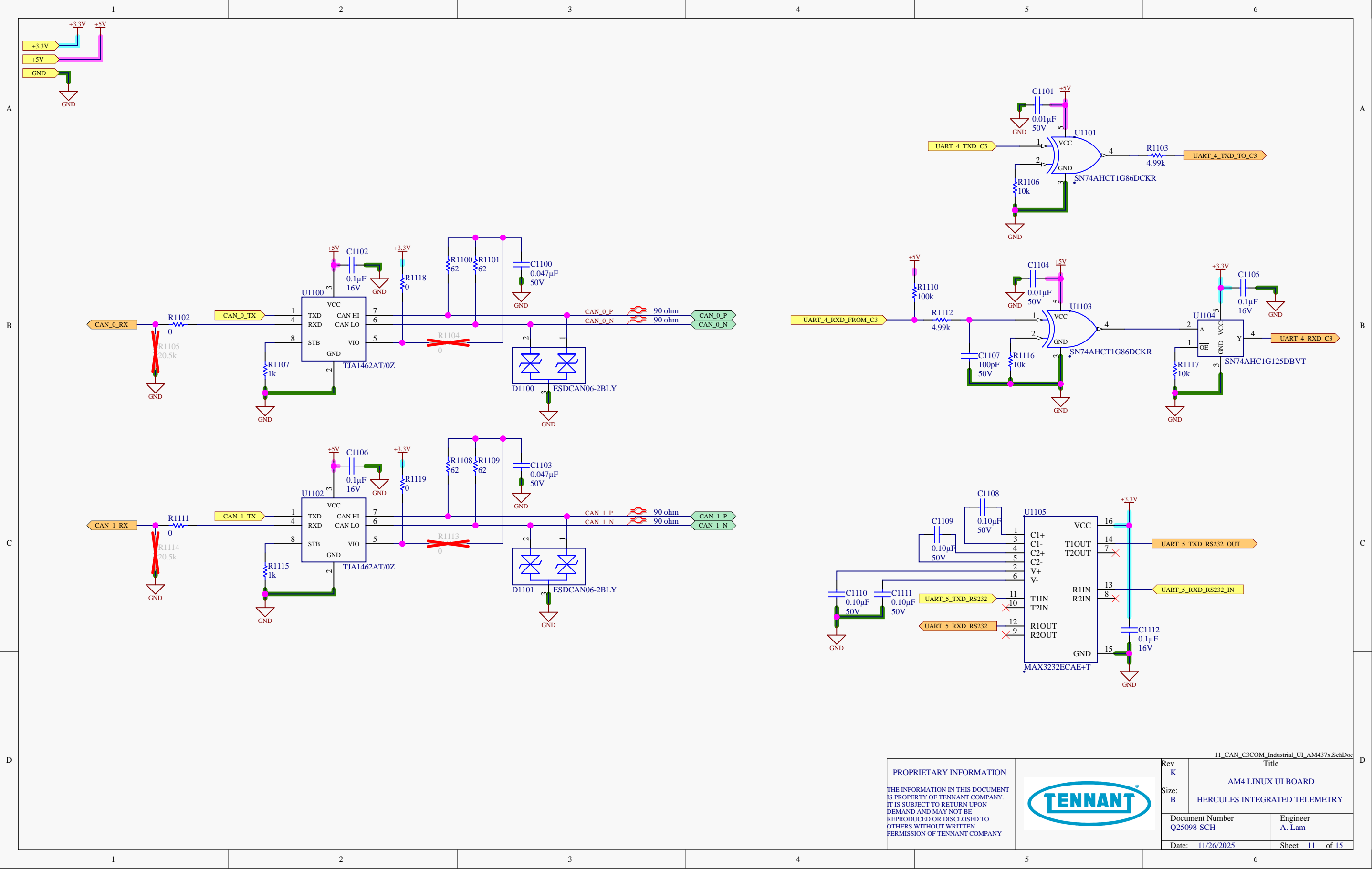


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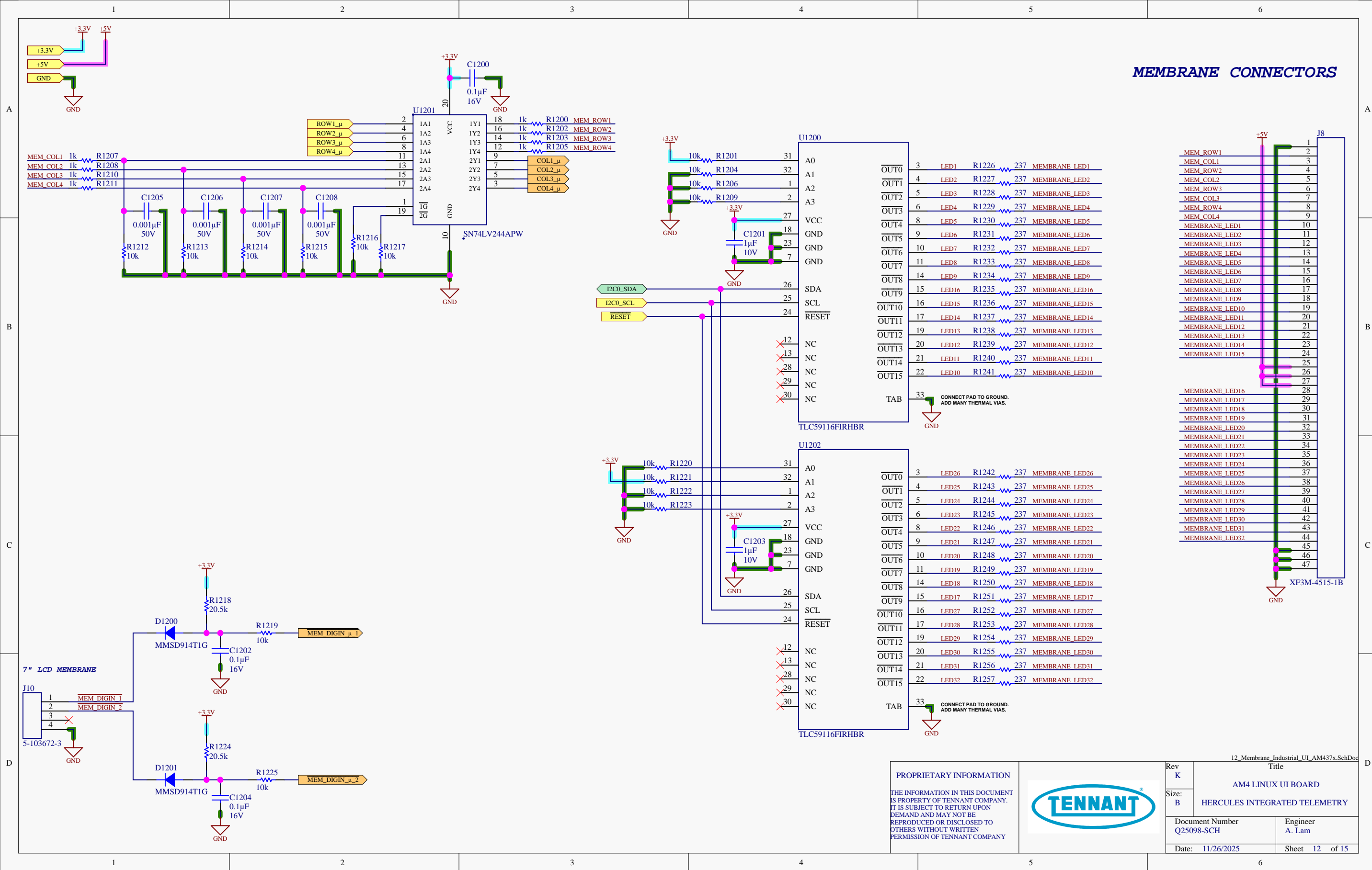


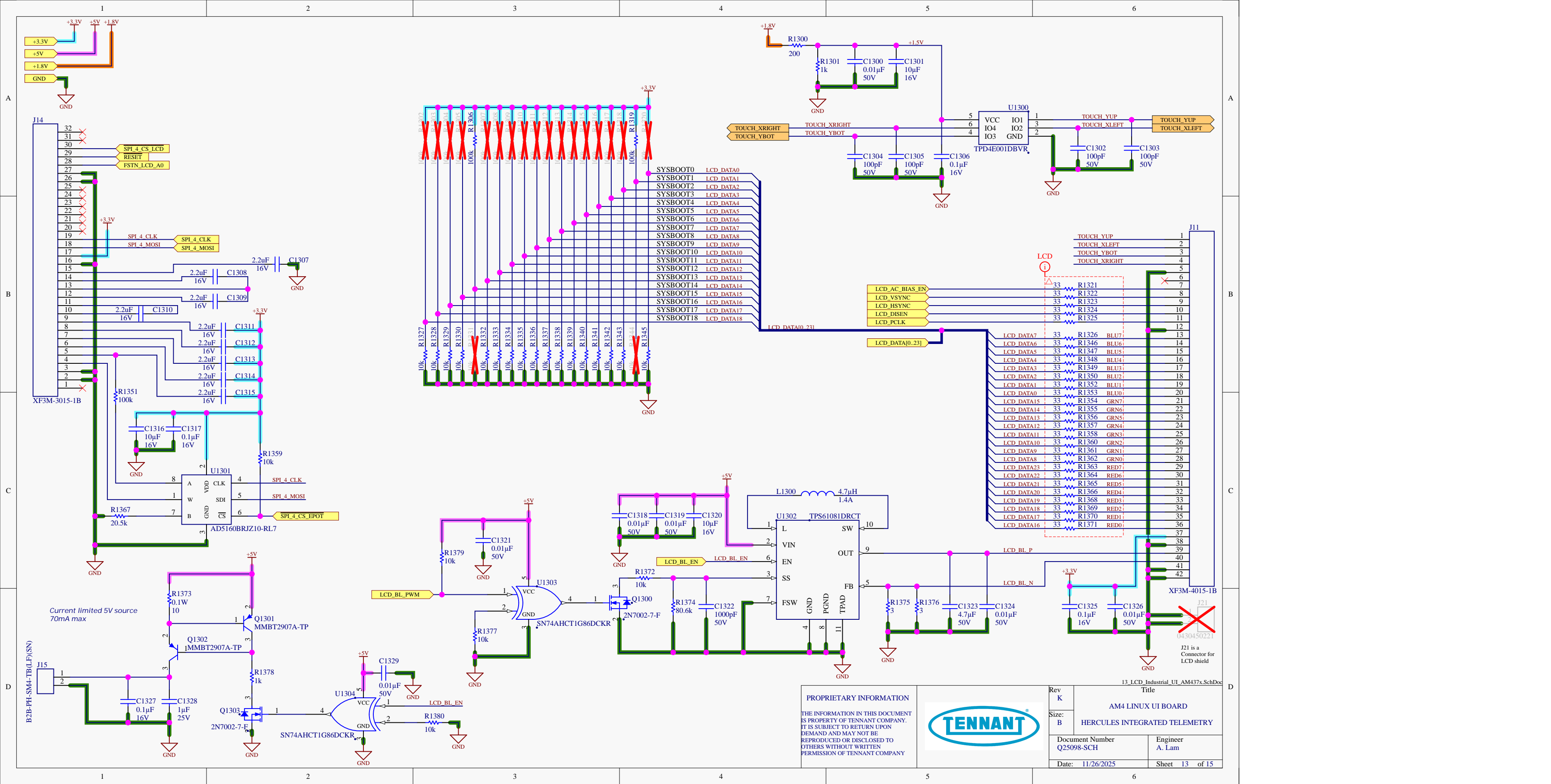
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