



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 Digin 4 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 port

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
  - Add D1525 and D1526
  - Add R1534, R1535, R1536, R1537, R1538, R1539, R1540, R1541, R1542, R1543, R1544, R1545, R1546, R1547, R1548, R1549

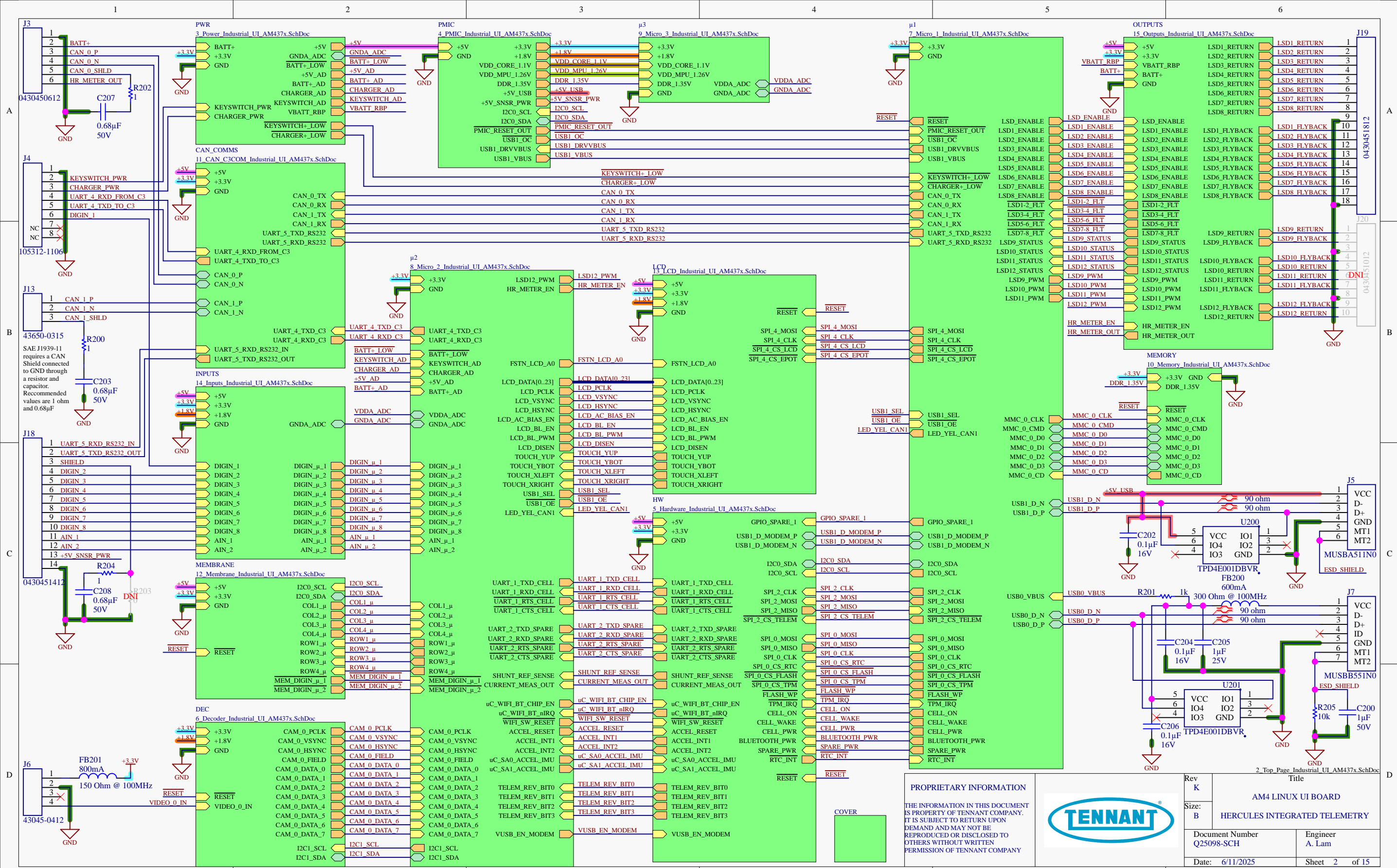
7-bit I2C addresses (12C0)				
SA0 for IMU/Accel	0	1	0	1
SA1 for IMU/Accel	0	0	1	1
BMI270	0x68	0x69		
LSM6DSMTR	0x6A	0x6B		
ISM330DLC	0x6A	0x6B		
ISM330DHC	0x6A	0x6B		
ISM330DHCX	0x6A	0x6B		
BNO055	0x29	0x28		
Accel - FXLS8471QR1	0x1E	0x1D	0x1C	0x1F
LED Driver 0 - TLC59116FIRHBR	0x61			
LED Driver 1 - TLC59116FIRHBR	0x62			
EEPOT - ISL90728WIE627Z	0x3E			
PMIC - TPS65218D0	0x24			
7-bit I2C addresses (I2C1)				
Video Decoder - TW9990	0x45			

BOM ITEMS:

FID1	FID2	FID3
DNI	DNI	DNI
FID4	FID5	FID6
DNI	DNI	DNI

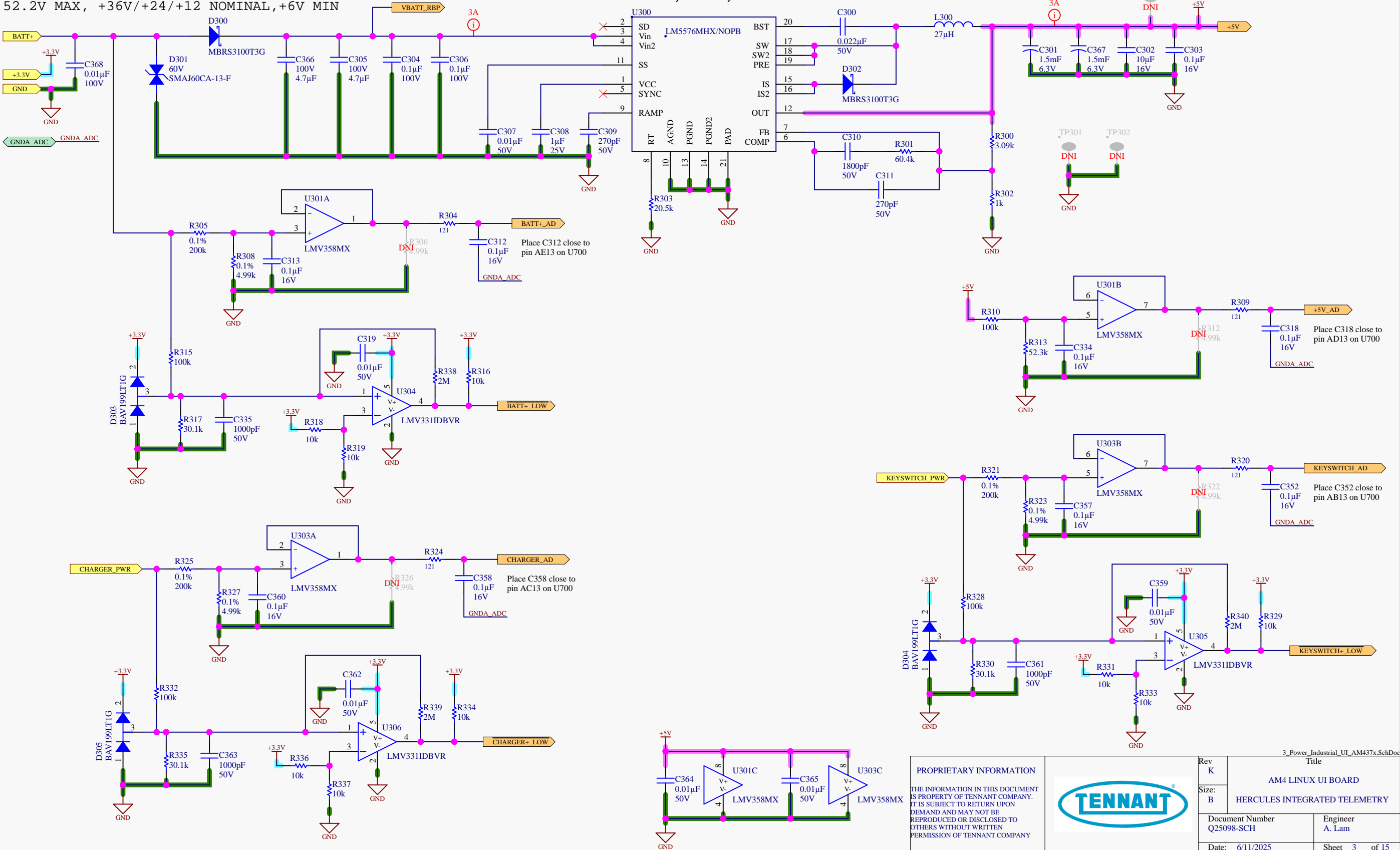
PCB	
BOM	Q25098-PCB_revF PCB, AM4 LINUX
FW1	Q30124 Firmware-Application, U1001
FW2	Q30125 Firmware-Bootloader, U500

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		Size: B	AM4 LINUX UI BOARD  HERCULES INTEGRATED TELEMETRY	
		Document Number Q25098-SCH		Engineer A. Lam
		Date: 6/11/2025		Sheet 1 of 15



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

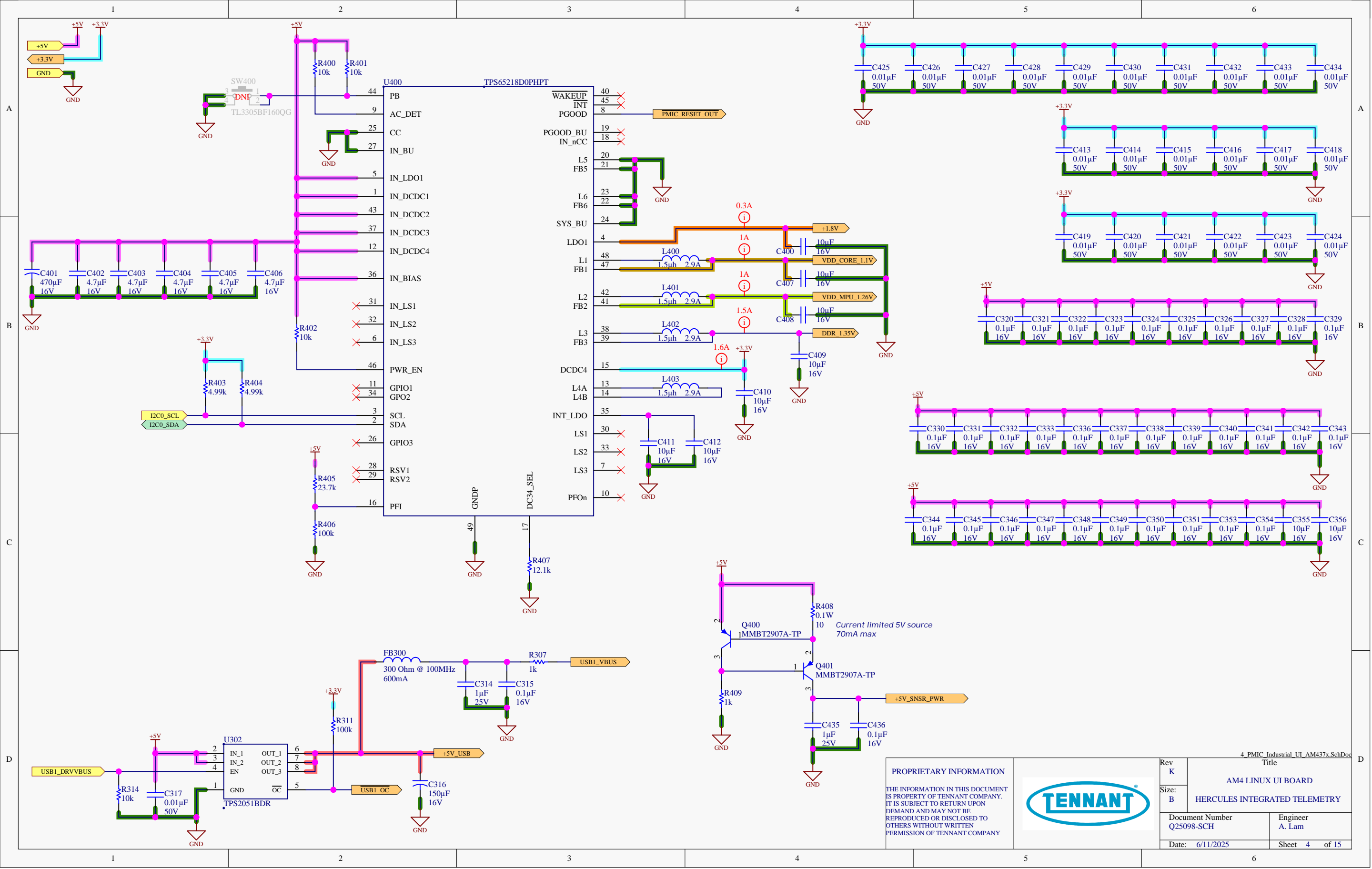
POWER SUPPLY +5V, 75VIN, 3A



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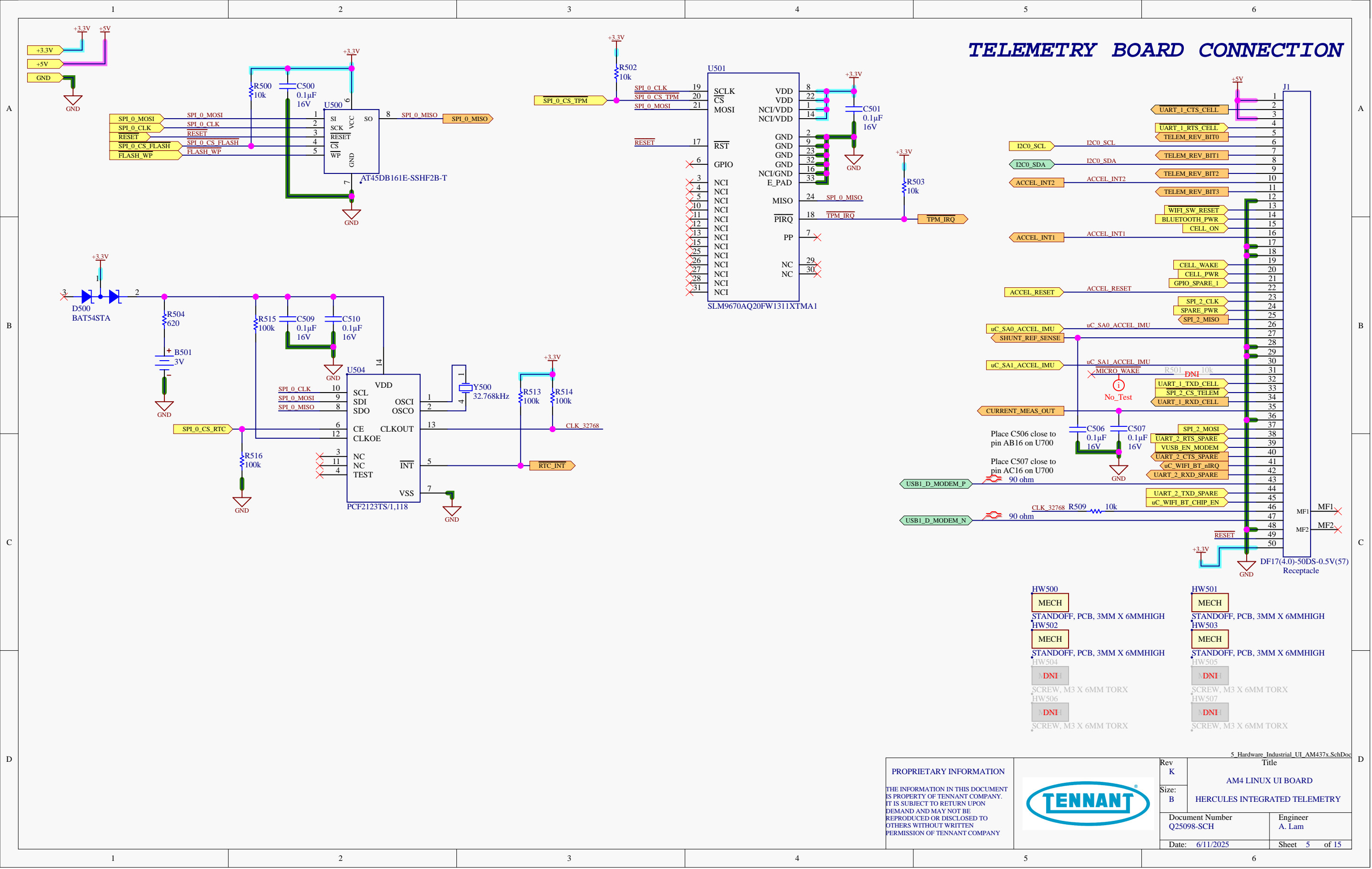
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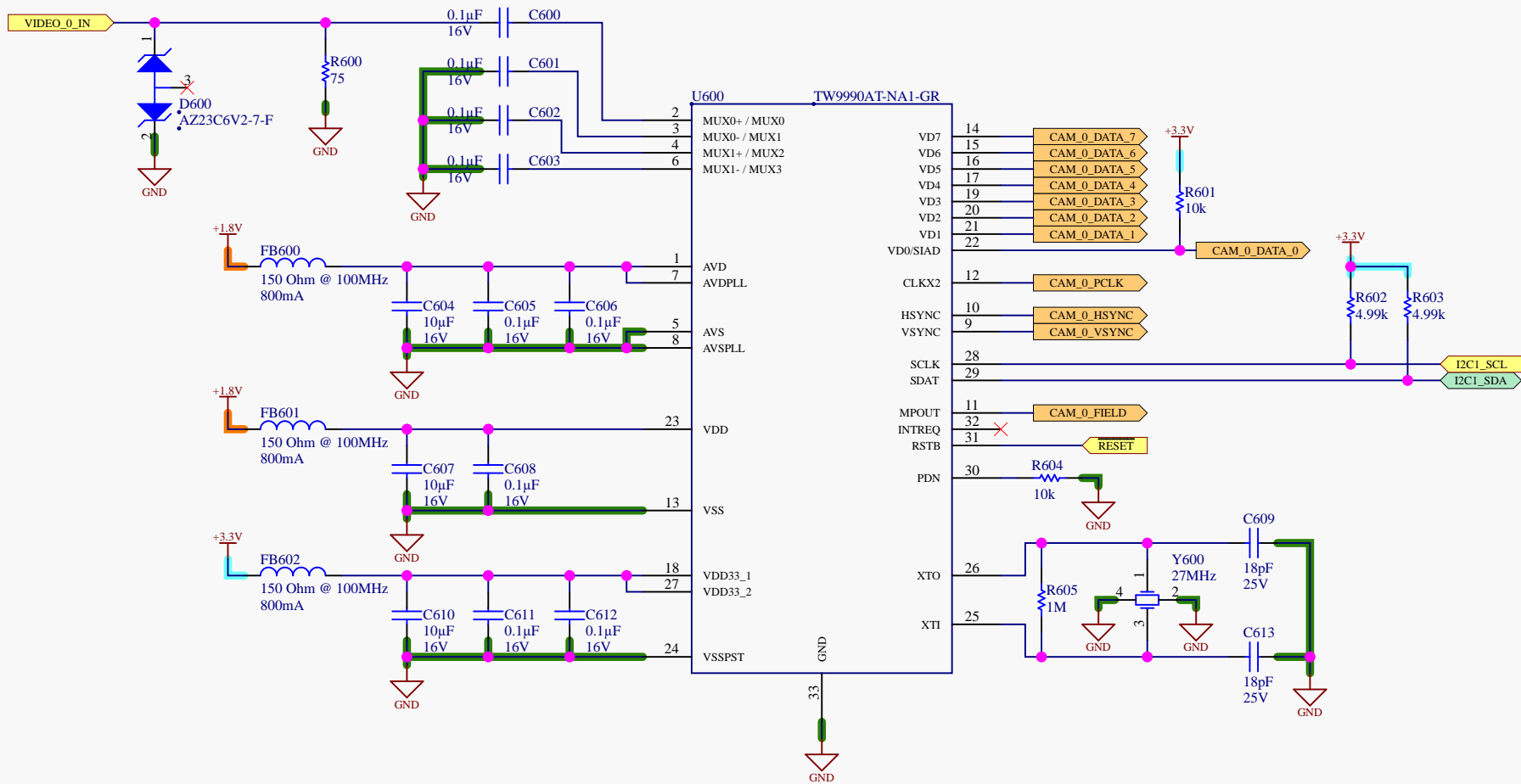
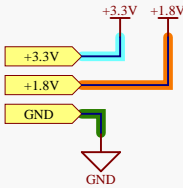
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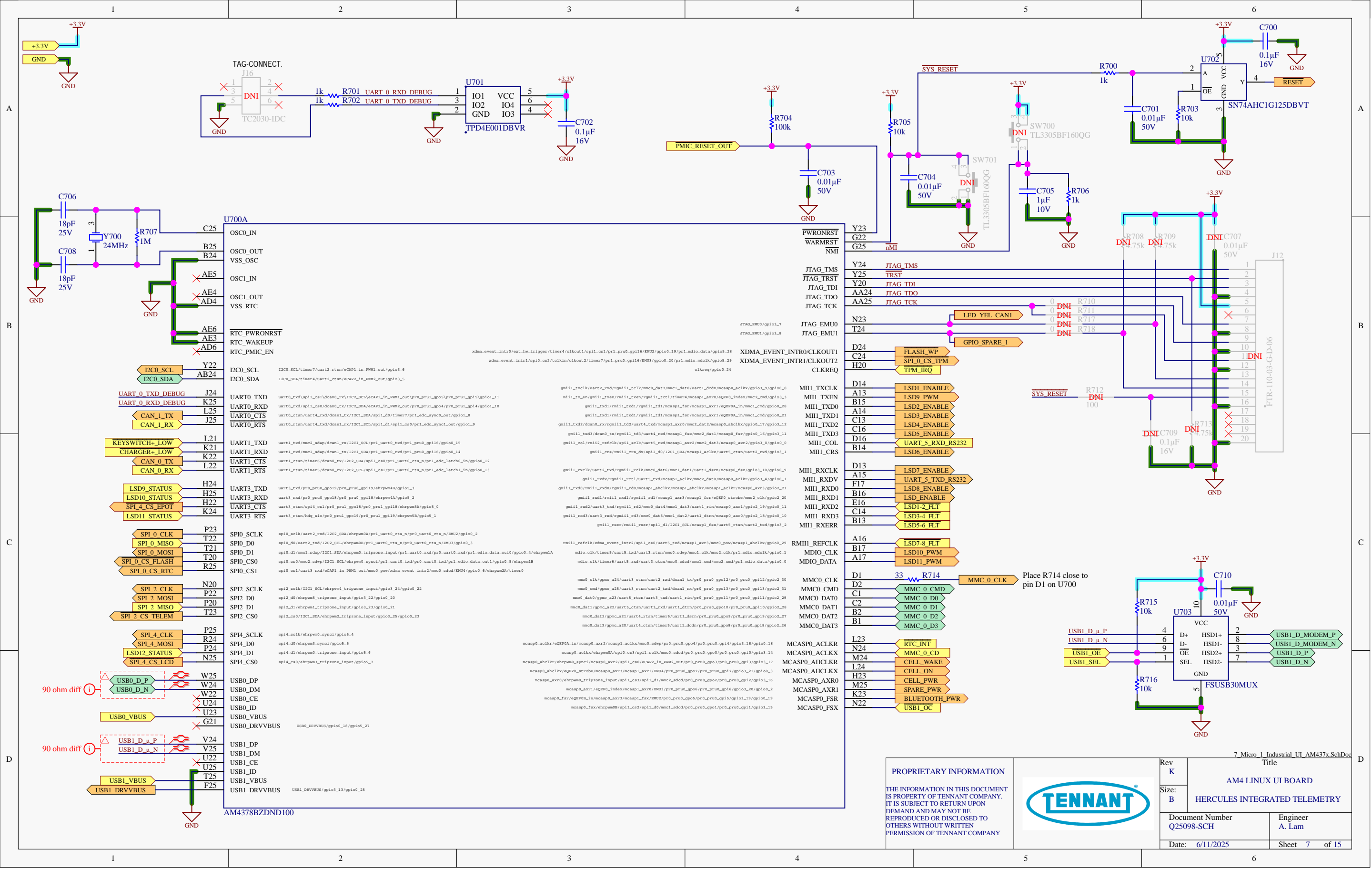


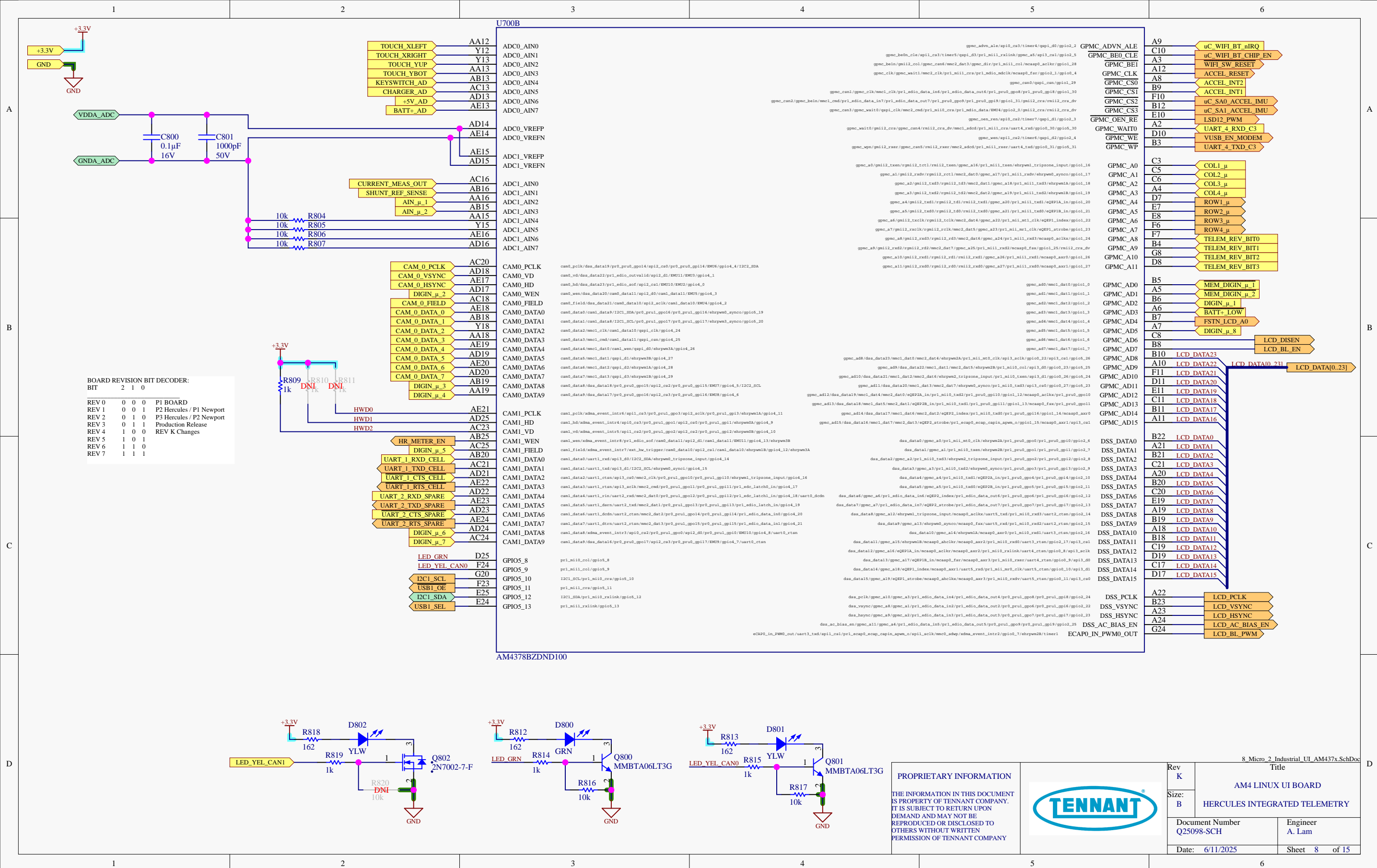
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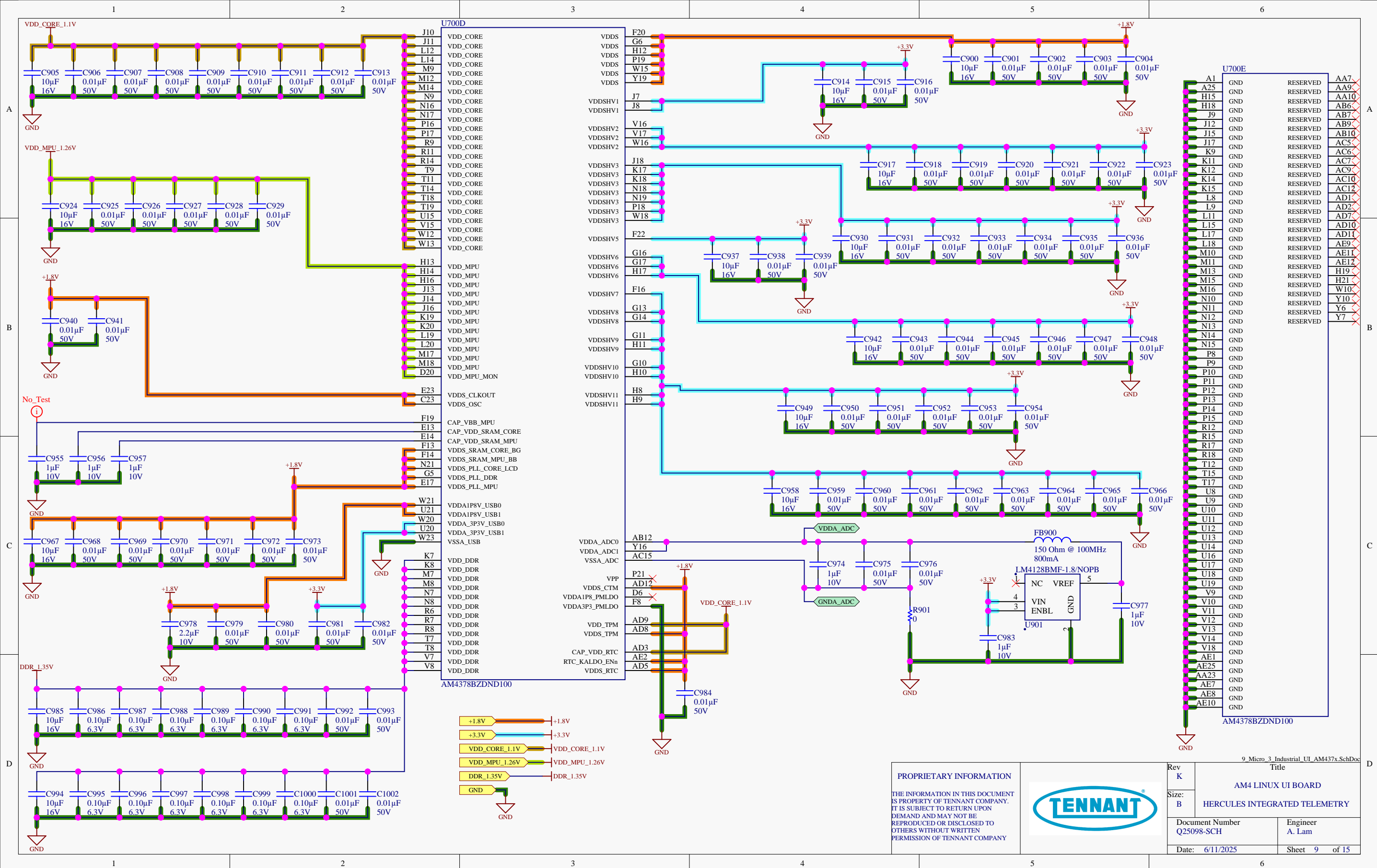


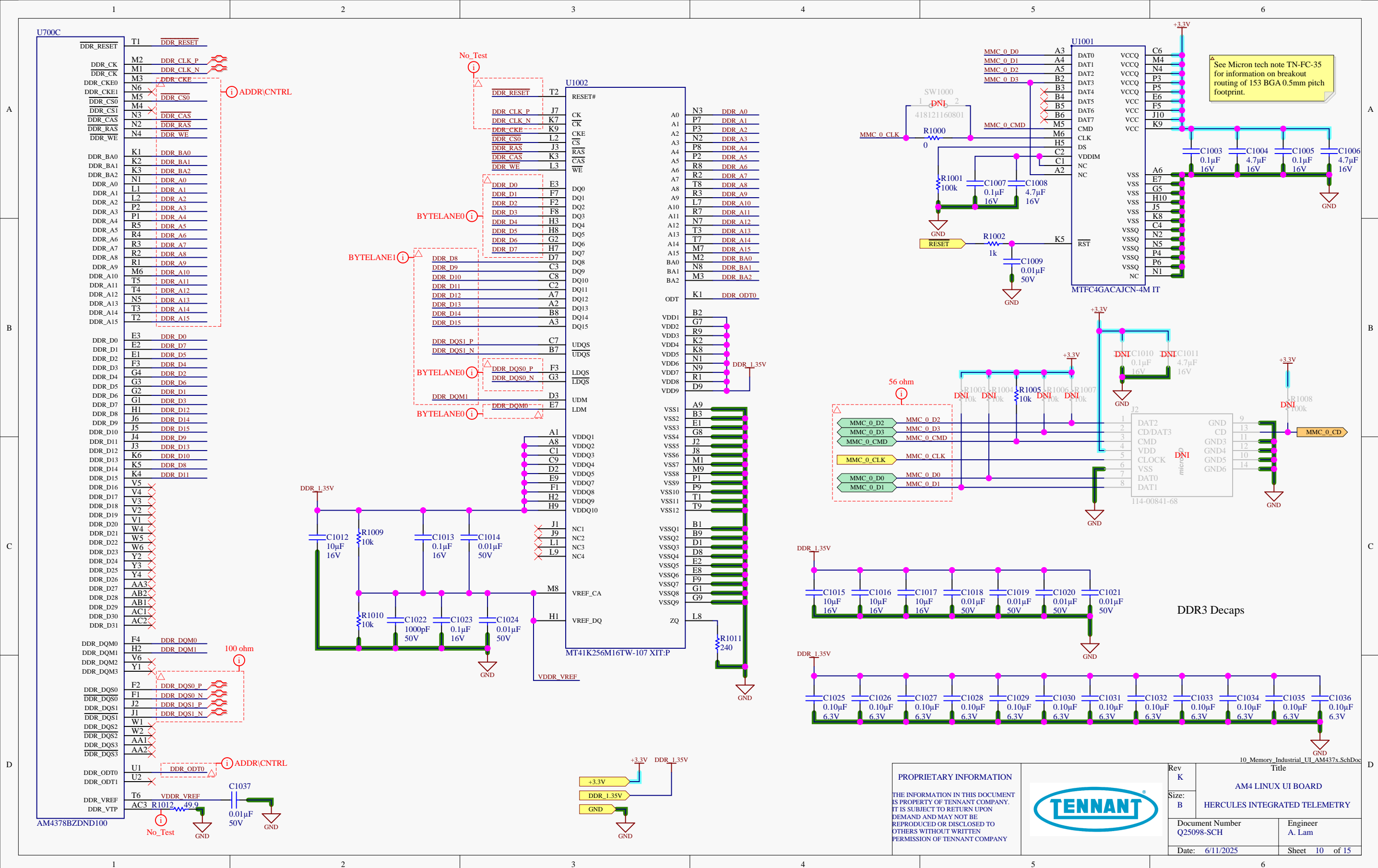
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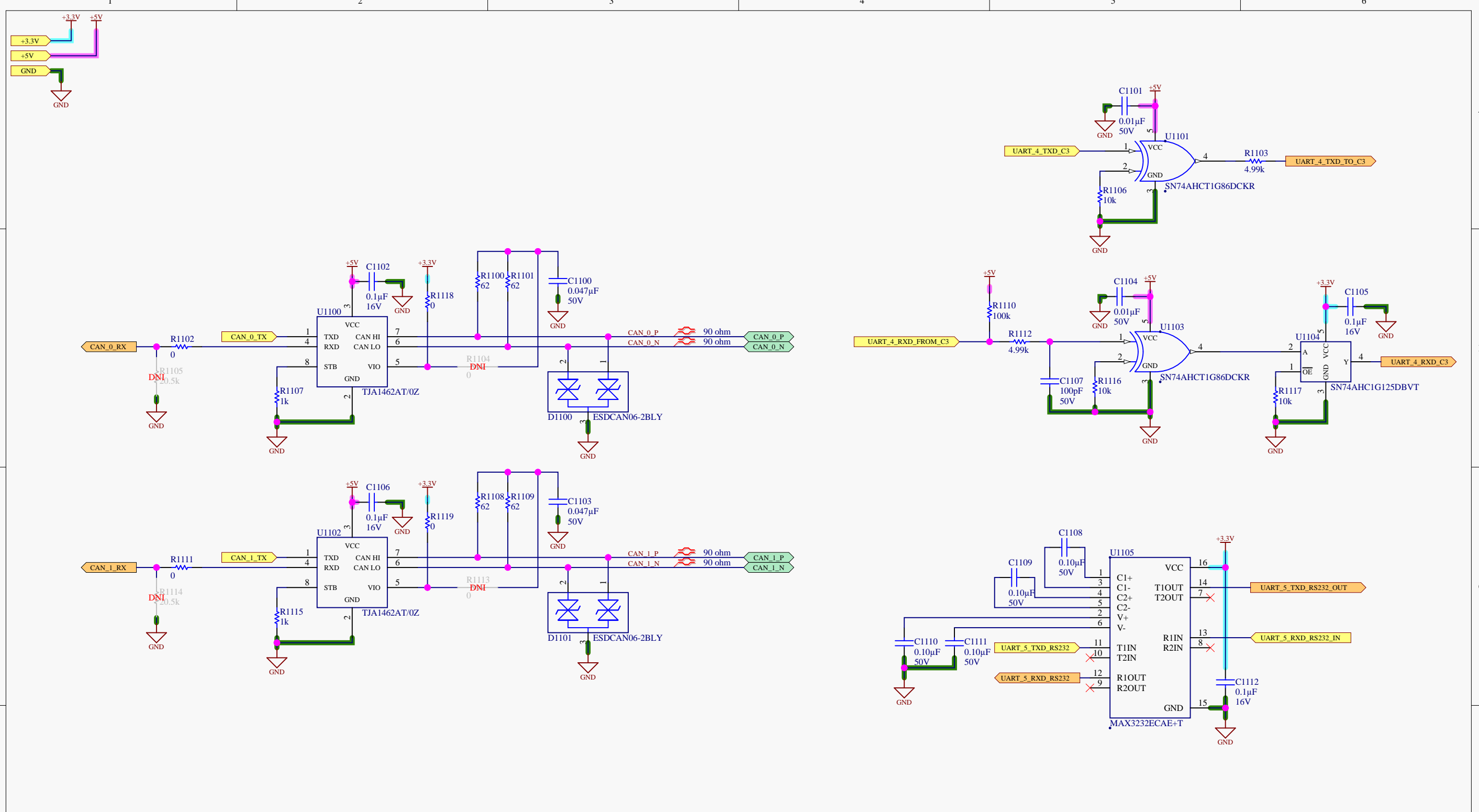


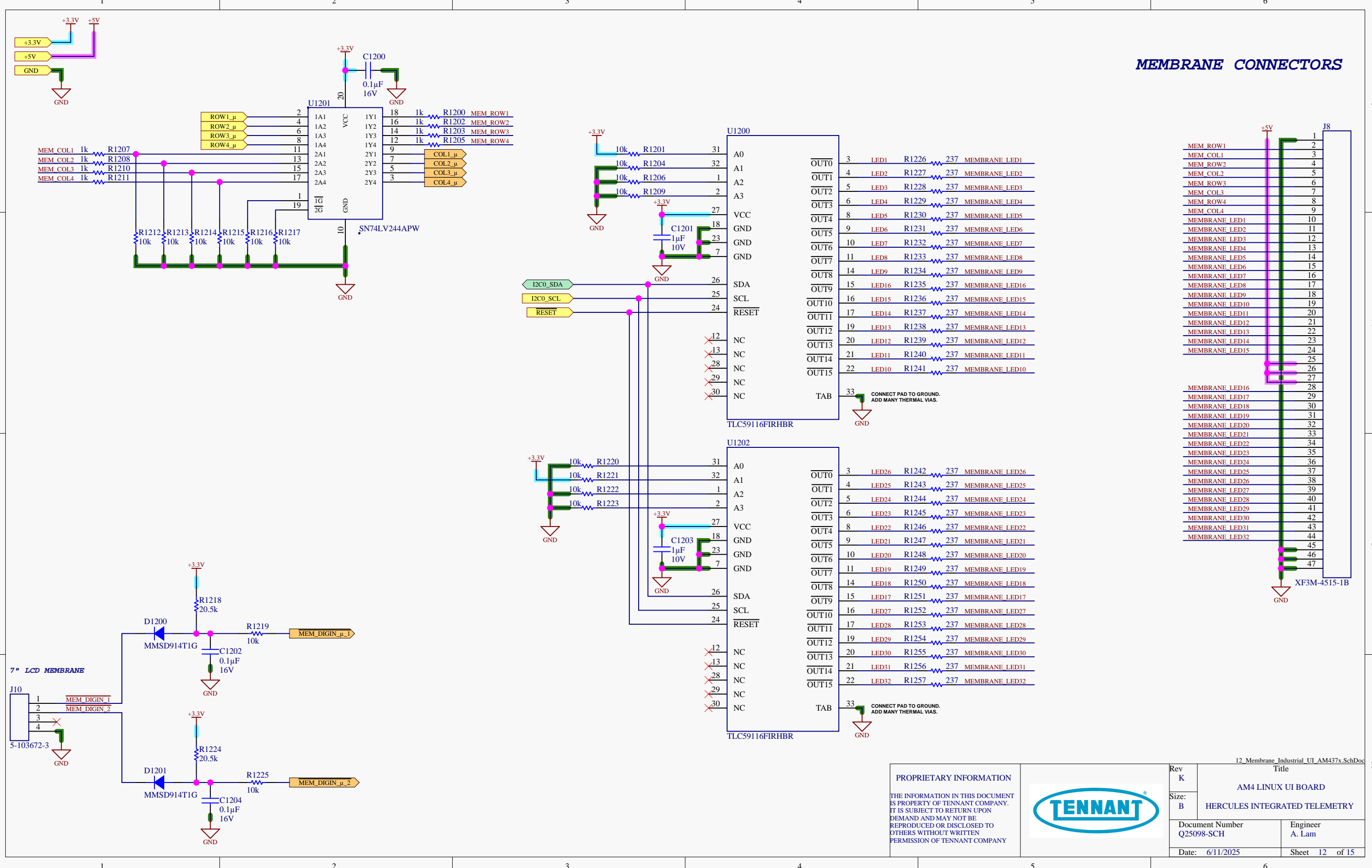












MEMBRANE CONNECTORS

MEM ROW1	1
MEM COL1	2
MEM ROW2	3
MEM COL2	4
MEM ROW3	5
MEM COL3	6
MEM ROW4	7
MEM COL4	8
MEMBRANE_LED1	9
MEMBRANE_LED2	10
MEMBRANE_LED3	11
MEMBRANE_LED4	12
MEMBRANE_LED5	13
MEMBRANE_LED6	14
MEMBRANE_LED7	15
MEMBRANE_LED8	16
MEMBRANE_LED9	17
MEMBRANE_LED10	18
MEMBRANE_LED11	19
MEMBRANE_LED12	20
MEMBRANE_LED13	21
MEMBRANE_LED14	22
MEMBRANE_LED15	23
MEMBRANE_LED16	24
MEMBRANE_LED17	25
MEMBRANE_LED18	26
MEMBRANE_LED19	27
MEMBRANE_LED20	28
MEMBRANE_LED21	29
MEMBRANE_LED22	30
MEMBRANE_LED23	31
MEMBRANE_LED24	32
MEMBRANE_LED25	33
MEMBRANE_LED26	34
MEMBRANE_LED27	35
MEMBRANE_LED28	36
MEMBRANE_LED29	37
MEMBRANE_LED30	38
MEMBRANE_LED31	39
MEMBRANE_LED32	40



