I210-AT_82574 NIC REFERENCE SCHEMATIC

DUAL DESIGN

1. 82574
2. I210-AT

EXTERNAL INTERFACES PROVIDED:
- PCIE V2.1 (2.5GT/S) GEN1 X1
- MDI (COPPER) STANDARD IEEE 802.3 ETHERNET INTERFACE FOR 1000BASE-T, 100BASE-TX, AND 10BASE-T APPLICATIONS (802.3, 802.3U, AND 802.3AB)
- NC-SI (DMTF NC-SI OVER RMII) OR LEGACY SMBUS OR NC-SI OVER MCTP OVER PCI-E OR SMBUS FOR MANAGEABILITY CONNECTION TO BMC
- IEEE 1149.1 JTAG

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REVISION CONTROL

R1.90 INITIAL RELEASE (INTEL PUBLIC)

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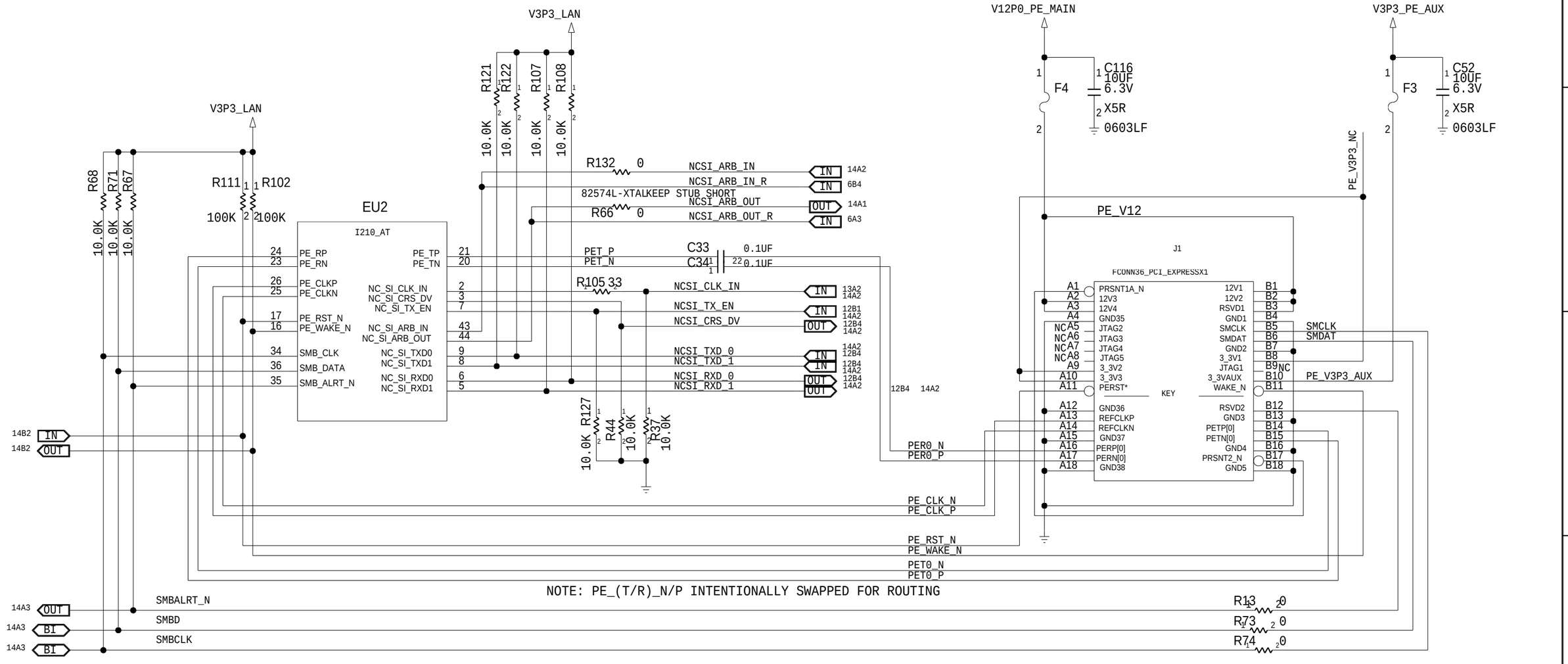
PCIE_NC-SI_SMB



NOTE: PE_(T/R)_N/P INTENTIONALLY SWAPPED FOR ROUTING

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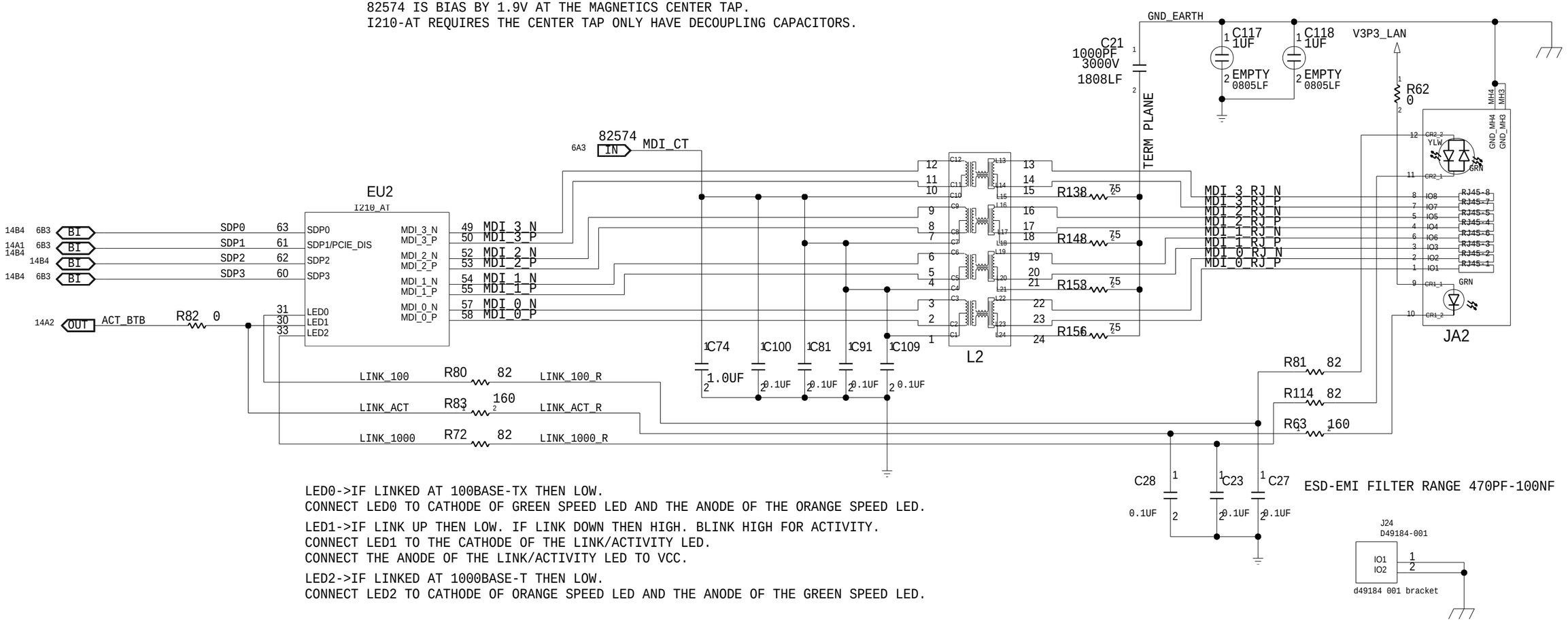
MDI_LED_SDP

82574 IS BIAS BY 1.9V AT THE MAGNETICS CENTER TAP.
I210-AT REQUIRES THE CENTER TAP ONLY HAVE DECOUPLING CAPACITORS.



LED0->IF LINKED AT 100BASE-TX THEN LOW.
CONNECT LED0 TO CATHODE OF GREEN SPEED LED AND THE ANODE OF THE ORANGE SPEED LED.

LED1->IF LINK UP THEN LOW. IF LINK DOWN THEN HIGH. BLINK HIGH FOR ACTIVITY.
CONNECT LED1 TO THE CATHODE OF THE LINK/ACTIVITY LED.
CONNECT THE ANODE OF THE LINK/ACTIVITY LED TO VCC.

LED2->IF LINKED AT 1000BASE-T THEN LOW.
CONNECT LED2 TO CATHODE OF ORANGE SPEED LED AND THE ANODE OF THE GREEN SPEED LED.

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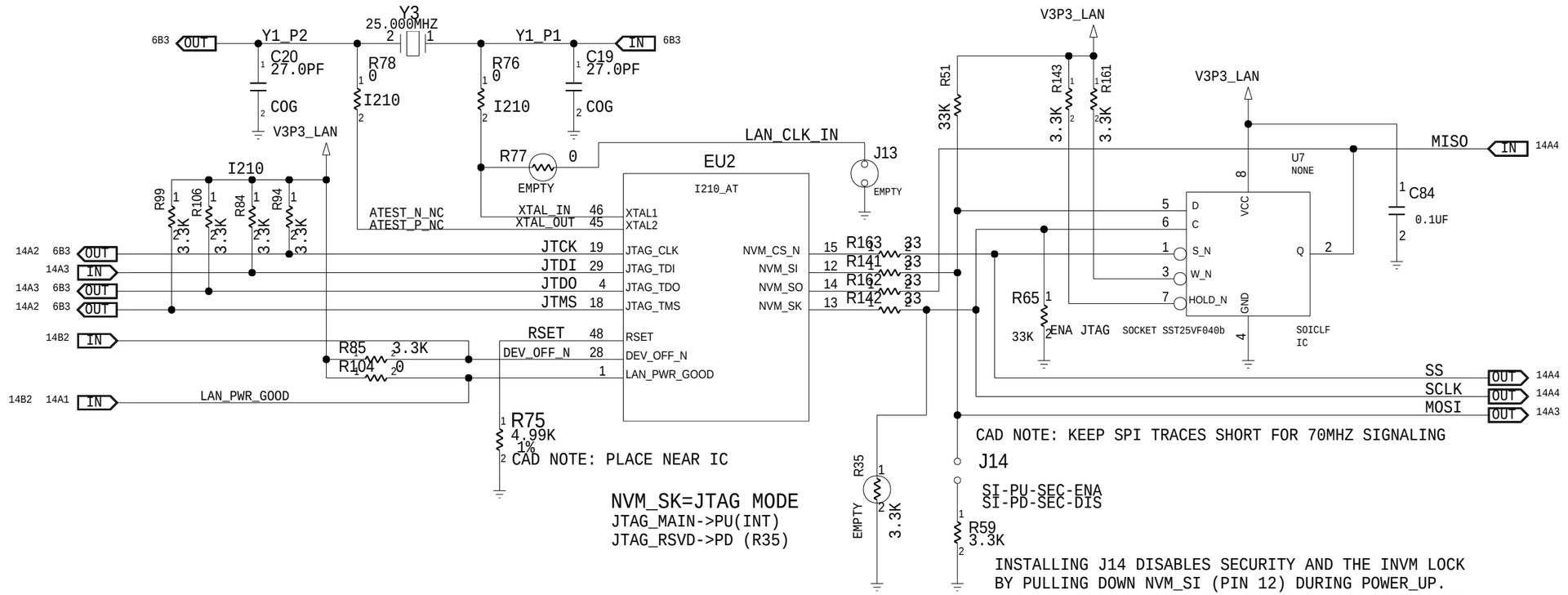
SUPPORT CIRCUITS



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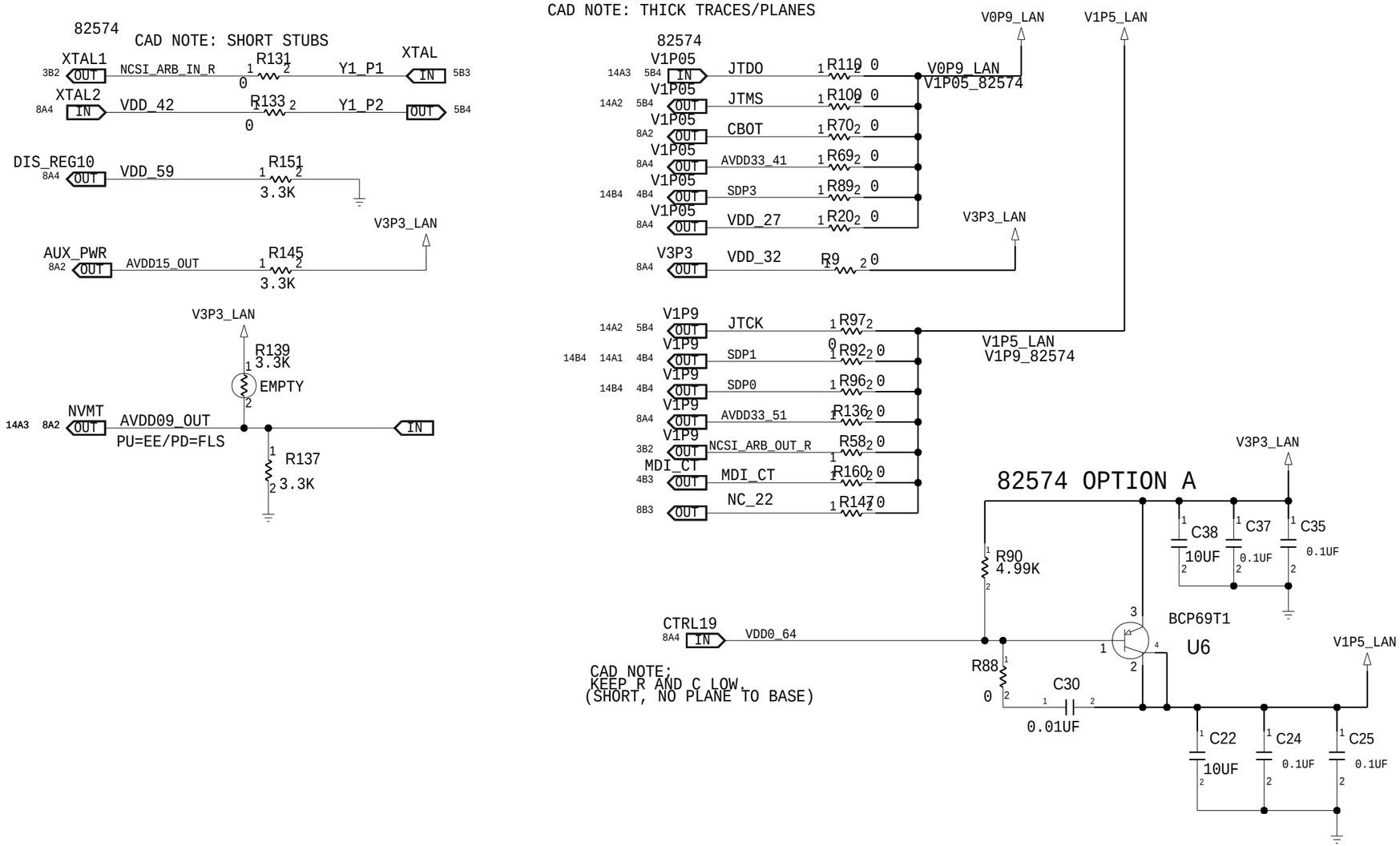
82574 CONFIGURATION

82574 REFERENCE

V1P05 WILL USE SVL V0P9_LAN NET
V1P9 WILL USE SPV V1P5_LAN NET

CAD NOTE: THICK TRACES/PLANES



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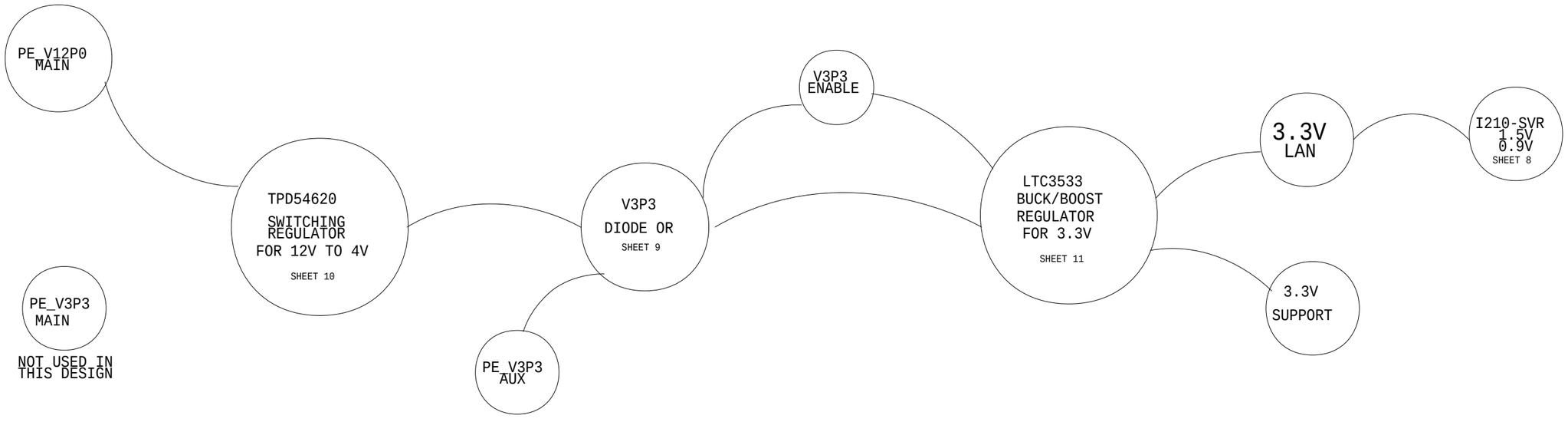
POWER SUPPLY TREE

THESE POWER SUPPLIES ARE EXAMPLES.
POWER SUPPLIES SHOULD BE OPTIMIZED
BY SYSTEM POWER DESIGNER FOR EACH PLATFORM.



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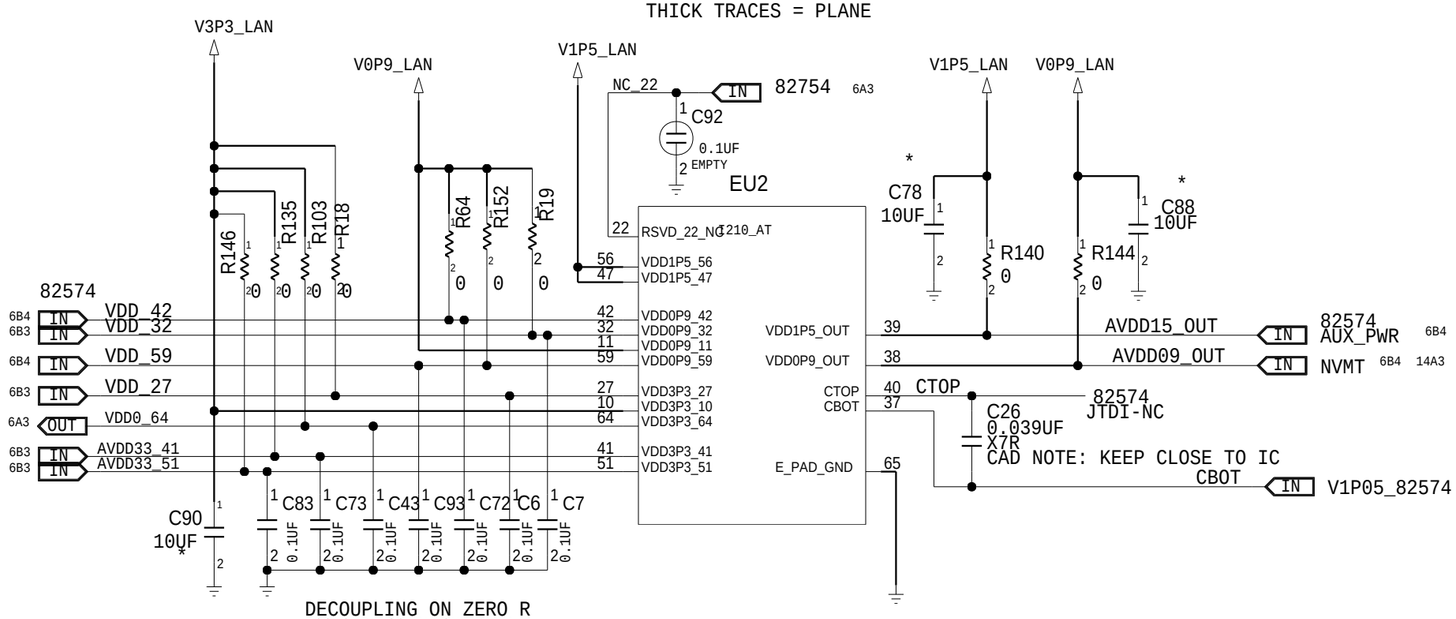
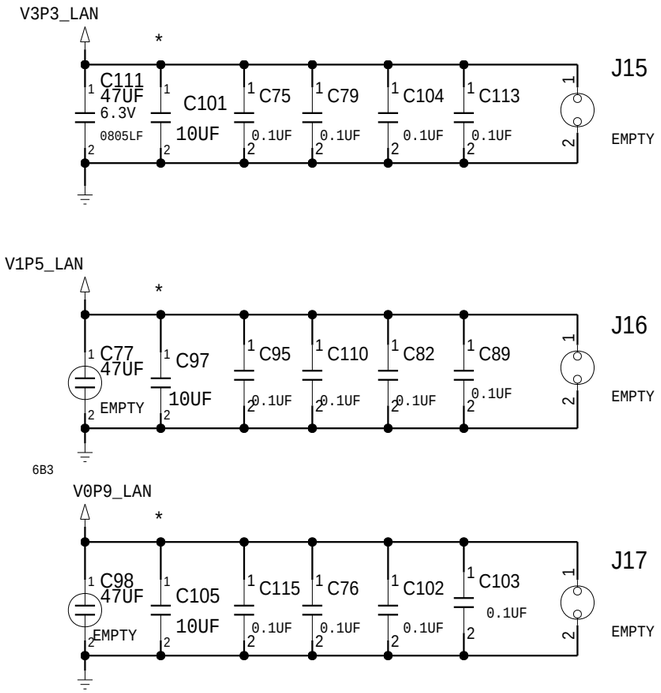
POWER SUPPLY & I210 REGULATOR

CONFIGURATION USING INTEGRATED SVR FOR V1P5 & V0P9
THICK TRACES = PLANE





*LOCALIZED AND DISTRIBUTED BULK CAPACITANCE RANGE ~15UF

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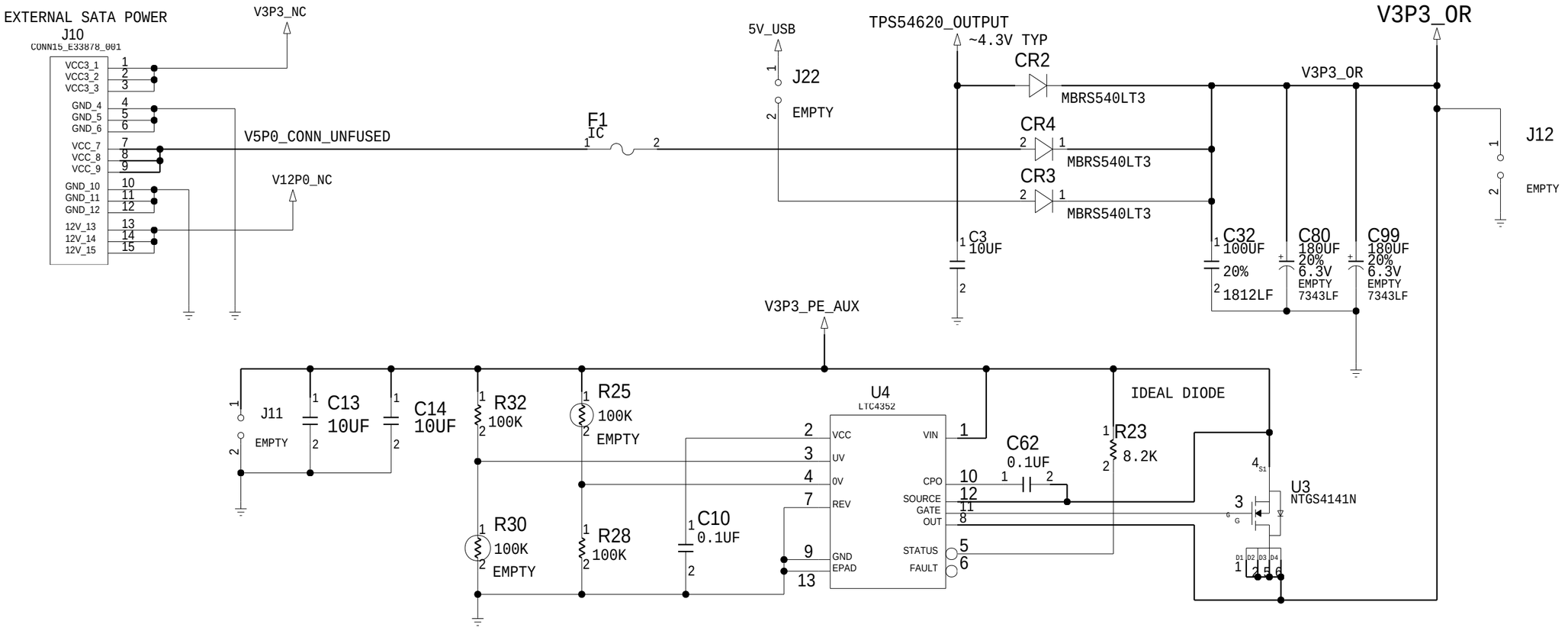
POWER MUX (AUX / MAIN SWITCH)

INPUTS TO V3P3 DIODE OR



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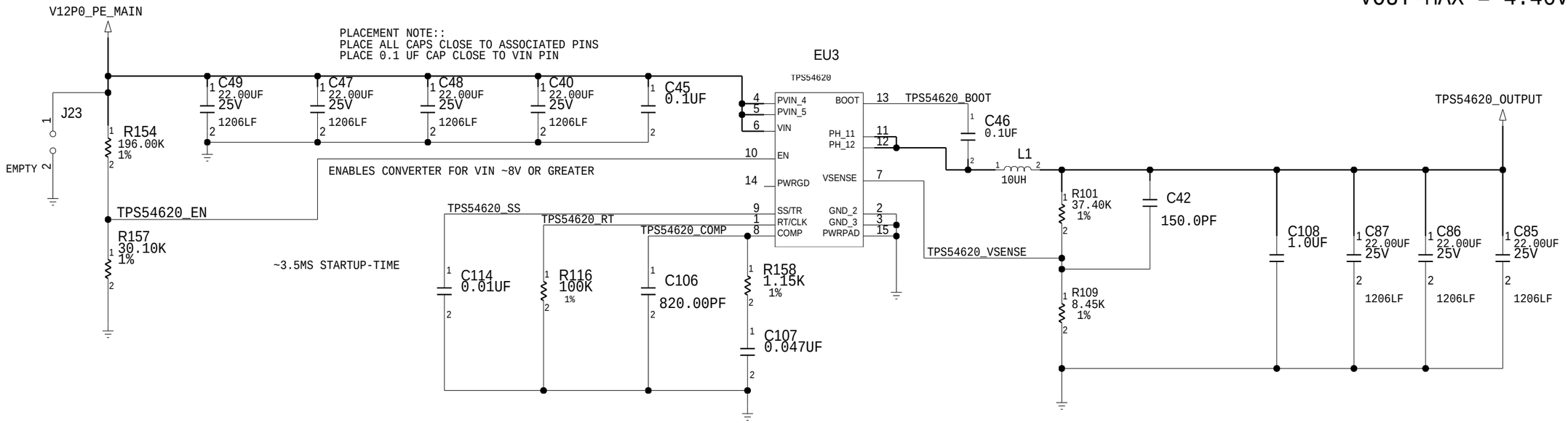
TPS54620 SWITCHING REGULATOR

VIN-MIN = 11.0V
VIN-MAX = 13.0V

VOUT-MIN = 4.22V
VOUT-MAX = 4.46V



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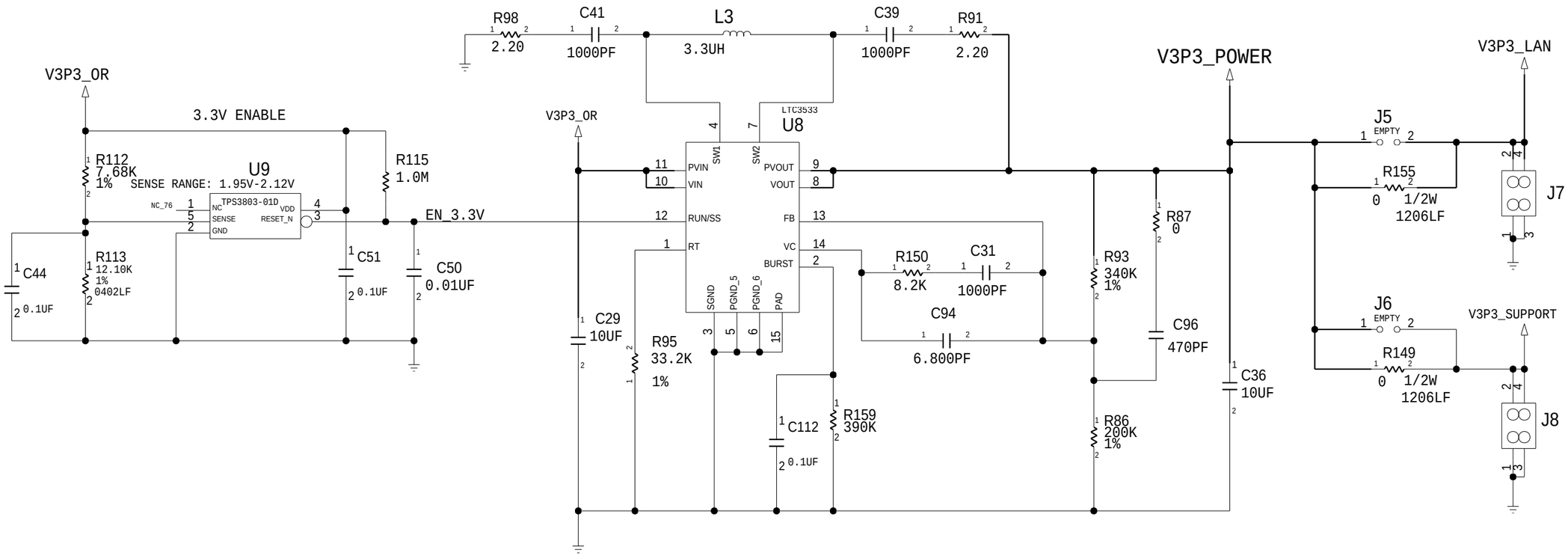
LTC3533 BUCK/BOOST REGULATOR FOR 3.3V



VOLTAGE BOOST REQUIRED TO COMPENSATE FOR
VOLTAGE DROP FROM DIODE OR CIRCUIT.
MANY DESIGNS MAY NOT REQUIRE A BOOST CIRCUIT.

VOUT_MIN = 3.18V
VOUT_MAX = 3.41V
$I_{3533\text{-}MAX}$ = 1.5A

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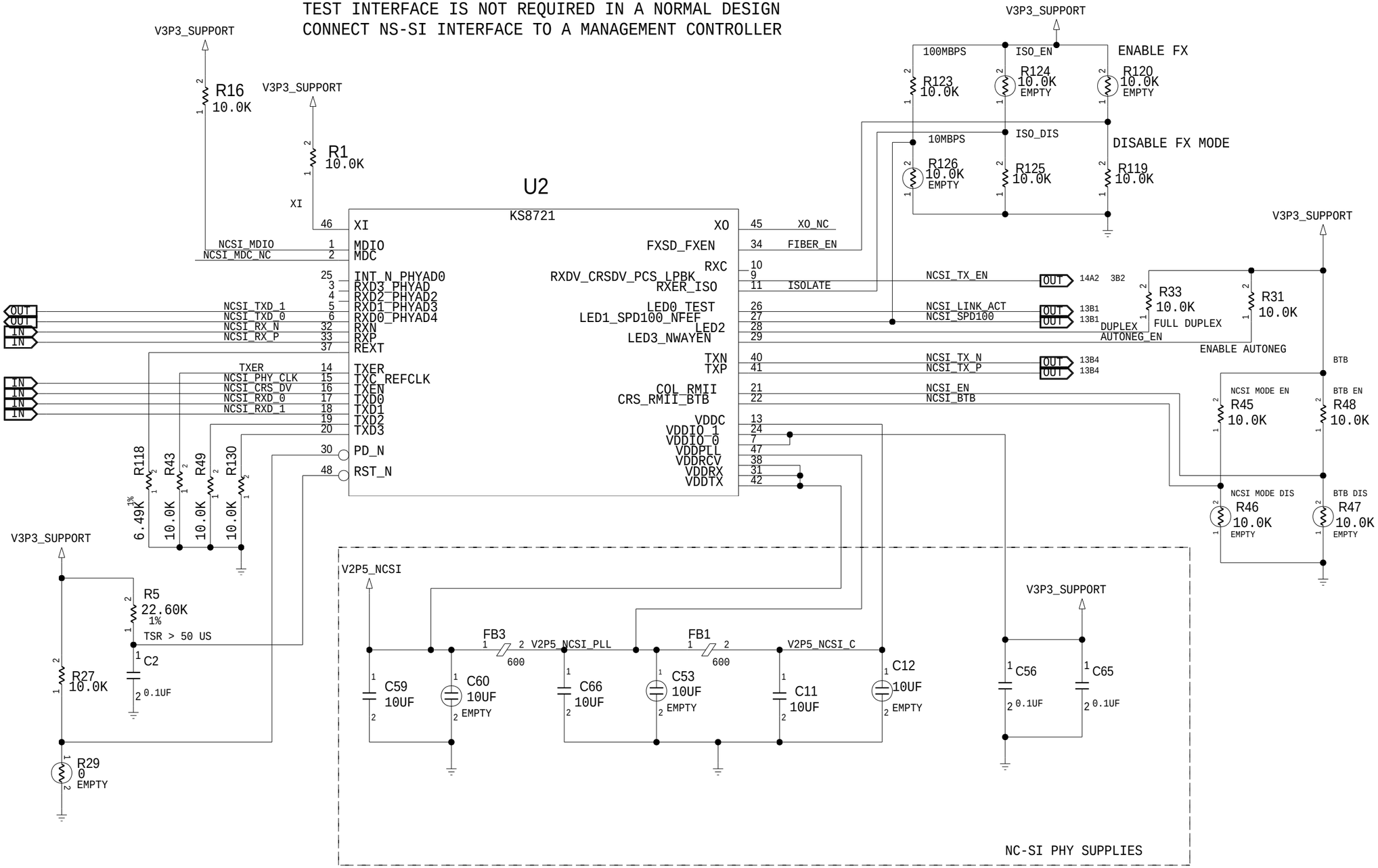
NC-SI TEST INTERFACE

TEST INTERFACE IS NOT REQUIRED IN A NORMAL DESIGN
CONNECT NS-SI INTERFACE TO A MANAGEMENT CONTROLLER



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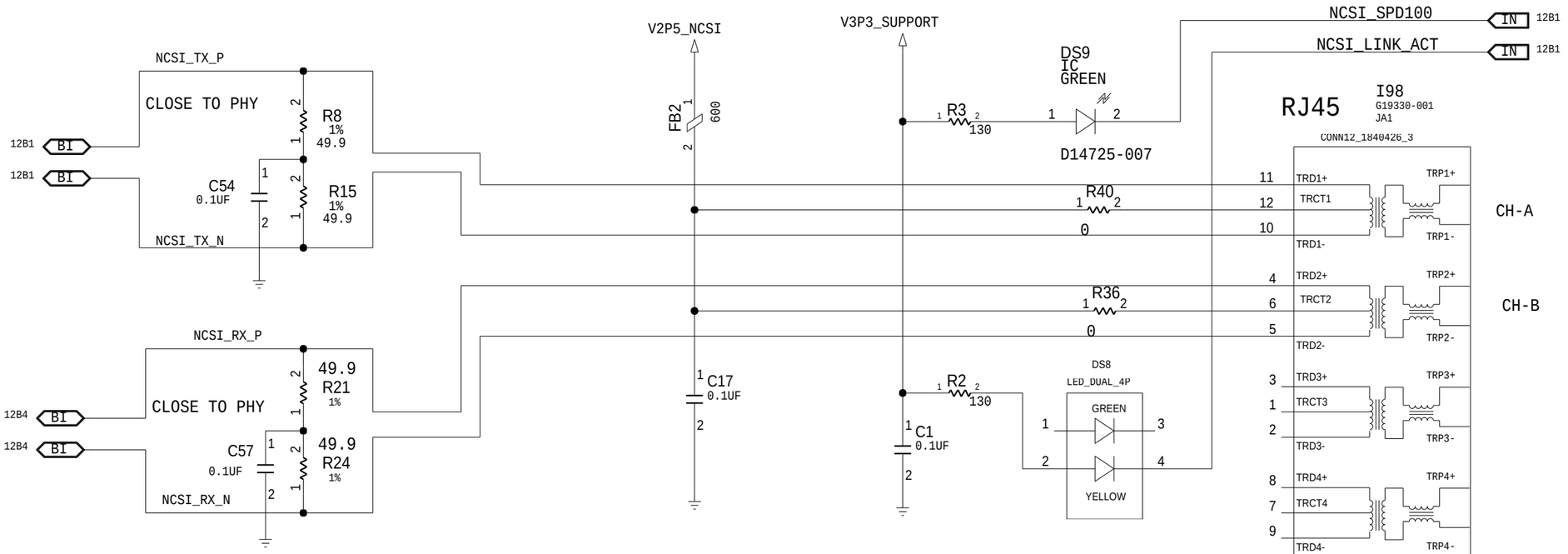
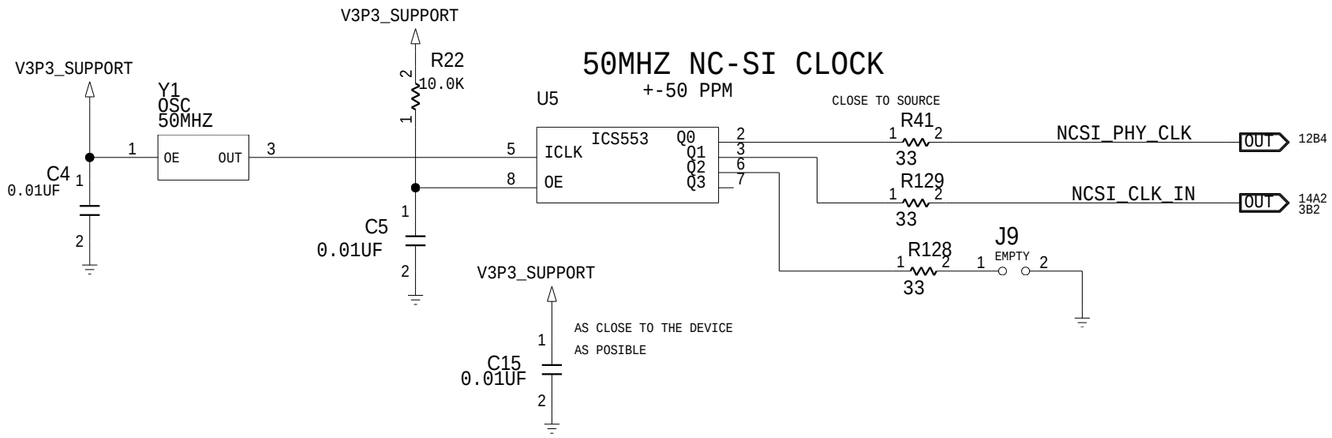
NC-SI TEST INTERFACE

TEST INTERFACE IS NOT REQUIRED IN A NORMAL DESIGN
CONNECT NS-SI INTERFACE TO A MANAGEMENT CONTROLLER





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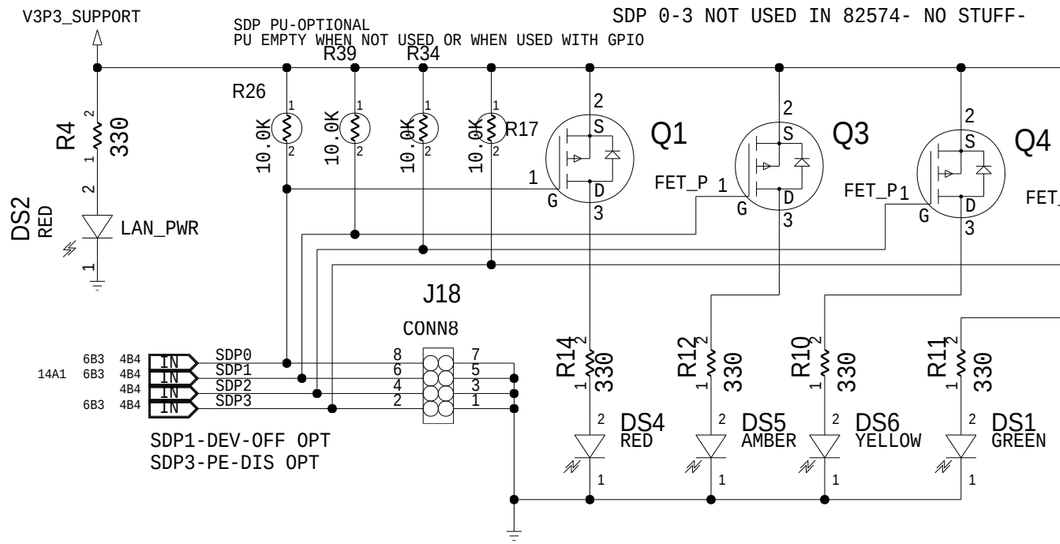
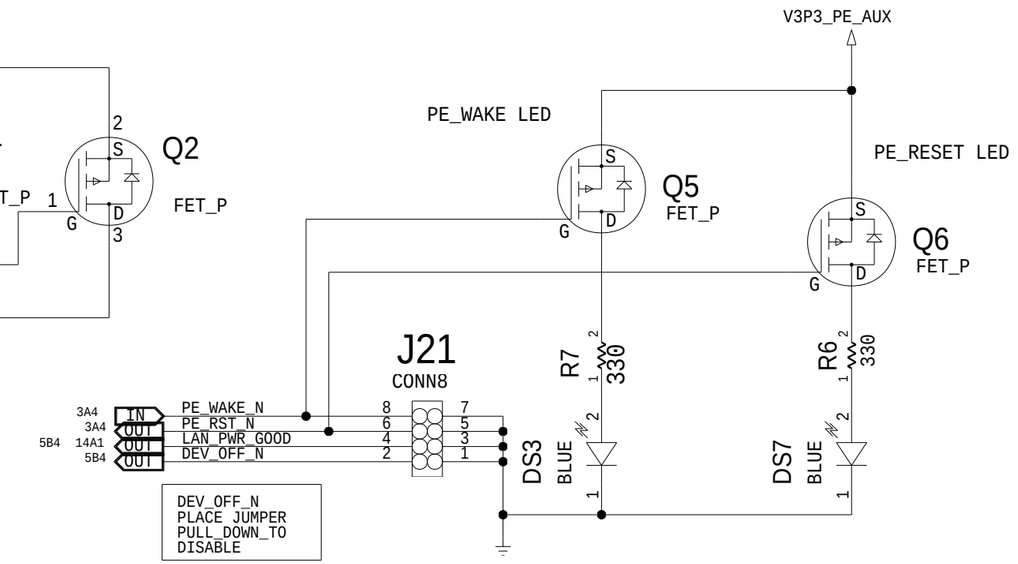
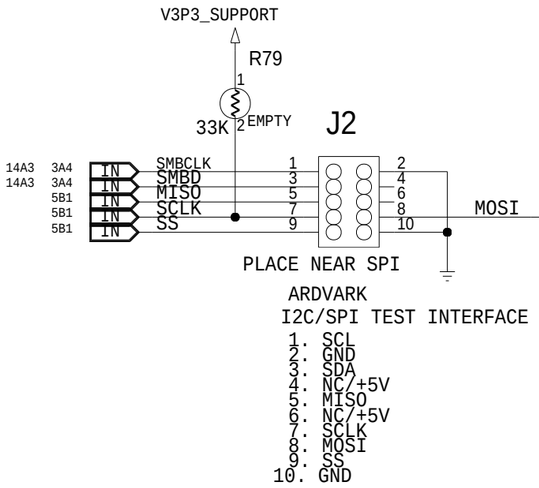
TEST CONNECTORS I/O

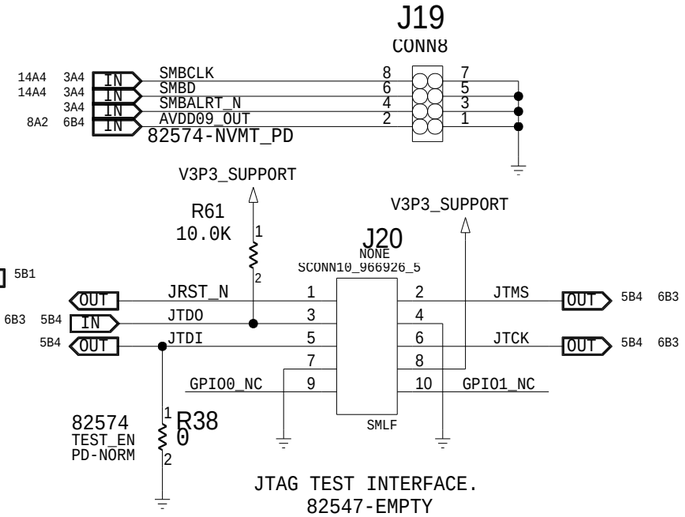
TEST INTERFACE IS NOT REQUIRED IN A NORMAL DESIGN

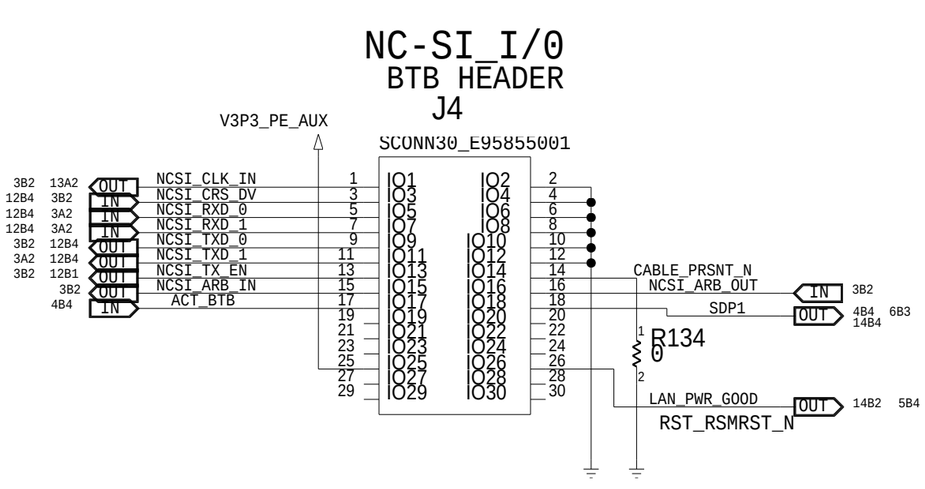
LED FUNCTION INTENTIONALLY INVERTED (LED OFF - NORMAL)











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