I211-AT
1G-BASE-T
REFERENCE DESIGN

EXTERNAL INTERFACES PROVIDED:
- PCIE V2.1 (2.5GT/S) GEN1 X1; CALLED PCIE IN THIS DOCUMENT.
- MDI (COPPER) STANDARD IEEE 802.3 ETHERNET INTERFACE FOR 1000BASE-T, 100BASE-TX, AND 10BASE-T APPLICATIONS (802.3, 802.3U, AND 802.3AB)
- IEEE 1149.1 JTAG

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 1

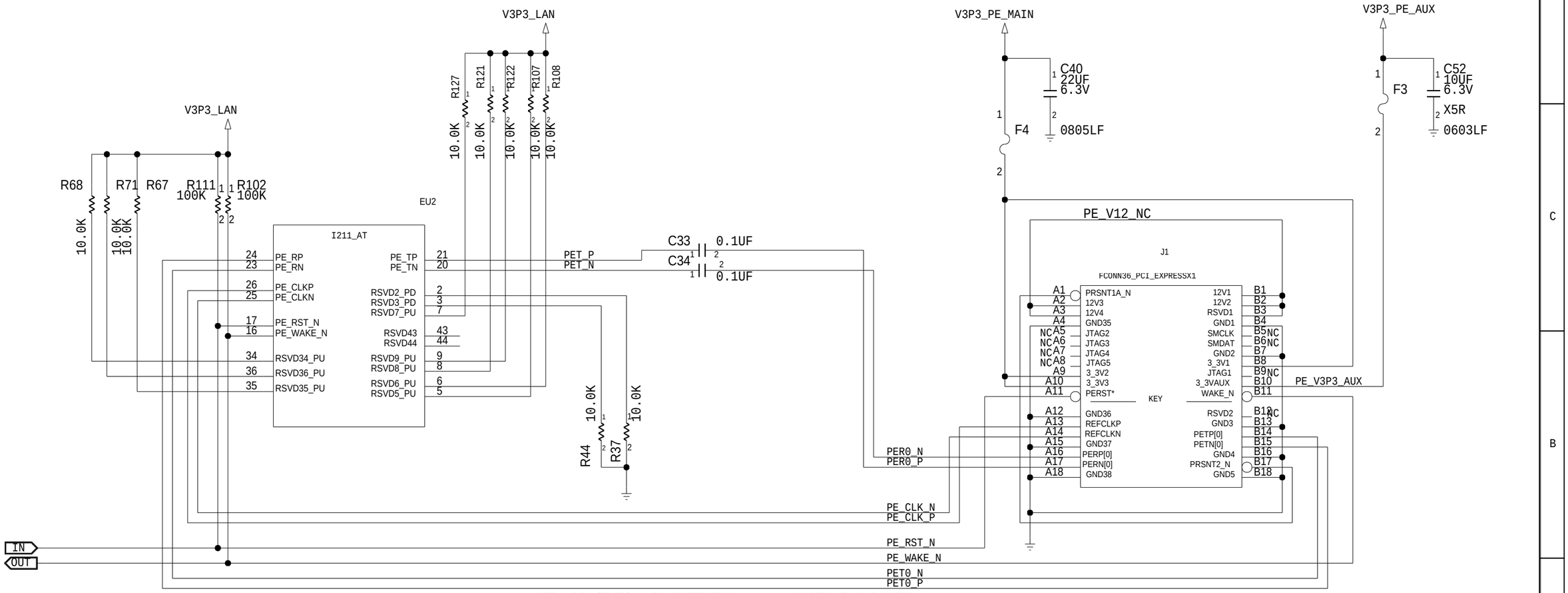
REVISION HISTORY

R1.90 INITIAL RELEASE (INTEL PUBLIC)

TABLE OF CONTENTS

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 2

PCIE_NC-SI_SMB

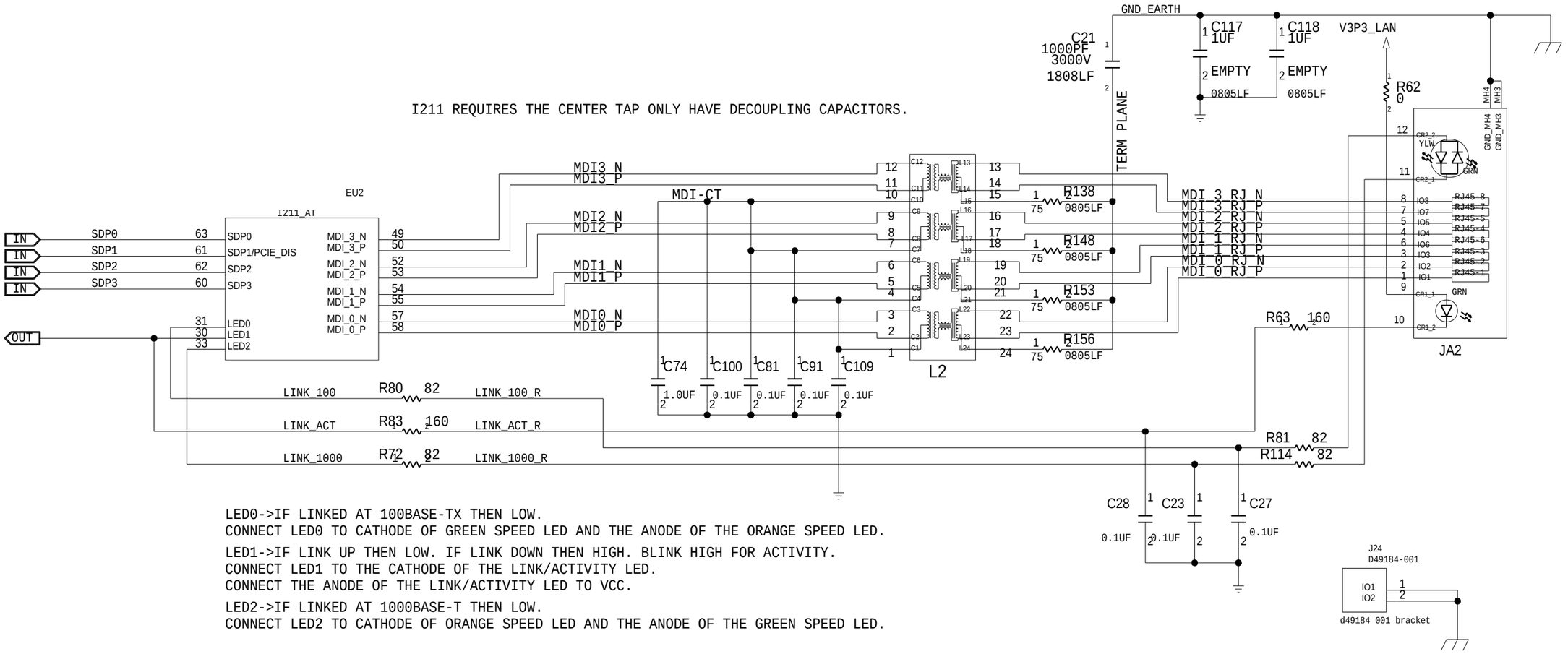


NOTE: PE_(T/R)_N/P INTENTIONALLY SWAPPED FOR ROUTING

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 3

I211-AT_MDI_LED_SDP

I211 REQUIRES THE CENTER TAP ONLY HAVE DECOUPLING CAPACITORS.



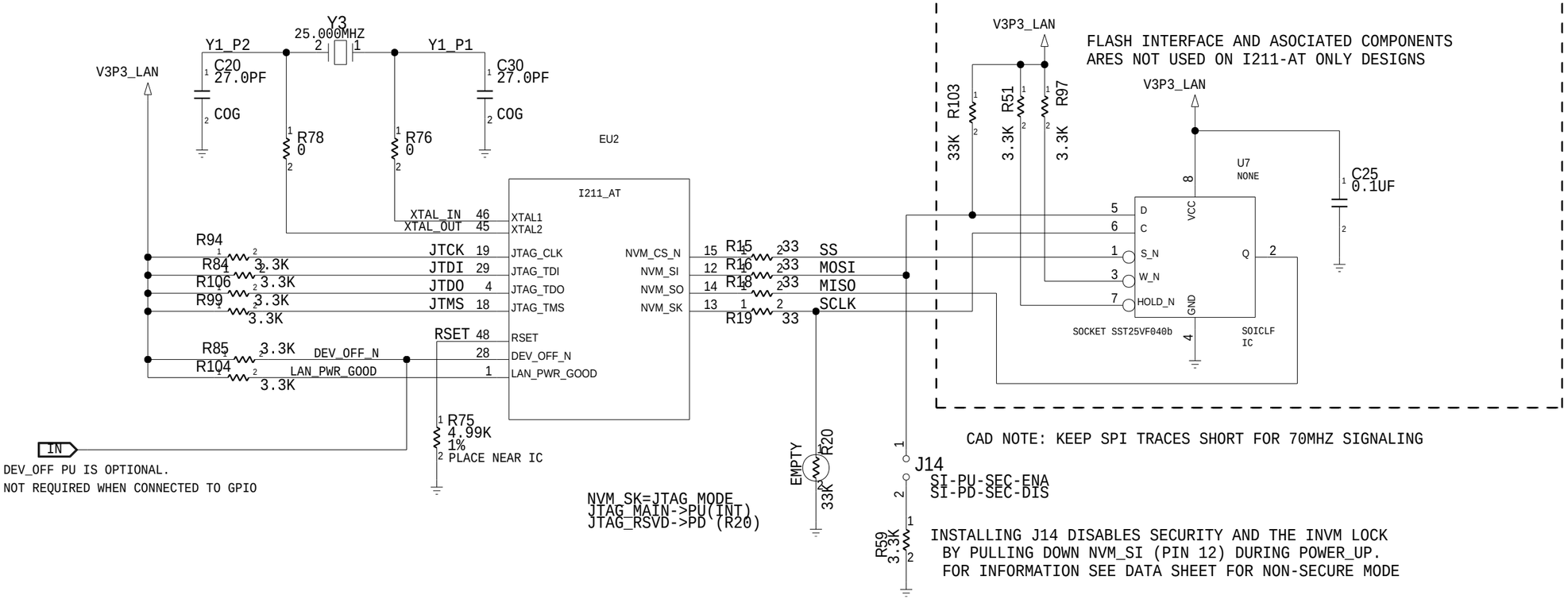
LED0->IF LINKED AT 100BASE-TX THEN LOW.
CONNECT LED0 TO CATHODE OF GREEN SPEED LED AND THE ANODE OF THE ORANGE SPEED LED.

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.

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 4

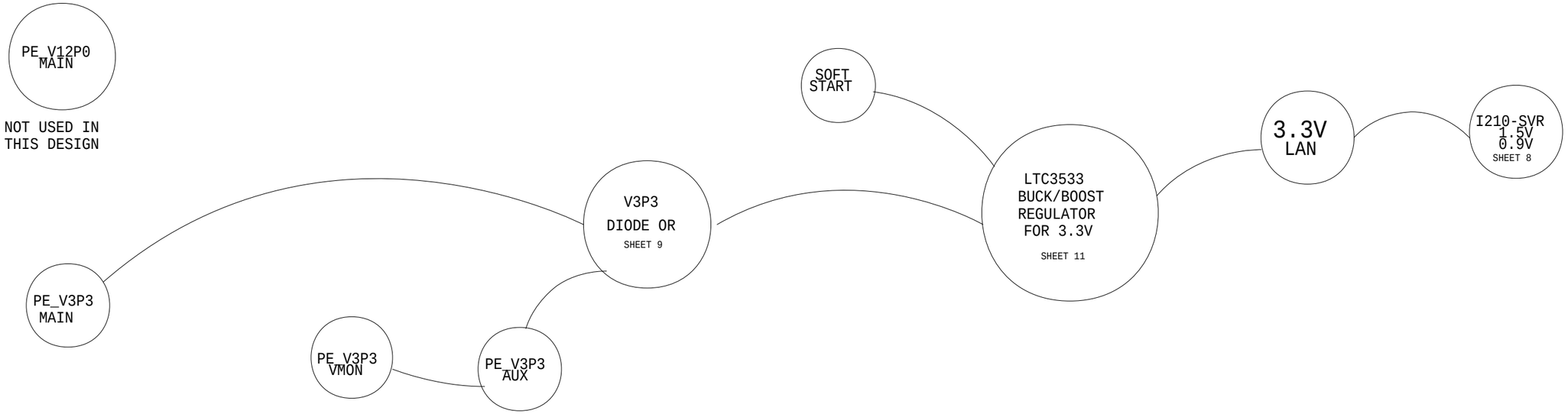
SUPPORT CIRCUITS



LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 5

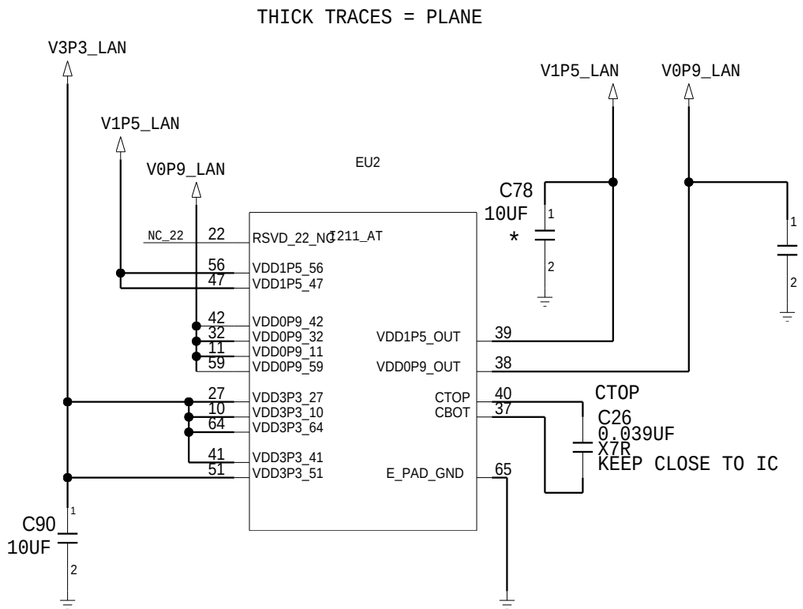
POWER SUPPLY TREE

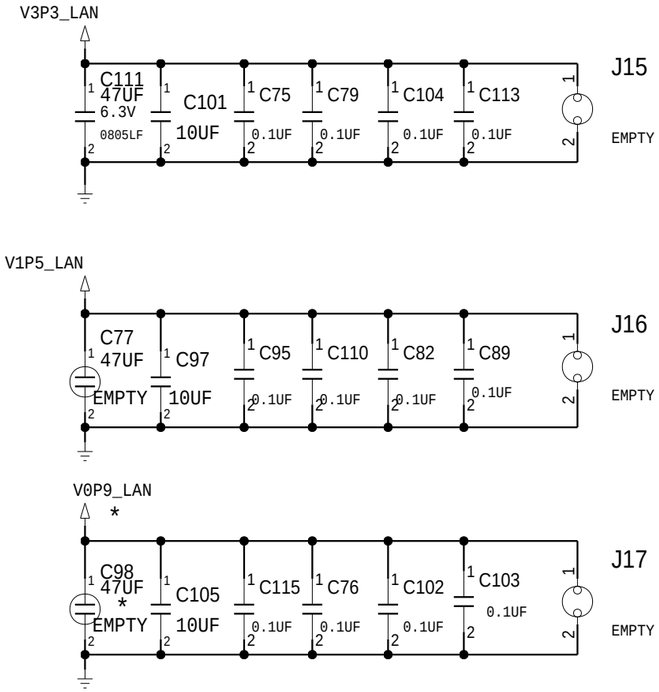
THESE POWER SUPPLIES ARE EXAMPLES.
POWER SUPPLIES SHOULD BE OPTIMIZED
BY SYSTEM POWER DESIGNER FOR EACH PLATFORM.



LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 6

POWER SUPPLY & I211 REGULATOR



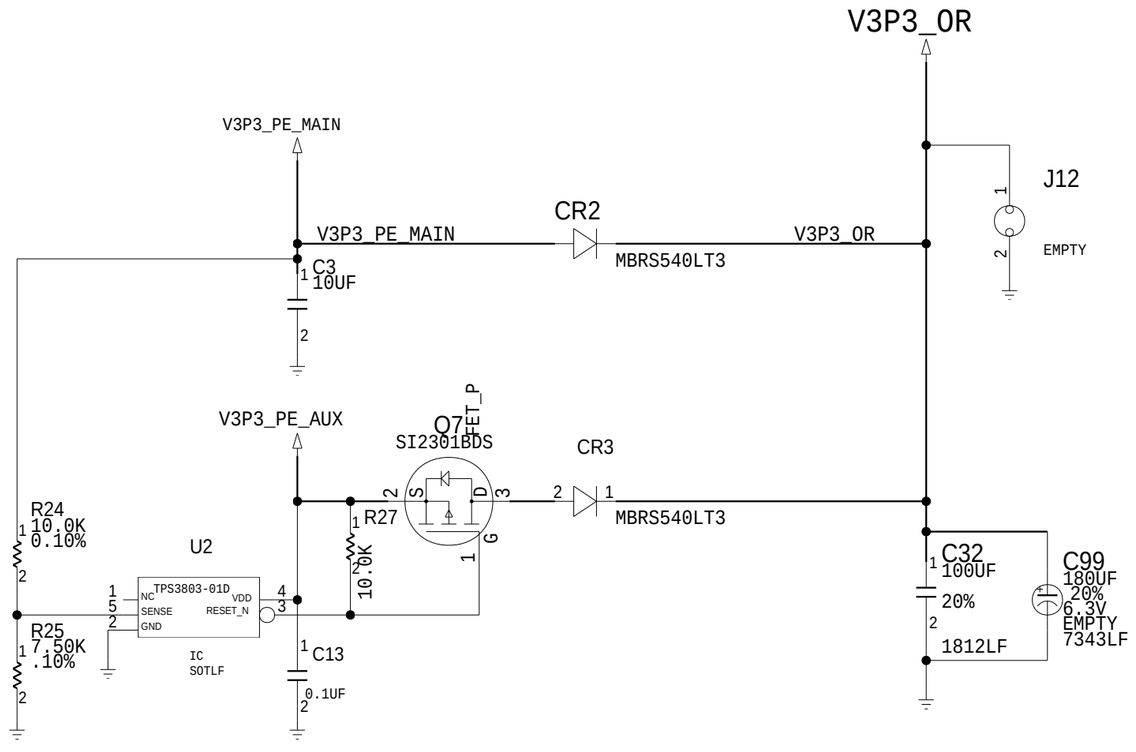


*LOCALIZED AND DISTRIBUTED BULK CAPACITANCE RANGE ~15UF

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 7

POWER MUX (AUX / MAIN SWITCH)

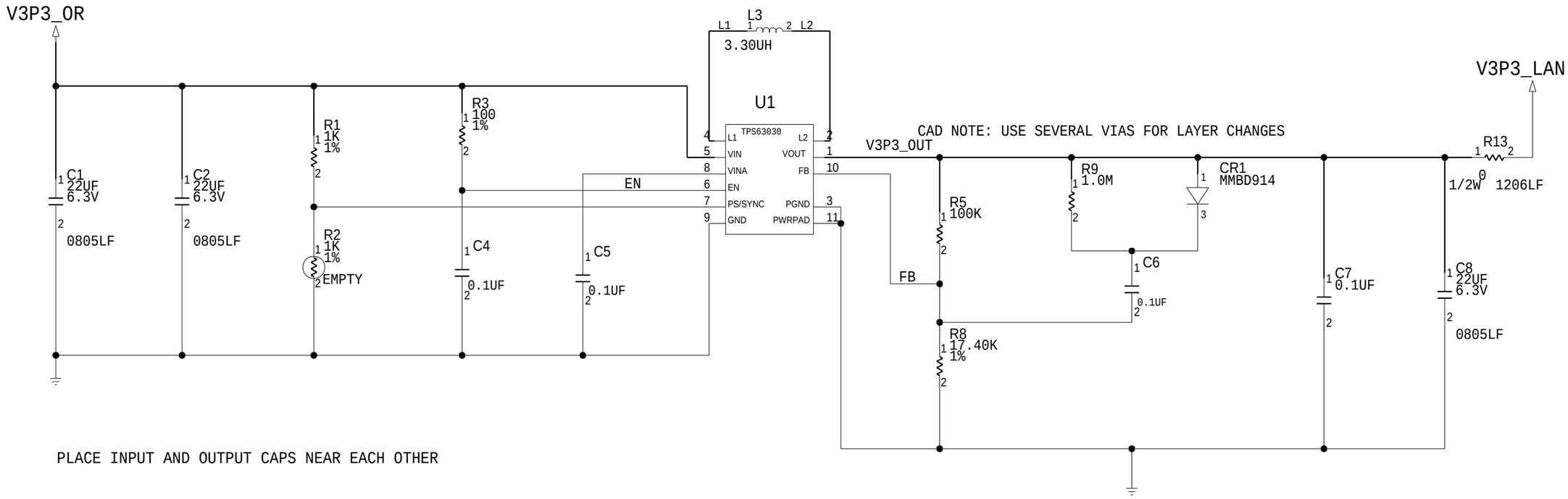
INPUTS TO V3P3 DIODE OR



SENSE_CIRCUITRY_FOR_3_3V_AUX_VERSUS_3_3V_MAIN

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 8

3.3V BUCK-BOOST
TPS63030



PLACE INPUT AND OUTPUT CAPS NEAR EACH OTHER

CALCULATED POWER SUPPLY CHARACTERISTICS:
- VOUT MIN = 3.28V
- VOUT MAX = 3.47V
- IOUT MAX = 350MA @ VIN=2.5V

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

LAN ACCESS DIVISION 2111 N.E. 25th AVENUE HILLSBORO, OR 97124	TITLE I211-AT REFERENCE SCHEMATIC	SIZE B	CODE	DOCUMENT NUMBER 511123	REV 1.90	DATE 2012-09-28	SHEET 9