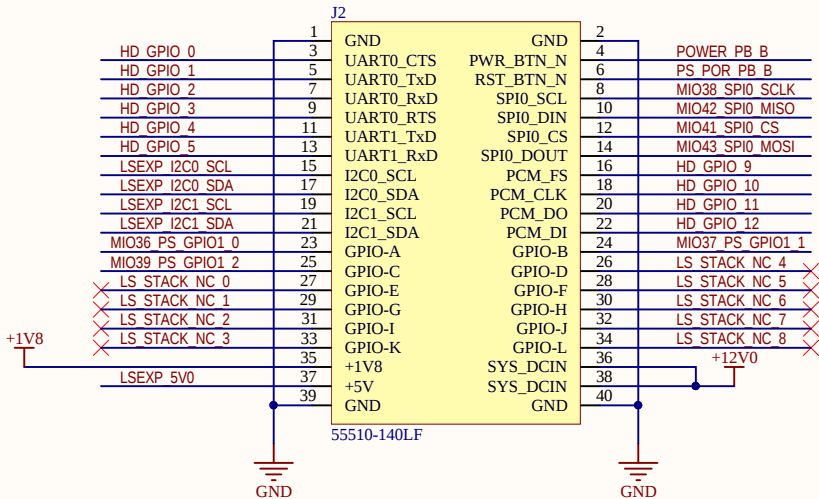
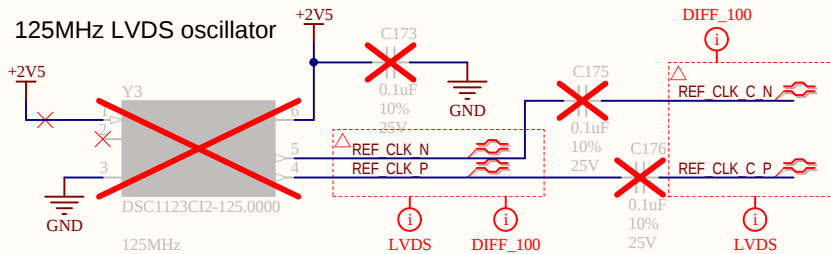


REV.	DESCRIPTION	DATE	APPROVED
A.2	Changed all LED resistors to 22R1 DNP 125MHz oscillator (not needed)	2019-04-08	J Johnson

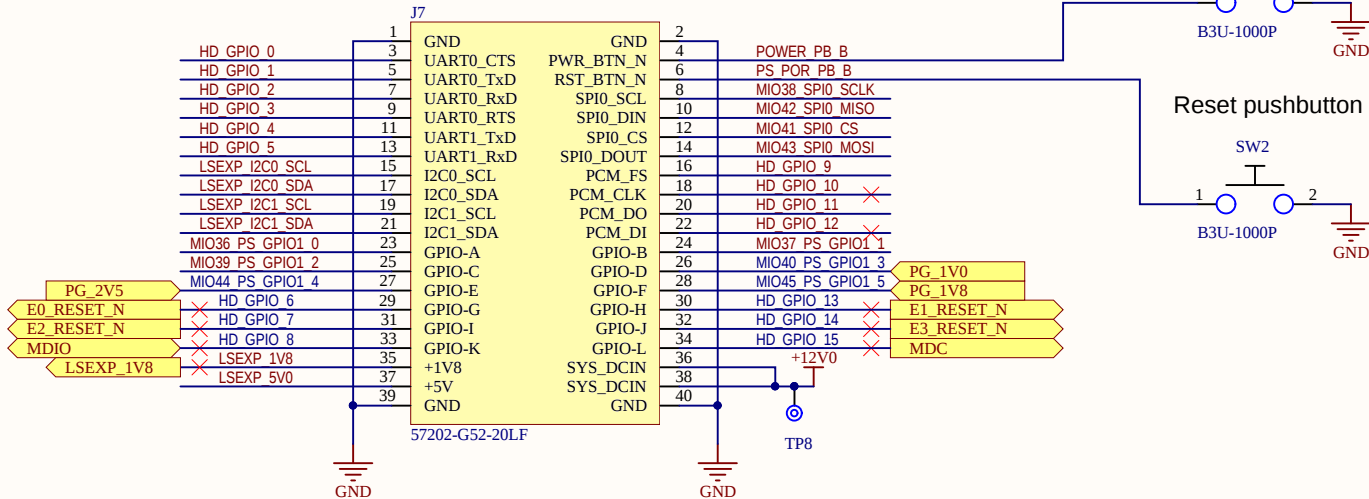
Low-speed expansion stacking connector (socket)



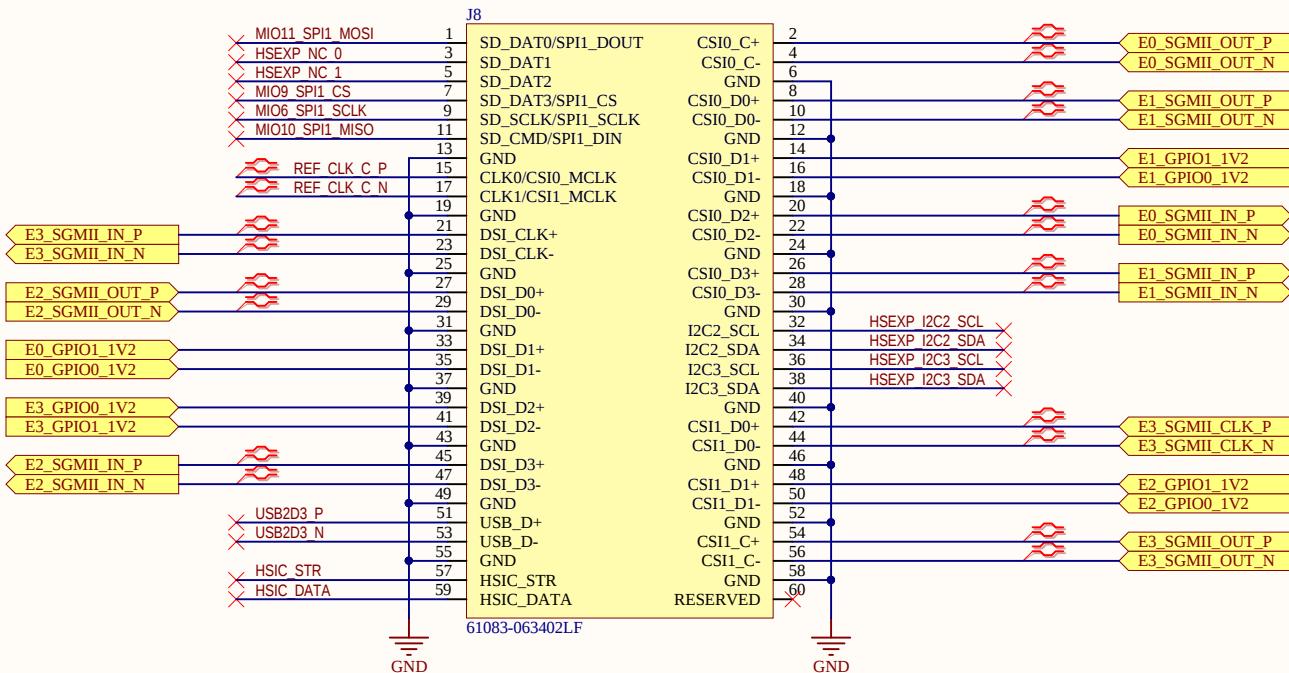
125MHz LVDS oscillator



Low-speed expansion connector (header)



High-speed expansion connector



TITLE 96B Quad Ethernet Mezzanine Card

SHEET Expansion connectors

CONFIG. Standard

PROJECT 96B Quad Ethernet Mezzanine Card DRAWN J Johnson DATE 2018-12-06

SIZE B SCH PIN. OP058-01-SCH REV. A.2 SHEET 2 OF 7

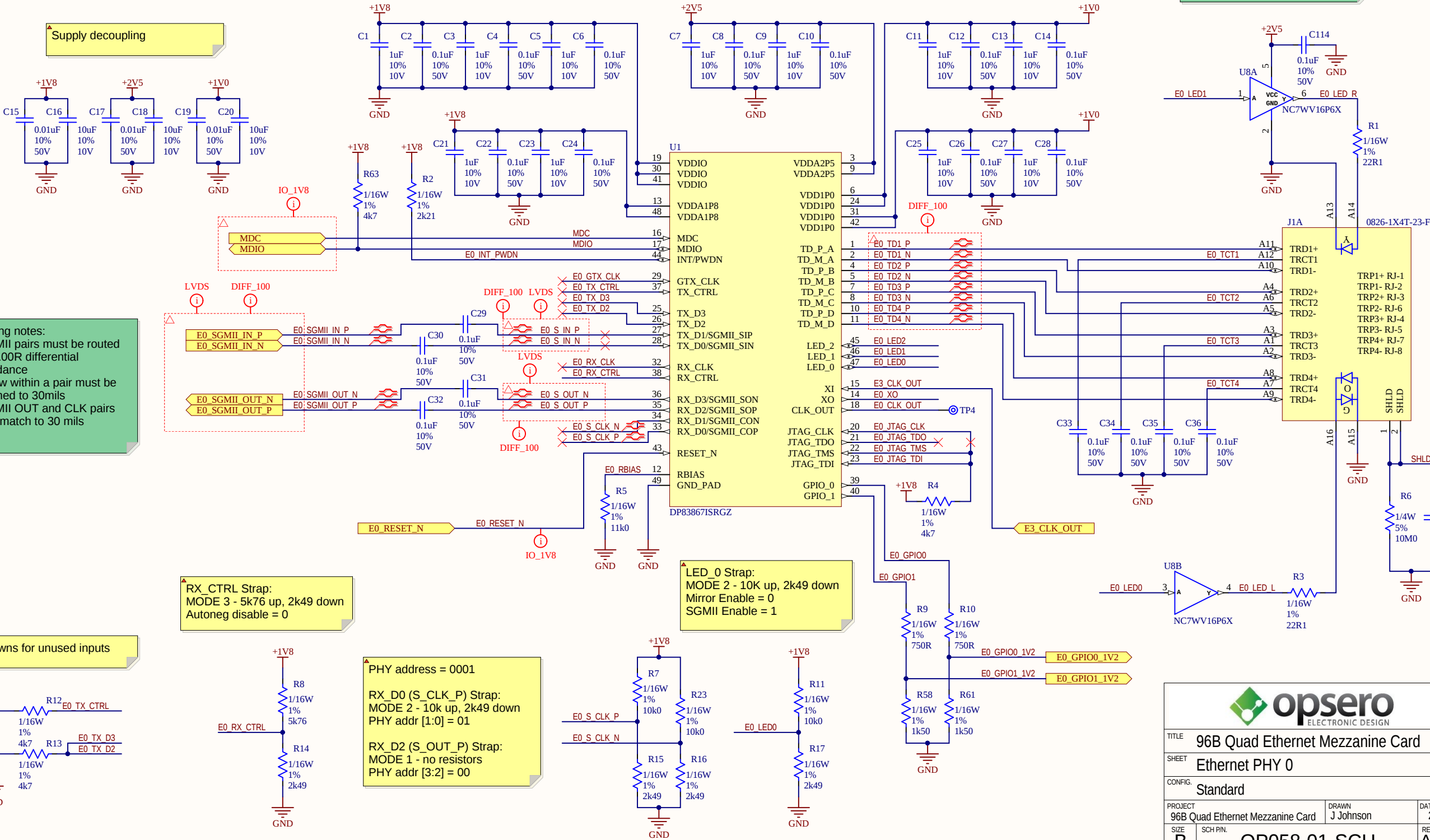
REV.	DESCRIPTION	DATE	APPROVED
A.2	Changed all LED resistors to 22R1 DNP 125MHz oscillator (not needed)	2019-04-08	J Johnson

Expected maximum power consumption:

- * VDDIO (1.8V): 28.94mA (25 deg, 100% utilisation)
- * VDDA2P5 (2.5V): 135.29mA (25 deg, 100% utilisation)
- * VDDA1P0 (1V): 124.4mA (105 deg)

Routing note:
* MDI traces must be 50R to ground and 100R differential impedance

Supply decoupling



Routing notes:
* SGMII pairs must be routed with 100R differential impedance
* Skew within a pair must be matched to 30mils
* SGMII OUT and CLK pairs must match to 30 mils

Pulldowns for unused inputs

RX_CTRL Strap:
MODE 2 - 5k76 up, 2k49 down
Autoneg disable = 0

PHY address = 0001
RX_D0 (S_CLK_P) Strap:
MODE 2 - 10k up, 2k49 down
PHY addr [1:0] = 01
RX_D2 (S_OUT_P) Strap:
MODE 1 - no resistors
PHY addr [3:2] = 00

LED_0 Strap:
MODE 2 - 10K up, 2k49 down
Mirror Enable = 0
SGMII Enable = 1

TITLE 96B Quad Ethernet Mezzanine Card			
SHEET Ethernet PHY 0			
CONFIG. Standard			
PROJECT 96B Quad Ethernet Mezzanine Card		DRAWN J Johnson	DATE 2018-12-06
SIZE B	SCH PIN.	REV. A.2	SHEET 3 OF 7
OP058-01-SCH			

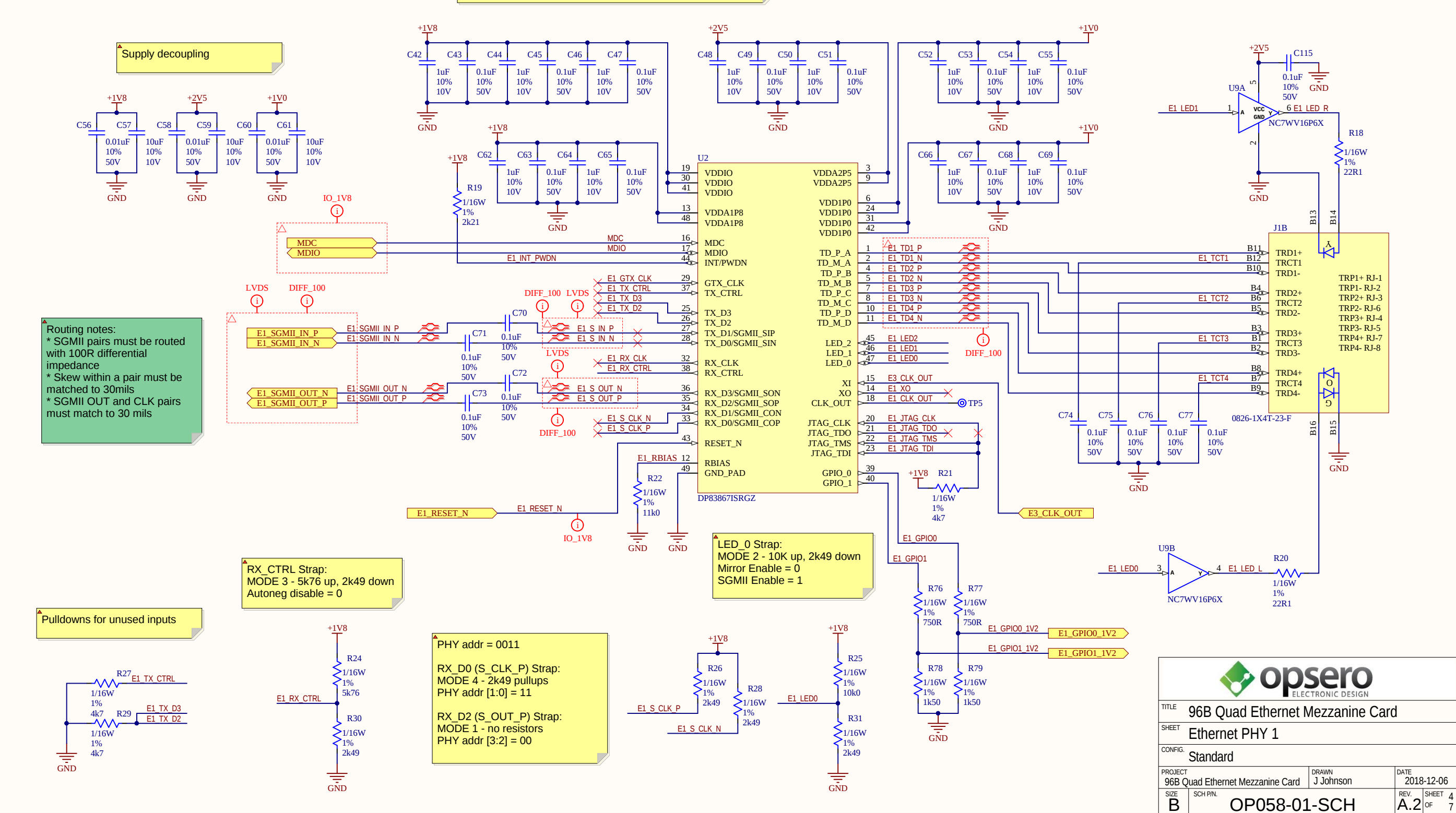
REV.	DESCRIPTION	DATE	APPROVED
A.2	Changed all LED resistors to 22R1 DNP 125MHz oscillator (not needed)	2019-04-08	J Johnson

Expected maximum power consumption:

- * VDDIO (1.8V): 28.94mA (25 deg, 100% utilisation)
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- * VDDA1P0 (1V): 124.4mA (105 deg)

Routing note:

- * MDI traces must be 50R to ground and 100R differential impedance



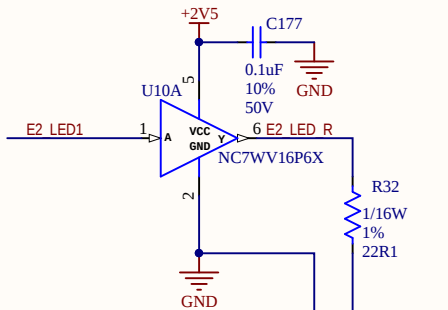
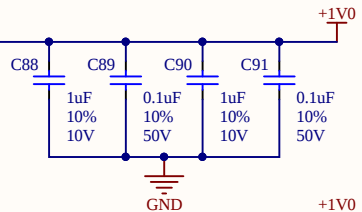
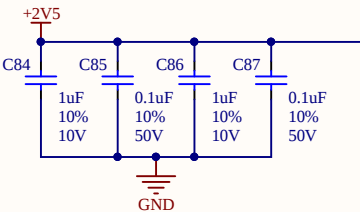
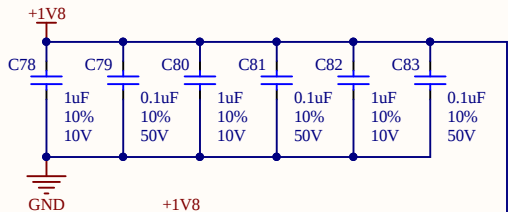
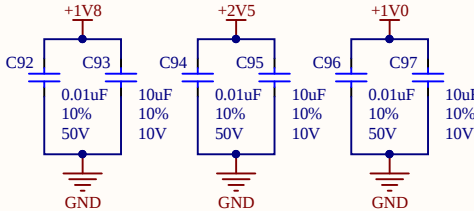
REV.	DESCRIPTION	DATE	APPROVED
A.2	Changed all LED resistors to 22R1 DNP 125MHz oscillator (not needed)	2019-04-08	J Johnson

Expected maximum power consumption:

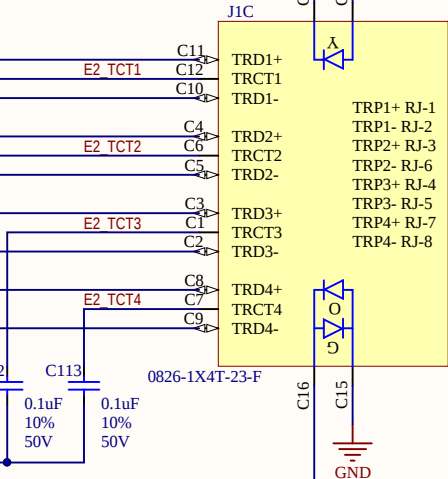
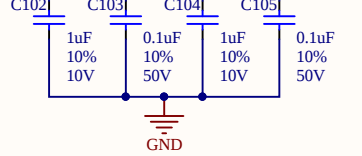
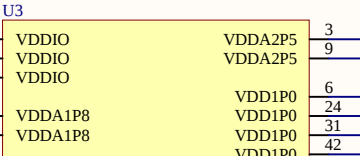
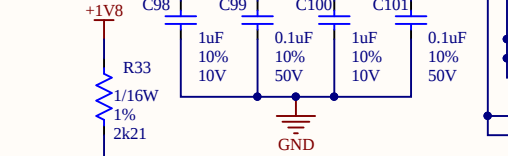
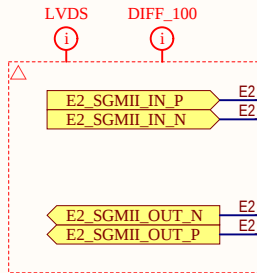
- * VDDIO (1.8V): 28.94mA (25 deg, 100% utilisation)
- * VDDA2P5 (2.5V): 135.29mA (25 deg, 100% utilisation)
- * VDDA1P0 (1V): 124.4mA (105 deg)

Routing note:
* MDI traces must be 50R to ground and 100R differential impedance

Supply decoupling

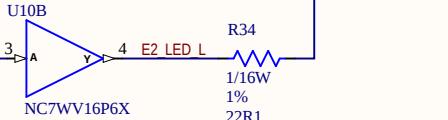
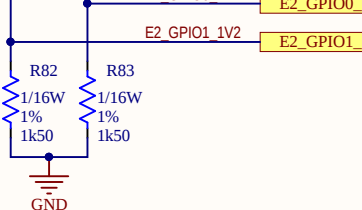
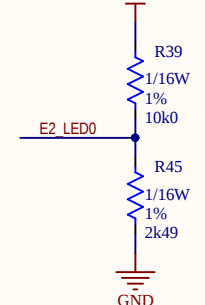
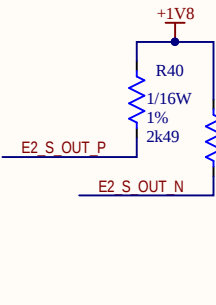


Routing notes:
* SGMII pairs must be routed with 100R differential impedance
* Skew within a pair must be matched to 30mils
* SGMII OUT and CLK pairs must match to 30 mils

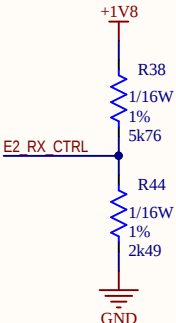
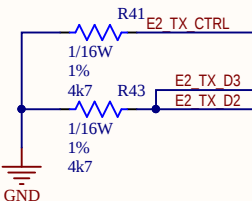


LED_0 Strap:
MODE 2 - 10K up, 2k49 down
Mirror Enable = 0
SGMII Enable = 1

PHY addr = 1100
RX_D0 (S_CLK_P) Strap:
MODE 1 - no resistors
PHY addr [1:0] = 00
RX_D2 (S_OUT_P) Strap:
MODE 4 - 2k49 pullups
PHY addr [3:2] = 11

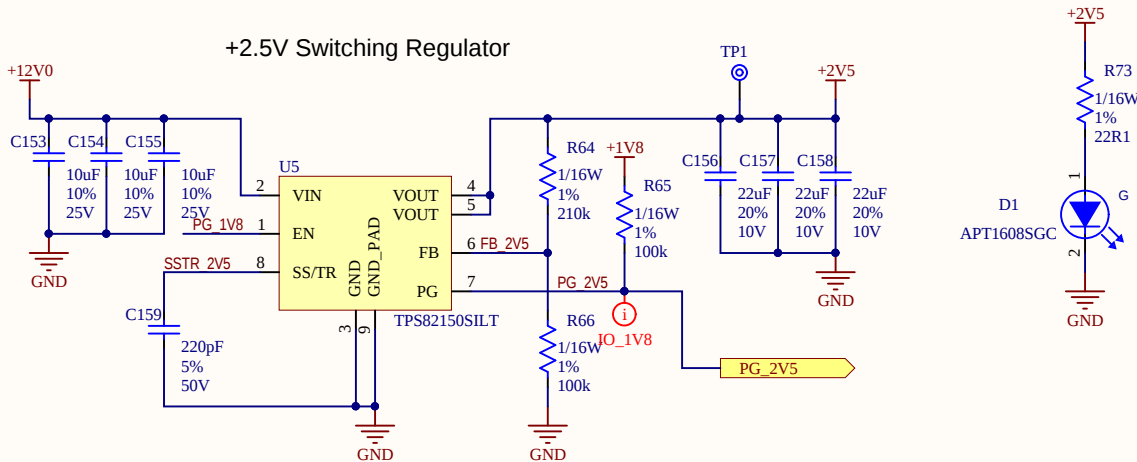
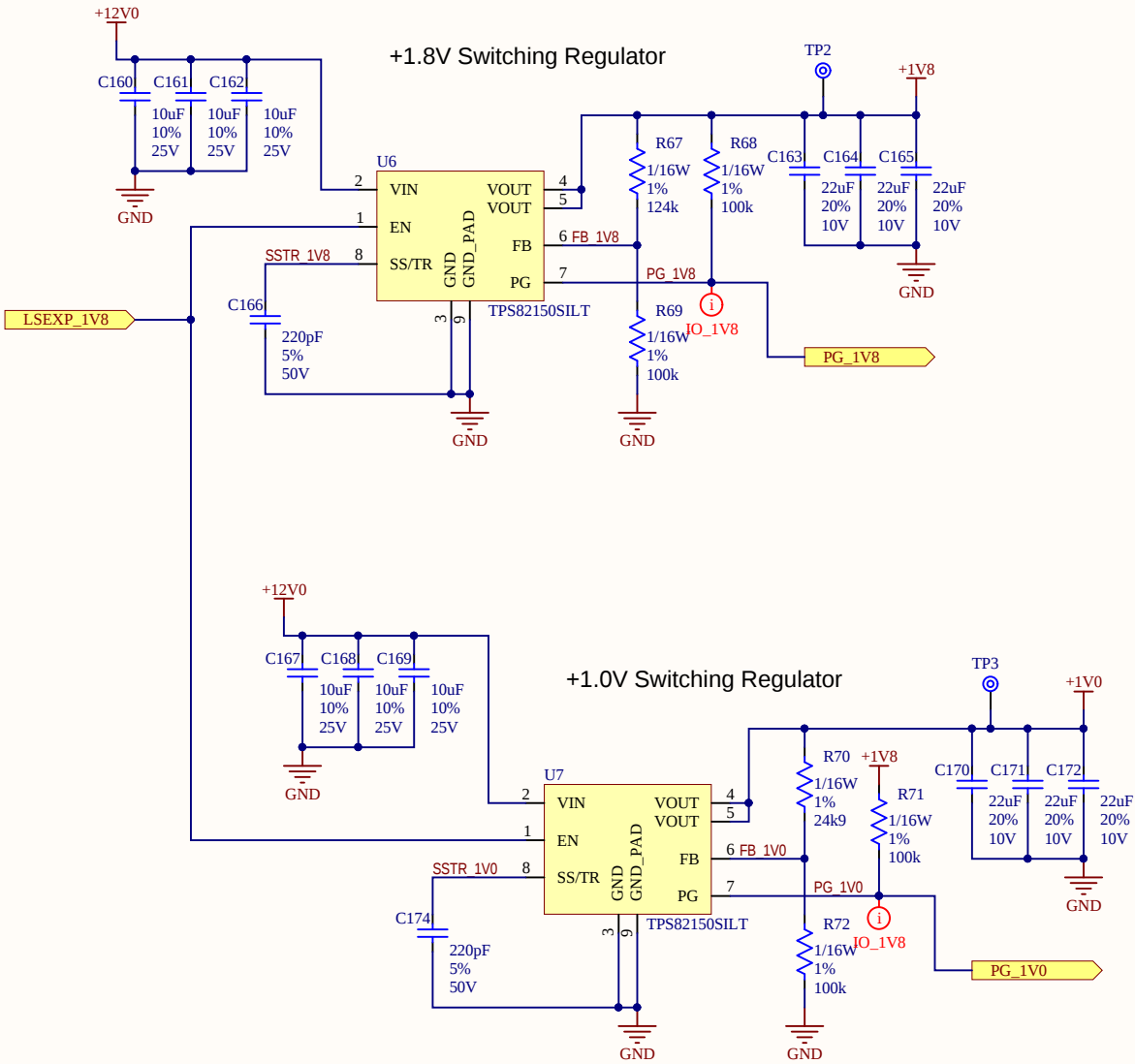


Pulldowns for unused inputs



TITLE 96B Quad Ethernet Mezzanine Card			
SHEET Ethernet PHY 2			
CONFIG. Standard			
PROJECT 96B Quad Ethernet Mezzanine Card		DRAWN J Johnson	DATE 2018-12-06
SIZE B	SCH PIN.	OP058-01-SCH	REV. A.2 SHEET 5 OF 7

REV.	DESCRIPTION	DATE	APPROVED
A.2	Changed all LED resistors to 22R1 DNP 125MHz oscillator (not needed)	2019-04-08	J Johnson



Power supply sequencing:

The 1.8V and 1.0V regulators are enabled on power-up, using the LS connector's 1.8V pin as an enable signal, then the 2.5V regulator is enabled on the 1.8V power good signal to meet the following requirements from the DP83867 datasheet:

"When operating in three-supply mode, the 1.8-V VDDA1P8 supply must be stable within 25 ms of the 1.8-V VDDA2P5 supply ramping up. There is no sequencing requirement for other supplies when operating in three-supply mode."

"If the 2.5-V power supply provides power to DP83867 devices only, the 1.8-V supply may ramp up any time before 2.5-V."

From the troubleshooting guide:

"When powering down the DP83867, the VDDA1P8 supply should be brought down before the VDDA2P5 supply"



TITLE	96B Quad Ethernet Mezzanine Card		
SHEET	Expansion connectors		
CONFIG.	Standard		
PROJECT	96B Quad Ethernet Mezzanine Card	DRAWN	J Johnson
DATE	2018-12-06		
SIZE	SCH PIN.	REV.	SHEET
B	OP058-01-SCH	A.2	7