




Table of Contents	
5	FLASH
6	PCI
7	eTSEC
8	GE PHY
9	USB UART I2C
10	MISC
11	CPU POWER
12	POWER SUPPLY
13	SATA
14	PCIE & SD

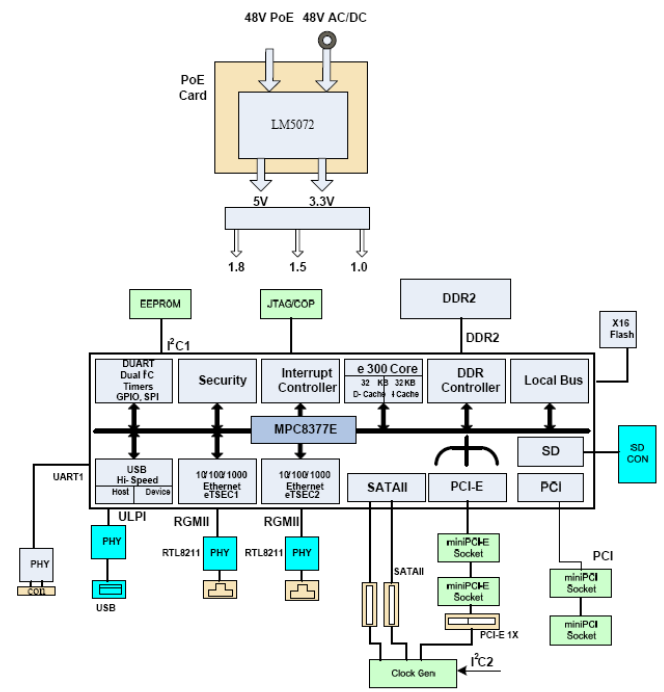
MPC8377EWLAN -- 25070
 Reference design for the WiFi AP/Router

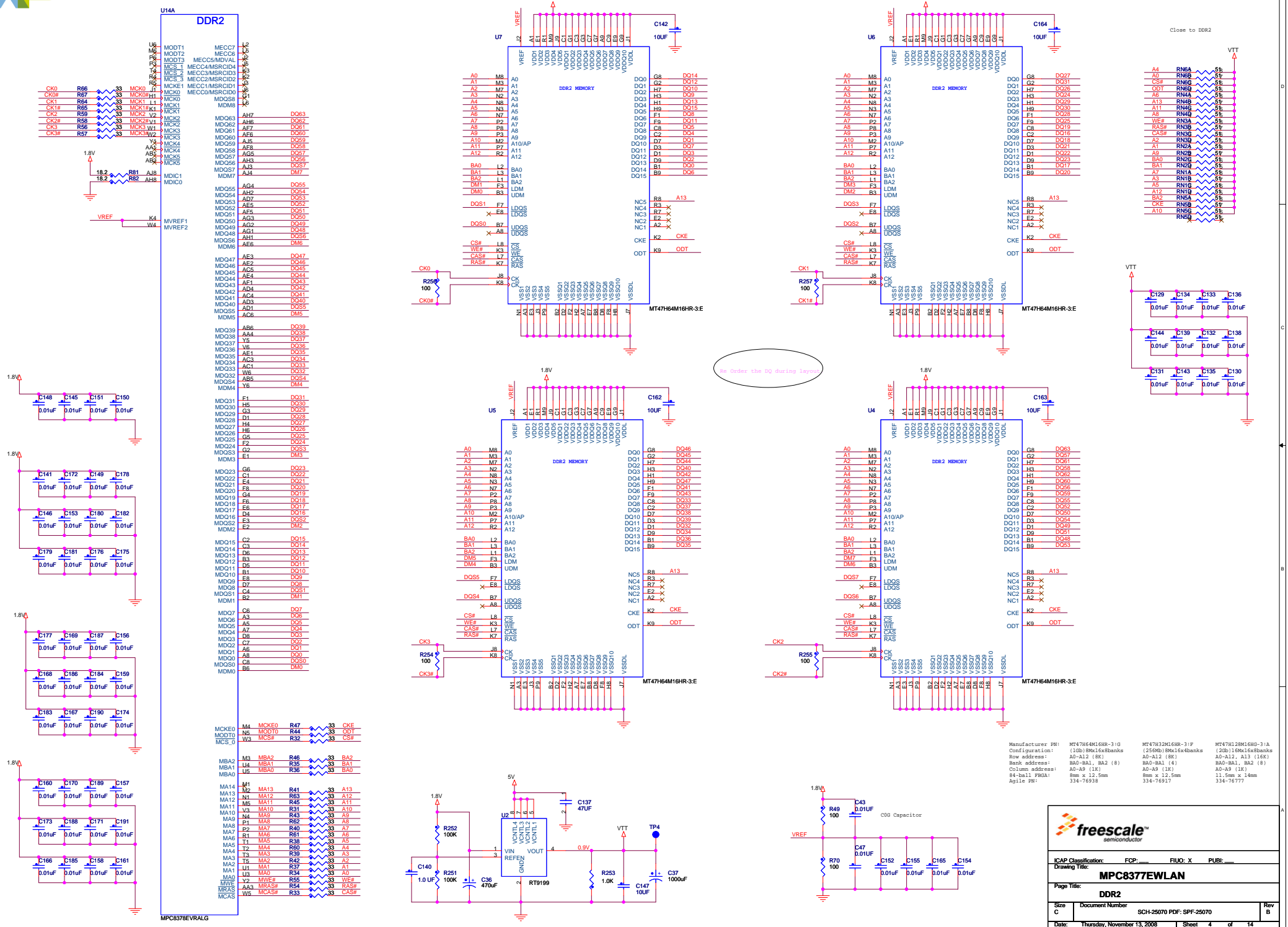
Revisions			
Rev	Description	Date	Approved
X1	Initial Release	Jul07,08	T.Q
A	Schematic Release	Aug14,08	T.Q
A2	Add Mini PCI-E and standard PCIE Add SD socket. Change power solution Add clock buffer for PCIE connectors DNP 125MHz osc replace P4 with lower one add header for boot selecting replace rs232 transceiver Replace osc for 25MHz and 66MHz replace sata conn replace usb A conn replace header JP1 replace power jack	Oct17,08	T.Q
B	Release	Nov12,08	T.Q

		Microcontroller Solutions Group	
6501 William Cannon Drive West Austin, TX 78735-8598		semiconductor	
This document contains information proprietary to Freescale Semiconductor and shall not be used for engineering design, procurement or manufacture in whole or in part without the express written permission of Freescale Semiconductor.			
ICAP Classification:		FCP:	FIUQ: X PUB:
Designer: DESIGNER	Drawing Title: MPC8377EWLAN		
Drawn by: DRAWN_BY	Page Title: TITLE PAGE		
Approved: APPROVER	Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B
Date: Wednesday, November 12, 2008		Sheet 1 of 14	

2. Interrupted lines coded with the same letter or letter combinations are electrically connected.
3. Device type number is for reference only. The number varies with the manufacturer.
4. Special signal usage:
 - # Denotes - Active-Low Signal
 - <> or [] Denotes - Vectored Signals
5. Interpret diagram in accordance with American National Standards Institute specifications, current revision, with the exception of logic block symbology.

		
ICAP Classification: FCP: _____ FIUO: X PUBI: _____		
Drawing Title: MPC8377EWLAN		
Page Title: NOTES		
Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B
Date: Wednesday, November 12, 2008 Sheet 2 of 14		





Do not order the DQ during layout

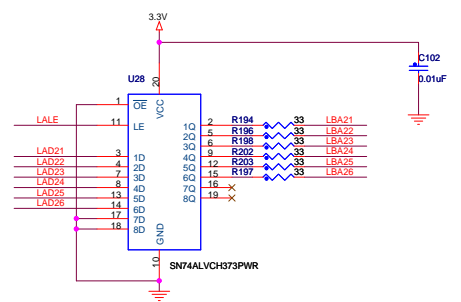
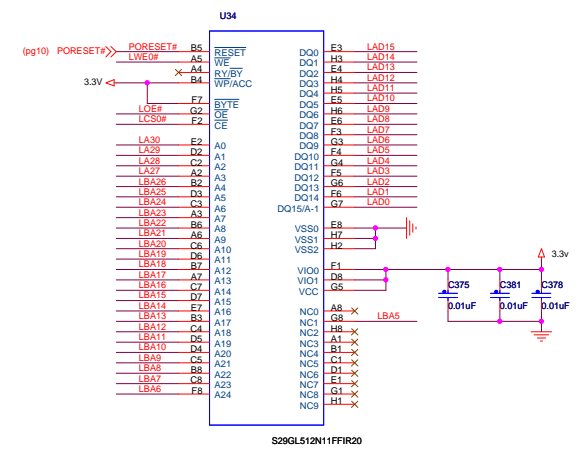
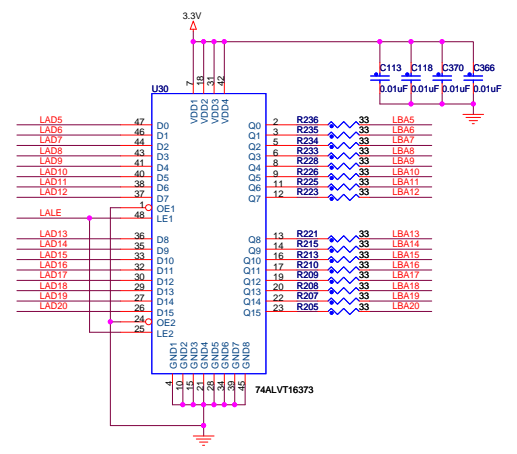
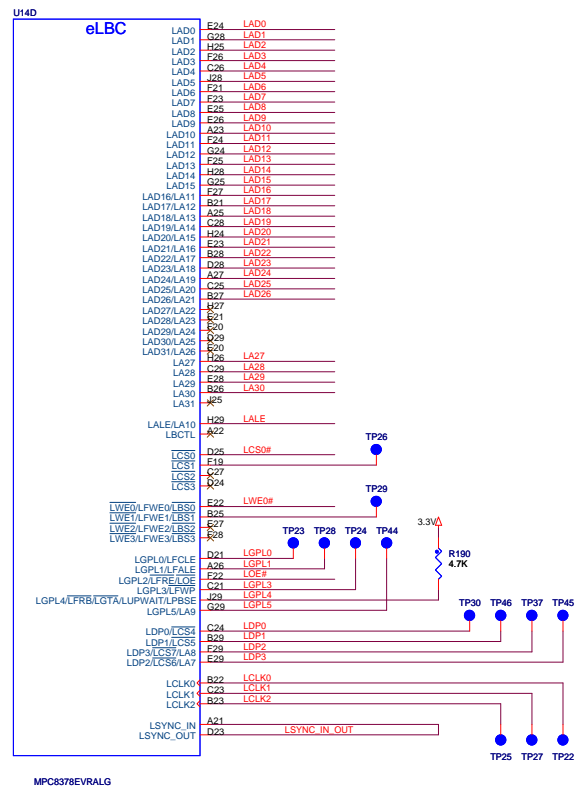
Manufacturer P/N	MT47H64M16HR-3-G	MT47H64M16HR-3-P	MT47H64M16HR-3-A
Configuration:	(10b) 89616x8banks	(256Mb) 89616x4banks	(20b) 169616x8banks
Row address:	A0-A12 (8K)	A0-A12 (8K)	A0-A12, A13 (16K)
Bank address:	B00-B01, B02 (8)	B00-B01 (4)	B00-B01, B02 (8)
Column address:	A0-A9 (1K)	A0-A9 (1K)	A0-A9 (1K)
84-ball PPGA:	8mm x 12.5mm	8mm x 12.5mm	11.5mm x 14mm
Agile P/N:	334-76938	334-76937	334-76777

freescale
semiconductor

ICAP Classification: FCP: _____ FIUO: X PUBL: _____
Drawing Title: **MPC8377EWLAN**

Page Title: **DDR2**

Size C	Document Number	SCH-25070 PDF: SPF-25070	Rev B
Date:	Thursday, November 13, 2008	Sheet 4 of 14	

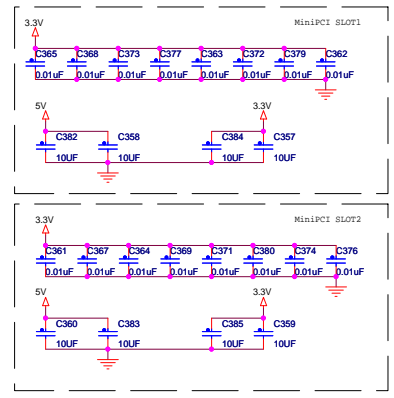
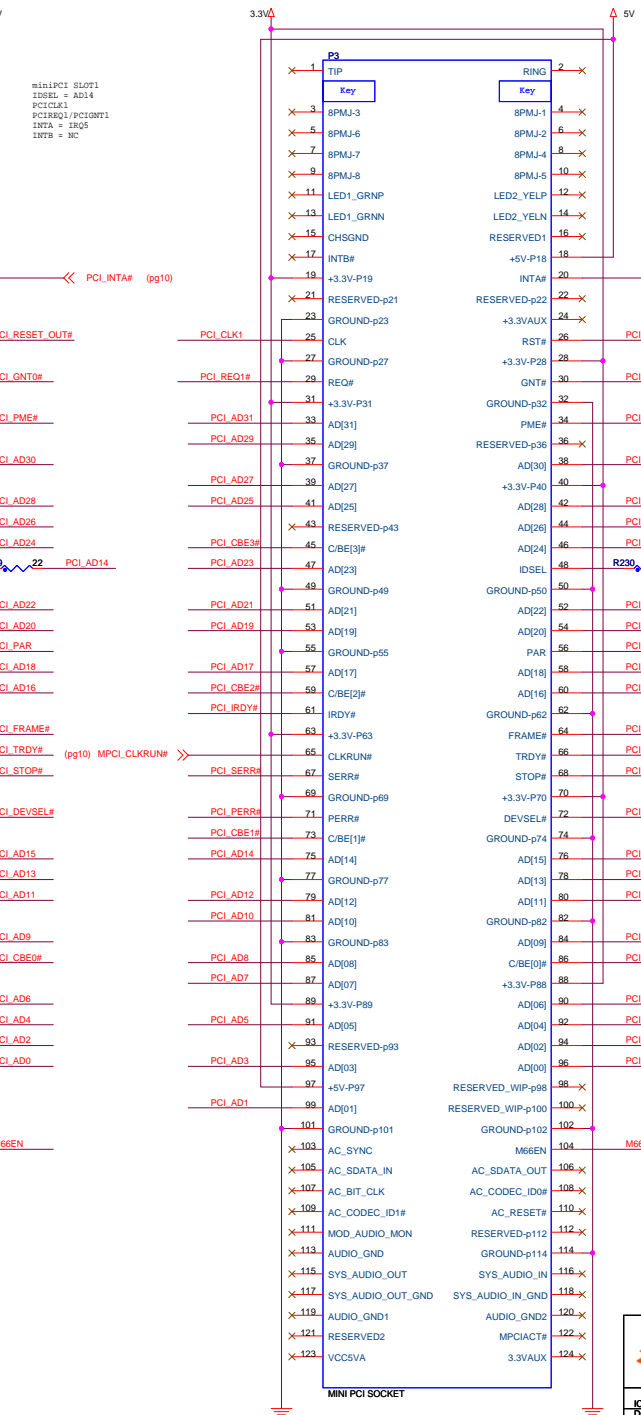
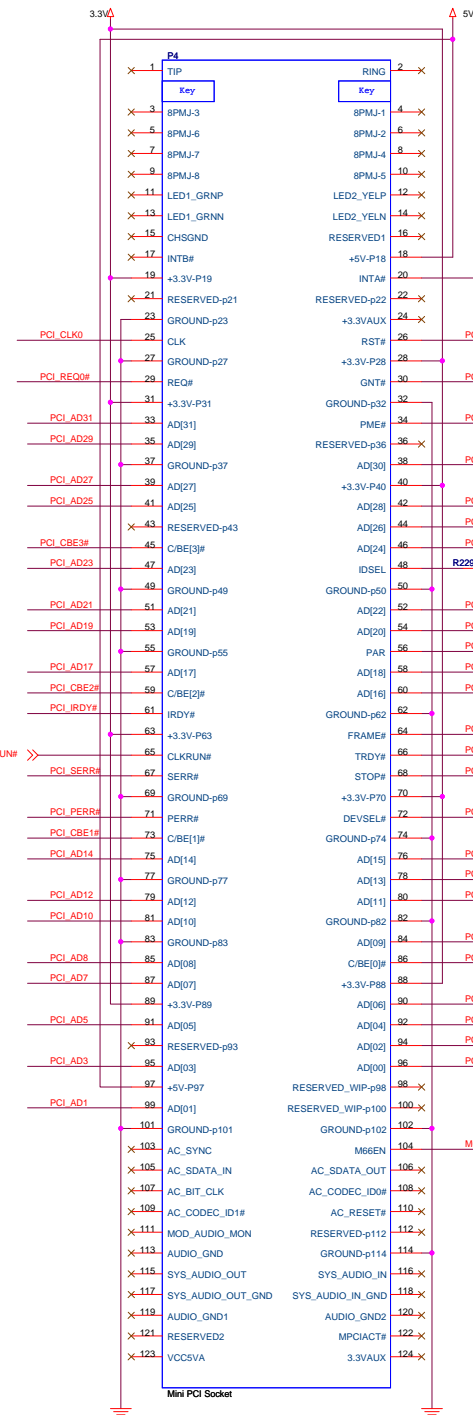
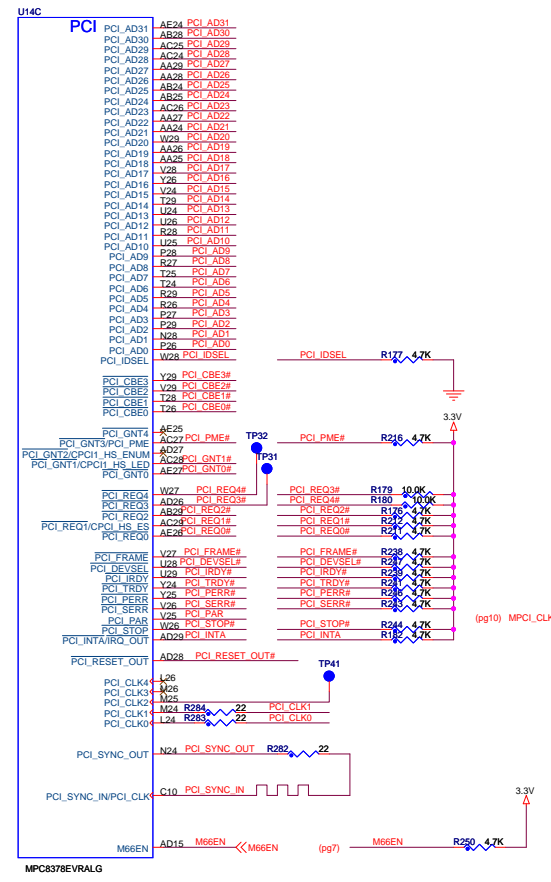




SYS_AUDIO0 NOT SUPPORTED
 VCC5VA NOT SUPPORTED (FOR VOICE MODEM)
 3.3VAUX (D3COLD) NOT SUPPORTED

miniPCI SLOT1
 IDSEL = AD14
 PCI CLK1
 PCI REQ1/PCI GNT1
 INTA = IRQ5
 INTB = NC

miniPCI SLOT2
 IDSEL = AD15
 PCI CLK1
 PCI REQ1/PCI GNT1
 INTA = IRQ6
 INTB = NC



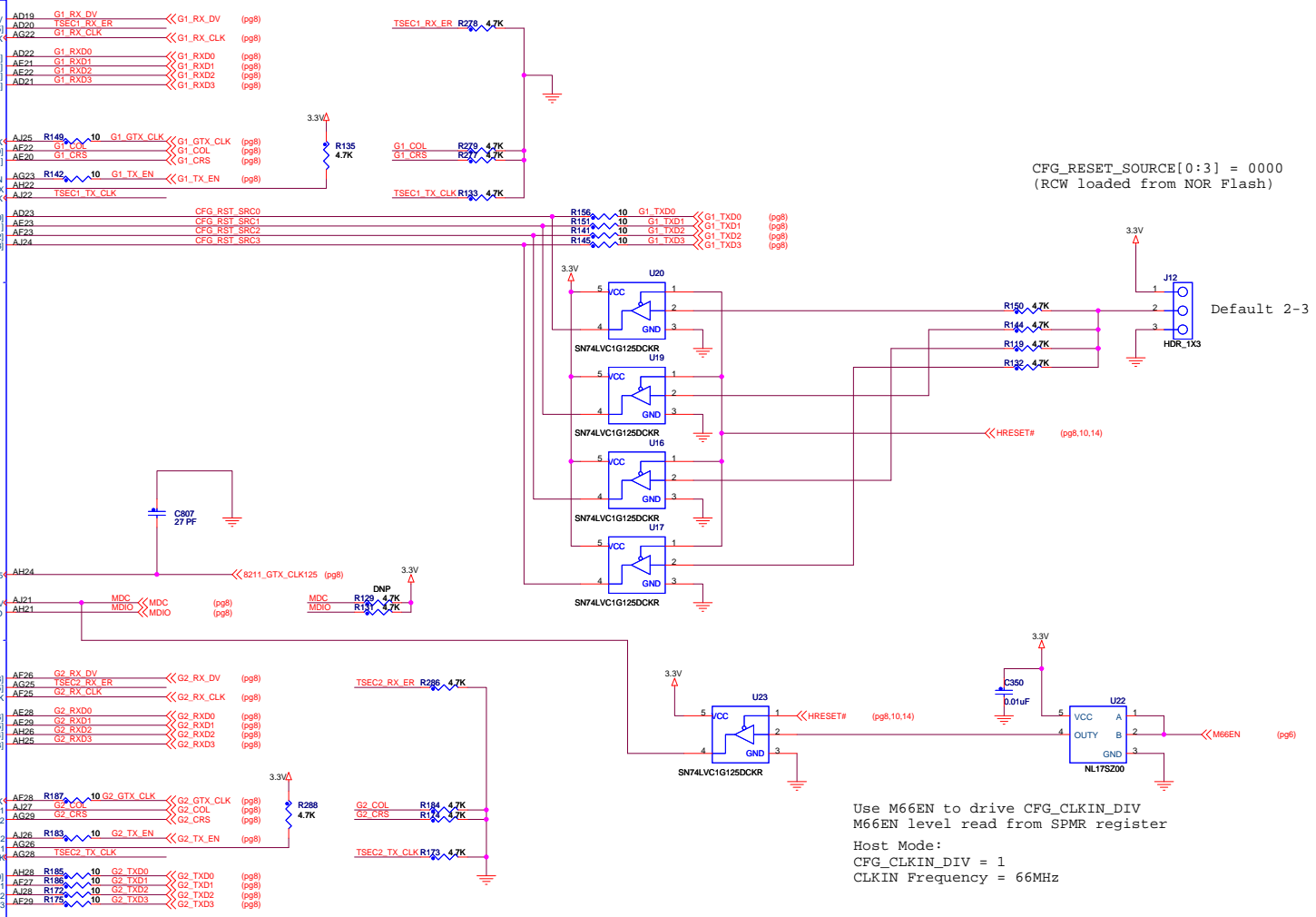
freescale
 semiconductor
 ICAP Classification: FCP: FIUO: X PUBL:
 Drawing Title: **MPC8377EWLAN**
 Page Title: **PCI & MiniPCI socket**
 Size C Document Number SCH-25070 PDF: SPF-25070 Rev B
 Date: Friday, November 14, 2008 Sheet 6 of 14



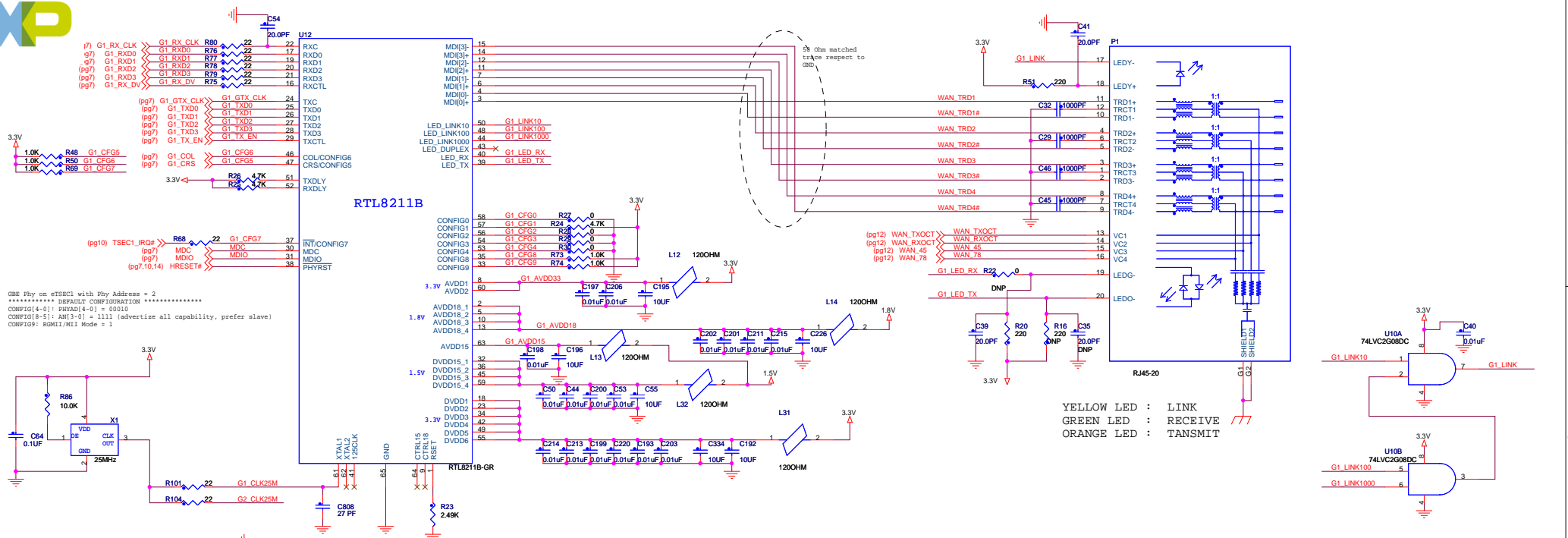
U14E



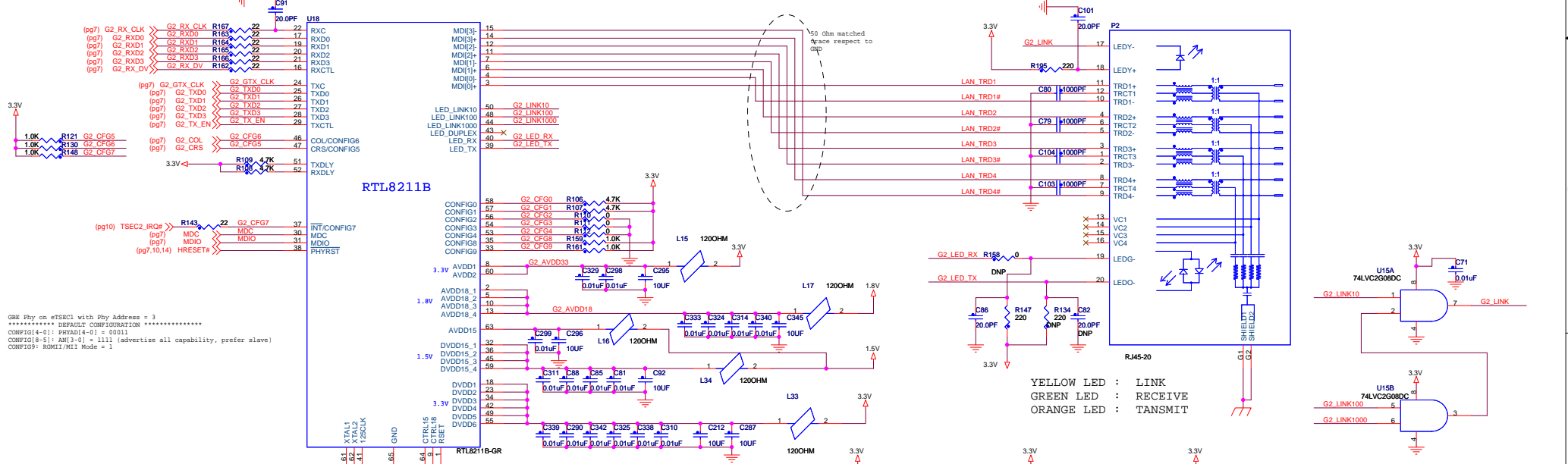
MPC8378VREALG



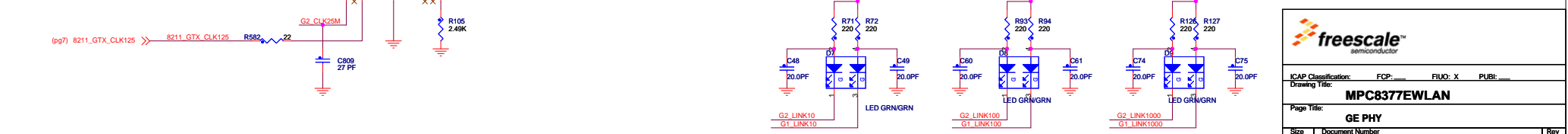
ICAP Classification: FCP: _____ FIUO: X PUBL: _____			
Drawing Title: MPC8377EWLAN			
Page Title: eTSEC			
Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B	
Date: Thursday, November 13, 2008	Sheet 7	of 14	



YELLOW LED : LINK
 GREEN LED : RECEIVE
 ORANGE LED : TANSMIT



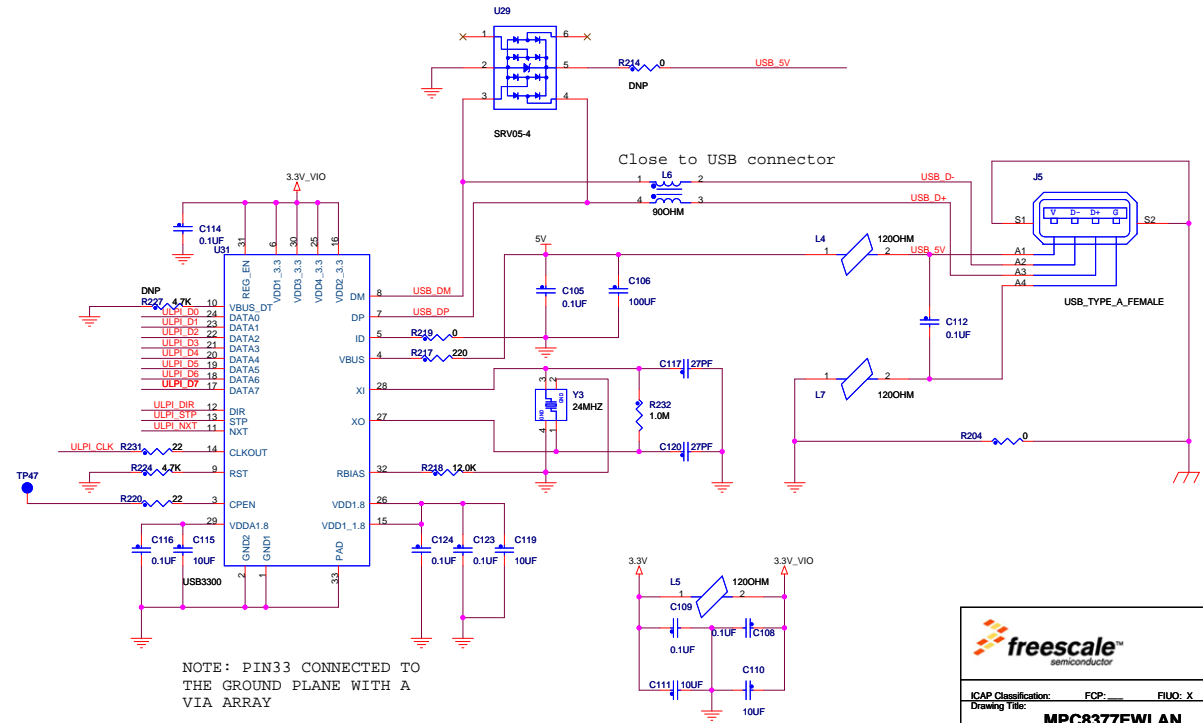
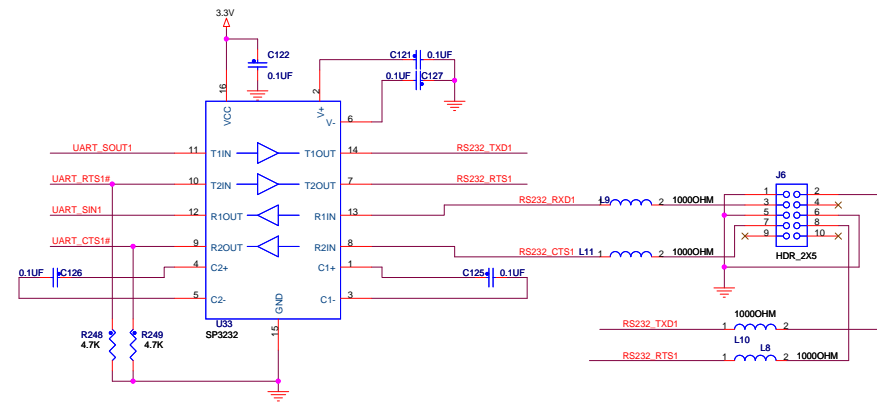
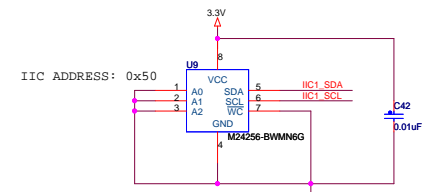
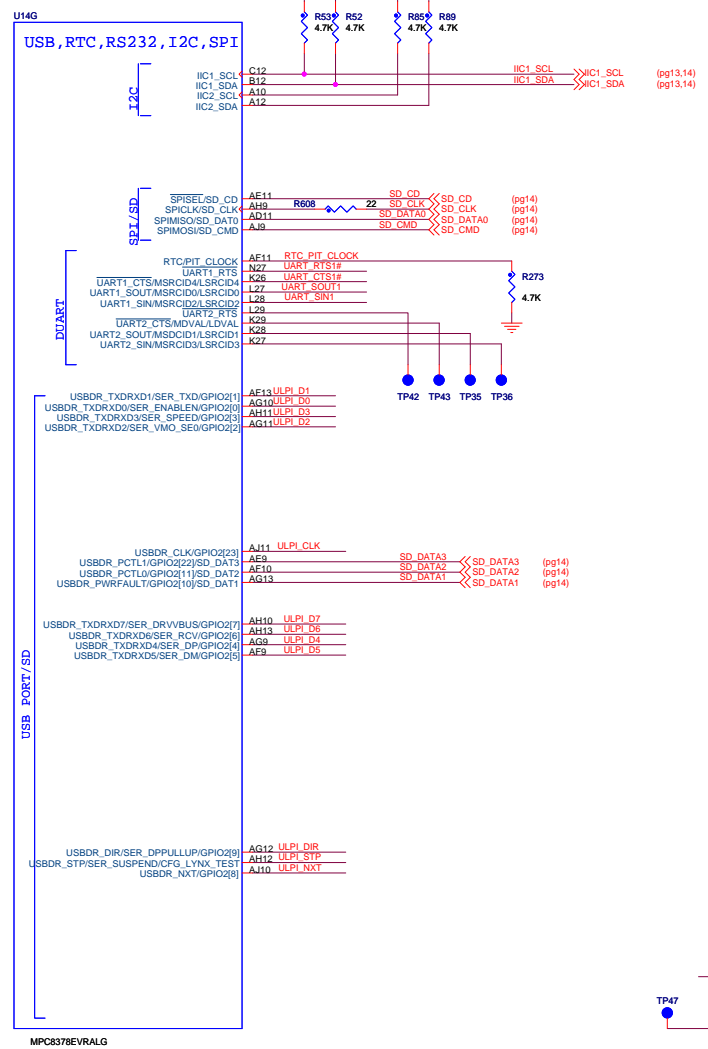
YELLOW LED : LINK
 GREEN LED : RECEIVE
 ORANGE LED : TANSMIT



freescale
 semiconductor

ICAP Classification: FCP, FIUO: X, PUBL: _____
 Drawing Title: **MPC8377EWLAN**
 Page Title: **GE PHY**

Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B
Date: Friday, November 14, 2008	Sheet 8 of 14	

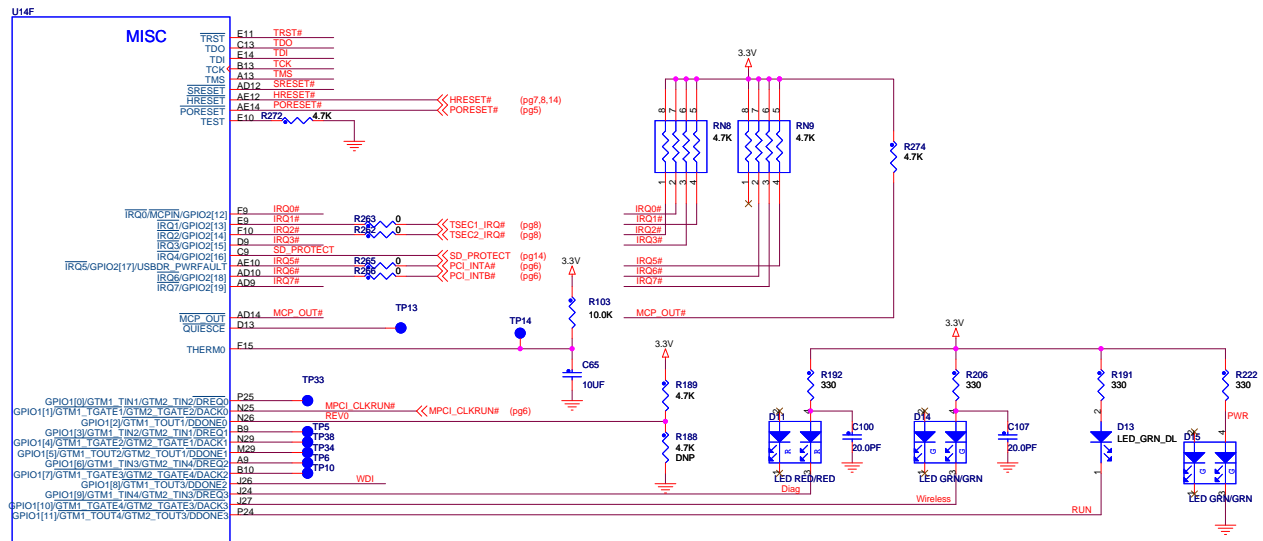


NOTE: PIN33 CONNECTED TO THE GROUND PLANE WITH A VIA ARRAY

freescale
semiconductor

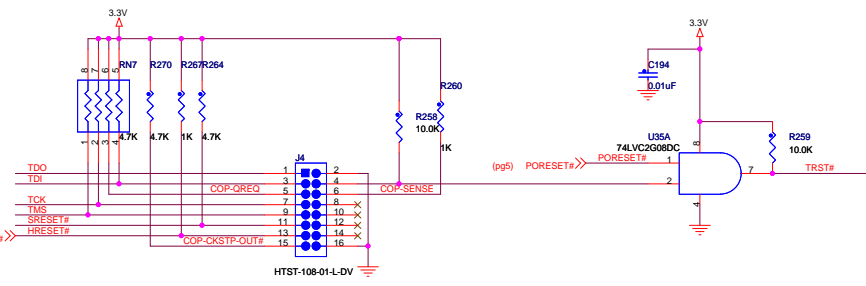
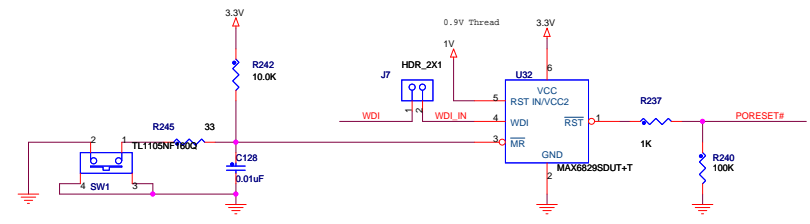
ICAP Classification: FCP: _____ FIUO: X PUBL: _____
Drawing Title: **MPC8377EWLAN**
Page Title: **USB & RS232**

Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B
Date: Friday, November 14, 2008	Sheet 9	of 14

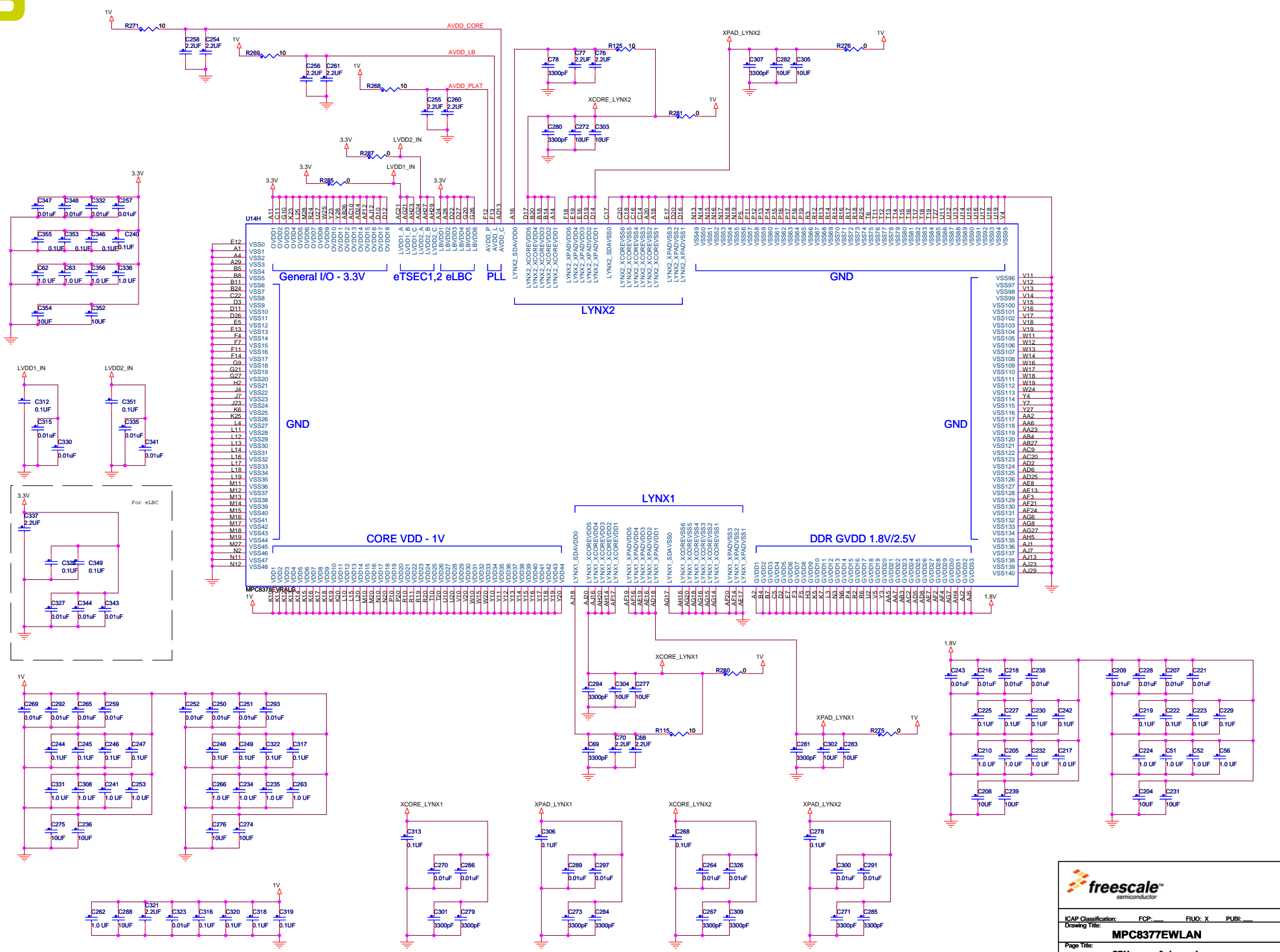


MPC8377EVRALG

TCK pulled up by 5-10K
 TMS pulled up by 5-10K
 TDI pulled up by 5-10K
 TRST# ANDed with PORESET#
 COP pin 2 NC / assert to GND
 COP pin 5 (QRQ8) pulled up by 5-10K
 COP pin 15 (CSSTP_OUT) pulled up by 5-10K
 COP pin 6 connect to 3.3V by 1K for current limiting

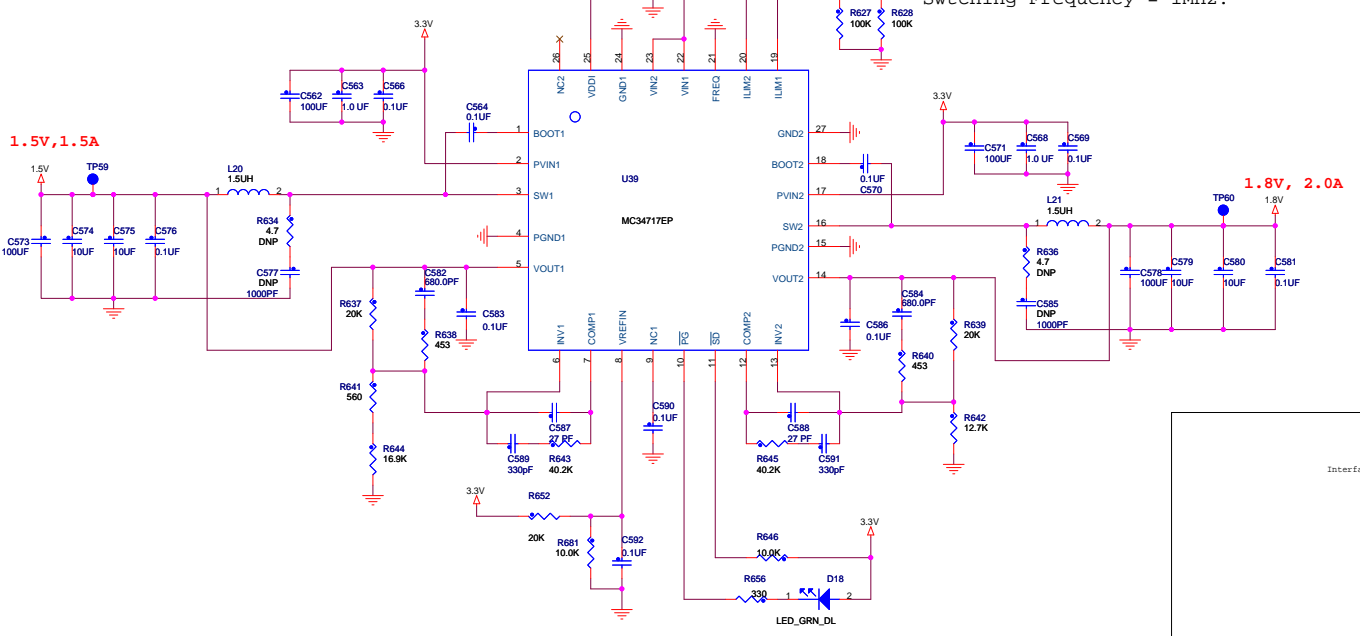


		ICAP Classification: FCP: _____ FJWO: X PUBL: _____	
		Drawing Title: MPC8377EVLAN	
Page Title: MISC		Date: Thursday, November 13, 2008	
Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B	
Date: Thursday, November 13, 2008		Sheet 10 of 14	

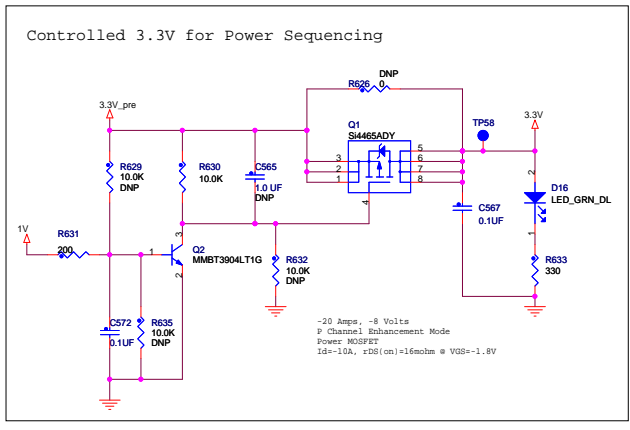




Dual Channel Regulator (1.5V and 1.8V) VIN=3.3V



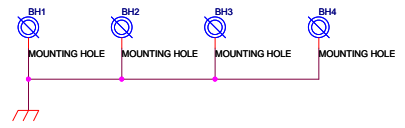
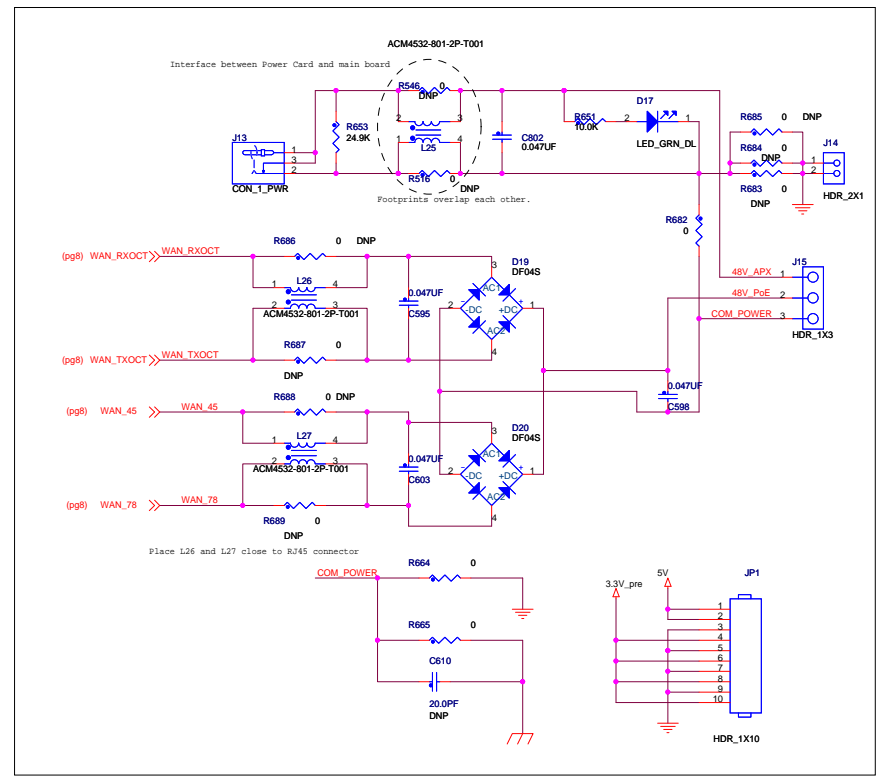
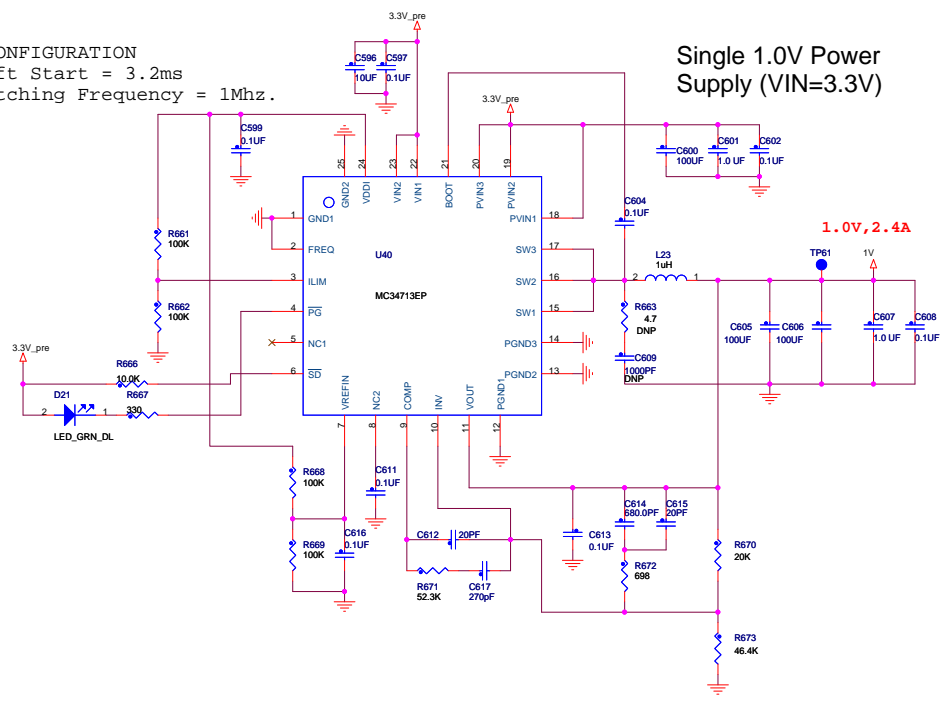
CONFIGURATION
Soft Start = 3.2ms
Switching Frequency = 1Mhz.

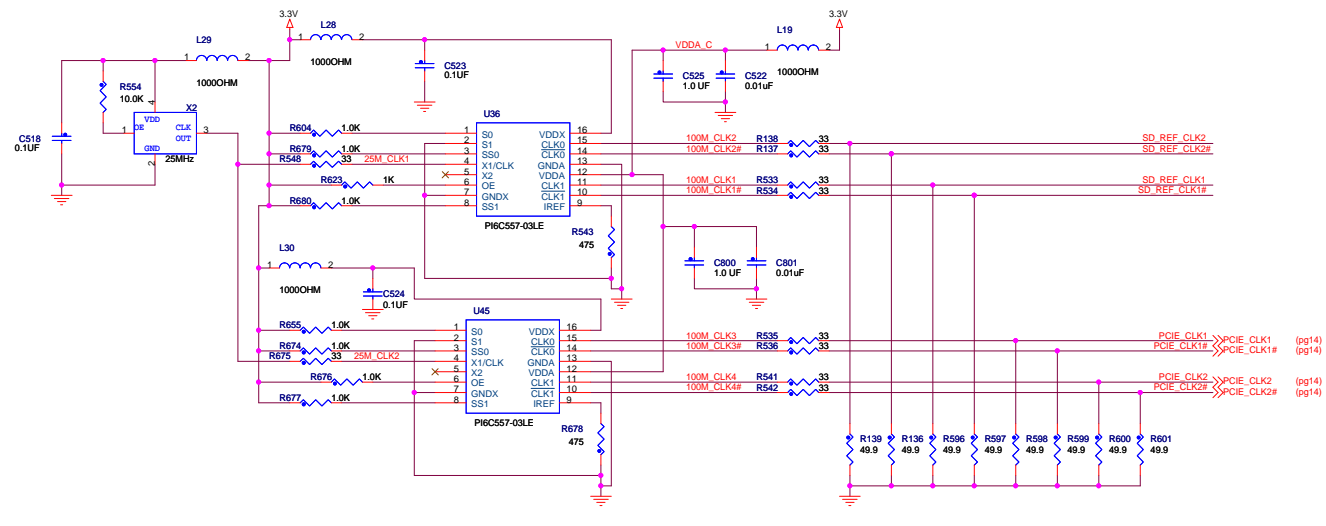
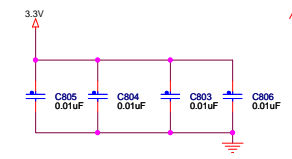
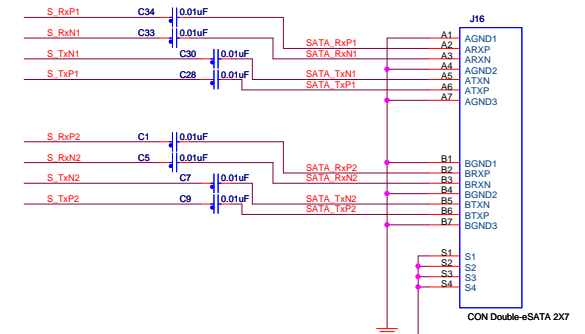
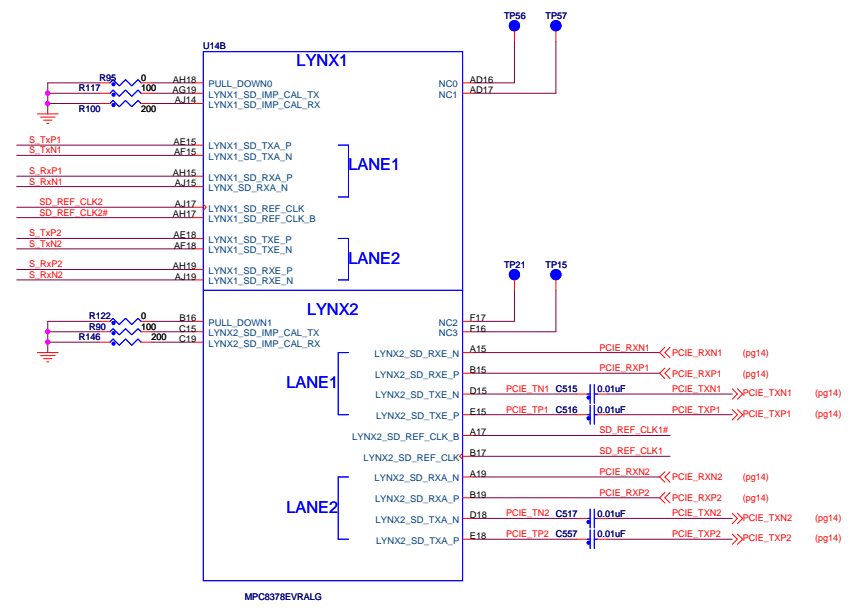


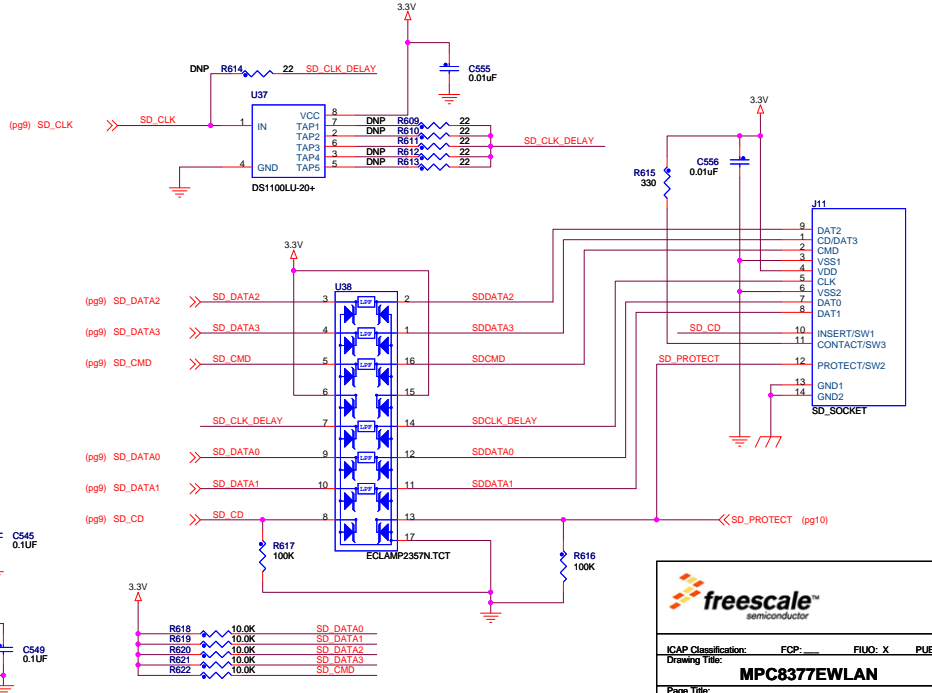
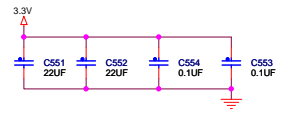
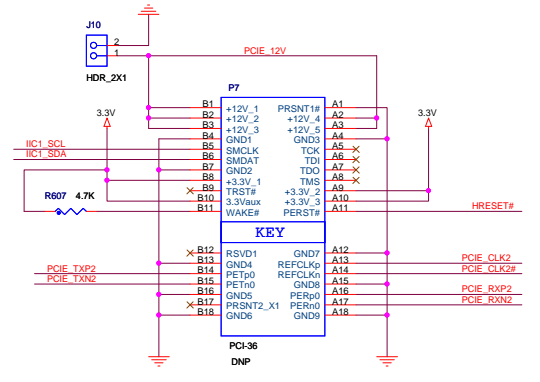
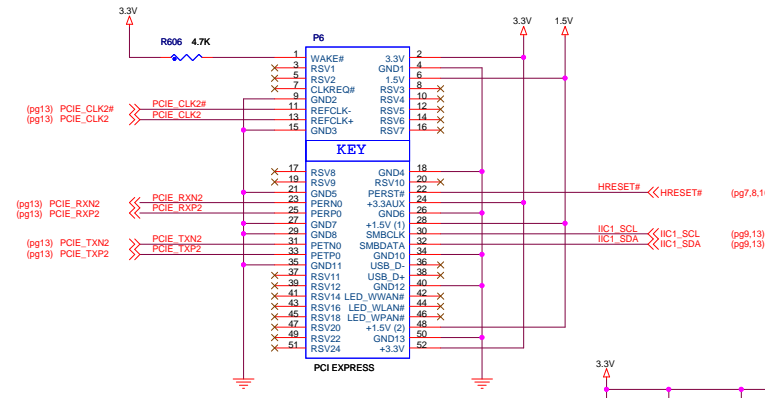
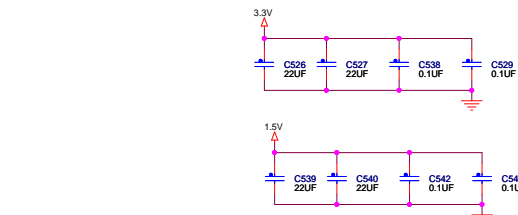
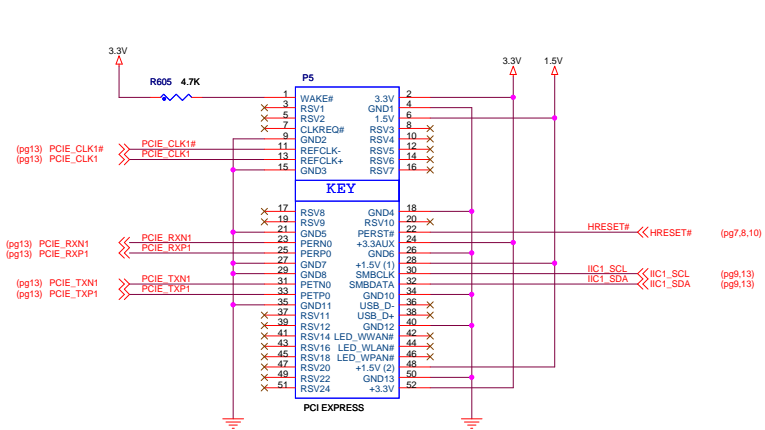
-10 Amps, -8 Volts
P Channel Enhancement Mode
Power MOSFET
Id=10A, rDS(on)=16mohm @ VGS=1.8V

CONFIGURATION
Soft Start = 3.2ms
Switching Frequency = 1Mhz.

Single 1.0V Power Supply (VIN=3.3V)







freescale
semiconductor

ICAP Classification: FCP: _____ FPU: X PUBL: _____
 Drawing Title: **MPC8377EWLAN**
 Page Title: **PCI EXPRESS & SD**

Size C	Document Number SCH-25070 PDF: SPF-25070	Rev B
Date: Thursday, November 13, 2008	Sheet 14 of 14	