Freescale Semiconductor

COMEXPRESS CARRIER

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ICAP Classification: FCP:___ FIUO: X PUBI:___

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Version Rev	DATE	Change
A	5/28/2010	FIRST PROTOTYPE
B	10/13/2010	RESPIN FOR PROTOTYPE B PER ECN
XXX	NA	XXX

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freescale semiconductor

Drawing Title: **COMEXPRESS CARRIER**

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COMEXPRESS CARRIER (COMe1/2/3)

COMe2 only

COMe1/3 only

NOR flash — LBC

PMC conn to PQ-MDS-QOC3 card — UPC

Dual DB9 — RS232 — UART2/3

RS-485 Adapter

TDM riser card — TDM for SLIC

Line In/Out — I2S CODEC — SSI

PMC conn to PQ-MDS-16T1E1 — HDLC

Dual RJ45 — RMII/MII PHY — ENET

1588 HDR — 1588 SIGNALS

4 CAN CONN — CAN

1588 HDR — 1588 SIGNALS

VGA

CLOCKS

ATX CONN

FAN HDR

DVI-I — DVI

2 Single-link DFP CONN — LVDS A/B

Dual DEM9 — RS232 — UART0/1

FPGA & external muxes

QE/ UART/ Usr define/ gpio

FSL COMe Connector

GBE0-3 — MIDI — 3 x RJ-45

4 USB2.0 ports — 4 DUAL USB HDRS

4 USB2.0 ports

SECURITY — TBD — Tamper det hdr

I2C#1 — I2C expander — 5 GPIOs, 3 GPIOs — FPGA

IXXAT (IEM) CONN — SPIFlash

I2C#3 — DVI/VGA

I2C#2 — LVDS

TouchIF

SPI — SPIFlash

SDHC — SD/MMC conn

Lynx1 — Lanes 0-3, Lanes 4-7, Lanes 16-19

Lynx2 — Lanes 20-23, Lane 24

SATA x1 — sata3, sata2, sata1, sata0

PCIe slot1 — PCIe slot2 — PCIe Slot3 — PCIe Slot4 — PCIe slot5

SB — SB

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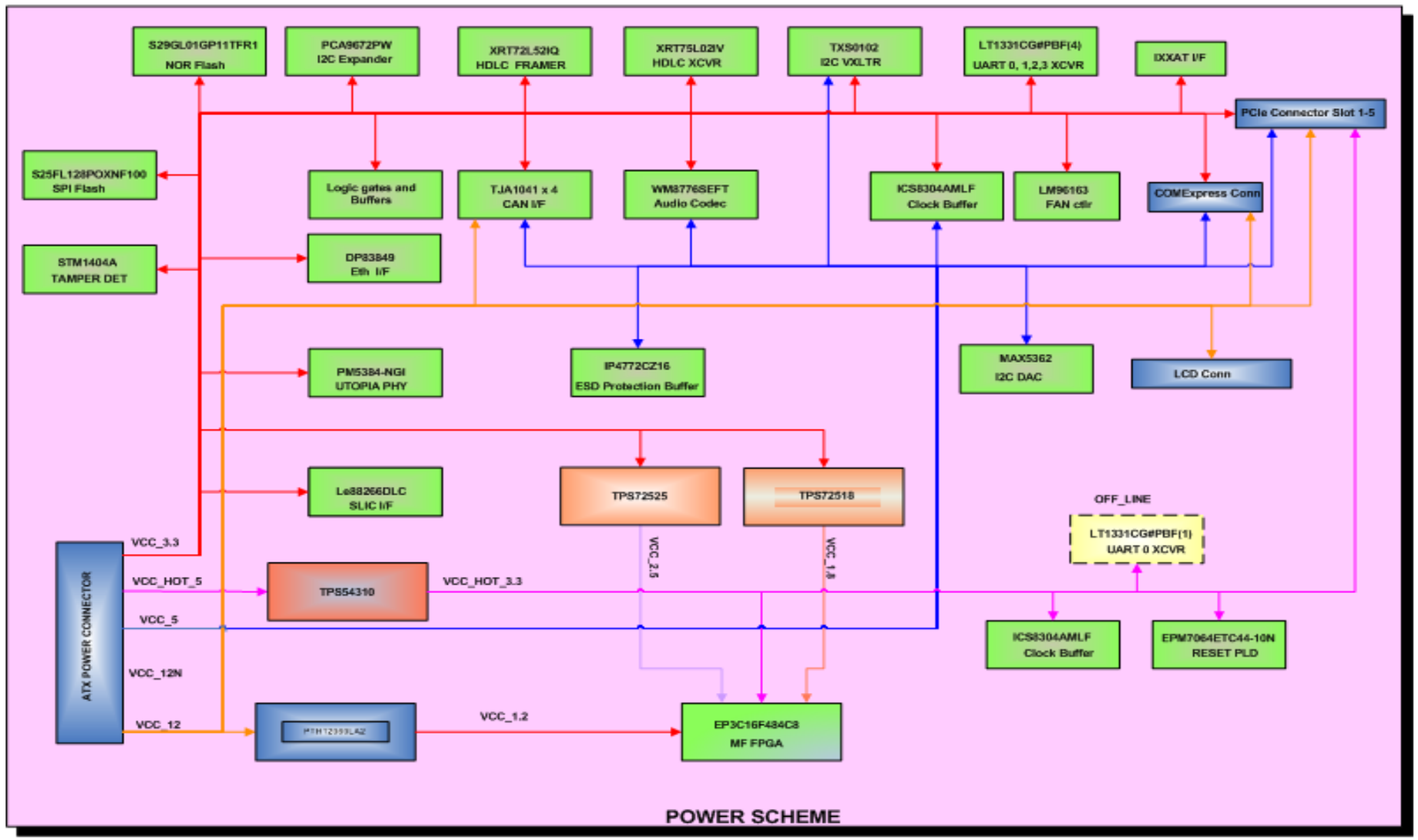

POWER SCHEME

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Block DiagramPower_Reset	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 5 of 63 / Rev B

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Date: 4/22/10

Part Number: Freescale_170-24679_via

Contact: Martin Thompson Phone: 408-938-7231

Layer	Cu Thick. (mils)	Cu Foil wt (oz)	DK	Lam. Thick. (mils)	Description
1	2.00	0.5 oz			Foil, 0.5 oz
			3.86	3.68	Prepreg 370HR 3313(59) 18Gx24
2	1.20	1 oz			
			3.96	6.00	Core 370HR 6mils 1080/3313 0.5 oz / 1 oz 18.25Gx24.25
3	0.60	0.5 oz			
			3.68	5.59	Prepreg 370HR 1080(68)/1080(68) 18Gx24
4	1.20	1 oz			
			3.96	8.00	Core 370HR 8mils 2x3313 0.5 oz / 1 oz 18.25Gx24.25
5	0.60	0.5 oz			
			3.90	3.98	Prepreg 370HR 2116(57) 18Gx24
6	0.60	0.5 oz			
			3.96	8.00	Core 370HR 8mils 2x3313 0.5 oz / 1 oz 18.25Gx24.25
7	1.20	1 oz			
			3.98	8.25	Prepreg 370HR 2116(53)/2116(53) 18Gx24
8	1.20	1 oz			
			3.96	8.00	Core 370HR 8mils 2x3313 0.5 oz / 1 oz 18.25Gx24.25
9	0.60	0.5 oz			
			3.90	3.98	Prepreg 370HR 2116(57) 18Gx24
10	0.60	0.5 oz			
			3.96	8.00	Core 370HR 8mils 2x3313 0.5 oz / 1 oz 18.25Gx24.25
11	1.20	1 oz			
			3.68	5.59	Prepreg 370HR 1080(68)/1080(68) 18Gx24
12	0.60	0.5 oz			
			3.96	6.00	Core 370HR 6mils 1080/3313 0.5 oz / 1 oz 18.25Gx24.25
13	1.20	1 oz			
			3.86	3.68	Prepreg 370HR 3313(59) 18Gx24
14	2.00	0.5 oz			Foil, 0.5 oz

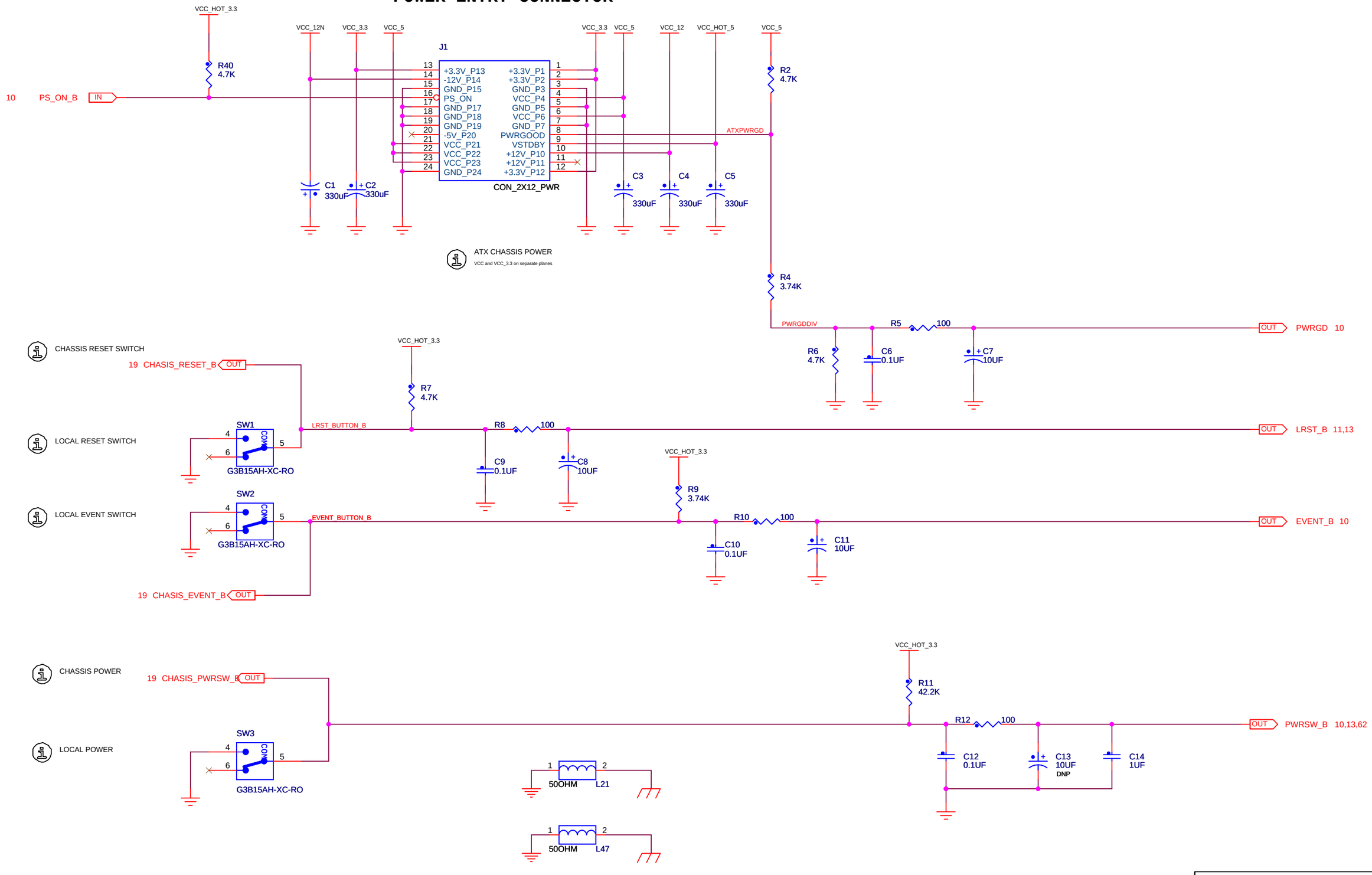
Layers	Drill Type	Via Fill		
1 - 14	PTH	--	89.53	Thickness over Laminate
			93.53	Thickness over Copper
			94.93	Thickness over Soldermask

Impedance Table

Layer	Structure Type	Coated Microstrip	Target Impedance (ohms)	Impedance Tolerance (ohms)	Target Linewidth (mils)	Edge Coupled Pitch * (mils)	Reference Layers	Modelled Linewidth (mils)	Modelled Impedance (ohms)	CoPlaner Space (mils)
1	Single Ended	Yes	50.00	+/-5	5.75	0.00	(2)	5.75	50.49	
1	Edge Coupled Differential	Yes	100.00	+/-10	4.50	12.00	(2)	4.50	100.13	
3	Edge Coupled Differential	---	100.00	+/-10	4.50	10.00	(2, 4)	4.50	98.45	
3	Edge Coupled Differential	---	90.00	+/-9	5.25	10.00	(2, 4)	5.25	89.70	
3	Edge Coupled Differential	---	92.00	+/-9.2	5.00	10.00	(2, 4)	5.00	92.48	
3	Single Ended	---	50.00	+/-5	5.50	0.00	(2, 4)	5.50	49.71	
3	Edge Coupled Differential	---	120.00	+/-12	3.50	14.00	(2, 4)	3.50	118.99	
5	Edge Coupled Differential	---	120.00	+/-12	4.25	12.00	(4, 7)	4.25	119.31	
5	Edge Coupled Differential	---	100.00	+/-10	5.00	10.00	(4, 7)	5.00	101.95	
5	Edge Coupled Differential	---	90.00	+/-9	6.00	10.00	(4, 7)	6.00	90.59	
5	Edge Coupled Differential	---	92.00	+/-9.2	5.75	10.00	(4, 7)	5.75	93.30	
5	Single Ended	---	50.00	+/-5	9.00	0.00	(4, 7)	9.00	50.16	
6	Edge Coupled Differential	---	120.00	+/-12	4.25	12.00	(4, 7)	4.25	119.31	
6	Edge Coupled Differential	---	100.00	+/-10	5.00	10.00	(4, 7)	5.00	101.95	
6	Edge Coupled Differential	---	90.00	+/-9	6.00	10.00	(4, 7)	6.00	90.59	
6	Edge Coupled Differential	---	92.00	+/-9.2	5.75	10.00	(4, 7)	5.75	93.30	
6	Single Ended	---	50.00	+/-5	9.00	0.00	(4, 7)	9.00	50.16	
9	Edge Coupled Differential	---	120.00	+/-12	4.25	12.00	(8, 11)	4.25	119.31	
9	Edge Coupled Differential	---	100.00	+/-10	5.00	10.00	(8, 11)	5.00	101.95	
9	Edge Coupled Differential	---	90.00	+/-9	6.00	10.00	(8, 11)	6.00	90.59	
9	Edge Coupled Differential	---	92.00	+/-9.2	5.75	10.00	(8, 11)	5.75	93.30	
9	Single Ended	---	50.00	+/-5	9.00	0.00	(8, 11)	9.00	50.16	
10	Edge Coupled Differential	---	120.00	+/-12	4.25	12.00	(8, 11)	4.25	119.31	
10	Edge Coupled Differential	---	100.00	+/-10	5.00	10.00	(8, 11)	5.00	101.95	
10	Edge Coupled Differential	---	90.00	+/-9	6.00	10.00	(8, 11)	6.00	90.59	
10	Edge Coupled Differential	---	92.00	+/-9.2	5.75	10.00	(8, 11)	5.75	93.30	
10	Single Ended	---	50.00	+/-5	9.00	0.00	(8, 11)	9.00	50.16	
12	Edge Coupled Differential	---	100.00	+/-10	4.50	10.00	(11, 13)	4.50	98.45	
12	Edge Coupled Differential	---	90.00	+/-9	5.25	10.00	(11, 13)	5.25	89.70	
12	Edge Coupled Differential	---	92.00	+/-9.2	5.00	10.00	(11, 13)	5.00	92.48	
12	Single Ended	---	50.00	+/-5	5.50	0.00	(11, 13)	5.50	49.71	
12	Edge Coupled Differential	---	120.00	+/-12	3.50	14.00	(11, 13)	3.50	118.99	
14	Single Ended	Yes	50.00	+/-5	5.75	0.00	(13)	5.75	50.49	
14	Edge Coupled Differential	Yes	100.00	+/-10	4.50	12.00	(13)	4.50	100.13	

* Edge Coupled Pitch is measured from the center line of one differential trace to the center line of the other.

POWER ENTRY CONNECTOR



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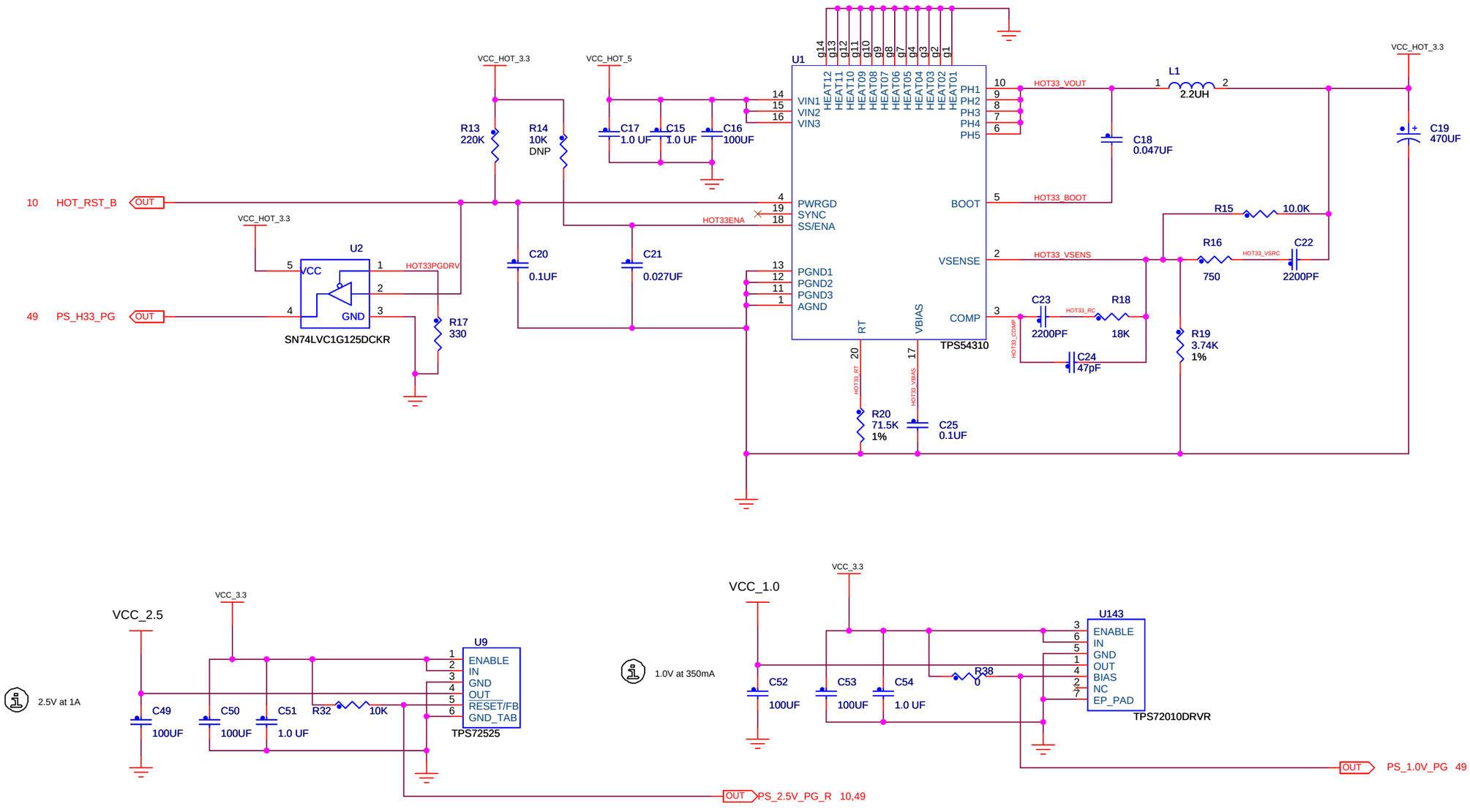
5V to 3.3V Step Down Regulator



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Standby (Hot) Power	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 9 of 63 / Rev B

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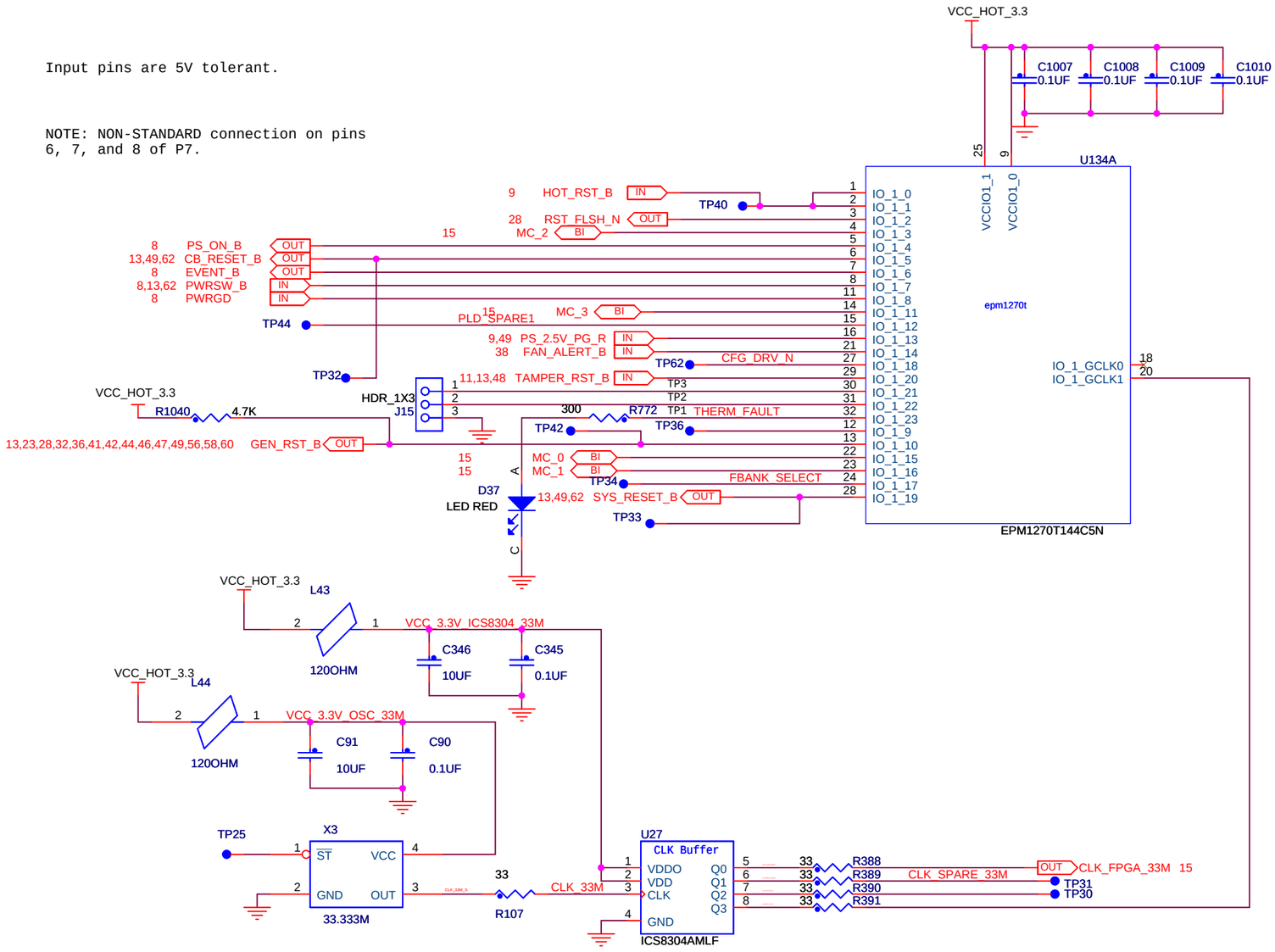
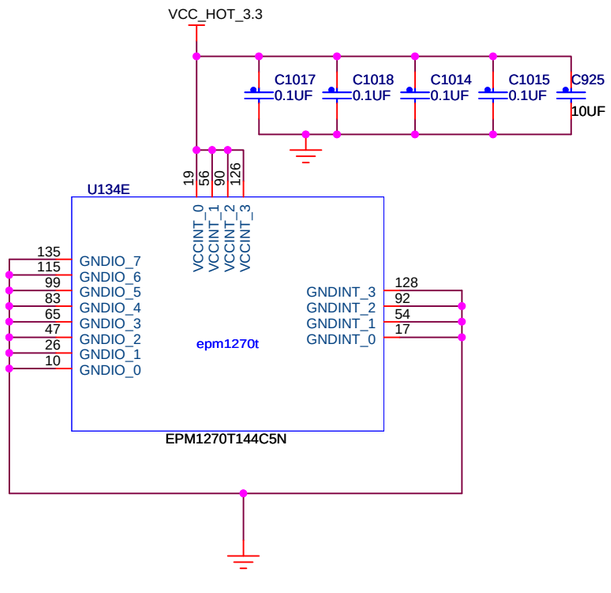
CPLD Interface

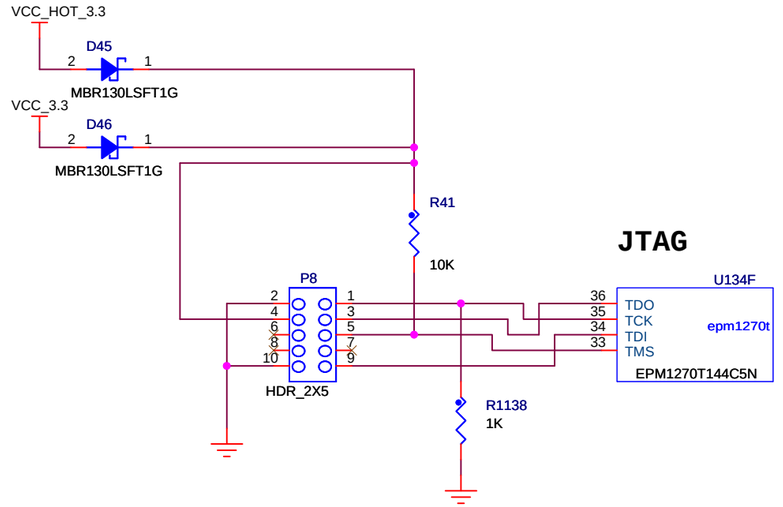
Input pins are 5V tolerant.

NOTE: NON-STANDARD connection on pins
6, 7, and 8 of P7.



CPLD POWER





CLOCK Generation for CPLD

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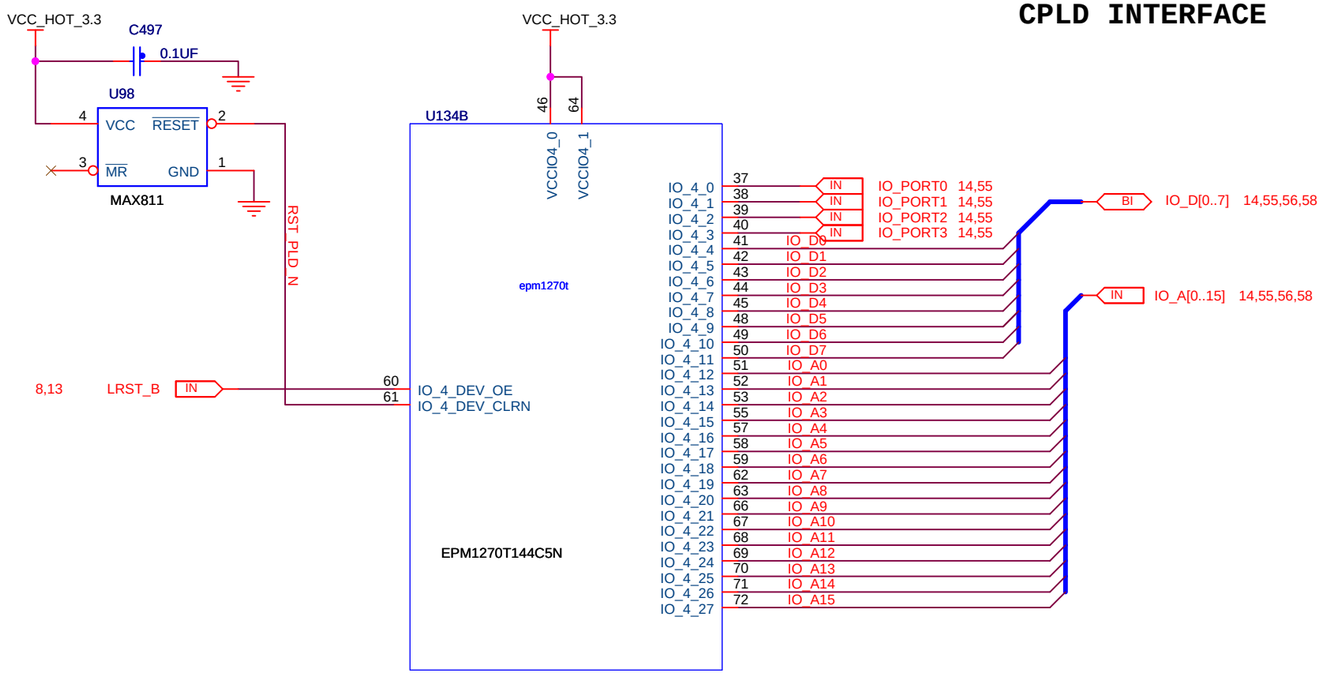
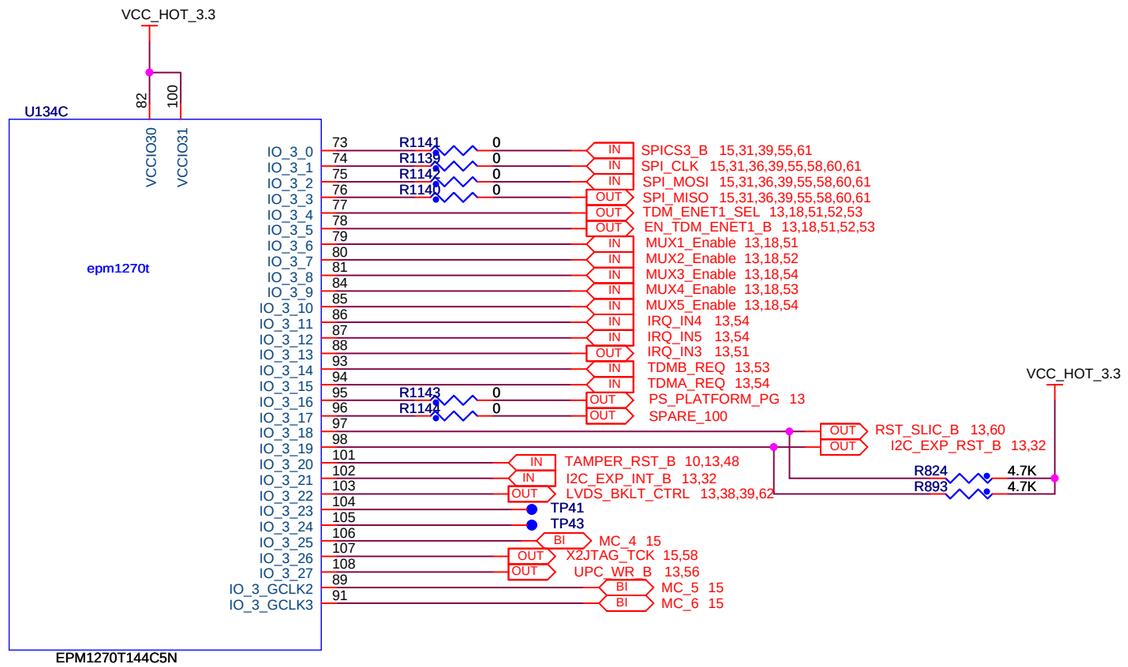
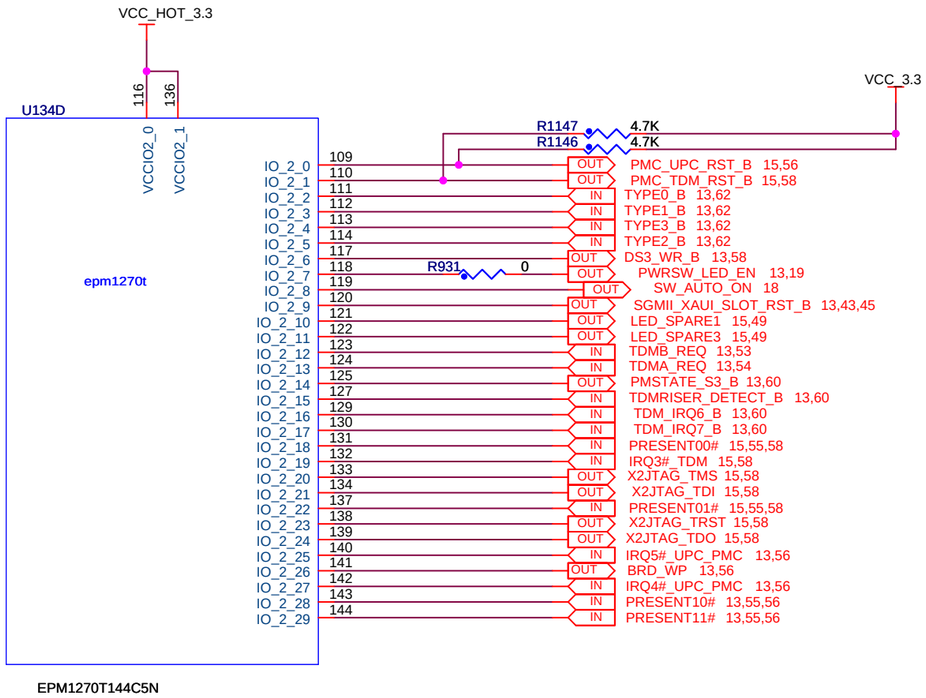
ɜET for CPLD

CPLD INTERFACE







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FPGA POWER

For bank 1 to 4

For bank 5 to 8

U102A

EP3C16F484C8

VCC_2.5

C761 2.2UF, C762 0.1UF, C763 0.01UF

F30 33 OHM

FPGA_VCCA

FPGA_VCCD_PLL

C783 47UF, C759 4.7uF, C771 0.1UF, C760 0.022UF

C794 0.01UF, C795 4700 PF, C796 2200PF, C797 2200PF, C798 1000PF

VCC_1.2_FPGA

F31 33 OHM

C810 470uF, C809 4.7uF

C813 2200PF, C814 4700 PF, C815 0.01UF, C816 0.01UF

C821 0.1UF, C822 0.1UF, C823 0.1UF, C824 0.1UF, C825 0.1UF

VCC_3.3

C764 0.1UF, C765 0.1UF, C892 0.1UF, C893 10UF

C768 0.1UF, C769 0.1UF, C770 0.1UF, C894 10UF

C758 2200PF, C766 4700 PF, C767 100UF

C772 0.1UF, C773 0.1UF, C774 0.1UF, C775 0.1UF, C776 10UF

C782 2200PF, C784 4700 PF, C785 100UF

C777 0.1UF, C778 0.1UF, C779 0.1UF, C780 0.1UF, C781 10UF

C786 0.1UF, C787 0.1UF, C788 0.01UF, C789 10UF

C790 0.1UF, C791 0.1UF, C792 0.01UF, C793 10UF

C799 0.1UF, C800 0.1UF, C801 0.1UF, C802 0.01UF, C803 10UF

C804 0.1UF, C805 0.1UF, C806 0.1UF, C807 0.01UF, C808 10UF

VCC_1.2_FPGA

L46 6.8uH

FPGA_VCC_1.2

C826 0.1UF, C827 0.1UF, C828 0.1UF, C829 0.1UF, C830 0.1UF, C831 0.1UF, C832 0.1UF, C833 0.1UF, C834 0.1UF, C835 0.1UF, C836 0.1UF, C837 0.1UF, C838 0.1UF

VCC_12

VCC_1.2_FPGA

U103 PWR Module

TP172

R796 0 TRACK

C811 0.1UF, C812 100UF

FPGA_PWR_VO_SENSE

R797 0

MARGINUPL

MARGINDNL

C817 0.01UF, C818 10UF, C819 100UF, C820 560uF

R798 12.1K

R799 66.5K

R800 66.5K

PTH12060LAZ

1.2V FPGA CORE Voltage Generation

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FPGA INTERFACE

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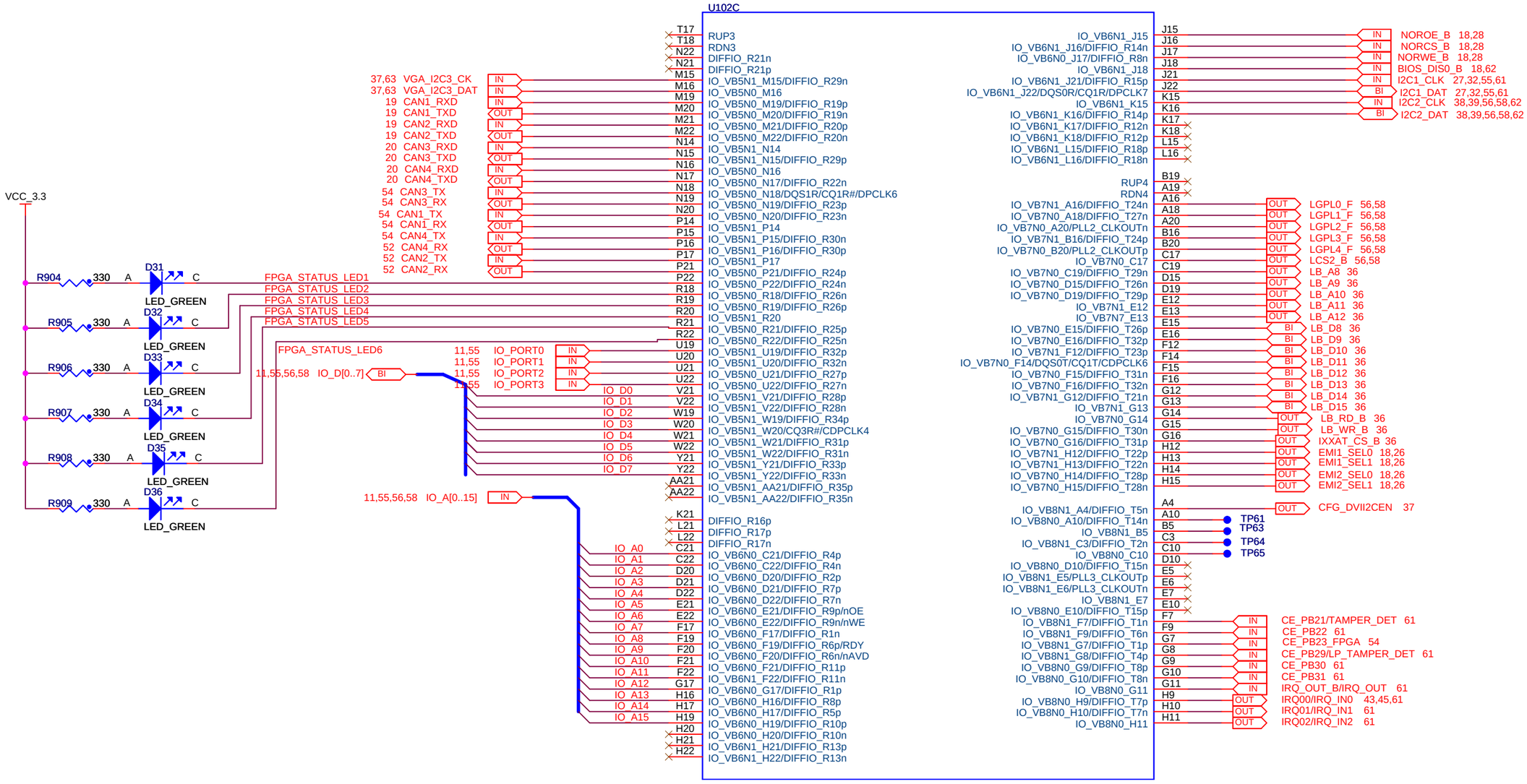
FPGA INTERFACE



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FPGA INTERFACE

JTAG Config Option

VCC_3.3
R813 10.0K
R814 10.0K
R815 10.0K
VCC_2.5
C839 0.1UF
C840 0.1UF
VCC_2.5
R816 1K
R817 1K
HDR_2X5 J44
R818 0 DNP
R819 10.0K
R820 10.0K

U102D

L5	TDI	IO_VB7N0_B18/DIFFIO_T27p/PADD0
L2	TCK	IO_VB7N1_A17/DIFFIO_T25n/PADD1
L1	TMS	IO_VB7N1_B17/DIFFIO_T25p/PADD2
L4	TDO	IO_VB7N1_E14/DIFFIO_T23n/PADD3
K2	UDCLK	IO_VB7N1_F13/DQS2T/CQ3T/DPCLK8
M18	CONF_DONE	IO_VB7N1_A15/DIFFIO_T20n/PADD5
K6	nSTATUS	IO_VB7N1_B15/DIFFIO_T20p/PADD6
L3	nCE	IO_VB7N1_C13/DIFFIO_T19n/PADD7
K5	nCONFIG	IO_VB7N1_D13/DIFFIO_T19p/PADD8
K22	IO_VB6N1_K22/DIFFIO_R16n/nCEO	IO_VB7N1_A14/DIFFIO_T18n/PADD9
M17	MSEL0	IO_VB7N1_B14/DIFFIO_T18p/PADD10
L18	MSEL1	IO_VB7N1_A13/DIFFIO_T17n/PADD11
L17	MSEL2	IO_VB7N1_B13/DQS4T/CQ5T/DPCLK9
K20	MSEL3	IO_VB7N1_E11/DIFFIO_T16n/PADD13
G2	CLK0	IO_VB7N1_F11/DIFFIO_T16p/PADD14
G1	CLK1	IO_VB8N0_B10/DIFFIO_T14p/PADD15
T2	CLK2	IO_VB8N0_A9/DIFFIO_T13n/PADD16
T1	CLK3	IO_VB8N0_B9/DQS5T/CQ5T#/DPCLK10
G21	CLK4	IO_VB8N0_A7/DIFFIO_T11n/PADD18
G22	CLK5	IO_VB8N0_A6/DIFFIO_T10n/PADD19
T21	CLK6	IO_VB6N0_C20/DQS2R/CQ3R/CDPCLK5
T22	CLK7	IO_VB6N0_B21/DIFFIO_R3p/PADD21
A12	CLK8	IO_VB6N0_B22/DIFFIO_R3n/PADD22
B12	CLK9	IO_VB6N0_G18/DIFFIO_R5n/PADD23
A11	CLK10	
B11	CLK11	DATA0
AB12	CLK12	IO_VB1N0_D1/DATA1/ASDO
AA12	CLK13	IO_VB8N0_A8/DIFFIO_T12n/DATA2
AB11	CLK14	IO_VB8N0_B8/DIFFIO_T12p/DATA3
AA11	CLK15	IO_VB8N0_B7/DIFFIO_T11p/DATA4
		IO_VB8N0_A5/DATA5
		IO_VB8N1_F10/DIFFIO_T6p/DATA6
		IO_VB8N1_C6/DATA7
		IO_VB8N1_B4/DIFFIO_T5p/DATA8
		IO_VB8N1_F8/DIFFIO_T4n/DATA9
		IO_VB8N1_A3/DIFFIO_T3n/DATA10
		IO_VB8N1_B3/DIFFIO_T3p/DATA11
		IO_VB8N1_C4/DQS1T/CQ1T#/CDPCLK7
		IO_VB8N0_C7/DIFFIO_T9p/DATA13
		IO_VB8N0_C8/DQS3T/CQ3T#/DPCLK11
		IO_VB8N0_B6/DIFFIO_T10p/DATA15

EP3C16F484C8

18 MSEL0 IN
18 MSEL1 IN
18 MSEL2 IN
18 MSEL3 IN
10 CLK_FPGA_33M IN
35 USB_SW1 OUT
35 USB_SW2 OUT
35 USB_SW3 OUT
35 USB_SW4 OUT

R1123 0
R1124 0
R1125 0
R1126 0

VCC_3.3
R446 4.7K
R445 4.7K

OUT	PMC_UPC_RST_B	11,56
OUT	PMC_TDM_RST_B	11,58
IN	SPICS3_B	11,31,39,55,61
IN	SPI_CLK	11,31,36,39,55,58,60,61
IN	SPI_MOSI	11,31,36,39,55,58,60,61
OUT	SPI_MISO	11,31,36,39,55,58,60,61
IN	PRESENT00#	11,55,58
IN	IRQ3#_TDM	11,58
OUT	X2JTAG_TMS	11,58
OUT	X2JTAG_TDI	11,58
IN	PRESENT01#	11,55,58
OUT	X2JTAG_TRST	11,58
OUT	X2JTAG_TDO	11,58
OUT	X2JTAG_TCK	11,58
OUT	LED_SPARE1	11,49
OUT	LED_SPARE3	11,49
BI	MC_0	10
BI	MC_1	10
BI	MC_2	10
BI	MC_3	10
BI	MC_4	11
BI	MC_5	11
BI	MC_6	11

R829 0

VCC_3.3
D27 D28 D29 D30
MBR130LSFT1G

U104
EPCS4

1	nCS	VCC	8
2	DATA	VCC	7
6	DCLK	VCC	3
5	ASDI	GND	4

C841 0.1UF
C842 0.1UF

IN nCSO 13

VCC_3.3
J45 HDR_2X5
C843 0.1UF
C844 0.1UF

C845 10pF
C846 10pF
C847 10pF
C848 10pF

Note : This device needs to be changed

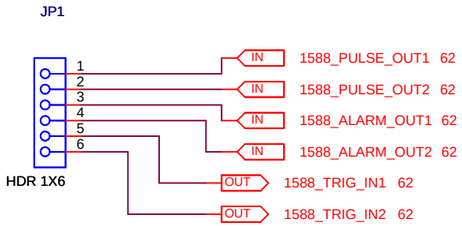
VCC_3.3

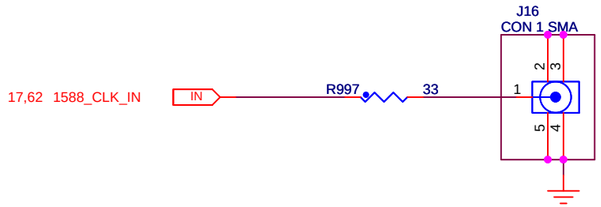
Serial Configuration Device

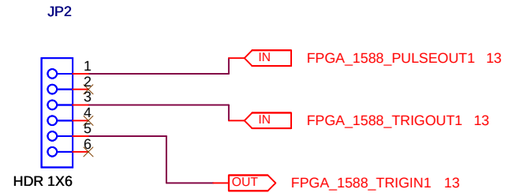
ICAP Classification: FCP:___ FIUO: X PUBI:___

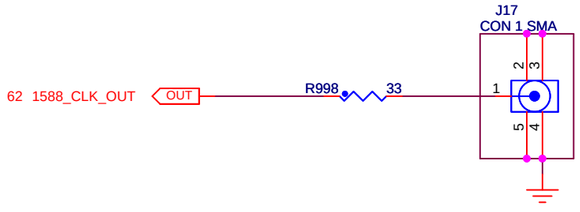
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: FPGA_PART_4	Document Number: SCH-26479 PDF: SPF-26479	Size: Custom	Date: Friday, October 22, 2010	Sheet 15 of 63 / Rev B

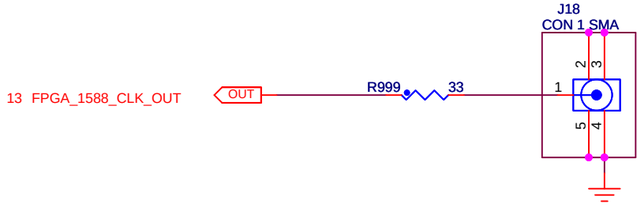
1588 INTERFACE





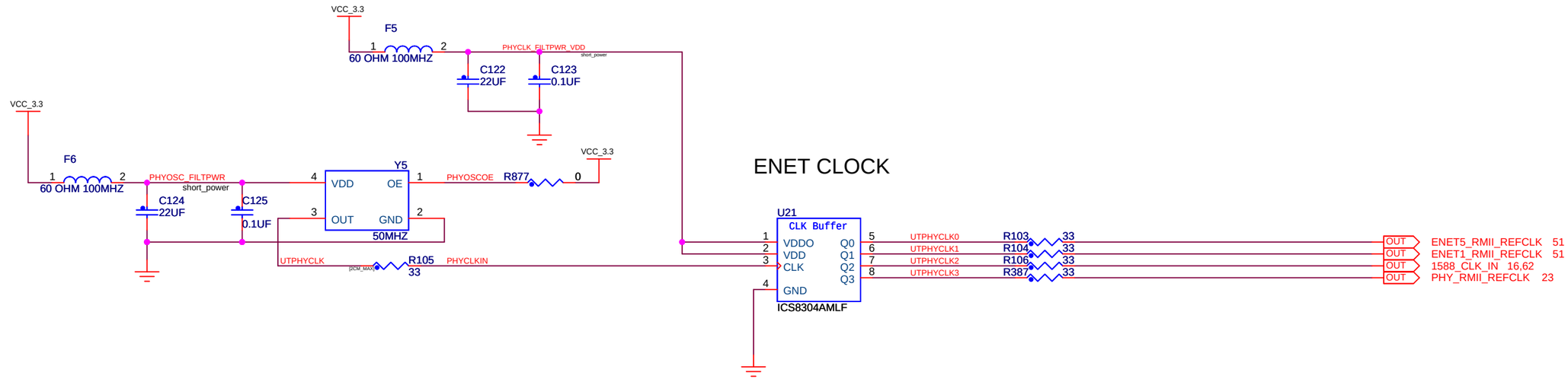






freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: COP, COP Mux and DBG headers	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 16 of 63 / Rev B

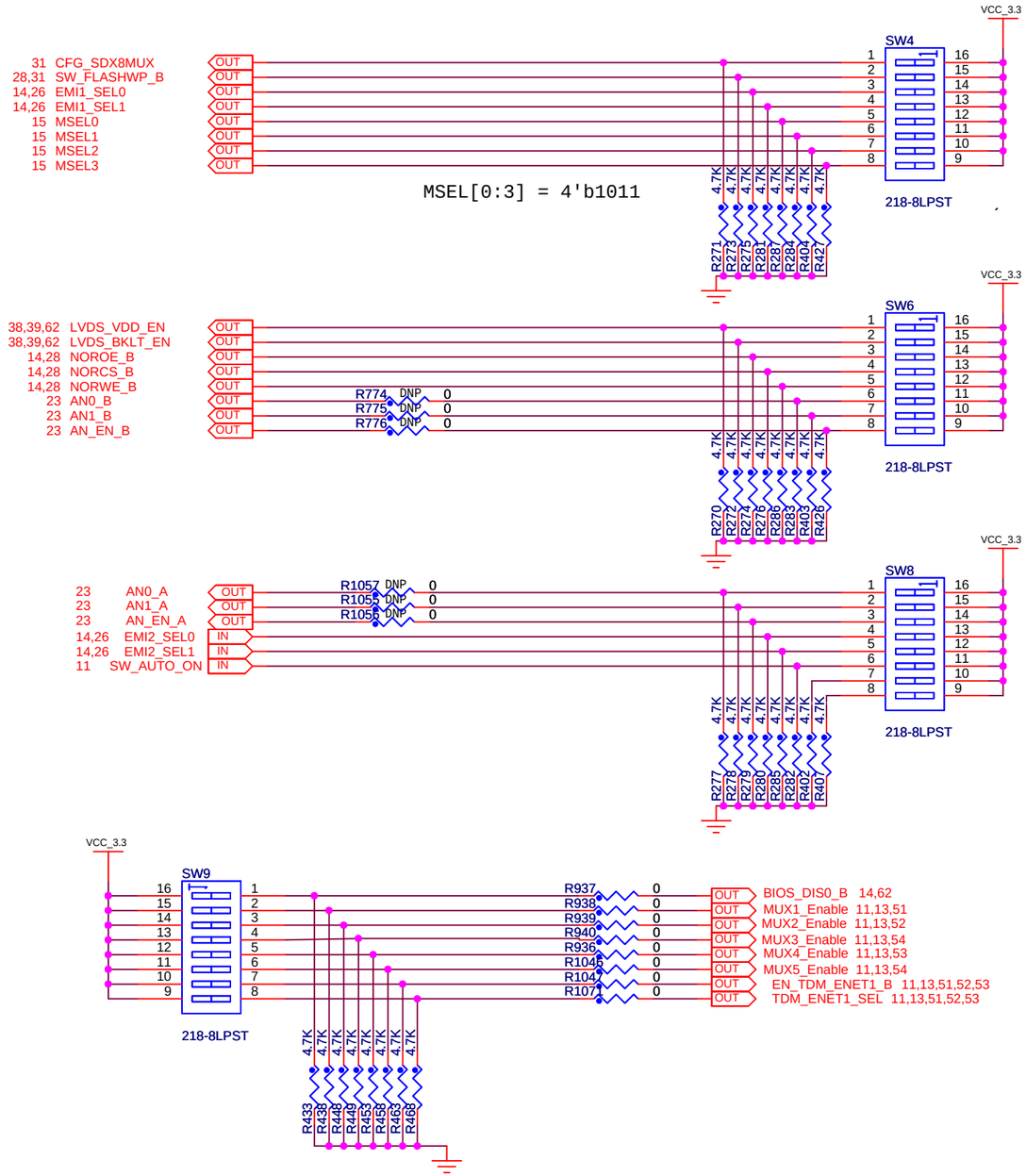
ICAP Classification: FCP:___ FIUO: X PUBI:___

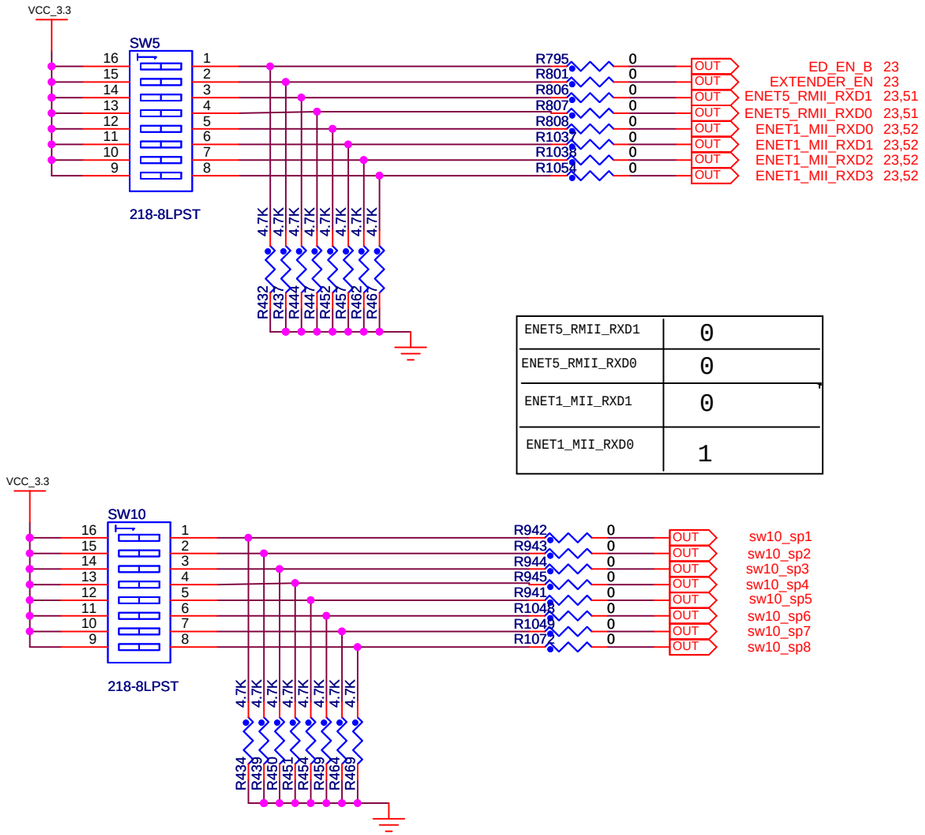


ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PHY and IEEE 1588 Clocks	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 17 of 63	Rev B

CONFIGURATION SWITCHES



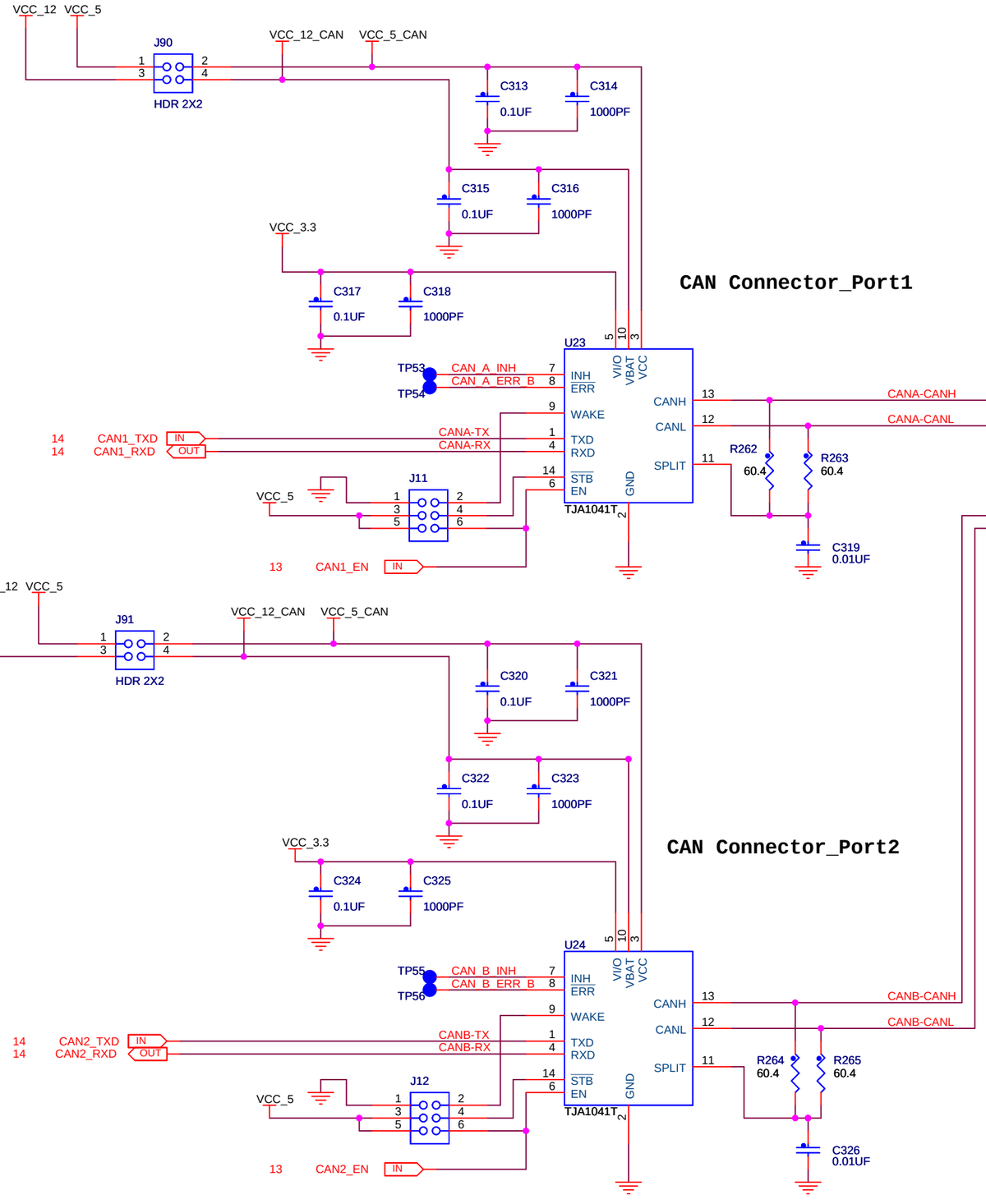


ENET5_RMII_RXD1	0
ENET5_RMII_RXD0	0
ENET1_MII_RXD1	0
ENET1_MII_RXD0	1

ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Configuration Switches	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 18 of 63	Rev B

CANA



CAN Connector_Port1

CANB

CAN Connector_Port2

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: CAN INTERFACE #1	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 19 of 63 / Rev B

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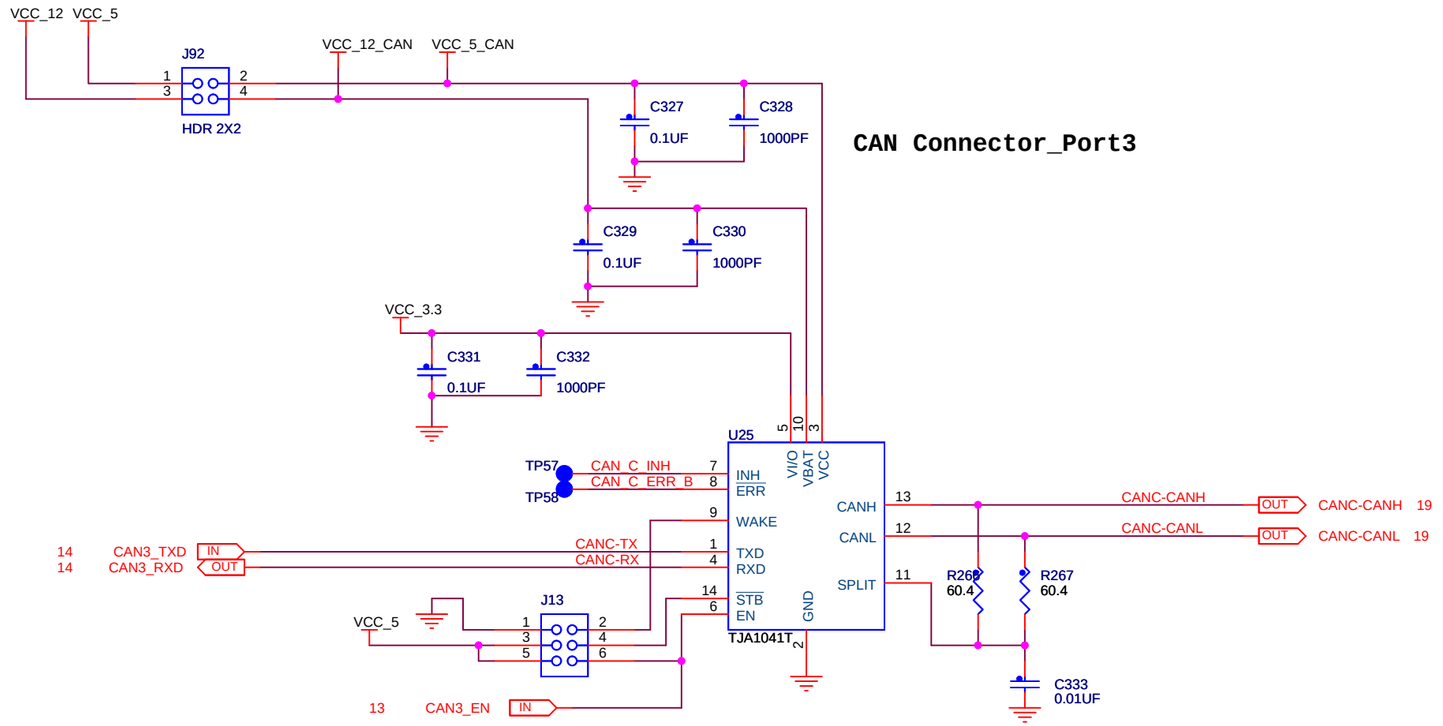
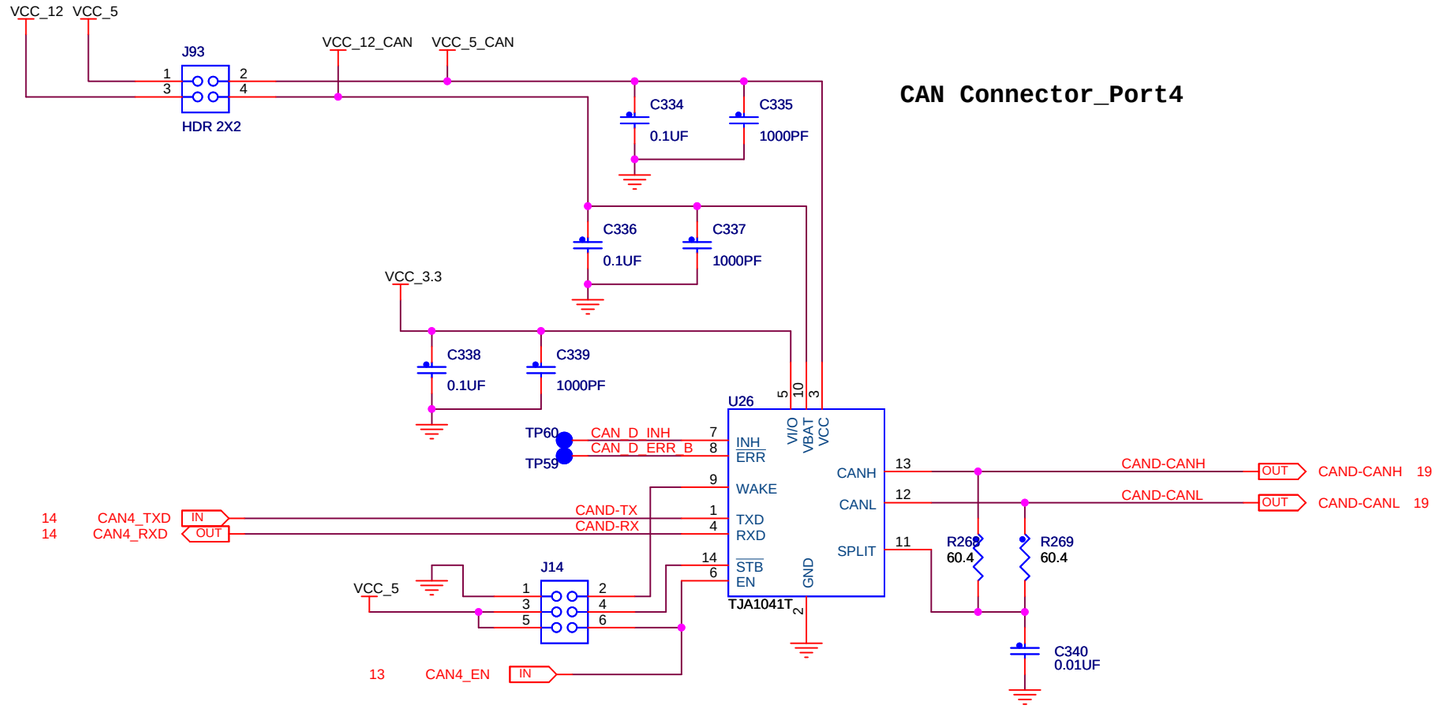
CANC

CAN Connector_Port3



CAND

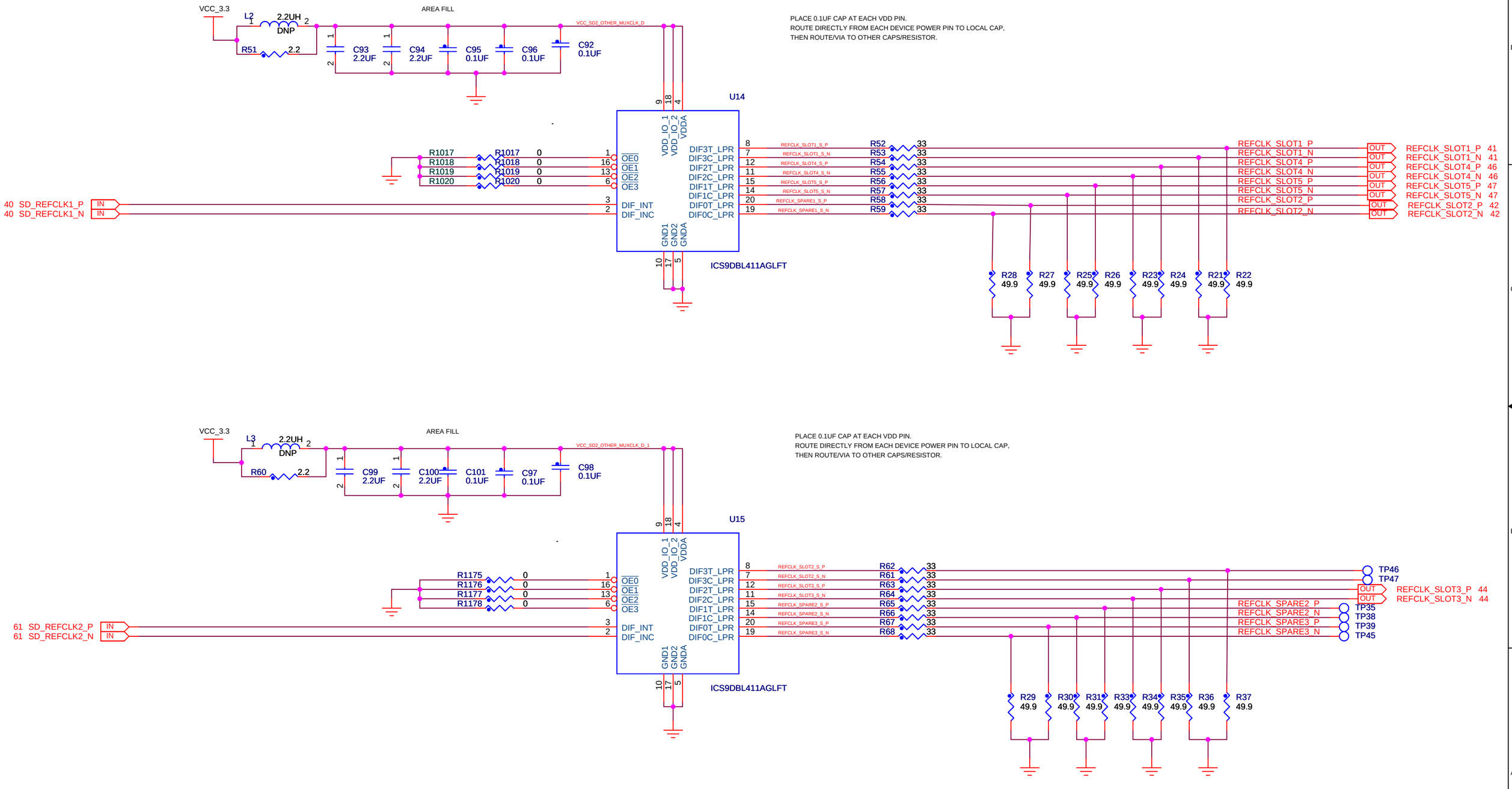
CAN Connector_Port4



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: CAN INTERFACE #2	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 20 of 63	Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

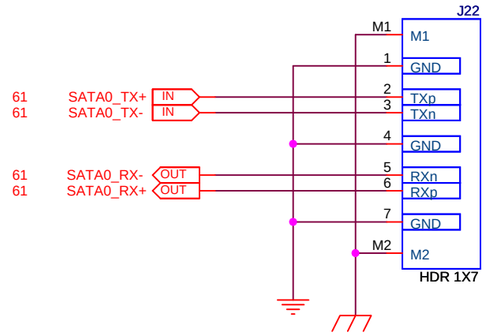
SERDES REFCLK BUFFER



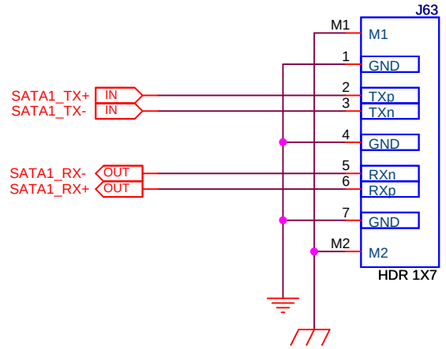
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: SERDES CLK BUFFER & MUX	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 21 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

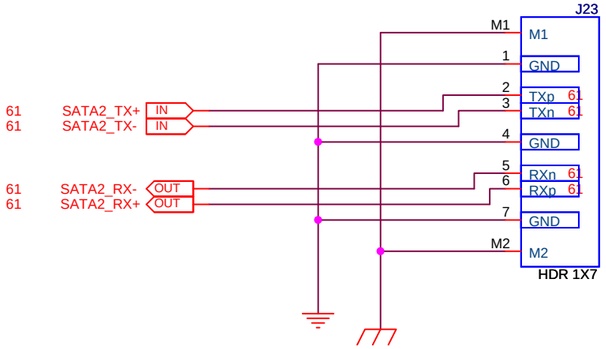
SATA Connector Port 0



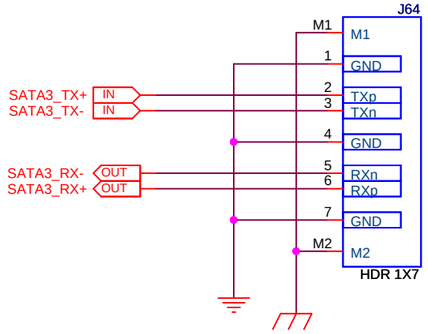
SATA Connector Port 1



SATA Connector Port 2



SATA Connector Port 3



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: SATA CONNECTOR	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 22 of 63 / Rev B

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ETHERNET PHY

DP83849

26 RMII_PHY_MDIO BI
26 RMII_PHY_MDC IN
66 MDIO
67 MDC

R976 4.7K
R1036 4.7K
R966 22
R967 22
51 ENET5_RMII_TXD1 IN
51 ENET5_RMII_TXD0 IN
45 TXD3_B/SNI_MODE_B
46 TXD2_B
47 TXD1_B
48 TXD0_B

R968 22
51 ENET5_RMII_TXEN IN
49 TX_EN_B
50 TX_CLK_B

18 ED_EN_B IN
18 EXTENDER_EN IN
53 RXD3_B/ED_EN_B
56 RXD2_B/EXTENDER_EN

R969 22
R970 22
18,51 ENET5_RMII_RXD1 OUT
18,51 ENET5_RMII_RXD0 OUT
57 RXD1_B/PHYAD4
58 RXD0_B/PHAD3

59 COL_B/FX_EN_B

R971 22
R972 22
51 ENET5_RMII_RXERR OUT
51 ENET5_RMII_RXDV OUT
60 RX_ER_B/MDIX_EN_B
61 CRS_B/CRS_DV_B/LED_CFG_B

VCC_3.3
R973 4.7K
R974 4.7K
R975 4.7K
62 RX_DV_B/MII_MODE_B
63 RX_CLK_B

R1039 4.7K

R1032 33
R1028 33
54 ENET1_MII_RXCLK OUT
52 ENET1_MII_RXDV OUT
79 RX_CLK_A
80 RX_DV_A/MII_MODE_A

R884 DNP 0

R977 33
R978 33
51 ENET1_MII_CRS IN
51 ENET1_MII_RXERR IN
51 ENET1_MII_COL IN
1 CRS_A/CRS_DV_A/LED_CFG_A
2 RX_ER_A/MDIX_EN_A
3 COL_A/FX_EN_A

R1027 33
R1026 33
R1034 33
R1035 33
18,52 ENET1_MII_RXD0 IN
18,52 ENET1_MII_RXD1 IN
18,52 ENET1_MII_RXD2 IN
18,52 ENET1_MII_RXD3 IN
4 RXD0_A/PHYAD1
5 RXD1_A/PHYAD2
8 RXD2_A/CLK2MAC_DIS
9 RXD3_A/ED_EN_A

R1033 33
R979 33
51 ENET1_MII_TXCLK OUT
52 ENET1_MII_TXEN IN
12 TX_CLK_A
13 TX_EN_A

R980 33
R981 33
R1030 33
R1029 33
52 ENET1_MII_TXD0 IN
52 ENET1_MII_TXD1 IN
52 ENET1_MII_TXD2 IN
52 ENET1_MII_TXD3 IN
14 TXD0_A
15 TXD1_A
16 TXD2_A
17 TXD3_A/SNI_MODE_A

R1041 4.7K
17 PHY_RMII_REFCLK IN
69 X2
70 X1

71 RESET_N
IN GEN_RST_B 10,13,28,32,36,41,42,44,46,47,49,56,58,60

VCC_3.3
F32 33 OHM
C1002 0.1UF
C1000 0.1UF
C1001 0.1UF
PFBOUT
C1003 0.1UF
C1004 0.1UF
C1005 0.1UF
C736 10UF

30 ANA33VDD
11 IOVDD1
51 IOVDD2
65 IOVDD3
78 IOVDD4
31 PFBOUT
28 PFBIN2
34 PFBIN3
7 PFBIN1
54 PFBIN4

ANAGND1 22
ANAGND2 29
ANAGND3 33
ANAGND4 40
IOGND1 10
IOGND2 52
IOGND3 64
IOGND4 77
CDGND1 25
CDGND2 37
COREGND1 6
COREGND2 55

CLK2MAC 68
PWRDOWN_INT_B 44
PWRDOWN_INT_A 18
LED_LINK_B/AN0_B 43
LED_SPEED_B/FXSD_B/AN1_B 42
LED_ACT/COL_B/AN_EN_B 41
TPRDM_B/FXRDM_B 39
TPRDP_B/FXRDP_B 38
TPTDM_B/FXTDM_B 36
TPTDP_B/FXTDP_B 35
TPTDP_A/FXTDP_A 27
TPTDM_A/FXTDM_A 26
TPRDP_A/FXRDP_A 24
TPRDM_A/FXRDM_A 23
LED_ACT/COL_A/AN_EN_A 21
LED_SPEED_A/FXSD_A/AN1_A 20
LED_LINK_A/AN0_A 19
TDI 76
TRSTN 75
TMS 74
TDO 73
TCK 72
RBIAS 32

IN PHY1_PWRDN 13
IN PHY0_PWRDN 13
IN AN0_B 18
IN AN1_B 18
IN AN_EN_B 18

R385 4.87K

IN AN0_A 18
IN AN1_A 18
IN AN_EN_A 18

R374 49.9
R375 49.9
C398 0.1UF
R376 49.9
R377 49.9
C399 0.1UF
R378 220
C400 0.1UF
C401 0.1UF

P16B Upper Port
ETH1_TXD- 13 TRD1- RJ1 TRP1+
ETH1_TXD_CT 7 TRCT1
ETH1_TXD+ 6 TRD1+ RJ2 TRP1-
ETH1_RXD- 5 TRD2- RJ3 TRP2+
ETH1_RXD_CT 12 TRCT2
ETH1_RXD+ 11 TRD2+ RJ6 TRP2-
10 TRD3- RJ4 TRP3+
4 TRCT3
3 TRD3+ RJ5 TRP3-
2 TRD4- RJ7 TRP4+
9 TRCT4
8 TRD4+ RJ8 TRP4-
1 GND2
ETH1_LED_LINK- 31 LED3_C
ETH1_LED_LINK+ 32 LED3_A
R379 220
ETH1_LED_SC- 33 LED4_GC
ETH1_LED_SC+ 34 LED4_GA
Chassis_GND
Chassis_GND
RJ45 13X2PORTS
S3
S4

C1006 1000pF

VCC_3.3
Name = AN_EN_B
R380 49.9
R381 49.9
C402 0.1UF
R382 49.9
R383 49.9
C403 0.1UF
R384 220

VCC_3.3
C404 0.1UF
C405 0.1UF

P16A Lower Port
ETH0_TXD- 21 TRD1- RJ1 TRP1+
ETH0_TXD_CT 14 TRCT1
ETH0_TXD+ 15 TRD1+ RJ2 TRP1-
ETH0_RXD- 16 TRD2- RJ3 TRP2+
ETH0_RXD_CT 22 TRCT2
ETH0_RXD+ 23 TRD2+ RJ6 TRP2-
24 TRD3- RJ4 TRP3+
17 TRCT3
18 TRD3+ RJ5 TRP3-
19 TRD4- RJ7 TRP4+
25 TRCT4
26 TRD4+ RJ8 TRP4-
20 GND1
ETH0_LED_LINK- 27 LED1_C
ETH0_LED_LINK+ 28 LED1_A
R386 220
ETH0_LED_SC- 29 LED2_GC
ETH0_LEC_SC+ 30 LED2_GA
Chassis_GND
Chassis_GND
RJ45 13X2PORTS
S1
S2

TP48
TP49
TP50
TP51
TP52

Ethernet Channel 1
RMII5

LED1 indicates a LINK and blinks for activity.

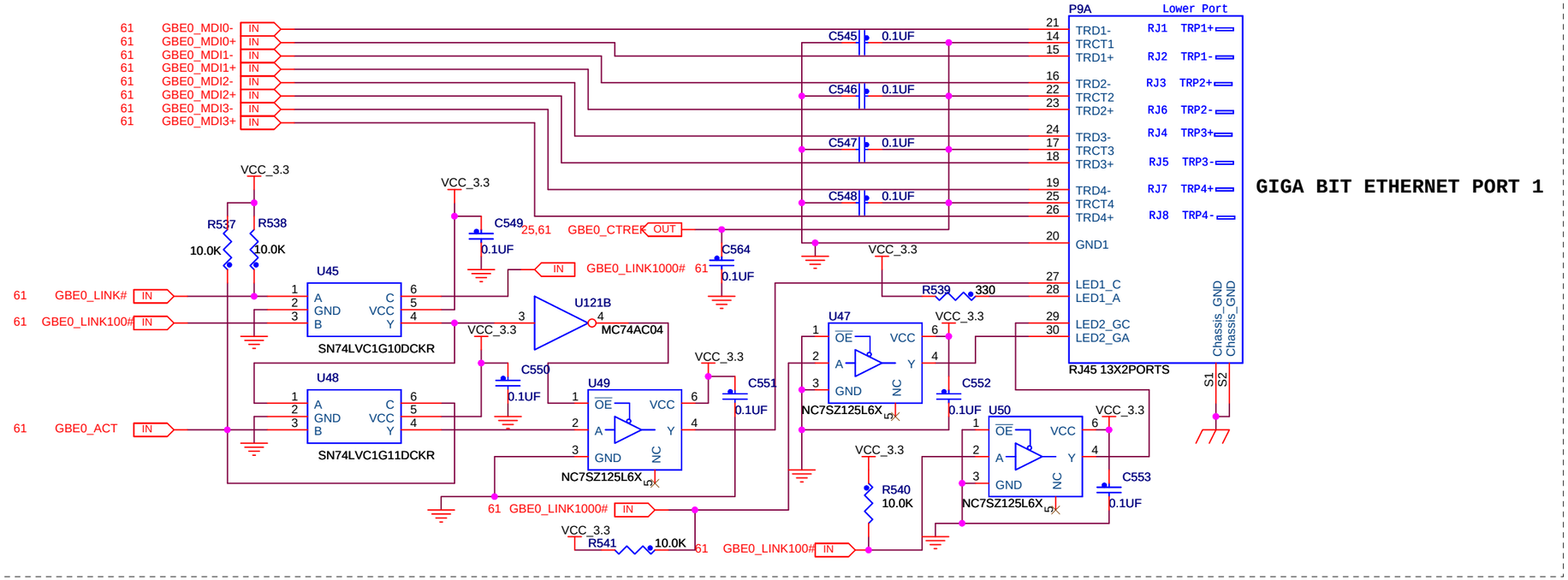
LED2 indicates Speed (10/100 Mbps) and Collision (when in 10 Mbps mode). LED2 is GREEN for 100Mbps mode, OFF for 10Mbps, and blinking ORANGE for Collisions.

Ethernet Channel 0
RMII1

LED1 indicates a LINK and blinks for activity.

LED2 indicates Speed (10/100 Mbps) and Collision (when in 10 Mbps mode). LED2 is GREEN for 100Mbps mode, OFF for 10Mbps, and blinking ORANGE for Collisions.

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PHY RMII Interfaces	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	ICAP Classification: FCP:___ FIUO: X PUBI:___ Sheet 23 of 63	Rev B



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: GiGe Connectors Part 1	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	ICAP Classification: FCP:___ FIUO: X PUBI:___
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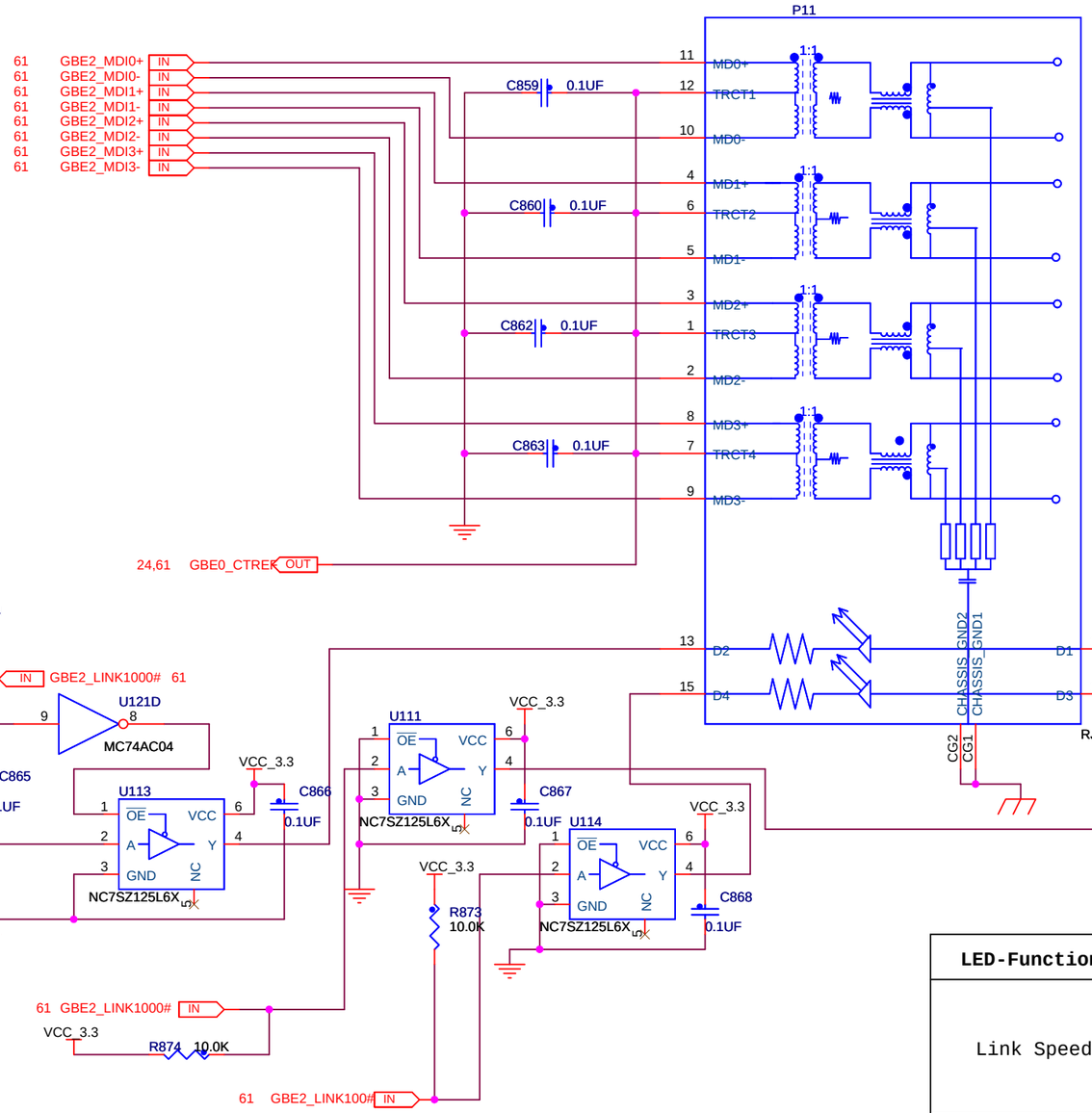
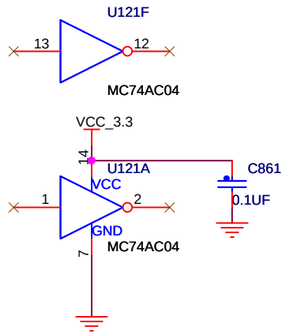
GIGA BIT ETHERNET PORT 3



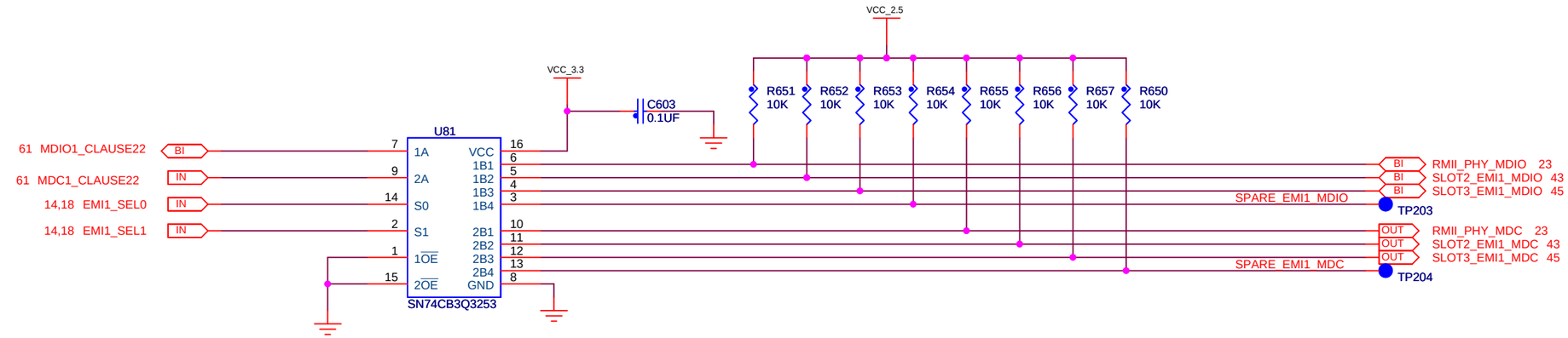


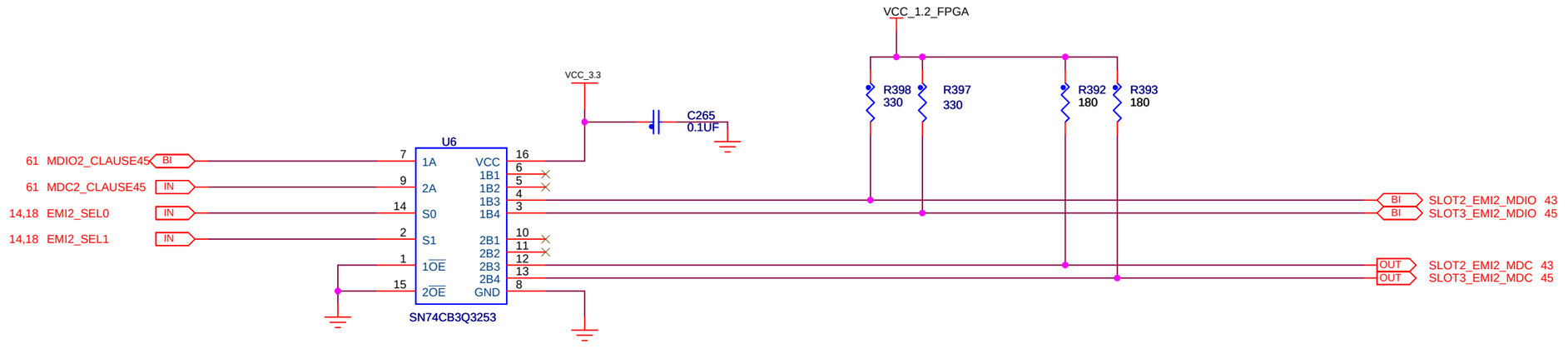
LED-Function	LED-Color#	LED-State	Description
Link Speed	Green / Orange	Off Green Orange	10 Mbps Link Speed
			100 Mbps Link speed
			1000 Mbps Link Speed
Link Status & Activity	Yellow	Off Steady On Blinking	No Link
			Link established, No Activity
			Link established, Activity

ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: GiGe Connectors Part 2	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 25 of 63	Rev B

MANAGEMENT BUS MUXING





freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Management Bus Muxing	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 26 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

Mclk Clock Generation for CODEC(Selectable 11.2Mhz or 12.2Mhz

CODEC Interface

U131 CLK Buffer — ICS8304AMLF
CODEC_MCLK0 R442 33
CODEC_MCLK1 R443 33
Q0 Q1 Q2 Q3 VDDO VDD CLK GND
VCC_3.3
C462 0.1UF
Option for Clock input from FPGA
AUD_CLK_IN

U129 SN74CBTLV1G125DBVR
U130 SN74CBTLV1G125DBVR
VCC OE B A GND
C463 0.1UF
C464 0.1UF
R441 10.0K
IN MCLK_12M_EN_B 13
IN MCLK_11M_EN_B 13

F14 60 OHM 100MHZ
C461 0.1UF
Y6 VDD OE OUT GND
3V3_FB
12Mhz_OE
TP196
CODEC_MCLK_0 R440 33
12.288MHz

F7 60 OHM 100MHZ
C442 0.1UF DNP
DNP
Y1 OSC. VCC OUT EN/DIS DGND
43V3_FB
CODEC_MCLK_1 R409 33
11Mhz_OE
TP197
DNP
11.2896MHZ

U39 WM8776SEFT
VCC_3.3
C443 0.1UF
C444 10UF
DVDD DGND MODE CE DI CL
AVDD HPVDD HPGND AGND DACREFP DACREFN ADCREFP ADCREFGND
VCC_5_AUD
L8 600 OHM
VCC_5
C445 0.1UF
C446 0.1UF
C447 10UF
AUDGND
C448 0.1UF
C449 10UF
C450 0.1UF
C451 10UF
C452 0.1UF
C453 10UF
C454 0.1UF
C455 10UF

14,32,55,61 I2C1_DAT IN R411 0 I2C_SDA_CODEC
14,32,55,61 I2C1_CLK IN R412 0 I2C_SCL_CODEC
13 SSI_TCLK OUT
13 SSI_TFS OUT
13 SSI_TXDATA IN
R413 33
R414 33
DACMCLK DACBCLK DACLRC DIN
13 SSI_RCLK OUT
13 SSI_RFS OUT
13 SSI_RXDATA OUT
R415 33
R416 33
R417 33
ADCMCLK ADCBCLK ADCLRC DOUT
R418 5.1K AINOPL
AINVGL
R419 10.0K
R420 10.0K
AIN1L AIN1R AIN2L AIN2R AIN3L AIN3R AIN4L AIN4R AIN5L AIN5R AUXL AUXR AINOPR AINVGR
C456 10UF
C457 10UF
TP100 TP101
R423 10.0K
R424 10.0K
R425 5.1K AINOPR
AINVGR
VMIDADC VMIDDAC
TP98 TP99
VOUTL VOUTR
HPOUTL HPOUTR
ZFLAGL ZFLAGR
NC_24 NC_25
C458 330uF HPOUT_L
C459 330uF HPOUT_R
TP102 TP103
R421 46.4K
R422 46.4K
R430 10.0K
R431 10.0K
R429 DNP 0
R428 DNP 0
L61 50OHM
L62 50OHM

J97 SIG_TIE_100X200
AUDGND

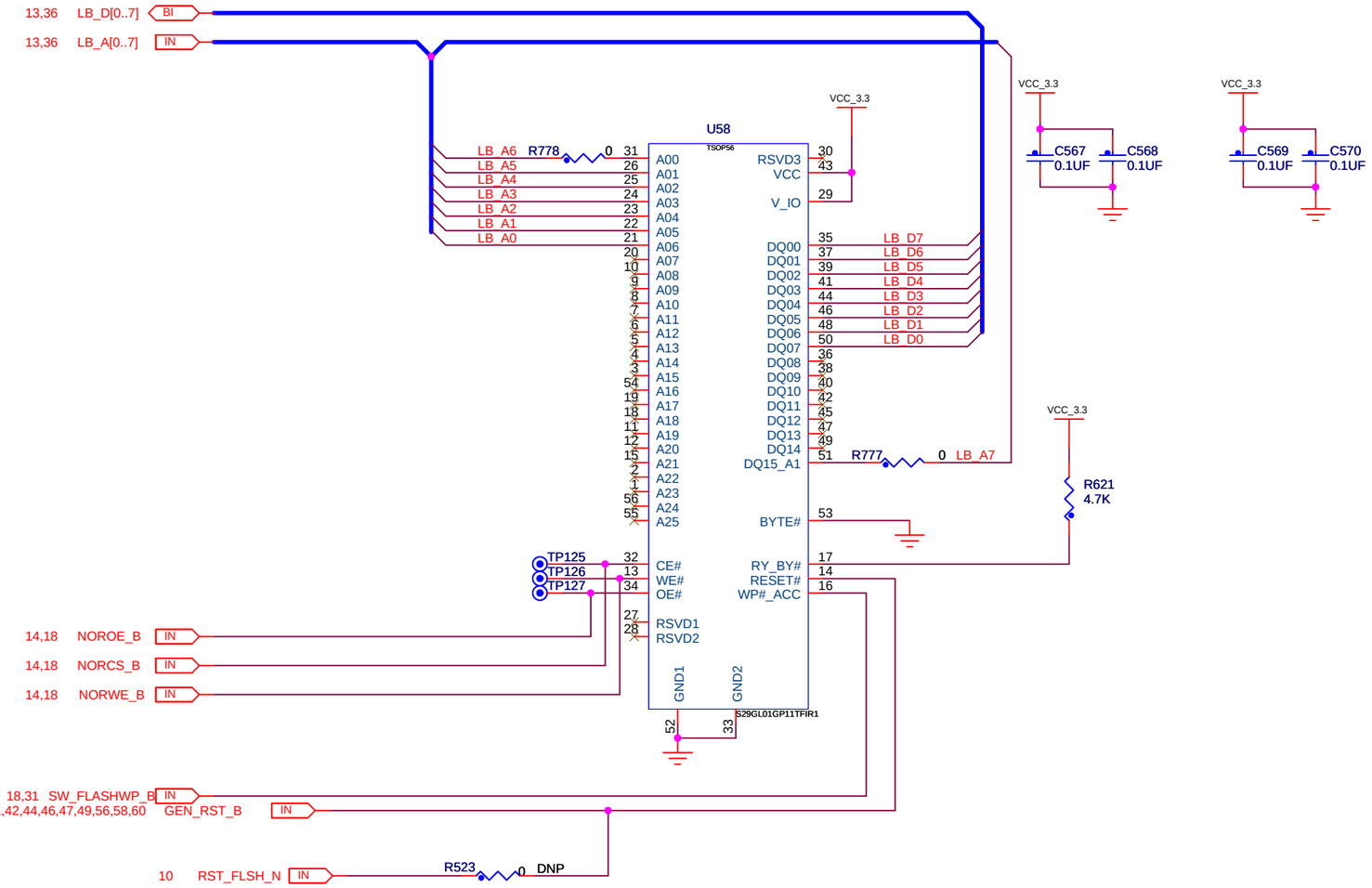
VCC_5
L64 600OHM
C1029 0.1UF
R1169 2.0K DNP
R1168 2.0K DNP
P23 HDR_2X5 KEY
FP_MIC FP_MIC_BIAS FP_OUT_R FP_OUT_L
FP_RTN_R R1170 10K
FP_RTN_L R1171 10K
TP72

AUDIO HDR

ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: SSI CODEC INTERFACE	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 27 of 63 / Rev B

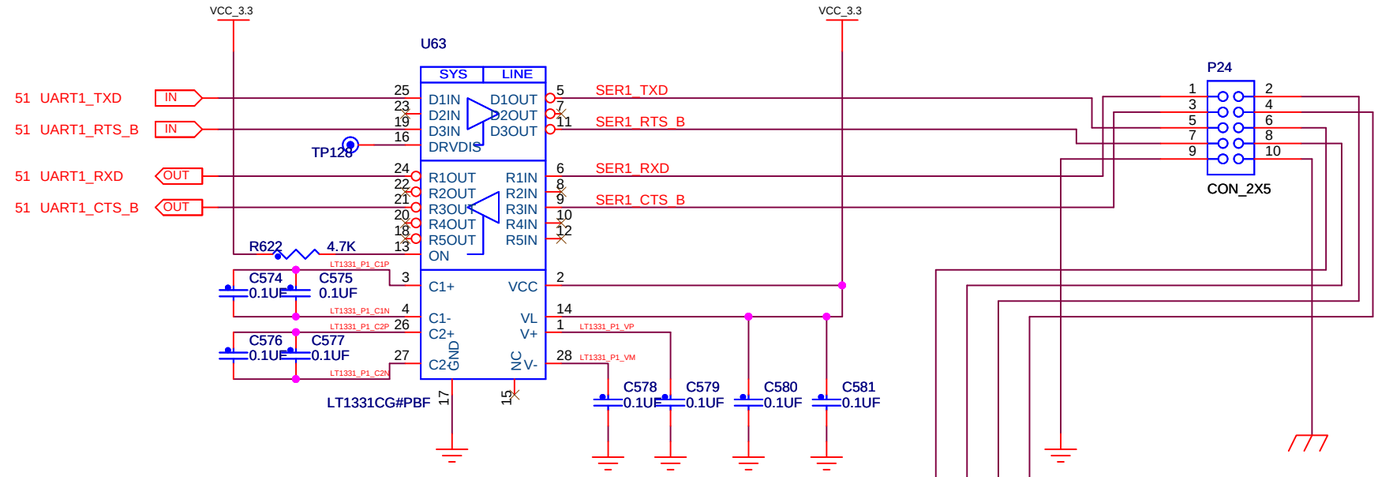
NOR FLASH



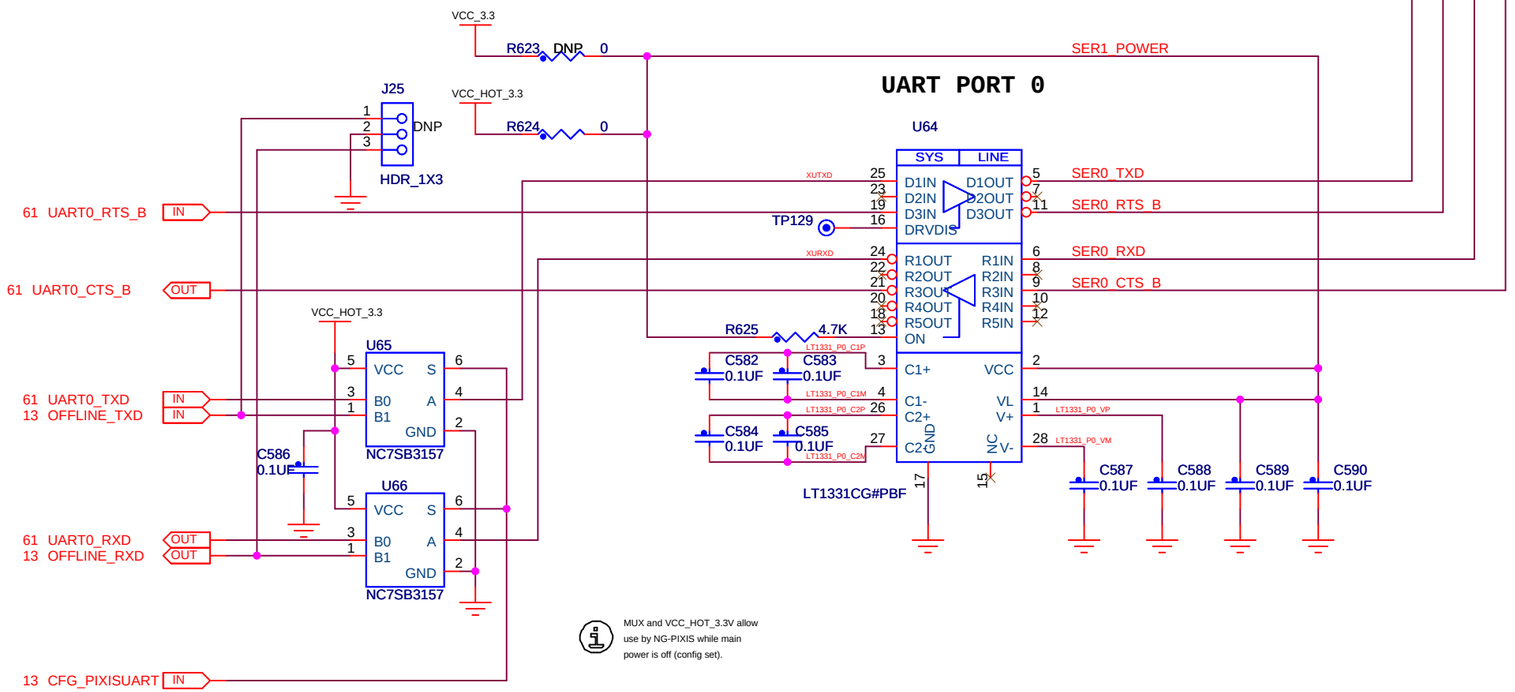
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: NORFlash, NANDFlash, PromJet	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 28 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

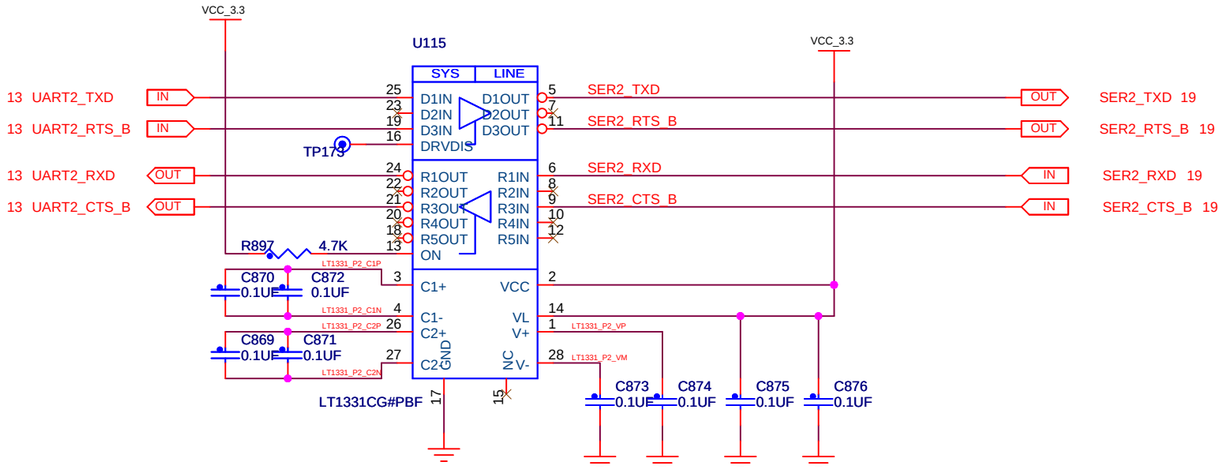
UART PORT 1



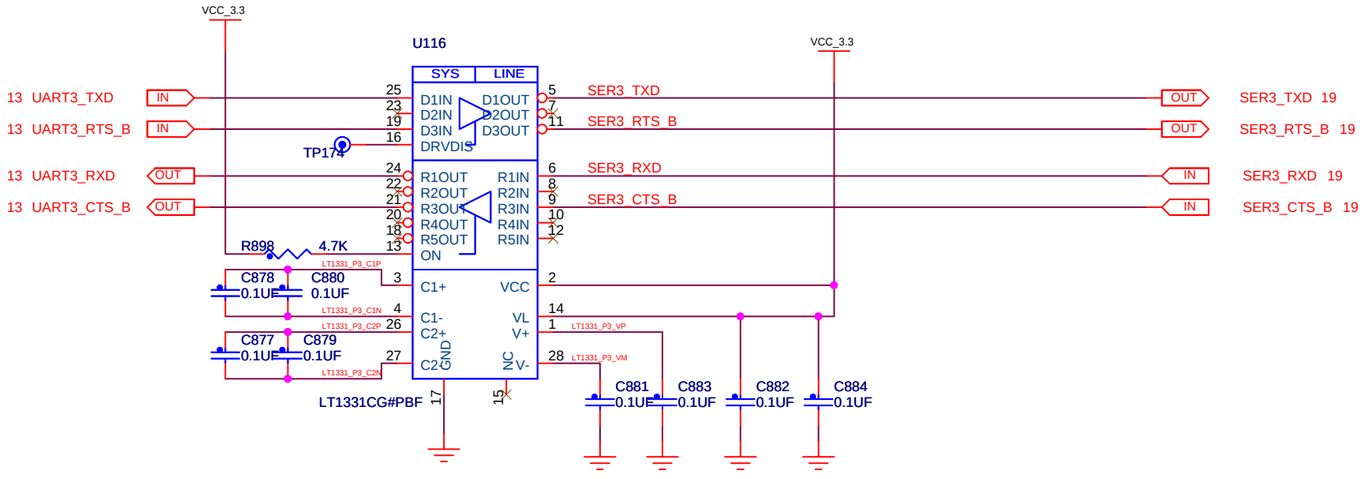
UART PORT 0



UART Port 2

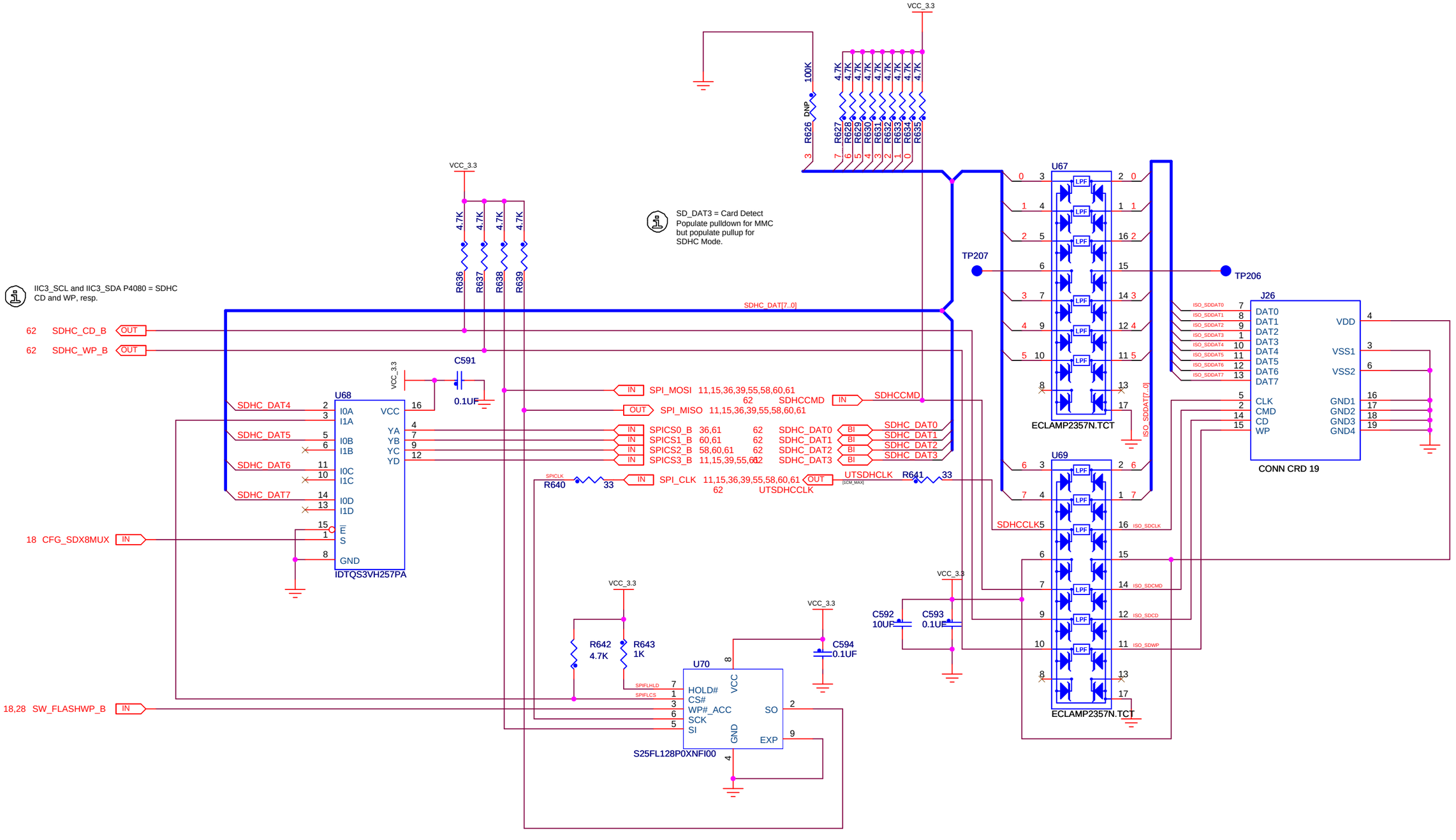


UART Port 3



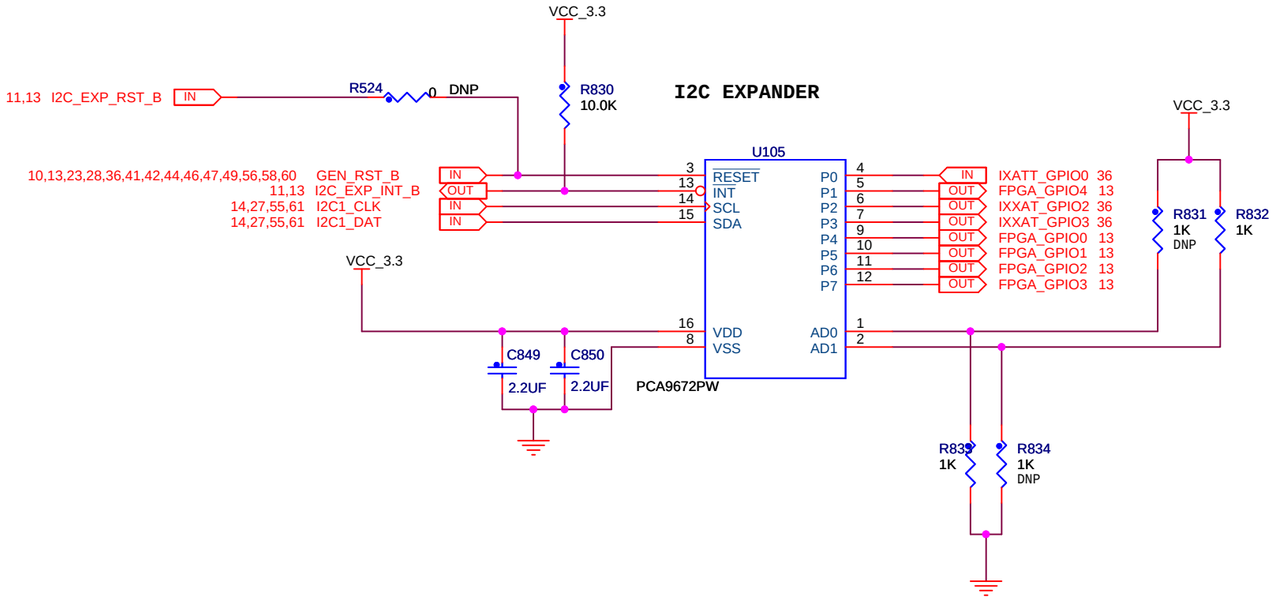
ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Serial Port_Part 2	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 30 of 63 / Rev B



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: SDMedia, SPI Devices	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 31 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

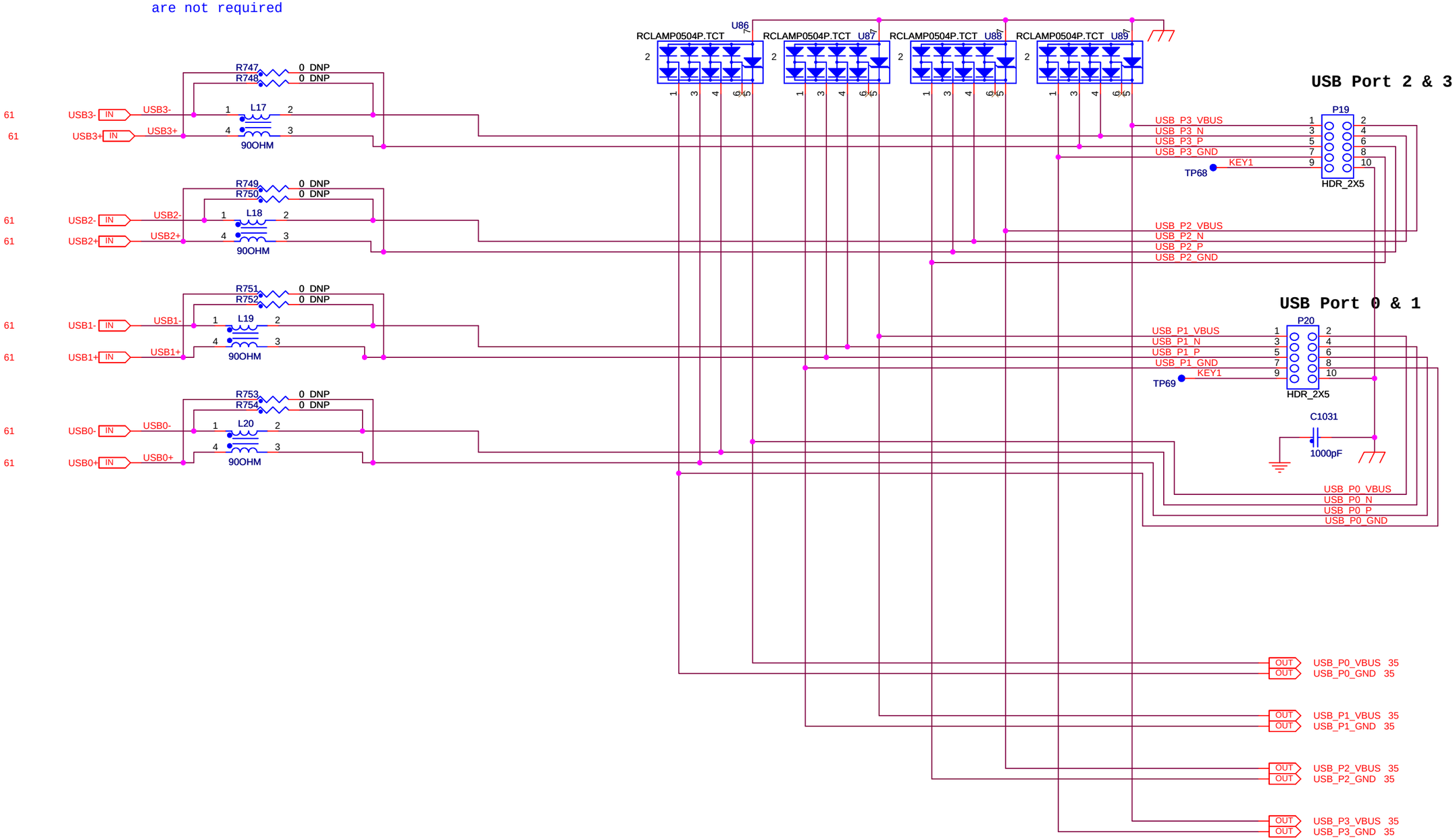


freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: I2C expander	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 32 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

USB PORTS 1 to 4

NOTE: ZERO OHM DNP resistors use the same foot print of CM CHoke and resistors are connected between 1-4 and 2-3 if chokes are not required



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: USB Connector #1	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 33 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

USB Port 5 to 8

RCLAMP0504P.TCT U90
RCLAMP0504P.TCT U91
RCLAMP0504P.TCT U92
RCLAMP0504P.TCT U93

R755 0 DNP
R756 0 DNP

61 USB7- IN USB7-
61 USB7+ IN USB7+
L22
90OHM

61 USB6- IN USB6-
61 USB6+ IN USB6+
L23
90OHM
R757 0 DNP
R758 0 DNP

61 USB5- IN USB5-
61 USB5+ IN USB5+
L24
90OHM
R759 0 DNP
R760 0 DNP

61 USB4- IN USB4-
61 USB4+ IN USB4+
L25
90OHM
R761 0 DNP
R762 0 DNP

USB_P7_VBUS
USB_P7_N
USB_P7_P
USB_P7_GND
KEY3
TP70
P21
HDR_2X5

USB_P6_VBUS
USB_P6_N
USB_P6_P
USB_P6_GND

USB_P5_VBUS
USB_P5_N
USB_P5_P
USB_P5_GND
KEY4
TP71
P22
HDR_2X5

USB_P4_VBUS
USB_P4_N
USB_P4_P
USB_P4_GND

C1028
1000pF
L26
50OHM

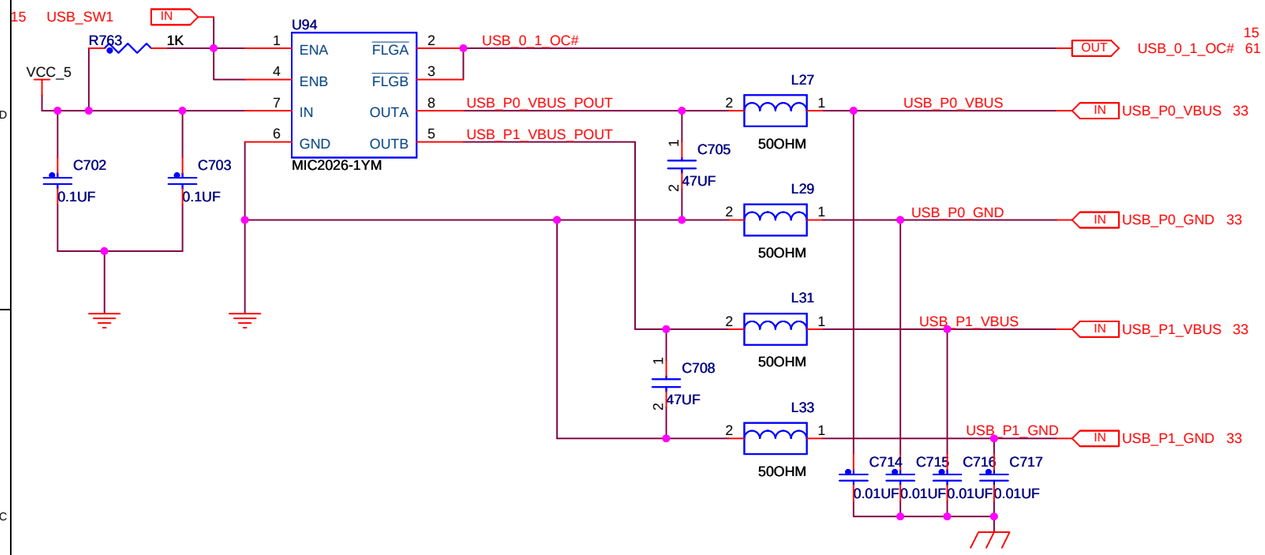
OUT USB_P4_VBUS 35
OUT USB_P4_GND 35
OUT USB_P5_VBUS 35
OUT USB_P5_GND 35
OUT USB_P6_VBUS 35
OUT USB_P6_GND 35
OUT USB_P7_VBUS 35
OUT USB_P7_GND 35

NOTE: ZERO OHM DNP resistors use the same foot print of CM CHoke and resistors are connected between 1-4 and 2-3 if chokes are not required

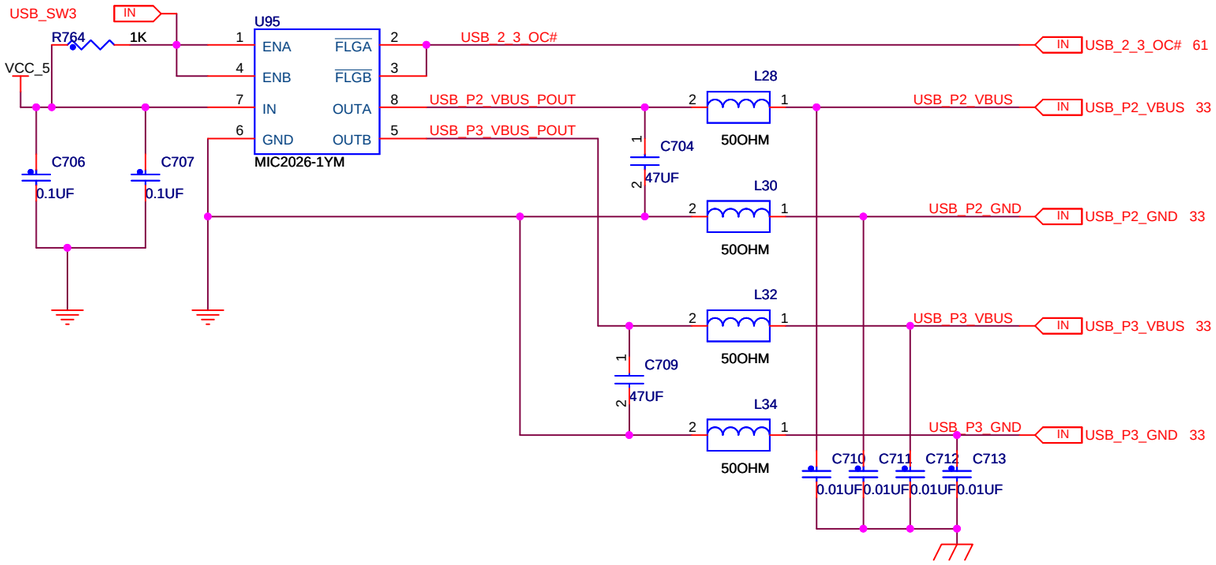
ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Blank Page	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 34 of 63 / Rev B

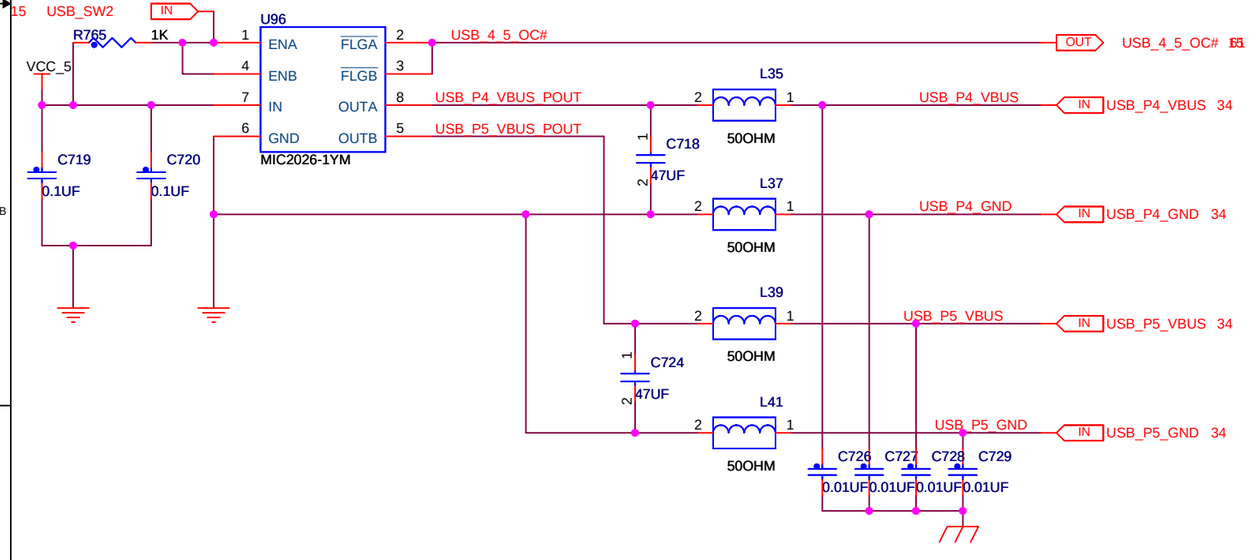
Power Switch for Port 0 & 1



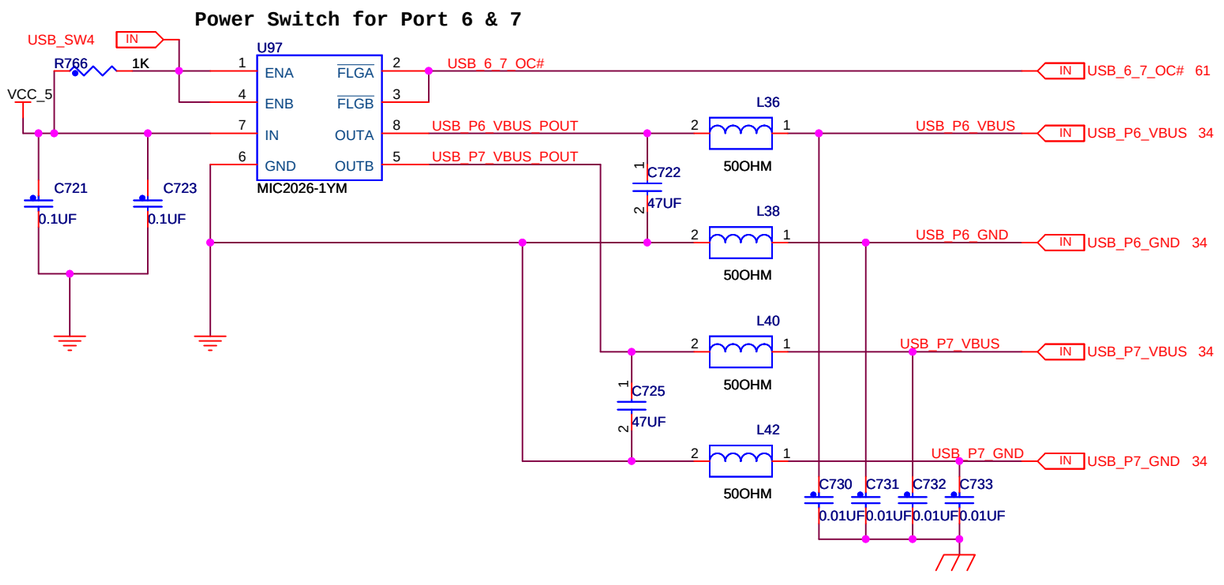
Power Switch for Port 2 & 3



Power Switch for Port 4 & 5



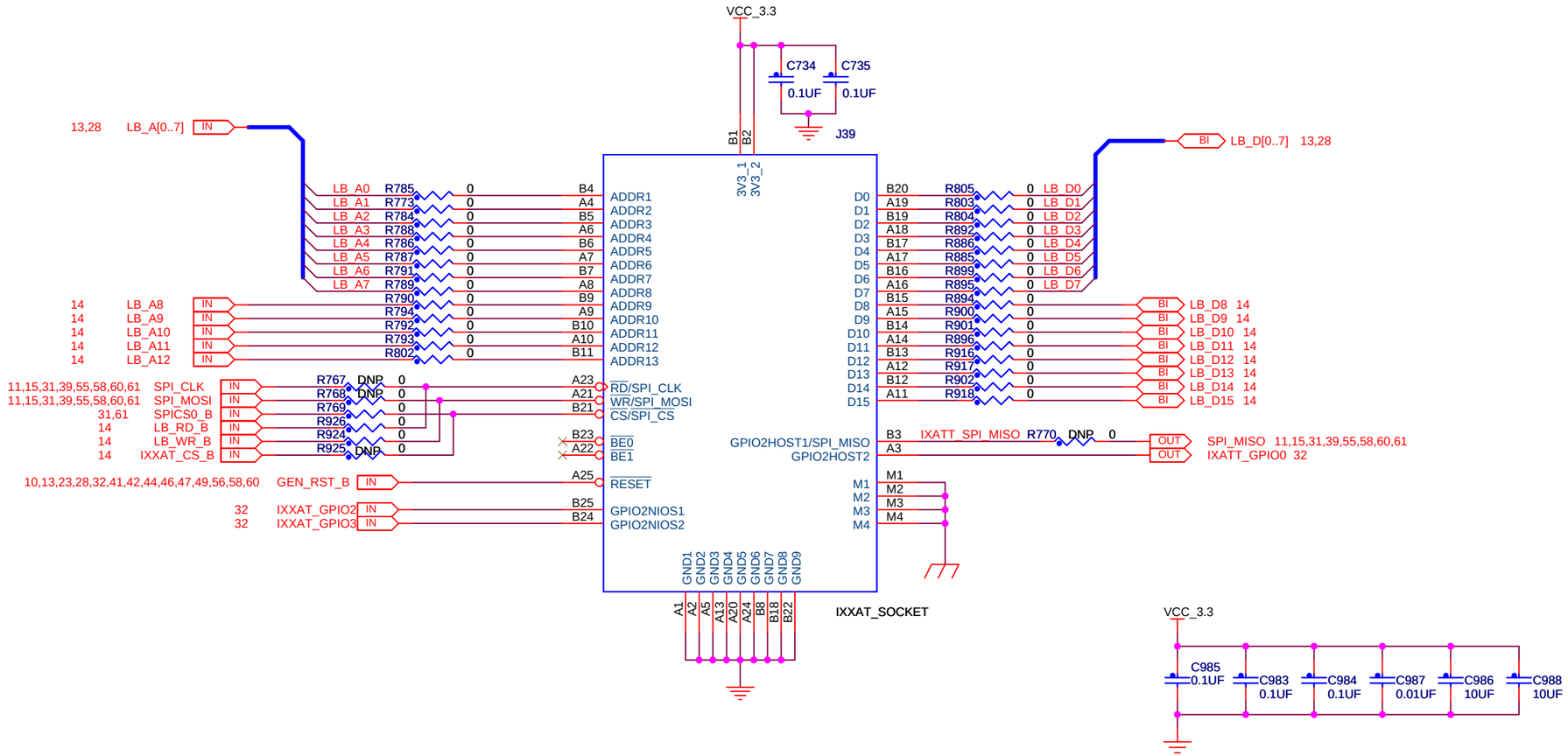
Power Switch for Port 6 & 7



ICAP Classification: FCP:___ FIUO: X PUBI:___

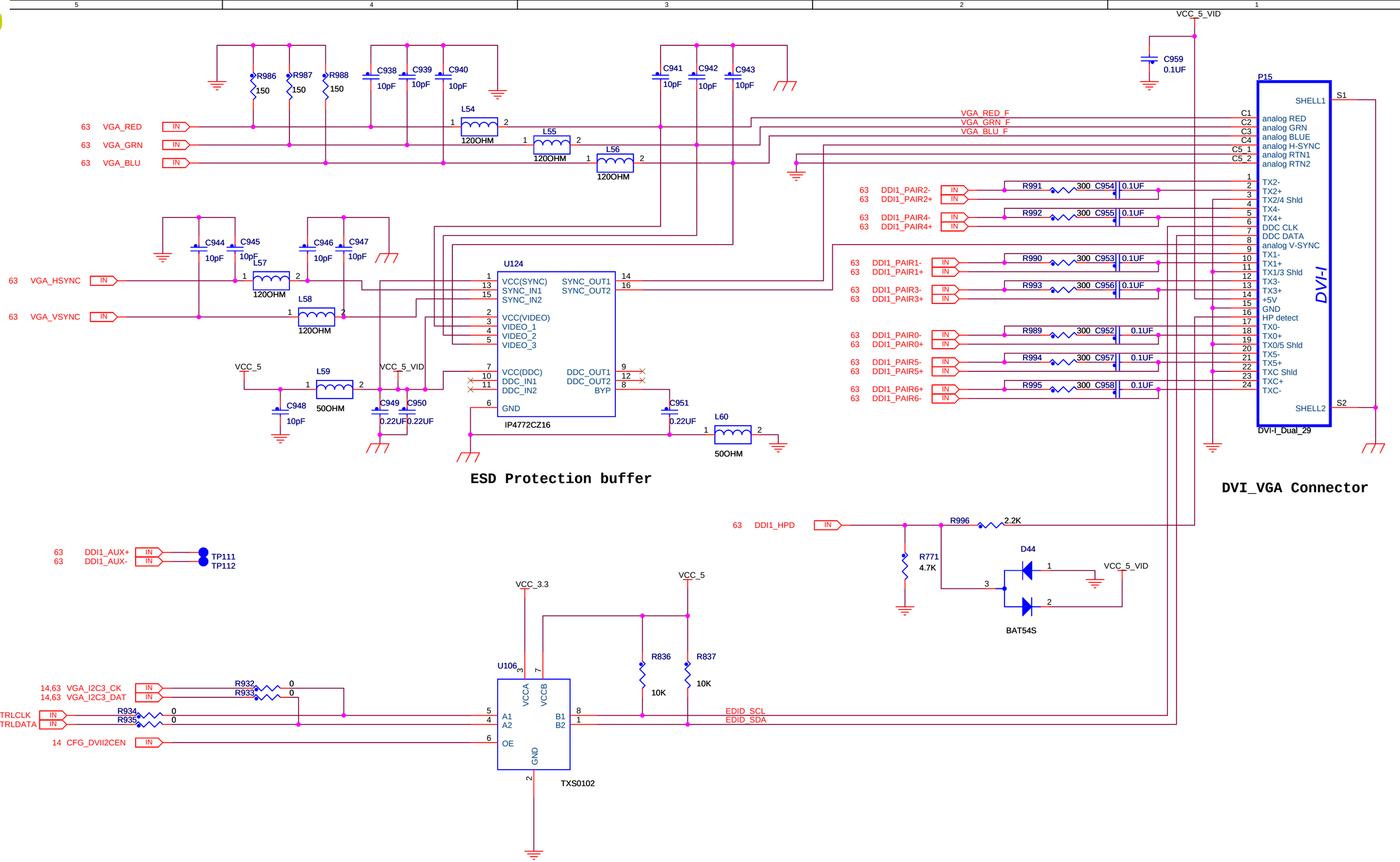
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: USB Power Switches	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 35 of 63 / Rev B

IEM Module



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: IXXAT_MODULE	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 36 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Blank Page	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 37 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

LCD CONNECTOR A

FAN Header

VCC_3.3 VCC_5 J47 HDR 2X2

Q29A Si9933BDY

R838 10K

C851 10UF C852 100uF

VCC_PANEL_LCD_A

18,39,62 LVDS_VDD_EN IN R839 10K LVDS_EN_A 1 Q18 MMBT3904

C937 0.1UF C936 22UF C935 0.1UF

U122 LM96163

TCRIT SMBCLK SMBDAT VDD TACH D+ D- ALERT PWM PAD GND

R887 0 I2C2_CLK R888 0 I2C2_DAT R965 13.3K R889 10.0K R964 1.3K R891 1K

Q31 MMBT3904 TP205

10 FAN_ALERT_B OUT

Connect to Reset PLD

VCC_12 R890 1K VCC_12 HDR_1X4 J101 CPU FAN

J99 HDR 1X2 WLOCK CHASSIS FAN1

J98 HDR 1X2 WLOCK CHASSIS FAN2

62 LVDS_A0- IN
62 LVDS_A0+ IN
62 LVDS_A1- IN
62 LVDS_A1+ IN
62 LVDS_A2- IN
62 LVDS_A2+ IN
62 LVDS_A_CK+ IN
62 LVDS_A_CK- IN
62 LVDS_A3- IN
62 LVDS_A3+ IN

J48 CON_20

R840 1K R841 1K

LCD_MODE_2_A LCD_REV_2_A

R842 1K DNP R843 1K DNP

VCC_3.3

11,13,39,62 LVDS_BKLT_CTRL IN

R844 DNP 0

VCC_5 U107 MAX5362

14,39,56,58,62 I2C2_DAT IN
14,39,56,58,62 I2C2_CLK IN

SDA SCL VDD GND OUT

Analog voltage for brightness control

VCC_5 Q19 FDV301N DNP

BACKBOOST_LCD_A

IRF7821PBF Q20 DNP

VCC_12 R846 0

R847 3.3K BLTEN3_A 1 MMBT2907A Q21

R848 2.2K

BLTEN2_A R851 0 DNP

18,39,62 LVDS_BKLT_EN IN R852 10K BLTEN1_A 1 Q22 MMBT3904

PWM(?)

VCC_BCAKLT_A

[HEAVY TRACE]

C853 10UF C854 100uF

R845 DNP 0

J49 53261-0871

LCDENA_A LCDBRITE_A LCDBLOPT_A

DNP R849 1K DNP R850 0

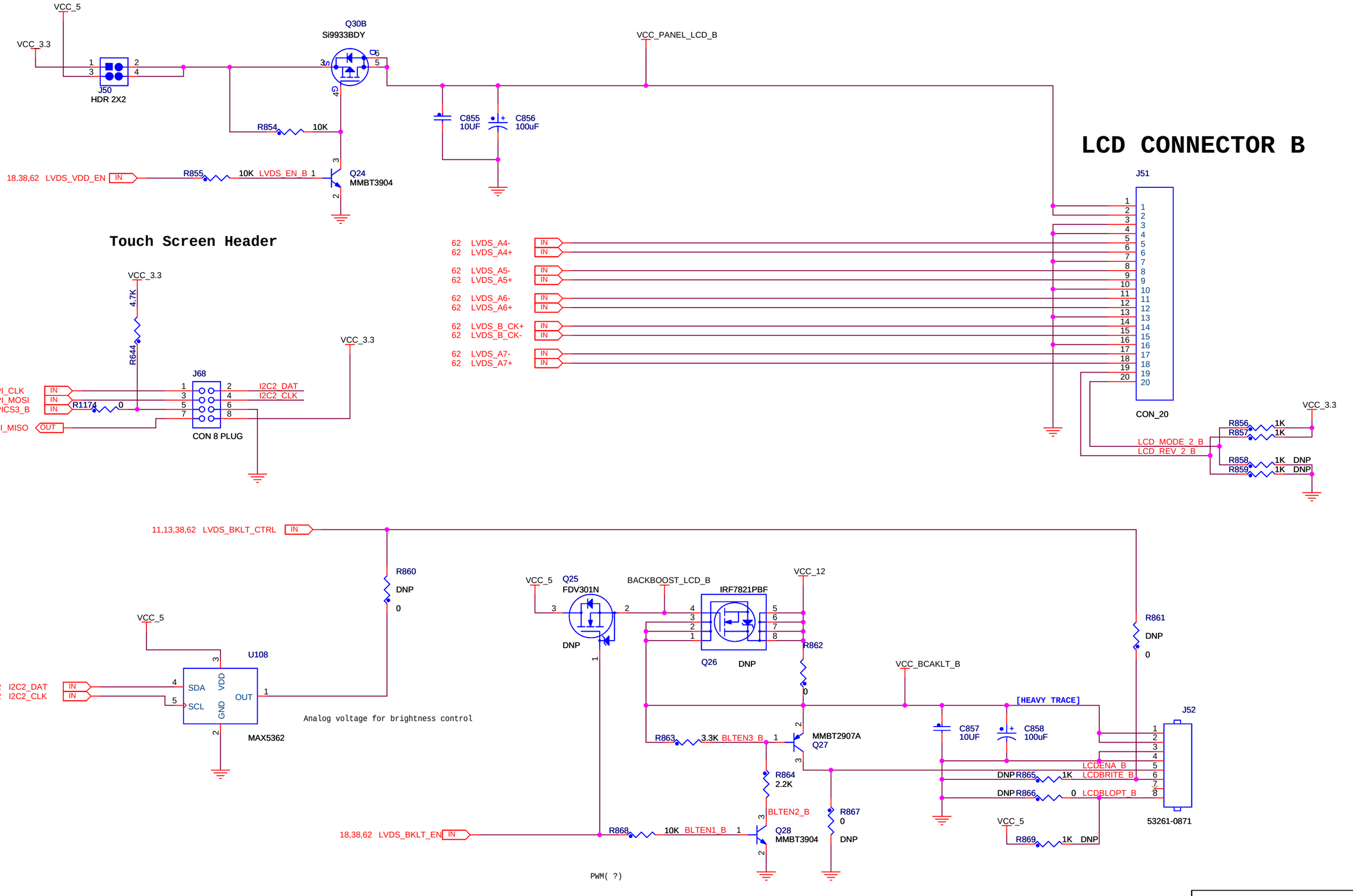
VCC_5 R853 1K DNP

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: LCD Connector_A	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 38 of 63	Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

LCD CONNECTOR B

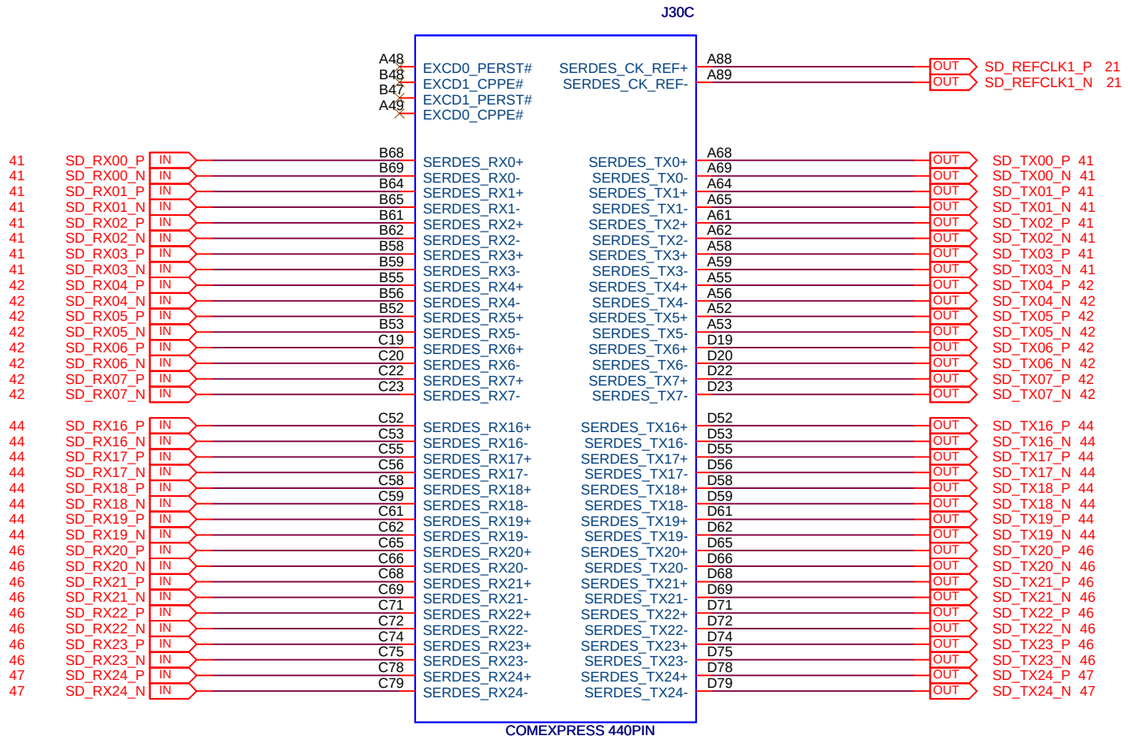
Touch Screen Header



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: LCD_ Connector_B	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 39 of 63	Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

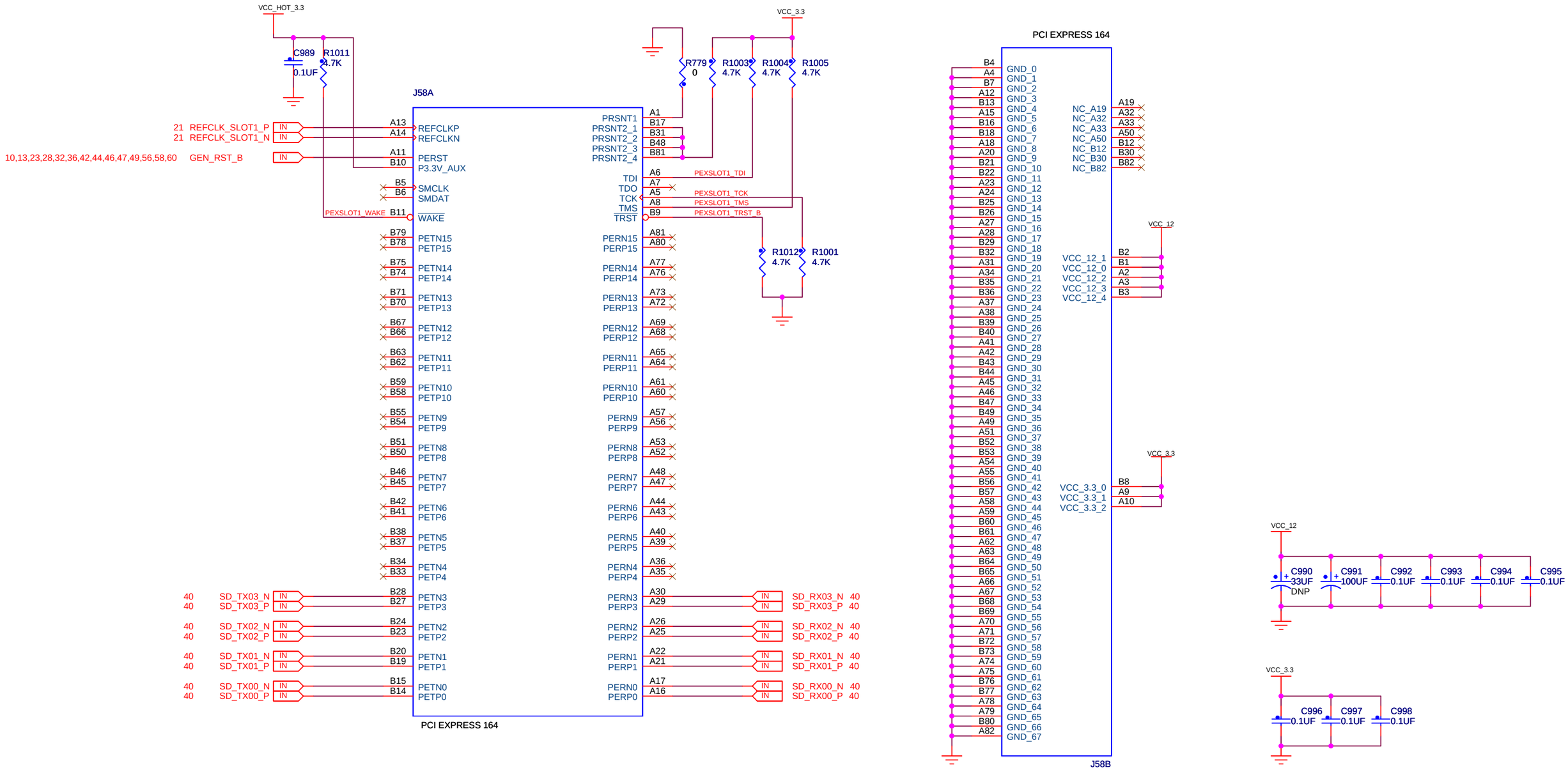
SERDES - COMe CONNECTOR



ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: **COMEXPRESS CARRIER**	Page Title: **P4080 SERDES**	Document Number: SCH-26479 PDF: SPF-26479	Size: Custom	Date: Friday, October 22, 2010	Sheet 40 of 63	Rev: B

SLOT 1 (PEX/SRIO) CONNECTOR



PCI EXPRESS 164

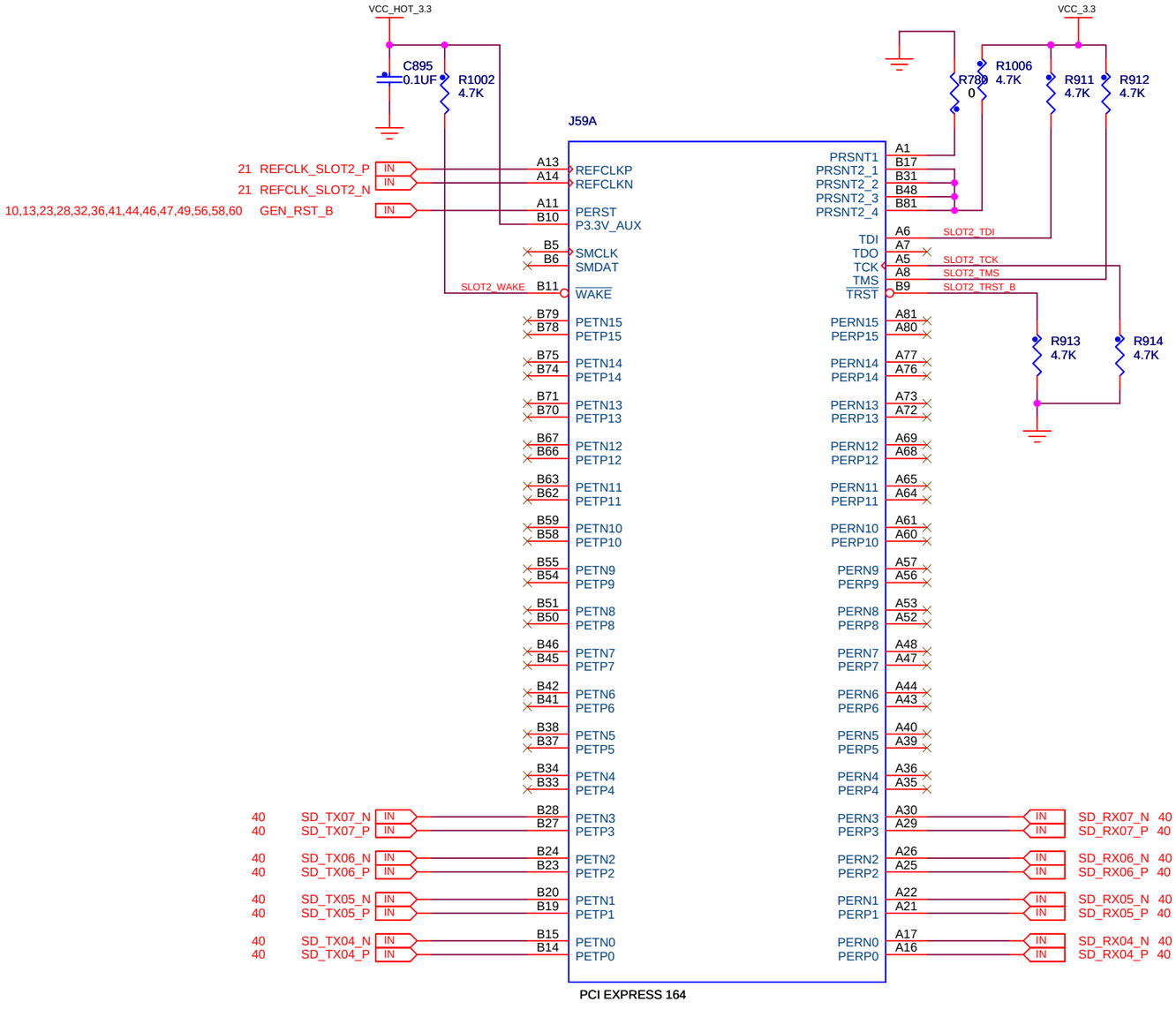
B4	GND_0		
A4	GND_1		
B7	GND_2		
A12	GND_3		
B13	GND_4	NC_A19	A19
A15	GND_5	NC_A32	A32
B16	GND_6	NC_A33	A33
B18	GND_7	NC_A50	A50
A18	GND_8	NC_B12	B12
A20	GND_9	NC_B30	B30
B21	GND_10	NC_B82	B82
B22	GND_11		
A23	GND_12		
A24	GND_13		
B25	GND_14		
B26	GND_15		
A27	GND_16		
A28	GND_17		
B29	GND_18		
B32	GND_19	VCC_12_1	B2
A31	GND_20	VCC_12_0	B1
A34	GND_21	VCC_12_2	A2
B35	GND_22	VCC_12_3	A3
B36	GND_23	VCC_12_4	B3
A37	GND_24		
A38	GND_25		
B39	GND_26		
B40	GND_27		
A41	GND_28		
A42	GND_29		
B43	GND_30		
B44	GND_31		
A45	GND_32		
A46	GND_33		
B47	GND_34		
B49	GND_35		
A49	GND_36		
A51	GND_37		
B52	GND_38		
B53	GND_39	VCC_3.3_0	B8
A54	GND_40	VCC_3.3_1	A9
A55	GND_41	VCC_3.3_2	A10
B56	GND_42		
B57	GND_43		
A58	GND_44		
A59	GND_45		
B60	GND_46		
B61	GND_47		
A62	GND_48		
A63	GND_49		
B64	GND_50		
B65	GND_51		
A66	GND_52		
A67	GND_53		
B68	GND_54		
B69	GND_55		
A70	GND_56		
A71	GND_57		
B72	GND_58		
B73	GND_59		
A74	GND_60		
A75	GND_61		
B76	GND_62		
B77	GND_63		
A78	GND_64		
A79	GND_65		
B80	GND_66		
A82	GND_67		

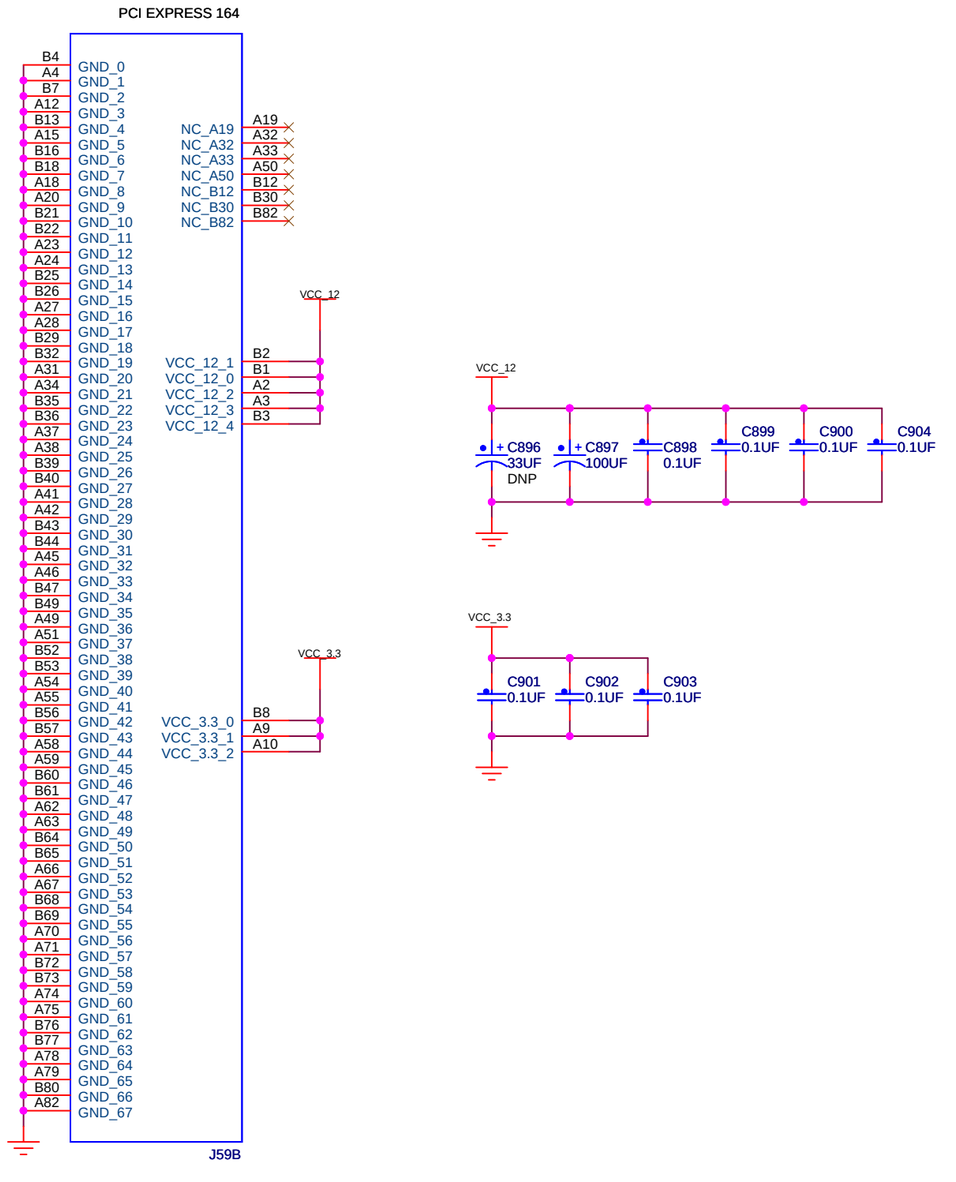
J58B

ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PEX x2 Slot #1	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 41 of 63 / Rev B

SLOT 2 (PEX/SRIO/SGMII) MAIN (PART 1 OF 2) CONNECTOR

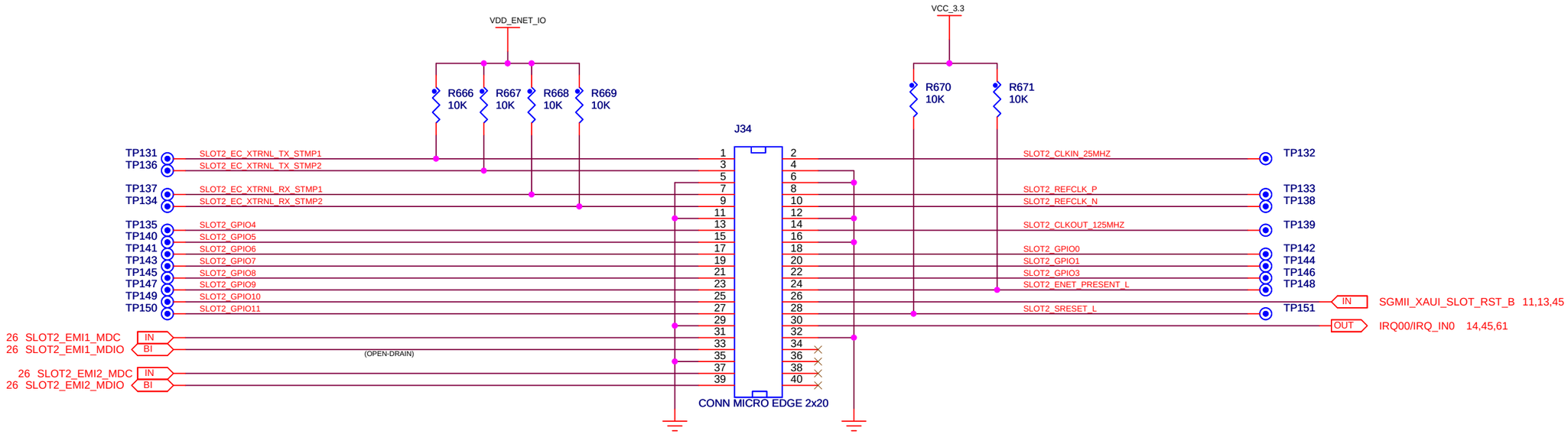




freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PEX/SGMII x4 Slot #2	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 42 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

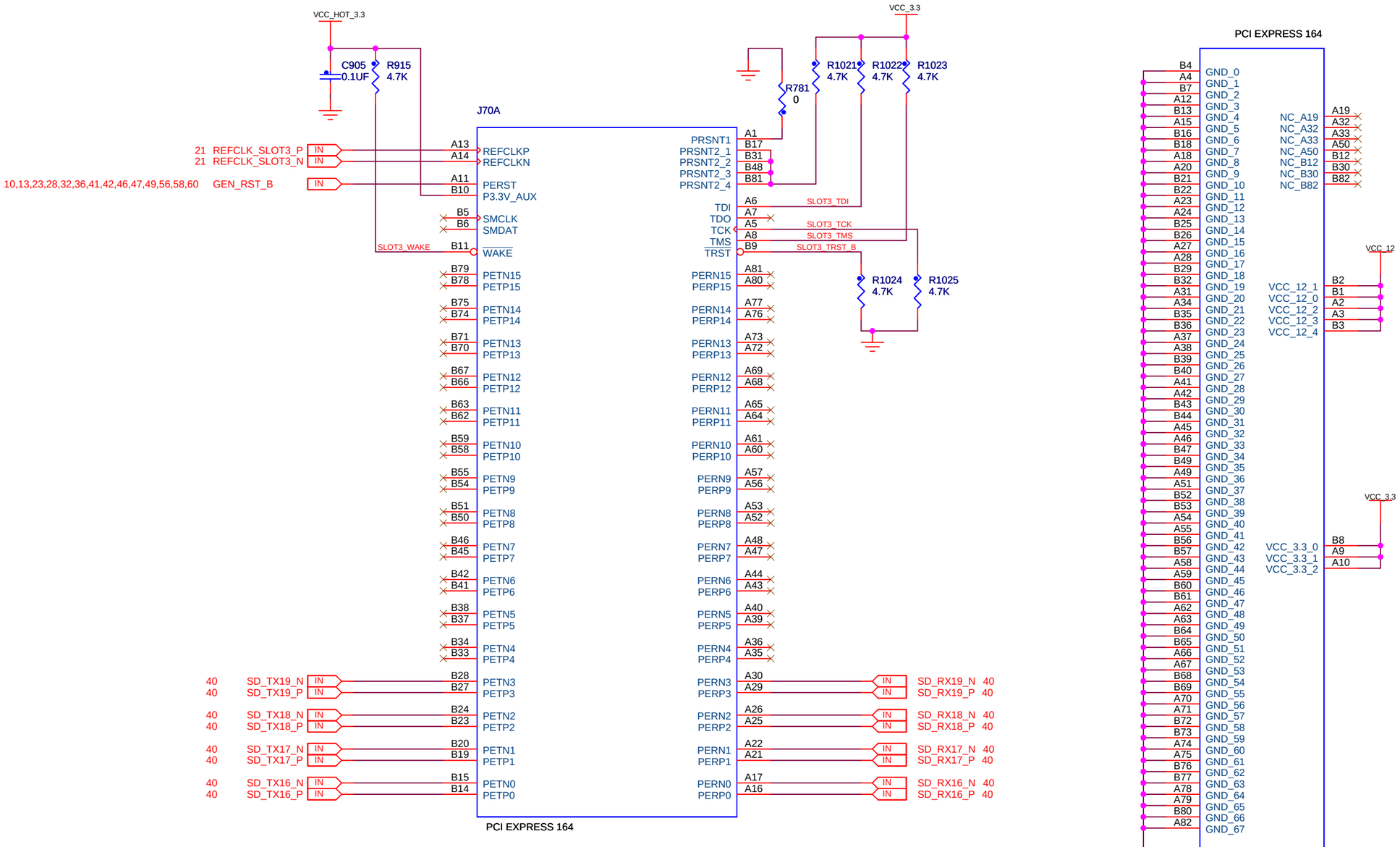
SLOT 2 (PEX/SGMII) SIDEBAND (PART 2 OF 2) CONNECTOR



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Slot #3 Sideband Connector	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 43 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

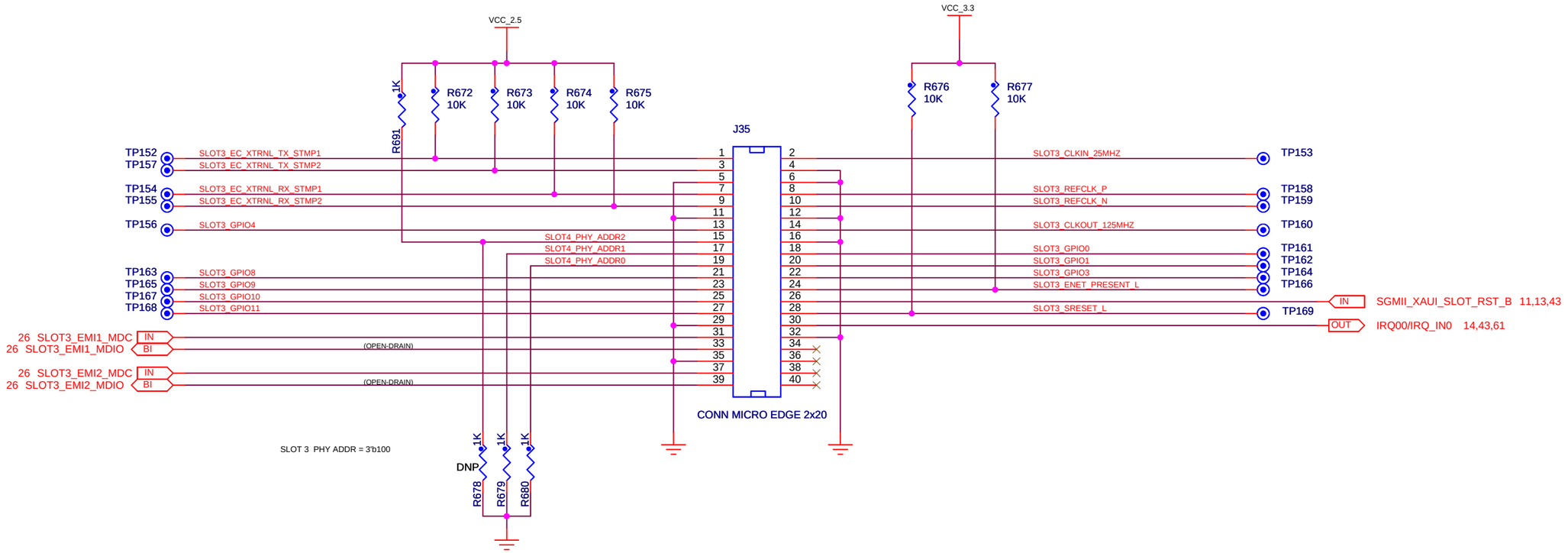
SLOT 3 (XAUI/SGMII) MAIN (PART 1 OF 2) CONNECTOR



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PEX/XAUI x4 Slot #4	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 44 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

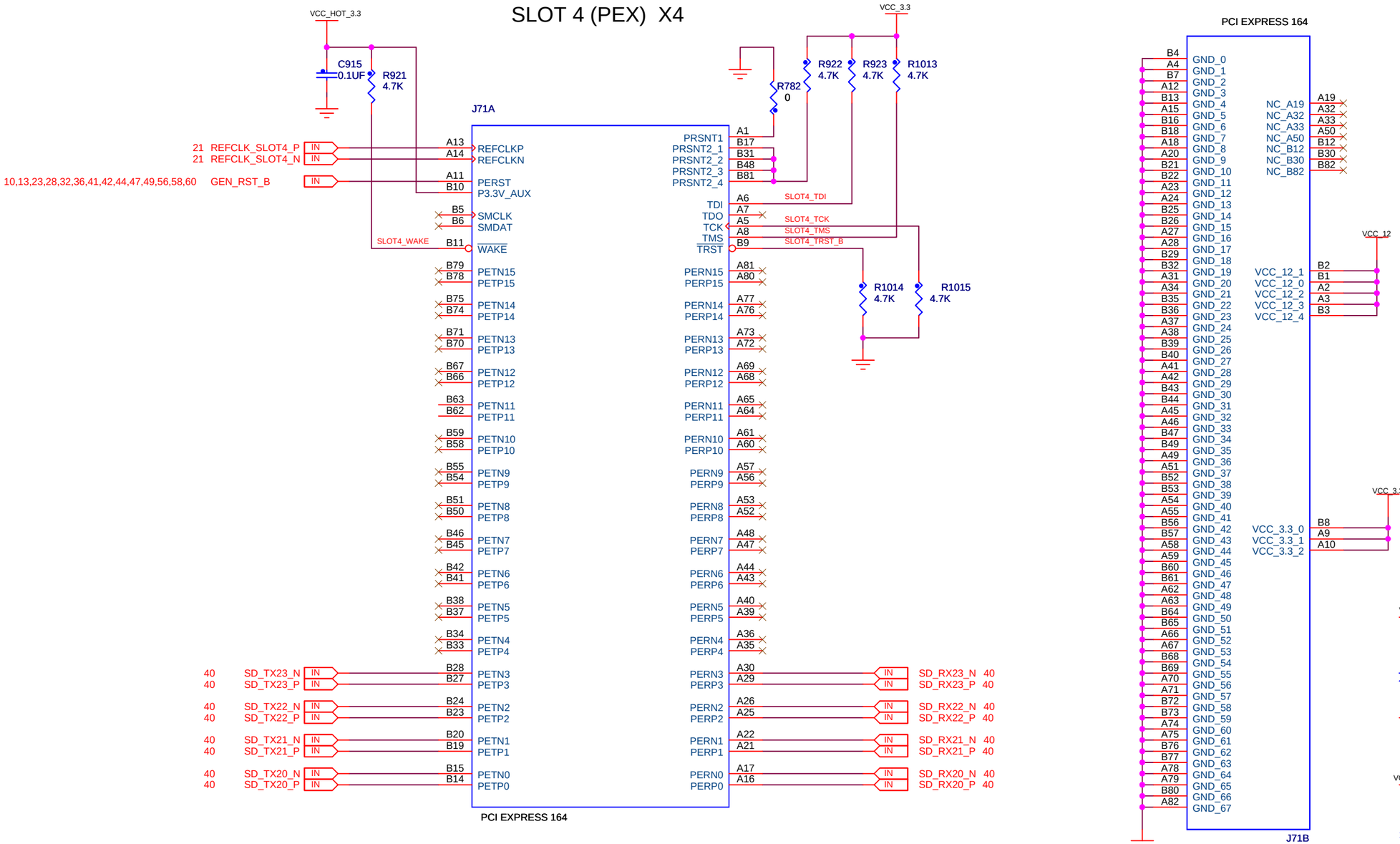
SLOT 3 (XAUI/SGMII/SRIO) SIDEBAND (PART 2 OF 2) CONNECTOR



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Slot #4 Sideband Connector	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 45 of 63	Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

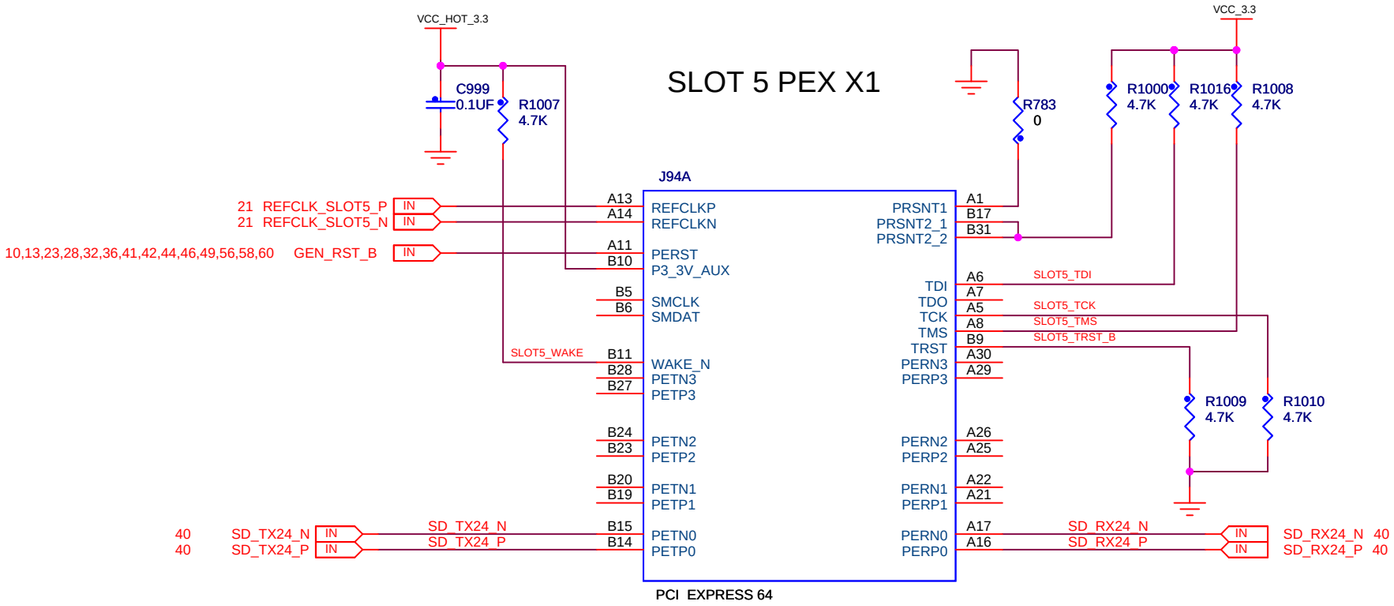
SLOT 4 (PEX) X4

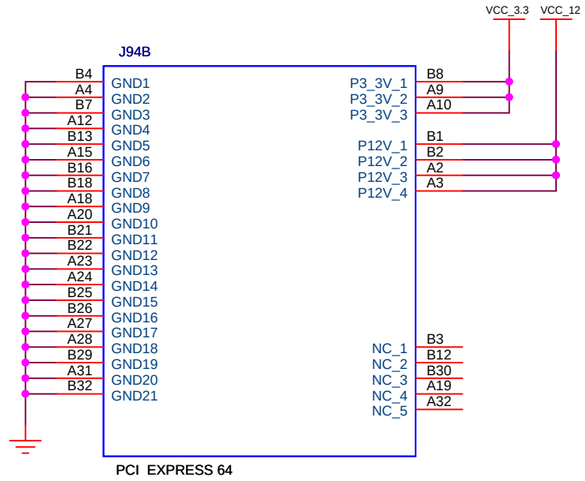


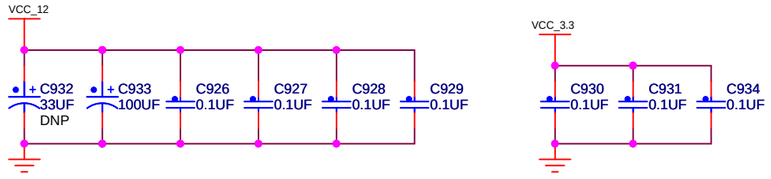
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PEX/XAUI x4 Slot #5	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 46 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

SLOT 5 PEX X1



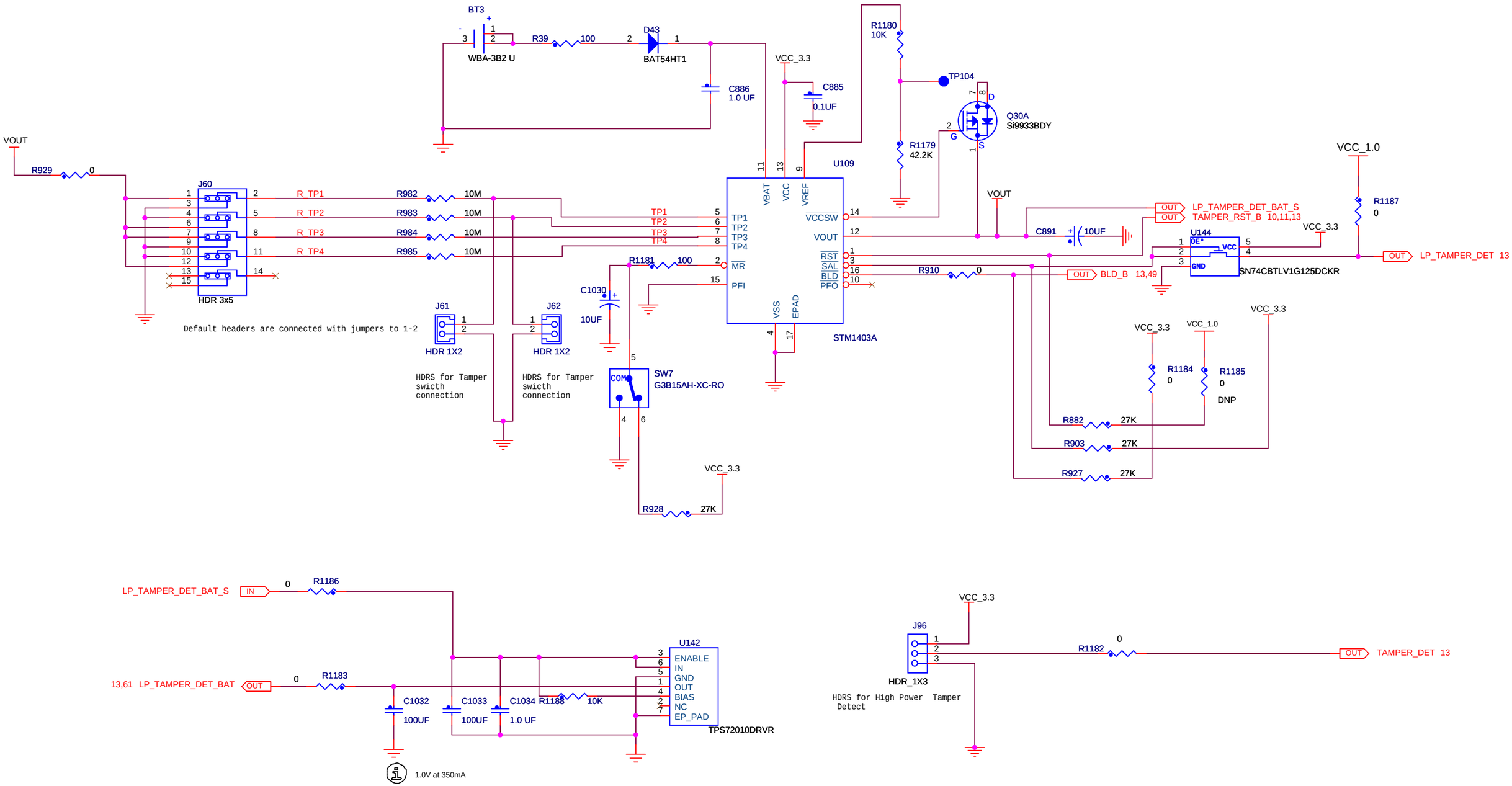




freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PEX/XAUI x4 Slot #5	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 47 of 63	Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

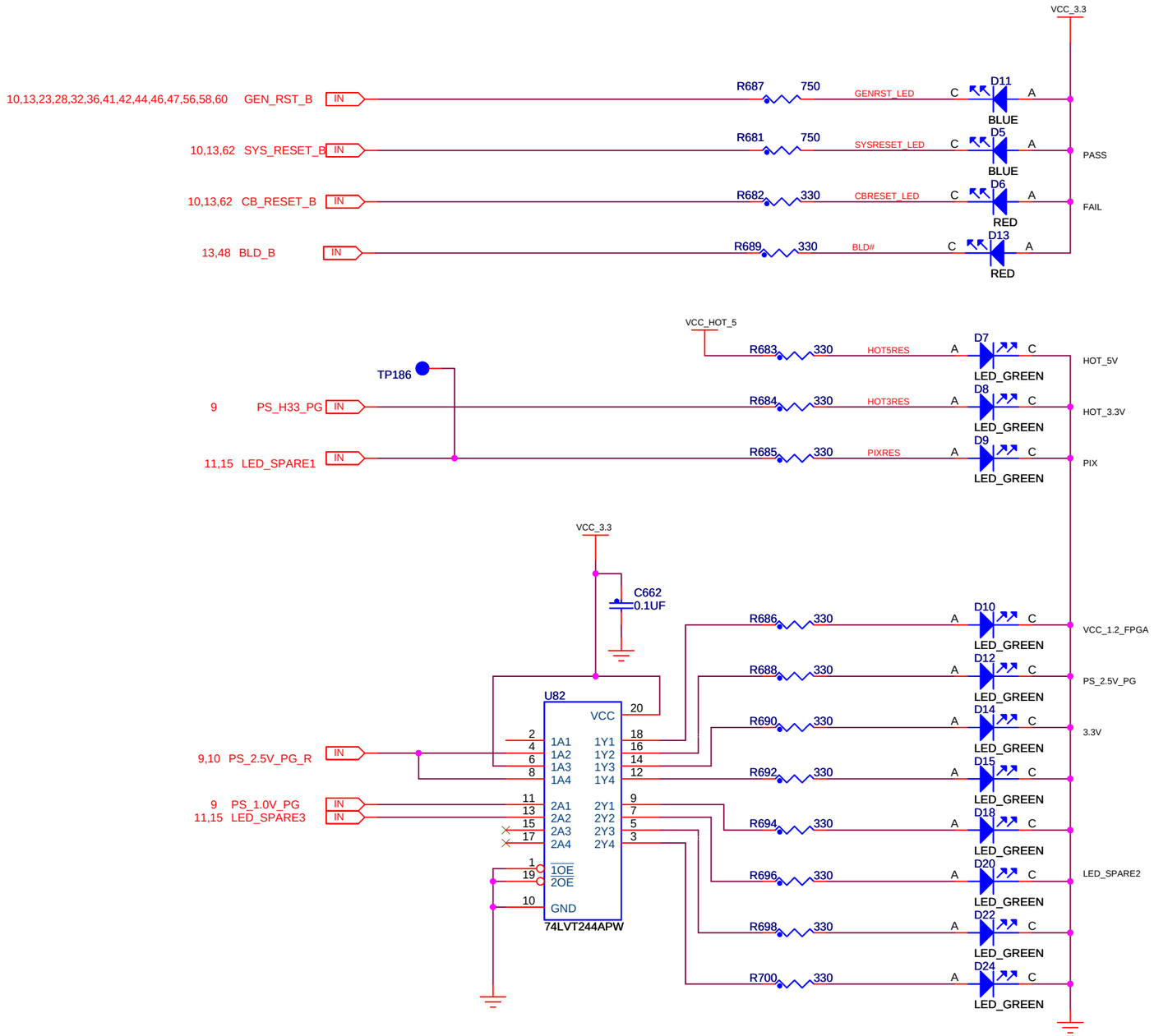
TAMPER DETECT INTERFACE



freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: Blank Page	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 48 of 63 / Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

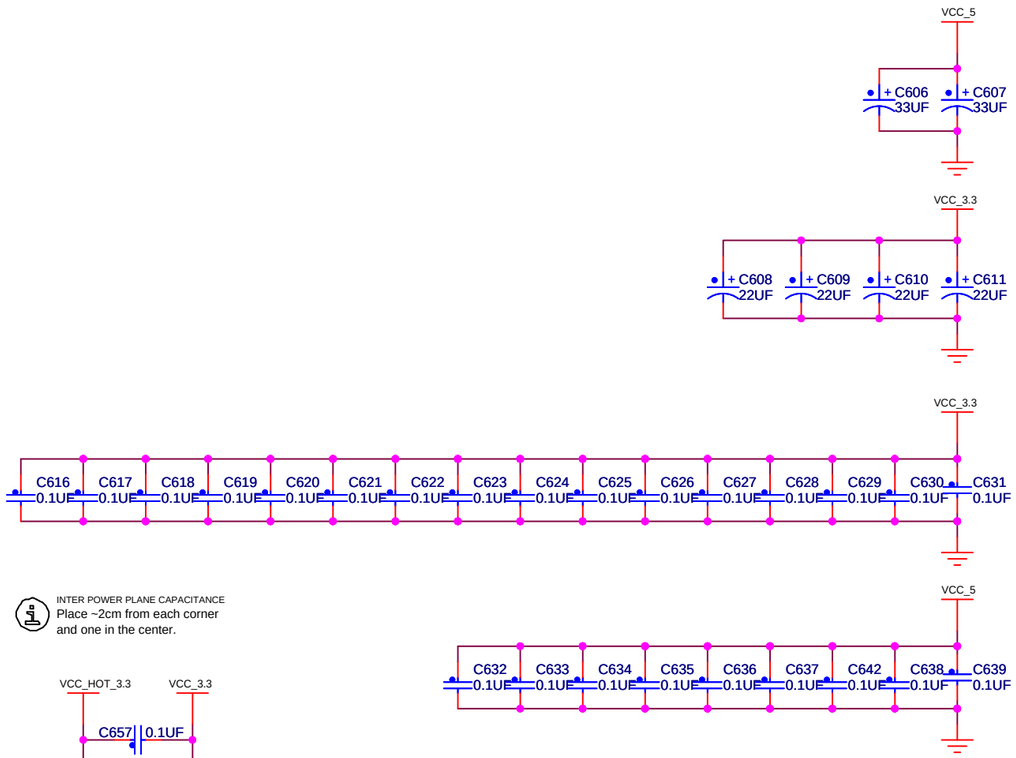
DEBUG LED INDICATION

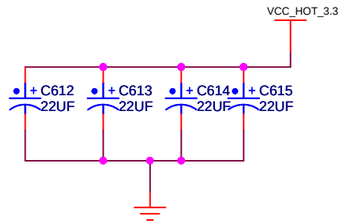


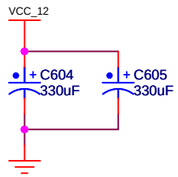
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: LEDs / Debug	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 49 of 63	Rev B

ICAP Classification: FCP:___ FIUO: X PUBI:___

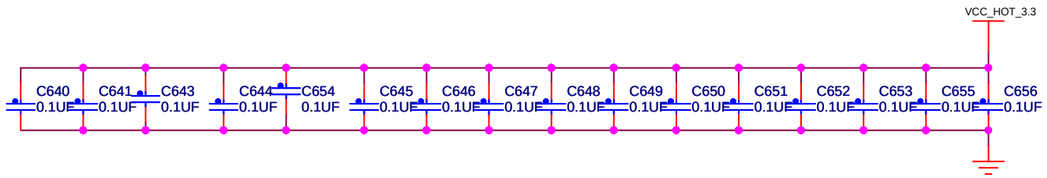
DECOUPLING CAPACITORS





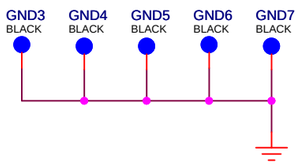


GLOBAL HF CAPACITANCE
Place in a grid ~5cm everywhere.

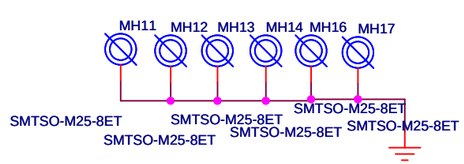


ATX Chassis: 11standoffs holes.

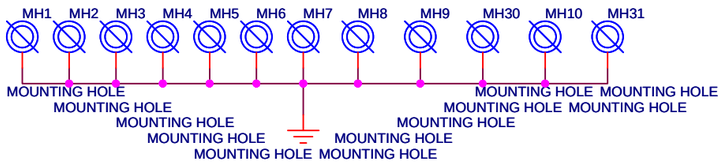
GROUND TEST POINTS
Place in each corner and center



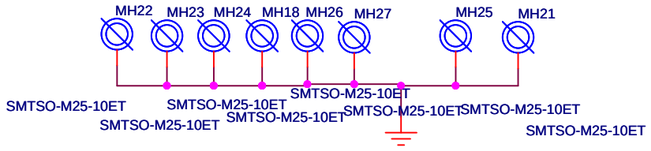
11 STANDOFFS MOUNTING HOLES FOR COMe MODULES



CHASSIS MOUNTING HOLES
ATX Chassis: 10 holes.



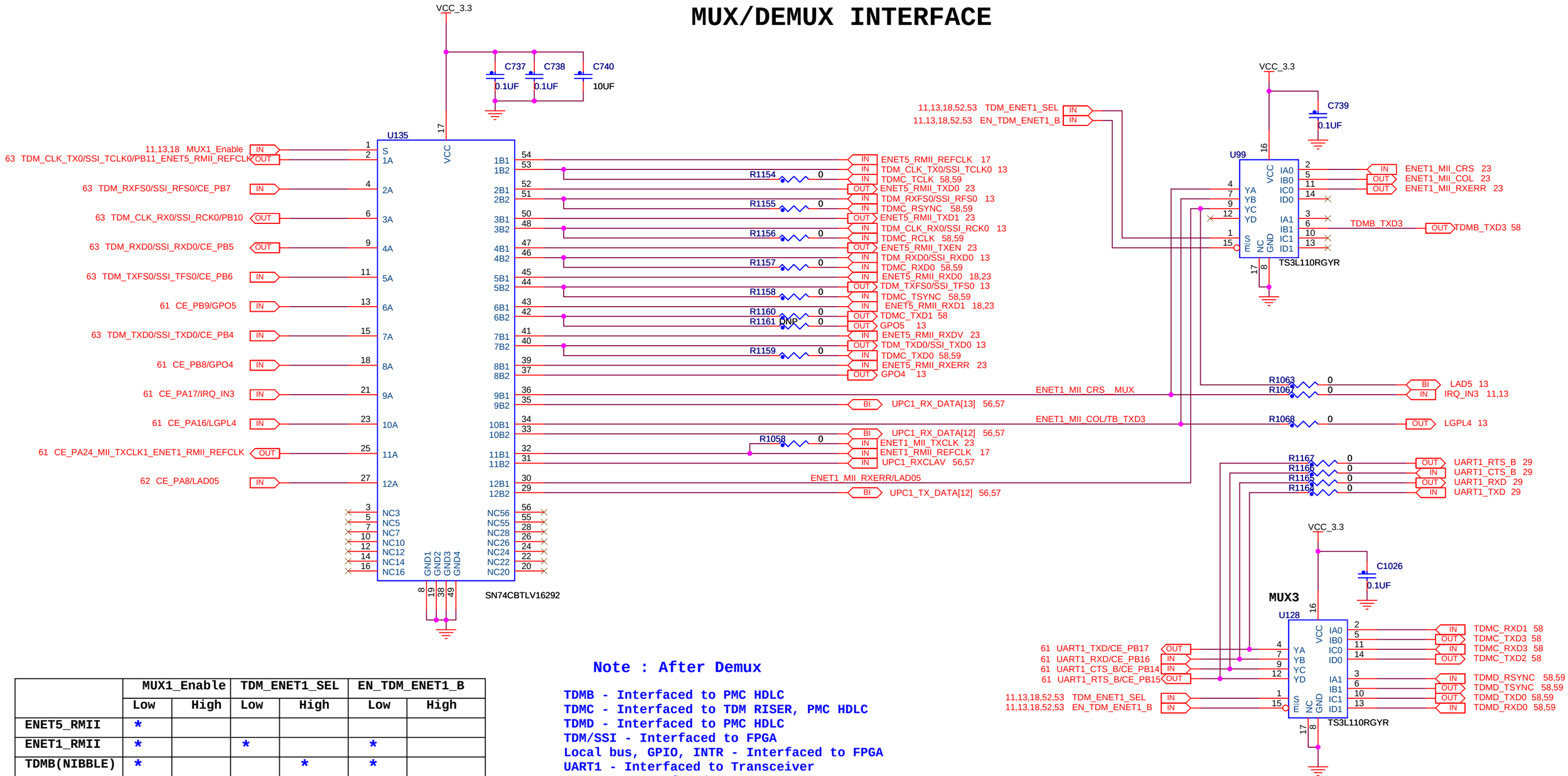
8 STANDOFFS MOUNTING HOLES FOR PMC CARDS 0 & 1



ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: **COMEXPRESS CARRIER**	Page Title: **Global Bypass Caps / Mech.**	Document Number: SCH-26479 PDF: SPF-26479	Size: Custom	Date: Friday, October 22, 2010	Sheet 50 of 63 / Rev B

MUX/DEMUX INTERFACE



	MUX1_Enable		TDM_ENET1_SEL		EN_TDM_ENET1_B	
	Low	High	Low	High	Low	High
ENET5_RMII	*					
ENET1_RMII	*		*		*	
TDMB(NIBBLE)	*			*	*	
TDMC(Nibble)		*	*		*	
TDMD(Serial)				*	*	
UTOPIA		*				
GPIO		*				
LBC	*					
INTR	*					

Note : After Demux

TDMB - Interfaced to PMC HDLC
TDMC - Interfaced to TDM RISER, PMC HDLC
TDMD - Interfaced to PMC HDLC
TDM/SSI - Interfaced to FPGA
Local bus, GPIO, INTR - Interfaced to FPGA
UART1 - Interfaced to Transceiver
UTOPIA - Interfaced to PMC connector
Ethernet1, 5 - Interfaced to PHY

After Mux

All Signals - Interfaced to COMe connector

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: MUX/DEMUX PART 1	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010

ICAP Classification: FCP:___ FIUO: X PUBI:___

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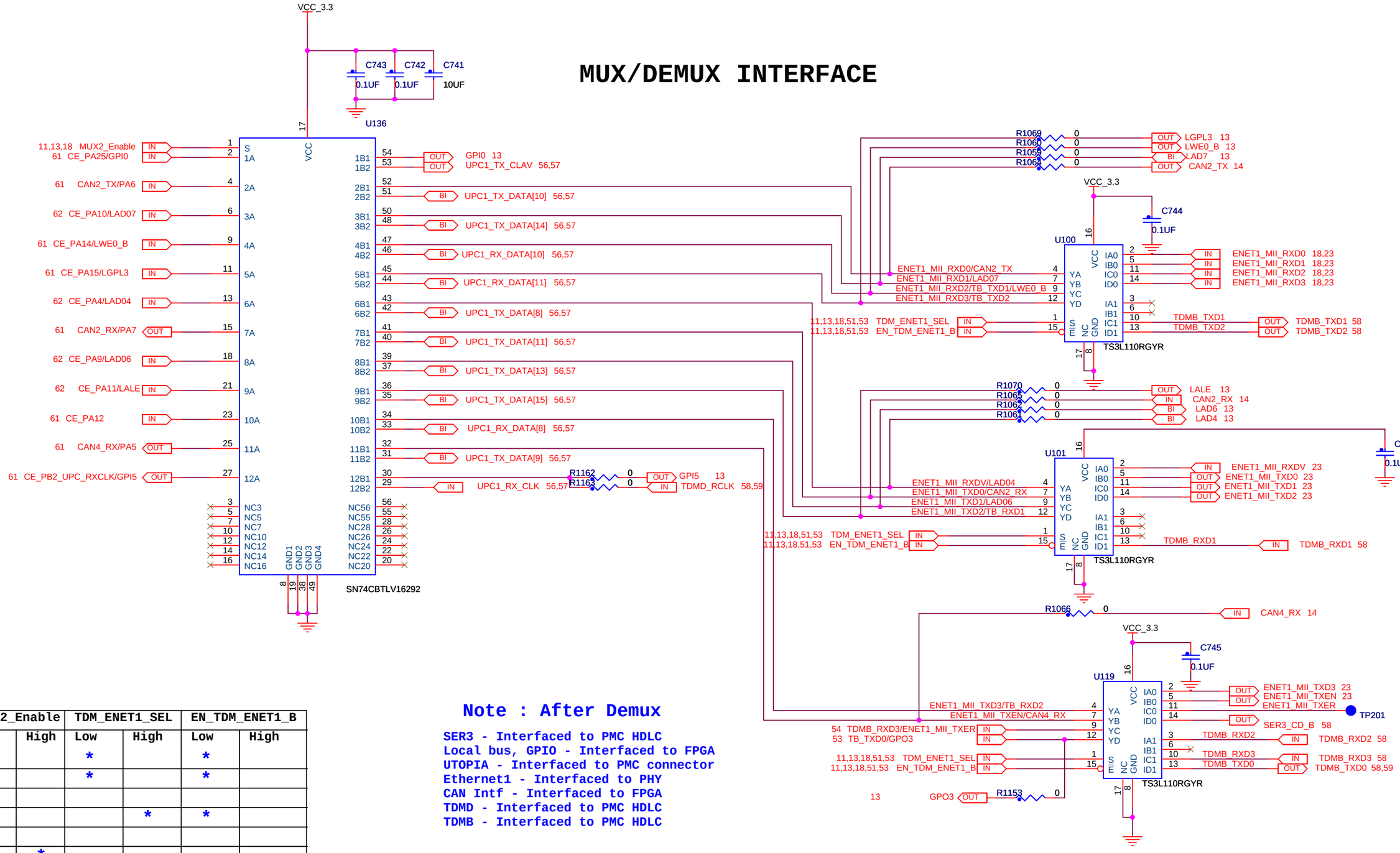
MUX/DEMUX INTERFACE



	MUX2_Enable		TDM_ENET1_SEL		EN_TDM_ENET1_B	
	Low	High	Low	High	Low	High
SER3	*		*		*	
ENET1_RMII	*		*		*	
CAN INTF	*					
TDMB(NIBBLE)	*			*	*	
TDMD(Serial)	*					
UTOPIA		*				
GPIO/INTR	*					
LBC	*					

Note : After Demux

SER3 - Interfaced to PMC HDLC
Local bus, GPIO - Interfaced to FPGA
UTOPIA - Interfaced to PMC connector
Ethernet1 - Interfaced to PHY
CAN Intf - Interfaced to FPGA
TDMD - Interfaced to PMC HDLC
TDMB - Interfaced to PMC HDLC

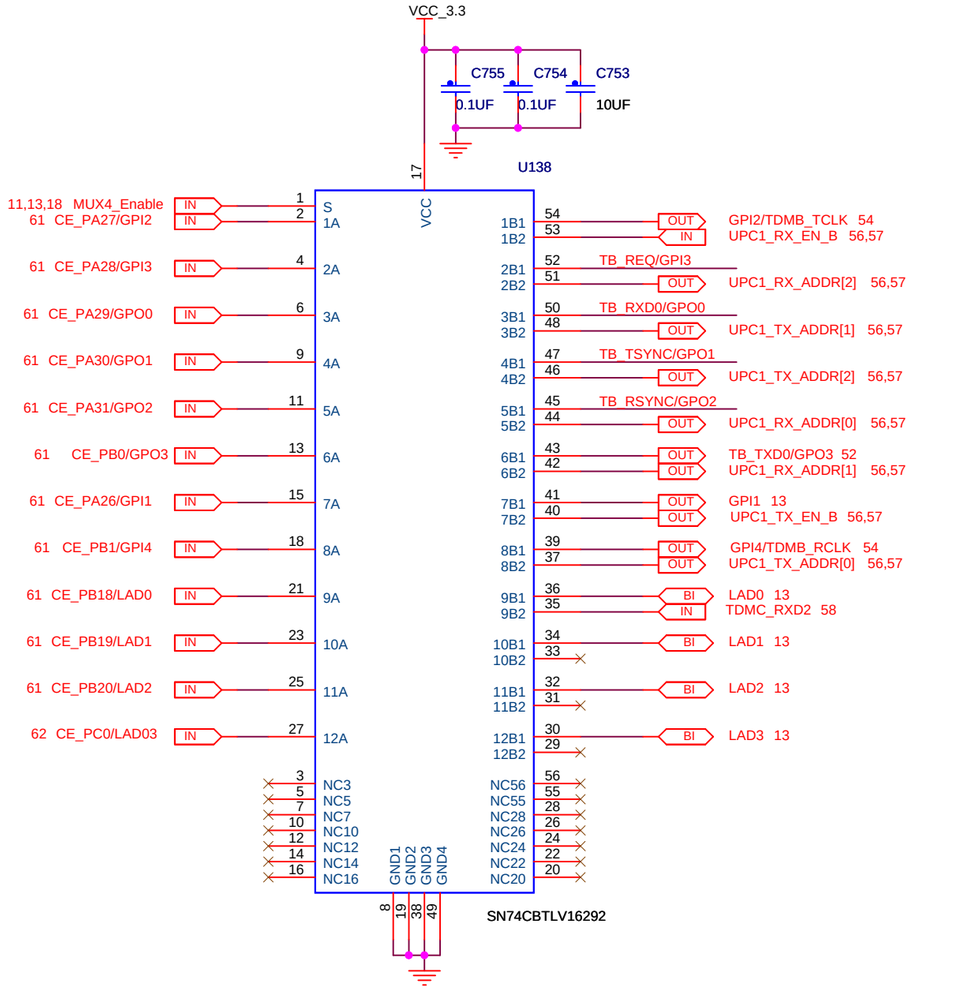
After Mux

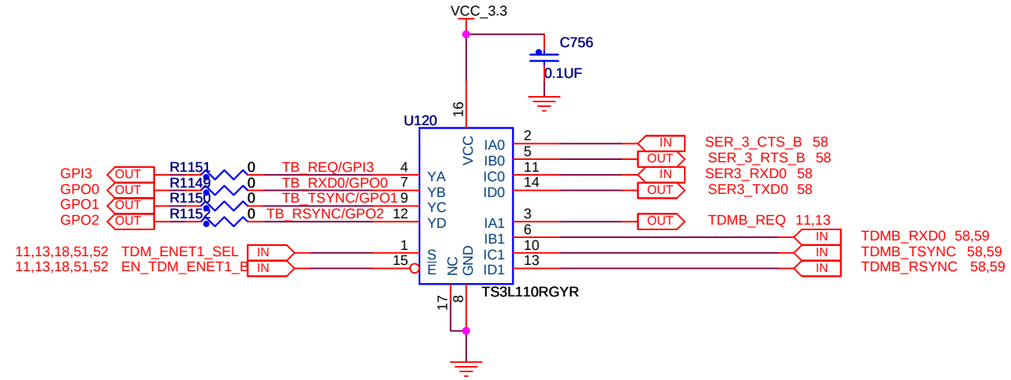
All Signals - Interfaced to COMe connector

ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: MUX/DEMUX PART 2	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 52 of 63 / Rev B

MUX/DEMUX INTERFACE





Note : After Demux

SER3 - Interfaced to PMC HDLC
Local bus, GPIO - Interfaced to FPGA
UTOPIA - Interfaced to PMC connector
TDMB - Interfaced to PMC HDLC
TDMC - Interfaced to PMC HDLC

After Mux

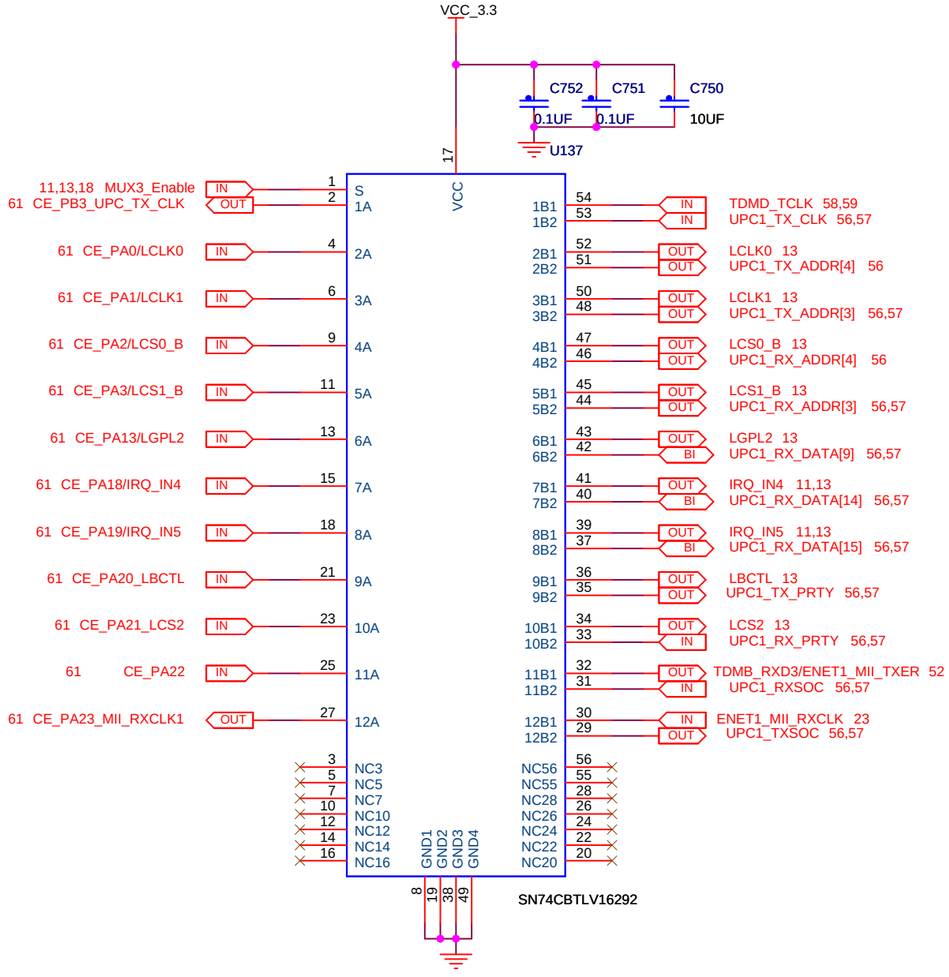
All Signals - Interfaced to COMe connector

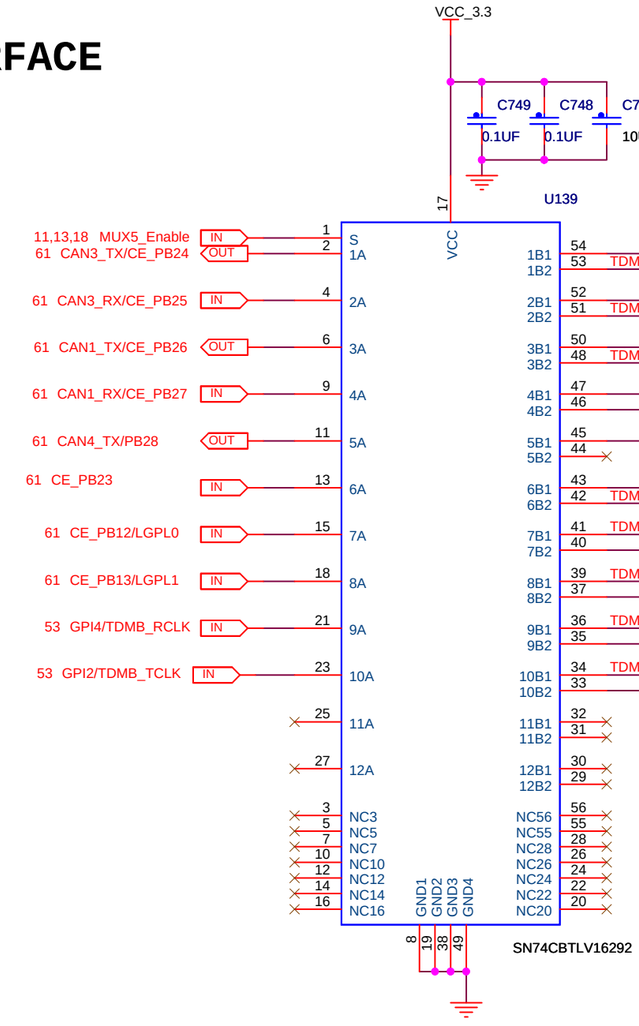
	MUX3_Enable		TDM_ENET1_SEL		EN_TDM_ENET1_B	
	Low	High	Low	High	Low	High
SER3	*		*		*	
TDMB(NIBBLE)	*			*	*	
UTOPIA		*				
GPIO/INTR	*			*	*	
LBC	*					
TDMC		*				

ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: MUX/DEMUX PART 3	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 53 of 63 / Rev B

MUX/DEMUX INTERFACE





	MUX4_Enable		MUX5_Enable	
	Low	High	Low	High
TDMA				*
ENET1_RMII	*			
CAN INTF			*	
TDMB(NIBBLE)			*	
TDMD(Serial)	*			
UTOPIA		*		
GPIO/INTR	*			*
LBC	*			*

Note : After Demux

TDMA - Interfaced to PMC HDLC
Local bus, GPIO - Interfaced to FPGA
UTOPIA - Interfaced to PMC connector
Ethernet1 - Interfaced to PHY
CAN Intf - Interfaced to FPGA
TDMD - Interfaced to PMC HDLC
TDMB - Interfaced to PMC HDLC

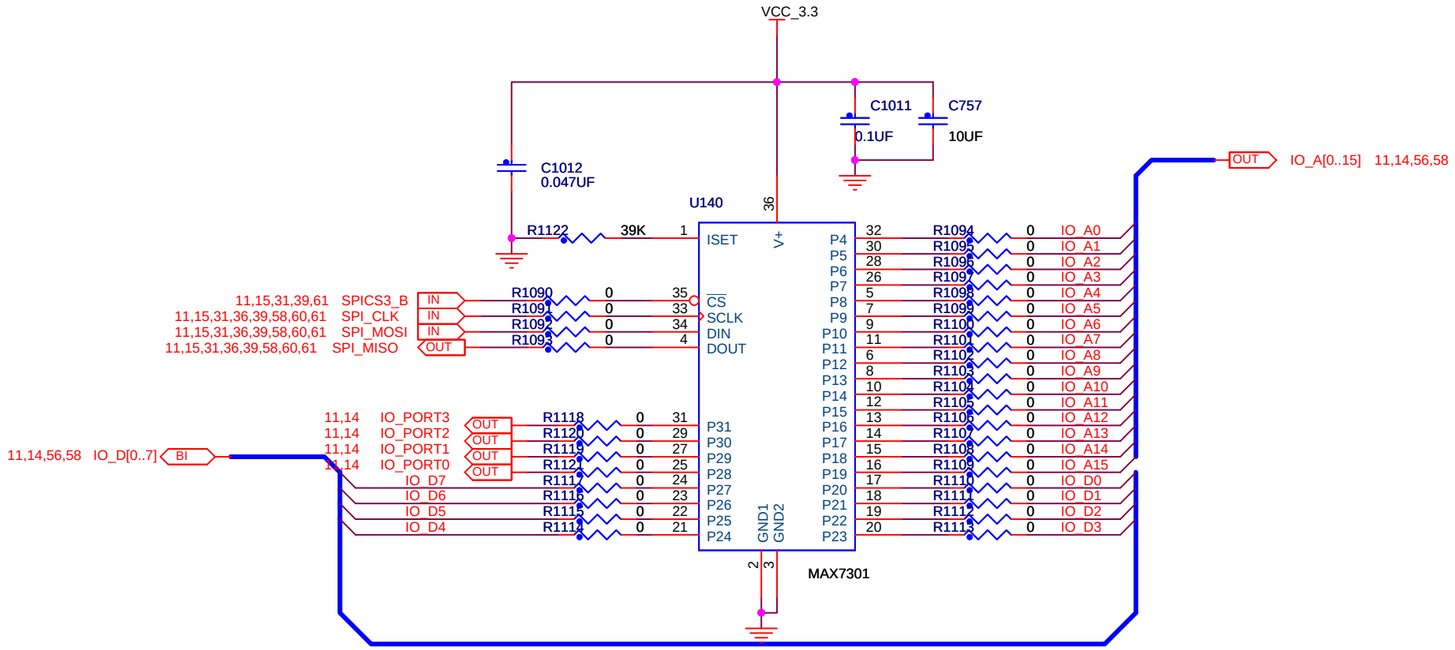
After Mux

All Signals - Interfaced to COMe connector

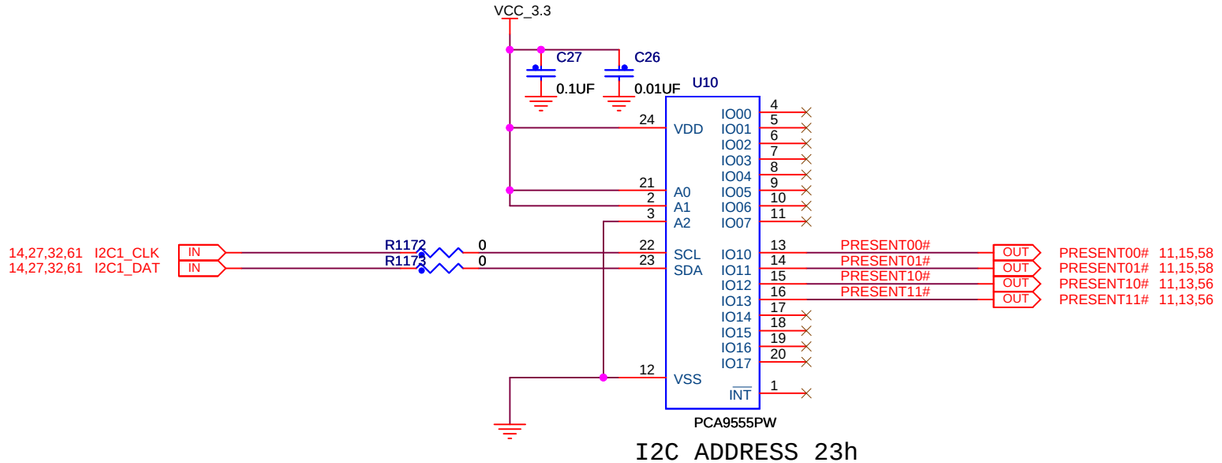
ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: MUX/DEMUX PART 4	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 54 of 63 / Rev B

IO EXPANDER



PMC0&1 PRESENCE DETECTION



I2C ADDRESS 23h

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: IO_ EXPANDER	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 55 of 63	Rev B

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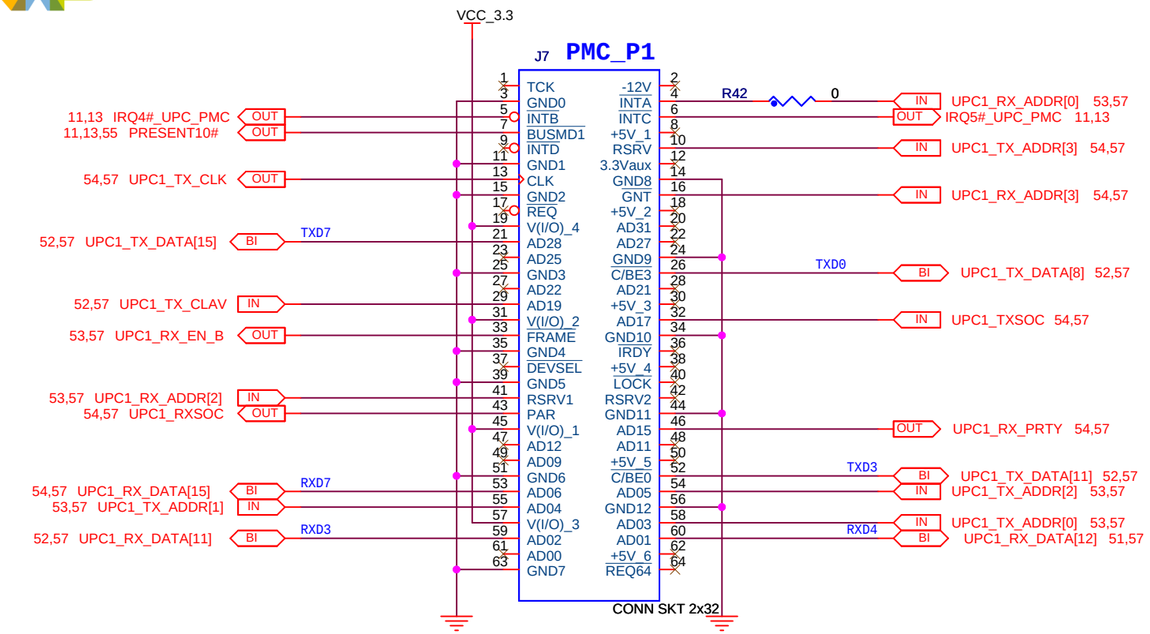
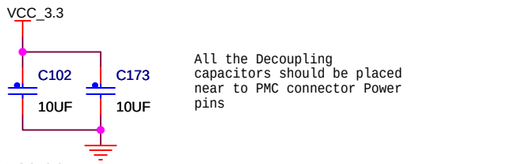
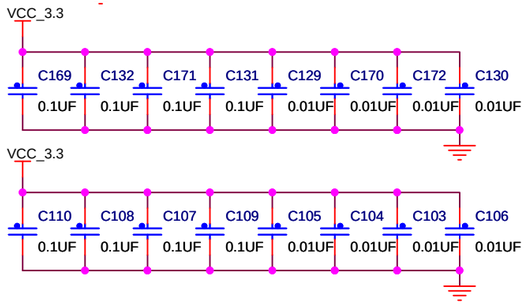


ICAP Classification: FCP:___ FIUO: X PUBI:___

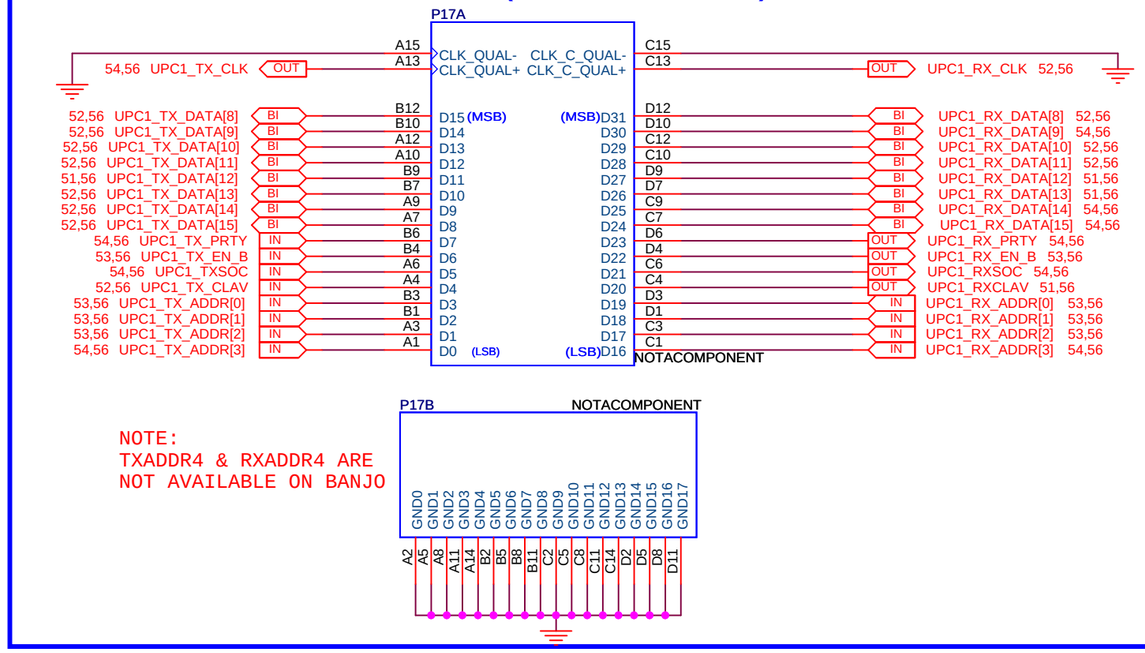
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PMC_CONNECTOR_UTOPIA1	Document Number SCH-26479 PDF: SPF-26479	Size Custom	Date: Friday, October 22, 2010	Sheet 56 of 63	Rev B



All the Decoupling capacitors should be placed near to PMC connector Power pins



VISIBILITY (BANJO CONNECTORS)

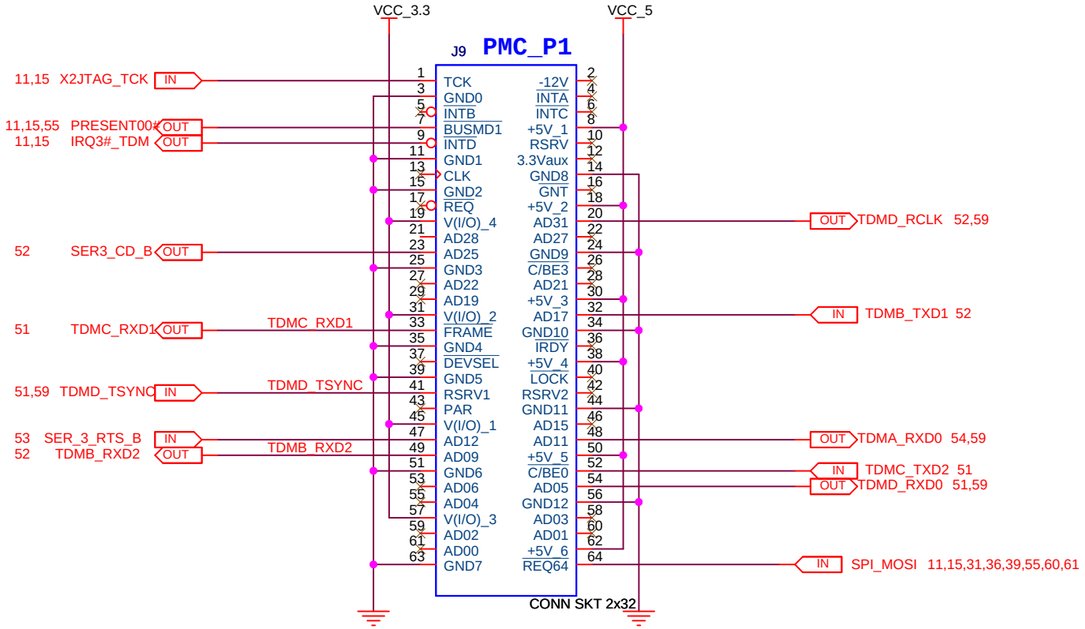


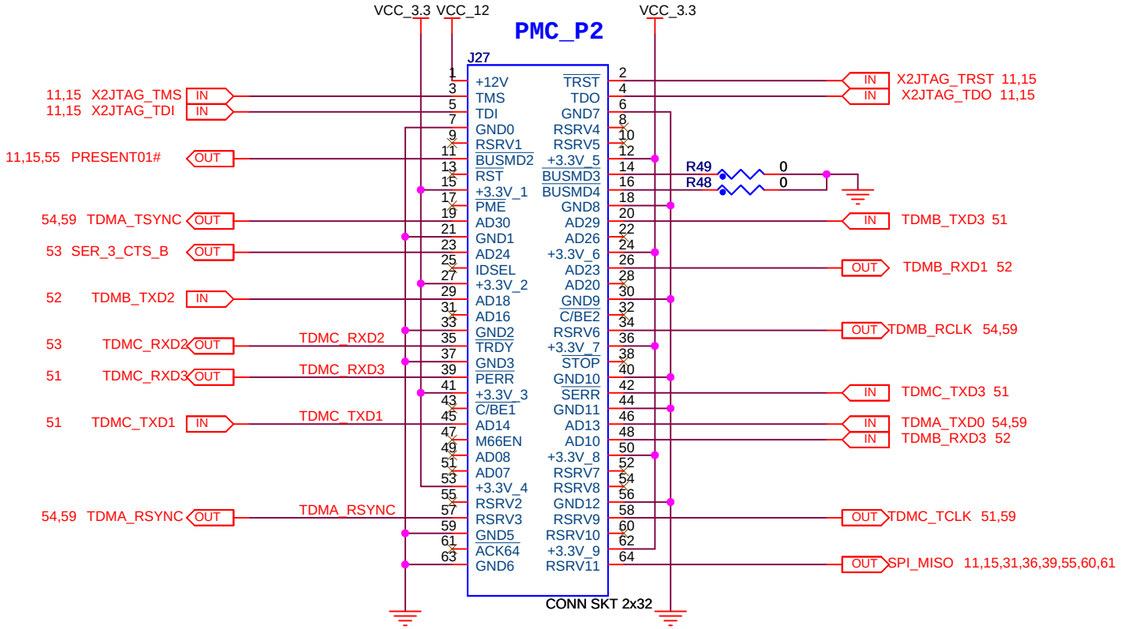
NOTE:
TXADDR4 & RXADDR4 ARE
NOT AVAILABLE ON BANJO

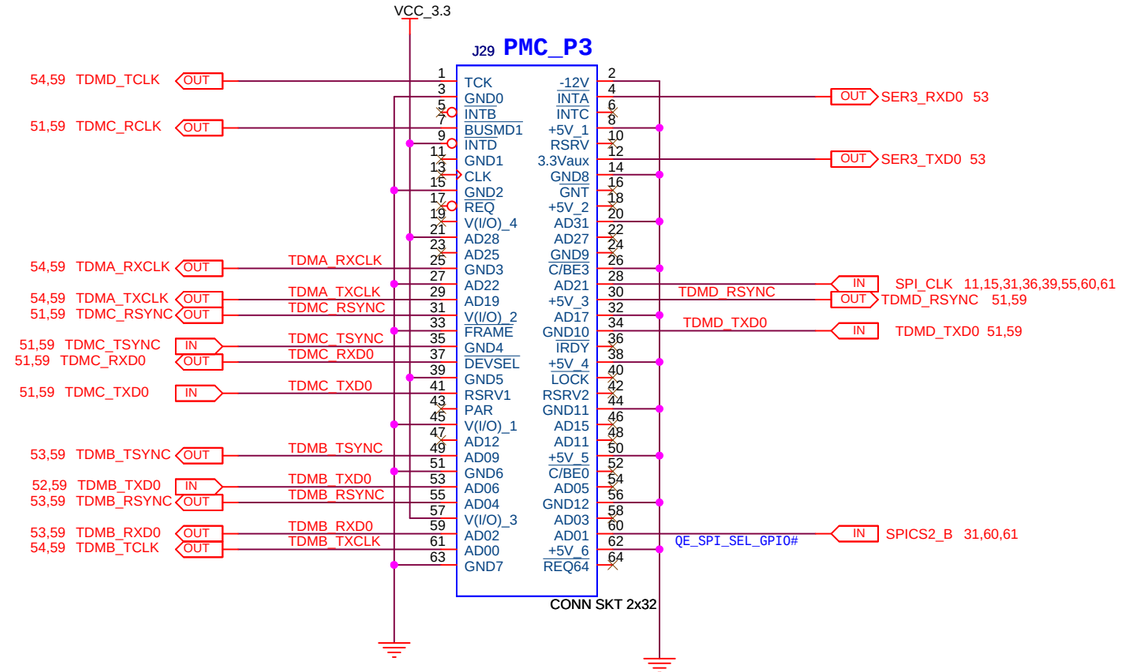
UPC1 CONNECTED TO PMC1

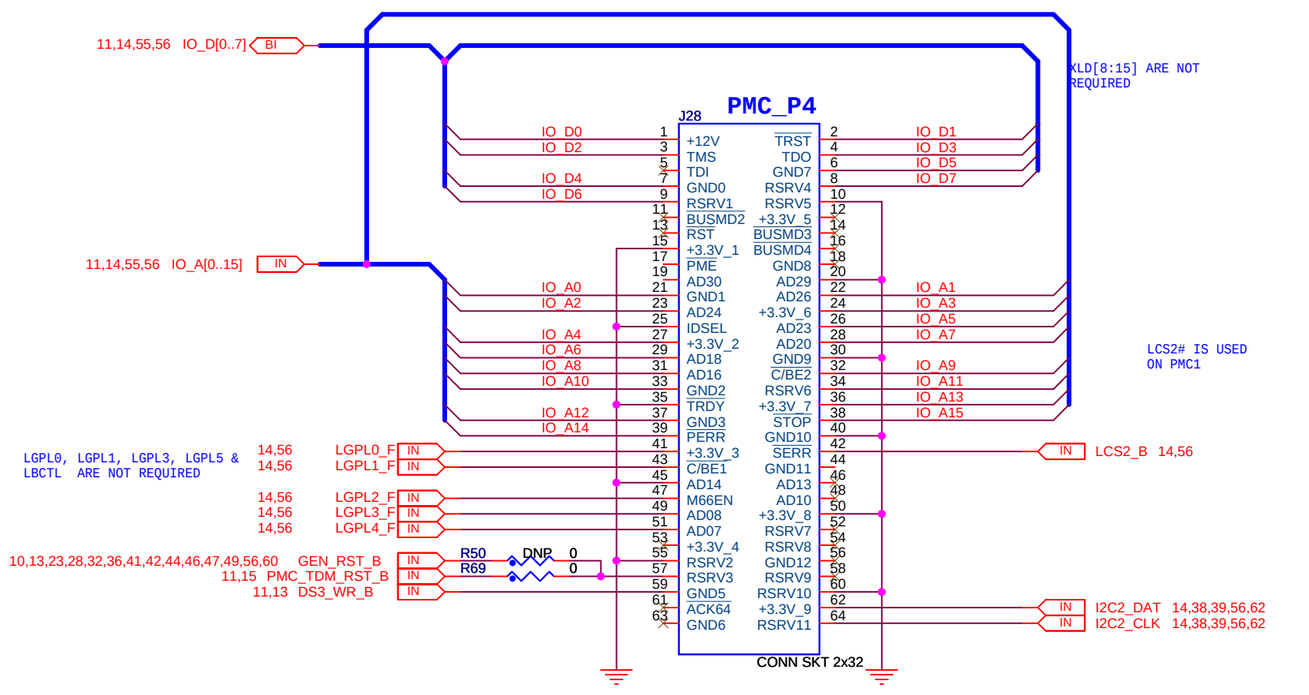
*-Nibble mode

Note :TDMA, TDMB,TDMC,TDMD,SER3 ports brought from the Multiplexer









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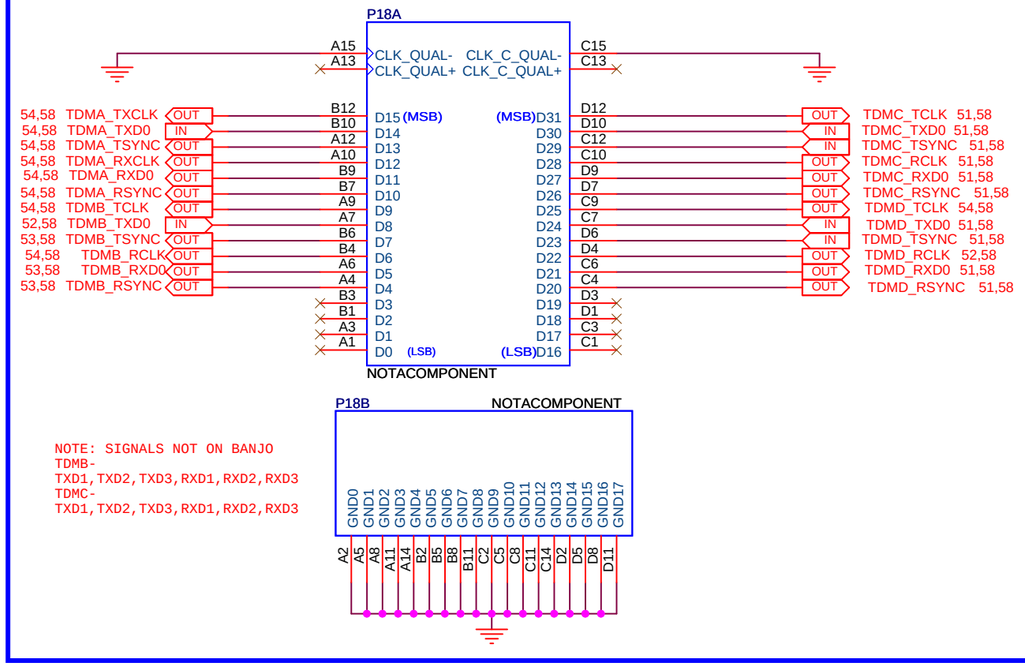
VISIBILITY (BANJO CONNECTORS)



NOTE: SIGNALS NOT ON BANJO
TDMB-
TXD1,TXD2,TXD3,RXD1,RXD2,RXD3
TDMC-
TXD1,TXD2,TXD3,RXD1,RXD2,RXD3

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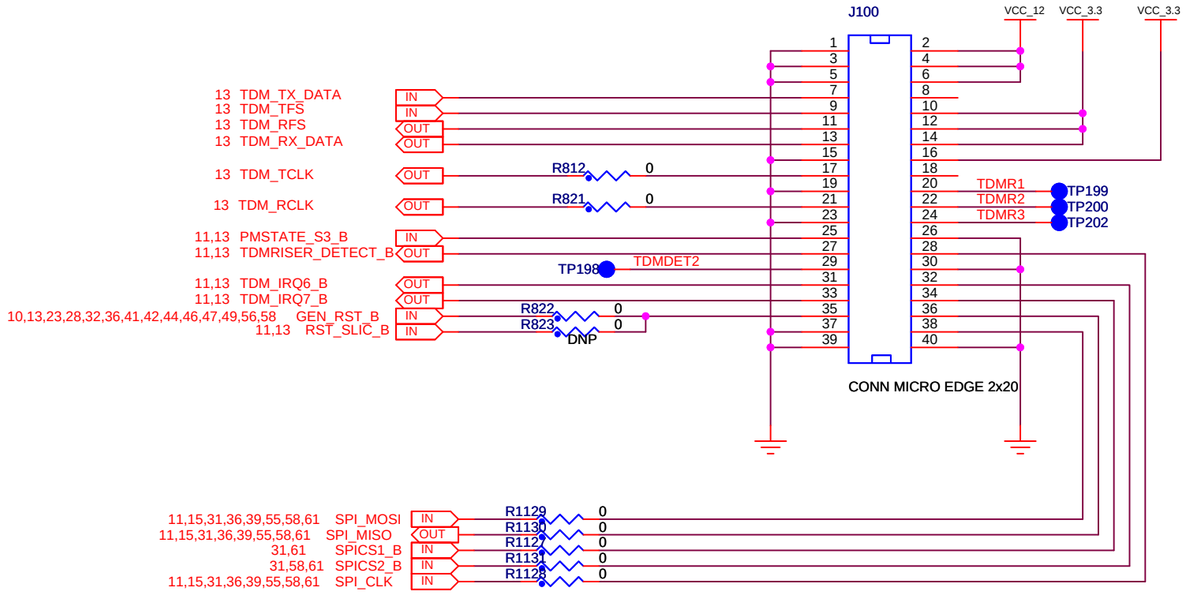
freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: PMC0_Connector_TDM2	Document Number: SCH-26479 PDF: SPF-26479	Size: Custom	Date: Friday, October 22, 2010	Sheet 59 of 63 / Rev B

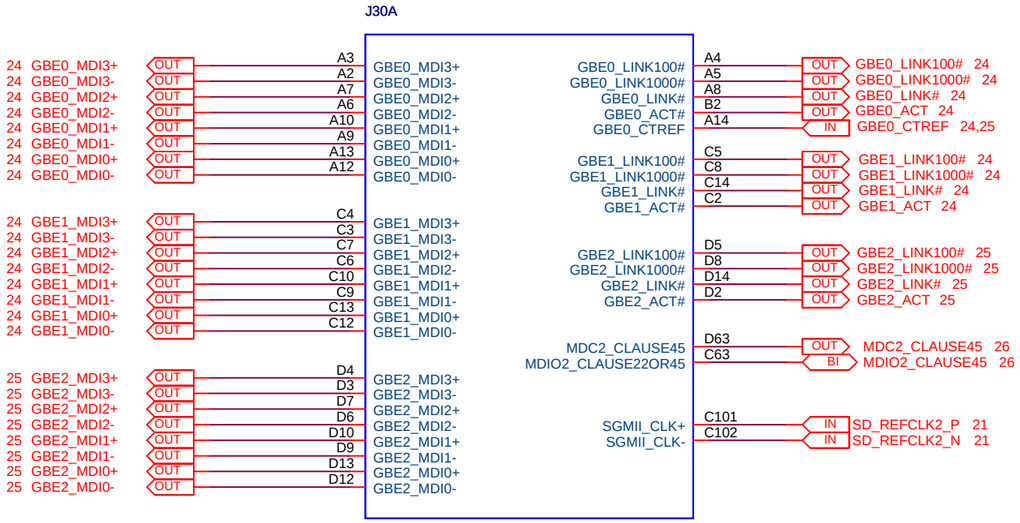
TDM RISER CARD CONNECTIVITY

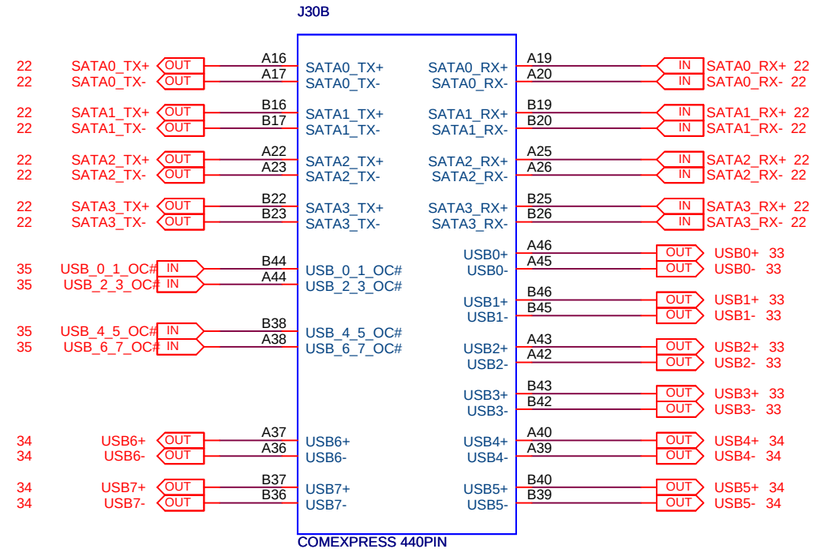


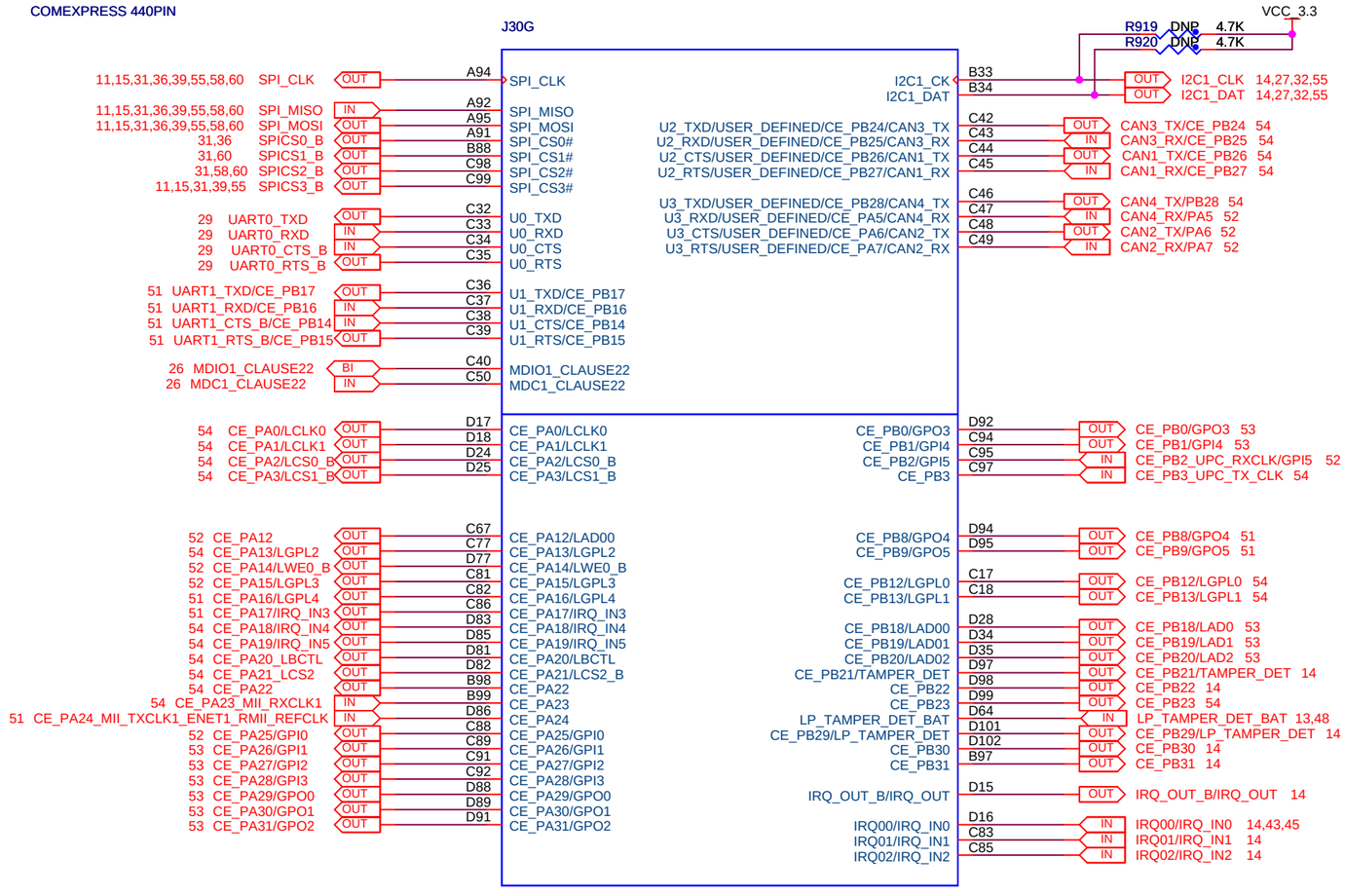
ICAP Classification: FCP:___ FIUO: X PUBI:___

freescale semiconductor	Drawing Title: COMEXPRESS CARRIER	Page Title: TDM RISER CARD IF	Document Number: SCH-26479 PDF: SPF-26479	Size: Custom	Date: Friday, October 22, 2010	Sheet 60 of 63 / Rev B

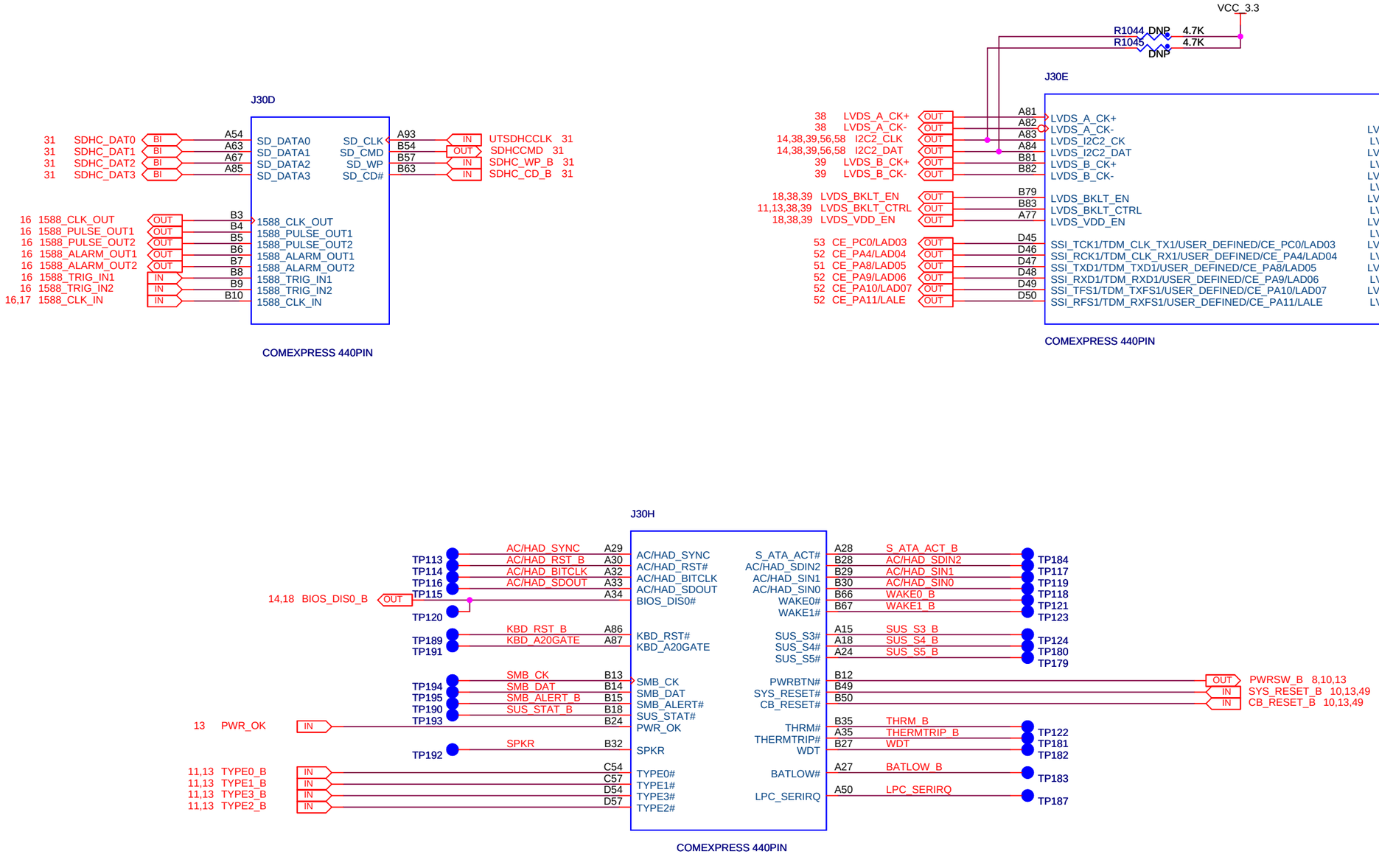
COM EXPRESS CONNECTOR







COM EXPRESS CONNECTOR



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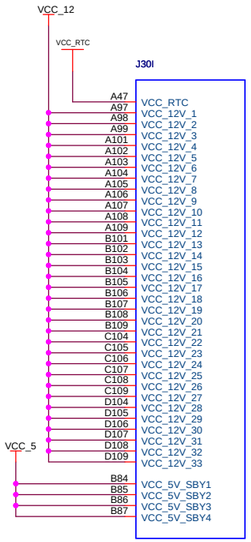
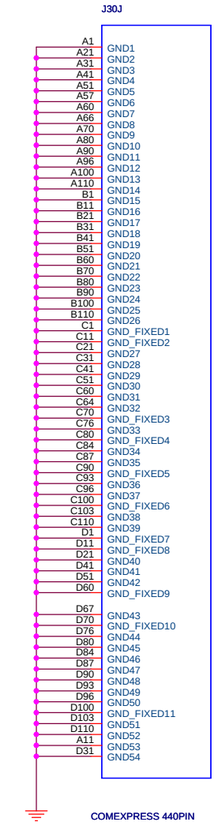
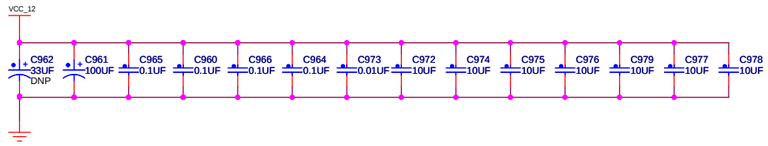
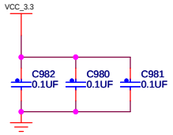
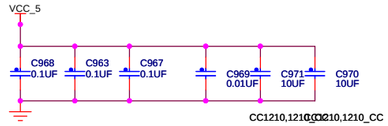
COM EXPRESS CONNECTOR

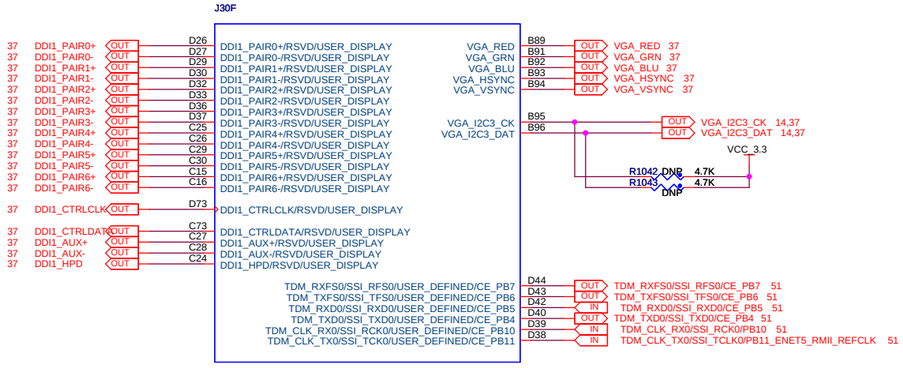


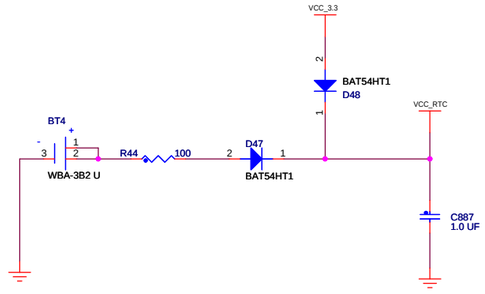












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