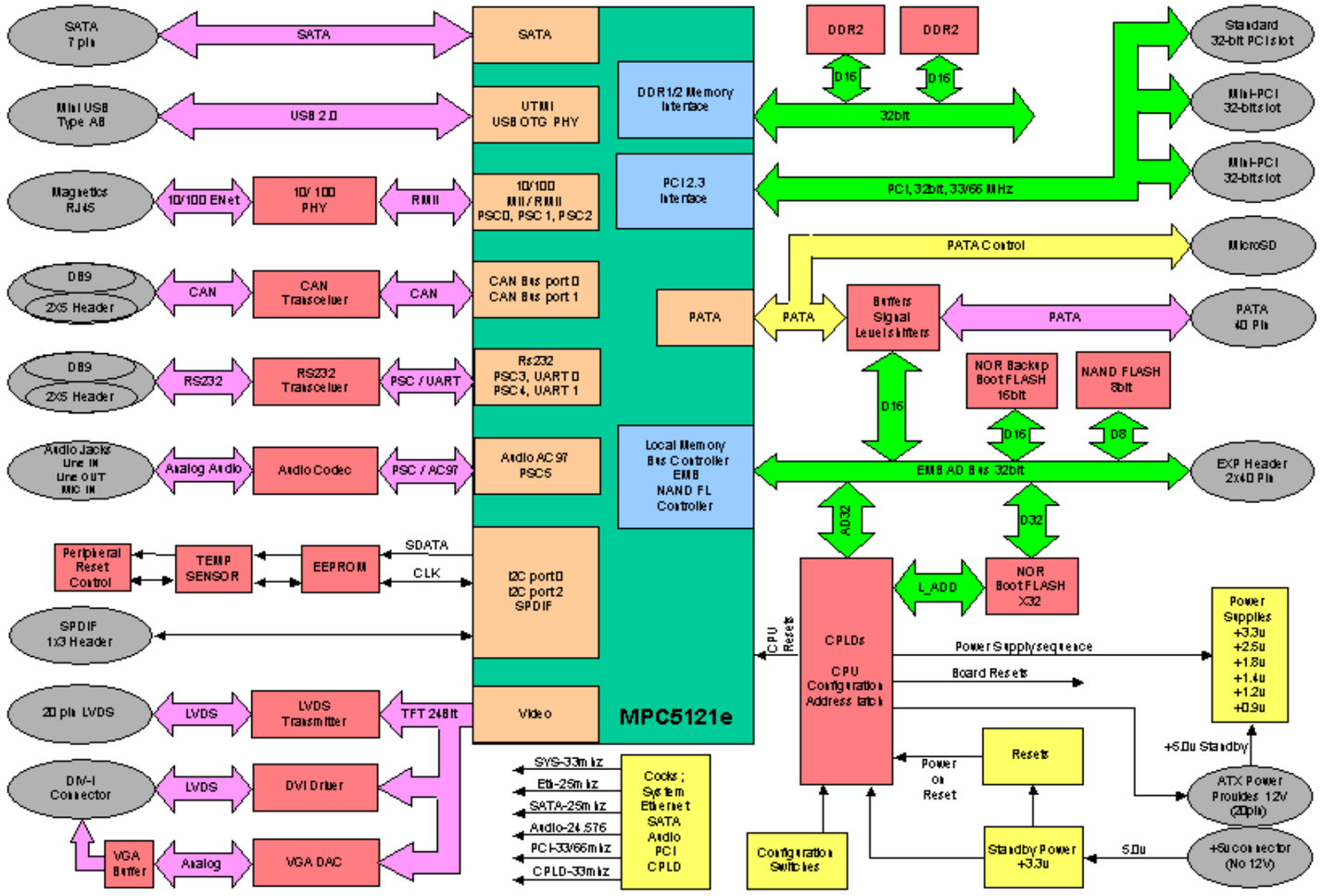

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Title: 01_Block_Diagram	
Size: Custom	Document Number: ADS5121e_Rev_4_public_October_08 — Rev: 4.1
Date: Wednesday, October 15, 2008	Sheet 1 of 11

PWR-1
Mini-fit jr.
39-29-9202

R1 4.7K
POWER_ON
POWER_OK 6
+5v_STBY

C1 10uF +25v C6032
C2 0.1uF 16v
C3 10uF +25v C6032
C4 0.1uF 16v
C5 10uF +25v C6032
C6 0.1uF 16v
C7 10uF +25v C6032
C8 0.1uF 16v

RO-1 0
GND_MTH
H1 HOLE_P_6MMPAD_4R06MMDRL 6MMPAD_4r06MMDRL
H2 HOLE_P_6MMPAD_4R06MMDRL 6MMPAD_4r06MMDRL
H3 HOLE_P_6MMPAD_4R06MMDRL 6MMPAD_4r06MMDRL
H4 HOLE_P_6MMPAD_4R06MMDRL 6MMPAD_4r06MMDRL

PWR-2
CON_PWR_BARREL
CON_SMT4_PWR
PWR_BARREL 6
R2 4.7K
R259 6.49K 1%
+3.3v_stby
C9 0.1uF 16v
F1 FUSE_5A FUSE_LTF154
P1 HDR_1x2_0.1in 1x2 VT_SMT
+5v_STBY

U2
LTM4602EV
LGA104
R3 121K 1%
POWER_EN 6
C10 .01uF 16v
RUN_SS
SVIN
FADJ
FCB
COMP
EXTVCC
PGOOD
VOSET
R4 56.2K 1%
PWR_G_3.3 6
R5 22.1k 1%
SGND

C2-1 220uF_10V D7343
C2-2 220uF_10V D7343
C2-3 0.1uF 16v
C2-4 0.1uF 16v
C2-5 0.1uF 16v
C2-6 220uF_10V D7343
C2-7 220uF_10V D7343
C2-8 0.1uF 16v
C2-9 0.1uF 16v
C2-10 0.1uF 16v

U1H
MPC5121E
PBGA-516

MPC5121E
IO POWER

MPC5121E
DDR POWER

MPC5121E
CORE POWER

C1-1 C1-2 C1-3 C1-4 C1-5 C1-6 C1-7 C1-8 C1-9 C1-10 0.1uF 16v
C1-11 C1-12 C1-13 C1-14 C1-15 C1-16 C1-17 C1-18 C1-19 C1-20 0.1uF 16v
CB1-1 CB1-2 100uF_6.3V B3528
C1-21 C1-22 C1-23 C1-24 C1-25 C1-26 C1-27 C1-28 C1-29 C1-30 0.1uF 16v
C1-31 C1-32 C1-33 C1-34 C1-36 C1-37 C1-38 C1-35 0.1uF 16v
C1-39 C1-40 C1-41 C1-42 C1-43 C1-44 C1-45 C1-46 C1-47 C1-48 0.1uF 16v
C1-49 C1-50 C1-51 0.1uF 16v
CB1-3 100uF_6.3V B3528
C1-53 C1-54 C1-55 C1-56 C1-57 C1-58 C1-59 C1-60 C1-61 C1-62 0.1uF 16v
C1-63 C1-64 C1-65 C1-66 C1-67 C1-68 C1-69 C1-70 C1-71 C1-72 0.1uF 16v
CB1-4 CB1-5 100uF_6.3V B3528
C1-73 C1-74 C1-75 C1-76 C1-77 C1-78 C1-79 C1-80 0.1uF 16v
CVT-1 CVT-2 CVT-3 CVT-4 CVT-5 CVT-6 CVT-7 CVT-8 0.1uF 16v
CBVT-1 CBVT-2 100uF_6.3V B3528
CVT-9 CVT-10 CVT-11 CVT-12 CVT-14 CVT-13 CVT-15 CVT-16 0.1uF 16v

U3
MIC68220
MLF20_4X5
LED1 GRN 0603
R6 470
C15 .001uF 16v
R12 56.2k 1%
PWR_3.3STBY_EN
C3-1 C3-2 1uF 16v
R9 56.2K 1%
C13 0.1uF 16v
R13 10K 1%
C14 4.7uF 10V
C16 100uF_6.3V B3528
+3.3v_stby
6 PWR_G_3.3AUX
R16 56.2k 1%
C23 .001uF 16v
6 PWR_G_3.3aux_en
R24 56.2K 1%
R18 56.2K 1%
C26 0.1uF 16v
R21 10K 1%
C27 4.7uF 10V
C28 100uF_6.3V B3528
+3.3_aux

U4
MIC68220
MLF20_4X5
C4-1 C4-2 1uF 16v
R7 56.2k 1%
C11 .001uF 16v
6 DDR_PWR_EN
R10 39.2K 1%
C17 0.1uF 16v
R14 15K 1%
C18 4.7uF 10V
C19 100uF_6.3V B3528
+1.8v
R19 121K 1%
C29 0.1uF 16v
R22 150K 1%
C30 4.7uF 10V
C31 100uF_6.3V B3528
+0.9v

U5
MIC68220
MLF20_4X5
C5-1 C5-2 1uF 16v
6 PWR_G_1.4
R8 56.2k 1%
C12 .001uF 16v
PWR_G_1.8
R11 18.2K 1%
C20 0.1uF 16v
R15 10K 1%
C21 4.7uF 10V
C22 100uF_6.3V B3528
+1.4v
R17 56.2k 1%
C25 .001uF 16v
PWR_G_3.3
R20 39.2K 1%
C32 0.1uF 16v
R23 15K 1%
C33 4.7uF 10V
C34 100uF_6.3V B3528
+1.8v_CPU
R272 1.00K 1% 0805
R273 1.00K 1% 0805
+0.9v_CPU

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Title: 02_Power_Supplies_CPU_PWR
Size:
Document Number: ADS5121e_Rev_4_public_October_08
Rev: 4.1
Date: Wednesday, October 15, 2008
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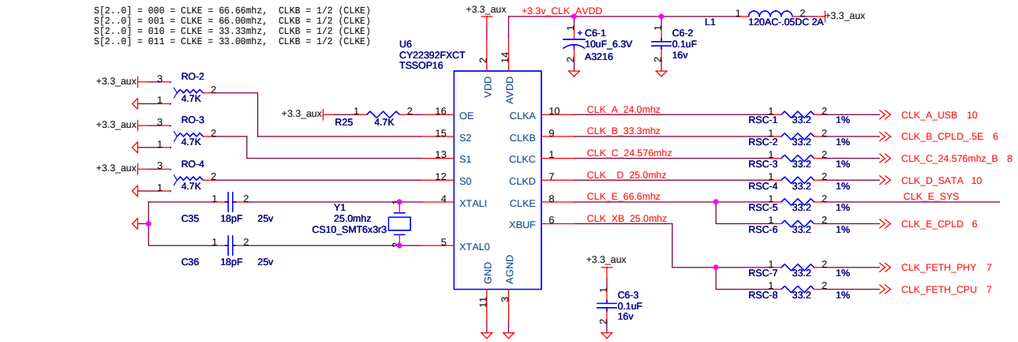
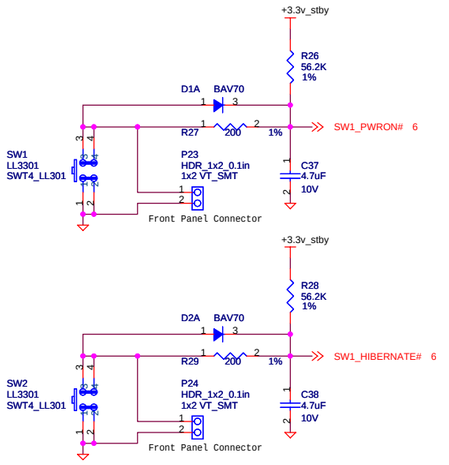
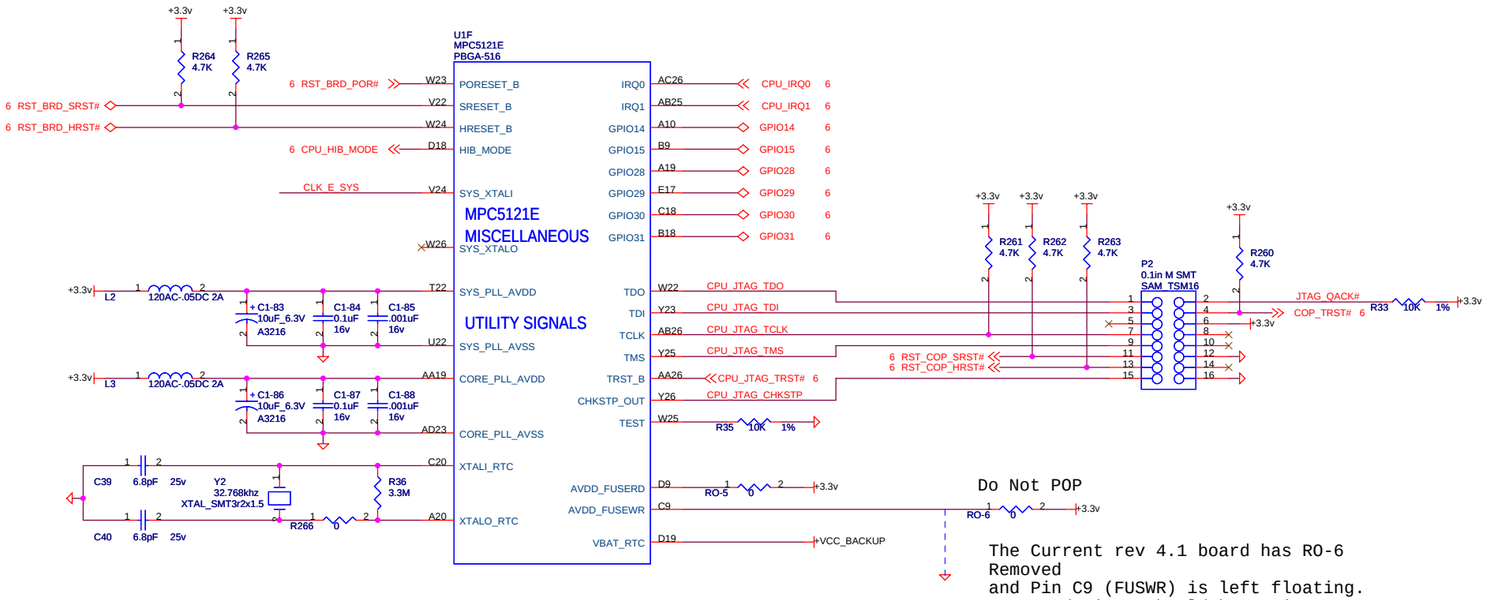
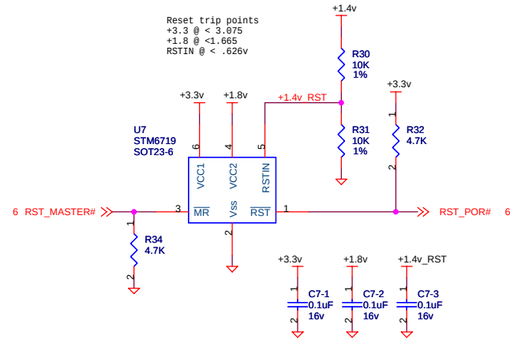


CLOCK RULES:
All clock traces are to be as short as possible
CLK_E_SYS = CLK_E_CPLD
CLK_FETH_PHY = CLK_FETH_CPU





The Current rev 4.1 board has RO-6
Removed
and Pin C9 (FUSWR) is left floating.
Future designs should have pin C9
(FUSWR) connected to GND



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Title: 03_Clocks_Resets_COP-Debug

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U1A
PBGA-516
MPC5121E

MPC5121E
EMB INTFC

U8
TSOP-48
8Gbyte (1Gbx8)

NAND Flash
Stacked Pkgs
Only

P29
Micro-SD
Micro-SD_PJS008

U9
256Mbx16
FBGA-64

U10
256Mbx16
FBGA-64

U11
256Mbx16
FBGA-64

U12
256Mbx16
FBGA-64

FLASH

R37
4.7K

R258
4.7K

C8-1
0.1uF
16v

C8-2
0.1uF
16v

C9-1
0.1uF
16v

C9-2
0.1uF
16v

C9-3
0.1uF
16v

C10-1
0.1uF
16v

C10-2
0.1uF
16v

C10-3
0.1uF
16v

C11-1
0.1uF
16v

C11-2
0.1uF
16v

C11-3
0.1uF
16v

C12-1
0.1uF
16v

C12-2
0.1uF
16v

C12-3
0.1uF
16v

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Title
04_FLASH_MEMORY

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U1B
MPC5121E
PBGA-516

MPC5121E
DDR SDRAM

DDR_MDQ0	1	2	DDR_C_MDQ0	AE5	MDQ0	AD17	DDR_C_MA0	1	2	DDR_MA0	DDR_MA0	1	2	+0.9v					
DDR_MDQ1	RSDD1 22.1	2 1%	DDR_C_MDQ1	AB6	MDQ1	AB16	DDR_C_MA1	RSDC1 22.1	2 1%	DDR_MA1	DDR_MA1	RTDC1 200	2 1%						
DDR_MDQ2	RSDD2 22.1	2 1%	DDR_C_MDQ2	AE4	MDQ2	AE18	DDR_C_MA2	RSDC2 22.1	2 1%	DDR_MA2	DDR_MA2	RTDC2 200	2 1%						
DDR_MDQ3	RSDD4 22.1	2 1%	DDR_C_MDQ3	AF6	MDQ3	AF20	DDR_C_MA3	RSDC3 22.1	2 1%	DDR_MA3	DDR_MA3	RTDC3 200	2 1%						
DDR_MDQ4	RSDD5 22.1	2 1%	DDR_C_MDQ4	AE7	MDQ4	AD18	DDR_C_MA4	RSDC4 22.1	2 1%	DDR_MA4	DDR_MA4	RTDC4 200	2 1%						
DDR_MDQ5	RSDD6 22.1	2 1%	DDR_C_MDQ5	AB8	MDQ5	AB17	DDR_C_MA5	RSDC5 22.1	2 1%	DDR_MA5	DDR_MA5	RTDC5 200	2 1%						
DDR_MDQ6	RSDD7 22.1	2 1%	DDR_C_MDQ6	AD6	MDQ6	AE19	DDR_C_MA6	RSDC6 22.1	2 1%	DDR_MA6	DDR_MA6	RTDC6 200	2 1%						
DDR_MDQ7	RSDD8 22.1	2 1%	DDR_C_MDQ7	AE6	MDQ7	AC18	DDR_C_MA7	RSDC7 22.1	2 1%	DDR_MA7	DDR_MA7	RTDC7 200	2 1%						
	RSDD9 22.1				MA8	AF21	DDR_C_MA8	RSDC8 22.1	2 1%	DDR_MA8	DDR_MA8	RTDC8 200	2 1%						
DDR_MDQS0	1	2	DDR_C_MDQS0	AD5	MA9	AD19	DDR_C_MA9	RSDC9 22.1	2 1%	DDR_MA9	DDR_MA9	RTDC9 200	2 1%						
DDR_MDM0	RSDD10 22.1	2 1%	DDR_C_MDM0	AC6	MDQS0	AF22	DDR_C_MA10	RSDC10 22.1	2 1%	DDR_MA10	DDR_MA10	RTDC10 200	2 1%						
	RSDD3 22.1	1%			MDM0	AC19	DDR_C_MA11	RSDC11 22.1	2 1%	DDR_MA11	DDR_MA11	RTDC11 200	2 1%						
DDR_MDQ8	1	2	DDR_C_MDQ8	AC7	MA10	AE21	DDR_C_MA12	RSDC12 22.1	2 1%	DDR_MA12	DDR_MA12	RTDC12 200	2 1%						
DDR_MDQ9	RSDD11 22.1	2 1%	DDR_C_MDQ9	AF8	MDQ8	AD20	DDR_C_MA13	RSDC13 22.1	2 1%	DDR_MA13	DDR_MA13	RTDC13 200	2 1%						
DDR_MDQ10	RSDD12 22.1	2 1%	DDR_C_MDQ10	AB9	MDQ9	AB19	DDR_C_MA14	RSDC14 22.1	2 1%	DDR_MA14	DDR_MA14	RTDC14 200	2 1%						
DDR_MDQ11	RSDD13 22.1	2 1%	DDR_C_MDQ11	AD7	MDQ10	AE22	DDR_C_MA15	RSDC15 22.1	2 1%	DDR_MA15	DDR_MA15	RTDC15 200	2 1%						
DDR_MDQ12	RSDD14 22.1	2 1%	DDR_C_MDQ12	AE9	MDQ11			RSDC16 22.1	1%			RTDC13 200	1%						
DDR_MDQ13	RSDD15 22.1	2 1%	DDR_C_MDQ13	AF10	MDQ12	AD22	DDR_C_MCS#	1	2	DDR_MCS#	DDR_MCS#	1	2						
DDR_MDQ14	RSDD16 22.1	2 1%	DDR_C_MDQ14	AC9	MDQ13	AF23	DDR_C_MRAS#	RSDC17 22.1	2 1%	DDR_MRAS#	DDR_MRAS#	RTDC16 200	2 1%						
DDR_MDQ15	RSDD17 22.1	2 1%	DDR_C_MDQ15	AF11	MDQ14	AF24	DDR_C_MCAS#	RSDC18 22.1	2 1%	DDR_MCAS#	DDR_MCAS#	RTDC17 200	2 1%						
	RSDD18 22.1	1%			MDQ15	AD21	DDR_C_MWE#	RSDC19 22.1	2 1%	DDR_MWE#	DDR_MWE#	RTDC20 200	2 1%						
DDR_MDQS1	1	2	DDR_C_MDQS1	AD8	MCS			RSDC20 22.1	1%			RTDC19 200	1%						
DDR_MDM1	RSDD19 22.1	2 1%	DDR_C_MDM1	AE8	MRAS	AD16	DDR_C_MBA0	1	2	DDR_MBA0	DDR_MBA0	1	2						
	RSDD20 22.1				MCAS	AC16	DDR_C_MBA1	RSDC21 22.1	2 1%	DDR_MBA1	DDR_MBA1	RTDC22 200	2 1%						
DDR_MDQ16	1	2	DDR_C_MDQ16	AD10	MWE	AF19	DDR_C_MBA2	RSDC22 22.1	2 1%	DDR_MBA2	DDR_MBA2	RTDC21 200	2 1%						
DDR_MDQ17	RSDD21 22.1	2 1%	DDR_C_MDQ17	AF12	MDQ16			RSDC23 22.1	1%			RTDC24 200	1%						
DDR_MDQ18	RSDD22 22.1	2 1%	DDR_C_MDQ18	AD11	MDQ17	AB20	DDR_C_MCKE	1	2	DDR_MCKE	DDR_MCKE	1	2						
DDR_MDQ19	RSDD23 22.1	2 1%	DDR_C_MDQ19	AB12	MDQ18			RSDC24 22.1	1%			RTDC23 200	1%						
DDR_MDQ20	RSDD24 22.1	2 1%	DDR_C_MDQ20	AD12	MDQ19	AC21	DDR_C_MODT	1	2	DDR_MODT	DDR_MODT	1	2						
DDR_MDQ21	RSDD25 22.1	2 1%	DDR_C_MDQ21	AB13	MDQ20			RSDC25 22.1	1%			RTDC25 200	1%						
DDR_MDQ22	RSDD26 22.1	2 1%	DDR_C_MDQ22	AF14	MDQ21														
DDR_MDQ23	RSDD27 22.1	2 1%	DDR_C_MDQ23	AD13	MDQ22	AF17	DDR_C_MCK	1	2	DDR_MCK	DDR_MCK								
	RSDD28 22.1	1%			MDQ23			RSDC26 22.1	1%										
DDR_MDQS2	1	2	DDR_C_MDQS2	AC11	MCKN														
DDR_MDM2	RSDD29 22.1	2 1%	DDR_C_MDM2	AF13	MDQS2	AF18	DDR_C_MCK#	1	2	DDR_MCK#	DDR_MCK#								
	RSDD39 22.1	1%			MDM2			RSDC27 22.1	1%										
DDR_MDQ24	1	2	DDR_C_MDQ24	AE13	MVTT0														
DDR_MDQ25	RSDD31 22.1	2 1%	DDR_C_MDQ25	AC13	MVTT1														
DDR_MDQ26	RSDD32 22.1	2 1%	DDR_C_MDQ26	AE15	MVTT2														
DDR_MDQ27	RSDD33 22.1	2 1%	DDR_C_MDQ27	AB14	MVTT3														
DDR_MDQ28	RSDD34 22.1	2 1%	DDR_C_MDQ28	AE16	MDQ24														
DDR_MDQ29	RSDD35 22.1	2 1%	DDR_C_MDQ29	AD15	MDQ25														
DDR_MDQ30	RSDD36 22.1	2 1%	DDR_C_MDQ30	AC15	MDQ26														
DDR_MDQ31	RSDD37 22.1	2 1%	DDR_C_MDQ31	AB15	MDQ27														
	RSDD38 22.1	1%			MDQ28														
DDR_MDQS3	1	2	DDR_C_MDQS3	AD14	MDQ29														
DDR_MDM3	RSDD30 22.1	2 1%	DDR_C_MDM3	AF16	MDQ30														
	RSDD40 22.1	1%			MDQ31														
					MDQS3														
					MDM3														

Route same as DDR2 control signals

Place Caps as close to CPU pin as possible

U13
512Mbx8 DDR2
FBGA60

U14
512Mbx8 DDR2
FBGA60

U15
512Mbx8 DDR2
FBGA60

U16
512Mbx8 DDR2
FBGA60

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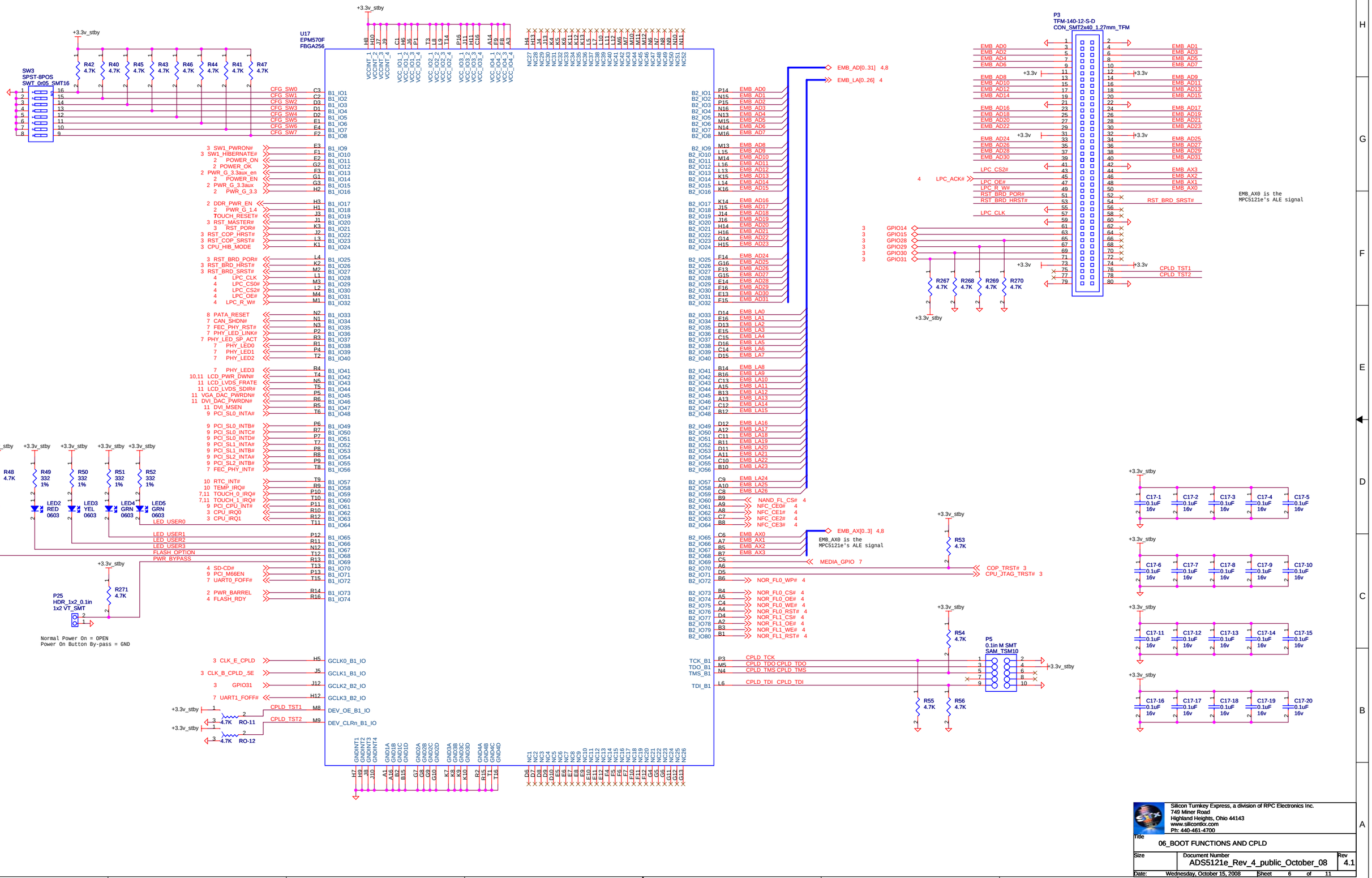
Title: 05_DDR2_MEMORY

Size | Document Number: ADS5121e_Rev_4_public_October_08 | Rev: 4.1

Date: Wednesday, October 15, 2008 | Sheet 5 of 11


U17
EPM570F
FBGA256
+3.3v_stby
SW3
SPST-8POS
SWT_0r05_SMT16
R42 4.7K
R40 4.7K
R45 4.7K
R43 4.7K
R46 4.7K
R44 4.7K
R41 4.7K
R47 4.7K
CFG_SW0
CFG_SW1
CFG_SW2
CFG_SW3
CFG_SW4
CFG_SW5
CFG_SW6
CFG_SW7
3 SW1_PWRON#
3 SW1_HIBERNATE#
2 POWER_ON
2 POWER_OK
2 PWR_G_3.3aux_en
2 POWER_EN
2 PWR_G_3.3aux
2 PWR_G_3.3
2 DDR_PWR_EN
2 PWR_G_1.4
TOUCH_RESET#
3 RST_MASTER#
3 RST_POR#
3 RST_COP_HRST#
3 RST_COP_SRST#
3 CPU_HIB_MODE
3 RST_BRD_POR#
3 RST_BRD_HRST#
3 RST_BRD_SRST#
4 LPC_CLK
4 LPC_CS0#
4 LPC_CS2#
4 LPC_OE#
4 LPC_R_W#
8 PATA_RESET
7 CAN_SHDN#
7 FEC_PHY_RST#
7 PHY_LED_LINK#
7 PHY_LED_SP_ACT
7 PHY_LED0
7 PHY_LED1
7 PHY_LED2
7 PHY_LED3
10,11 LCD_PWR_DWN#
11 LCD_LVDS_FRATE
11 LCD_LVDS_SDIR#
11 VGA_DAC_PWRDN#
11 DVI_DAC_PWRDN#
11 DVI_MSEN
9 PCI_SL0_INTA#
9 PCI_SL0_INTB#
9 PCI_SL0_INTC#
9 PCI_SL0_INTD#
9 PCI_SL1_INTA#
9 PCI_SL1_INTB#
9 PCI_SL2_INTA#
9 PCI_SL2_INTB#
7 FEC_PHY_INT#
10 RTC_INT#
10 TEMP_IRQ#
7,11 TOUCH_0_IRQ#
7,11 TOUCH_1_IRQ#
9 PCI_CPU_INT#
3 CPU_IRQ0
3 CPU_IRQ1
LED_USER0
LED_USER1
LED_USER2
LED_USER3
FLASH_OPTION
PWR_BYPASS
4 SD-CD#
9 PCI_M66EN
7 UART0_FOFF#
2 PWR_BARREL
4 FLASH_RDY
P4
HDR_1x2_0.1in
1x2 VT_SMT
BOOT FLASH = OPEN
BACHUP FLASH = GND
LED2 RED 0603
LED3 YEL 0603
LED4 GRN 0603
LED5 GRN 0603
R48 4.7K
R49 332 1%
R50 332 1%
R51 332 1%
R52 332 1%
P25
HDR_1x2_0.1in
1x2 VT_SMT
R271 4.7K
Normal Power On = OPEN
Power On Button By-pass = GND
3 CLK_E_CPLD
3 CLK_B_CPLD_.5E
3 GPIO31
7 UART1_FOFF#
CPLD_TST1
CPLD_TST2
RO-11 4.7K
RO-12 4.7K
GCLK0_B1_IO
GCLK1_B1_IO
GCLK2_B2_IO
GCLK3_B2_IO
DEV_OE_B1_IO
DEV_CLRn_B1_IO
EMB_AD[0..31] 4,8
EMB_LA[0..26] 4
EMB_AX[0..3] 4,8
EMB_AX0 is the
MPC5121e's ALE signal
NAND_FL_CS# 4
NFC_CE0# 4
NFC_CE1# 4
NFC_CE2# 4
NFC_CE3# 4
MEDIA_GPIO 7
NOR_FL0_WP# 4
NOR_FL0_CS# 4
NOR_FL0_OE# 4
NOR_FL0_WE# 4
NOR_FL0_RST# 4
NOR_FL1_CS# 4
NOR_FL1_OE# 4
NOR_FL1_WE# 4
NOR_FL1_RST# 4
CPLD_TCK
CPLD_TDO CPLD_TDO
CPLD_TMS CPLD_TMS
CPLD_TDI CPLD_TDI
R53 4.7K
R54 4.7K
R55 4.7K
R56 4.7K
P5
0.1in M SMT
SAM_TSM10
COP_TRST# 3
CPU_JTAG_TRST# 3
P3
TFM-140-12-S-D
CON_SMT2x40_1.27mm_TFM
LPC_ACK# 4
LPC_OE#
LPC_R_W#
RST_BRD_POR#
RST_BRD_HRST#
LPC_CS2#
LPC_CLK
GPIO14 3
GPIO15 3
GPIO28 3
GPIO29 3
GPIO30 3
GPIO31 3
R267 4.7K
R268 4.7K
R269 4.7K
R270 4.7K
RST_BRD_SRST#
CPLD_TST1
CPLD_TST2
EMB_AX0 is the
MPC5121e's ALE signal
C17-1 0.1uF 16v
C17-2 0.1uF 16v
C17-3 0.1uF 16v
C17-4 0.1uF 16v
C17-5 0.1uF 16v
C17-6 0.1uF 16v
C17-7 0.1uF 16v
C17-8 0.1uF 16v
C17-9 0.1uF 16v
C17-10 0.1uF 16v
C17-11 0.1uF 16v
C17-12 0.1uF 16v
C17-13 0.1uF 16v
C17-14 0.1uF 16v
C17-15 0.1uF 16v
C17-16 0.1uF 16v
C17-17 0.1uF 16v
C17-18 0.1uF 16v
C17-19 0.1uF 16v
C17-20 0.1uF 16v
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Title
06_BOOT FUNCTIONS AND CPLD
Size
Document Number
ADS5121e_Rev_4_public_October_08
Rev
4.1
Date: Wednesday, October 15, 2008
Sheet 6 of 11

10/100 BASET ETHERNET PHY INTERFACE AND CONNECTOR

Place parts as close to PHY as possible

+3.3v
L4 120AC-.05DC 1A IND_0603
+VDDA_PHY_3r3
C18-1 0.1uF 16v
C18-2 22uF_6.3V A3216
+VDDA_PHY_1r8
C18-3 10uF_6.3V A3216
C18-4 0.1uF 16v

+VDDA_PHY_3r3
LO-1 120AC-.05DC 1A IND_0603
Center tap of magnetics needs to be as short and direct as possible to +VDDA_PHY
ONLY 1 INDUCTOR IS TO BE POPULATED!
+VDDA_PHY_1r8
LO-2 120AC-.05DC 1A IND_0603
Do Not POP
+VDDA_PHY_M

CPU_FEC_RXD[0..3]
Wireing due to error in net naming.
This was re-wired to correct the ADS5121e_03.1_FAB4 and FAB5 PCB layouts

U1D
MPC5121E
PBGA-516

MPC5121E
FEC INTERFACE
SER (PSC) IO
CAN (PSC) IO

PSC0_3/FEC_TXD0	C16	CPU_FEC_TXD0	R58 33.2 1%	FEC_TXD0	U18 KSZ8041NL MLF32 TXD0
PSC0_4/FEC_TXD1	B16	CPU_FEC_TXD1	R60 33.2 1%	FEC_TXD1	TXD1
PSC1_0/FEC_TXD_2	C15	CPU_FEC_TXD2	R61 33.2 1%	FEC_TXD2	TXD2
PSC1_1/FEC_TXD_3	A16	CPU_FEC_TXD3	R62 33.2 1%	FEC_TXD3	TXD3
PSC0_2/FEC_TX_CLK	E15	CPU_FEC_TX_CLK	R64 33.2 1%	FEC_TX_CLK	TXC
PSC0_1/FEC_TX_EN	A17	CPU_FEC_TX_EN	R65 33.2 1%	FEC_TX_EN	TX_EN
SPDIF_TX/FEC_TX_ER	AD24				
PSC2_2/FEC_RXD_0	E13	CPU_FEC_RXD0	R67 33.2 1%	FEC_RXD0	RXD0_DUPLEX
PSC2_1/FEC_RXD_1	B14	CPU_FEC_RXD1	R68 33.2 1%	FEC_RXD1	RXD1_PHYAD2
PSC2_0/FEC_RXD_2	C14	CPU_FEC_RXD2	R70 33.2 1%	FEC_RXD2	RXD2_PHYAD1
PSC1_4/FEC_RXD_3	D14	CPU_FEC_RXD3	R72 33.2 1%	FEC_RXD3	RXD3_PHYAD0
PSC2_4/FEC_RX_CLK	D13	CPU_FEC_RX_CLK		FEC_RX_CLK	RXC
SPDIF_TXCLK/FEC_RX_DV	AB21	CPU_FEC_RX_DV	R73 33.2 1%	FEC_RX_DV	RXDV_CRSDV_CONFIG2
PSC1_3/FEC_RX_ER	A15	CPU_FEC_RX_ER	R74 33.2 1%	FEC_RX_ER	RXER_ISO
			R78 33.2 1%		LED1_SPEED
PSC0_0/FEC_COL	D16	CPU_FEC_COL		FEC_COL	COL_CONFIG0
SPDIF_RX/FEC_CRS	AC24	CPU_FEC_CRS	R80 33.2 1%	FEC_CRS	CRS_CONFIG1
			R81 33.2 1%		
PSC2_3/FEC_MDIO	A14	CPU_FEC_MDIO	R82 4.7K +3.3v	FEC_MDIO	MDIO
PSC1_2/FEC_MDC	E14	CPU_FEC_MDC	R84 4.7K +3.3v	FEC_MDC	MDC
			Do not populate		
				6 FEC_PHY_INT#	INTRP
				6 FEC_PHY_RST#	RST#
PSC3_0/SER_PA_RTS	AF3	CPU_UART0_RTS			
PSC3_1/SER_PA_CTS	AB5	CPU_UART0_CTS			
PSC3_2/SER_PA_TXD	AC4	CPU_UART0_TXD			
PSC3_3/SER_PA_RXD	AD4	CPU_UART0_RXD			
PSC3_4/SER_PA_DCD	AF4				
PSC4_0/SER_PB_RTS	AB1	CPU_UART1_RTS			
PSC4_1/SER_PB_CTS	AA3	CPU_UART1_CTS			
PSC4_2/SER_PB_TXD	AB3	CPU_UART1_TXD			
PSC4_3/SER_PB_RXD	AA5	CPU_UART1_RXD			
PSC4_4/SER_PB_DCD	AC2				
PSC5_0/AC97_CLK	AC1	R85 33.2 1%	AC97_CLK 8		
PSC5_1/AC97_SYNC	AC3	R86 33.2 1%	AC97_SYNC 8		
PSC5_2/AC97_TX	AD1	R87 33.2 1%	AC97_TX 8		
PSC5_3/AC97_RX	AD2	R88 33.2 1%	AC97_RX 8		
PSC5_4AC97_RST#	AE3	R89 33.2 1%	AC97_RESET3 8		
CAN0_TX	A18	R90 33.2 1%	CPU_CAN0_TXD		
CAN0_RX	C19	R91 33.2 1%	CPU_CAN0_RXD		
CAN1_TX	E16	R94 33.2 1%	CPU_CAN1_TXD		
CAN1_RX	B19	R95 33.2 1%	CPU_CAN1_RXD		
PSC_MCLK_IN	C17	CLK_FETH_CPU 3			

U18 KSZ8041NL MLF32

VDDIO_3.3	17		
VDDA_3.3	3		
VDDPLL_1.8	2		
TX+	7	FEC_TX+	R59 49.9 1% +VDDA_PHY_M C41 .001uF 16v
TX-	6	FEC_TX#	R63 49.9 1%
RX+	5	FEC_RX+	R66 49.9 1% +VDDA_PHY_M C42 .001uF 16v
RX-	4	FEC_RX#	R69 49.9 1%
LED0_NWAYEN	30	PHY_LED_LINK#	PHY_LED_LINK# 6
LED1_SPEED	31	PHY_LED_SP_ACT	PHY_LED_SP_ACT 6
REXT	10		R83 6.49k 1%
XI_REFCLK	9		CLK_FETH_PHY 3
X0	8		
GND	33		
GND_PAD			

+3.3v C18-5 0.1uF 16v

T1
EPF8119S
XFR_H1102_SMT16

1	16	FEC_RJ_TX+
2	15	FEC_RJ_TX#
3	14	FEC_RJ_RX+
4	13	
5	12	FEC_RJ_RX#
6	11	
7	10	
8	9	

R75 75 1% R79 75 1% R76 75 1% R77 75 1%
C43 .001uF,2KV

6 PHY_LED0
6 PHY_LED1
R57 200 1%

6 PHY_LED2
6 PHY_LED3
R71 200 1%

J1
RJ45/1X8/BILED
RJ45_8P_DLED_SMT14

9	13	
10	15	GRN_YEL
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
11	16	GRN_YEL
12	14	

MEDIA_CONNECTOR

P6
0.1in M SMT
SAM_TSM10

+3.3v	1	2
CPU_UART0_RTS	3	4 MEDIA_GPIO 6
CPU_UART0_TXD	5	6
CPU_UART0_RXD	7	8 CPU_UART0_CTS
	9	10 +5v

+3.3v R275 4.7K TOUCH_0_IRQ# 6

RS232 UARTS

U19
ICL3225E
SSOP-20W

C1P		VCC	19 +3.3v
C1N		VP	3 C47 0.1uF 16v
C2P		VN	7
C2N		RIN1	16 UART0_RXD C49 0.1uF 16v
R1OUT		T1OUT	17 UART0_RTS
T1IN		RIN2	8 UART0_TXD
T2IN		T2OUT	9 UART0_CTS
R2OUT		READY	1
INVALID		FOFF	20 R92 10K 1% UART0_FOFF# 6
FON		GND	18

C44 0.1uF 16v
C45 0.1uF 16v
CPU_UART0_RXD 15
CPU_UART0_RTS 13
CPU_UART0_TXD 12
CPU_UART0_CTS 10
+3.3v C19-1 0.1uF 16v

P7
9P DSUB MALE
CON_DSUB_9_M_RA_SMT

1	10
6	PCB
2	EDGE
7	
3	
8	
4	
9	
5	11

U20
ICL3225E
SSOP-20W

C1P		VCC	19 +3.3v
C1N		VP	3 C50 0.1uF 16v
C2P		VN	7
C2N		RIN1	16 UART1_RXD C51 0.1uF 16v
R1OUT		T1OUT	17 UART1_RTS
T1IN		RIN2	8 UART1_TXD
T2IN		T2OUT	9 UART1_CTS
R2OUT		READY	1
INVALID		FOFF	20 R93 10K 1% UART1_FOFF# 6
FON		GND	18

C46 0.1uF 16v
C48 0.1uF 16v
CPU_UART1_RXD 15
CPU_UART1_RTS 13
CPU_UART1_TXD 12
CPU_UART1_CTS 10
+3.3v C20-1 0.1uF 16v

P8
0.1in M SMT
SAM_TSM10

UART1_RXD	1	2 UART1_RTS
UART1_TXD	3	4 UART1_CTS
	5	6
	7	8
	9	10

P27
1.25MM SMT
1x6 SMT_VT

+3.3v	1	7
+5v	2	
	3	
	4	
	5	
UART1_TXD	6	
UART1_RXD		8

Interface for Button Encoder Board.
This connector is shared with the second external UART connector.

CAN BUS

U21
MAX3050ASA
SOIC-8

CPU_CAN0_TXD	1	TXD	VCC 3 +5v
CPU_CAN0_RXD	4	RXD	CANL 6 CAN0_L
R96 121K 1%	8	RS	CANH 7 CAN0_H
6 CAN_SHDN#	5	SHDN	GND 2

+5v C21-1 0.1uF 16v

L5
ZJYS51R5-2P
SMT-4_ZJYS

TVS1
NUP2105L
SOT23-3

R98 61.9 1%
R99 61.9 1%
C52 .01uF 16v

P9
9P DSUB MALE
CON_DSUB_9_M_RA_SMT

1	10
6	PCB
2	EDGE
7	
3	
8	
4	
9	
5	11

6 CAN_SHDN#

U22
MAX3050ASA
SOIC-8

CPU_CAN1_TXD	1	TXD	VCC 3 +5v
CPU_CAN1_RXD	4	RXD	CANL 6 CAN1_L
R97 121K 1%	8	RS	CANH 7 CAN1_H
CAN_SHDN#	5	SHDN	GND 2

+5v C22-1 0.1uF 16v

L6
ZJYS51R5-2P
SMT-4_ZJYS

TVS2
NUP2105L
SOT23-3

R100 61.9 1%
R101 61.9 1%
C53 .01uF 16v

P10
0.1in M SMT
SAM_TSM10

	1	2
	3	4
	5	6
	7	8
	9	10

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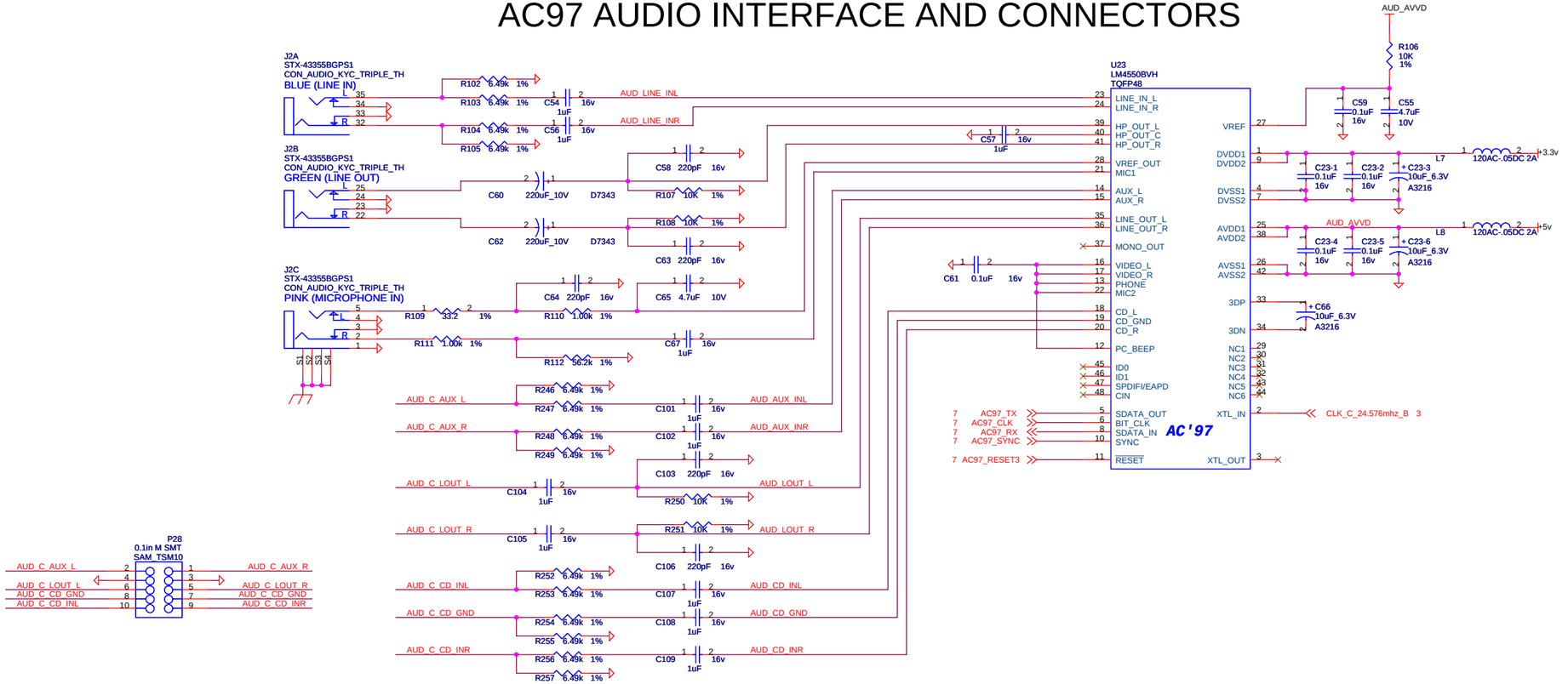
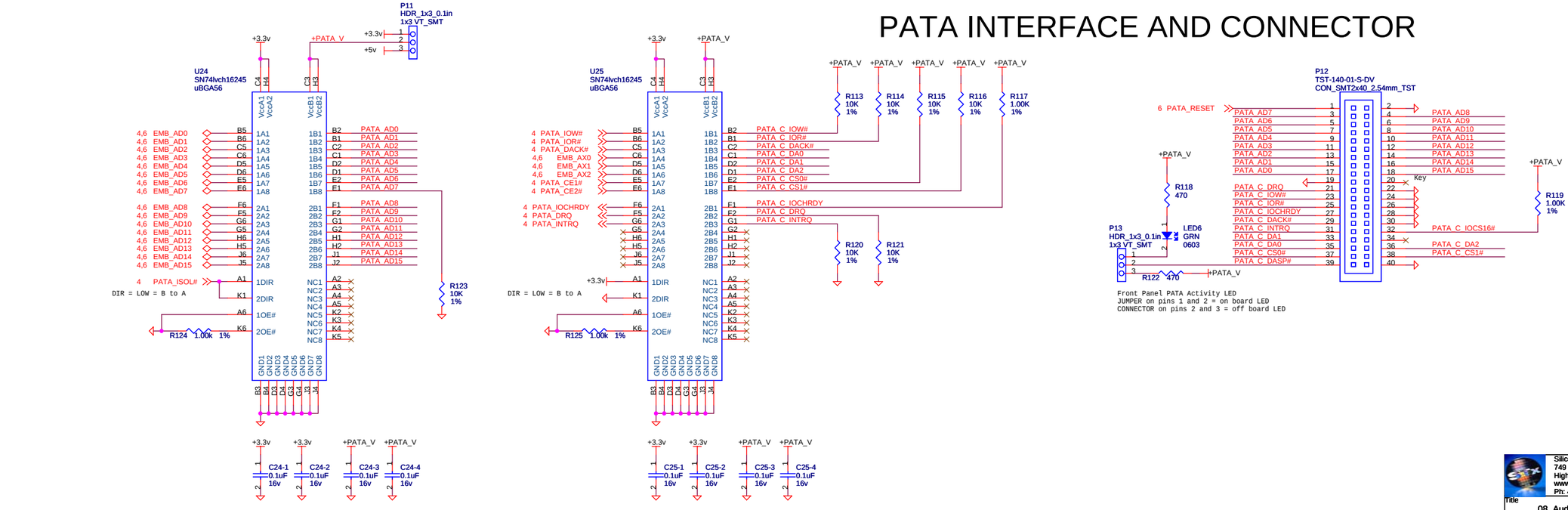
Size:
Document Number: ADS5121e_Rev_4_public_October_08
Rev: 4.1
Date: Wednesday, October 15, 2008 Sheet 7 of 11

AC97 AUDIO INTERFACE AND CONNECTORS



PATA INTERFACE AND CONNECTOR



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Title: 08_Audio_PATA_Interfaces

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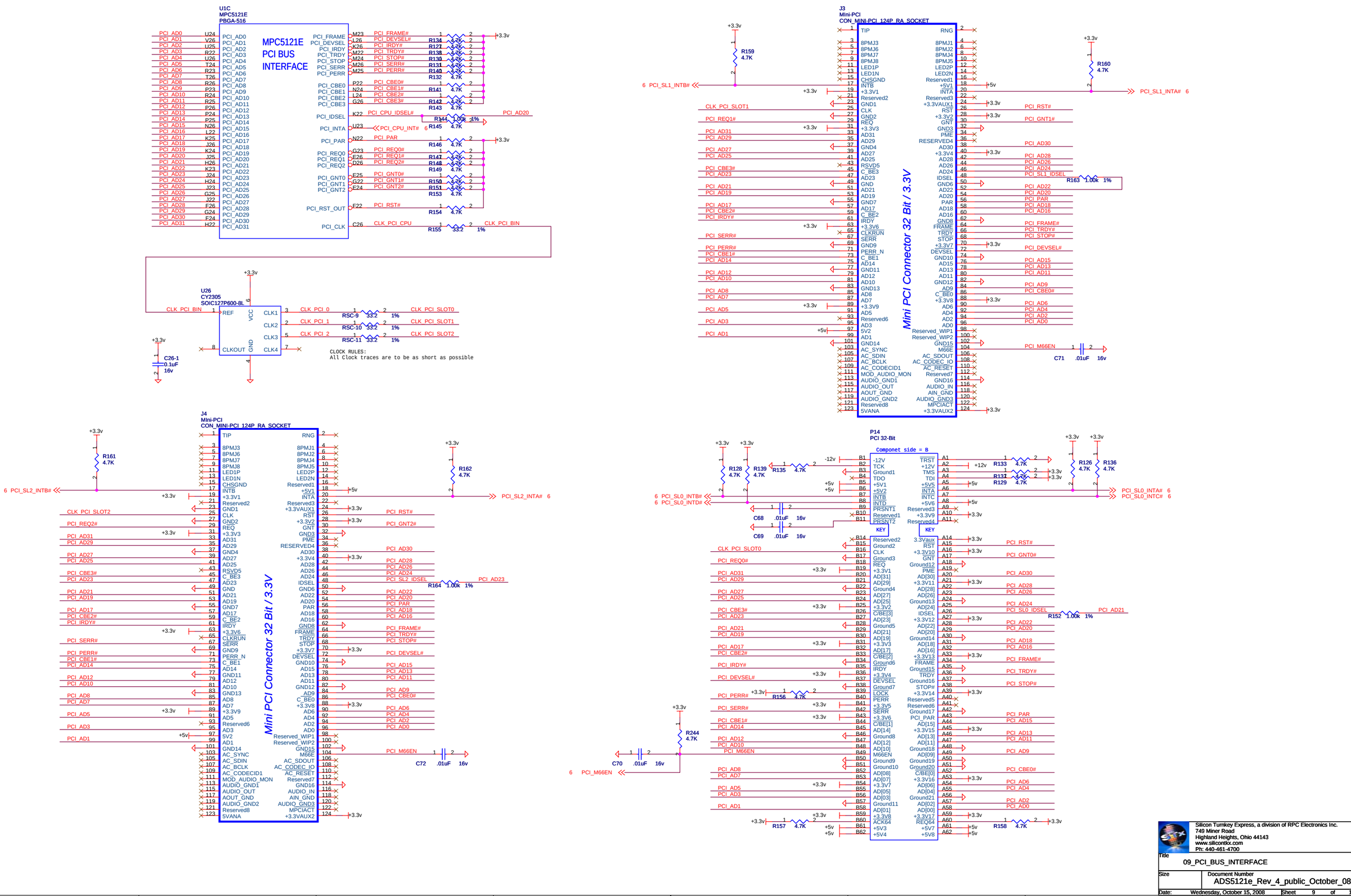
U1C
MPC5121E
PBGA-516
MPC5121E
PCI BUS
INTERFACE
PCI_AD0 PCI_AD1 PCI_AD2 PCI_AD3 PCI_AD4 PCI_AD5 PCI_AD6 PCI_AD7 PCI_AD8 PCI_AD9 PCI_AD10 PCI_AD11 PCI_AD12 PCI_AD13 PCI_AD14 PCI_AD15 PCI_AD16 PCI_AD17 PCI_AD18 PCI_AD19 PCI_AD20 PCI_AD21 PCI_AD22 PCI_AD23 PCI_AD24 PCI_AD25 PCI_AD26 PCI_AD27 PCI_AD28 PCI_AD29 PCI_AD30 PCI_AD31
PCI_FRAME PCI_DEVSEL PCI_IRDY PCI_TRDY PCI_STOP PCI_SERR PCI_PERR
PCI_CBE0 PCI_CBE1 PCI_CBE2 PCI_CBE3
PCI_IDSEL
PCI_INTA
PCI_PAR
PCI_REQ0 PCI_REQ1 PCI_REQ2
PCI_GNT0 PCI_GNT1 PCI_GNT2
PCI_RST_OUT
PCI_CLK
PCI_FRAME# PCI_DEVSEL# PCI_IRDY# PCI_TRDY# PCI_STOP# PCI_SERR# PCI_PERR#
PCI_CBE0# PCI_CBE1# PCI_CBE2# PCI_CBE3#
PCI_CPU_IDSEL#
PCI_CPU_INT#
PCI_PAR
PCI_REQ0# PCI_REQ1# PCI_REQ2#
PCI_GNT0# PCI_GNT1# PCI_GNT2#
PCI_RST#
CLK_PCI_CPU
R134 4.7K
R135 4.7K
R136 4.7K
R137 4.7K
R138 4.7K
R139 4.7K
R140 4.7K
R141 4.7K
R142 4.7K
R143 4.7K
R144 1.00k 1%
R145 4.7K
R146 4.7K
R147 4.7K
R148 4.7K
R149 4.7K
R150 4.7K
R151 4.7K
R153 4.7K
R154 4.7K
R155 33.2 1%
+3.3v
PCI_AD20
CLK_PCI_BIN
U26
CY2305
SOIC127P600-8L
REF VCC CLK1 CLK2 CLK3 CLK4 CLKOUT GND
CLK_PCI_0 CLK_PCI_1 CLK_PCI_2
CLK_PCI_SLOT0 CLK_PCI_SLOT1 CLK_PCI_SLOT2
RSC-9 33.2 1%
RSC-10 33.2 1%
RSC-11 33.2 1%
C26-1
0.1uF
16v
CLOCK RULES:
All Clock traces are to be as short as possible
J3
Mini-PCI
CON_MINI-PCI_124P_RA_SOCKET
TIP RNG
8PMJ3 8PMJ6 8PMJ7 8PMJ8 LED1P LED1N CHSGND INTB +3.3V1 Reserved2 GND1 CLK GND2 REQ +3.3V3 AD31 AD29 GND4 AD27 AD25 RSVD5 C_BE3 AD23 GND AD21 AD19 GND7 AD17 C_BE2 IRDY +3.3V6 CLKRUN SERR GND9 PERR_N C_BE1 AD14 GND11 AD12 AD10 GND13 AD8 AD7 +3.3V9 AD5 Reserved6 AD3 5V2 AD1 GND14 AC_SYNC AC_SDIN AC_BCLK AC_CODECID1 MOD_AUDIO_MON AUDIO_GND1 AUDIO_OUT AOUT_GND AUDIO_GND2 Reserved8 5VANA
8PMJ1 8PMJ2 8PMJ4 8PMJ5 LED2P LED2N Reserved1 +5V1 INTA Reserved3 +3.3VAUX1 RST +3.3V2 GNT GND3 PME RESERVED4 AD30 +3.3V4 AD28 AD26 AD24 IDSEL GND6 AD22 AD20 PAR AD18 AD16 GND8 FRAME TRDY STOP +3.3V7 DEVSEL GND10 AD15 AD13 AD11 GND12 AD9 C_BE0 +3.3V8 AD6 AD4 AD2 AD0 Reserved_WIP1 Reserved_WIP2 GND15 M66E AC_SDOUT AC_CODEC_IO AC_RESET Reserved7 GND16 AUDIO_IN AIN_GND AUDIO_GND3 MPCIACT +3.3VAUX2
Mini PCI Connector 32 Bit / 3.3V
R159 4.7K
6 PCI_SL1_INTB#
R160 4.7K
PCI_SL1_INTA# 6
PCI_SL1_IDSEL
R163 1.00k 1%
C71 .01uF 16v
J4
Mini-PCI
CON_MINI-PCI_124P_RA_SOCKET
R161 4.7K
6 PCI_SL2_INTB#
R162 4.7K
PCI_SL2_INTA# 6
R164 1.00k 1%
C72 .01uF 16v
P14
PCI 32-Bit
Componet side = B
-12v TCK Ground1 TDO +5V1 +5V2 INTB INTD PRSNT1 Reserved1 PRSNT2
TRST +12v TMS TDI +5V5 INTA INTC +5V6 Reserved3 +3.3V9 Reserved4
KEY
Reserved2 Ground2 CLK Ground3 REQ +3.3V1 AD[31] AD[29] Ground4 AD[27] AD[25] C/BE[3] AD[23] Ground5 AD[21] AD[19] +3.3V3 AD[17] C/BE[2] Ground6 IRDY +3.3V4 DEVSEL Ground7 LOCK PERR +3.3V5 SERR +3.3V6 C/BE[1] AD[14] Ground8 AD[12] AD[10] M66EN Ground9 Ground10 AD[08] AD[07] +3.3V7 AD[05] AD[03] Ground11 AD[01] +3.3V8 ACK64 +5V3 +5V4
3.3Vaux RST +3.3V10 GNT Ground12 PME AD[30] +3.3V11 AD[28] AD[26] Ground13 AD[24] IDSEL +3.3V12 AD[22] AD[20] Ground14 AD[18] AD[16] +3.3V13 FRAME Ground15 TRDY Ground16 STOP# +3.3V14 Reserved5 Reserved6 Ground17 PCI_PAR AD[15] +3.3V15 AD[13] AD[11] Ground18 AD[09] Ground19 Ground20 C/BE[0] +3.3V16 AD[06] AD[04] Ground21 AD[02] AD[00] +3.3V17 REQ64 +5V7 +5V8
R128 4.7K
R139 4.7K
R135 4.7K
R133 4.7K
R132 4.7K
R129 4.7K
R126 4.7K
R136 4.7K
6 PCI_SL0_INTB#
6 PCI_SL0_INTD#
PCI_SL0_INTA# 6
PCI_SL0_INTC# 6
C68 .01uF 16v
C69 .01uF 16v
R152 1.00k 1%
R244 4.7K
C70 .01uF 16v
6 PCI_M66EN
R156 4.7K
R157 4.7K
R158 4.7K
PCI_RST#
PCI_GNT1#
PCI_GNT2#
PCI_GNT0#
PCI_M66EN
PCI_REQ1#
PCI_REQ2#
PCI_REQ0#
CLK_PCI_SLOT0
CLK_PCI_SLOT1
CLK_PCI_SLOT2
PCI_AD31 PCI_AD29 PCI_AD27 PCI_AD25 PCI_CBE3# PCI_AD23 PCI_AD21 PCI_AD19 PCI_AD17 PCI_CBE2# PCI_IRDY# PCI_SERR# PCI_PERR# PCI_CBE1# PCI_AD14 PCI_AD12 PCI_AD10 PCI_AD8 PCI_AD7 PCI_AD5 PCI_AD3 PCI_AD1
PCI_AD30 PCI_AD28 PCI_AD26 PCI_AD24 PCI_SL0_IDSEL PCI_AD22 PCI_AD20 PCI_PAR PCI_AD18 PCI_AD16 PCI_FRAME# PCI_TRDY# PCI_STOP# PCI_DEVSEL# PCI_AD15 PCI_AD13 PCI_AD11 PCI_AD9 PCI_CBE0# PCI_AD6 PCI_AD4 PCI_AD2 PCI_AD0
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09_PCI_BUS_INTERFACE
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U1E
MPC5121E
PBGA-516

MPC5121E
SATA INTERFACE
J1850 INTERFACE
SPDIF INTERFACE
USB_INTERFACE
I2C INTERFACES

SATA_VDDA_3P3
SATA_VDDA0_1P2
SATA_VDDA1_1P2
SATA_VDDA2_1P2
SATA_VDDA_VREG
SATA_RX_VSSA1
SATA_RX_VSSA2
SATA_TX_VSSA
SATA_PLL_VDDA1P2
SATA_PLL_VSSA
SATA_XTALI
SATA_XTALO
USB2_VDDA1
USB2_VDDA2
USB2_VDDA_BIAS1
USB2_VSSA_BIAS1
USB2_VSSA1
USB2_VSSA2
USB2_VSSA3
USB2_PLL_PWR3
USB2_PLL_GNDA
USB2_XTALI
USB2_XTALO

SATA_TXP
SATA_TXN
SATA_RXN
SATA_RXP
SATA_ANAVIZ
SATA_RESREF
J1850_TX
J1850_RX
SPDIF_TXCLK
SPDIF_TX
SPDIF_RX
USB2_DRVVBUS
VB_PWR_FAULT
USB2_DM
USB2_DP
USB2_UID
USB2_TPA
USB2_VBUS
USB2_RREF
I2C0_SCL
I2C0_SDA
I2C2_SCL
I2C2_SDA

J5
47155-4001
SATA-7P_SMT
GND1
TX+
TX-
GND2
RX-
RX+
GND3
S1
S2

P15
HDR_1x3_0.1in
1x3 VT_SMT

P16
HDR_1x4_0.1in
1x4 VT_SMT

U27
MIC2026-2
SOIC-8
ENB_A#
FLGA
ENB_B#
FLGB
IN
OUTA
OUTB
GND

P17
USB Mini-AB

SP1A
ESD 24VDC
SOT23-3
SP1B
ESD 24VDC
SOT23-3

VR1
5.5V 20A
PRT_0603
VR2
5.5V 20A
PRT_0603

U28
AT24C32CD3-DH
ULA_MLP8
SCL
SDA
WP
VCC
A2
A1
A0
GND

P18
HDR_1x2_0.1in
1x2 VT_SMT

U29
AD7414-0
SOT23-6
SCL
SDA
ALRT
VDD
AS
GND

U30
M41T62
QFN16
SCL
SDA
XIN
XOUT
VCC
IRQ#/OUT
SQW
NC6
NC7
NC8
NC12
NC13
NC15
NC16
VSS

Y3
32.768khz
XTAL_SMT3r2x1.5

BATT1
CR1220
12mm_COIN
BT1
BK-885
BAT_HOLDER_12MM

U31
AD5246
SC70-6
VDD
SCL
SDA
GND
W
B

P19
1.25MM SMT
1x8 SMT_VT

U38
TSC2004
PQFN20
SNSVDD
IOVdd
VREF
AD0
AD1
SCL
SDA
PINTDAV#
RESET#
SNSGND
SNSGND
DGND
AGND
X+
Y+
X-
Y-
AUX
NC1
NC2
TPAD

P22
1.25MM SMT
1x5 SMT_VT

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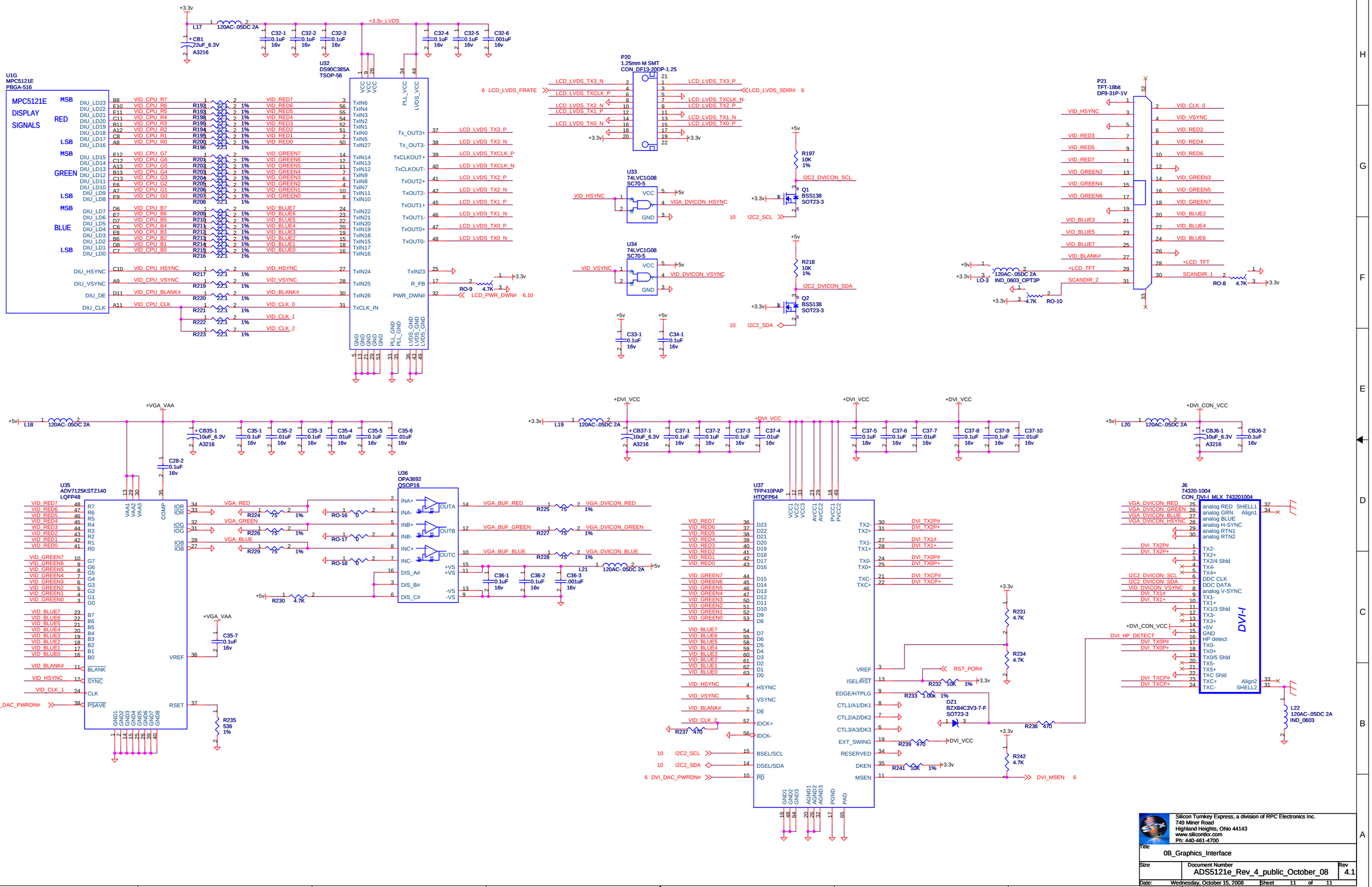

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