

Compal confidential

JBK00 LA-4093P Schematics Document

Mobile AMD S1G2 CPU with ATI
RX781 & SB700 core logic with M86-M

2009-03-25

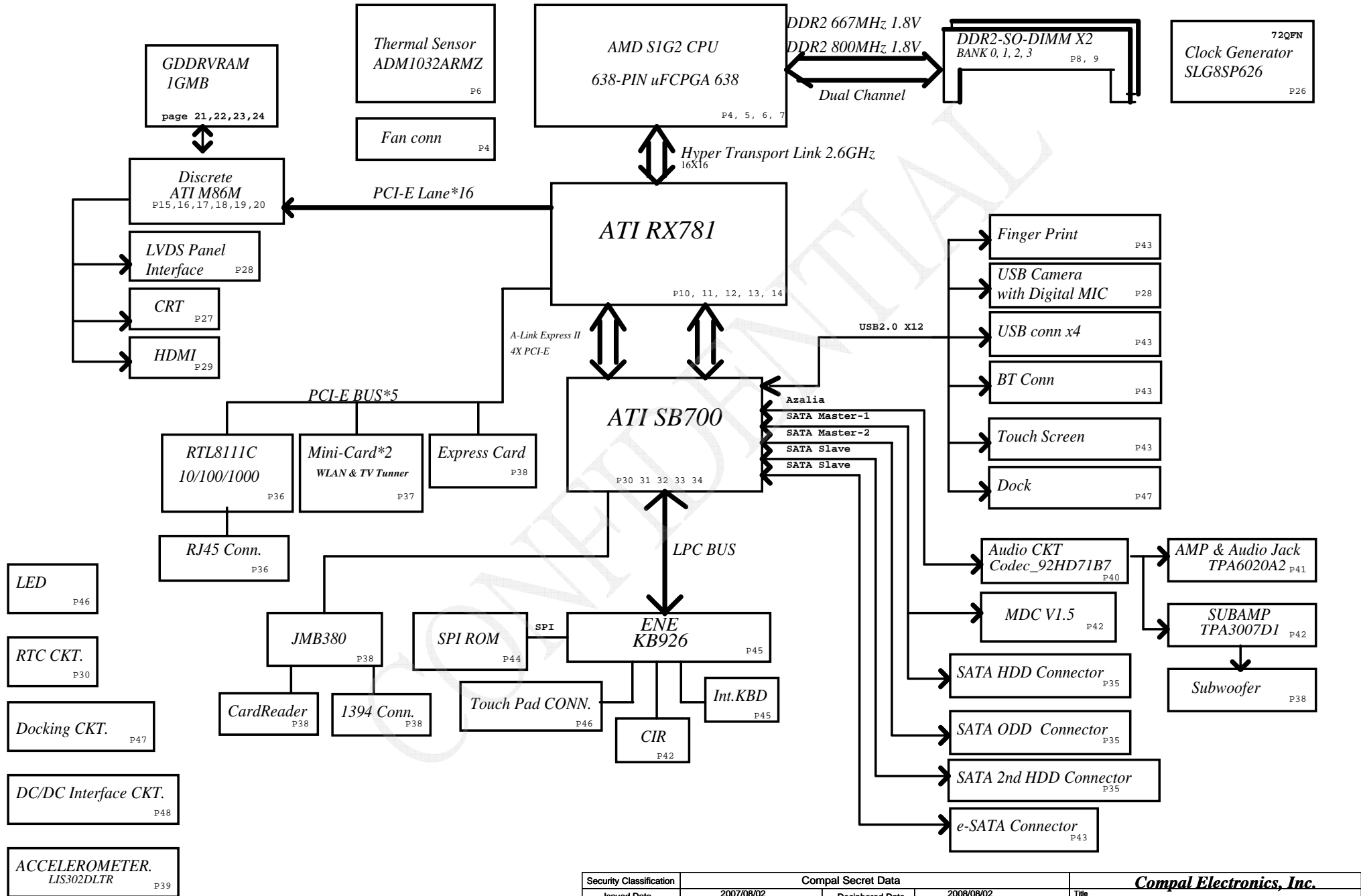
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	產出日期	
	解密日期	

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Consumer AMD Discrete 17"



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
Voltage Rails

power plane	+B	+5VALW +3VALW +1.2VALW +3V_LAN	+1.8V +0.9V	+5VS
				+3VS
State	+3VL	+5VL		+2.5VS
				+1.8VS
				+1.5VS
				+1.1VS
				+VGA_CORE
				+1.2V_HT
				+CPU_CORE_NB
				+CPU_CORE_0
				+CPU_CORE_1
S0	O	O	O	O
S1	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist	X	X	X	X

O MEANS ON X MEANS OFF

Symbol Note :

 : means Digital Ground

 : means Analog Ground

@ : means just reserve , no build

DEBUG@ : means just reserve for debug.

Layout Notes

@ : means just reserve , no build

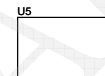
45@ : means need be mounted when 45 level assy or rework stage.

RX781R1@ : means just reserve for R1 FRU BOM

SBR1 @ : means just reserve for R1 FRU BOM

M86R1@ : means just reserve for R1 FRU BOM

M86M



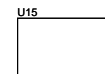
M86M R1
M86R3@

RX781



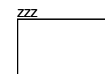
RX781 R1
RX781R3@

SB700



SB700 R1
SBR3@

PCB



PCB LA-4093P REV1.0 MB

I2C / SMBUS ADDRESSING

DEVICE	HEX	ADDRESS
DDR SO-DIMM 0	A0	10100000
DDR SO-DIMM 1	A4	10100100
CLOCK GENERATOR (EXT.)	D2	11010010
ACCELEROMETER	3A	00111010

EC SM Bus1 address

EC SM Bus2 address

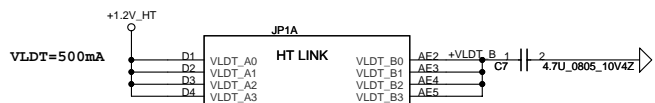
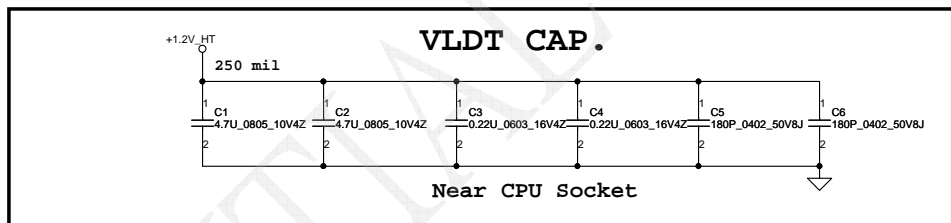
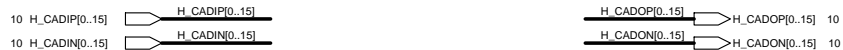
Device	HEX	Address
Smart Battery	16H	0001 011X b
24C16	A0H	1010 000X b
CPU SIC interface	98H	1001 100X b

Device	HEX	Address
ADI1032-2 CPU	9AH	1001 101X b
ADI1032-1 VGA	98H	1001 100X b

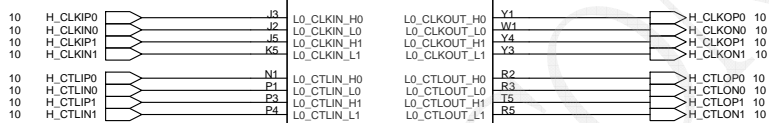
SMBUS Control Table

	SOURCE	INVERTER	BATT	SERIAL EEPROM	THERMAL SENSOR CPU & ADM1032	SODIMM I / II	CLK CHIP	MINI CARD Slot 2	LCD	HDMI	G-Sensor
SMB_EC_CK1	KB926	X	V	V	X	X	X	X	X	X	X
SMB_EC_DA1	KB926	X	X	X	V	X	X	X	X	X	X
SMB_EC_CK2	KB926	X	X	X	V	X	X	X	X	X	X
SMB_EC_DA2	KB926	X	X	X	V	X	X	X	X	X	X
I2C_CLK	RS780M	X	X	X	X	X	X	X	V	X	X
I2C_DATA	RS780M	X	X	X	X	X	X	X	V	X	X
DDC_CLK0	RS780M	X	X	X	X	X	X	X	X	V	X
DDC_DATA0	RS780M	X	X	X	X	X	X	X	X	V	X
DDC_CLK1	RS780M	X	X	X	X	X	X	X	X	X	X
DDC_DATA1	RS780M	X	X	X	X	X	X	X	X	X	X
SCL0	SB700	X	X	X	X	V	V	X	X	X	V
SDA0	SB700	X	X	X	X	V	V	X	X	X	V
SCL1	SB700	X	X	X	X	X	X	V	X	X	X
SDA1	SB700	X	X	X	X	X	X	V	X	X	X
SCL2	SB700	X	X	X	X	X	X	X	X	X	X
SDA2	SB700	X	X	X	X	X	X	X	X	X	X
SCL3	SB700	X	X	X	X	X	X	X	X	X	X
SDA3	SB700	X	X	X	X	X	X	X	X	X	X

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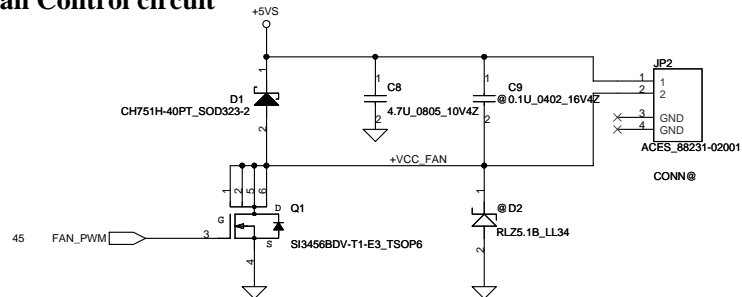


H_CADIP0	E3	L0_CADIN_H0	L0_CADOUT_H0	AD1	H_CADOP0
H_CADIN0	E2	L0_CADIN_L0	L0_CADOUT_L0	AC1	H_CADON0
H_CADIP1	F1	L0_CADIN_H1	L0_CADOUT_H1	AC2	H_CADOP1
H_CADIN1	F1	L0_CADIN_L1	L0_CADOUT_L1	AC3	H_CADON1
H_CADIP2	G3	L0_CADIN_H2	L0_CADOUT_H2	AB1	H_CADOP2
H_CADIN2	G2	L0_CADIN_L2	L0_CADOUT_L2	AA1	H_CADON2
H_CADIP3	G1	L0_CADIN_H3	L0_CADOUT_H3	AA2	H_CADOP3
H_CADIN3	H1	L0_CADIN_L3	L0_CADOUT_L3	AA3	H_CADON3
H_CADIP4	H1	L0_CADIN_H4	L0_CADOUT_H4	W2	H_CADOP4
H_CADIN4	K1	L0_CADIN_L4	L0_CADOUT_L4	W3	H_CADON4
H_CADIP5	L3	L0_CADIN_H5	L0_CADOUT_H5	V1	H_CADOP5
H_CADIN5	L2	L0_CADIN_L5	L0_CADOUT_L5	L11	H_CADON5
H_CADIP6	L4	L0_CADIN_H6	L0_CADOUT_H6	L12	H_CADOP6
H_CADIN6	M1	L0_CADIN_L6	L0_CADOUT_L6	L13	H_CADON6
H_CADIP7	N3	L0_CADIN_H7	L0_CADOUT_H7	T1	H_CADOP7
H_CADIN7	N2	L0_CADIN_L7	L0_CADOUT_L7	R1	H_CADON7
H_CADIP8	N2	L0_CADIN_H8	L0_CADOUT_H8	AD4	H_CADOP8
H_CADIN8	F5	L0_CADIN_L8	L0_CADOUT_L8	AD3	H_CADON8
H_CADIP9	F3	L0_CADIN_H9	L0_CADOUT_H9	AD5	H_CADOP9
H_CADIN9	F4	L0_CADIN_L9	L0_CADOUT_L9	AC5	H_CADON9
H_CADIP10	F4	L0_CADIN_H10	L0_CADOUT_H10	AB4	H_CADOP10
H_CADIN10	G6	L0_CADIN_L10	L0_CADOUT_L10	AB3	H_CADON10
H_CADIP11	H3	L0_CADIN_H11	L0_CADOUT_H11	AB5	H_CADOP11
H_CADIN11	H4	L0_CADIN_L11	L0_CADOUT_L11	AA5	H_CADON11
H_CADIP12	K3	L0_CADIN_H12	L0_CADOUT_H12	Y5	H_CADOP12
H_CADIN12	K4	L0_CADIN_L12	L0_CADOUT_L12	W5	H_CADON12
H_CADIP13	L5	L0_CADIN_H13	L0_CADOUT_H13	V4	H_CADOP13
H_CADIN13	M5	L0_CADIN_L13	L0_CADOUT_L13	V3	H_CADON13
H_CADIP14	M3	L0_CADIN_H14	L0_CADOUT_H14	V5	H_CADOP14
H_CADIN14	M4	L0_CADIN_L14	L0_CADOUT_L14	U5	H_CADON14
H_CADIP15	N5	L0_CADIN_H15	L0_CADOUT_H15	T4	H_CADOP15
H_CADIN15	P5	L0_CADIN_L15	L0_CADOUT_L15	T3	H_CADON15



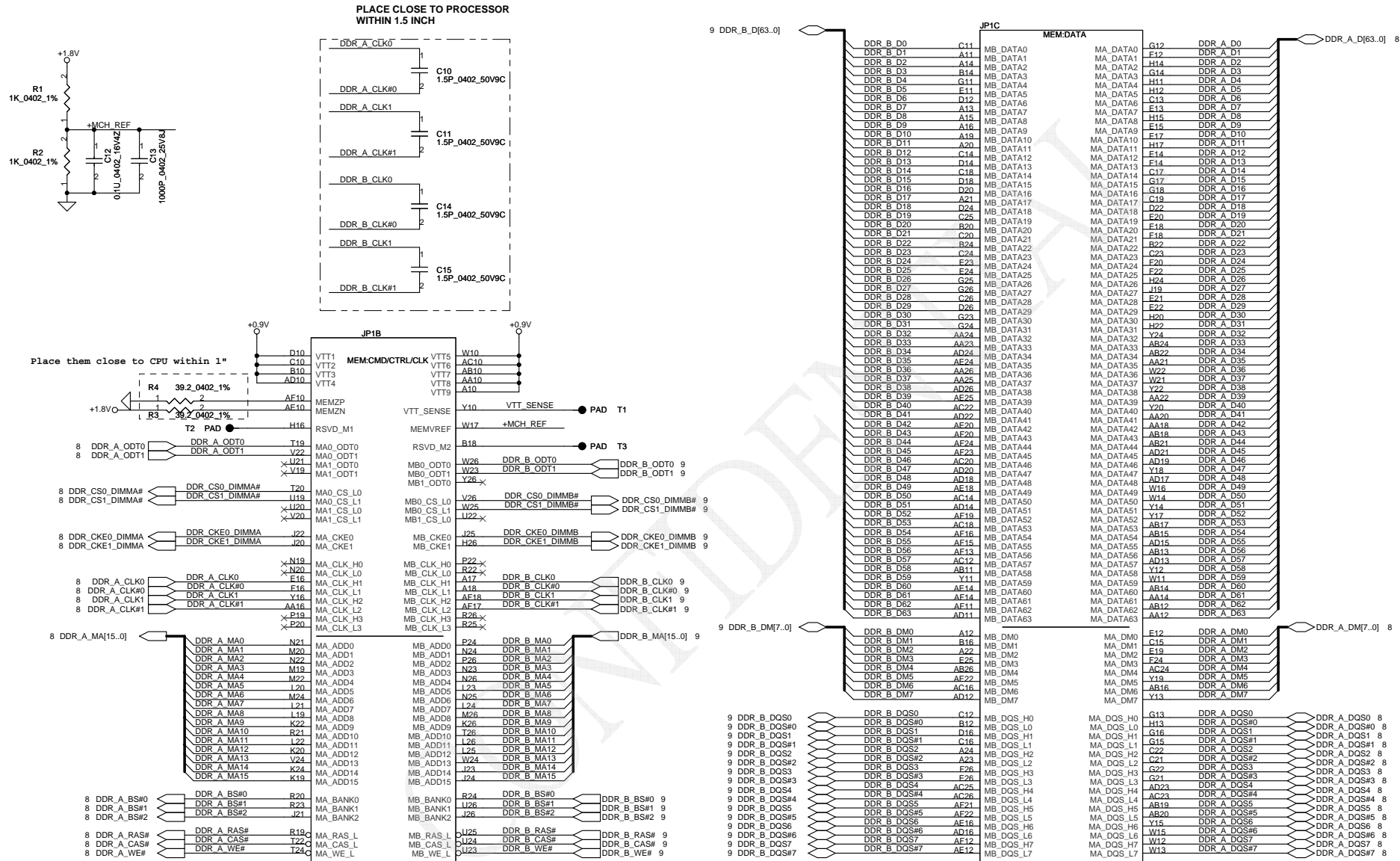
60900221006_B
 CONN@

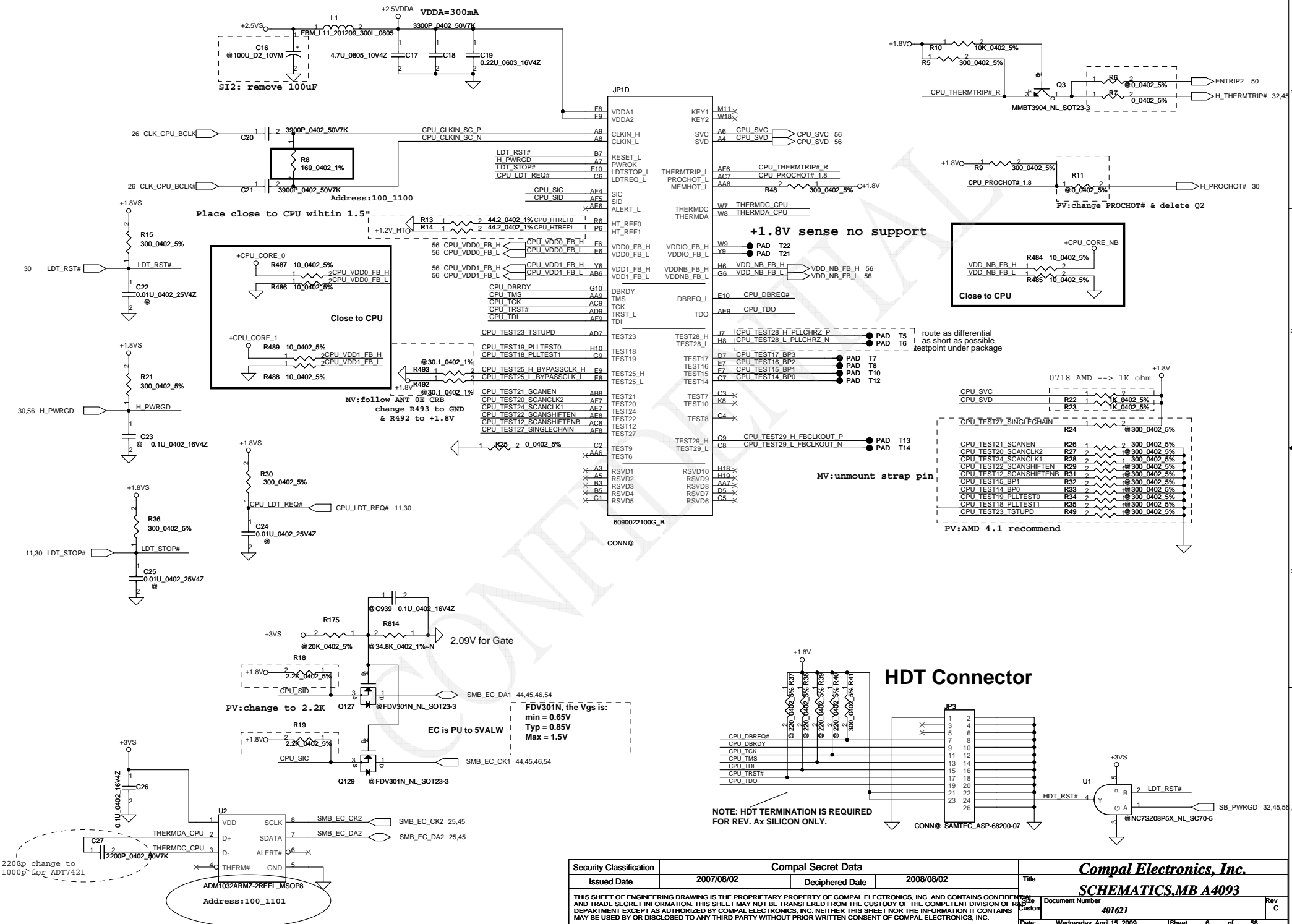
PWM Fan Control circuit



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Processor DDR2 Memory Interface

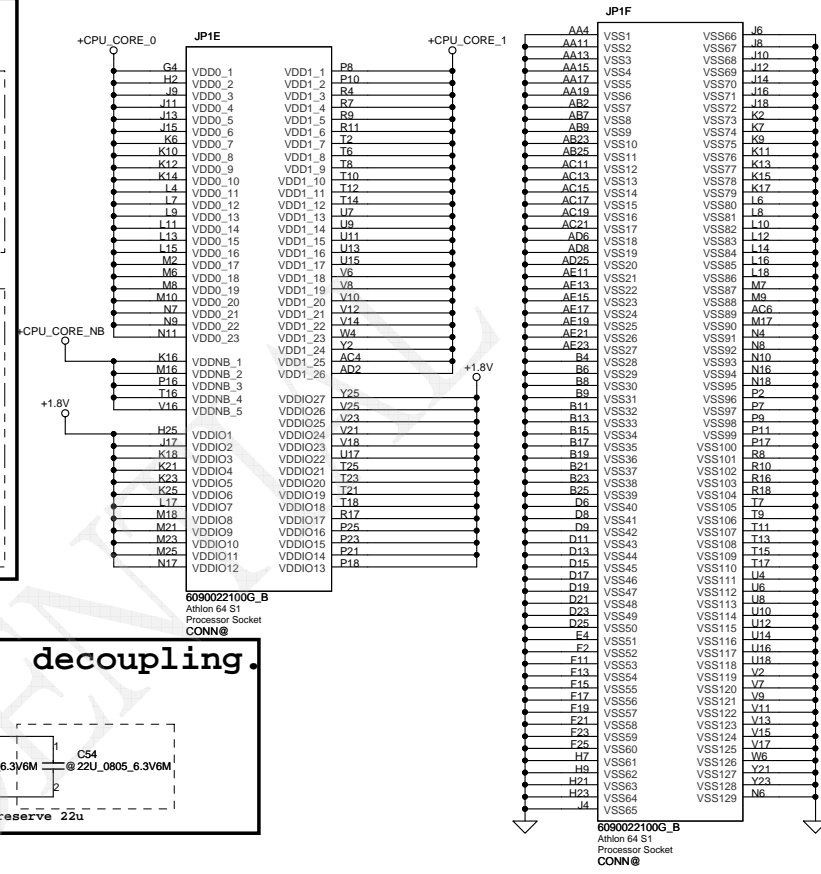
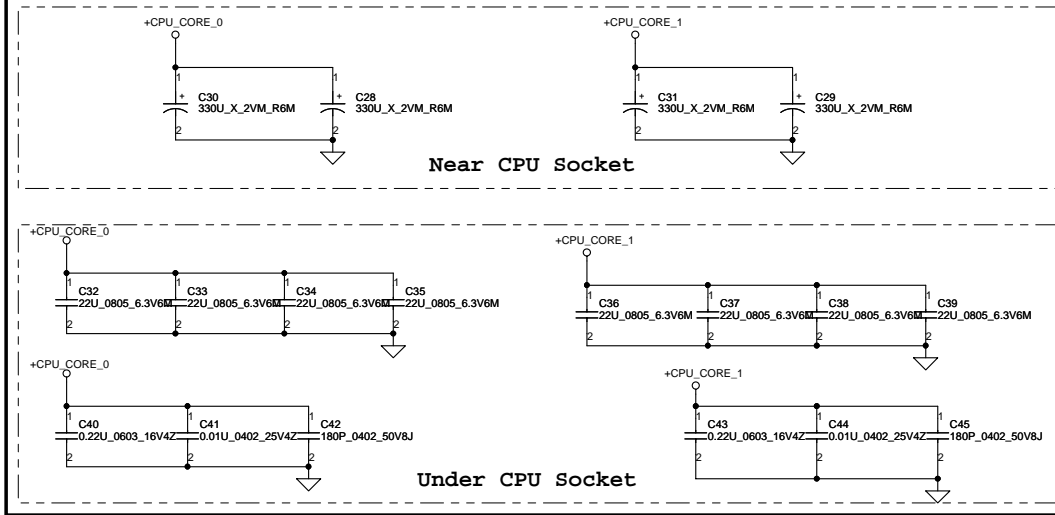




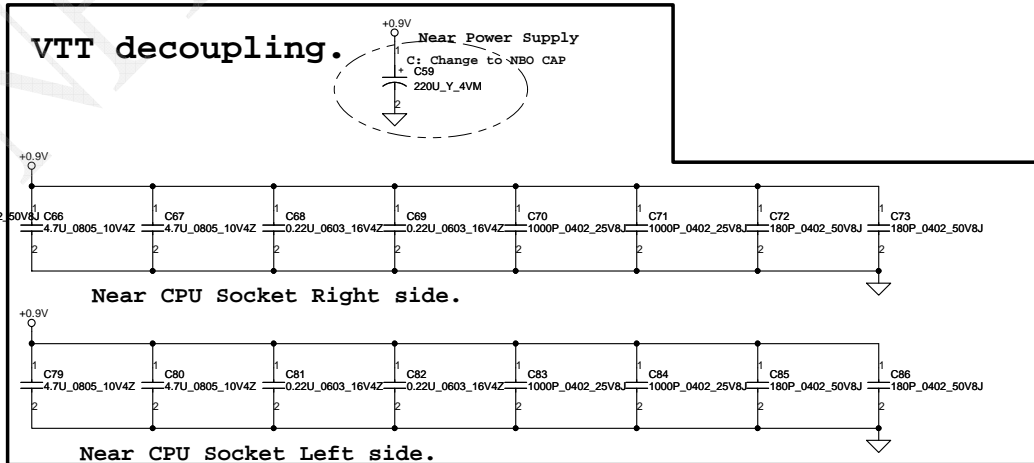
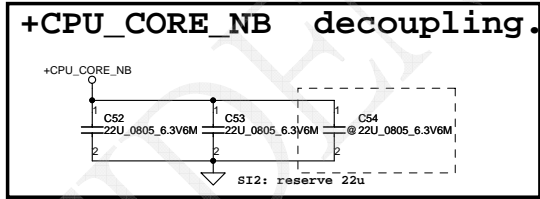
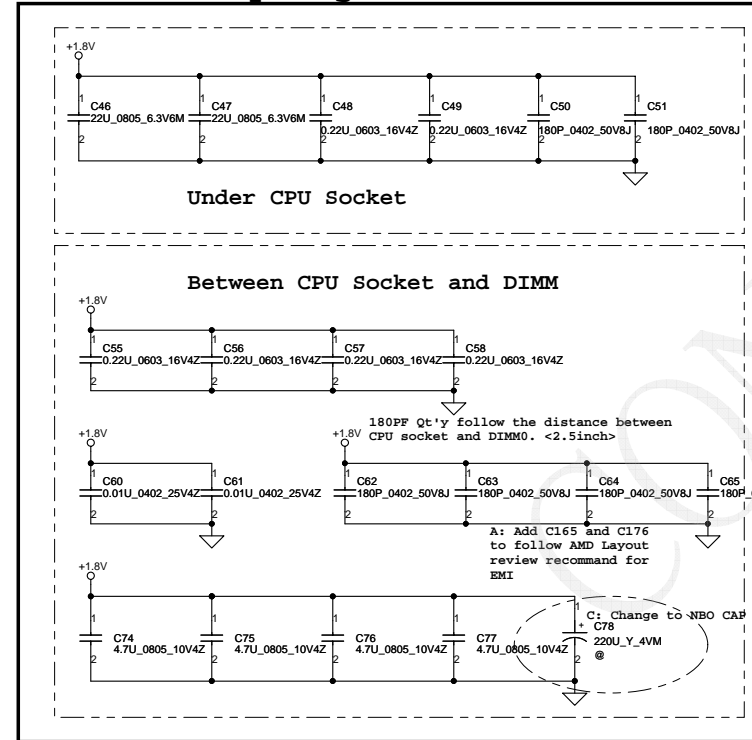
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VDD(+CPU_CORE) decoupling.

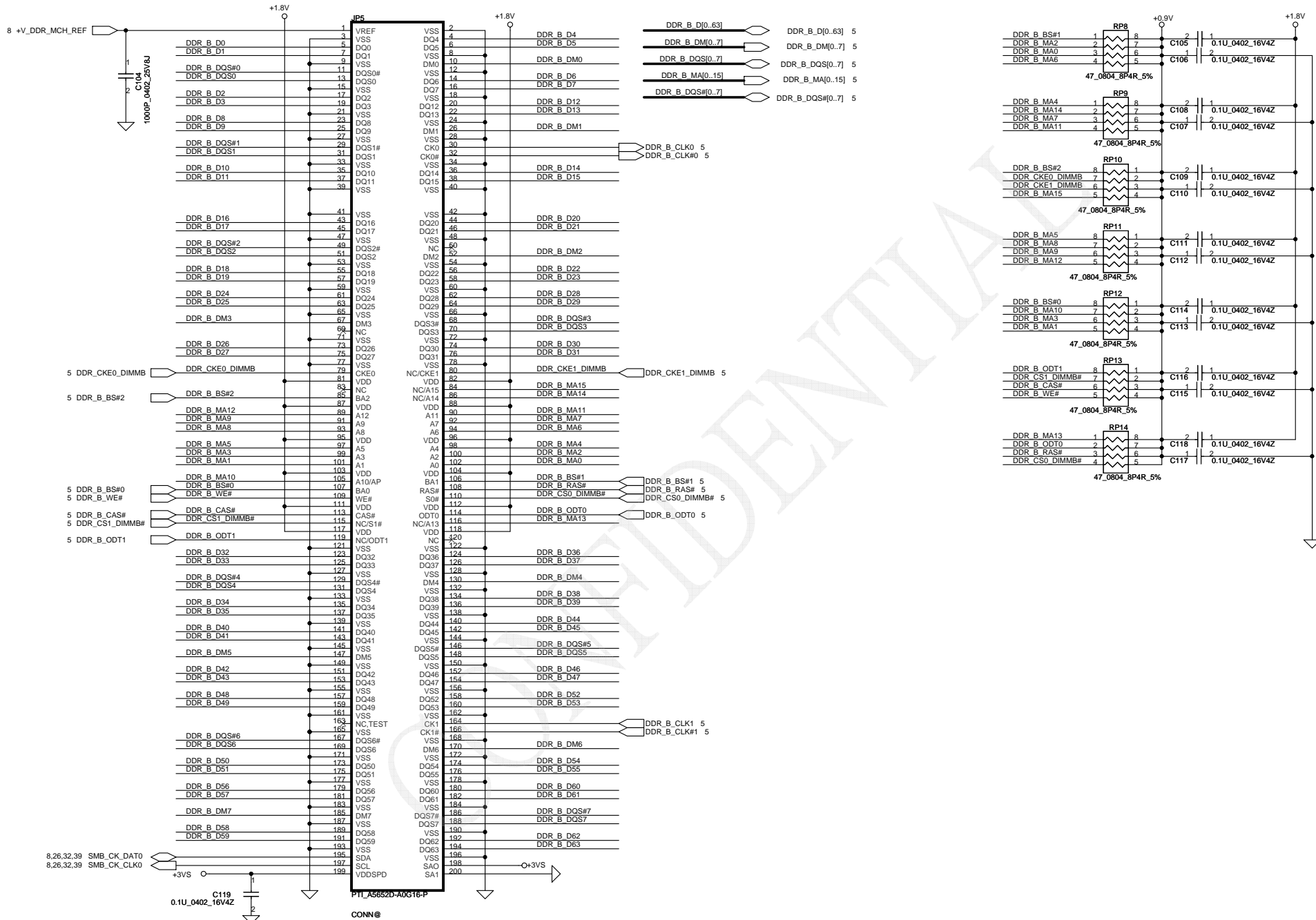


VDDIO decoupling.



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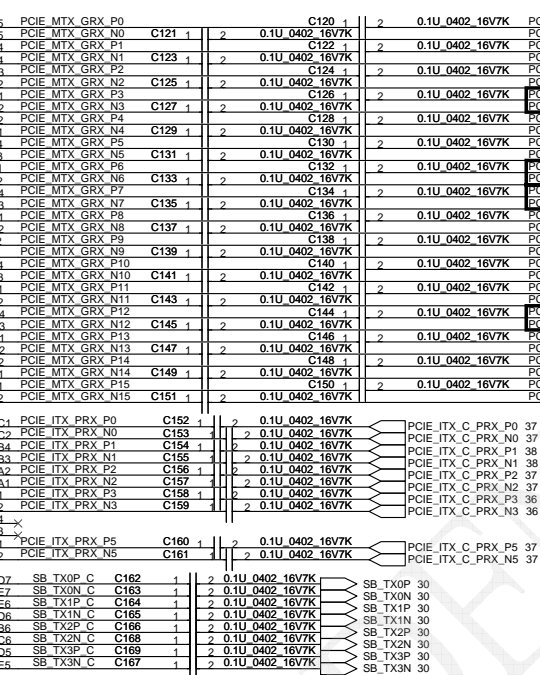
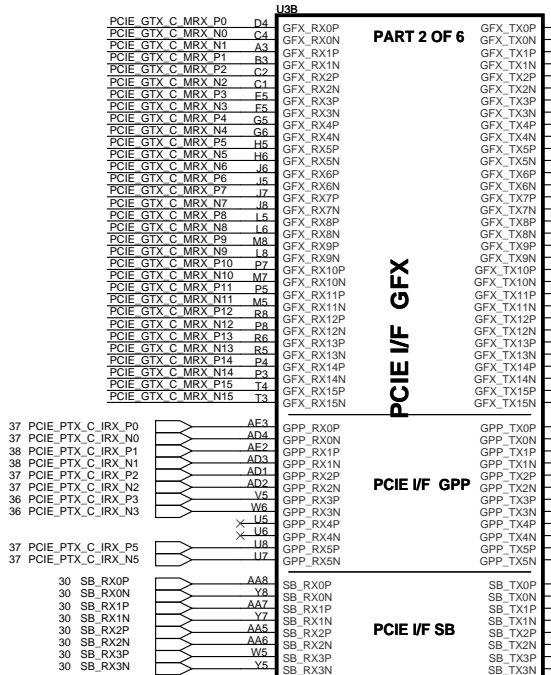
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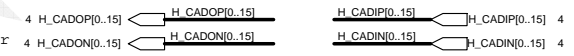
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15 PCIE GTX_C_MRX_P[0..15] <-> PCIE GTX_C_MRX_P[0..15]
 15 PCIE GTX_C_MRX_N[0..15] <-> PCIE GTX_C_MRX_N[0..15]

PCIE_MTX_C_GRX_P[0..15] <-> PCIE_MTX_C_GRX_P[0..15] 15
 PCIE_MTX_C_GRX_N[0..15] <-> PCIE_MTX_C_GRX_N[0..15] 15



Polarity inversion
 Polarity inversion
 Polarity inversion
 New Card
 Cardreader
 WLAN
 GLAN
 TV Tuner



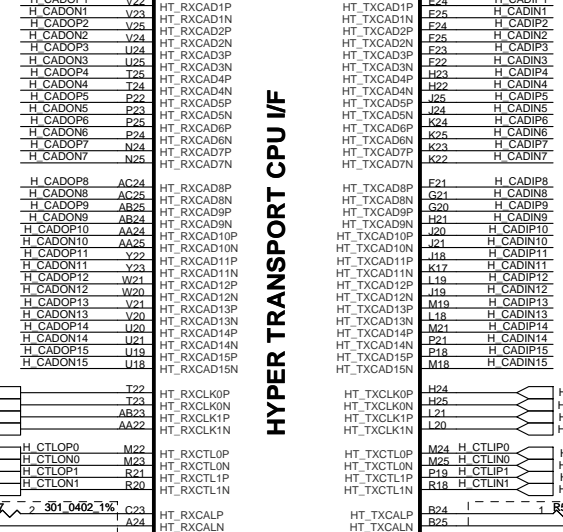
RS780M_FCBGA528
 RX781R1@

RS780M Display Port Support (muxed on GFX)

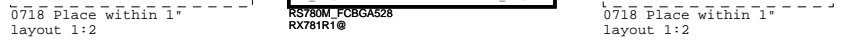
DP0	GFX_TX0,TX1,TX2 and TX3 AUX0 and HPD0
DP1	GFX_TX4,TX5,TX6 and TX7 AUX1 and HPD1

RS780M_FCBGA528
 RX781R1@

PART 1 OF 6

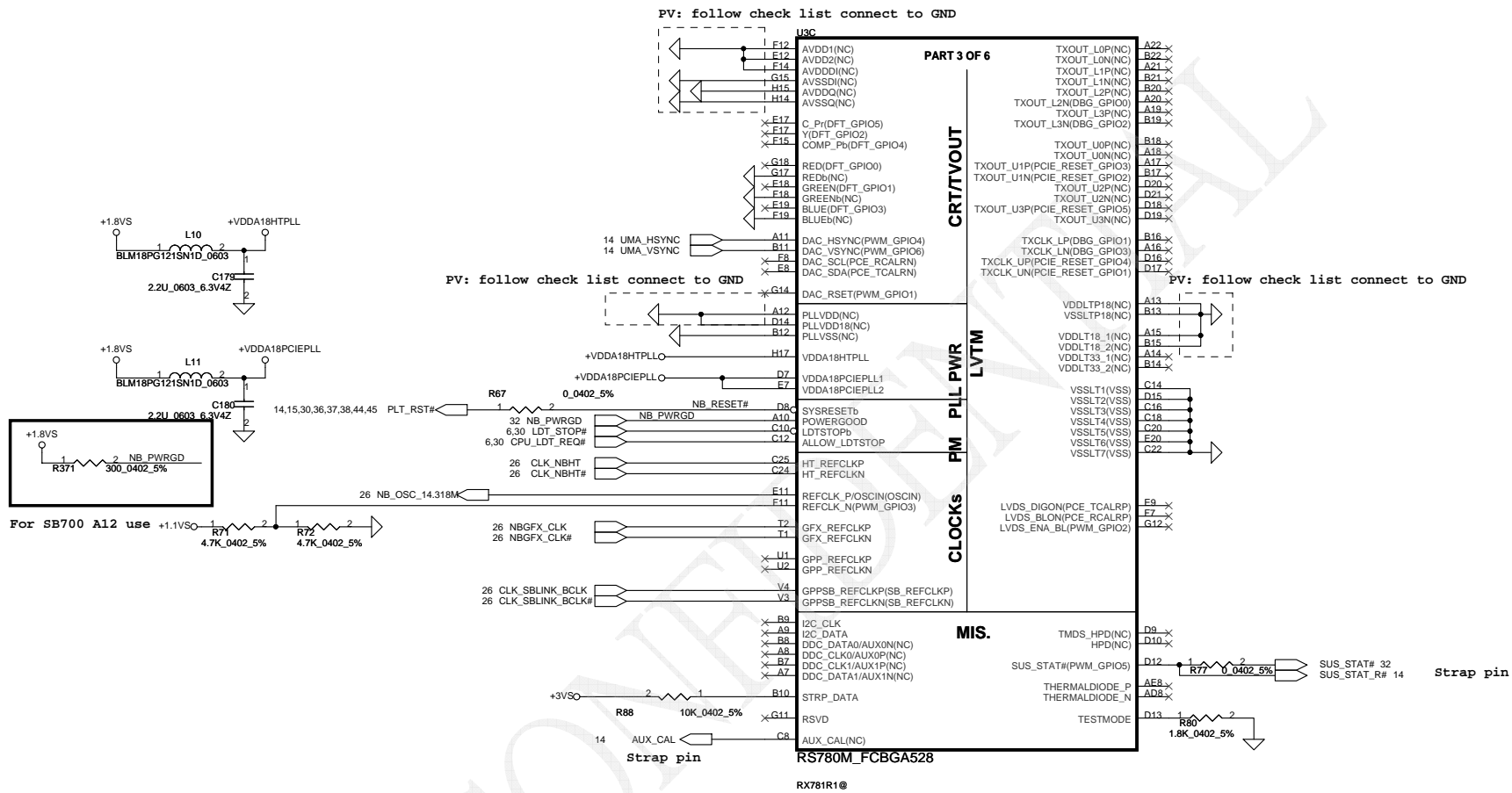


HYPER TRANSPORT CPU I/F



NEED CHECK R68 & R69 WITH AMD

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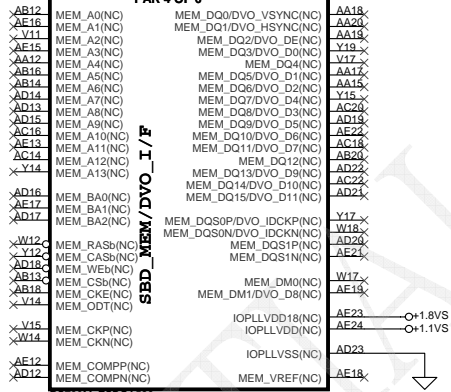


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U3D

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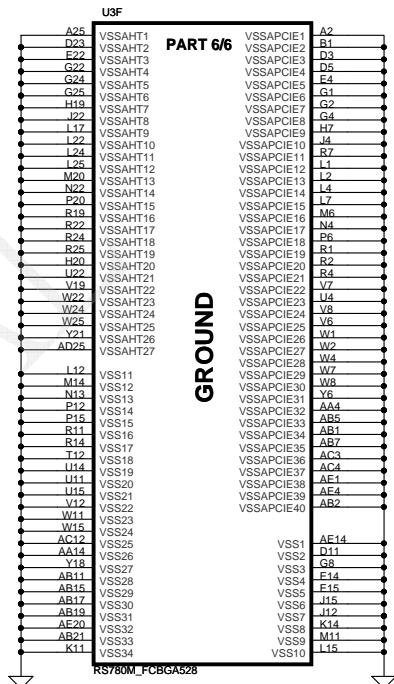
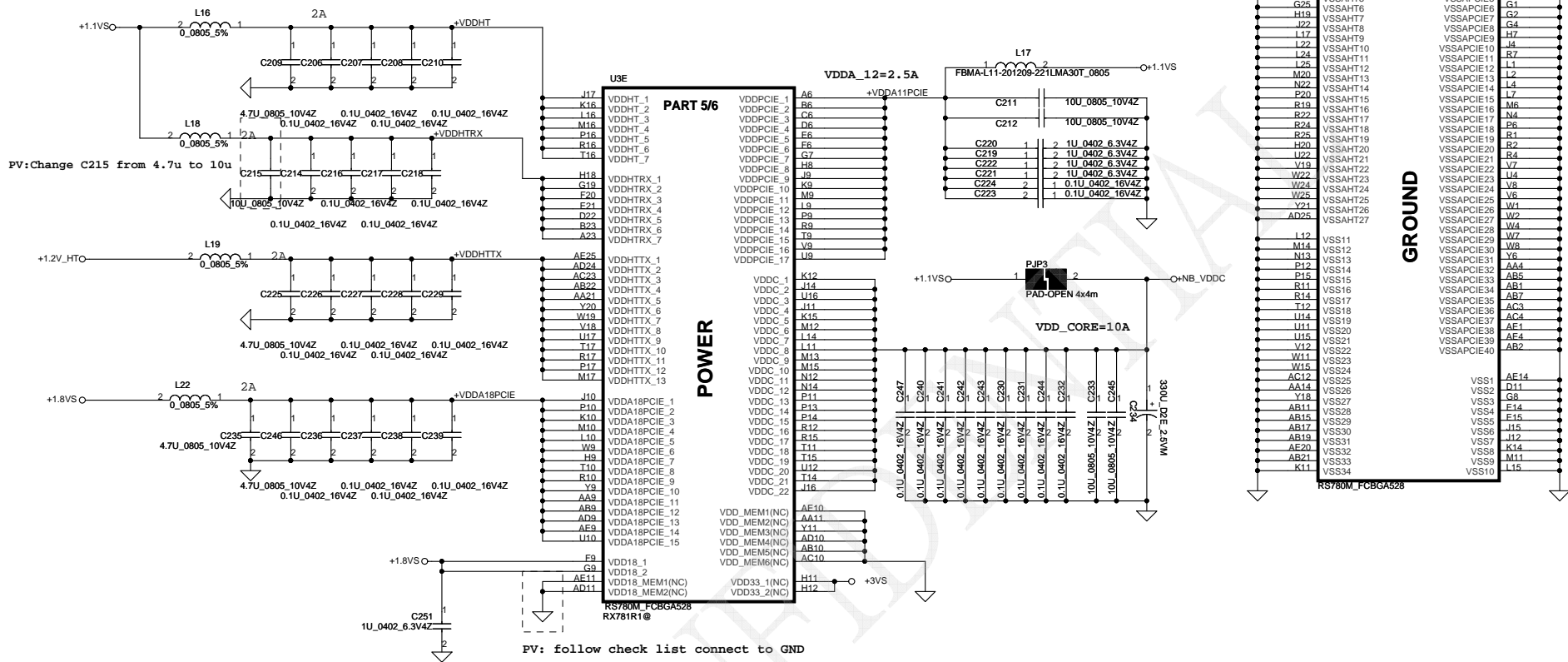


RS780M_FCBGA528

RX781R1@

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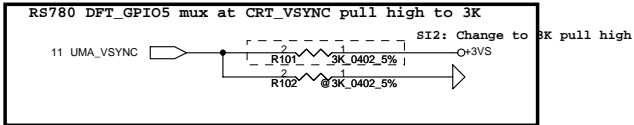
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PV: follow check list connect to GND

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DFT_GPIO5:STRAP_DEBUG_BUS_GPIO_ENABLEb

Enables the Test Debug Bus using GPIO.

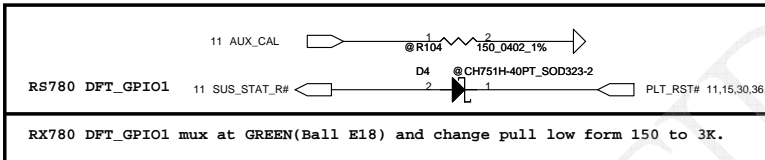
1 : Enable (RX780, RS780)
 0 : Disable (RX780, RS780)
 PIN: RS740-->RS780_AUX_CAL; RX780-->NB_TV_C; RS780--> VSYNC#

RS780 use register to control PCI-E configure

DFT_GPIO[4:2]: STRAP_PCIE_GPP_CFG[2:0]

These pin straps are used to configure PCI-E GPP mode.

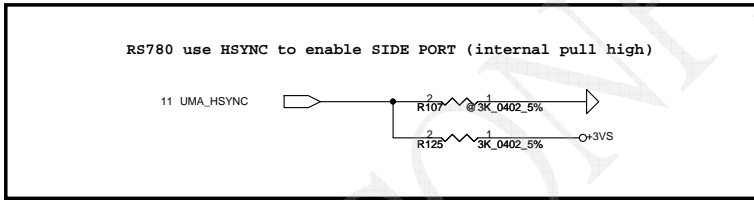
000 : 00001
 001 : 00010
 010 : 01011
 011 : 00100
 100 : 01010
 101 : 01100
 111 : 01011



DFT_GPIO1: LOAD_EEPROM_STRAPS

Selects Loading of STRAPS from EPROM

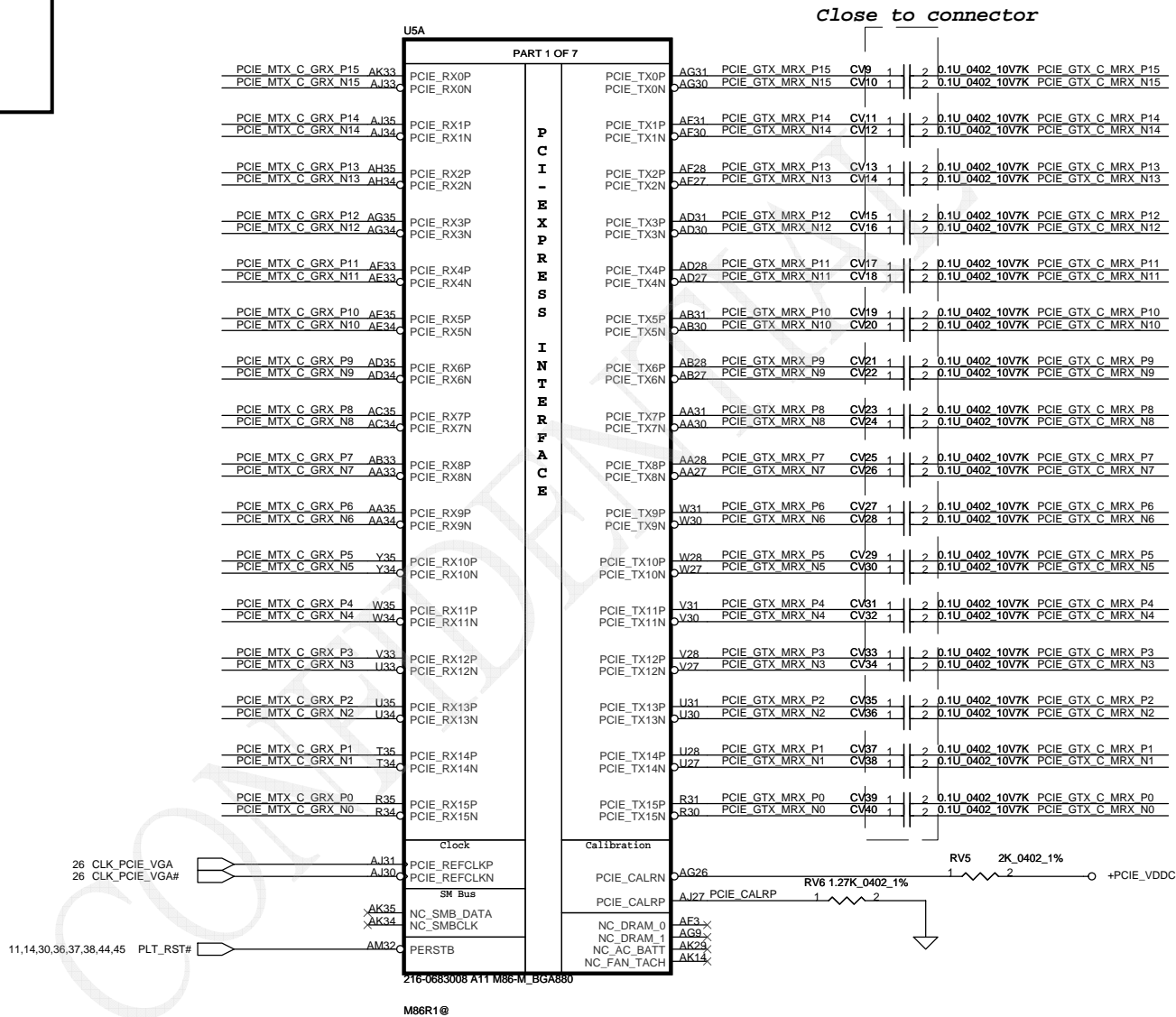
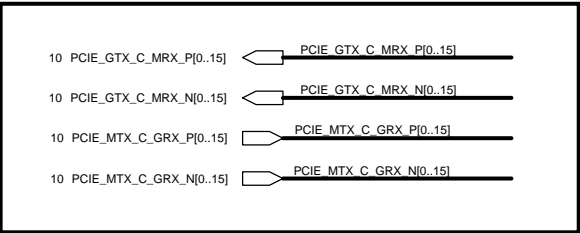
1 : Bypass the loading of EEPROM straps and use Hardware Default Values
 0 : I2C Master can load strap values from EEPROM if connected, or use default values if not connected
 RS740/RX780: DFT_GPIO1 RS780:SUS_STAT



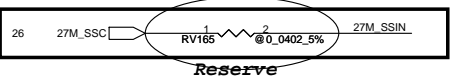
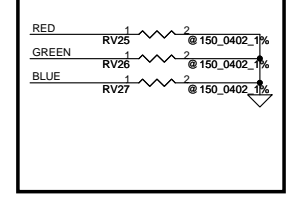
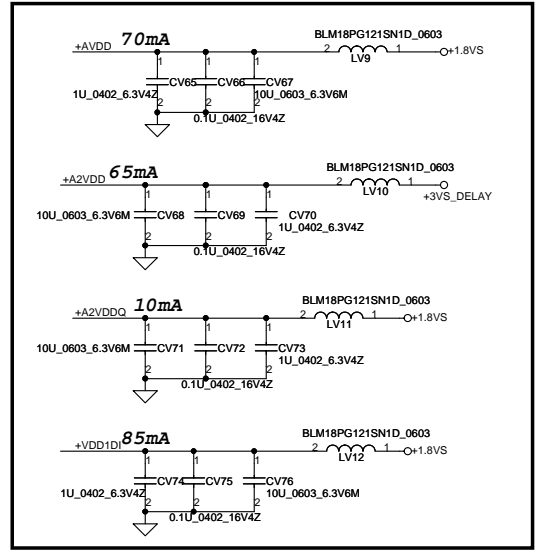
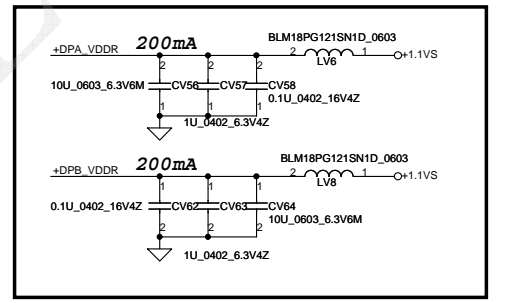
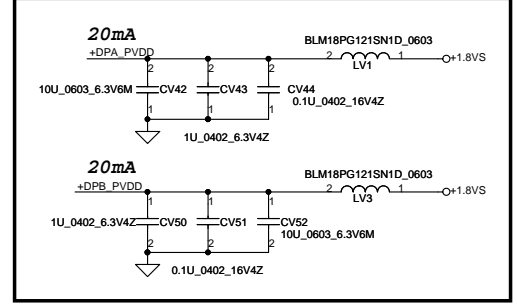
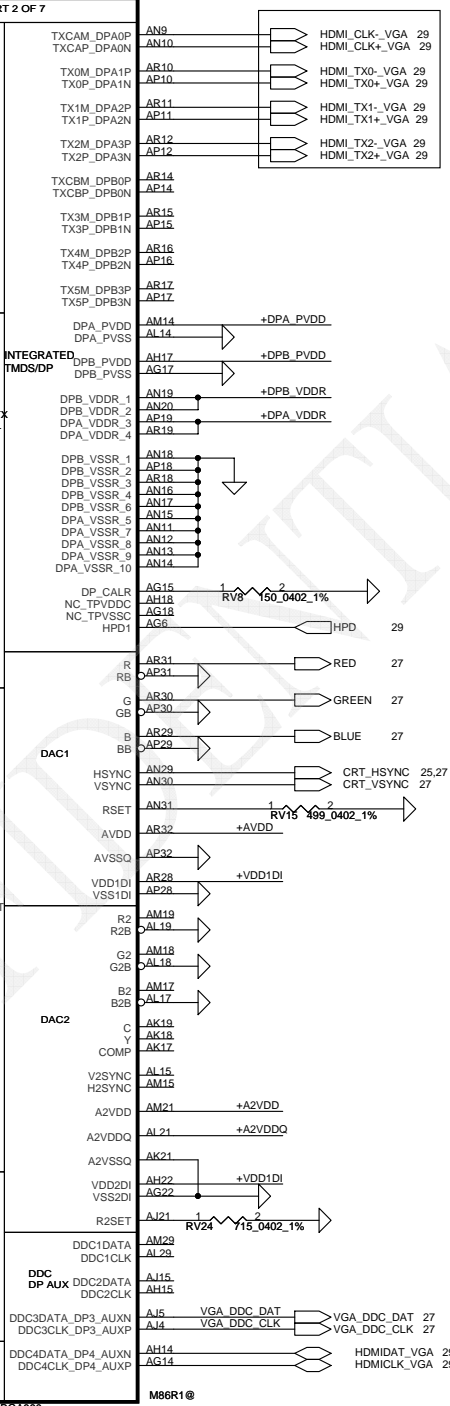
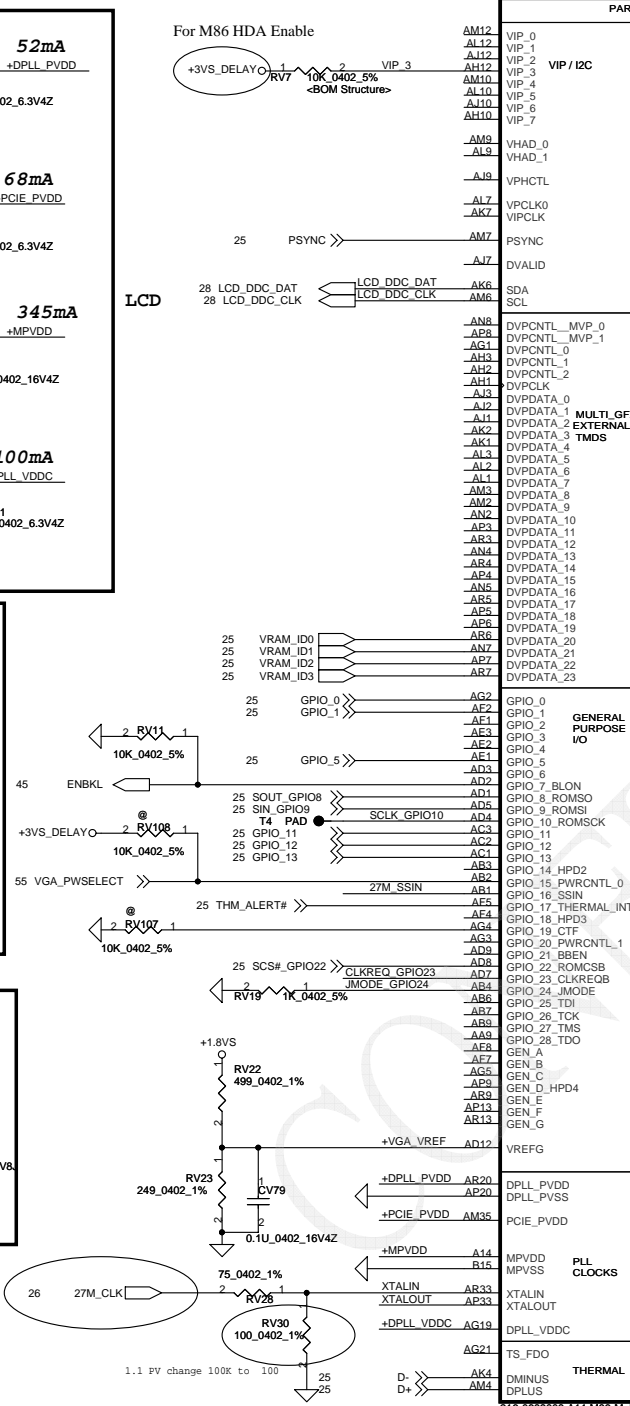
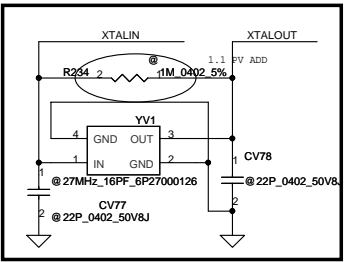
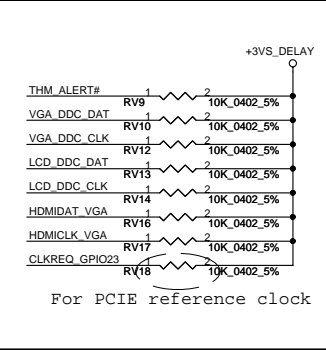
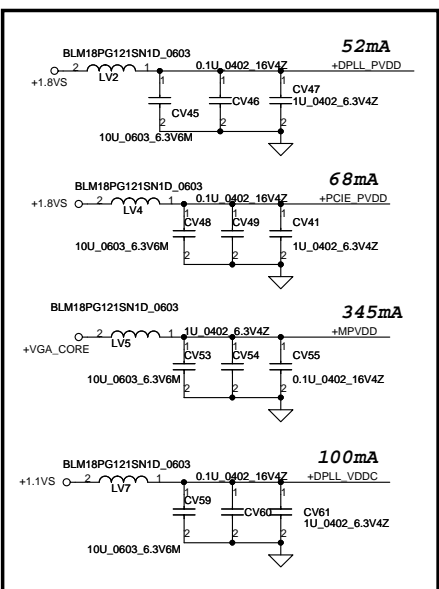
DFT_GPIO0: STRAP_DEBUG_BUS_PCIE_ENABLEb

RX780: Enables the Test Debug Bus using PCIE bus
 1 : Disable (Can still be enabled using nbcfg register access)
 0 : Enable

RS780: Enables Side port memory (RS780 use HSYNC#)
 1. Disable (RS780)
 0 : Enable (RS780)

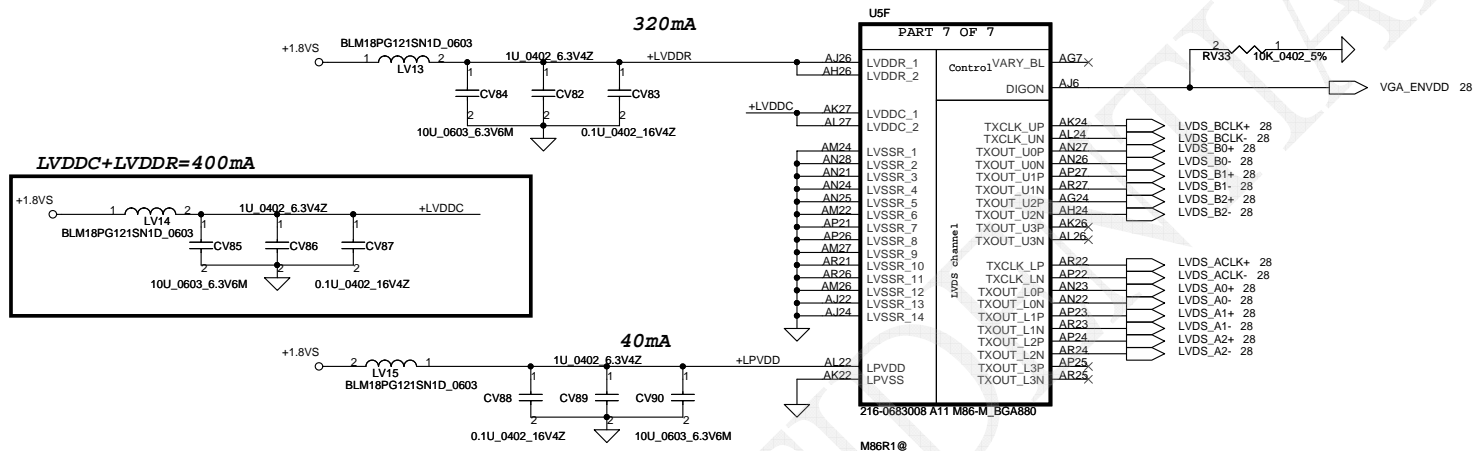


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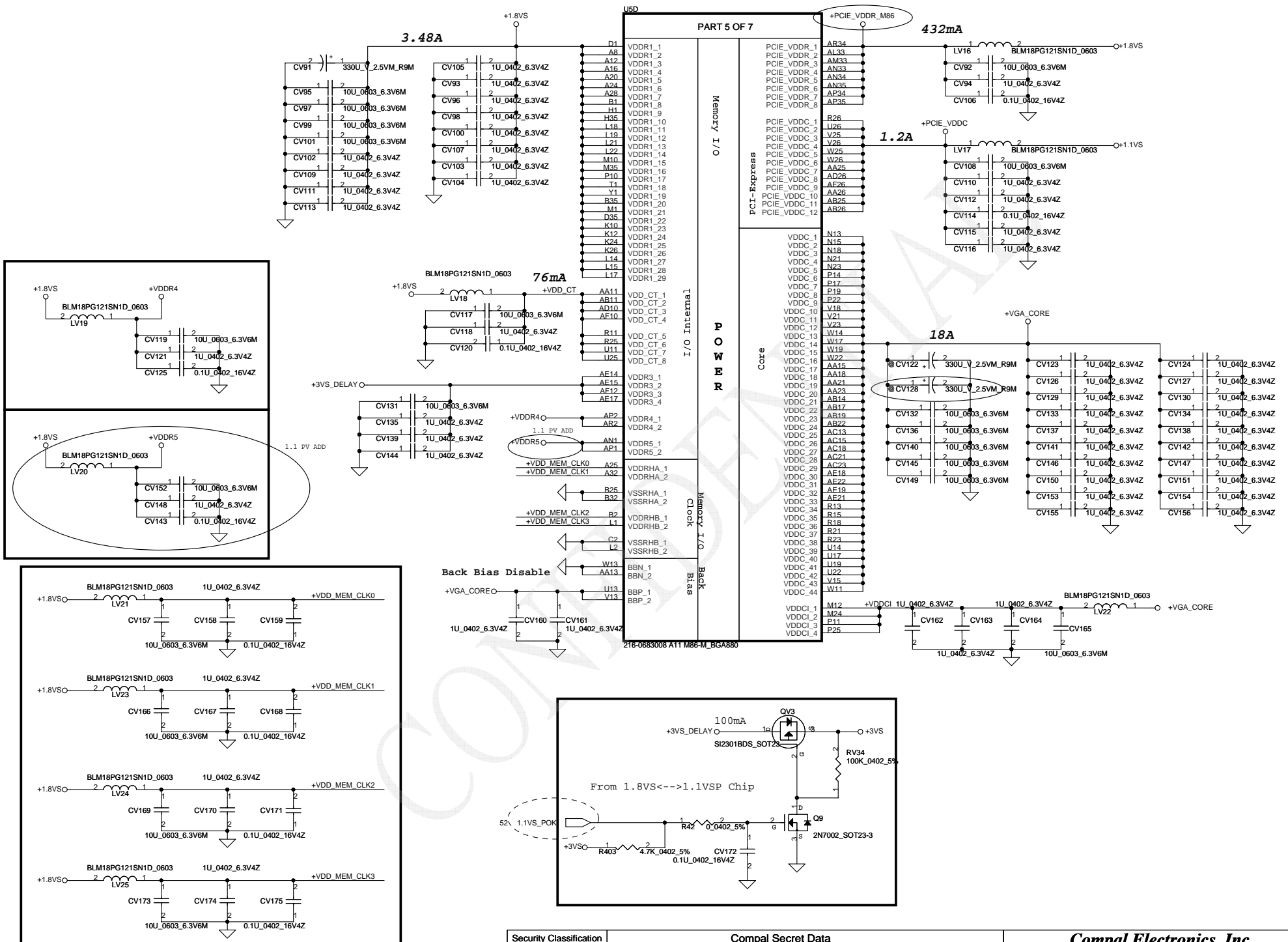


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USE
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P33	PCIE_VSS_1	VSS_66	P6
P34	PCIE_VSS_2	VSS_67	M9
P35	PCIE_VSS_3	VSS_68	M28
R27	PCIE_VSS_4	VSS_69	K28
R28	PCIE_VSS_5	VSS_70	M32
R29	PCIE_VSS_6	VSS_71	N14
R32	PCIE_VSS_7	VSS_72	N17
R33	PCIE_VSS_8	VSS_73	N19
U29	PCIE_VSS_9	VSS_74	N22
U32	PCIE_VSS_10	VSS_75	N33
V29	PCIE_VSS_11	VSS_76	N3
V32	PCIE_VSS_12	VSS_77	R5
T33	PCIE_VSS_13	VSS_78	U8
V34	PCIE_VSS_14	VSS_79	P13
V35	PCIE_VSS_15	VSS_80	P15
W29	PCIE_VSS_16	VSS_81	P18
W32	PCIE_VSS_17	VSS_82	P21
W33	PCIE_VSS_18	VSS_83	P23
AA29	PCIE_VSS_19	VSS_84	P26
AA32	PCIE_VSS_20	VSS_85	P29
AB29	PCIE_VSS_21	VSS_86	P30
AB32	PCIE_VSS_22	VSS_87	R1
Y33	PCIE_VSS_23	VSS_88	R6
AB34	PCIE_VSS_24	VSS_89	P9
AB35	PCIE_VSS_25	VSS_90	R10
AC33	PCIE_VSS_26	VSS_91	R14
AD29	PCIE_VSS_27	VSS_92	R17
AD32	PCIE_VSS_28	VSS_93	R19
AF29	PCIE_VSS_29	VSS_94	R22
AF32	PCIE_VSS_30	VSS_95	V3
AD33	PCIE_VSS_31	VSS_96	AK9
AF34	PCIE_VSS_32	VSS_97	J10
AF35	PCIE_VSS_33	VSS_98	J15
AG27	PCIE_VSS_34	VSS_99	J18
AG29	PCIE_VSS_35	VSS_100	U21
AG32	PCIE_VSS_36	VSS_101	U23
AG33	PCIE_VSS_37	VSS_102	U7
AJ29	PCIE_VSS_38	VSS_103	W8
AJ32	PCIE_VSS_39	VSS_104	V10
AH33	PCIE_VSS_40	VSS_105	V14
AL34	PCIE_VSS_41	VSS_106	V17
AL35	PCIE_VSS_42	VSS_107	V19
AK32	PCIE_VSS_43	VSS_108	V22
		VSS_109	V1
A2	VSS_1	VSS_110	AK12
A34	VSS_2	VSS_111	V9
C3	VSS_3	VSS_112	W10
C5	VSS_4	VSS_113	W15
A4	VSS_5	VSS_114	W18
C18	VSS_6	VSS_115	W21
A21	VSS_7	VSS_116	W23
C23	VSS_8	VSS_117	AA6
C11	VSS_9	VSS_118	AA10
C13	VSS_10	VSS_119	AA14
C14	VSS_11	VSS_120	AA17
A18	VSS_12	VSS_121	AA19
A11	VSS_13	VSS_122	AA22
C26	VSS_14	VSS_123	AB8
C33	VSS_15	VSS_124	AB10
F35	VSS_16	VSS_125	AB13
R7	VSS_17	VSS_126	AB15
G10	VSS_18	VSS_127	AB18
F15	VSS_19	VSS_128	AB21
H17	VSS_20	VSS_129	AB23
G21	VSS_21	VSS_130	AC14
D29	VSS_22	VSS_131	AC17
A29	VSS_23	VSS_132	AC19
G1	VSS_24	VSS_133	AC22
F14	VSS_25	VSS_134	AF9
J15	VSS_26	VSS_135	AD6
E19	VSS_27	VSS_136	AD24
F22	VSS_28	VSS_137	W5
F24	VSS_29	VSS_138	AF6
D7	VSS_30	VSS_139	AF14
G9	VSS_31	VSS_140	AF21
F26	VSS_32	VSS_141	AF22
G29	VSS_33	VSS_142	AK10
D33	VSS_34	VSS_143	AF17
M5	VSS_35	VSS_144	AF18
G4	VSS_36	VSS_145	AF19
E10	VSS_37	VSS_146	AG12
F12	VSS_38	VSS_147	A14
F17	VSS_39	VSS_148	AH21
G18	VSS_40	VSS_149	D4
G22	VSS_41	VSS_150	AF15
VSS_42		VSS_151	AG10
F30	VSS_43	VSS_152	AN6
J35	VSS_44	VSS_153	AK15
H18	VSS_45	VSS_154	A17
H19	VSS_46	VSS_155	A118
J21	VSS_47	VSS_156	A119
F7	VSS_48	VSS_157	AF24
J12	VSS_49	VSS_158	AN32
J26	VSS_50	VSS_159	AK3
K30	VSS_51	VSS_160	AN9
J32	VSS_52	VSS_161	AR8
F33	VSS_53	VSS_162	AM1
K6	VSS_54	VSS_163	AK30
K9	VSS_55	VSS_164	V11
K14	VSS_56	VSS_165	
K15	VSS_57	VSS_166	
K17			
K18			
K19			
K21			
K22			
M28			
K3			
L33			

PC1-Express GND

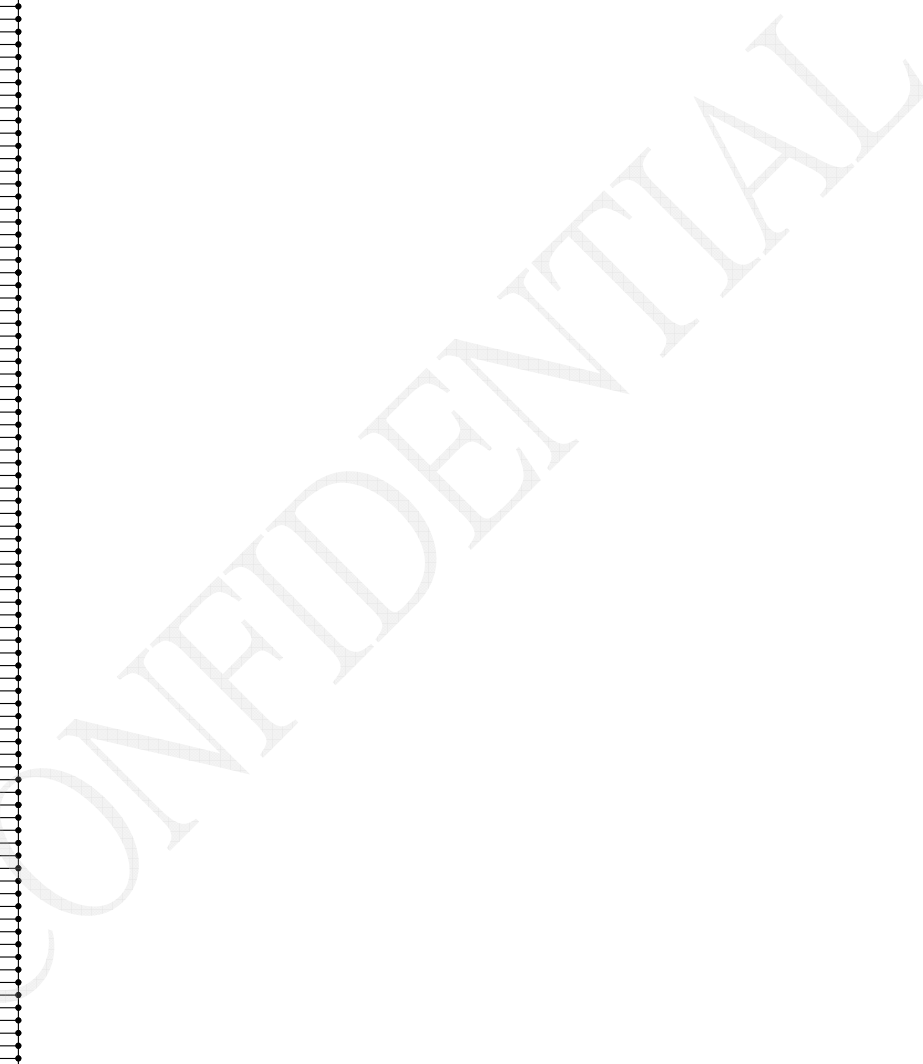
CORE GND

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MECH_1
MECH_2
MECH_3

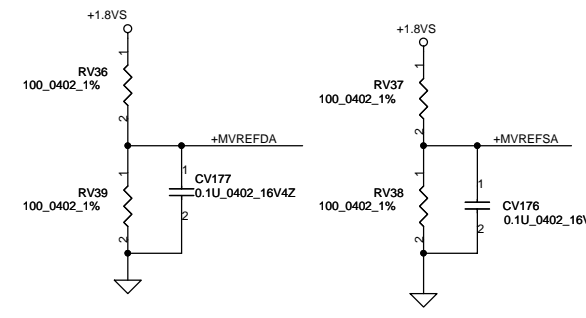
A35 x
AR1 x
AR35

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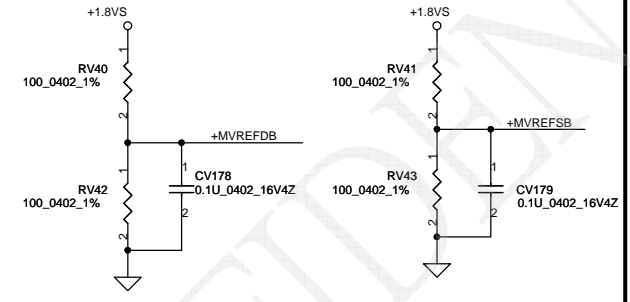
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 QSA#[7..0] << QSA#[7..0] 21,22
 QSA#[7..0] << QSA#[7..0] 21,22
 MAA[12..0] << MAA[12..0] 21,22
 BA[2..0] << BA[2..0] 21,22
 MDA[63..0] << MDA[63..0] 21,22

Close to pin N34, N35



MDB[63..0] << MDB[63..0] 23,24
 MAB[12..0] << MAB[12..0] 23,24
 BB[2..0] << BB[2..0] 23,24
 DOMB#[7..0] << DOMB#[7..0] 23,24
 QSB[7..0] << QSB[7..0] 23,24
 QSB#[7..0] << QSB#[7..0] 23,24

Close to pin A13, B14



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MEMORY INTERFACE A			
MDA0 P27	DQA_0	MAA_0	C27 MAA0
MDA1 P28	DQA_1	MAA_1	B28 MAA1
MDA2 P31	DQA_2	MAA_2	B27 MAA2
MDA3 P32	DQA_3	MAA_3	G26 MAA3
MDA4 M27	DQA_4	MAA_4	F27 MAA4
MDA5 K31	DQA_5	MAA_5	F27 MAA5
MDA6 K31	DQA_6	MAA_6	D27 MAA6
MDA7 K32	DQA_7	MAA_7	J27 MAA7
MDA8 M33	DQA_8	MAA_8	F29 MAA8
MDA9 M34	DQA_9	MAA_9	E30 MAA9
MDA10 L34	DQA_10	MAA_10	E26 MAA10
MDA11 L35	DQA_11	MAA_11	A27 MAA11
MDA12 J33	DQA_12	MAA_A12	G27 MAA12
MDA13 J34	DQA_13	MAA_BA2	D26 BA2
MDA14 H33	DQA_14	MAA_BA0	C28 BA0
MDA15 H34	DQA_15	MAA_BA1	B29 BA1
MDA16 K27	DQA_16		
MDA17 J29	DQA_17		
MDA18 J30	DQA_18		
MDA19 E29	DQA_19		
MDA20 F29	DQA_20		
MDA21 F32	DQA_21		
MDA22 D30	DQA_22		
MDA23 D32	DQA_23		
MDA24 G34	DQA_24		
MDA25 G34	DQA_25		
MDA26 G35	DQA_26		
MDA27 F34	DQA_27		
MDA28 D34	DQA_28		
MDA29 C34	DQA_29		
MDA30 C35	DQA_30		
MDA31 B34	DQA_31		
MDA32 C24	DQA_32		
MDA33 B24	DQA_33		
MDA34 B23	DQA_34		
MDA35 A23	DQA_35		
MDA36 C21	DQA_36		
MDA37 B21	DQA_37		
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MDA39 B20	DQA_39		
MDA40 J22	DQA_40		
MDA41 H22	DQA_41		
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MDA44 J19	DQA_44		
MDA45 F19	DQA_45		
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MDA48 C19	DQA_48		
MDA49 B19	DQA_49		
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MDA59 D18	DQA_59		
MDA60 I17	DQA_60		
MDA61 G15	DQA_61		
MDA62 F15	DQA_62		
MDA63 D15	DQA_63		
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+MVREFSA N34	MVREFSA		
AM34 NC_1			

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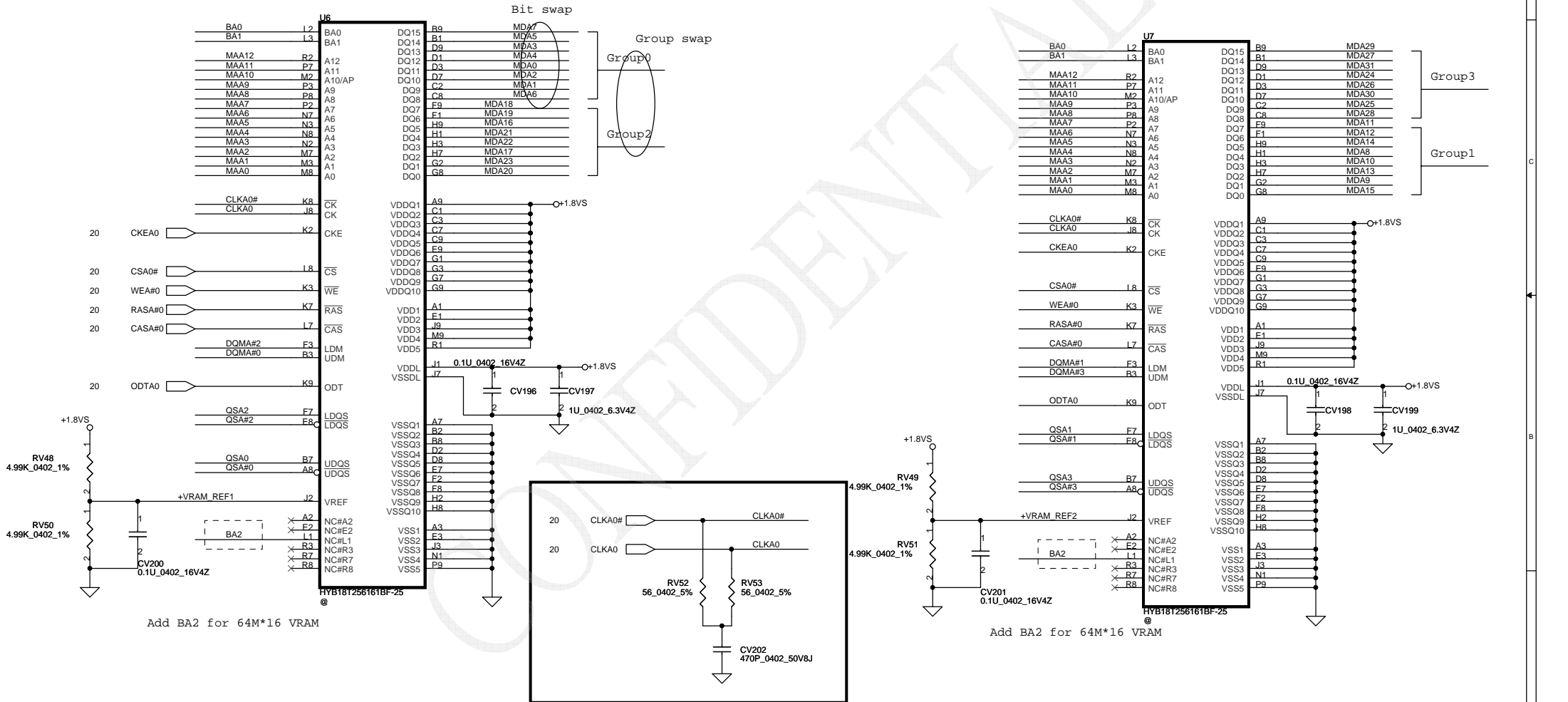
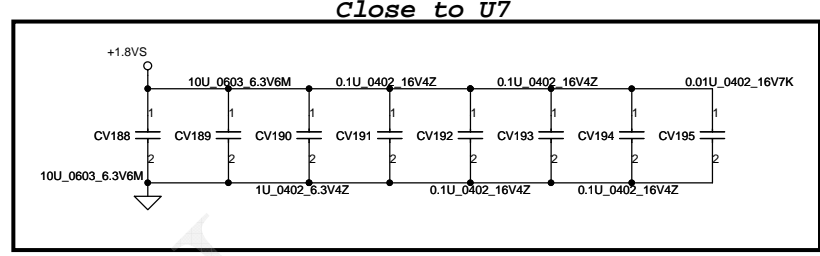
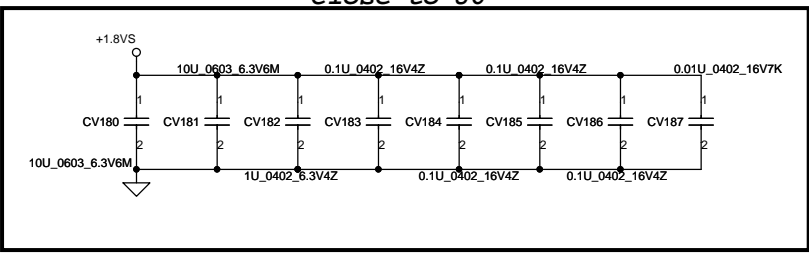
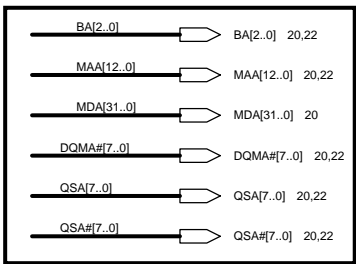
Part 4 of 7

MEMORY INTERFACE B			
MDB0 H15	DOB_0	MAB_0	LH2 MAB0
MDB1 G14	DOB_1	MAB_1	LH3 MAB1
MDB2 F14	DOB_2	MAB_2	J3 MAB2
MDB3 D14	DOB_3	MAB_3	J5 MAB3
MDB4 H12	DOB_4	MAB_3	J4 MAB4
MDB5 G12	DOB_5	MAB_4	J6 MAB5
MDB6 F12	DOB_6	MAB_5	G5 MAB6
MDB7 D10	DOB_7	MAB_6	J9 MAB7
MDB8 B13	DOB_8	MAB_8	E3 MAB8
MDB9 C12	DOB_9	MAB_9	F4 MAB9
MDB10 B12	DOB_10	MAB_10	L1 MAB10
MDB11 B11	DOB_11	MAB_10	J2 MAB11
MDB12 C9	DOB_12	MAB_12	L7 MAB12
MDB13 B9	DOB_13	MAB_BA2	F1 BB2
MDB14 A9	DOB_14	MAB_BA0	G2 BB0
MDB15 B8	DOB_15	MAB_BA1	G3 BB1
MDB16 J10	DOB_16		
MDB17 H10	DOB_17		
MDB18 F10	DOB_18		
MDB19 D9	DOB_19		
MDB20 G7	DOB_20		
MDB21 G6	DOB_21		
MDB22 F6	DOB_22		
MDB23 C8	DOB_23		
MDB24 C8	DOB_24		
MDB25 C7	DOB_25		
MDB26 B7	DOB_26		
MDB27 A7	DOB_27		
MDB28 B5	DOB_28		
MDB29 A5	DOB_29		
MDB30 C4	DOB_30		
MDB31 B4	DOB_31		
MDB32 M3	DOB_32		
MDB33 M2	DOB_33		
MDB34 N2	DOB_34		
MDB35 M1	DOB_35		
MDB36 B3	DOB_36		
MDB37 R2	DOB_37		
MDB38 T3	DOB_38		
MDB39 T2	DOB_39		
MDB40 M8	DOB_40		
MDB41 M7	DOB_41		
MDB42 P5	DOB_42		
MDB43 P4	DOB_43		
MDB44 R9	DOB_44		
MDB45 R8	DOB_45		
MDB46 R6	DOB_46		
MDB47 U4	DOB_47		
MDB48 U3	DOB_48		
MDB49 U2	DOB_49		
MDB50 U1	DOB_50		
MDB51 V2	DOB_51		
MDB52 Y3	DOB_52		
MDB53 Y2	DOB_53		
MDB54 AA2	DOB_54		
MDB55 AA1	DOB_55		
MDB56 U9	DOB_56		
MDB57 U7	DOB_57		
MDB58 U6	DOB_58		
MDB59 V4	DOB_59		
MDB60 W9	DOB_60		
MDB61 W7	DOB_61		
MDB62 W6	DOB_62		
MDB63 W4	DOB_63		
+MVREFDB B14	MVREFDB		
+MVREFSB A13	MVREFSB		
RV44 1 2 1K 0402 5%	AM30	TESTEN	
RV45 1 2 4.7K 0402 5%	AA8	TEST_MCLK	
RV46 1 2 4.7K 0402 5%	AA5	TEST_YCLK	
RV47 1 2 240_0402_1%	AH19	MEMTEST	
		DRAM_RST	

216-0683008 A11 M86-M_BGA880

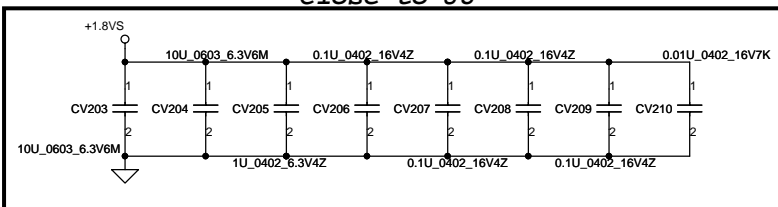
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	401621				

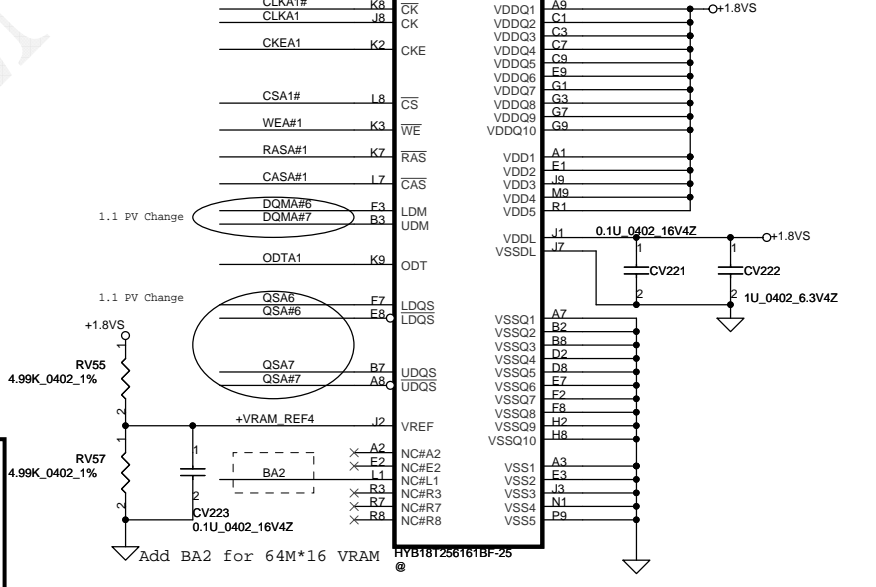
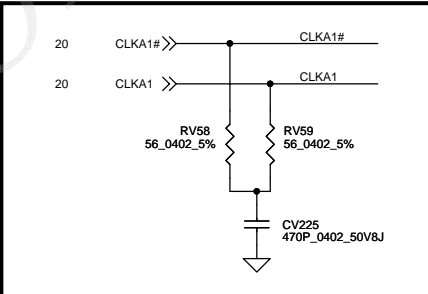
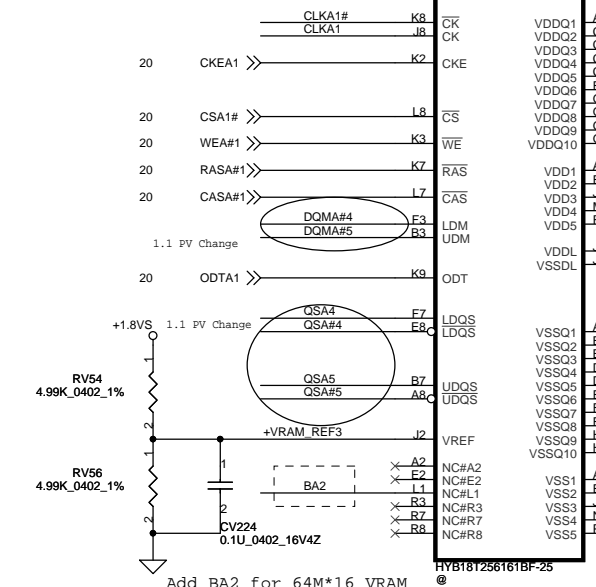
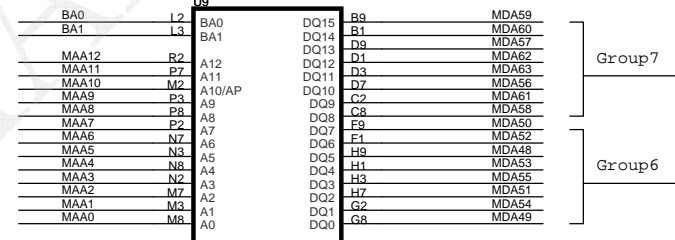
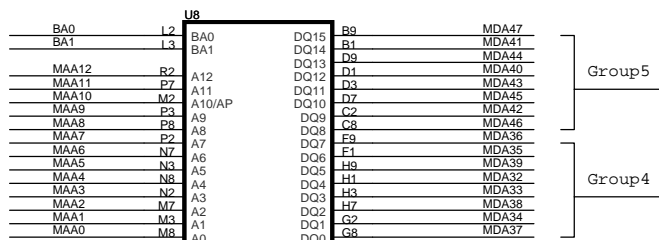
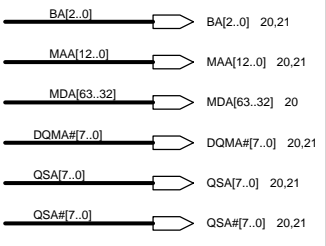
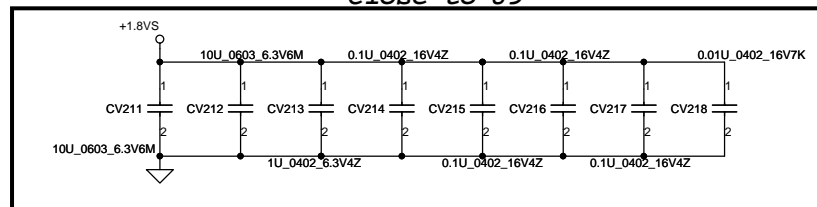


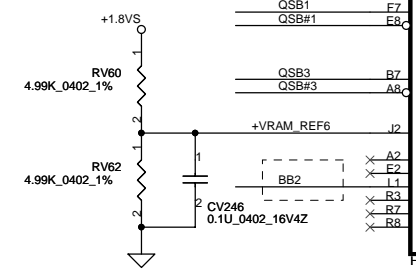
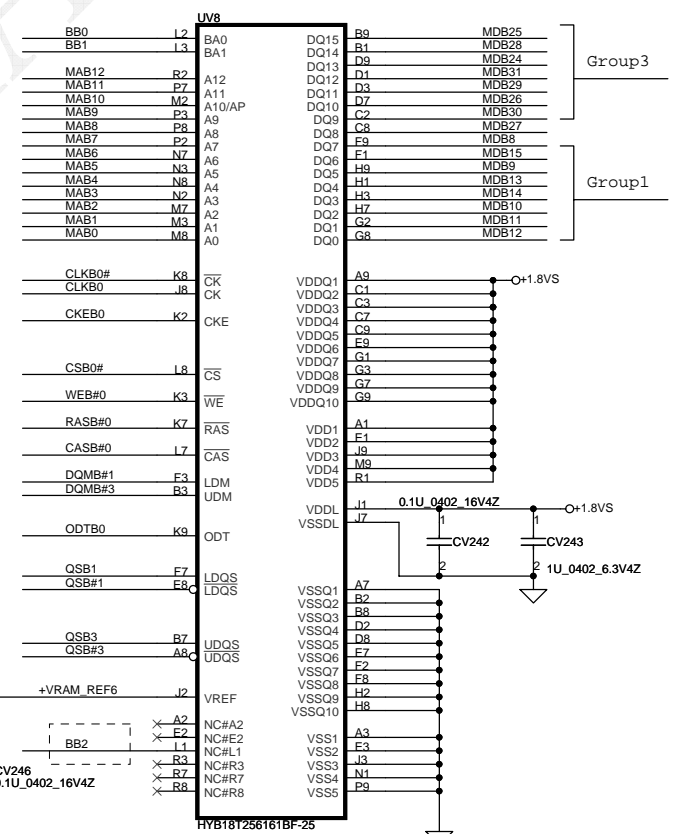
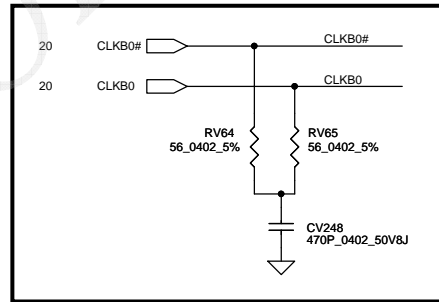
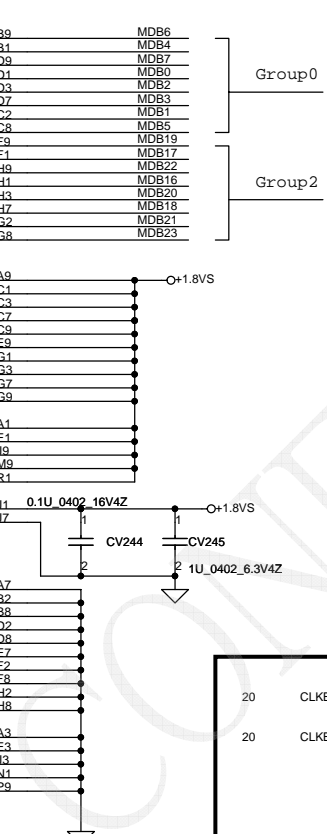
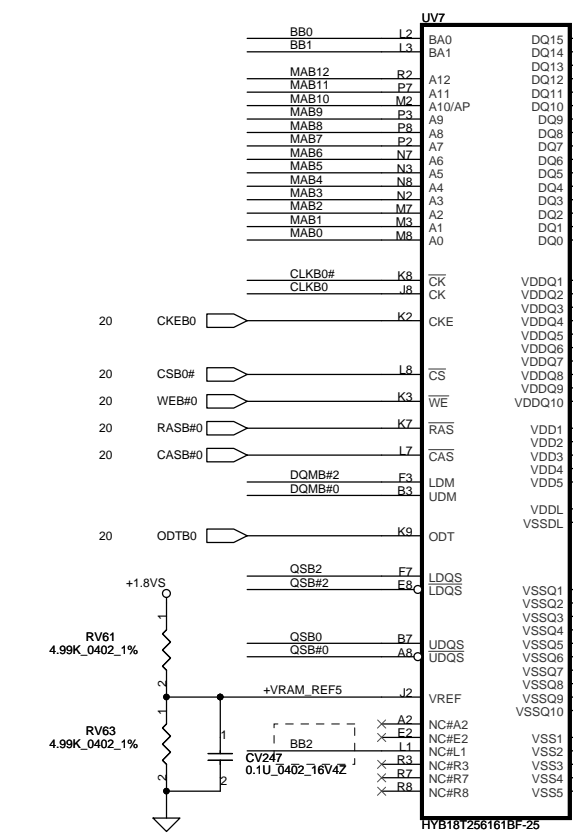
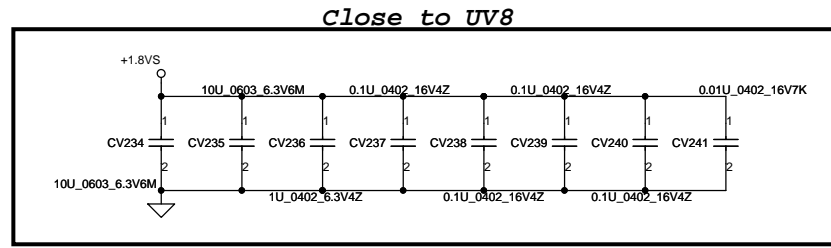
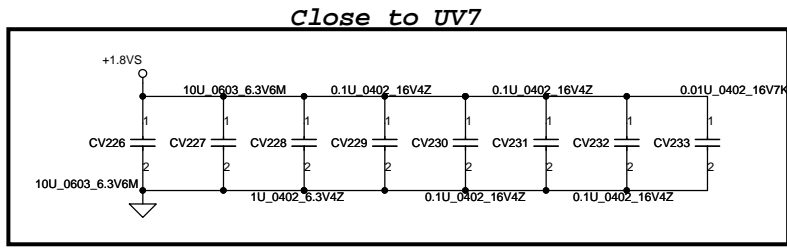
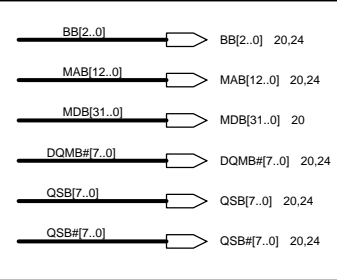
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Close to U8



Close to U9

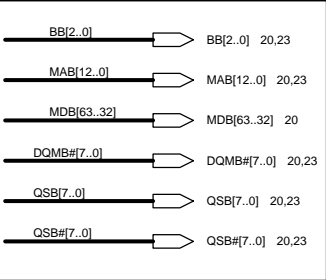




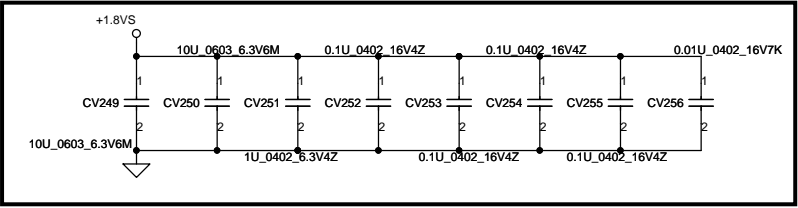
Add BA2 for 64M*16 VRAM

Add BA2 for 64M*16 VRAM

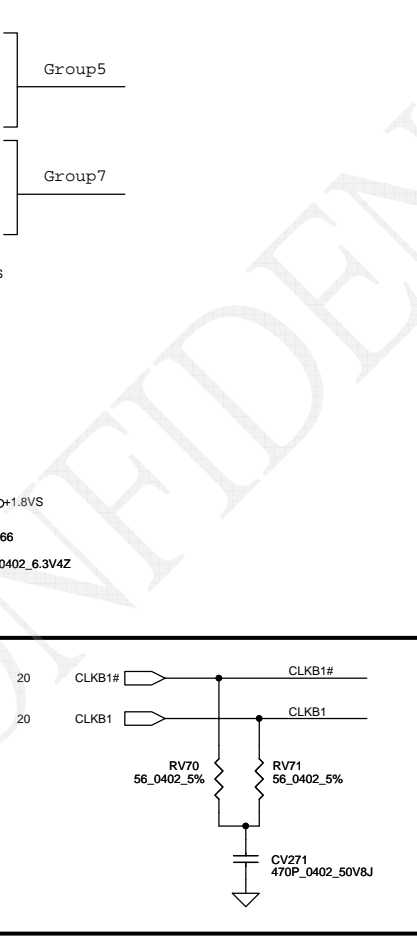
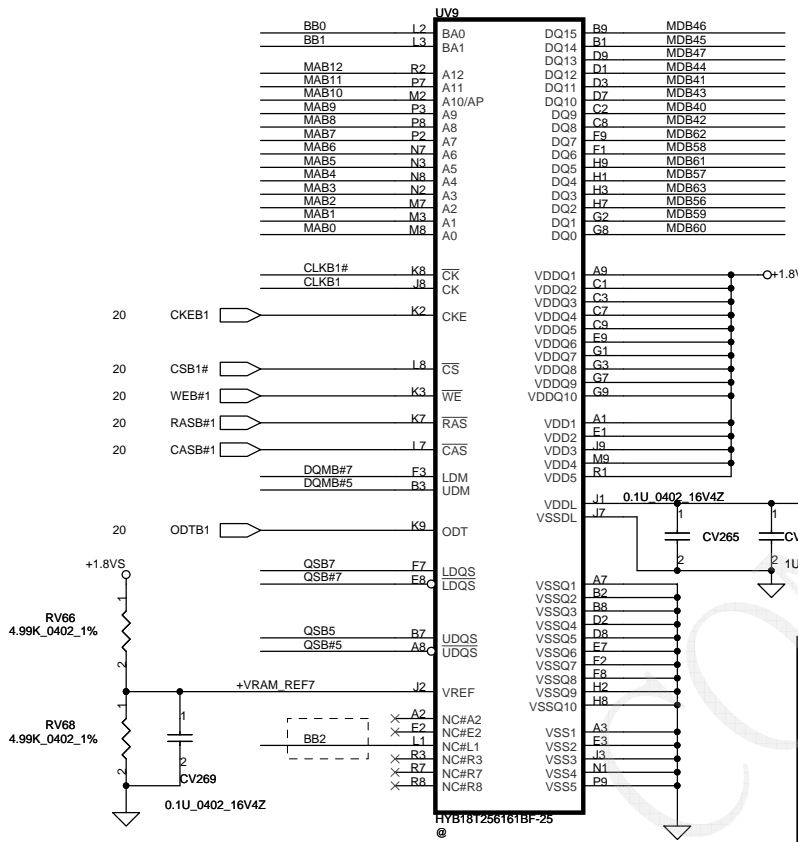
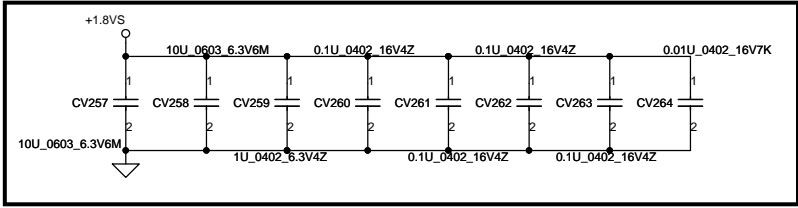
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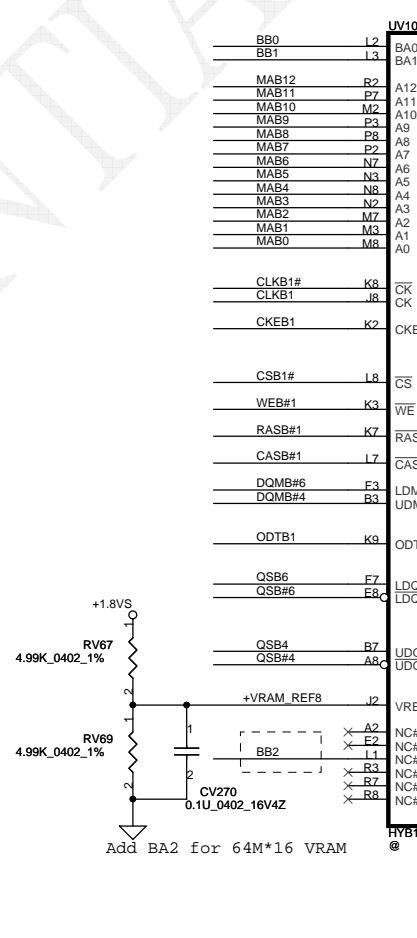
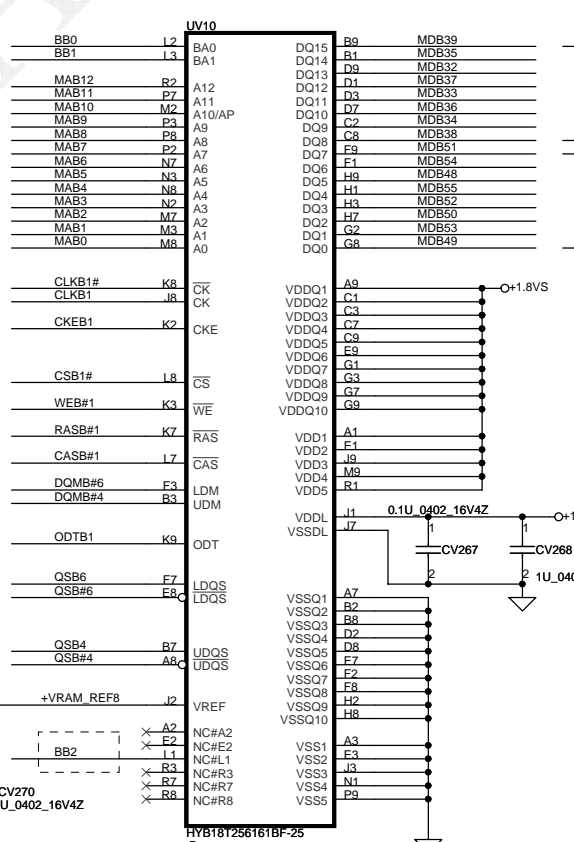
Close to UV9



Close to UV10



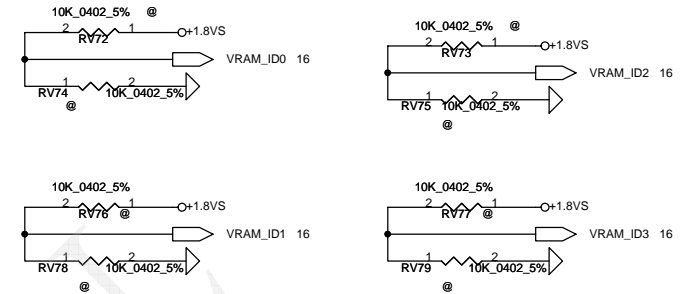
Add BA2 for 64M*16 VRAM



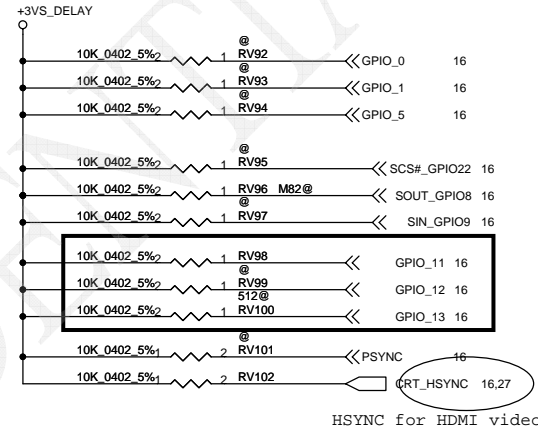
Add BA2 for 64M*16 VRAM

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STRAPS	PIN	GPU	Project	VRAM size	Vendor Part Number#	Compal Part Number#	VRAM_ID 3,2,1,0
VRAM_ID[3:0]	DVPDATA (23,22,21,20)	M82M-XT	JBK00 1.0a	512M(x4)	Samsung 64Mx16 1.8V	SA00002MD00	0 0 0 0
			JBK00 1.0	256M(x4)	Samsung 32Mx16 1.8V	SA00002AJ10	0 0 0 1
				512M(x4)	Hynix 64Mx16 1.8V		0 0 1 0
			JBK00 1.0	256M(x4)	Hynix 32Mx16 1.8V	SA00002DL00	0 0 1 1
			JBK00 1.0	256M(x4)	Qimonda 32Mx16 1.8V	SA00002A600	0 1 0 0
			JBK00 1.0a	512M(x4)	Qimonda 64Mx16 1.8V	SA00002MF00	0 1 0 1
		M86M	JBK00 1.1	512M(x8)	Samsung 32Mx16 1.8V	SA00002AJ10	0 1 1 0
			JBK00 1.1	512M(x8)	Hynix 32Mx16 1.8V	SA00002DL00	0 1 1 1
			JBK00 1.1	512M(x8)	Qimonda 32Mx16 1.8V	SA00002A600	1 0 0 0
				1G(x8)	Samsung 64Mx16 1.8V	SA00002MD00	1 0 0 1
				1G(x8)	Hynix 64Mx16 1.8V		1 0 1 0
				1G(x8)	Qimonda 64Mx16 1.8V	SA00002MF00	1 0 1 1

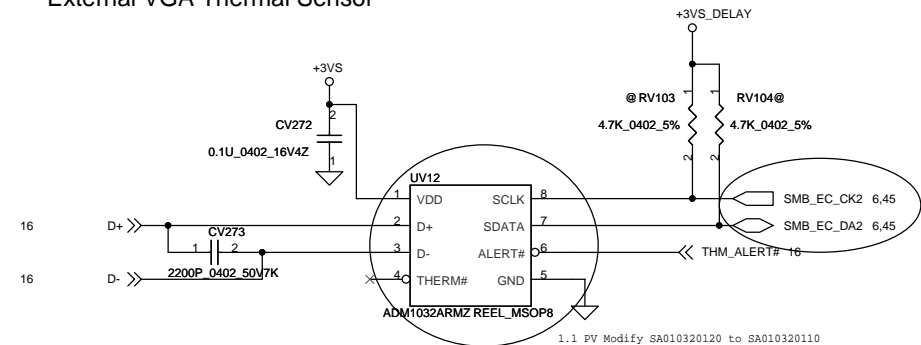


STRAPS	PIN	DESCRIPTION OF RECOMMENDED SETTING	RECOMMENDED M8X
TX_PWRS_ENB	GPIO0	PCIE FULL TX OUTPUT SWING	0
TX_DEEMPH_EN	GPIO1	PCIE TRANSMITTER DE-EMPHASIS ENABLES	0
BIF_DEBUG_ACCESS	GPIO4	DEBUG SIGNALS MUXED OUT	0
BIF_GEN2_EN_A	GPIO5	PCI-E 5.0GT/s or 2.5 GT/s select	0
DEBUG_I2C_ENABLE	GPIO6	Internal use only	0
BIF_AUDIO_EN	VIP3	ENABLE HD AUDIO M86-M ONLY	
BIF_AUDIO_EN	GPIO8	ENABLE HD AUDIO M82-M ONLY	
ROMIDCFG[3:0]	GPIO [9,13,12,11]	SERIAL ROM TYPE OR MEMORY APERTURE SIZE SELECT	0 0 0 1
BIF_VGA_DIS	PSYNC	VGA ENABLED==0 is enable	0
BIF_HDMI_EN	HSYNC	HDMI ENABLE	1



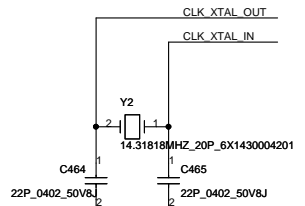
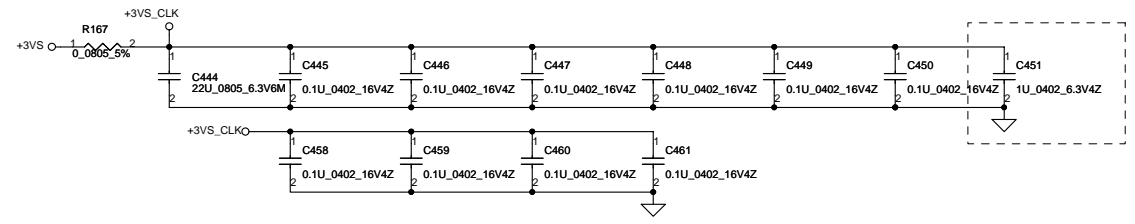
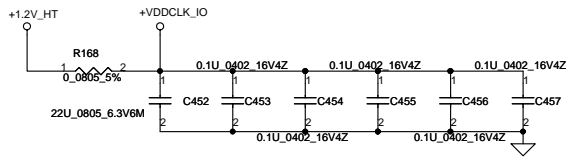
GPIO9 = 0 (BIOS_ROM_EN = 0)	
GPIO[13:11]	MEMORY SIZE
0 0 0	128MB
0 0 1	256MB
0 1 0	64MB
1 0 0	512MB

External VGA Thermal Sensor

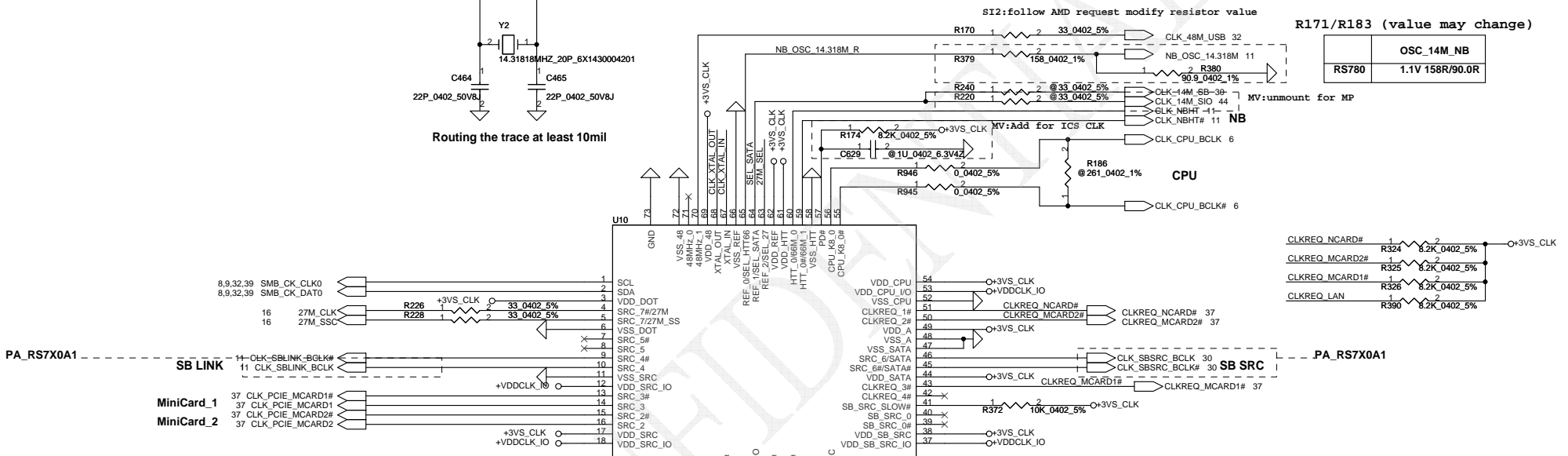


1.1 PV Modify SA010320120 to SA010320110

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Routing the trace at least 10mil



R171/R183 (value may change)	
OSC_14M_NB	1.1V 158R/90.0R
RS780	

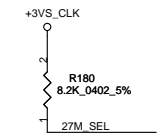
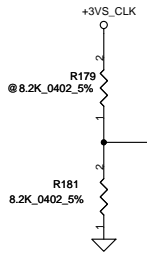
CLKREQ_NCARD#	R324	8.2K_0402_5%	+3VS_CLK
CLKREQ_MCARD2#	R325	8.2K_0402_5%	
CLKREQ_MCARD1#	R326	8.2K_0402_5%	
CLKREQ_LAN	R390	8.2K_0402_5%	

PA_RS7X0A1	
SB LINK	14-CLK_SBLINK_BCLK#
	11-CLK_SBLINK_BCLK

MiniCard_1	
37	CLK_PCIE_MCARD1#
37	CLK_PCIE_MCARD1

MiniCard_2	
37	CLK_PCIE_MCARD2#
37	CLK_PCIE_MCARD2

PA_RS7X0A1	
30	CLK_SBSRC_BCLK
30	CLK_SBSRC_BCLK#



SEL_SATA	
1	configure as SATA output
0*	configure as normal SRC(SRC_6) output
* default	

27M_SEL	
1*	configure as 27M and 27M_SS output
0	configure as SRC_7 output
* default	

NB CLOCKS	RX780	RS780
HT_REFCLKP	100M DIFF	100M DIFF
HT_REFCLKN	100M DIFF	100M DIFF
REFCLK_P	14M SE (1.8V)	14M SE (1.1V)
REFCLK_N	NC	vref
GFX_REFCLK	100M DIFF	100M DIFF(IN/OUT)*
GPP_REFCLK	100M DIFF	NC or 100M DIFF OUTPUT
GPPSB_REFCLK	100M DIFF	100M DIFF

Use voltage divider resistor R379 & R380 to pull low

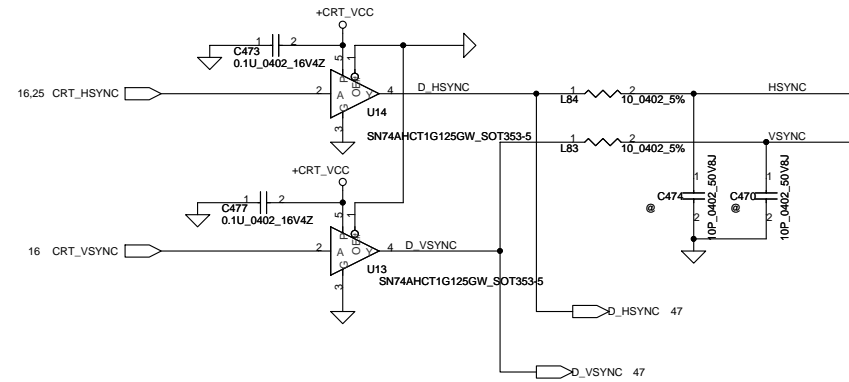
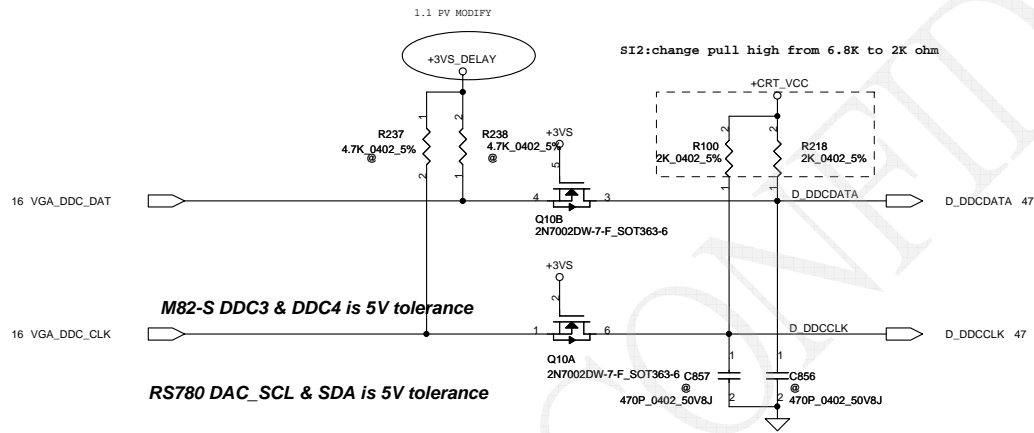
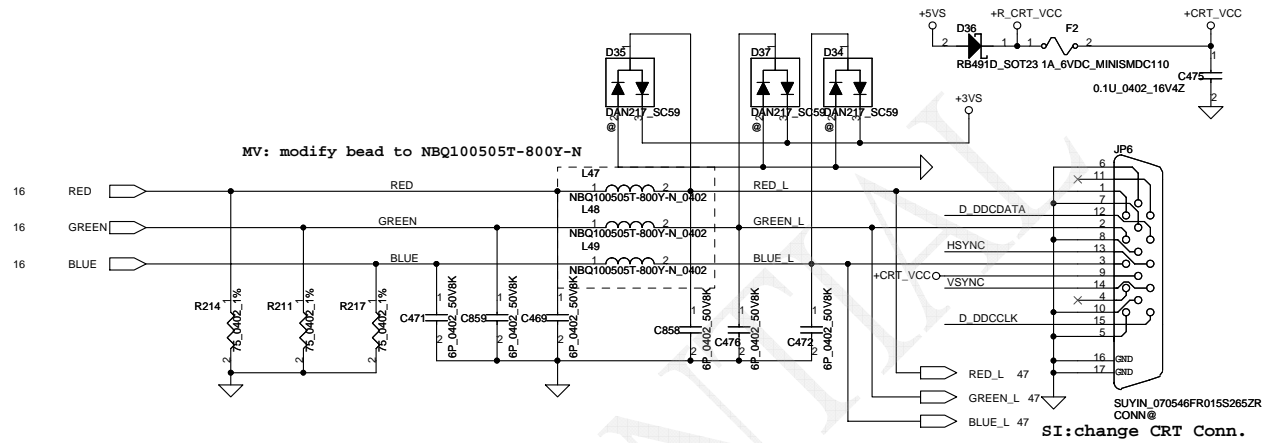
NB_OSC_14.318M	
1	configure as single-ended 66MHz output
0*	configure as differential 100MHz output
* default	

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		2008/08/02

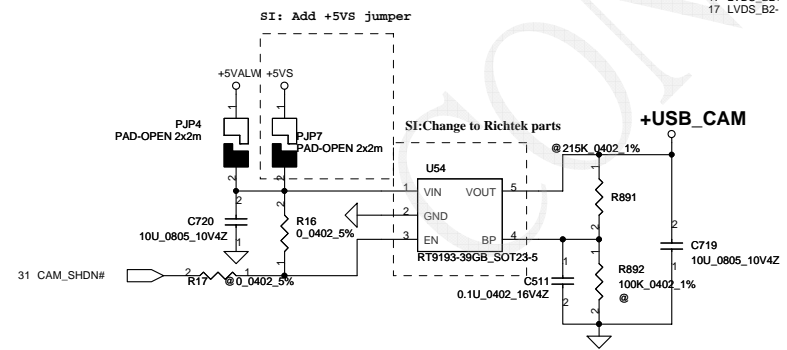
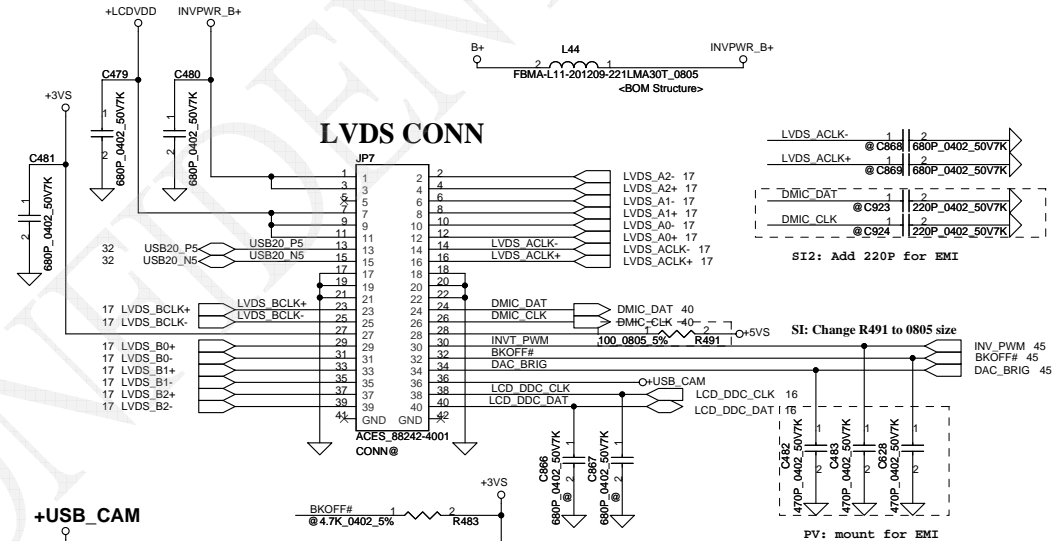
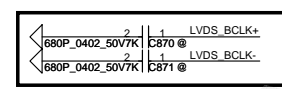
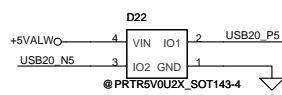
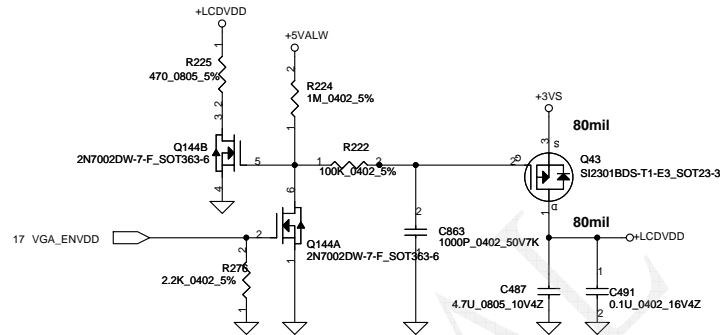
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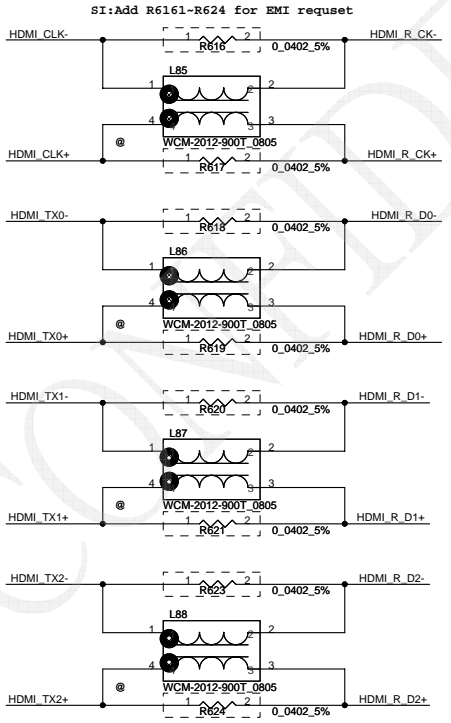
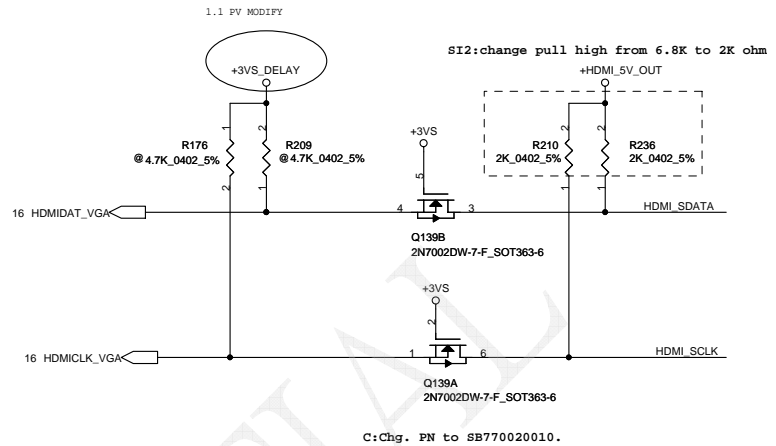
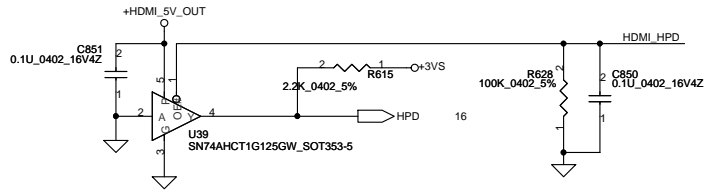
CRT CONNECTOR



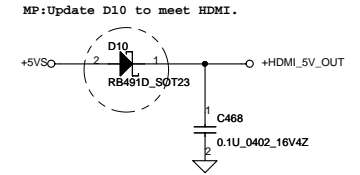
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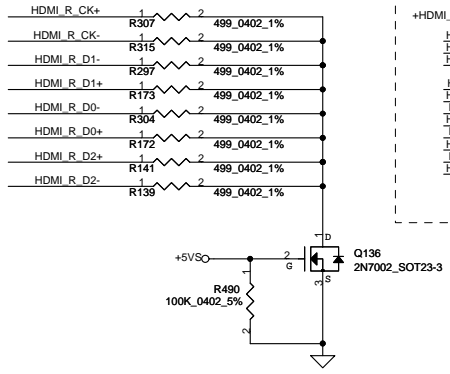
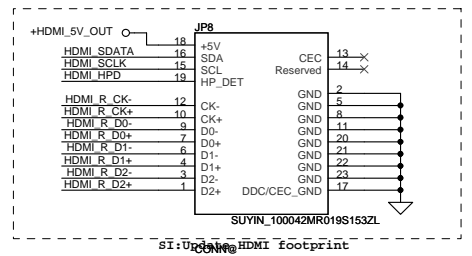
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16 HDMI_CLK+_VGA	C507	1	2	0.1U_0402_16V7K	HDMI_CLK+
16 HDMI_CLK-_VGA	C508	1	2	0.1U_0402_16V7K	HDMI_CLK-
16 HDMI_TX0+_VGA	C655	1	2	0.1U_0402_16V7K	HDMI_TX0+
16 HDMI_TX0-_VGA	C675	1	2	0.1U_0402_16V7K	HDMI_TX0-
16 HDMI_TX1+_VGA	C804	1	2	0.1U_0402_16V7K	HDMI_TX1+
16 HDMI_TX1-_VGA	C827	1	2	0.1U_0402_16V7K	HDMI_TX1-
16 HDMI_TX2+_VGA	C852	1	2	0.1U_0402_16V7K	HDMI_TX2+
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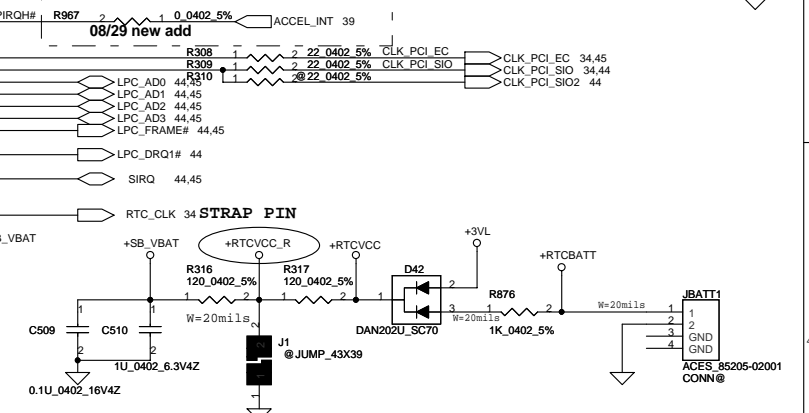
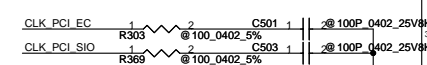
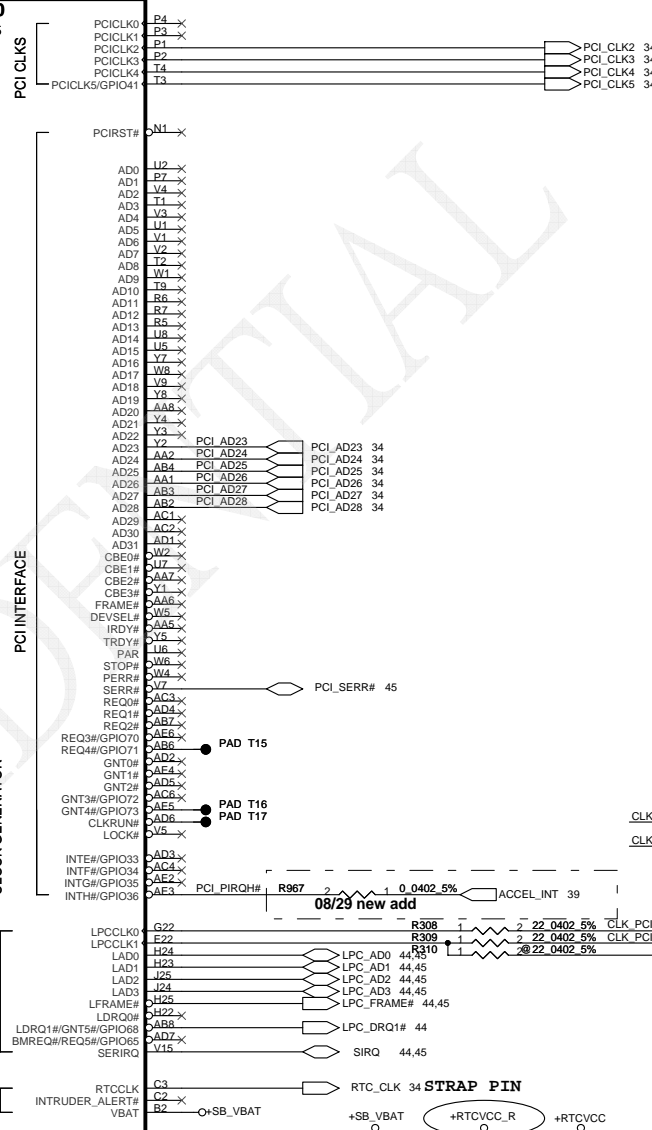
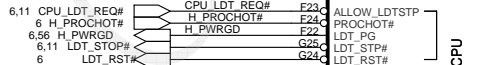
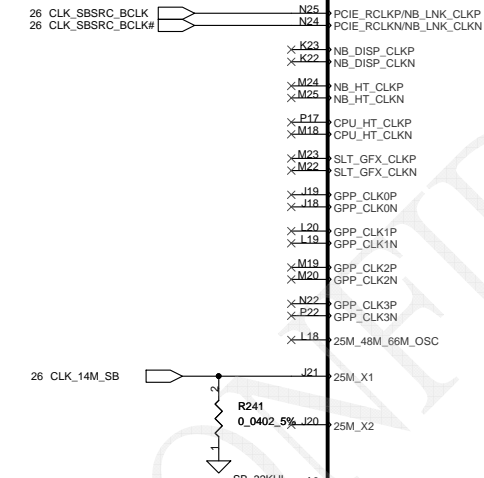
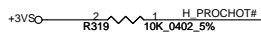
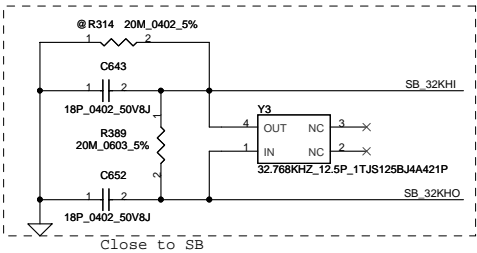
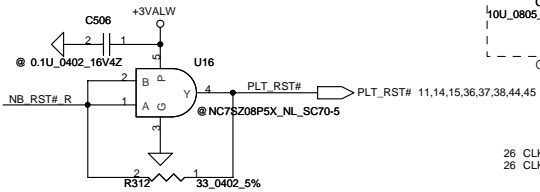
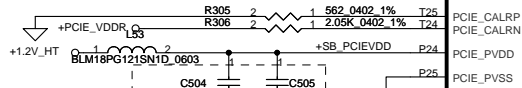
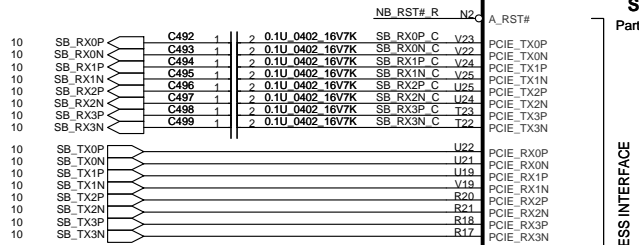
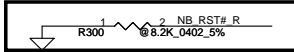


HDMI Connector



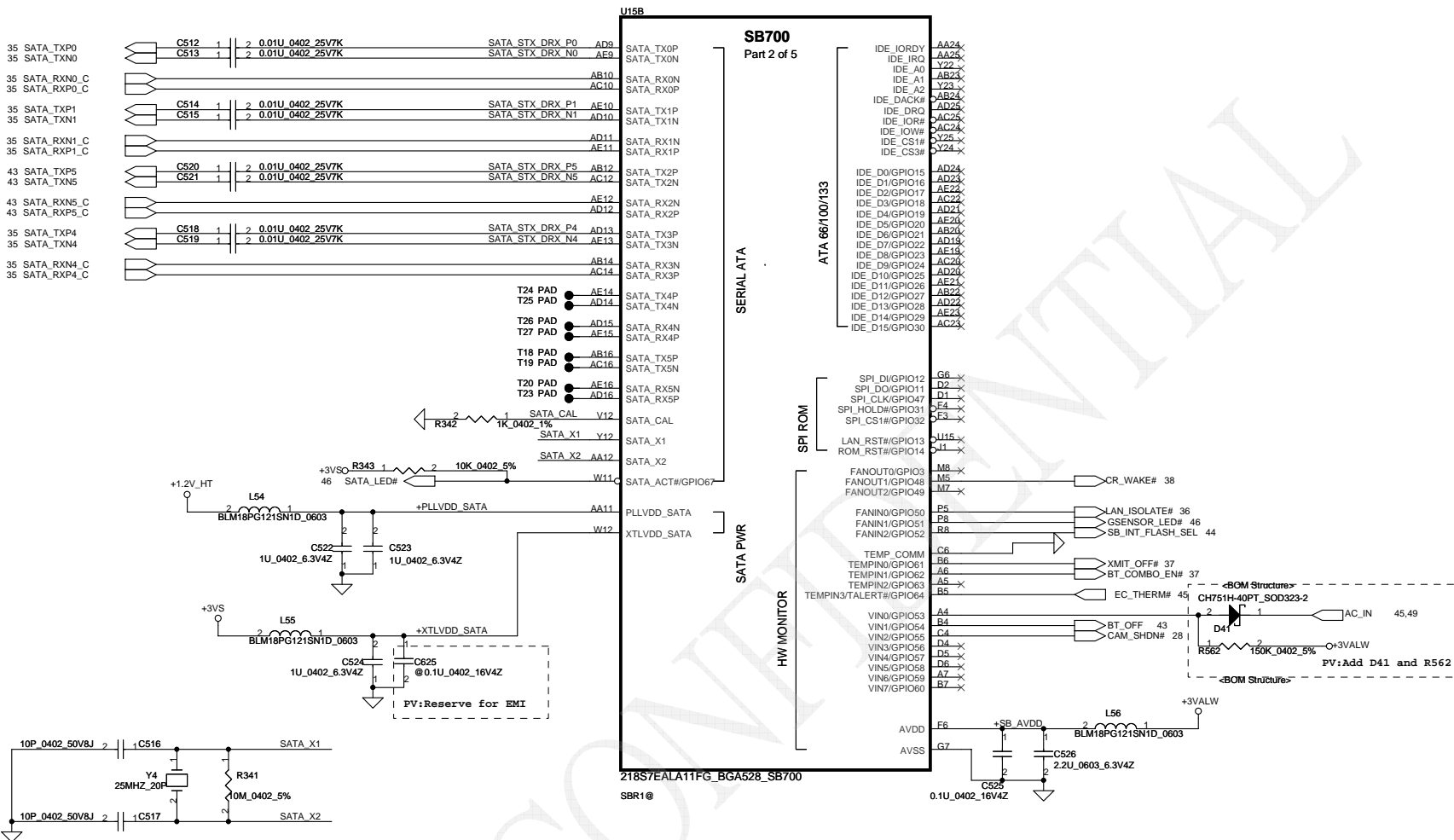
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Check AMD need pull low or not

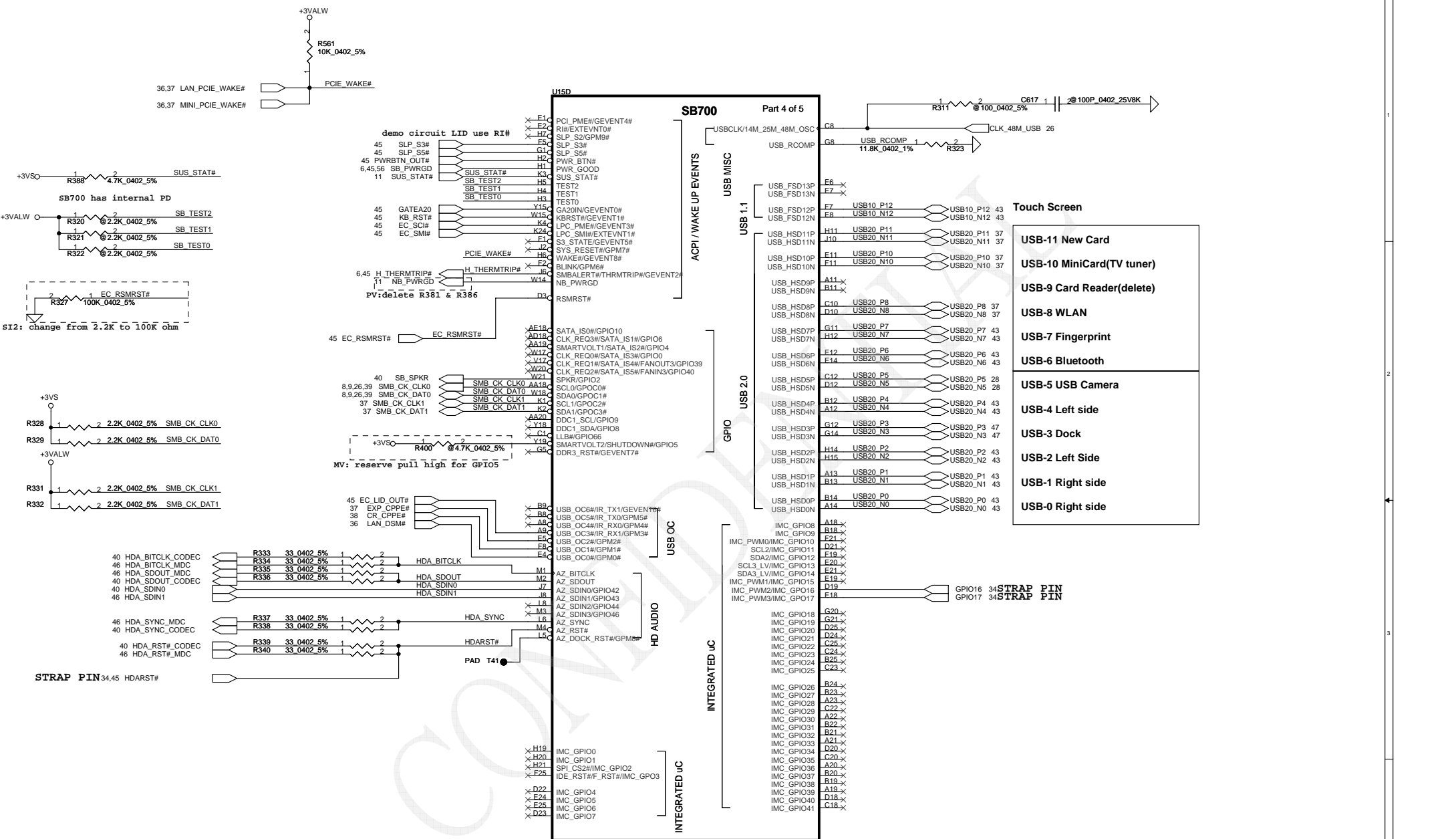


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SCHMATIC, MB A4093

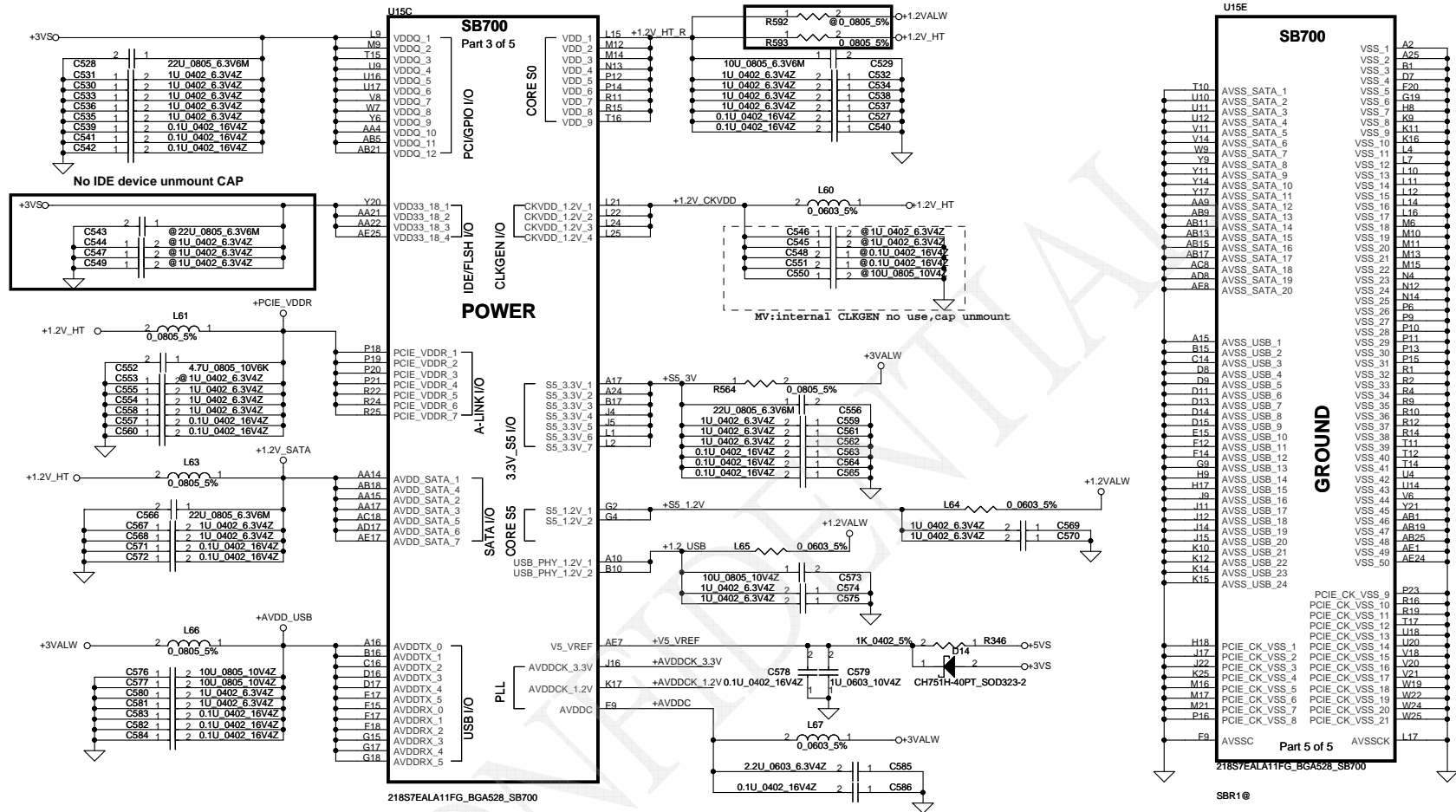


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21857EAL11FG_BGA528_SB700
SBR1@

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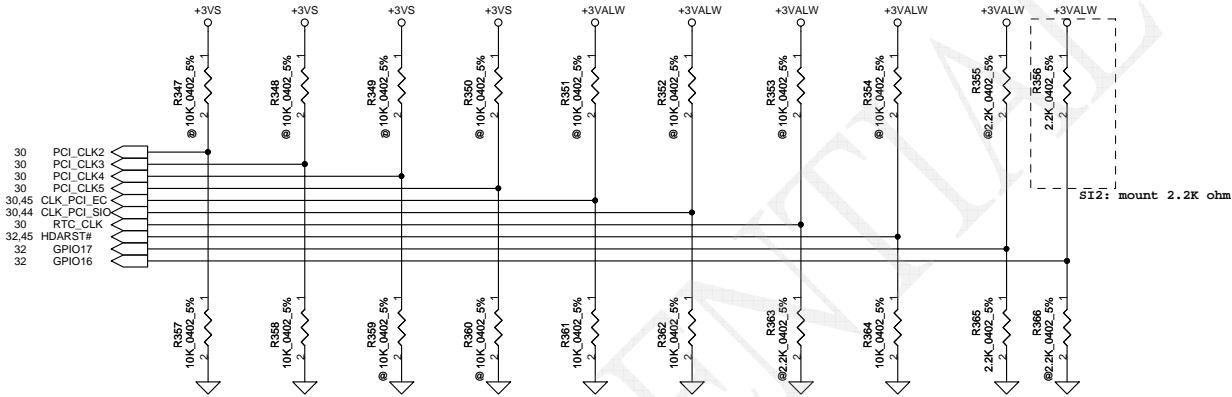
SCHMATIC, MB A4093

Rev C

REQUIRED STRAPS

NOTE: SB700 HAS INTERNAL 15K PULL UP RESISTOR FOR RTC_CLK

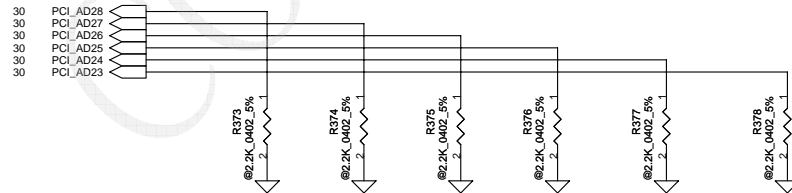
	PCI_CLK2	PCI_CLK3	PCI_CLK4	PCI_CLK5	LPC_CLK0	LPC_CLK1	RTC_CLK	AZ_RST_CD#	GP17	GP16
PULL HIGH	BOOTFAIL TIMER ENABLED	USE DEBUG STRAPS	RESERVED	RESERVED	ENABLE PCI MEM BOOT	CLKGEN ENABLED	INTERNAL RTC DEFAULT	EC ENABLED	Internal pull up H,H = Reserved H,L = SPI ROM	
PULL LOW	BOOTFAIL TIMER DISABLED DEFAULT	IGNORE DEBUG STRAPS DEFAULT			DISABLE PCI MEM BOOT DEFAULT	CLKGEN DISABLED DEFAULT	EXT. RTC (PD on X1, apply 32KHz to RTC_CLK)	EC DISABLED DEFAULT		L,H = LPC ROM (Default) L,L = FWH ROM



DEBUG STRAPS

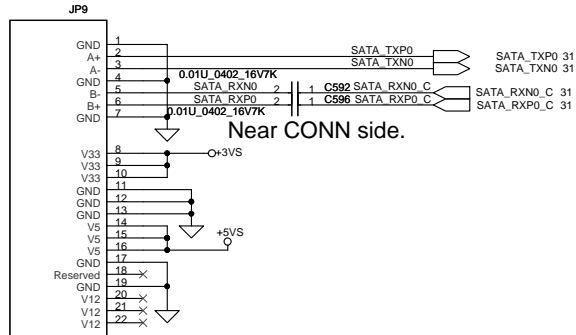
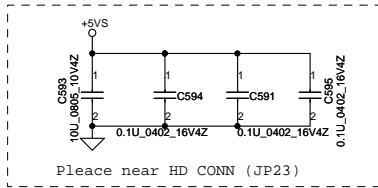
SB700 HAS 15K INTERNAL PU FOR PCI_AD[28:23]

	PCI_AD28	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL HIGH	USE LONG RESET DEFAULT	USE PCI PLL DEFAULT	USE ACPI BCLK DEFAULT	USE IDE PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	RESERVED
PULL LOW	USE SHORT RESET	BYPASS PCI PLL	BYPASS ACPI BCLK	BYPASS IDE PLL	USE EEPROM PCIE STRAPS	



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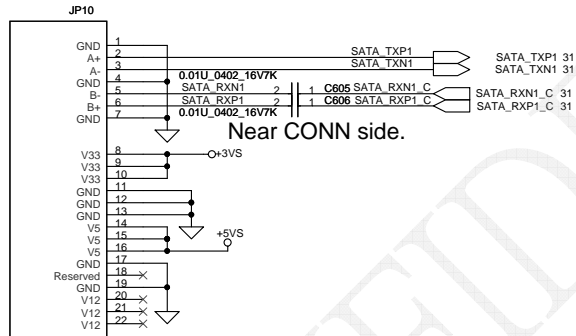
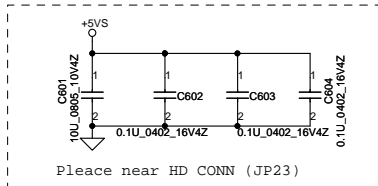
HDD Connector



SUYIN_127072FR022G210ZR_RV

CONN@

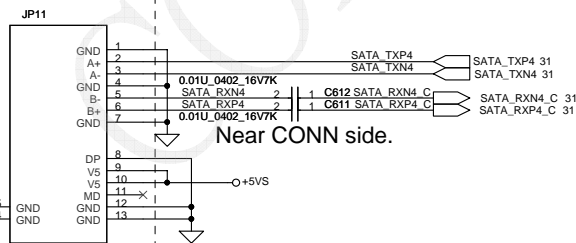
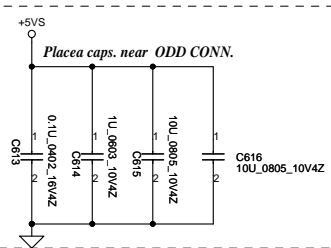
2nd HDD Connector-option



SUYIN_127072FR022G210ZR_RV

CONN@

CD-ROM Connector

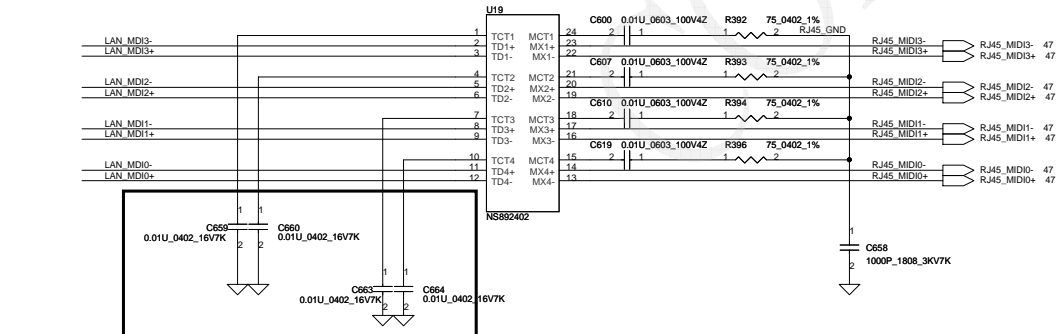
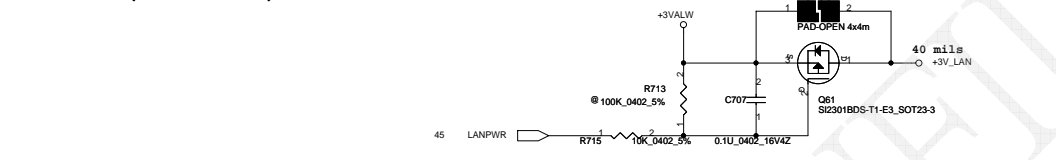
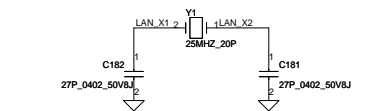
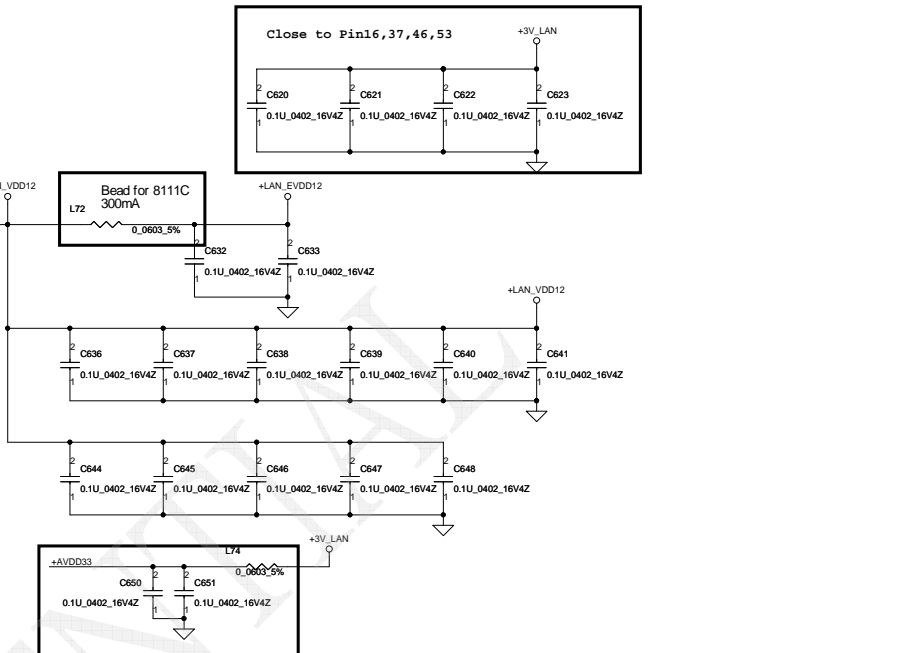
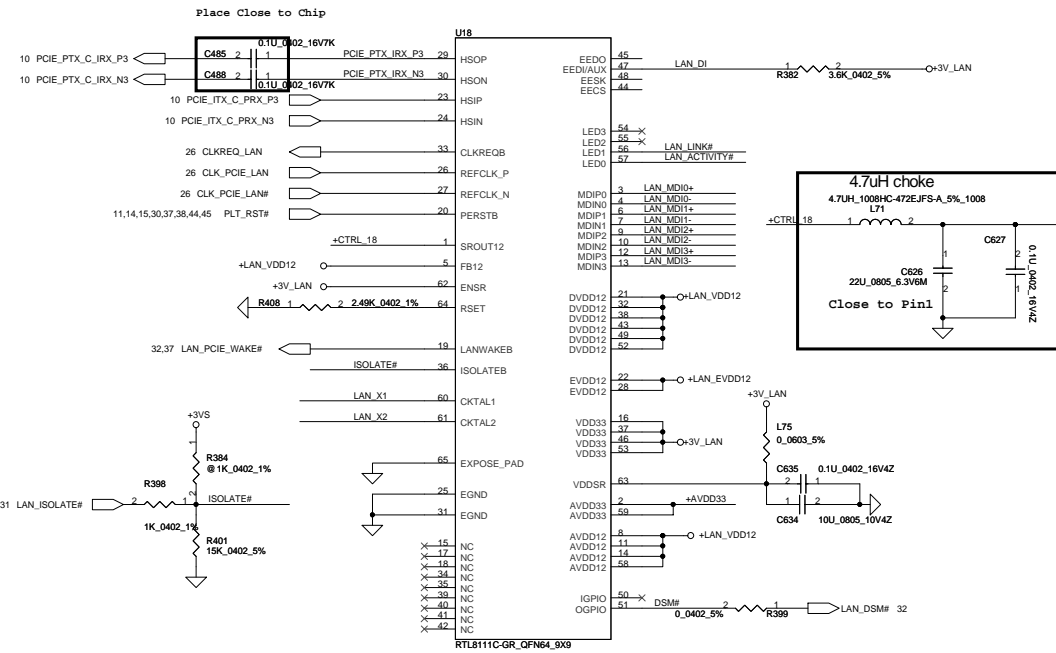


SUYIN_127382FR013G509ZR

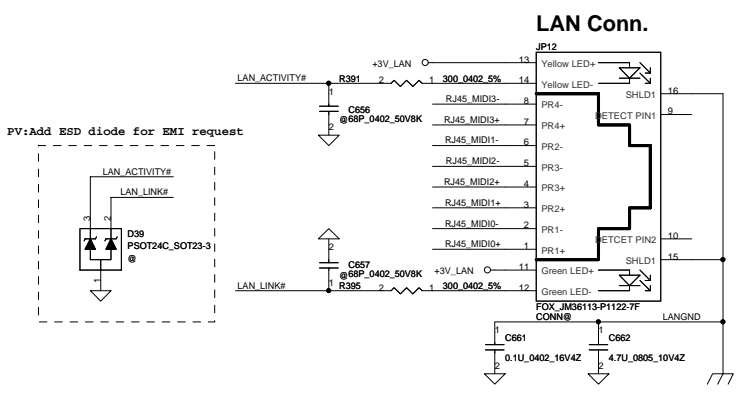
CONN@

SI: Update ODD footprint to fix pin reverse issue

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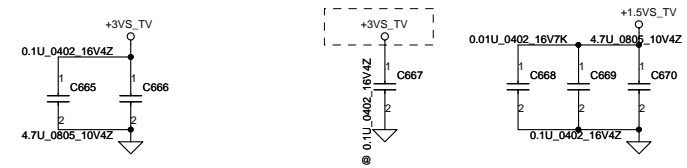
Place these components
colsed to LAN chip



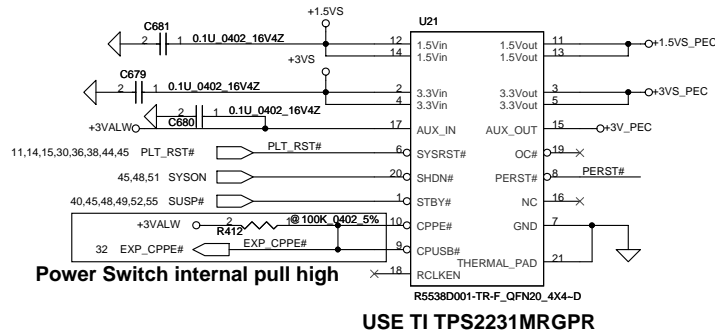
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Mini Card---TV tuner

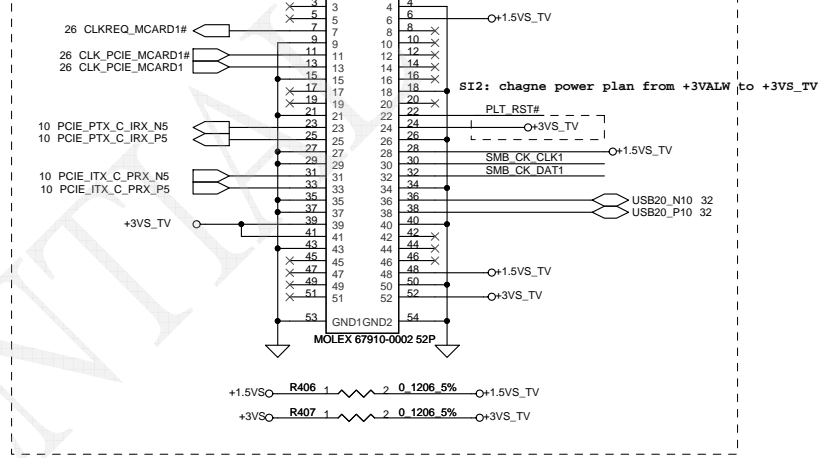
SI2: chagne power plan from +3VALW to +3VS_TV



New Card

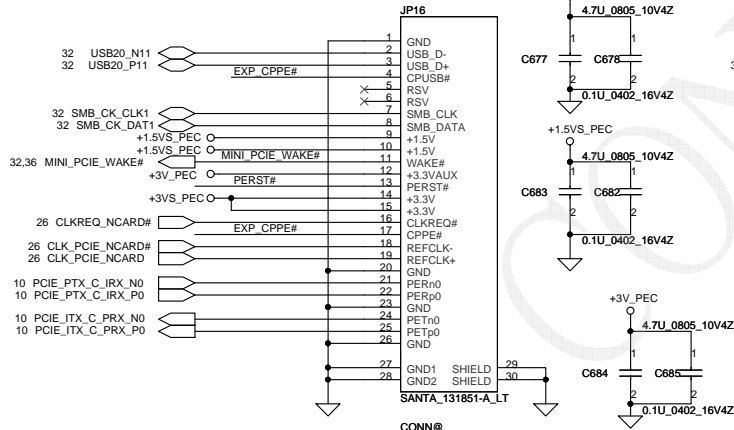
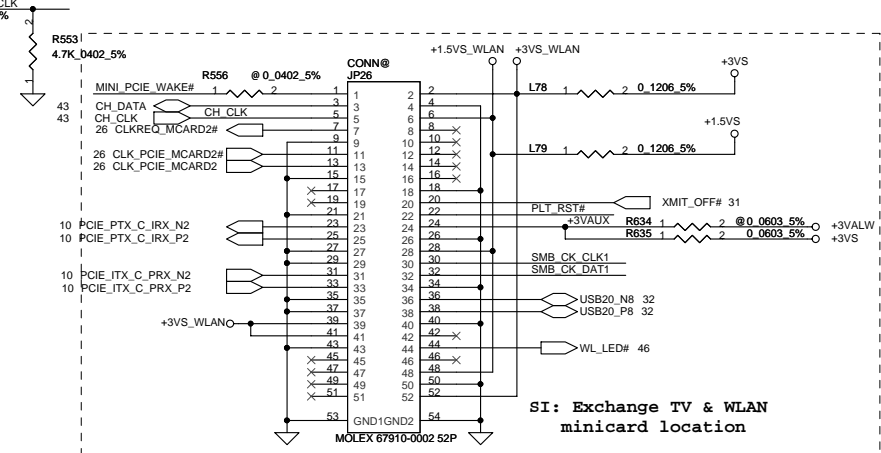
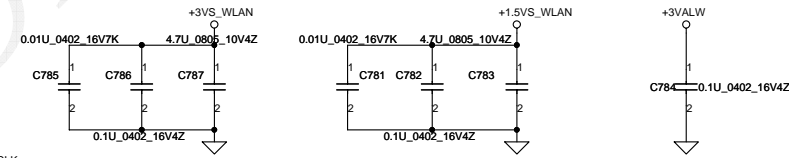


SI: Exchange TV & WLAN minicard location



Mini-Express Card---WLAN

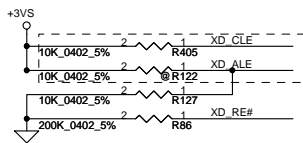
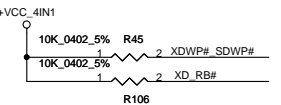
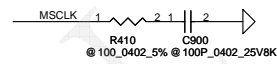
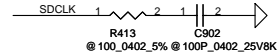
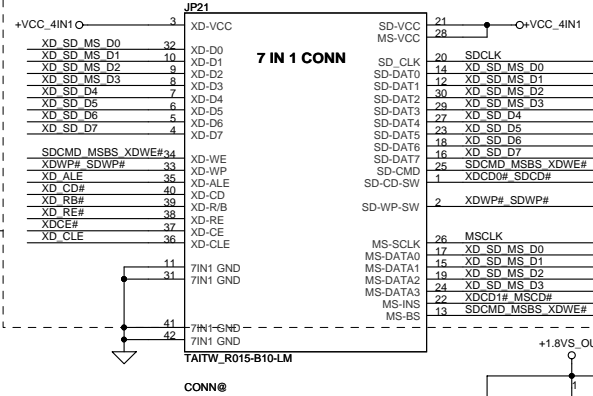
Near to Express Card slot.



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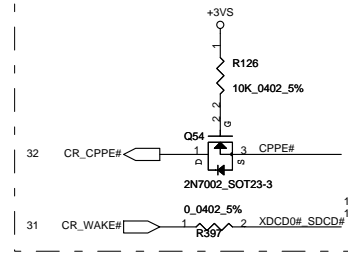
SI:Per ME request change JP21 to new one

Card Reader Connector

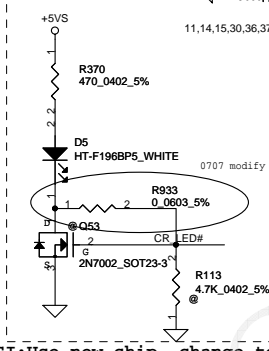
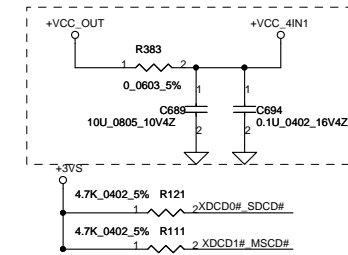


SI:Per Jmicro request change R405 & R122 from 200K to 10K

SI2:Support D3E function

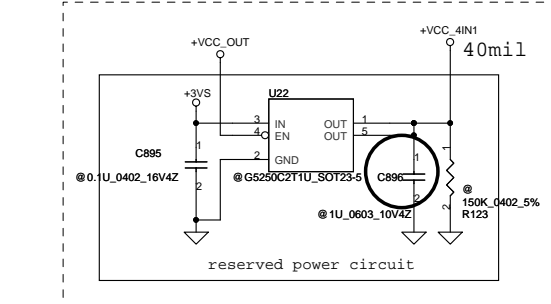


SI:Use build in Regulator Chip mount R383,C689,C694

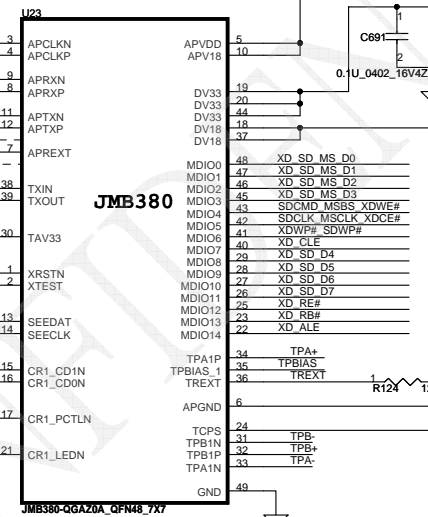


SI:Use new chip ,change to High active control

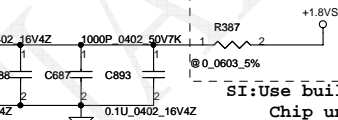
SI:Use build in Regulator Chip unmount U22 and relation parts



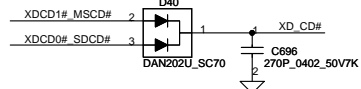
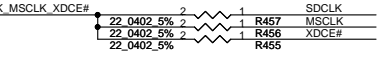
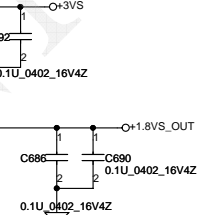
Power Circuit



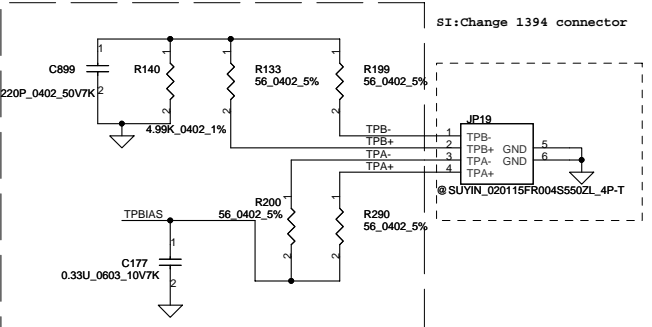
SI2: Use B version chip



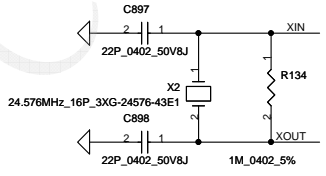
SI:Use build in Regulator Chip unmount R387



Close to Chip

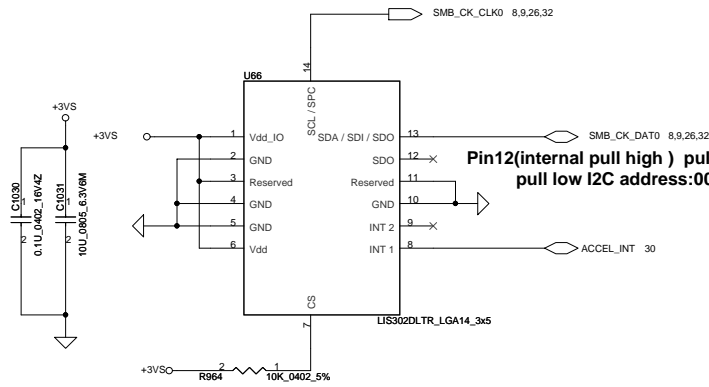


SI:Change 1394 connector

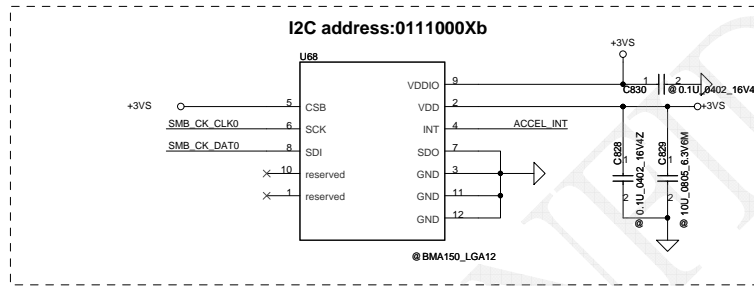


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ACCELEROMETER



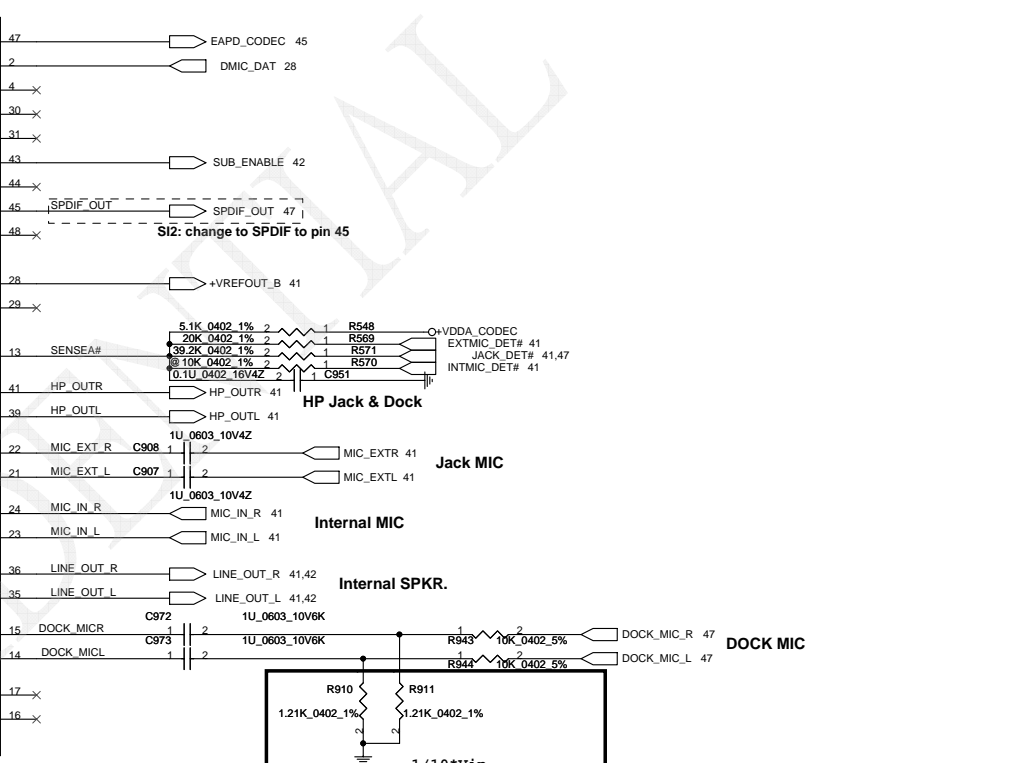
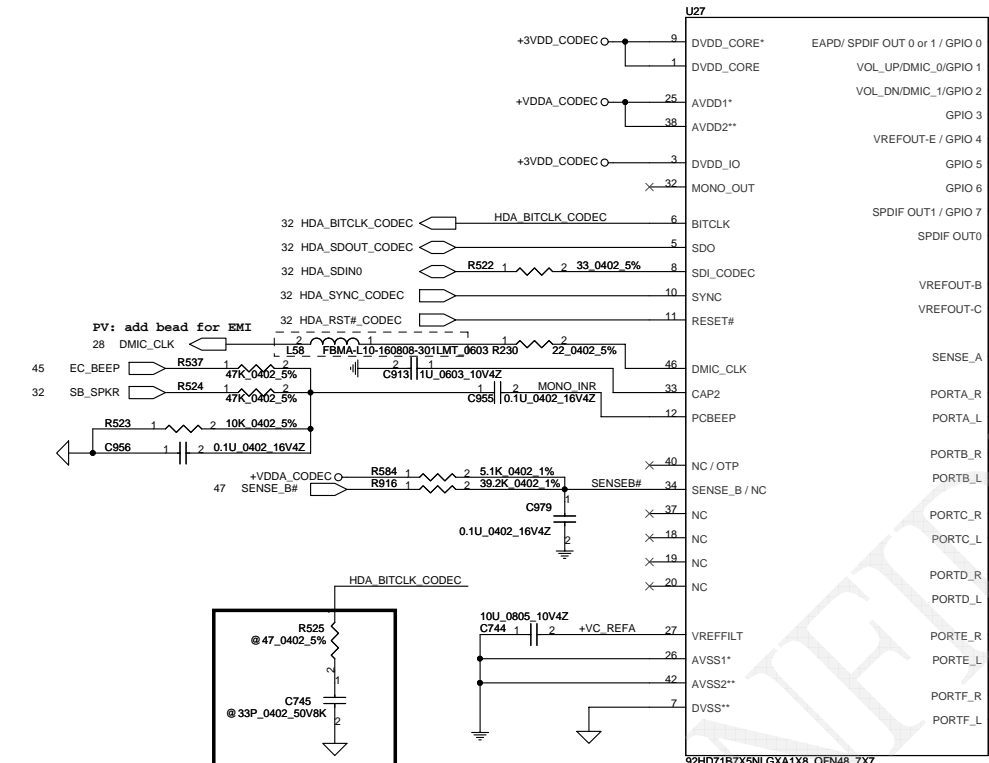
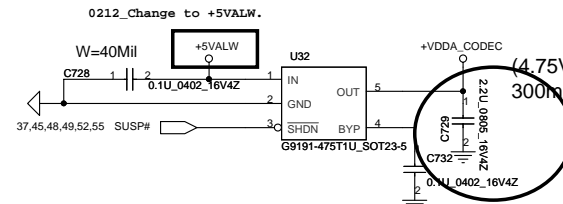
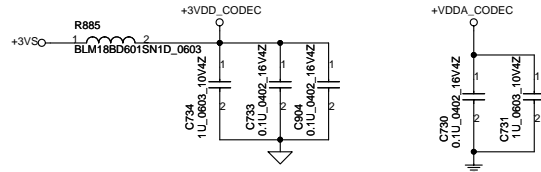
Pin12(internal pull high) pull up I2C address :0011101b
pull low I2C address:0011100b



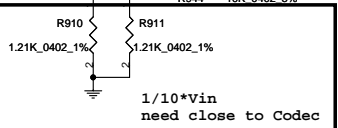
SI: Reserve Bosch solution

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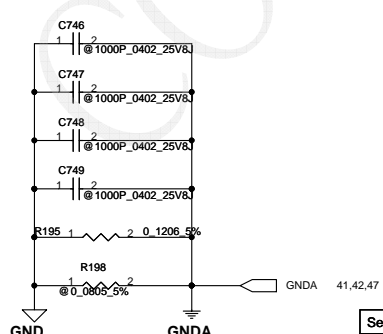
CODEC POWER



SI2: Use new version Codec

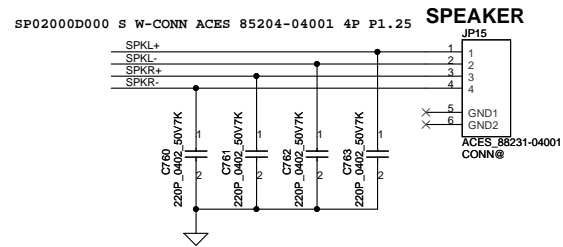
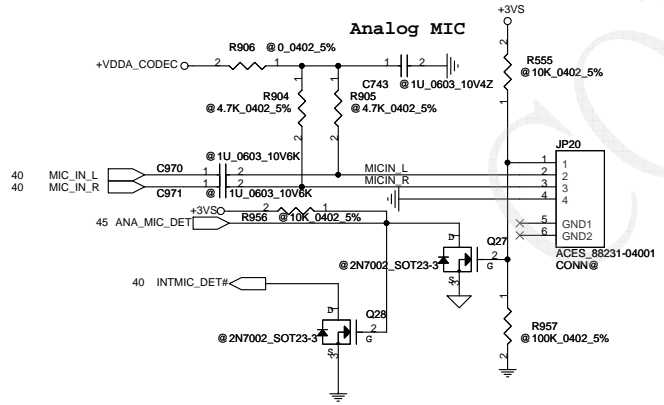
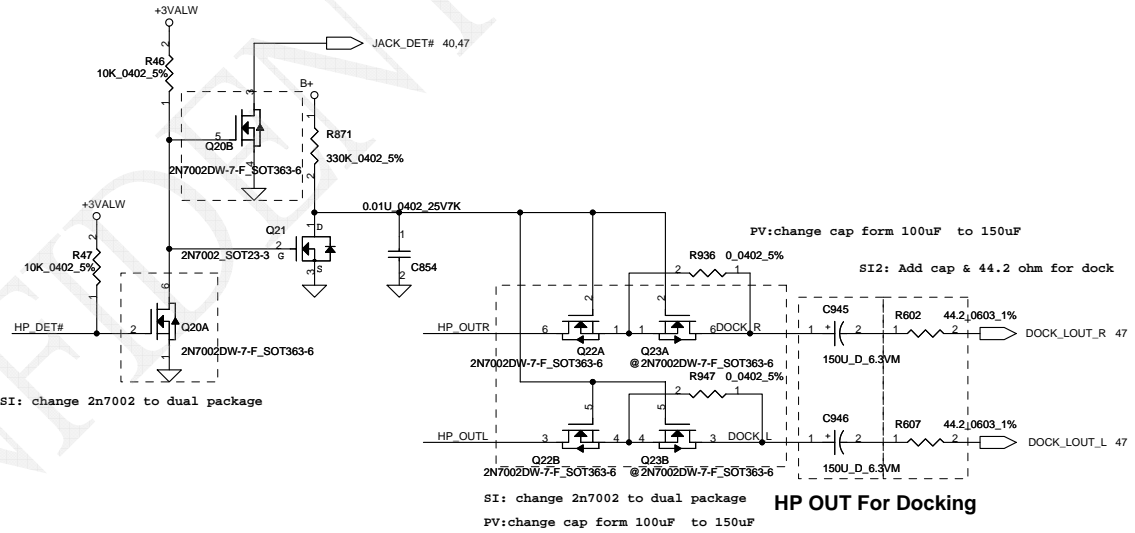
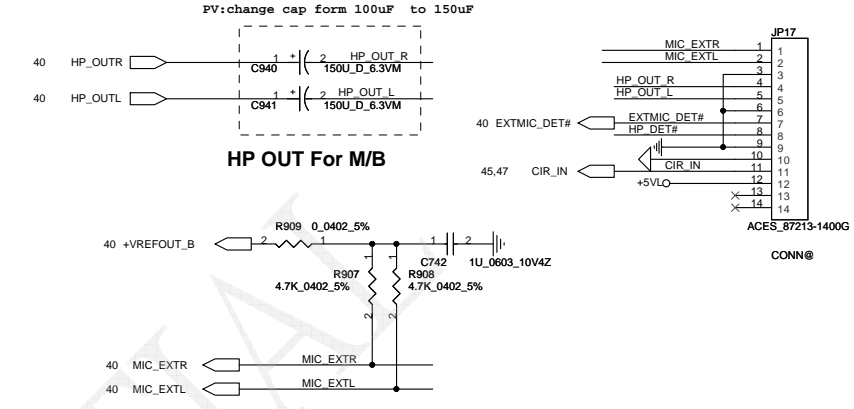
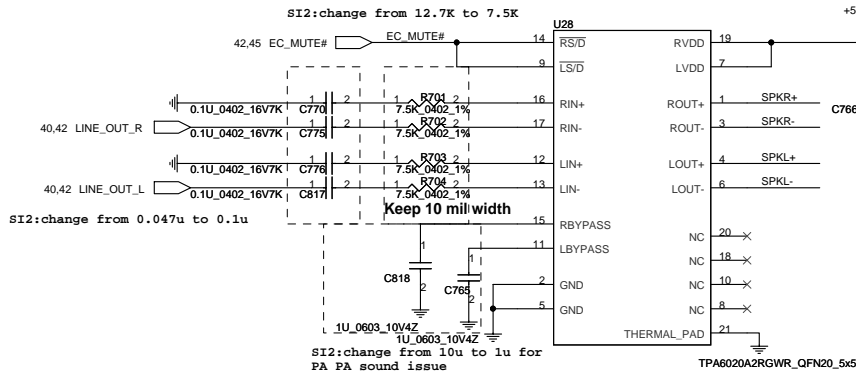


SENSE A		SENSE B	
Port	Resistor	Port	Resistor
A	39.2K	E	39.2K
B	20K	F	20K
C	10K	G	10K
D	5.11K	H	5.11K

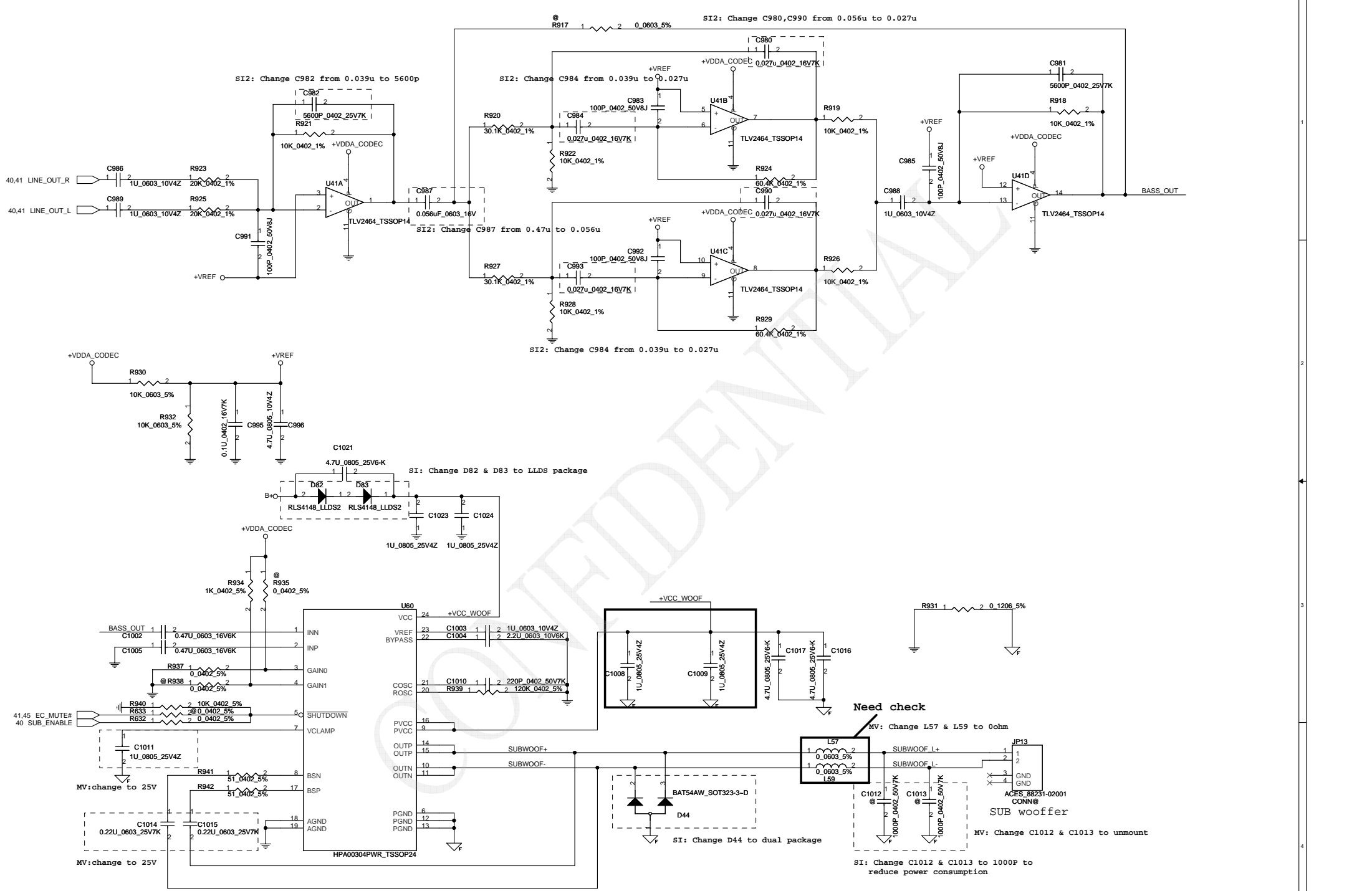


HP_DET#	MIC_DET	LINEOUT	PORT-A <Earphone OUT>	MIC	EQ
0 (LOW)	0 (LOW)	OFF	ON	ON	Disable
0 (LOW)	NC	OFF	ON	OFF	Disable
NC	0 (LOW)	ON	OFF	ON	Enable
NC	NC	ON	OFF	OFF	Enable

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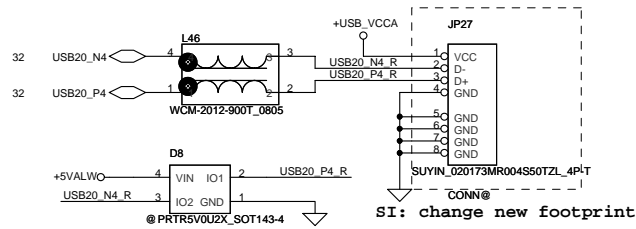
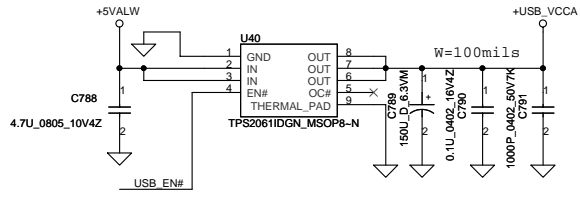


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				Customer	401621	Rev C
				Date:	Wednesday, April 15, 2009	Sheet 41 of 58

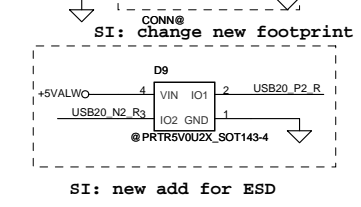
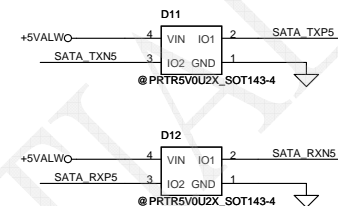
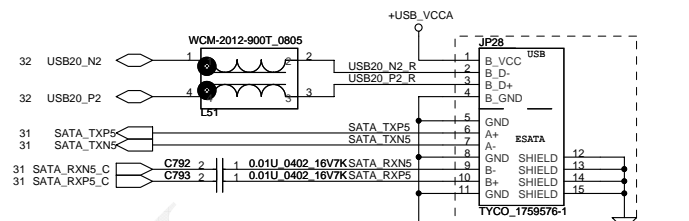


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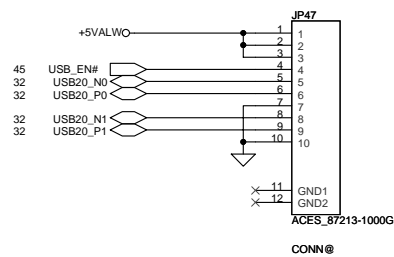
Left side USB CONNECTOR 0



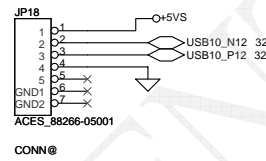
Left side ESATA/USB combination Connector



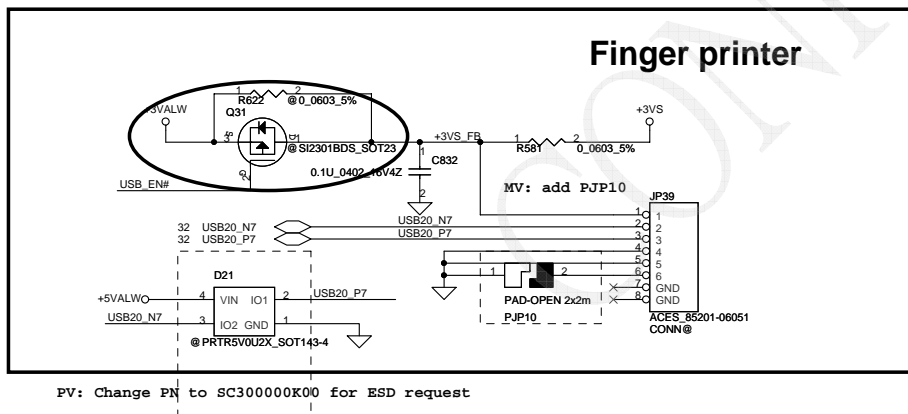
USB Board Conn



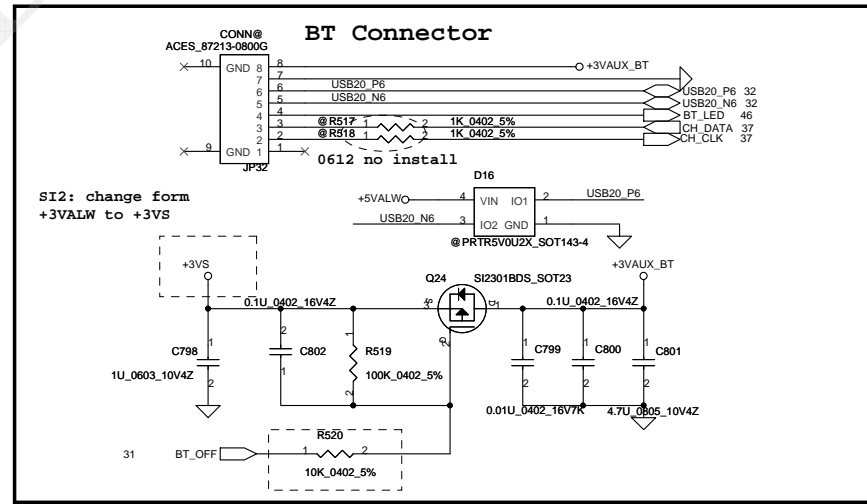
Touch screen



Finger printer

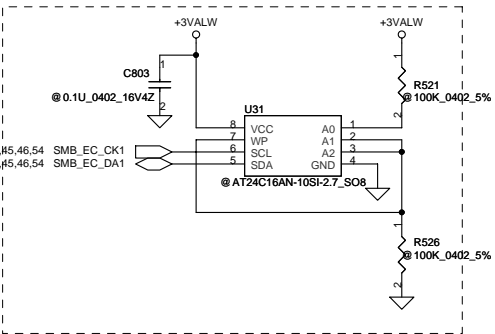


BT Connector

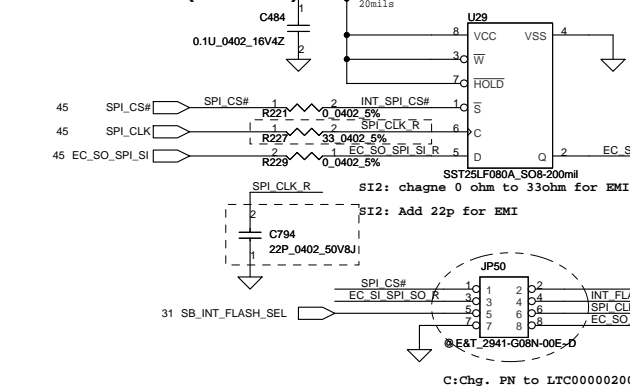


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SI2: Change from +3VL to +3VALW and unmount this EEPROM

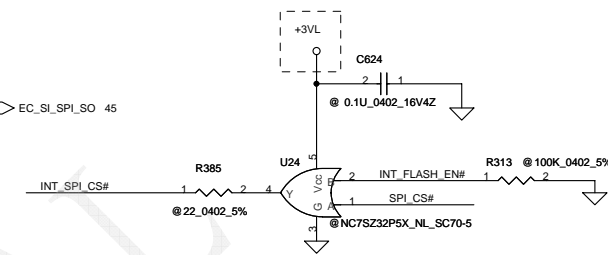


SPI Flash (8Mb*1)

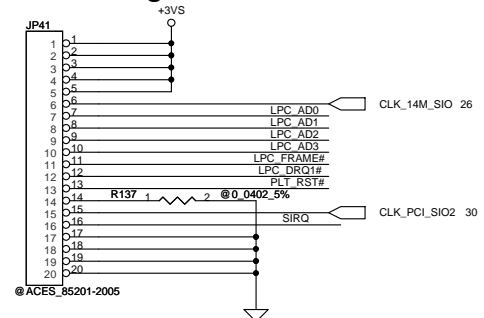


C:Chg. PN to LTC0000200

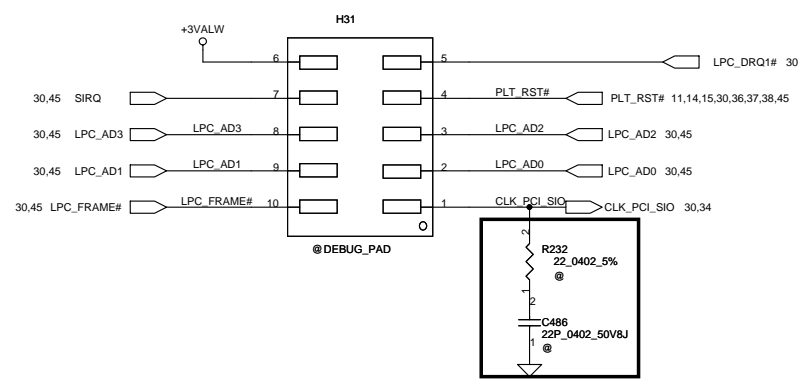
SI2: Change from +3VALW to +3VL



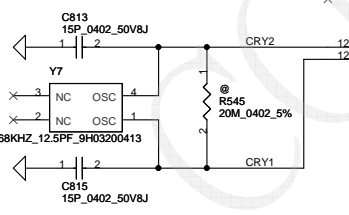
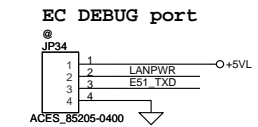
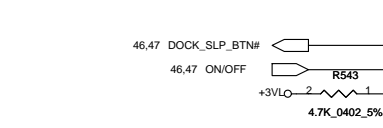
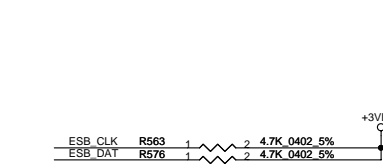
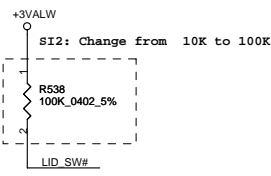
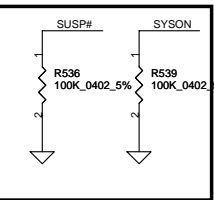
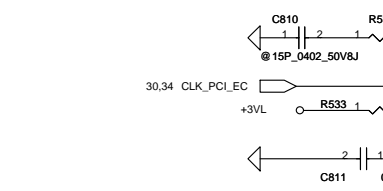
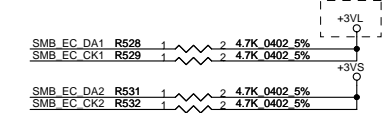
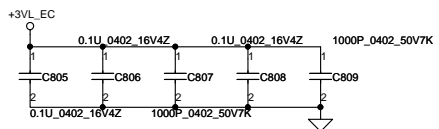
LPC Debug Port



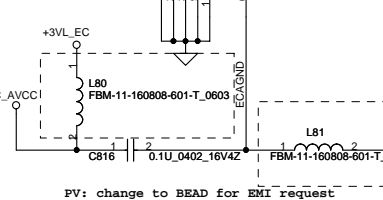
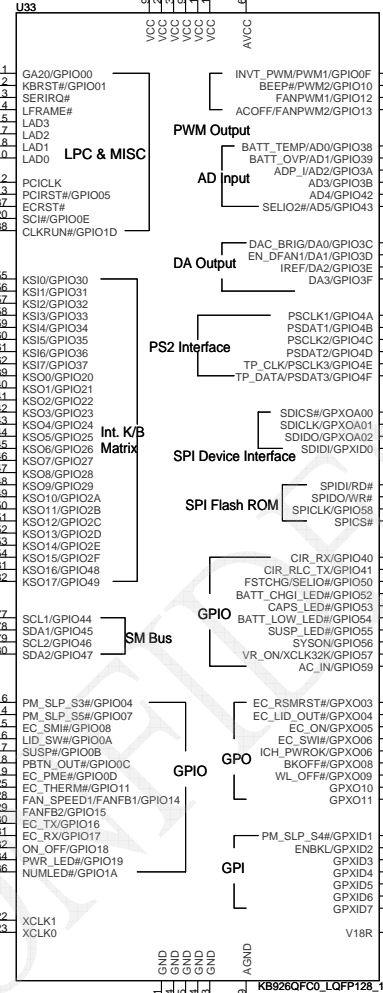
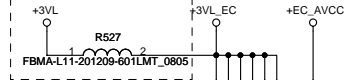
LPC Debug Port



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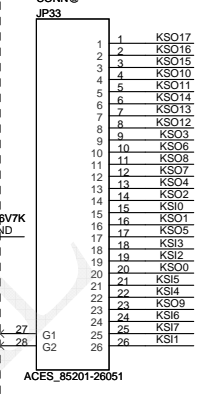
PV: change to BEAD for EMI request



PV: change to BEAD for EMI request

SI2: Change keyboard conn

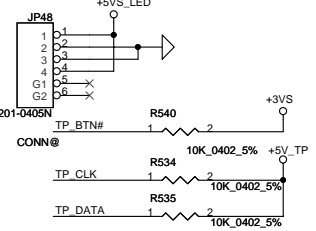
KBD CONN



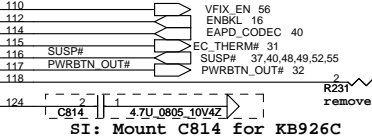
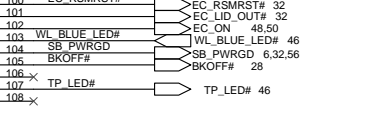
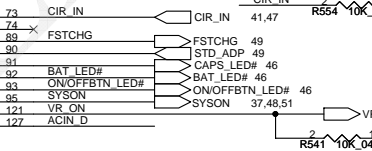
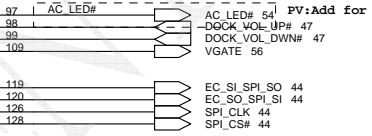
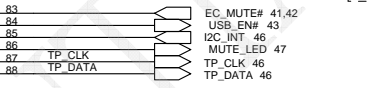
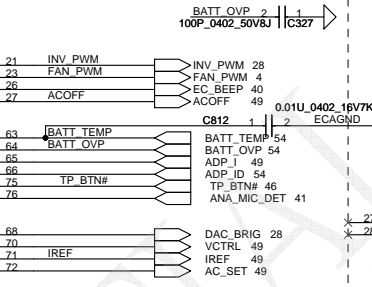
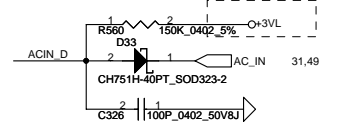
For EMI

KSO17 @C213	1	2	100P_0402_25V8K
KSO9 @C609	1	2	100P_0402_25V8K
KSO16 @C754	1	2	100P_0402_25V8K
KSO10 @C756	1	2	100P_0402_25V8K
KSO11 @C757	1	2	100P_0402_25V8K
KSO14 @C758	1	2	100P_0402_25V8K
KSO10 @C758	1	2	100P_0402_25V8K
KSO11 @C759	1	2	100P_0402_25V8K
KSO12 @C764	1	2	100P_0402_25V8K
KSO2 @C824	1	2	100P_0402_25V8K
KSO3 @C769	1	2	100P_0402_25V8K
KSO10 @C822	1	2	100P_0402_25V8K
KSO12 @C823	1	2	100P_0402_25V8K
KSO2 @C824	1	2	100P_0402_25V8K
KSO4 @C825	1	2	100P_0402_25V8K
KSO7 @C826	1	2	100P_0402_25V8K
KSO8 @C875	1	2	100P_0402_25V8K
KSO5 @C876	1	2	100P_0402_25V8K
KSO5 @C877	1	2	100P_0402_25V8K
KSO1 @C878	1	2	100P_0402_25V8K
KSO10 @C884	1	2	100P_0402_25V8K
KSO13 @C885	1	2	100P_0402_25V8K
KSO15 @C886	1	2	100P_0402_25V8K
KSO0 @C887	1	2	100P_0402_25V8K
KSO2 @C888	1	2	100P_0402_25V8K
KSO1 @C889	1	2	100P_0402_25V8K
KSO17 @C890	1	2	100P_0402_25V8K

KB Back Light Conn



PV: Change from +3VALW to +3VL

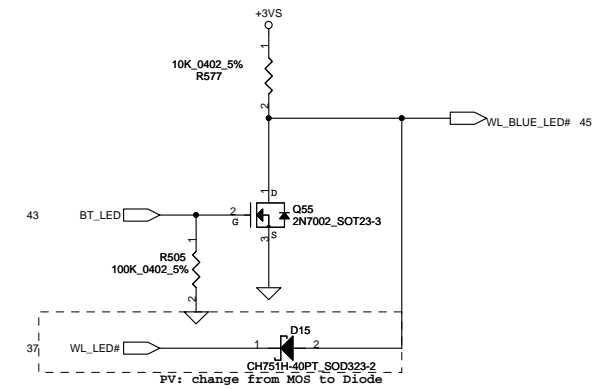
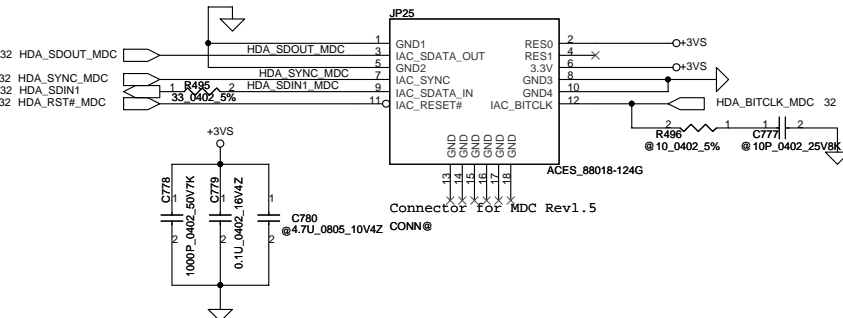


SI: Mount C814 for KB926C

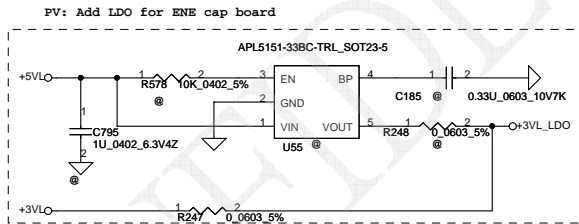
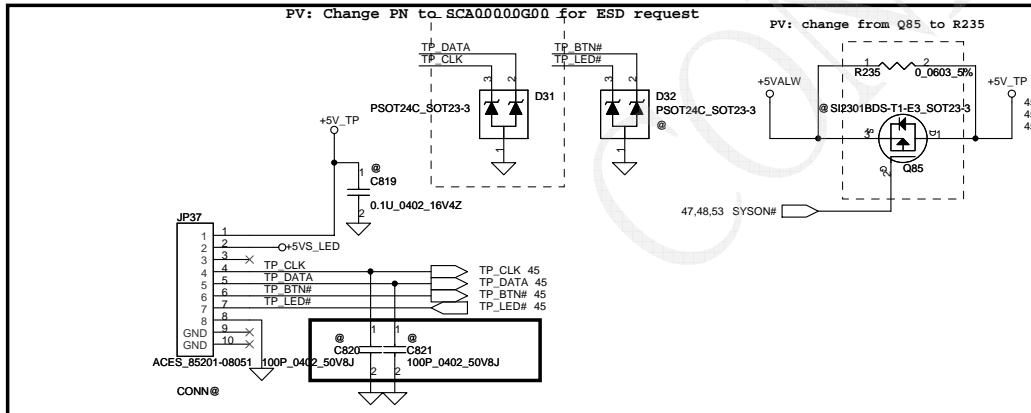
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MDC 1.5 Conn.

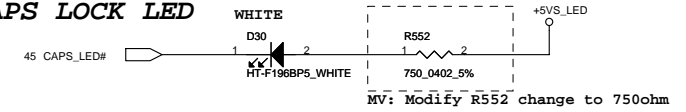
Change type 4/25



T/P Board (Inculde T/P_ON/OFF)



CAPS LOCK LED



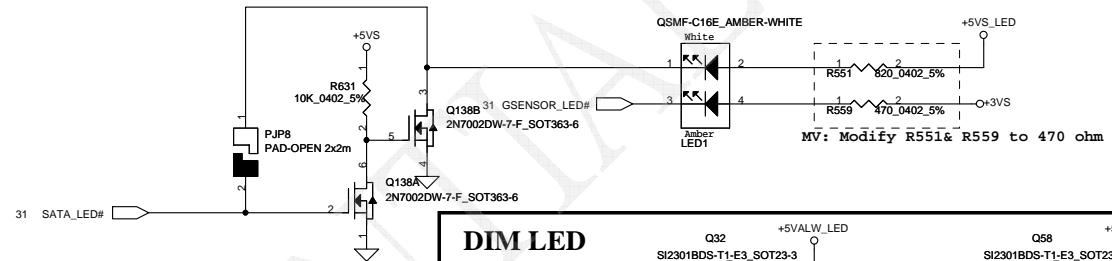
POWER LED(Left 1)



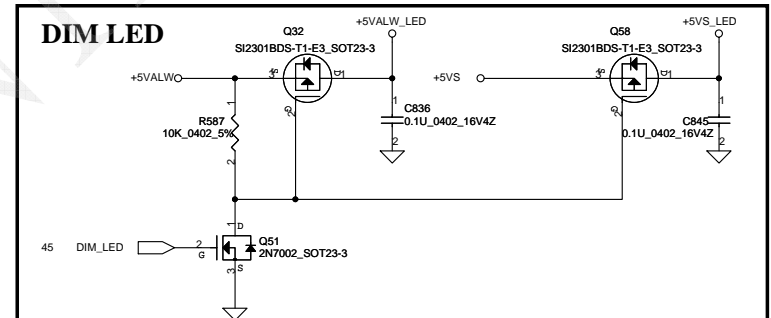
Battery Charge LED(Left 2)



HDD LED(Left 3)

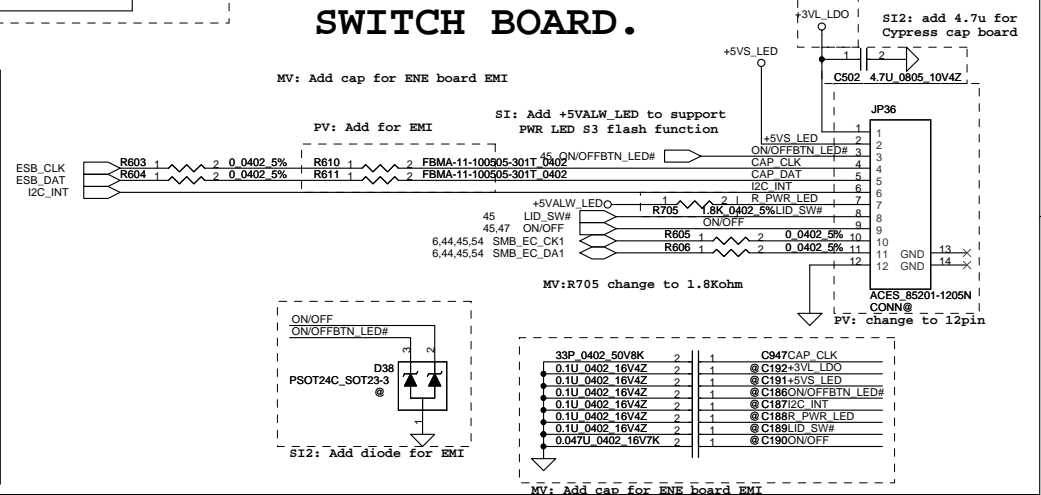


DIM LED



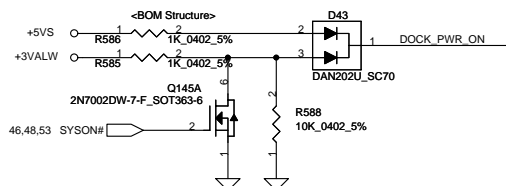
SI: Change to +3VL to support Qplay bottom boot in BATT mode

SWITCH BOARD.



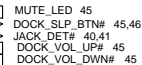
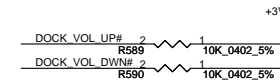
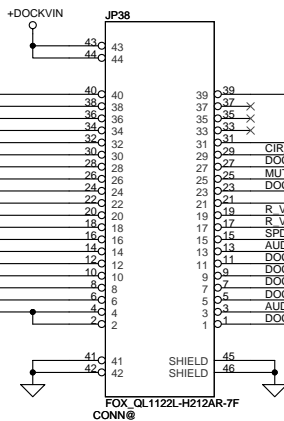
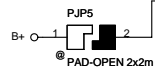
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Atlas/ Saturn Dock

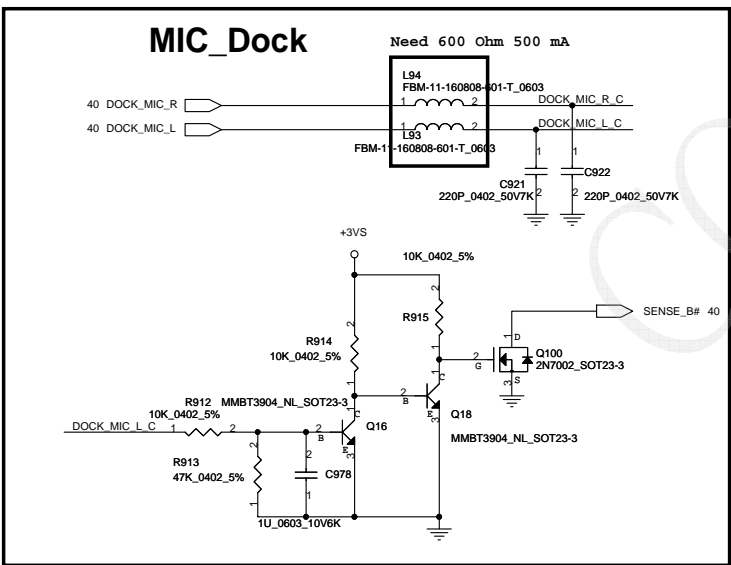
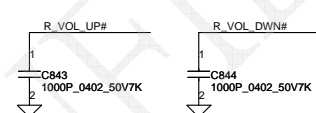
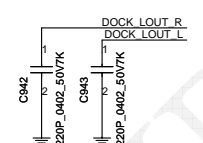
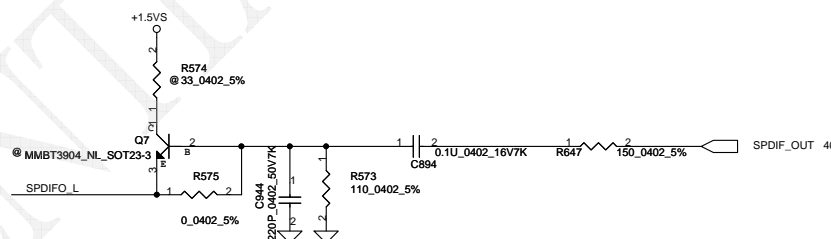
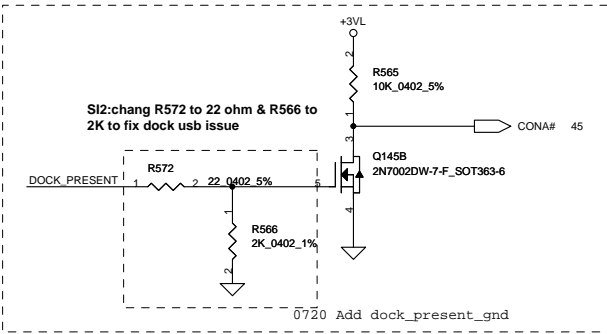


DOCK_PWR_ON Spec
 0V = Notebook S4/S5, Dock off
 2.5V = Notebook S3, Dock on
 4V = Notebook S0, Dock on

- 27 GREEN_L
- 27 RED_L
- 27 BLUE_L
- 27 D_HSYNC
- 27 D_DDCLK
- 32 USB20_N3
- 27 D_VSYNC
- 32 USB20_P3
- 36 RJ45_MIDI3+
- 36 RJ45_MIDI3-
- 36 RJ45_MIDI2+
- 36 RJ45_MIDI2-
- 36 RJ45_MIDI1+
- 36 RJ45_MIDI1-
- 36 RJ45_MIDI0+
- 36 RJ45_MIDI0-

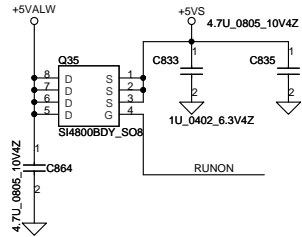


need change to reverse type connector

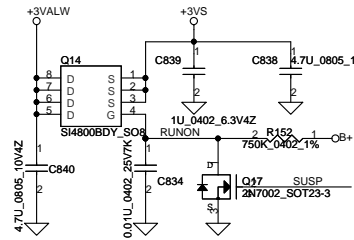


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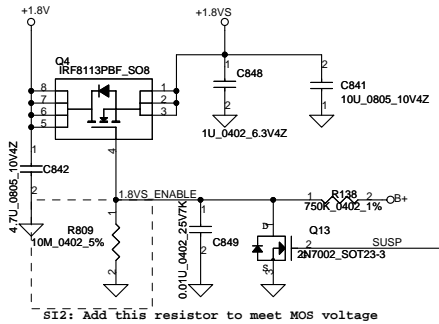
+5VALW TO +5VS



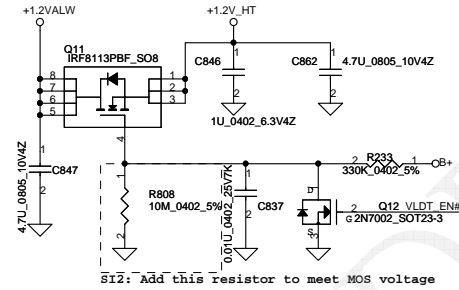
+3VALW TO +3VS



+1.8V TO +1.8VS

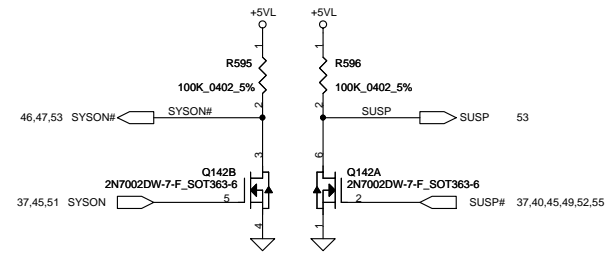
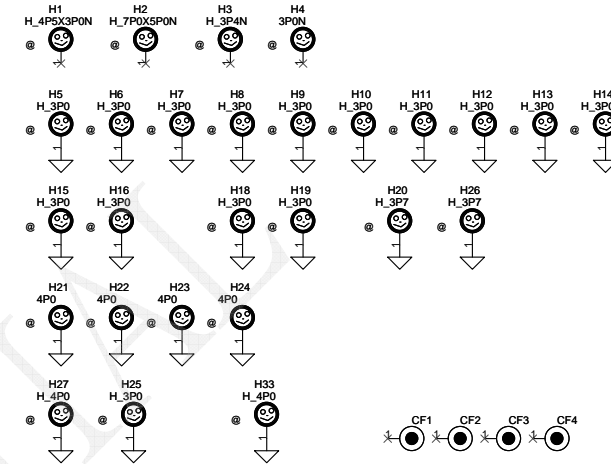


+1.2VALW TO +1.2V_HT

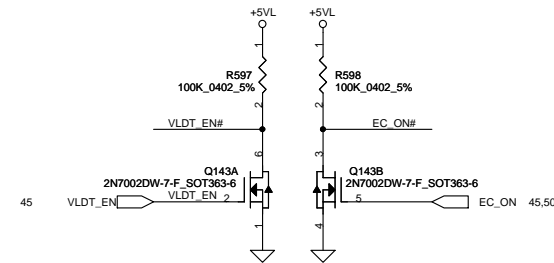
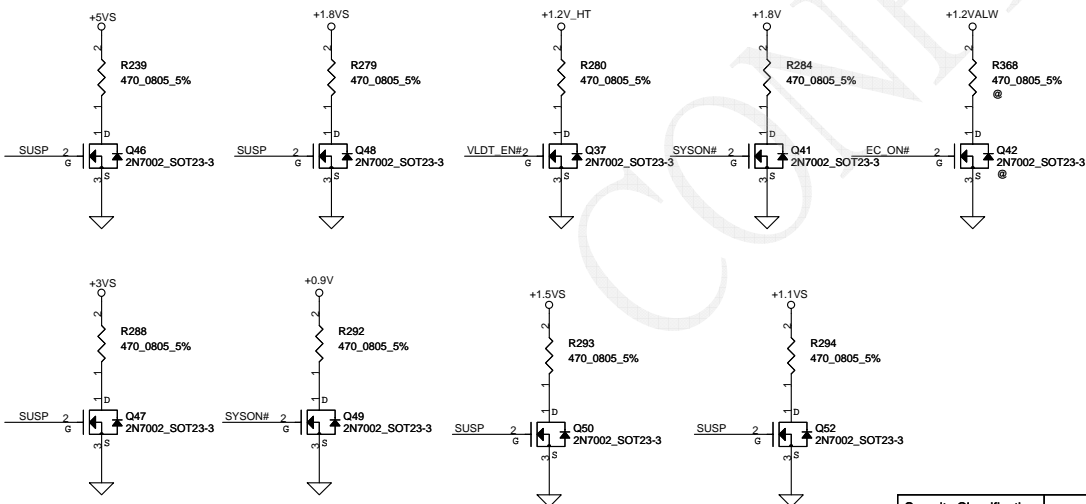


SI2: Add this resistor to meet MOS voltage

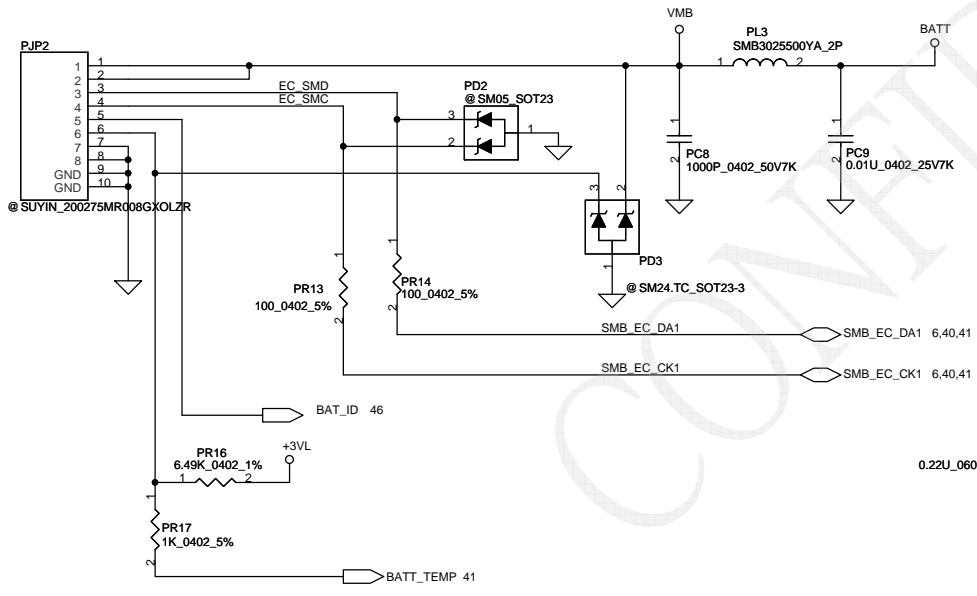
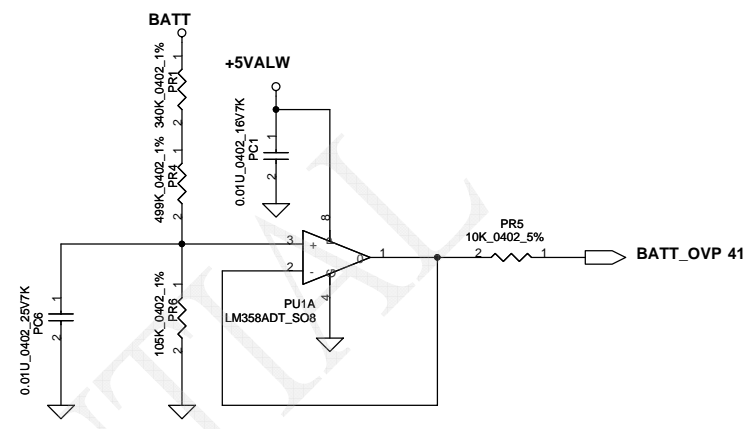
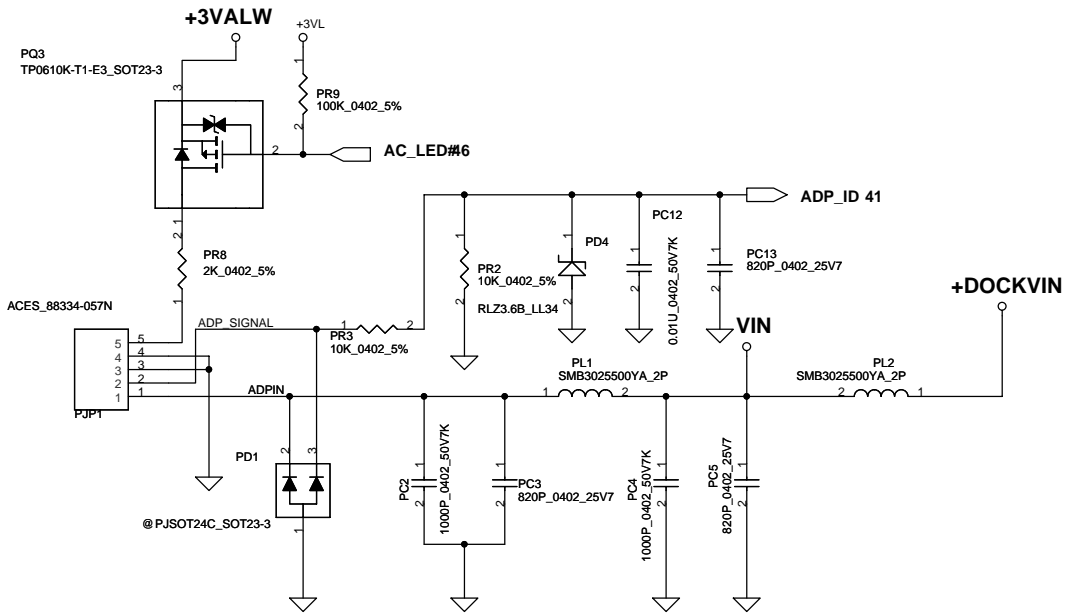
SI2: Add this resistor to meet MOS voltage



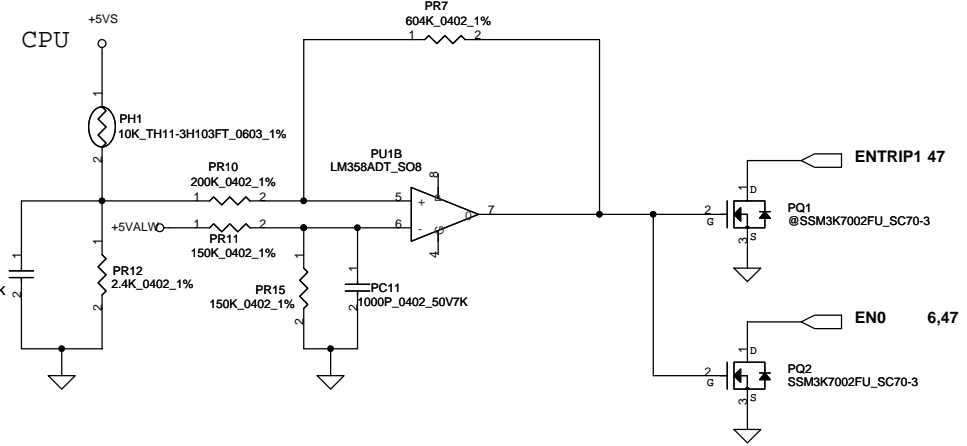
Discharge circuit



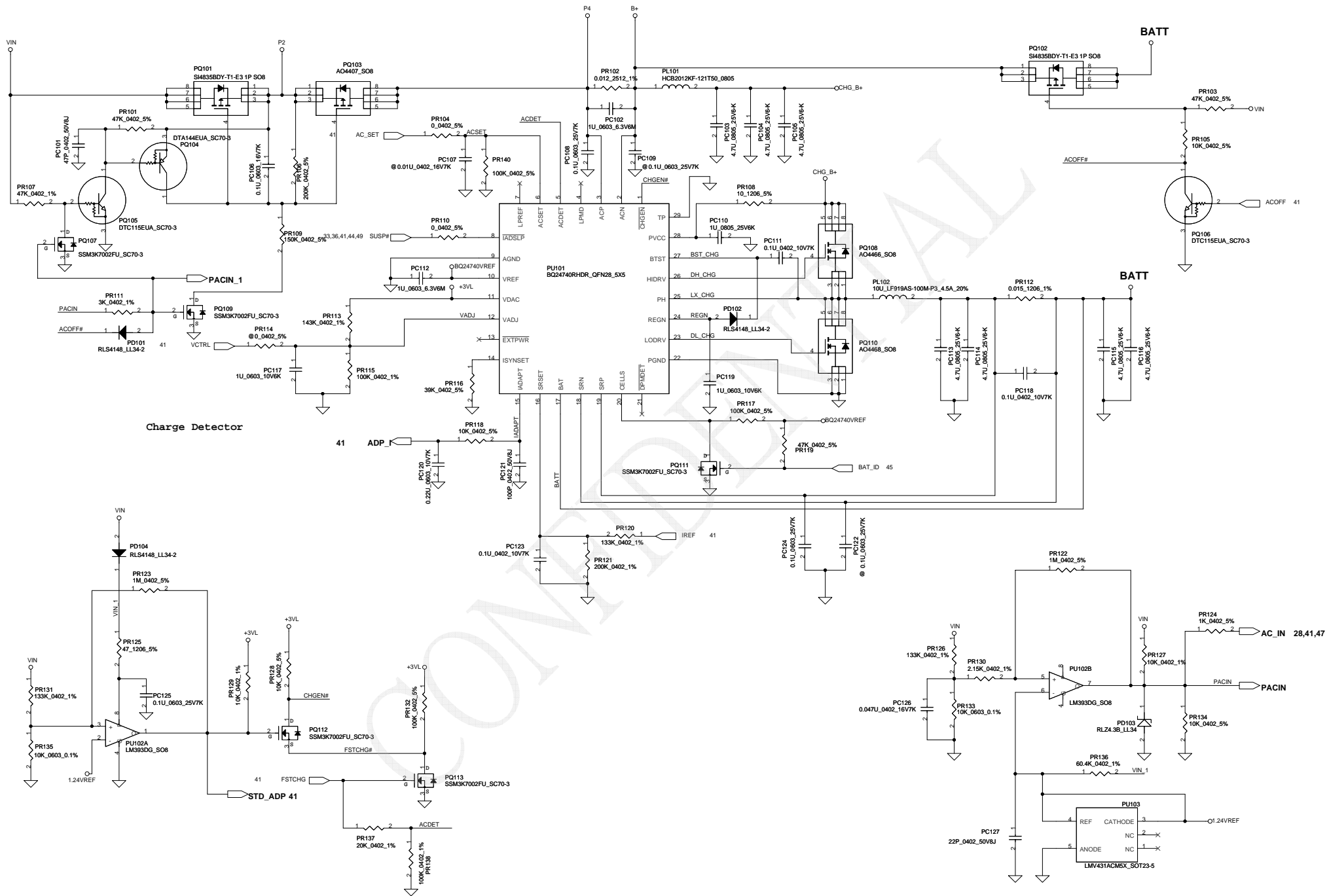
Security Classification	Compal Secret Data			Title	
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PH1 under CPU bottom side :
CPU thermal protection at 90 +/-3 degree C



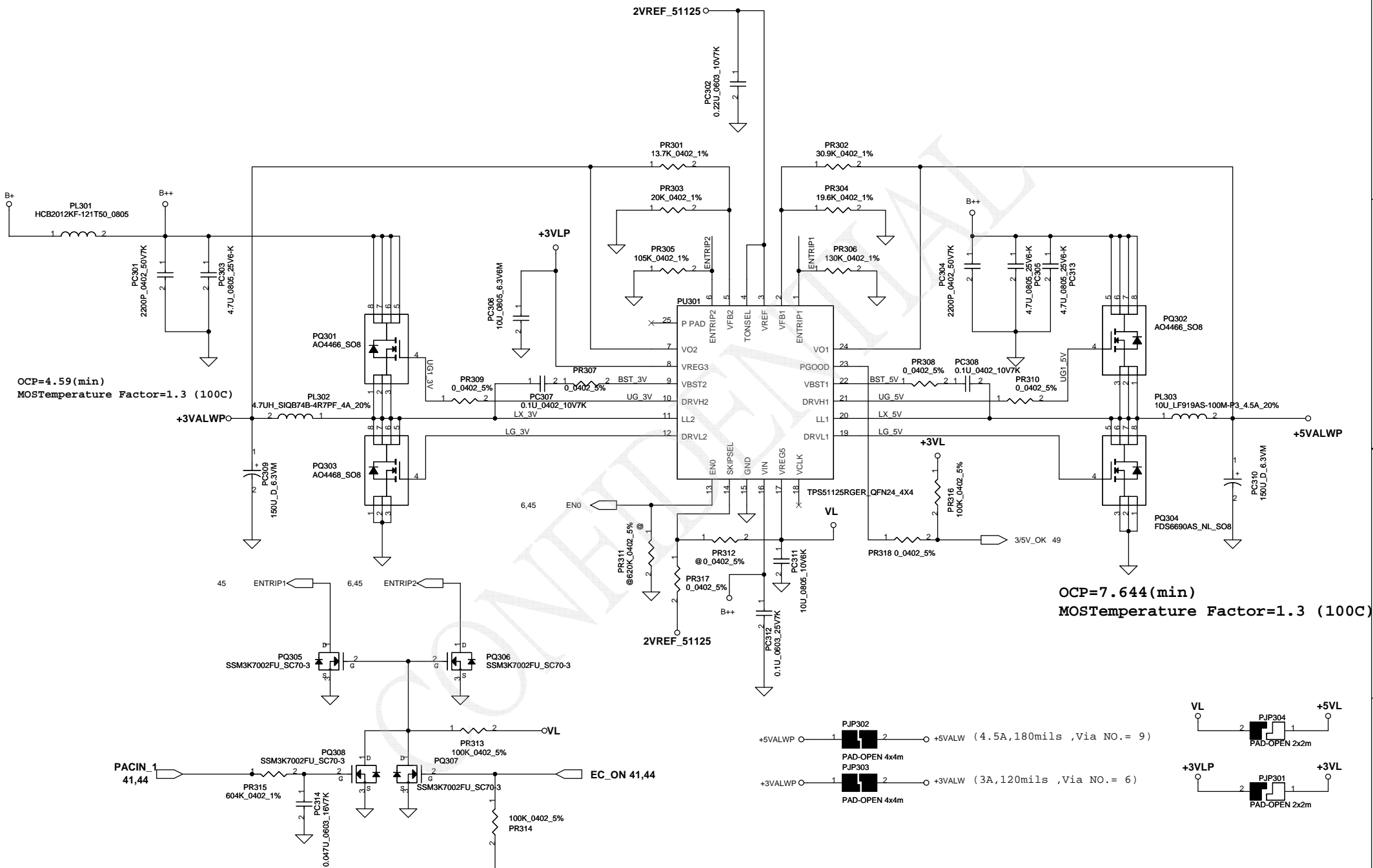
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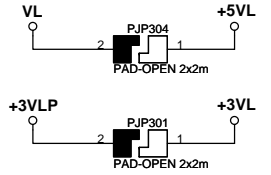
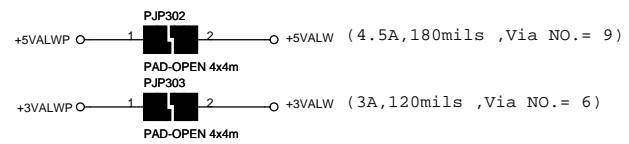
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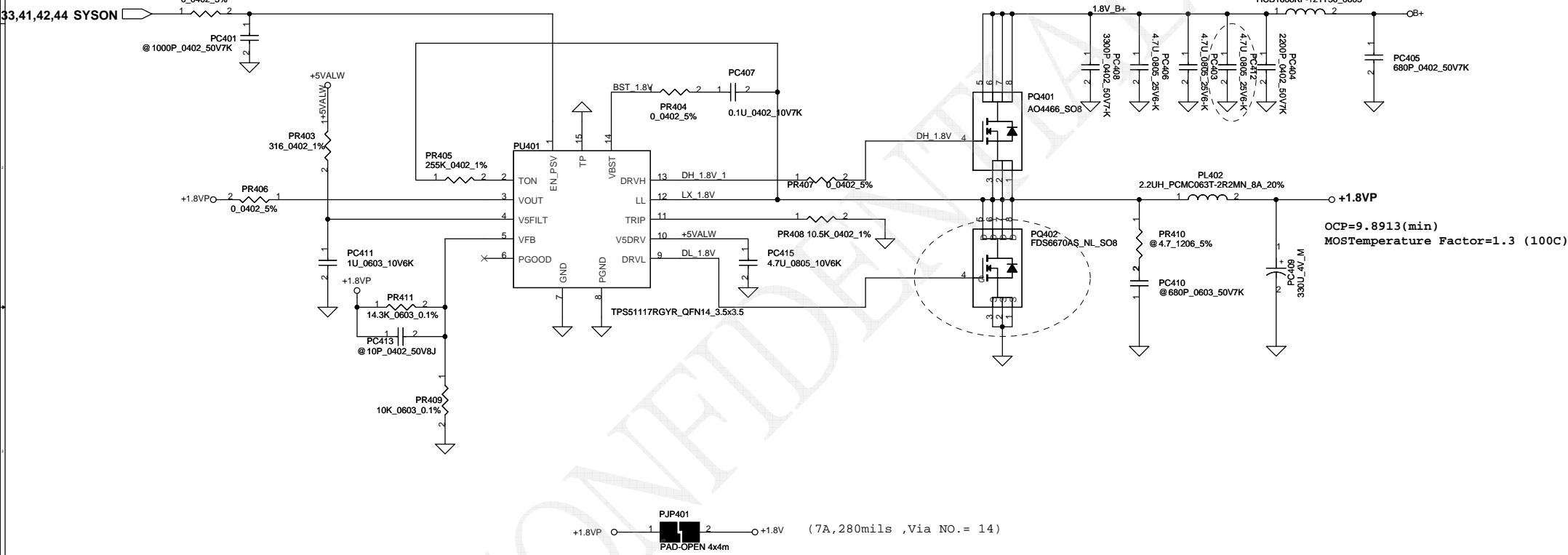


OCP=4.59(min)
MOSTemperature Factor=1.3 (100C)

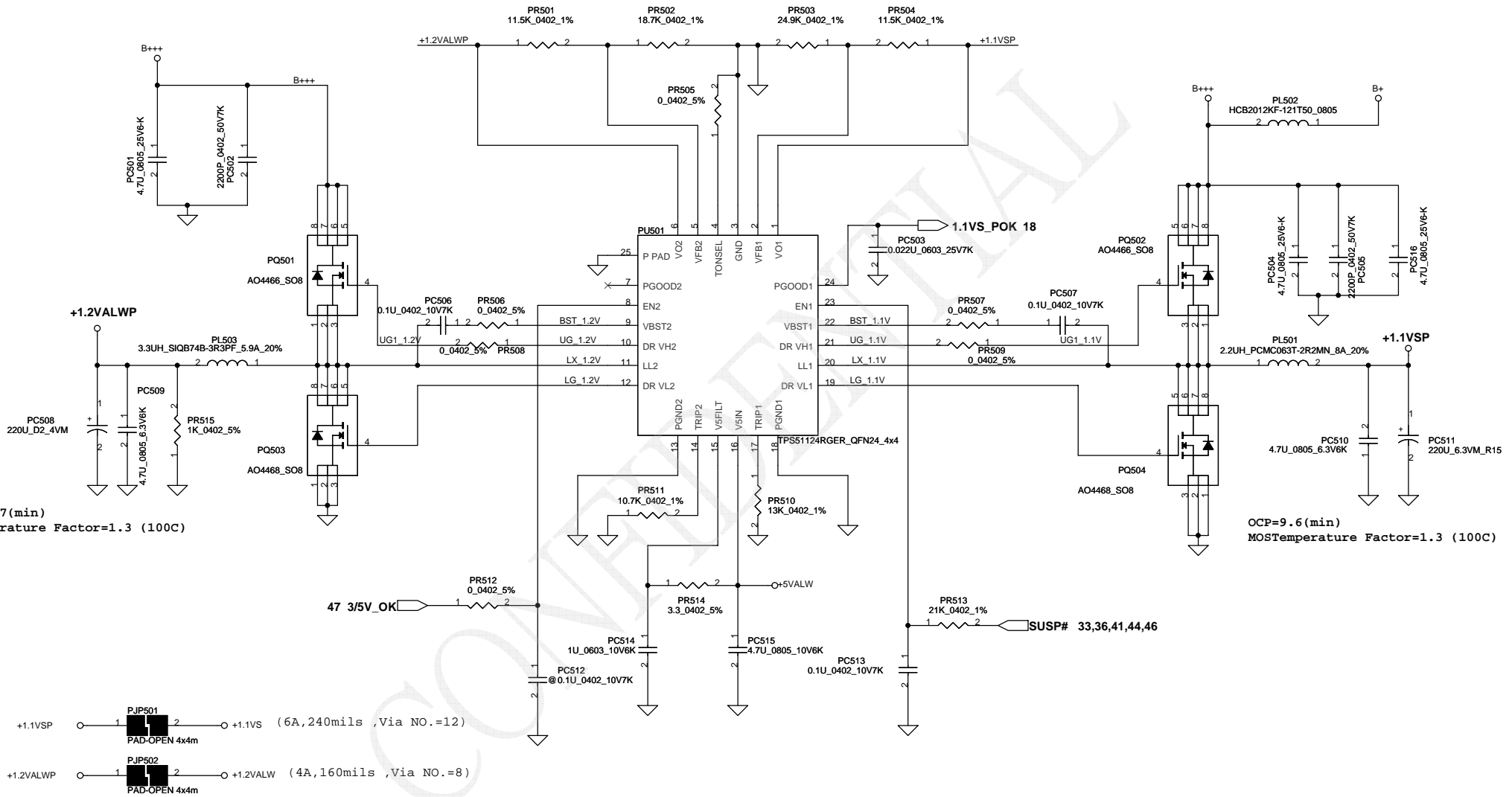
OCP=7.644(min)
MOSTemperature Factor=1.3 (100C)



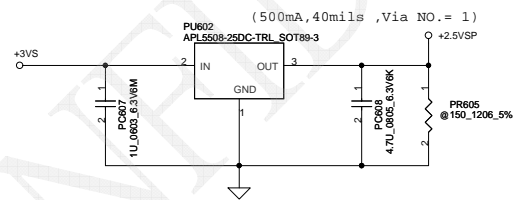
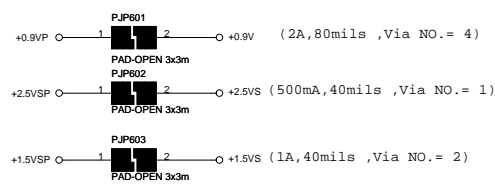
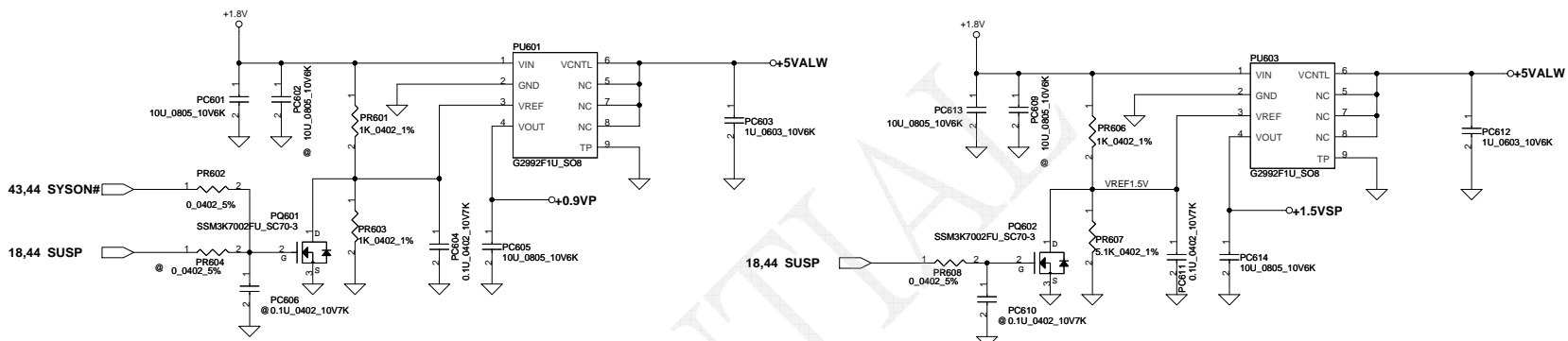
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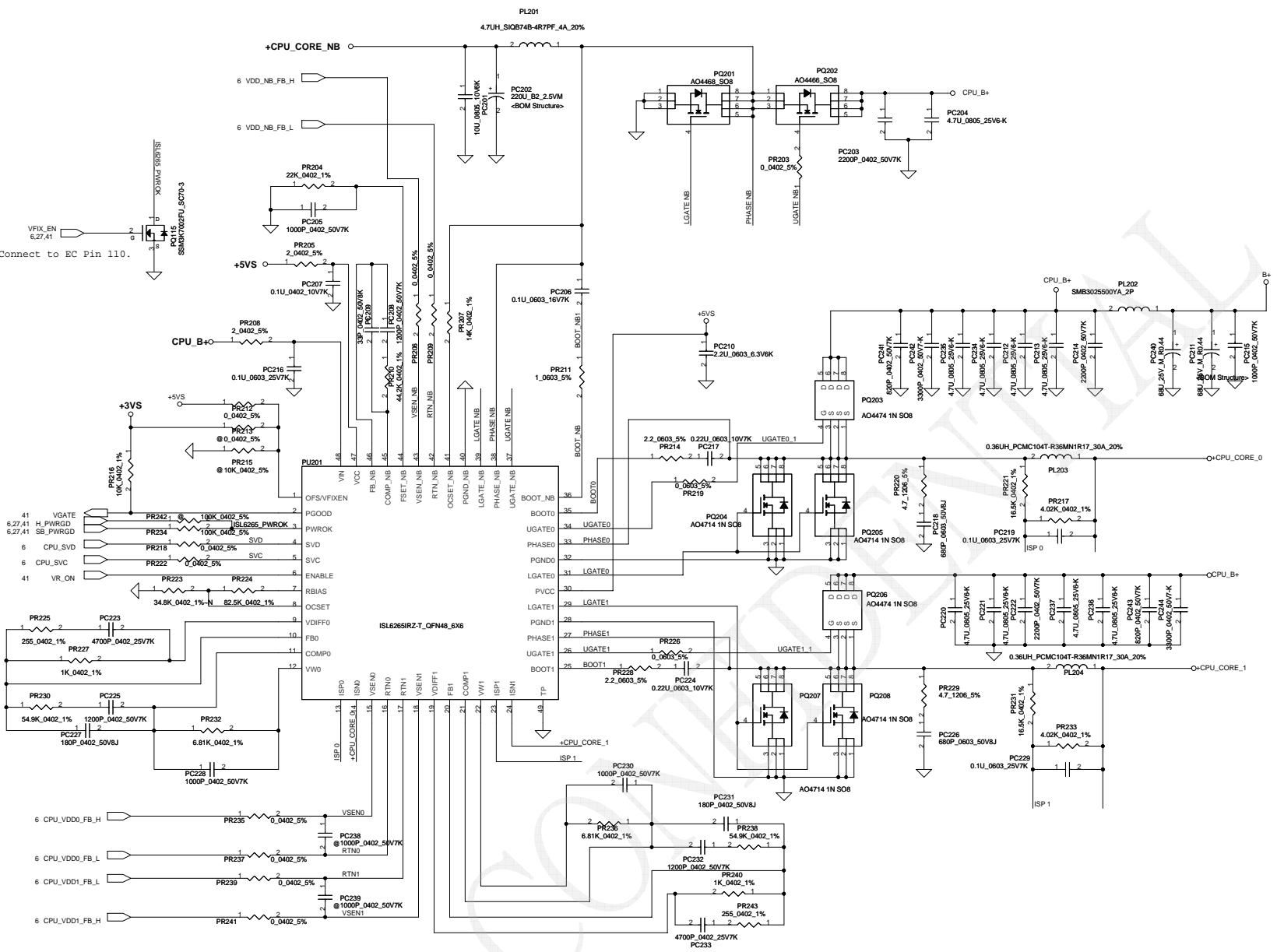
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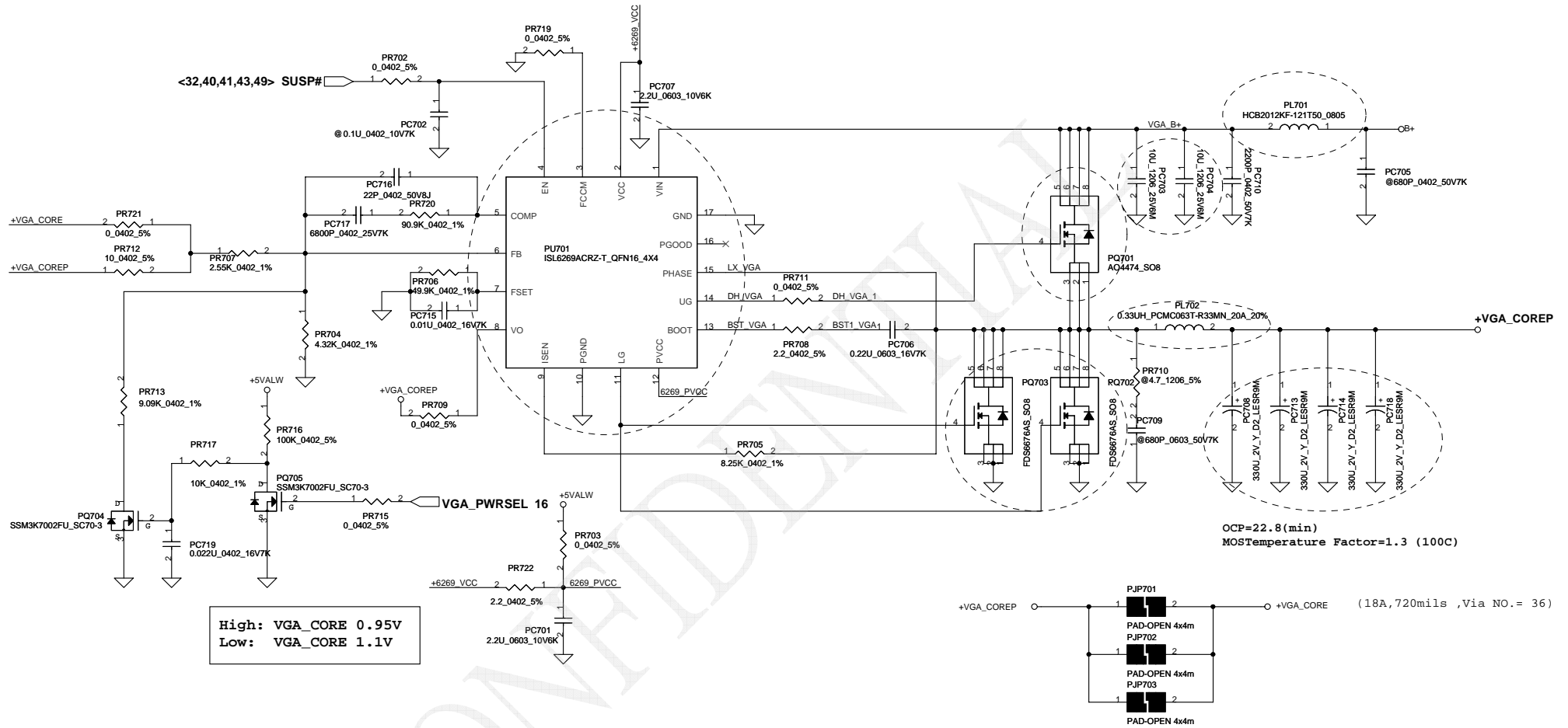
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Item	Modify List	PAGE	Fixed Issue and change Item	M.B. Ver.
1	ADD *106, DV7, U7, UV8, U8, UV9, U9, UV10 (MEMORY)	P15-P25	change M82S TO M86M	1.1
2	ADDQ9 (2M7002)	P15-P25	change M82S TO M86M	1.1
3	ADD QV3(SI2301BD9)	P15-P25	change M82S TO M86M	1.1
4	ADD RV47(240 ohm)	P15-P25	change M82S TO M86M	1.1
5	ADD R42(0 ohm)	P15-P25	change M82S TO M86M	1.1
6	ADD RV19, RV44 (1K ohm)	P15-P25	change M82S TO M86M	1.1
7	ADD RV96, RV100, RV72, RV73, RV74, RV75, RV76, RV77, RV78, RV79, RV92, RV93, RV94, RV95, RV97, RV99, RV101, RV107, RV108, RV7, RV9, RV10, RV11, RV12, RV13, RV14, RV16, RV17, RV18, RV33, RV98, RV102(10K ohm)	P15-P25	change M82S TO M86M	1.1
8	ADD RV30, RV34(100K ohm)	P15-P25	change M82S TO M86M	1.1
9	ADD RV103, RV104, RV45, RV46, R403(4.7K ohm)	P15-P25	change M82S TO M86M	1.1
10	ADD RV36, RV37, RV38, RV39, RV40, RV41, RV42, RV43(100 ohm)	P15-P25	change M82S TO M86M	1.1
11	ADD RV6 (1.27Kohm)	P15-P25	change M82S TO M86M	1.1
12	ADD RV25, RV26, RV27, RV8(150 ohm)	P15-P25	change M82S TO M86M	1.1
13	ADD RV5(2K ohm)	P15-P25	change M82S TO M86M	1.1
14	ADD RV23, RV15, RV22(499 ohm)	P15-P25	change M82S TO M86M	1.1
15	ADD RV60, RV61, RV62, RV63, RV66, RV67, RV68, RV69, RV54, RV55, RV56, RV57, RV48, RV49, RV50, RV51(4.99K ohm)	P15-P25	change M82S TO M86M	1.1
16	ADD RV24(715 ohm)	P15-P25	change M82S TO M86M	1.1
17	ADD RV28(75 ohm)	P15-P25	change M82S TO M86M	1.1
18	ADD YV1(CRYSTAL 27MHz)	P15-P25	change M82S TO M86M	1.1
19	ADD RV103, RV104, RV45, RV46, R403(4.7K ohm)	P15-P25	change M82S TO M86M	1.1
20	ADD LV1, LV2, LV3, LV4, LV5, LV6, LV7, LV8, LV9, LV10, LV11, LV12, LV13, LV14, LV15, LV16, LV17, LV18, LV19, LV21, LV22, LV23, LV24, LV25 (MURATA, BLM18P01215N1D)	P15-P25	change M82S TO M86M	1.1
21	ADDCV226, CV227, CV234, CV235, CV249, CV250, CV257, CV258, CV203, CV204, CV211, CV212, CV180, CV181, CV188, CV189, CV42, CV45, CV48, CV52, CV53, CV56, CV59, CV64, CV67, CV68, CV71, CV76, CV84, CV85, CV90, CV92, CV95, CV97, CV99, CV101, CV108, CV117, CV119, CV131, CV132, CV136, CV140, CV145, CV149, CV157, CV165, CV166, CV169, CV173(10u)	P15-P25	change M82S TO M86M	1.1
22	ADD CV80, CV244, CV229, CV230, CV231, CV232, CV237, CV238, CV239, CV240, CV242, CV246, CV247, CV252, CV253, CV254, CV255, CV260, CV261, CV262, CV263, CV265, CV267, CV269, CV270, CV206, CV207, CV208, CV209, CV214, CV215, CV216, CV217, CV219, CV221, CV223, CV224, CV196, CV183, CV184, CV185, CV186, CV191, CV192, CV193, CV194, CV199, CV220, CV221, CV44, CV46, CV49, CV50, CV55, CV58, CV60, CV62, CV66, CV69, CV72, CV75, CV79, CV83, CV87, CV88, CV106, CV114, CV120, CV125, CV159, CV168, CV171, CV172, CV175, CV176, CV177, CV178, CV179, CV272(0.1u)	P15-P25	change M82S TO M86M	1.1
23	ADD CV77, CV78(22P)	P15-P25	change M82S TO M86M	1.1
24	ADD CV273 (2200P)	P15-P25	change M82S TO M86M	1.1
25	ADDCV233, CV241, CV256, CV264, CV210, CV218, CV187, CV195(0.01u)	P15-P25	change M82S TO M86M	1.1
26	ADD CV245, CV228, CV236, CV243, CV251, CV259, CV266, CV268, CV205, CV213, CV220, CV222, CV197, CV182, CV180, CV189, CV41, CV43, CV47, CV51, CV57, CV63, CV65, CV70, CV73, CV74, CV82, CV86, CV89, CV93, CV96, CV98, CV100, CV103, CV104, CV105, CV107, CV109, CV111, CV113, CV118, CV121, CV135, CV139, CV144, CV162, CV163, CV164, CV54, CV61, CV94, CV102, CV110, CV112, CV115, CV116, CV123, CV124, CV126, CV127, CV159, CV130, CV131, CV134, CV137, CV138, CV141, CV142, CV146, CV147, CV150, CV151, CV153, CV154, CV155, CV156, CV158, CV160, CV161, CV167, CV170, CV174(75 ohm)	P15-P25	change M82S TO M86M	1.1
	ADD RV28(10u)		change M82S TO M86M	1.1
27	ADD CV9, CV10, CV11, CV12, CV13, CV14, CV15, CV16, CV17, CV18, CV19, CV20, CV21, CV22, CV23, CV24, CV25, CV26, CV27, CV28, CV29, CV30, CV31, CV32, CV33, CV34, CV35, CV36, CV37, CV38, CV39, CV40 (0.1u)	P15-P25	change M82S TO M86M	1.1
28	ADD CV122, CV91, CV128(3300)	P15-P25	change M82S TO M86M	1.1
PW				
1	Change RV30 100K to 100 ohm	P16	About GBU 27MHz	
2	Change PR702 4.7K to 0 ohm	P55	About GBU IV delay time	
3	del PC702 0.1 u	P55	About GBU IV delay time	
4	change NPT Q2A4 TO U8 P3 Pin	P22	about GBU A channel VRAM	
5	change NPT Q2A5 TO U8 B3 Pin	P22	about GBU A channel VRAM	
6	Change NPT Q2A4 Q2A4 TO U8 F7, E8 PIN	P22	about GBU A channel VRAM	
7	Change NPT Q2A5 Q2A5 TO U8 B7, A8 PIN	P22	about GBU A channel VRAM	
8	change NPT Q2A6 TO U8 P3 Pin	P22	about GBU A channel VRAM	
9	change NPT Q2A6 TO U8 B3 Pin	P22	about GBU A channel VRAM	
10	Change NPT Q2A7 Q2A7 TO U8 F7, E8 PIN	P22	about GBU A channel VRAM	
11	Change NPT Q2A6 Q2A6 TO U8 B7, A8 PIN	P22	about GBU A channel VRAM	
12	Change UV12 BOM SAQ10220120 to SAQ10320110	P25	about GBU Thermal Sensor	
13	Modify R217, R218, R176, R209 PULL +3VS TO +3VS_DELAY	P27 P25	Change power plan	
14	ADD LV20, CV152, CV148, CV143	P18	ADD M86M +VDDM5 POWER	