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9	SNB-E POWER
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11	DDR III DIMM 1 / DIMM 2
12	DDR III DIMM 3 / DIMM 4
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14	PBG-PCIE/USB/DMI/SAS
15	PBG-PCI/SATA
16	PBG-SMB/LPC/AUDIO/RTC
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19	PBG-GND
20	Clock Gen 932SQ420D
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22	PCIE X16 slot
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24	SIO-Fintek F71889AD
25	Gigabit LAN - RTL8111E
26	USB 3.0 NEC UPD720202
27	N/A
28	SATA Port
29	Audio Codec ALC892
30	FAN Port
31	Front / Rear USB Connectors
32	PBG Core Power
33	DDR Power
34	CPU_VTT
35	VRD12 - ISL6366
36	VSA POWER
37	VCCP POWER
38	CPU Decoupling Caps
39	ATX F_Panel/EMI/LED
40	CPU XDP

MS-7712

Version : 1.0

CPU :

INTEL Sandy Bridge-E Processor

System Chipset :

INTEL Patsburg Chipset

On Board Chipset :

VRM 12 -- ISL6366 6 Phase

Gigabit LAN -- RTL8111E

USB 3.0 -- UPD720202

HDA Codec -- Realtek ALC892

Super I/O -- F71889AD

SPI Flash 64Mb

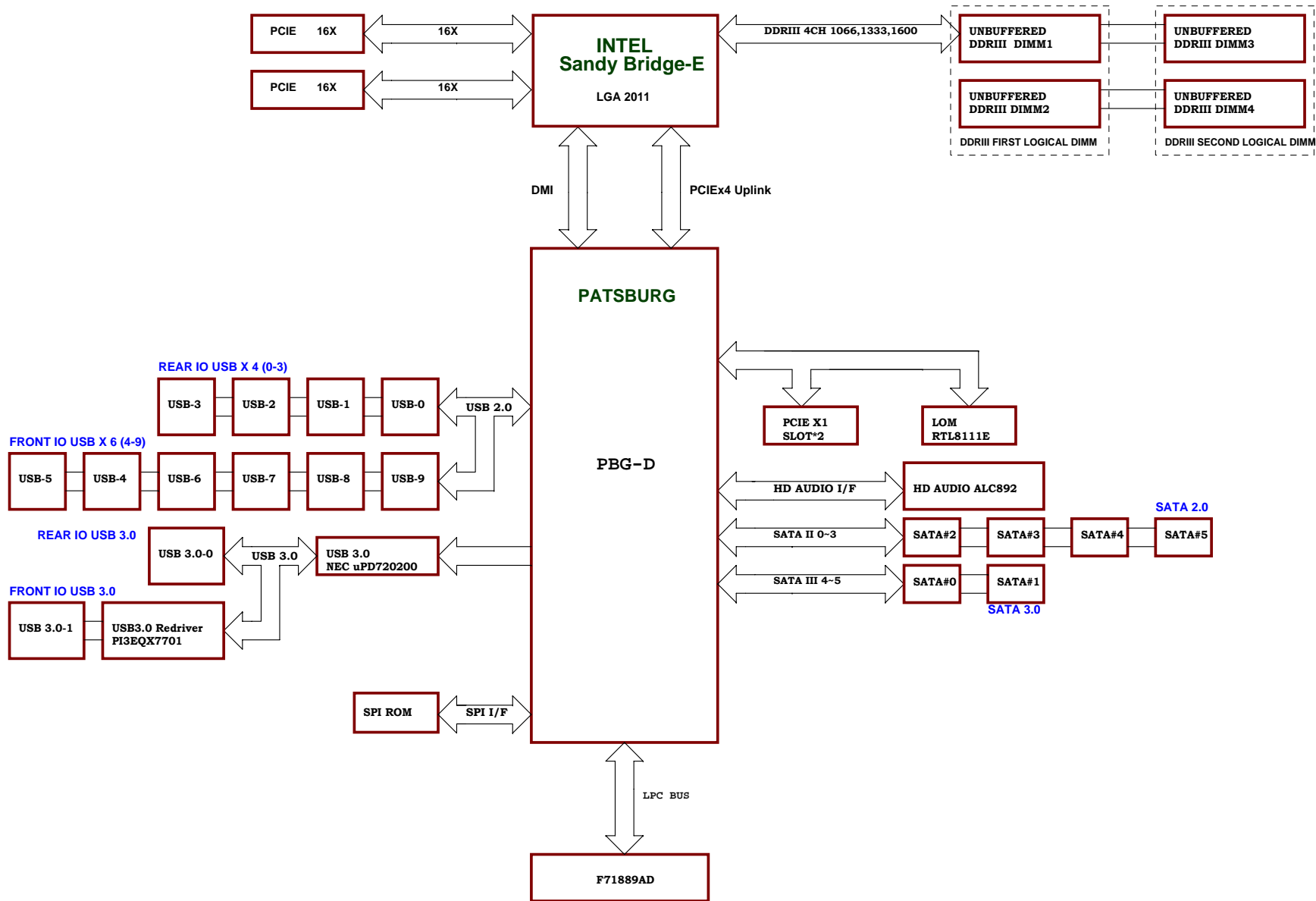
Main Memory :

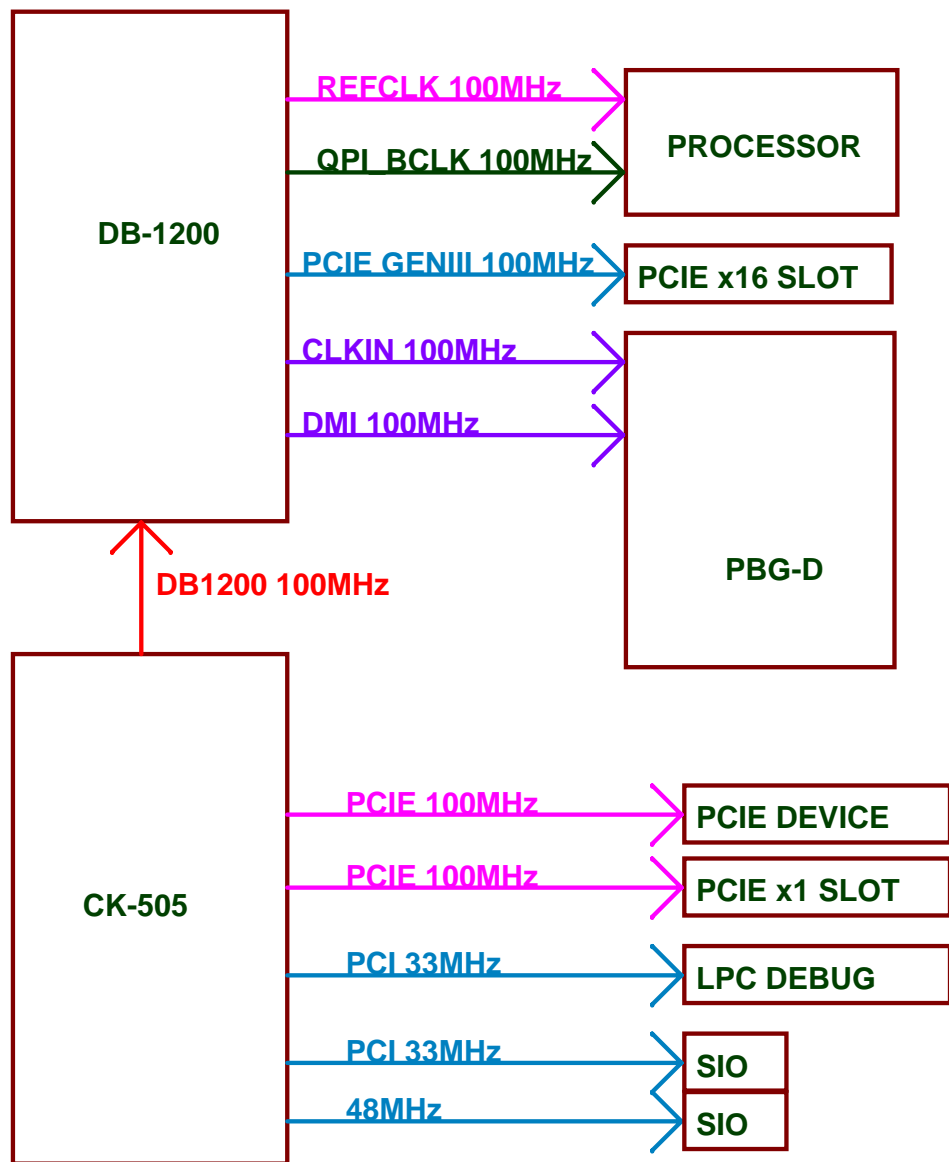
4 Channel DDR III * 4 (Max 16GB)

Expansion Slot :

PCI Express x16 Slot * 2

PCI Express x1 Slot * 2





11 MEM_MA_DATA[63..0] ← MEM_MA_DATA[63..0]

CPU1E	
MEM_MA_DATA0	CC7
MEM_MA_DATA1	CD8
MEM_MA_DATA2	CK8
MEM_MA_DATA3	CL9
MEM_MA_DATA4	BY6
MEM_MA_DATA5	CA7
MEM_MA_DATA6	CA7
MEM_MA_DATA7	CL7
MEM_MA_DATA8	CB4
MEM_MA_DATA9	CB4
MEM_MA_DATA10	CH4
MEM_MA_DATA11	CH4
MEM_MA_DATA12	CA1
MEM_MA_DATA13	CA3
MEM_MA_DATA14	CG3
MEM_MA_DATA15	CG5
MEM_MA_DATA16	CK12
MEM_MA_DATA17	CM12
MEM_MA_DATA18	CK16
MEM_MA_DATA19	CM18
MEM_MA_DATA20	CG13
MEM_MA_DATA21	CL11
MEM_MA_DATA22	CL15
MEM_MA_DATA23	BY10
MEM_MA_DATA24	BY12
MEM_MA_DATA25	CB12
MEM_MA_DATA26	CB12
MEM_MA_DATA27	CB12
MEM_MA_DATA28	CB12
MEM_MA_DATA29	CB12
MEM_MA_DATA30	CH10
MEM_MA_DATA31	CF10
MEM_MA_DATA32	CE31
MEM_MA_DATA33	CE31
MEM_MA_DATA34	CE31
MEM_MA_DATA35	CE31
MEM_MA_DATA36	CB30
MEM_MA_DATA37	CB30
MEM_MA_DATA38	CB34
MEM_MA_DATA39	CB34
MEM_MA_DATA40	CL31
MEM_MA_DATA41	CL31
MEM_MA_DATA42	CL35
MEM_MA_DATA43	CL35
MEM_MA_DATA44	CK30
MEM_MA_DATA45	CH30
MEM_MA_DATA46	CK34
MEM_MA_DATA47	CH34
MEM_MA_DATA48	CH38
MEM_MA_DATA49	CD38
MEM_MA_DATA50	CE41
MEM_MA_DATA51	CD42
MEM_MA_DATA52	CC47
MEM_MA_DATA53	CE47
MEM_MA_DATA54	CC41
MEM_MA_DATA55	CH42
MEM_MA_DATA56	CK38
MEM_MA_DATA57	CH42
MEM_MA_DATA58	CK42
MEM_MA_DATA59	CK37
MEM_MA_DATA60	CL37
MEM_MA_DATA61	CL37
MEM_MA_DATA62	CL41
MEM_MA_DATA63	CL41

MEM_MA_DATA0
MEM_MA_DATA1
MEM_MA_DATA2
MEM_MA_DATA3
MEM_MA_DATA4
MEM_MA_DATA5
MEM_MA_DATA6
MEM_MA_DATA7
MEM_MA_DATA8
MEM_MA_DATA9
MEM_MA_DATA10
MEM_MA_DATA11
MEM_MA_DATA12
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MEM_MA_DATA57
MEM_MA_DATA58
MEM_MA_DATA59
MEM_MA_DATA60
MEM_MA_DATA61
MEM_MA_DATA62
MEM_MA_DATA63

DDR0_DQS_DP_00	CH8	MEM_MA_DQS_H0	MEM_MA_DQS_H0_11
DDR0_DQS_DN_00	CG7	MEM_MA_DQS_L0	MEM_MA_DQS_L0_11
DDR0_DQS_DP_01	CF4	MEM_MA_DQS_H1	MEM_MA_DQS_H1_11
DDR0_DQS_DN_01	CE3	MEM_MA_DQS_L1	MEM_MA_DQS_L1_11
DDR0_DQS_DP_02	CK14	MEM_MA_DQS_H2	MEM_MA_DQS_H2_11
DDR0_DQS_DN_02	CH14	MEM_MA_DQS_L2	MEM_MA_DQS_L2_11
DDR0_DQS_DP_03	CE11	MEM_MA_DQS_H3	MEM_MA_DQS_H3_11
DDR0_DQS_DN_03	CD10	MEM_MA_DQS_L3	MEM_MA_DQS_L3_11
DDR0_DQS_DP_04	CC33	MEM_MA_DQS_H4	MEM_MA_DQS_H4_11
DDR0_DQS_DN_04	CE33	MEM_MA_DQS_L4	MEM_MA_DQS_L4_11
DDR0_DQS_DP_05	CJ33	MEM_MA_DQS_H5	MEM_MA_DQS_H5_11
DDR0_DQS_DN_05	CL33	MEM_MA_DQS_L5	MEM_MA_DQS_L5_11
DDR0_DQS_DP_06	CD40	MEM_MA_DQS_H6	MEM_MA_DQS_H6_11
DDR0_DQS_DN_06	CB40	MEM_MA_DQS_L6	MEM_MA_DQS_L6_11
DDR0_DQS_DP_07	CK40	MEM_MA_DQS_H7	MEM_MA_DQS_H7_11
DDR0_DQS_DN_07	CH40	MEM_MA_DQS_L7	MEM_MA_DQS_L7_11

RSVD_037
RSVD_038
RSVD_039
RSVD_040
RSVD_041
RSVD_042
RSVD_043
RSVD_044
RSVD_045
RSVD_046
RSVD_047
RSVD_048
RSVD_049
RSVD_050
RSVD_051
RSVD_052
RSVD_053
RSVD_054

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11 MEM_MB_DATA[63..0] ← MEM_MB_DATA[63..0]

CPU1G	
MEM_MB_DATA0	CP4
MEM_MB_DATA1	CP2
MEM_MB_DATA2	CV4
MEM_MB_DATA3	CV4
MEM_MB_DATA4	CM4
MEM_MB_DATA5	CL3
MEM_MB_DATA6	CV2
MEM_MB_DATA7	CV6
MEM_MB_DATA8	DA7
MEM_MB_DATA9	DC7
MEM_MB_DATA10	DC11
MEM_MB_DATA11	DE11
MEM_MB_DATA12	CV6
MEM_MB_DATA13	DB6
MEM_MB_DATA14	DB10
MEM_MB_DATA15	DB10
MEM_MB_DATA16	CV7
MEM_MB_DATA17	CV7
MEM_MB_DATA18	CP10
MEM_MB_DATA19	CP10
MEM_MB_DATA20	CP6
MEM_MB_DATA21	CP6
MEM_MB_DATA22	CV9
MEM_MB_DATA23	CV10
MEM_MB_DATA24	CR13
MEM_MB_DATA25	CU13
MEM_MB_DATA26	CR17
MEM_MB_DATA27	CU17
MEM_MB_DATA28	CU12
MEM_MB_DATA29	CU16
MEM_MB_DATA30	CU16
MEM_MB_DATA31	CV18
MEM_MB_DATA32	CU30
MEM_MB_DATA33	CP30
MEM_MB_DATA34	CT34
MEM_MB_DATA35	CP34
MEM_MB_DATA36	CU29
MEM_MB_DATA37	CP29
MEM_MB_DATA38	CU33
MEM_MB_DATA39	CR33
MEM_MB_DATA40	DA33
MEM_MB_DATA41	DD32
MEM_MB_DATA42	DC35
MEM_MB_DATA43	DA35
MEM_MB_DATA44	DA31
MEM_MB_DATA45	CV32
MEM_MB_DATA46	DE34
MEM_MB_DATA47	DE35
MEM_MB_DATA48	CR37
MEM_MB_DATA49	CU37
MEM_MB_DATA50	CR41
MEM_MB_DATA51	CU41
MEM_MB_DATA52	CT36
MEM_MB_DATA53	CV36
MEM_MB_DATA54	CT40
MEM_MB_DATA55	CV40
MEM_MB_DATA56	DE37
MEM_MB_DATA57	DE38
MEM_MB_DATA58	DD40
MEM_MB_DATA59	DB40
MEM_MB_DATA60	DA37
MEM_MB_DATA61	DC37
MEM_MB_DATA62	DA39
MEM_MB_DATA63	DE40

MEM_MB_DATA0
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MEM_MB_DATA58
MEM_MB_DATA59
MEM_MB_DATA60
MEM_MB_DATA61
MEM_MB_DATA62
MEM_MB_DATA63

DDR1_DQS_DP_00	CR3	MEM_MB_DQS_H0	MEM_MB_DQS_H0_11
DDR1_DQS_DN_00	CT4	MEM_MB_DQS_L0	MEM_MB_DQS_L0_11
DDR1_DQS_DP_01	DE9	MEM_MB_DQS_H1	MEM_MB_DQS_H1_11
DDR1_DQS_DN_01	DC9	MEM_MB_DQS_L1	MEM_MB_DQS_L1_11
DDR1_DQS_DP_02	CU9	MEM_MB_DQS_H2	MEM_MB_DQS_H2_11
DDR1_DQS_DN_02	CV8	MEM_MB_DQS_L2	MEM_MB_DQS_L2_11
DDR1_DQS_DP_03	CU15	MEM_MB_DQS_H3	MEM_MB_DQS_H3_11
DDR1_DQS_DN_03	CR15	MEM_MB_DQS_L3	MEM_MB_DQS_L3_11
DDR1_DQS_DP_04	CP32	MEM_MB_DQS_H4	MEM_MB_DQS_H4_11
DDR1_DQS_DN_04	CT32	MEM_MB_DQS_L4	MEM_MB_DQS_L4_11
DDR1_DQS_DP_05	DB34	MEM_MB_DQS_H5	MEM_MB_DQS_H5_11
DDR1_DQS_DN_05	CV34	MEM_MB_DQS_L5	MEM_MB_DQS_L5_11
DDR1_DQS_DP_06	CU38	MEM_MB_DQS_H6	MEM_MB_DQS_H6_11
DDR1_DQS_DN_06	CP38	MEM_MB_DQS_L6	MEM_MB_DQS_L6_11
DDR1_DQS_DP_07	DC38	MEM_MB_DQS_H7	MEM_MB_DQS_H7_11
DDR1_DQS_DN_07	DE38	MEM_MB_DQS_L7	MEM_MB_DQS_L7_11

DDR1_DQS_DP_00
DDR1_DQS_DN_00
DDR1_DQS_DP_01
DDR1_DQS_DN_01
DDR1_DQS_DP_02
DDR1_DQS_DN_02
DDR1_DQS_DP_03
DDR1_DQS_DN_03
DDR1_DQS_DP_04
DDR1_DQS_DN_04
DDR1_DQS_DP_05
DDR1_DQS_DN_05
DDR1_DQS_DP_06
DDR1_DQS_DN_06
DDR1_DQS_DP_07
DDR1_DQS_DN_07

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12 MEM_MC_DATA[63..0] <--

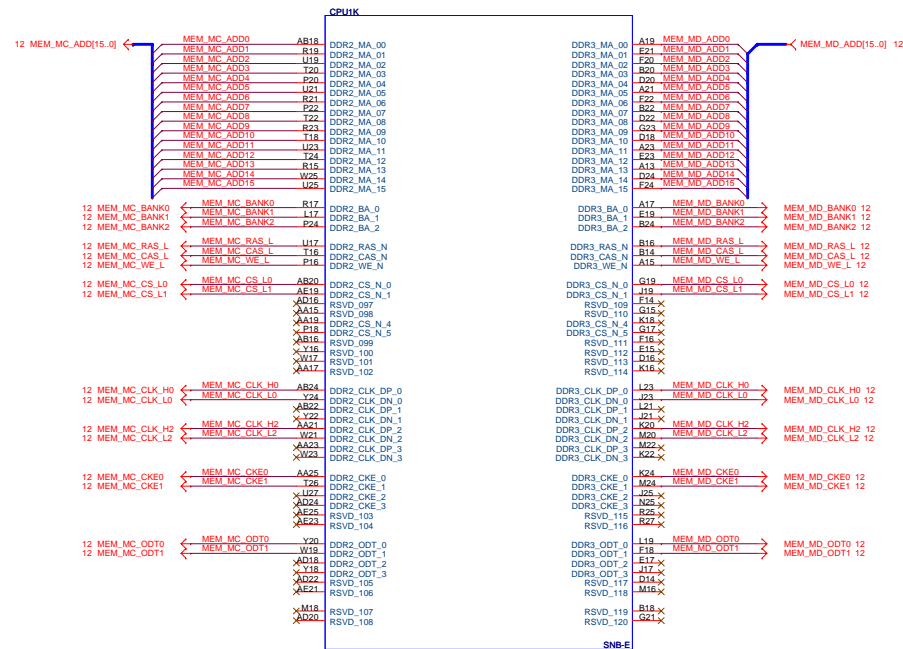
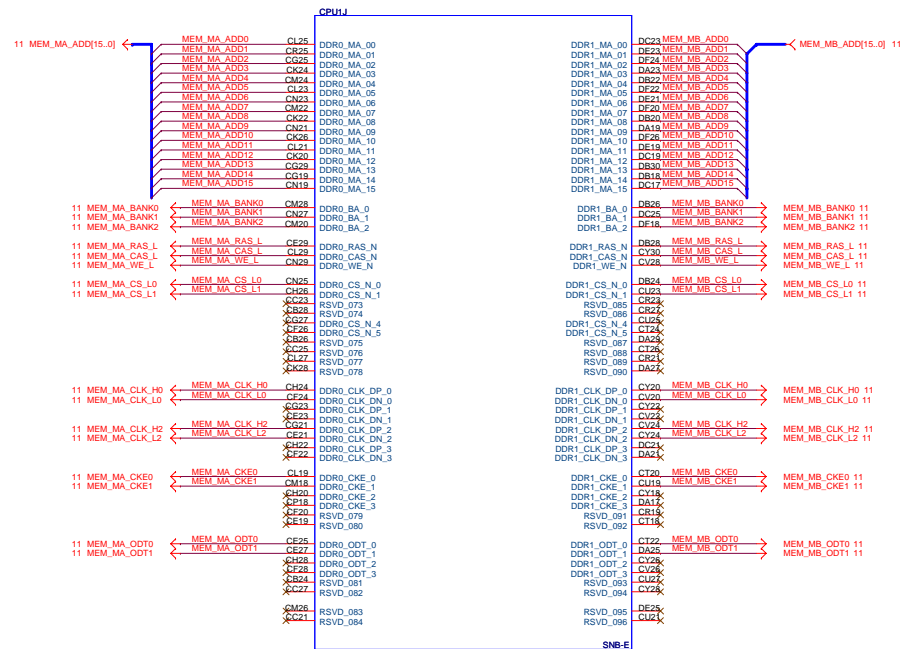
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MEM_MC_DATA0_T40	DDR2_DQ_00	
MEM_MC_DATA1_V40	DDR2_DQ_01	
MEM_MC_DATA2_P36	DDR2_DQ_02	
MEM_MC_DATA3_T36	DDR2_DQ_03	
MEM_MC_DATA4_R41	DDR2_DQ_04	
MEM_MC_DATA5_U41	DDR2_DQ_05	
MEM_MC_DATA6_R37	DDR2_DQ_06	
MEM_MC_DATA7_U37	DDR2_DQ_07	
MEM_MC_DATA8_A41	DDR2_DQ_08	
MEM_MC_DATA9_AD40	DDR2_DQ_09	
MEM_MC_DATA10_A37	DDR2_DQ_10	
MEM_MC_DATA11_A37	DDR2_DQ_11	
MEM_MC_DATA12_A41	DDR2_DQ_12	
MEM_MC_DATA13_A41	DDR2_DQ_13	
MEM_MC_DATA14_A38	DDR2_DQ_14	
MEM_MC_DATA15_A37	DDR2_DQ_15	
MEM_MC_DATA16_U33	DDR2_DQ_16	
MEM_MC_DATA17_R33	DDR2_DQ_17	
MEM_MC_DATA18_U29	DDR2_DQ_18	
MEM_MC_DATA19_U29	DDR2_DQ_19	
MEM_MC_DATA20_T34	DDR2_DQ_20	
MEM_MC_DATA21_P34	DDR2_DQ_21	
MEM_MC_DATA22_V30	DDR2_DQ_22	
MEM_MC_DATA23_T30	DDR2_DQ_23	
MEM_MC_DATA24_C35	DDR2_DQ_24	
MEM_MC_DATA25_A38	DDR2_DQ_25	
MEM_MC_DATA26_A33	DDR2_DQ_26	
MEM_MC_DATA27_A33	DDR2_DQ_27	
MEM_MC_DATA28_W35	DDR2_DQ_28	
MEM_MC_DATA29_A33	DDR2_DQ_29	
MEM_MC_DATA30_AD32	DDR2_DQ_30	
MEM_MC_DATA31_A33	DDR2_DQ_31	
MEM_MC_DATA32_A33	DDR2_DQ_32	
MEM_MC_DATA33_A33	DDR2_DQ_33	
MEM_MC_DATA34_A33	DDR2_DQ_34	
MEM_MC_DATA35_A33	DDR2_DQ_35	
MEM_MC_DATA36_A33	DDR2_DQ_36	
MEM_MC_DATA37_A33	DDR2_DQ_37	
MEM_MC_DATA38_A33	DDR2_DQ_38	
MEM_MC_DATA39_A33	DDR2_DQ_39	
MEM_MC_DATA40_V6	DDR2_DQ_40	
MEM_MC_DATA41_Y6	DDR2_DQ_41	
MEM_MC_DATA42_A38	DDR2_DQ_42	
MEM_MC_DATA43_A37	DDR2_DQ_43	
MEM_MC_DATA44_U7	DDR2_DQ_44	
MEM_MC_DATA45_W7	DDR2_DQ_45	
MEM_MC_DATA46_A38	DDR2_DQ_46	
MEM_MC_DATA47_A37	DDR2_DQ_47	
MEM_MC_DATA48_R13	DDR2_DQ_48	
MEM_MC_DATA49_U13	DDR2_DQ_49	
MEM_MC_DATA50_T10	DDR2_DQ_50	
MEM_MC_DATA51_V10	DDR2_DQ_51	
MEM_MC_DATA52_T14	DDR2_DQ_52	
MEM_MC_DATA53_V14	DDR2_DQ_53	
MEM_MC_DATA54_U9	DDR2_DQ_54	
MEM_MC_DATA55_W3	DDR2_DQ_55	
MEM_MC_DATA56_Y4	DDR2_DQ_56	
MEM_MC_DATA57_A54	DDR2_DQ_57	
MEM_MC_DATA58_A54	DDR2_DQ_58	
MEM_MC_DATA59_A55	DDR2_DQ_59	
MEM_MC_DATA60_U9	DDR2_DQ_60	
MEM_MC_DATA61_V4	DDR2_DQ_61	
MEM_MC_DATA62_A52	DDR2_DQ_62	
MEM_MC_DATA63_A53	DDR2_DQ_63	
AF30	DDR2_ECC_0	
Y28	DDR2_ECC_1	
Y26	DDR2_ECC_2	
AB26	DDR2_ECC_3	
AB30	DDR2_ECC_4	
AD30	DDR2_ECC_5	
Y27	DDR2_ECC_6	
Y27	DDR2_ECC_7	

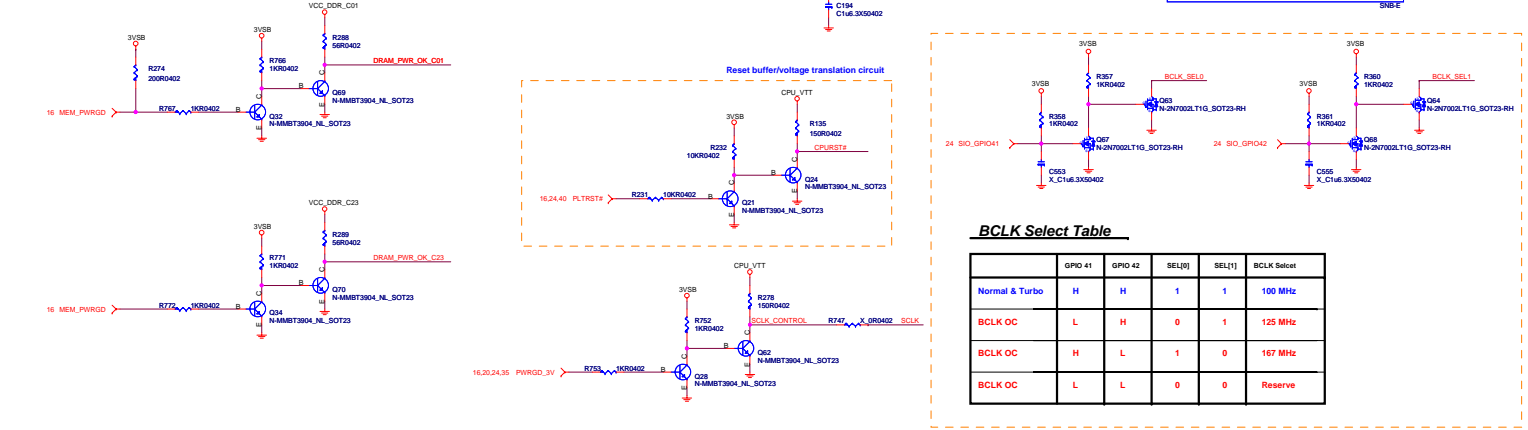
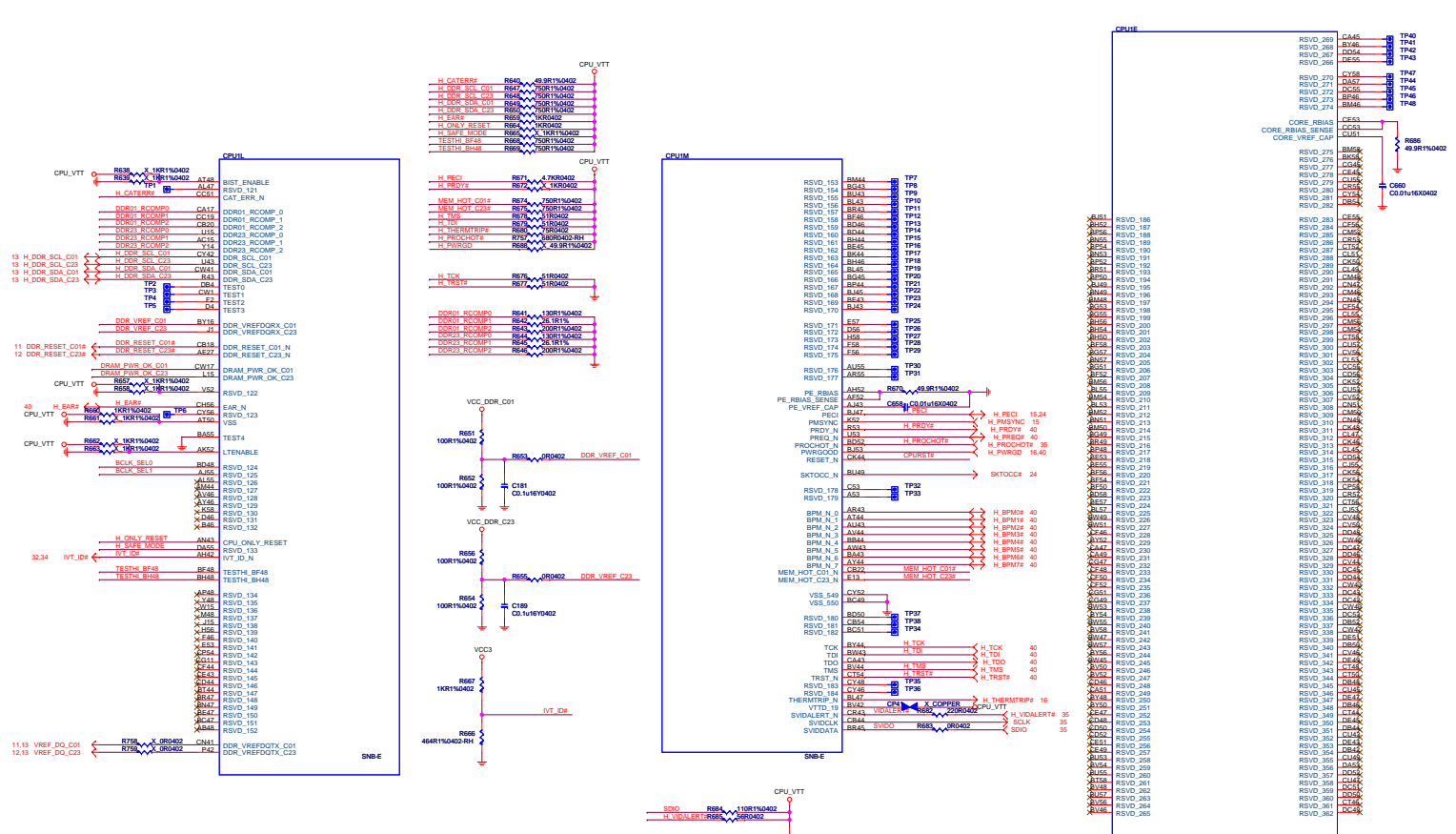
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12 MEM_MD_DATA[63..0] <--

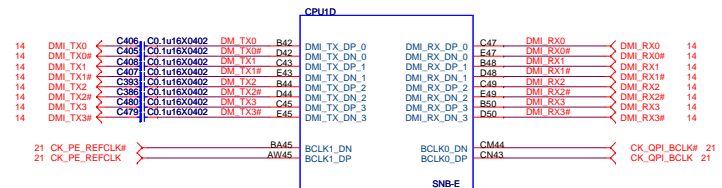
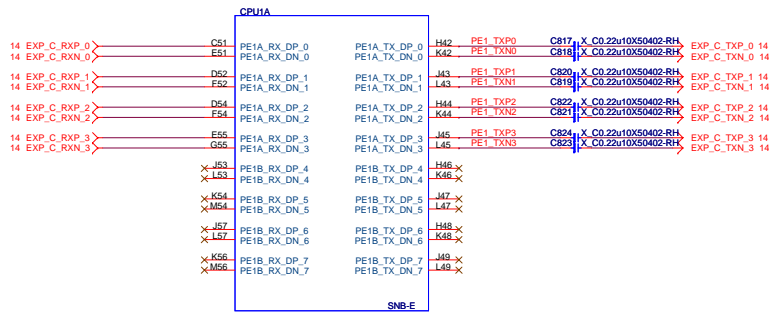
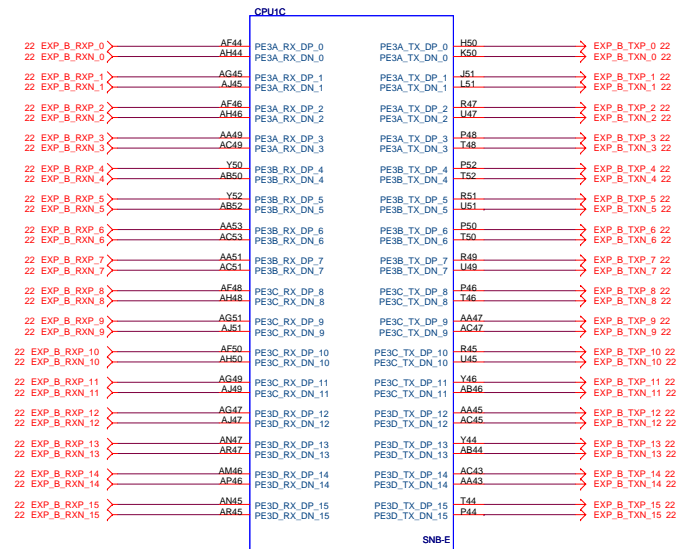
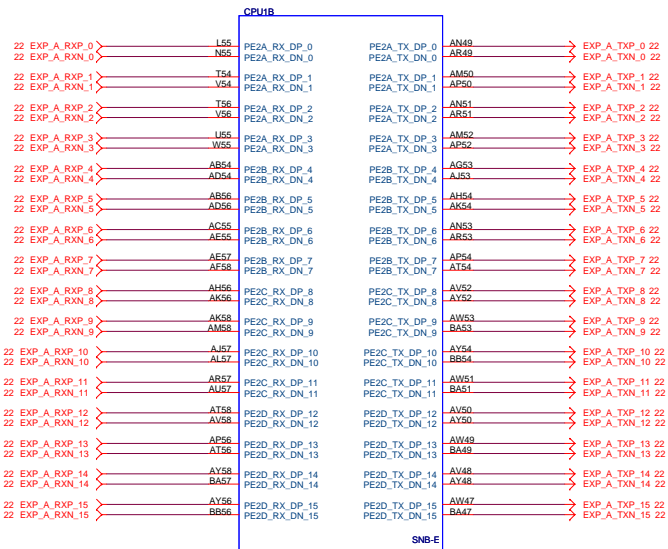
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MEM_MD_DATA0_B40	DDR3_DQ_00	
MEM_MD_DATA1_A39	DDR3_DQ_01	
MEM_MD_DATA2_C37	DDR3_DQ_02	
MEM_MD_DATA3_E37	DDR3_DQ_03	
MEM_MD_DATA4_F40	DDR3_DQ_04	
MEM_MD_DATA5_D40	DDR3_DQ_05	
MEM_MD_DATA6_F38	DDR3_DQ_06	
MEM_MD_DATA7_A37	DDR3_DQ_07	
MEM_MD_DATA8_N36	DDR3_DQ_08	
MEM_MD_DATA9_L39	DDR3_DQ_09	
MEM_MD_DATA10_L36	DDR3_DQ_10	
MEM_MD_DATA11_J36	DDR3_DQ_11	
MEM_MD_DATA12_M40	DDR3_DQ_12	
MEM_MD_DATA13_K40	DDR3_DQ_13	
MEM_MD_DATA14_K36	DDR3_DQ_14	
MEM_MD_DATA15_H38	DDR3_DQ_15	
MEM_MD_DATA16_A35	DDR3_DQ_16	
MEM_MD_DATA17_F34	DDR3_DQ_17	
MEM_MD_DATA18_F32	DDR3_DQ_18	
MEM_MD_DATA19_D32	DDR3_DQ_19	
MEM_MD_DATA20_E36	DDR3_DQ_20	
MEM_MD_DATA21_C36	DDR3_DQ_21	
MEM_MD_DATA22_A33	DDR3_DQ_22	
MEM_MD_DATA23_B32	DDR3_DQ_23	
MEM_MD_DATA24_M32	DDR3_DQ_24	
MEM_MD_DATA25_L31	DDR3_DQ_25	
MEM_MD_DATA26_M28	DDR3_DQ_26	
MEM_MD_DATA27_L27	DDR3_DQ_27	
MEM_MD_DATA28_L33	DDR3_DQ_28	
MEM_MD_DATA29_K32	DDR3_DQ_29	
MEM_MD_DATA30_N27	DDR3_DQ_30	
MEM_MD_DATA31_M26	DDR3_DQ_31	
MEM_MD_DATA32_D17	DDR3_DQ_32	
MEM_MD_DATA33_A11	DDR3_DQ_33	
MEM_MD_DATA34_C9	DDR3_DQ_34	
MEM_MD_DATA35_E9	DDR3_DQ_35	
MEM_MD_DATA36_F12	DDR3_DQ_36	
MEM_MD_DATA37_B12	DDR3_DQ_37	
MEM_MD_DATA38_F10	DDR3_DQ_38	
MEM_MD_DATA39_A9	DDR3_DQ_39	
MEM_MD_DATA40_H13	DDR3_DQ_40	
MEM_MD_DATA41_L13	DDR3_DQ_41	
MEM_MD_DATA42_J9	DDR3_DQ_42	
MEM_MD_DATA43_L9	DDR3_DQ_43	
MEM_MD_DATA44_K14	DDR3_DQ_44	
MEM_MD_DATA45_M14	DDR3_DQ_45	
MEM_MD_DATA46_K10	DDR3_DQ_46	
MEM_MD_DATA47_M10	DDR3_DQ_47	
MEM_MD_DATA48_E7	DDR3_DQ_48	
MEM_MD_DATA49_F8	DDR3_DQ_49	
MEM_MD_DATA50_N7	DDR3_DQ_50	
MEM_MD_DATA51_P6	DDR3_DQ_51	
MEM_MD_DATA52_C7	DDR3_DQ_52	
MEM_MD_DATA53_D6	DDR3_DQ_53	
MEM_MD_DATA54_L7	DDR3_DQ_54	
MEM_MD_DATA55_M6	DDR3_DQ_55	
MEM_MD_DATA56_G3	DDR3_DQ_56	
MEM_MD_DATA57_H2	DDR3_DQ_57	
MEM_MD_DATA58_N3	DDR3_DQ_58	
MEM_MD_DATA59_P4	DDR3_DQ_59	
MEM_MD_DATA60_F4	DDR3_DQ_60	
MEM_MD_DATA61_H4	DDR3_DQ_61	
MEM_MD_DATA62_L1	DDR3_DQ_62	
MEM_MD_DATA63_M2	DDR3_DQ_63	
G29	DDR3_ECC_0	
J29	DDR3_ECC_1	
E25	DDR3_ECC_2	
C25	DDR3_ECC_3	
F30	DDR3_ECC_4	
H30	DDR3_ECC_5	
F26	DDR3_ECC_6	
H26	DDR3_ECC_7	

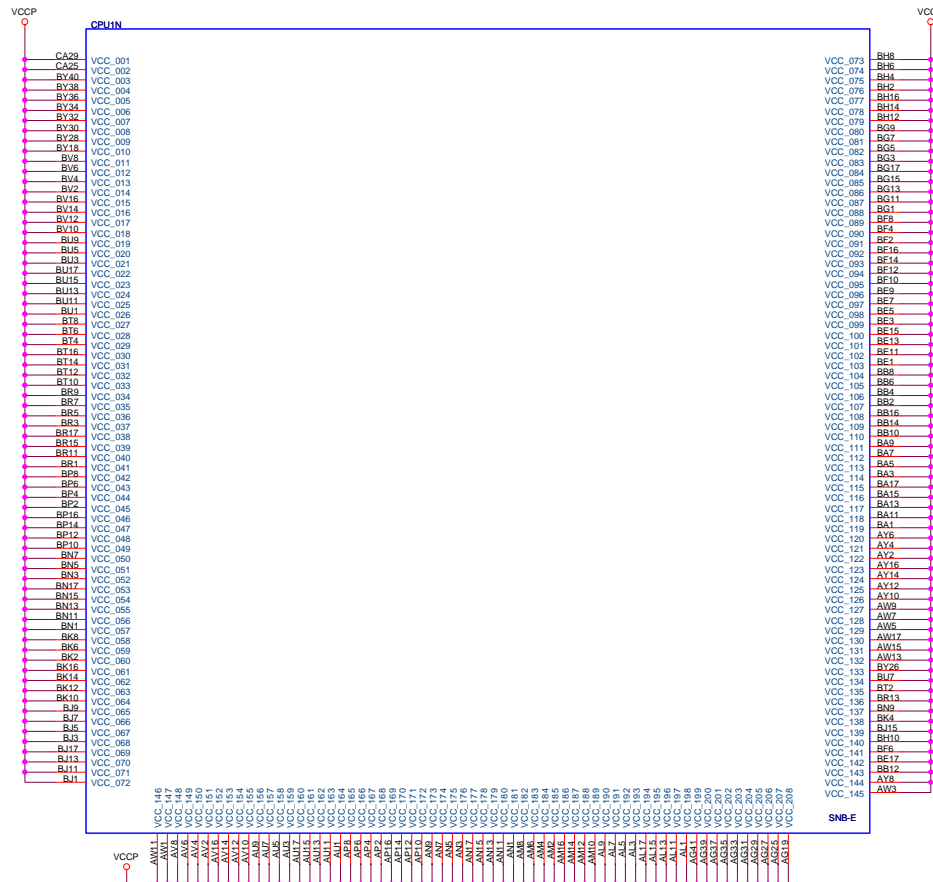
SNB-E



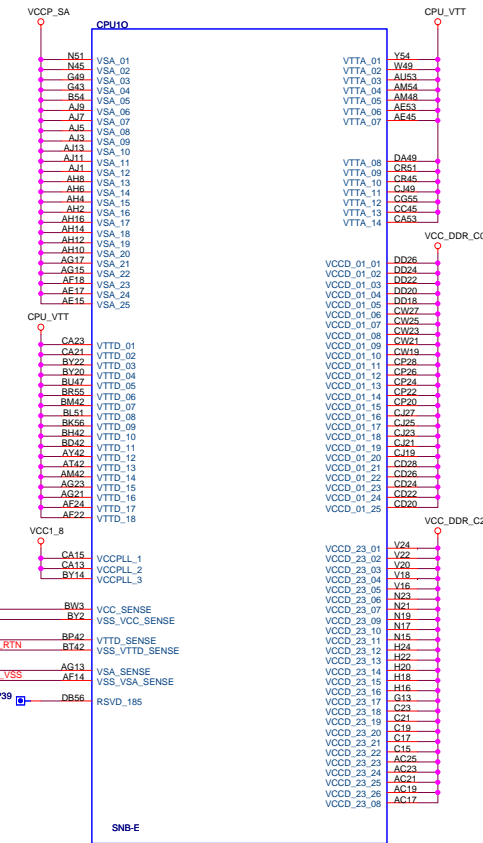


	GPIO 41	GPIO 42	SEL[0]	SEL[1]	BCLK Select
Normal & Turbo	H	H	1	1	100 MHz
BCLK OC	L	H	0	1	125 MHz
BCLK OC	H	L	1	0	167 MHz
BCLK OC	L	L	0	0	Reserve

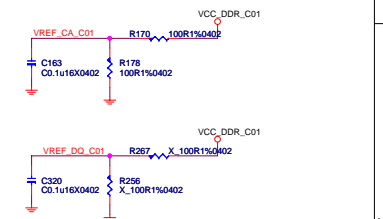
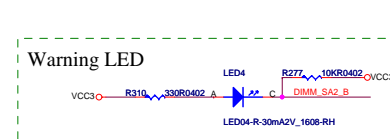
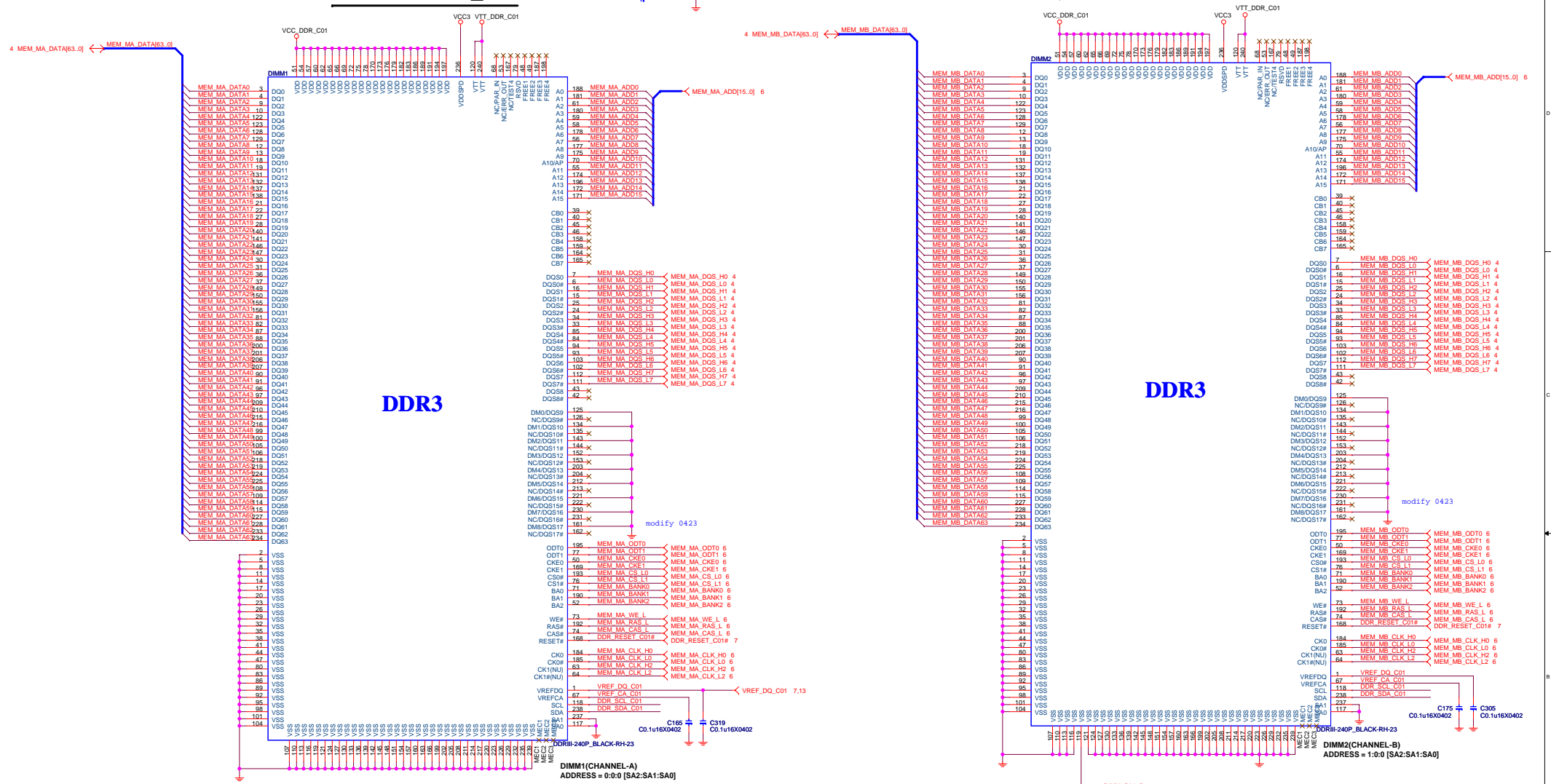


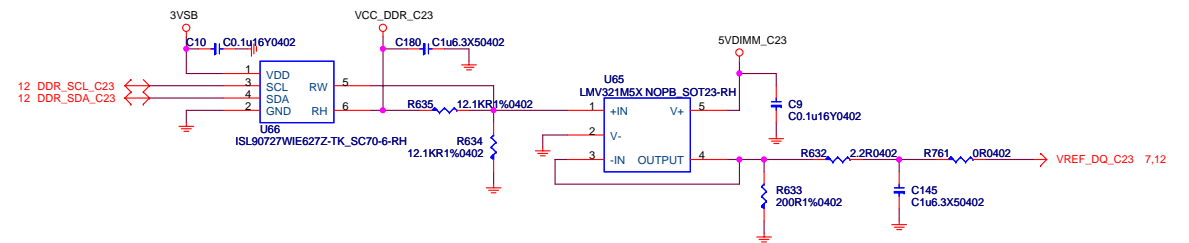
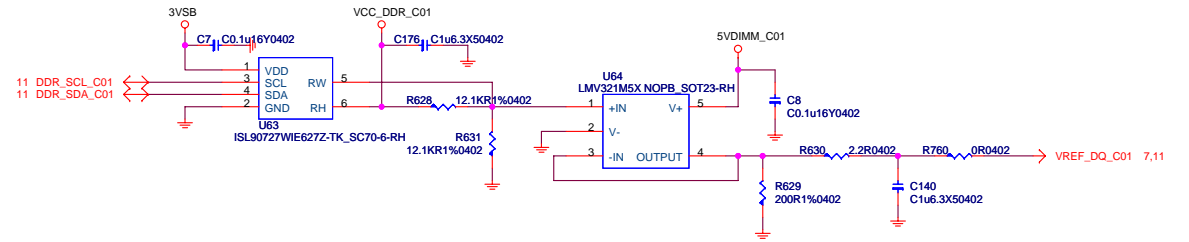
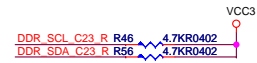
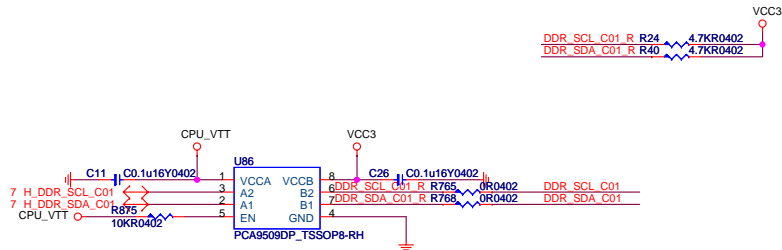


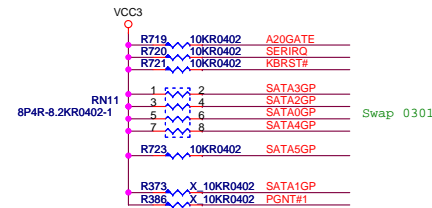
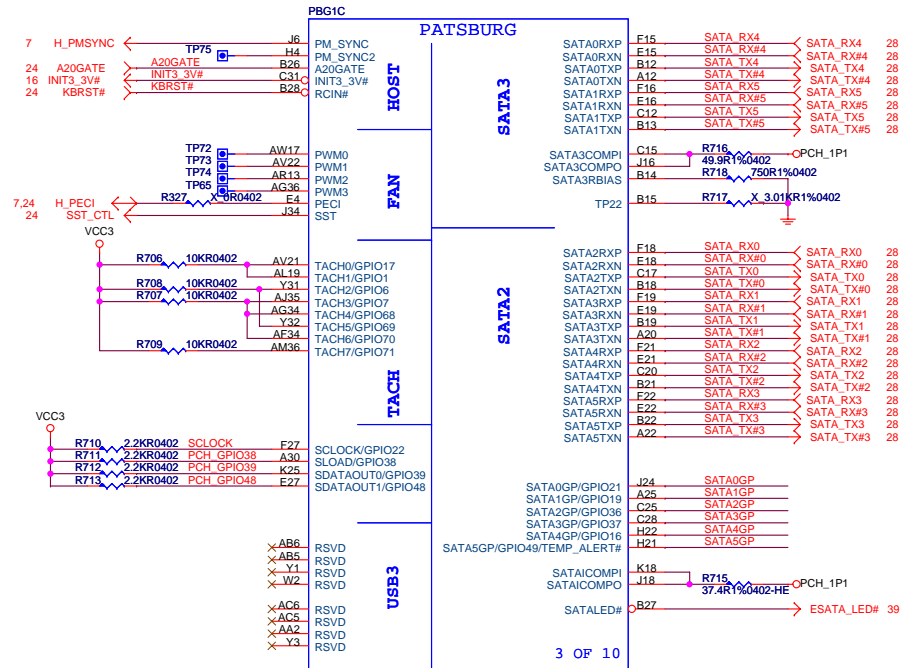
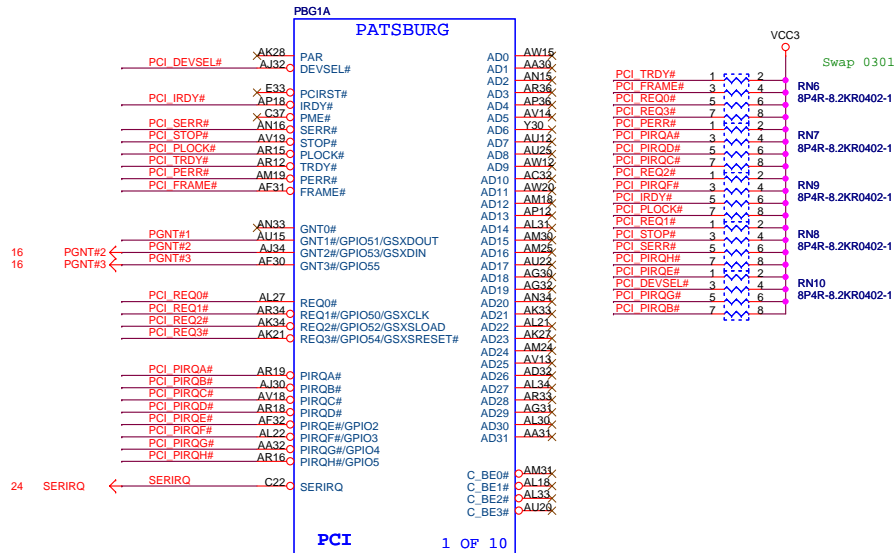
35 CPU_VCC_SENSE CPU_VCC_SENSE BW3
35 CPU_VSS_SENSE CPU_VSS_SENSE BY2
34 CPU_VTT_SENSE CPU_VTT_SENSE BP42
34 CPU_VTT_SENSE_RTIN CPU_VTT_SENSE_RTIN BT42
35 CPU_VSA_SENSE CPU_VSA_SENSE AG13
35 CPU_VSA_SENSE_VSS CPU_VSA_SENSE_VSS AF14



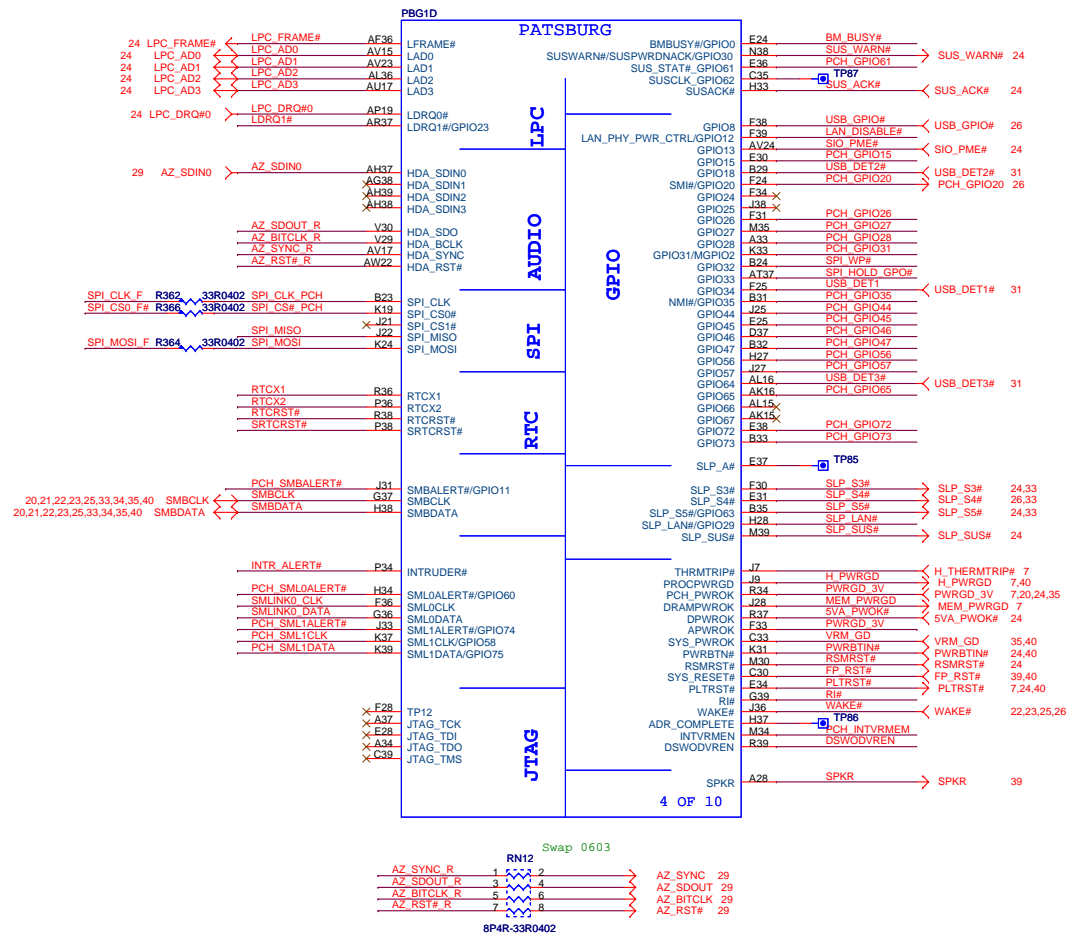
DDRIII DIMM_B1



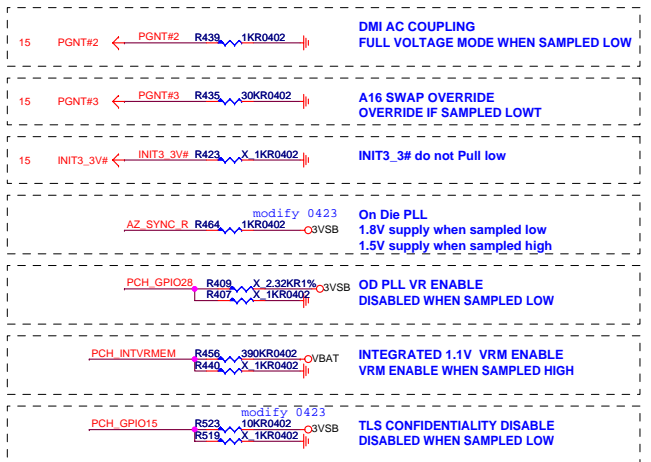




BOOT DEVICE	GNT1#	SATA1GP/GPIO19
LPC	0	0
PCI	1	0
SPI	1	1

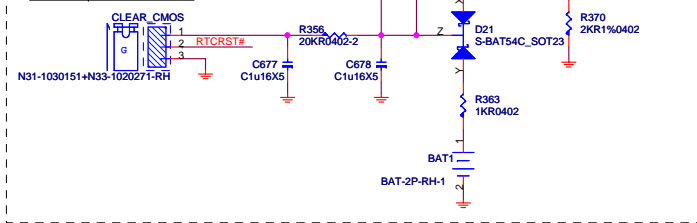


REQUIRED STRAPS

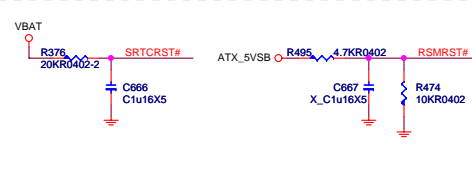
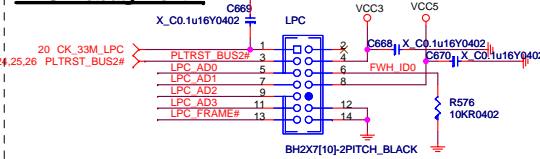


JBAT1 Clear CMOS

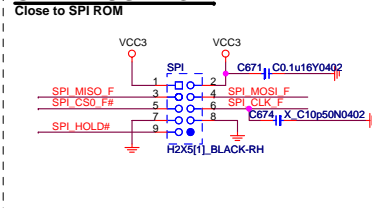
CMOS CLEAR JUMPER
1 - 2 Normal
2 - 3 Clear CMOS



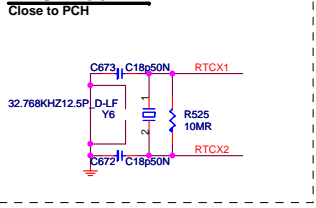
LPC Debug Port



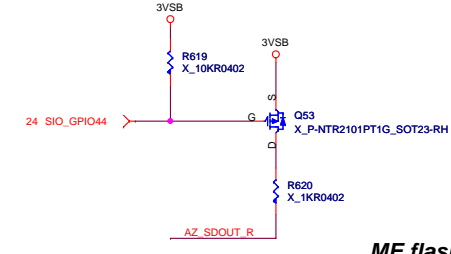
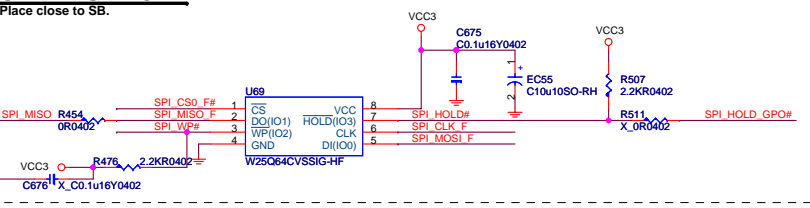
SPI DEBUG PROT



RTC Block

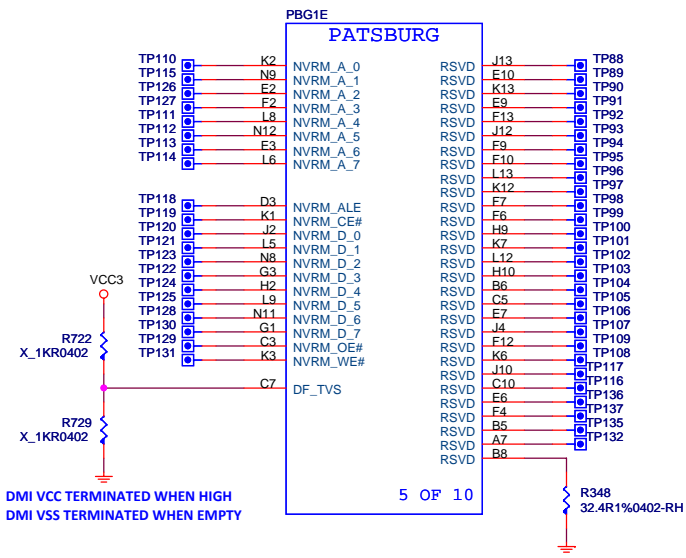
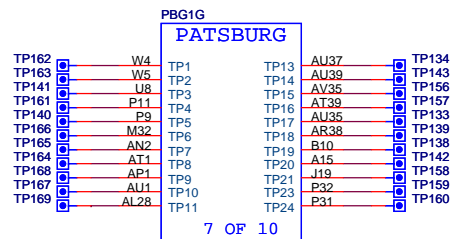


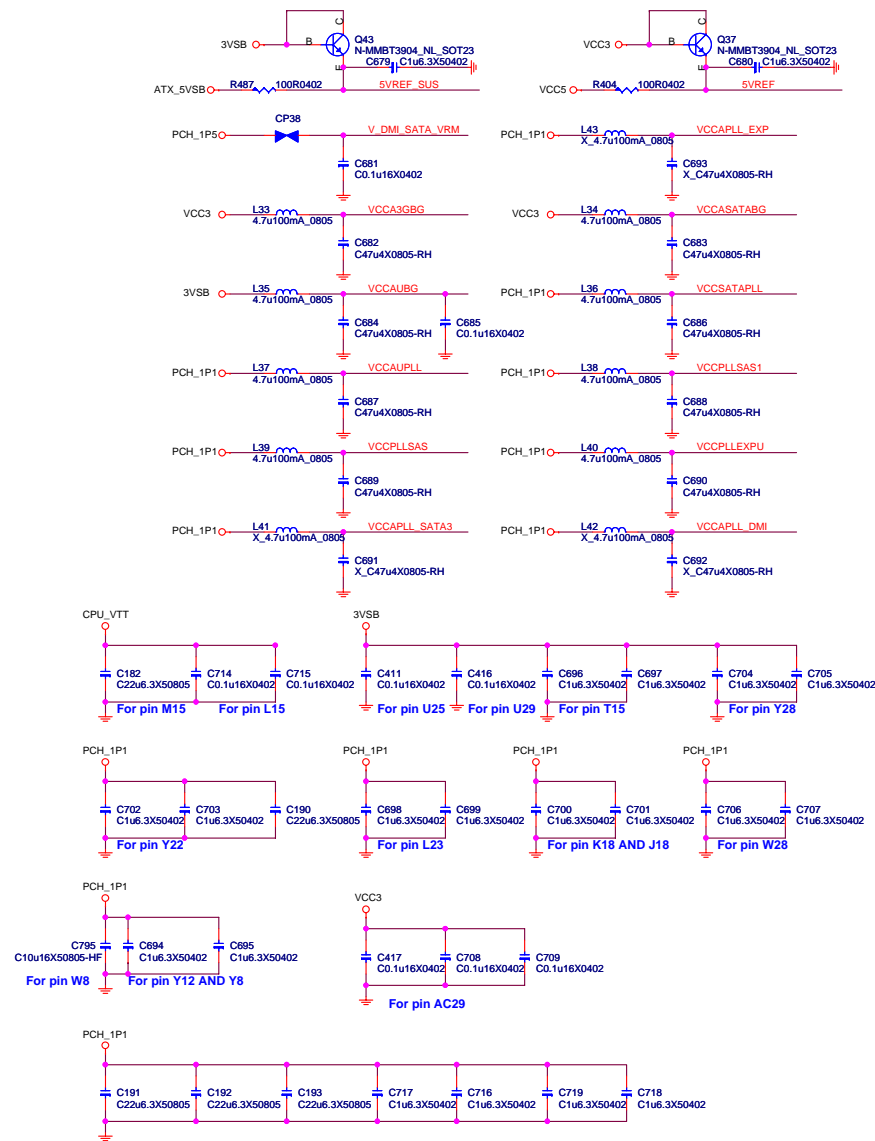
SPI FLASH ROM

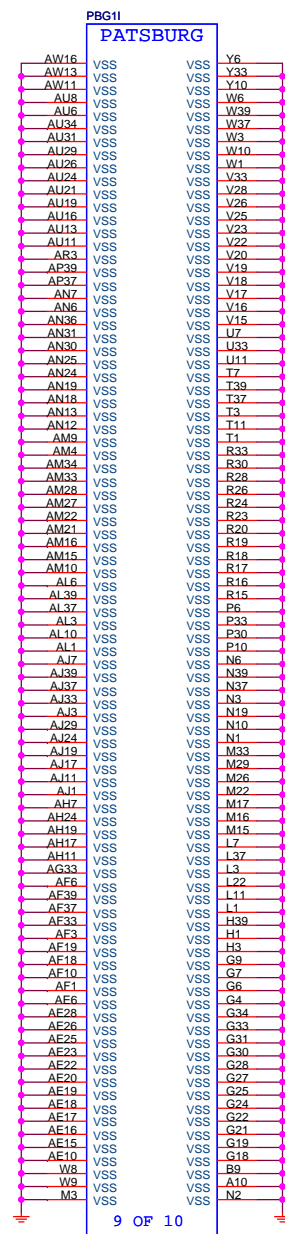
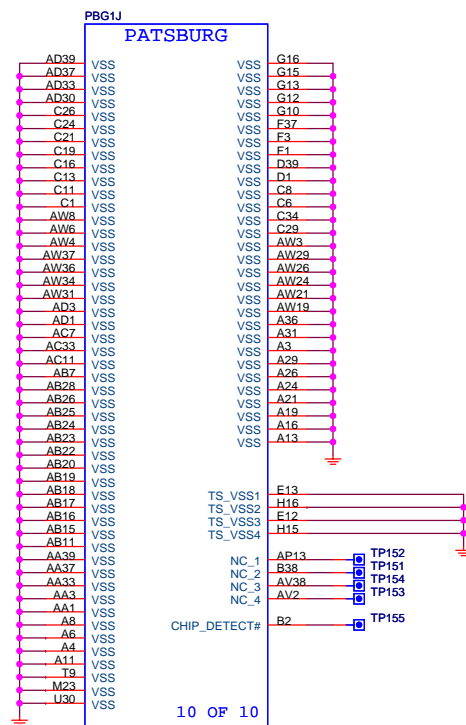


ME flash Table

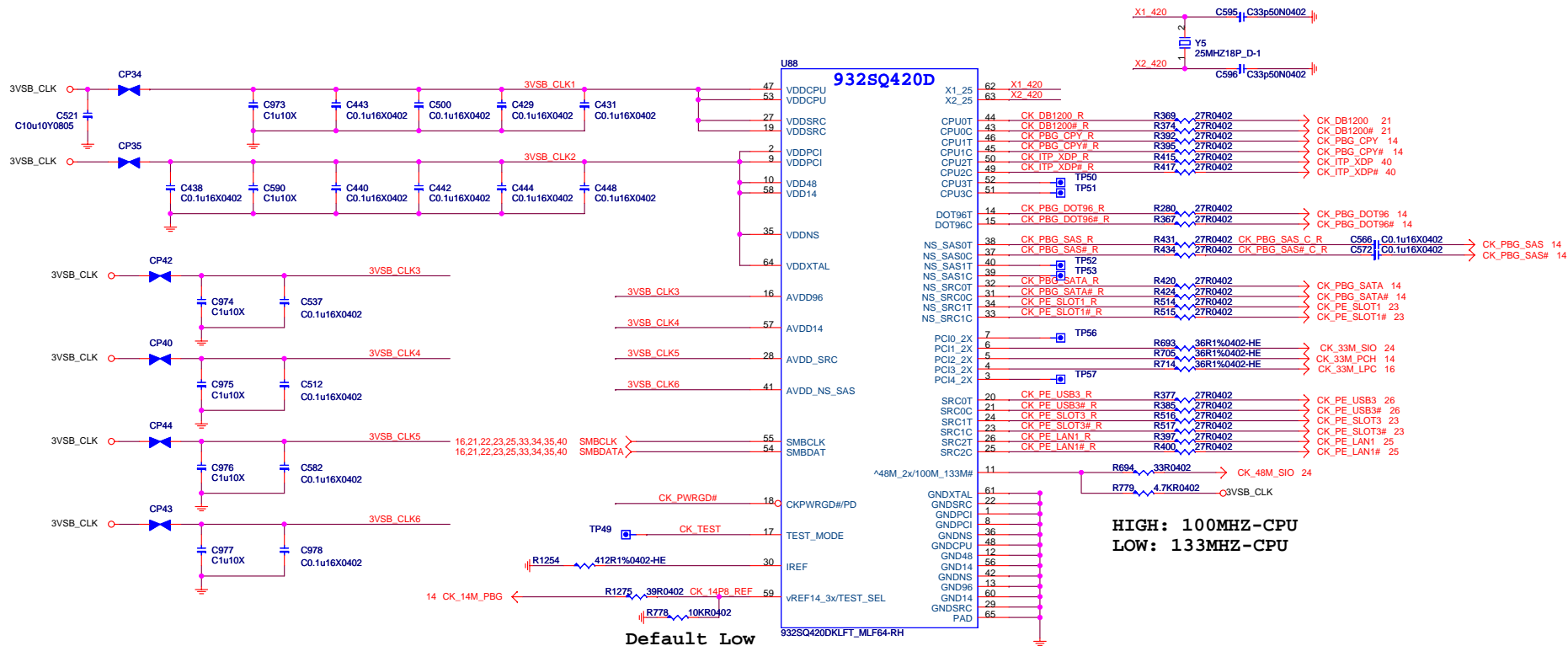
	GPIO 44	AZ_SDOUT_R
Normal	H	Floating
Flash ME	L	Pull High





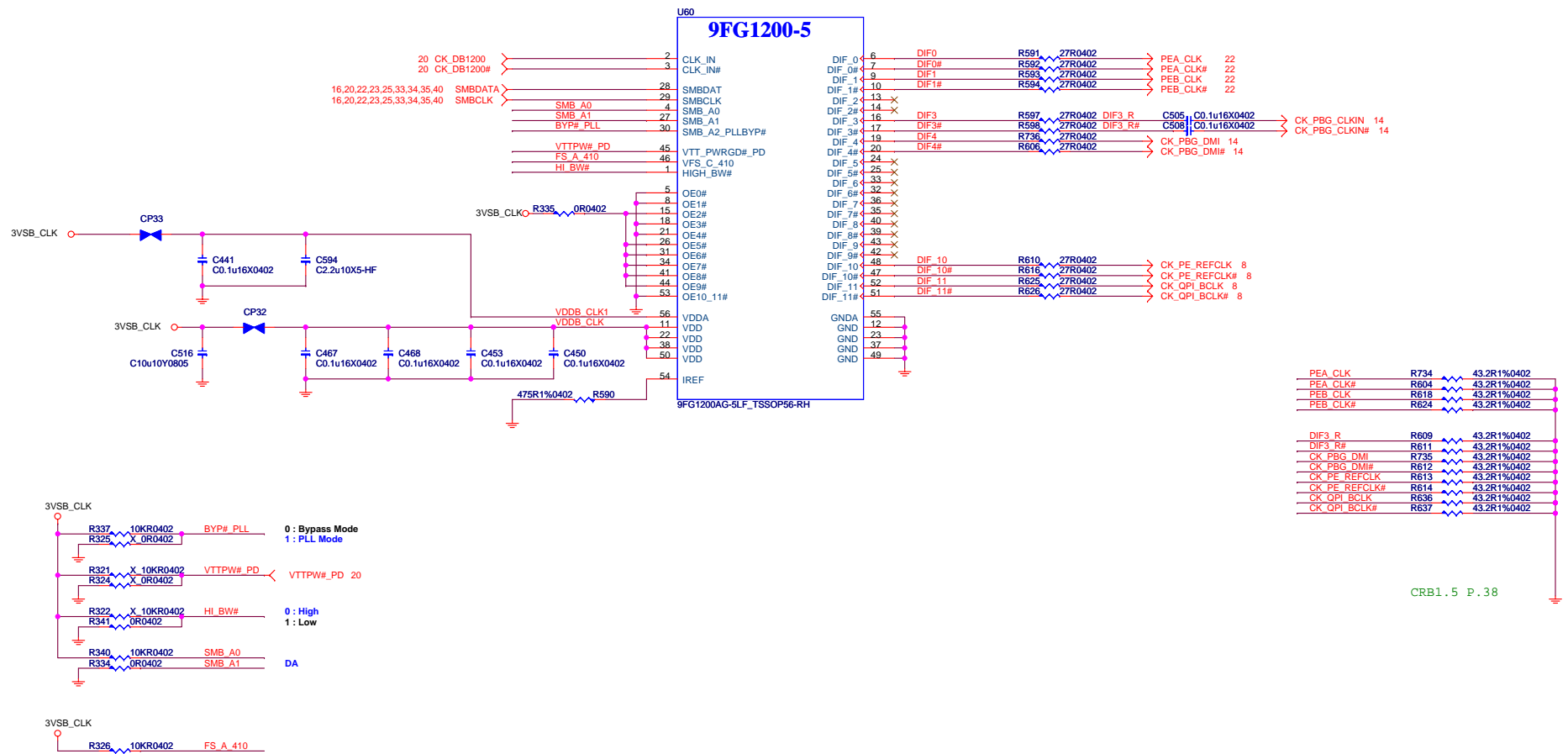


Clock Gen 932SQ420D

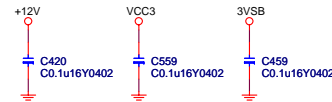
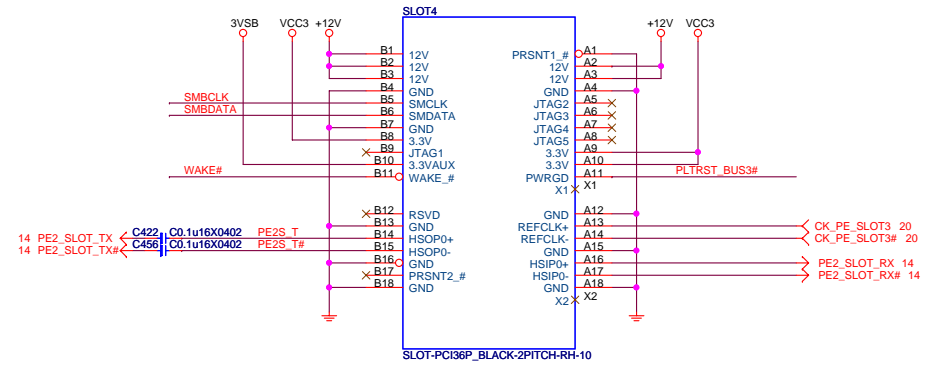
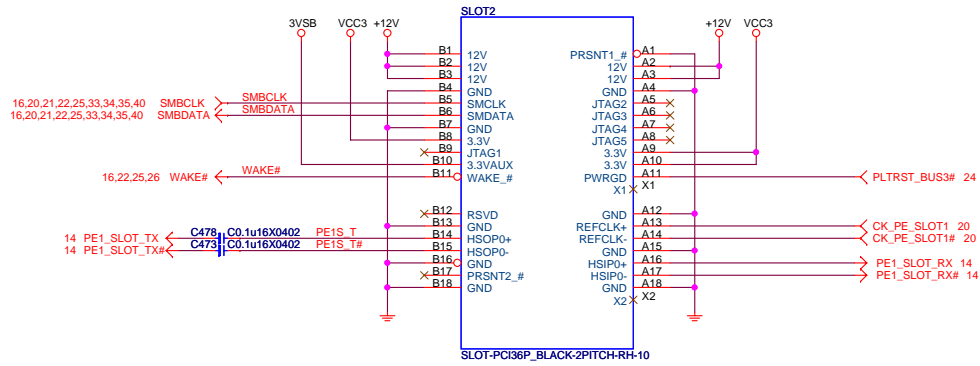


CK DB1200	R401	43.2R1%0402
CK DB1200#	R402	43.2R1%0402
CK PBG CPY	R447	43.2R1%0402
CK PBG CPY#	R482	43.2R1%0402
CK ITP XDP	R484	43.2R1%0402
CK ITP XDP#	R485	43.2R1%0402
CK PBG DOT96	R486	43.2R1%0402
CK PBG DOT96#	R489	43.2R1%0402
CK PBG SAS C R	R493	43.2R1%0402
CK PBG SAS# C R	R494	43.2R1%0402
CK PBG SATA	R532	43.2R1%0402
CK PBG SATA#	R540	43.2R1%0402
CK PE SLOT1#	R518	43.2R1%0402
CK PE SLOT1#	R530	43.2R1%0402
CK PE USB3#	R497	43.2R1%0402
CK PE USB3#	R503	43.2R1%0402
CK PE SLOT3	R583	43.2R1%0402
CK PE SLOT3#	R546	43.2R1%0402
CK PE LAN1	R504	43.2R1%0402
CK PE LAN1#	R513	43.2R1%0402

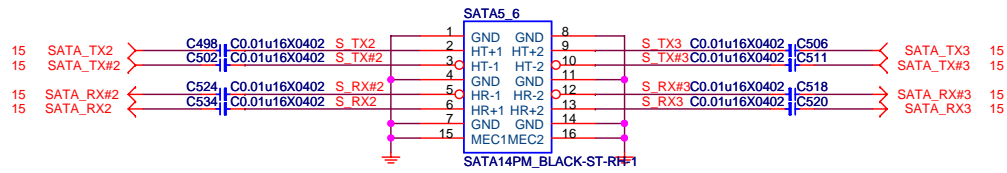
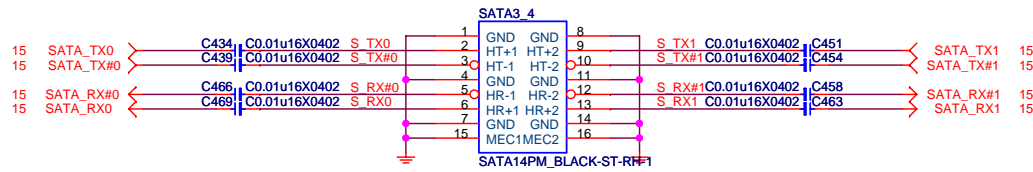
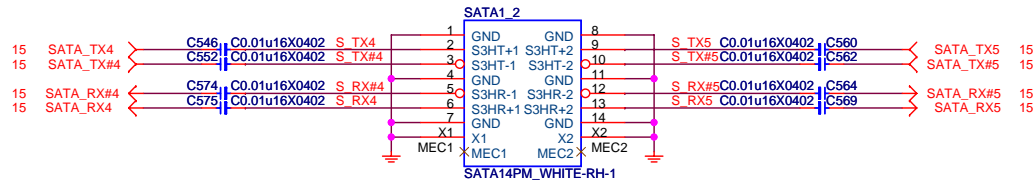
Clock Buffer 9FG1200D




PCI EXPRESS X1 SLOT

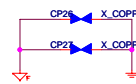
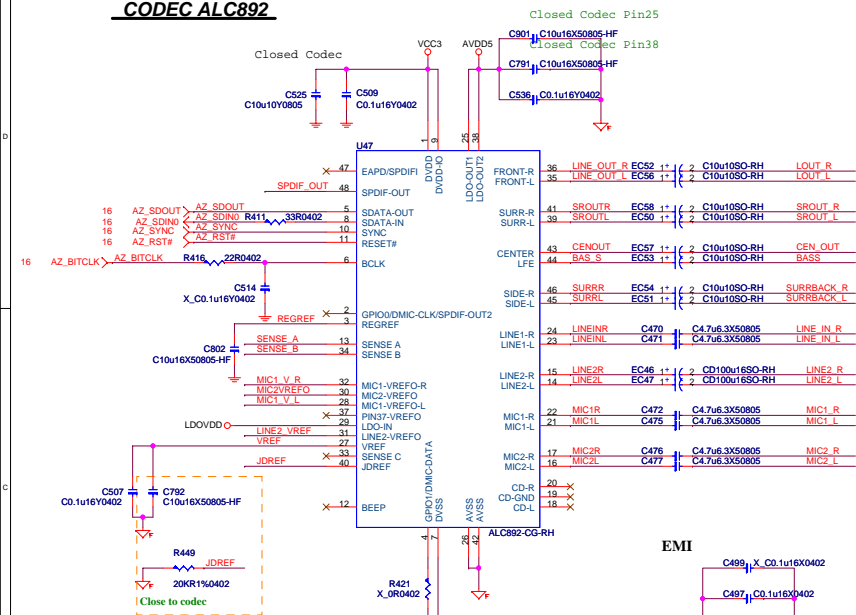


SATA Connector

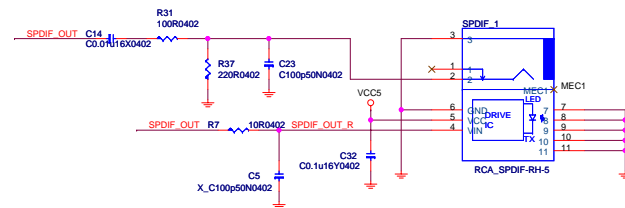
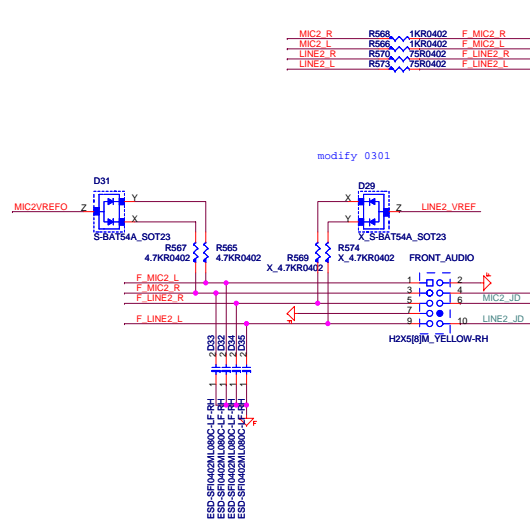


 MICRO-START INT'L CO.,LTD.		
Title		
SATA Port		
Size	Document Number	Rev
	MS-7712	1.0
Date:	Wednesday, November 09, 2011	Sheet 28 of 45

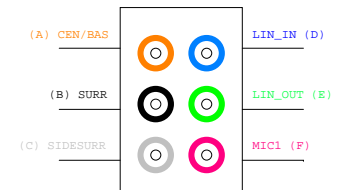
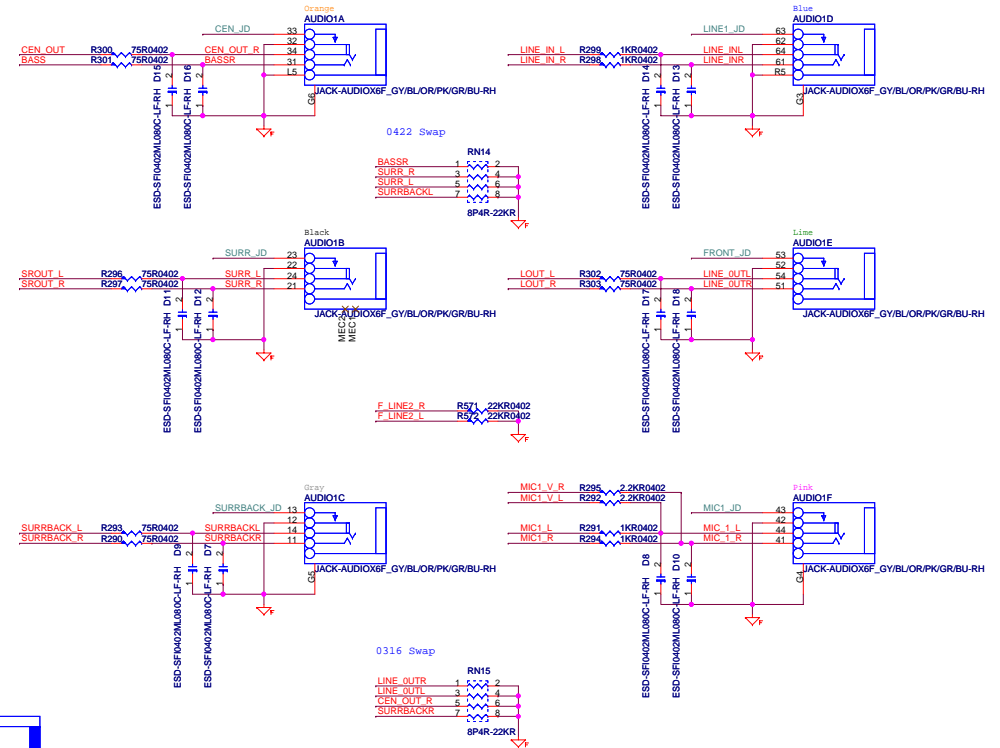
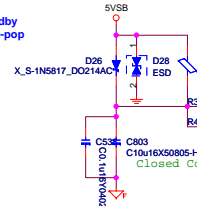
CODEC ALC892



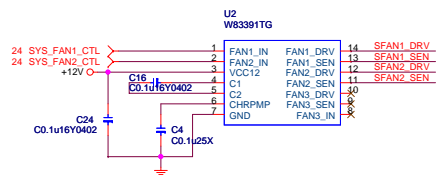
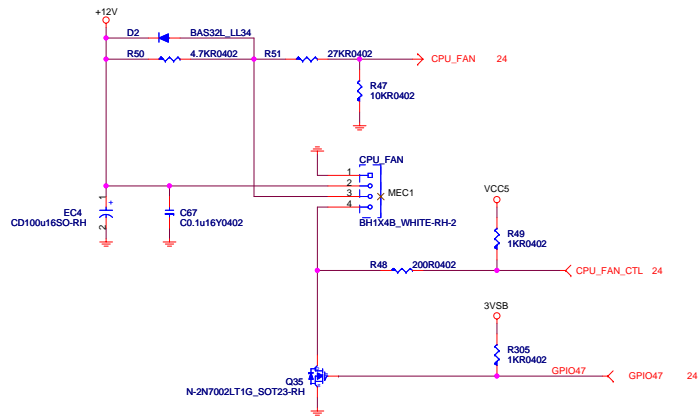
SPDIF OUT OPT+RCA



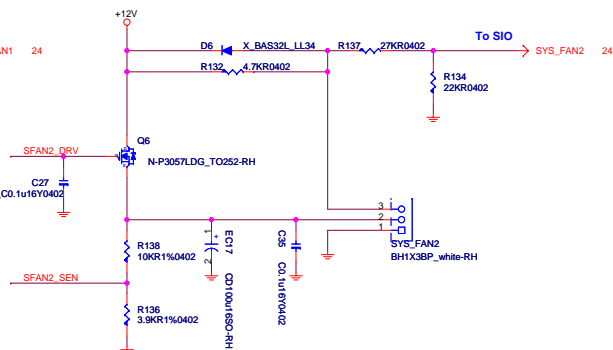
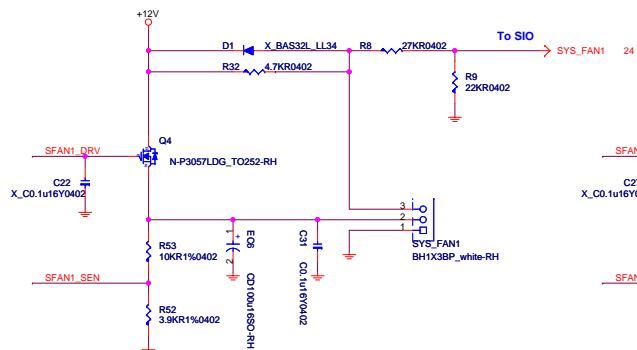
For Standby
mode-De-pop



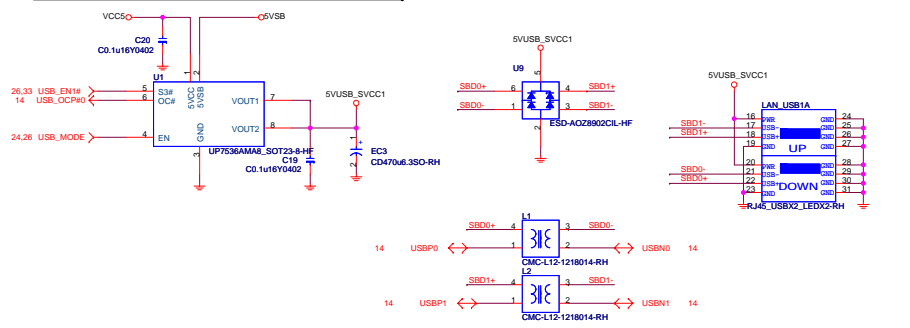
CPU Fan



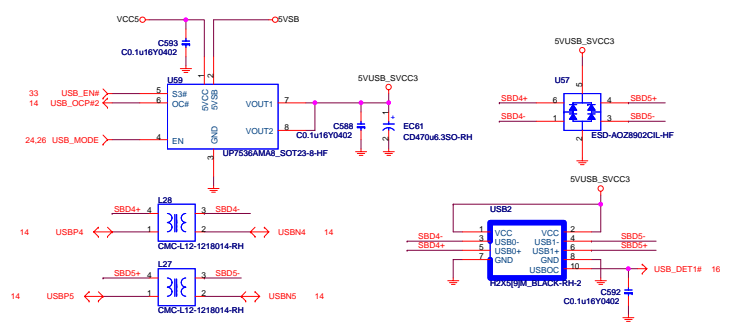
System Fan



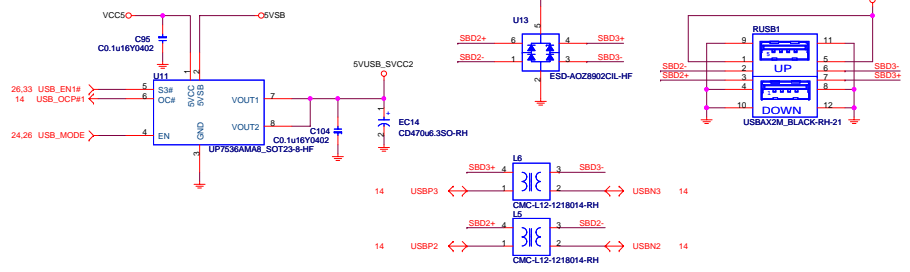
Rear USB Connector For USB Port 0 / 1



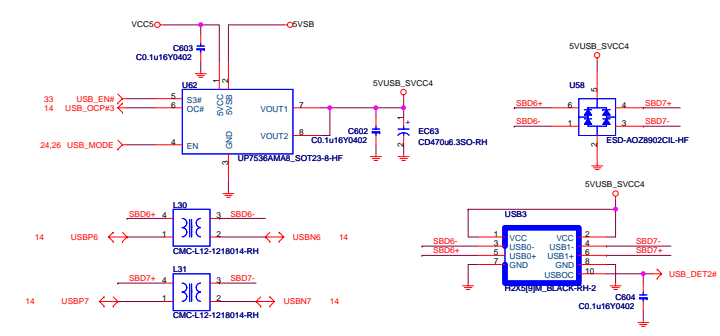
Front Panel USB Connector For USB Port 4 / 5



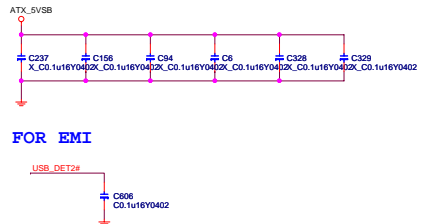
Rear USB Connector For USB Port 2 / 3



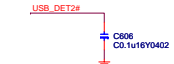
Front Panel USB Connector For USB Port 6 / 7



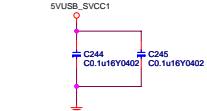
FOR EMI



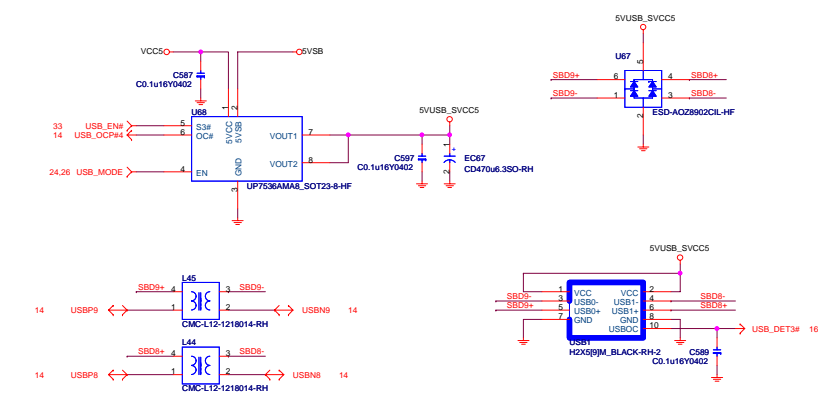
FOR EMI



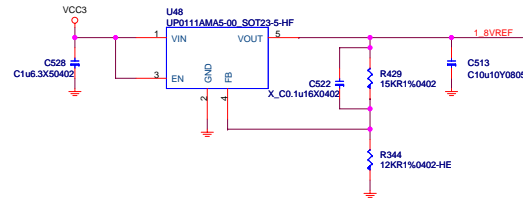
FOR EMI



Front Panel USB Connector For USB Port 8 / 9

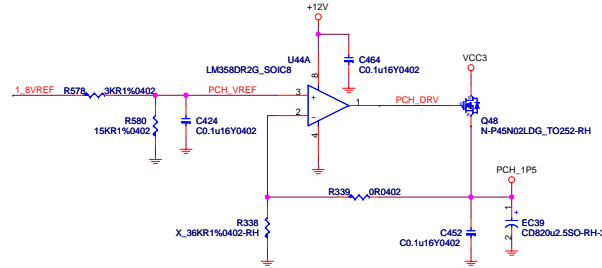


1.8V Reference Power



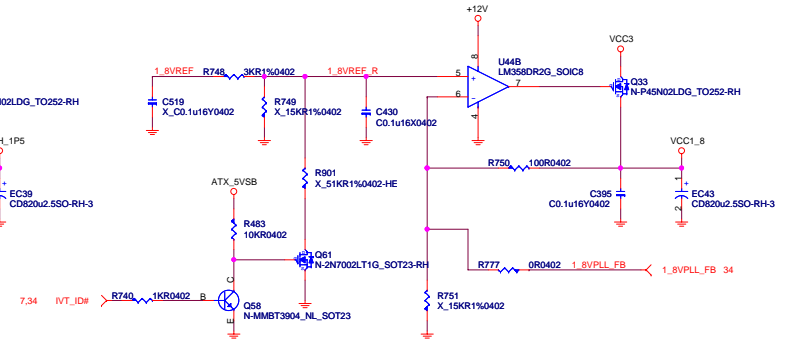
PBG 1.5V Power Rail

Linear 1.5V, 0.512A Imax



VCCPLL Power Rail

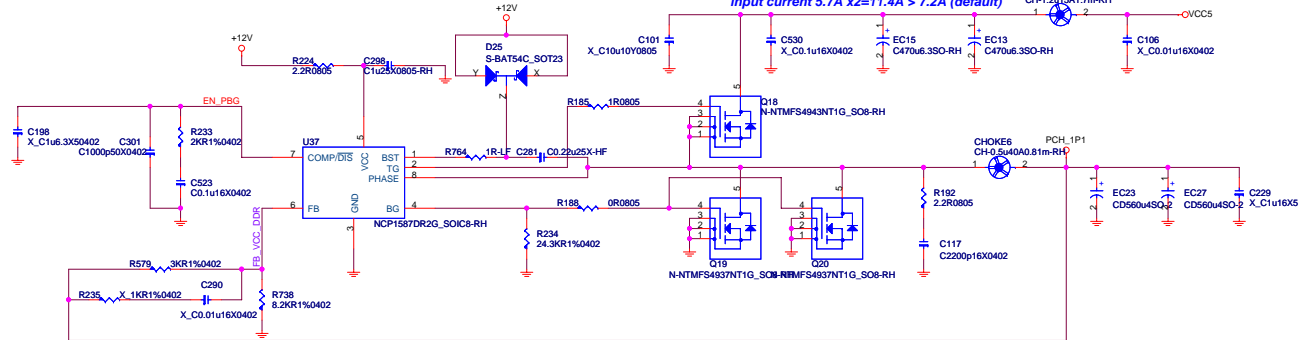
Linear 1.8V, 2A Imax



IVT_ID#		VOLTAGE
H	SNB-E	1.8V(normal)
L	IVB-E	1.7V

PBG Core Power Rail

Switching 1 phase 1.1V, 16.4A Imax



$$V_{out} = 0.8 \left[\frac{R738(GND) + R579}{R738} \right]$$

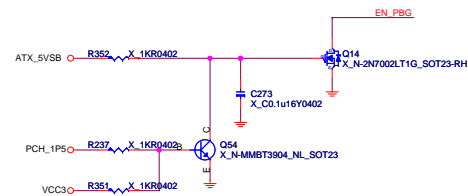
$$= 0.8 \left[\frac{(8.2 + 3)}{8.2} \right]$$

$$= 1.09268(V)$$

$$I_{octr} = (I_{ocset} * R_{ocset}) / R_{dson}$$

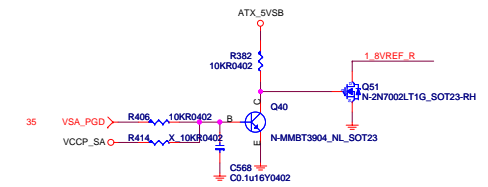
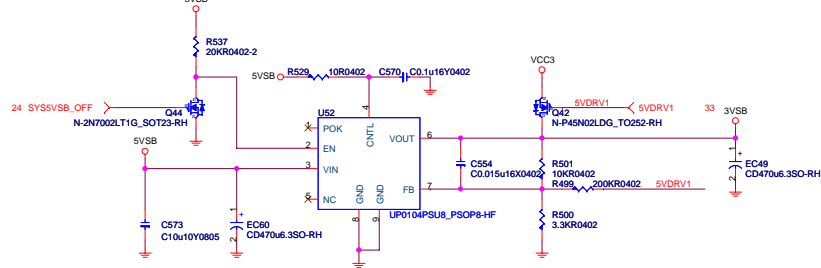
$$= (10\mu A * 24.3K) / 7.2m$$

$$= 33.75A (> 1.5 * 16.64A)$$



3VSB Power Rail

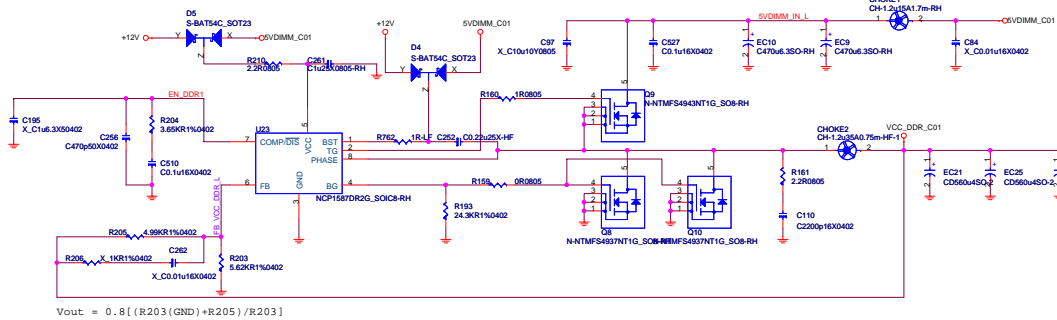
1.09A



DDR III 1.5V POWER

Switch 1 Phase 1.5V 17A

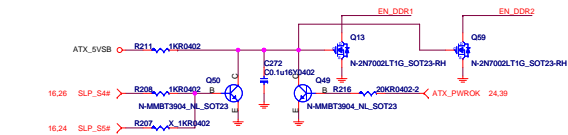
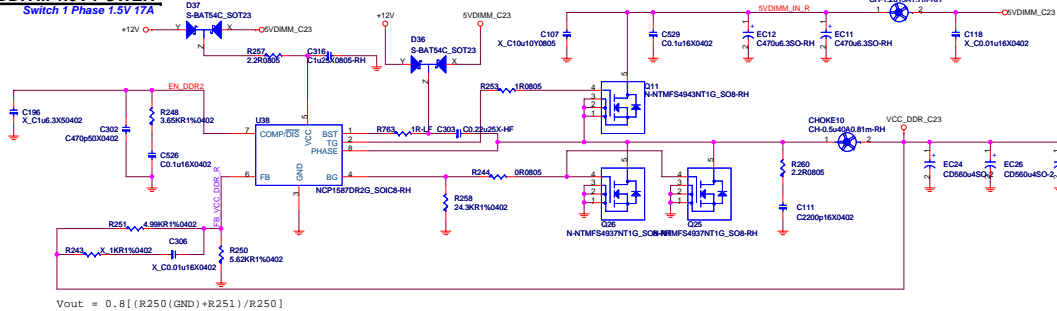
input current 5.7A x2=11.4A > 7.8A (default)



DDR III 1.5V POWER

Switch 1 Phase 1.5V 17A

input current 5.7A x2=11.4A > 7.8A (default)



UPI VOLTAGE CONSOLE

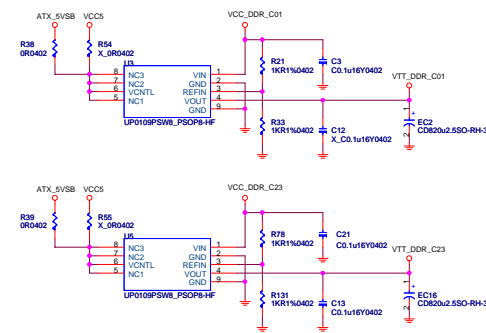
ADDRESS	0x2A	0X28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

UPI VOLTAGE CONSOLE

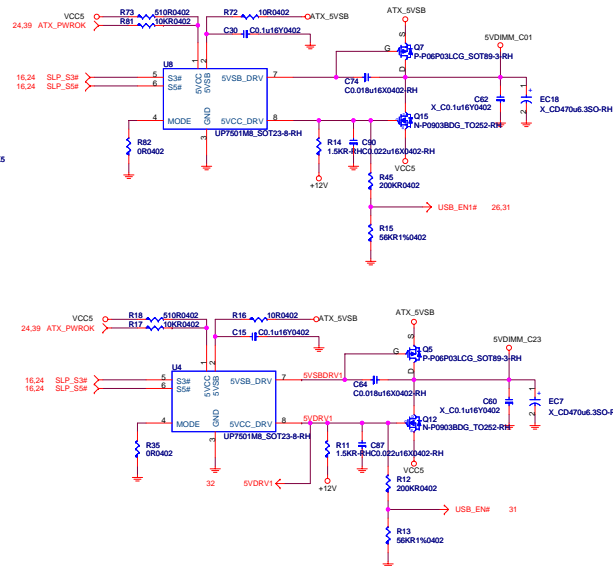
ADDRESS	0x2A	0X28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%

DDRIII Termination Power

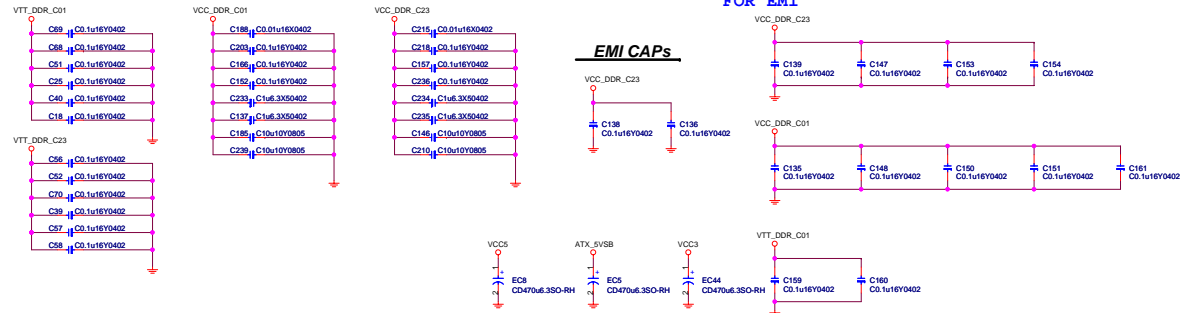
Linear, 0.75V - 1A



DDRIII Regulator Power Source

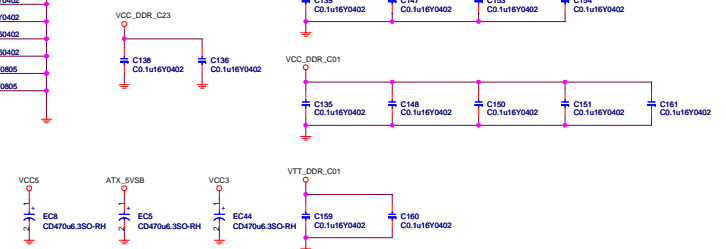


DDRIII I/O Power Decoupling Caps.



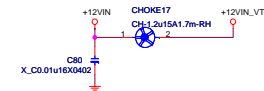
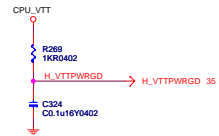
FOR EMI

EMI CAPs

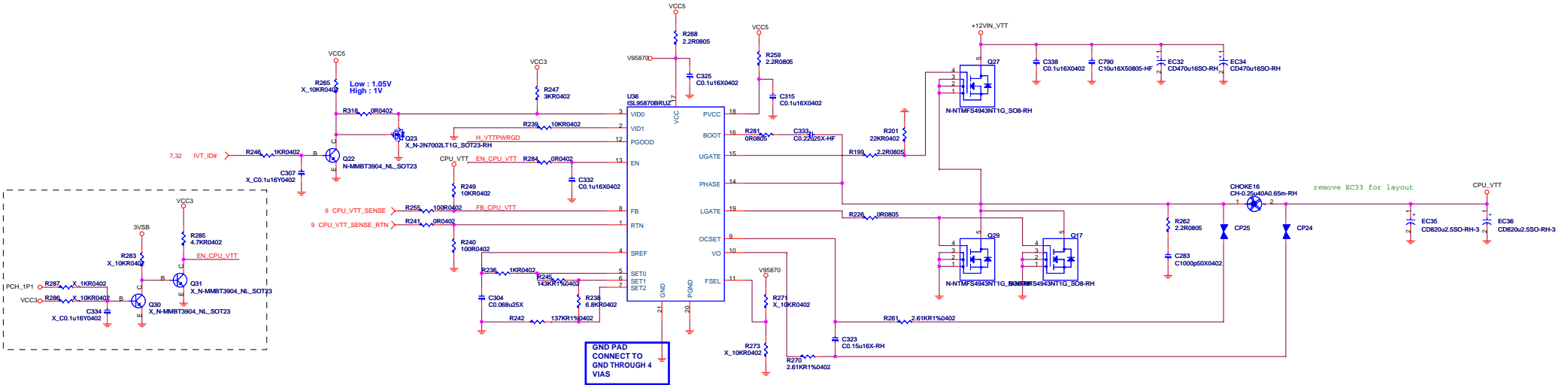
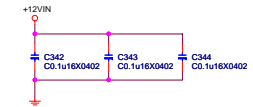


CPU VTT Power Rail

Switch 1 Phase 1.05V 22A



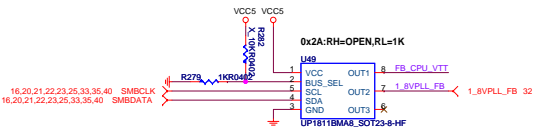
FOR EMI

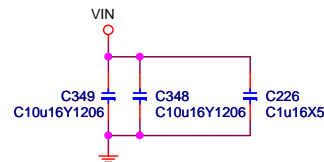
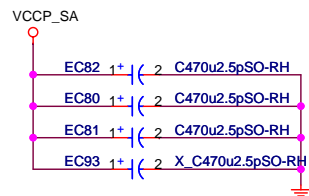
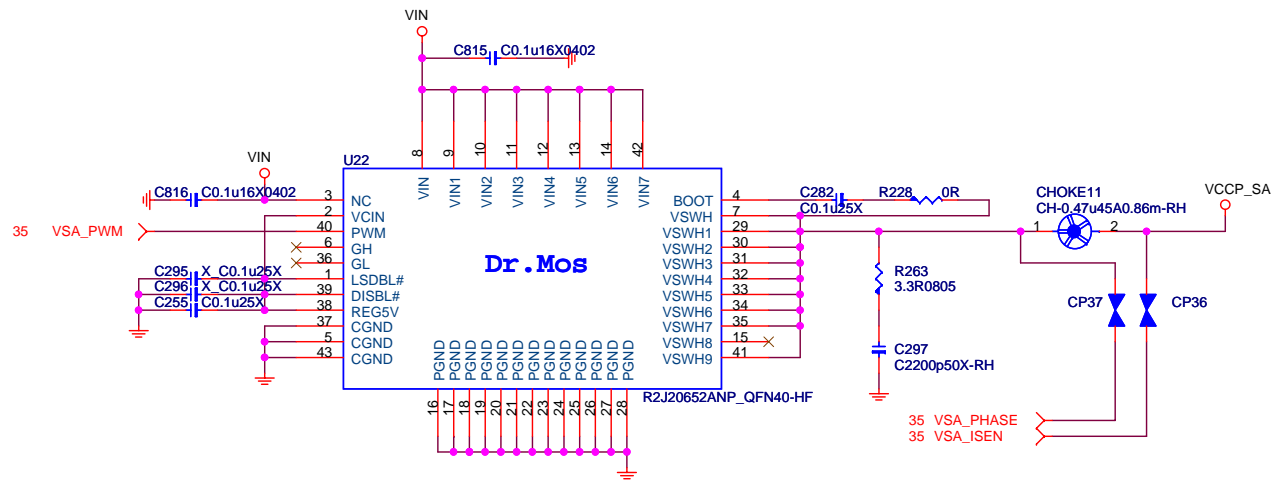


1. Rocest = $\text{Iout} \times \text{DCR} / \text{Iocset}$; Iocset = 10uA
If DCR = 1m; Iout = 20A, Rocest = $20\text{A} \times 1\text{m} / 10\text{uA} \rightarrow \text{Rocest} = 2\text{K}$
2. Csen = $\text{L} / \text{Rocest} \times \text{DCR}$
If DCR = 1m; L = 1u, Csen = $1\text{u} / 2\text{K} \times 1\text{m} \rightarrow \text{Csen} = 0.5\text{u}$

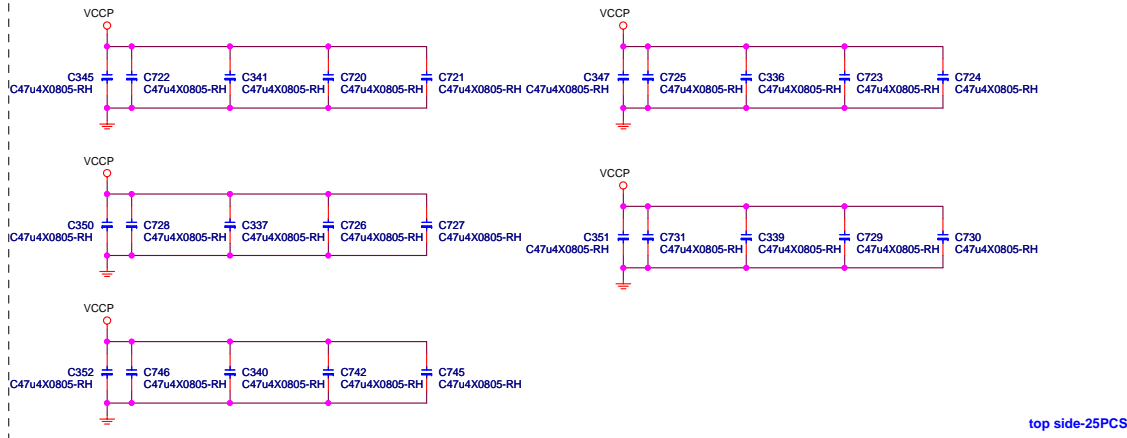
UPI VOLTAGE CONSOLE

ADDRESS	0x2A	0x28	0x26	0x24	0x22	0x20
RH (KOhm)	OPEN	3.9	3	2.2	1.3	10
RL (KOhm)	10	1.3	2.3	3	3.9	OPEN
BUS_SEL	0%	25%	40%	60%	75%	100%



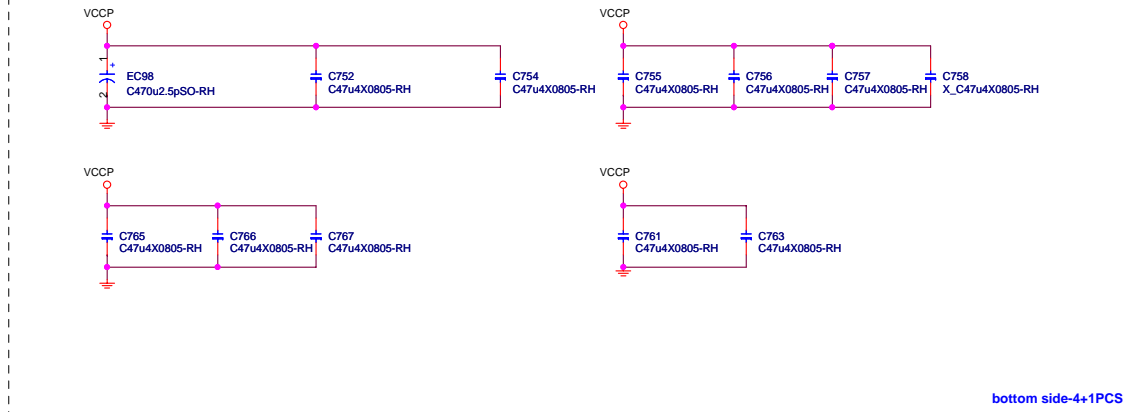


VCCP Decoupling



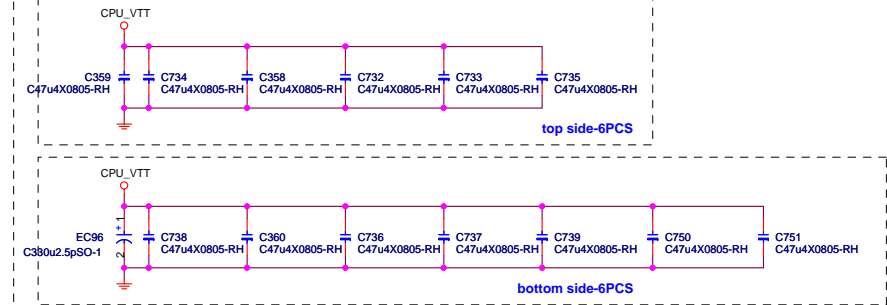
top side-25PCS

VCCP Decoupling Bottom Side



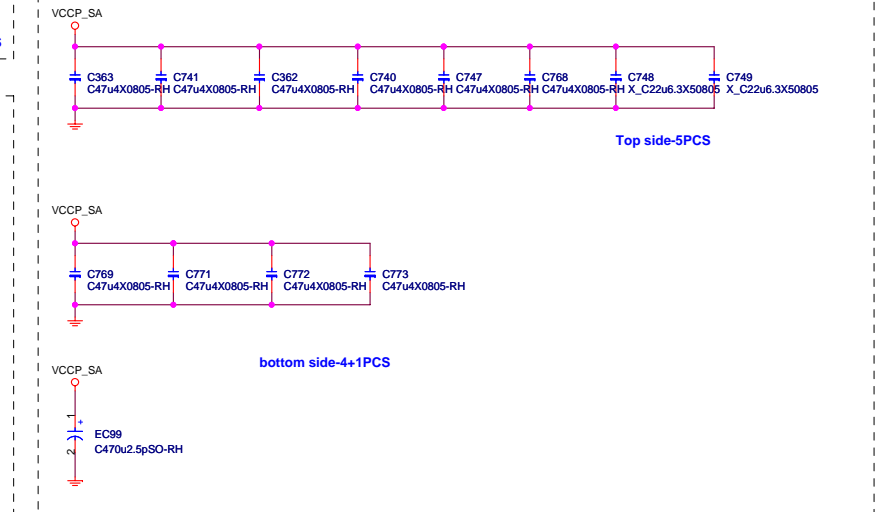
bottom side-4+1PCS

CPU VTT Decoupling



bottom side-6PCS

CPU VSA Decoupling



Top side-5PCS

bottom side-4+1PCS

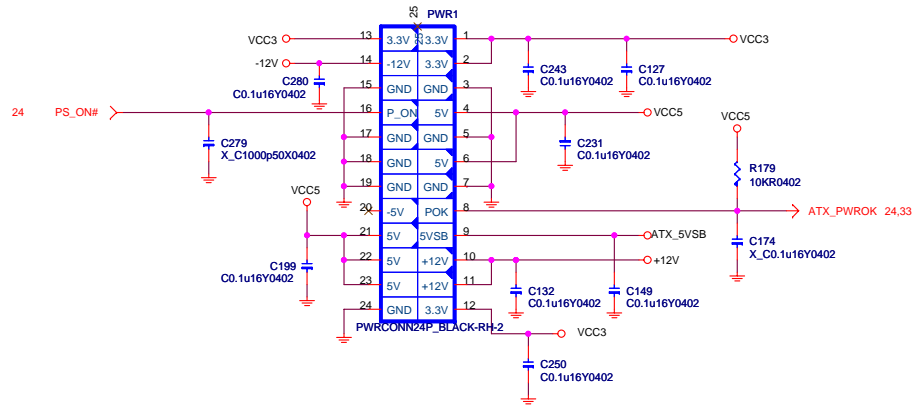
CPU VCC_DDR Decoupling



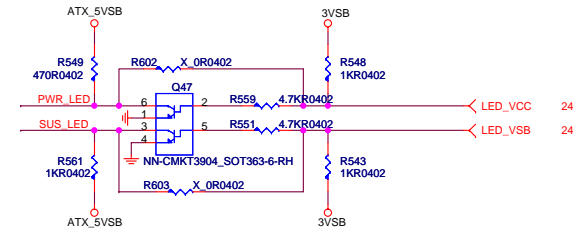
bottom side-4PCS

ATX Power Connector / Front Panel / LED

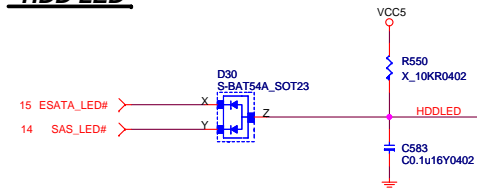
24 Pin ATX Power Connector



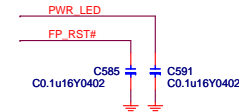
Power LED



HDD LED



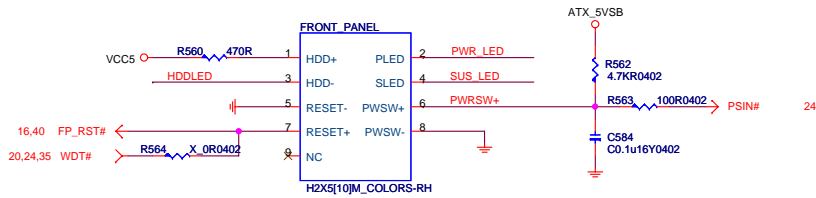
For EMI
(close pin header)



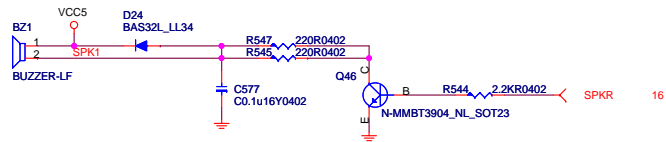
FOR EMI



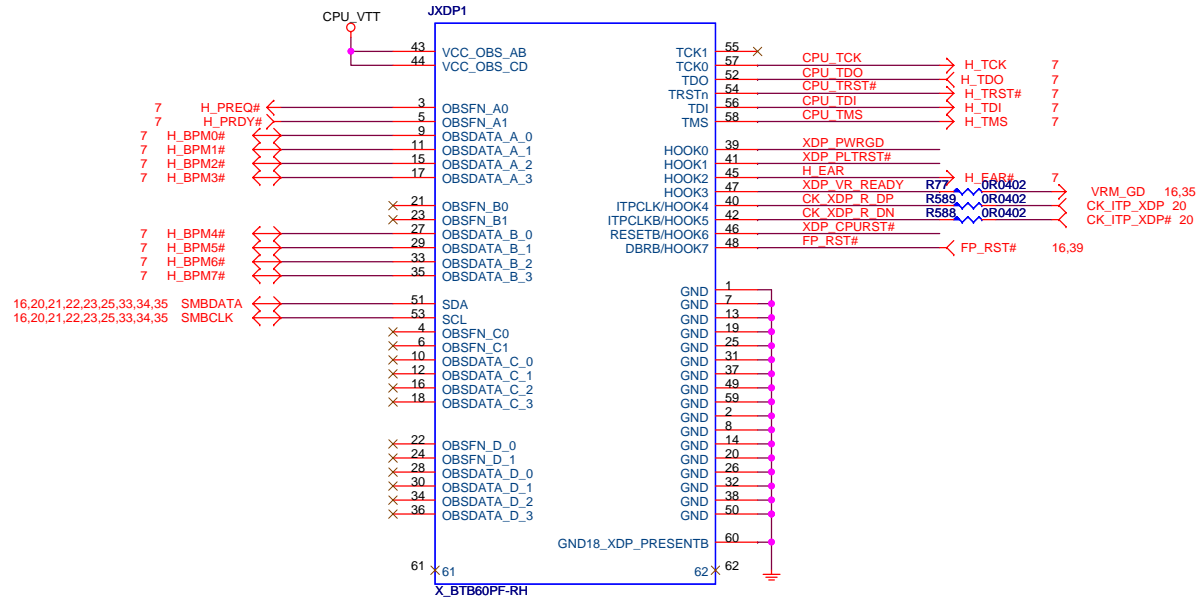
Front Panel



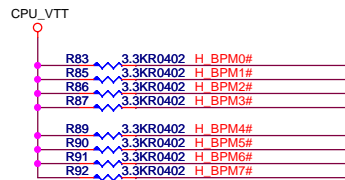
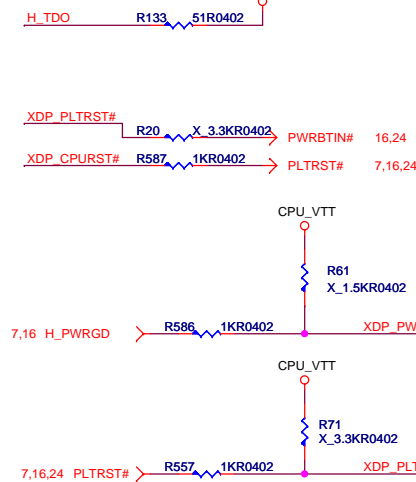
Buzzer Circuit



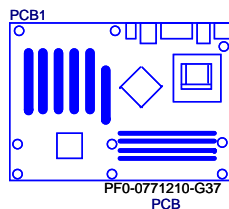
CPU XDP PORT



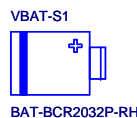
PLACE NEAR XDP CONNECTOR CPU_VTT



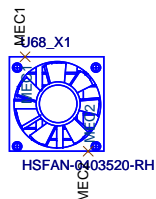
Manual Parts



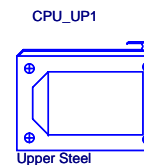
精成PF0-0771210-G37



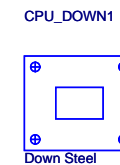
BAT-BCR2032P-RH



HSFAN-0403520-RH

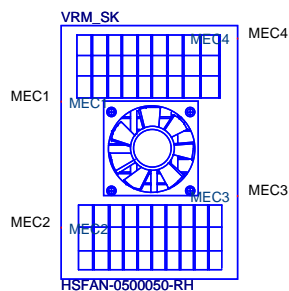
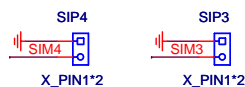
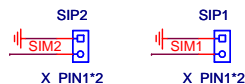


Upper Steel



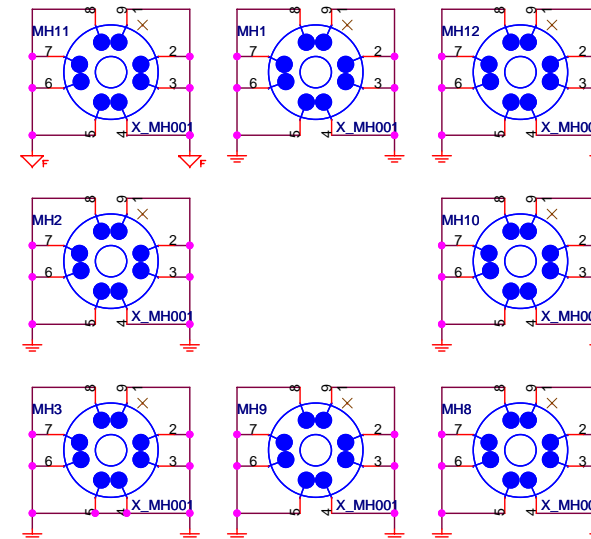
Down Steel

Simulation



PCB Mounting Holes

Mounting Holes



Optics Orientation Holes

Optical Fiducial Marks-120

