

Lunar Bear

MS-7400 Version 1.1



CPU:

Intel Conroe/Conroe-L 65W
(FSB1333/1066/800/533)

System Chipset:

Intel BearlakeQ35 - GMCH (North Bridge)
Intel ICH9 DO (South Bridge W/ AMT)

On Board Chipset:

BIOS - SPI FLASH
HD Audio - Realtek ALC262 C2
LPC Super I/O : SMSC SCH5017
Gigabit LAN - Intel Nineveh 82566
Clock GEN - Cypress CY505YC64CT
IDE Controller - VIA VT6410(IDE Mode)
TPM - SLB 9635 TT1.2

Main Memory:

DDR II(800/667)*2 (Up to 4GByte)

Intersil PWM:

Controller - Intersil 6326 3Phase

Expansion Slots:

PCI-E[X16] Slot *1
Riser Slot : (PCI*1/PCI-E[X1]*1)

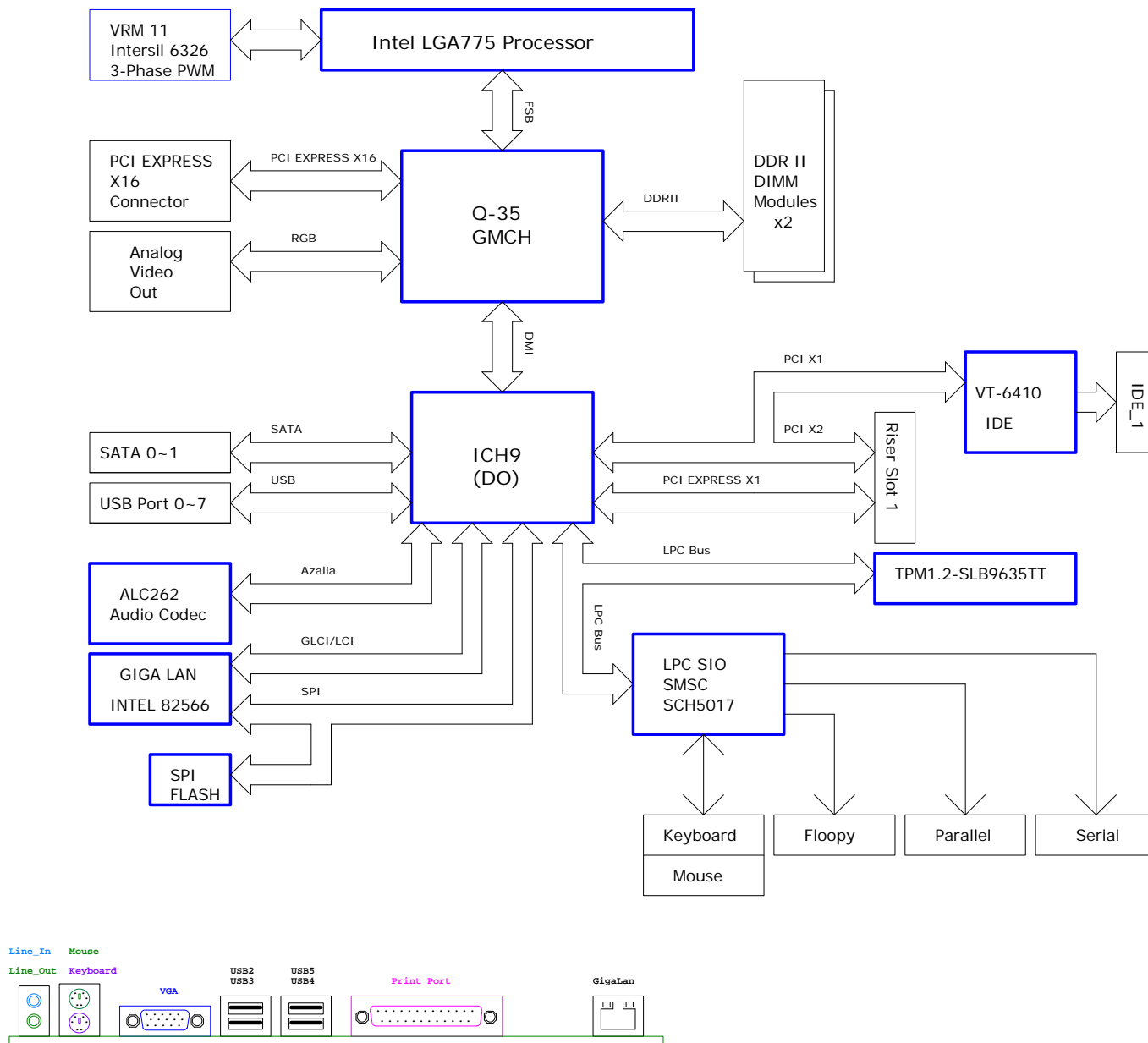
MS-6448 N1	ERP Number	Function
MS-7400-11	601-7400-01S	Mainboard
MS-4046-2A	604-4046-020	Power Button/LED board
MS-4085-10	604-4085-010	Front Audio Board
MS-4048-3A	604-4048-06S	Front 1394/USB Board
MS-4121-10	604-4121-01S	Riser Card

Model option table

Model type	Function	BOM Config	ERP BOM No	BOM Opt.
MS-7400N1-11	Bearlake Q35+ICH9 DO+Nineveh82566+VT6410	Cfg-7400-LB	601-7400-01S	L

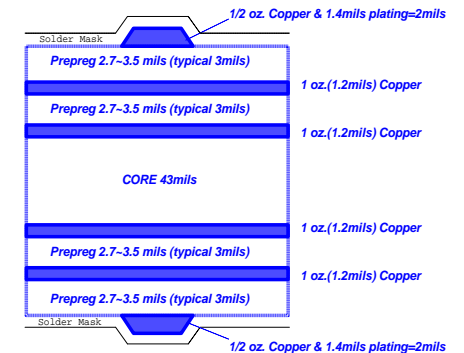
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Intel LGA775 CPU (P3:Signal,P4:Power,P5:GND)	3-5
CLOCK Generator-CY505YC64CT	6
Bearlake Q35 - MCH	7-10
DDR II System Memory 1 & 2	11
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PCI EXPRESS X16 Slot	13
Intel ICH9(DO) - PCI & DMI & USB & PCI-E	14
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Block Diagram



Board Stack-up (6 layers)

(1080 Prepreg Considerations)



Single End 50ohm Top/Bottom : 4mils
 USB2.0 - 90ohm : 15/4.5/7.5/4.5/15
 SATA - 95ohm : 15/4/8/4/15
 LAN - 100ohm : 15/4/8/4/15
 PCIE - 95ohm : 15/4/8/4/15
 IEEE1394 - 110ohm : 15/4/9/4/15
 Differential Clock : 18/4/10/4/18

Example Fab Drawing Note (1080 Prepreg PCB)

Trace Width (mils)	Differential Spacing (mils)	Target Impedance	Tolerance
4.0	NA	50-ohm, single-ended	15%
6.5	NA	40-ohm, single-ended	15%
7.5	NA	37-ohm, single-ended	15%
9.5	NA	32-ohm, single-ended	15%
3.9	8.1	95-ohm, differential	20%, reference only
4.5	7.5	90-ohm, differential	20%, reference only

Bearlake(GMCH) Impedance Requirements by Interface

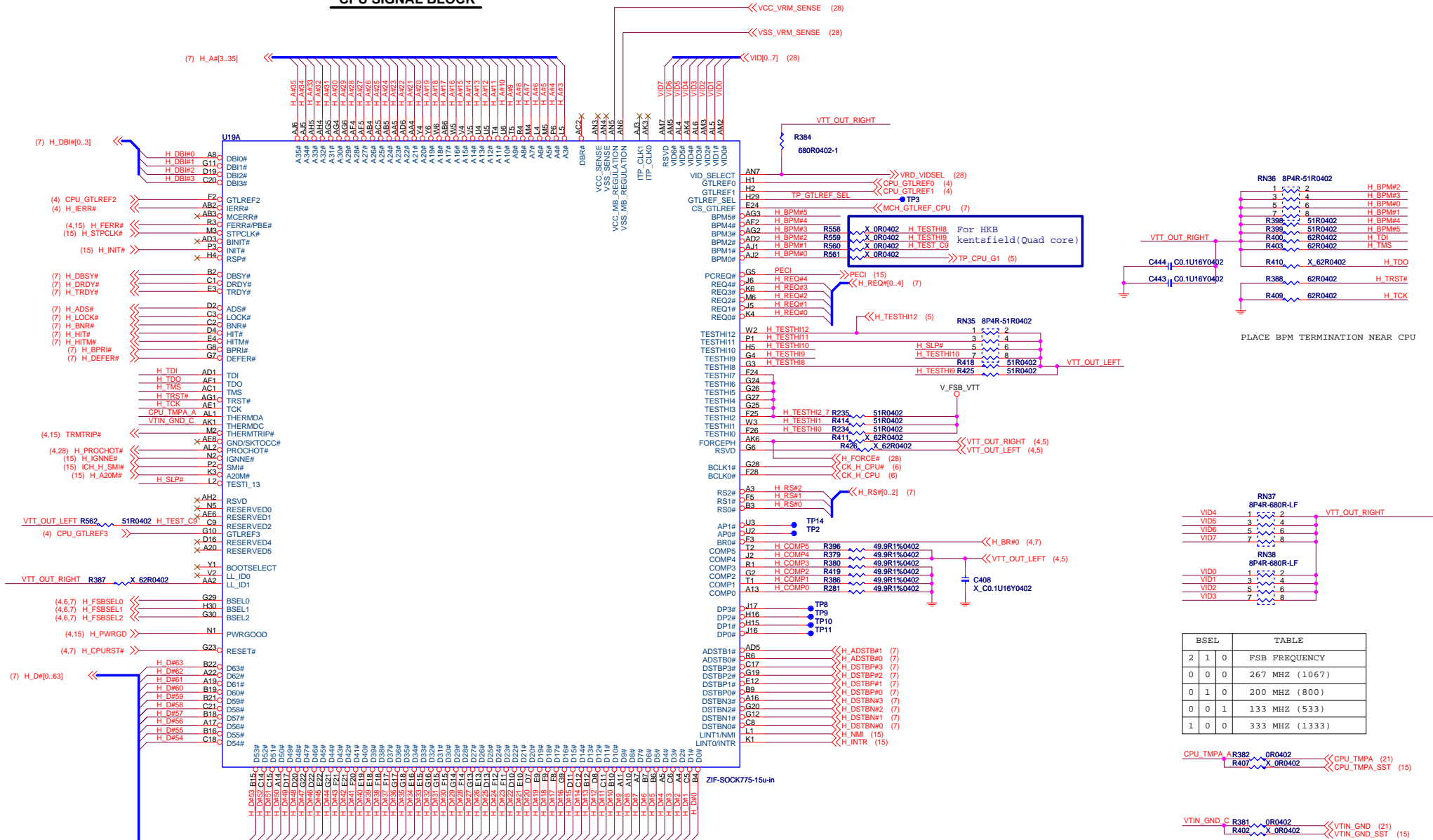
Interface	Impedance Required
FSB(All)	4x signals 42-ohm, others 50-ohm, single-ended
Controller Link	50-ohm, single-ended
DDR2(DQ, DQS, DM, CLK, CLK#)	40-ohm, single-ended
DDR2(Control)	43-ohm, single-ended
DDR2(Command)	33-ohm, single-ended
DDR3(CLK, CLK#)	40-ohm, single-ended
DDR3(DQ, DQS, DM)	50/37-ohm, single-ended
DDR3(Control)	36-ohm, single-ended
DDR3(Command)	32-ohm, single-ended
PCI Express, DMI	95-ohm, differential
VGA	87-ohm, single-ended at MCH breakout, then 60-ohm, single-ended to VGA connector

ICH9 Impedance Requirements by Interface

Interface	Impedance Required
PCI	50-ohm, single-ended
Controller Link	50-ohm, single-ended
Miscellaneous	50-ohm, single-ended
PCI Express, DMI	95-ohm, differential
SATA	95-ohm, differential
USB	90-ohm, differential

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Title: BLOCK DIAGRAM		
Size:	Document Number: MS-7400	Rev: 11
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CPU SIGNAL BLOCK

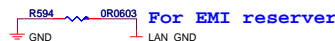
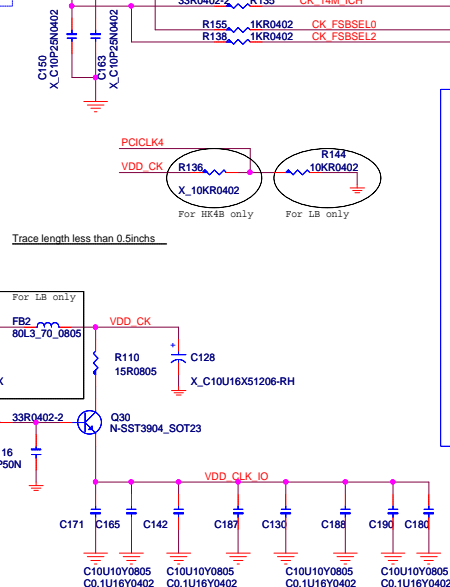
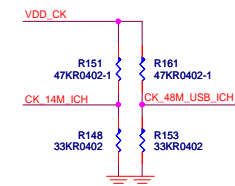


BSEL			TABLE
2	1	0	FSB FREQUENCY
0	0	0	267 MHZ (1067)
0	1	0	200 MHZ (800)
0	0	1	133 MHZ (533)
1	0	0	333 MHZ (1333)

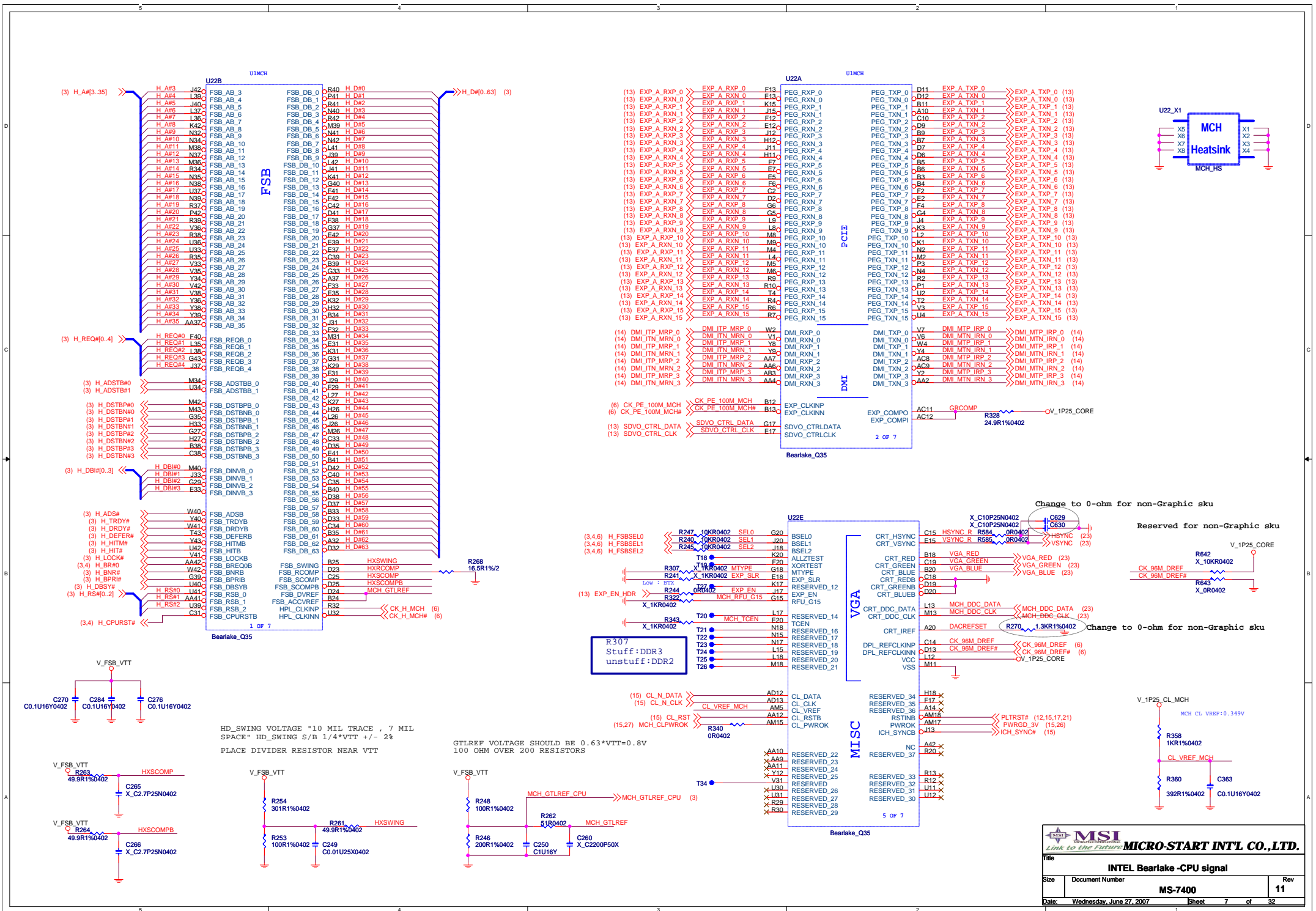
CPU_TMPA AR382 0R0402
R407 X_0R0402

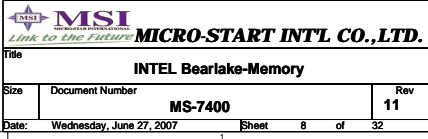
» CPU_TMPA (21)
» CPU_TMPA_SST (15)

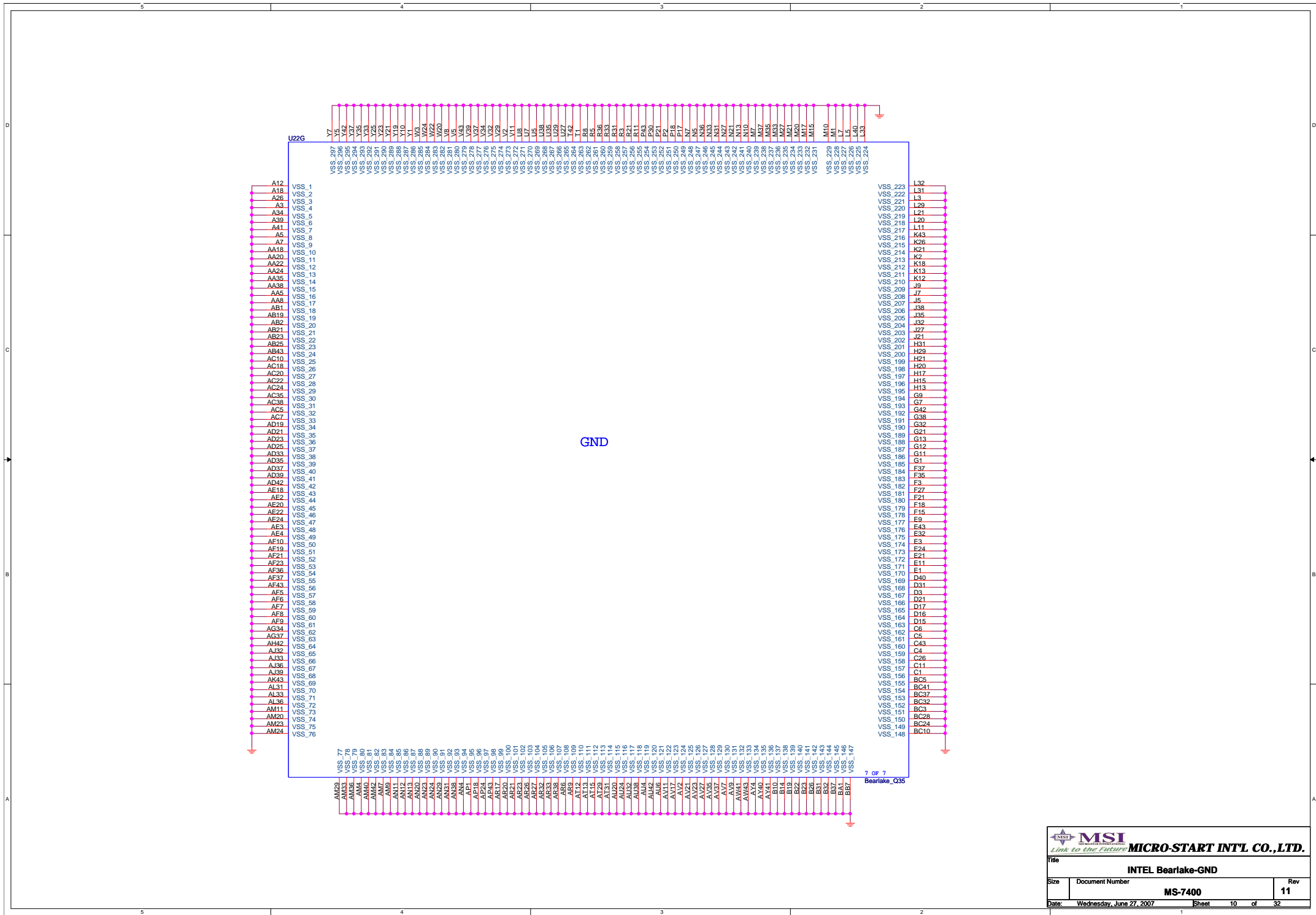
VTIN_GND C R381 0R0402
R402 X 0R0402 VTIN_GND (21)
VTIN_GND_SST (15)

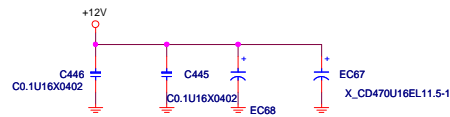
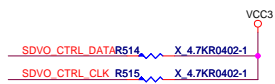


Signal	Pin	Connector
SIO_PCLK	C141	X C22P50N0402
RAIDCLK	C148	C22P50N0402
PCI_CLK1	C157	X C10P50N0402
PCI_CLK2	C586	X C10P50N0402
ICH_PCLK	C182	C10P50N0402
TPM_PCLK	C154	C10P50N0402
CK_48M_USB_ICH	C166	X C10P25N0402
SIO_14	C145	C10P50N0402
CK_14M_ICH	C156	X C10P25N0402











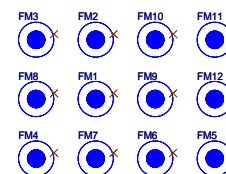
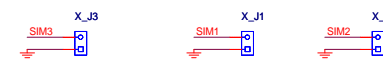
ICH9-DO

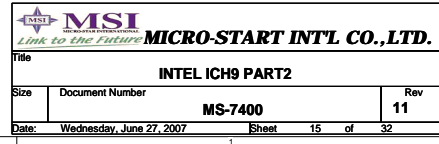


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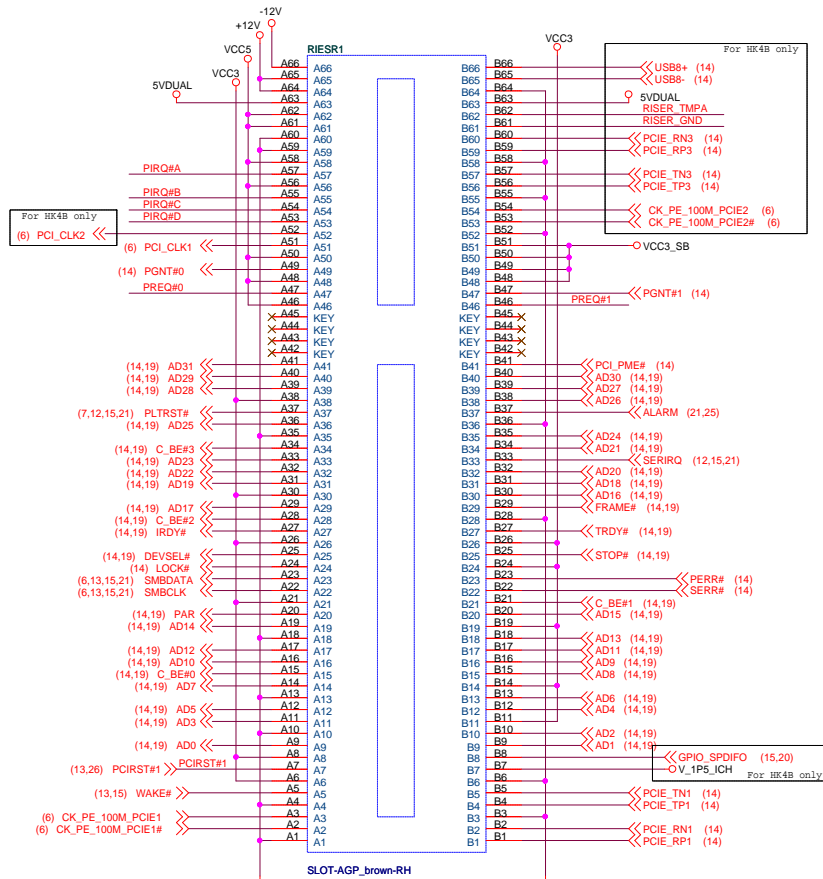
Mounting Holes







LB&HK4B riser card interface

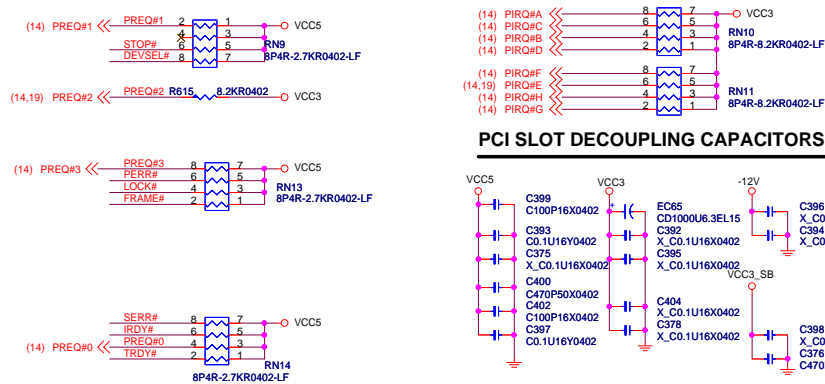


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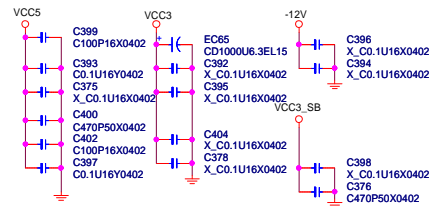
IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

```

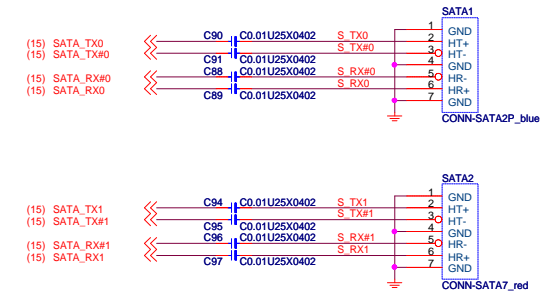
PCI PULL-UP / DOWN RESISTORS



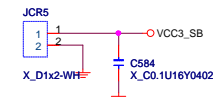
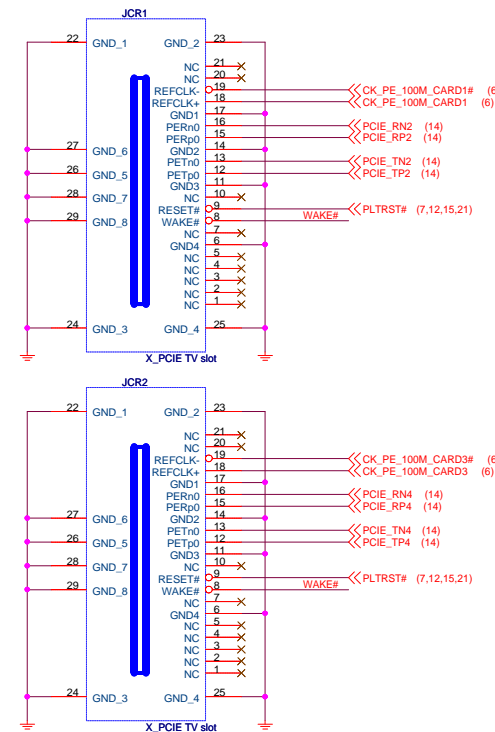
PCI SLOT DECOUPLING CAPACITORS




SERIAL ATA CONNECTOR BLOCK

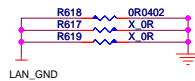
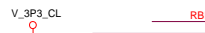
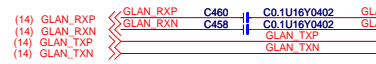
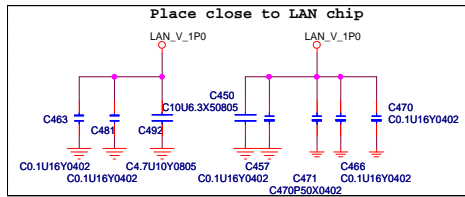


```
Lunar Bear not mount : JCR1, JCR2 & JCR5
HK4B : populate JCR1, reserve JCR2 & JCR5
```

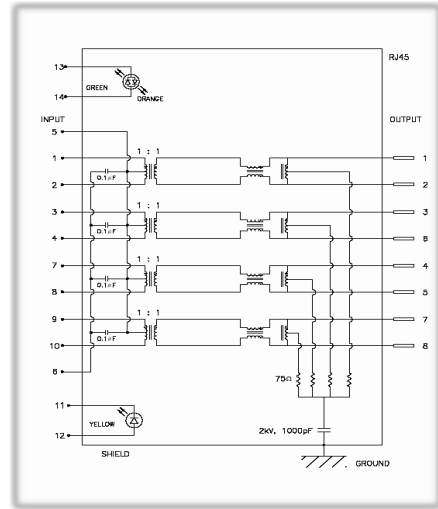


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Title RISER & JCR & SATA Slots			
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LAN - NINEVEH

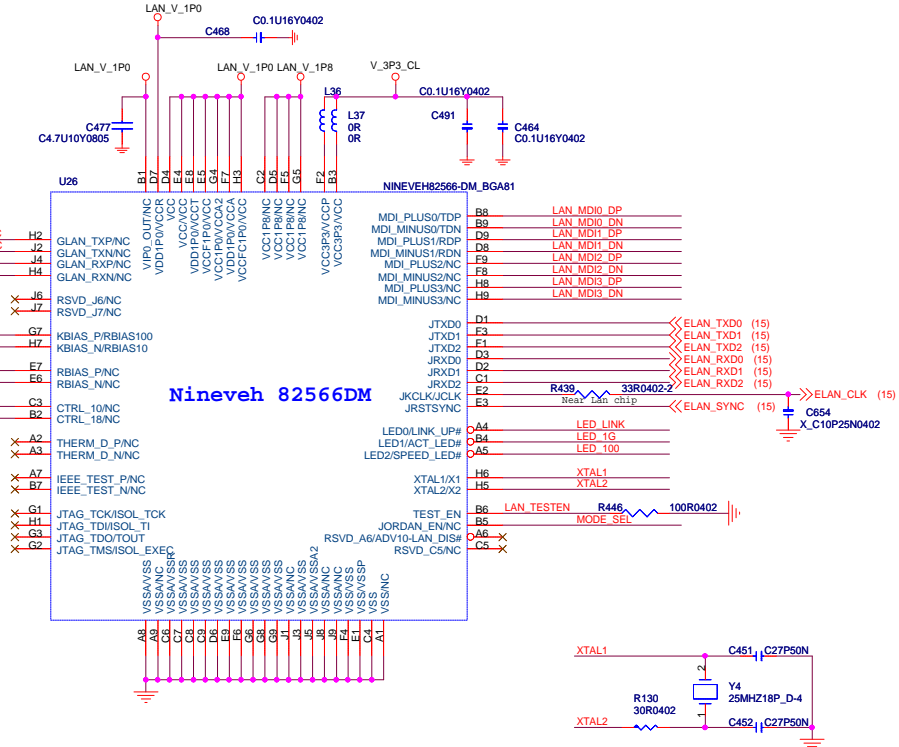
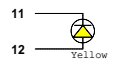
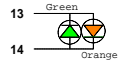


LAN1 structure

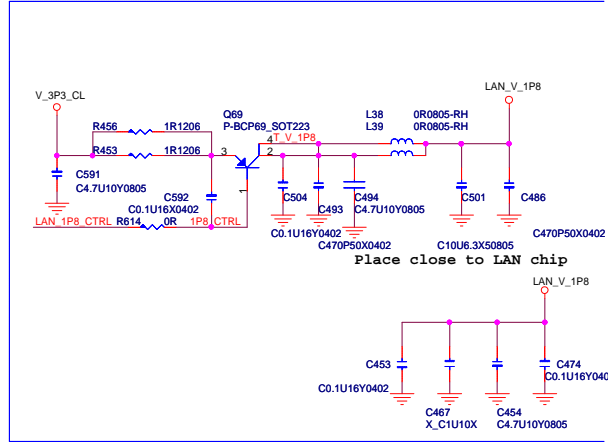
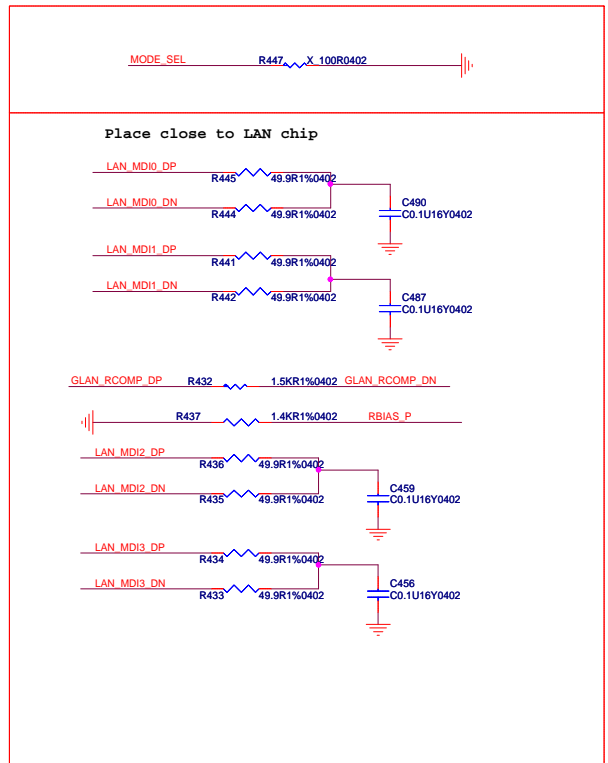
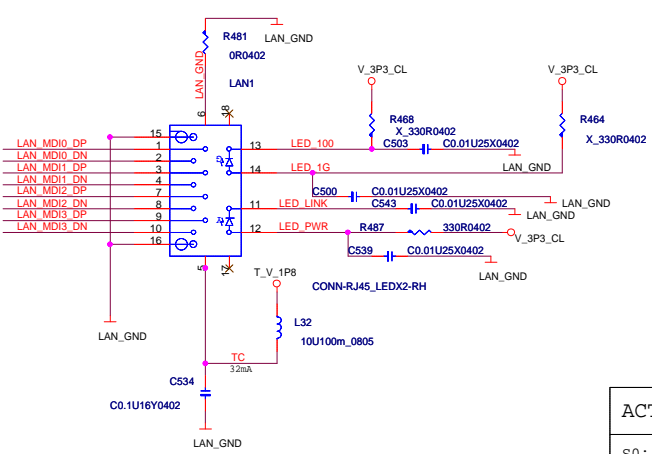


```
Speed LED Type
1000Mbps : Orange
100Mbps  : Green
10Mbps   : LED off
```

For Active/Link:
Yellow

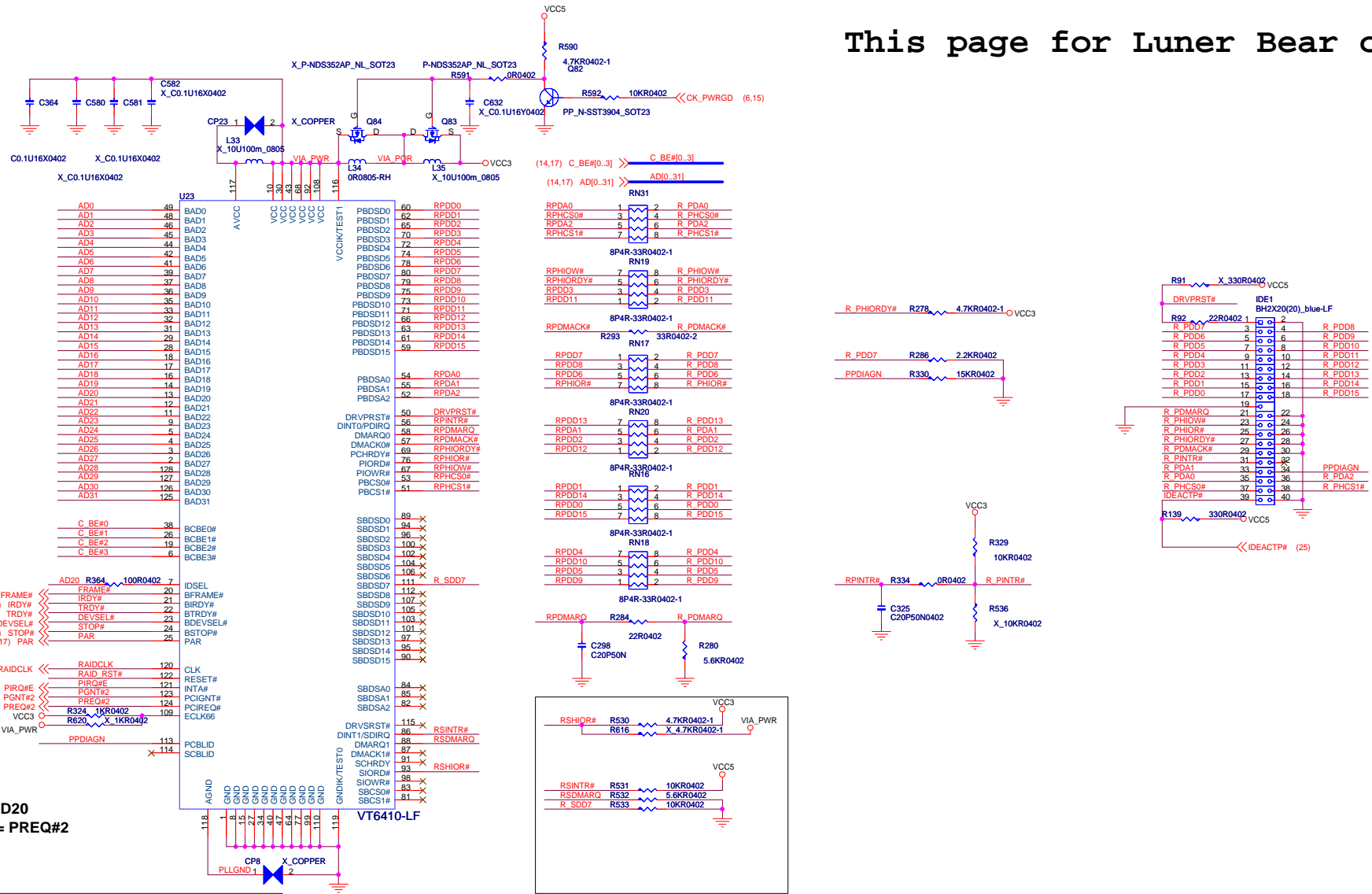


LAN CONNECTOR



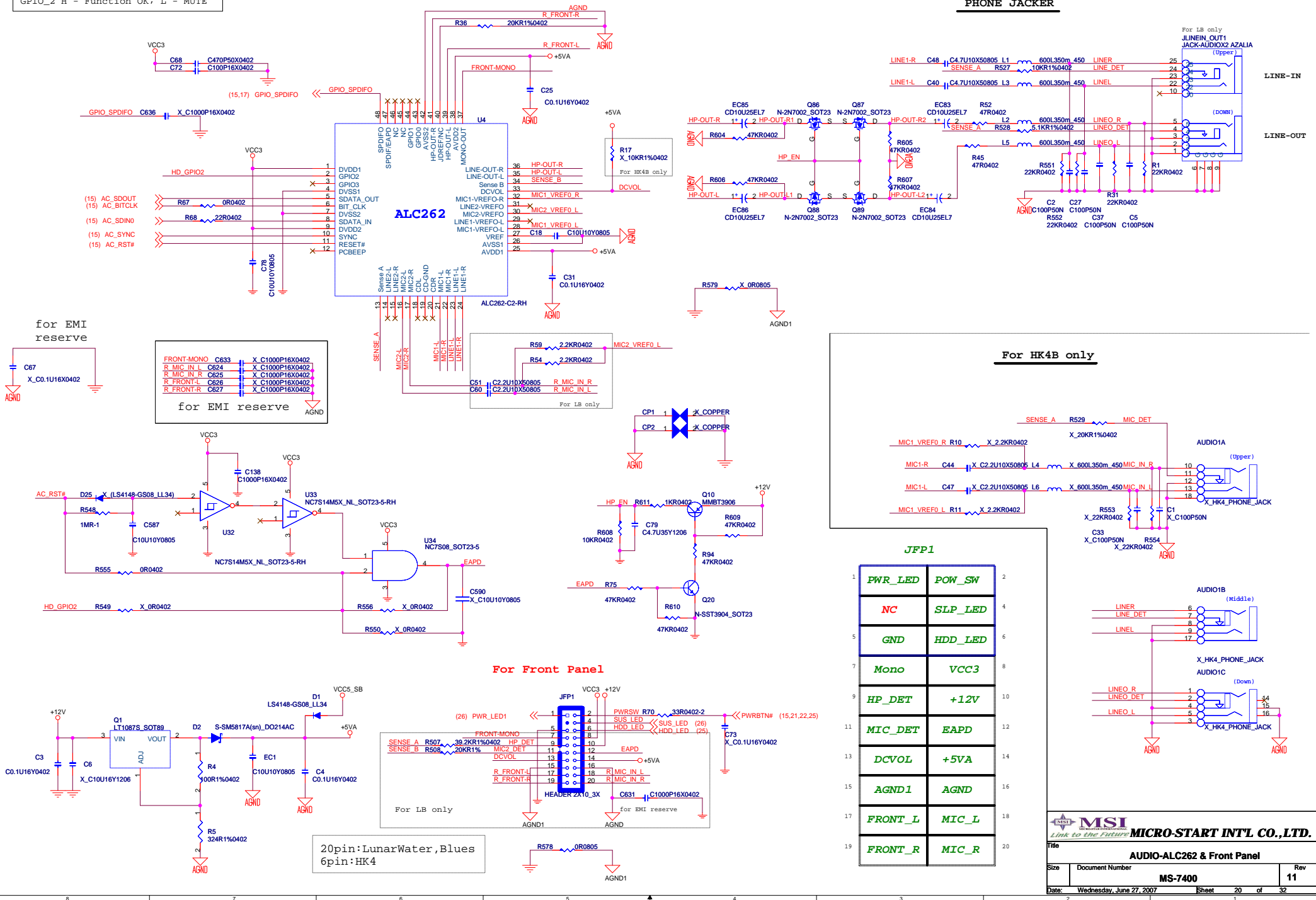
ACT_LED	Link_LED
S0: LOW	S0: LOW
S1/S3/S4/S5: HIGH	S5: HIGH
	S1/S3/S4: WOL EN-->LOW WOL DIS-->HIGH

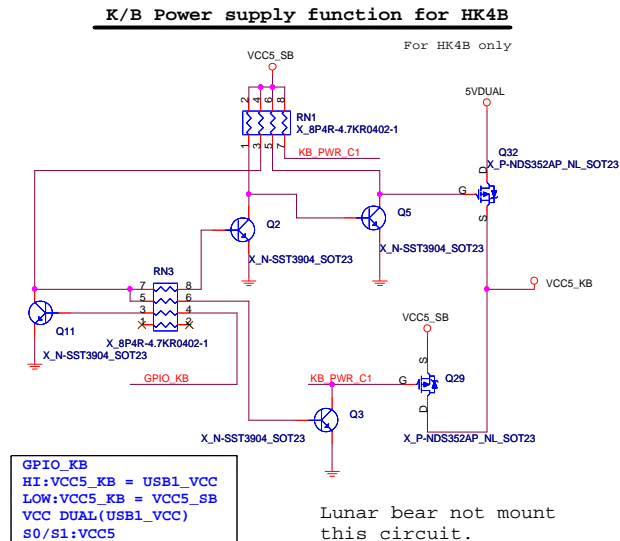
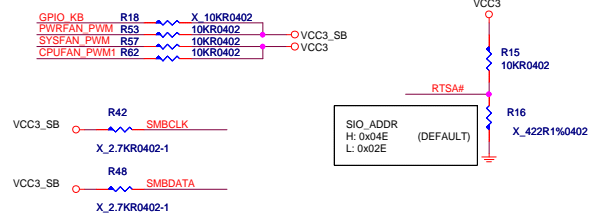
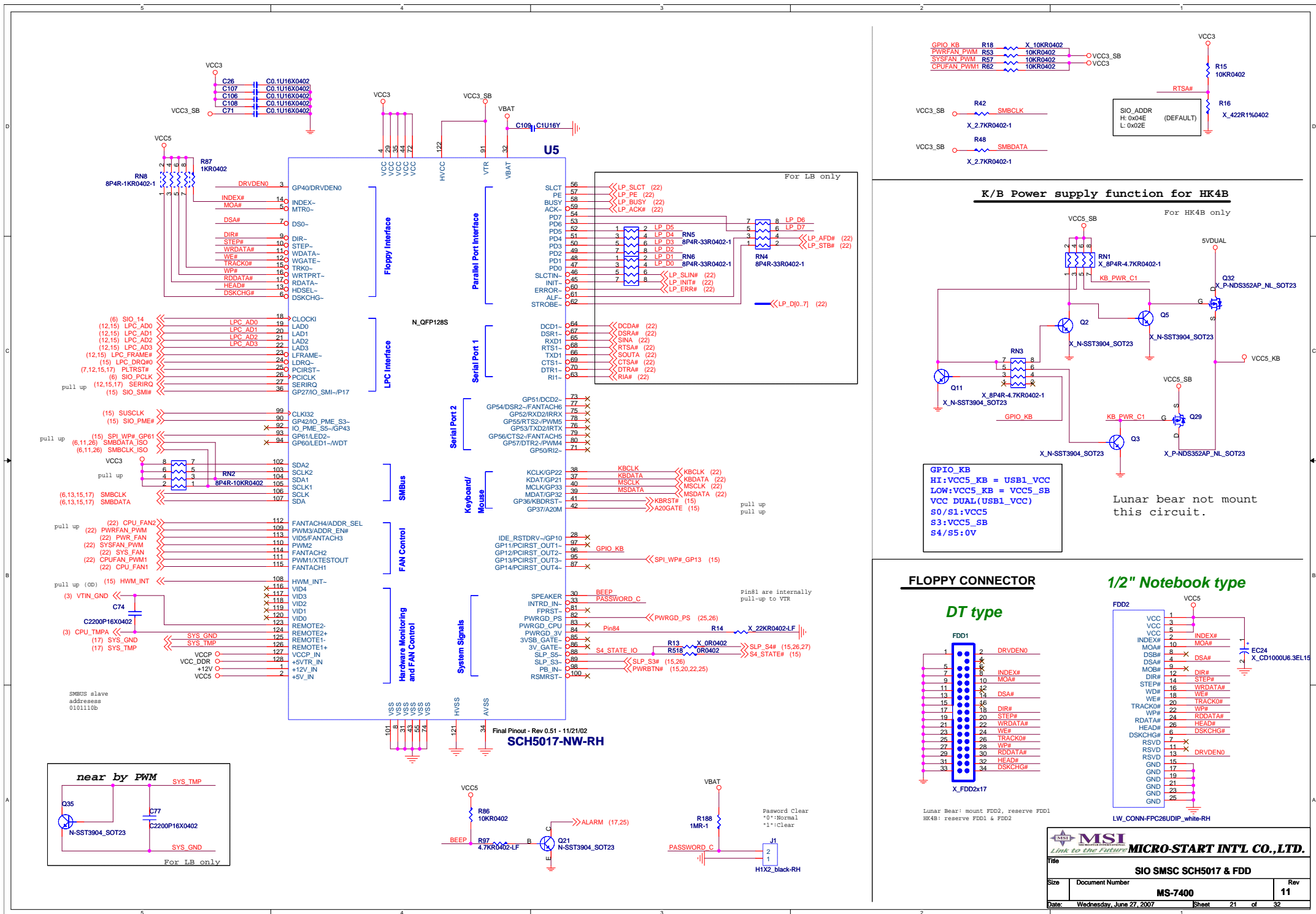
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GPIO_2 H - Function OK; L - MUTE

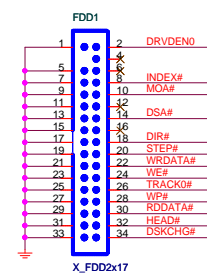
PHONE JACKER





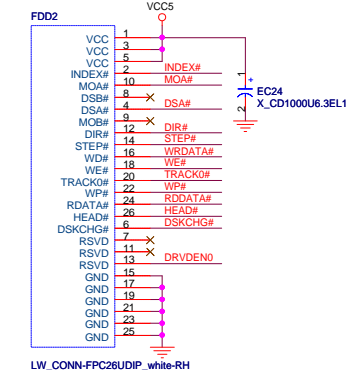
FLOPPY CONNECTOR

DT type



Lunar Bear: mount FDD2, reserve FDD1. HK4B: reserve FDD1 & FDD2.

1/2" Notebook type



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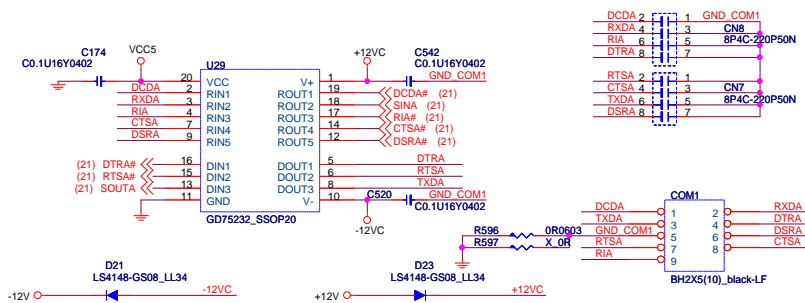
MS-7400

SIO SMSC SCH5017 & FDD

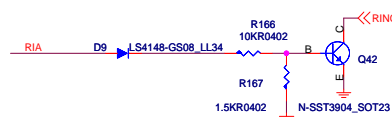
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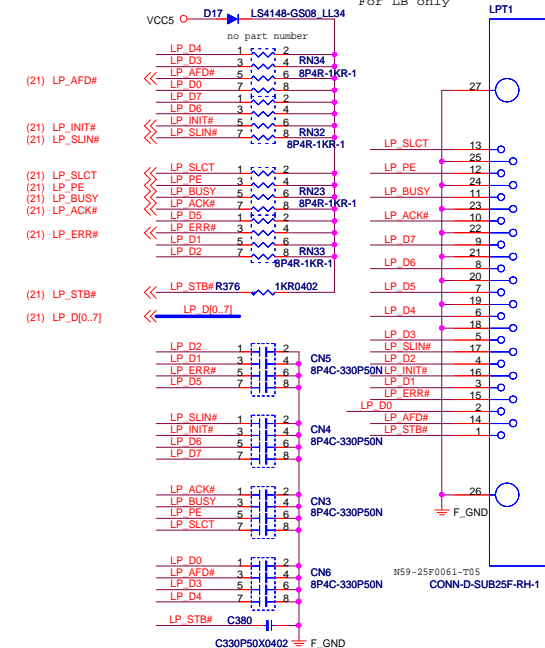
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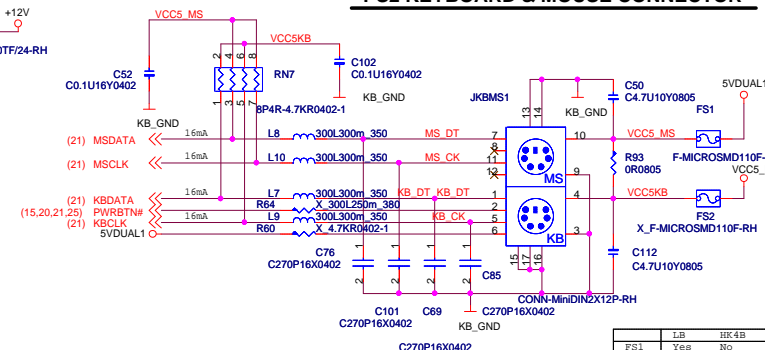


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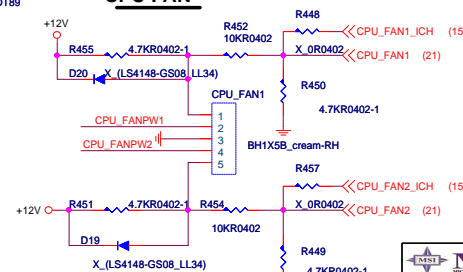
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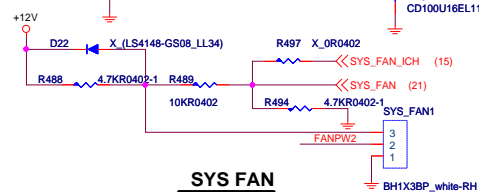


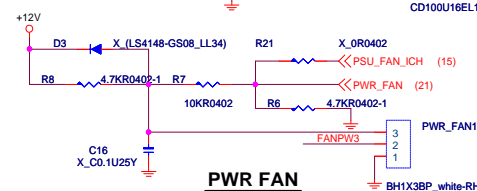


	LB	HK4B
FS1	Yes	No
FS2	No	Yes
R93	Yes	No
R60	No	Yes
R64	No	Yes
L8	Yes	No
L10	Yes	No
C76	Yes	No
C101	Yes	No

Conclusion







Video Connector

Video Connector

PLACE CLOSE TO MCH, WITHIN 750 MIL OF PIN

PLACE CLOSE TO VGA CONNECTOR

PLACE CLAMPING COMPONENT AND LEVEL SHIFT CIRCUIT CLOSE TO VGA CONNECTOR

for EMI reserve

ESD Protection

MSI
Link to the Future
MICRO-START INTL CO., LTD.

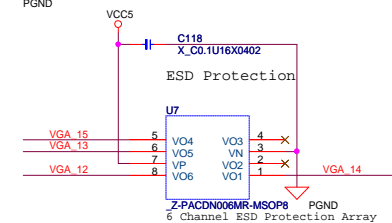
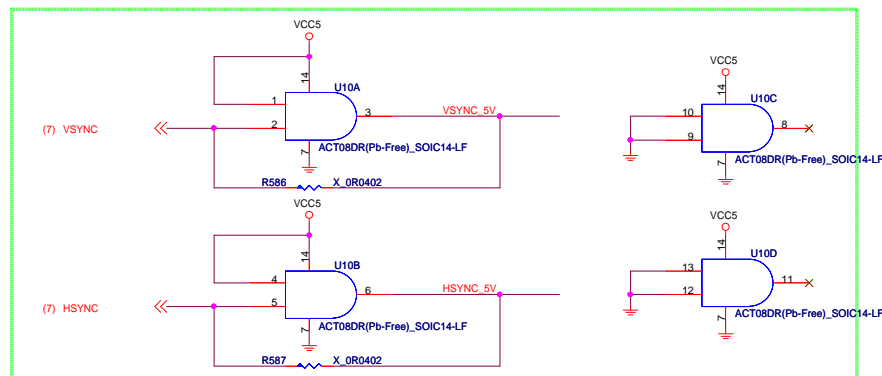
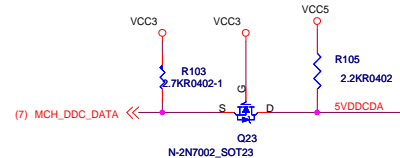
VIDEO Connectors

MS-7400

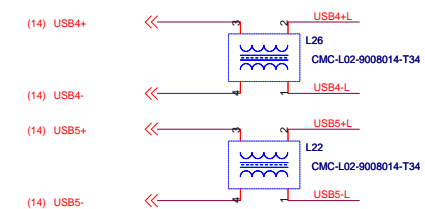
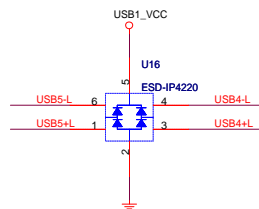
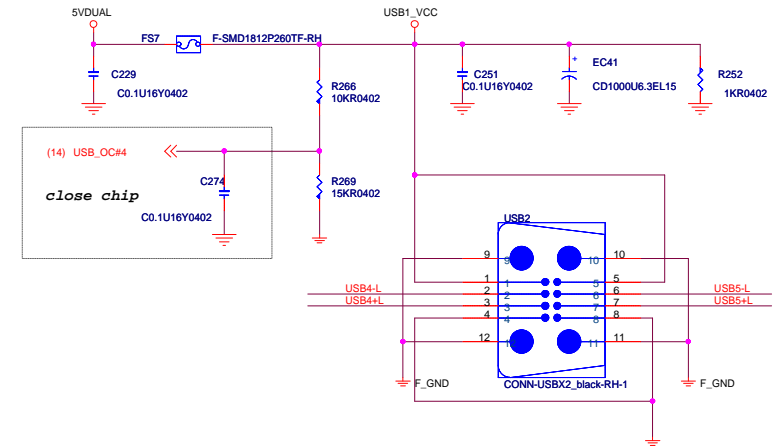
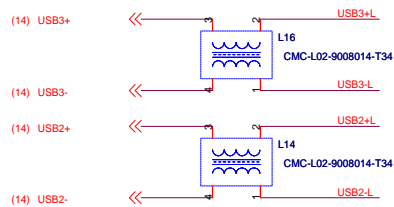
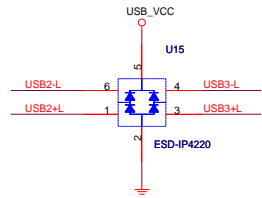
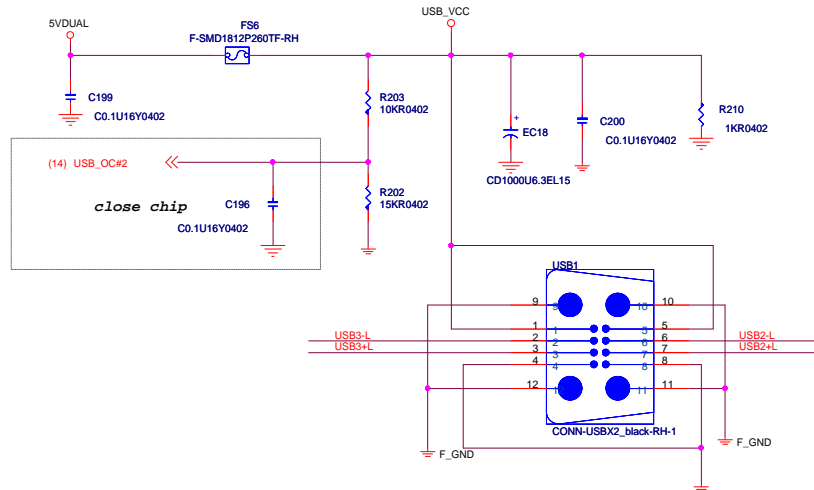
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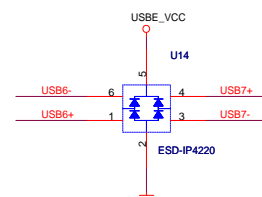
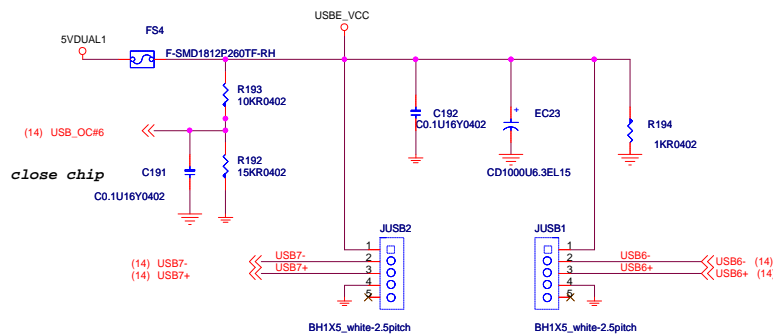
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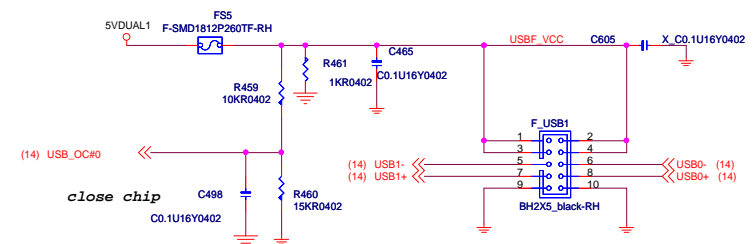
REAR USB PORT



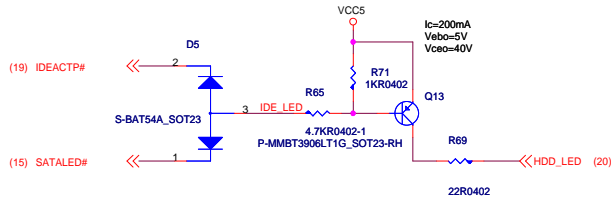
EXTERNAL USB PORT 0,1



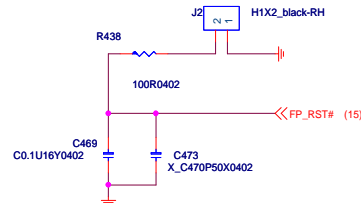
FRONT PANEL USB PORT 6,7 CONNECTOR



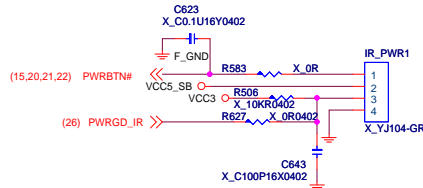
ATX connector / IR



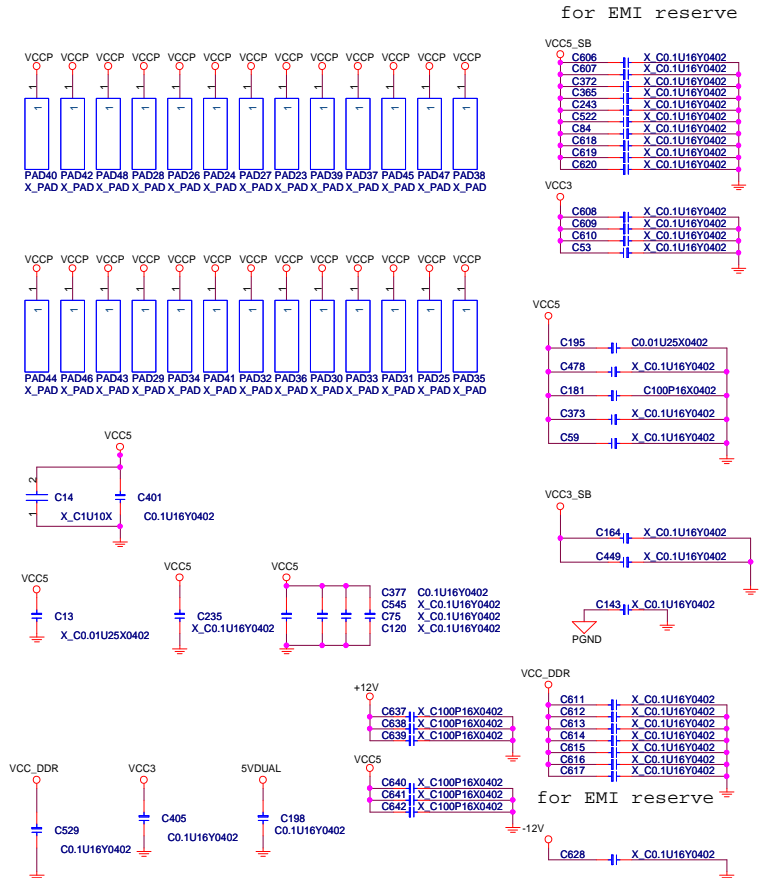
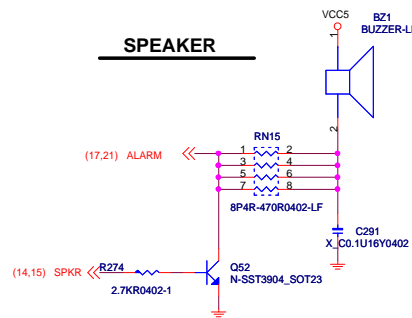
For Debug
Remove after MP



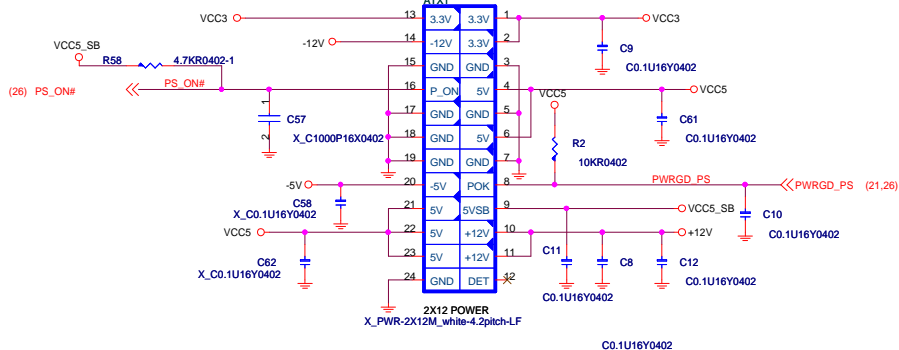
IR Connector



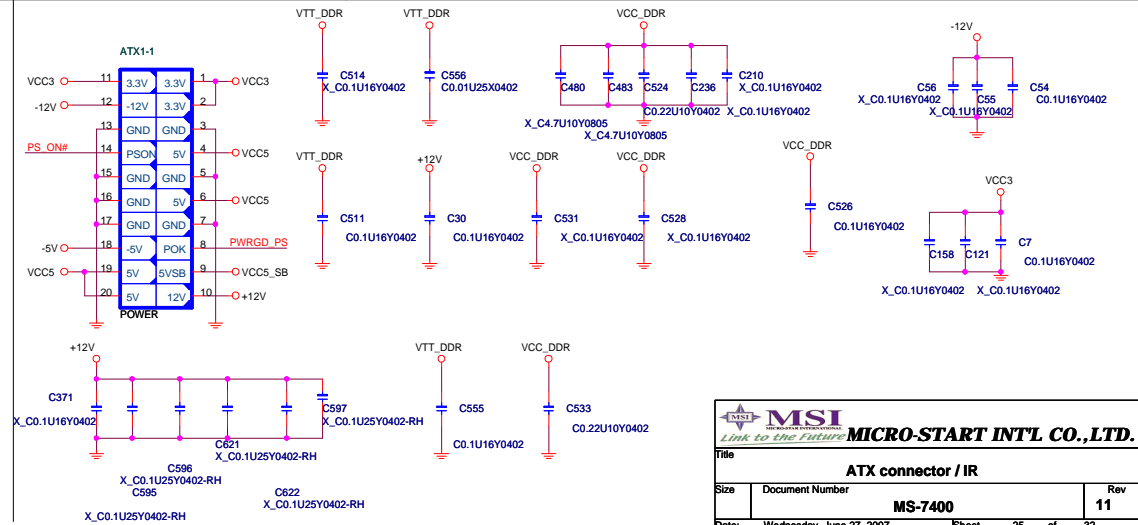
SPEAKER

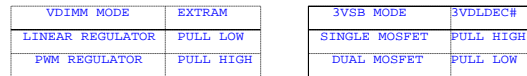


ATX Connector

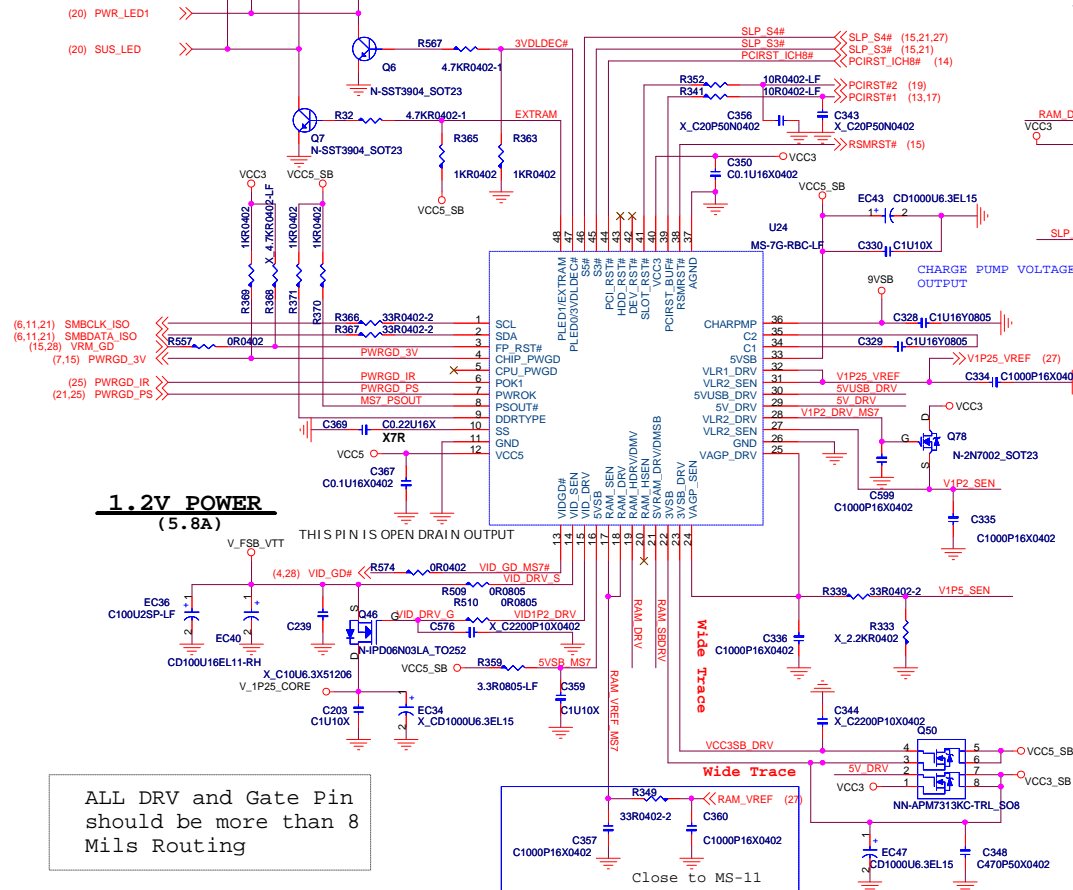


11,12,23,24pin:reserve



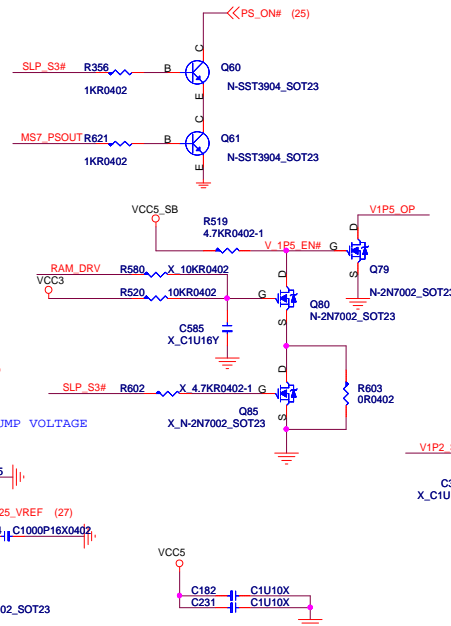
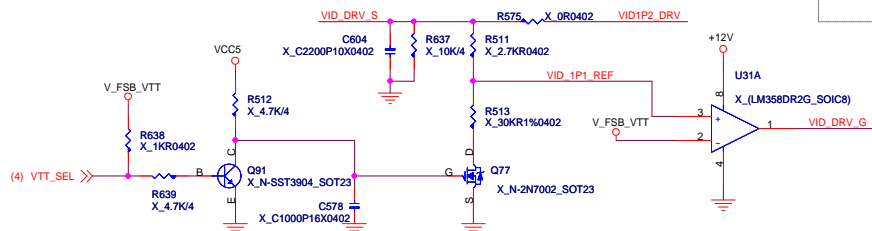


ACPI Controller

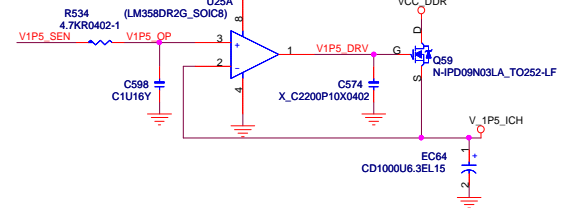


Kinesifiled VTT SEL for HK4B

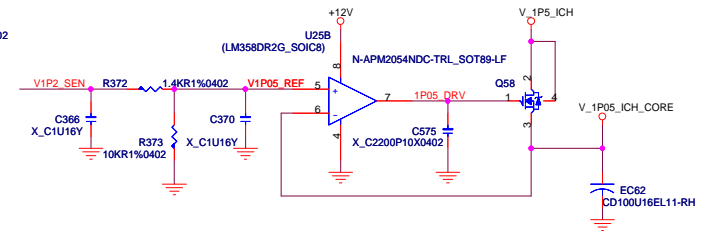
```
Remove R509,R510,R547
Stuff R575,R511,C604,U31,R513,Q77,R512,Q91,R637,R638,R639
```



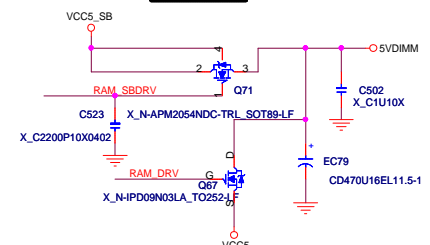
ICH9 1.5V POWER
(2.75A)



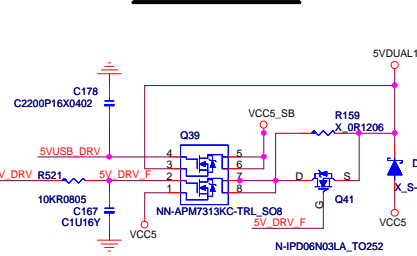
ICH9 1.05V POWER
(2A)



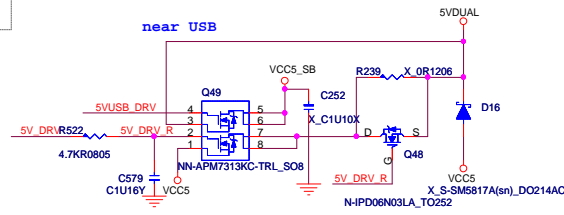
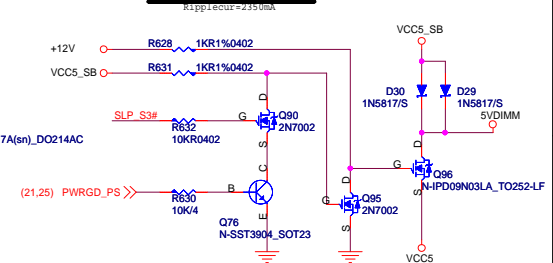
5VDIMM

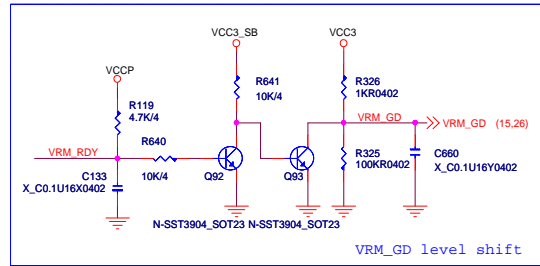


5V DUAL Power

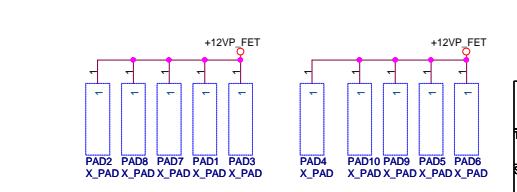
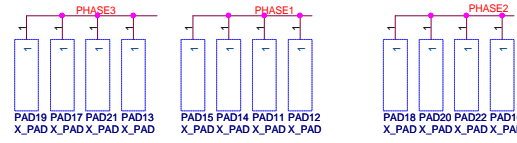
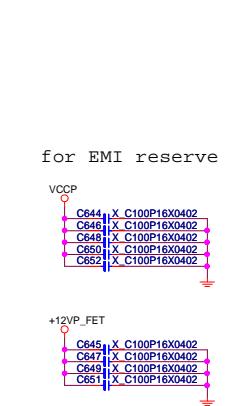
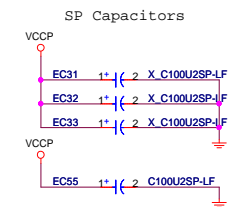
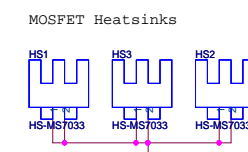
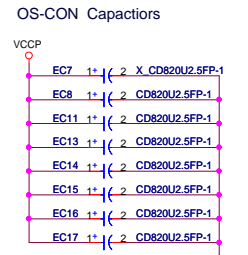
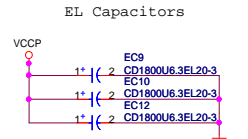
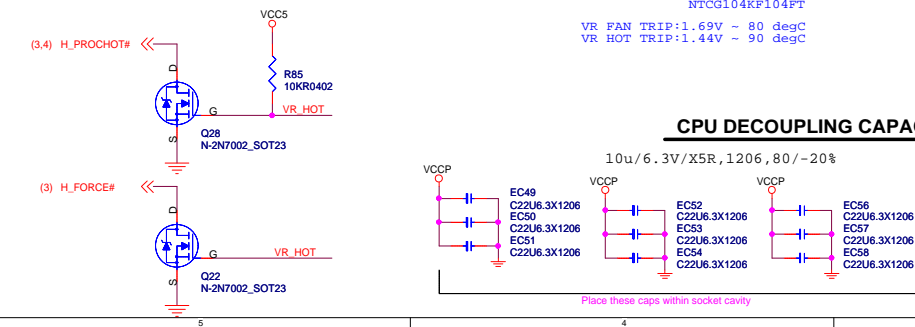
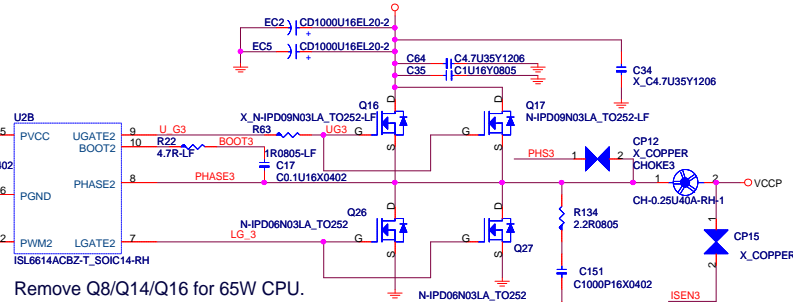
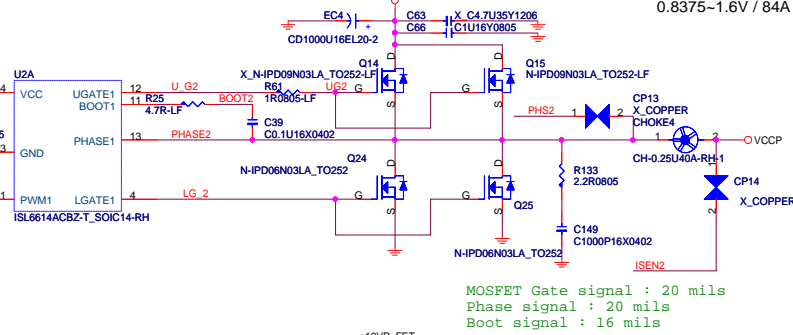
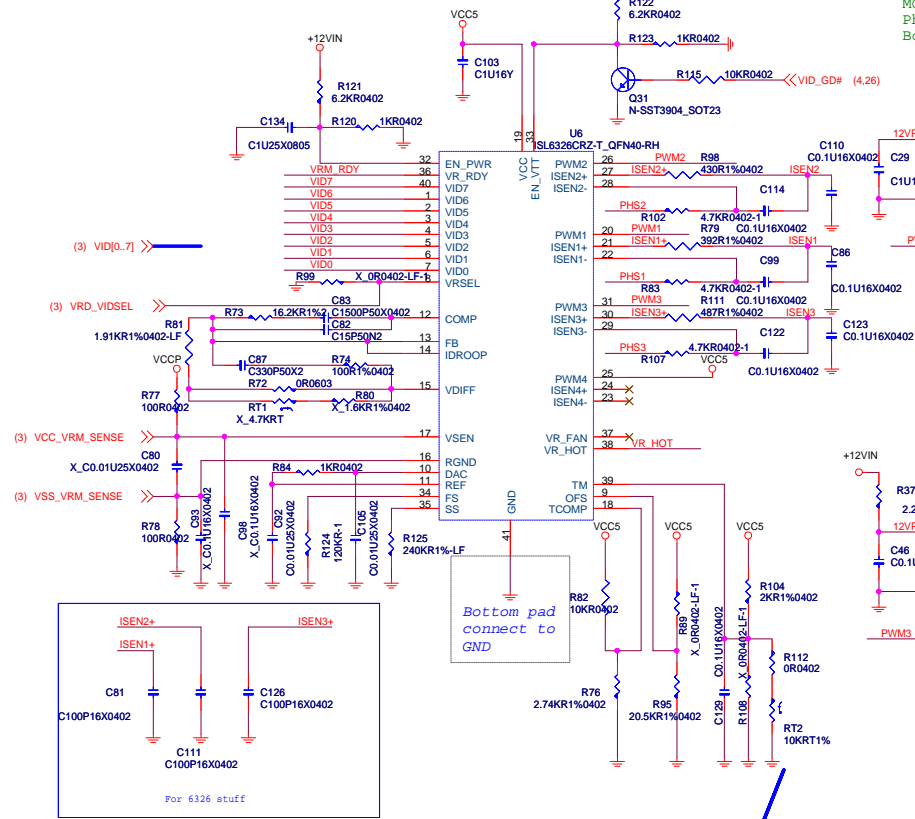
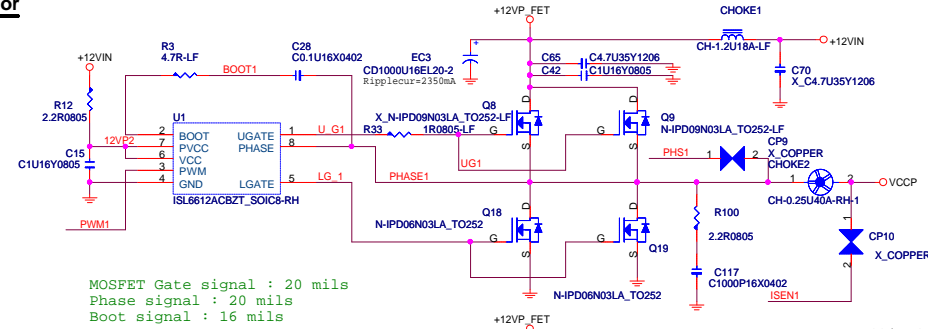
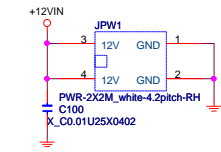


5VDIMM for iAMT

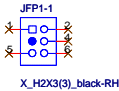
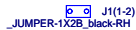
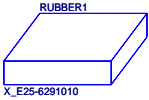
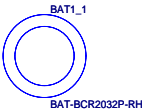




ATX12V Power Connector



Auto-BOM Manual Parts



JFP1

1	PWR_LED	2	POW_SW
	NC	4	SLP_LED
5	GND	6	HDD_LED

For HK4B

ICH9

GPIO Pin	Type	Default	Function	Power	MUXED/ UNMUXED	Pin-out
GPIO 0	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	N7
GPIO 1	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AK21
GPIO 2	I/O	GPI	PIRQ#E pull-up to VCC3 with 8.2K	VCC3		K6
GPIO 3	I/O	GPI	PIRQ#F pull-up to VCC3 with 8.2K	VCC3		L7
GPIO 4	I/O	GPI	PIRQ#G pull-up to VCC3 with 8.2K	VCC3		F2
GPIO 5	I/O	GPI	PIRQ#H pull-up to VCC3 with 8.2K	VCC3		G2
GPIO 6	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AH22
GPIO 7	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AK23
GPIO 8	I/O	GPI	SIO_PME# connect to SIO,pull_up VCC3_SB with 10k	VCC3_SB	UNMUXED	A20
GPIO 9	I/O	GPO/WOL	WOL_ENABLE/GPIO9, pull-down with 100K	VCC3_SB	MUXED	A18
GPIO 10	I/O	GPI	Detect AUDIO Devices, Pull-up to VCC3_SB with 10K	VCC3_SB	MUXED	C17
GPIO 11	I/O	SMBALERT#	SMB_ALERT# pull-up to VCC3_SB with 10K	VCC3_SB		C16
GPIO 12	I/O	GPO	NC	VCC3_SB	UNMUXED	A8
GPIO 13	I/O	GPI	Enable/Disable VT6410 IDE controller, pull-up VCC3_SB with 10K	VCC3_SB	UNMUXED	A19
GPIO 14	I/O	GPI	Pull-up to VCC3_SB with 10K directly	VCC3_SB	MUXED	A9
GPIO 15	I/O	GPO	PCI_STOP# for CK505(Not Use)	VCC3_SB	MUXED	C15
GPIO 16	I/O	GPO	SIO HWM_INT,pull_up VCC3 with 10K(change to GPI)	VCC3	UNMUXED	M2
GPIO 17	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3	MUXED	AH21
GPIO 18	I/O	GPO	NC	VCC3	UNMUXED	K1
GPIO 19	I/O	GPI	Pull-up to VCC3 with 10K	VCC3		AE20
GPIO 20	I/O	GPO	NC	VCC3	UNMUXED	AF5
GPIO 21	I/O	GPI	Pull-up to VCC3 with 10K	VCC3		AK25
GPIO 22	I/O	GPI	Pull-up to VCC3 with 10K	VCC3	MUXED	AJ24
GPIO 23	I/O	LDRQ1#	LDRQ_1# pull_up VCC3 with 10K(Not Use)	VCC3	MUXED	J3
GPIO 24	I/O	GPO	NC	3.3V_SB	MUXED	A14
GPIO 25	I/O	GPO	CPU_STOP# for CK505(Not Use)	3.3V_SB	UNMUXED	B18
GPIO 26	I/O	GPO	S4 STATE#	3.3V_SB		C11
GPIO 27	I/O	GPO	NC	3.3V_SB		A11
GPIO 28	I/O	GPO	NC	3.3V_SB		G18
GPIO 29	I/O	OC5#	OC#4 connect to USB connector	3.3V_SB		N1
GPIO 30	I/O	OC6#	OC#6 connect to USB connector	3.3V_SB		N5
GPIO 31	I/O	OC7#	OC#6 connect to USB connector	3.3V_SB		M1
GPIO 32	I/O	GPO	SIO_SMI# connect to SIO,pull_up VCC3 with 10k	VCC3	UNMUXED	K2
GPIO 33	I/O	GPO	Pull-up to VCC3 with 4.7K	VCC3	UNMUXED	AF6
GPIO 34	I/O	GPO	NC	VCC3	UNMUXED	AH5
GPIO 35	I/O	GPO	NC	VCC3		L1
GPIO 36	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AE21
GPIO 37	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AE22
GPIO 38	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AK24
GPIO 39	I/O	GPI	Pull-down to GND with 10K directly	VCC3		AH23
GPIO 40	I/O	OC1#	OC#0 connect to USB connector	3.3V_SB		N3
GPIO 41	I/O	OC2#	OC#2 connect to USB connector	3.3V_SB		P7
GPIO 42	I/O	OC3#	OC#2 connect to USB connector	3.3V_SB		R7
GPIO 43	I/O	OC4#	OC#4 connect to USB connector	3.3V_SB		N2
GPIO 44/45	I/O	OC8/9#	OC#6 connect to USB connector	3.3V_SB		P3/R6
GPIO 46/47	I/O	OC10/11#	OC#6 connect to USB connector	3.3V_SB		T7/P1
GPIO 48	I/O	GPI	Pull-up to VCC3 with 10K directly	VCC3		AD20
GPIO 49	I/O	GPO	DMI strapping ,pull-down 2.2K to GND	VCC3		AJ25
GPIO 50	I/O	REQ1#	REQ1 pull-up to VCC5 with 2.7K	VCC5	MUXED	G13
GPIO 51	I/O	GNT1#	GNT1#	VCC3	MUXED	A7
GPIO 52	I/O	REQ2#	REQ2 pull-up to VCC5 with 8.2K	VCC5	MUXED	F13
GPIO 53	I/O	GNT2#	GNT2#	VCC3	MUXED	C7
GPIO 54	I/O	REQ3#	REQ3 pull-up to VCC5 with 2.7K	VCC5	MUXED	G8
GPIO 55	I/O	GNT3#	GNT3#(Not Use)	VCC3	MUXED	F7
GPIO 56	I/O	GPI	Pull-up to VCC3_SB with 10K directly	3.3V_SB	MUXED	F16
GPIO 57	I/O	GPI	Pull-up to VCC3_SB with 10K directly	3.3V_SB	MUXED	C12
GPIO 58	I/O	SPI_CS1	SPI_CS#(Not Use) , SPI_CS1_F#(Not Use)	3.3V_SB	MUXED	F23
GPIO 59	I/O	OC0#	OC#0 connect to USB connector	3.3V_SB		P5
GPIO 60	I/O	LINKALERT	LINKALERT# pull-up to VCC3_SB with 10K	3.3V_SB		F18

PCI Configuration

DEVICE	MCP1 INT Pin	REQ# /GNT#	IDSEL	CLOCK
VT6410	PIRQ#F	PREQ#2 PGNT#2	AD20	RAIDCLK
Riser slot (PCI1)	PIRQ#B PIRQ#C PIRQ#D PIRQ#A	PREQ#1 PGNT#1	AD17	PCI_CLK1
Riser slot (CARD1)	PIRQ#C PIRQ#D PIRQ#A PIRQ#B	PREQ#0 PGNT#0	AD18	PCI_CLK2

DDRII DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 1	0A0H	SCLK_A0/SCLK_A0# SCLK_A1/SCLK_A1# SCLK_A2/SCLK_A2#
DIMM 2	0A4H	SCLK_B0/SCLK_B0# SCLK_B1/SCLK_B1# SCLK_B2/SCLK_B2#

SIO SCH5017

PIN NAME	PIN#	USAGE	Input/Output
GP12	96	GPIO_KB	OUTPUT
GP27	36	SIO_SMI#	OUTPUT
GP42	90	SIO_PME#	OUTPUT
Intrd_in~	33	Clear Password	INPUT

SMBus DISTRIBUTION

SMBus	Power	Load
SMBCLK	VCC3_SB	ICH9, PCI EXPRESS x16,x1
SMBCLK_ISO	VCC3	DIMM, CLK GEN, SIO, MS7

JUMPER SETTING

JBAT1	(1-2)Normal	(2-3)Clear
J1	(1-2) OPEN Clear	(1-2) short Normal

LGA775-CPU		
0.8375V - 1.6000V Core	-	100A
1.2V FSB Vtt	-	4.6A

Bearlake (GMCH)		
1.2V FSB_VTT	-	1.2 A
1.25V Core	-	13.8A
1.25V DMI/PCI Exp.	-	2.47 A
1.8V VCC_DDR	-	3.73A
1.8V VCC_SMCLK	-	450mA
3.3V VCCA_DAC	-	66 mA
3.3V VCC33	-	15.8mA
1.25V Vcc CL	-	4.3A

ICH9		
1.05V Core	-	1.16A
1.25V DMI	-	41 mA
1.2V FSB_VTT	-	2 mA
1.5V_A USB/SATA/PLL	-	1.652A
1.5V_B PCI Exp.	-	0.646A
VCCRTC	-	6 uA
3.3V CL	-	19 mA
1.5V GbE LAN	-	87 mA
3.3V VccSus3_3	-	200mA
3.3V Vcc3_3	-	308mA
3.3V 10/100 LAN	-	19 mA
3.3V GbE LAN	-	1 mA
3.3V HDA	-	32 mA
3.3V SushDA	-	33 mA

VT6410 IDE Raid		
3.3V	-	TBD

HD Audio ALC262		
3.3V AUDIO	-	40mA
5V AUDIO	-	200mA

CK505		
3.3V VDD_48/PCI/REF	-	250mA
0.3V-1V CPU/SRC/DOT/PLL	-	80mA

Nineveh GbE		
3.3V_SB I/O & LED	-	15.5mA
1.8V AVDD	-	418.2mA
1.0V Core	-	277.2mA

ISL6326		
VCCP VRD11/10.x	-	0.8375V-1.6000V
3-Phase Switch	-	

W83310DS		
VTT_DDR	-	0.9V Linear 1.2A

MS11+ SW-Power		
VCC_DDR	-	1.8V PWM 18.43A

MS11+ SW-Power		
V_1P25_CORE	-	1.25V PWM 21.11A

MS7 Controller		
V_1P25_CL	-	1.25V Linear 4.3A
V_1P05_ICH	-	1.05V Linear 1.16A
V_FSB_VTT	-	1.2V Linear 5.8A
V_1P5_ICH	-	1.5V Linear 4.05A
VCC3_SB	-	3.3V Linear 3.96A
5VDUAL1	-	5V Switch 4.85A
5VDIMM	-	5V Switch 8.29A

DDRII x2 & TERMINATOR		
0.9V VTT_DDR	-	1.2A
1.8V VCC_DDR (S0,S1)	-	4.7A
1.8V VCC_DDR (S3)	-	400mA

PCI Express x16 slot		
+12V	-	5.5 A
+3.3Vaux (wake)	-	375mA
+3.3Vaux (no wake)	-	20mA
+3.3V	-	3.0A

AGP Extender riser slot		
	HK4B	Luner Bear
+12V	- 1A	- 1A
+5V	- 5.0A	- 5.0A
+3.3Vaux	- 2.28A	- 750mA
+3.3V	- 11.6A	- 10.6A
V_1P5_ICH	- 0.5A	

PCI_E x1 slot		
+12V	-	0.5A
+3.3Vaux	-	375mA
+3.3V	-	3.0A

PCI slot		
+12V	-	0.5A
+3.3Vaux	-	375mA
+3.3V	-	7.6A
+5V	-	5.0A

For Luner Bear

Card Board		
+3.3Vaux	-	1.2A

SPDIF Board		
+3.3V	-	1A
+3.3Vaux	-	0.33A
V_1P5_ICH	-	0.5A

For HK4B

USB x 9		
+5V (S0,S1)	-	4.5A
+5V (S3)	-	20mA

PS2		
+5V (S0,S1)	-	345mA
+5V (S3)	-	2.0mA

5VAudio	-	+5VR
	-	500mA

3V
Battery

+12V
ATX
2x2

+5V +3.3V +5VSB +12V
24.97A
ATX POWER

0A Change To 0B : (2007/04/18)

Page3.
* Reserve R383 between VRDSEL(AL3) and GND.(Intel core2 processor recommend)
Page6.
* Change C154/157/162 from 22p to 10p to slove rise/fall time issue.
Page15.
* Reserve pull high selection resistor R9/R19 for SIO's PWRBTN# and KBRST#.
Page18.
* Change C451&C452 from 22P to 27P and place a serial resistor(R130/30ohm) on XTAL2.(Intel TA-181 recommend)
Page22.
* Change Q4/Q72 from P-SI2303/SOT23 to P06P03LCG_SOT89-3 for SYS/PWR fan.
Page23.
* Change C134/C129/C126(22P50N2) to 3.3P50N2 and add 3.3P50N2 on C130/C127/C125 for RGB rise/fall time issue.
Page26.
* For AMT initial fail when power-off by push power bottom 4secs, add 5VDIMM for AMT circuit.
(R628/R631/R630/R632/D29/D30/Q76/Q90/Q95/Q96)
* For Kensfield VTT_SEL ref voltage level fine tune, Change R511 from 33R to 2.7K, R513 from 365R to 30K.
* Remove EC87 on circuit for more layout spacing.
Page27.
* For AMT initial issue, add R397/R440 to change the refer source of RAM_VREF.
* Change EC74 from 560uf to 820uf to uniform componet.
Page28.
* Change choke2/3/4 from 0.3u/40A to 0.25u/40A.
* Change EC7/8/13/14/15/16/17 from 560uf to 820uf.
* Change R73 from 20K to 11K, R74 from 750ohm to 100ohm, R81from 1.8K to 1.54K, R95 from 18K to 24.3K.
R79 from 430ohm to 402ohm, R111 from 430ohm to 487ohm; Change C82 from 100p to 10p, C87 from 680p to 470p.
* Remove EC31/EC32/EC33.
(MSIT Power Team Recommend)

0B Change To 10 : (2007/06/12)

Page4.
* For Q35/G33 GTLREF voltage should be 0.635*VTT.
Unchabged for MCH_GTLREF_CPU.(Inetel MOW WW14)
Page6.
* Un-stuff the EMI cap of C157/C586 for the PCI_CLK of riser card.(HW/EMI)
Page14.
* Change the pull high reserve resistor of PGNT#3 from VCC3_SB to VCC3.(Intel ICH9)
Page15.
* For SPI_WP#, to add net GPIO13/61 from SIO, select GPIO13 for Ver.10.(NEC)
Page22.
* Change the library of Q4/Q72.(HW)
* Change the power source of KB/MS to separate the fuse function.(HW)
Page25.
Unstuff IR_PWR1 connector, only reserve.(NECP)
Page26.
* Add EC36 for V_FSB_VTT.(HW)
* Change R622/R623 to R26/R27 for LB.(HW)
Page27.
* Change C305 from 1uf to 4.7uf for more meet Intel CRB power sequency.(HW)
* Change C306/C540 from 1000p to 2200p for heavy load ring problem.(Power team)
Page28.
* Change R73 to 16.2k, R81 to 1.91K, C82 to 15pF, C87 to 330pF, R95 to 20.5k, R79 to 392R.
Change EC9/EC10/EC12 to 1800uF *3.(Power team)
* Remove Q8/Q14/Q16 for LB(95W CPU) only.(Power team)
* Remove the footprint of EC25/26/27/29/30 for VCCP power plane completeness.(Power team)