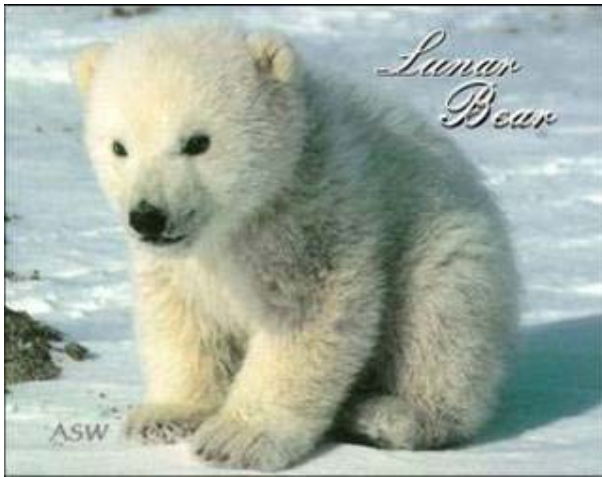


Lunar Bear

MS-7400 Version 0B



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)

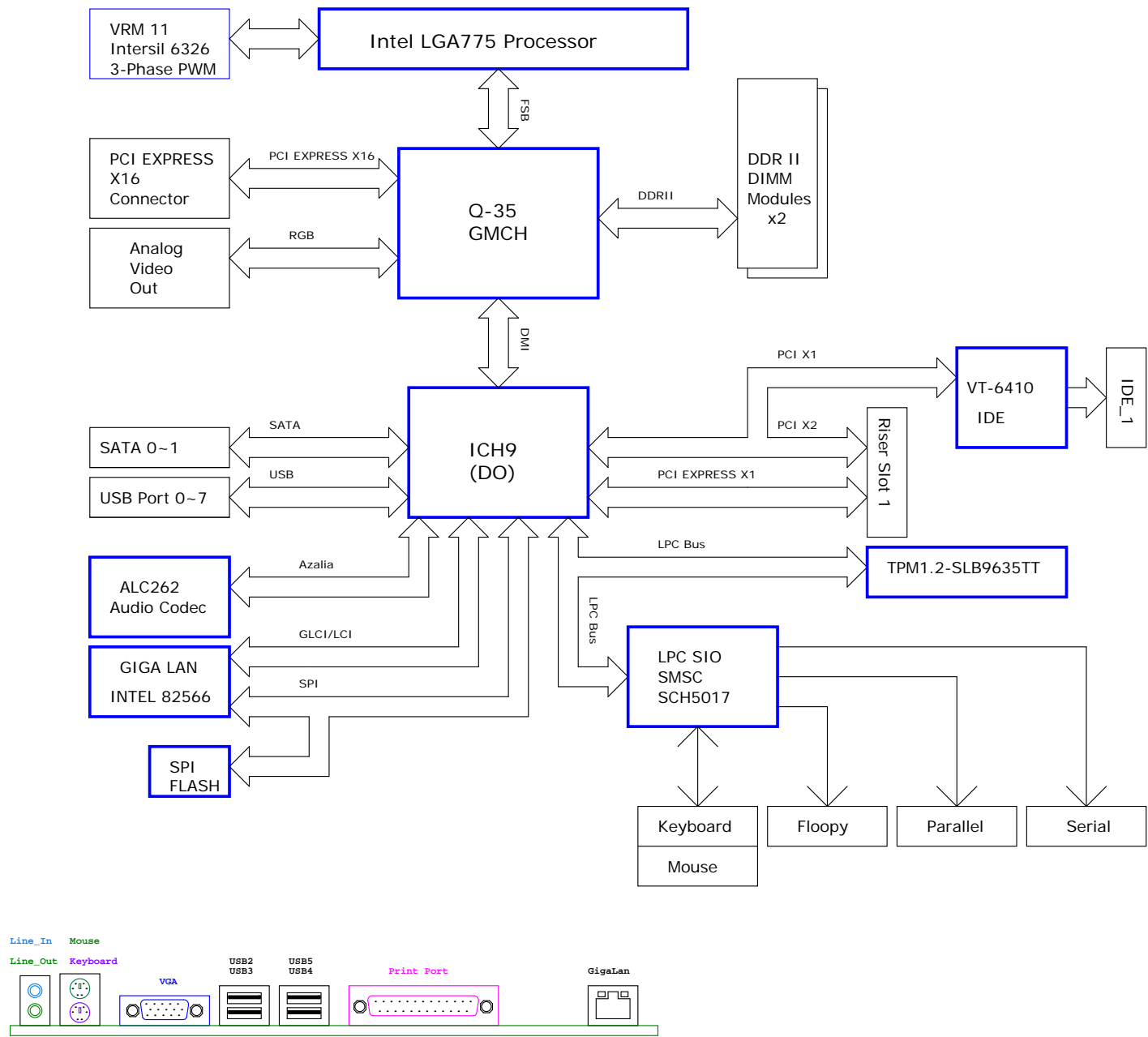
MS-6448 N1	ERP Number	Function
MS-7400-0B	601-7400-B20	Mainboard
MS-4046-2A	604-4046-020	Power Button/LED board
MS-4085-10	604-4085-010	Front Audio Board
MS-4048-3A	604-4048-06S	Front 1394/USB Board
MS-4121-0B	604-4121-B10	Riser Card

Cover Sheet	1
Block Diagram	2
Intel LGA775 CPU	3-5
CLOCK Generator-CY505YC64CT	6
Bearlake Q35 - MCH	7-10
DDR II System Memory 1 & 2	11
DDR II VTT Decoupling & TPM1.2	12
PCI EXPRESS X16 Slot	13
Intel ICH9(DO) - PCI & DMI & USB & PCI-E	14
Intel ICH9(DO) - SPI&SATA&HOST&LPC&MISC	15
Intel ICH9(DO)- POWER&GND	16
RISER Slot & JCR & SATA Connector	17
LAN-NINEVEH 82566	18
VIA VT6410 IDE	19
HD AUDIO-ALC262 & Front Panel	20
SIO SMSC SCH5017 & FDD	21
KB/MS/LPT/COM Port /FAN	22
VGA Connector	23
USB Connectors	24
ATX Connetcor & IR	25
ACPI CONTROLLER MS7	26
DIMM/GMCH/AMT POWER	27
VRM11 Intersil 6326 3Phase	28
Manual parts	29
GPIO & Jumper Setting	30
Power MAP	31
History	32

Model option table

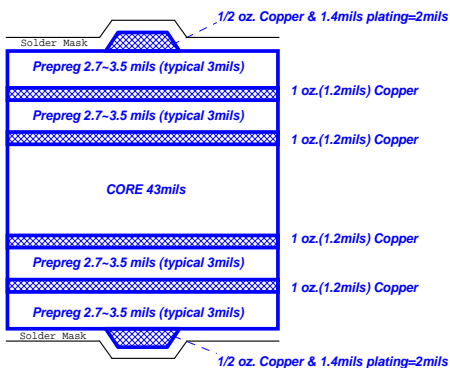
Model type	Function	BOM Config	ERP BOM No	BOM Opt.
MS-7400N1-0B	Bearlake Q35+ICH9 DO+Nineveh82566+VT6410	Cfg-7400-LB	601-7400-B20	L

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

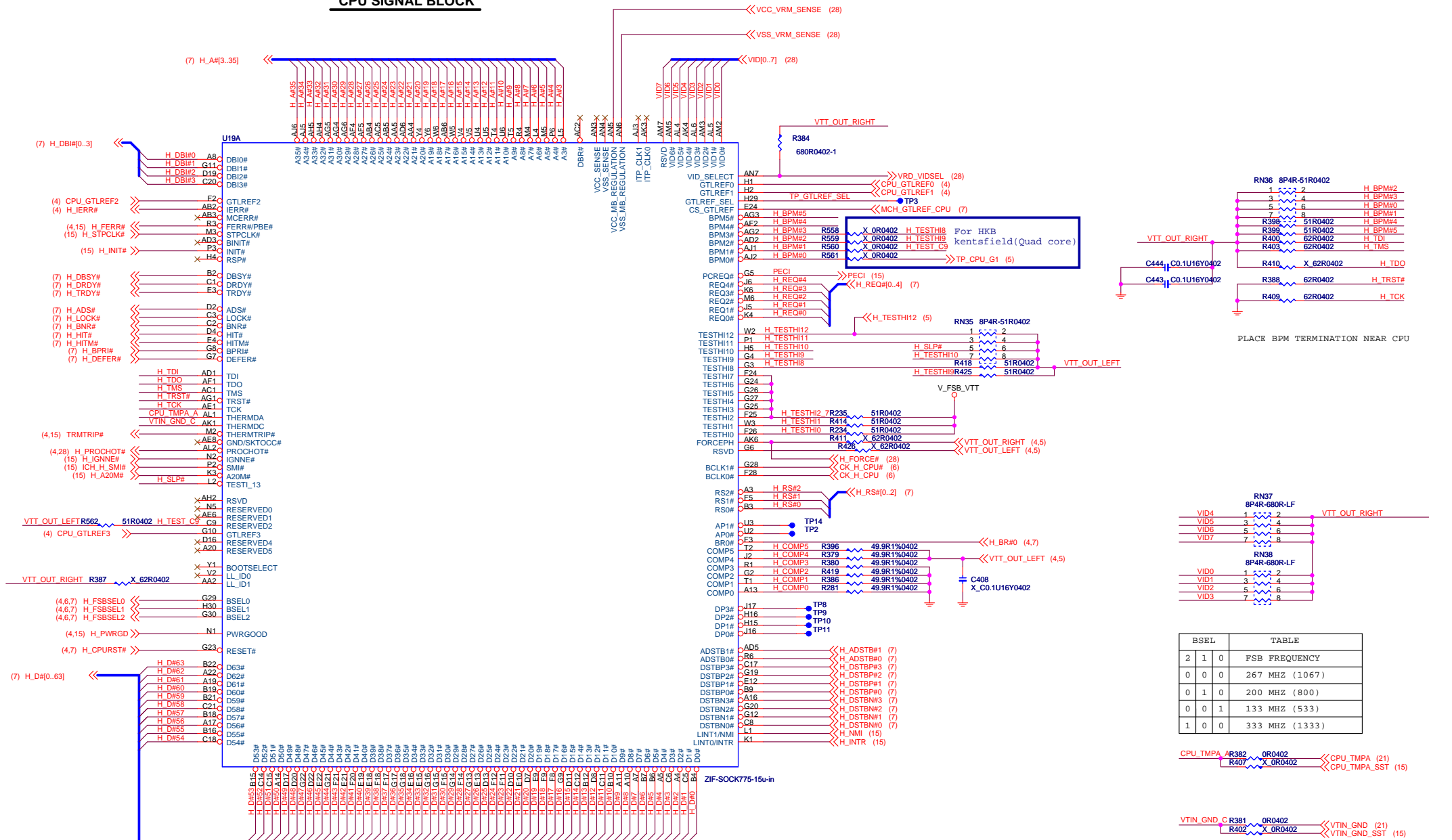
Interface	Impedance Required
FSB (All)	4x signals 42-ohm, others 50-ohm, single-ended
Controller Link	50-ohm, single-ended
DDR2(DQ, DQS, DM, CLK, CLK#)	40-ohm, single-ended
DDR2(Control)	43-ohm, single-ended
DDR2(Command)	33-ohm, single-ended
DDR3(CLK, CLK#)	36-ohm, single-ended
DDR3(DQ, DQS, DM)	50/37-ohm, 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 WCH breakout, then 50-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

 MICRO-START INTL CO., LTD.		
Title BLOCK DIAGRAM		
Size	Document Number MS-7400	Rev 0B
Date:	Tuesday, April 17, 2007	Sheet 2 of 32

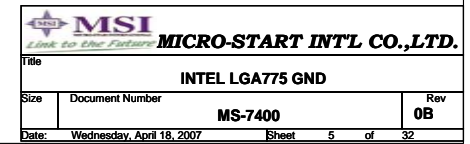
CPU SIGNAL BLOCK



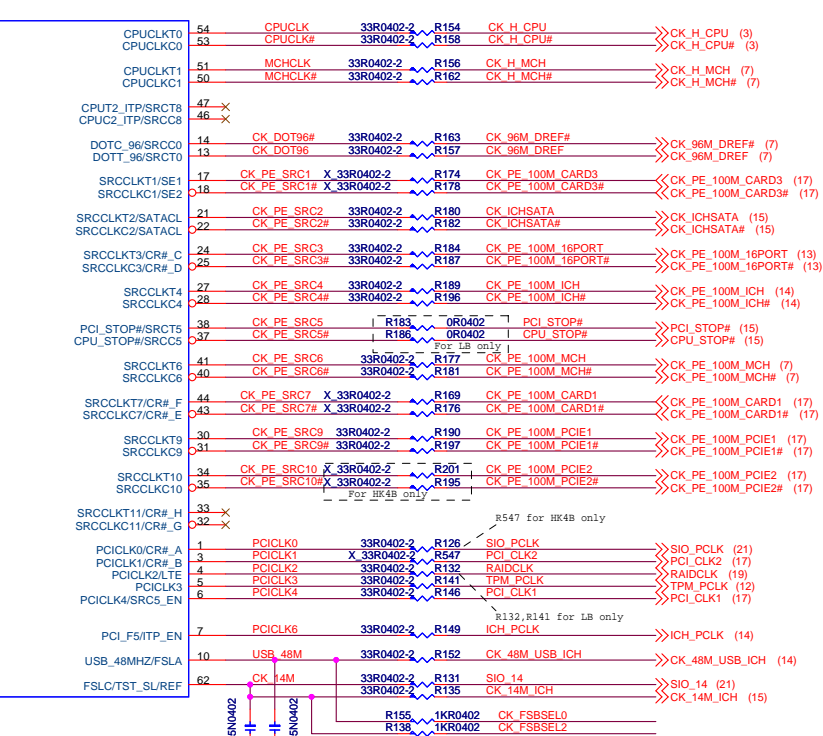
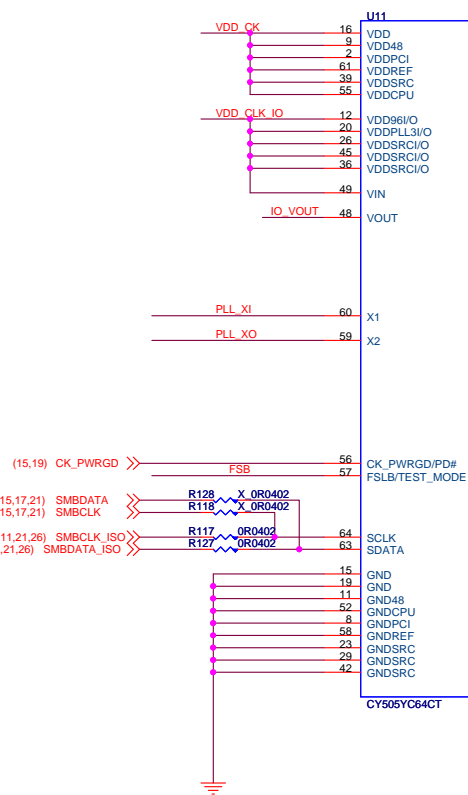
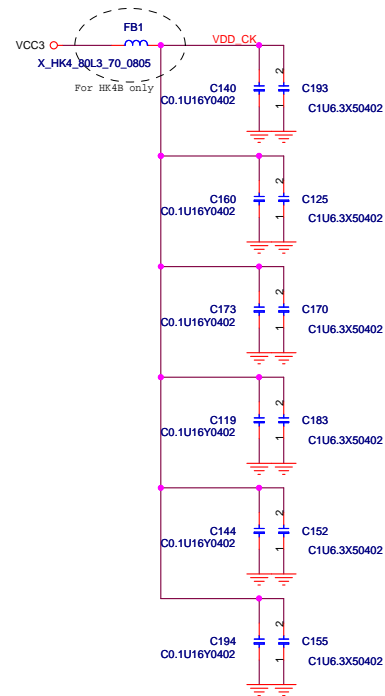
BSEL			TABLE
2	1	0	FSB FREQUENCY
0	0	0	267 MHZ (1067)
0	1	0	200 MHZ (800)
0	0	1	133 MHZ (533)
1	0	0	333 MHZ (1333)

CPU_TMPA_AR382 0R0402
R407 X_0R0402

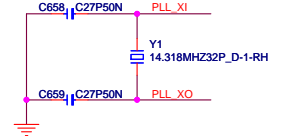
CPU_TMPA (21)
CPU_TMPA_SST (15)



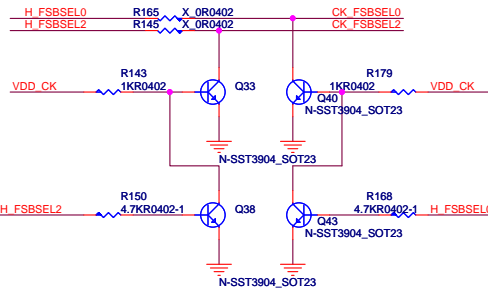
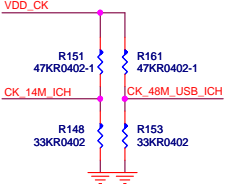
CLOCK Generator - CY505YC64DT



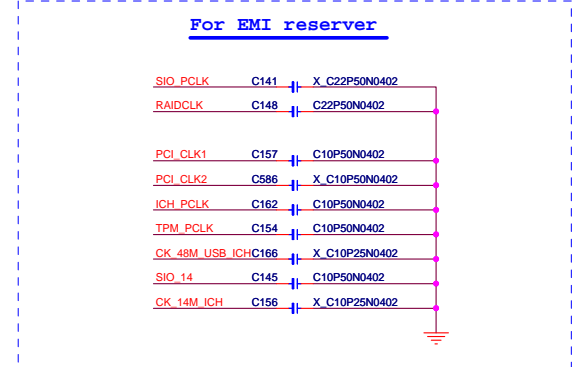
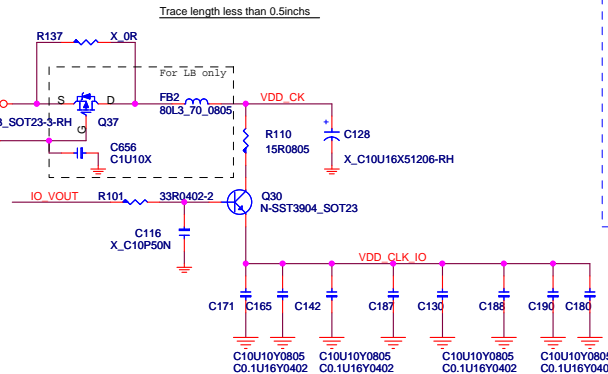
FSC Bit7	FSB Bit6	FSA Bit5	CPU MHz
0	0	0	266.66
0	0	1	133.33
0	1	0	200.00
0	1	1	166.66
1	0	0	333.33
1	0	1	100.00
1	1	0	400.00

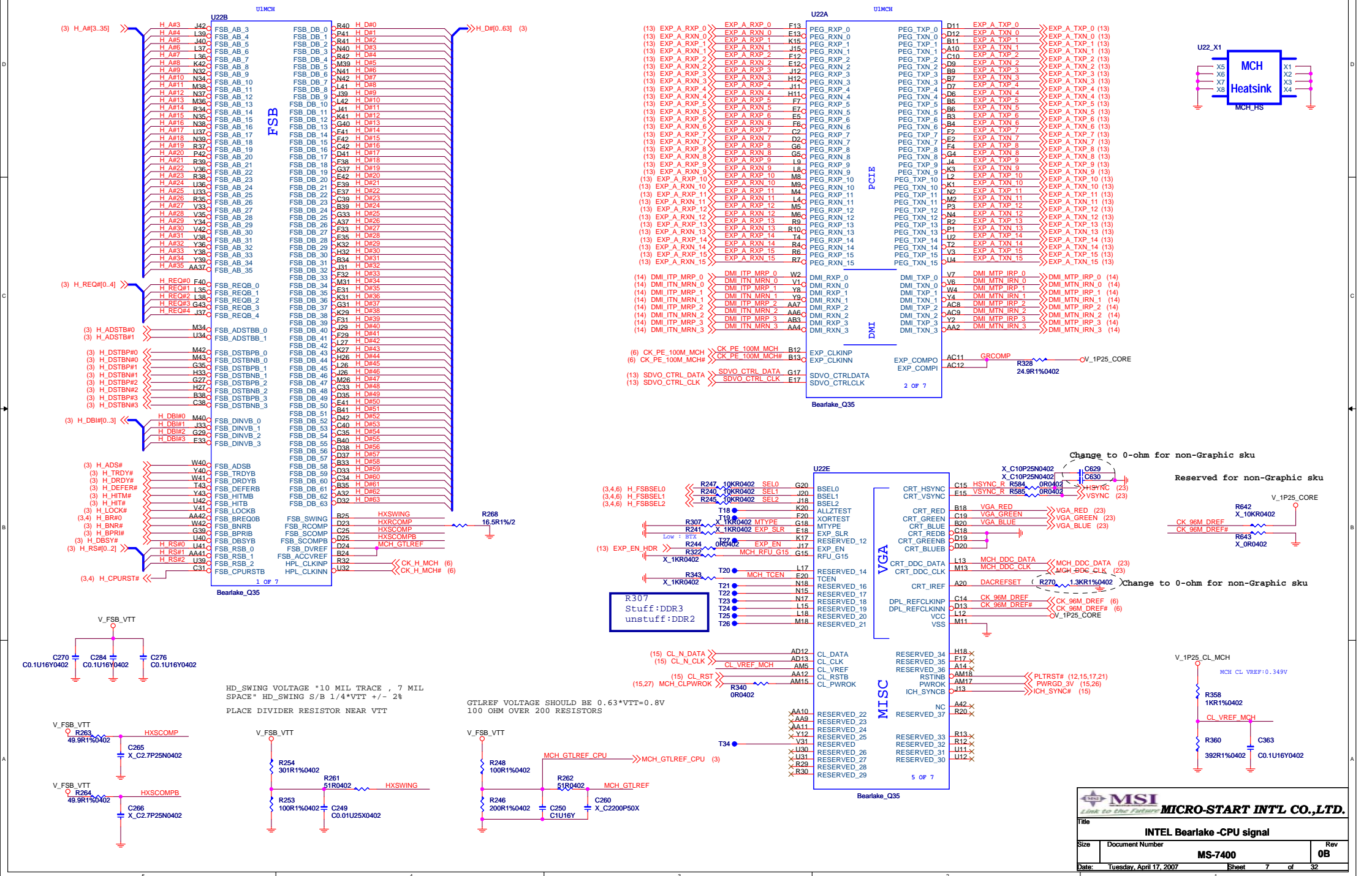


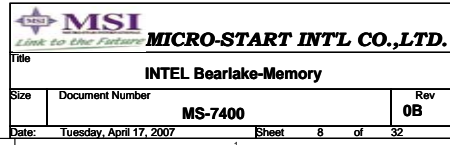
(3,4,7) H_FSBSEL1 > H_FSBSEL1 R147 1KR0402 FSB
(3,4,7) H_FSBSEL0 > H_FSBSEL0 R160 X 10KR0402/ISB 48M
(3,4,7) H_FSBSEL2 > H_FSBSEL2 R142 X 10KR0402/CK 14M

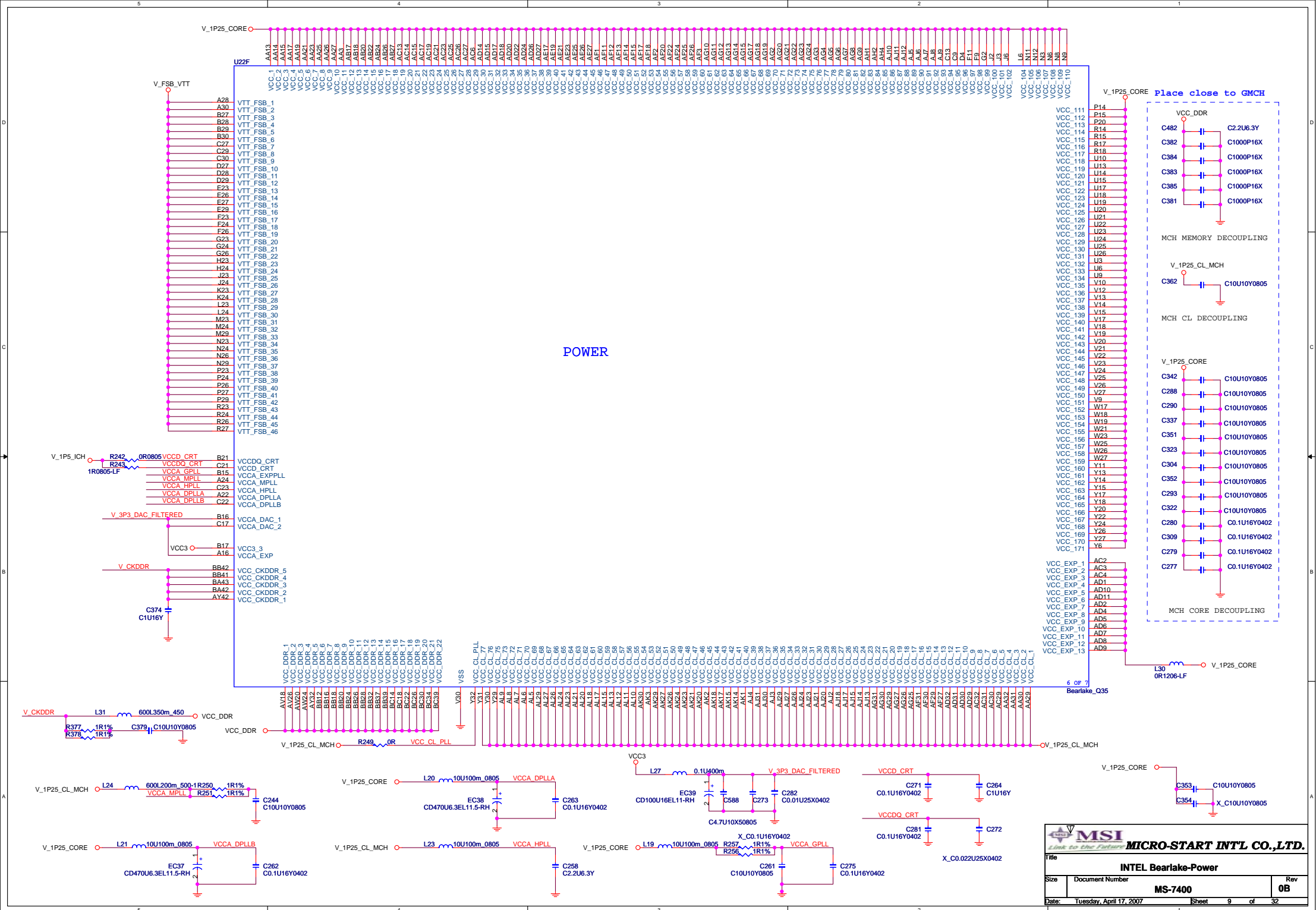


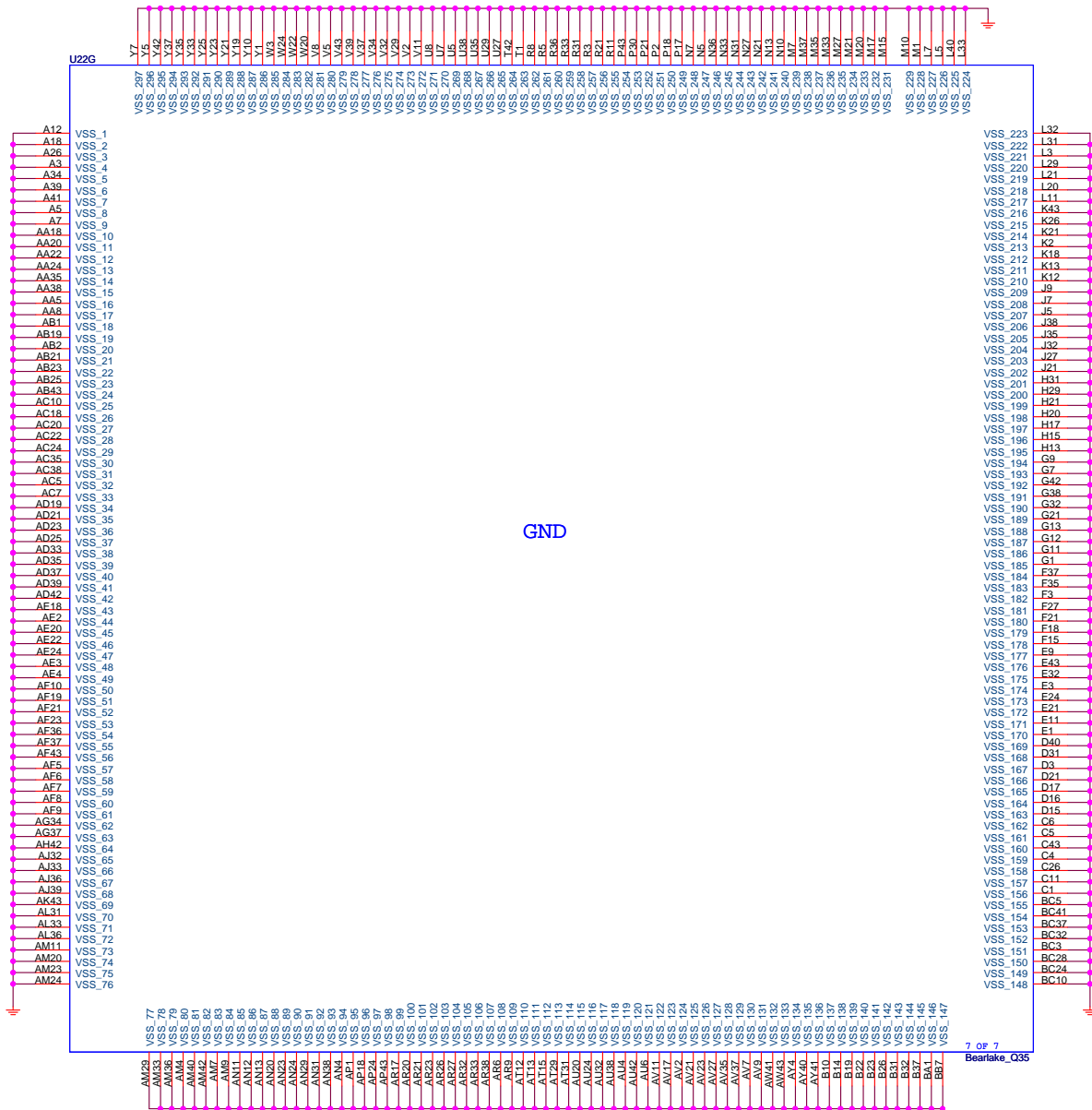
R594 0R For EMI reserver
LAN_GND

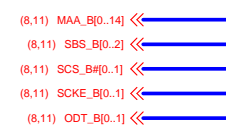
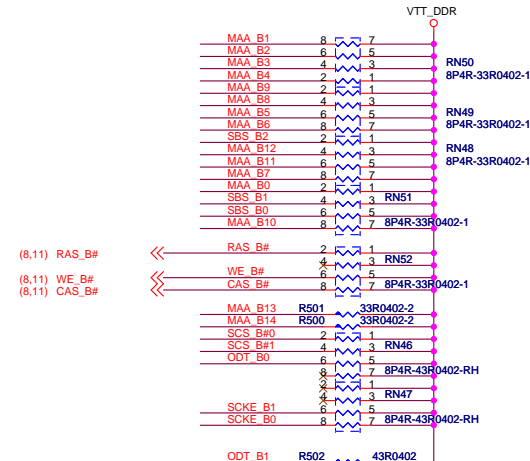
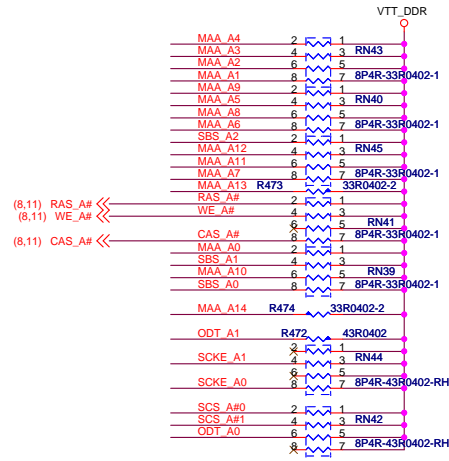
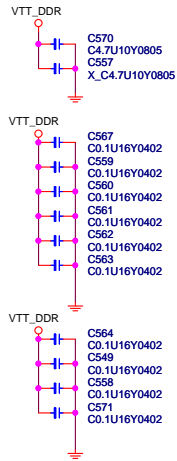
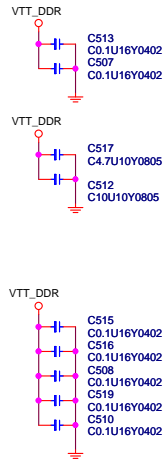




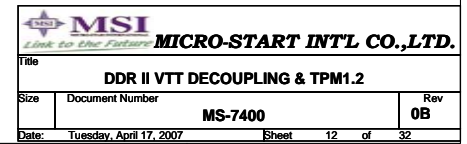
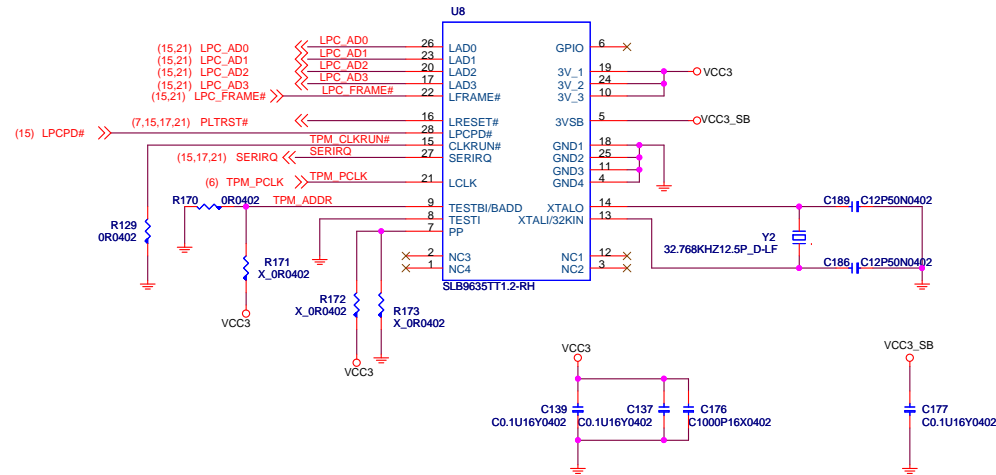
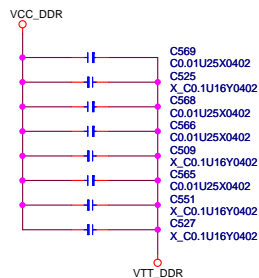
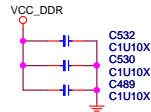
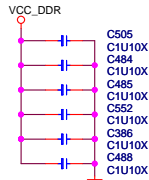
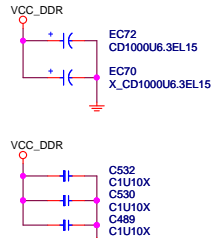


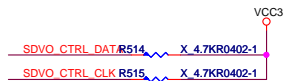


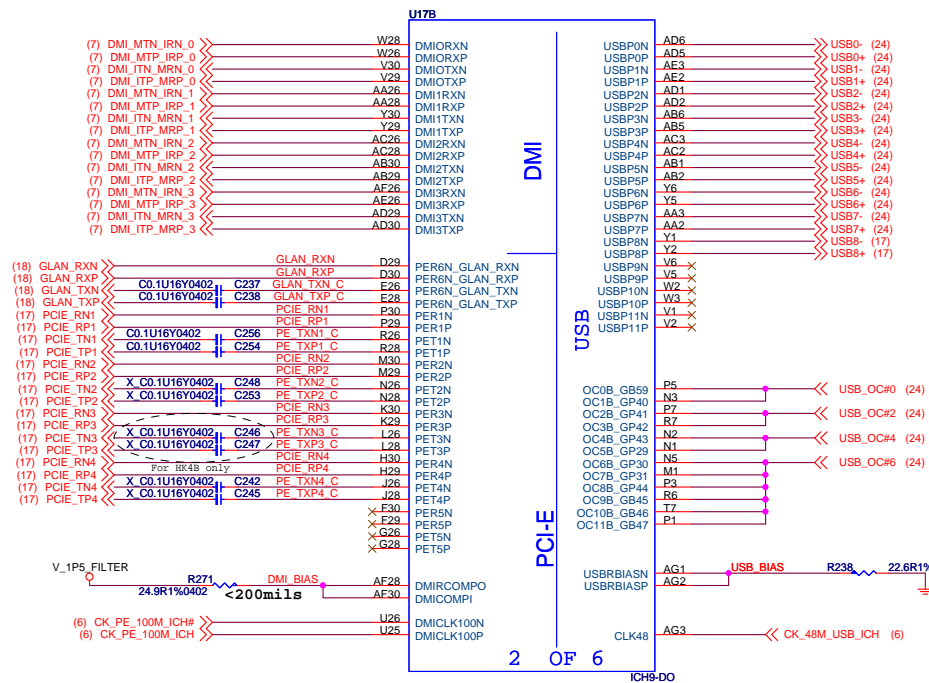
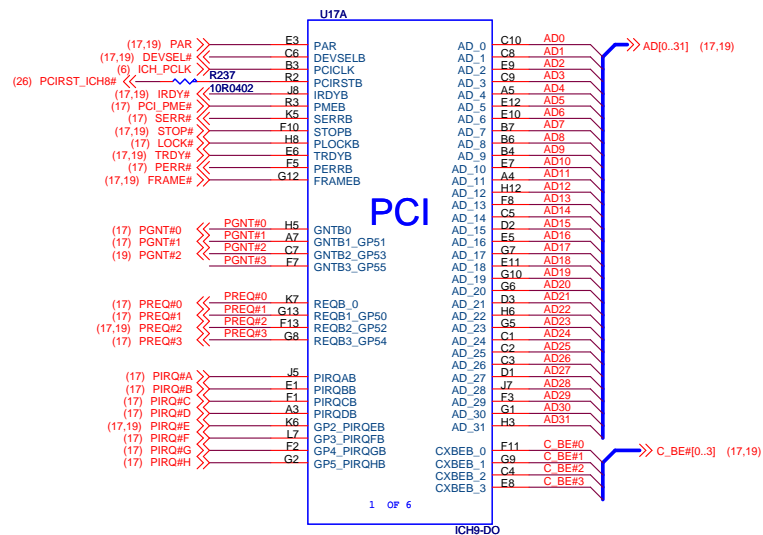




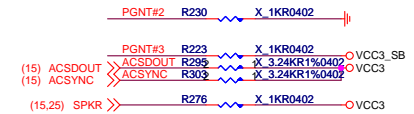
IO Address: 0x02E



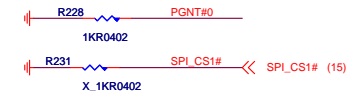




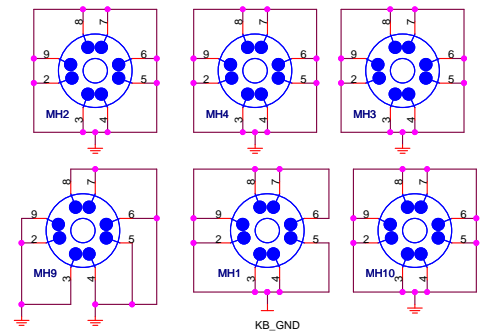
ICH9 H/W STRAPS			
SIGNAL	H	L	DES.
SPKR	DIS	EN	REBOOT
GNT3	DIS	EN	A16 OVERRIDE
INTVRMEN	EN	DIS	INT VRM
SATALED	NORM	REVERSE	PCIE 0-3 ORDER
HDA_SDOUT	DFX/ PCIE	N/A	XOR MODE/PCIE PORT CONFIG BIT 1
HDA_SYNC	SET BIT	N/A	PCIE PORT CONFIG BIT 0 (1-4)
GNT2	N/A	SET BIT	PCIE PORT CONFIG 2 BIT 0 (5-6)



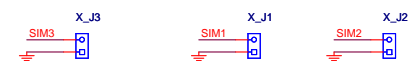
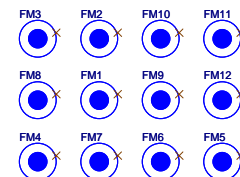
BOOT SELECT STRAPS			
BOOT DEVICE	GNT#0	SPI_CS1#	
FWH	1	1	
SPI	0	X	(Default)
PCI	1	0	




Mounting Holes

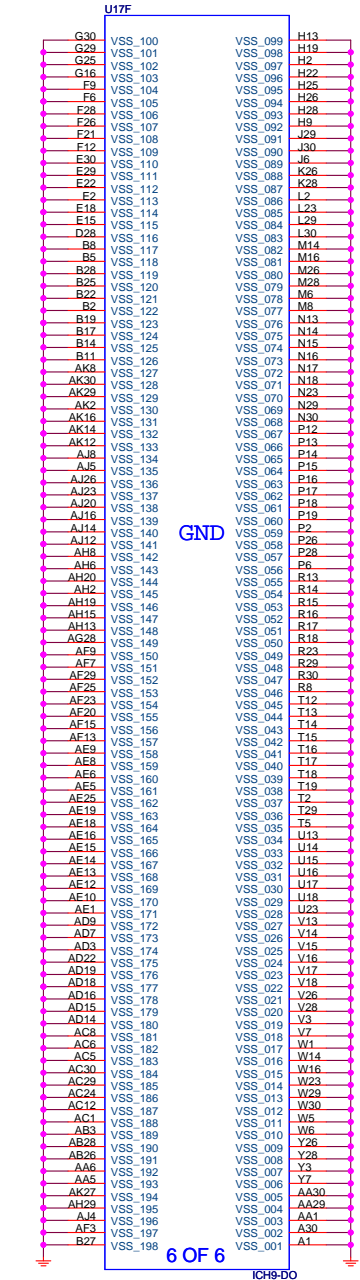
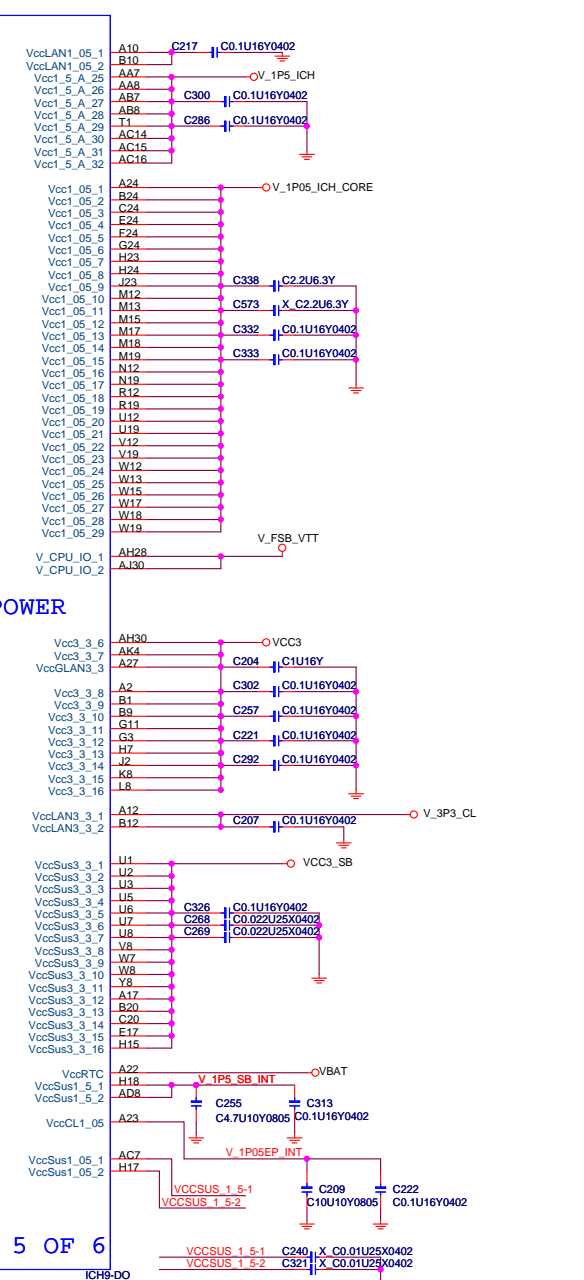
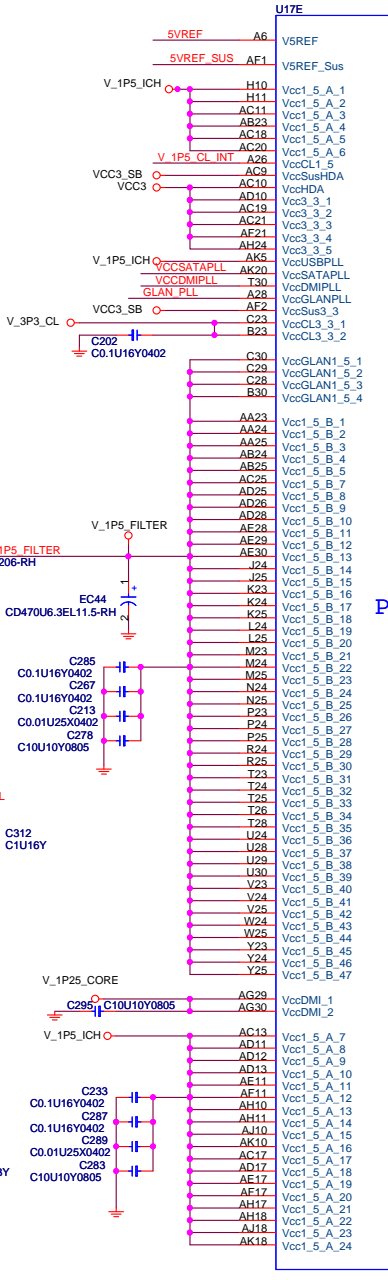
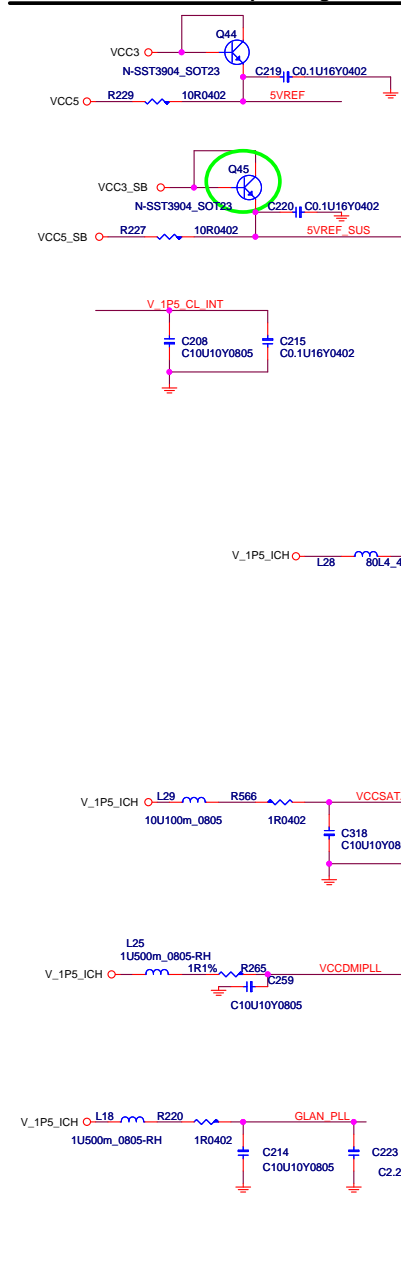


Optics Orientation Holes



 MSI <i>Link to the Future</i>					MICRO-START INT'L CO.,LTD.				
Title INTEL ICH9 PART1									
Size		Document Number MS-7400						Rev 0B	
Date:		Tuesday, April 17, 2007				Sheet		14 of 32	

5VREF & 5VREF_SUS Sequencing Circuit



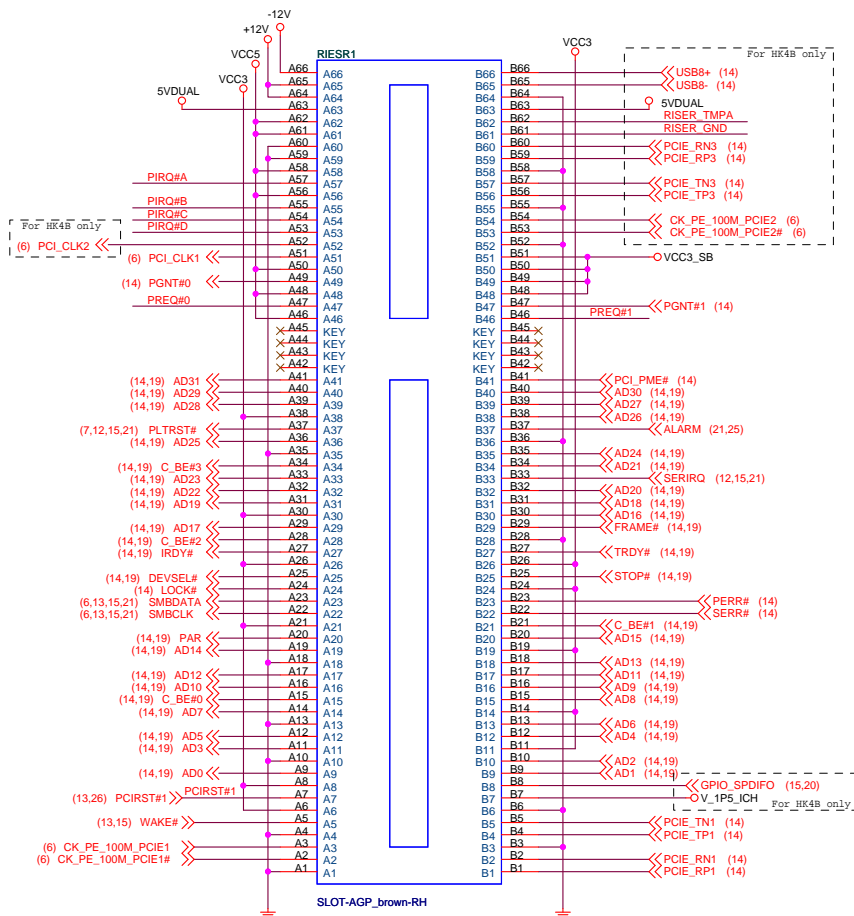
POWER

5 OF 6

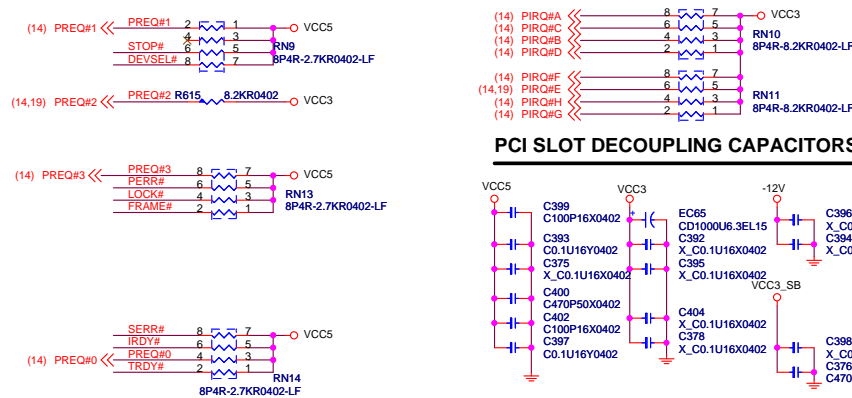
GND

6 OF 6

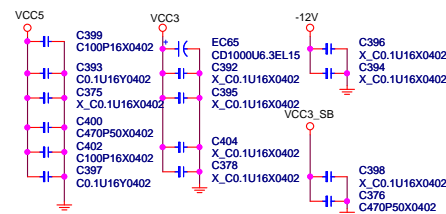
LB&HK4B riser card interface



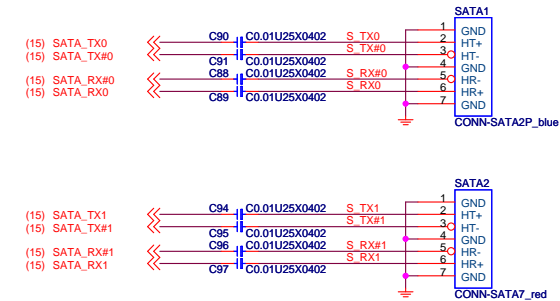
PCI PULL-UP / DOWN RESISTORS



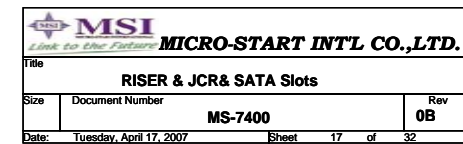
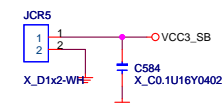
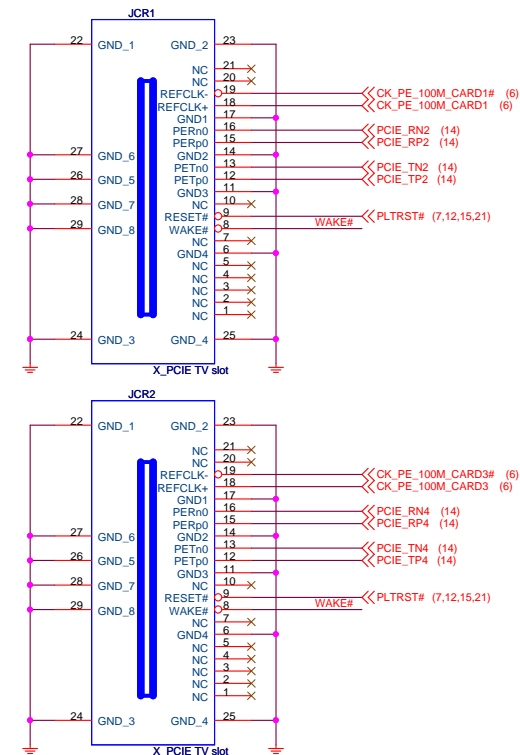
PCI SLOT DECOUPLING CAPACITORS



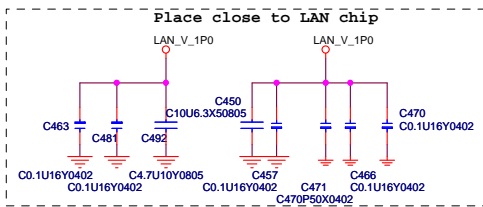
SERIAL ATA CONNECTOR BLOCK



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



LAN - NINEVEH

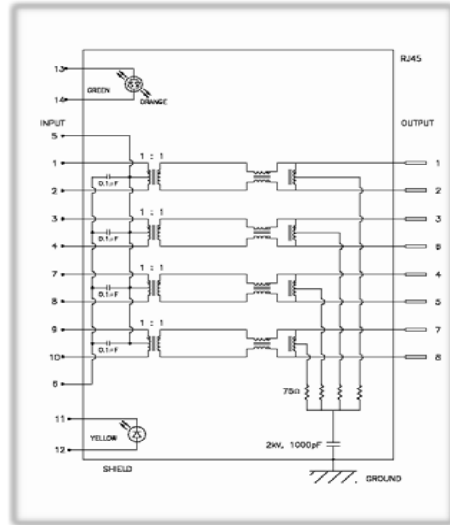


(14) GLAN_RXP
(14) GLAN_RXN
(14) GLAN_TXP
(14) GLAN_TXN

V_3P3_CL

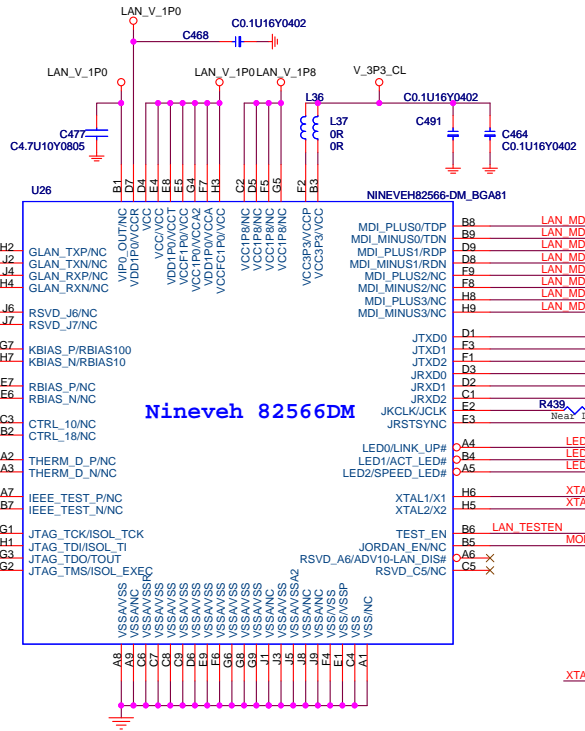


LAN1 structure



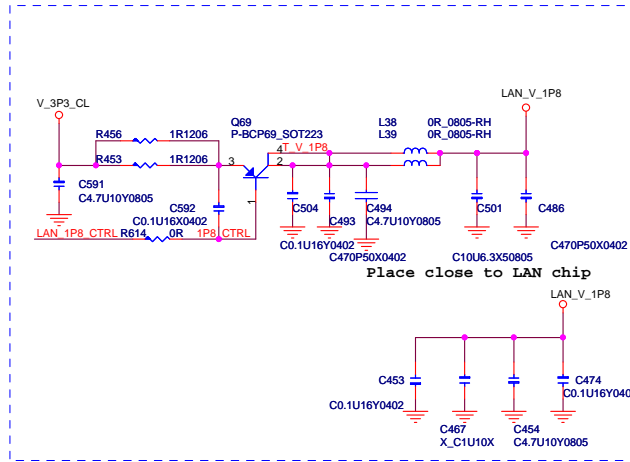
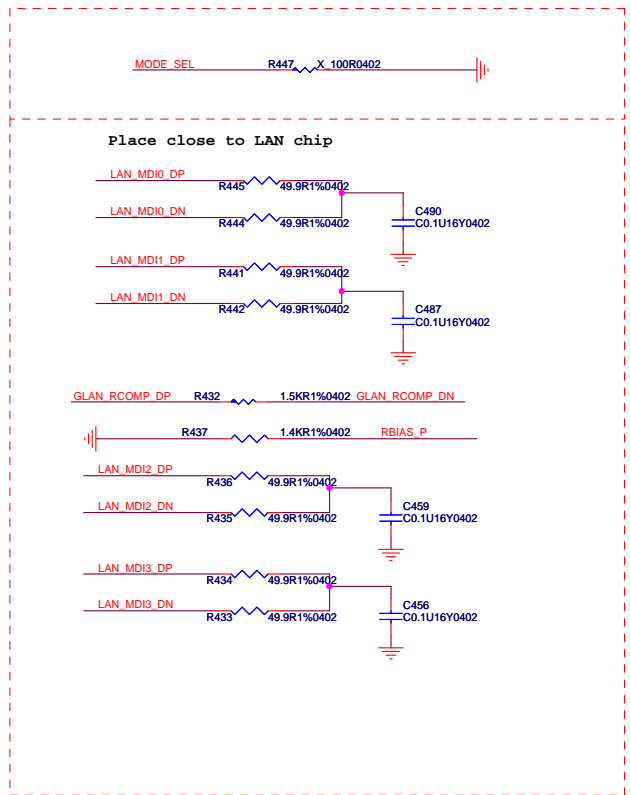
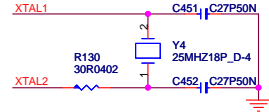
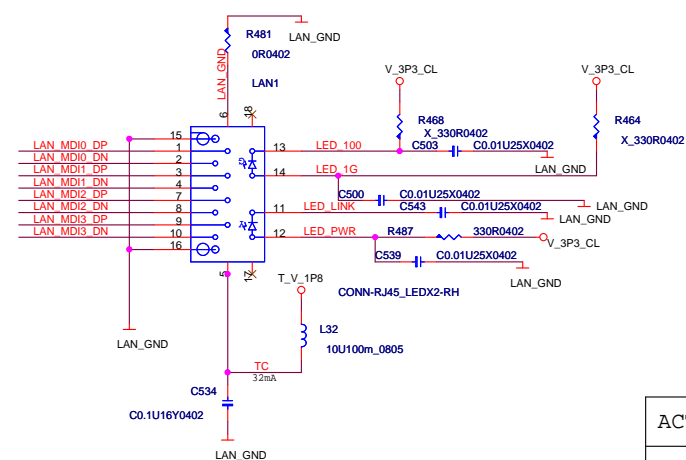
Speed LED Type
1000Mbps : Orange
100Mbps : Green
10Mbps : LED off

For Active/Link:
Yellow



Nineveh 82566DM

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

MSI
Link to the Future

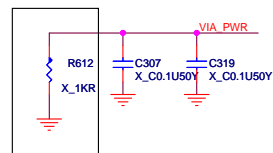
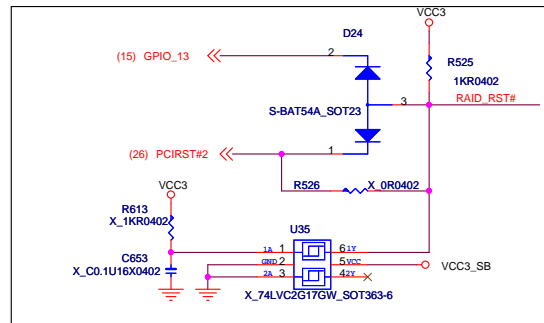
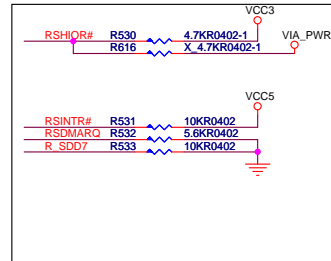
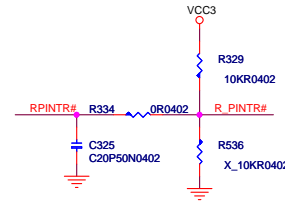
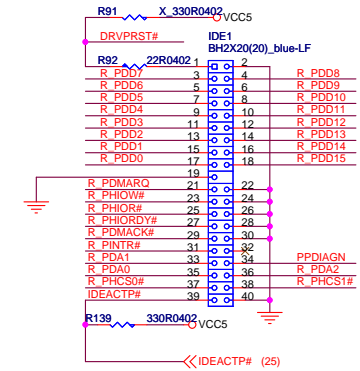
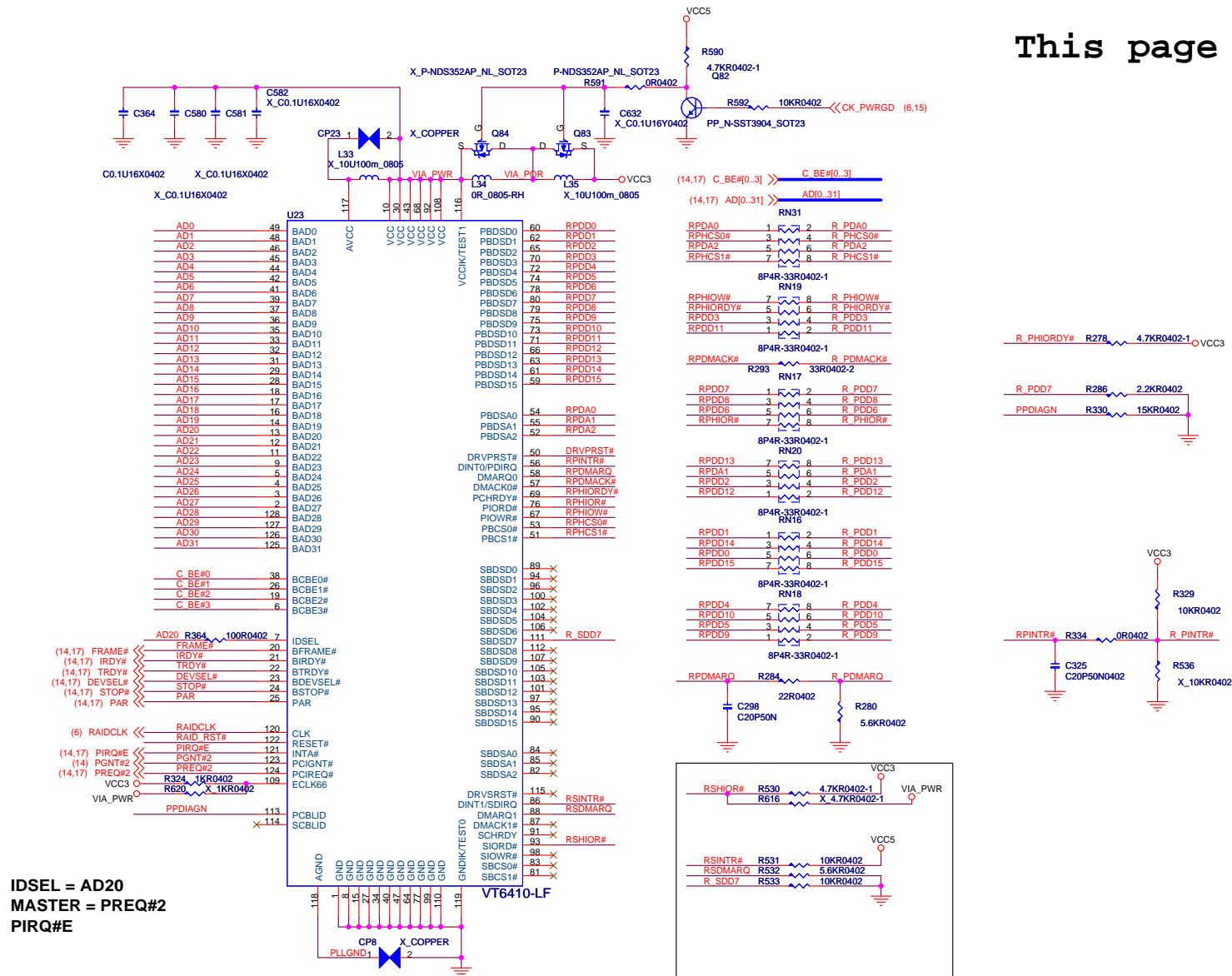
MICRO-START INT'L CO.,LTD.

Title: **LAN-NINEVEH 82566**

Size: Document Number **MS-7400** Rev **0B**

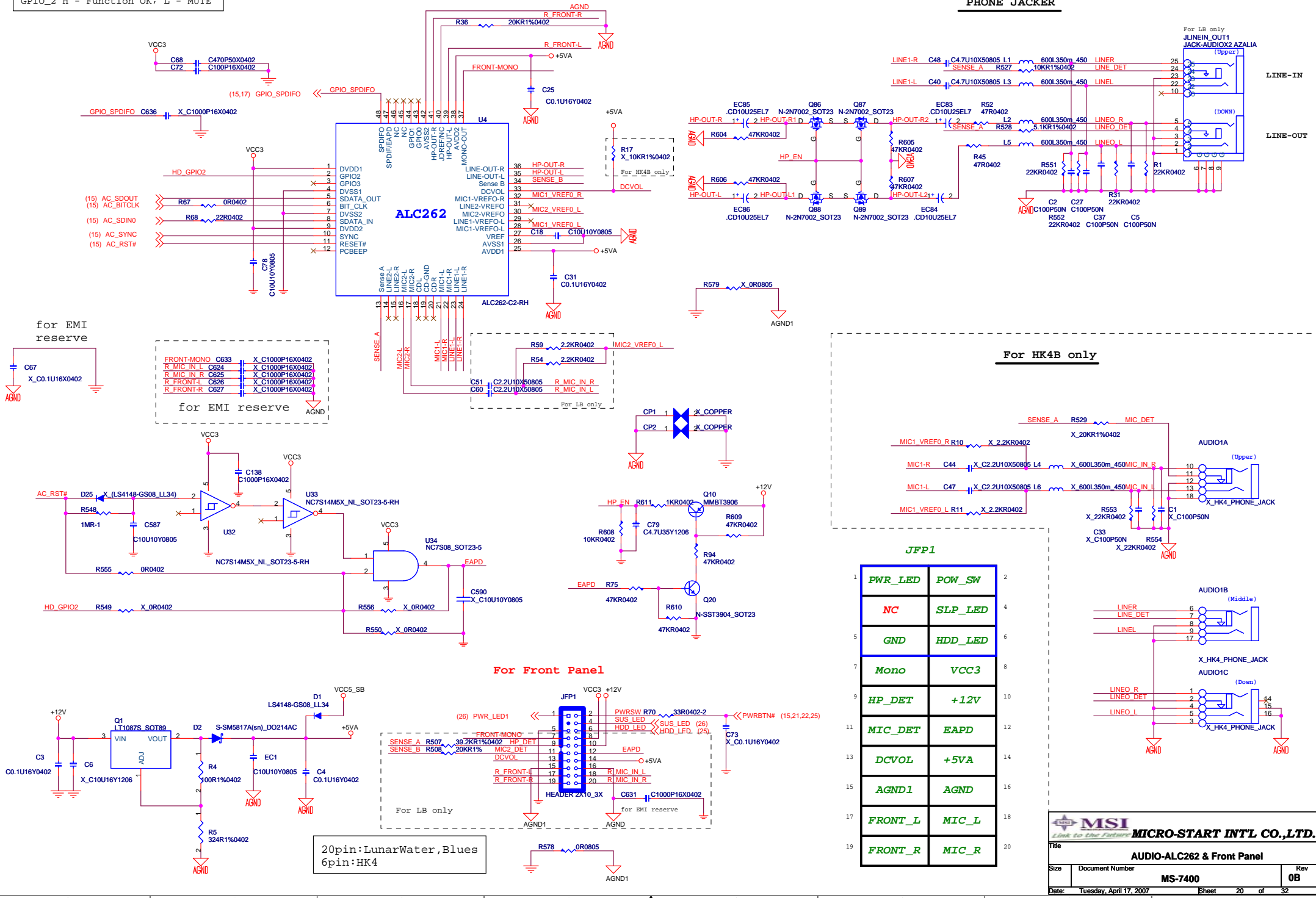
Date: Wednesday, April 18, 2007 Sheet 18 of 32


This page for Luner Bear only



GPIO_2 H - Function OK; L - MUTE

PHONE JACKER



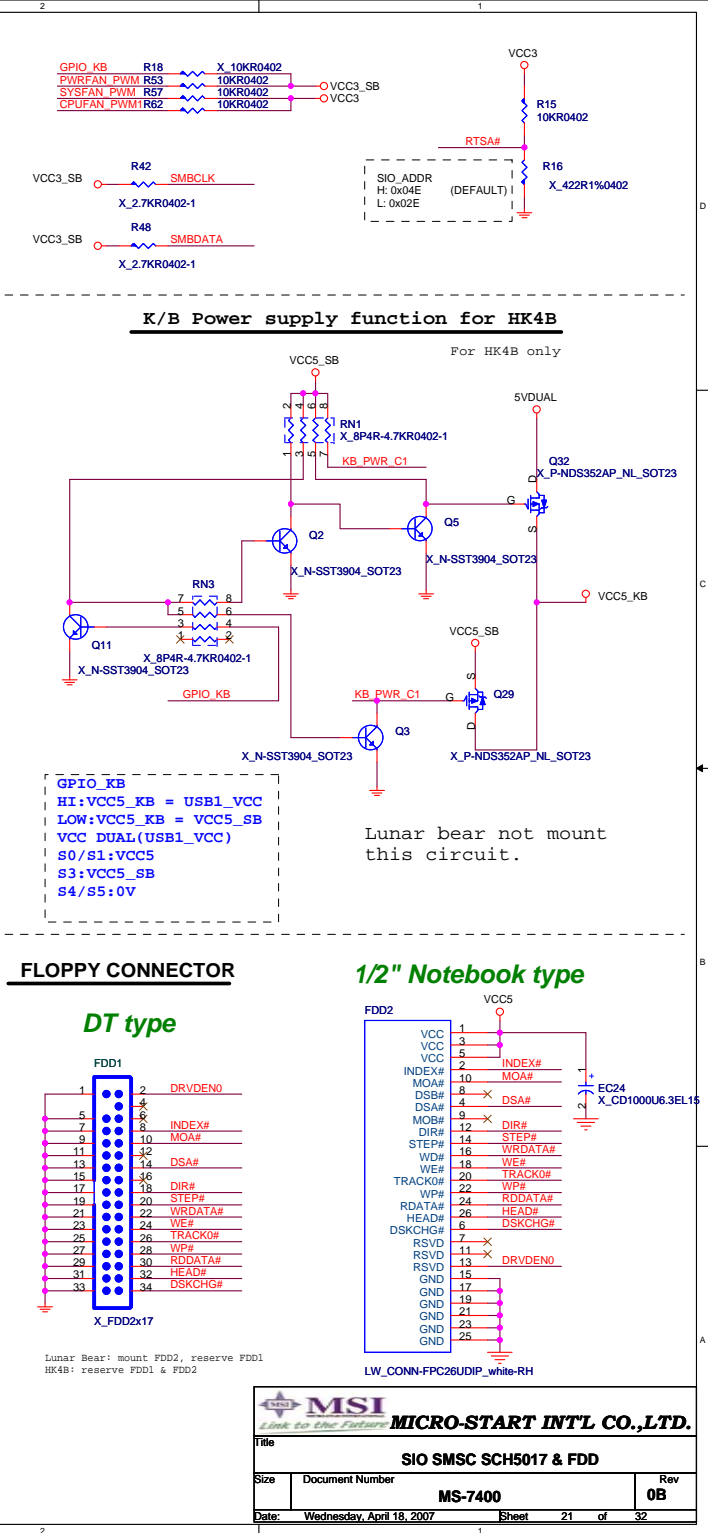
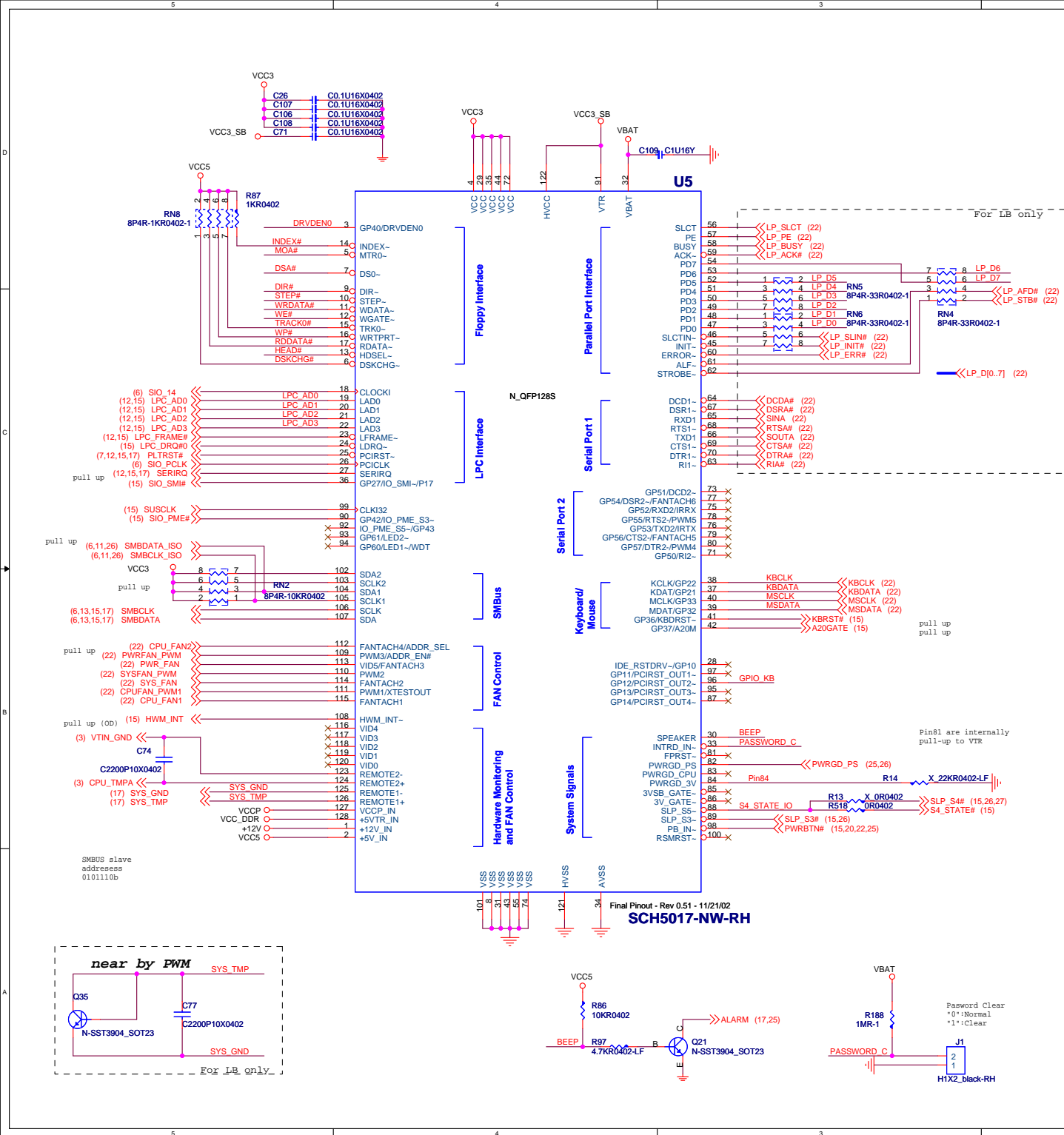


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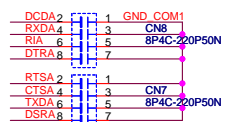
MICRO-START INTL CO.,LTD.

Title: **AUDIO-ALC262 & Front Panel**

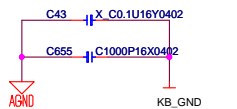
Size	Document Number	Rev
	MS-7400	0B
Date:	Tuesday, April 17, 2007	Sheet 20 of 32



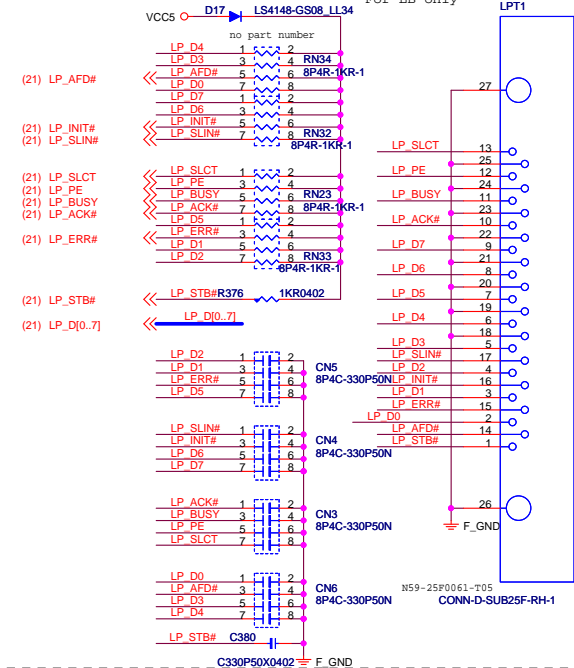
For LB only

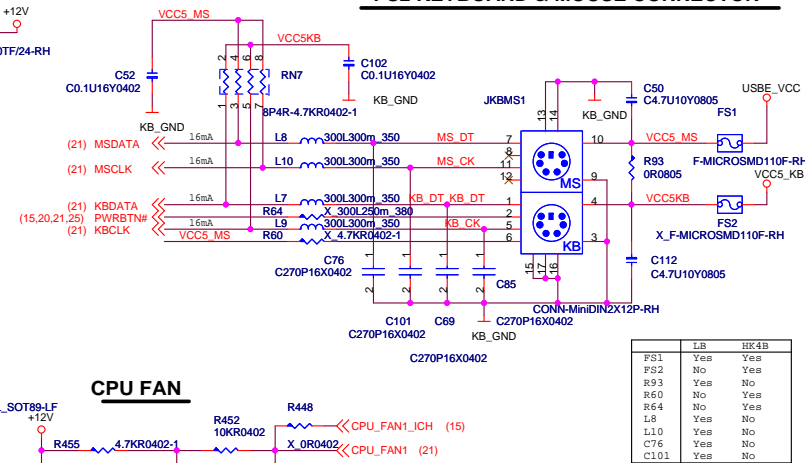


For LB only

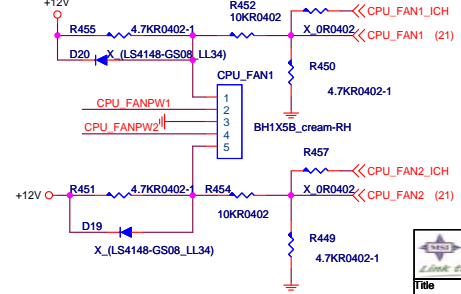


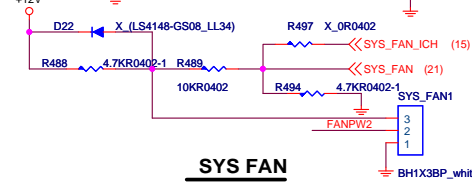
For LB only

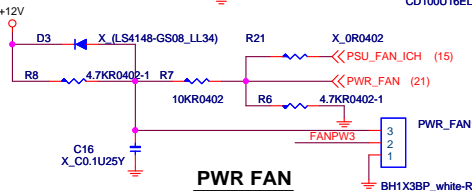




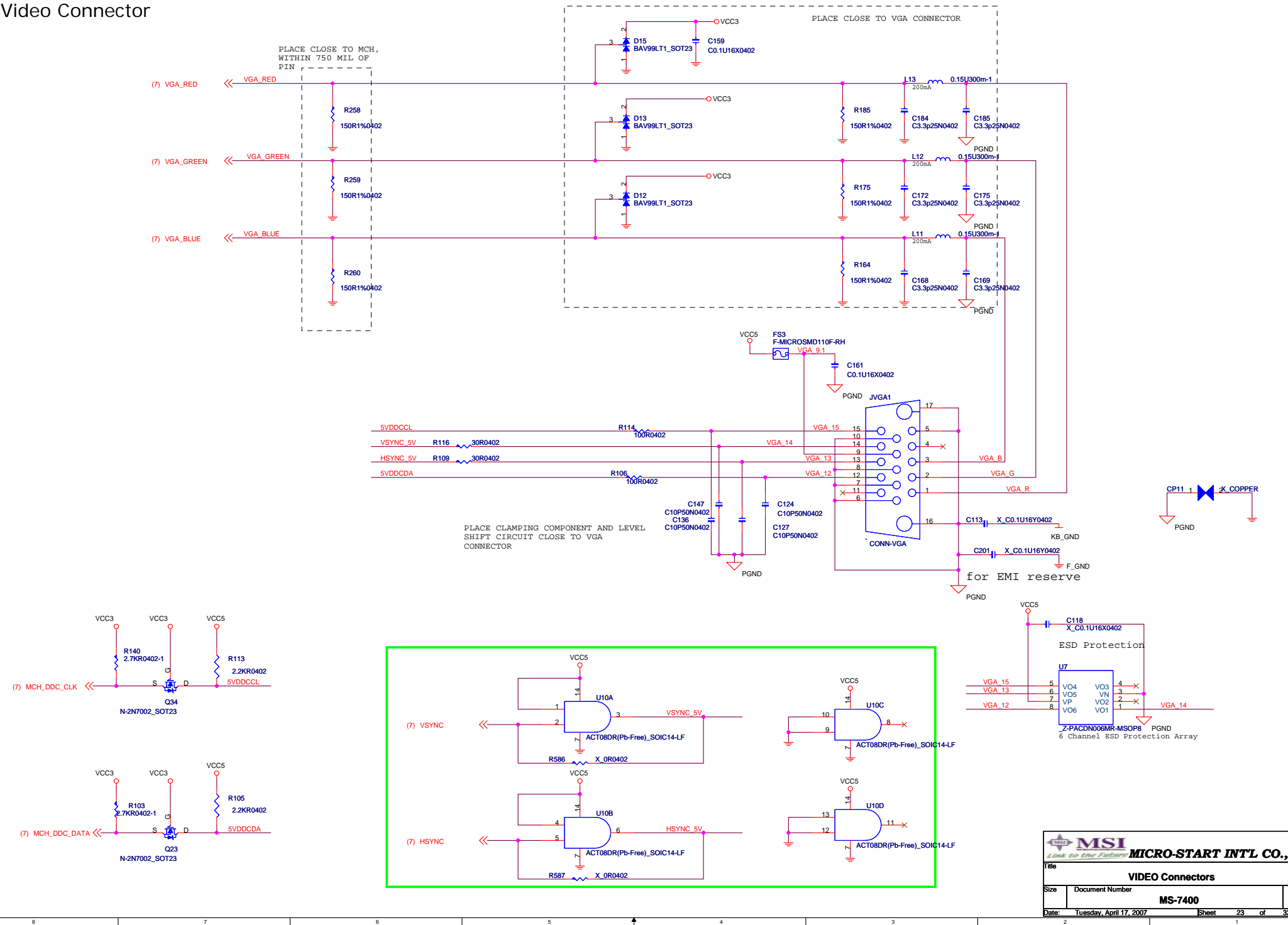
	LB	HK4B
FS1	Yes	Yes
FS2	No	Yes
R93	Yes	No
R60	No	Yes
R64	No	Yes
L8	Yes	No
L10	Yes	No
C76	Yes	No
C101	Yes	No



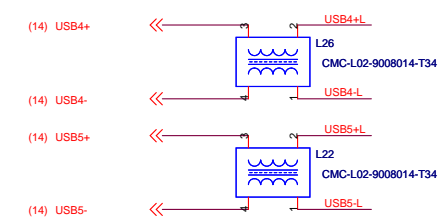
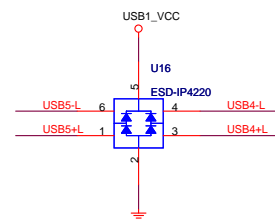
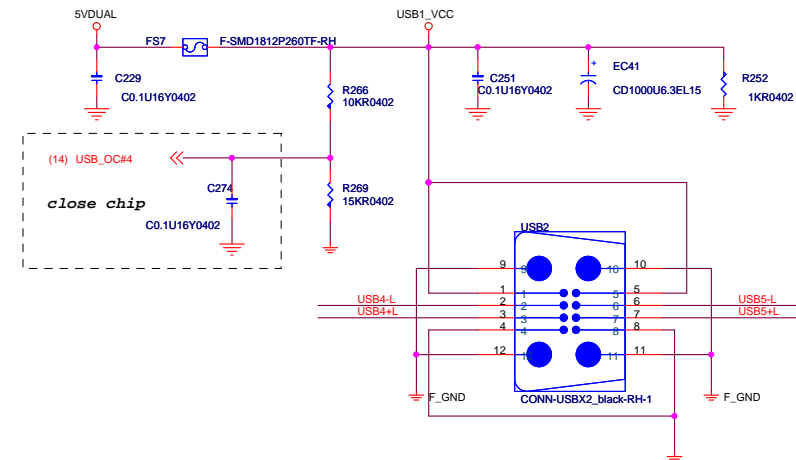
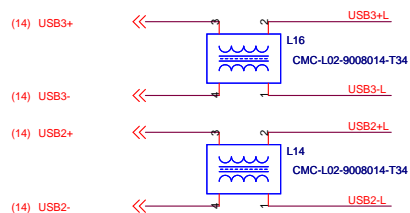
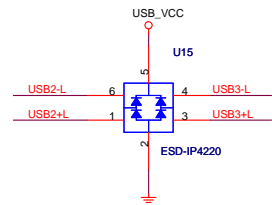
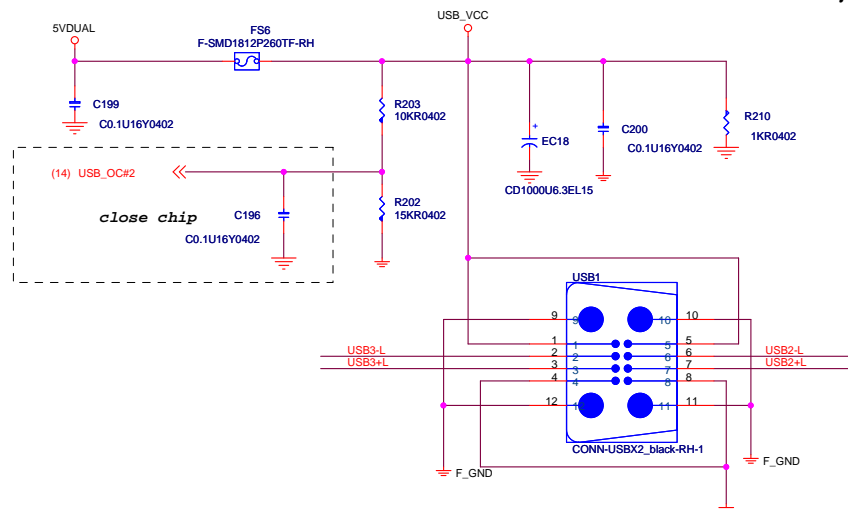




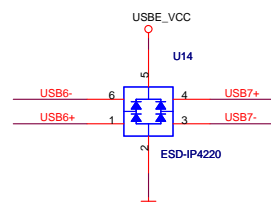
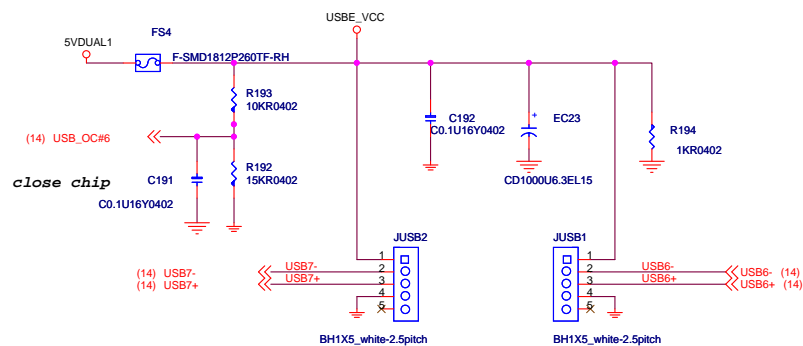
Video Connector



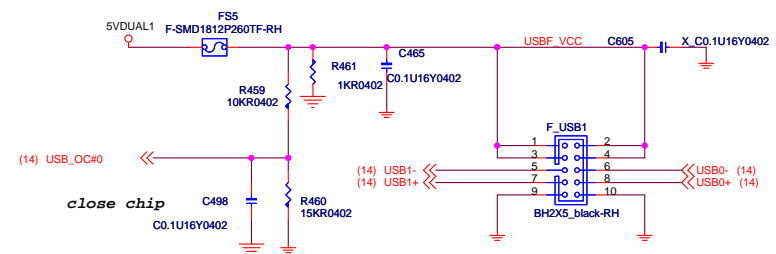
REAR USB PORT



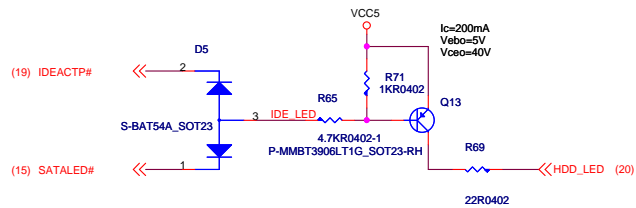
EXTERNAL USB PORT 0,1



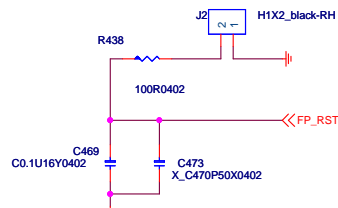
FRONT PANEL USB PORT 6,7 CONNECTOR



ATX connector / IR

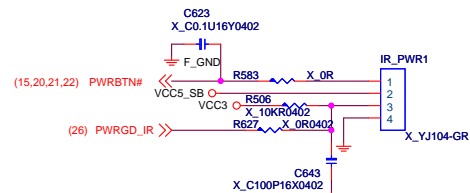


For Debug
Remove after MP

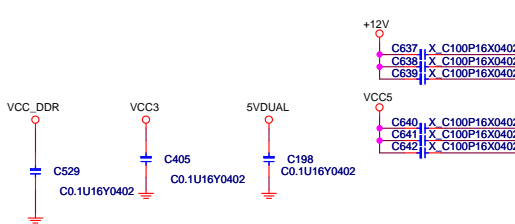
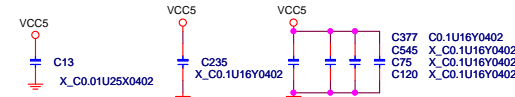
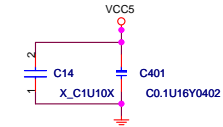
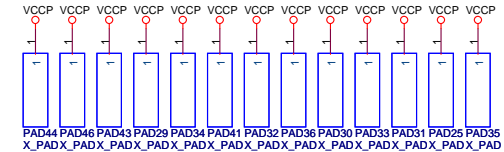
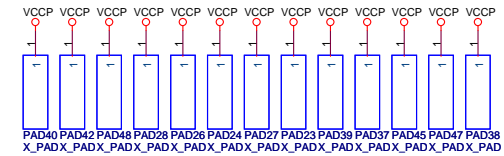
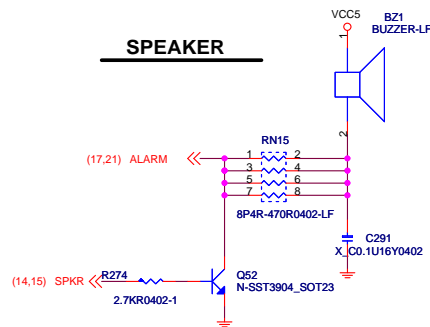


IR Connector

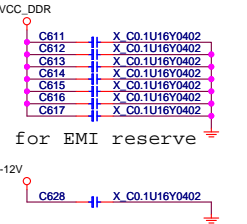
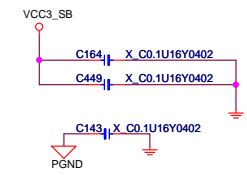
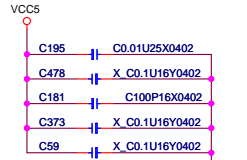
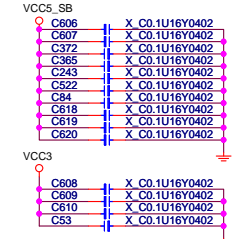
For HK4B only



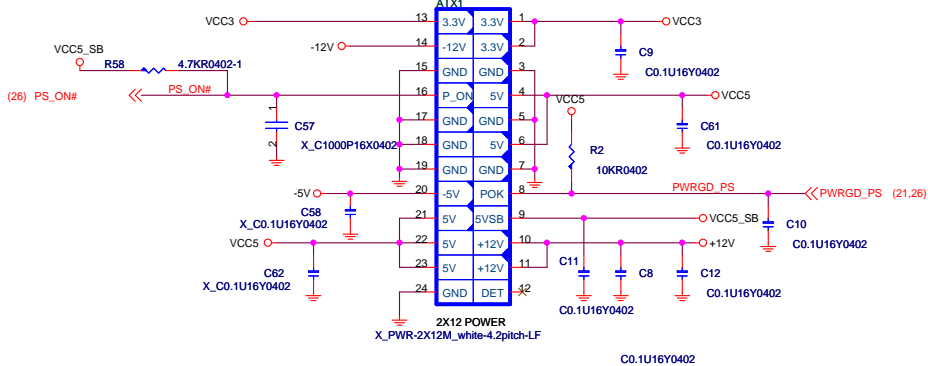
SPEAKER



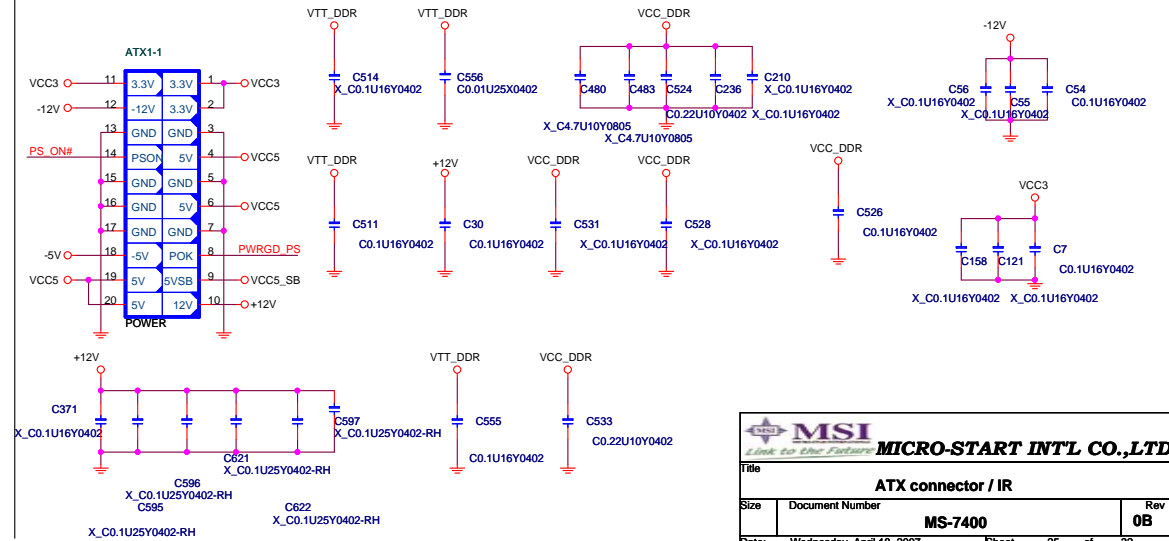
for EMI reserve



ATX Connector



11,12,23,24pin:reserve

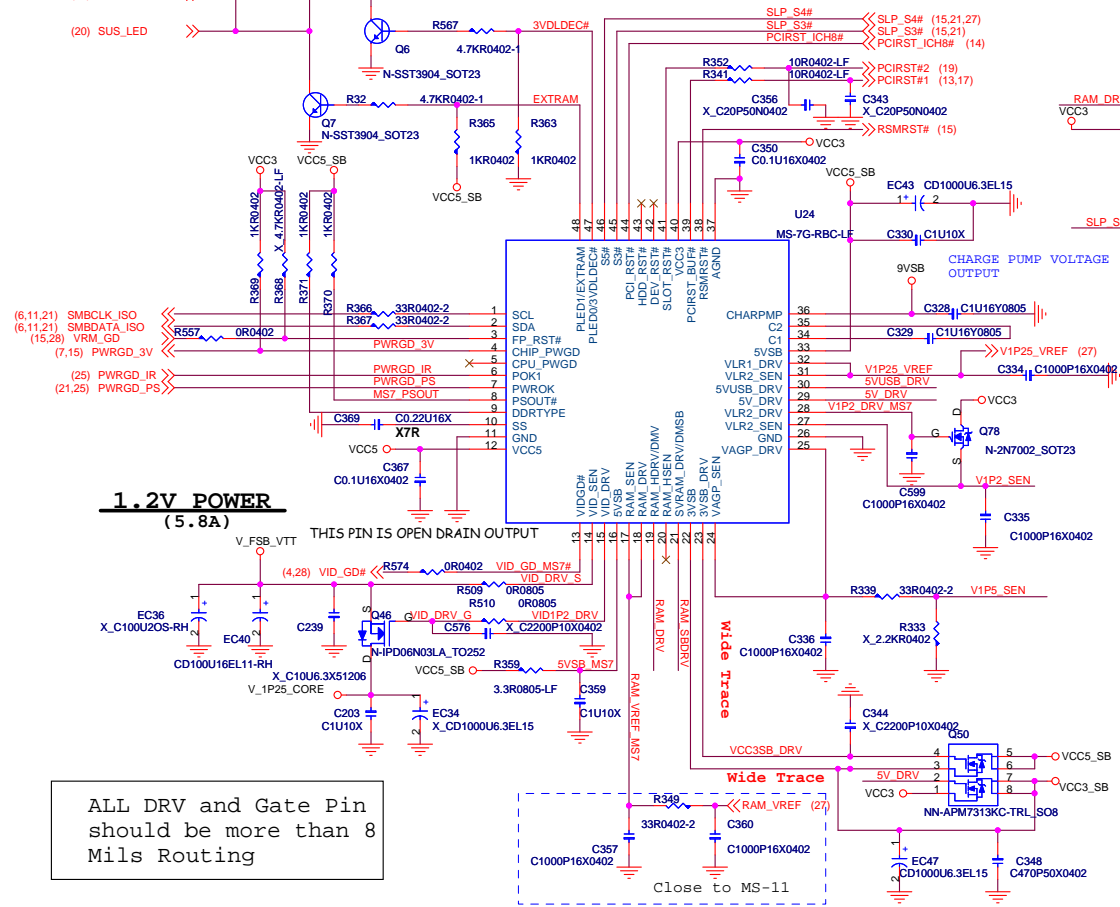


VDIMM LINEAR OR PWM SELECT 3VSB MODE SELECT

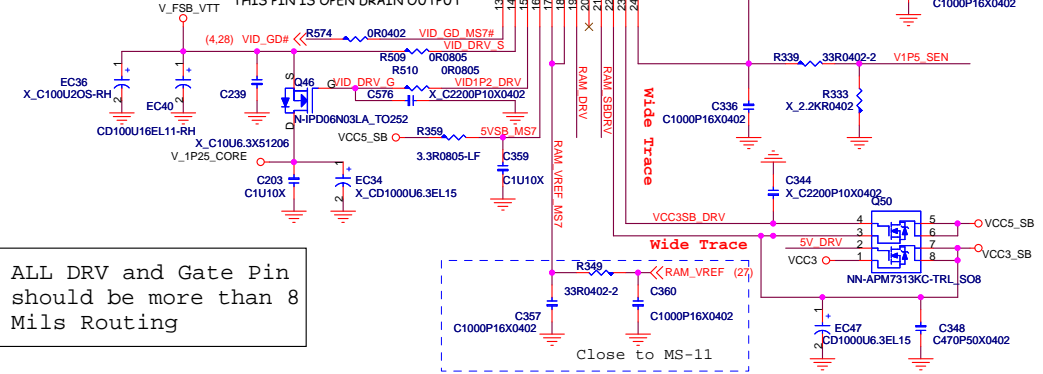
VDIMM MODE 3VSB MODE
 LINEAR REGULATOR PULL LOW SINGLE MOSFET PULL HIGH
 PWM REGULATOR PULL HIGH DUAL MOSFET PULL LOW

ACPI Controller

For HK4B only (20) PWR_LED1
 For LB only (20) SUS_LED

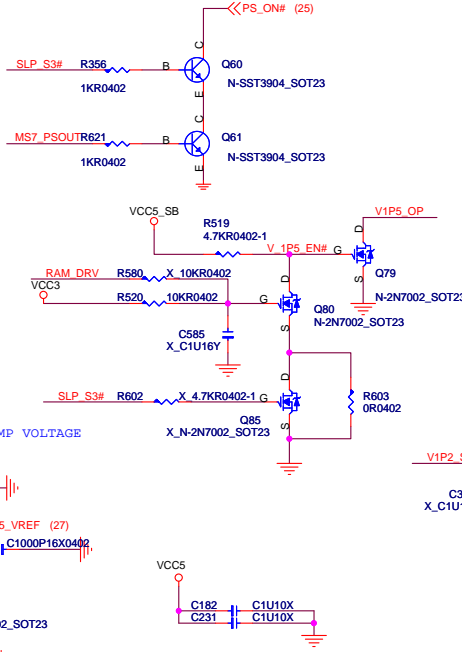
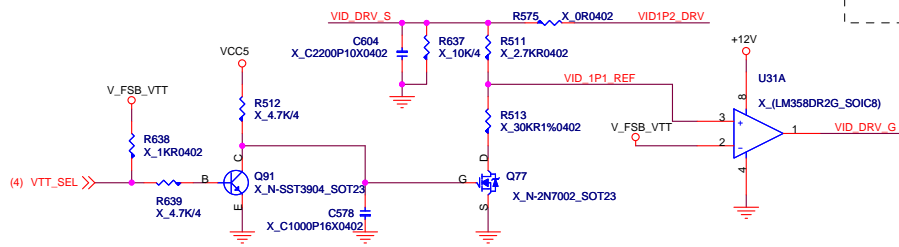


1.2V POWER (5.8A)

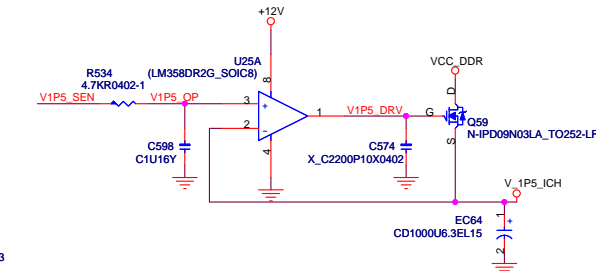


Kinesfiled VTT SEL for HK4B

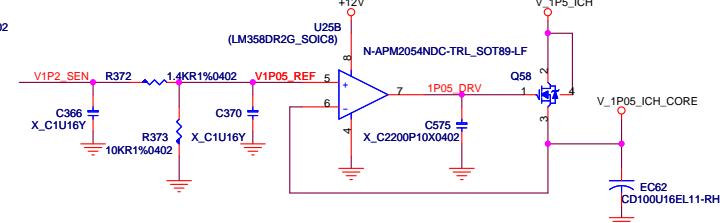
Remove R509,R510,R547
 Stuff R575,R511,C604,U31,R513,Q77,R512,Q91,R637,R638,R639



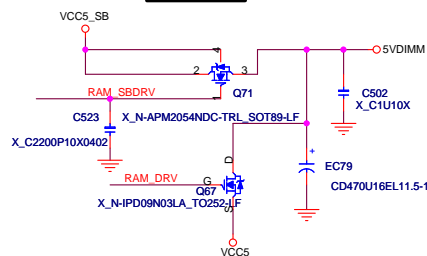
ICH9 1.5V POWER (2.75A)



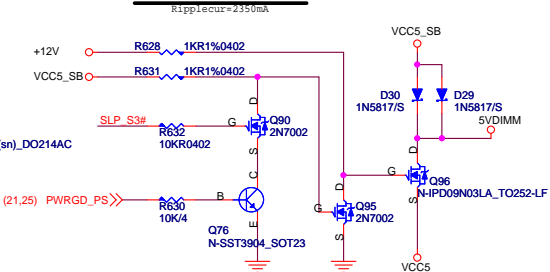
ICH9 1.05V POWER (2A)



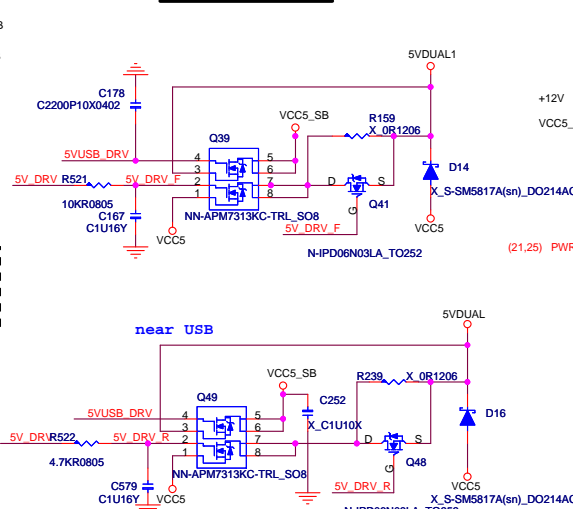
5VDIMM



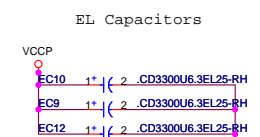
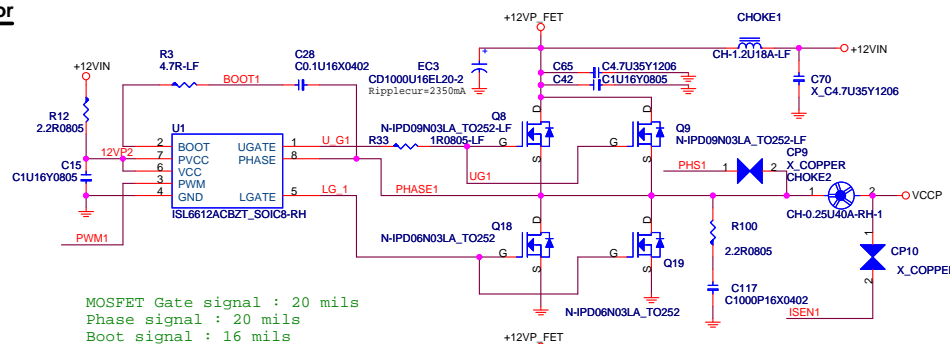
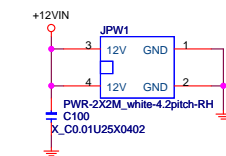
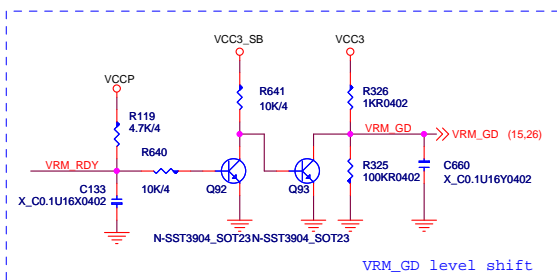
5VDIMM for iAMT



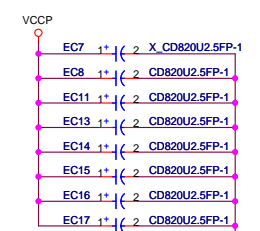
5V DUAL Power



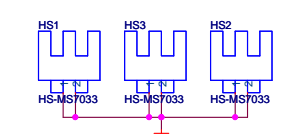
ATX12V Power Connector



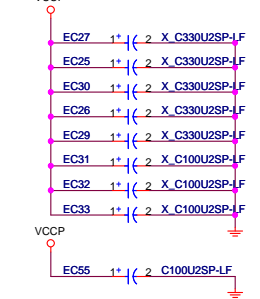
OS-CON Capacitors



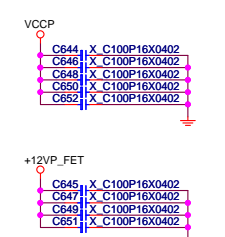
MOSFET Heatsinks



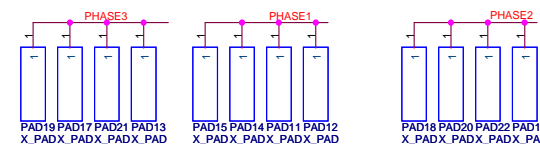
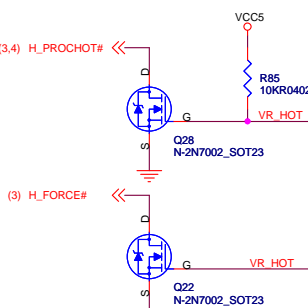
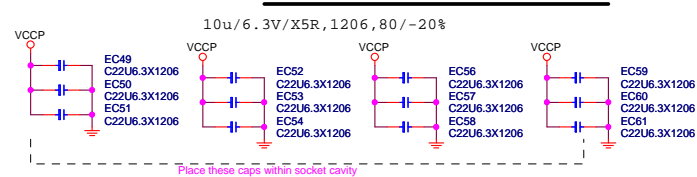
SP Capacitors



for EMI reserve



CPU DECOUPLING CAPACITORS



Auto-BOM Manual Parts

PCB1
P30-074000A-G37



P30-074000A-G37

U13_L1



BIOS_LABEL

LAB1



MODEL_LABEL

BAT1_1



BAT-BCR2032P-RH

RUBBER1



X_E25-6291010



U22_A1
HS_HOOK1X3(2)_black-LF-1



U22_B1
HS_HOOK1X3(2)_black-LF-1



U22_C1
HS_HOOK1X3(2)_black-LF-1



U22_D1
HS_HOOK1X3(2)_black-LF-1



J1(1-2)
_JUMPER-1X2B_black-RH



JBAT1(1-2)
_JUMPER-1X2B_black-RH

JFP1

JFP1-1



X_H2X3(3)_black-RH

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#	VCC5	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

**MICRO-START INTL CO.,LTD.**

File

GPIO PIN definition

SizeDocument NumberMS-7264Rev0B

Date: Wednesday, April 18, 2007Sheet30 of 32

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

Card Board		
+3.3Vaux	-	1.2A

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

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


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

5VAudio		
+5VR	-	500mA

+12V		
ATX	-	2x2

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

3V Battery		
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 MICRO-START INTL CO.,LTD.		
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0A Change To 0B : (2007/04/18)

Page3.
* Reserve R383 between VRDSEL(AL3) and GND.(Intel core2 processor recommend)
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 APM2054/SOT89 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 ref. source for RAM_VREF.
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)