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HP D7 Columbus (MS-7557) Ver: 0A

BTX(266.4mm X 211.5mm)

CPU:

INTEL -HAVENDALE / LYNNFIELD LGA 1156

System Chipset:

INTEL-IBEXPEAK PCH-Digital Office

OnBoard Chipset:

Clock Gen: Realtek RTM875-605

AZALIA Codec:ADI1884

LAN:Intel integrated Hanksville 10/100/1000 NIC

SIO: SMSC 5327

Flash ROM: 64 Mb SPI (CHIP)

Main Memory:

DDRIII (1066/1333MHz) * 4 (Dual Channel)

Expansion Slots:

PCI Express (X16) Slot * 1

PCI Express (X4) Slot * 1

PCI Express (X1) Slot * 1

PCI Slot * 1

PWM:

Controller:ON-semi NCP5392 (4-Phase 95W)

Controller:ON-semi NCP 5380

ACPI:

ON-semi 1587

Other:

SATA(SATA2-300MB/s) *4

USB2.0 *14 (Rear*6 Front*4 Intrenal *4)

DISPLAY PORT*1

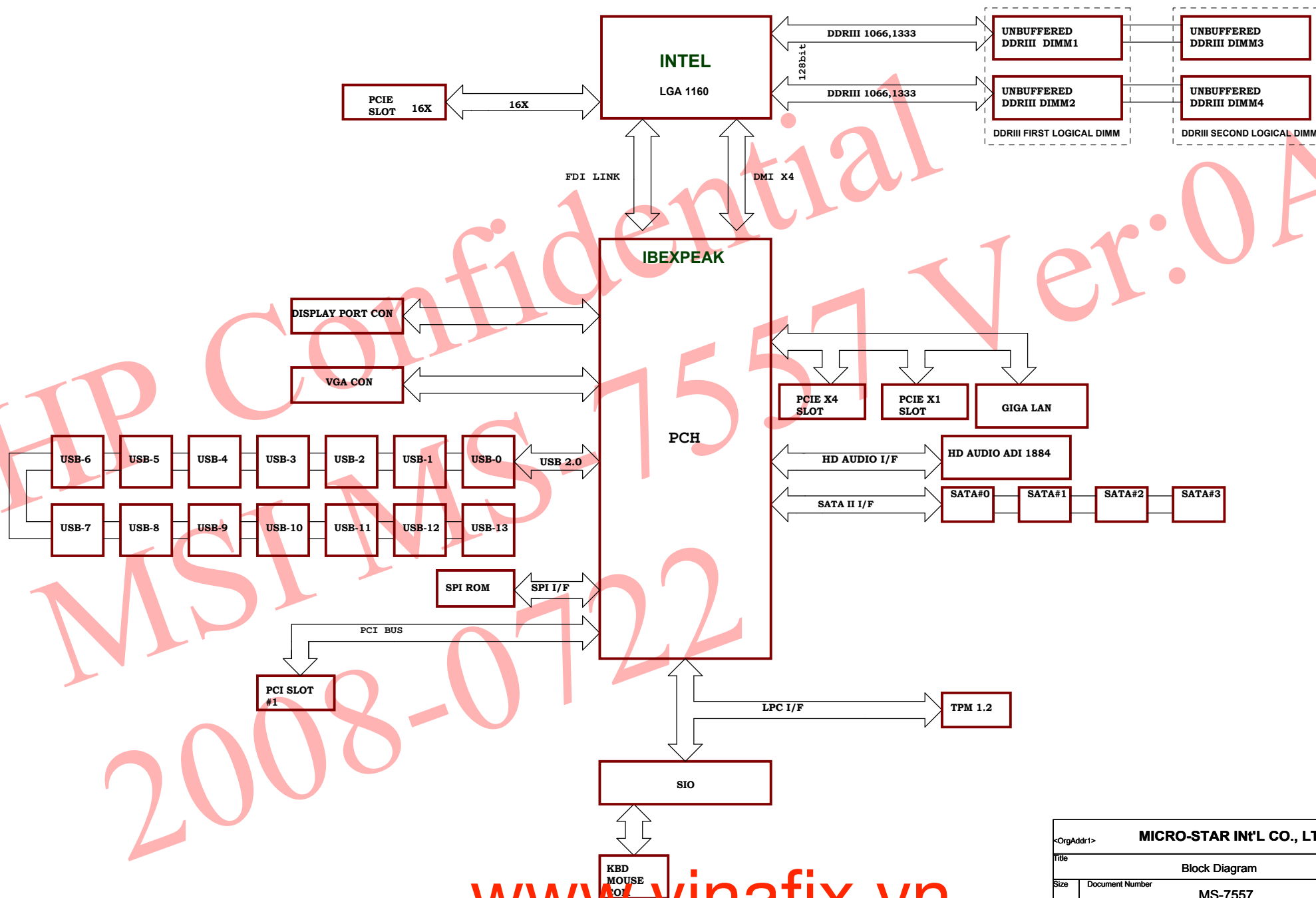
VGA PORT *1

PRINT Header *1

COM PORT *1

COM Header *1

<OrgAddr> MICRO-STAR INT'L CO., LTD.			
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DDR DIMM Config.

DEVICE	ADDRESS	CLOCK
DIMM 2 CH-A	10100000B	MEM_MA0_CLK_H0/L0 MEM_MA0_CLK_H1/L1 MEM_MA0_CLK_H2/L2
DIMM 4 CH-A	10100010B	MEM_MA1_CLK_H0/L0 MEM_MA1_CLK_H1/L1 MEM_MA1_CLK_H2/L2
DIMM 1 CH-B	10100001B	MEM_MB0_CLK_H0/L0 MEM_MB0_CLK_H1/L1 MEM_MB0_CLK_H2/L2
DIMM 3 CH-B	10100011B	MEM_MB1_CLK_H0/L0 MEM_MB1_CLK_H1/L1 MEM_MB1_CLK_H2/L2

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PCI_INT#E PCI_INT#F PCI_INT#G PCI_INT#H	PCI_REQ0# PCI_GNT0#	AD16	CLK33M_PCISLOT_J20
TPM				LPCCLK0
SIO				LPCCLK1

PCI RESET DEVICE

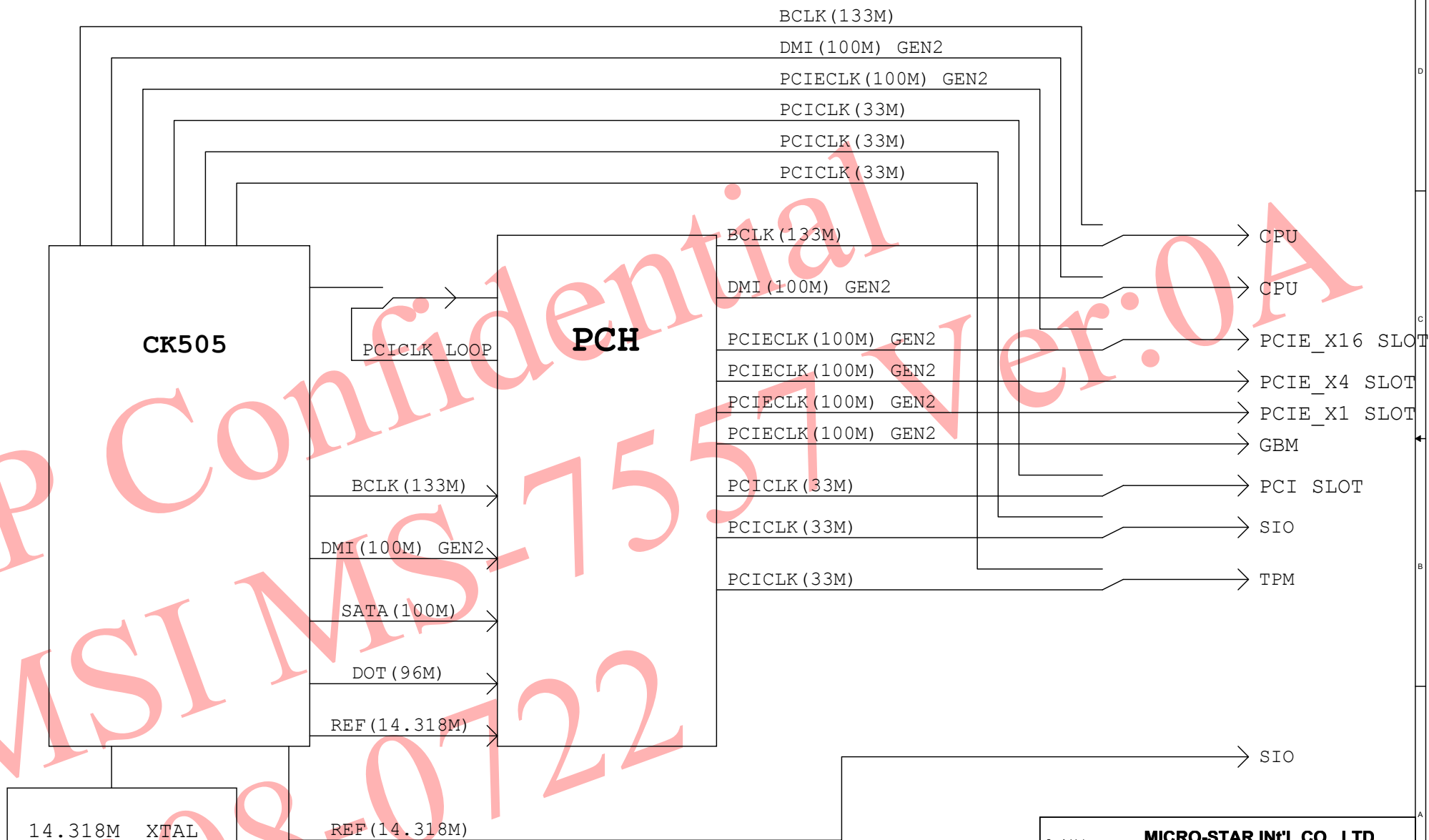
IBEXPEAK	
Signals	Target
PCIRST#	PCISLOT1
PE_RST#	TPM_RST#
PE_RST#	LPC/SIO

<OrgAddr1> MICRO-STAR IN'L CO., LTD.		
Title Device Map		
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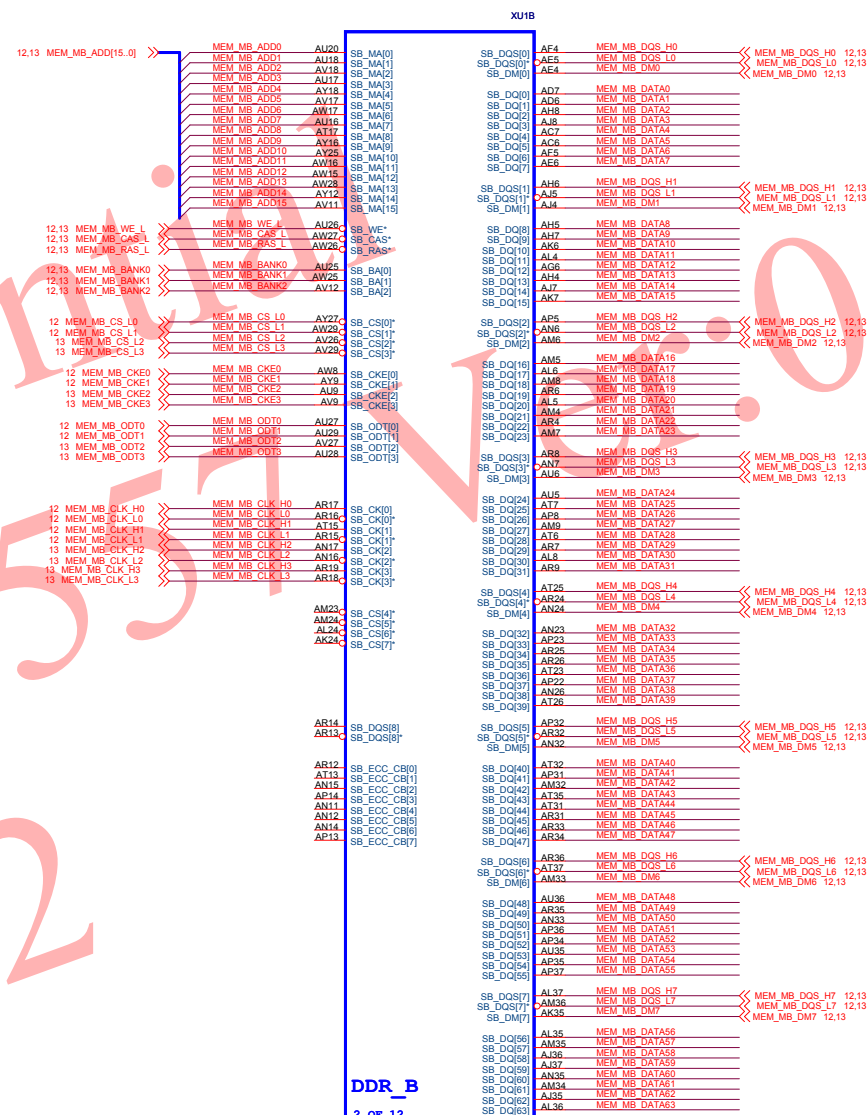
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MSI MS-7557 Ver:0A
2008-0722

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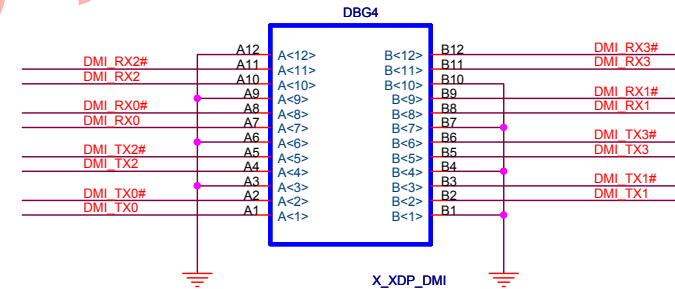
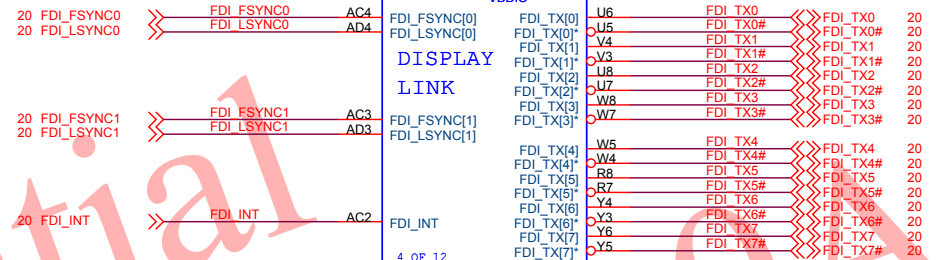
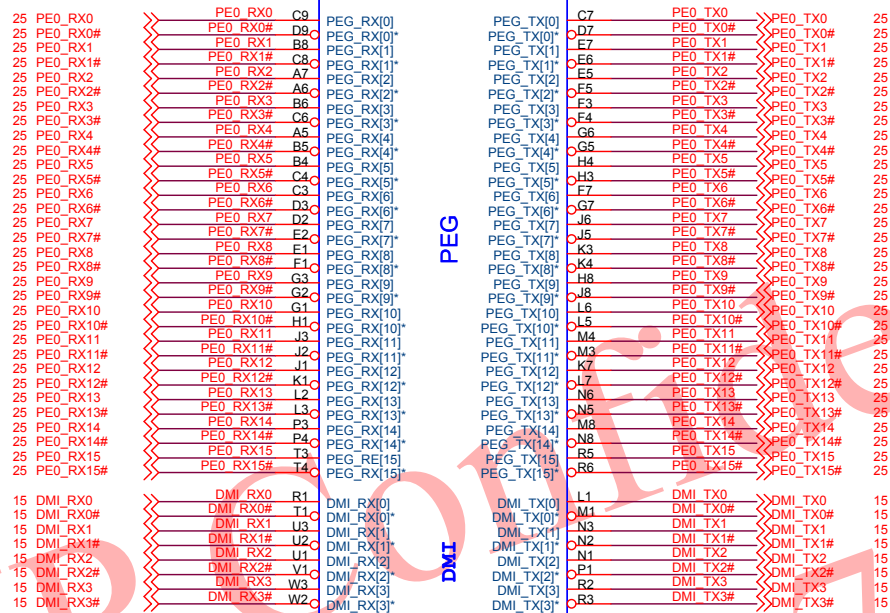
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PCIE_X16 : 16 / 5 / 5 / 5 / 16

XU1C

XU1D



DMI : 17 / 5 / 5 / 5 / 17

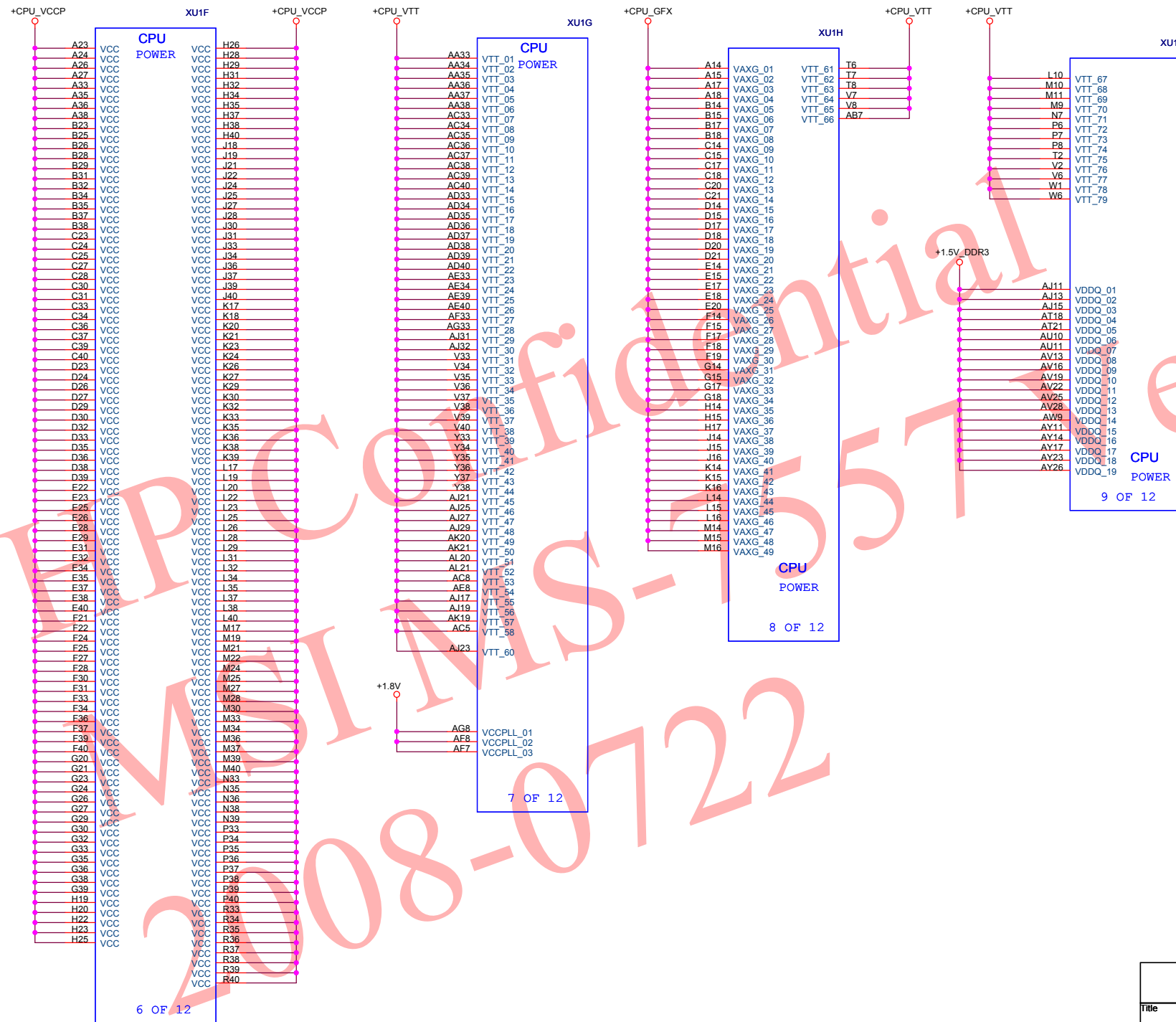
3 OF 12

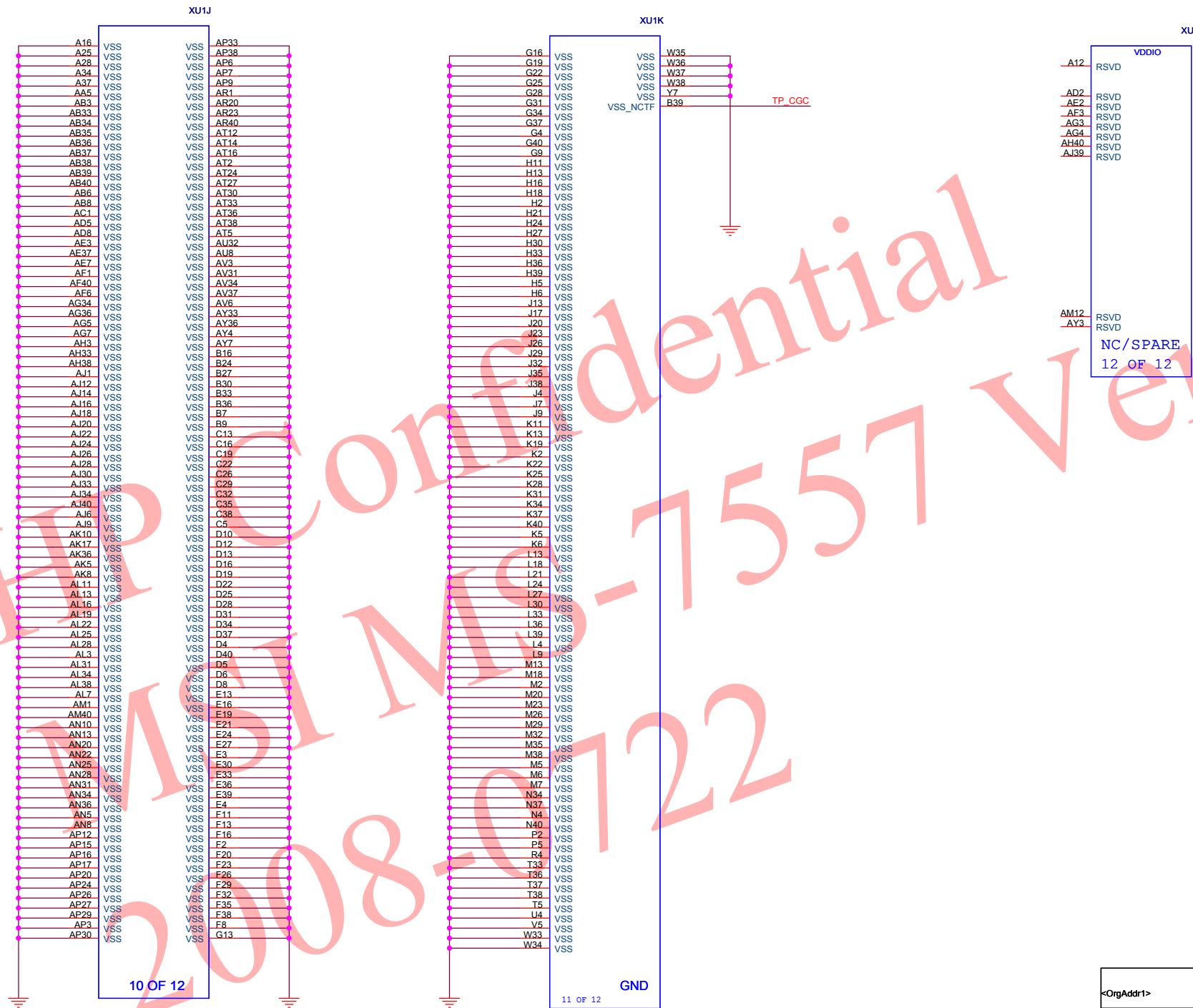
Break-out:10mil width, 6 mil space

Other Area:10mil width, 15 mil space

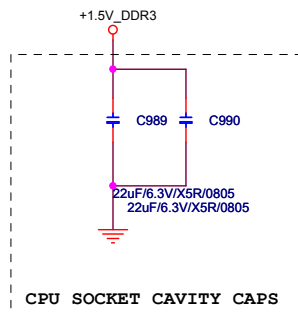
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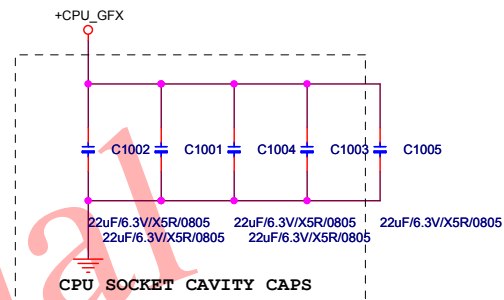




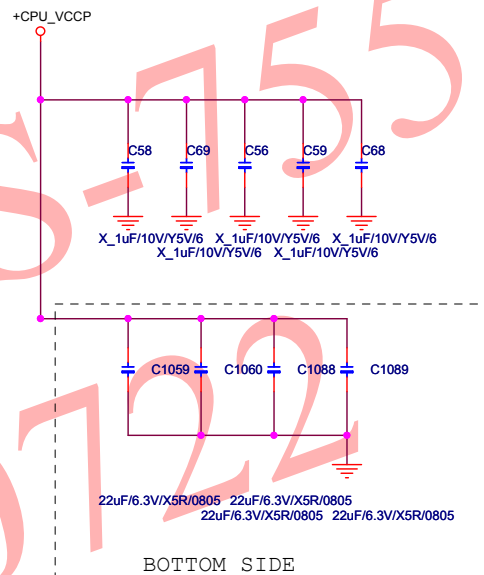
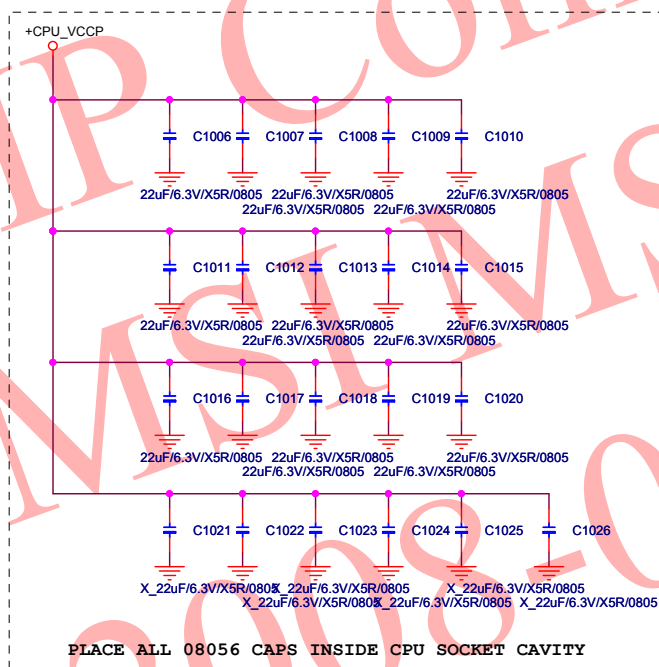
+1.5V_DDR3-Decoupling



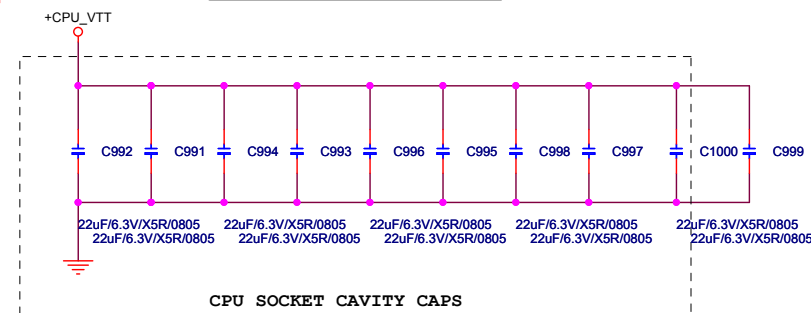
+CPU_GFX Decoupling



+CPU_VCCP-Decoupling

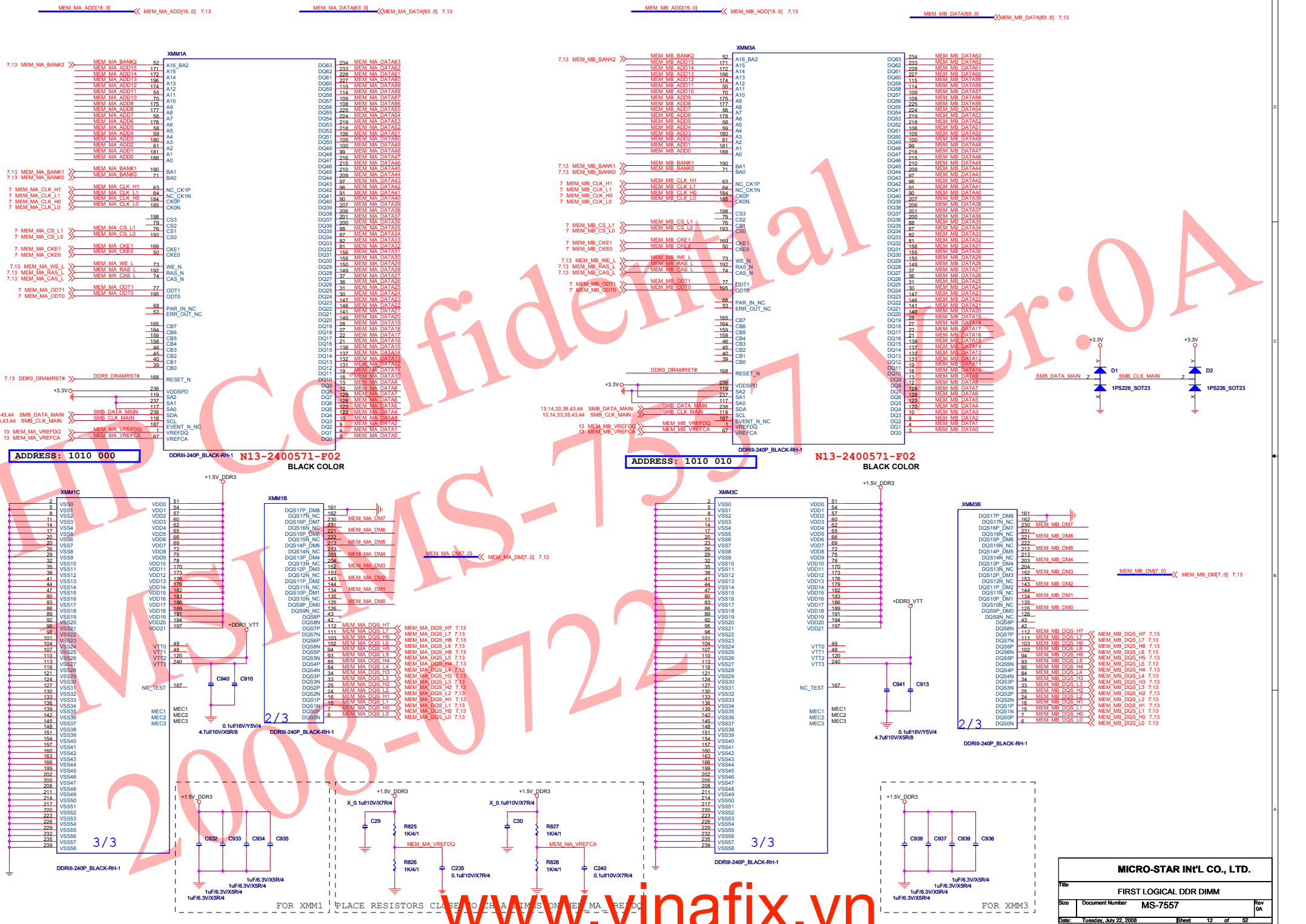


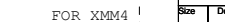
+CPU_VTT Decoupling

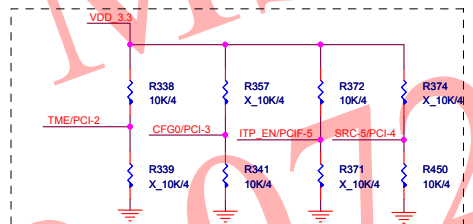
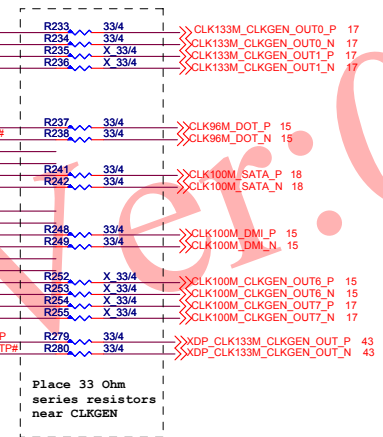
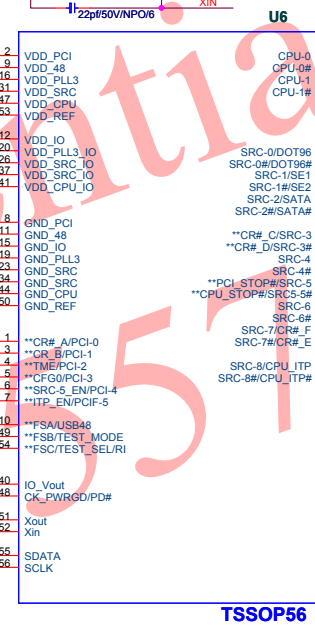
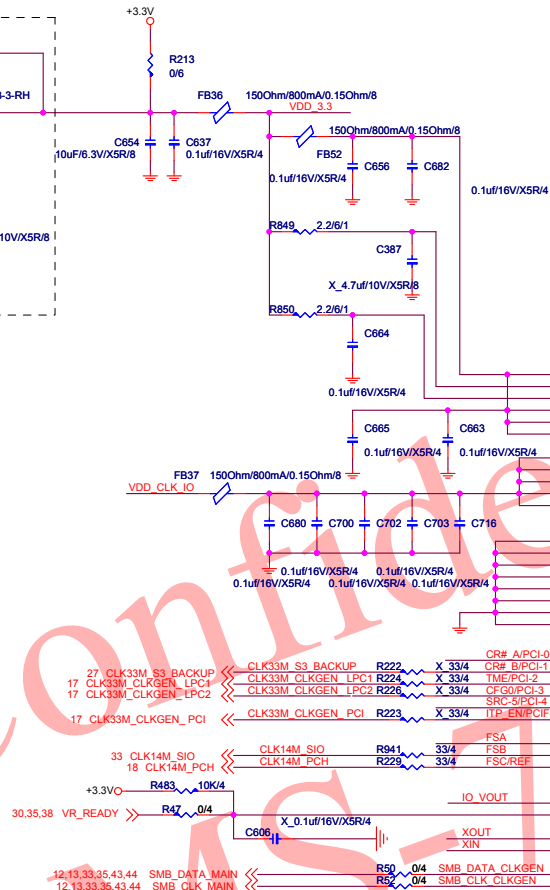
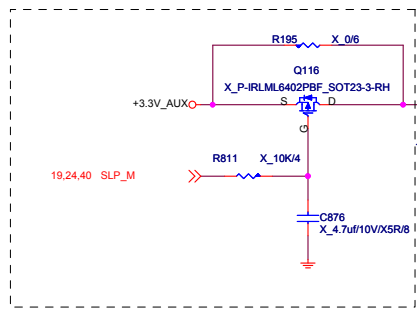


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Title			CPU-Decoupling
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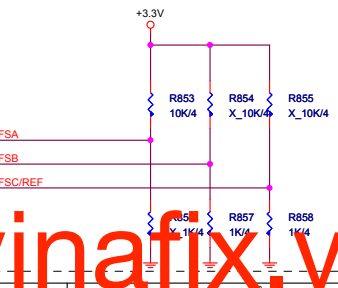
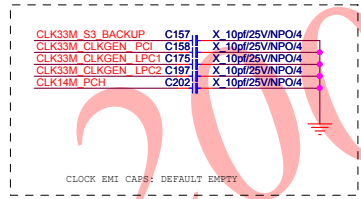
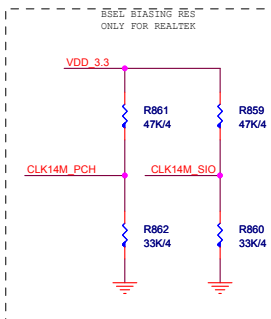




	PULL HIGH	PULL LOW
TME/PCI-2	NO OVERCLOCKING	NORMAL RUN
SRC5_EN/PCI-4	PIN29/30 IS SRC5	PIN29/30 IS PCI_STOP/CPU_STOP
CFG0/PCI-3	CFG Strap mode	CFG Strap mode
ITP_EN/PCIF-5	PIN 38/39 IS CPUITP	PIN 38/39 IS SRC8

FSC	FSB	FSA	CPU
0	0	0	266
0	0	1	133
0	1	0	200
0	1	1	166
1	0	0	333
1	0	1	100
1	1	0	400
1	1	1	200

IDT CV184 PN:I11-CV18402-I09
SILEGO SLG8XP518T PN:I???
Realtek RTM886T-805 PN:???



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Title Clock-Gen		
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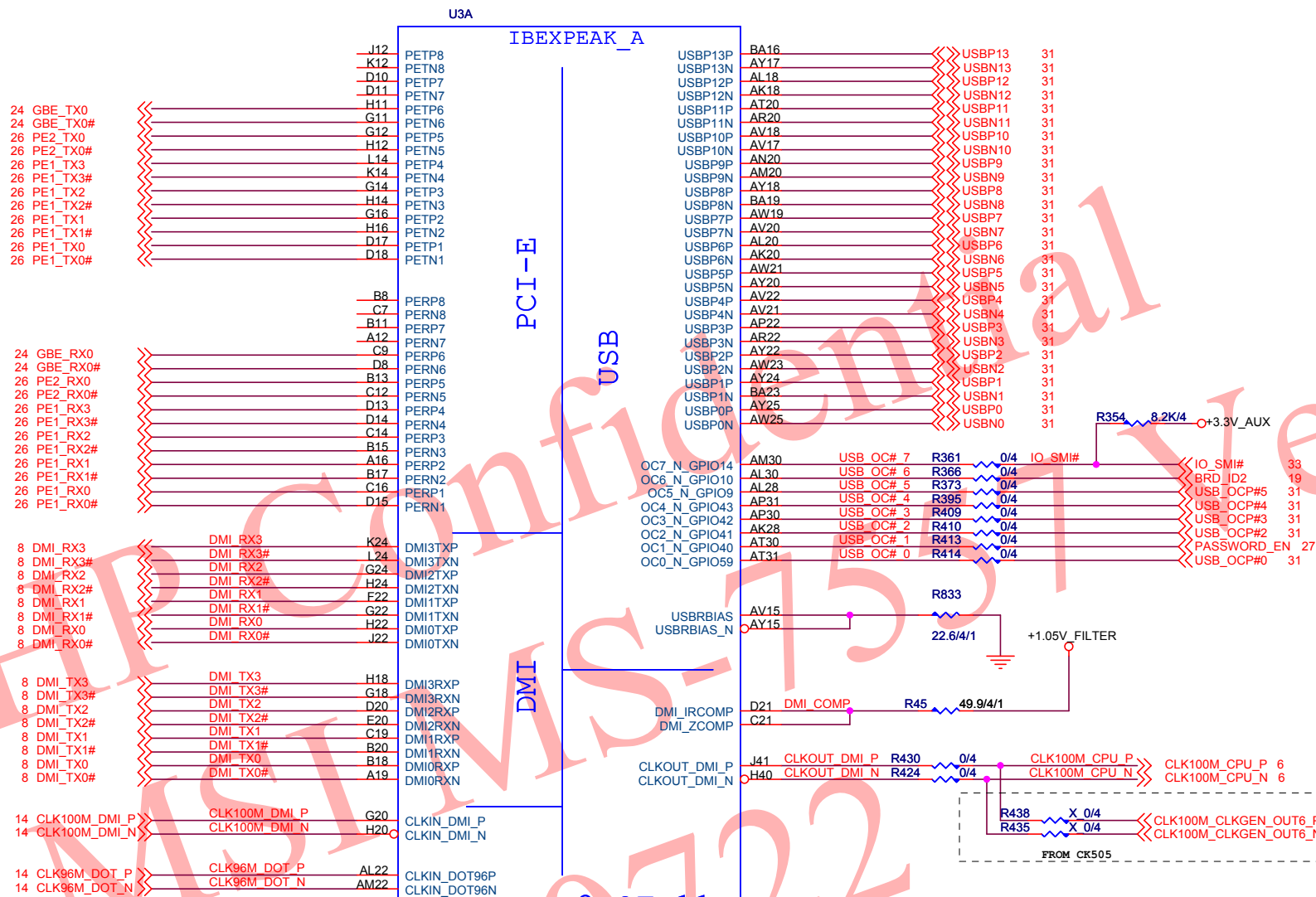
IBEXPEAK_A

PCI-E

USB

DMI

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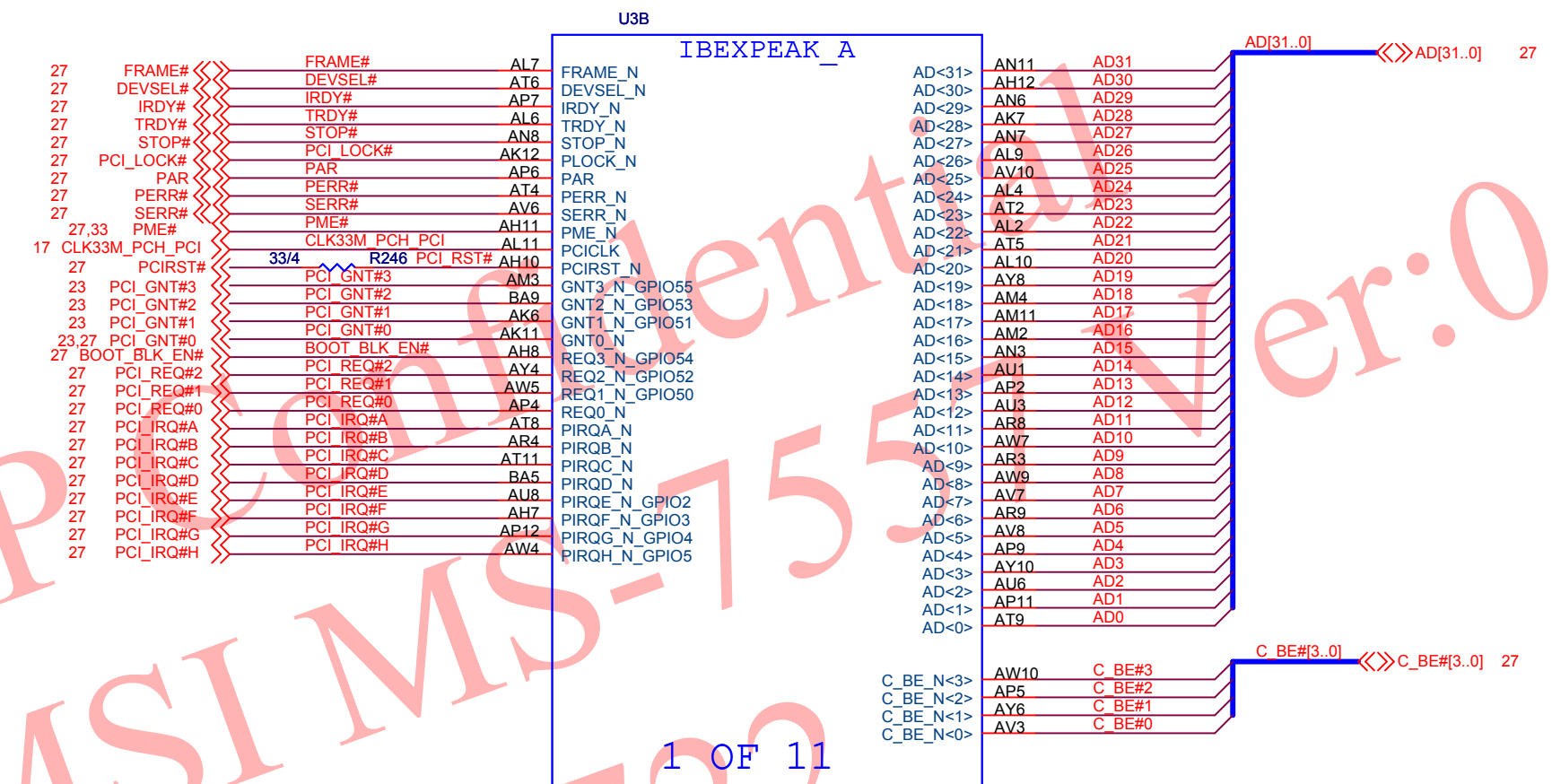


USB_OC#_7	USB_OC#_7	44
USB_OC#_6	USB_OC#_6	44
USB_OC#_5	USB_OC#_5	44
USB_OC#_4	USB_OC#_4	44
USB_OC#_3	USB_OC#_3	44
USB_OC#_2	USB_OC#_2	44
USB_OC#_1	USB_OC#_1	44
USB_OC#_0	USB_OC#_0	44

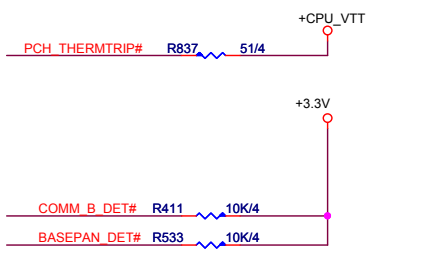
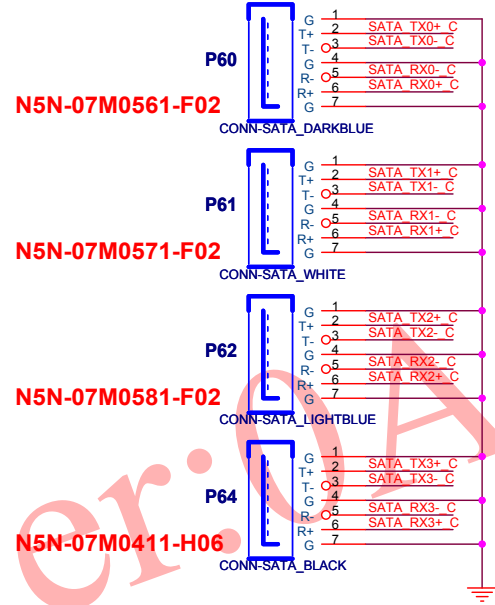
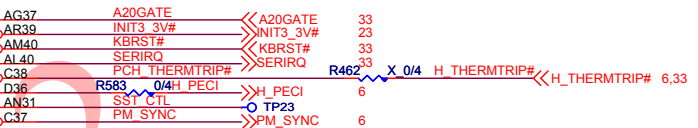
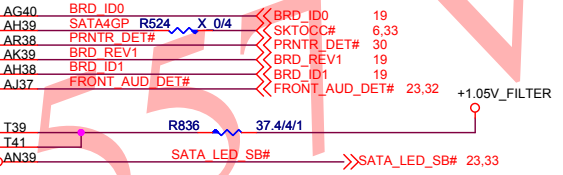
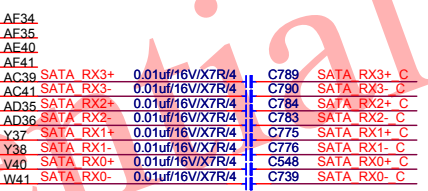
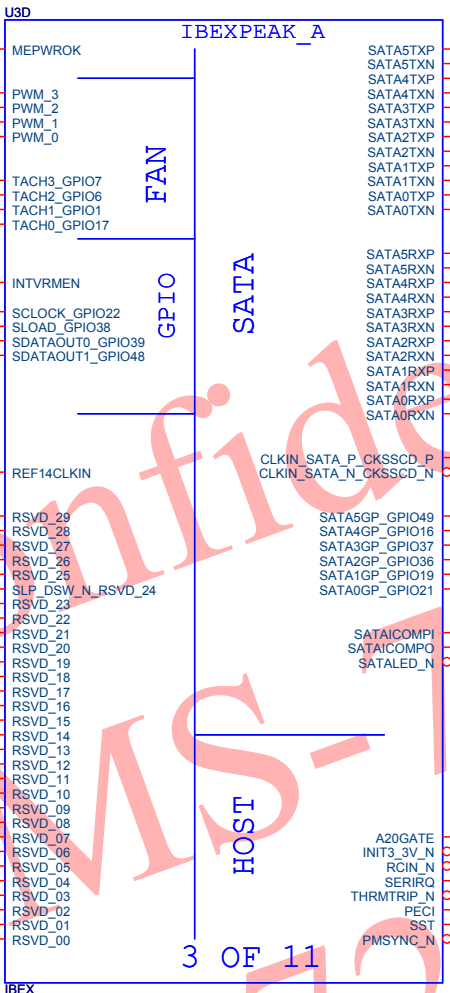
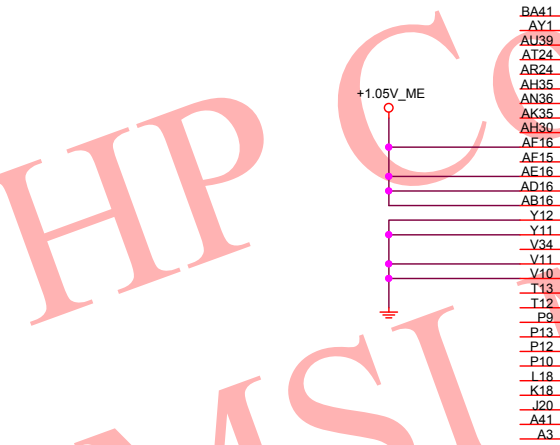
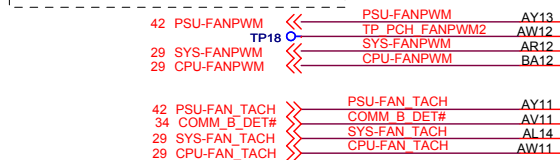
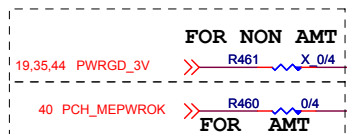
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Title		
IBEXPEAK-PCIE/DMI/USB		
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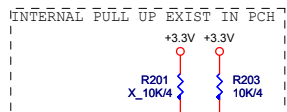
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Title			
IBEXPEAK-SATA/HOST/FAN/GPIO			
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19,23 HDA_SDOUT >>
19 HDA_BITCLK >>

19,23 HDA_SYNC >>

18 BRD_REV1 >> BRD_REV1
18 BRD_ID0 >> BRD_ID0
18 BRD_ID1 >> BRD_ID1

18 BRD_REV1 >> BRD_REV1
18 BRD_ID0 >> BRD_ID0
18 BRD_ID1 >> BRD_ID1

18 BRD_REV1 >> BRD_REV1
18 BRD_ID0 >> BRD_ID0
18 BRD_ID1 >> BRD_ID1

15 BRD_ID2 >> BRD_ID2
18 BRD_ID0 >> BRD_ID0
18 BRD_ID1 >> BRD_ID1
15 BRD_ID2 >> BRD_ID2

33 LPC_AD3 >> LPC_AD3
33 LPC_AD2 >> LPC_AD2
33 LPC_AD1 >> LPC_AD1
33 LPC_AD0 >> LPC_AD0

33 LPC_DRQ#0 >> LPC_DRQ#0
33 LPC_FRAME# >> LPC_FRAME#

32 HDA_SDIN2 >> HDA_SDIN2
HDA_SDIN<2>
HDA_SDIN<1>
HDA_SDIN<0>

HDA_SDOUT_R
HDA_BITCLK_R
HDA_SYNC_R
32 HDA_RST#

6 CPU_PWRGD
35 PCH_SYSPWROK
33 PWRBTN#
18,35,44 PWRGD_3V
6,36 MEM_PWRGD

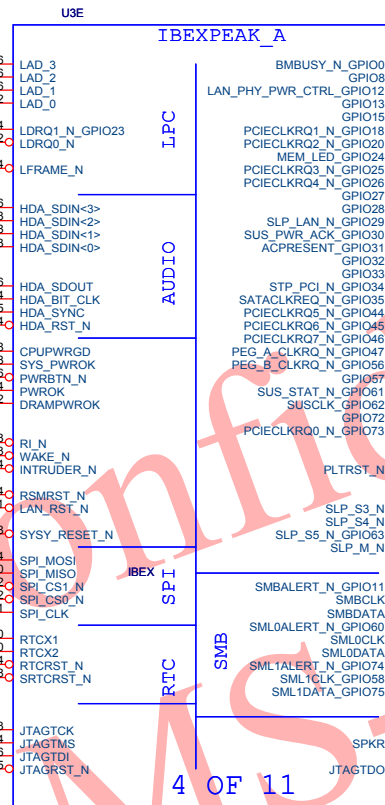
23,33 RI#
23,33 PE_WAKE_CHIP#
35 RSMRST#

6,23,43,44 FP_RST#
30 SPI_DI
30 SPI_DO
30 SPI_CS#
30 SPI_CLK

32K X1
32K X2
RTCX1
RTCX2
RTCRST#
SRTCST#

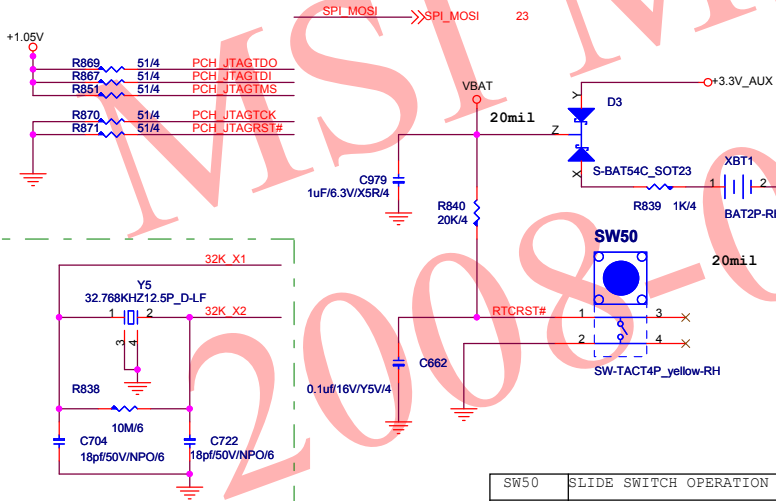
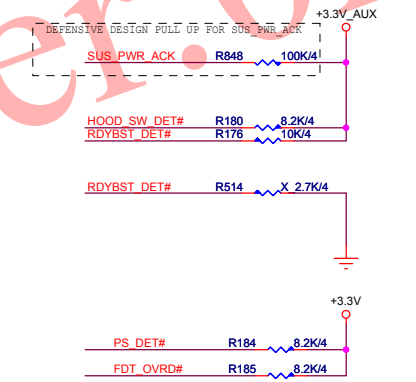
44 PCH_JTAGTCK
44 PCH_JTAGTMS
44 PCH_JTAGTDI
44 PCH_JTAGRST#

44 PCH_JTAGTCK
44 PCH_JTAGTMS
44 PCH_JTAGTDI
44 PCH_JTAGRST#

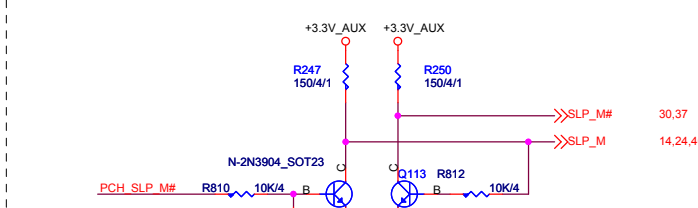
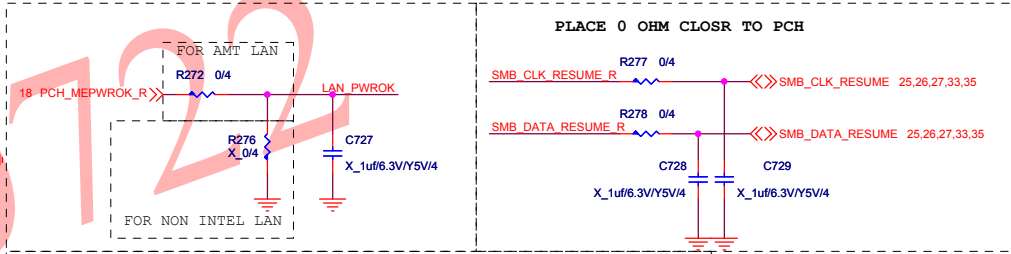


AK41 PCH_REQ# >> PCH_REQ#
AK30 ICG_EN# >> ICG_EN#
AU34 LAN_DISABLE# >> LAN_DISABLE#
AR16 RDYBST_DET# >> RDYBST_DET#
AV36 PCH_GP15 >> PCH_GP15
AM39 BOOT_BLK_REC# >> BOOT_BLK_REC#
AP38 PCIECLKRO2# >> PCIECLKRO2#
AR34 R530 1K/4 HOOD_SW_DET# >> HOOD_SW_DET#
AP33 PCIECLKRO3# >> PCIECLKRO3#
AP37 PCIECLKRO4# >> PCIECLKRO4#
AV40 TP_PCH_GP28 >> TP_PCH_GP28
BA35 WOL_EN >> WOL_EN
AT37 SUS_PWR_ACK >> SUS_PWR_ACK
AP40 PCH_GP15 >> PCH_GP15
AT16 R531 1K/4 PS_DET# >> PS_DET#
AT16 R532 1K/4 FDT_OVRD# >> FDT_OVRD#
AT40 HOOD_LOCK_DET >> HOOD_LOCK_DET
AR41 BRD_REV0 >> BRD_REV0
AW38 PCH_GP14 >> PCH_GP14
AV36 PCH_GP15 >> PCH_GP15
AP36 PCH_GP16 >> PCH_GP16
AV39 PCH_GP17 >> PCH_GP17
AW35 AUD_AMP_DIS# >> AUD_AMP_DIS#
AK32 TPM_PP >> TPM_PP
AK31 LPCPD# >> LPCPD#
AV34 SUSCLK_1K/4 >> SUSCLK_1K/4
AN35 PCIECLKRO0# >> PCIECLKRO0#
AV34 PLTRST# >> PLTRST#
AV35 R259 0/4 SLP_S3# >> SLP_S3#
AP35 R260 0/4 SLP_S4# >> SLP_S4#
AU36 R523 0/4 SLP_S5# >> SLP_S5#
AT36 R266 0/4 PCH_SLP_M# >> PCH_SLP_M#
AL31 PCH_SMBALERT# >> PCH_SMBALERT#
AV32 SMB_CLK_RESUME_R >> SMB_CLK_RESUME_R
AM31 SMB_DATA_RESUME_R >> SMB_DATA_RESUME_R
BA39 PCH_SML0ALERT# >> PCH_SML0ALERT#
AW33 SMLINK0_CLK >> SMLINK0_CLK
AT34 SMLINK0_DATA >> SMLINK0_DATA
AY32 PCH_SML1ALERT# >> PCH_SML1ALERT#
AV31 PCH_SML1CLK >> PCH_SML1CLK
AR31 PCH_SML1DATA >> PCH_SML1DATA
AJ38 SPKR >> SPKR
AN34 PCH_JTAGDO >> PCH_JTAGDO

BOARD REV[1:0]	PHASE
00	All Proto
01	All SI
10	PV1
11	PV2
00	MVB
01	1st Major ECN
10	2nd Major ECN
11	3rd Major ECN



SW50	SLIDE SWITCH OPERATION
1-3	NORMAL OPERATION
2-3	CLEAR CMOS



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U3I

IBEXPEAK_A

U3J

IBEXPEAK_A

U3K

IBEXPEAK_A

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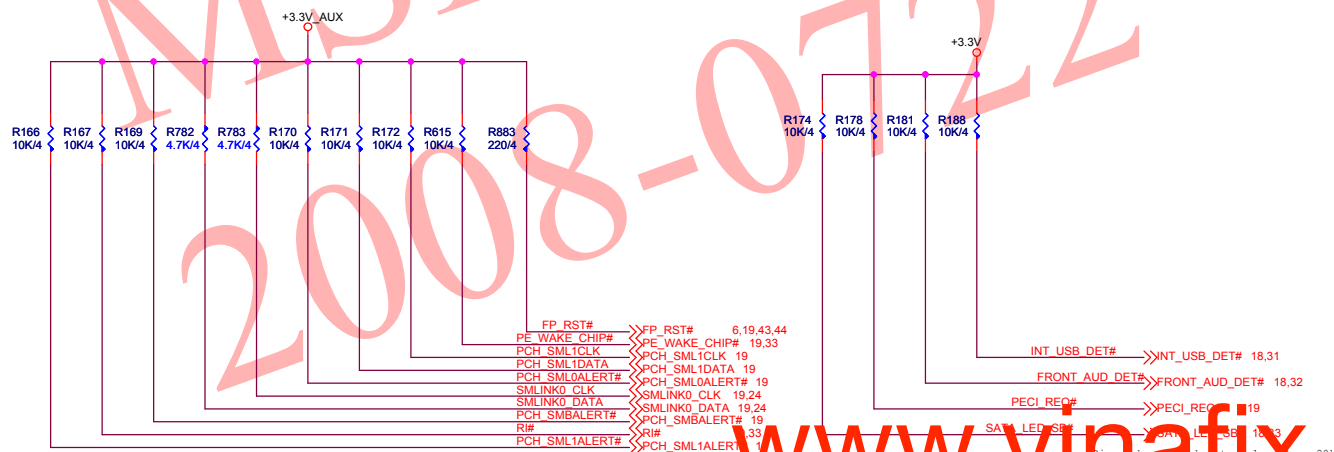
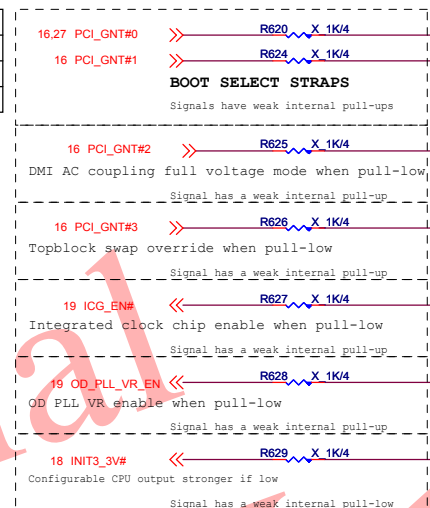
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MICRO-STAR INT'L CO., LTD.

Title
IBEXPEAK-GND/NVRAMSize
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19,25,27,33,35 SMB_CLK_RESUME
19,25,27,33,35 SMB_DATA_RESUME

25,33 PE_WAKE#

X7R

15 PE1_TX0# C1032 0.1uF/10V/X7R4
15 PE1_TX0# C1031 0.1uF/10V/X7R4
5.5/4.5/20

15 PE1_TX1# C1033 0.1uF/10V/X7R4
15 PE1_TX1# C1034 0.1uF/10V/X7R4

15 PE1_TX2# C1035 0.1uF/10V/X7R4
15 PE1_TX2# C1036 0.1uF/10V/X7R4

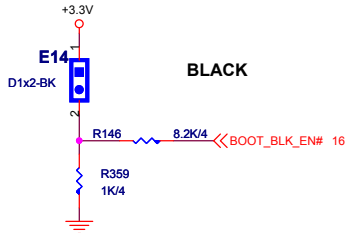
15 PE1_TX3# C1037 0.1uF/10V/X7R4
15 PE1_TX3# C1038 0.1uF/10V/X7R4

Series 0402 0.1uF cap on each TX line
within 500 mil of connector

J42

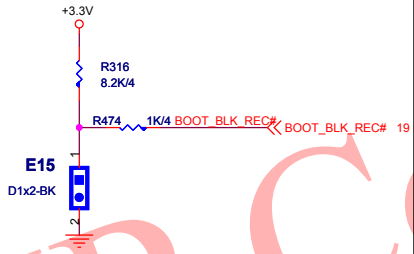
B1 12V
B2 12V
B3 RSVD
B4 GND
B5 SMCLK
B6 SMDAT
B7 JTAG_TCK
B8 JTAG_TDI
B9 JTAG_TDO
B10 JTAG_TMS
B11 3.3V
B12 3.3V_AUX
B13 WAKE#
B14 PRSNT1#
B15 12V
B16 12V
B17 RSVD
B18 GND
B19 JTAG_TCK
B20 JTAG_TDI
B21 JTAG_TDO
B22 JTAG_TMS
B23 3.3V
B24 3.3V_AUX
B25 WAKE#
B26 PRSNT2#
B27 GND
B28 RSVD
B29 HSON0
B30 HSON1
B31 HSON2
B32 HSON3
B33 HSON4
B34 HSON5
B35 HSON6
B36 HSON7
B37 HSON8
B38 HSON9
B39 HSON10
B40 HSON11
B41 HSON12
B42 HSON13
B43 HSON14
B44 HSON15
B45 PRSNT2#
B46 GND
B47 RSVD
B48 HSON16
B49 HSON17
B50 HSON18
B51 HSON19
B52 HSON20
B53 HSON21
B54 HSON22
B55 HSON23
B56 HSON24
B57 HSON25
B58 HSON26
B59 HSON27
B60 HSON28
B61 HSON29
B62 HSON30
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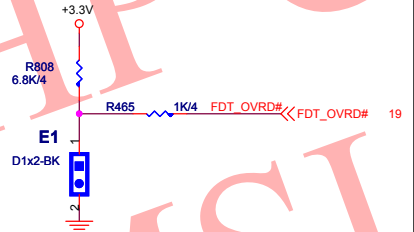


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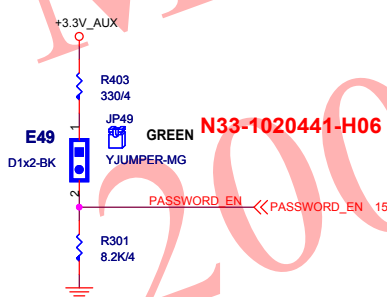


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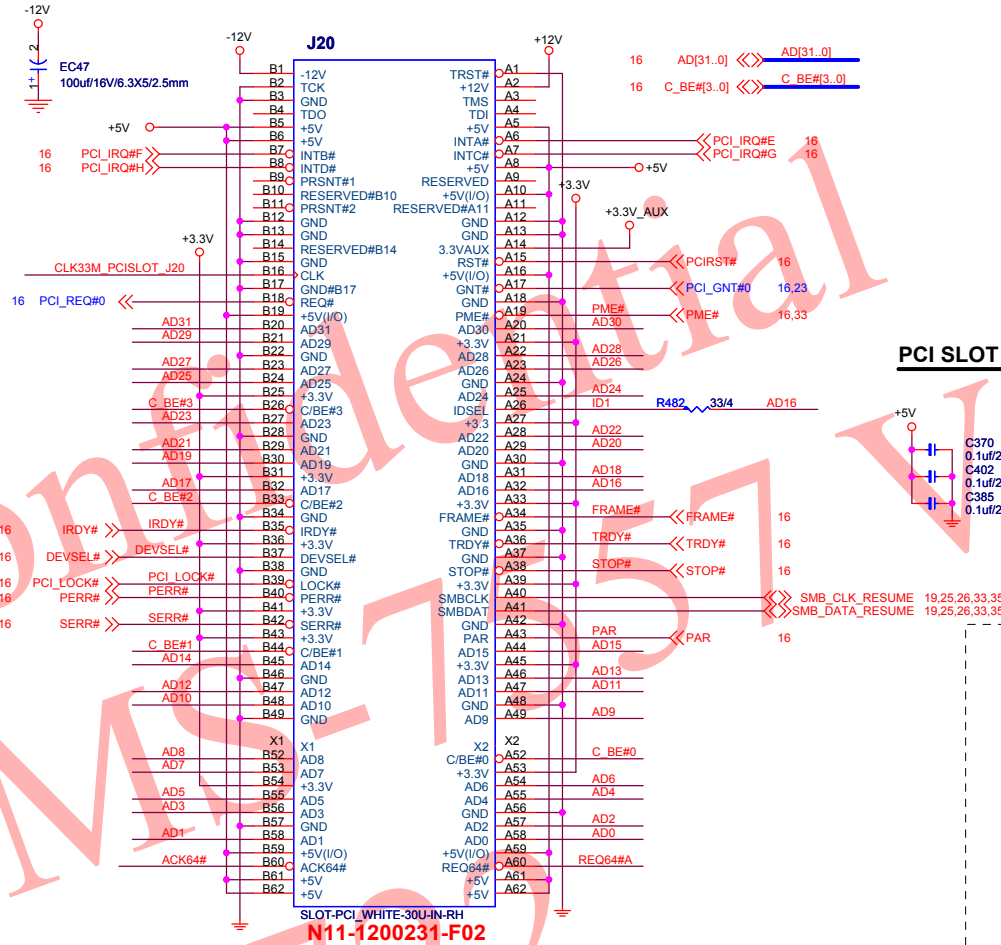
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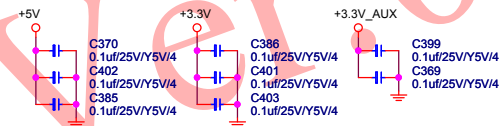


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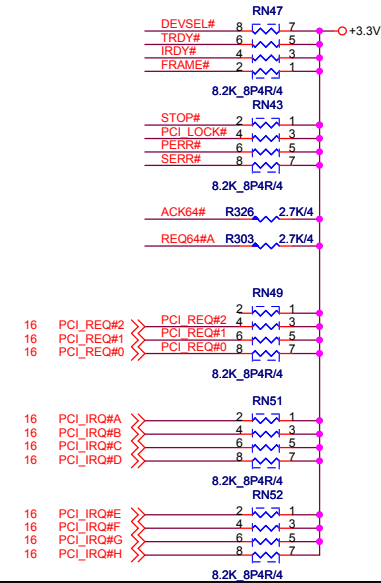
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17 CLK33M_PCI_SLOT >> CLK33M_PCI_SLOT R332_0/4 CLK33M_PCISLOT_J20

PCI SLOT DECOUPLING CAPACITORS



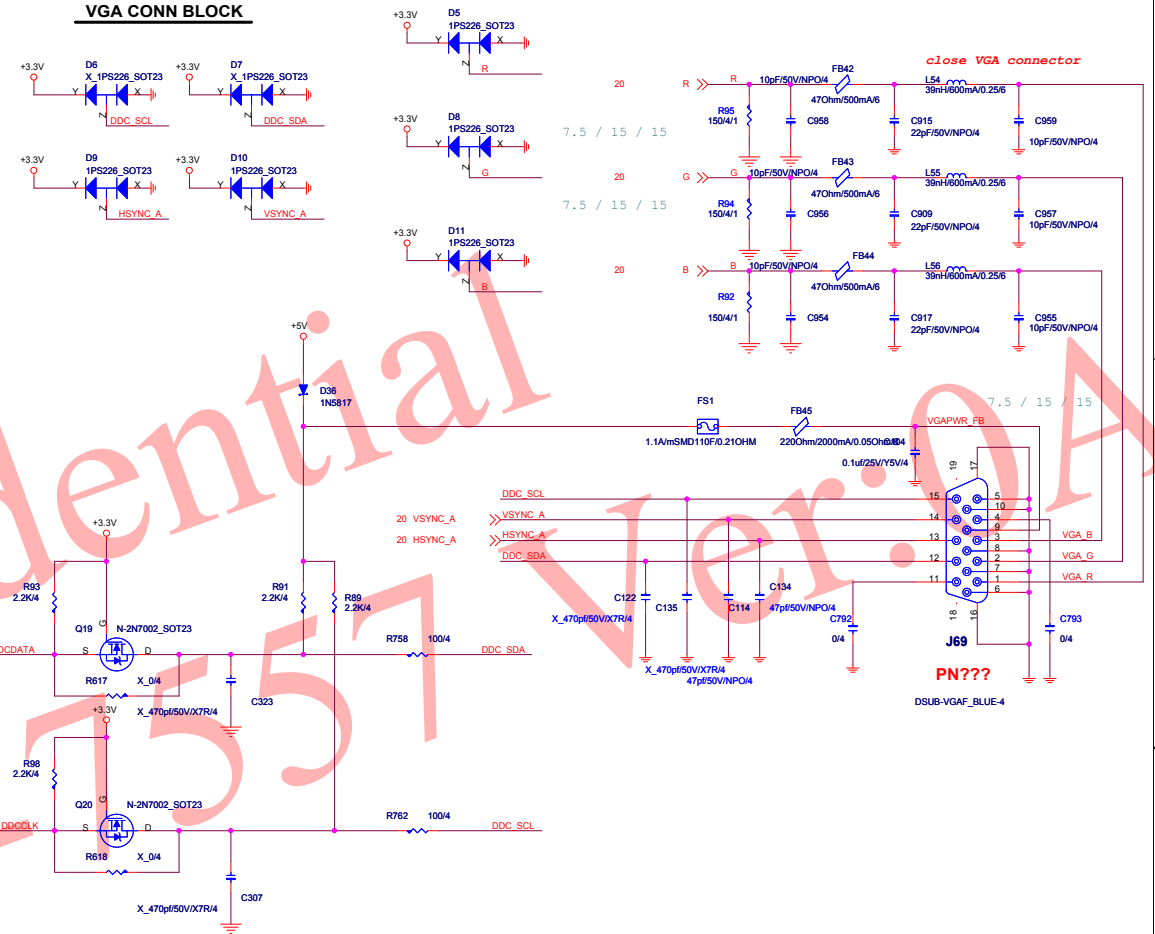
PCI PULL-UP / DOWN RESISTORS



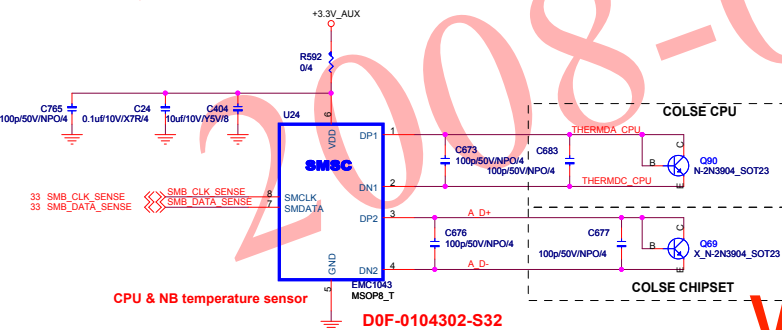
MICRO-STAR INT'L CO., LTD.

Title			PCI Slot1
Size	Document Number	MS-7557	Rev 0A
Date:	Tuesday, July 22, 2008	Sheet	27 of 52

VGA CONN BLOCK

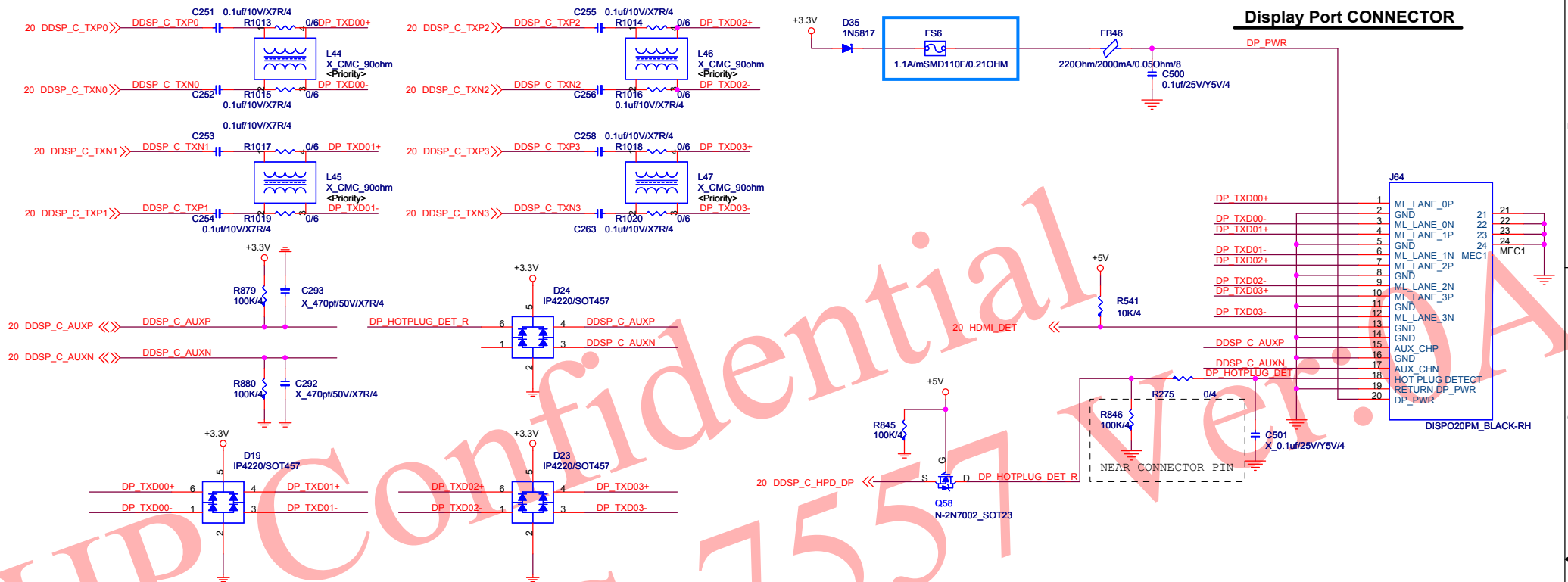


Temperature Sensing



MICRO-STAR INT'L CO., LTD.			
File			
VGA CONNECTOR			
Size	Document Number	Rev	
	MS-7557	QA	
Date	Tuesday, July 22, 2008	Sheet	28 of 52

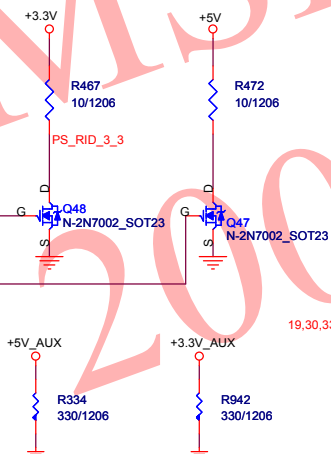
www.vinafix.vn



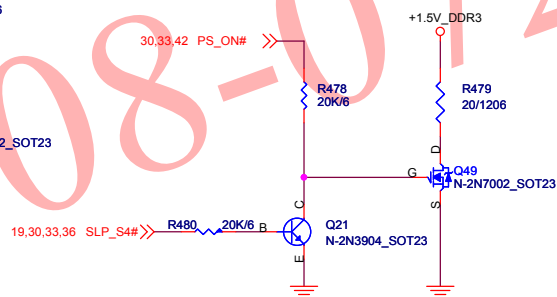
7.1.6 Residual Voltage Bleed-Off Circuit

A residual voltage circuit is required on the board. This circuit must be active in the S3, S4, and S5 state, whenever the main +5 V and +3.3 V power are turned off. A circuit diagram is shown below. When the system is in S3, S4, or S5, the transistors will be turned on, which will clamp any residual voltage on +5V and +3.3 V to ground. See the figure below for an example of a bleed-off circuit.

BLEED-OFF CIRCUIT

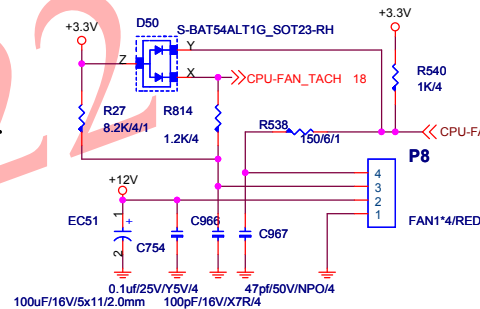


MEMORY VOLTAGE BLEED-OFF CIRCUIT

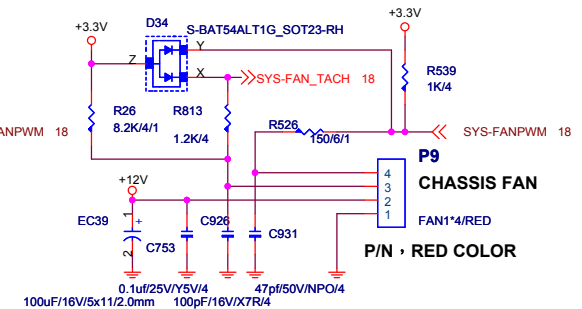


FAN BLOCK

CPU FAN



SYS FAN



MICRO-STAR IN'L CO., LTD.

Title			
DP CONNECTOR / FAN			
Size	Document Number	Rev 0A	
MS-7557			
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PARALLAL PORT

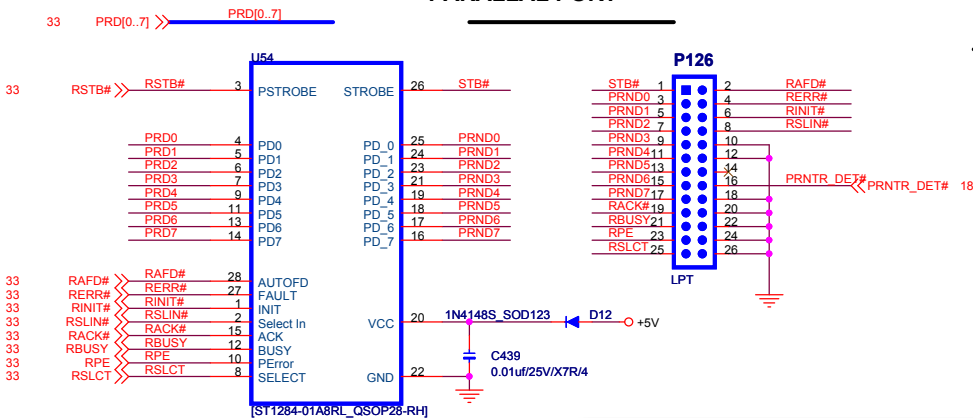
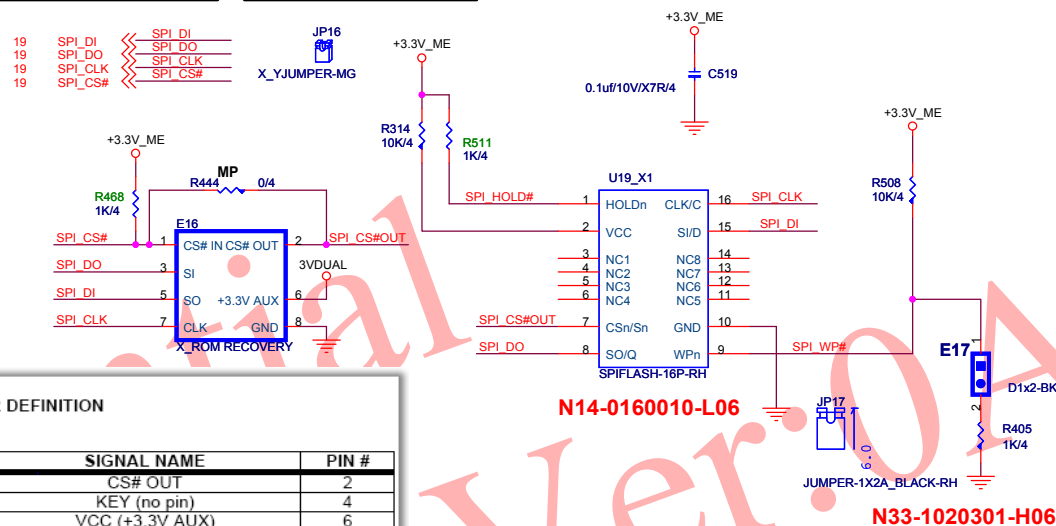


TABLE 22
ROM RECOVERY HEADER DEFINITION

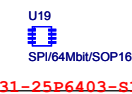
E16			
PIN #	SIGNAL NAME	SIGNAL NAME	PIN #
1	CS# IN	CS# OUT	2
3	SI	KEY (no pin)	4
5	SO	VCC (+3.3V AUX)	6
7	CLK	GND	8

SPI ROM

Connect E16 pin1 and pin2

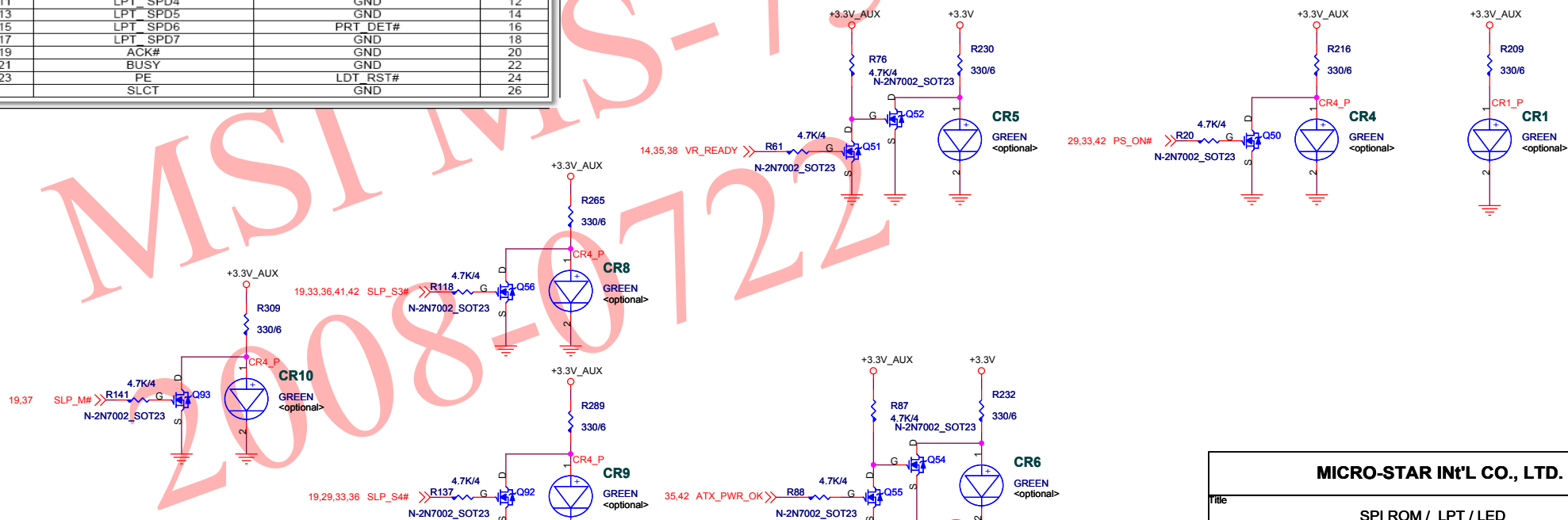


BIOS



Parallel Port 2 x13 header

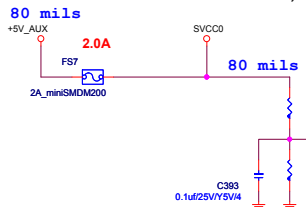
PIN #	SIGNAL NAME	SIGNAL NAME	PIN #
1	LPT_STB#	XAFD#	2
3	LPT_SPD0	ERROR#	4
5	LPT_SPD1	XINIT#	6
7	LPT_SPD2	XSLIN#	8
9	LPT_SPD3	GND	10
11	LPT_SPD4	GND	12
13	LPT_SPD5	GND	14
15	LPT_SPD6	PRT_DET#	16
17	LPT_SPD7	GND	18
19	ACK#	GND	20
21	BUSY	GND	22
23	PE	LDT_RST#	24
	SLCT	GND	26



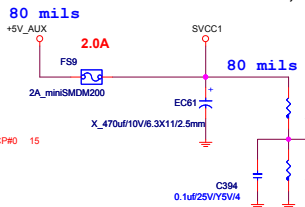
MICRO-STAR INT'L CO., LTD.

Title			
SPI ROM / LPT / LED			
Size	Document Number	MS-7557	
Date	Tuesday, July 22, 2008	Sheet	30 of 52

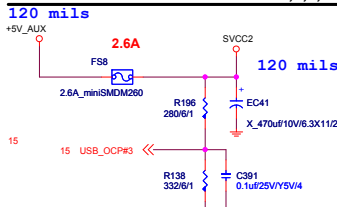
POWER CIRCUIT FOR USB PORT 0,1



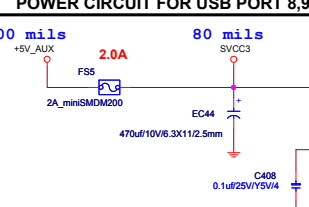
POWER CIRCUIT FOR USB PORT 2,3



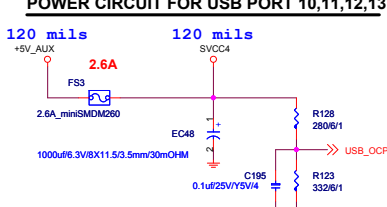
POWER CIRCUIT FOR USB PORT 4,5,6,7



POWER CIRCUIT FOR USB PORT 8,9

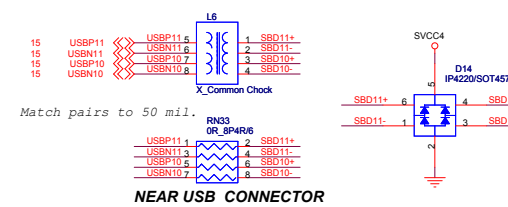


POWER CIRCUIT FOR USB PORT 10,11,12,13

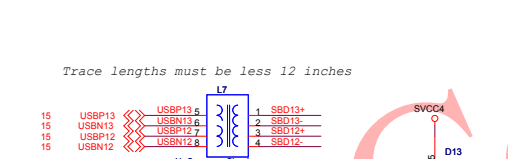


REAR PANEL USB CONNECTOR FOR USB PORT 10,11,12,13

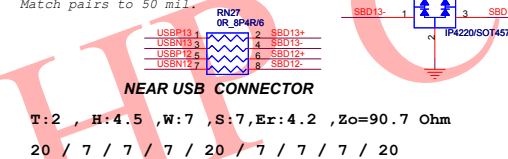
Trace lengths must be less 12 inches



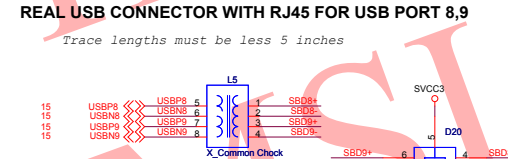
Match pairs to 50 mil.



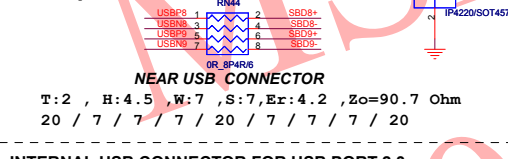
Trace lengths must be less 12 inches



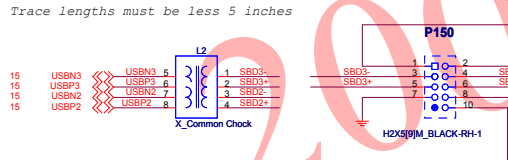
Match pairs to 50 mil.



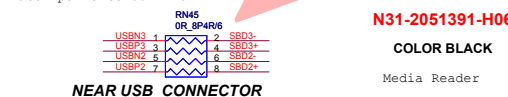
Trace lengths must be less 12 inches



Match pairs to 50 mil.



Trace lengths must be less 12 inches

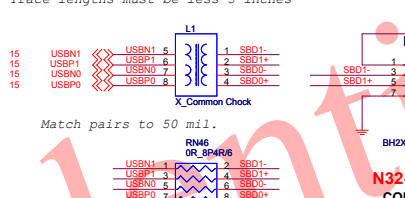


Match pairs to 50 mil.

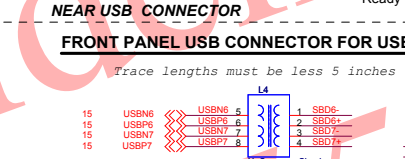


INTERNAL USB CONNECTOR FOR USB PORT 0,1

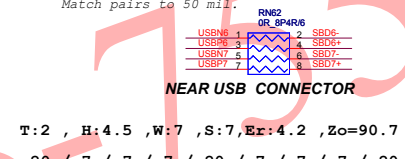
Trace lengths must be less 5 inches



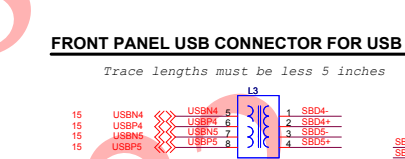
Match pairs to 50 mil.



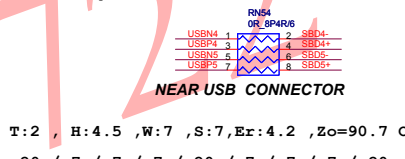
Trace lengths must be less 5 inches



Match pairs to 50 mil.



Trace lengths must be less 5 inches



Match pairs to 50 mil.



Trace lengths must be less 5 inches

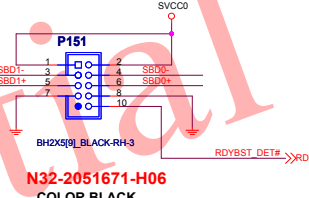


Match pairs to 50 mil.

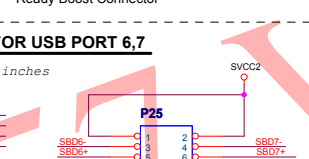


INTERNAL USB CONNECTOR FOR USB PORT 6,7

Trace lengths must be less 5 inches



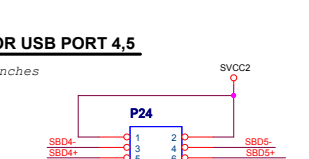
Match pairs to 50 mil.



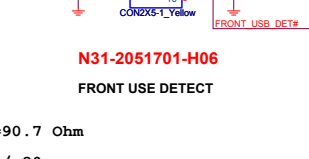
Trace lengths must be less 5 inches



Match pairs to 50 mil.



Trace lengths must be less 5 inches



Match pairs to 50 mil.



Trace lengths must be less 5 inches

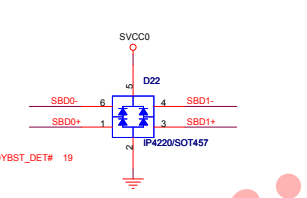


Match pairs to 50 mil.

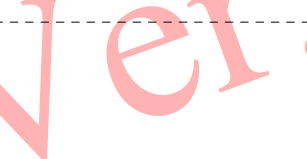


INTERNAL USB CONNECTOR FOR USB PORT 8,9

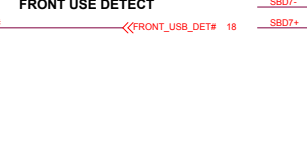
Trace lengths must be less 5 inches



Match pairs to 50 mil.



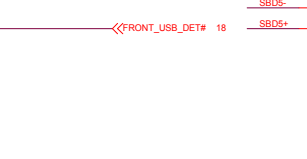
Trace lengths must be less 5 inches



Match pairs to 50 mil.



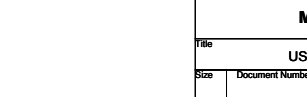
Trace lengths must be less 5 inches



Match pairs to 50 mil.



Trace lengths must be less 5 inches



Match pairs to 50 mil.

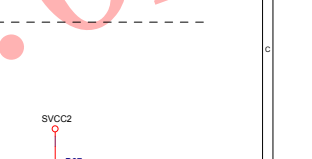


INTERNAL USB CONNECTOR FOR USB PORT 10,11,12,13

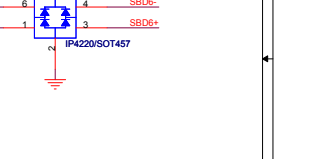
Trace lengths must be less 5 inches



Match pairs to 50 mil.



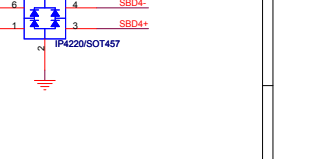
Trace lengths must be less 5 inches



Match pairs to 50 mil.



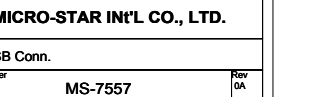
Trace lengths must be less 5 inches



Match pairs to 50 mil.



Trace lengths must be less 5 inches



Match pairs to 50 mil.



ADI1884 CODEC

ADI 1884A X_AD1884LQFP48

Trace Width 20mils.

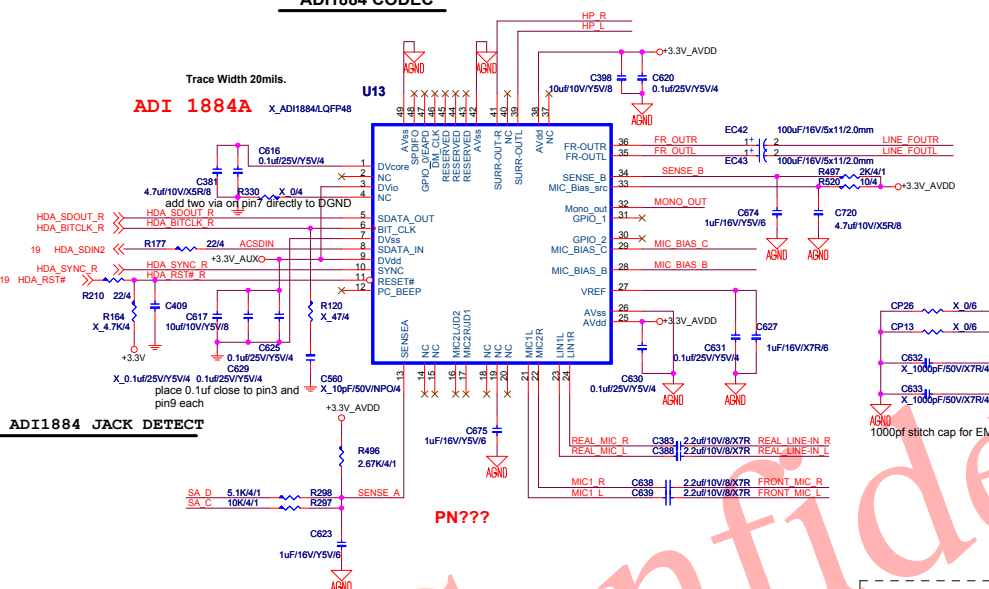
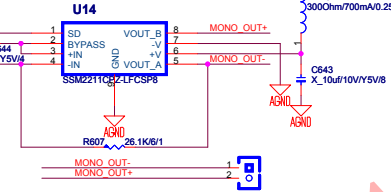
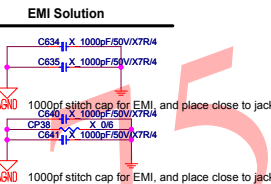
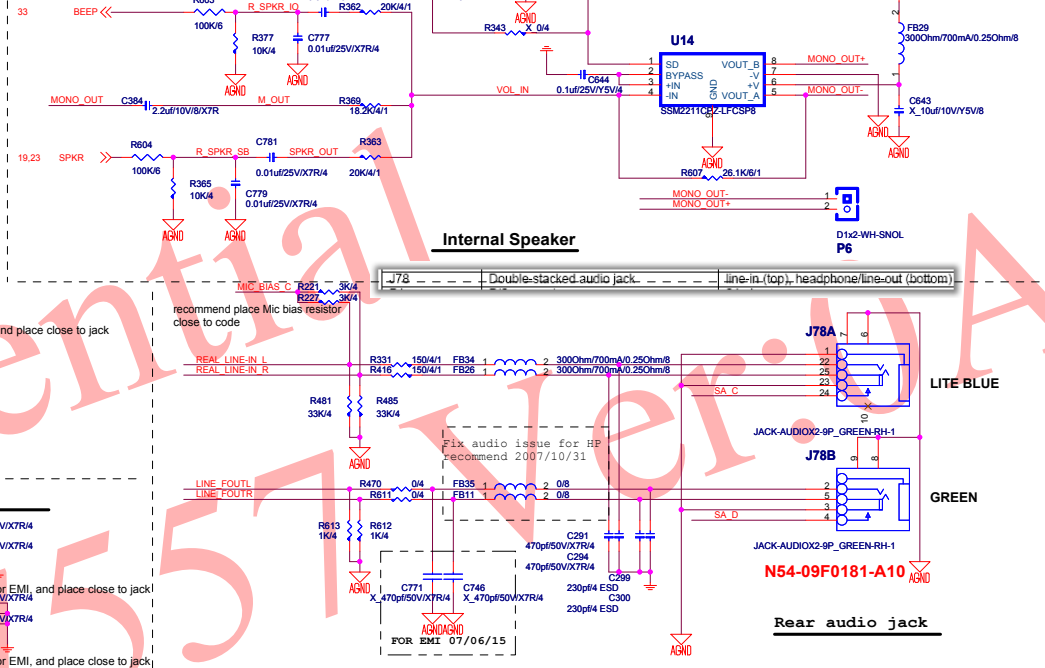


TABLE 14
SPEAKER HEADER DEFINITION

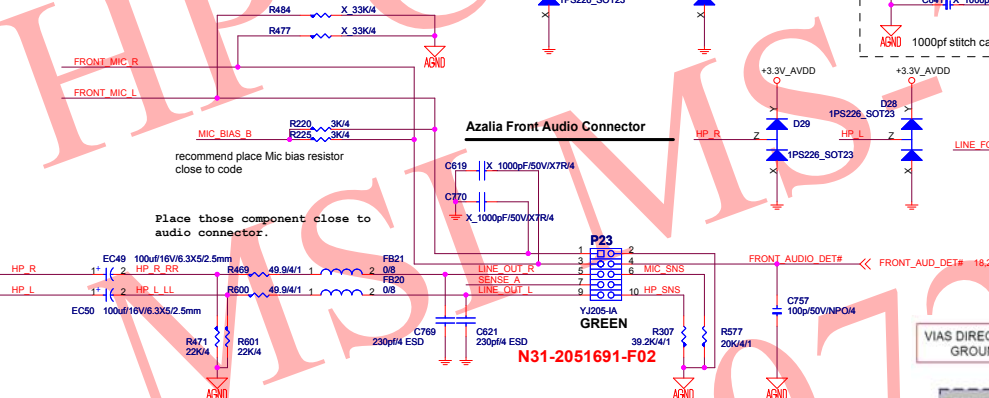
P6	
SPEAKER-	1
SPEAKER+	2



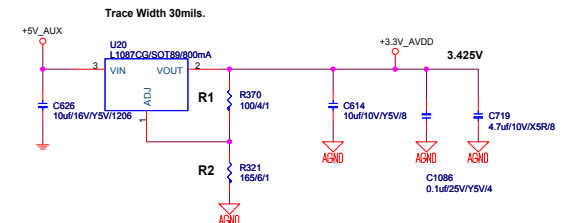
Internal Speaker



Speaker Out Decoupling



AUDIO CODE REGULATORS



ANALOG I/O

Pin Name	Pin Number	I/O	Description	Capabilities *
PCBEEP	12	I	Monaural Input from system for Analog PCBEEP	LI
PORT-F_L	16	I/O	Auxiliary Input / Output	LI
PORT-F_R	17	I/O	Auxiliary Input / Output	LO
PORT-B_L	21	I	Front Panel stereo MIC / Line-In	LI / MIC
PORT-B_R	22	I	Front Panel stereo MIC / Line-In	LI / MIC
PORT-C_L	23	I	Rear Panel stereo MIC / Line-In	LI / MIC
PORT-C_R	24	I	Rear Panel stereo MIC / Line-In	LI / MIC
MONO_OUT	32	O	Monaural Output to Internal Speaker or Telephony Subsystem Speakerphone	LO
PORT-D_L	35	O	Rear Panel Headphone / Line-Out	HP / LO
PORT-D_R	36	O	Rear Panel Headphone / Line-Out	HP / LO
PORT-A_L	39	O	Front Panel Headphone / Line-Out	HP / LO
PORT-A_R	41	O	Front Panel Headphone / Line-Out	HP / LO

* LI - Line Level Input
LO - Line Level Output
HP - Output capable of driving headphone load & power
MIC - Input supports Microphones with MIC Bias & boost amplifier.

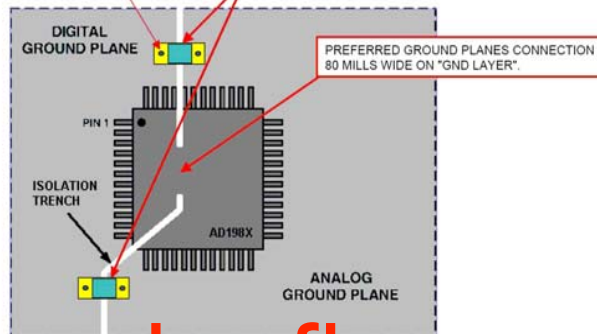


TABLE 15
FRONT I/O AUDIO HEADER DEFINITION

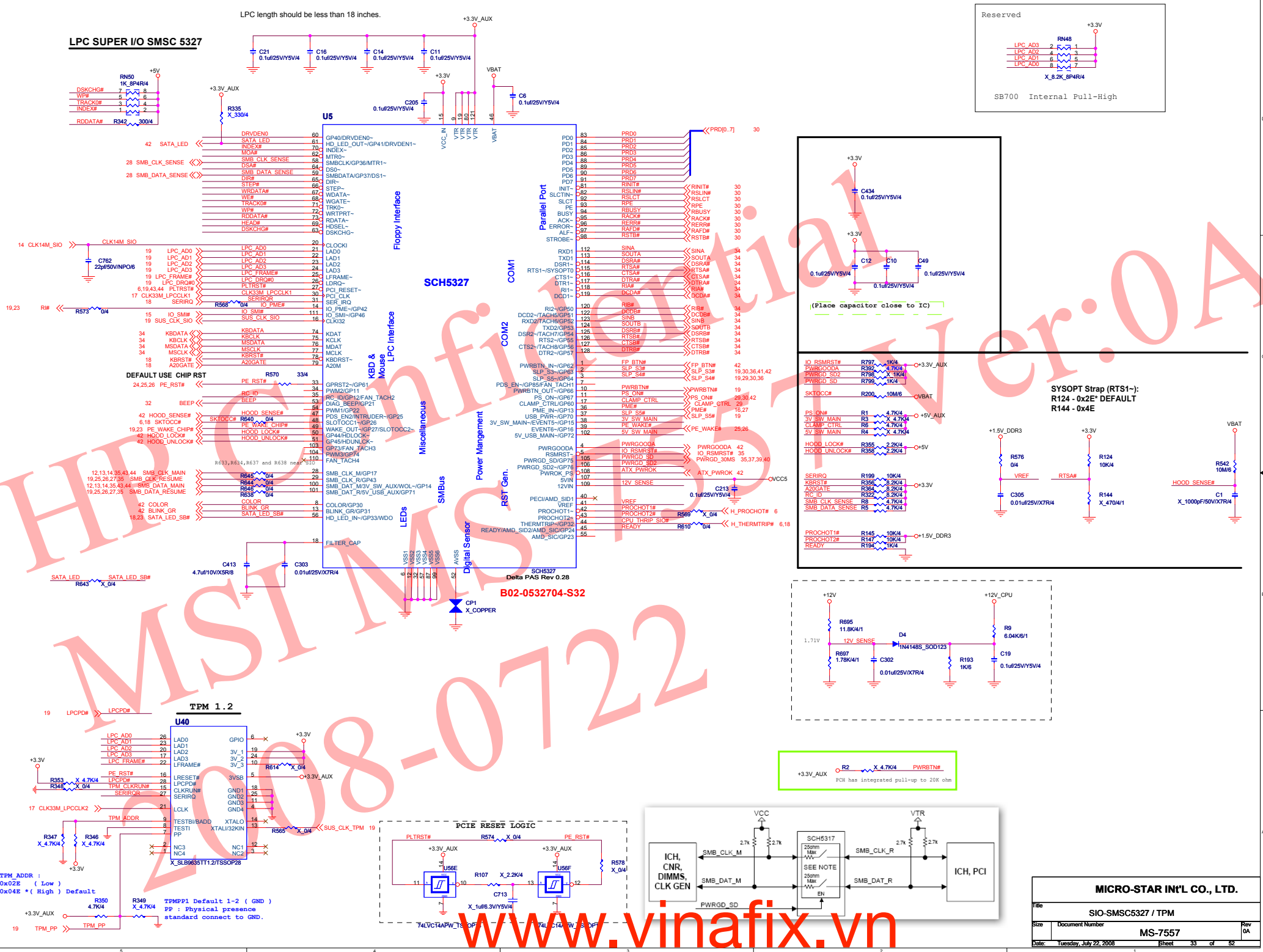
PIN #	SIGNAL NAME	SIGNAL NAME	PIN #
1	Microphone Left Input	ANALOG GROUND	2
3	Microphone Right Input	Front Audio Detect#	4
5	Headphone Out from Codec (Right)	Sense1_Return	6
7	Sense Send	KEY (no pin)	8
9	Headphone Out from Codec (Left)	Sense2_Return	10

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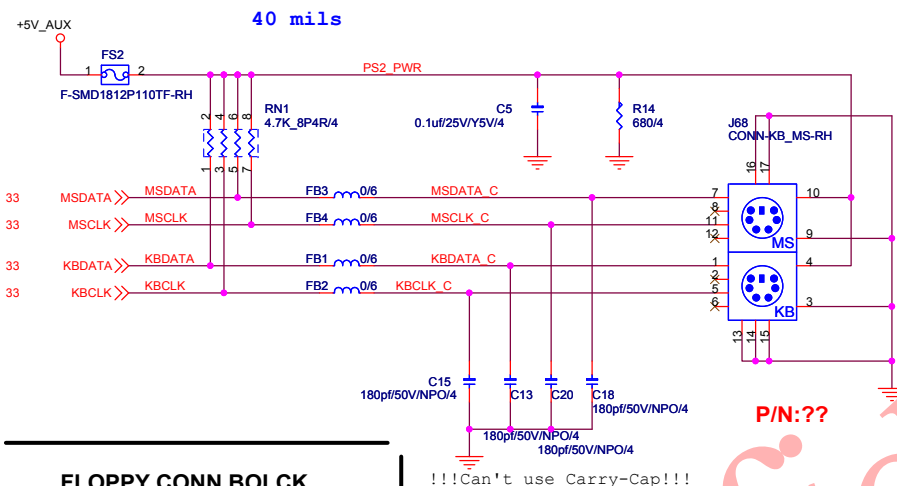
Azalia Codec-ADI 1884			
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LPC SUPER I/O SMC5327

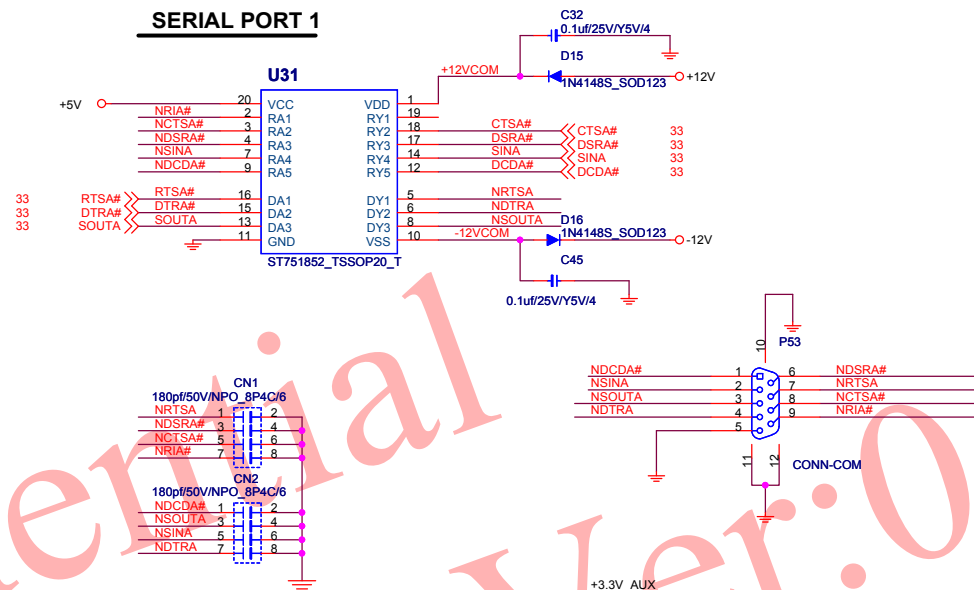


PS2 KEYBOARD & MOUSE CONNECTOR



FLOPPY CONN BOLCK

SERIAL PORT 1



SERIAL PORT 2

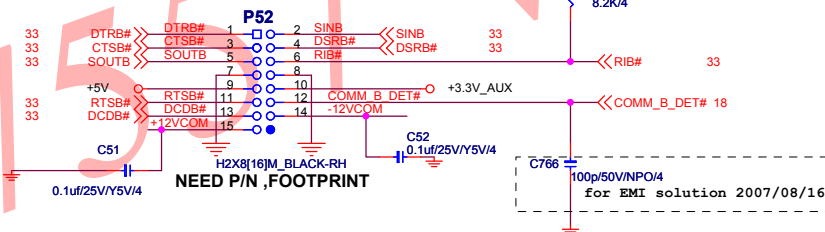
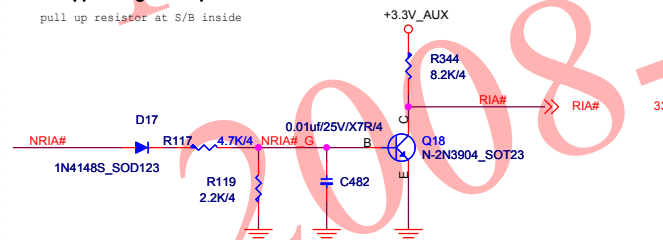


TABLE 12
FLOATING SERIAL PORT PIN DEFINITION (TOP VIEW)

P52			
Pin #	Signal Name	Signal Name	Pin #
1	DTR#	RXD	2
3	CTS#	DSR#	4
5	TXD	RI#	6
7	GND	GND	8
9	+5 V	+3.3 VAUX	10
11	RTS#	COMM B DETECT#	12
13	DCD#	-12 V (THRU DIODE)	14
15	+12 V (THRU DIODE)	KEY	16

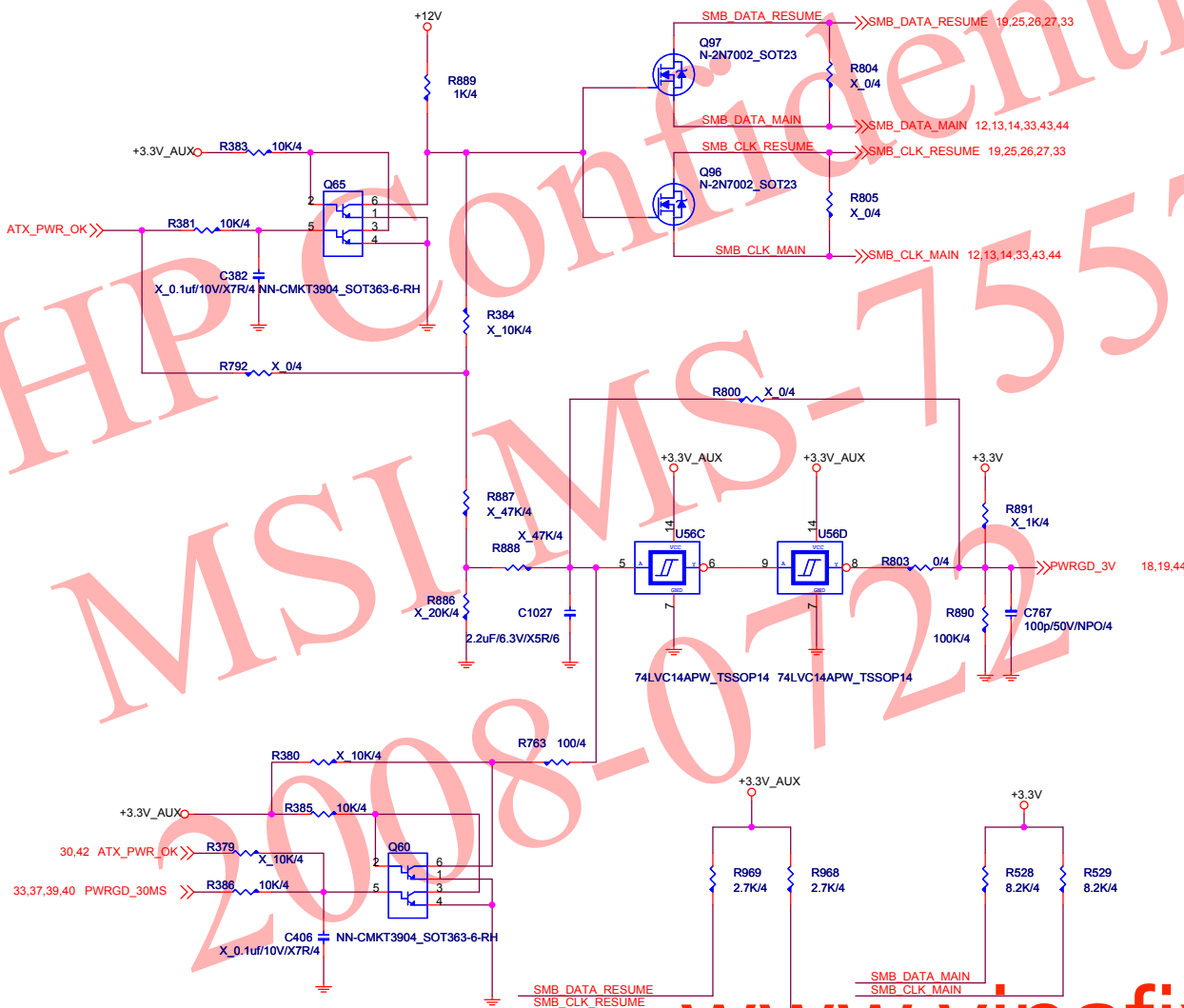
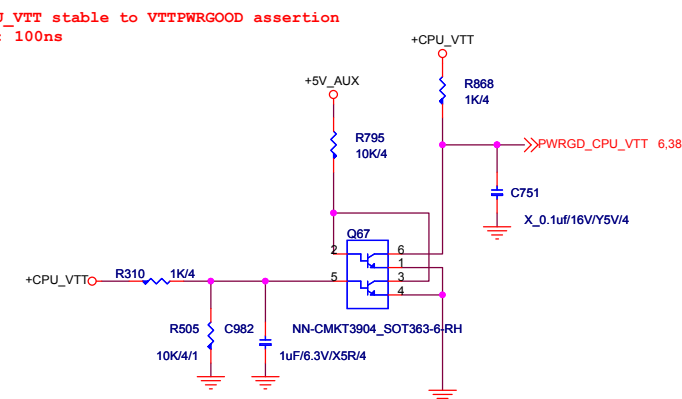
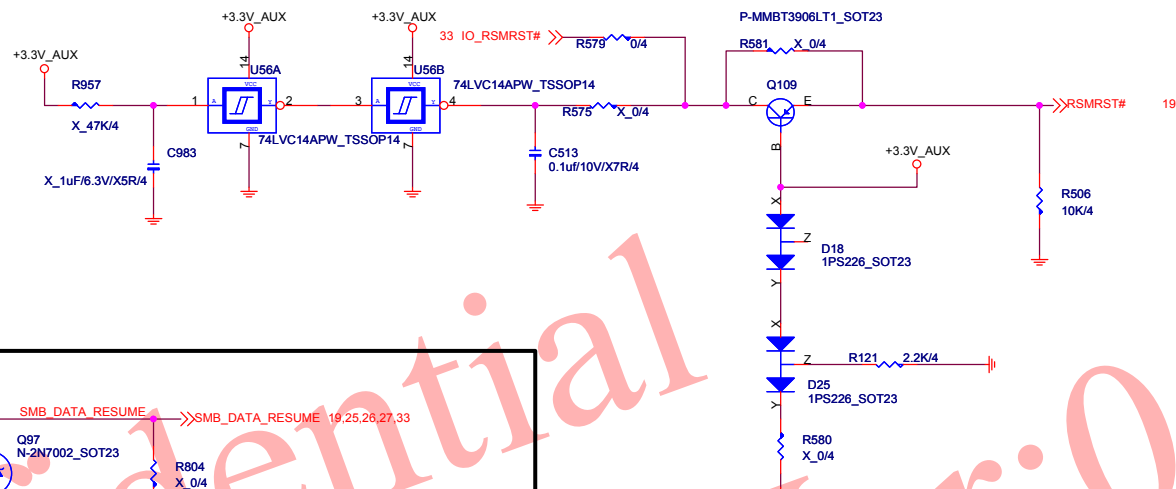
Support ring wake up

pull up resistor at S/B inside

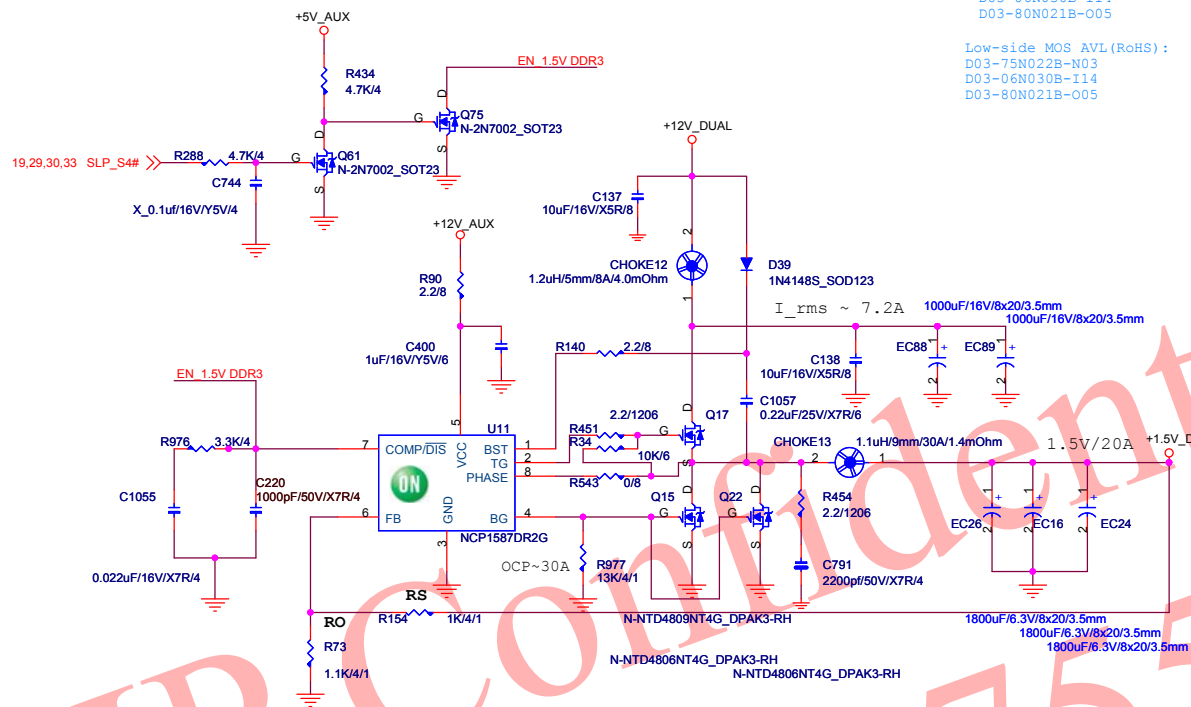


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Title			
KB/MS&COM1&Floppy Conn.			
Size	Document Number	MS-7557	
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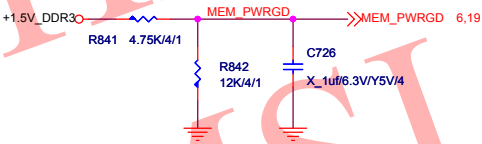
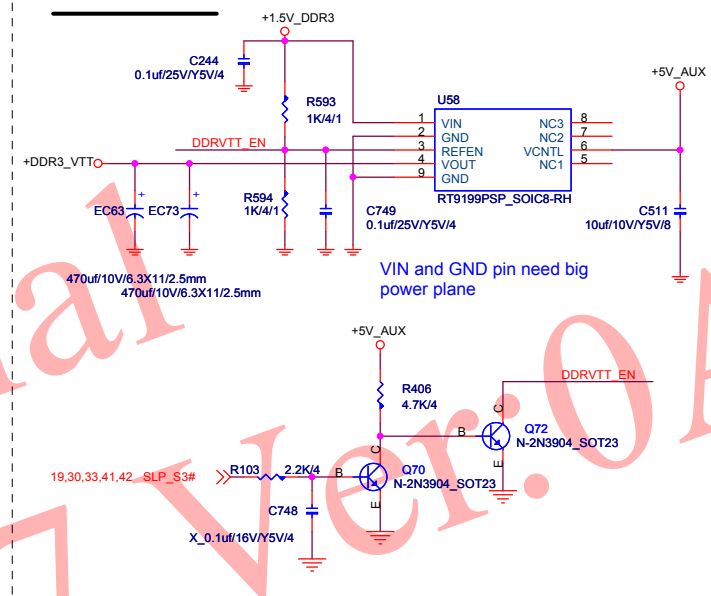
DDR III 1.5V POWER



High-side MOS AVL (RoHS):
D03-75N022B-N03
D03-06N030B-I14
D03-80N021B-O05

Low-side MOS AVL (RoHS):
D03-75N022B-N03
D03-06N030B-I14
D03-80N021B-O05

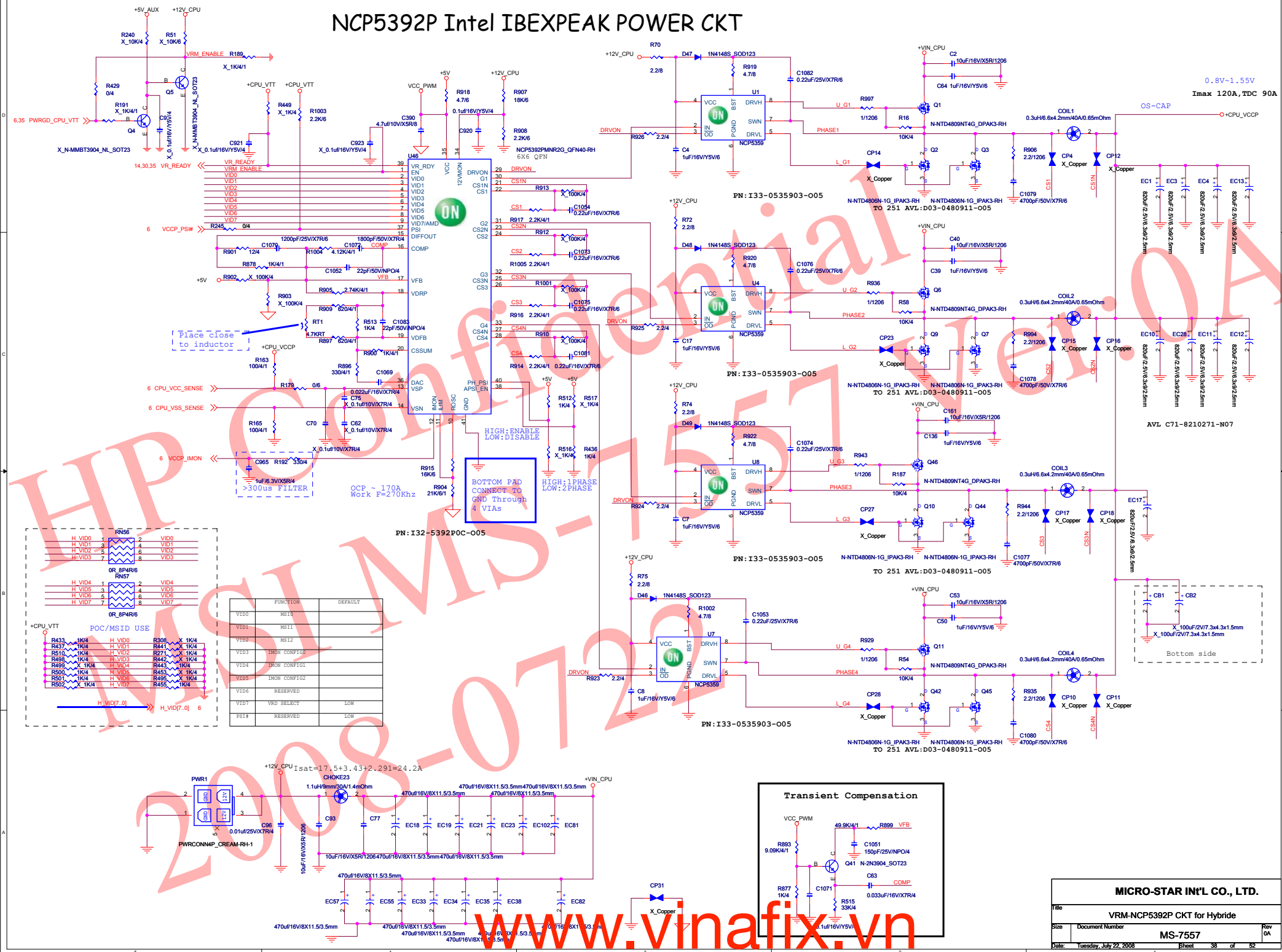
DDR VTT Power



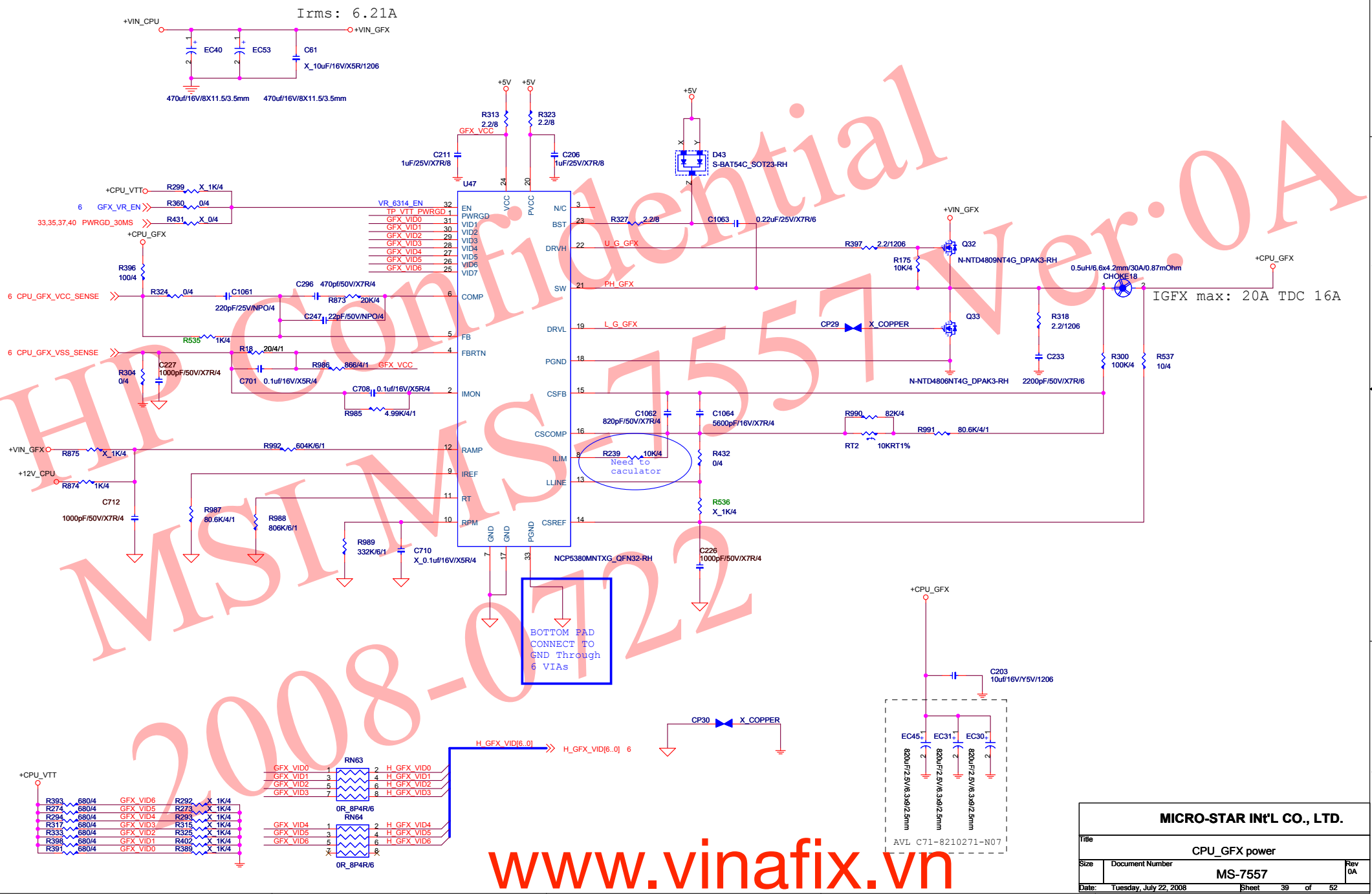
VDDQ stable to SM_DRAMPWROK assertion.
Min: 100 ns

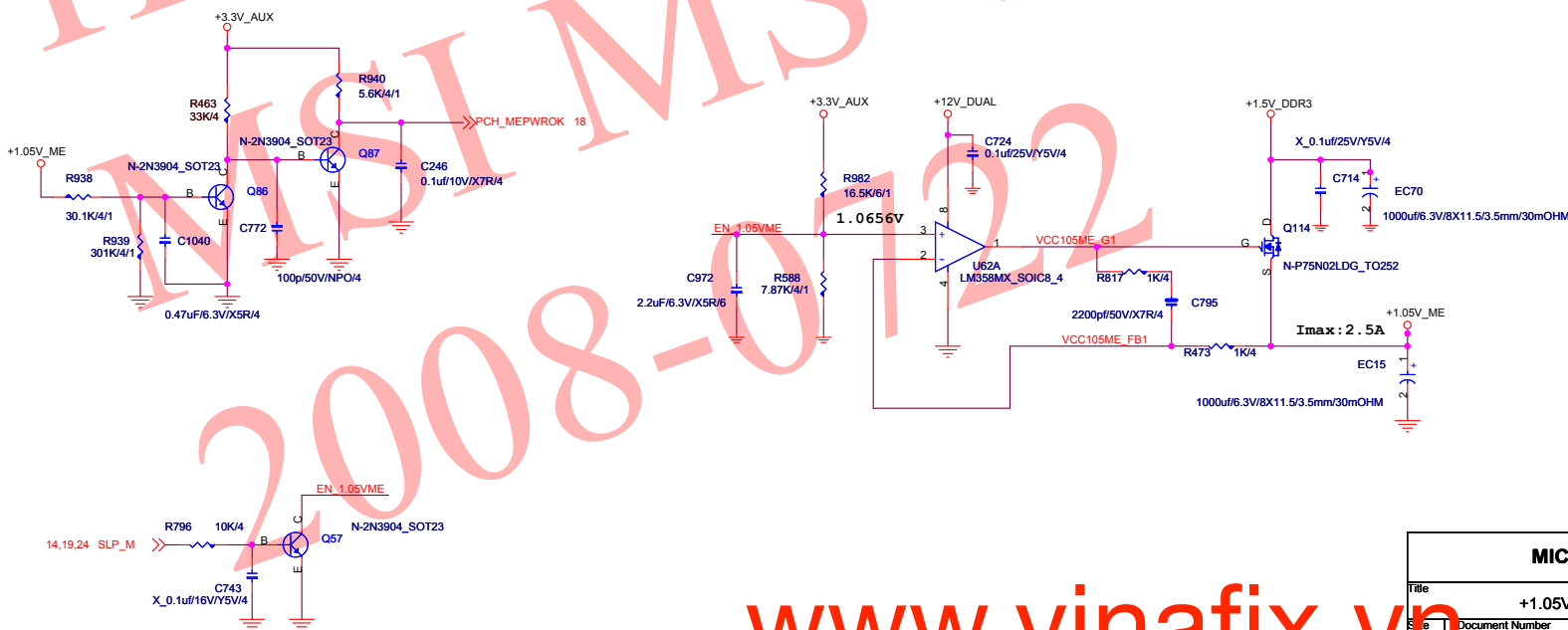
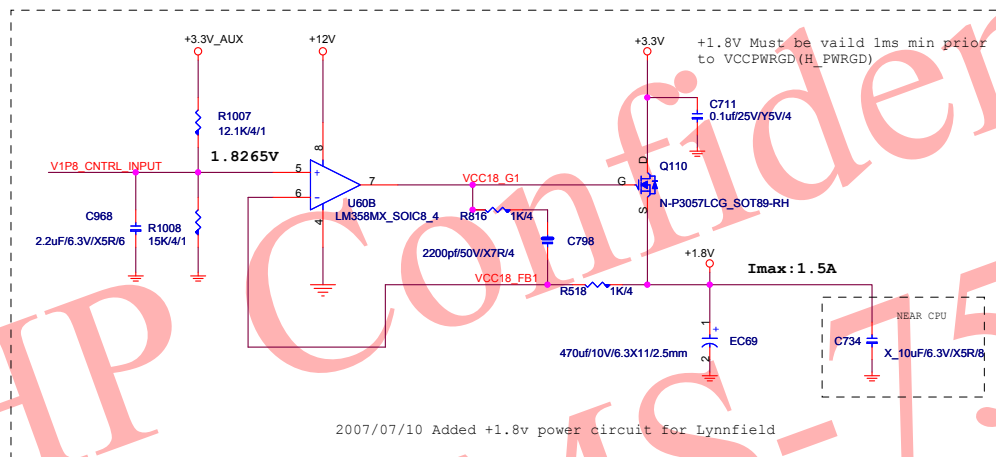
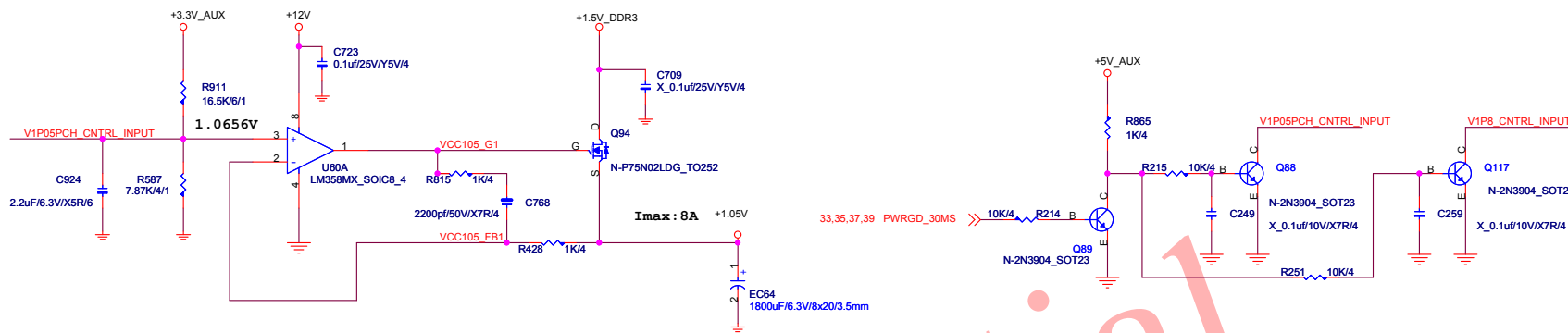
	SUPPORT iAMT			W/O SUPPORT iAMT		
	S0 MODE	S3 MODE	S5 MODE	S0 MODE	S3 MODE	S5 MODE
SLP_S4#	HIGH	HIGH	HIGH	HIGH	HIGH	LOW
SLP_M#	HIGH	HIGH	HIGH	HIGH	LOW	LOW
DDRIII	1.5V	1.5V	1.5V	1.5V	1.5V	DISABLE
MCH_ME	1.05V	1.05V	1.05V	1.05V	DISABLE	DISABLE

NCP5392P Intel IBEXPEAK POWER CKT

[illegible]

NCP5380 POWER CKT FOR CPU_GFX



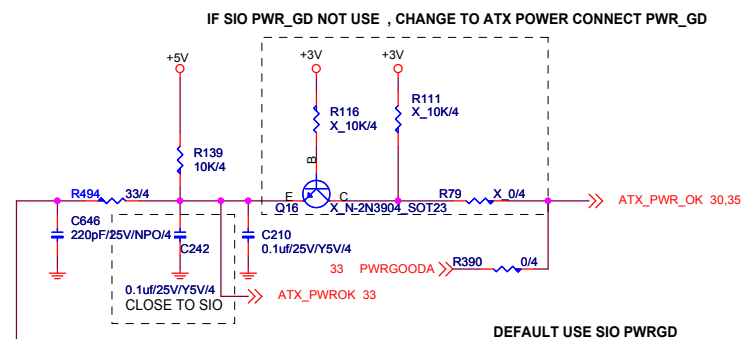
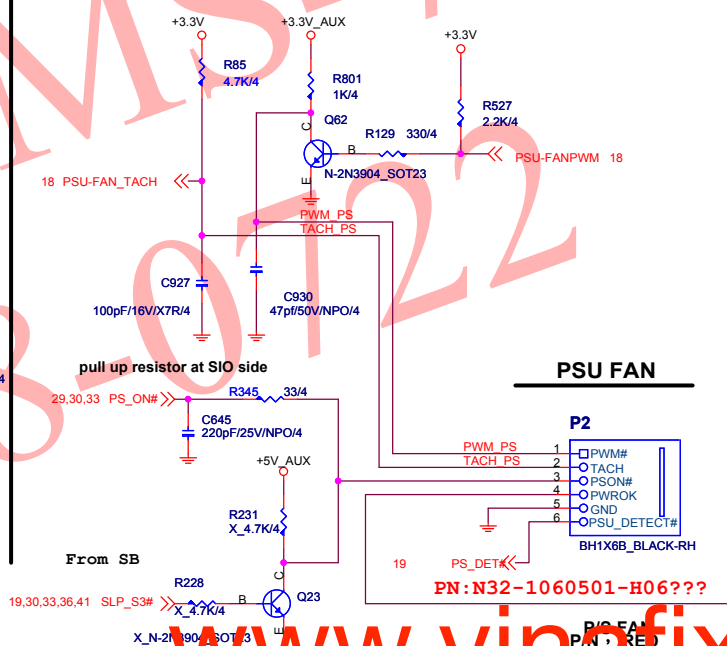
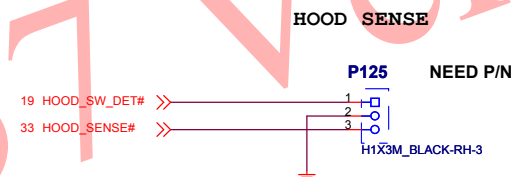
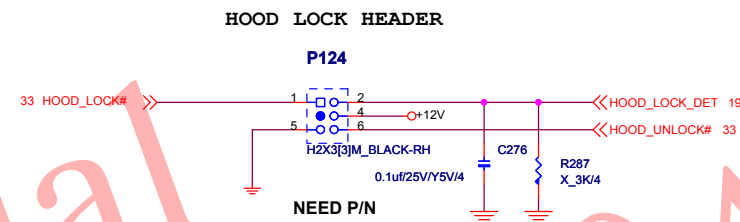


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+1.05V/+1.05V_ME/+1.8V

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+CPU_VTT

R975 51/4 TP_XDP_TESTIN#
R945 51/4 CPU_TDO
R946 X 51/4 CPU_TDI
R947 X 51/4 CPU_TMS

R948 X 51/4 CPU_TCK
R949 X 51/4 CPU_TRST#

TP_XDP_TESTIN# 44
CPU_TDO 6
CPU_TDI 6
CPU_TMS 6

CPU_TCK 6
CPU_TRST# 6

6 XDP_CPU_PREQ#
6 XDP_CPU_PRDY#

XDP_CPU_BPM_N0
XDP_CPU_BPM_N1
XDP_CPU_BPM_N2
XDP_CPU_BPM_N3

XDP_CPU_BPM_N4
XDP_CPU_BPM_N5
XDP_CPU_BPM_N6
XDP_CPU_BPM_N7

12,13,14,33,35,44 SMB_DATA_MAIN
12,13,14,33,35,44 SMB_CLK_MAIN

+CPU_VTT

R953 X 3K/4

6,19,33,44 PLTRST# PLTRST# R954 1K/4 XDP_PLTRST#

6 CPU_RESET_OUT# CPU_RESET_OUT# R955 1K/4 TP_CPU_RESET_OUT#

+CPU_VTT

R956 1.5K/4

6 XDP_CPU_PWRGD XDP_CPU_PWRGD R950 0/4 XDP_PWRGD

6 XDP_CPU_BCLK_P XDP_CPU_BCLK_P R951 0/4 XDP_CPU_CLK_R_P

6 XDP_CPU_BCLK_N XDP_CPU_BCLK_N R952 0/4 XDP_CPU_CLK_R_N

14 XDP_CLK133M_CLKGEN_OUT_P
14 XDP_CLK133M_CLKGEN_OUT_N

R958 X 0/4
R959 X 0/4

+CPU_VTT

DBG2

VCC_TP_AB
VCC_TP_CD

TP_FN_A0
TP_FN_A1

TP_DATA_A_0
TP_DATA_A_1
TP_DATA_A_2
TP_DATA_A_3

TP_FN_B0
TP_FN_B1

TP_DATA_B_0
TP_DATA_B_1
TP_DATA_B_2
TP_DATA_B_3

SDA
SCL

TP_FN_C0
TP_FN_C1

TP_DATA_C_0
TP_DATA_C_1
TP_DATA_C_2
TP_DATA_C_3

TP_FN_D0
TP_FN_D1

TP_DATA_D_0
TP_DATA_D_1
TP_DATA_D_2
TP_DATA_D_4

TCK1
TCK0

TDO
TRST#

TDI
TMS

HOOK0
HOOK1
HOOK2

HOOK3
ITPCLK/HOOK4

ITPCLK#/HOOK5
RESET#/HOOK6

DBR#/HOOK7

GND
GND

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GND

GND
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Title CPU_XDP

Size Document Number

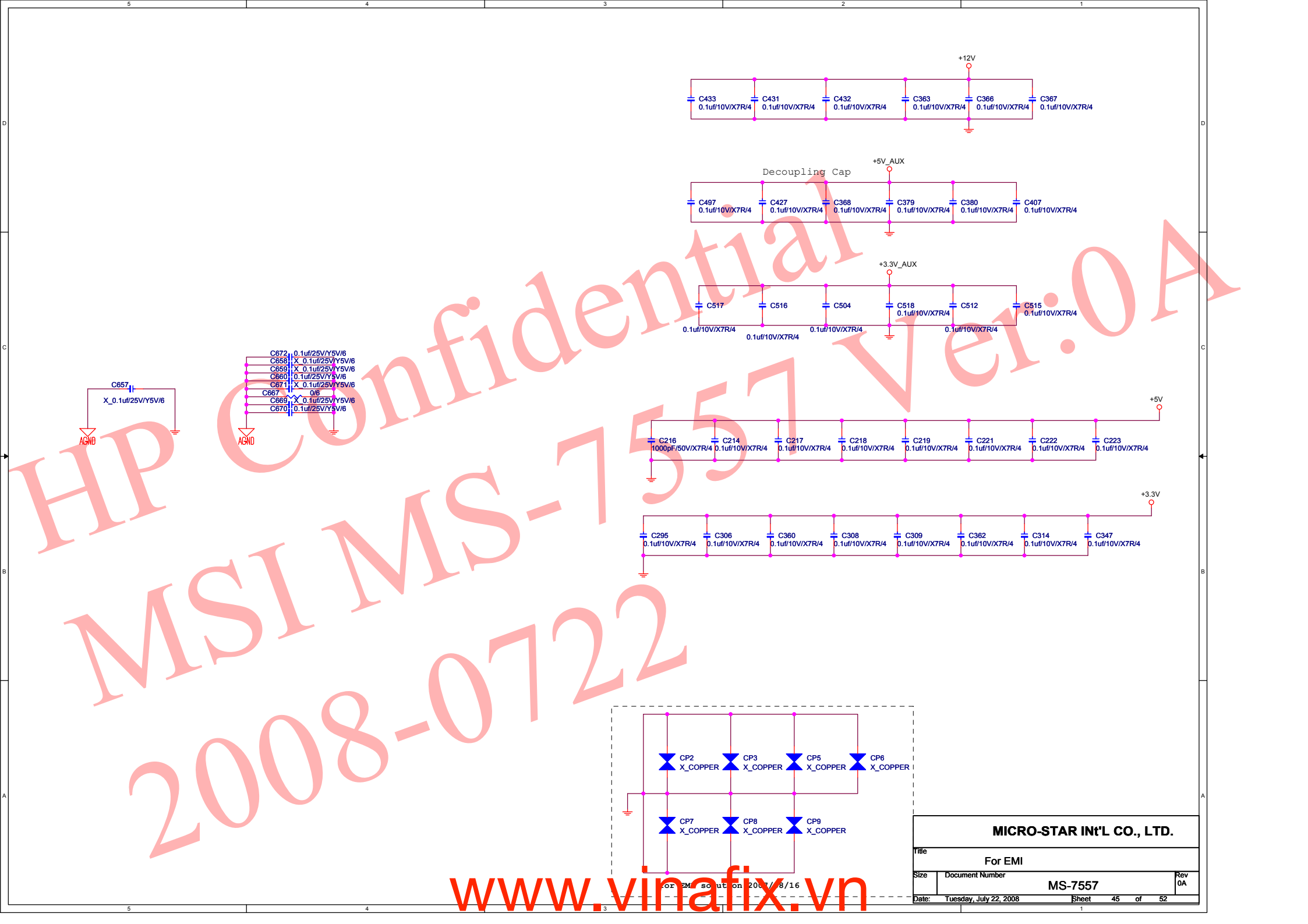
MS-7557

Rev

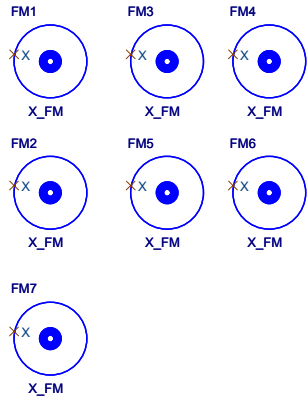
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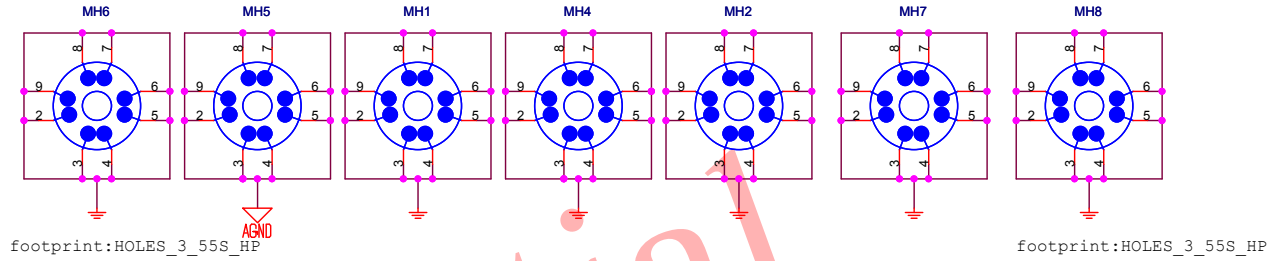
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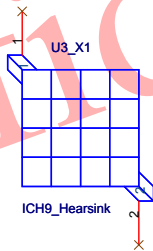
Optics Orientation Holes



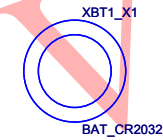
Mounting Holes



NB/SB FAN/HEAT-SINK



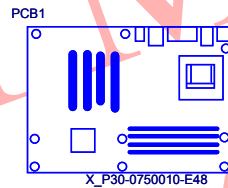
BATTERY



Simulation



PCB



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0A
2008/07/01 MS-7557 0A START

2008/07/09

PAGE36: DDRIII power solution changed from intersil (ISL6545) to ON-semi (NCP1587)

PAGE37: +CPU VTT power solution changed from intersil (ISL6545) to ON-semi (NCP1587)

PAGE38: +CPU VCCP power solution changed from intersil (ISL6334) to ON-semi (NCP5392)

PAGE39: +CPU GFX power solution changed from intersil (ISL6314) to ON-semi (NCP5380)

PAGE40: +1.05V ME power solution changed from intersil (ISL6545) to ON-semi (NCP1587)

PAGE41: +3.3_AUX AND +5V_AUX power solution changed from intersil (ISL6228) to ON-semi (NCP1587)

2008/07/10

PAGE6: Added R881,R882,R892,deleted RN61.

PAGE6: XDP_CPU_BPM_N0-7 would be connected to XDP debug connector.

PAGE14: Deleted R872.

PAGE19: BRD_ID0 and 1 change pull high to +3V due to the GPIO's power are from +3V

PAGE20: Added DP support DVI dongle function circuit

PAGE24: Modify +3.3V_LAN CIRCUIT

PAGE27: PASSWORD_EN change pull high to +3V_AUX due to the GPIO's power are from +3V_AUX

PAGE29: Added CPU Fan circuit.

PAGE37: Added R131(uninstall)

PAGE40: Added +1.8v power circuit for Lynnfield

2008/07/15

PAGE19: Added SLP_M and SLP_M# circuit.

PAGE33: U5 changed to SMSC.

PAGE36: Added R543,R73 Changed to 1.1K ohm.

PAGE37: Deleted EC57,EC55,EC62. Added R1011,C1087,EC17

PAGE38: Added EC55,57,62,81,82,102.

PAGE40: Modify +1.05V_ME circuit.

PAGE41: Added R544.

2008/07/16

PAGE6: Added Clock distribution diagram.

PAGE14: Added R195,Q116,R811,C876,R213(Uninstall).

PAGE29: Added R1013-R1020,L44-47(Uninstall)

PAGE41: Added D51.

2008/07/17

PAGE8: Modify DBG4 circuit.

PAGE37: Added CB3,CB4.

PAGE38: Added CB1,CB2,EC17.

PAGE42: Modify P160-1 and P160-2 SATA POWER CONN.

2008/07/18

PAGE21: Added R491,R545(Uninstall)

PAGE35: Modify PWRGD_3V circuit.

PAGE35: Modify PWRGD_CPU_VTT circuit.

PAGE40: Added R865,R251,Q117.C249(Un-installed) and C259(Un-installed).

PAGE41: Q115 has inversed 180 degree.

PAGE41: R960,R961,R966,R967 have changed from 4.7K ohm to 10K ohm.

2008/07/21

PAGE11: Added
C1059,C1060,C1088,C1089,deleted EC14,EC20.

PAGE18: Change P64 SATA connector

PAGE33: R200 and R542 have changed to 10M ohm(SMSC recommend).

PAGE33: R355,R358 has changed to 2K ohm(SMSC recommend).

PAGE33: R569 has been un-installed.(SMSC recommend).

PAGE33: U5 pin3 connect to SLP_S4#.(SMSC recommend).

PAGE33: Added R4.(SMSC recommend).

PAGE38: Deleted EC62.

2008/07/22

PAGE19: Modify RTCRST# circuit.

PAGE32: R198,R204,R207 have removed to page 19.

PAGE32: Uninstalled R477,R484.

PAGE32: D26-31,D33,D38 pin X has been connected to GND.

PAGE33: R150 has removed to page 6 and changed from 300 ohm to 51 ohm (SMSC recommend).

PAGE39: Deleted R400,R283.

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