MS-7636 Ver: 1.3 uATX(244mm X 240mm)

CPU:

INTEL - Lynnfield/ Clarkdale LGA 1156

System Chipset:

INTEL-IBEXPEAK PCH (H - 55)

OnBoard Chipset:

Clock Gen:ICS 4105B

HD Audio Codec:ALC889

LAN:RTL8111D 10/100/1000

SIO:F71889

Flash ROM: 64 Mb SPI (CHIP)

IDE X1 JMB-368

Main Memory:

DDRIII (800/1066/1333MHz) * 4 (Dual Channel)

Expansion Slots:

PCI Express (X16) Slot * 1
PCI Express (X1) Slot * 2
PCI Slot *1

PWM:

Controller: uP6206
(3-Phase use STD MOS -- 95W)

OV by uP6264 or SIO
uP6103 (CPU_VTT)
Linear (PCH)
uP6103(DDR)
GPU Power -ISL6314

ACPI: uPI+SIO

Other:

SATA(SATA2-300MB/s) *6
USB2.0 *10 (Rear*4 / Front*6)
PRINT Header *1
COM pin header *2
TPM Header *1
on BOARD BUZZER
D-SUB *1
DVI PORT*1
HDMI PORT*1

BOM SKUs

H55:chiset
S:solid cap
EL:EL cap
G:giga lan 8111DL
M:Miga lan 8103EL
6: 6 ports
DVI: DVI Stuff

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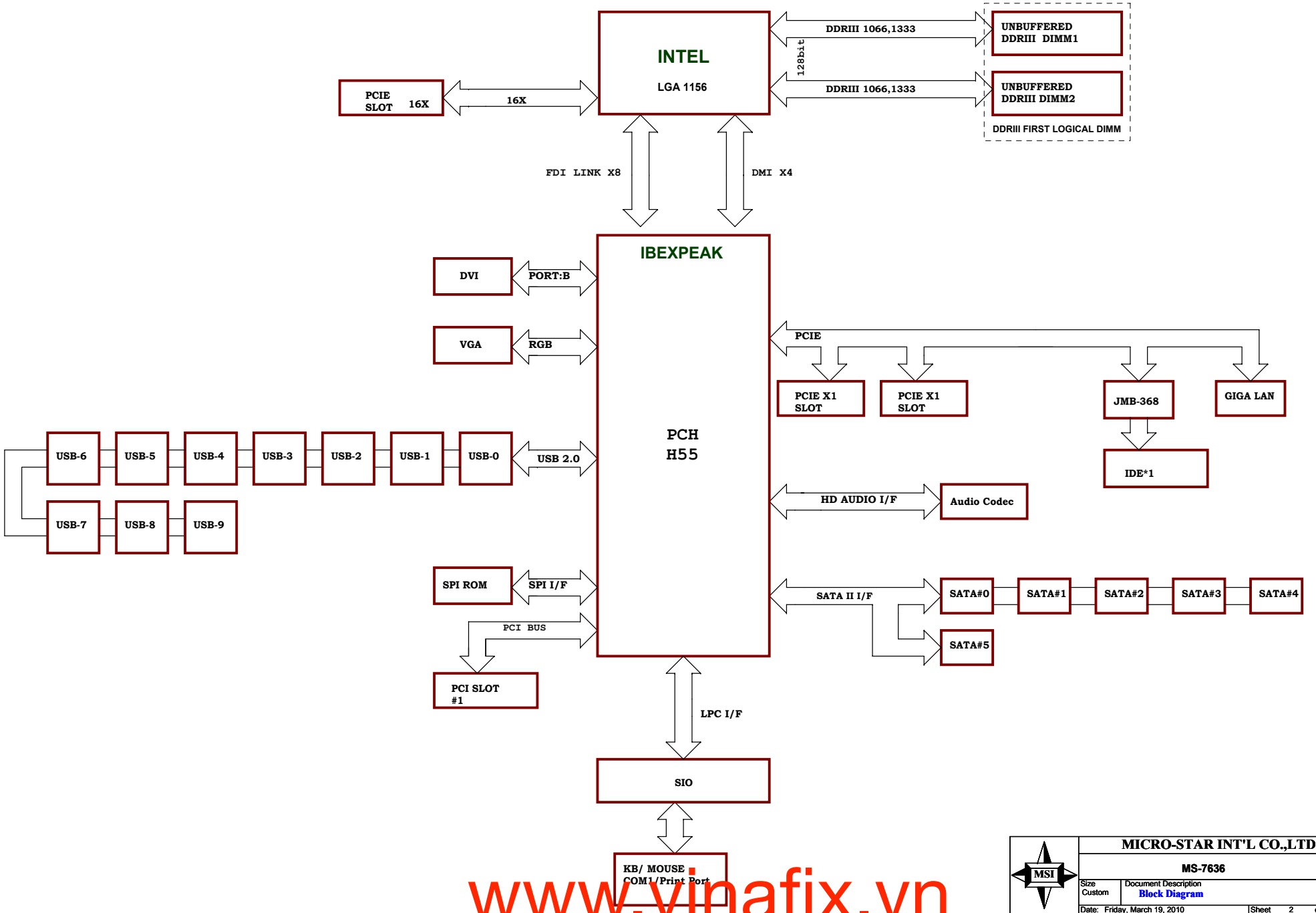
INTEL CONFIDENTIAL



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Size	Document Description	Rev
Custom	Block Diagram	1.3

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DDR DIMM config.

Device	Address	Clock
CHA DIMM1	10100001B	MEM_MA_CLK_H0/L0 H1/L1
CHB DIMM2	10100000B	MEM_MB_CLK_H0/L0 H1/L1

PCI Config.

DEVICE	MCP1 INT Pin	REQ#/GNT#	IDSEL	CLOCK
PCI Slot 1	PCI_INT#A PCI_INT#B PCI_INT#C PCI_INT#D	PCI_REQ0# PCI_GNT0#	AD16	PCH CLKOUT_PCI<0>
TPM				PCH CLKOUT_PCI<3>
SIO				PCH CLKOUT_PCI<2>

PCI RESET DEVICE

IBEXPEAK	
Signals	Target
PCIRST#_PCH	PCISLOT1
PLTRST_BU1#	JMB368 IDE
PLTRST_BU2#	PCIE*16 / *1
PLTRST_BU3#	LAN&TPM
PLTRST#	SIO

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Size	Document Description	Rev
C	GPIO Table	1.3

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History

1.2009-10-13 Change VCC_SENSE to CPU_VCC_SENSE
2.2009-10-13 Add HDMI circuit,change USB circuit,JSP1 circuit update
3.2009-10-13 update NCT3016 circuit ,add VTIN3 circuit for VRM MOS
4.2009-10-18 Add C589 C590
5.2009-10-18 Add R561 R562 For HDMI HPDET
6.2009-10-20 Add R602,Swap HDMI wire for layout
7.2009-10-21 NCT3016 circuit update:add R637 Q65 R592,Change U27 pin16 tp NCT_GPIO16,delete C121
8.2009-10-21A   NCT3016 citcui update:add Q85,chang SATA1&SATA2 to SATA1_2
9.2009-10-23   change JUSB2 & JUSB1 for layout
10.2009-10-23A   NCT3016 circuit update:add R850
11.2009-10-24   delete VCCGATE and DUALGATE circuit
12.2009-10-26   delete C534
13.2009-10-26   Swap RN40

MS-7636-1.3

1.2010-02-23 Add MH7 MH8 MH9 R545

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AA8/Y8 ,these signals for 120 MHz from the Intel?5 Series Chipset CLKOUT_DP_P /CLKOUT_BCLK1_P and CLKOUT_DP_N / CLKOUT_BCLK1_N. Leave as NC
on the PCH and connect directly to GND at the processor. 120MHz clock is used for embedded DisplayPort which is no supported on Desktop designs.

CPU1E

BACK SIDE

For DP port

Follow DG&CRB

Follow MS7588-1.0

demo board no connect

if not use XDP,add Test point

CFG 0~5 HAVE INTERNAL PULL-UPS

demo board empty
check list not empty

N12-160A010-F02

PEG CONFIG TABLE

SEL2	SEL1	SEL0	PCIE CONFIG
1	1	1	1 X 16
1	1	0	2 X 8

CPU1C

PEG

DMI

3 OF 12

Break-out:10mil width, 6 mil space
Other Area:10mil width, 15 mil space

CPU1D

VDDIO

DISPLAY LINK

4 OF 12

CPU reset

reserve

Size: Custom	Document Description: CPU-CNTL/CLK/MISC
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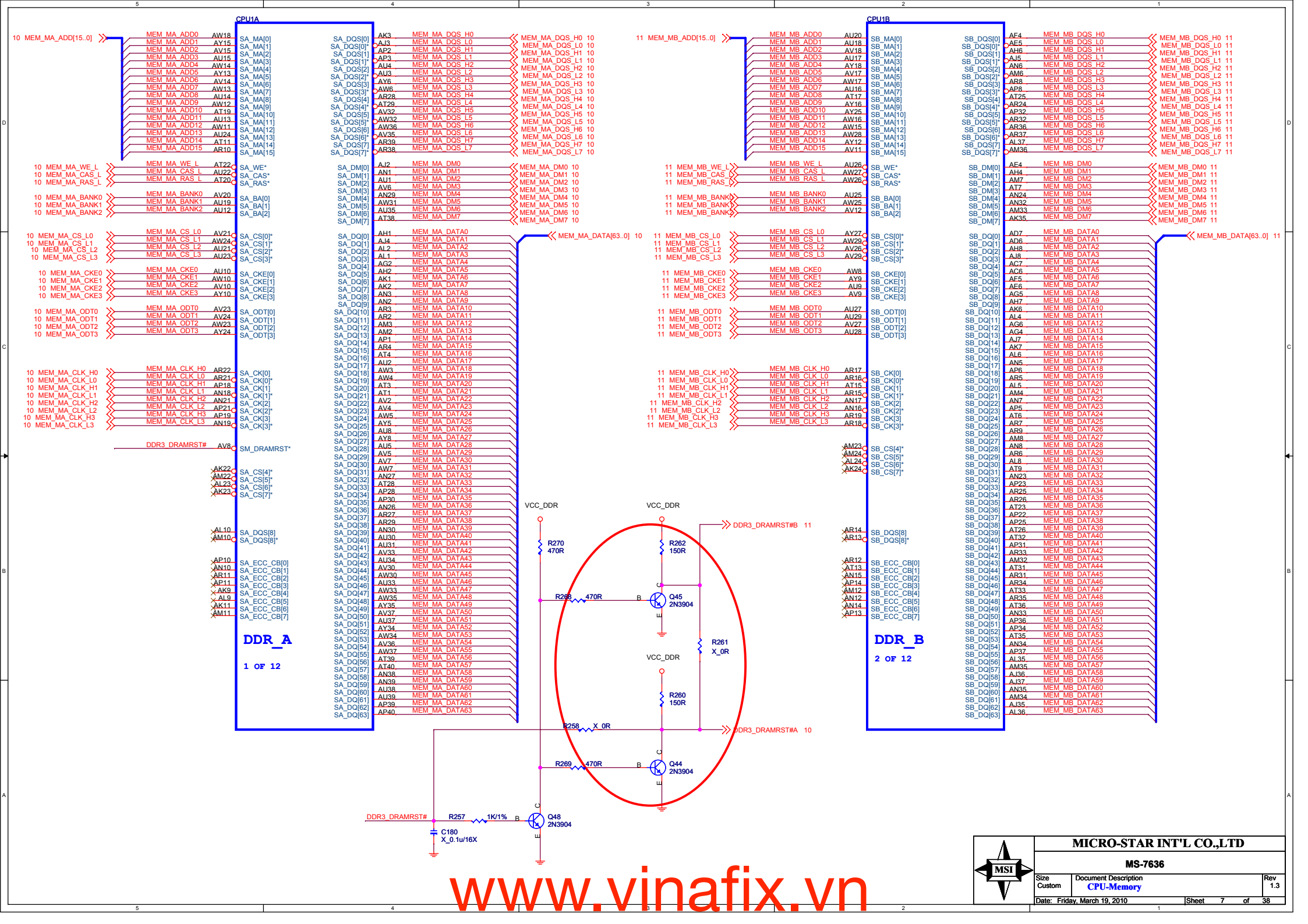

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Custom	CPU-Memory	1.3

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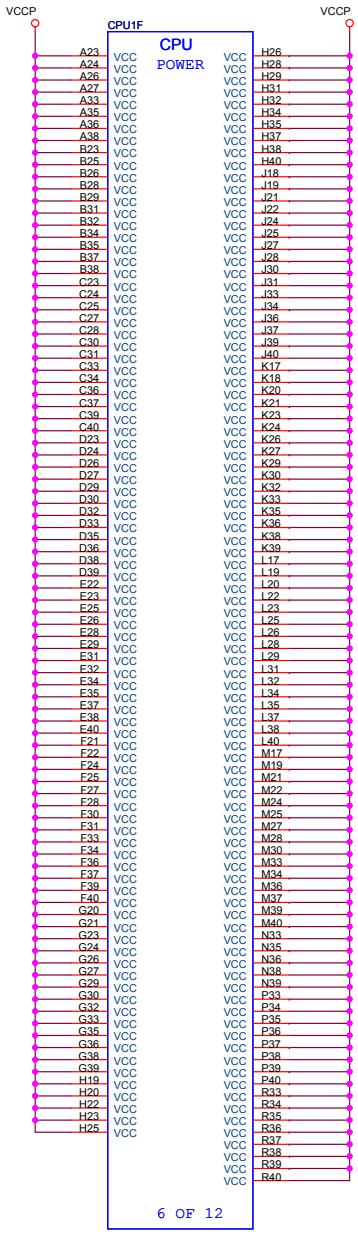
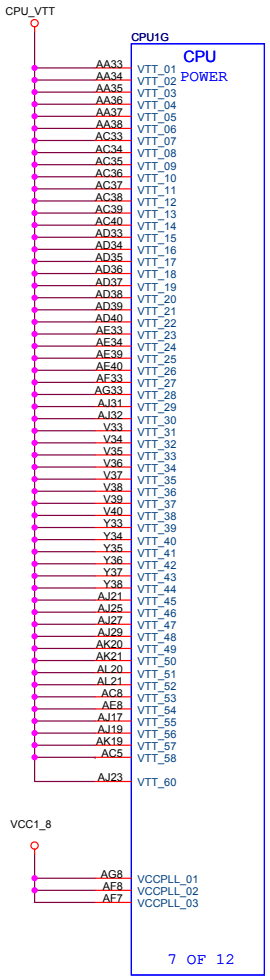
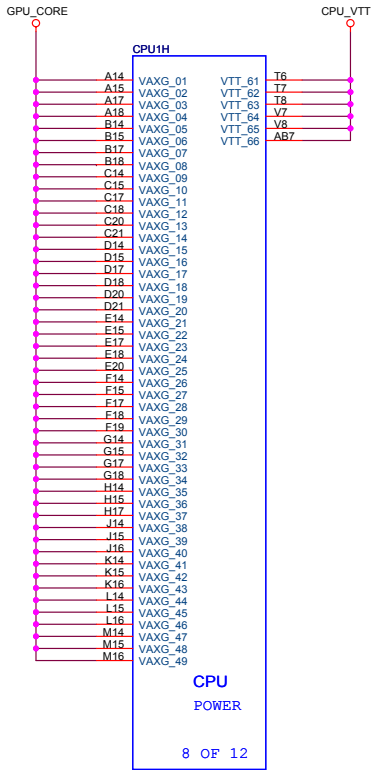
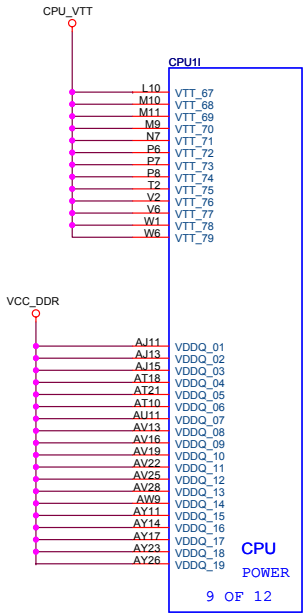
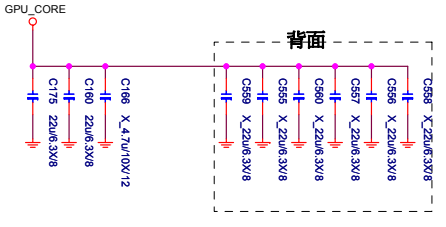






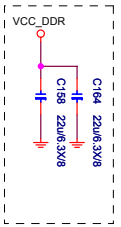


GPU_CORE Decoupling



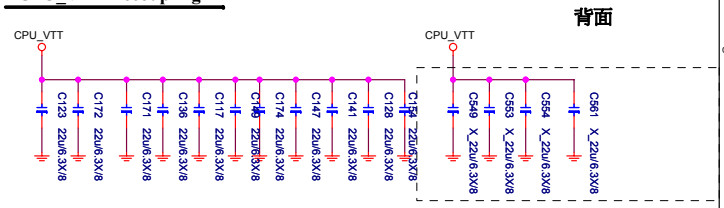
CPU SOCKET CAVITY CAPS

VCC_DDR-Decoupling



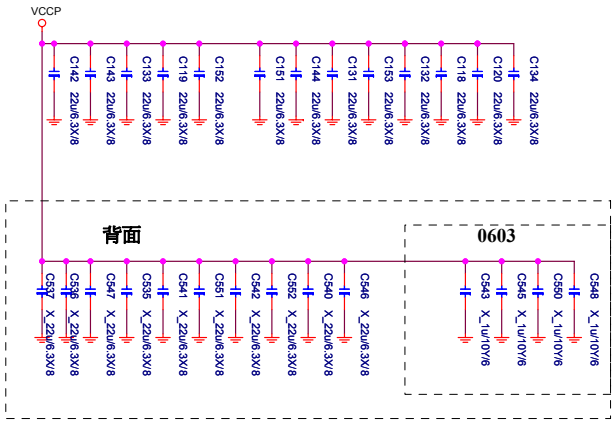
CPU SOCKET CAVITY CAPS

CPU_VTT Decoupling



CPU SOCKET CAVITY CAPS

CPU_VCCP-Decoupling



CPU SOCKET CAVITY CAPS

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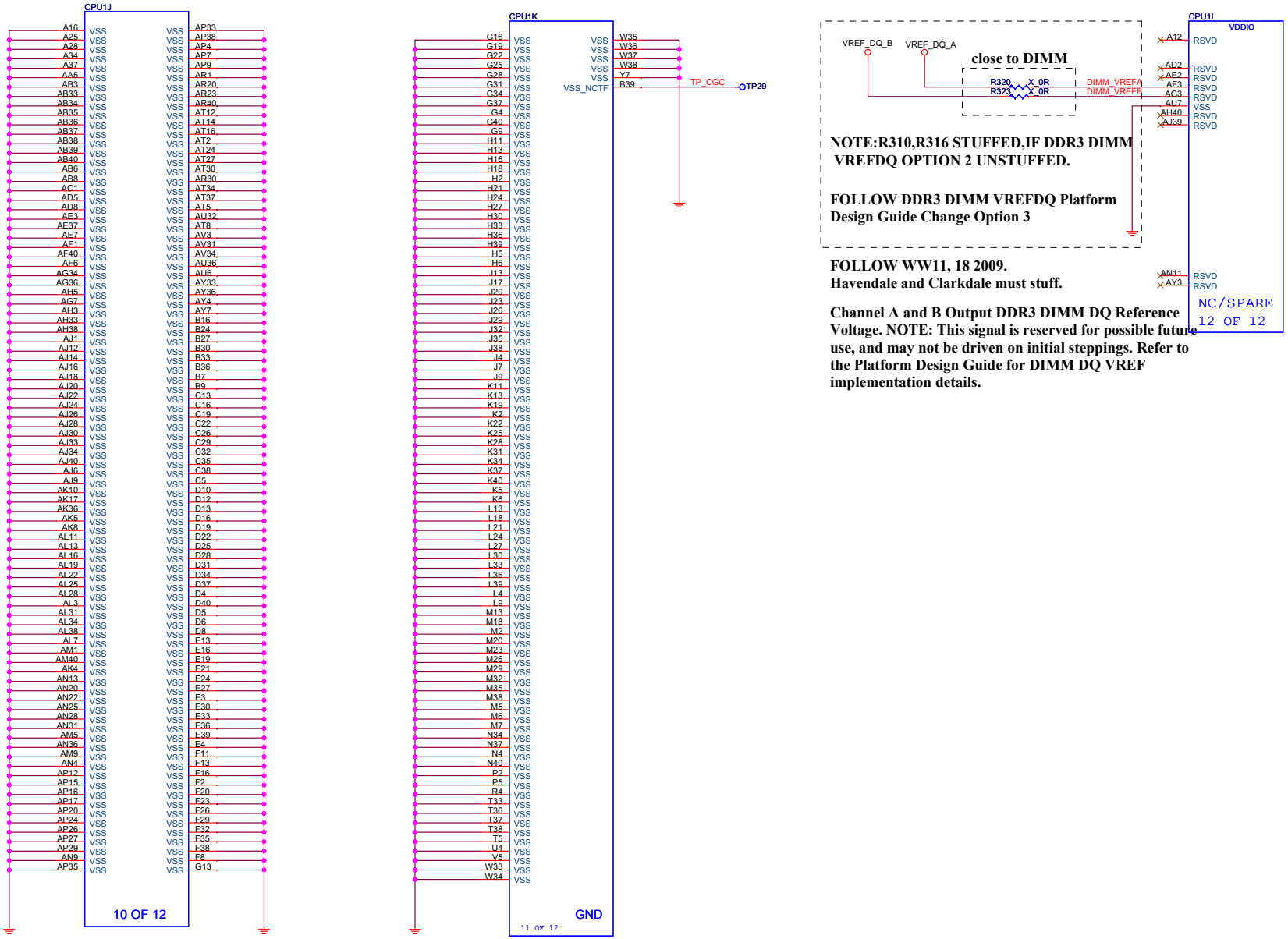

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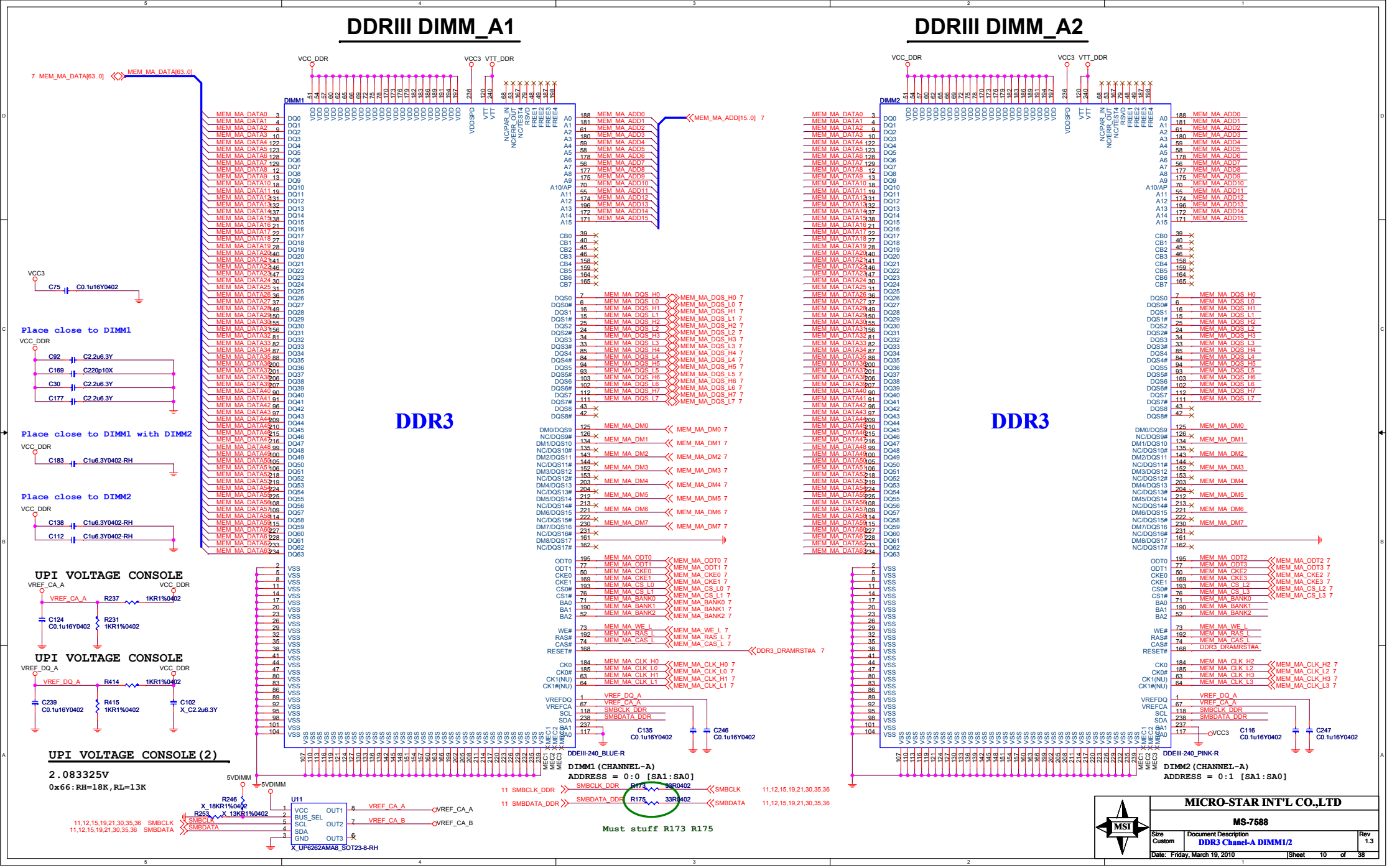

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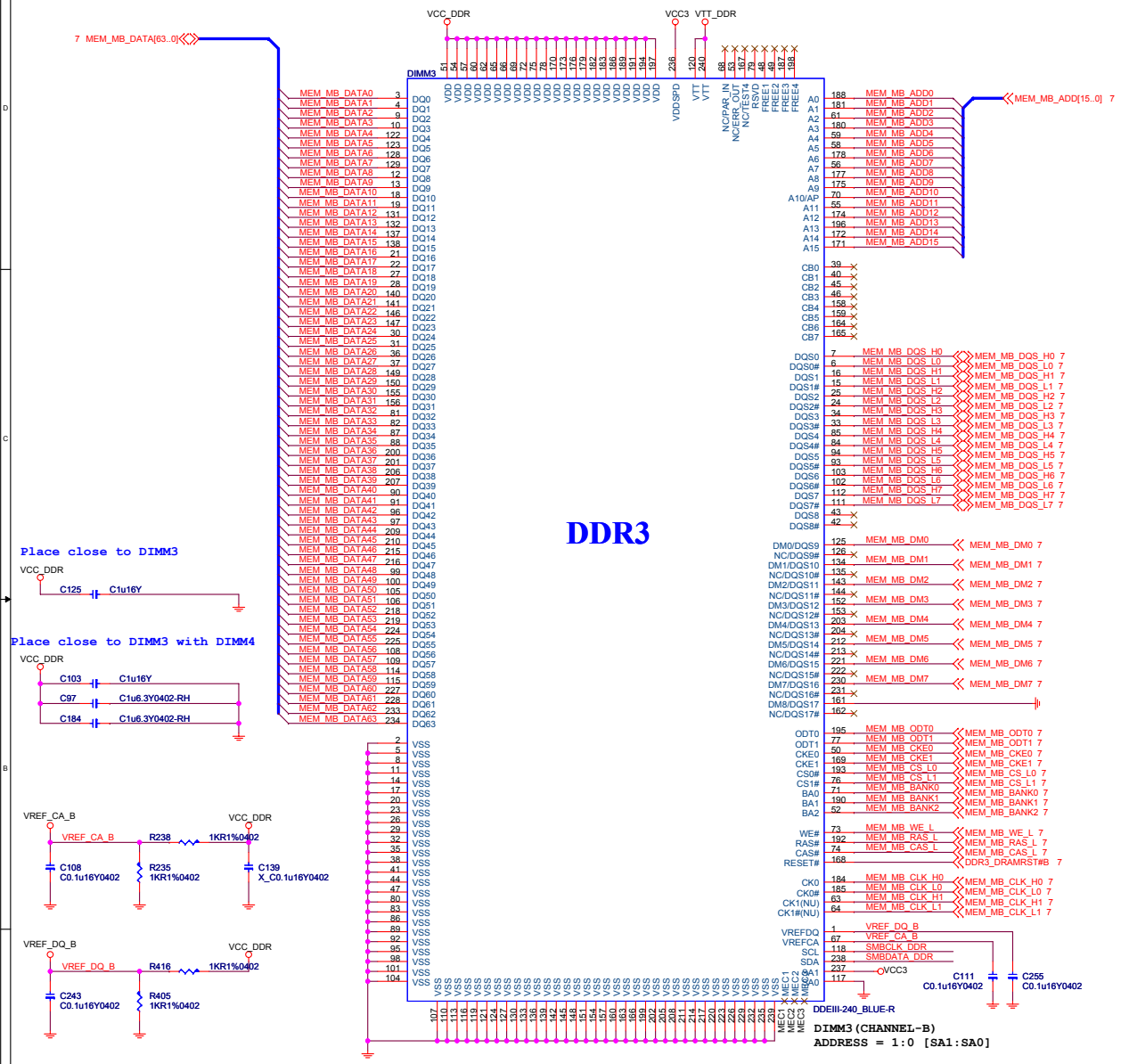
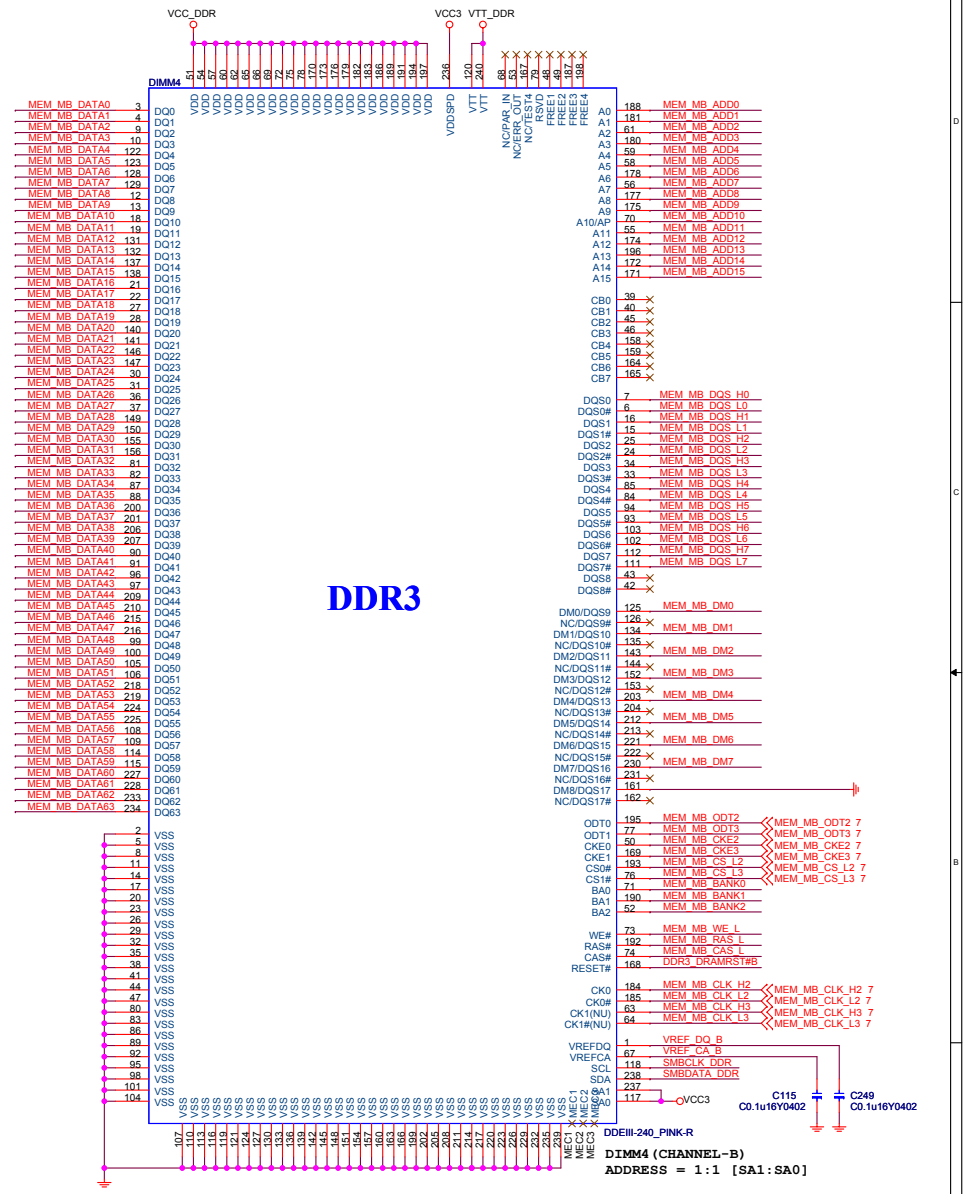
DDRIII DIMM_B1



DDRIII DIMM_B2

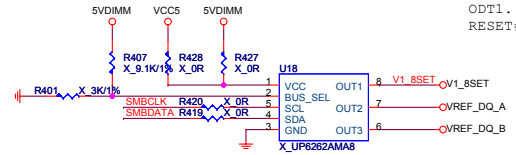


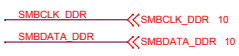
UPI VOLTAGE CONSOLE(3) 0x68:RH=9.1K,RL=3K

Vref-DQ : Reference voltage for DQ0 DQ63, CB0 CB7 and PAR_IN. When in single ended mode used for DQS0 DQS7.

Vref-CA : Reference voltage for A0-A15, BA0 BA2, RAS#, CAS#, WE#, S0#, S01#, CKE0, CKE1, ODT0 and ODT1.

RESET#(Output) : A synchronously forces all registered output LOW when RESET# is LOW. This signal can be used during power up to ensure that CKE is LOW and DQs are High-Z.





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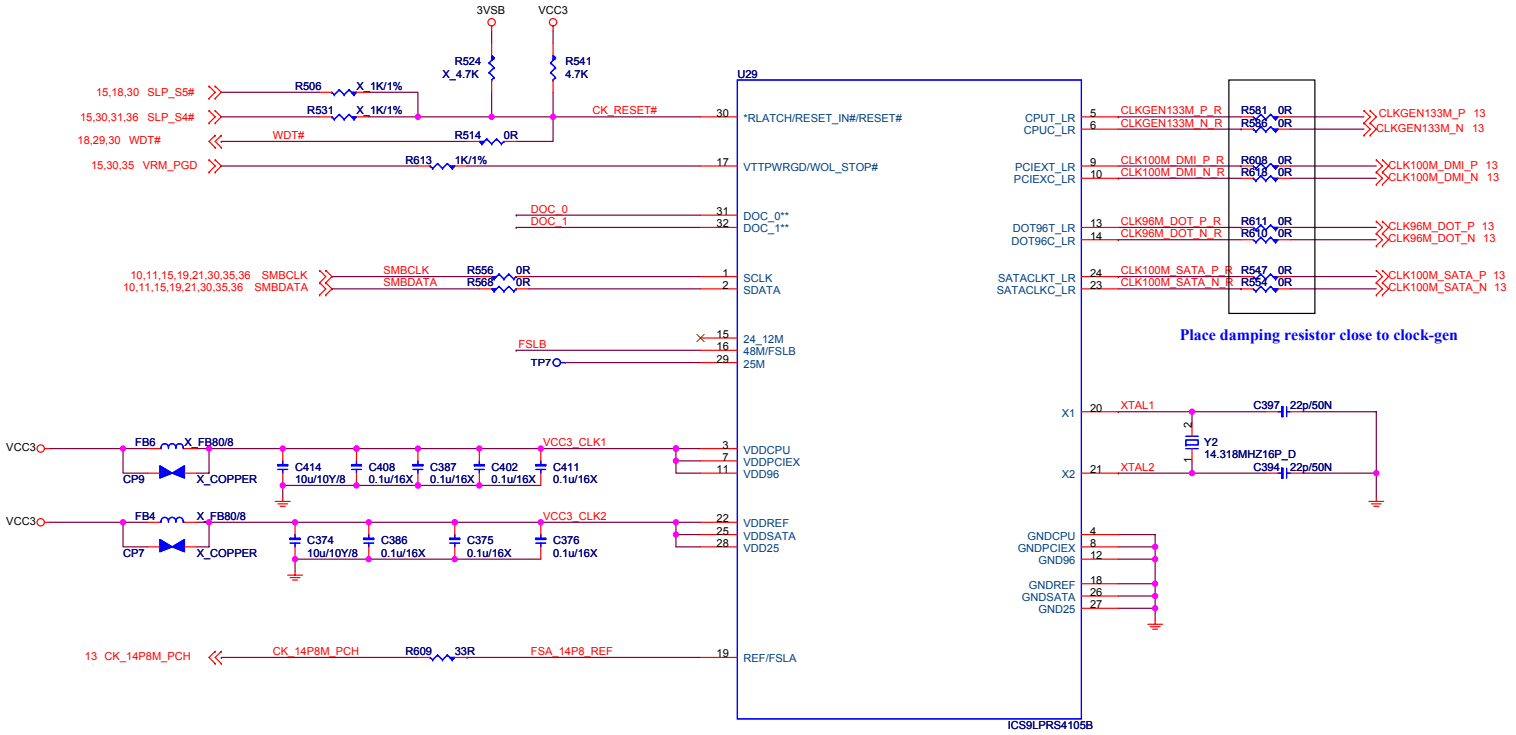
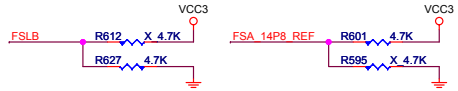


CLOCK GEN STRAPING

FS4 B0b4	FS3 B0b3	FS2 B0b2	FSB B0b1	FSA B0b0	CPU Mhz	Spread %
0	0	0	0	0	100.00	-0.5
0	0	0	0	1	133.33	-0.5
0	0	0	1	0	200.00	-0.5
0	0	0	1	1	166.66	-0.5

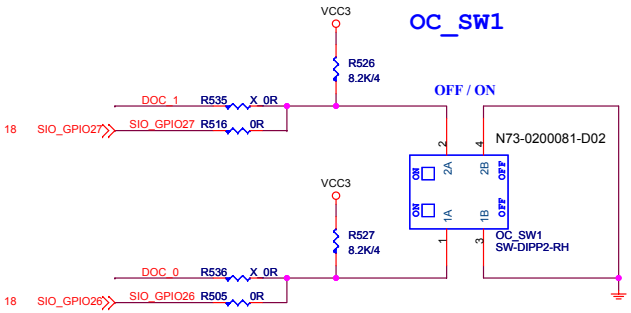


Pin16: 48MHz clock output. / 3.3V tolerant input for CPU frequency selection. Low voltage threshold inputs, see input electrical characteristics for Vil_FS and Vih_FS values.

Pin19: 14.318 MHz reference clock./ 3.3V tolerant input for CPU frequency selection. Refer to input electrical characteristics for Vil_FS and Vih_FS values.

OC

DOC_0**:Dynamic Over Clocking pin: real time frequency selection 0: Normal; 1: Frequency will transition to a preprogrammed value in the I2C.

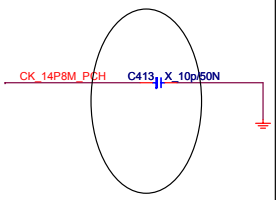


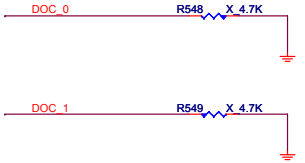
OFF=1 ; ON=0

DOC		TABLE
1	0	CPU FREQUENCY
1	1	133 MHz (default)
1	0	142 MHz
0	1	150 MHz
0	0	166 MHz

(Default) OFF / OFF
OFF / ON
ON / OFF
ON / ON

EMI





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PCI Express port 7 and 8
are not available for the H55,

USB port 6 and 7
are not available for the H55,

PCH1A
IBEXPEAK_A
PCI-E
USB
DMI
1 OF 9

PCH1C
IBEXPEAK_A
CLOCK
CLOCK_IN
3 OF 9
IBEX_0

Programmable output clock
to 48MHZ

Place near SB

PCH1B
IBEXPEAK_A
PCI
2 OF 9

For EMI

PCICLK LOOPBACK

DCI:Must stuff 25M crystal when use vga

BOOT DEVICE	GNT1	GNT0
LPC	0	0
PCI	0	1
SPI	1	1

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Document Description: IBEXPEAK-PCIE/DMI/USB/CLK
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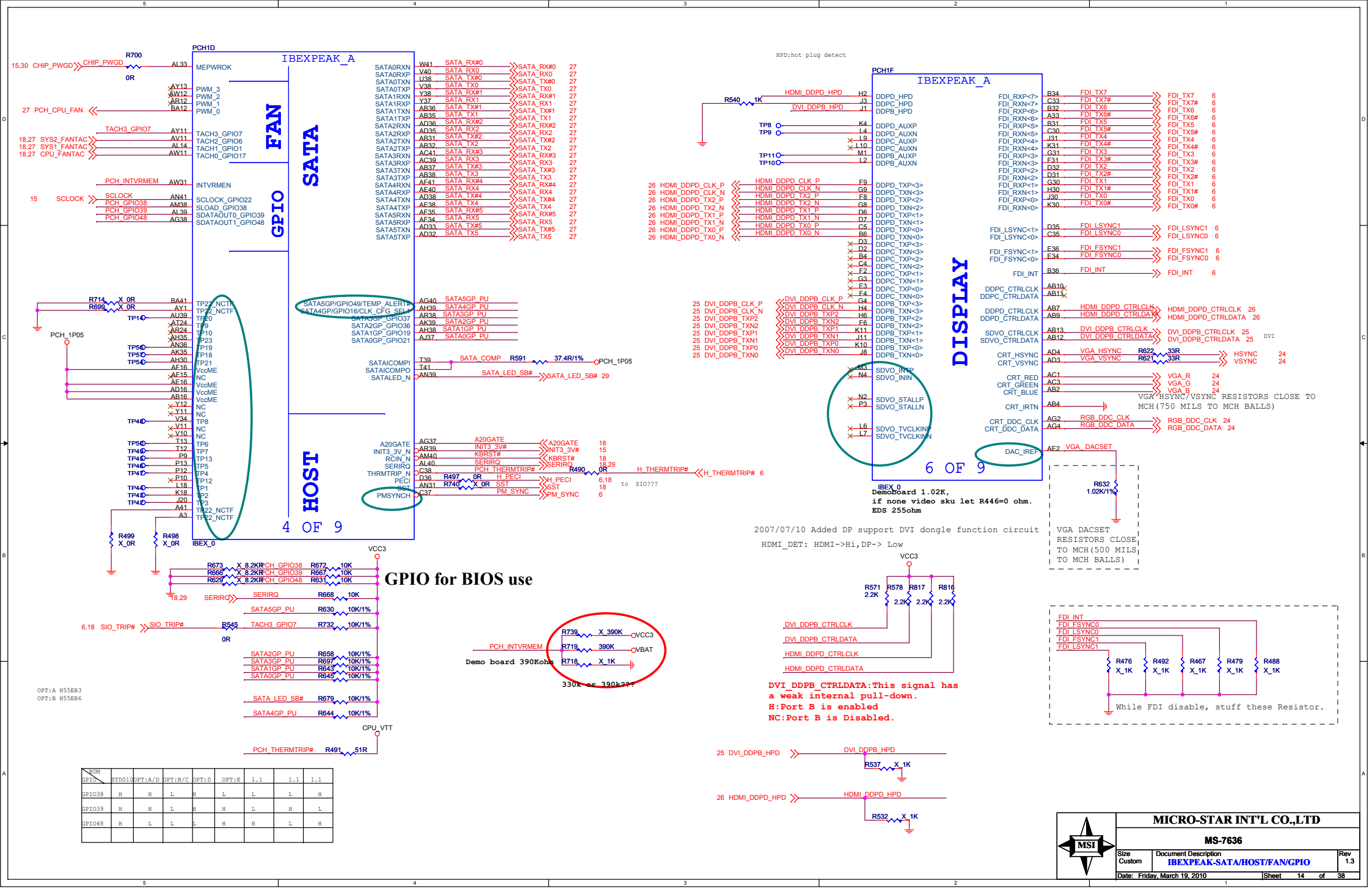

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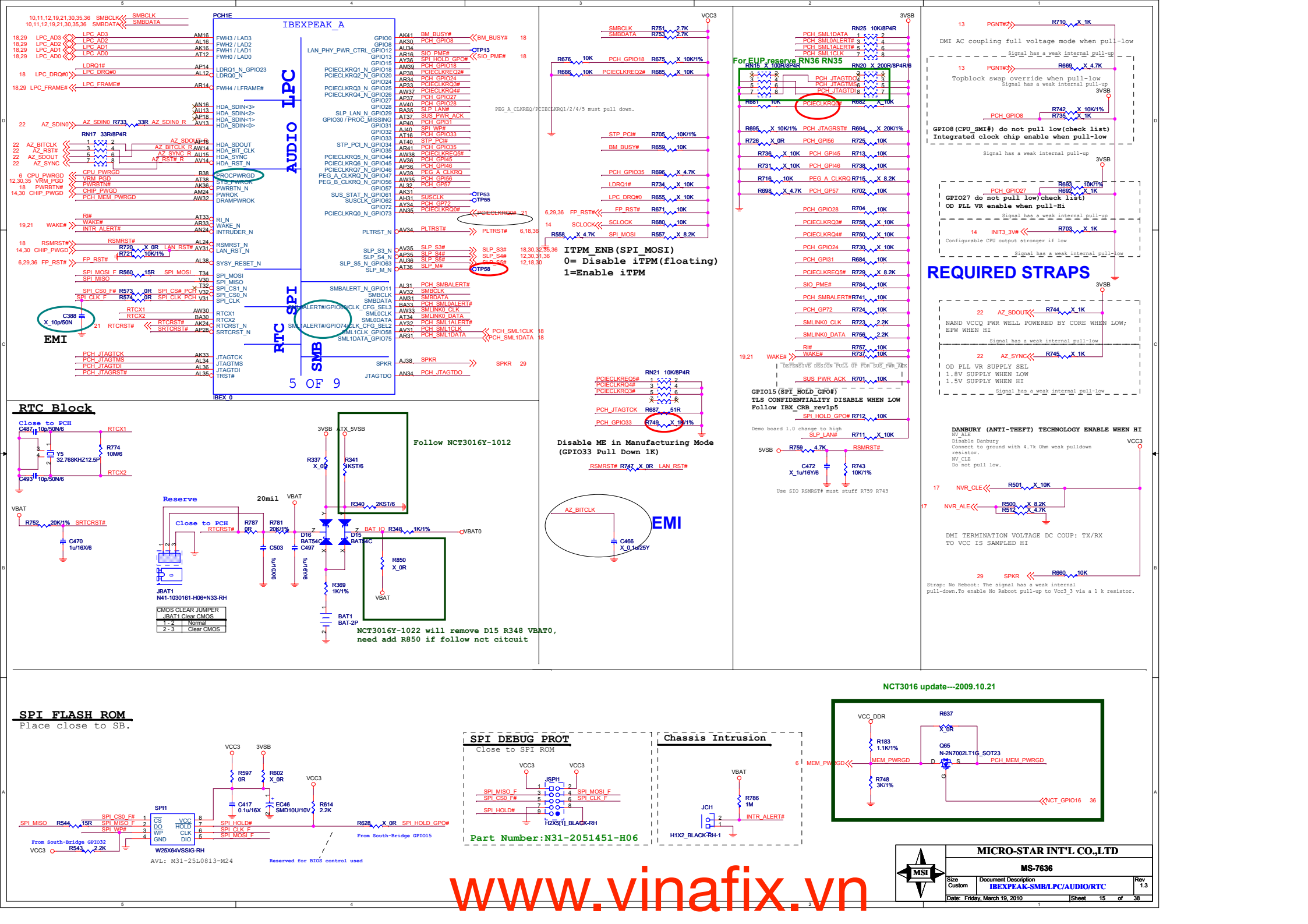

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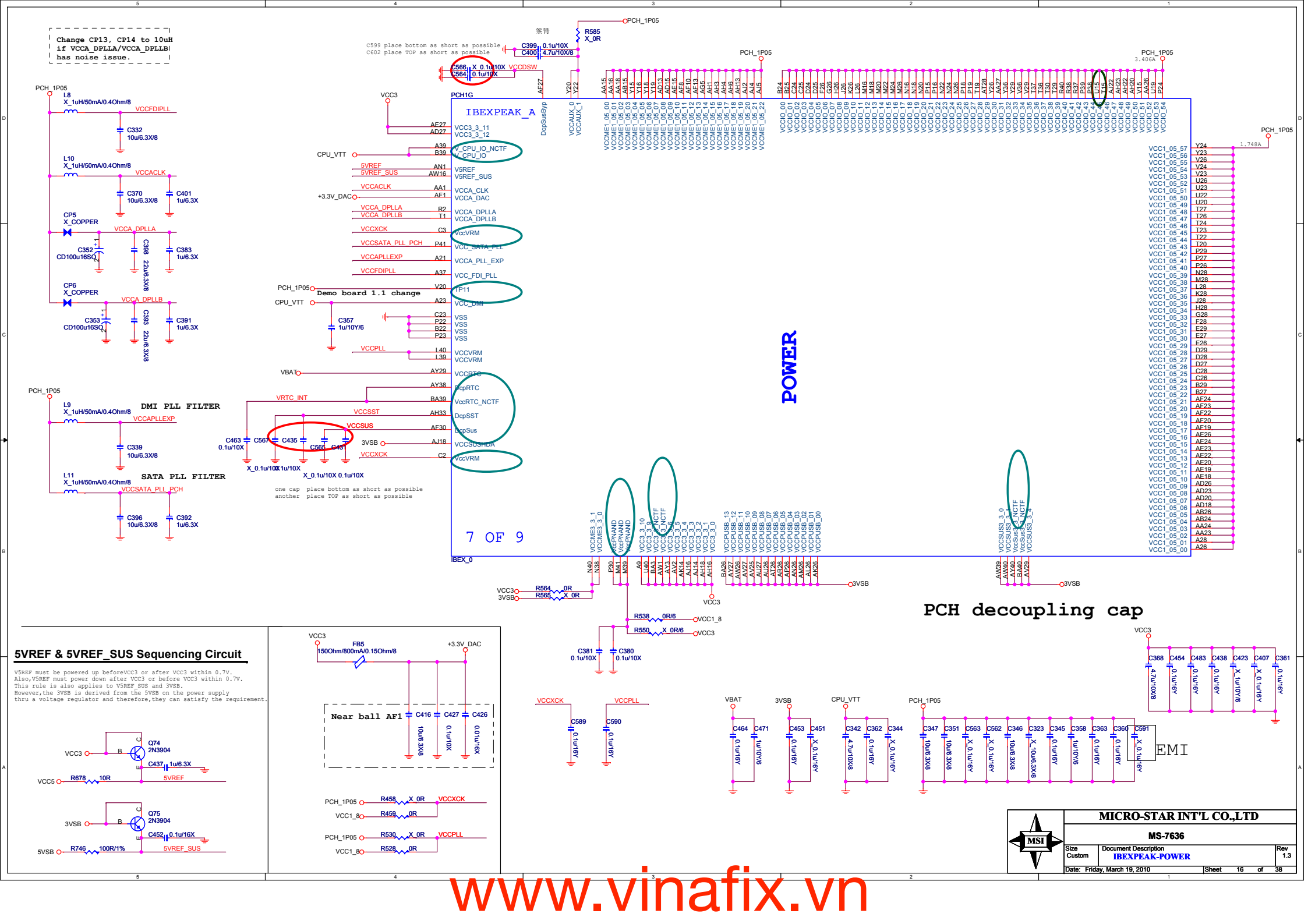

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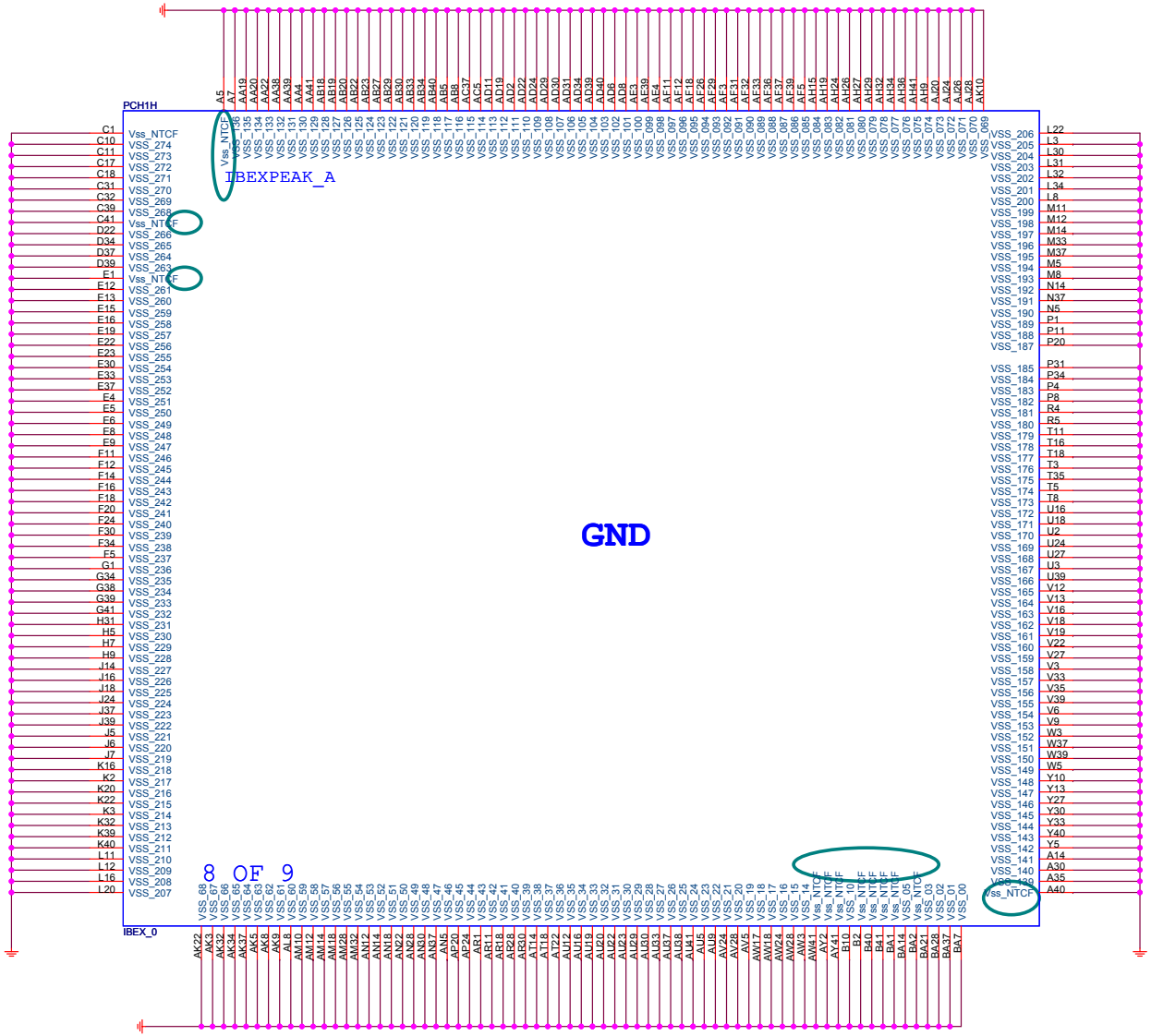

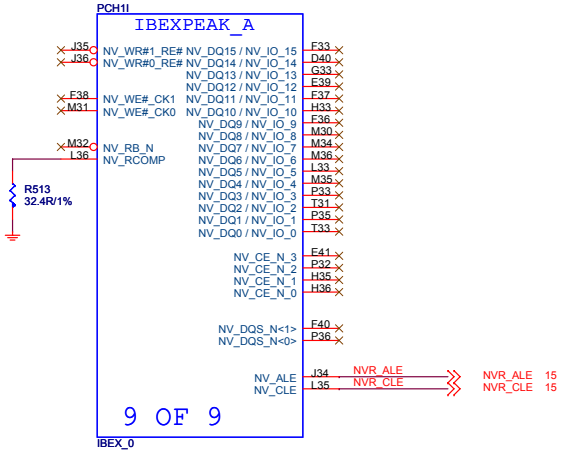

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Size: Custom	Document Description: IBEXPEAK-GND/NVRAM	Rev: 1.3
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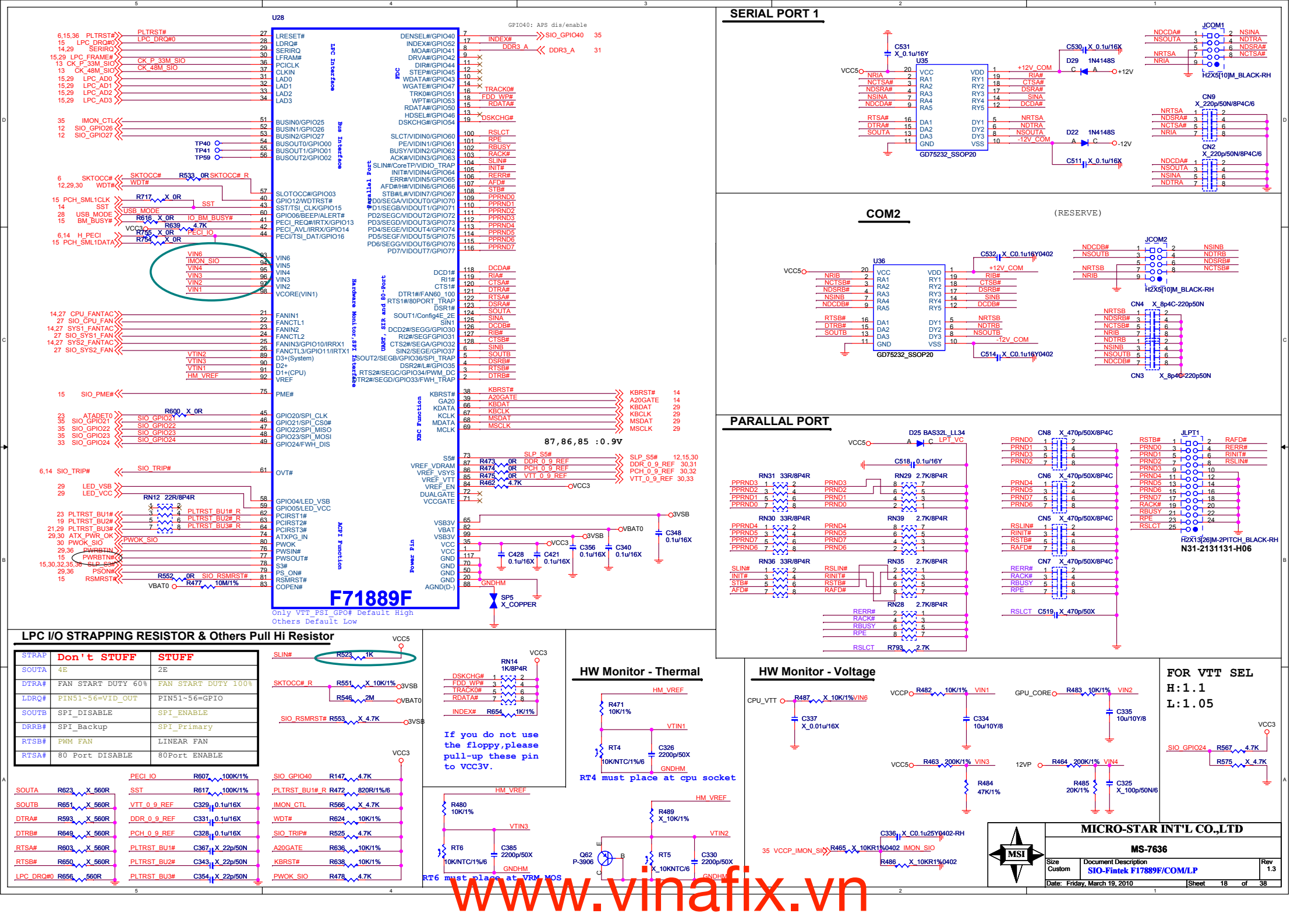
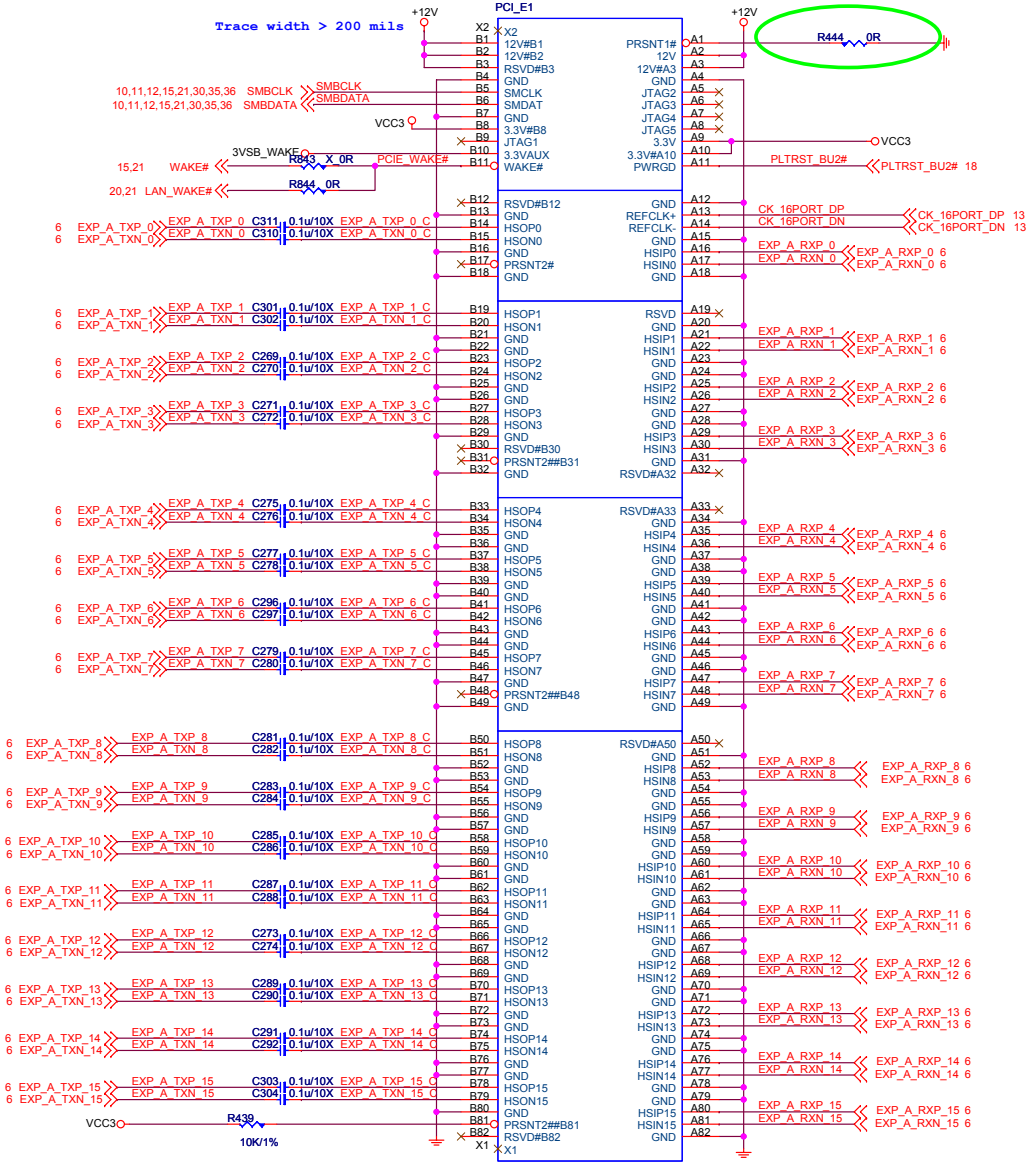
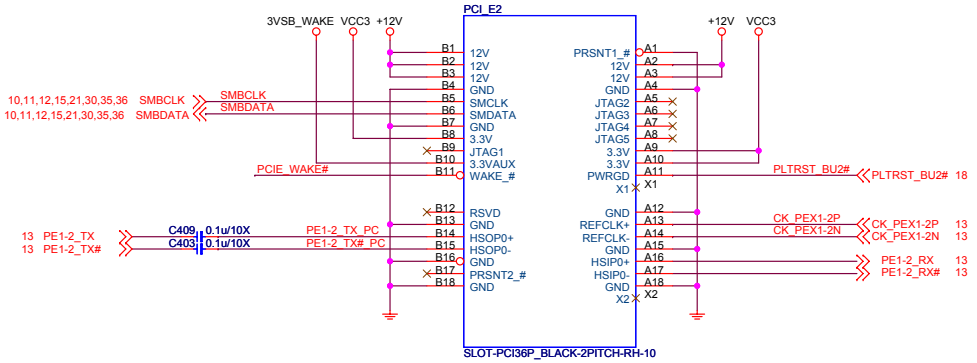


STRAP	Don't STUFF	STUFF
SOUTA	4E	2E
DTRA#	FAN START DUTY 60%	FAN START DUTY 100%
LDRQ#	PIN51~56=VID_OUT	PIN51~56=GPIO
SOUTB	SPI_DISABLE	SPI_ENABLE
DRRB#	SPI_Backup	SPI_Primary
RTSB#	PWM FAN	LINEAR FAN
RTSA#	80 Port DISABLE	80Port ENABLE

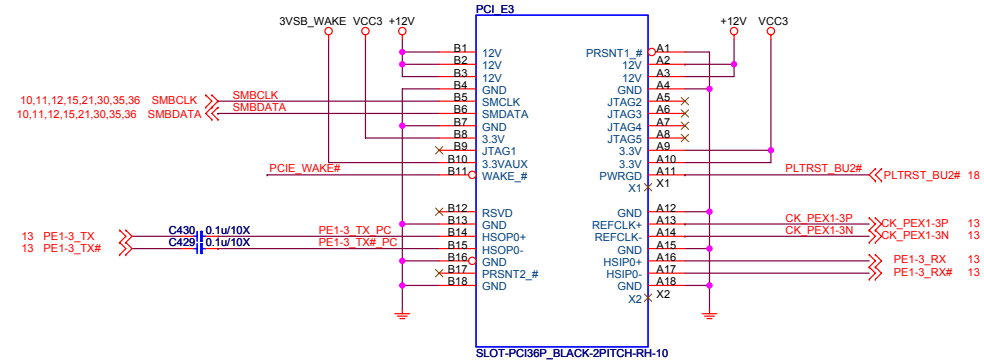
PCI_Express X16 Slot

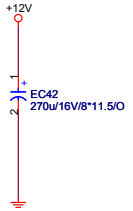


PCI EXPRESS x1-PORT2



PCI EXPRESS x1-PORT3





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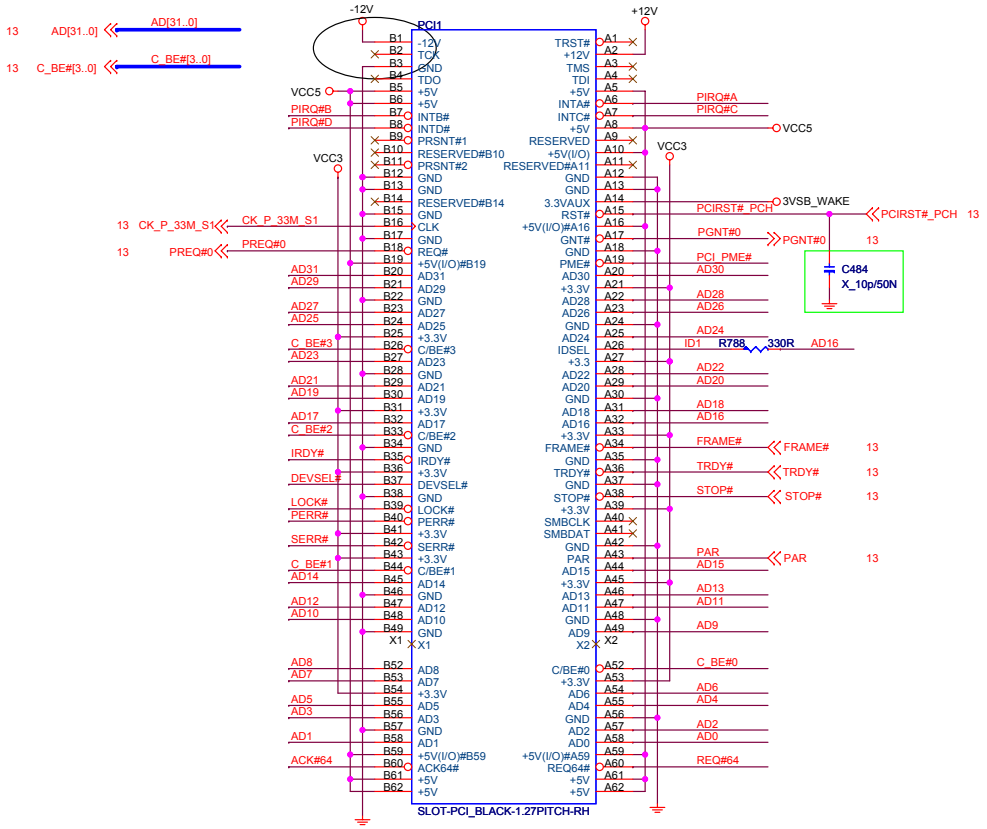
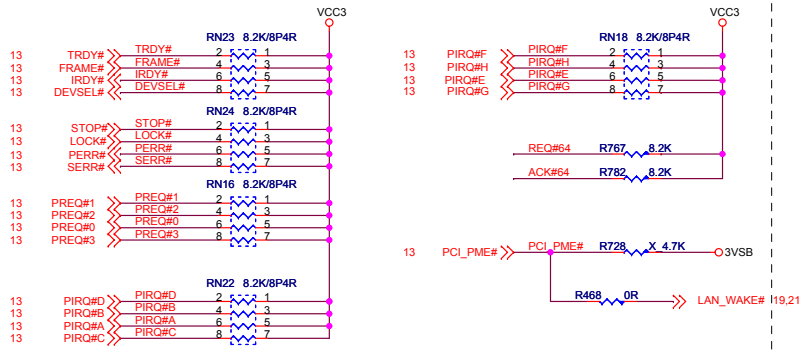
PCI SLOT 1 (PCI VER: 2.2 COMPLY)

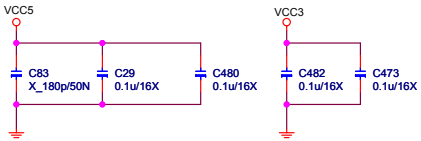


IDSEL = AD16
MASTER = PREQ#0
PIRQ#A

PCI PULL-UP / DOWN RESISTORS



PCI SLOT DECOUPLING CAPACITORS



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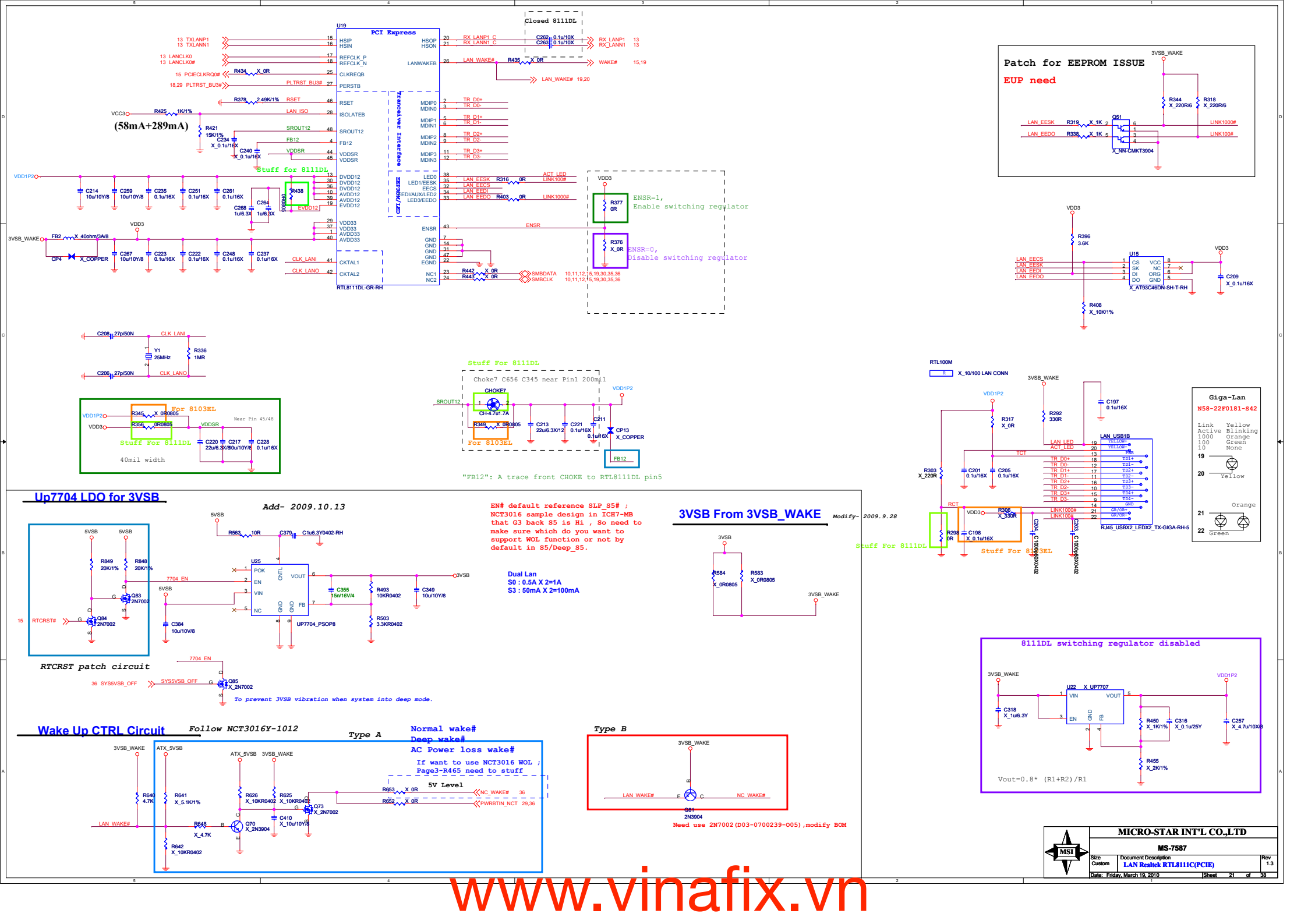

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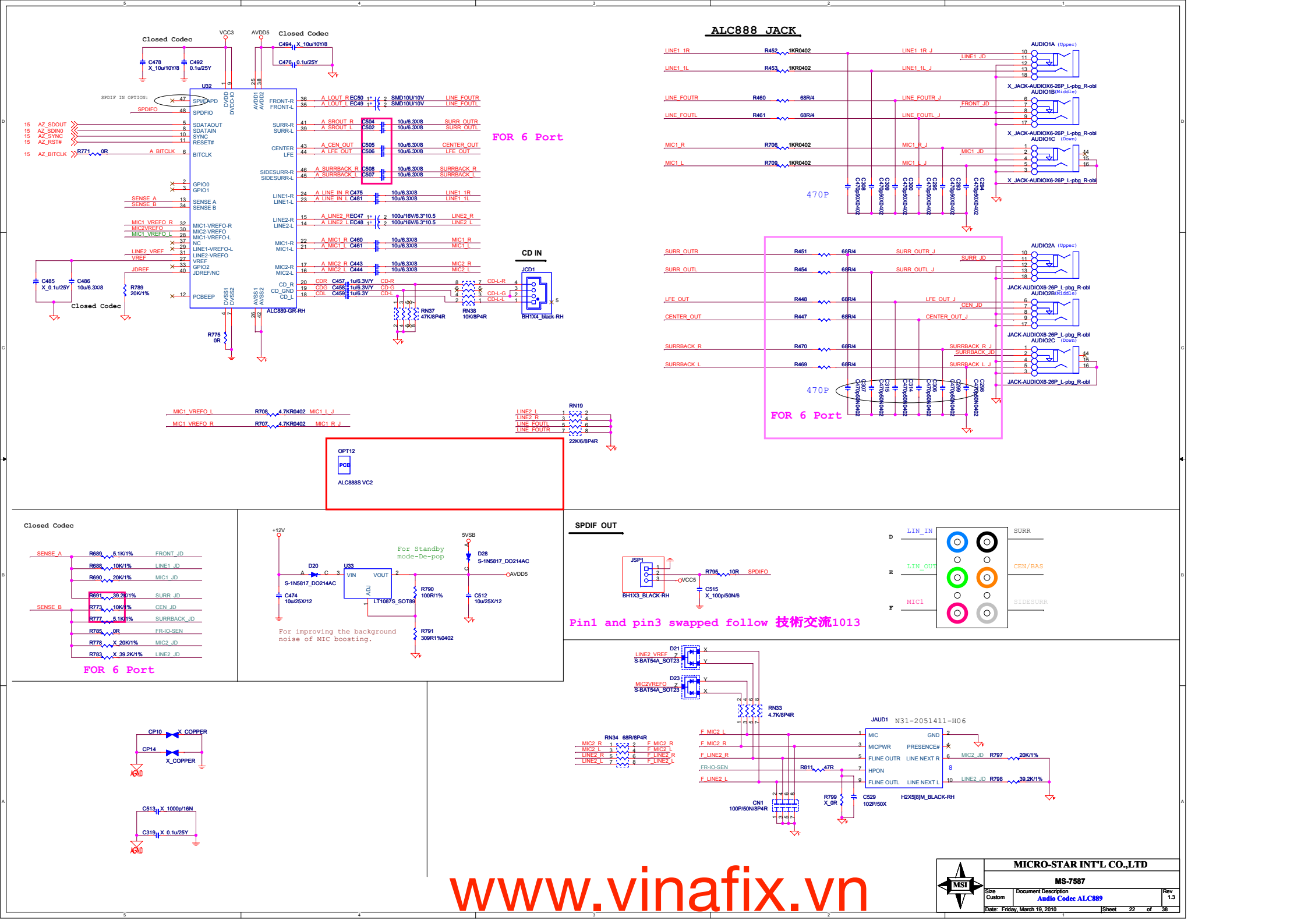
Closed Codec
VCC3
AVDD5
Closed Codec
C478 X_10u/10Y/8
C492 0.1u/25Y
C494 X_10u/10Y/8
C476 0.1u/25Y
U32
SPDIF IN OPTION:
SPDIFO
SPDIFIO
AZ_SDOUT
AZ_SDIN0
AZ_SYNC
AZ_RST#
AZ_BITCLK
R771 0R
A_BITCLK
SDATAOUT
SDATAIN
SYNC
RESET#
BITCLK
GPIO0
GPIO1
SENSE_A
SENSE_B
SENSE A
SENSE B
MIC1_VREFO_R
MIC2VREFO
MIC1_VREFO_L
MIC1-VREFO-R
MIC2-VREFO
MIC1-VREFO-L
NC
LINE2_VREF
VREF
LINE1-VREFO-L
LINE2-VREFO
VREF
GPIO2
JDREF
JDREF/NC
PCBEEP
C485 X_0.1u/25Y
C486 10u/6.3X/8
R789 20K/1%
Closed Codec
FRONT-R
FRONT-L
A_LOUT_R EC50
A_LOUT_L EC49
SMD10U/10V
LINE_FOUTR
LINE_FOUTL
SURR-R
SURR-L
A_SROUT_R C504
A_SROUT_L C502
SURR_OUTR
SURR_OUTL
CENTER
LFE
A_CEN_OUT C505
A_LFE_OUT C506
CENTER_OUT
LFE_OUT
SIDESURR-R
SIDESURR-L
A_SURRBACK_R C508
A_SURRBACK_L C507
SURRBACK_R
SURRBACK_L
LINE1-R
LINE1-L
A_LINE_IN_R C475
A_LINE_IN_L C481
LINE1_1R
LINE1_1L
LINE2-R
LINE2-L
A_LINE2_R EC47
A_LINE2_L EC48
100u/16V/6.3*10.5
LINE2_R
LINE2_L
MIC1-R
MIC1-L
A_MIC1_R C460
A_MIC1_L C461
MIC1_R
MIC1_L
MIC2-R
MIC2-L
A_MIC2_R C443
A_MIC2_L C444
MIC2_R
MIC2_L
CD_R
CD_GND
CD_L
CDR C457 1u/6.3V/Y
CDG C458 1u/6.3V/Y
CDL C459 1u/6.3Y
CD-R
CD-G
CD-L
CD-L-R
CD-L-G
CD-L-L
ALC889-GR-RH
RN37 47K/8P4R
RN38 10K/8P4R
R775 0R
CD IN
JCD1
BH1X4_black-RH
FOR 6 Port
ALC888 JACK
LINE1_1R
LINE1_1L
R452 1KR0402
R453 1KR0402
LINE1_1R_J
LINE1_1L_J
LINE1_JD
AUDIO1A (Upper)
X_JACK-AUDIOX6-26P_L-pbg_R-obl
AUDIO1B(Middle)
LINE_FOUTR
LINE_FOUTL
R460 68R/4
R461 68R/4
LINE_FOUTR_J
LINE_FOUTL_J
FRONT_JD
AUDIO1C (Down)
MIC1_R
MIC1_L
R706 1KR0402
R709 1KR0402
MIC1_R_J
MIC1_L_J
MIC1_JD
470P
C470p50X0402
C309
C300
C285
C283
C284
SURR_OUTR
SURR_OUTL
R451 68R/4
R454 68R/4
SURR_OUTR_J
SURR_OUTL_J
SURR_JD
AUDIO2A (Upper)
JACK-AUDIOX6-26P_L-pbg_R-obl
AUDIO2B(Middle)
LFE_OUT
CENTER_OUT
R448 68R/4
R447 68R/4
LFE_OUT_J
CENTER_OUT_J
CEN_JD
AUDIO2C (Down)
SURRBACK_R
SURRBACK_L
R470 68R/4
R469 68R/4
SURRBACK_R_J
SURRBACK_L_J
SURRBACK_JD
C470p50N0402
C314
C309
C298
C288
FOR 6 Port
MIC1_VREFO_L
MIC1_VREFO_R
R708 4.7KR0402
R707 4.7KR0402
MIC1_L_J
MIC1_R_J
RN19
LINE2_L
LINE2_R
LINE_FOUTL
LINE_FOUTR
22K/6/8P4R
OPT12
PCB
ALC888S VC2
Closed Codec
SENSE_A
SENSE_B
R689 5.1K/1%
R688 10K/1%
R690 20K/1%
R691 39.2K/1%
R773 10K/1%
R777 5.1K/1%
R785 0R
R778 X_20K/1%
R783 X_39.2K/1%
FRONT_JD
LINE1_JD
MIC1_JD
SURR_JD
CEN_JD
SURRBACK_JD
FR-IO-SEN
MIC2_JD
LINE2_JD
FOR 6 Port
+12V
D20
S-1N5817_DO214AC
C474 10u/25X/12
U33
VIN
VOUT
ADJ
LT1087S_SOT89
For Standby mode-De-pop
5VSB
D28
S-1N5817_DO214AC
AVDD5
R790 100R/1%
C512 10u/25X/12
R791 309R1%0402
For improving the background noise of MIC boosting.
SPDIF OUT
JSP1
BH1X3_BLACK-RH
VCC5
R795 10R
SPDIFO
C515 X_100p/50N/6
Pin1 and pin3 swapped follow 技術交流1013
D
E
F
LIN_IN
LIN_OUT
MIC1
SURR
CEN/BAS
SIDESURR
CP10 X_COPPER
CP14 X_COPPER
AGND
C513 X_1000p/16N
C319 X_0.1u/25Y
AGND
LINE2_VREF
MIC2VREFO
D21
D23
S-BAT54A_SOT23
RN33 4.7K/8P4R
RN34 68R/8P4R
F_MIC2_L
F_MIC2_R
F_LINE2_R
F_LINE2_L
FR-IO-SEN
R811 47R
JAUD1 N31-2051411-H06
MIC
MICPWR
FLINE OUTR
HPON
FLINE OUTL
GND
PRESENCE#
LINE NEXT R
LINE NEXT L
H2X5[8]M_BLACK-RH
R797 20K/1%
R798 39.2K/1%
CN1 100P/50N/8P4R
R799 X_0R
C529 102P/50X
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MSI
MICRO-STAR INT'L CO.,LTD
MS-7587
Size Custom
Document Description
Audio Codec ALC889
Rev 1.3
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361.3 mA

min 15mil.

DVDD_1.8V

APVDD_1.8V

CP8 X_COPPER

VCC3

C365 C0.1u16Y0402

C324 C0.1u16Y0402

C369 C10u10Y0805

close to IC

DVDD_1.8V

C359 C0.1u16Y0402

C373 C10u10Y0805

close to IC

APVDD_1.8V

CLOSE PIN 9

CLOSE PIN 4

C378 C10u10Y0805

C335 C0.1u16Y0402

C377 C10u10Y0805

C364 C0.1u16Y0402

C366 C1000p16X0402

VCC3

U16

VIN VOUT ADJ

X_L1087CG_SOT89-3

DVDD_1.8V

R411 X_220R1%0402-RH

C250 X_C100u6.3Y1210-RH

C238 X_C0.1u16Y0402

C229 X_C0.1u16Y0402

R406 X_100R1%0402

U24

JMB368

JMB368-LGGZ0A-A-RH

PD_DACK# PD_IORDY PD_IOW# PD_IOR# DVDD_1.8V IDE_IRQ ATADET0 PD_A1 PD_A0 PD_A2 PD_CS#0 PD_CS#1

YDMACKnA XIORDYA YIDIORnA YIDIOWnA DV18 XINTRQA XICBLIDA YIDA1A YIDA0A YIDA2A YICS0nA YICS1nA

PD_DREQ PDD15 VCC3 XIDMARQA ZIDD15A DV33 XSMBCLK ZSMBDAT XRSTn ZIDD0A ZIDD14A ZIDD1A ZIDD13A ZIDD2A ZIDD12A

ZIDD3A ZIDD11A DV33 ZIDD4A ZIDD10A ZIDD5A ZIDD9A ZIDD6A ZIDD8A ZIDD7A NC XTEST

PDD3 PDD11 VCC3 PDD4 PDD10 PDD5 PDD9 PDD6 PDD8 PDD7

18 PLTRST_BU1#

PDD0 PDD14 PDD1 PDD13 PDD2 PDD12

DGND ACPLKN ACPLKP APV18 APG18 APREXT APRXP APRXN APV18 APG18 APTXN APTXP

GND APVDD_1.8V PCIE_REXT1 APVDD_1.8V GND JMB368_RX# JMB368_RX

near by JMB368

C327 C0.1u16Y0402

C333 C0.1u16Y0402

JMB368_RX 13

JMB368_RX# 13

13 CK_JMB368_DN

13 CK_JMB368_DP

JMB368_TX# 13

JMB368_TX 13

VCC3

R375 4.7KR0402

VCC5

R436 4.7KR0402

IDERST0

Q54

Q52 N-MMBT3904_NL_SOT23

N-MMBT3904_NL_SOT23

18 PLTRST_BU1#

R335 4.7KR0402

R432 X_0R0402

IDE Connector

IDE1

IDERST0 PDD7 PDD6 PDD5 PDD4 PDD3 PDD2 PDD1 PDD0

PDD8 PDD9 PDD10 PDD11 PDD12 PDD13 PDD14 PDD15

(#20 key-pin)

PD_DREQ PD_IOW# PD_IOR# PD_IORDY PD_DACK# IDE_IRQ PD_A1 PD_A0 PD_CS#0

(#28 CSEL)

CSELA

(#32 IOCS16)

ATADET0 PD_A2 PD_CS#1

C193 X_C0.01u25X0402

R286 X_10KR0402

ATADET0 18

29 IDE_LED#

BH2X20[20]_BLUE-RH-2

R267 4.7KR0402

R301 4.7KR0402

VCC3

ATADET0 program by SIO

VCC5

R449 10R/4

C317 C0.1u25Y0402-RH

VCC3

R446 X_0R/4

R445 0R/4

28,30 5VDRV1_EN

U23

POK EN VIN VREF VCTRL VOUT GND GND FB

UP7706U8_PSOP8-RH

DVDD_1.8V

FB3 40L3A-25_0805

C322 X_C0.01u16X0402-RH

J368_1

R457 2KR1%0402

R456 1.6KR1%0402

C321 C22u6.3X60805-RH

C320 C22u6.3X60805-RH

C313 C1u6.3X50402-1

I31-0770602-U33

Vout=(1+R1/R2)*0.8

CSELA R295 0R/4

PD_DREQ R315 5.6KR1%0402

IDE_IRQ R290 10KR0402

PDD7 R423 X_10KR0402

PCIE_REXT1

R495 8.2KR1%0402

Near to PIN 6

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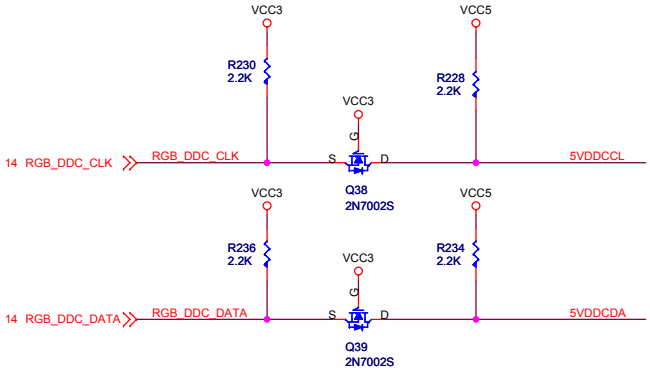
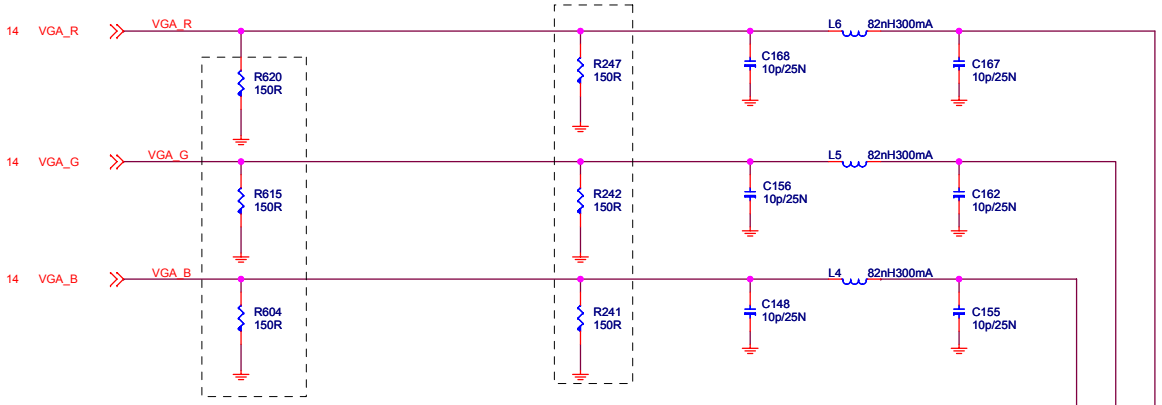
D-Sub

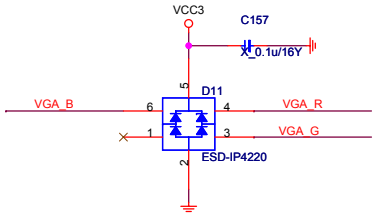
Level shift

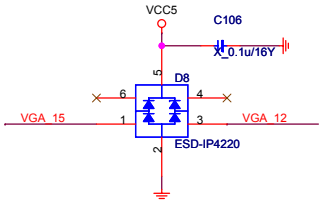


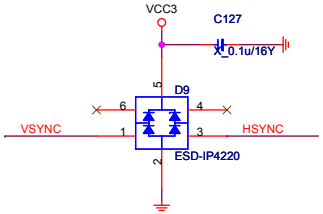
PLACE CLOSE TO VGA CONNECTOR,
WITHIN 750 MIL OF PIN



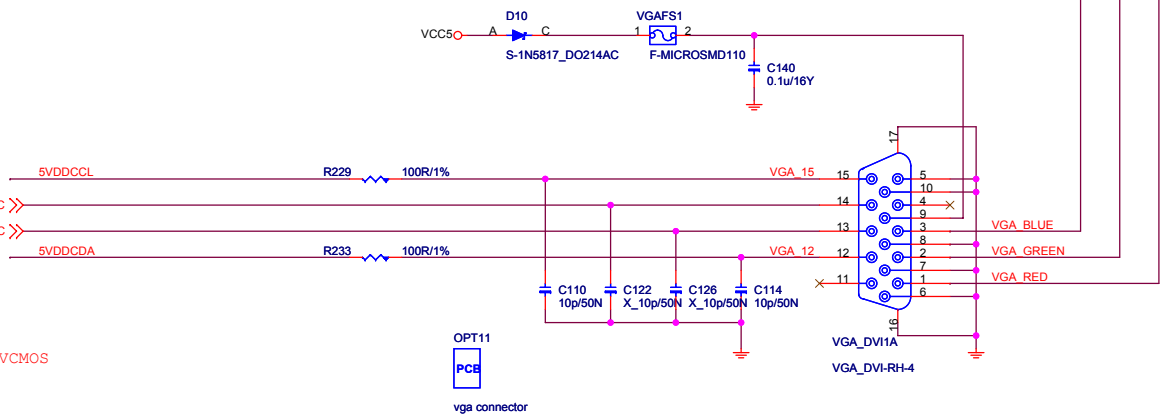
Close to PCH within 250 mils.







VSYNC/HSYNC:HVCMOS
CRB pull VCC3



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	MS-7636	
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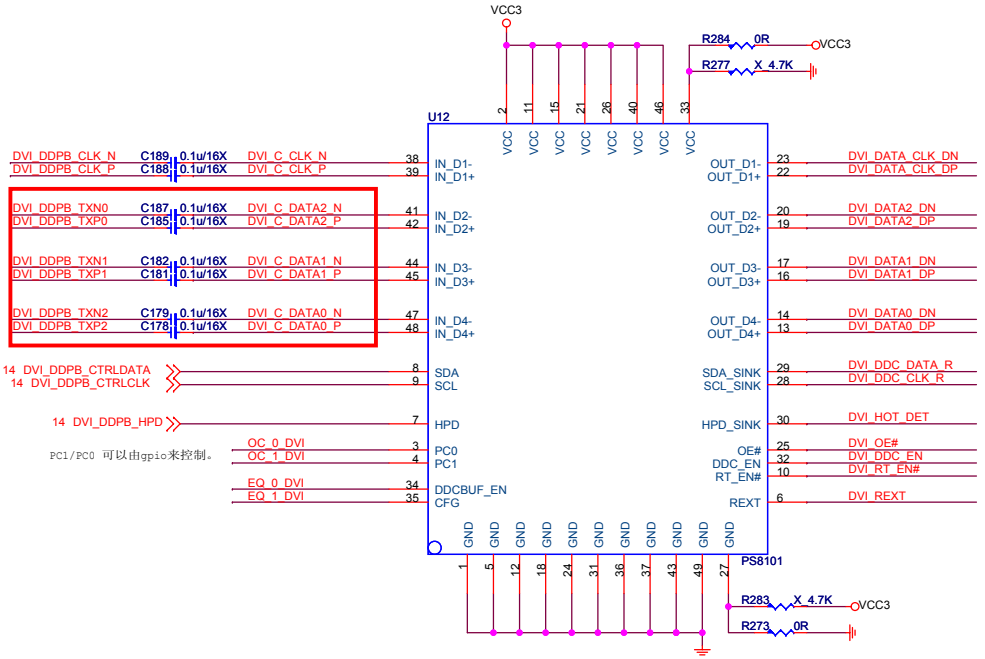
DVI level shifter

14 DVI_DDPB_TXP0
14 DVI_DDPB_TXN0
14 DVI_DDPB_TXP1
14 DVI_DDPB_TXN1
14 DVI_DDPB_TXP2
14 DVI_DDPB_TXN2
14 DVI_DDPB_CLK_P
14 DVI_DDPB_CLK_N

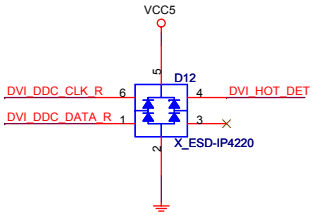
PCH signal Mappings
DG P156

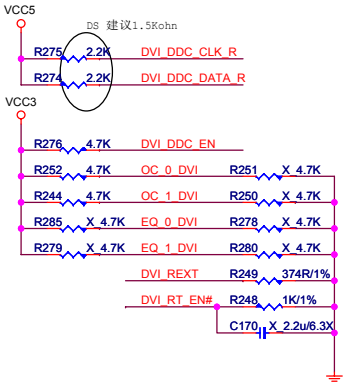
差分阻抗为100ohm

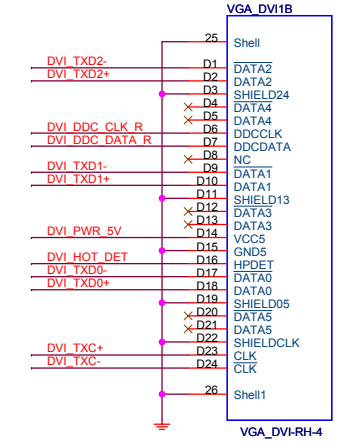


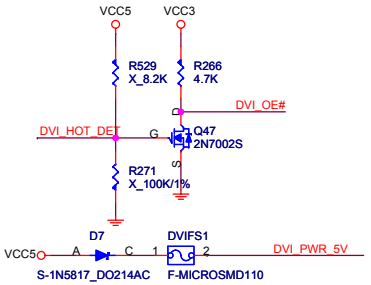
PARADE 腹:B0B-081010C-P97.

reserve





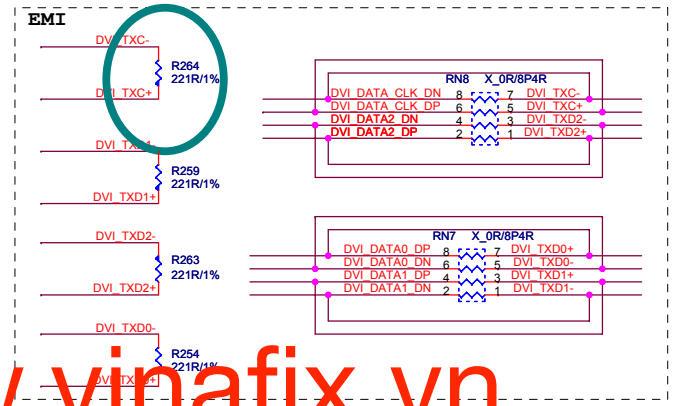


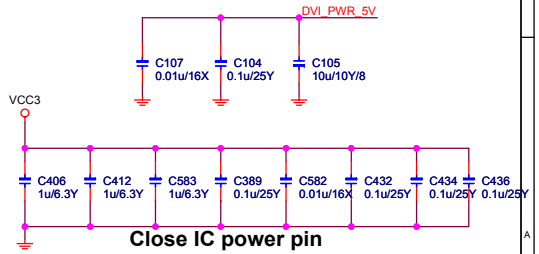


	"0"	"1"	note
DDC_EN	DDC level shifter disable	DDC level shifter enable	internal pull-up at ~500K ohm.
RT_EN#	Input 50 ohm termination resistor enable	the input termination ; resistors are set to high impedances	internal pull-down at ~500K ohm.
OE#	enable	the chip is power down and input termination resistors will be at high impedance.	internal pull-down at ~500K ohm.
HPD_SINK	disable	enable	internal pull-down at ~200K ohm; 5V tolerant.
DDCBUF_EN	For DDC level shifitng configuration, please refer to Table.		internal pull-down at ~500K ohm.
REXT			analog current generation.

[DDC_EN, DDCBUF_EN, OE#]	DDC Passive Switch	DDC Active Buffer
1, 0, X	On	Off
1, 1, 0	Off	On
1, 1, 1	Off	Off
0, X, X	Off	Off

PC1, PC0		note
00	8 dB	internal pull-down at ~500K ohm.
01	4 dB	The 4-dB equalization setting is recommended for PC motherboard level shifting to compensate PCB trace losses.
10	12 dB	
11	0 dB	





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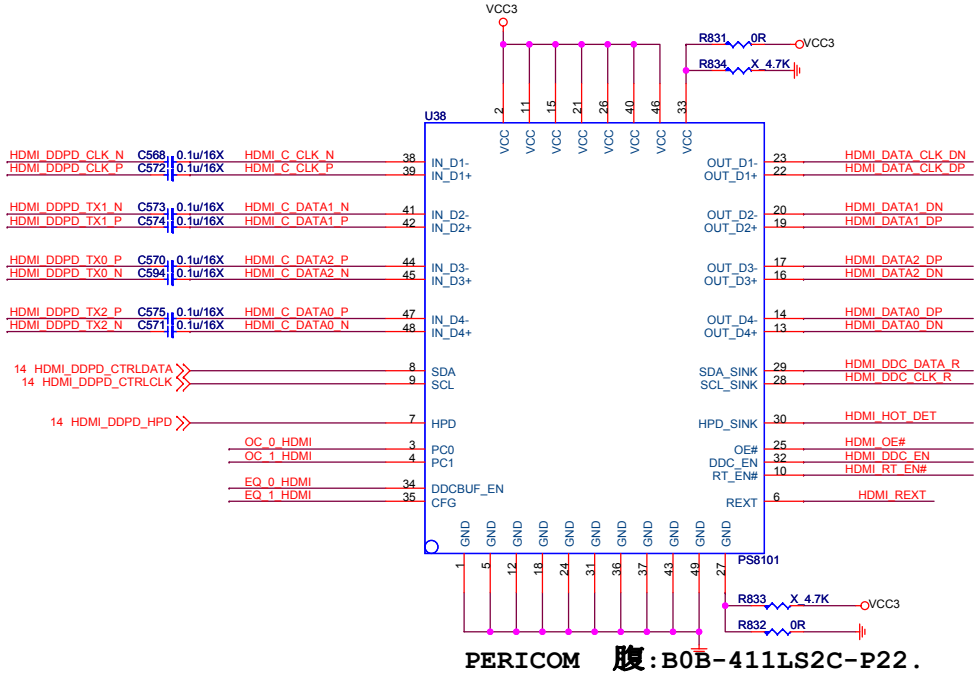
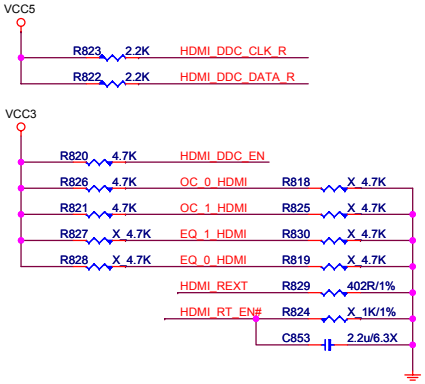
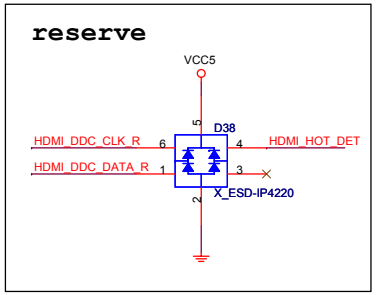
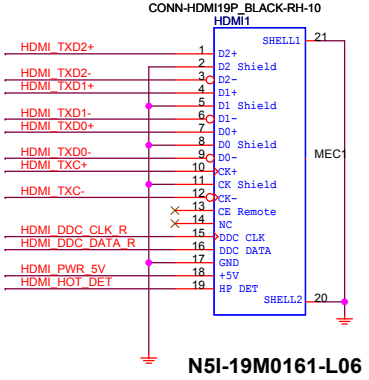
HDMI level shifter



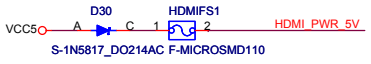
PERICOM 腹:B0B-411LS2C-P22.
PARADE 腹:B0B-081010C-P97.

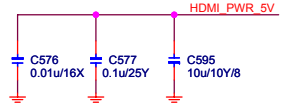


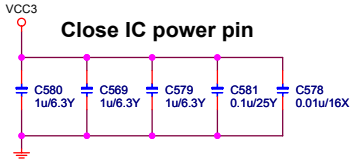




N5I-19M0161-L06



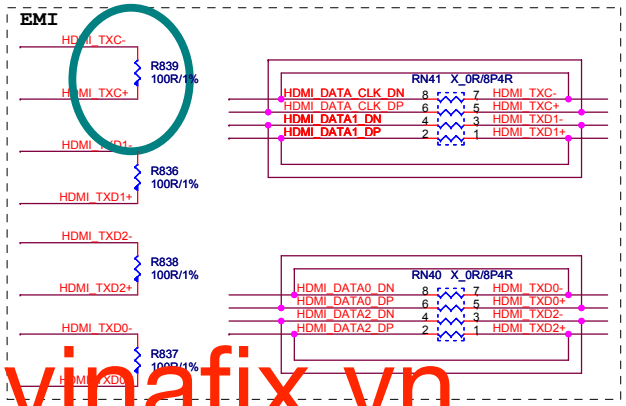


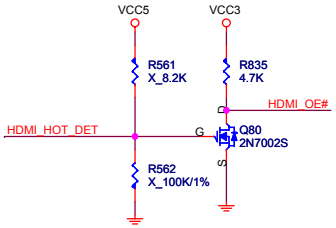


	"0"	"1"	note
DDC_EN	DDC level shifter disable	DDC level shifter enable	internal pull-up at ~500K ohm.
RT_EN#	Input 50 ohm termination resistor enable	the input termination ; resistors are set to high impedances	internal pull-down at ~500K ohm.
OE#	enable	the chip is power down and input termination resistors will be at high impedance.	internal pull-down at ~500K ohm.
HPD_SINK	disable	enable	internal pull-down at ~200K ohm; 5V tolerant.
DDCBUF_EN	For DDC level shifitng configuration, please refer to Table.		internal pull-down at ~500K ohm.
REXT			analog current generation.

[DDC_EN, DDCBUF_EN, OE#]	DDC Passive Switch	DDC Active Buffer
1, 0, X	On	Off
1, 1, 0	Off	On
1, 1, 1	Off	Off
0, X, X	Off	Off

PC1, PC0		note
00	8 dB	internal pull-down at ~500K ohm.
01	4 dB	
10	12 dB	
11	0 dB	





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Custom	HDMI	1.3

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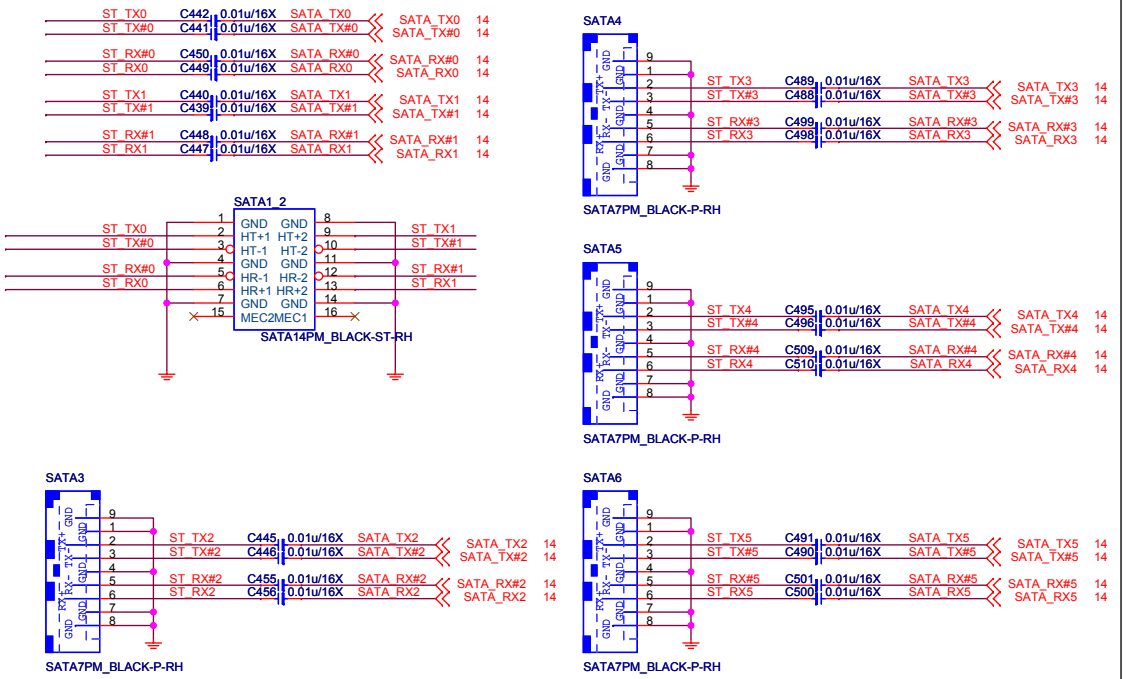
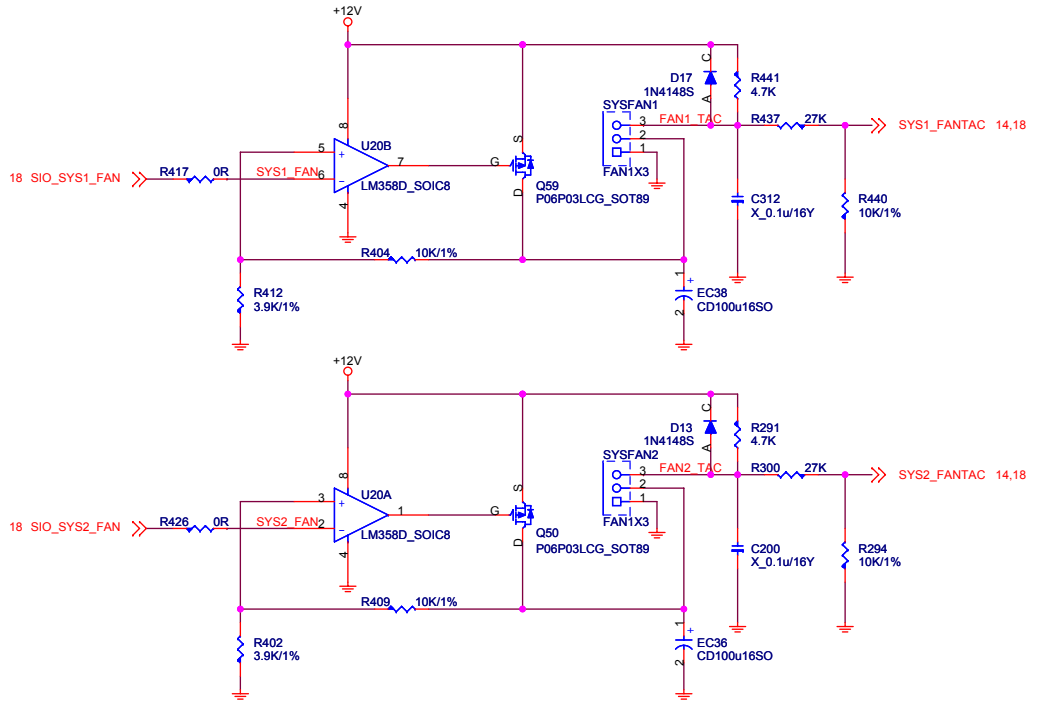
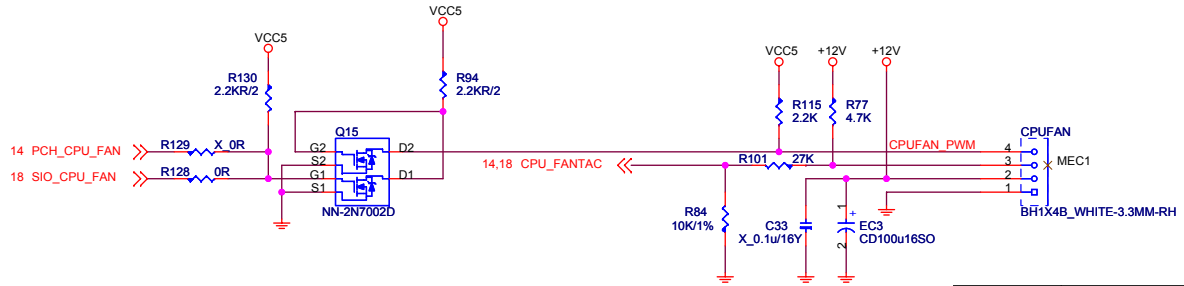
SATA connector (color:Black)



FAN-COUNTROL CIRCUIT





MICRO-STAR INT'L CO.,LTD

MS-7636

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Custom	SATA & e-SATA Ports and Fan Control	1.3

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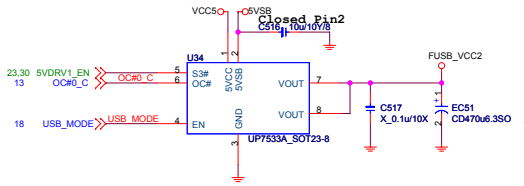
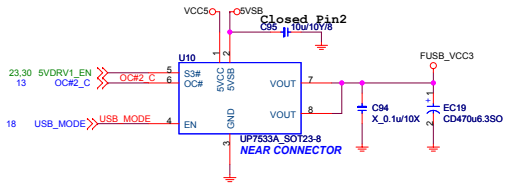
Rear USB Connector

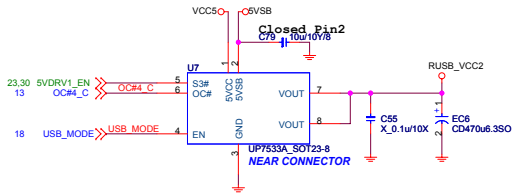
USB POWER FOR PORT 0,1



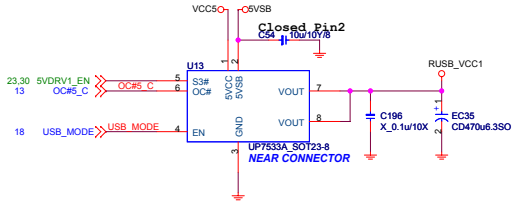
USB POWER FOR PORT 4,5



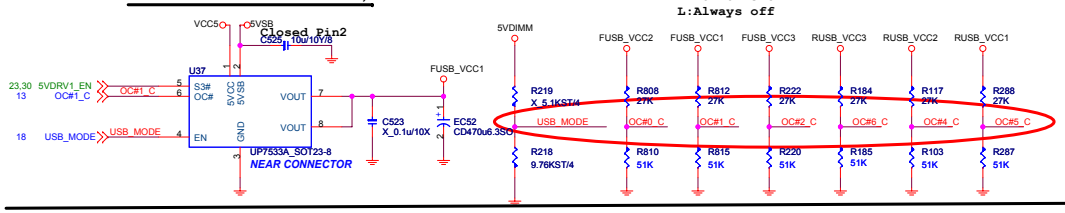
USB POWER FOR PORT 6,7



USB POWER FOR PORT 8,9

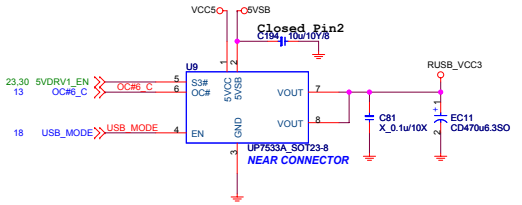


USB POWER REAL PORT 2,3



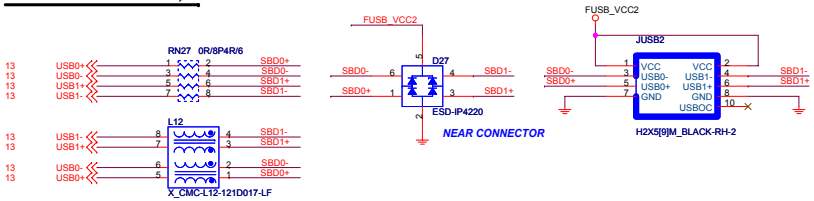
USB_MODE for USB voltage
H:Follow 5VSB
L:Always off

USB POWER FOR PORT 10,11

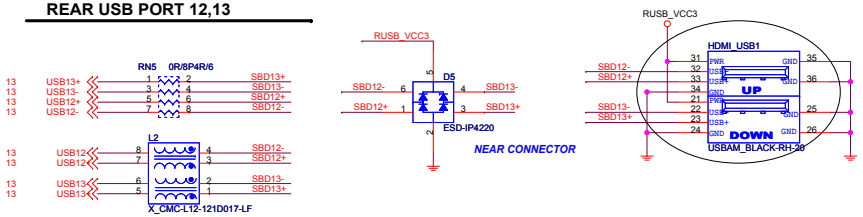


Front USB Connector

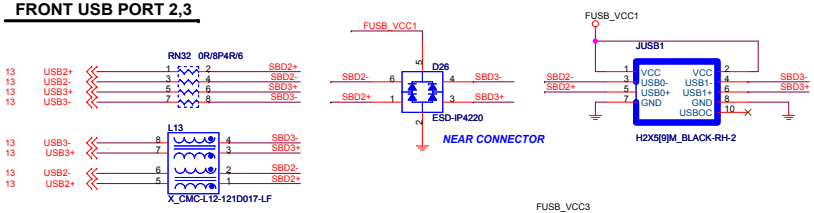
FRONT USB PORT 0,1



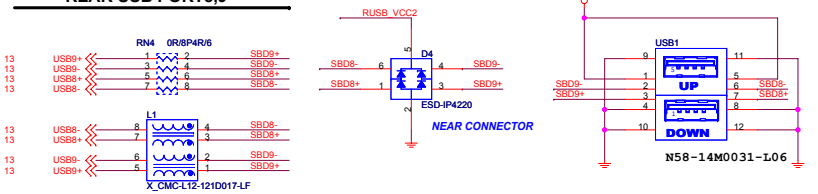
REAR USB PORT 12,13



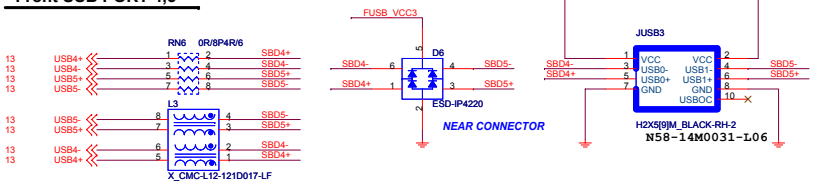
FRONT USB PORT 2,3



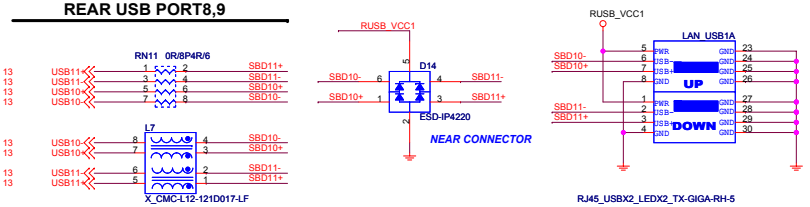
REAR USB PORT8,9



Front USB PORT 4,5



REAR USB PORT8,9



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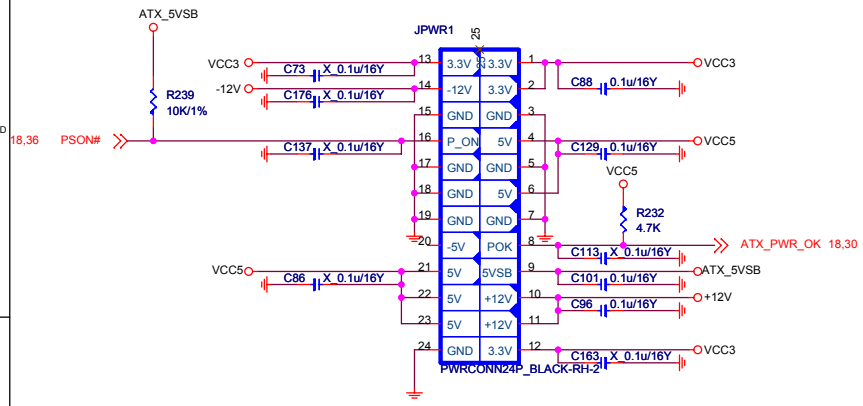
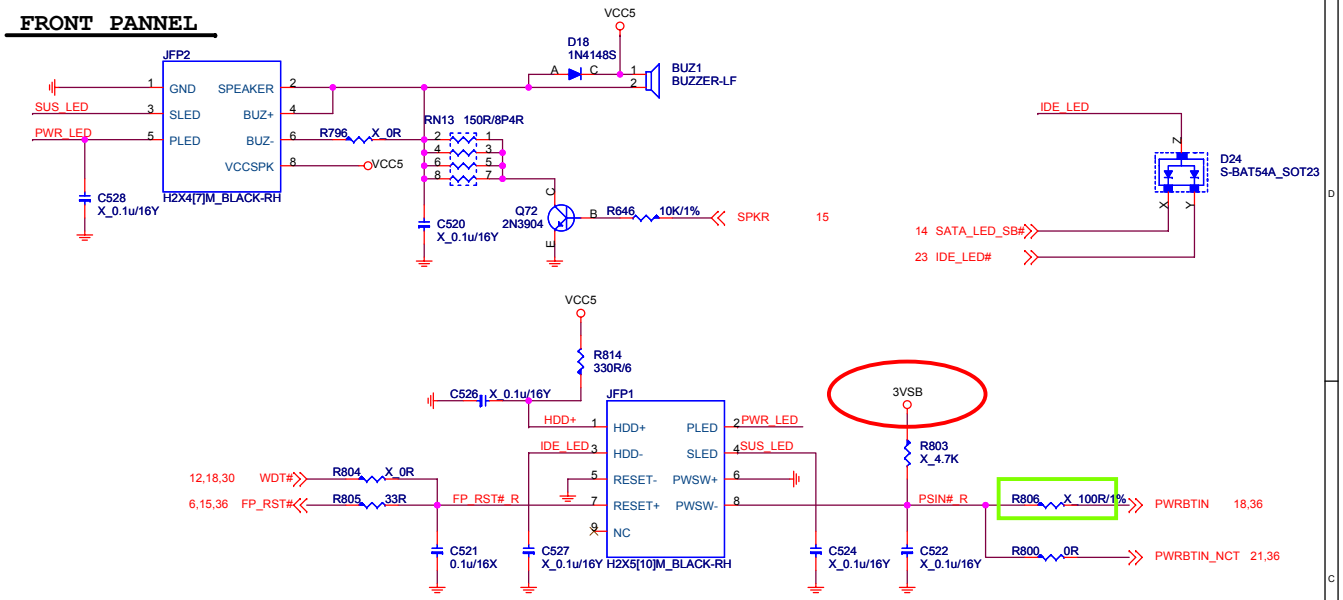
ATX POWER CONNECTOR



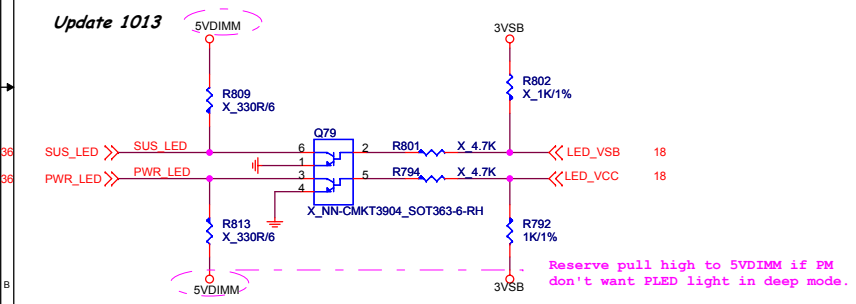
FRONT PANNEL



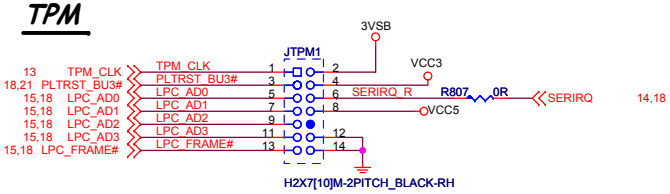
LED (for Fintek 71889)

If use N3016Y LED Ctrl,
SIO LED_VCC / LED_VSB can not to use.

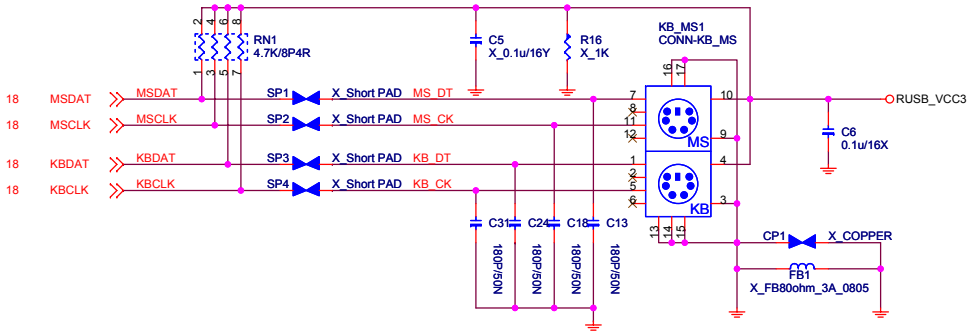
Update 1013



TPM



PS2 KEYBOARD & MOUSE CONNECTOR



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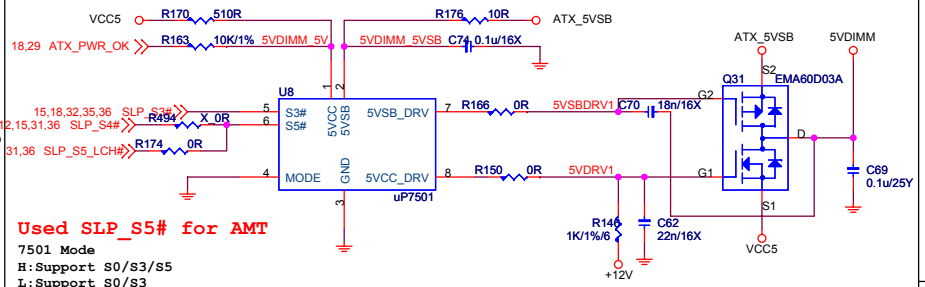
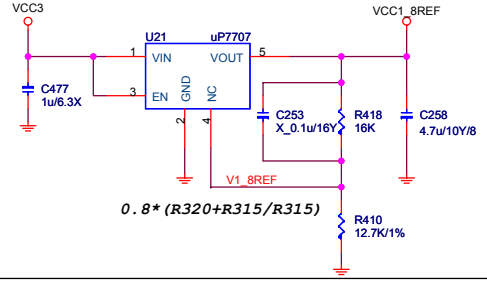
5VDIMM FOR DDR



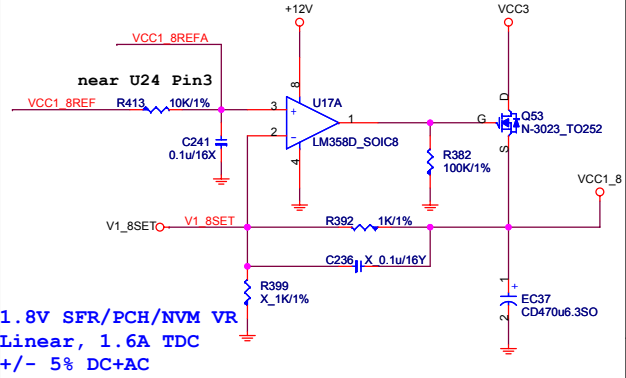
Used SLP_S5# for AMT

7501 Mode
H:Support S0/S3/S5
L:Support S0/S3

VCC1_8REF



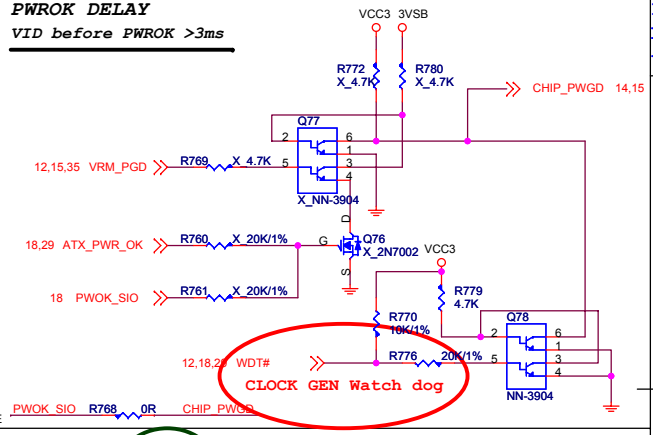
VCC1_8



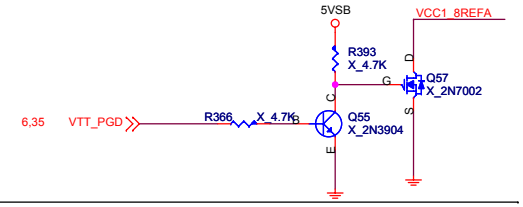
1.8V SFR/PCH/NVM VR
Linear, 1.6A TDC
+/- 5% DC+AC

PWROK DELAY

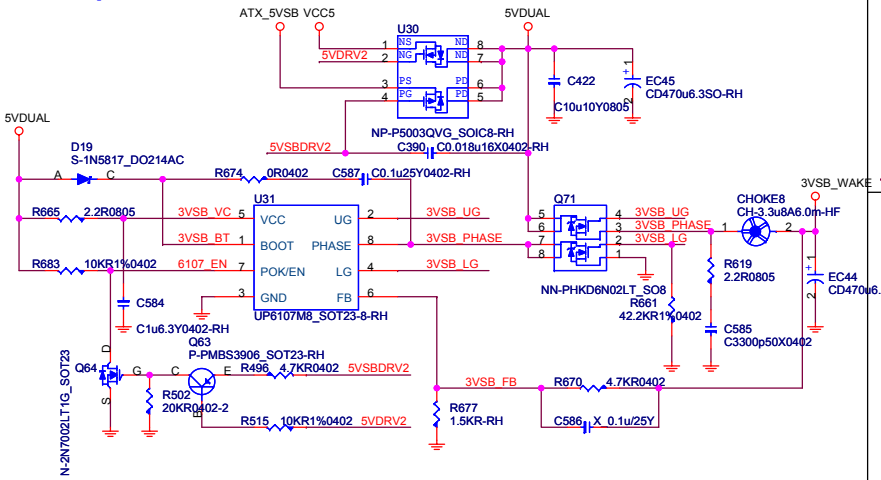
VID before PWROK >3ms

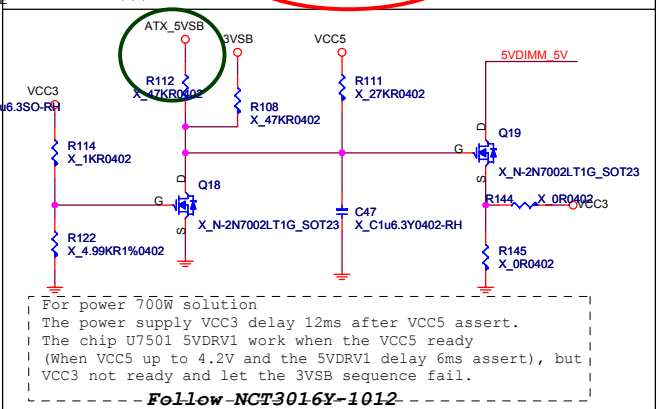


cpuvtt & pch vore wait 1.8v



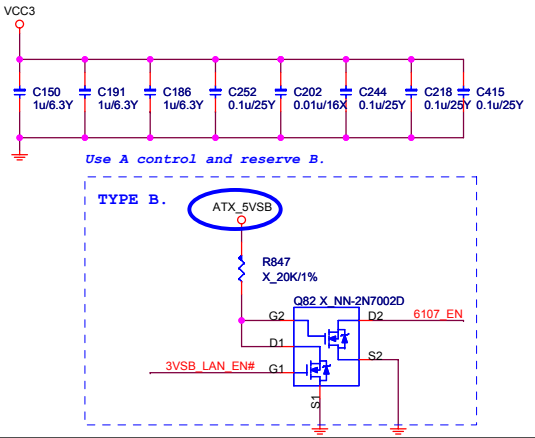
Deep Mode WOL LAN Power CTRL Circuit



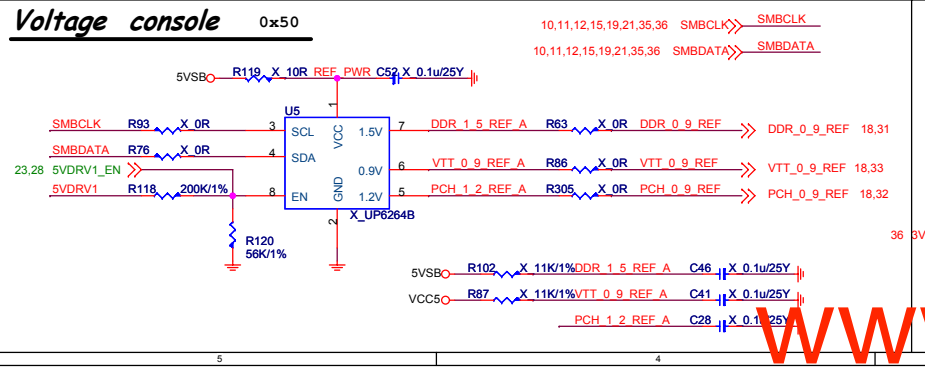


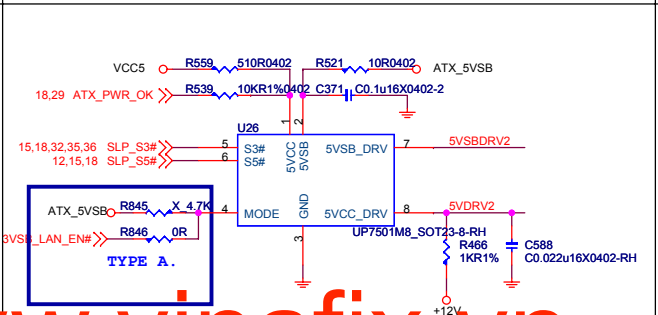
For power 700W solution
The power supply VCC3 delay 12ms after VCC5 assert.
The chip U7501 5VDRV1 work when the VCC5 ready
(When VCC5 up to 4.2V and the 5VDRV1 delay 6ms assert), but
VCC3 not ready and let the 3VSB sequence fail.

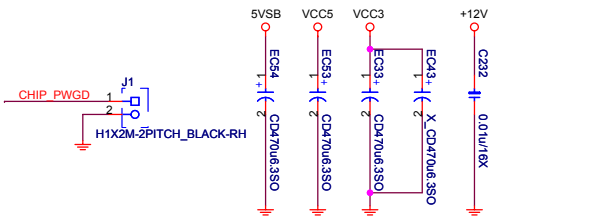
Follow NCT3016Y-1012



Voltage console 0x50







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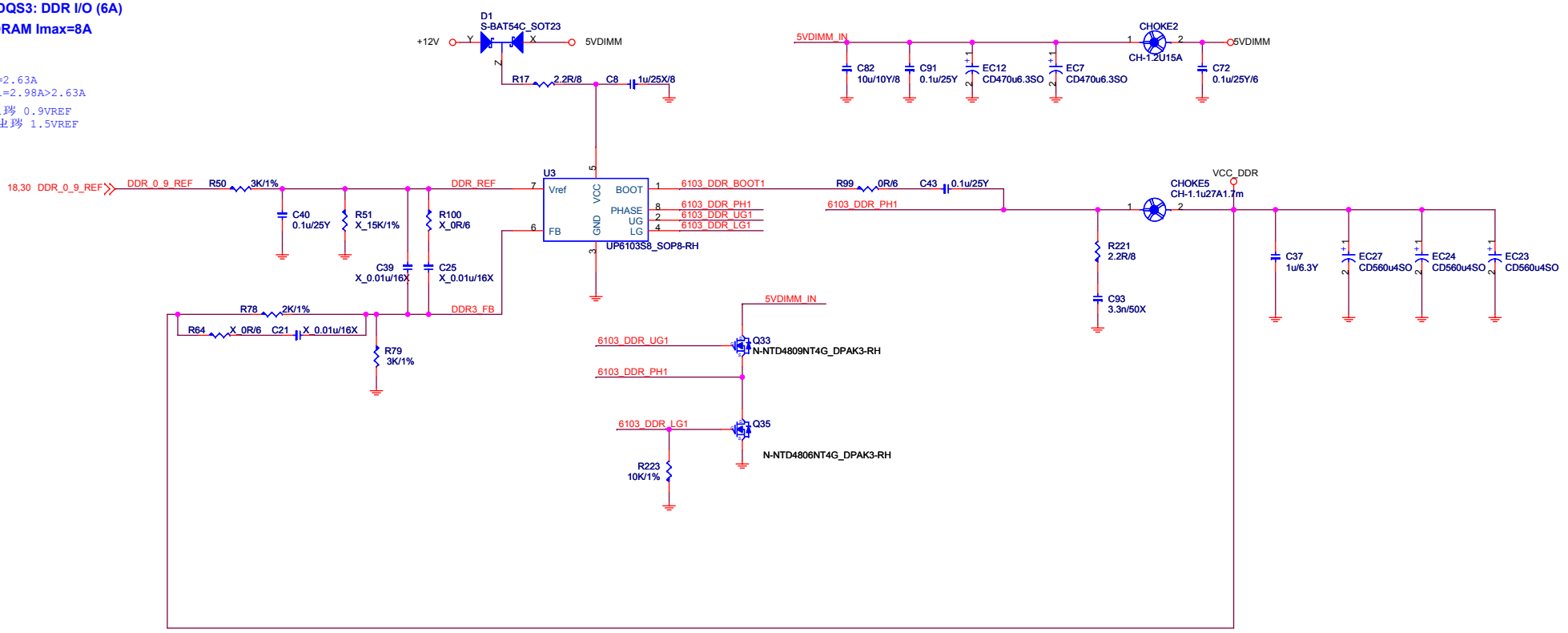
DDR3_1.5V

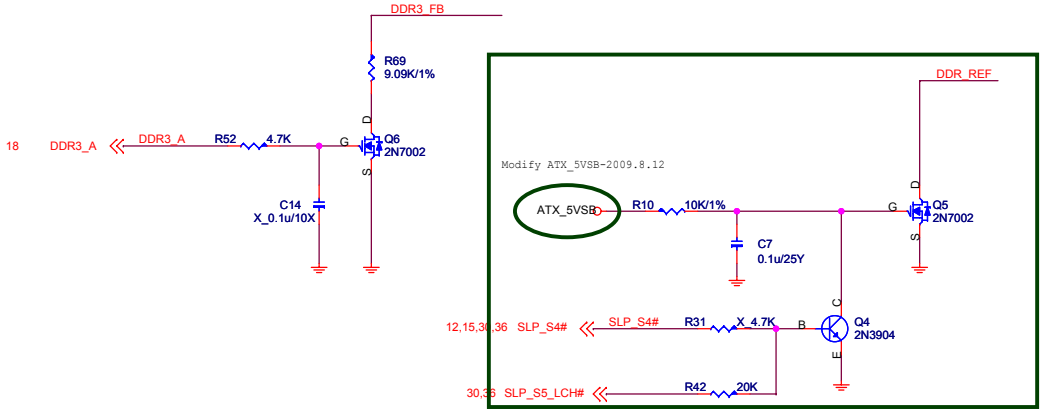
21.25A=6A+8A+0.75A+6.5A

V1.5DDQS3: DDR I/O (6A)
DDR DRAM Imax=8A

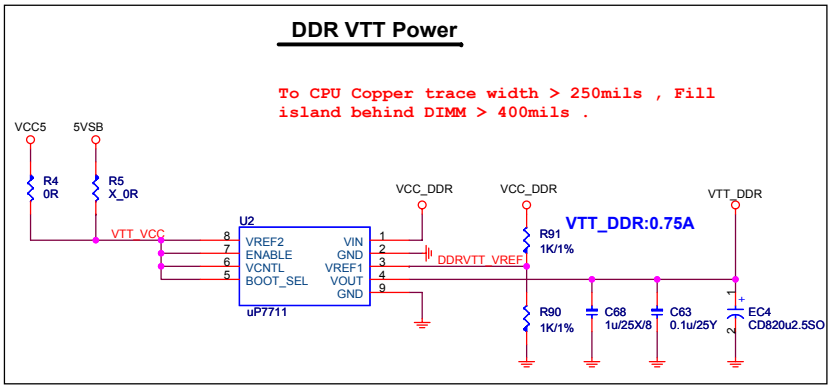
Iripple=2.63A
1.49*2*1=2.98A>2.63A

SIO 业珍 0.9VREF
6264 业珍 1.5VREF





Only for meet Intel power down sequence.



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Custom	DDR POWER - UPI6103_1-Phase	1.3

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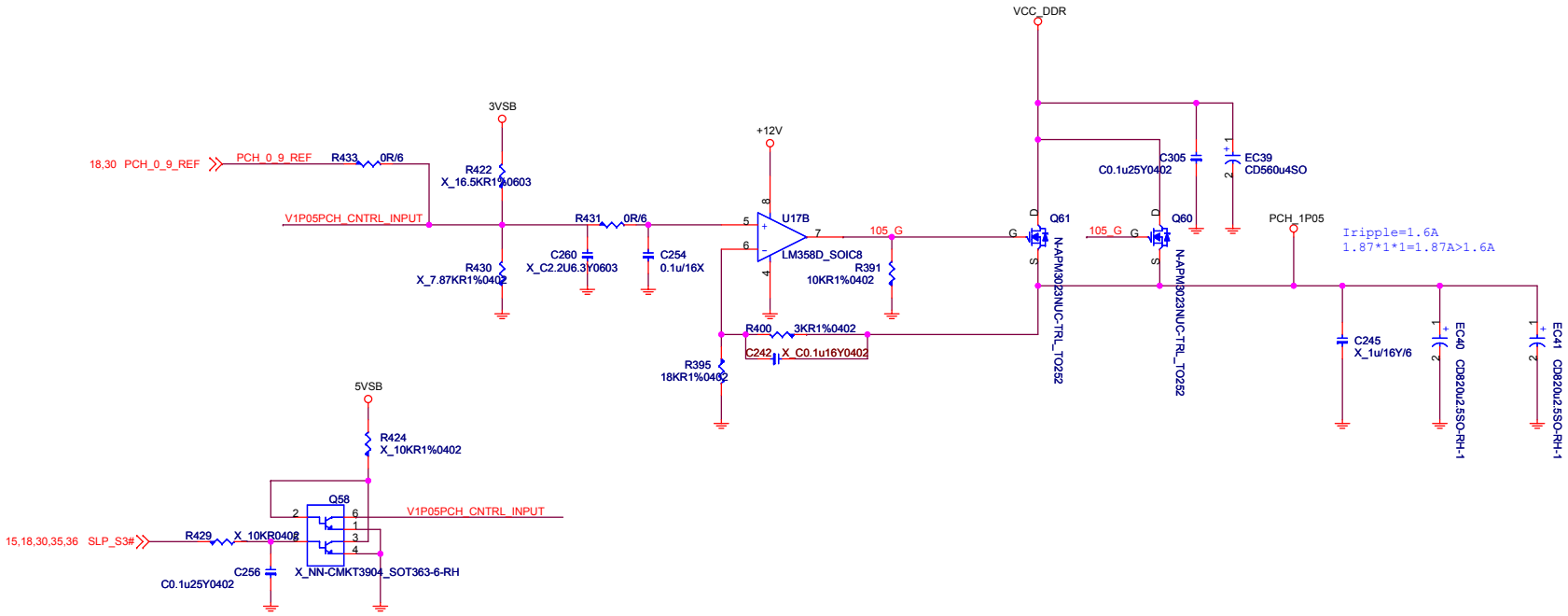
PCH Core 6.8A

V1.05PCHS0: Vcc, VccExp, VccDMI, VccSATA, VccSATAPLL, VccAUPLL, VccSSC, VccDIFFCLK, VccDIFFCLKN, VccUSBCORE, VccDPLL, VccDPLL_EXP,VccDPLL_FDI (4.5A)
V1.05MEM: VccMEW, VccAUX, VccME (2.3A)



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Size: Custom	Document Description: PCH POWER - UPI6103_1-Phase	Rev: 1.3
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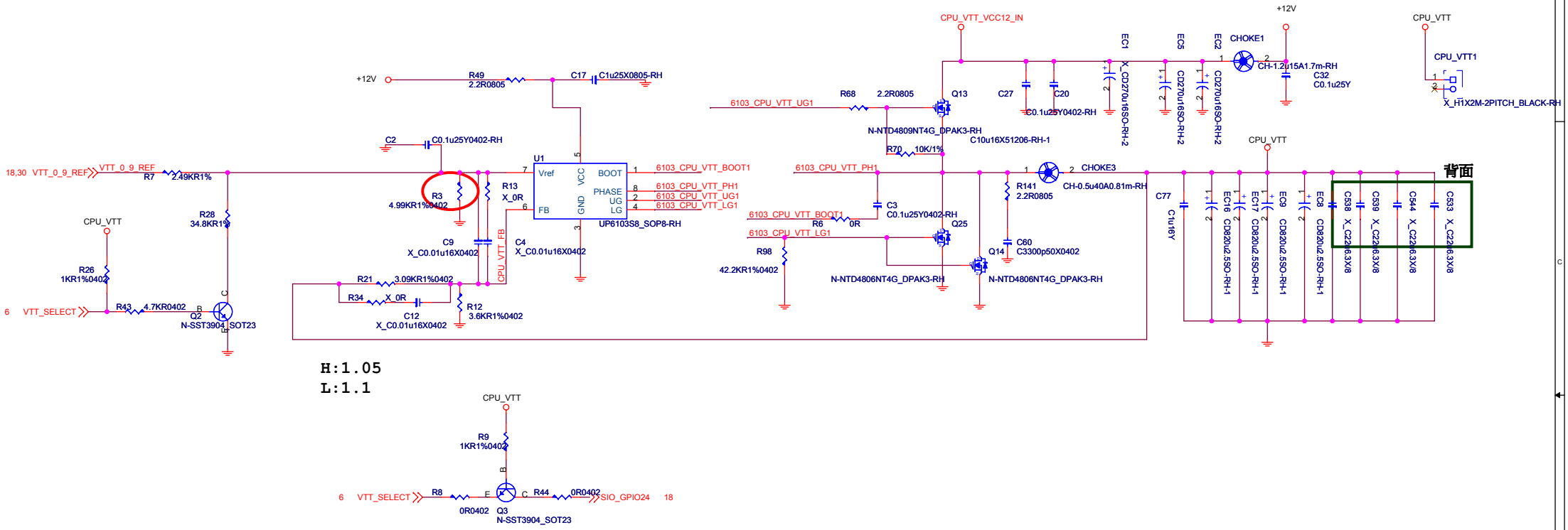
VTTPWRGD LEVEL SHIFT

CPU_VTT
VTTS0: 1.1V/1.05V CPU Uncore, MCP I/O (30A)

Iripple=8.28A
6.1*2*1=12.2A>8.28A



H:1.05
L:1.1

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Custom	CPU_VTT - UPI6103_1-Phase	1.3

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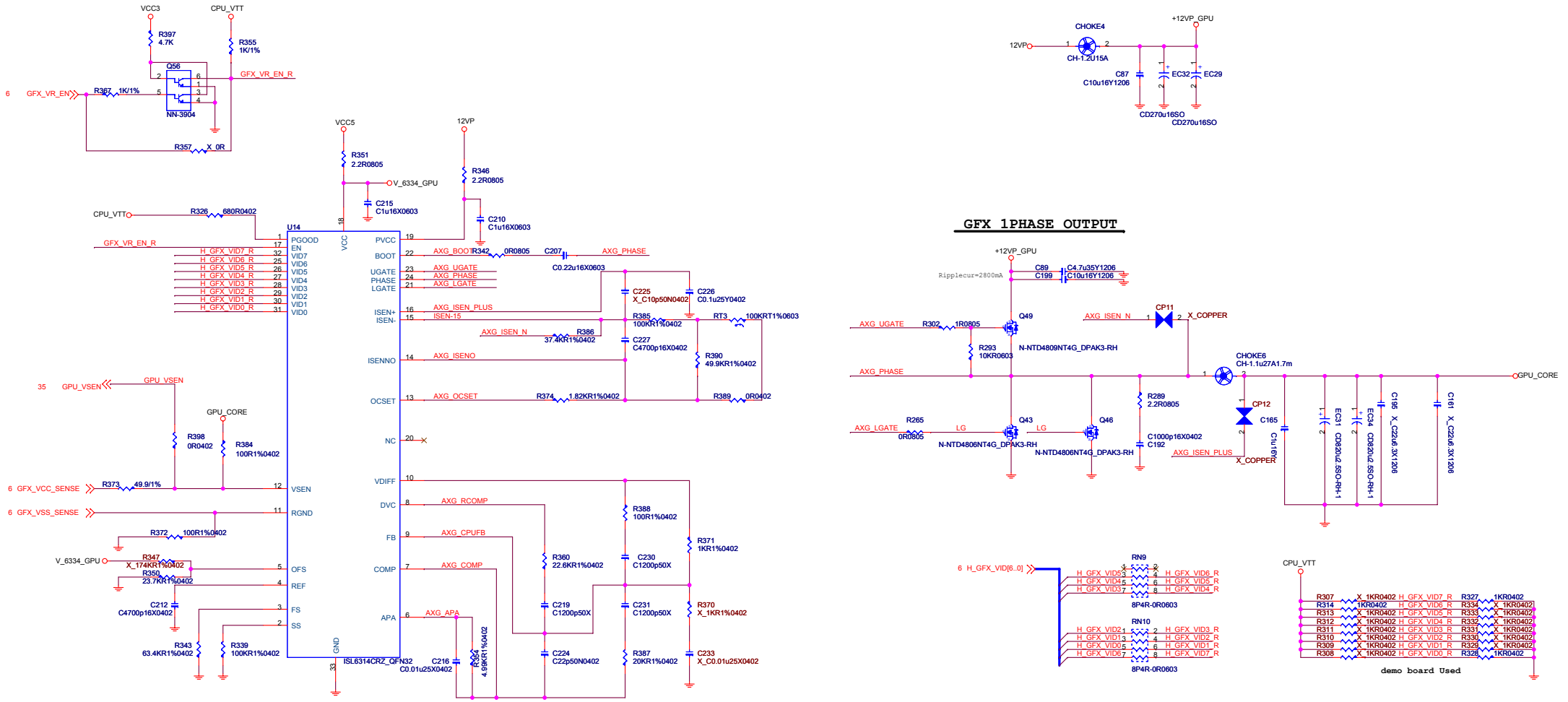

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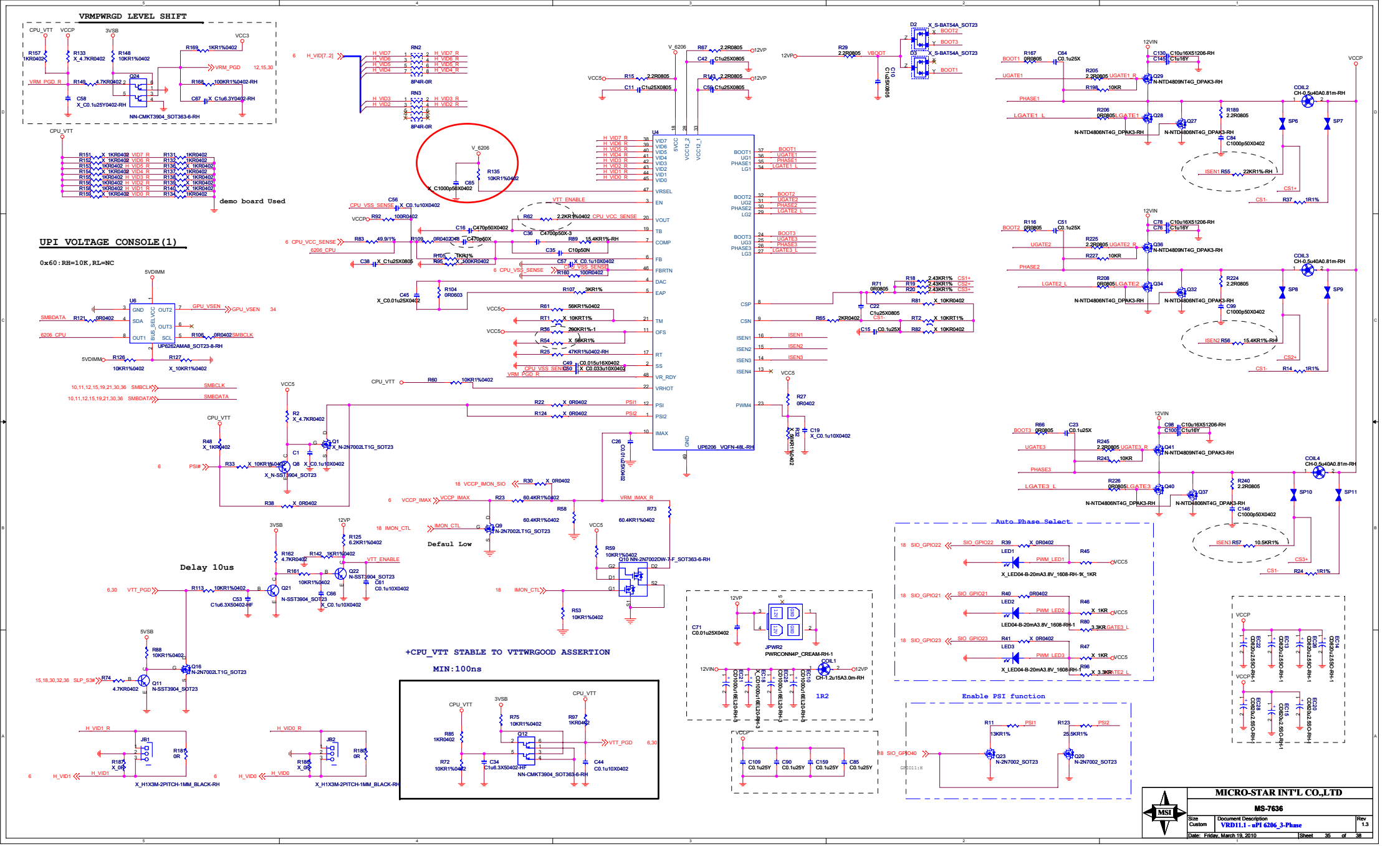

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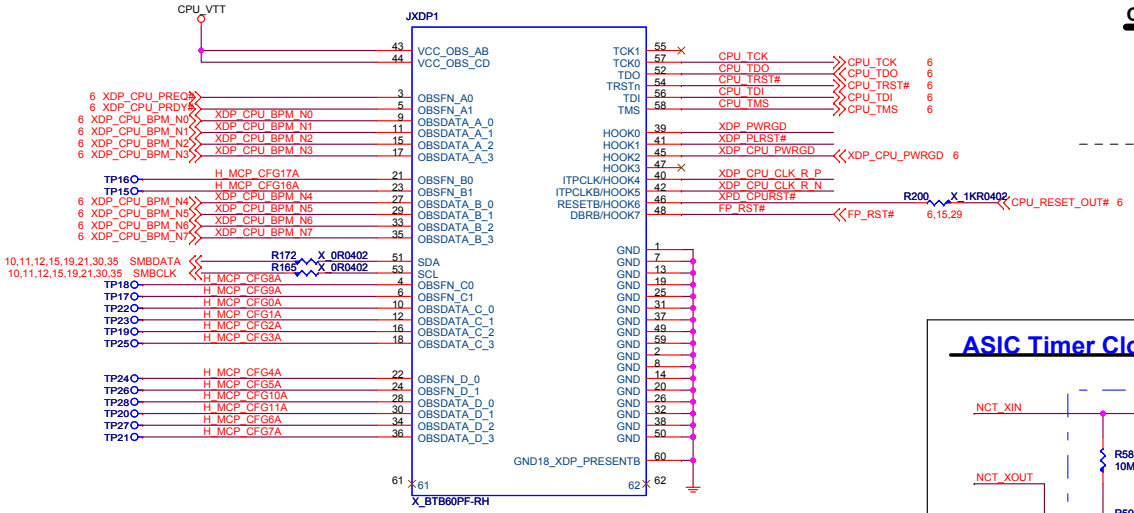
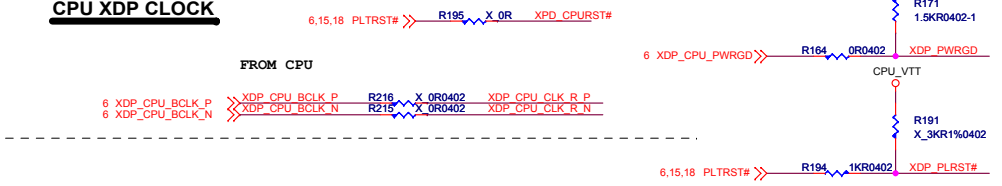
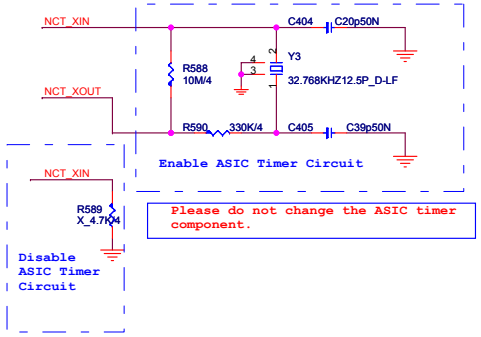
Reserve debug port 5020



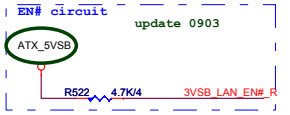
CPU XDP CLOCK



ASIC Timer Clock

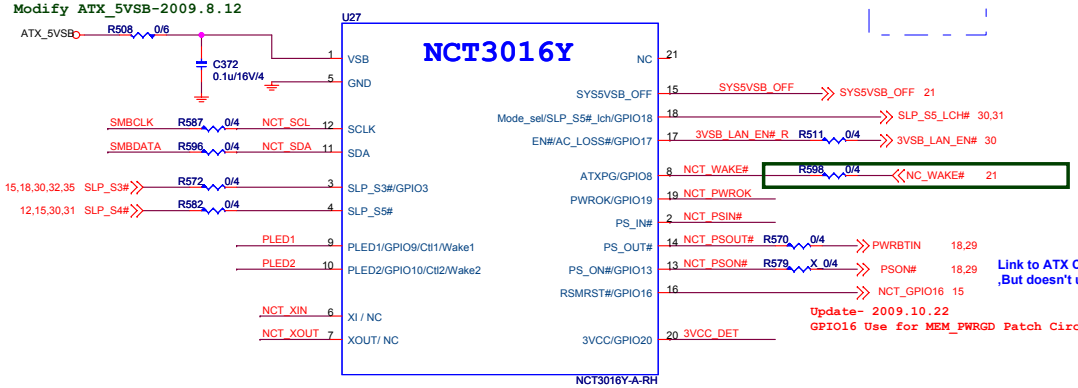


EN#/VSB Discharge



NCT3016Y

Modify ATX_5VSB-2009.8.12



Update- 2009.10.22
GPIO16 Use for MEM_PWRGD Patch Circuit

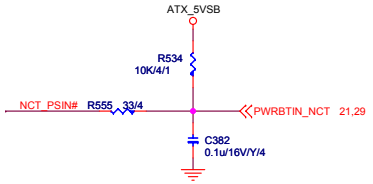
Link to ATX COON PSON# ,But doesn't use it

NCT_GPIO16

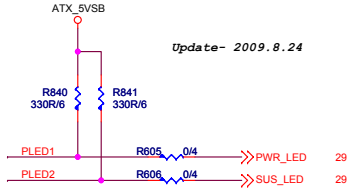
Power On
Hardware default = high
1.Set Lock_GPIO_Mode =1
2.Set GPIO16_Data =1
3.Set GPIO16 port as output by open-drain mode
4.Porting GPIO16_Data =0 before system into deep_s3
5.Waiting CPU_PWRGD from low to high and setting GPIO16_Data =1 when resume from deep_s3

GPIO16 always keep high except for deep_s3

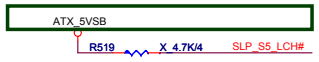
PANEL SWITCH



N3016Y Power LED Control



Strapping PIN

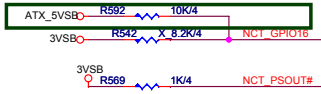


Modify ATX_5VSB-2009.8.12

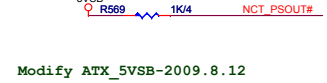
SLP_S5_LCH# (SimpleMode_Sel):
8-PIN Function: Pull-high 10k
20-PIN Full Function: Floating (Internal Pull-Down)

Pull-High

Update- 2009.10.22
If RSMRST# use to GPIO function,
please pull high to ATX_5VSB else pull high to 3VSB.

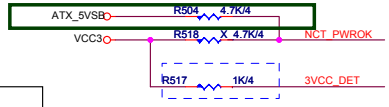


Modify ATX_5VSB-2009.10.21



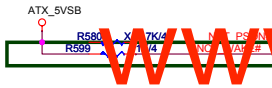
NCT_PSOUT# must used 1K resistance and connect to SYS_3VSB or 3VDual power source for power detect.

Modify ATX_5VSB-2009.8.12



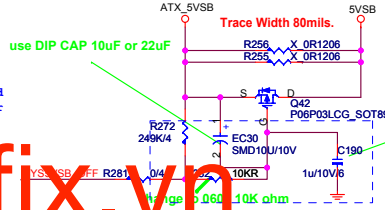
Modify-
2009.10.22
HW default
support deep_s5.

3VCC_DET must used 1K resistance and connect to 3VCC power source for power detect.



New future for WAKE 0 support wake up over ... HW trap p... Pull High : Wake ...

5VSB Power Switch



Modify - 2009.8.12
use X7R or X5R

POWER ON STRAPPING PIN

PIN	Name	0	1
18	SimpleMode_Sel	Full function	Simple Mode

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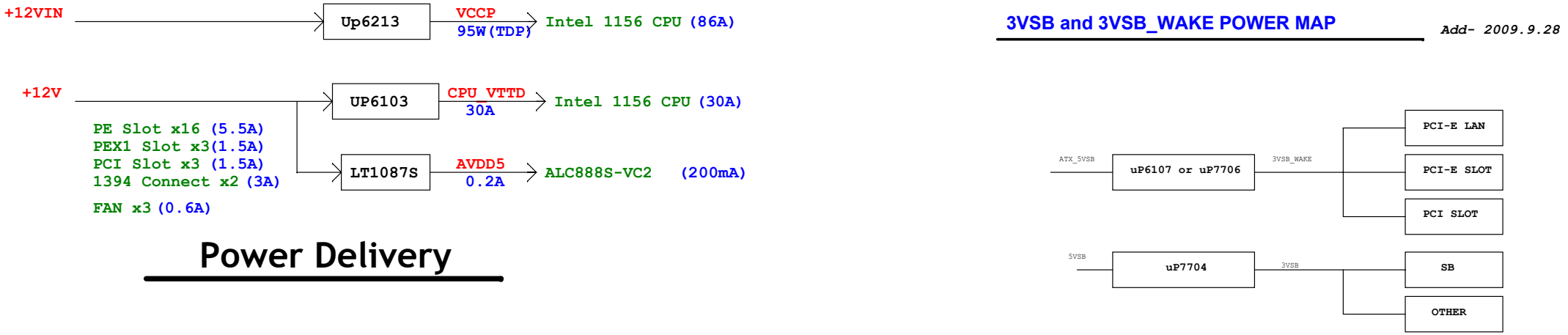
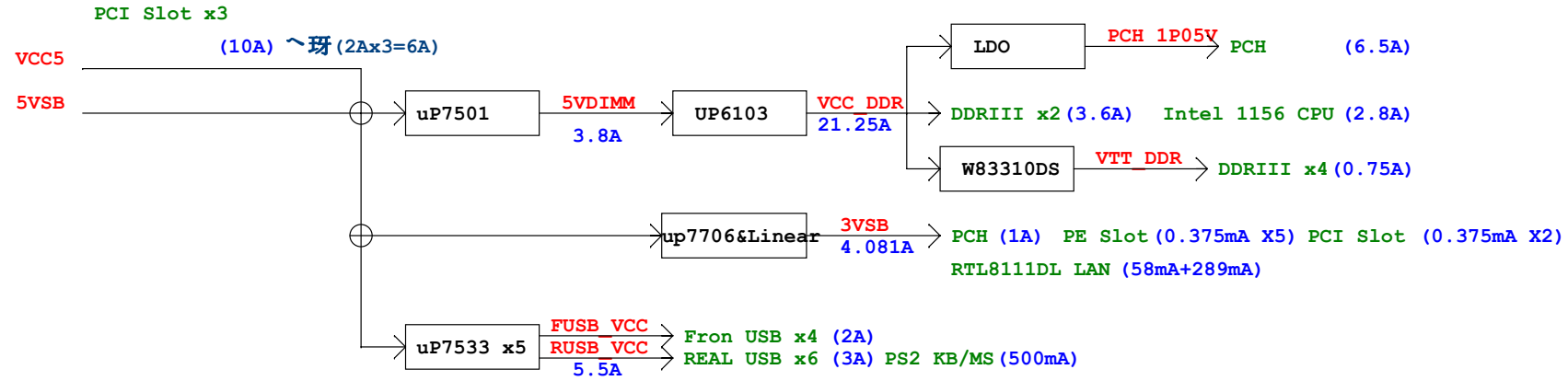
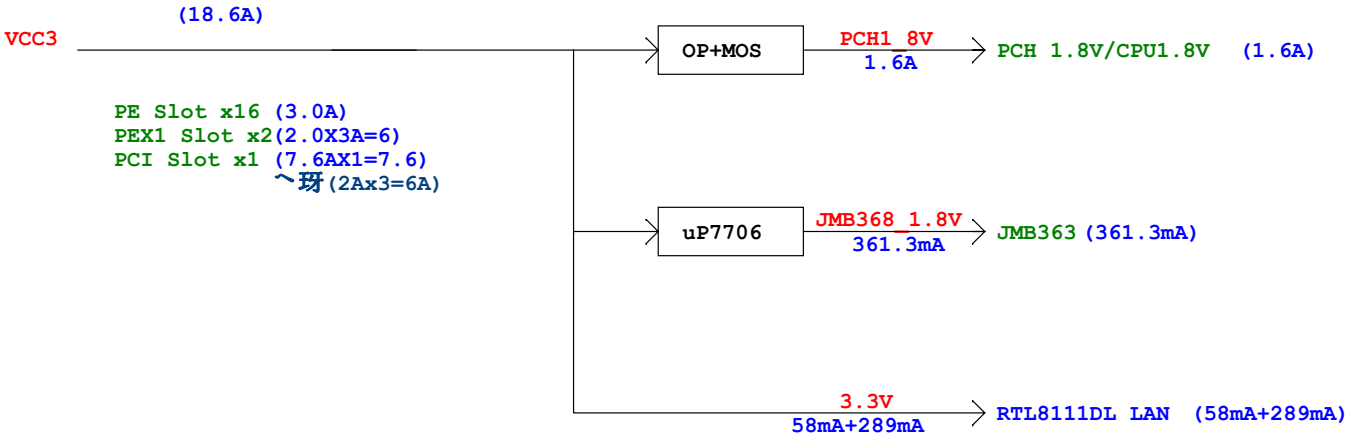
3VSB and 3VSB_WAKE POWER MAP

Add- 2009.9.28



Power Delivery





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MS-7588

Size	Document Description	Rev
Custom	Power Map	1.3

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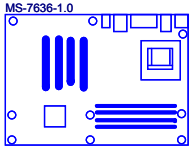
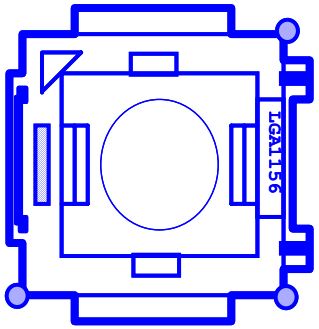
PCB

PCB1
<HP-BOM>
MS-7636-1.0



CPU SOCKET

XU1_X1
<HP-BOM>
CPU SOCKET



HDMI logo

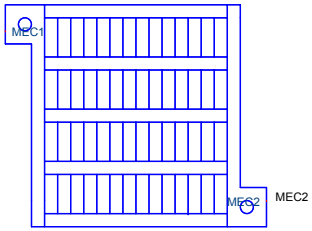
HDMI_L
PCB
HDMI_LOGO

BATTERY

BAT1_X1

BAT-BCR2032P-RH

HS_PCH1
MEC1

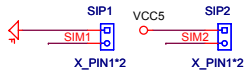


MEC2
HS-0404591-RH

EL CAP

OPT1	OPT2	OPT3	OPT4	LABEL1	Rubber1	Rubber2	LABEL2	bottom_EC54	bottom_label
PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB	PCB
X_CD470u6.3V4SO-2	X_CD10uF	X_CD100uF	X_CD1000uF	G51-M1SP632	rubber	rubber	G51-M1SP644	E26-7636010	E26-7636010

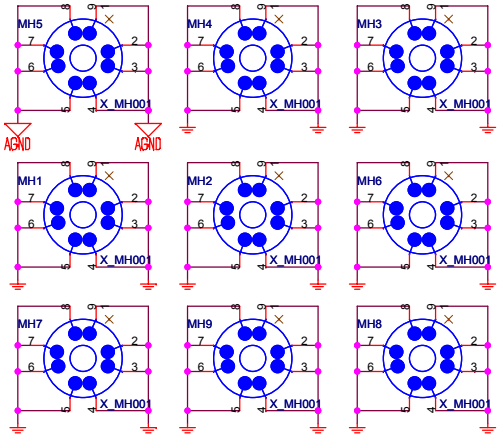
Simulation



Optical Fiducial Marks-120

Optical Fiducial Marks-100

Mounting Holes



H55EB3:3孔audio（888S VC2）,GB LAN, OC-switch 不上, DVI,HDMI 不上, JMB368 不上(IDE 也不上), APS LED 不上（SW APS） 半固.
H55SG6DVI:Full spec

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Size	Document Description	Rev
Custom	Manual & Option parts	1.3

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