

IH81C-MHS REV 0.73

CPU:

Intel Ivy HASWELL processors in LGA1150Package 95W

System Chipset: H81

Main Memory:

Dual Channel/DDR-III*2(Max 16GB) 1066/1333/1600

Onboard Device:

Super I/O:IT8772

LAN:Realtek 8106E

HD Codec:ALC892 3 Jacks

Power solution:

CPU Voltage Regulators:3phase by ISL95812 high 1 Low 1

DDR Voltage Regulators:1Phase by uP1514 SDRAM high 1 Low 2

Expansion Slots:

PCI EXPRESS 16X SLOT*1

PCI EXPRESS 1X SLOT*1

REAR IO:

PS/2

VGA Port

USB3.0 PORT*2

Gb RJ-45 +2 layer USB2.0 Ports

Audio Jacks

HDMI/DVI Port

Front I/O:

4SATA

USB 2.0 Header * 4

CPU /System1

Serial header

CIR Header

Front Audio Header

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5

4

3

2

1



X16 SLOT X1

PCIE GEN3 X16

**Haswell
Broadwell**
LGA 1150 SOCKET

1066/1333

 Channel A DIMM X2
Channel B DIMM X2

Ports 0 & 1 6 Gb/s Support

 Cost Reduced HDMI Level
Shifter When Trace length
less than 9.25'
DVI/HDMI
PORTS

PORT B/D

DISPLAY
PORTS

PORT C

VGA PORT

 USB 2.0 PORTS *8
USB 3.0 PORTS *4

 SATA3.0 PORTS X2
SATA2.0 PORTS X4
Dual Independent
Dispaly

SPI FLASH 32M

 HDC CODEC
ALC898

DMI FDI

PCH

708 PIN

LPC

8 PCIE2.0 PORTS
5GT/s

GIGA LAN RTL8111EL

 IT8893FX PCI BRIDGE
PCI SLOT*2

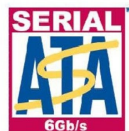
 PEG X4 CONN
X16 SLOT X1

PEG X1 SLOT*2

6JACKS

SPDIF OUT PORT

Front Audio Header



ITE8721/8728

CPU SMART FAN X1
SYSTEM FAN X2

PS2 KB/MS

Serial header

CIR Header

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 Title **BLOCK DIAGRAM**

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B

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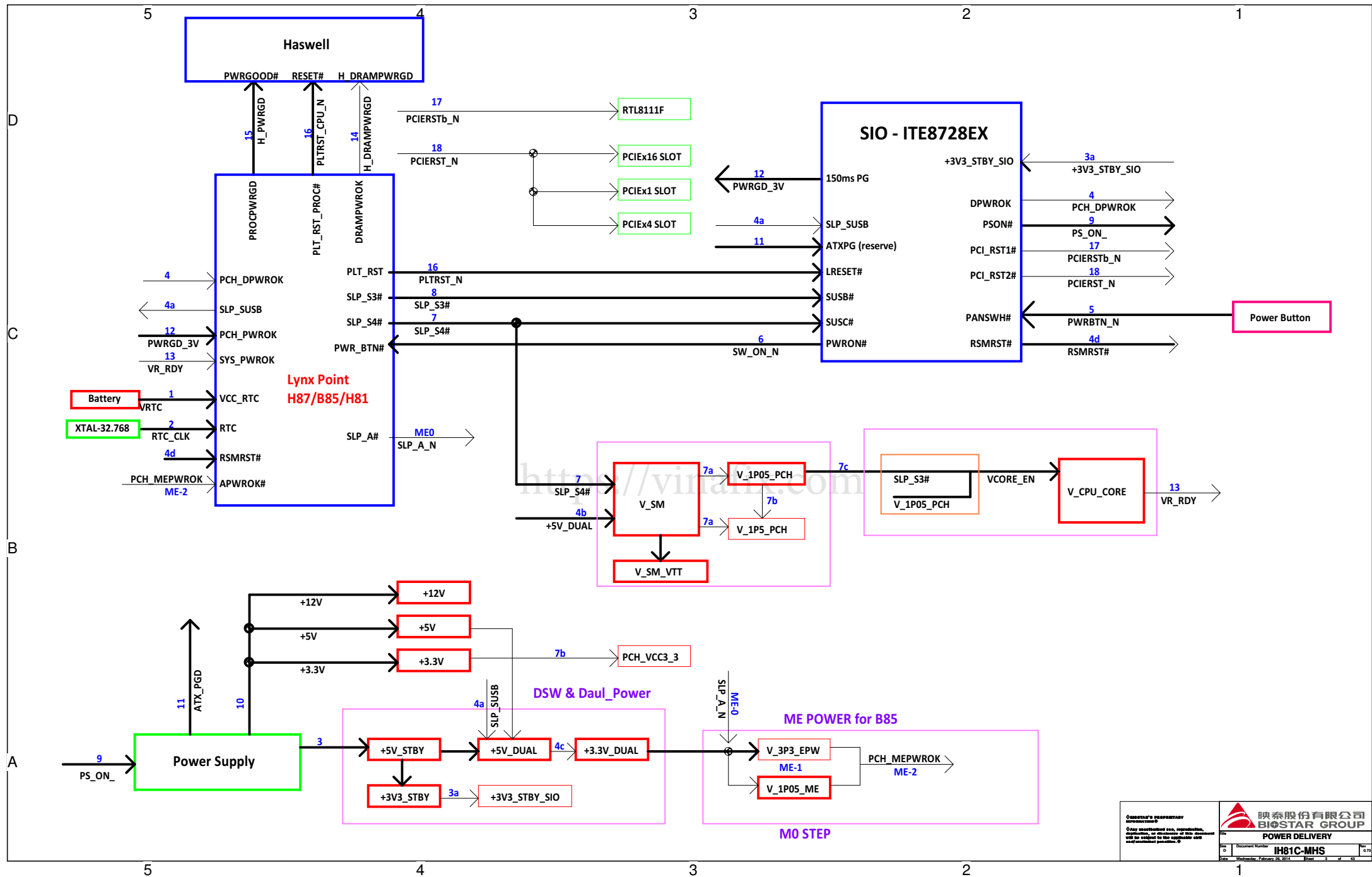
1

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D

D

C

C

B

B

A

A

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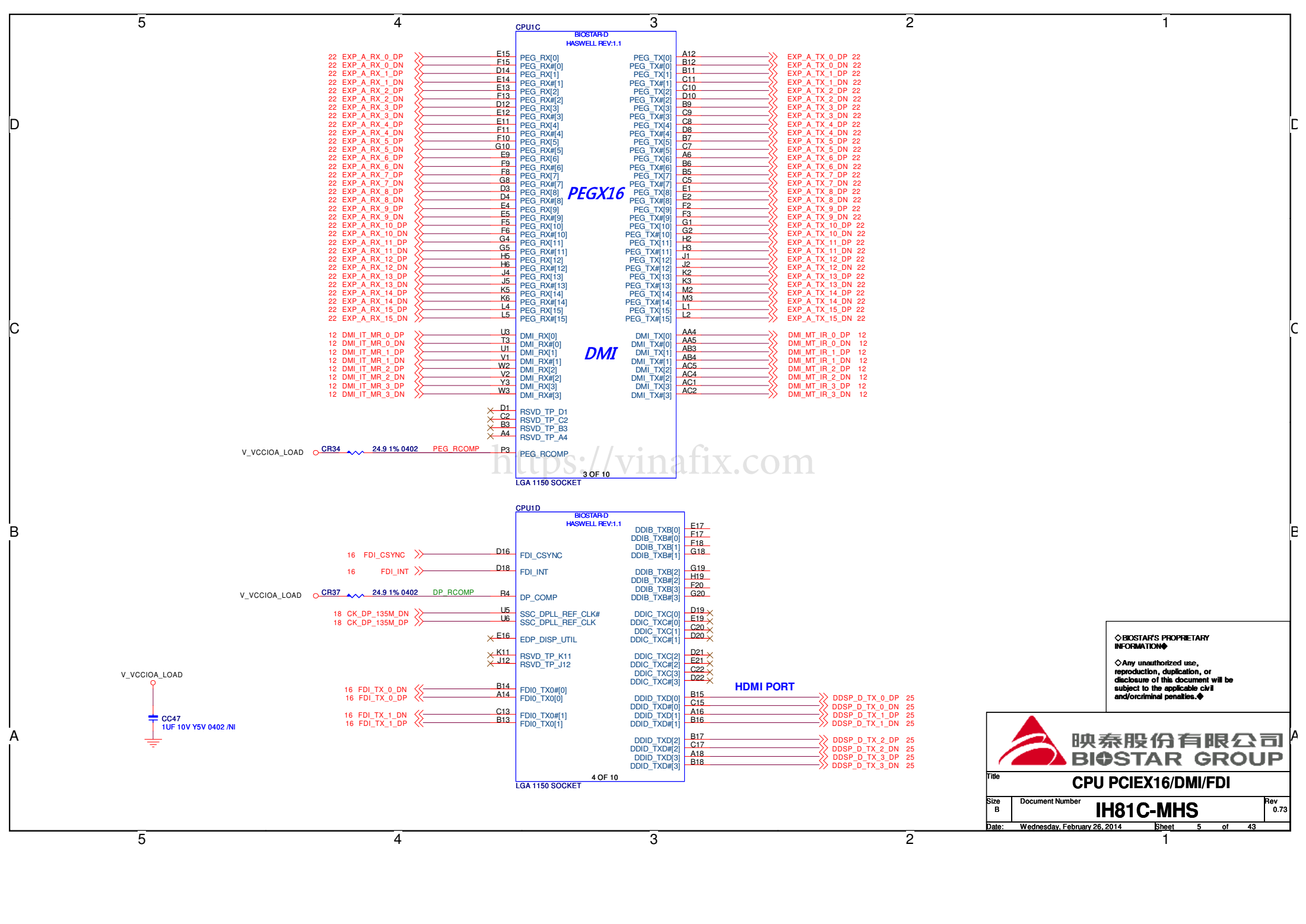
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3

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1



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Title

CPU PCIEX16/DMI/FDI

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D

C

B

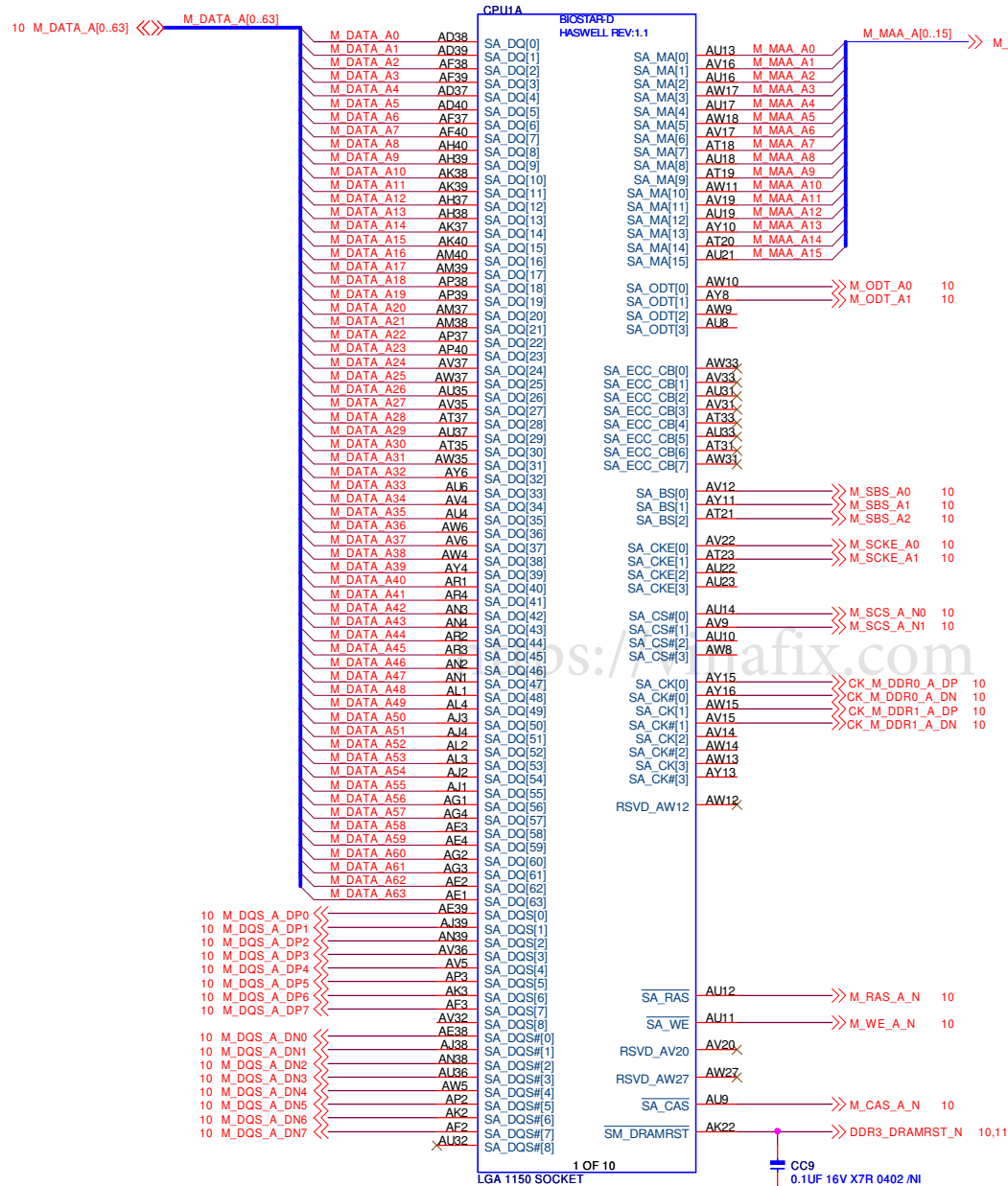
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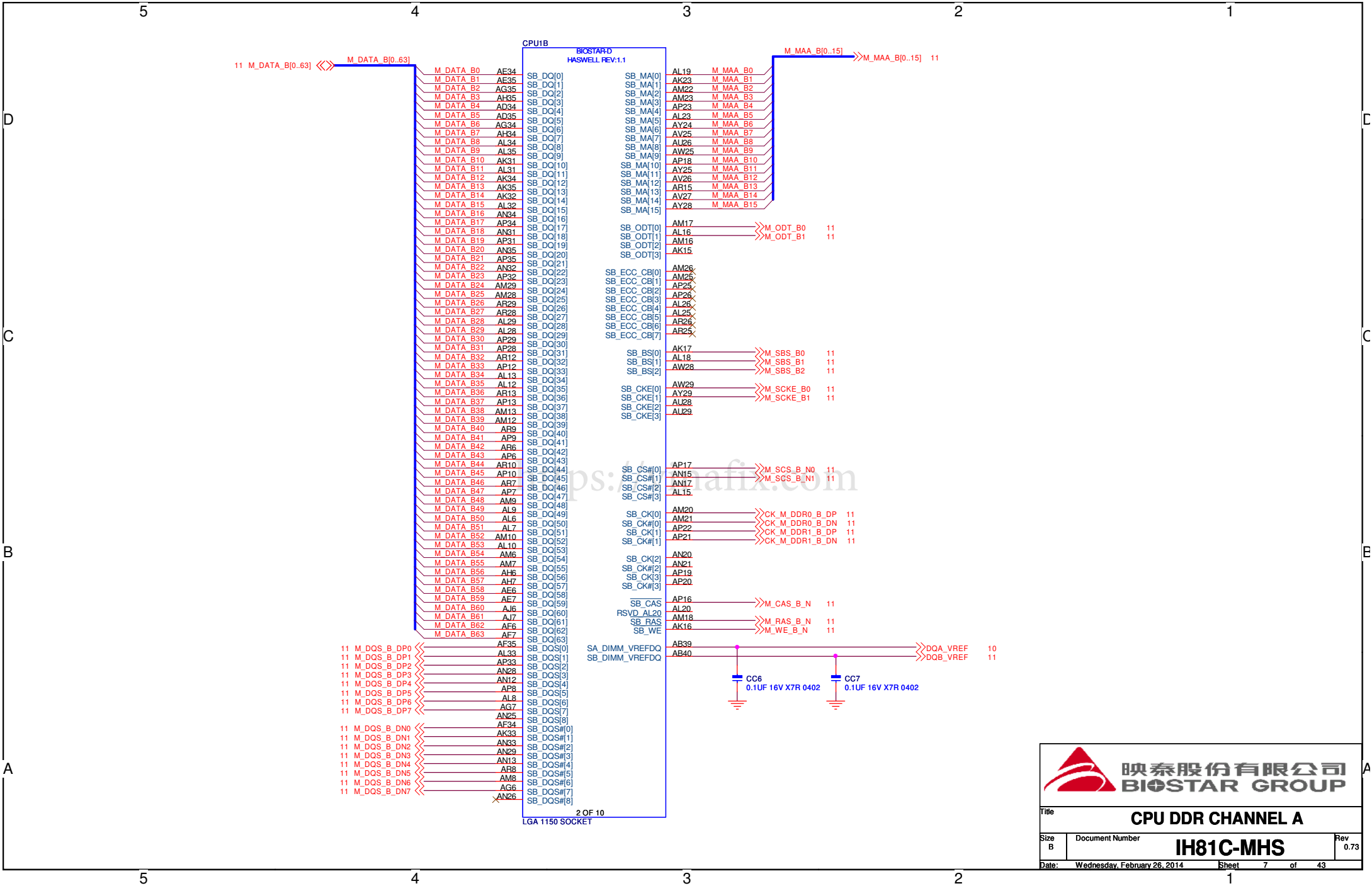



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Title: **CPU DDR CHANNEL A**

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Title

CPU DDR CHANNEL A

Size

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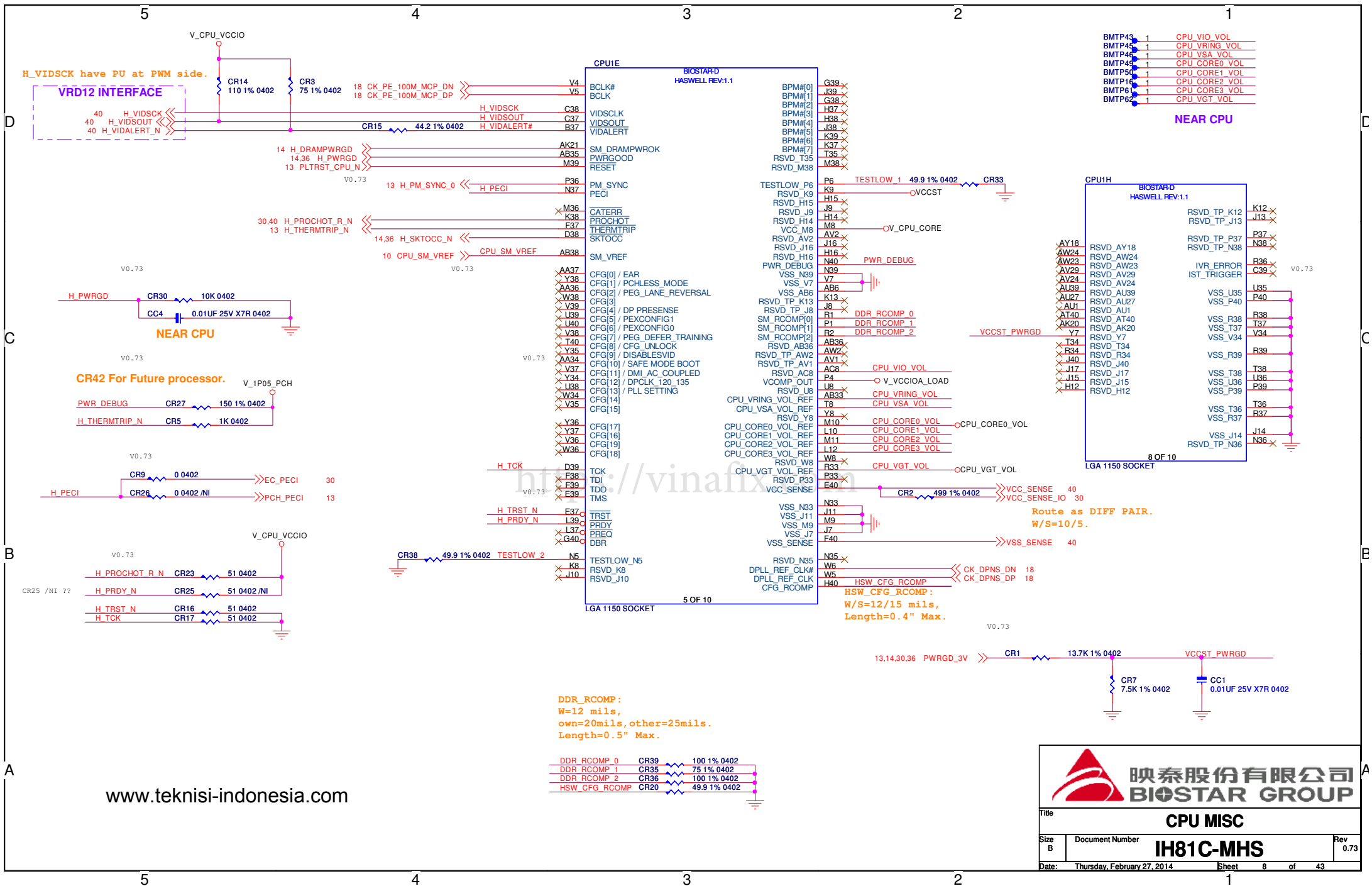
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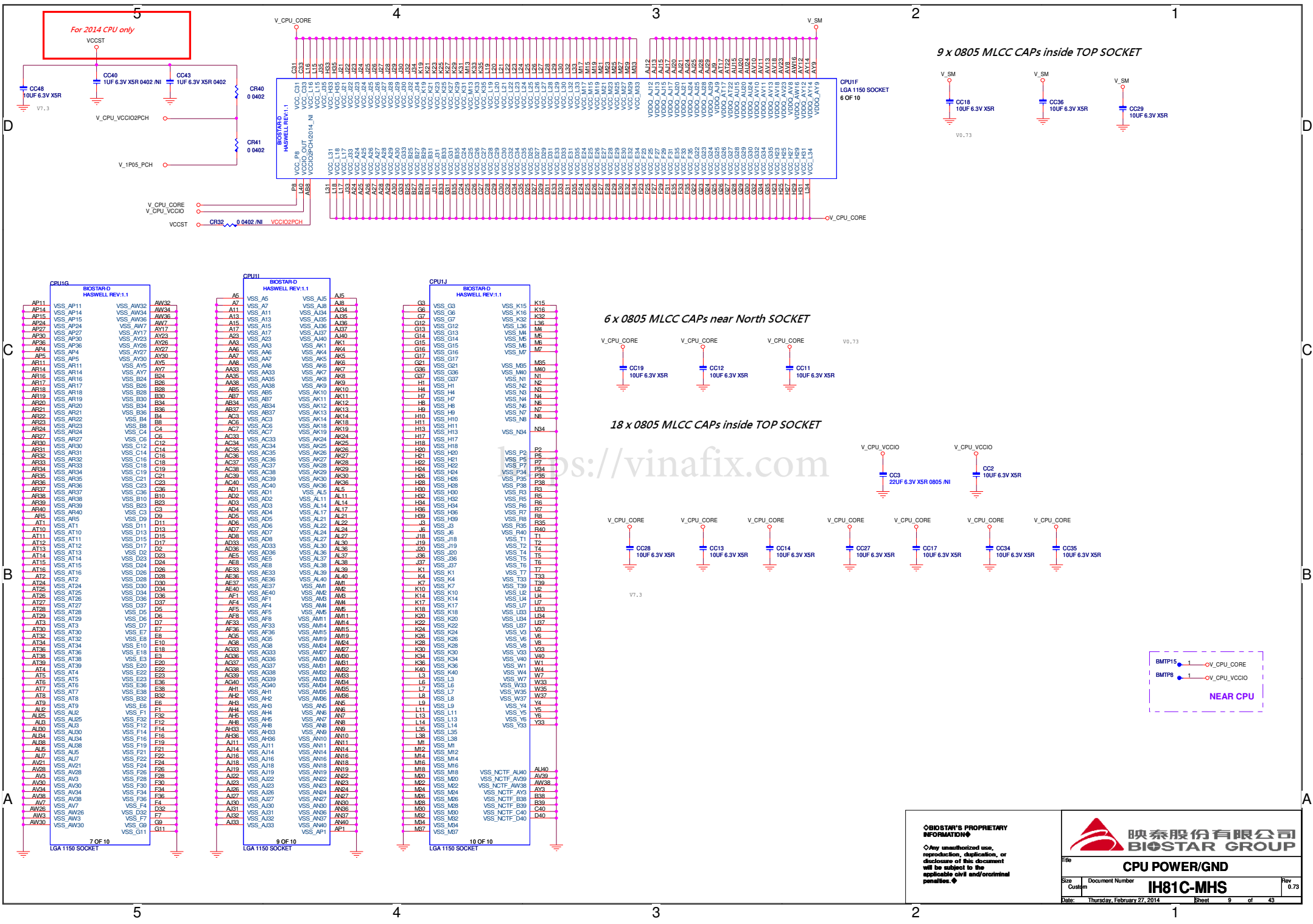
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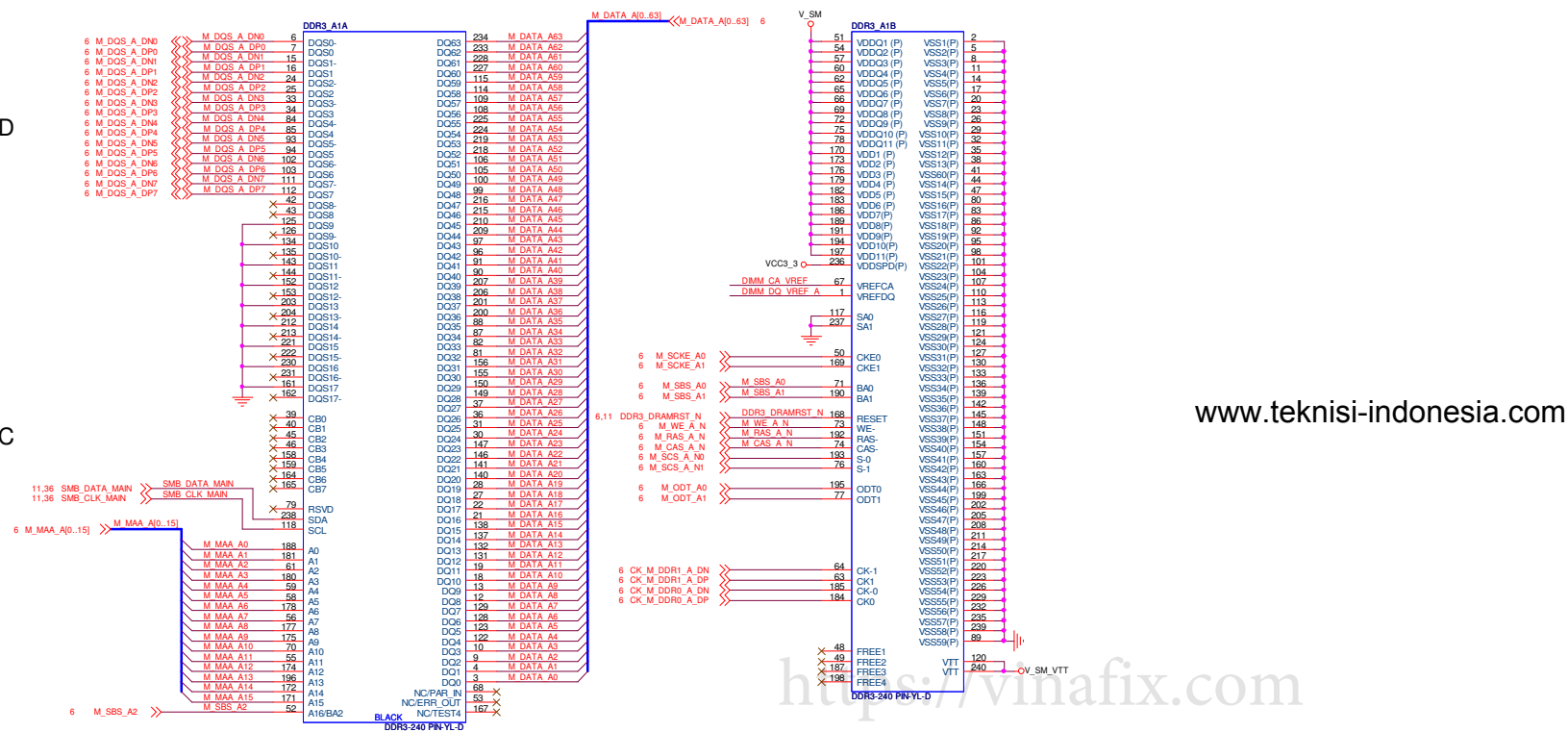
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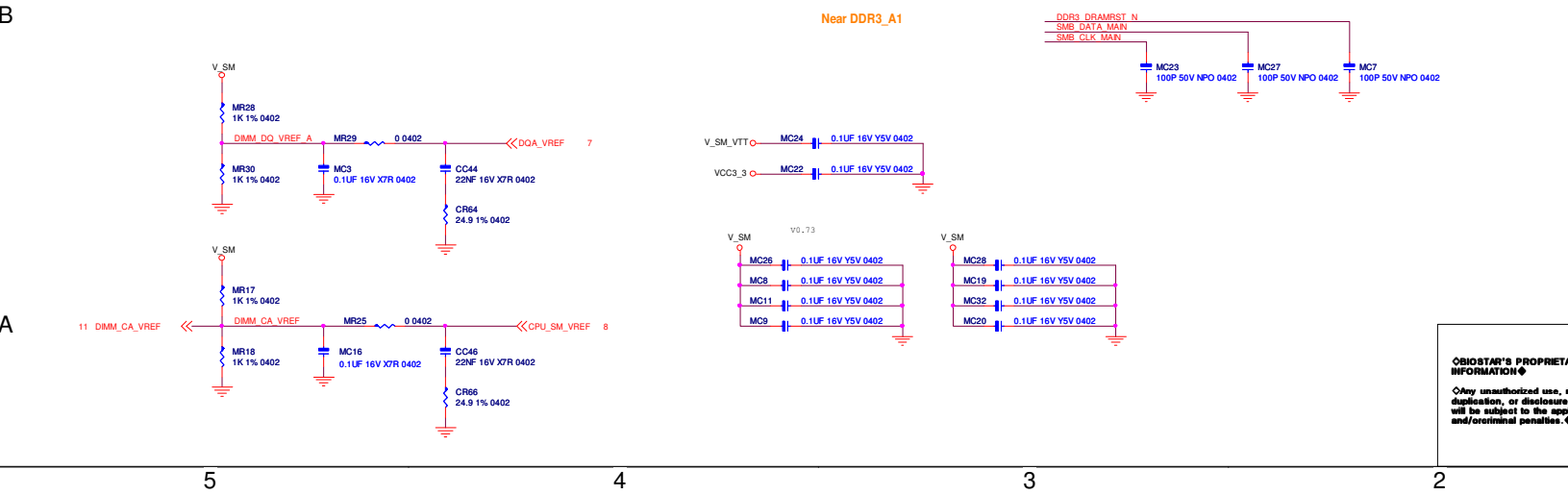


MEMORY PART: M+Reference



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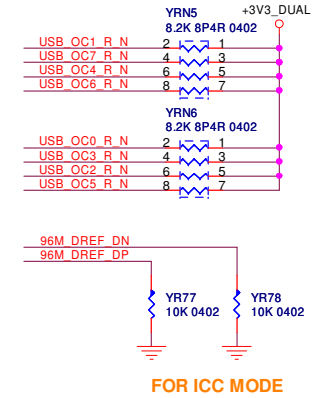
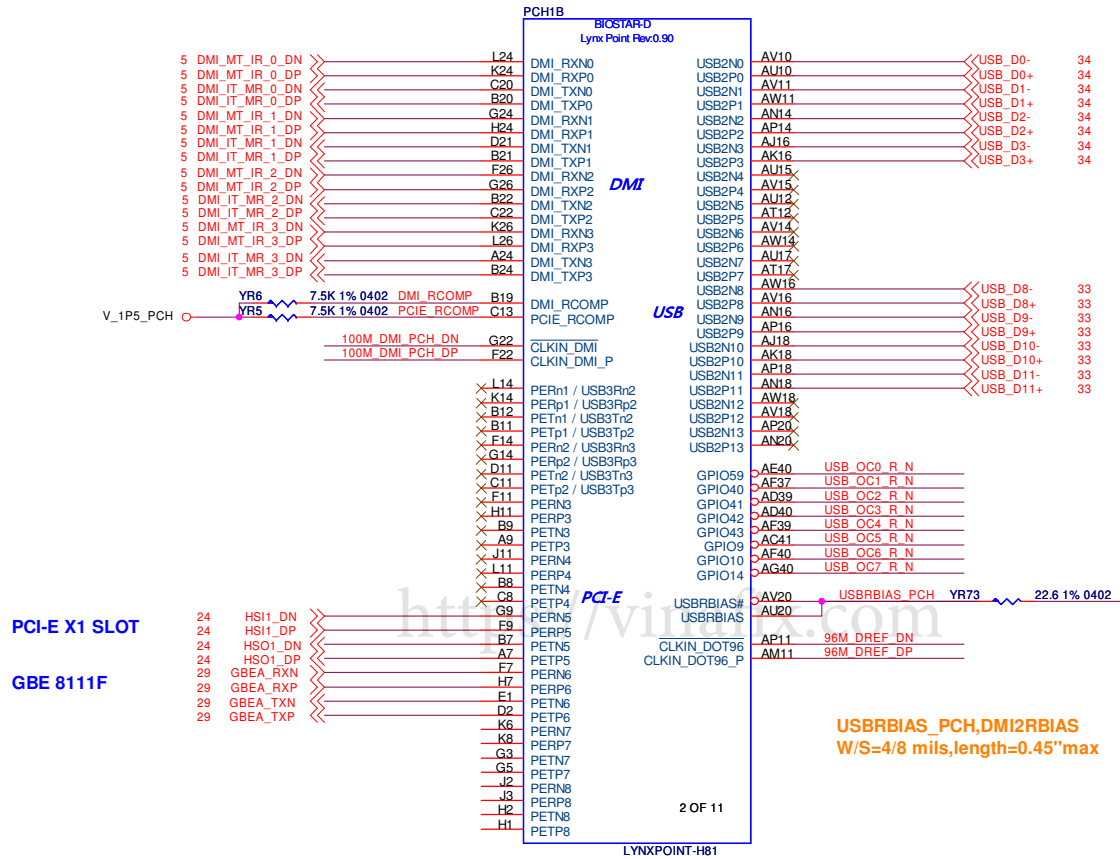
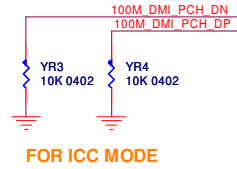
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 映泰股份有限公司 BIOSTAR GROUP				
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DDR2 DIMMB1/B2				
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PCH PART: Y+Reference



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Title PCH DMI/PCIE/USB		
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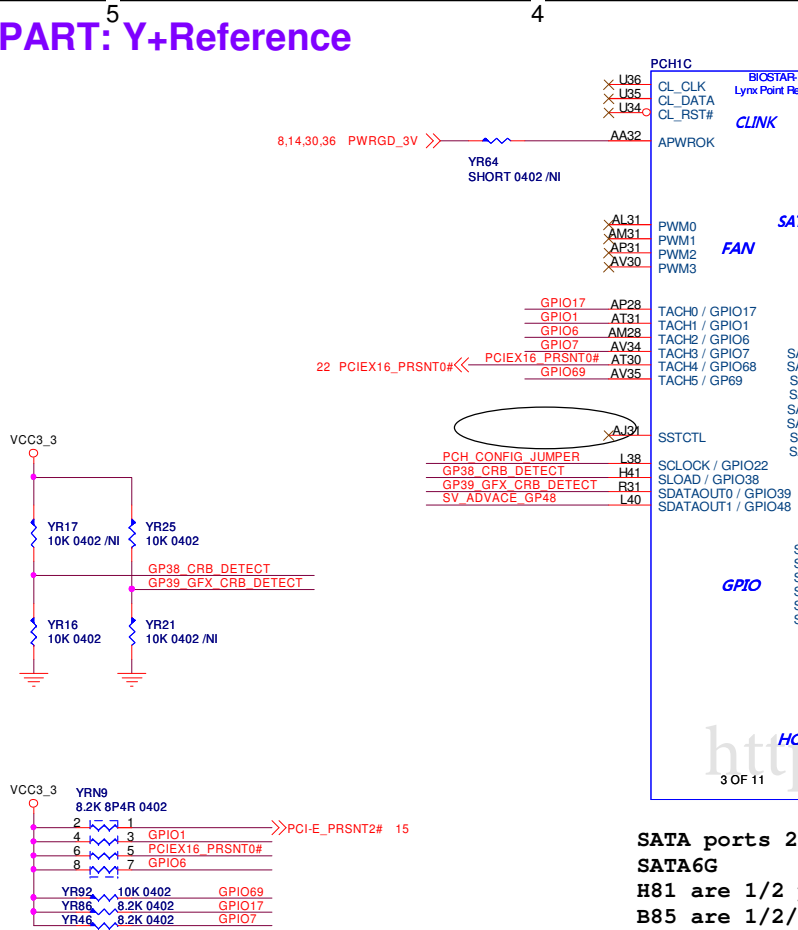
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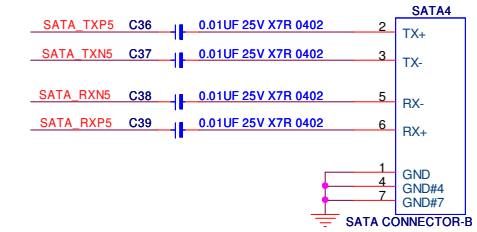
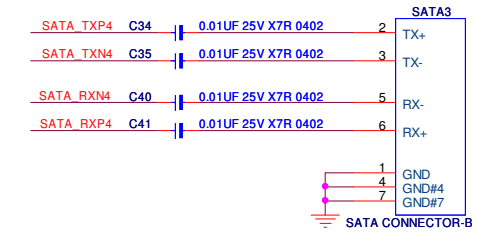
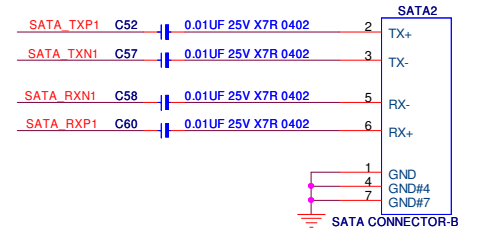
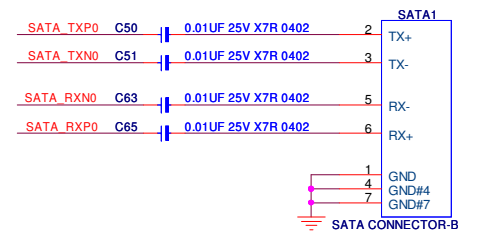
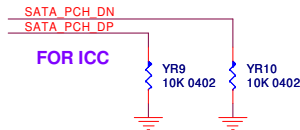
C

B

A



SATA ports 2 and 3 are disabled on H81
SATA6G
H81 are 1/2 port
B85 are 1/2/4/5 port
H87 are 1/2/3/4/5/6 port



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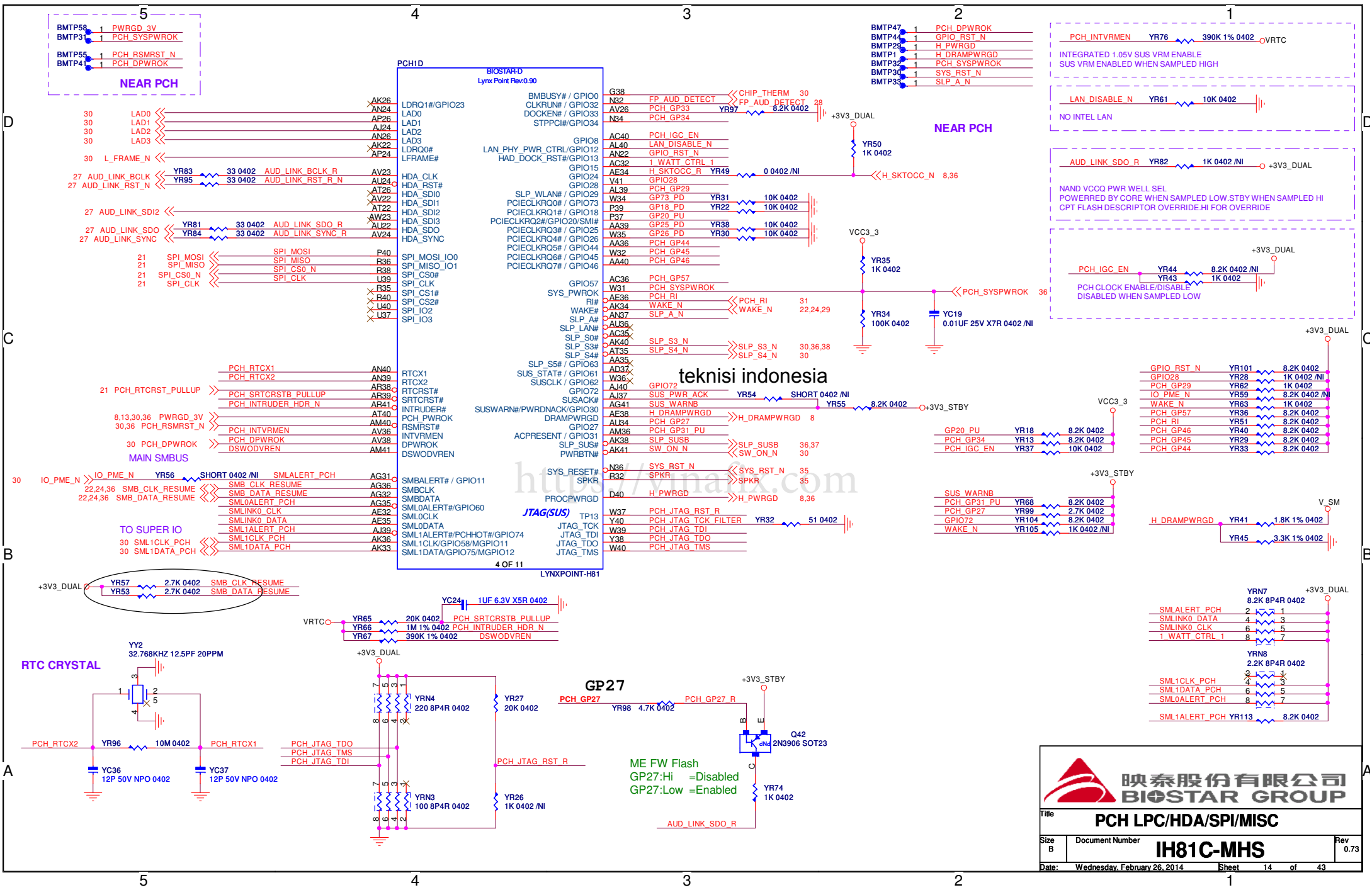
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Title **PCH CLINK/SATA/CPU HOST**

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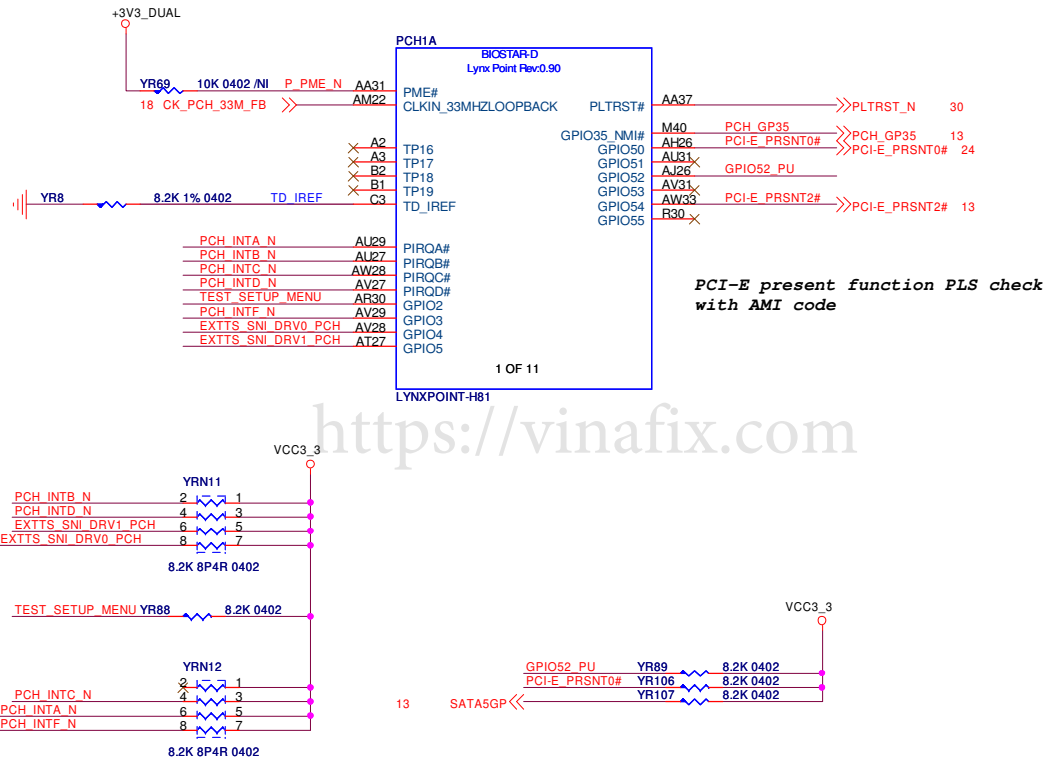


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Title			PCH LPC/HDA/SPI/MISC		
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ME FW Flash
GP27:Hi =Disabled
GP27:Low =Enabled

PCH PART: Y+Reference



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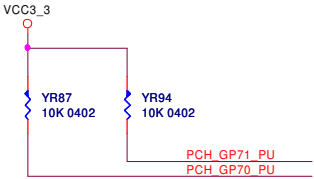
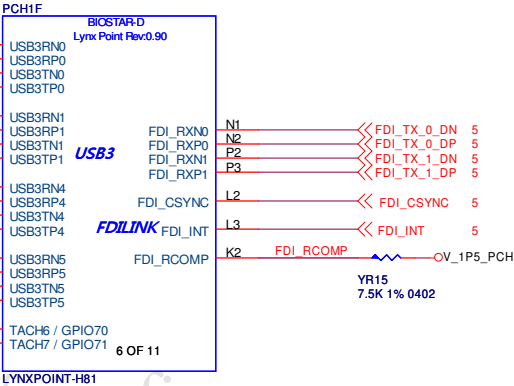
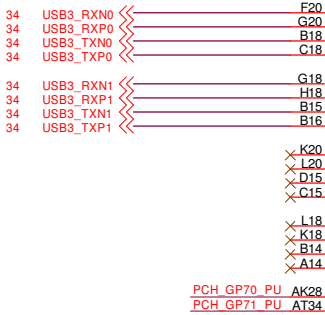


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PCH PART: Y+Reference

H81 only can use USB 3.0 ports 1 and 2

Real USB CONN



FOR LPT:
GP70 STRAP---USB3 PORT4,
GP71 STRAP---USB3 PORT5.
SOFT STRAP TO DETERMINE NATIVE FUNCTION.

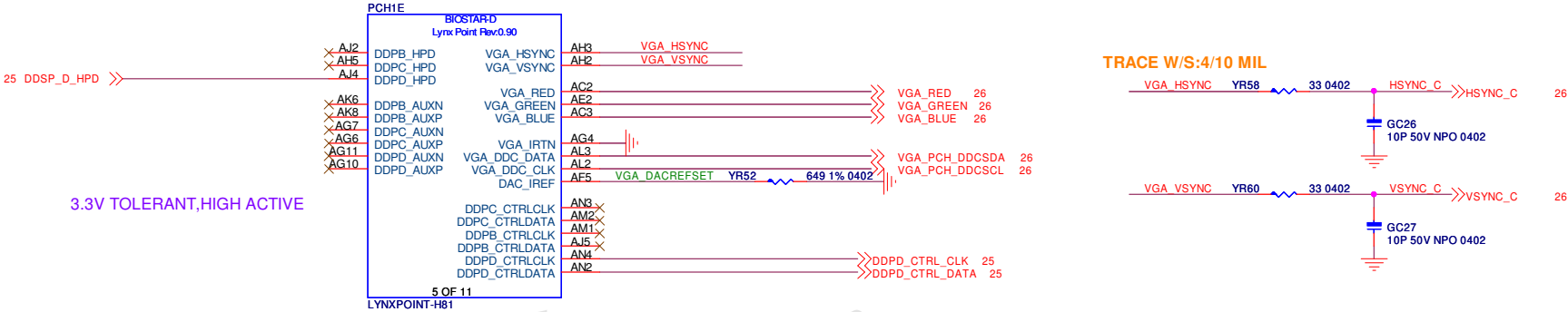
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Title PCH USB3/FDI LINK		
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PCH PART: Y+Reference



REMOVE LEVEL SHIFTER WHEN TRACE LENGHT LESS THAN 9.25 INCHES

	FUNCTION
PORTB	DVI OR SDVO
PORTC	DISPLAY PORT
PORTD	HDMI/DVI/eDP

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TitlePCH VGA/DISPLAY PORT

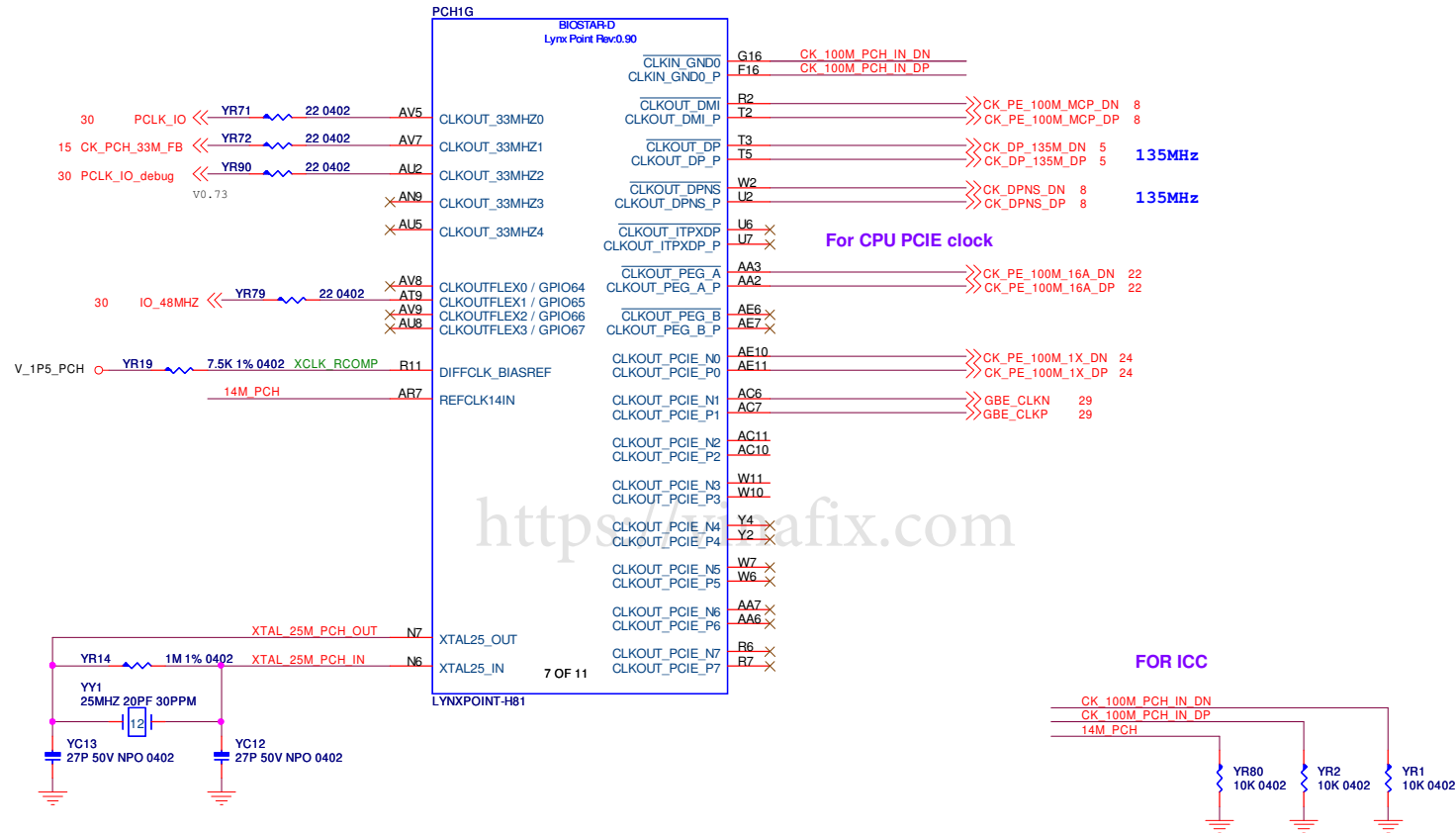
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Document NumberIH81C-MHS

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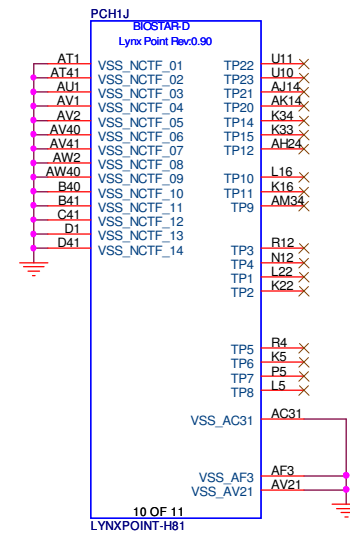
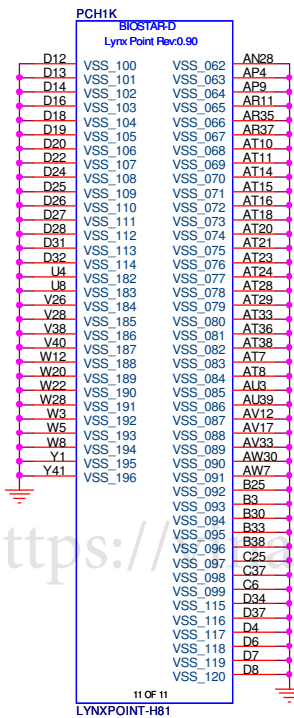
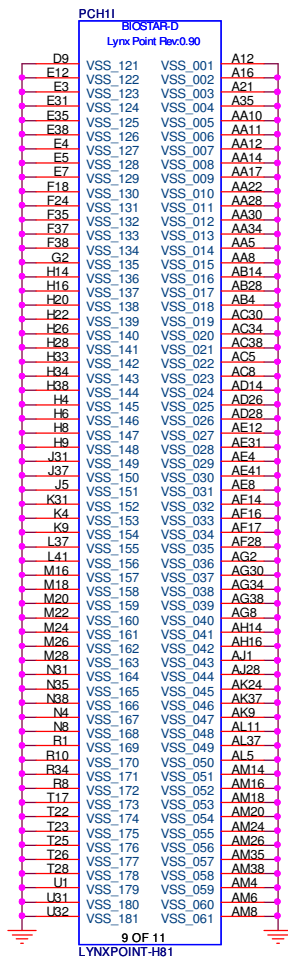
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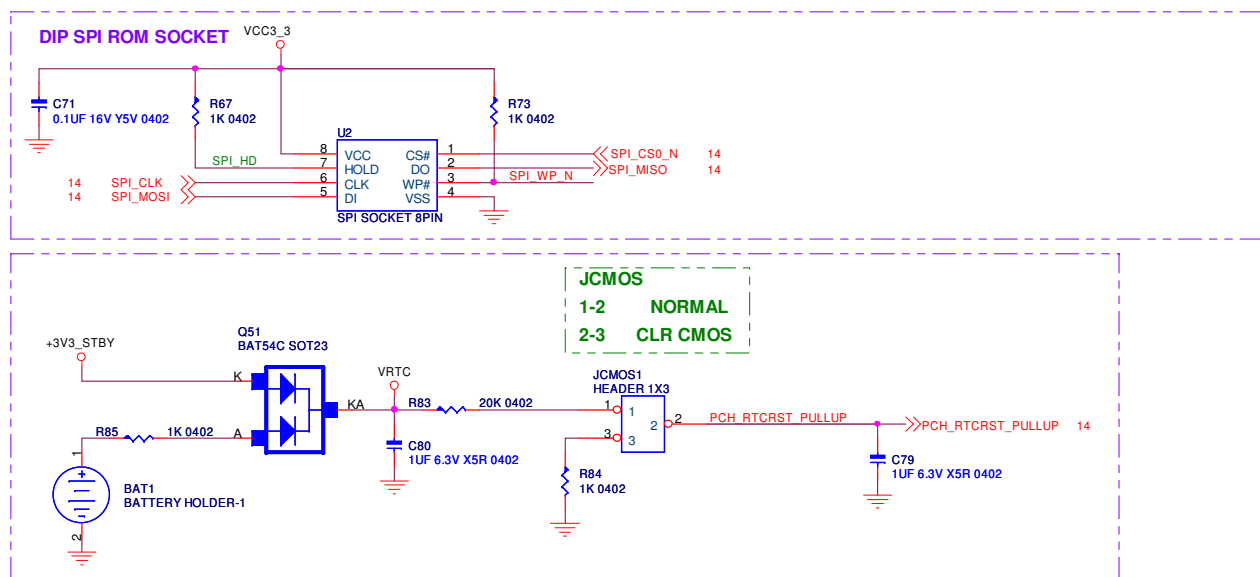
PCH PART: Y+Reference



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Title PCH CLOCK BUFFER		
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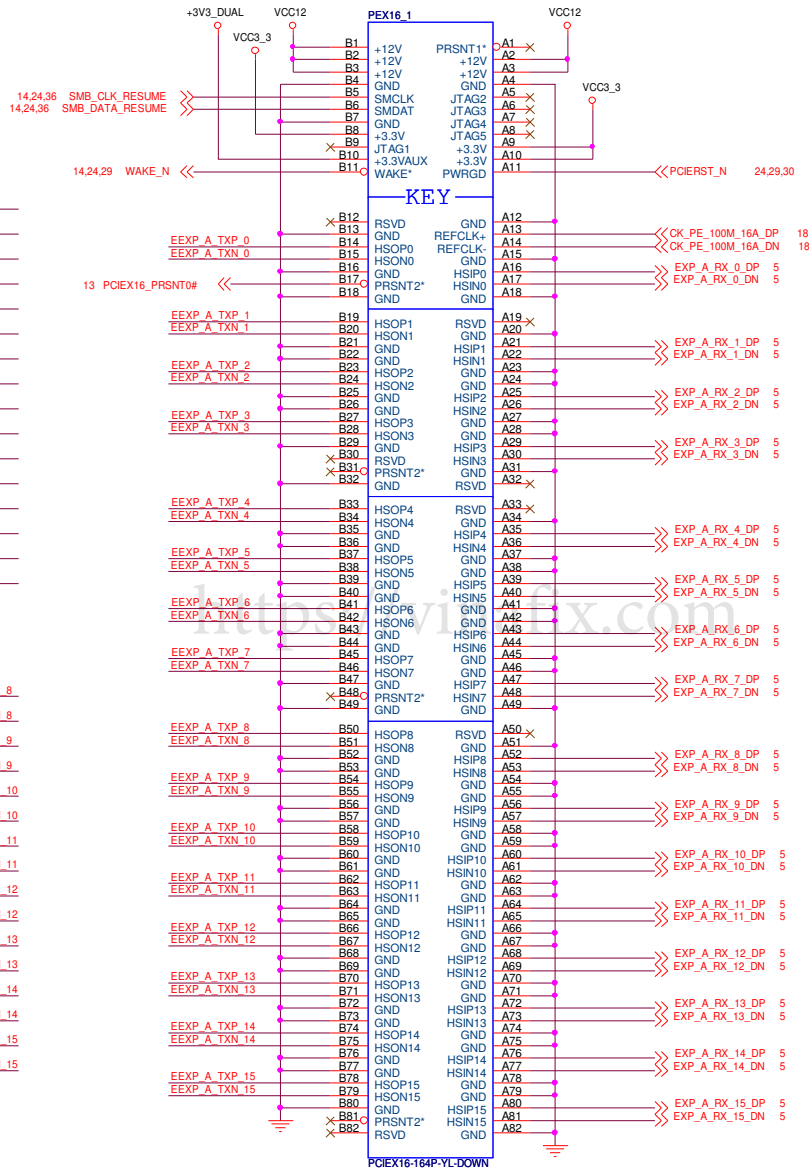
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Title		SPI ROM/RTC CRYSTAL/BAT	
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SLOT PART: E+Reference

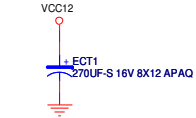
Value:180 nF - 265 nF
450 mils max to connector pin

5 EXP_A_TX_0_DP	EC7	0.1UF 16V X7R 0402	EEXP_A_TXP_0
5 EXP_A_TX_0_DN	EC6	0.1UF 16V X7R 0402	EEXP_A_TXN_0
5 EXP_A_TX_1_DP	EC8	0.1UF 16V X7R 0402	EEXP_A_TXP_1
5 EXP_A_TX_1_DN	EC9	0.1UF 16V X7R 0402	EEXP_A_TXN_1
5 EXP_A_TX_2_DP	EC10	0.1UF 16V X7R 0402	EEXP_A_TXP_2
5 EXP_A_TX_2_DN	EC11	0.1UF 16V X7R 0402	EEXP_A_TXN_2
5 EXP_A_TX_3_DP	EC13	0.1UF 16V X7R 0402	EEXP_A_TXP_3
5 EXP_A_TX_3_DN	EC12	0.1UF 16V X7R 0402	EEXP_A_TXN_3
5 EXP_A_TX_4_DP	EC14	0.1UF 16V X7R 0402	EEXP_A_TXP_4
5 EXP_A_TX_4_DN	EC15	0.1UF 16V X7R 0402	EEXP_A_TXN_4
5 EXP_A_TX_5_DP	EC16	0.1UF 16V X7R 0402	EEXP_A_TXP_5
5 EXP_A_TX_5_DN	EC17	0.1UF 16V X7R 0402	EEXP_A_TXN_5
5 EXP_A_TX_6_DP	EC19	0.1UF 16V X7R 0402	EEXP_A_TXP_6
5 EXP_A_TX_6_DN	EC18	0.1UF 16V X7R 0402	EEXP_A_TXN_6
5 EXP_A_TX_7_DP	EC20	0.1UF 16V X7R 0402	EEXP_A_TXP_7
5 EXP_A_TX_7_DN	EC21	0.1UF 16V X7R 0402	EEXP_A_TXN_7

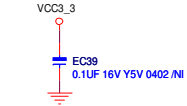
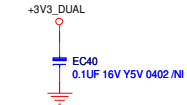
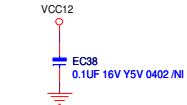
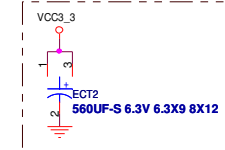
5 EXP_A_TX_8_DP	EC22	0.1UF 16V X7R 0402	EEXP_A_TXP_8
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5 EXP_A_TX_9_DP	EC24	0.1UF 16V X7R 0402	EEXP_A_TXP_9
5 EXP_A_TX_9_DN	EC25	0.1UF 16V X7R 0402	EEXP_A_TXN_9
5 EXP_A_TX_10_DP	EC26	0.1UF 16V X7R 0402	EEXP_A_TXP_10
5 EXP_A_TX_10_DN	EC27	0.1UF 16V X7R 0402	EEXP_A_TXN_10
5 EXP_A_TX_11_DP	EC29	0.1UF 16V X7R 0402	EEXP_A_TXP_11
5 EXP_A_TX_11_DN	EC28	0.1UF 16V X7R 0402	EEXP_A_TXN_11
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5 EXP_A_TX_15_DP	EC36	0.1UF 16V X7R 0402	EEXP_A_TXP_15
5 EXP_A_TX_15_DN	EC37	0.1UF 16V X7R 0402	EEXP_A_TXN_15



For ALL SOLID----270UF-S 16V 8X11 ELITE
For NO SOLID----470UF 16V 8X11.5



NETIN:560UF-S 6.3V 6.3X8 8X8
BOM: 1000UF 6.3V 8X12
560UF-S 6.3V 6.3X8 ELITE



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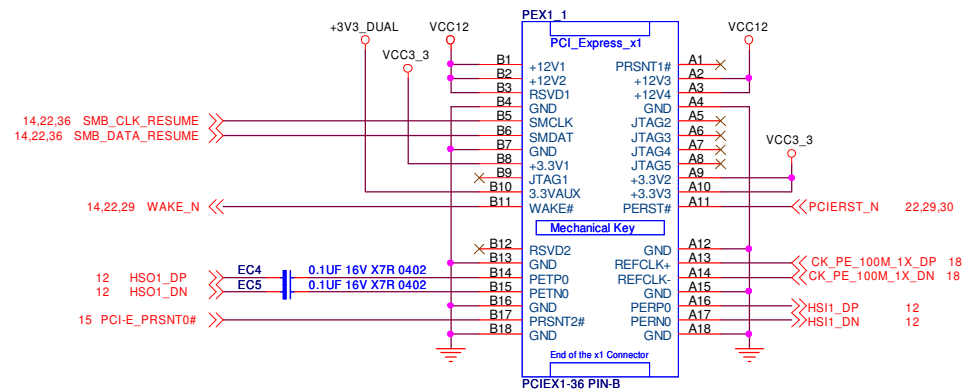
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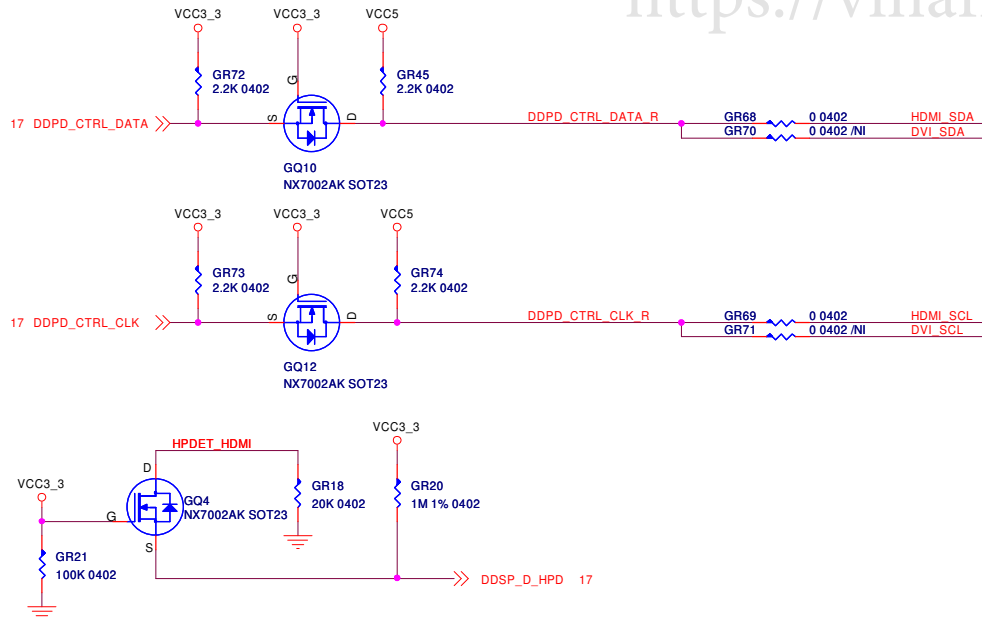
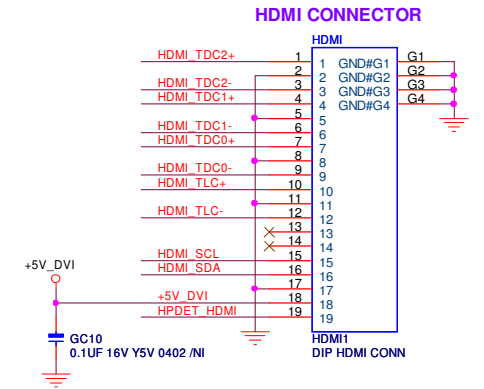
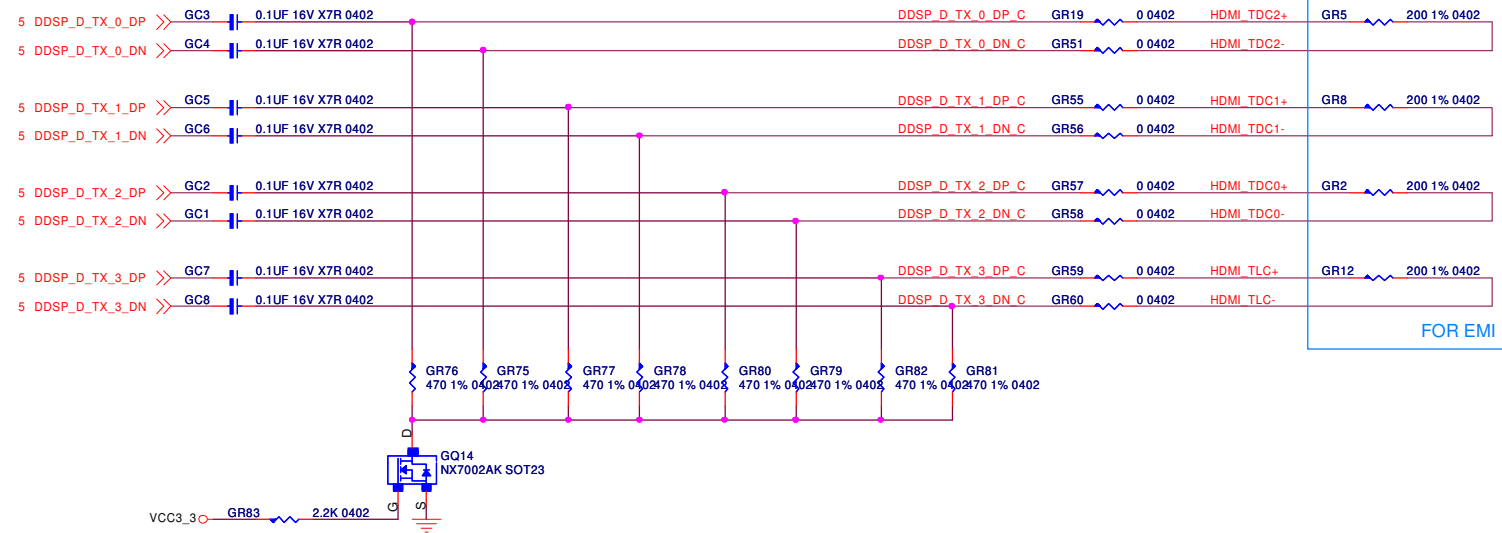


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Title: PCIEX1 SLOT 1&2	
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HDMI



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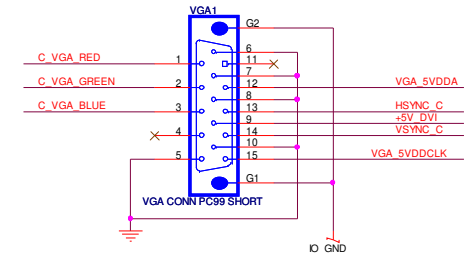
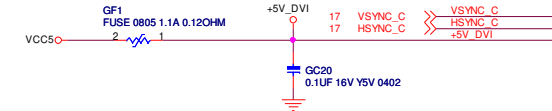
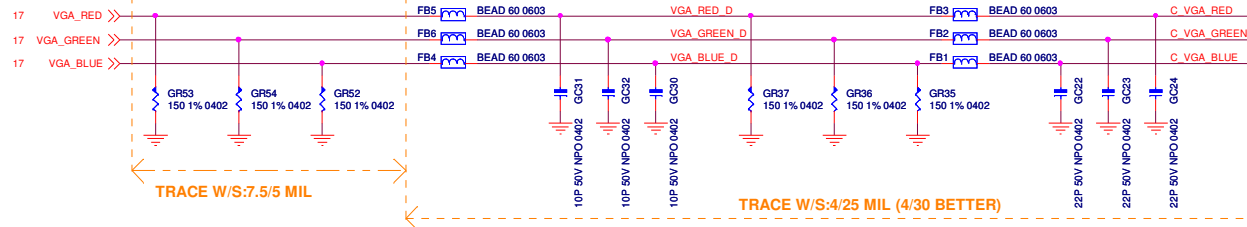
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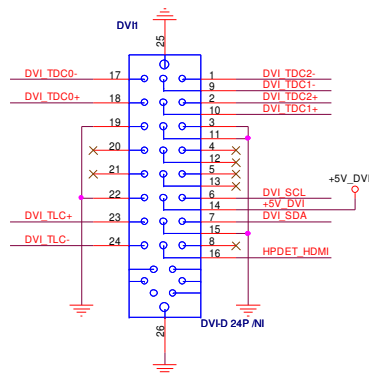
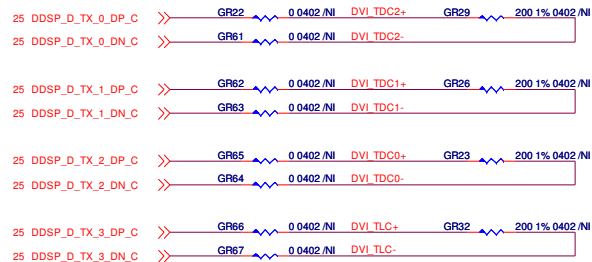
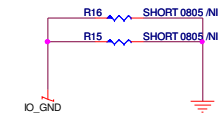


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HDMI CONNECTOR			
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PLACEMENT: NEAR R/G/B SOURCE



D_SUB

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DVI CONNECTOR

DVI

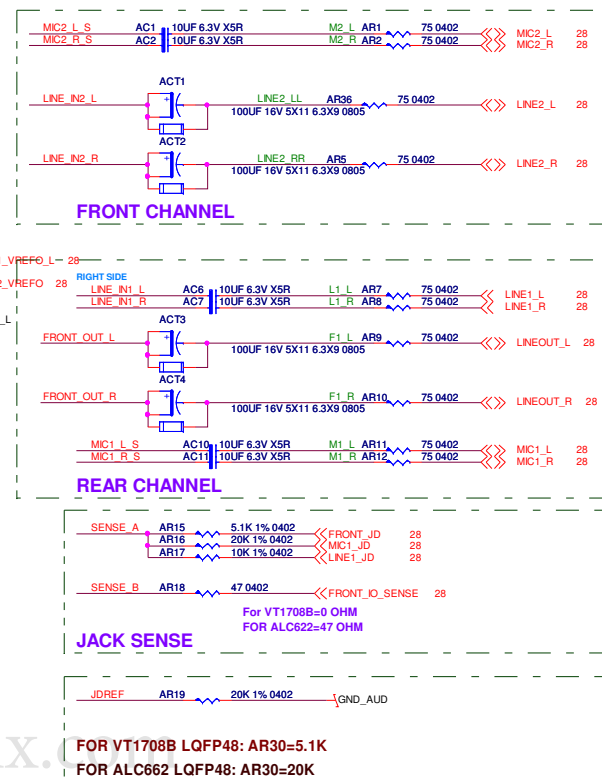
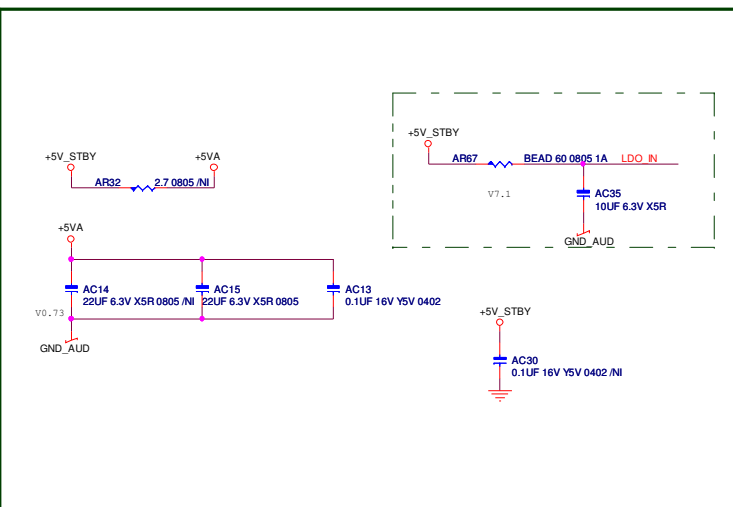
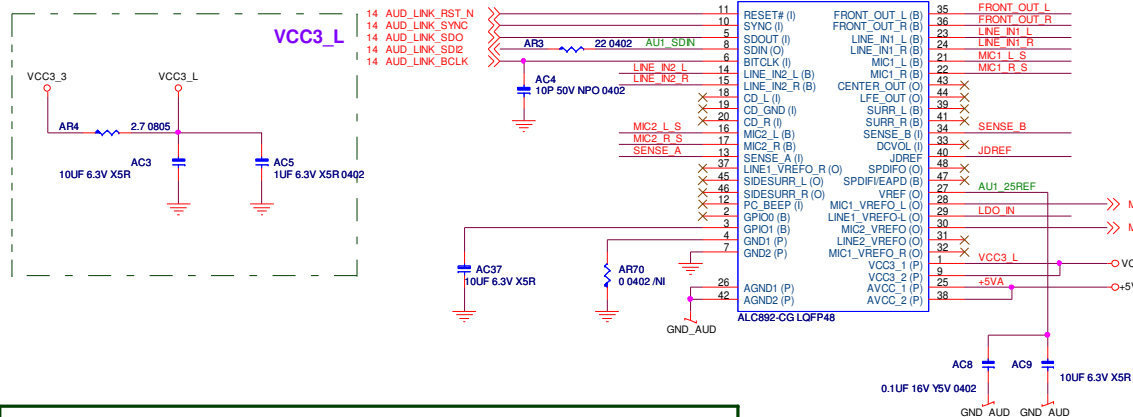
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AUDIO PART: A+Reference



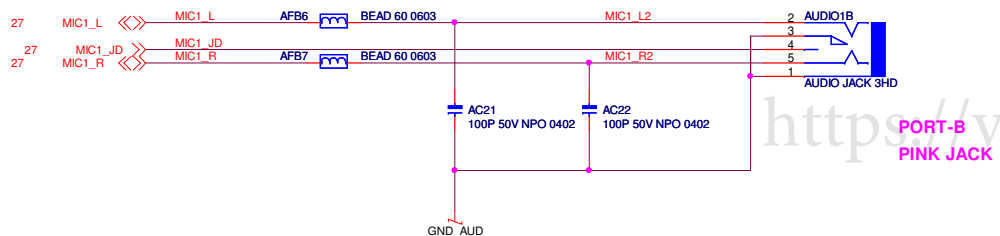
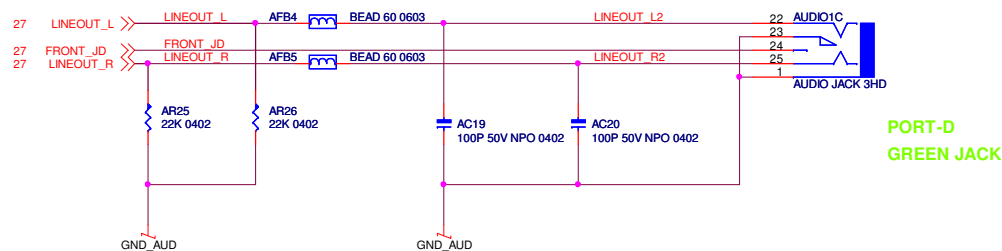
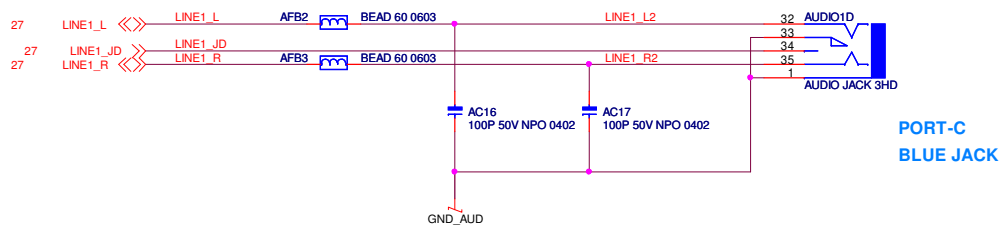
<https://vinafix.com>

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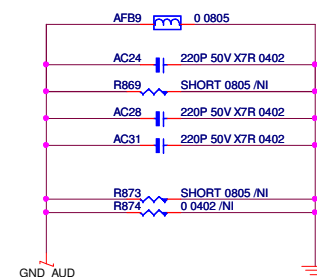
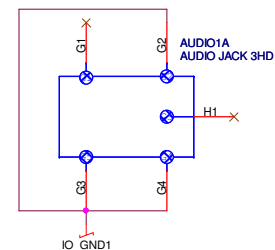
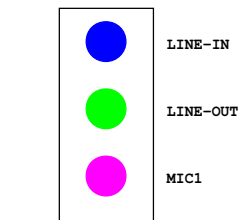
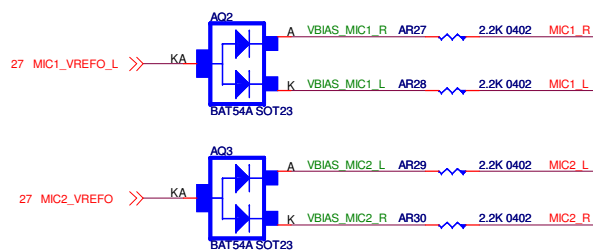
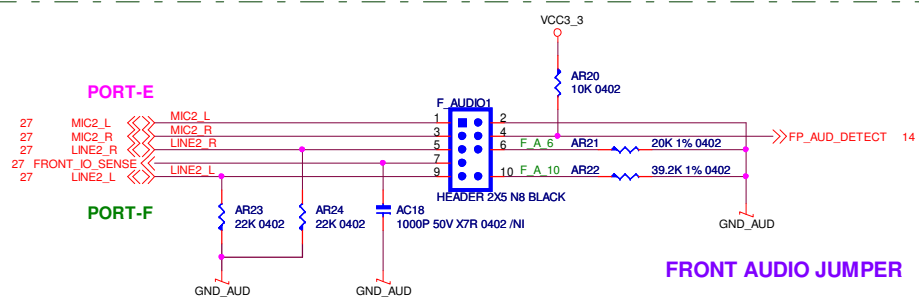
COMPONENT CONTRAST LIST

AUDIO	AR67	AC35	AC37	AR70	AR32	AC14	AC15
ALC 892CG	2.7 0805	O	O	X	X	22UF 6.3V X5R 0805	22UF 6.3V X5R 0805
ALC 887VD	2.7 0805	O	O	X	X	22UF 6.3V X5R 0805	22UF 6.3V X5R 0805
ALC 662CG	X	X	X	0 0402	2.7 0805	10UF 10V 0805 Y5V	10UF 10V 0805 Y5V

Title: AUDIO CODEC ALC662	
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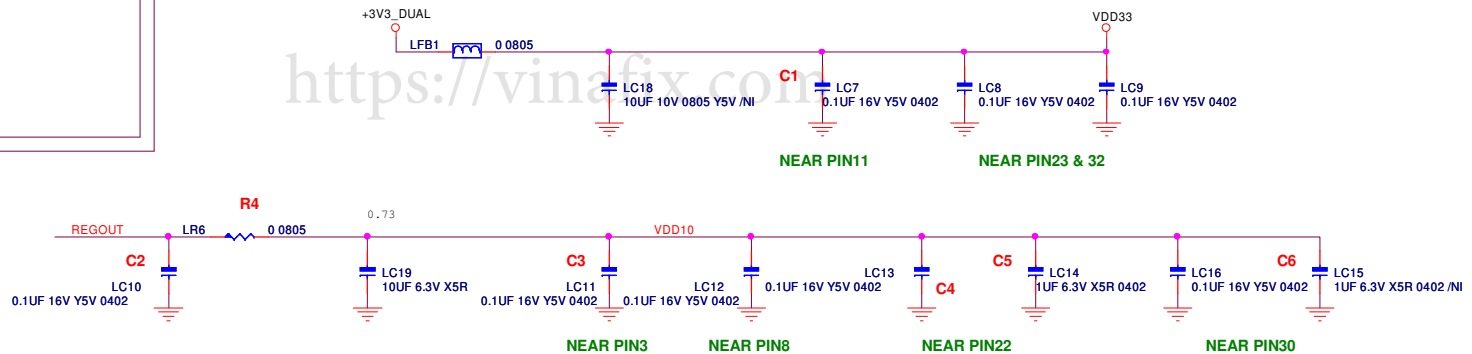
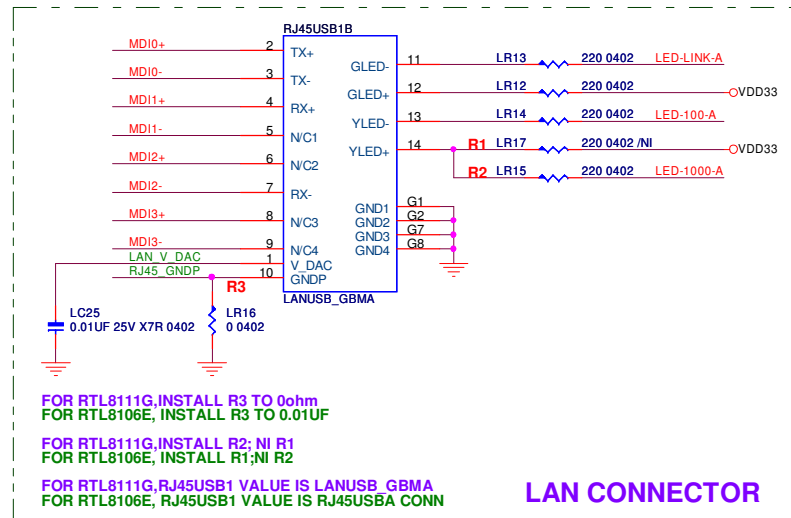
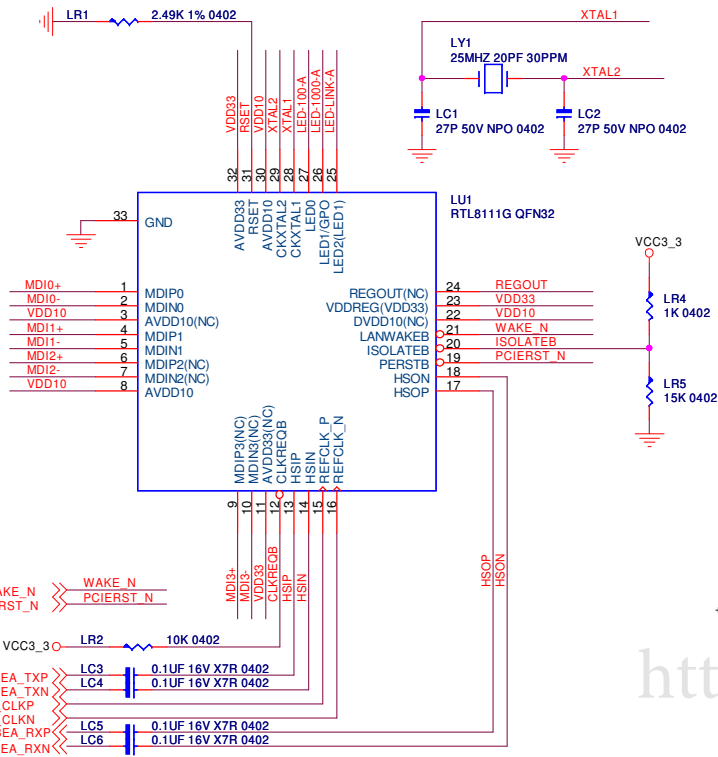
REAR AUDIO JACKS



Title **AUDIO CONNECTOR**

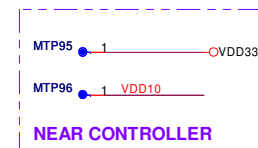
Size Custom Document Number **IH81C-MHS** Rev 0.73

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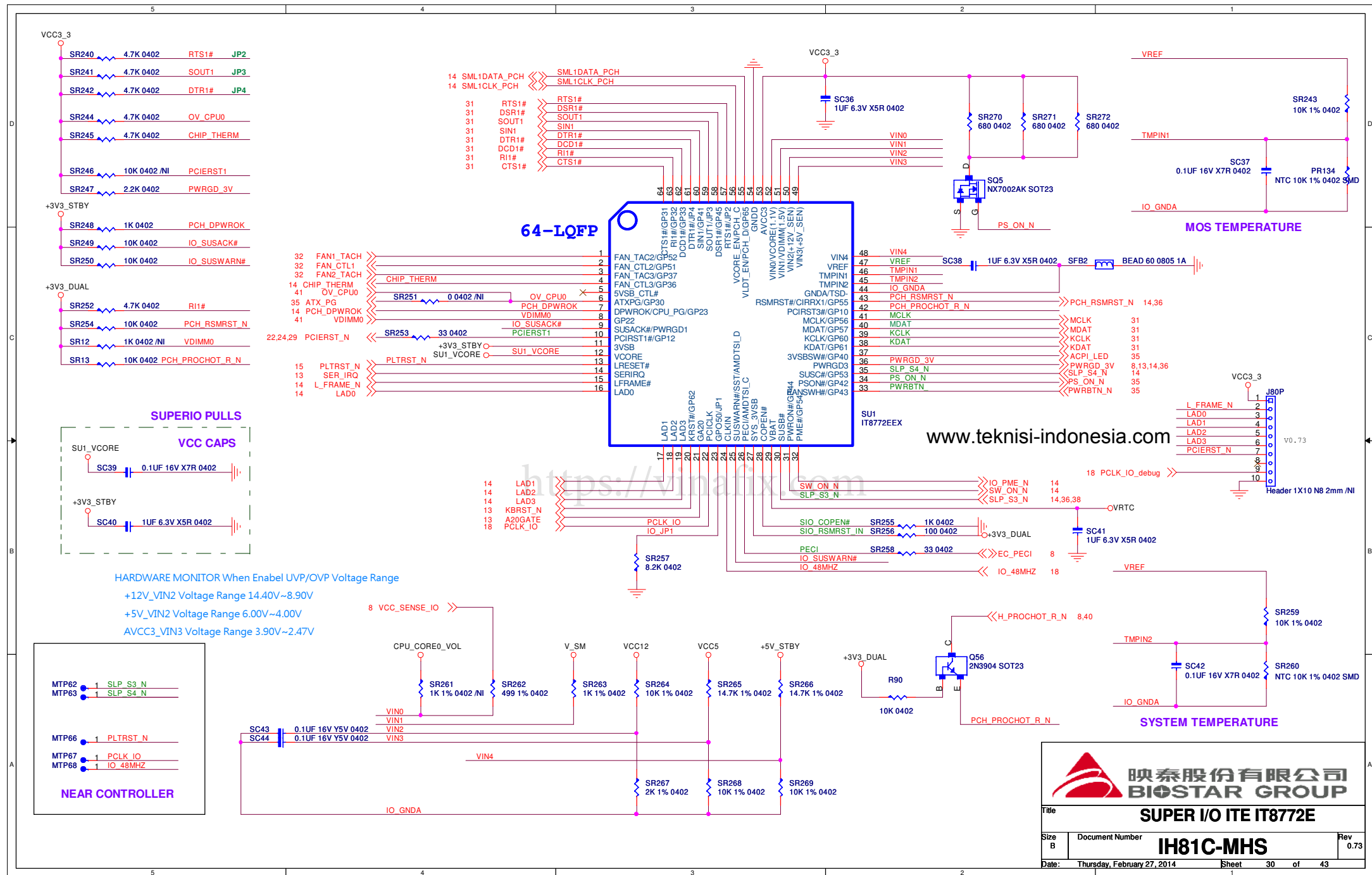


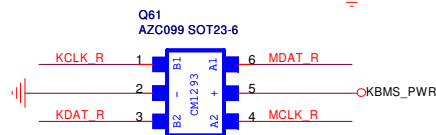
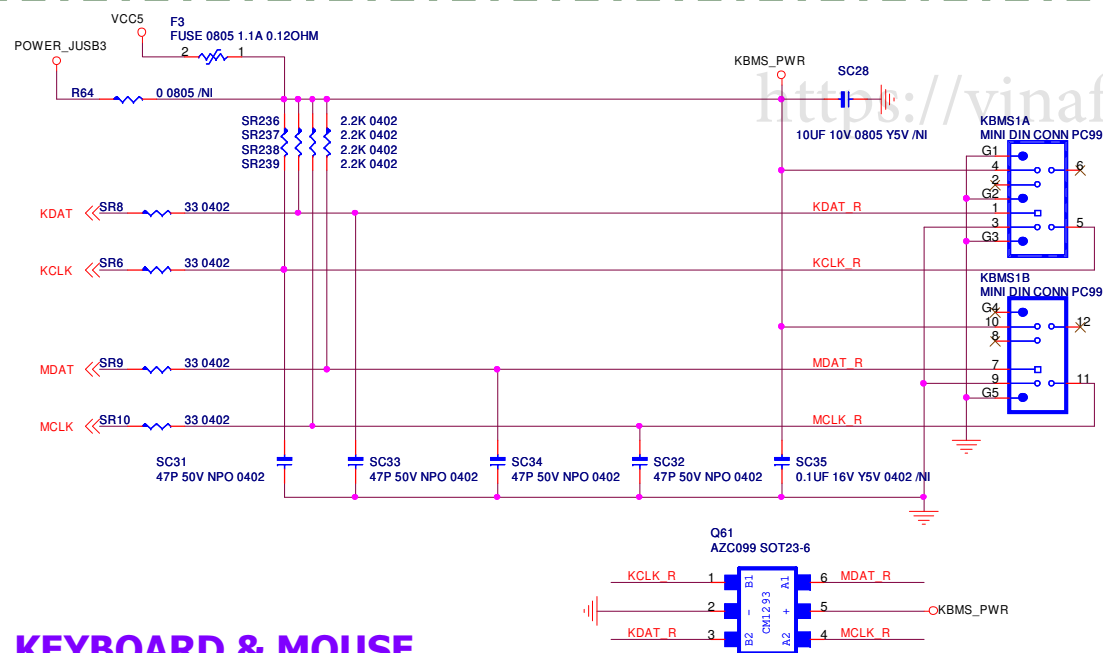
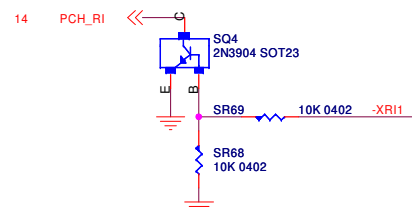
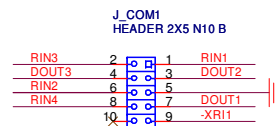
COMPONENT CONTRAST LIST

LAN PARTS	R1	R2	R3	R4	C1	C2	C3	C4	C5	C6	RJ45 CONN
RTL8111G	X	O	0ohm	O	O	O	O	O	O	X	LANUSB_GBMA
RTL8106E	O	X	0.01uF	X	X	X	X	X	X	O	RJ45USBA_CONN

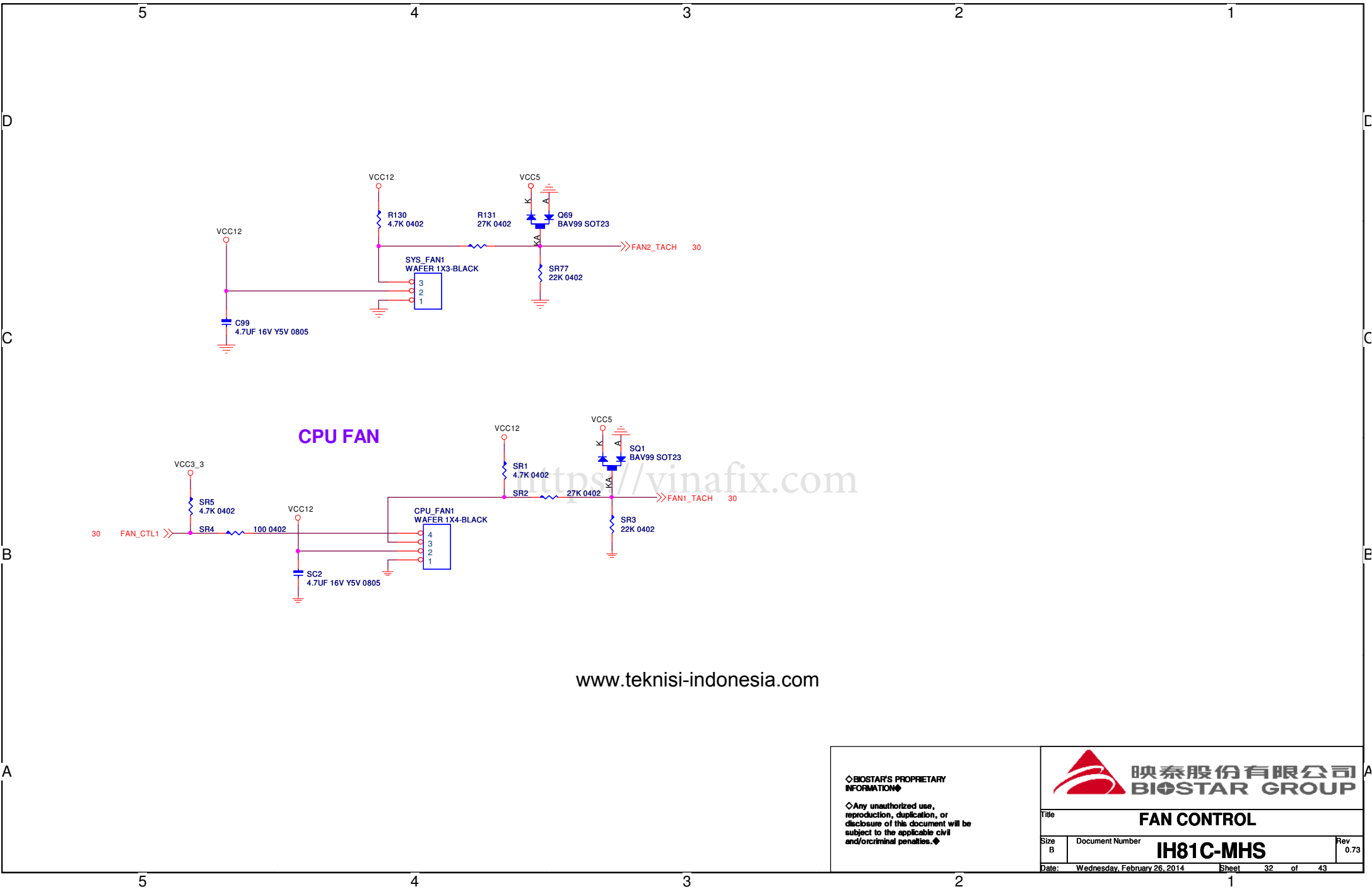


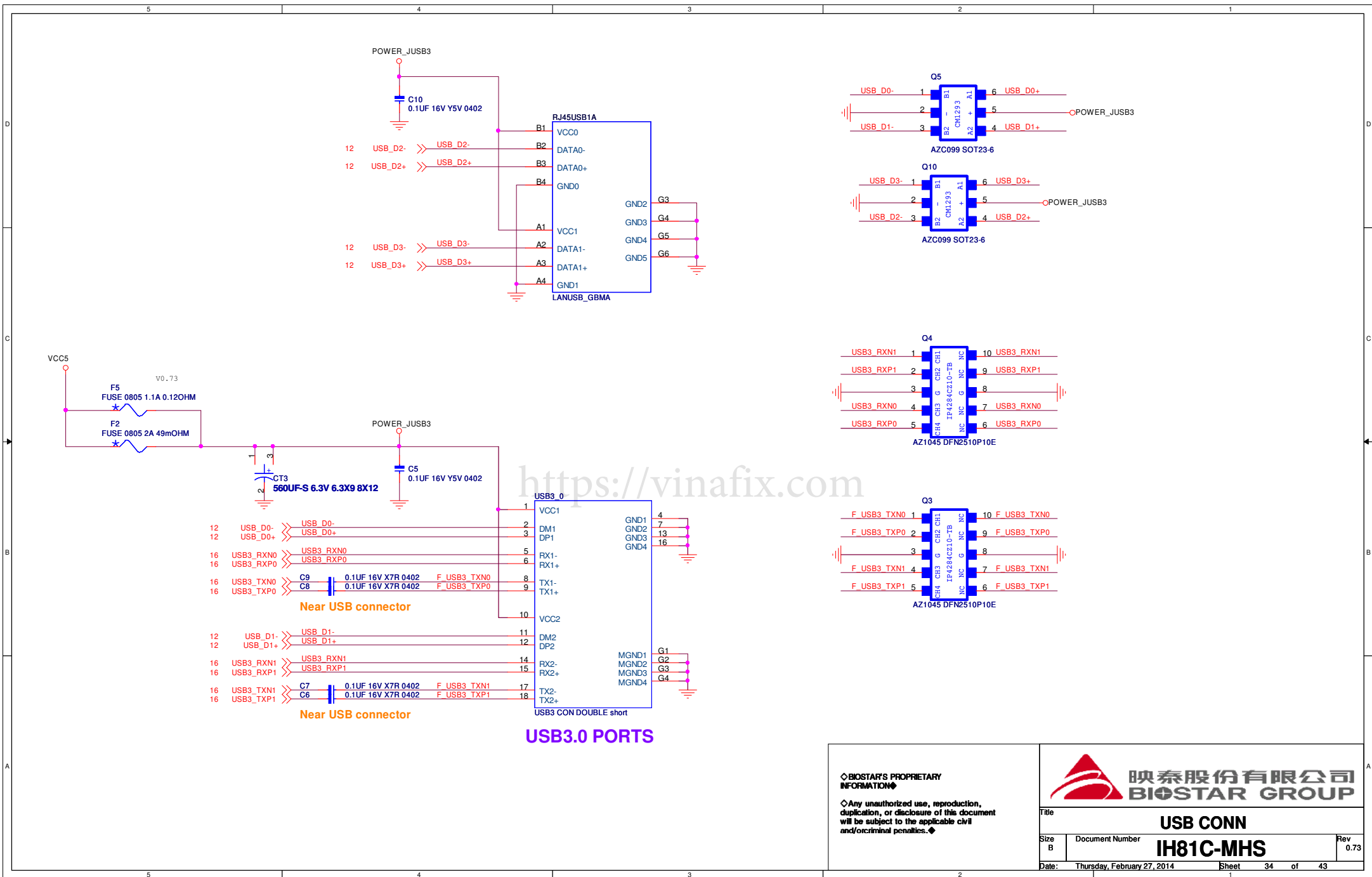
Title RTL8111G/8106E	
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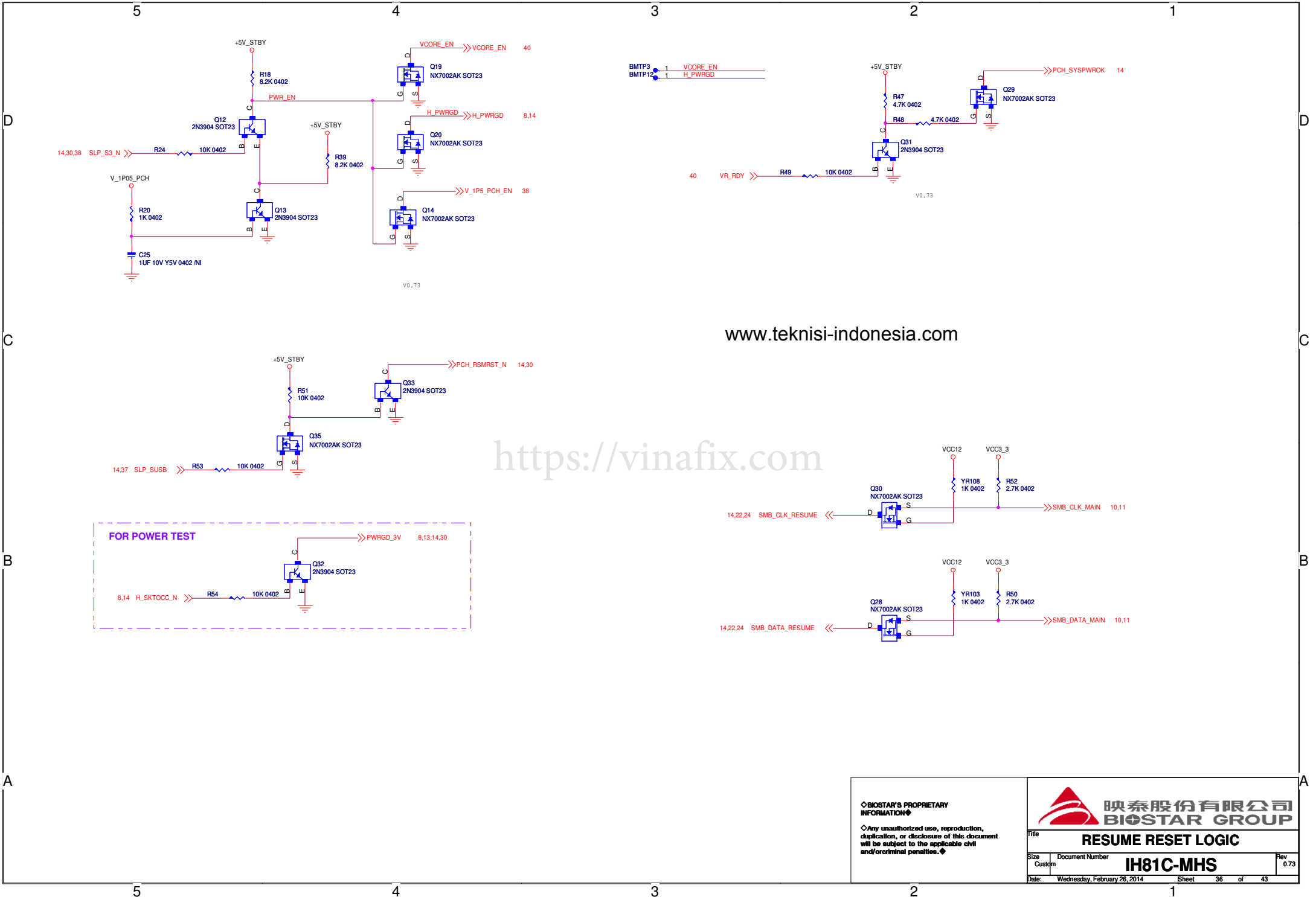
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BI+STAR GROUP

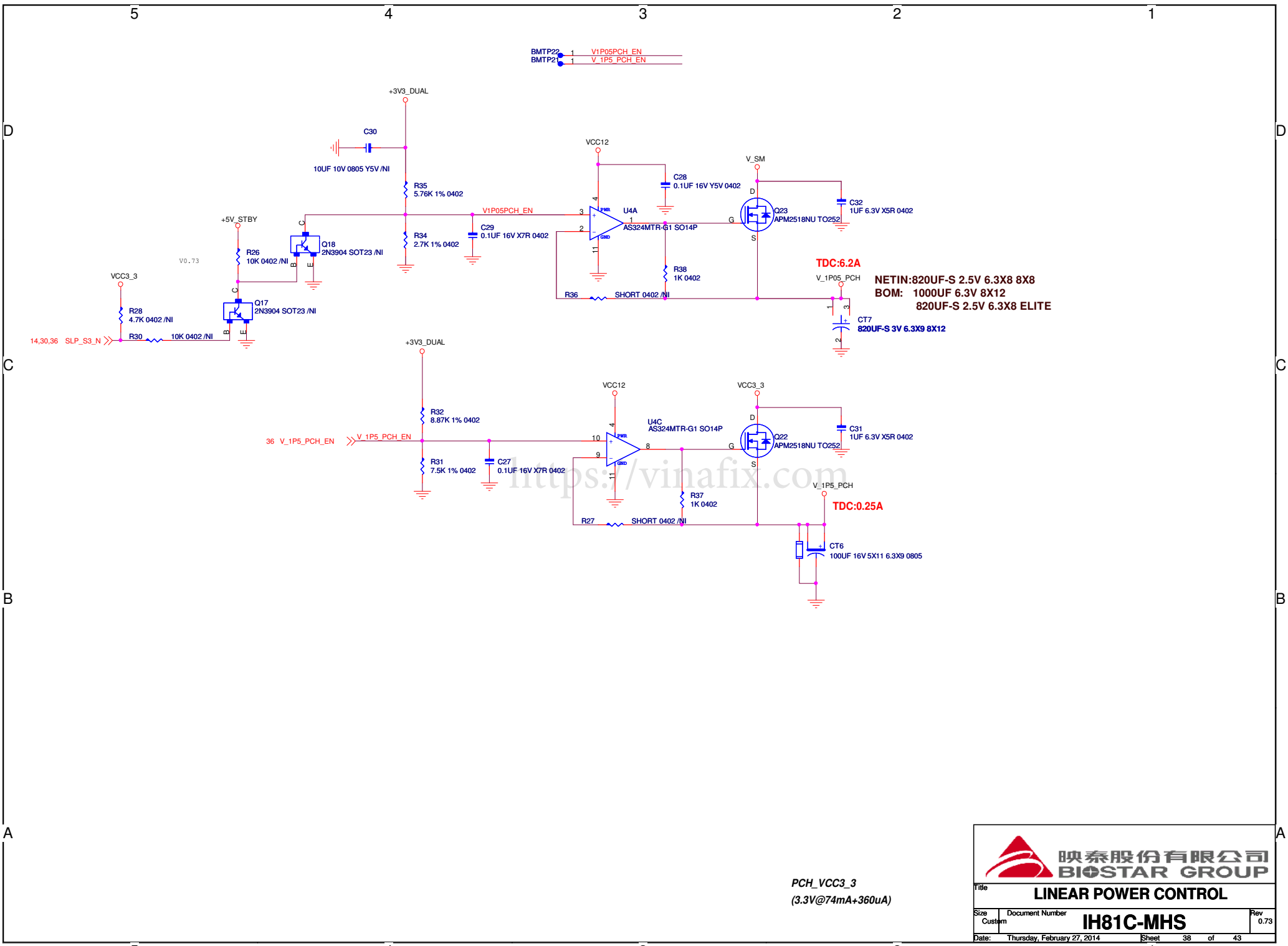
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Size B	Document Number IH81C-MHS
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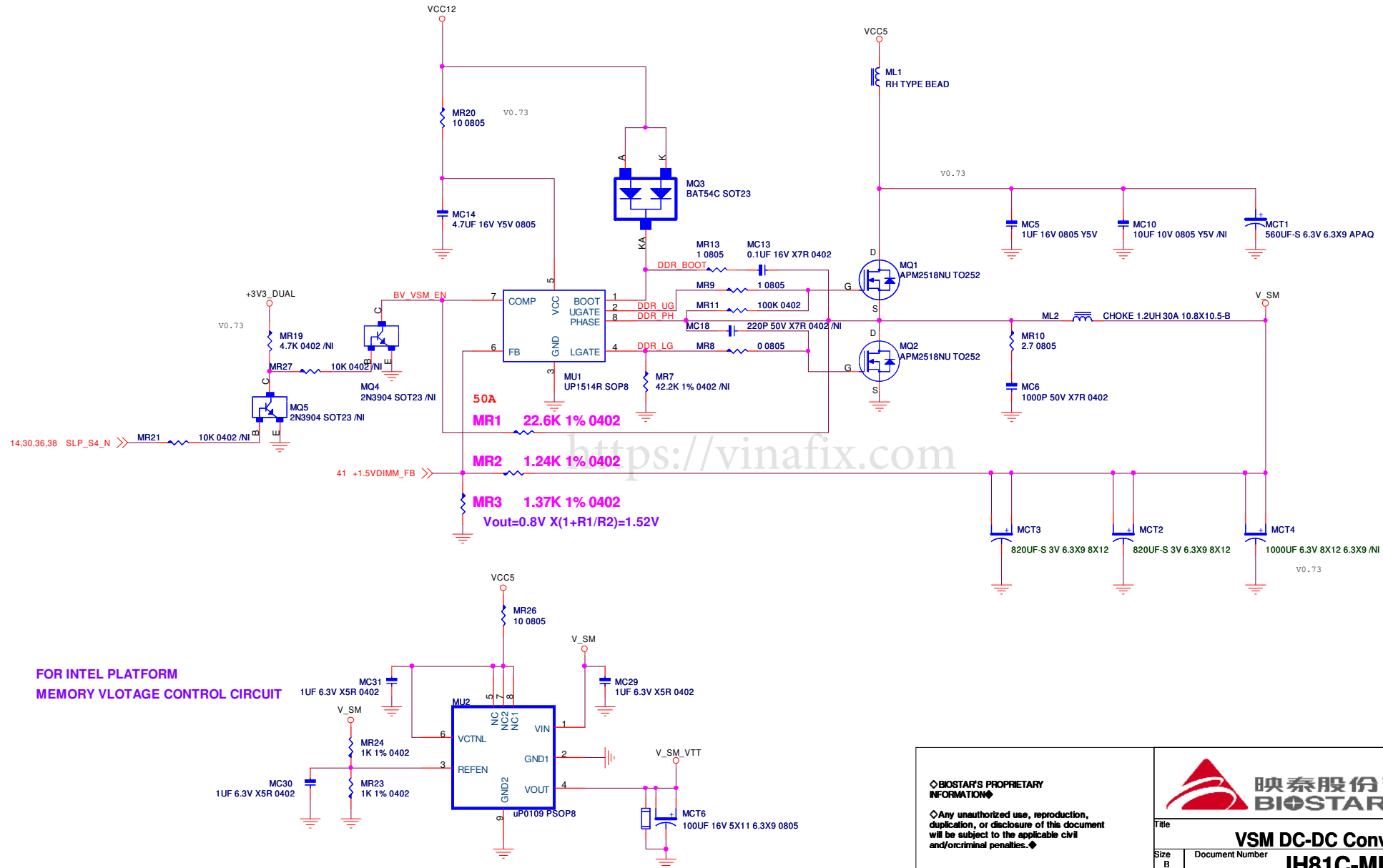
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PCH_VCC3_3
(3.3V@74mA+360uA)

MEMORY PART:M+Reference



FOR INTEL PLATFORM
MEMORY VLOTAGE CONTROL CIRCUIT

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VSM DC-DC Conver				
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39 +1.5VDIMM_FB << +1.5VDIMM_FB MR4 7.5K 1% 0402 << VDIMM0 30

DDR OVER VOLTAGE TABLE

V_SM	OV_VSM0
1.52V(DEFAULT)	1
1.65V	0

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40 OV_CPU >> R87 1.8K 1% 0402 /NI << OV_CPU0 30

V_CPU_CORE	OV_CPU0	
DEFAULT	1	
+5%	0	



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5

4

3

2

1

D

D

C

C


B

B

A

A

<https://vinafix.com>

		
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Title RESERVED FOR AMT POWER		
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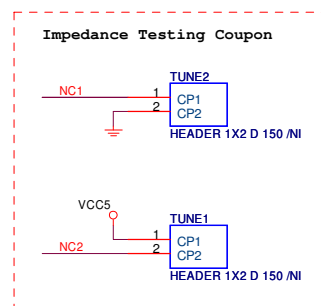
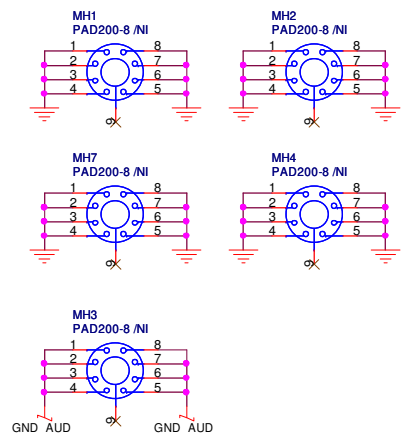
5

4

3

2

1



(LB1)



H81MLC LB1

(LB2)



VER6.1 10X3 LB2 /NI



SPI W25Q64 DIP

(YY2)



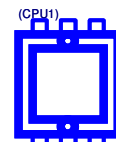
XTAL WIRE



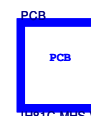
JCMOS1(1_2)
JUMPER 2P B



3V BATTERY SONY



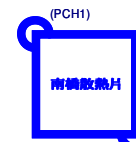
LGA 1156 FRAME



IH81C-MHS V0.73



J1(1_2)
JUMPER 2P B /NI



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