

TITLE	SHEET
COVER SHEET	1
BLOCK DIAGRAM	2
CHANGE LIST	3
INTEL 1156 PROCESSOR-1	4
INTEL 1156 PROCESSOR-2	5
INTEL 1156 PROCESSOR-3	6
INTEL 1156 PROCESSOR-4	7
DDRII DIMMA1	8
DDRII DIMMB1	9
PCH-1(PC/USB/DM/PCIE)	10
PCH-2(SATA/CPU HOST)	11
PCH-3(AUDIO/SPI/MISC)	12
PCH-4(VGA/FDI/DSP/NVRAM)	13
PCH-5(CLOCK BUFFER/CAP)	14
PCH-6(POWER)	15
PCH-7(GND)	16
CLK GEN RTM885N-932	17
VGA CONNECTOR	18
DVI/HDMI CONNECTOR	19
PE X16 SLOT	20
PE X1 SLOT	21
PCI SLOT 1/2	22
ATX POWER CON & MH	23
K/B,COM,PRINT HEADER	24
IDE-VT6415	25
LAN RTL8111DL/RTL8102EL	26
AUDIO CODEC ALC662	27
AUDIO CONNECTOR	28
USB PORT	29
FRONT PANEL & FAN	30
SUPER I/O IT8721F/BX	31
CPU_CORE DC-DC CONVER	32
VAXG DC-DC CONVER	33
VTT DC-DC CONVER	34
MISC DC-DC-1	35
OVER VOLTAGE/HW MONITOR	36
RESET BUFFER & SEQUENCE	37
BOM	38

**Model Name : IH55A-MHS**  
**Marketing name : H55 HD**

**VER:6.4**

**CPU :**  
Core i7 / i5 / i3/ Pentium

**System Chipset :**  
Intel PCH(Ibex Peak H55)

**On Board Chip :**  
Clock Gen. -- REALTEK RTM885N-932  
Audio Codec -- REALTEK ALC662  
Lan Chip -- REALTEK RTL8111DL/RTL8102EL  
PWM Controller -- UP6219A + NIKO-SEM MOS  
Super I/O -- ITE 8721FBX  
SPI Flash 16M


**Main Memory :**  
2 Channel DDR III \* 2 (Max 4GB)

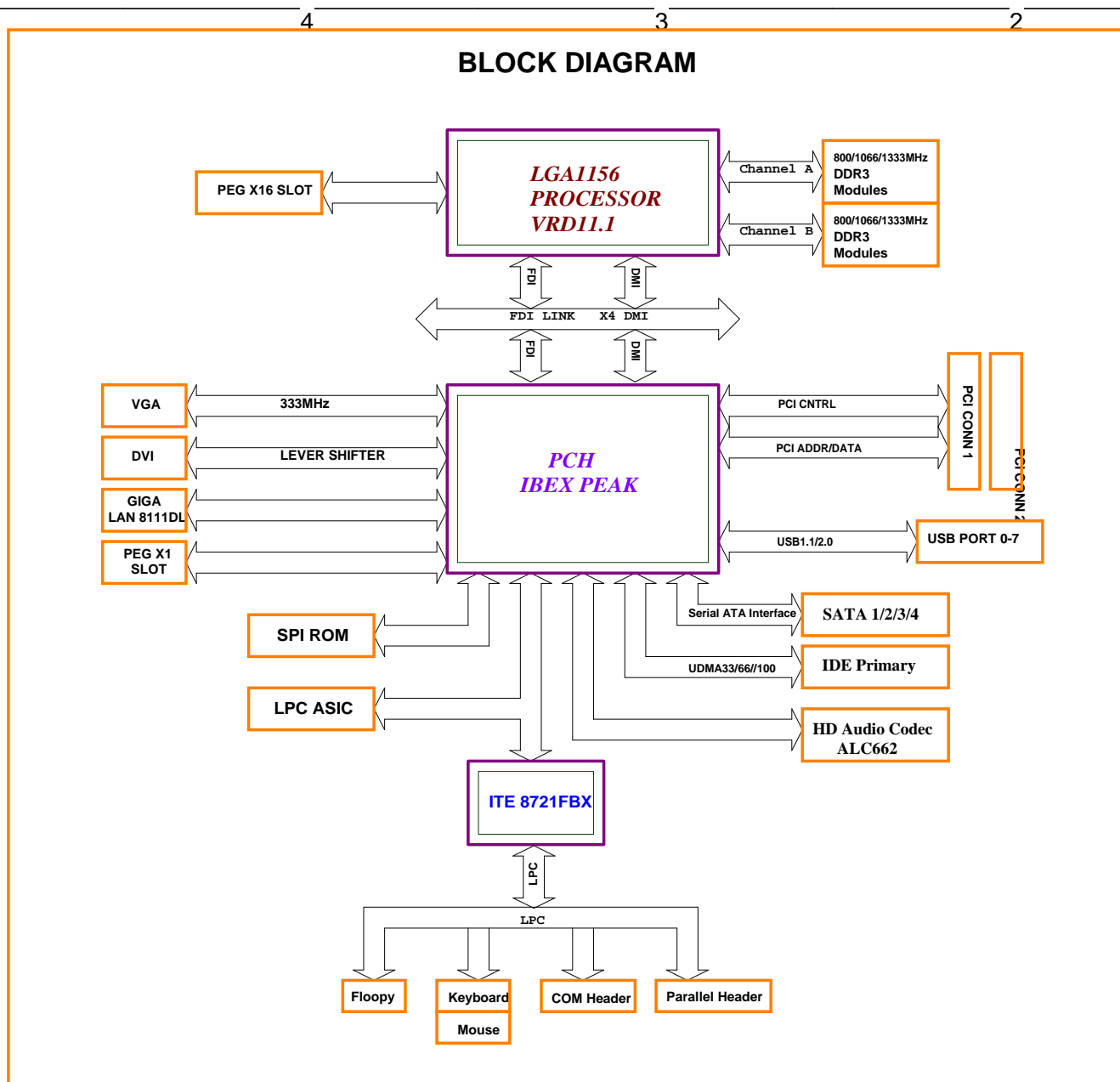
**Expansion Slot :**  
PCI Express x16 Slot \* 1  
PCI Express x1 Slot \* 1  
PCI Slot \* 2

**Heatsink :**  
SB: SBLS-T

**I/O Pannel :**  
47-RIOBRACKET-55E


**PCB SIZE :**  
200.03\*244.00mm  
4-layers-1080

<b>HW Engineer:</b>		<b>Date:</b>	
<b>HW Leader:</b>		<b>Date:</b>	
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		<b>COVER SHEET</b>	
Size Custom	Document Number	<b>IH55A-MHS</b> Rev 6.4	
Date: Tuesday, June 29, 2010		Sheet 1 of 38	

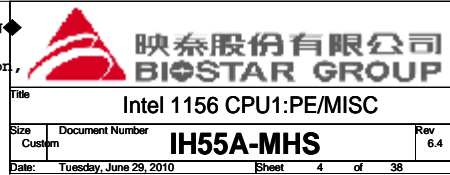


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Title <b>BLOCK DIAGRAM</b>			
Size	Document Number	Rev	
Custom	<b>IH55A-MHS</b>	6.4	
Date:	Tuesday, June 29, 2010	Sheet	2 of 38

1



D

C

B

A

D

C

B

A

8 M\_MAA\_A[0..15] &gt;&gt; M\_MAA\_A[0..15]

M\_DATA\_A[0..63] &gt;&gt; M\_DATA\_A[0..63] 8

9 M\_MAA\_B[0..15] &gt;&gt; M\_MAA\_B[0..15]

M\_DATA\_B[0..63] &gt;&gt; M\_DATA\_B[0..63] 9

CPU1A

BIOSTAR\_D\_V1\_2

M\_MAA\_A0 AW18  
M\_MAA\_A1 AY15  
M\_MAA\_A2 AV15  
M\_MAA\_A3 AU15  
M\_MAA\_A4 AW14  
M\_MAA\_A5 AY13  
M\_MAA\_A6 AV14  
M\_MAA\_A7 AU14  
M\_MAA\_A8 AU14  
M\_MAA\_A9 AW12  
M\_MAA\_A10 AT19  
M\_MAA\_A11 AU13  
M\_MAA\_A12 AW11  
M\_MAA\_A13 AU24  
M\_MAA\_A14 AT11  
M\_MAA\_A15 AR10

SA\_MA0  
SA\_MA1  
SA\_MA2  
SA\_MA3  
SA\_MA4  
SA\_MA5  
SA\_MA6  
SA\_MA7  
SA\_MA8  
SA\_MA9  
SA\_MA10  
SA\_MA11  
SA\_MA12  
SA\_MA13  
SA\_MA14  
SA\_MA15

AT22  
AT22  
AT20

SA\_WE#  
SA\_CAS#  
SA\_RAS#

SA\_DQ0  
SA\_DQ1  
SA\_DQ2  
SA\_DQ3  
SA\_DQ4  
SA\_DQ5  
SA\_DQ6  
SA\_DQ7

SA\_CS#0  
SA\_CS#1  
SA\_CS#2  
SA\_CS#3

SA\_CKE0  
SA\_CKE1  
SA\_CKE2  
SA\_CKE3

SA\_ODT0  
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SA\_ODT2  
SA\_ODT3

SA\_DQS3  
SA\_DQS#3  
SA\_DM3

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SA\_DQ120  
SA\_DQ121

SA\_DQ122  
SA\_DQ123  
SA\_DQ124  
SA\_DQ125

DDR\_A

1/10

LGA 1156 SOCKET

M\_DQS\_A\_DN[0..7] &lt;&lt; M\_DQS\_A\_DN[0..7] 8

M\_DQS\_A\_DP[0..7] &lt;&lt; M\_DQS\_A\_DP[0..7] 8

M\_DQM\_A[0..7] &lt;&lt; M\_DQM\_A[0..7] 8

DDR\_B

2/10

LGA 1156 SOCKET

2

2

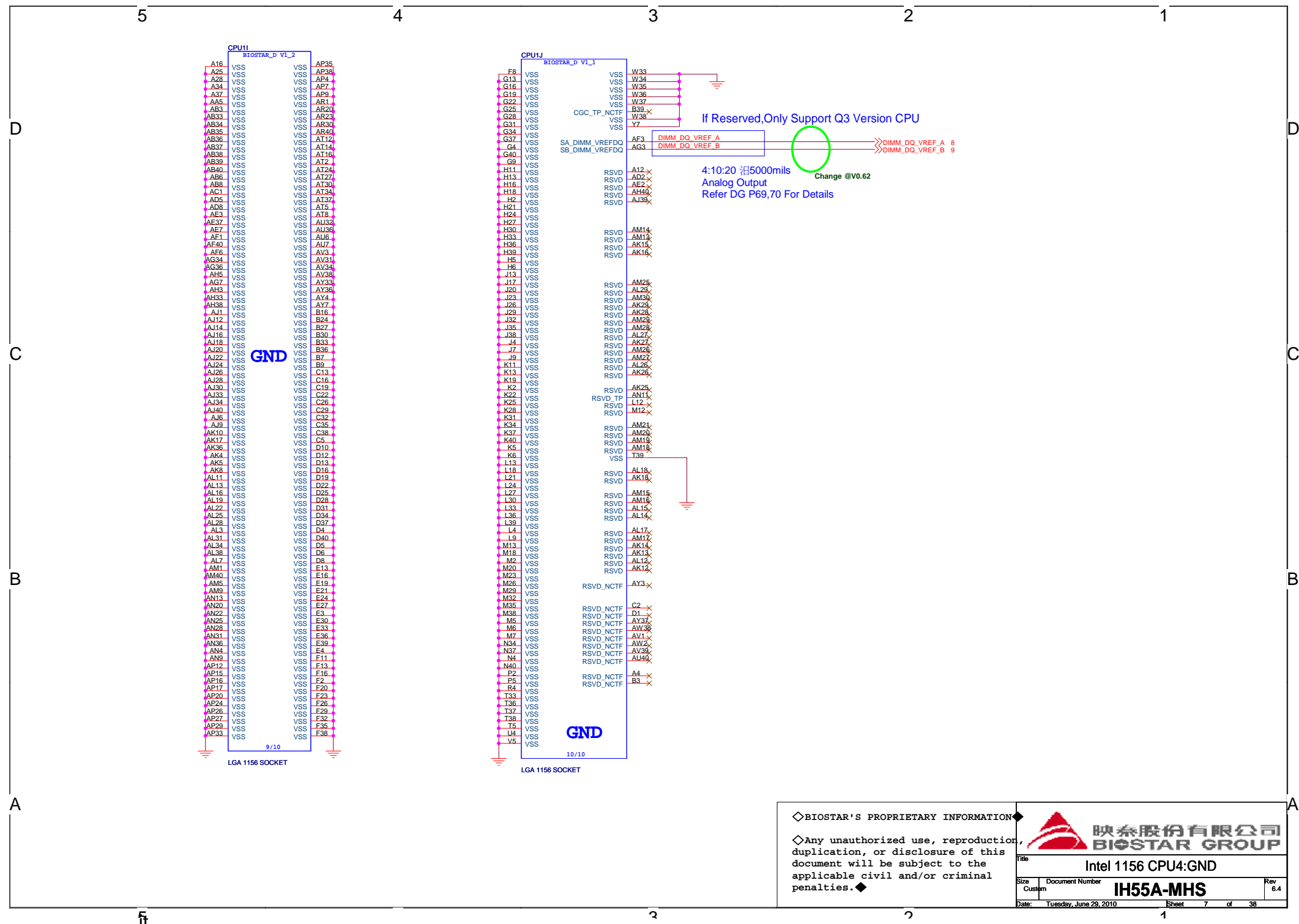


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Title		Intel 1156 CPU2:MEMORY	
Size	Document Number	IH55A-MHS	
Custom		Rev 6.4	
Date:	Tuesday, June 29, 2010	Sheet	5 of 38

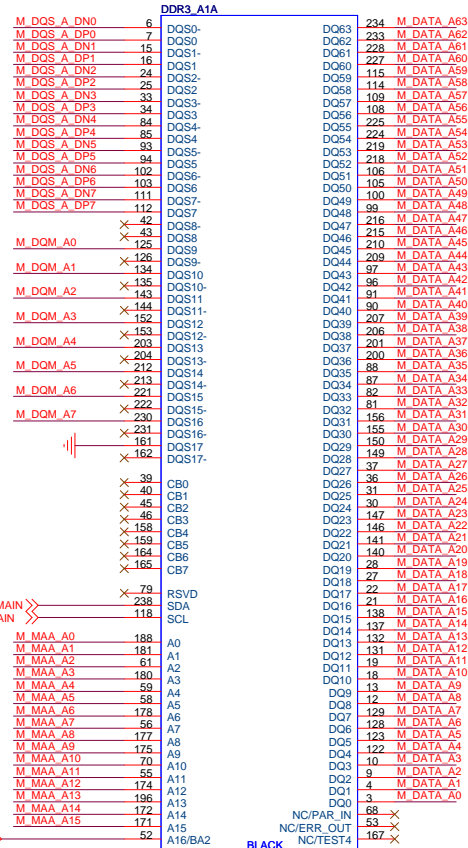
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5 M\_DATA\_A[0..63] >> M\_DATA\_A[0..63]  
5 M\_MAA\_A[0..15] >> M\_MAA\_A[0..15] 5 M\_DQS\_A\_DN[0..7] >> M\_DQS\_A\_DN[0..7]  
5 M\_DQM\_A[0..7] >> M\_DQM\_A[0..7] 5 M\_DQS\_A\_DP[0..7] >> M\_DQS\_A\_DP[0..7]



DDR3-240 PIN-R  
<PCB Footprints>

CPU

U1MM02

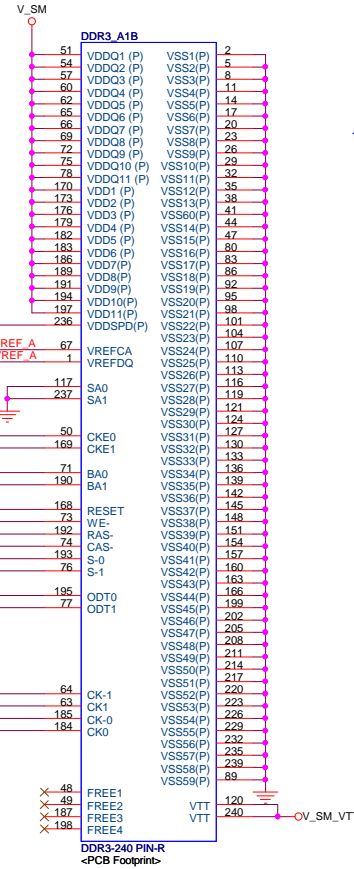
U1MM01

U1MM03

U1MM01

CHA

CHB





5

4

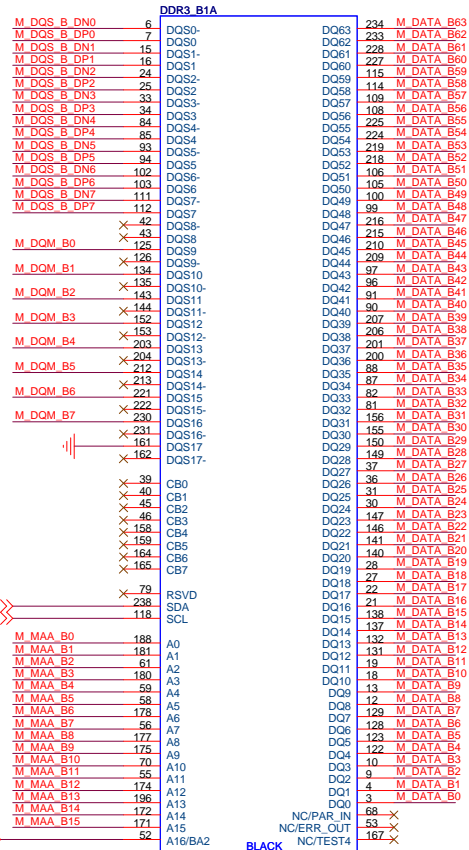
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2

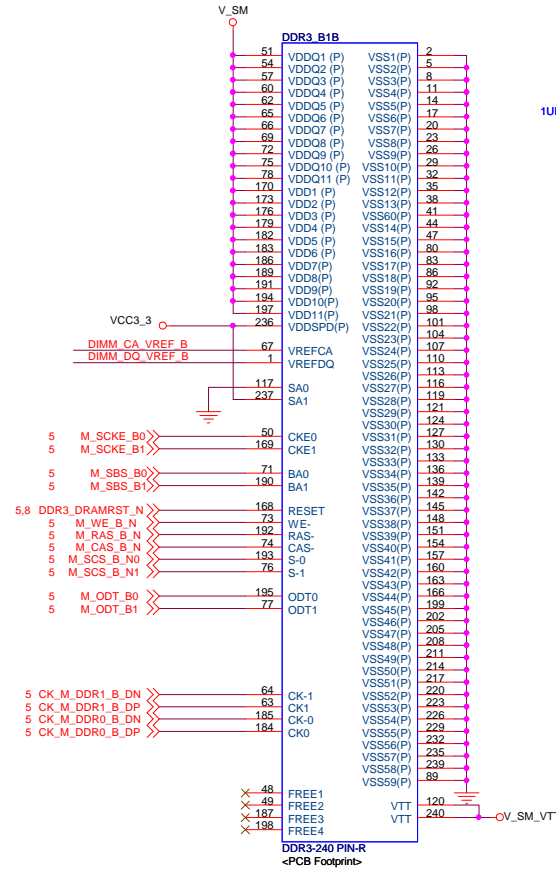
1

5 M\_DATA\_B[0..6] M\_DATA\_B[0..63]  
5 M\_MAA\_B[0..15] M\_MAA\_B[0..15]  
5 M\_DQM\_B[0..7] M\_DQM\_B[0..7]

5 M\_DQS\_B\_DN[0..7] M\_DQS\_B\_DN[0..7]  
5 M\_DQS\_B\_DP[0..7] M\_DQS\_B\_DP[0..7]

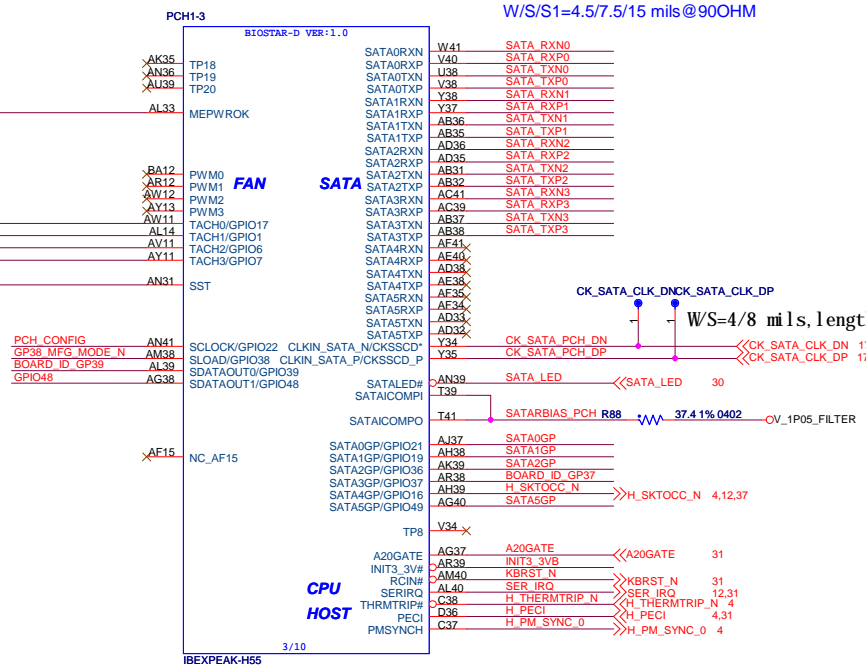
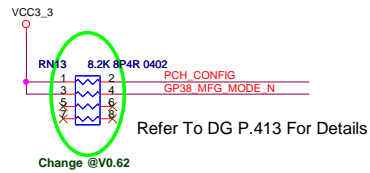


DDR3-240 PIN-R  
<PCB Footprint>





if use PCH PWM controller,  
SST should connect to sensor(dual sensor)  
Refer To DG P.285



BOARDID TABLE: CRB STYLE

BOARD ID define		
Bit2	Bit1	Bit0
X	X	X
	1	1
	0	1
	1	0
	0	0
		1
		0

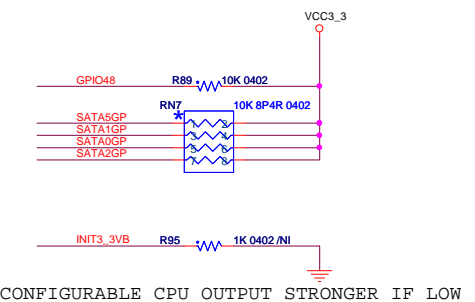
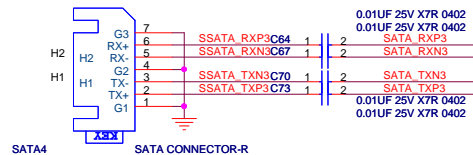
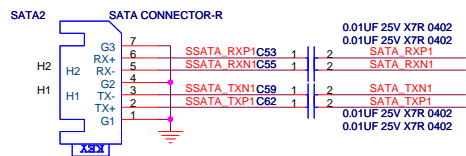
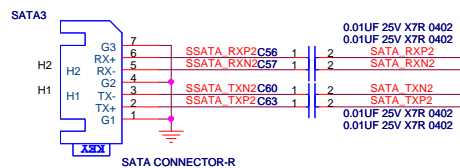
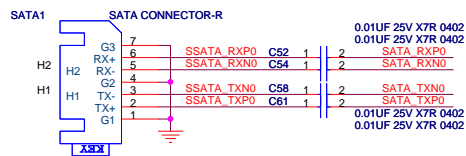
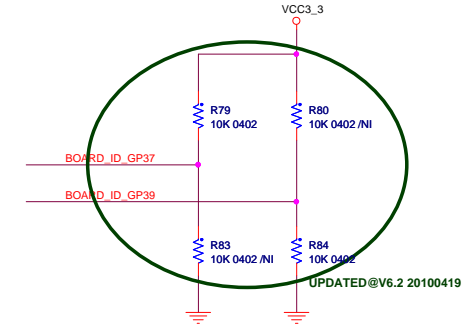
→ need bios version.

→ need bios version.

→ need bios version.

→ With TSP function.

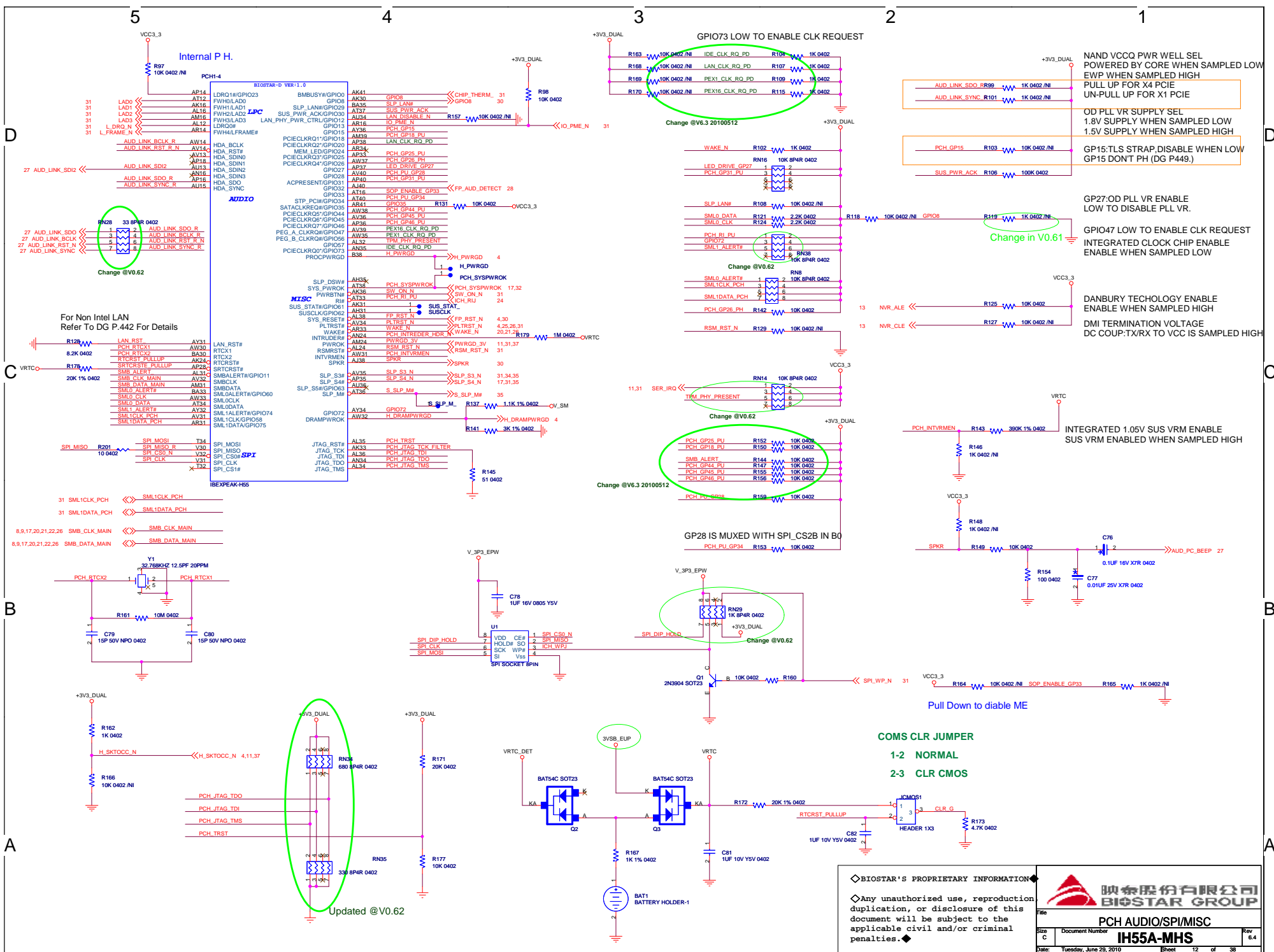
→ With TSP function.

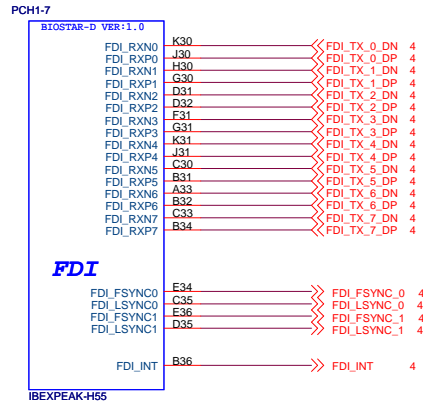


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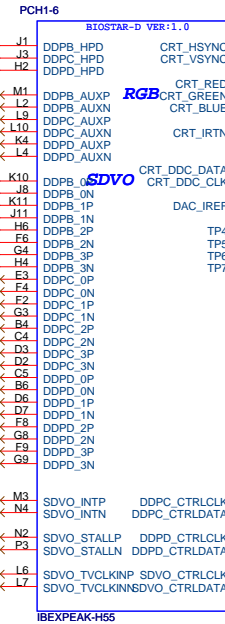
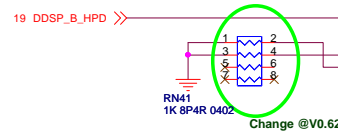
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<b>PCH SATA/CPU HOST</b>	
File	Rev
Size	6.4
Document Number	
Date: Tuesday, June 29, 2010	Sheet 11 of 38

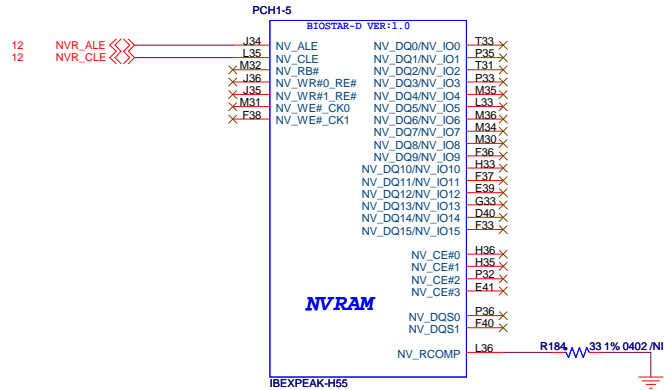
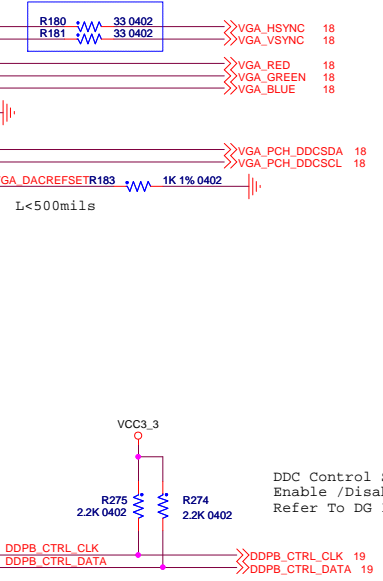




### 3.3V TOLERANT Hot Plug Detect



### NEAR PCH



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Title: PCH VGA/FDI/DSP/NVRAM

Size: Custom

Document Number: IH55A-MHS

Date: Tuesday, June 29, 2010

Sheet: 13 of 38

Rev: 6.4

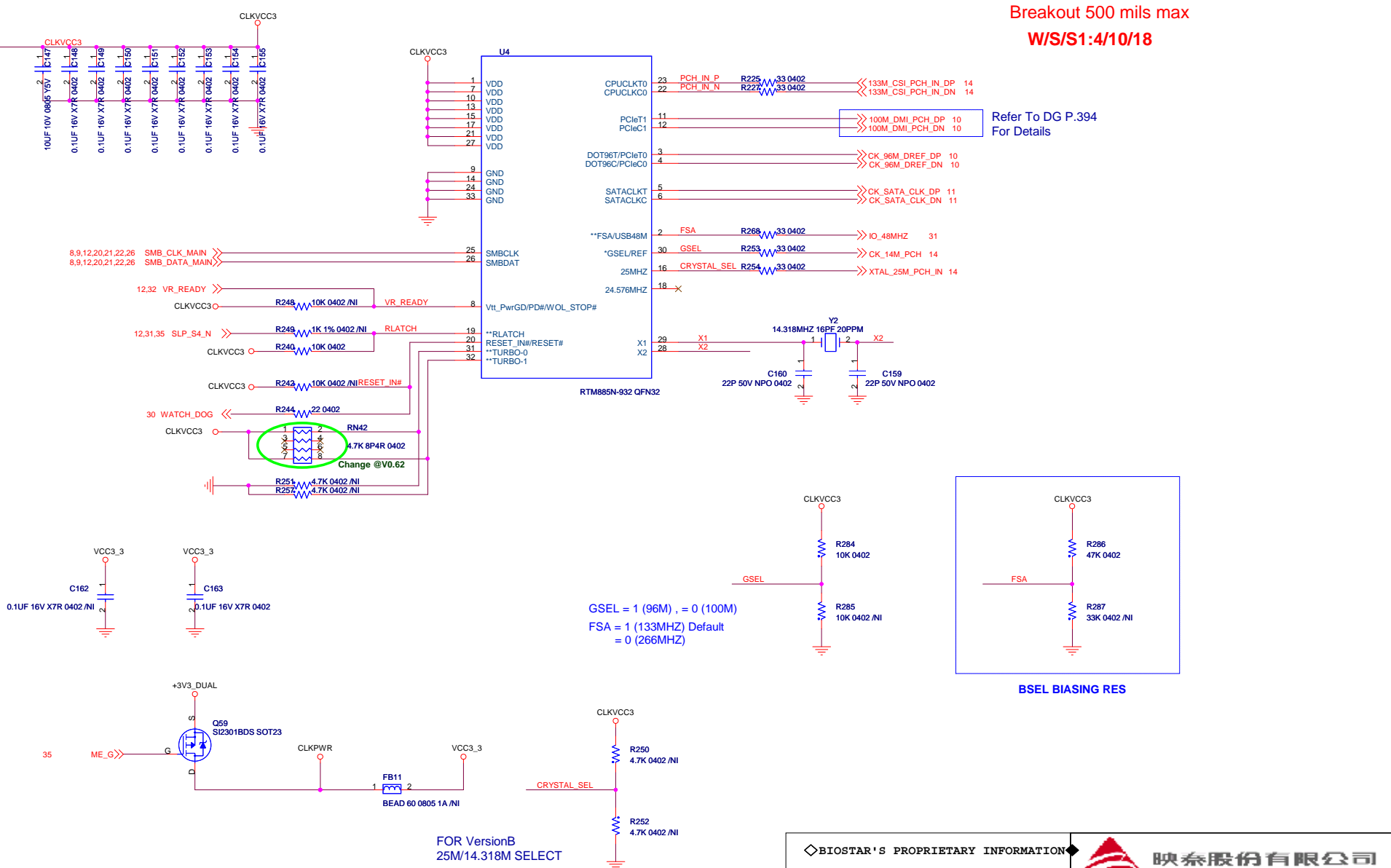








5 4 3 2 1



Breakout 500 mils max  
W/S/S1:4/10/18

Refer To DG P.394  
For Details

GSEL = 1 (96M) , = 0 (100M)  
FSA = 1 (133MHZ) Default  
= 0 (266MHZ)

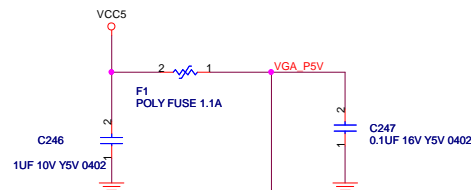
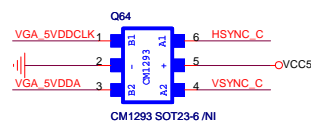
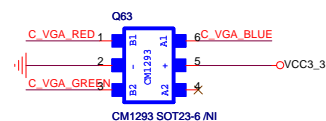
BSEL BIASING RES

FOR VersionB  
25M/14.318M SELECT

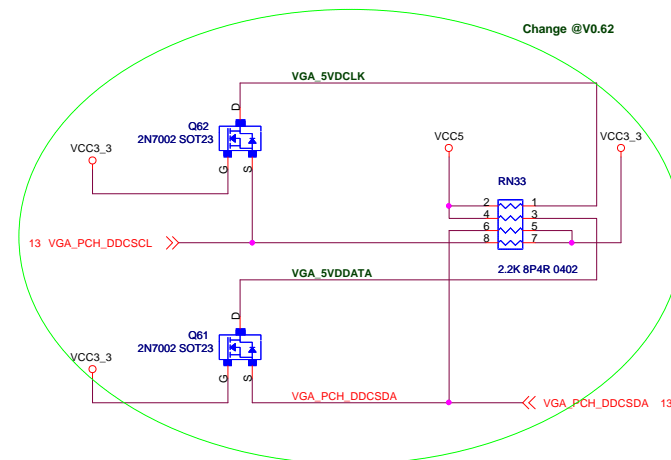
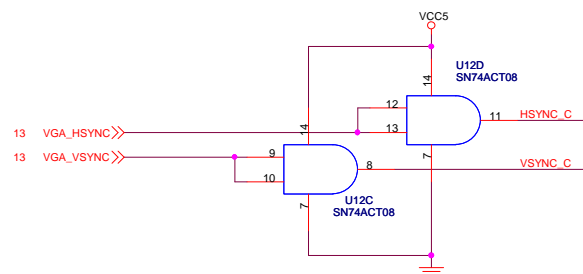
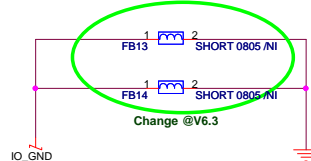
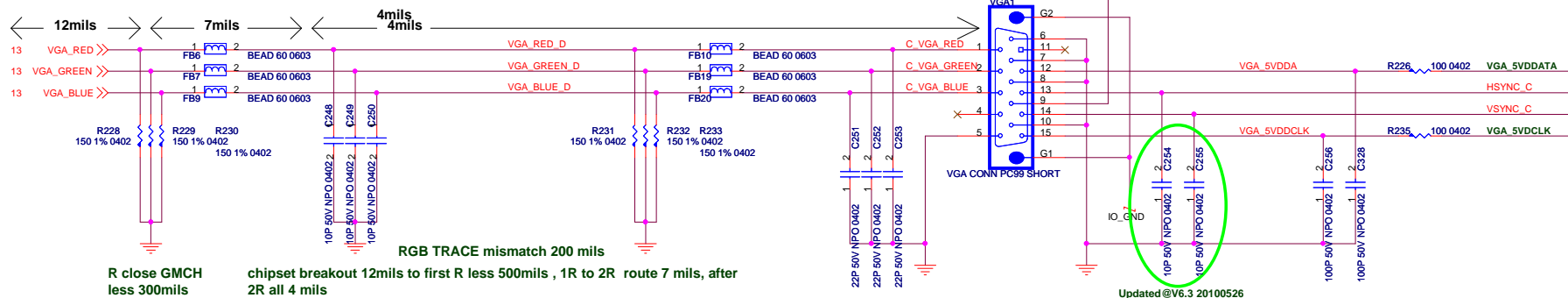
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Title: CLK GEN RTM885N-932			
Size: Custom	Document Number: IH55A-MHS		Rev: 6.4
Date: Tuesday, June 29, 2010		Sheet: 17	of 38



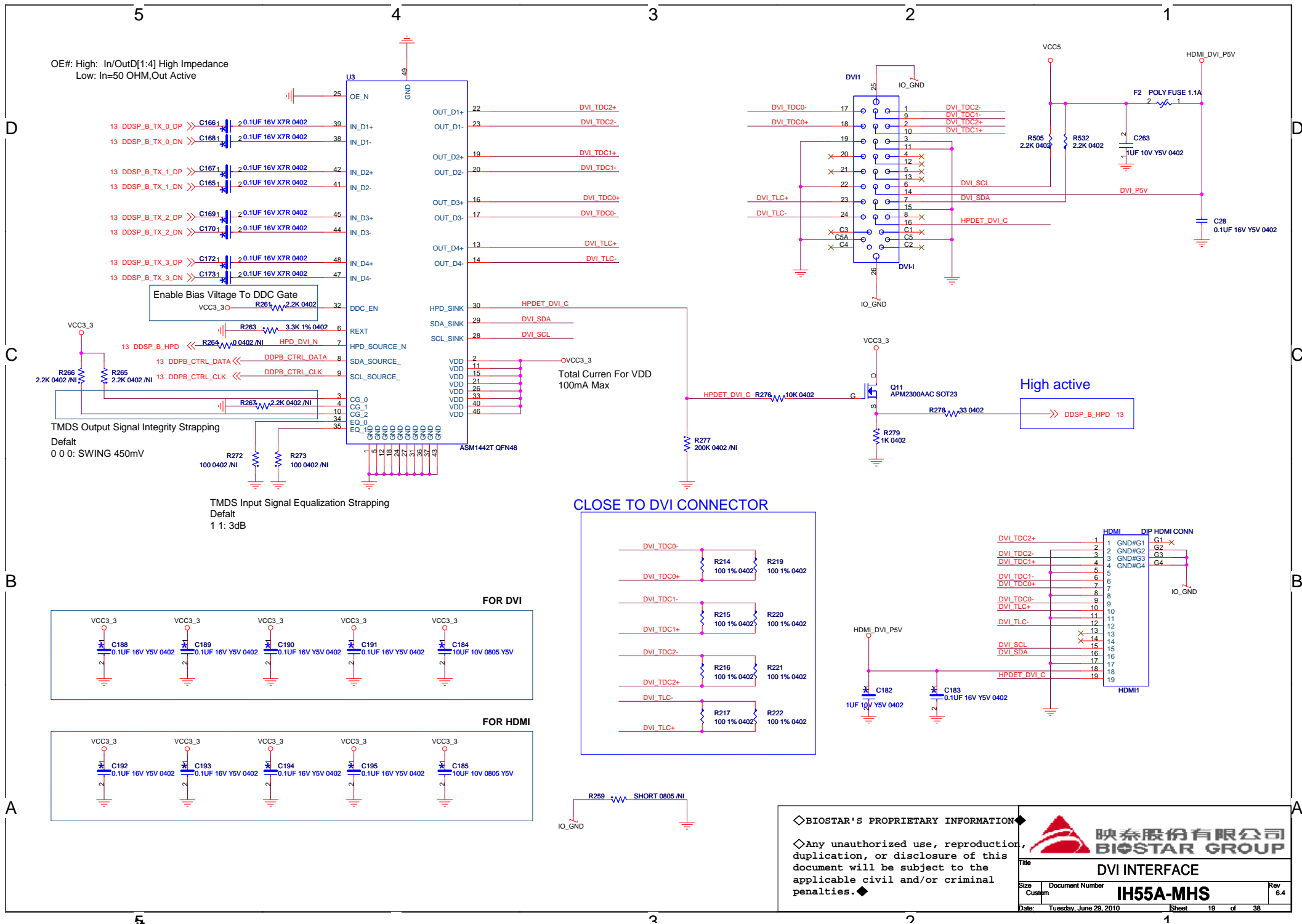
Close To GMCH



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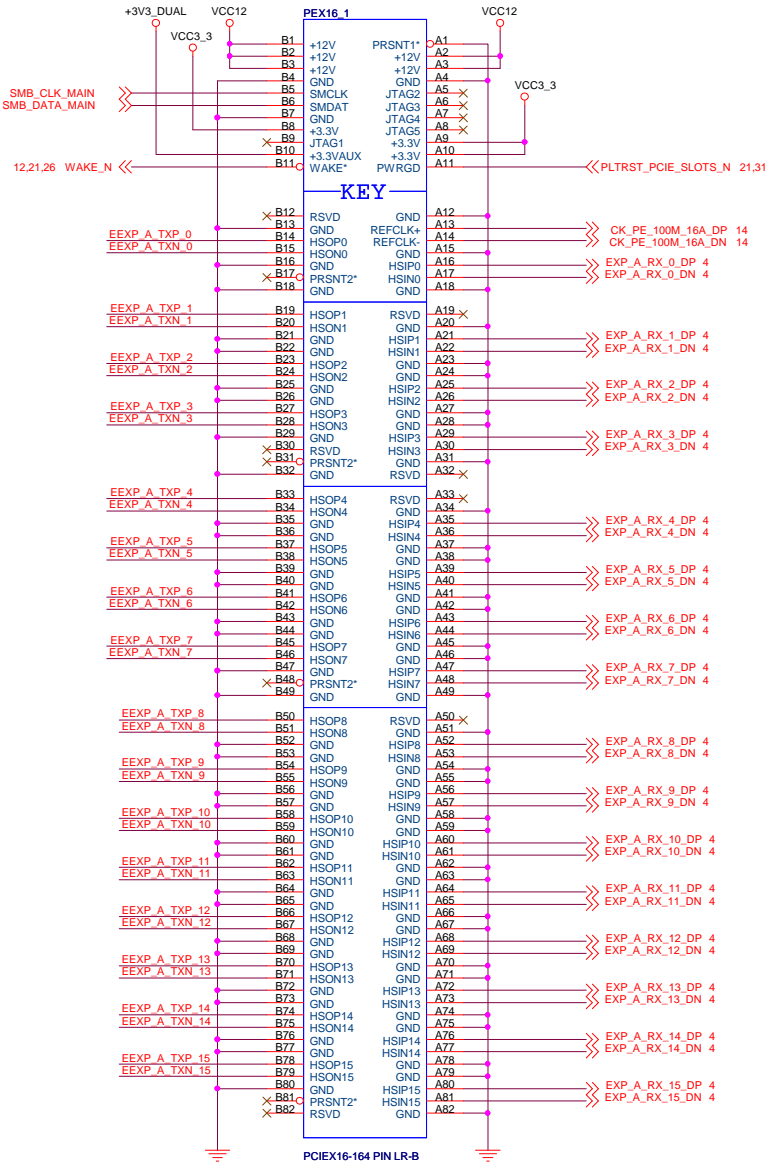
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VGA CONNETOR	
Size	Document Number
Custom	IH55A-MHS
Date:	Rev
Tuesday, June 29, 2010	6.4
Sheet	18 of 38

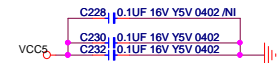
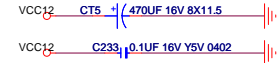
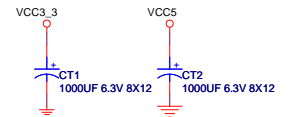


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4	EXP_A_TX_1_DR<>EXP_A_TXP_1	C200	1	2	0.1UF 16V X7R 0402	EEXP_A_TXP_1
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4	EXP_A_TX_2_DR<>EXP_A_TXN_2	C203	1	2	0.1UF 16V X7R 0402	EEXP_A_TXN_2
4	EXP_A_TX_3_DR<>EXP_A_TXP_3	C204	1	2	0.1UF 16V X7R 0402	EEXP_A_TXP_3
4	EXP_A_TX_3_DR<>EXP_A_TXN_3	C205	1	2	0.1UF 16V X7R 0402	EEXP_A_TXN_3
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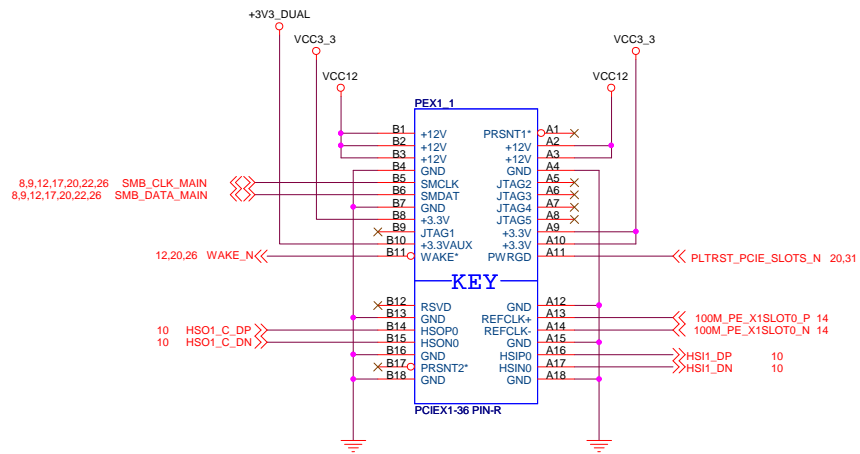
8,9,12,17,21,22,26 SMB\_CLK\_MAIN  
8,9,12,17,21,22,26 SMB\_DATA\_MAIN




12,21,26 WAKE\_N << R302 0.0402 NI >> P\_PME\_N 10,22



PEX16 SLOT CURRENT  
VCC12---->5A  
VCC3\_3---->3A  
+3V3\_DUAL---->0.375A(S0)  
0.02A(S3)



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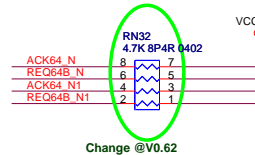
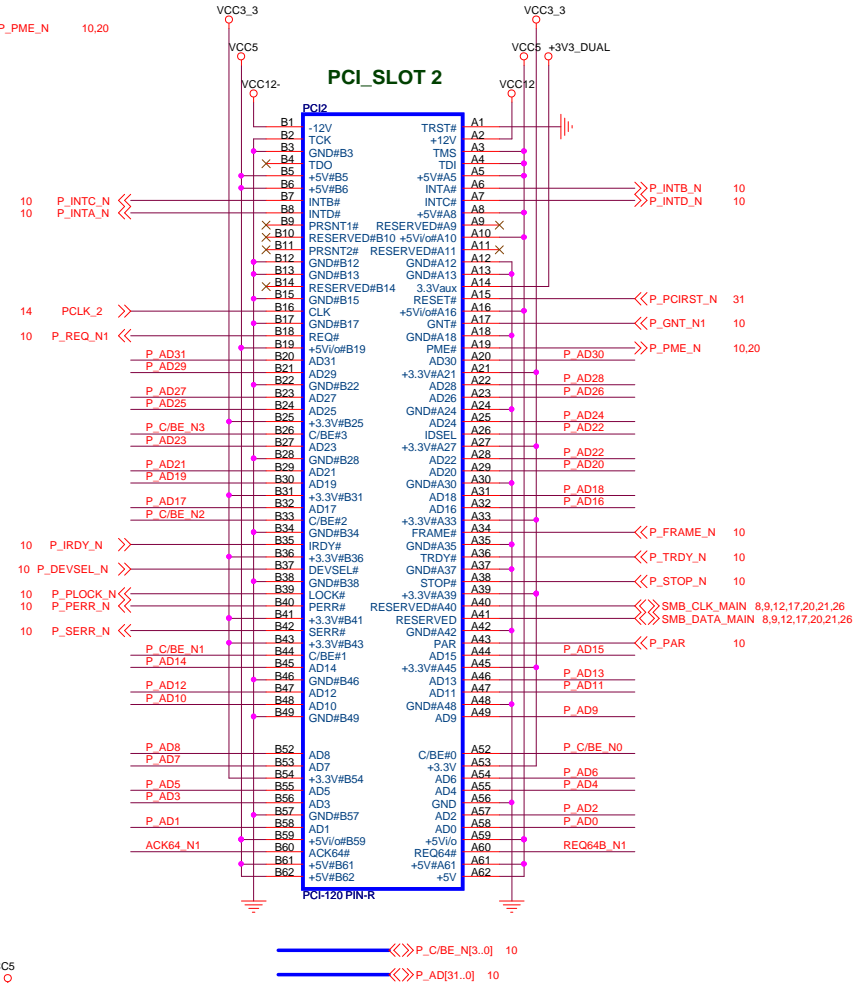
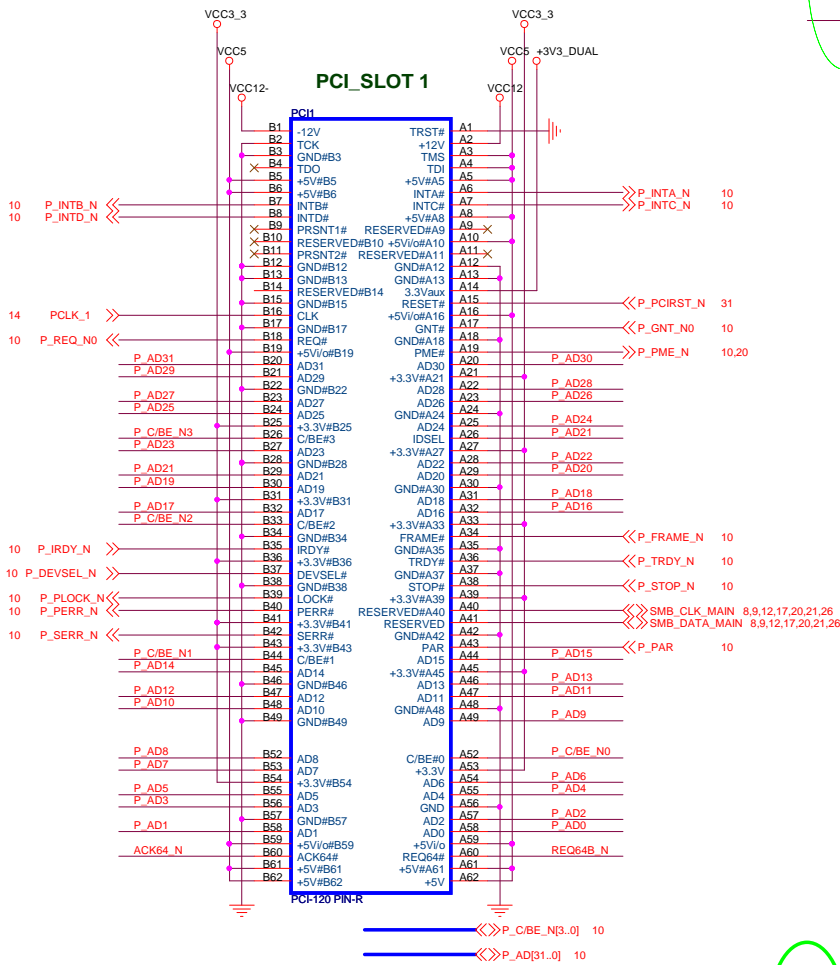


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Title PCIEx1 SLOT		
Size Custom	Document Number IH55A-MHS	Rev 6.4
Date: Tuesday, June 29, 2010	Sheet 21	of 38

IDSEL:AD21, INT:ABCD, REQ0 & GNT0, PCI\_CLK1

IDSEL:AD22, INT:BCDA, REQ1 & GNT1, PCI\_CLK2



PCI SLOTS CURRENT  
VCC3\_3---->5A  
+3V3\_DUAL---->0.375A(S0)/0.02A(S3)  
VCC12---->0.5A  
-VCC12---->0.1A

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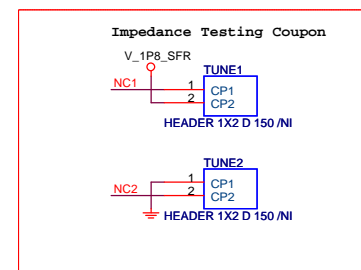
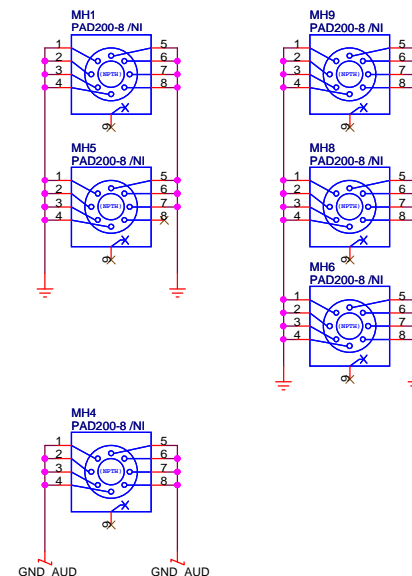
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PCI SLOT \*2  
IH55A-MHS

Rev 6.4

Date: Tuesday, June 29, 2010 Sheet 22 of 38





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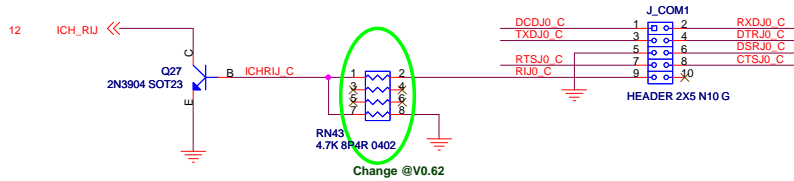
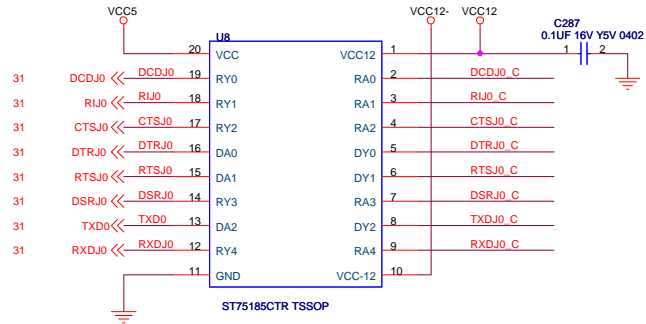


Size	Document Number
Custom	<b>IH55A-MHS</b>

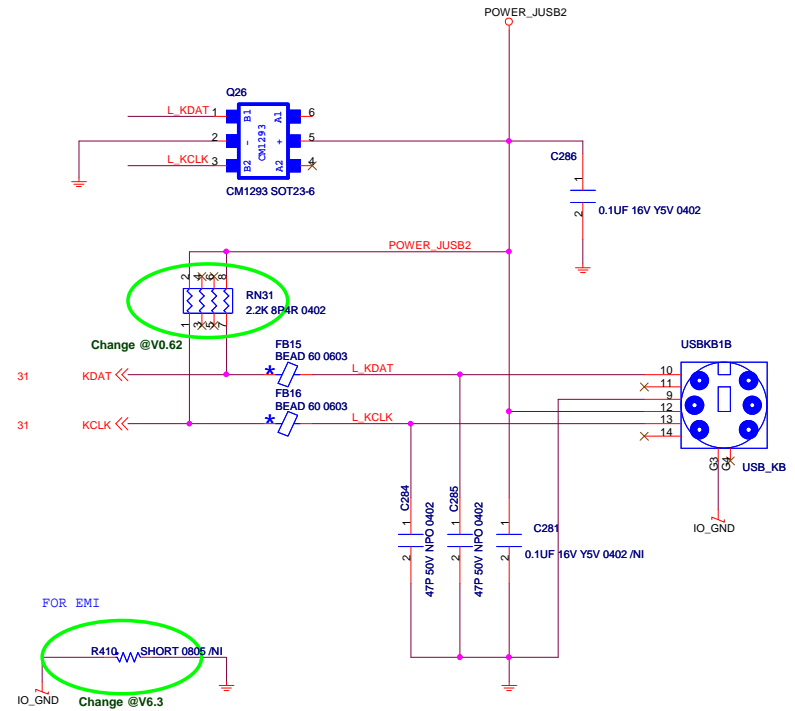
Date: Tuesday, June 29, 2010 Sheet 23 of 38

Re

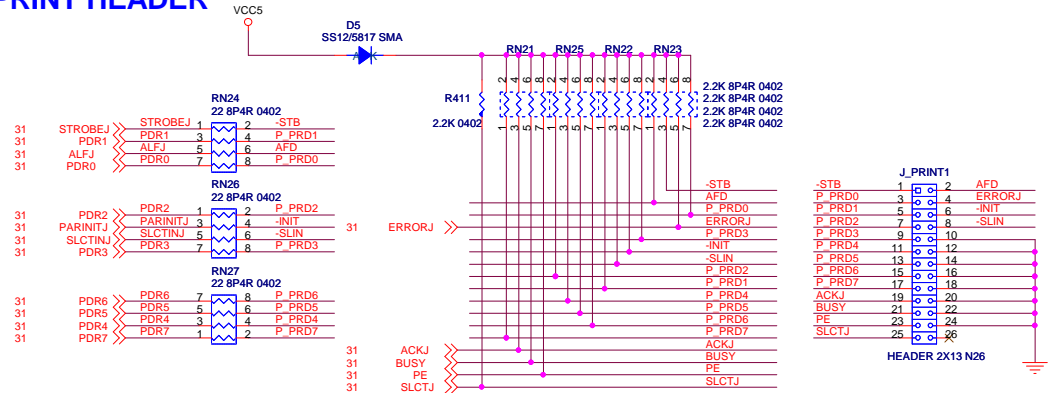
## COM HEADER



## K/B PORT



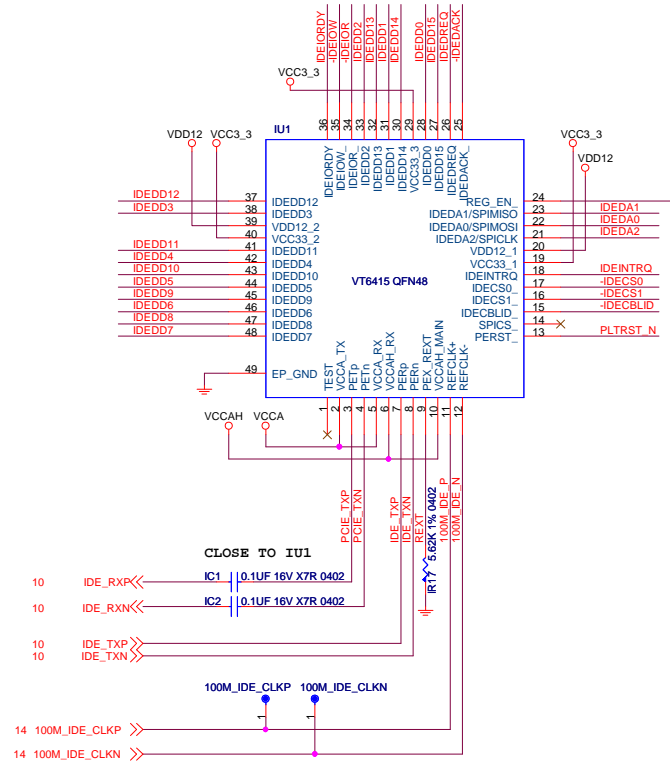
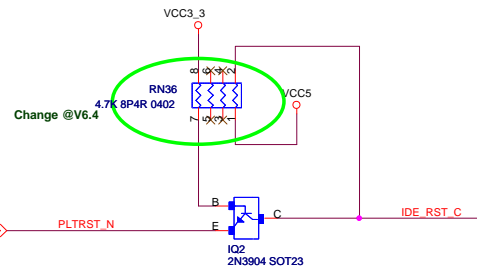
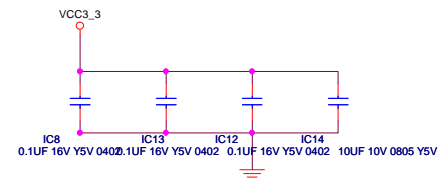
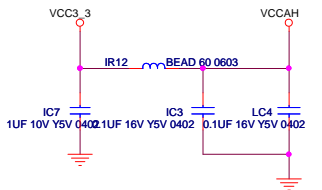
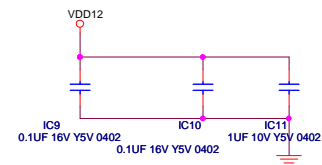
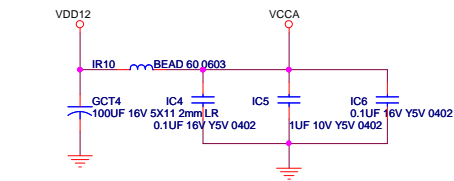
## PRINT HEADER



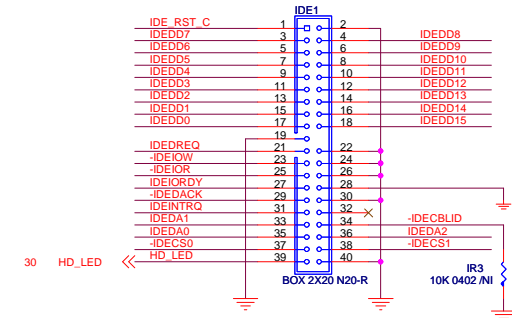
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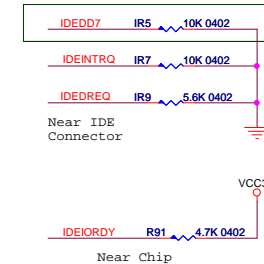
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Title: K/B,COM,PRINT HEADER	
Size: Custom	Document Number: IH55A-MHS
Date: Tuesday, June 29, 2010	Sheet: 24 of 38
Rev: 6.4	



## PRIMARY IDE



IR5 for single-slave-CF card compatibility



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Title: IDE-VT6415

Size: Custom Document Number: IH55A-MHS Rev: 6.4

Date: Tuesday, June 29, 2010 Sheet: 25 of 38

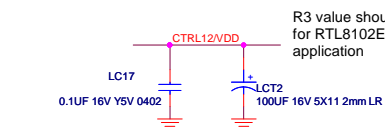
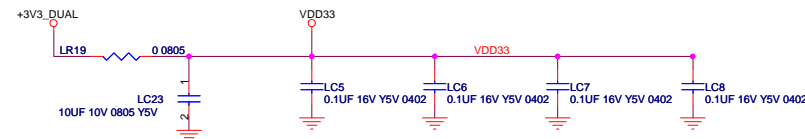
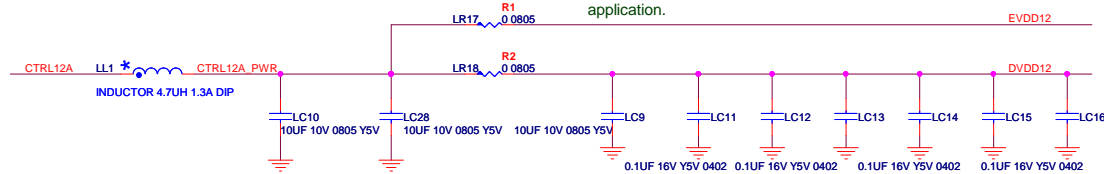
A

Remove R1 & R2  
in RTL8102EL  
application.

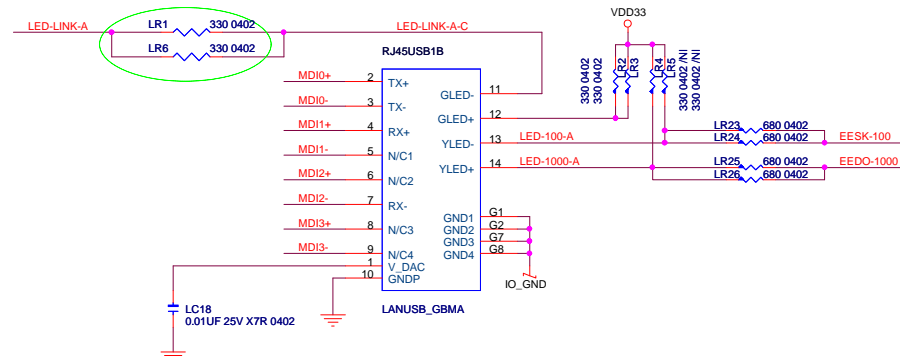
C

D

E



Remove R4 and R5 in RTL8102EL  
application.



For RTL8102EL, use this block.

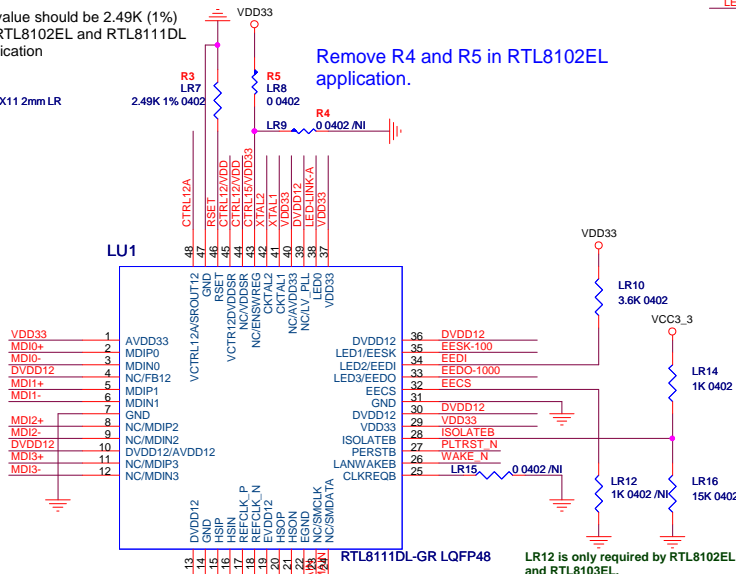
DVDD12 LR11 0.0805 NI CTRL12/VDD

For RTL8111DL, use this block.

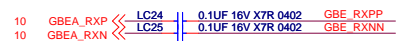
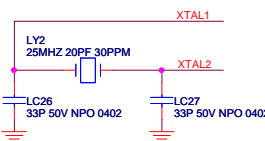
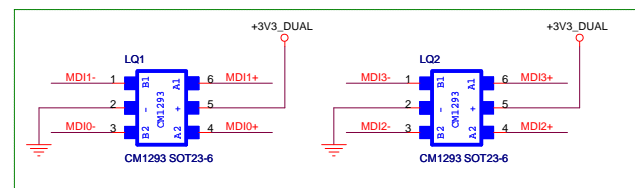
VDD33 LR13 0.0805 NI CTRL12/VDD

LC20 10UF 10V 0805 Y5V

LC29 10UF 10V 0805 Y5V



LR12 is only required by RTL8102EL  
and RTL8103EL.

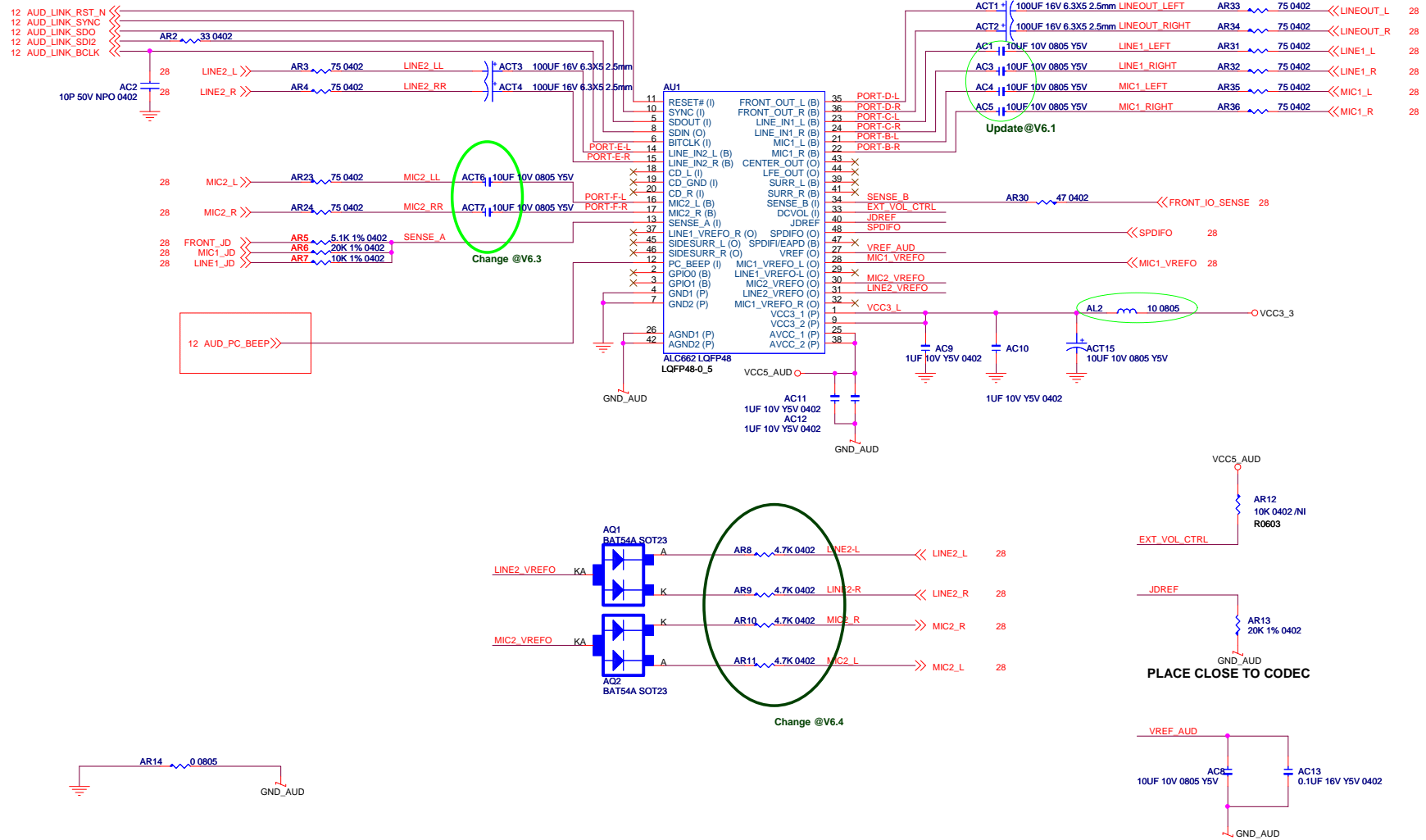


Change @V0.62

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Title RTL8111DL/RTL8102EL	
Size	Document Number Custom IH55A-MHS
Date	Tuesday, June 29, 2010
Sheet	26 of 38
Rev	6.4

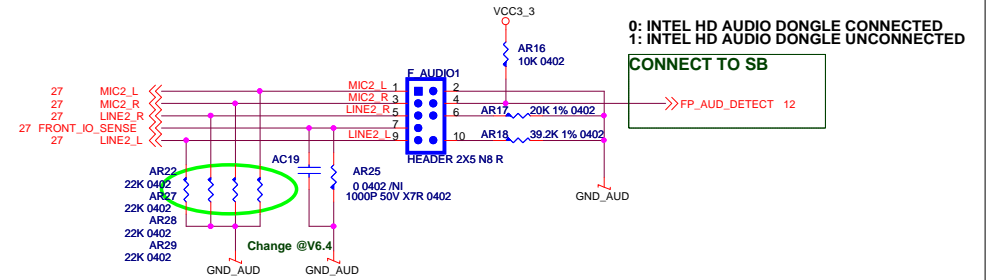
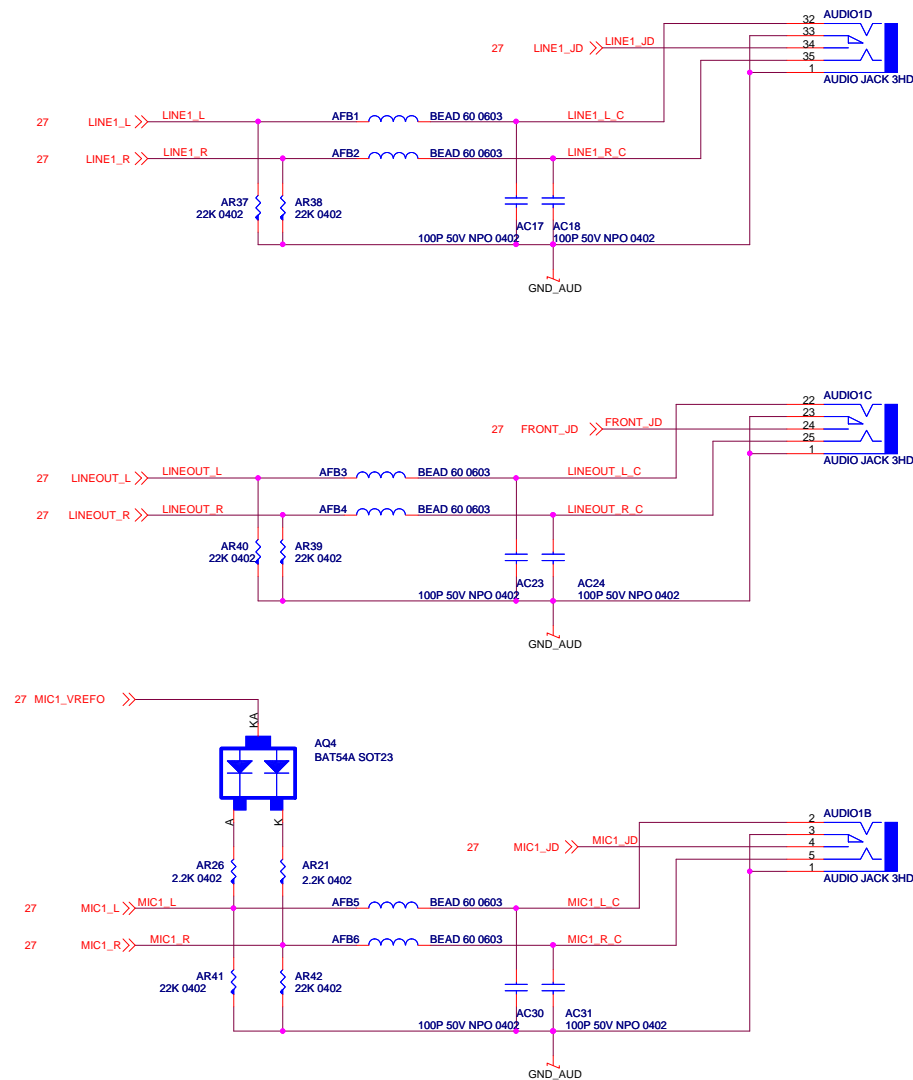


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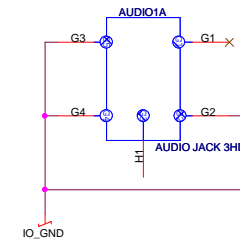
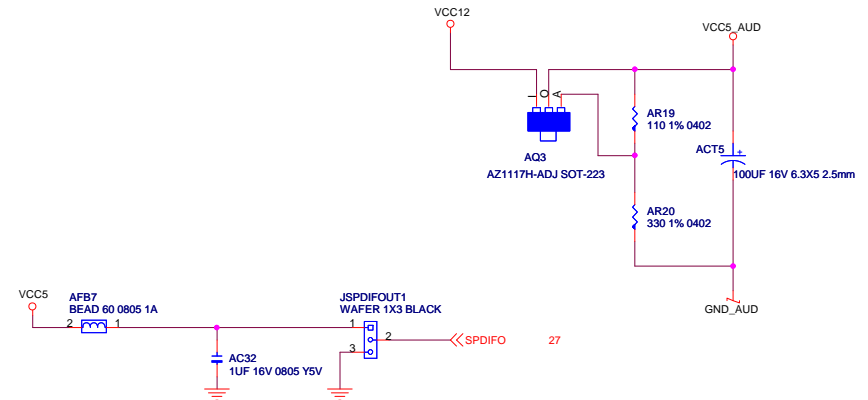
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		AUDIO CODEC ALC662	
Size	Document Number	Rev	
Custom	IH55A-MHS	6.4	
Date:	Tuesday, June 29, 2010	Sheet	27 of 38

## Rear Panel Onboard Analog I/O



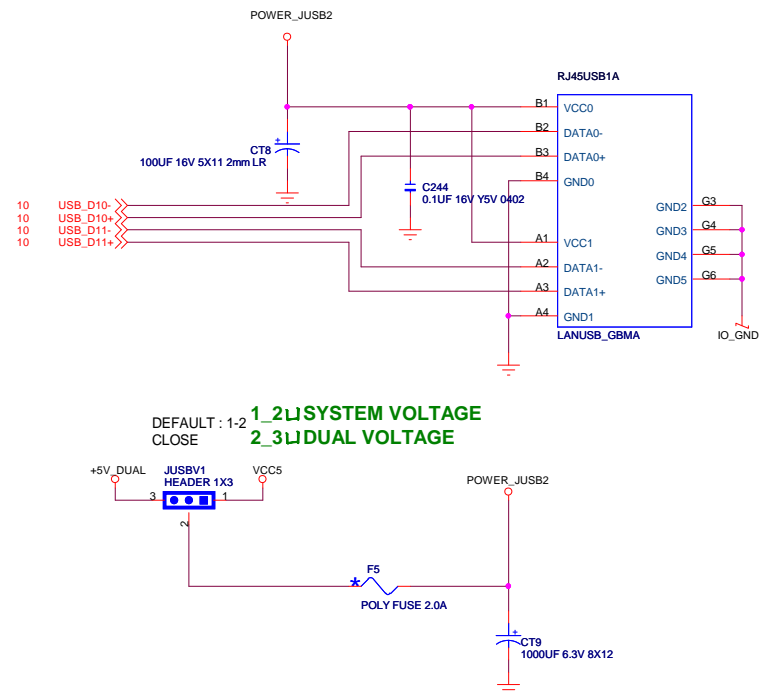
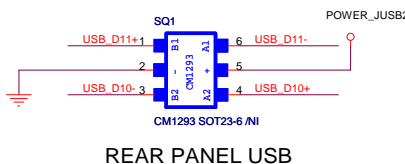
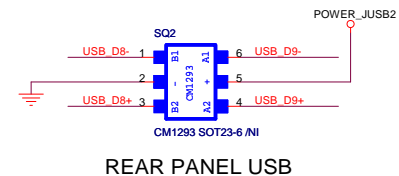
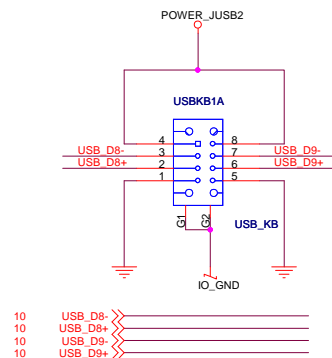
## AUDIO ANALOG POWER



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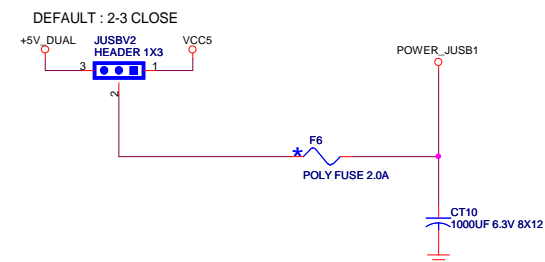
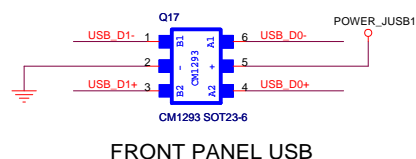
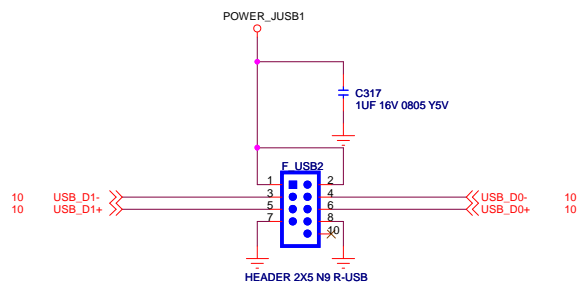
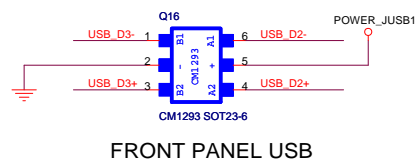
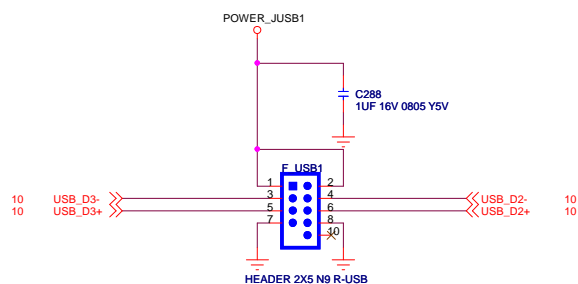
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<b>AUDIO CONNECTOR</b> <b>IH55A-MHS</b>	
Title Size Custom Date:	Document Number Tuesday, June 29, 2010 Sheet 28 of 38
Rev 6.4	



## REAR USB PORT

## FRONT USB PORT

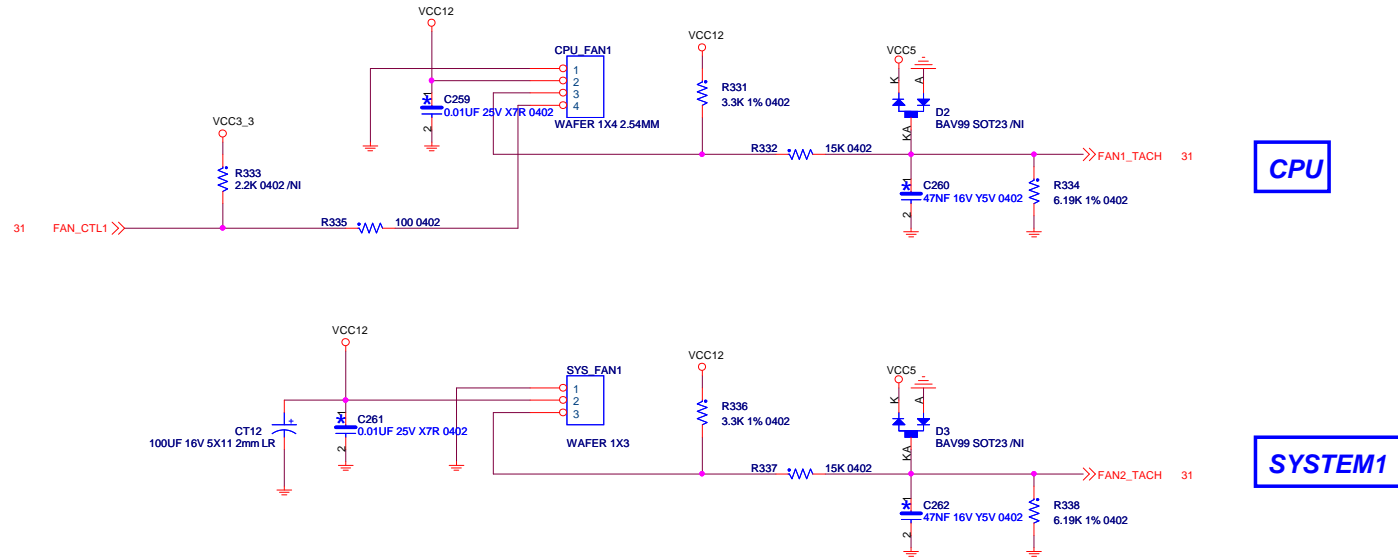
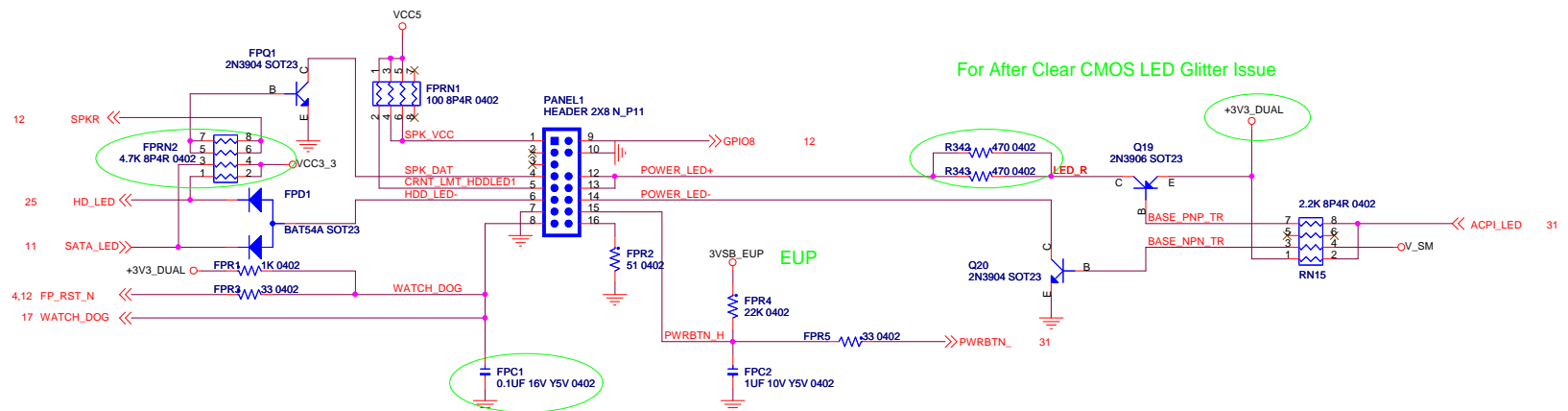


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Title	
USB CONN	
Size	Document Number
Custom	IH55A-MHS
Date:	Tuesday, June 29, 2010
Sheet	29 of 38
Rev	6.4



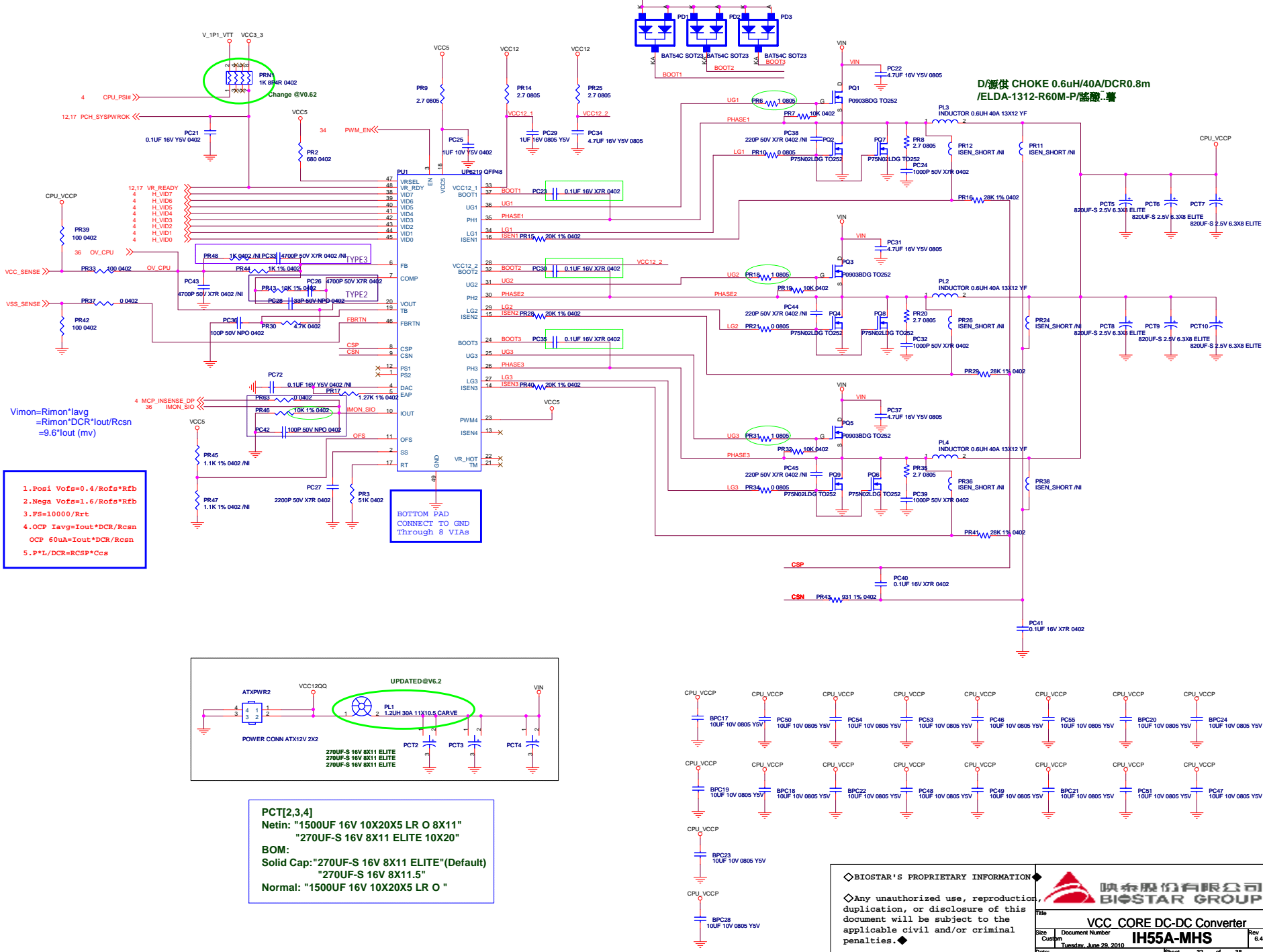
[illegible]

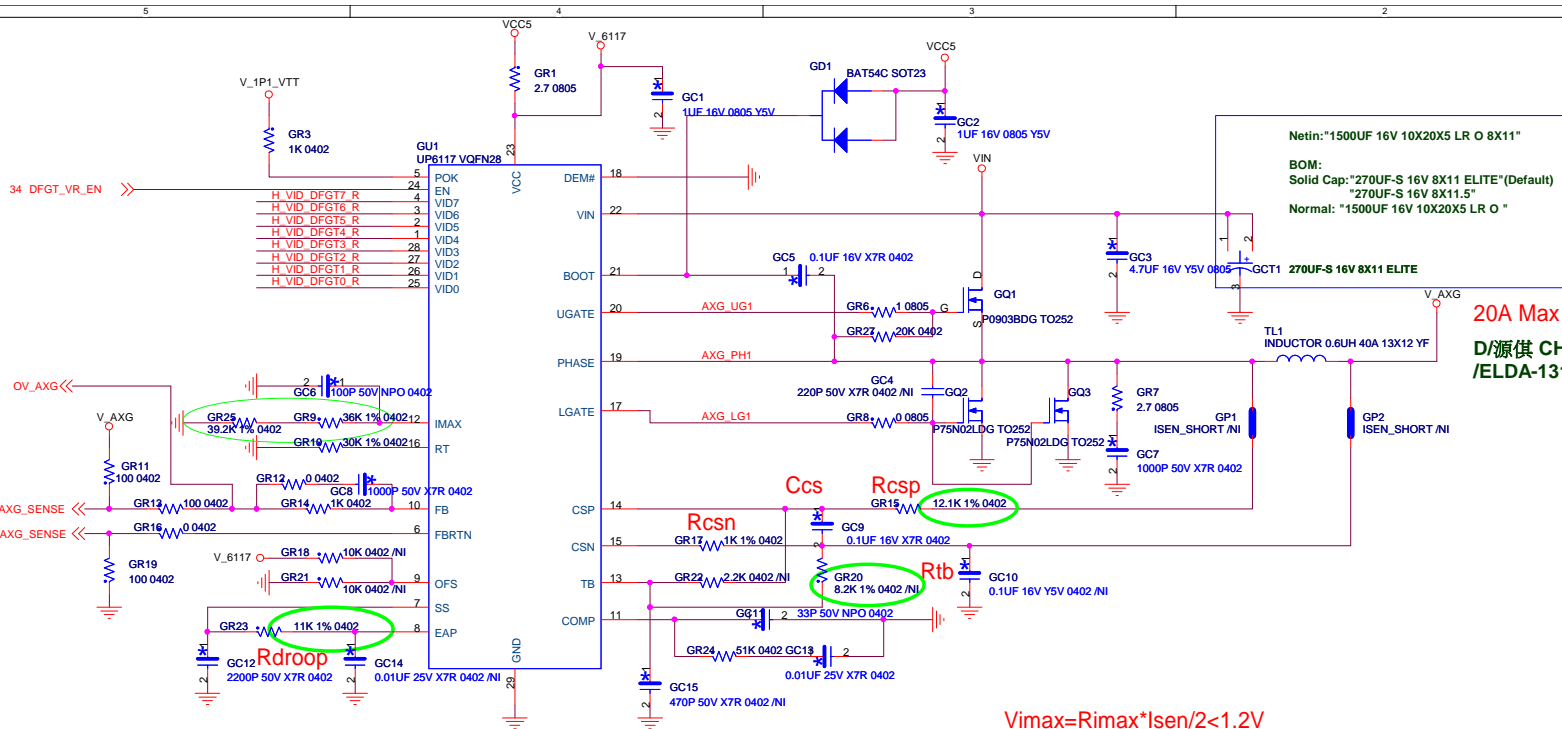
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Title		<b>FAN&amp;POWER CONN&amp;FP</b>	
Size	Document Number	<b>IH55A-MHS</b>	
Custom		Rev 6.4	
Date:	Tuesday, June 29, 2010	Sheet	30 of 38



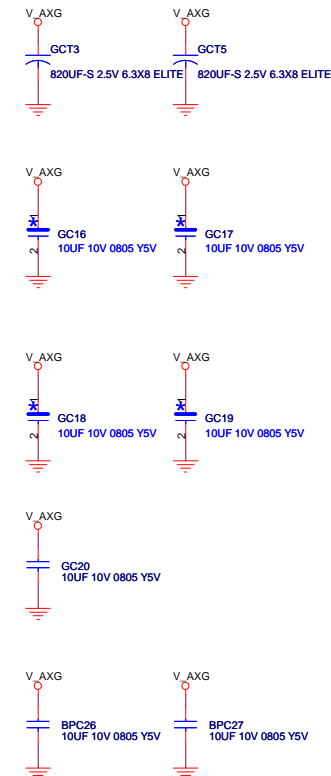
## UP6219 FOR Intel P4 VRD11.1 POWER CKT - 3PHASE



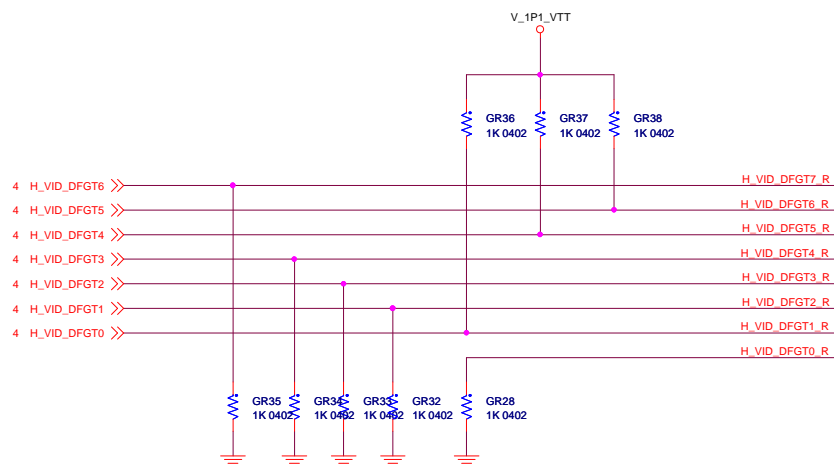


20A Max

D/源供 CHOKE 0.6uH/40A/DCR0.8m  
/ELDA-1312-R60M-P/謠酸..薯



Default VID Setting=1.0V  
ChangeTo RN@V0.62



$$V_{max} = R_{max} \cdot I_{sen} / 2 < 1.2V$$

$$L / R_{dc} = R_{cs} \cdot C_{cs}$$

$$I_{sen} = I_L \cdot R_{dc} / R_{csn} = 16\mu A$$

$$V_{out} = V_{ss} - R_{droop} \cdot I_{sen} / 2$$

$$V_{out} - V_{tb} = 10\mu A \cdot R_{tb}$$

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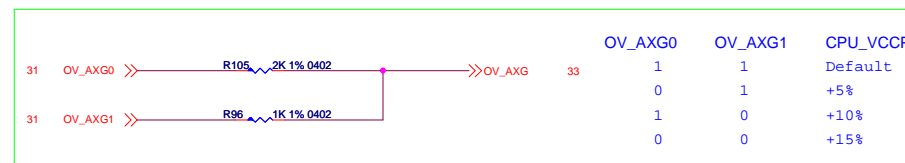
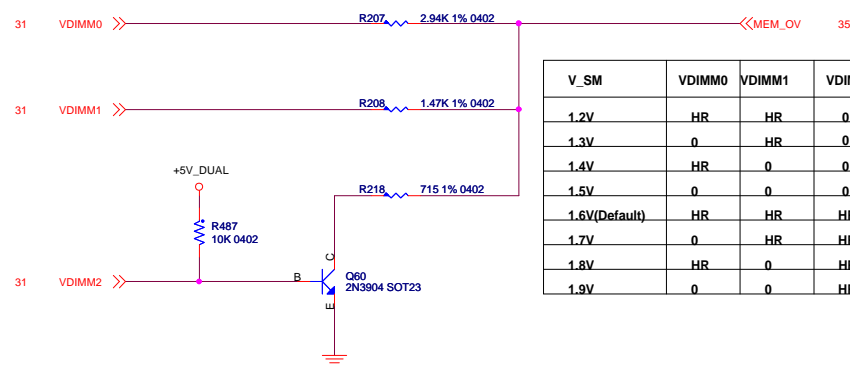
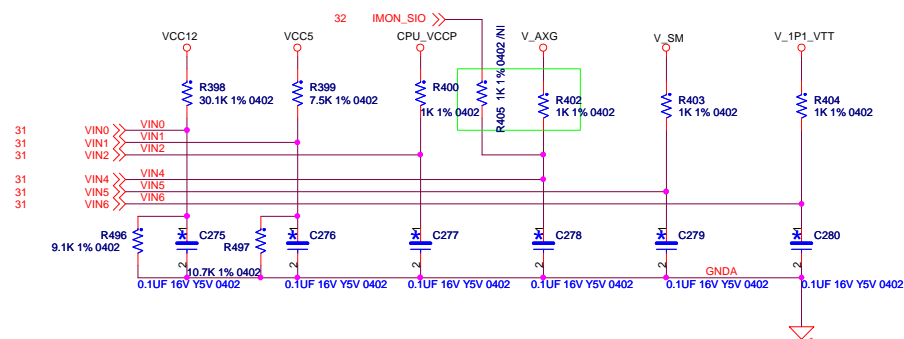
 <b>映泰股份有限公司</b> <b>BIOSTAR GROUP</b>		<b>VAXG DC-DC CONVER</b> <b>IH55A-MHS</b>	
Title	Document Number	Size	Rev
Custom			6.4
Date: Tuesday, June 29, 2010	Sheet	33	of 38






Note: VIN0,VIN1 Must be around 2.8V(>=2.9V)

## Hardware monitor



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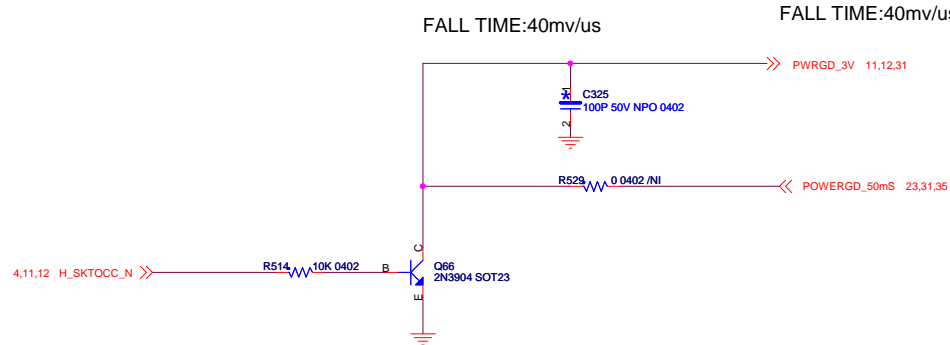
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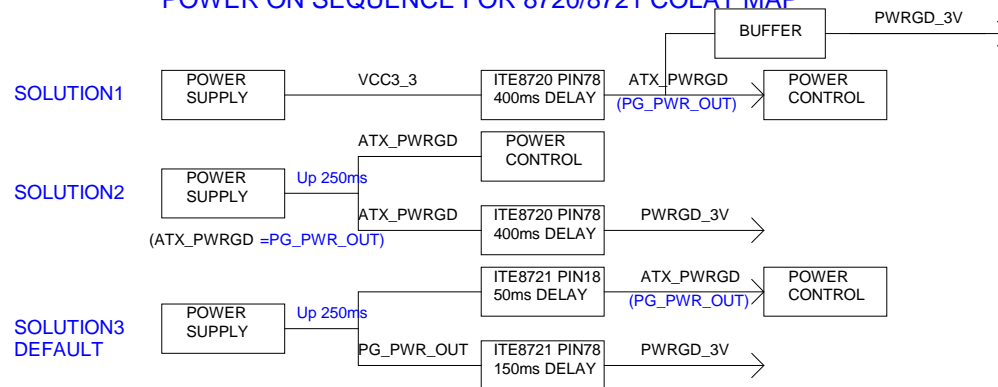
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OVER VOLTAGE	
Size	Document Number
Custom	IH55A-MHS
Date	Sheet
Tuesday, June 29, 2010	36 of 38

Rev 6.4





### POWER ON SEQUENCE FOR 8720/8721 COLAY MAP



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<b>Size</b> Custom	<b>Document Number</b> IH55A-MHS
<b>Date</b> Tuesday, June 29, 2010	<b>Sheet</b> 37 of 38
<b>Rev</b> 6.4	

JUSBV1(1\_2)  
JUMPER 2P R

(BAT1)  
電池  
3V BATTERY SONY

JUSBV2(1\_2)  
JUMPER 2P R

JCMOS1(1\_2)  
JUMPER 2P B

(U1)  
FLASH ROM  
SPI MX25L1605 DIP

(Y1)  
XTAL WIRE

PCB  
IH55A-MHS VER:6.4

(PCB)  
泡棉  
POLON 245x200


15-N09-164000R11 ... IH55A-MHS VER:6.4 箭 OSP+窪 (200.03\*244.00\*1.5)mm 4L  
?  
86-IH55AMHS-R05P-64  
96-IH55AMHS-R05P-64

New PANEL1 2\*8

(PCH1)  
PCH  
HEAT SINK  
SBLS-T

(CPU1)  
LGA 1156 FRAME

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Size Custom	Document Number IH55A-MHS	Rev 6.4
Date: Tuesday, June 29, 2010		
Sheet 38 of 38		