

PAGE	TITLE
------	-------

01	COVER SHEET
02	BOM & PCB MODIFY HISTORY
03	BLOCK DIAGRAM
04	CPU HYPER TRANSPORT
05	CPU DDRIII MEMORY
06	CPU CONTROL
07	CPU POWER & GND
08	DDRIII CHANNEL A
09	DDRIII CHANNEL B
10	RS880 HT-LINK I/F
11	RS880 PCIE I/F ,SWITCH
12	RS880 SYSTEM I/F
13	RS880 STRAPS ,SPMEM
14	RS880 POWER & GND
15	RTM880N-793
16	ATI SB850 PCIE/PCI/CPU/LPC
17	ATI SB850 ACPI/USB/GPIO/AUDIO
18	ATI SB850 SATA/SPI/IDE/HWM
19	ATI SB850 POWER & GND
20	PCI EXPRESS x16 ,x1
21	PCI SLOT 1, 2
22	RGB CONNECTOR
23	FDD ,HDMI ,DVI Connector
24	COM/F_USB/I_PWR
25	ALC892R

PAGE	TITLE
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[illegible]

Model Name:GA-890GPA-UD3H

Component value change history

Version: 2.01

P-Code: U98137-0

[illegible]

Circuit or PCB layout change for next version

[illegible]

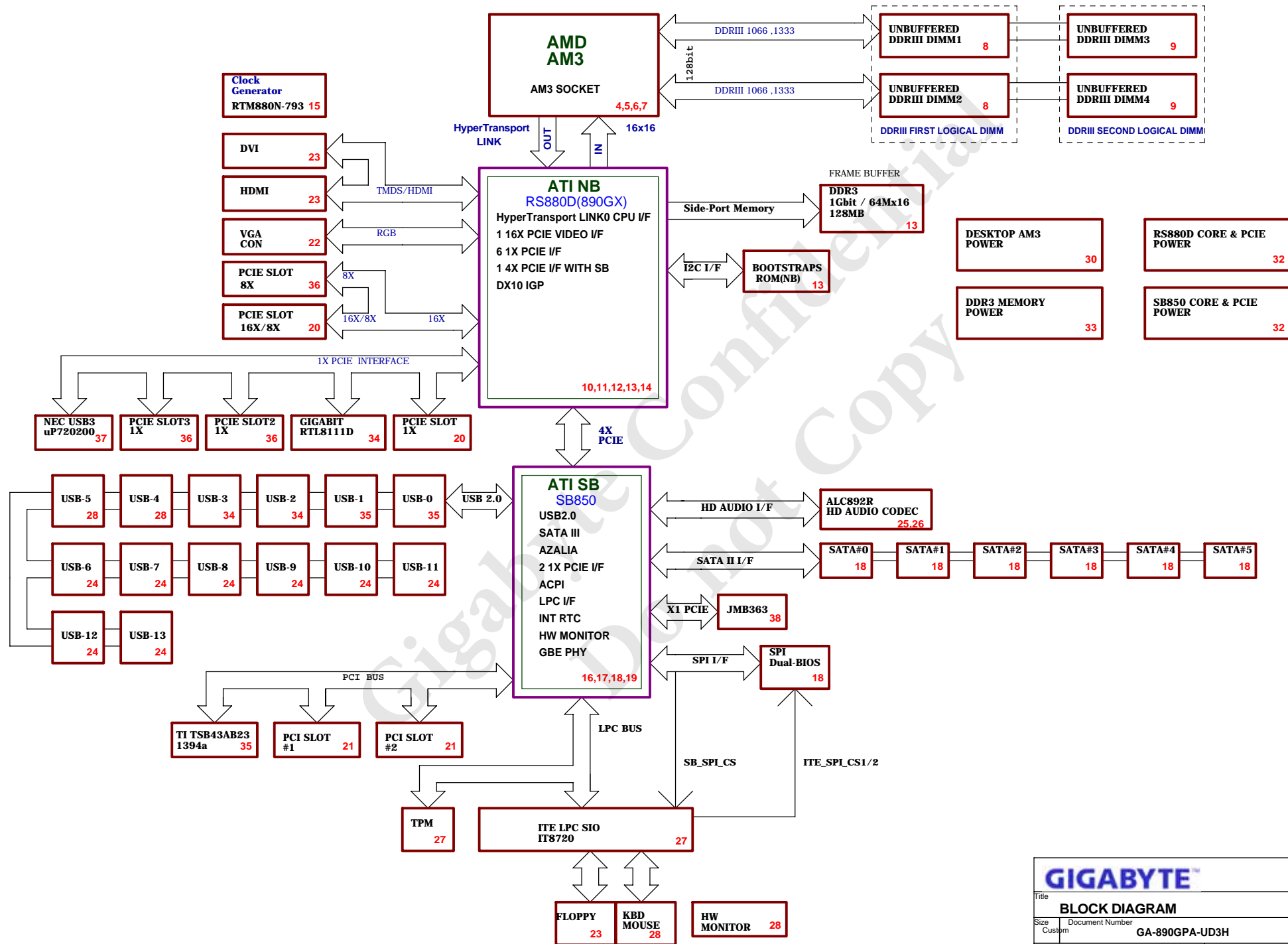
GIGABYTE™

Title	BOM & PCB HISTORY
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Size	Document Number
Custom	GA-890GPA-UD3H

Date: Thursday, April 29, 2010 Sheet 2 of 38

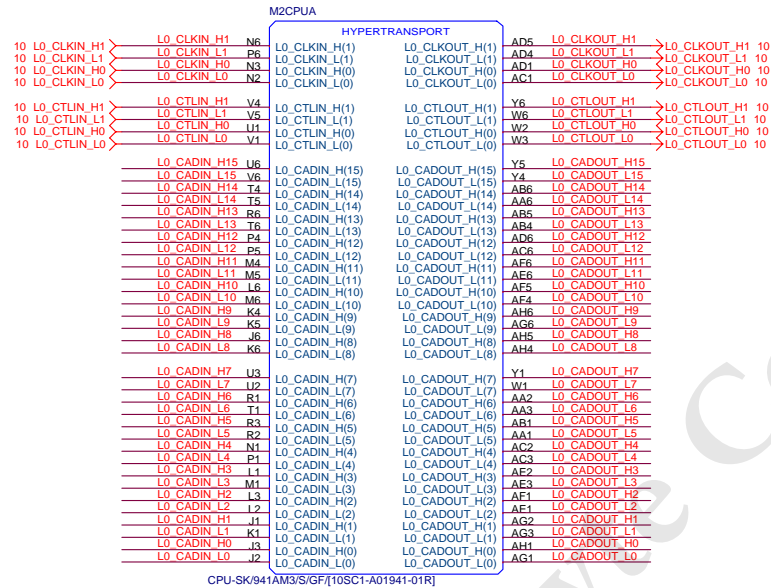
RS880 CUSTOMER DESKTOP REFERENCE DESIGN



GIGABYTE

Title	BLOCK DIAGRAM		
Size	Custom	Document Number	GA-890GPA-UD3H
Date:	Thursday, April 29, 2010	Sheet	3 of 38
Rev	2.01		

L0_CADIN_L[0..15] < L0_CADIN_L[0..15] 10
 L0_CADIN_H[0..15] < L0_CADIN_H[0..15] 10
 L0_CADOUT_L[0..15] < L0_CADOUT_L[0..15] 10
 L0_CADOUT_H[0..15] < L0_CADOUT_H[0..15] 10

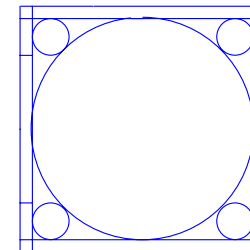


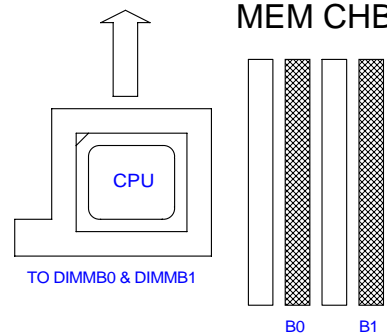
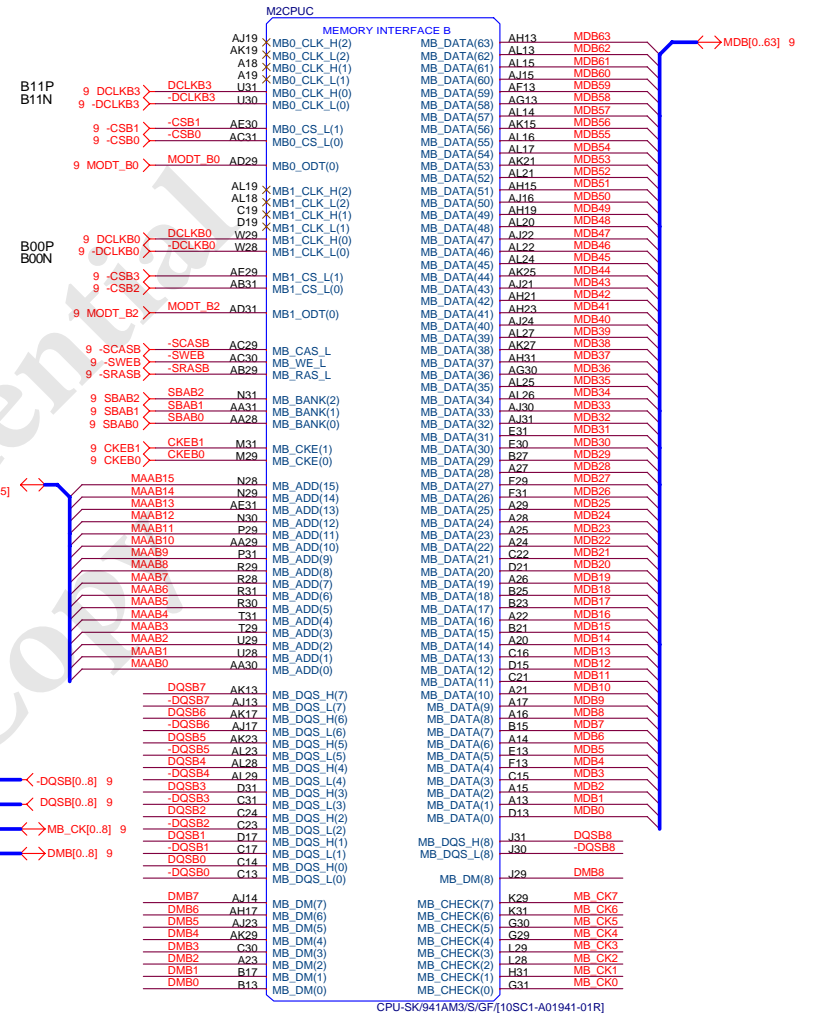
CPU_VDD_RUN = VCORE
 CPU_VDDA_RUN = VDDA25
 VLDT_RUN = VCC12_HT
 CPU_VDDIO_SUS = DDR15V
 CPU_VDDR = CPU_VDDR12

VLDT_A = VCC12_HT
 VLDT_B = HT12B

M2CPU

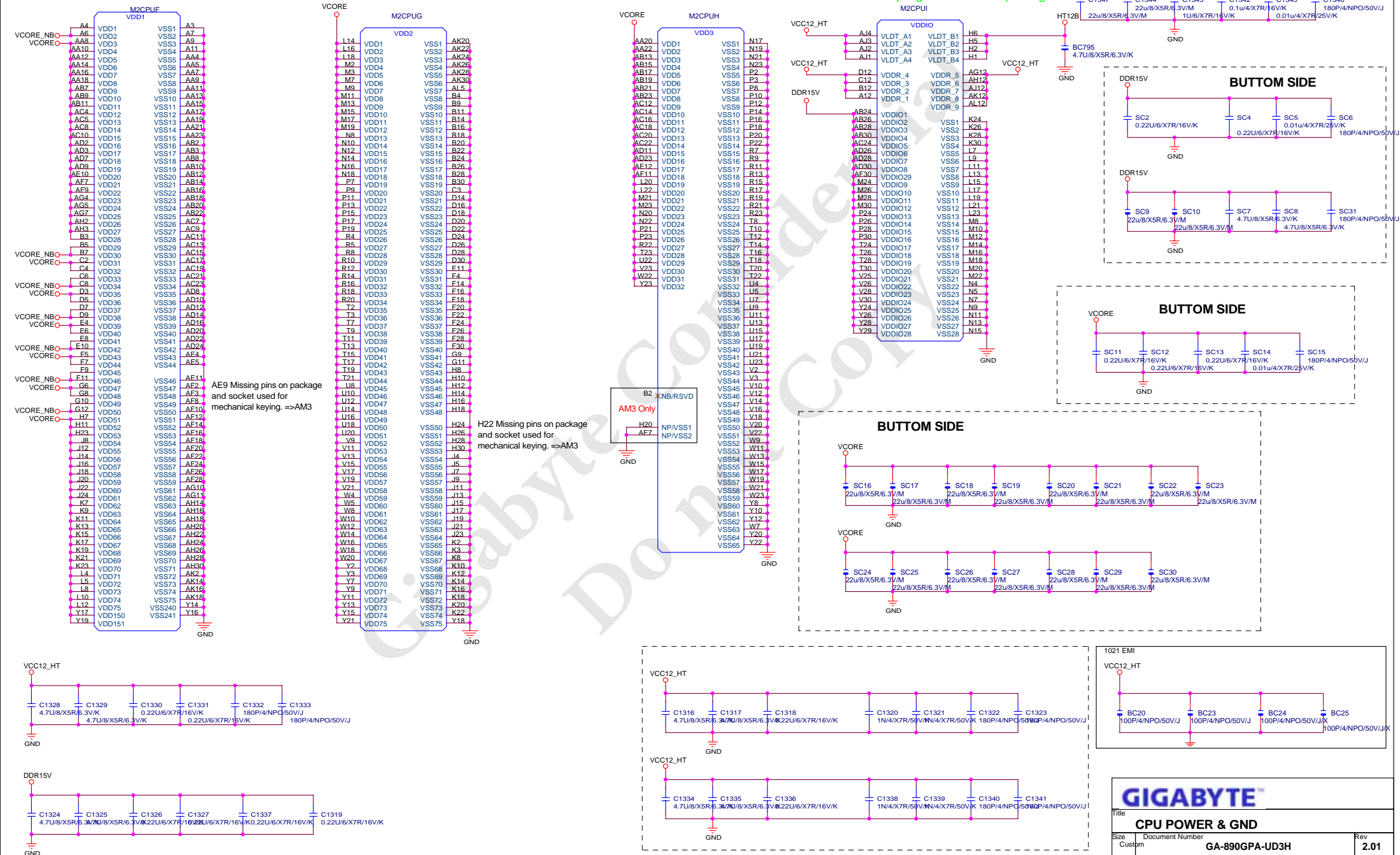
AM2RM/PP/BU/PB[12KRC-04K812-12R]







VLDT_RUN_B is connected to the VLDT_RUN power supply through the package or on the die. It is only connected on the board to decoupling near the CPU package.

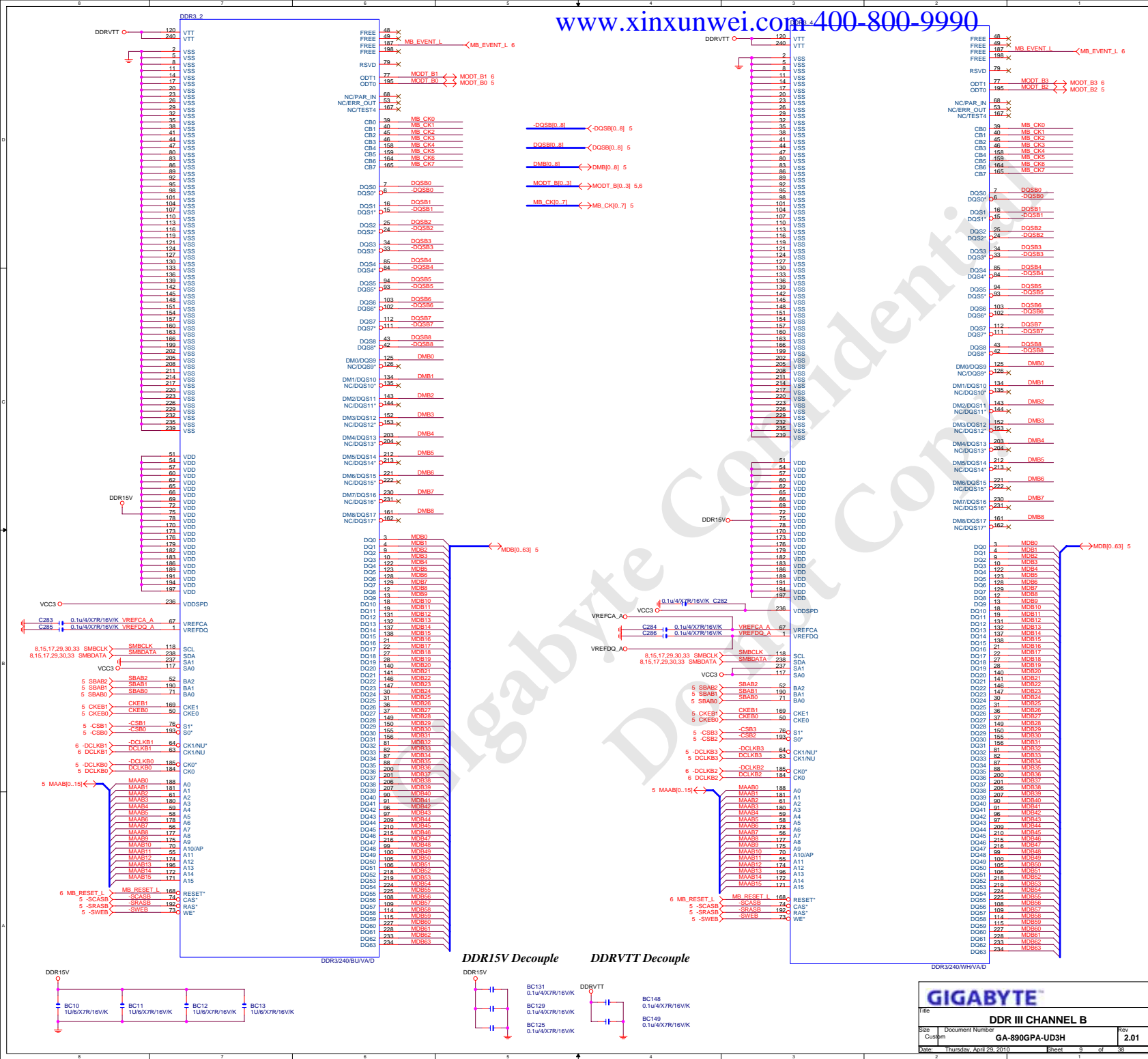


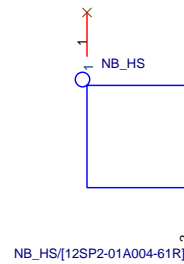
GIGABYTE

CPU POWER & GND

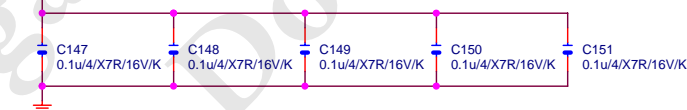
Size	Document Number	Rev
Custm	GA-890GPA-UD3H	2.01
Date:	Thursday, April 29, 2010	Sheet 7 of 38







VCORE

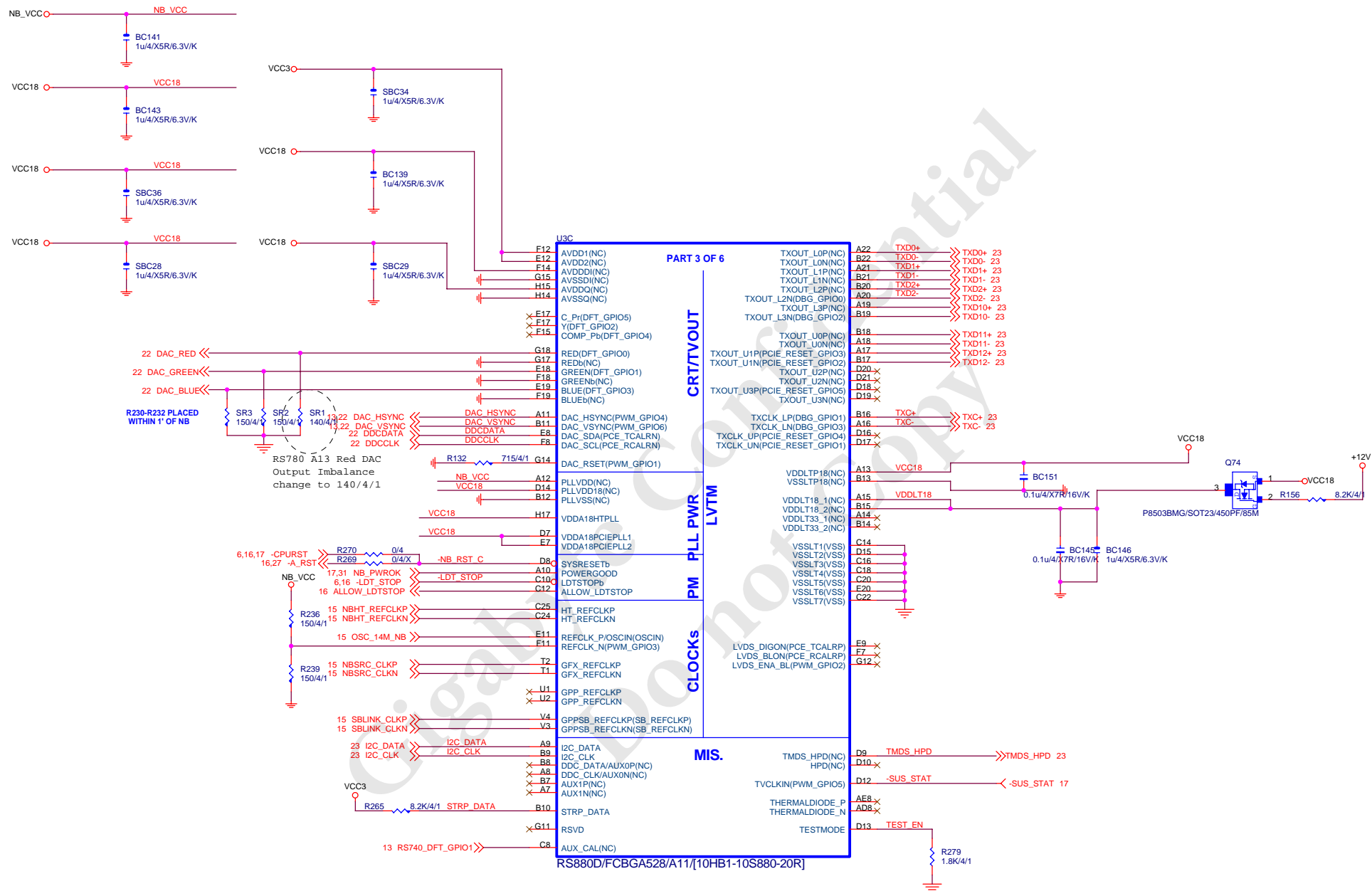


HT Link Stitching Caps

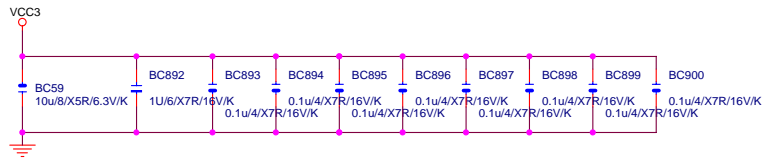
GIGABYTE™Title
RS880 HT-LINK I/FSize
B Document Number**GA-890GPA-UD3H**Rev
2.01

Date: Thursday, April 29, 2010

Sheet 10 of 38





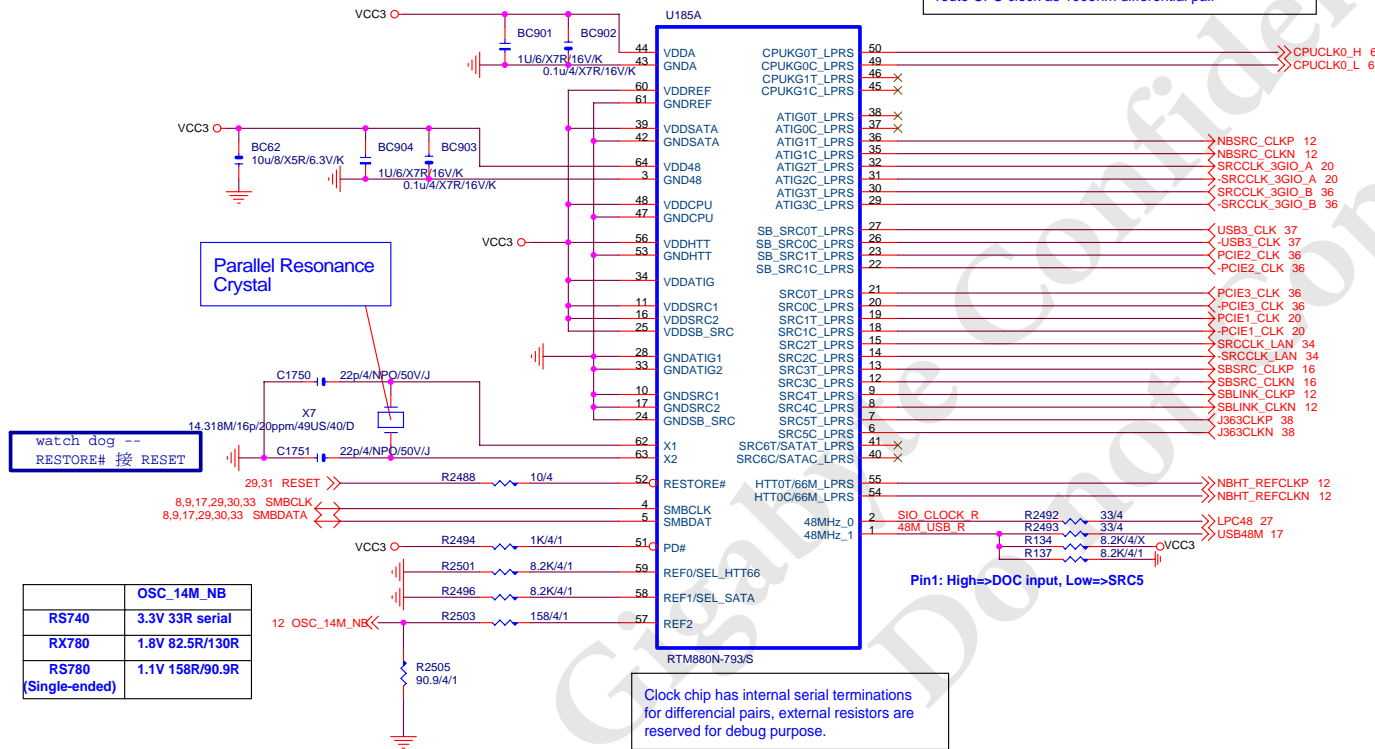


- 1- PLACE ALL THE SERIES TERMINATION
RESISTORS AS CLOSE TO U800 AS
POSSIBLE
2- ROUTE ALL SRCLCKTx AND SRCLCKCx
AS DIFFERENT PAIR RULE
3- PUT DECOUPLING CAPS CLOSE TO U800
POWER PIN

NB CLOCK INPUT TABLE

NB CLOCKS	RS740	RX780	RS780	
HT_REFCLKP	66M SE(SE)	100M DIFF	100M DIFF	
HT_REFCLKN	NC	100M DIFF	100M DIFF	
REFCLK_P				
	14M SE (3.3V)	14M SE (1.8V)	14M SE (1.1V)	100M DIFF
REFCLK_N	NC	NC	vref	100M DIFF
GFX_REFCLK*	100M DIFF	100M DIFF	100M DIFF	
GPP_REFCLK	NC	100M DIFF	100M DIFF(OUT)	
GPSSB_REFCLK	100M DIFF	100M DIFF	100M DIFF	

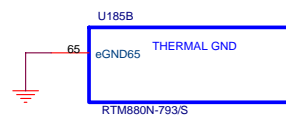
* the GFX_REFCLK input is required for all cases



	OSC_14M_NB
RS740	3.3V 33R serial
RX780	1.8V 82.5R/130R
RS780 (Single-ended)	1.1V 158R/90.9R

REF0/SEL_HTT66	HTT CLOCK
0	100.00 DIFFERENTIAL
1	66.66 SINGLE END

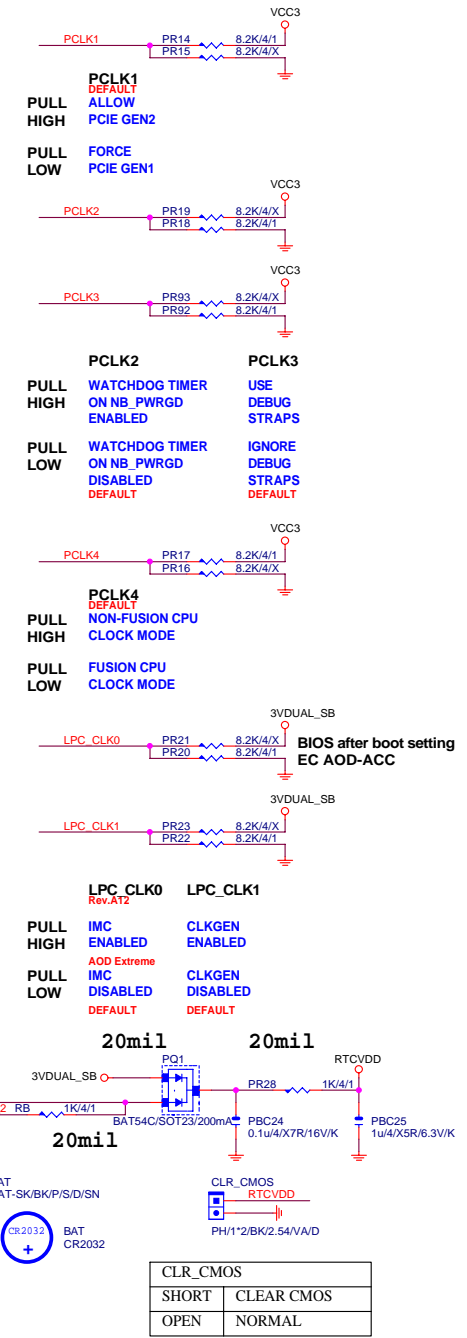
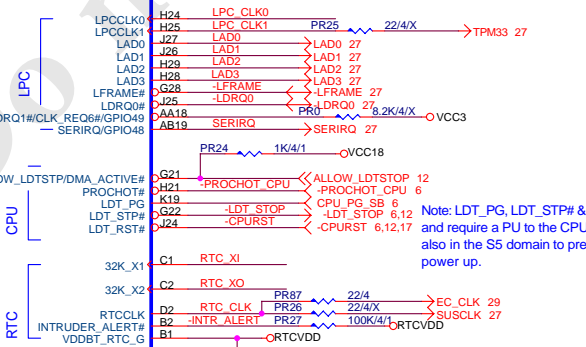
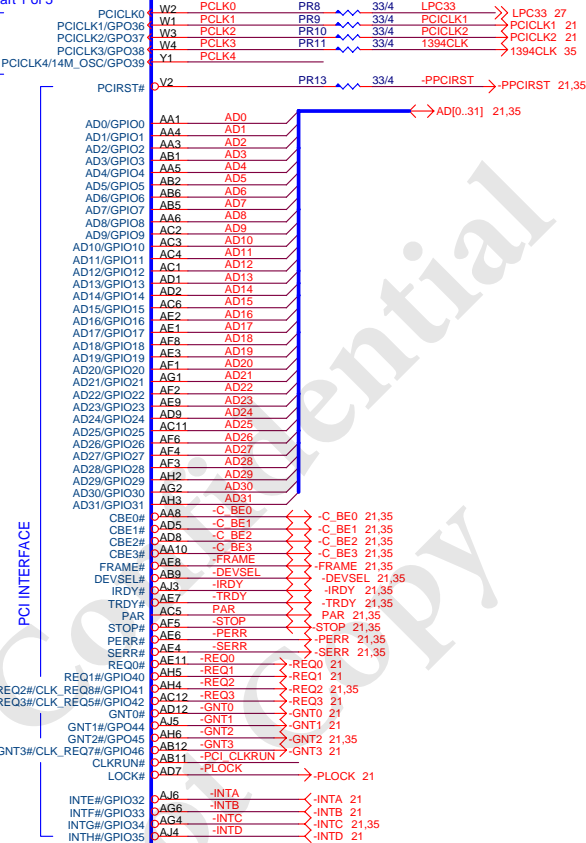
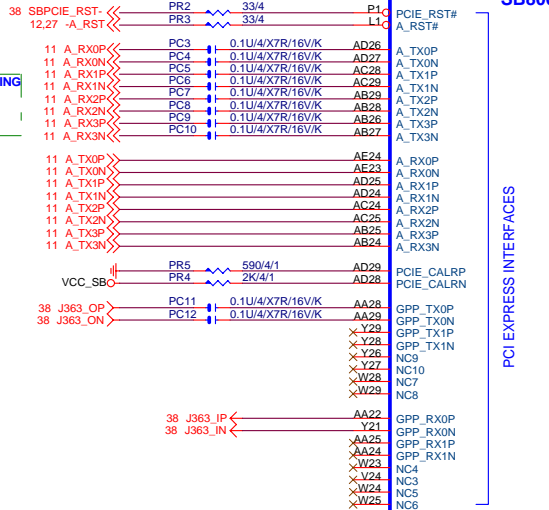
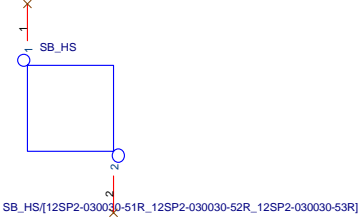
REF1/SEL_SATA	SRC6/SATA
0	100.00 DIFFERENTIAL SPREADING SRC CLOCK
1	100.00 NON-SPREADING DIFFERENTIAL SATA CLOCK





PLACE THESE PCIE AC COUPLING CAPS CLOSE TO SB850

S.B HEATSINK



CLR_CMOS	
SHORT	CLEAR CMOS
OPEN	NORMAL

NOT ADD ICT FOR RTCVDD PIN

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ATI SB850 PCIE/PCI/CPULPC		
Document Number	GA-890GPA-UD3H	Rev 2.01
Date: Thursday, April 29, 2010	Sheet 16	of 38

IMC_GPIO200 IMC_GPIO199

ROM TYPE:

H, H = Reserved

H, L = SPI ROM

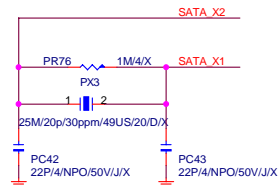
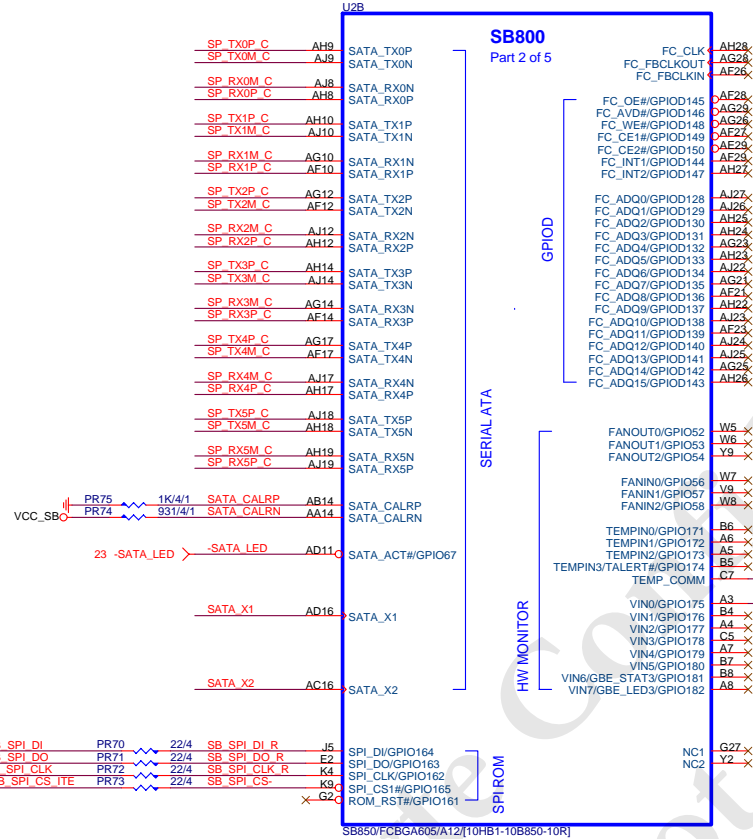
L, H = LPC ROM

L, L = FWH ROM



ATI SB850 ACPI/USB/GPIO/AUDIO

Document Number	Rev
GA-890GPA-UD3H	2.01



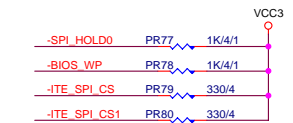
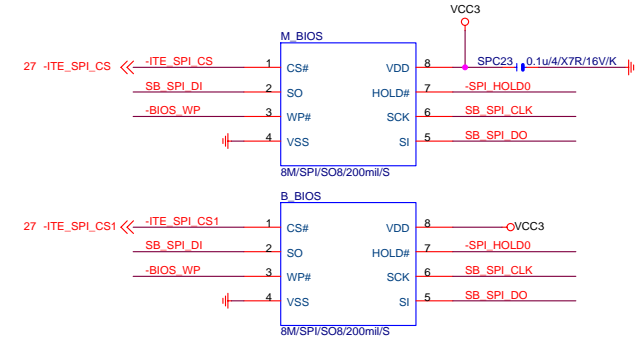
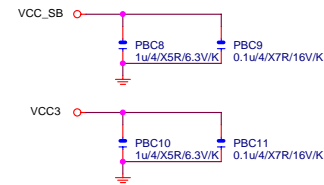
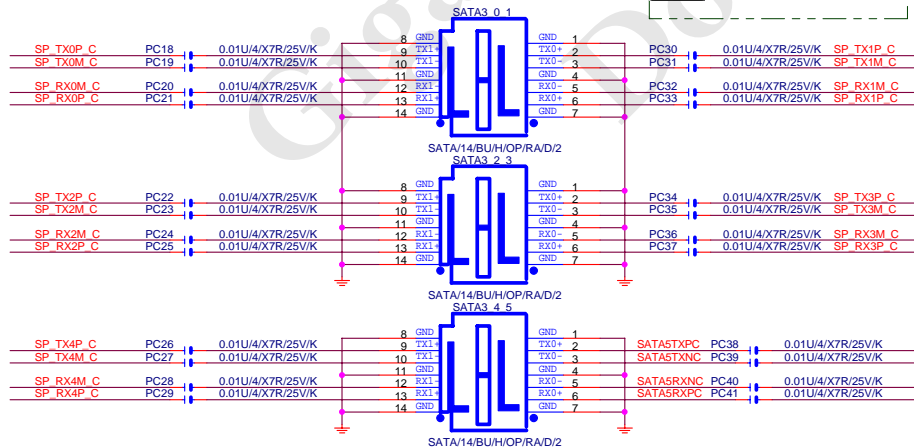
**PLACE SATA_CAL
RES VERY CLOSE
TO BALL OF U600**

NOTE:

R650 IS 1K 1% FOR 25MHz
XTAL, 4.99K 1% FOR 100MHz
INTERNAL CLOCK



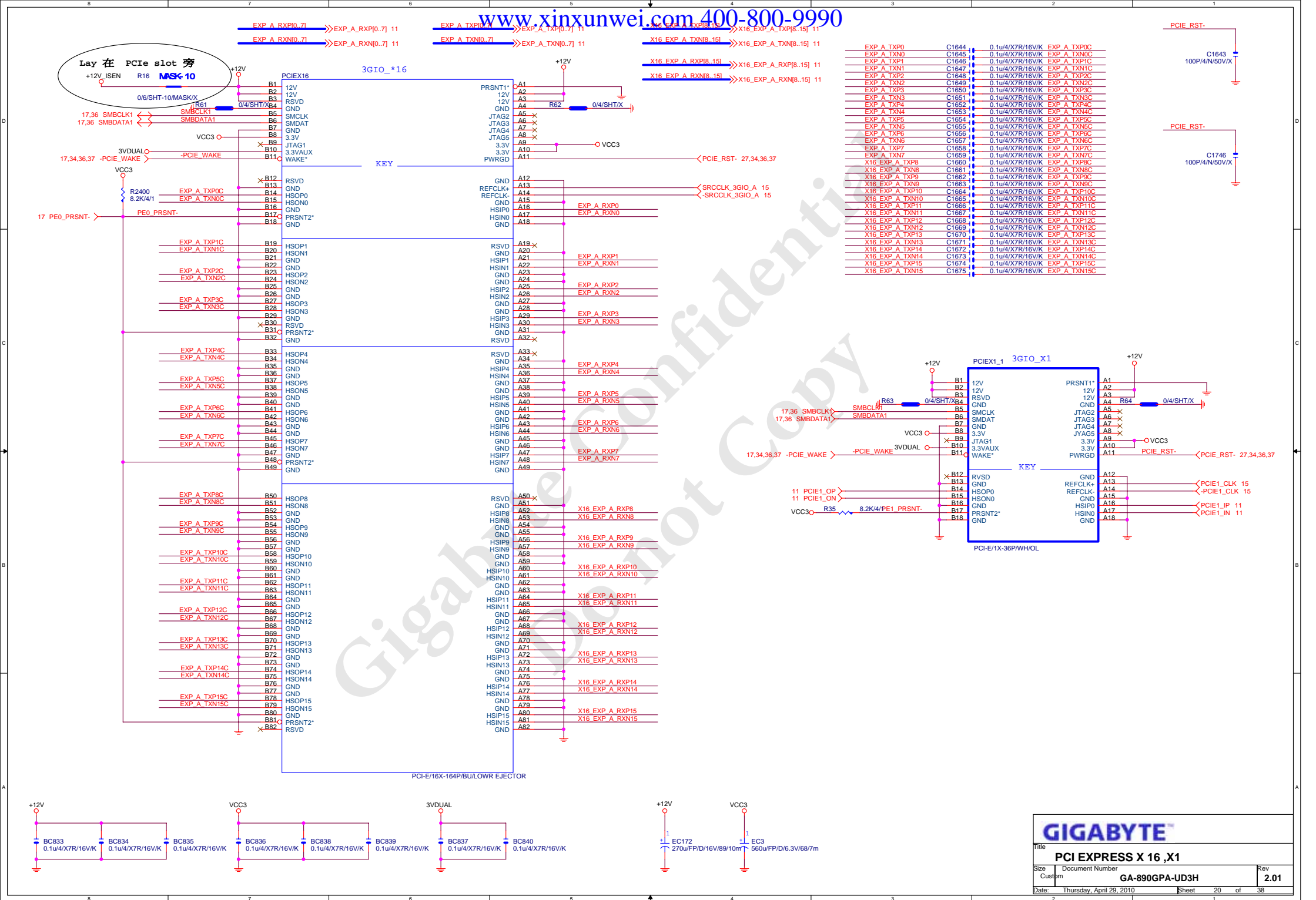
**PLACE SATA AC COUPLING
CAPS CLOSE TO SB850**

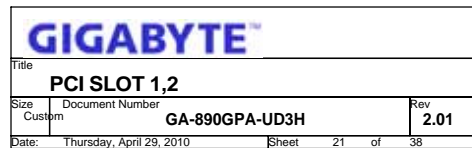


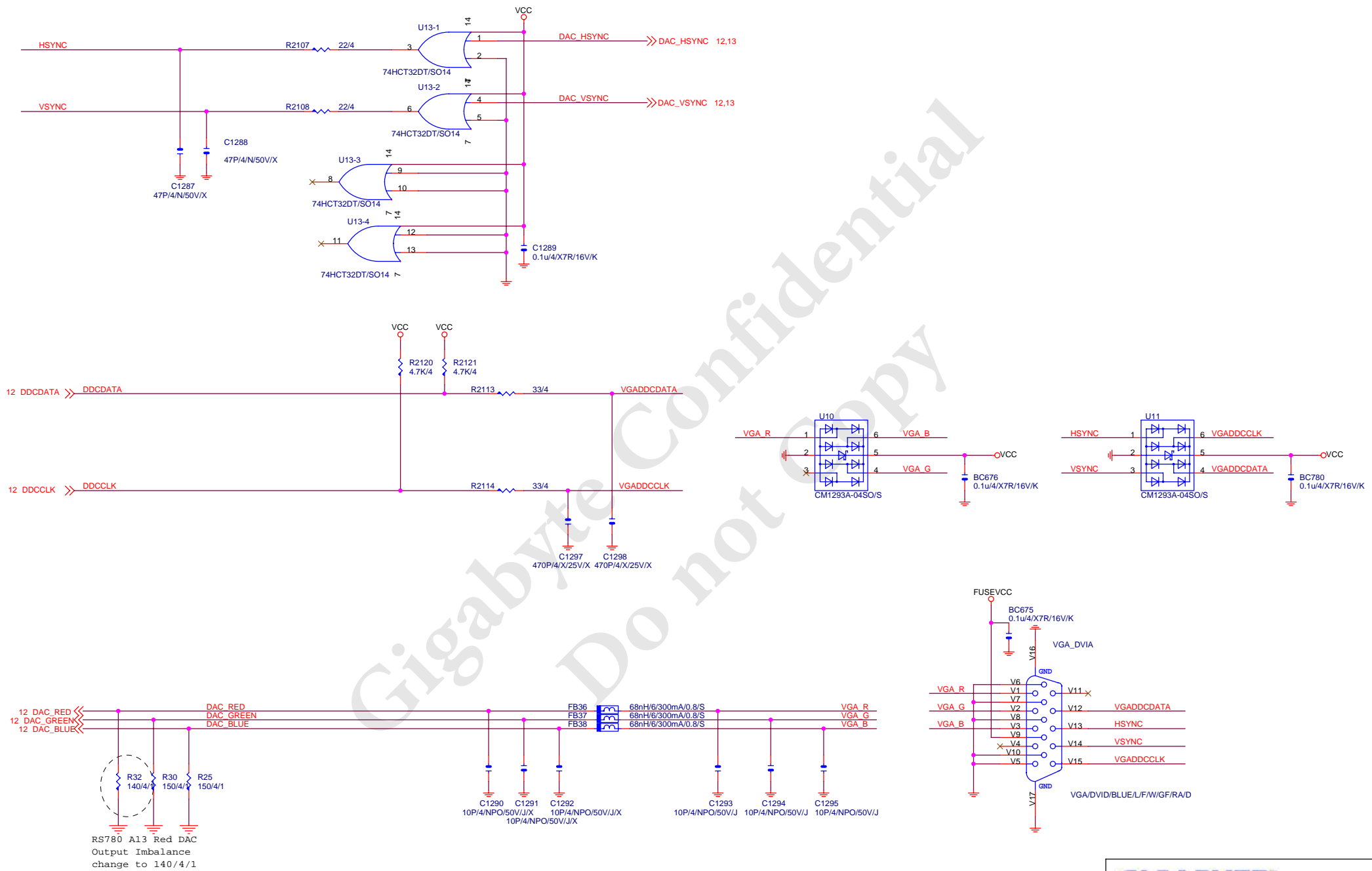
GIGABYTE

Title	ATI SB850 SATA/IDE/HWM/SPI		
Size	Document Number	Rev	2.01
Custom	GA-890GPA-UD3H		
Date:	Thursday, April 29, 2010	Sheet	18 of 38









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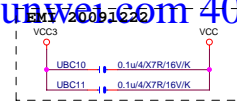
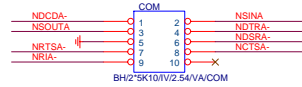
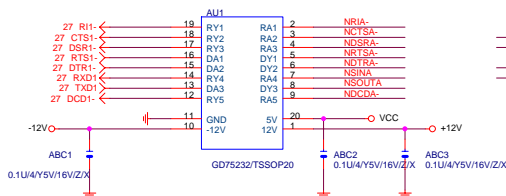
PA

PB

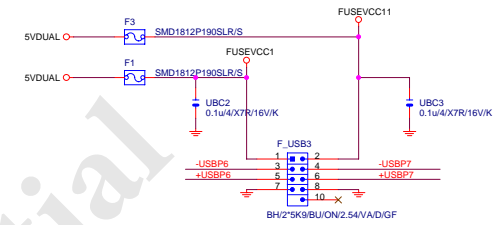
PC

PD

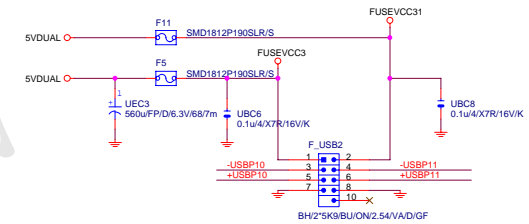
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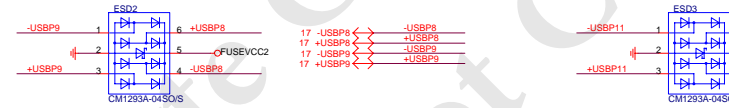
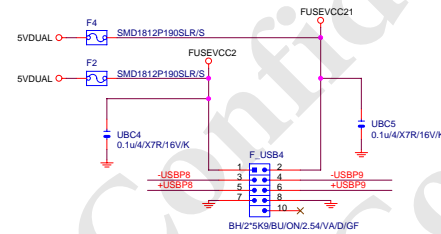
FRONT SIDE USB3



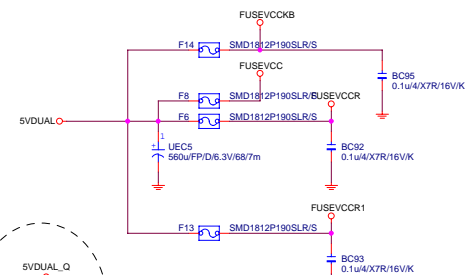
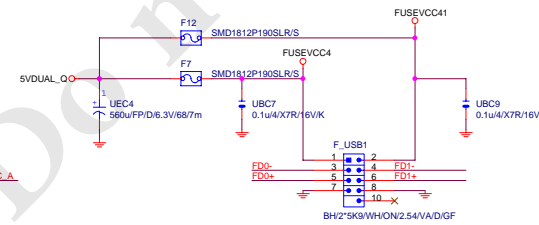
FRONT SIDE USB2



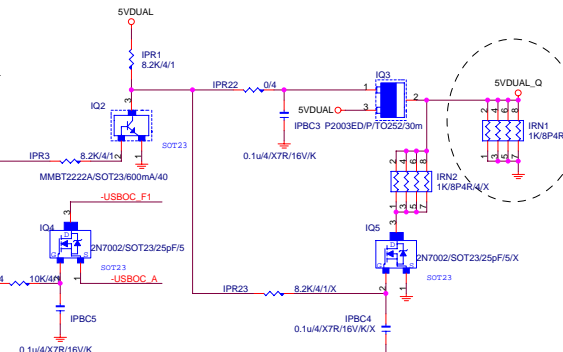
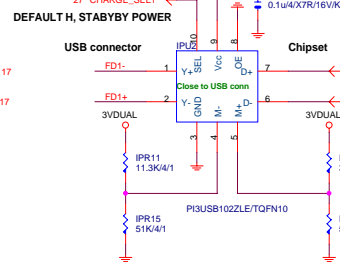
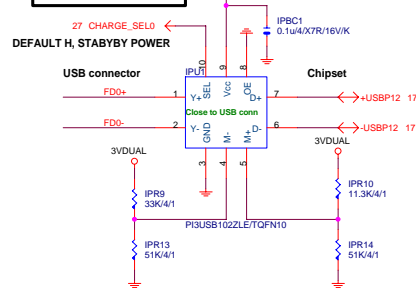
FRONT SIDE USB4



FRONT SIDE USB1



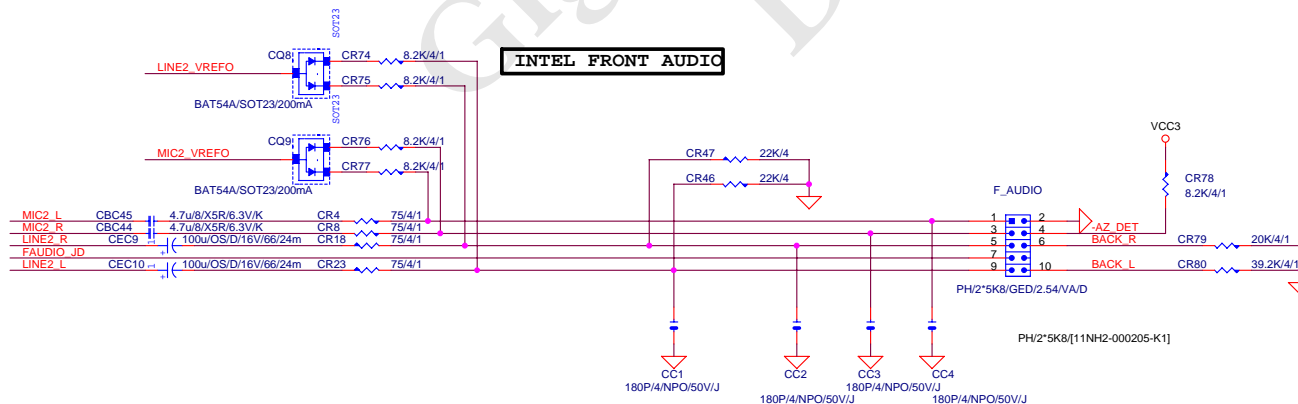
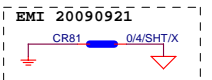
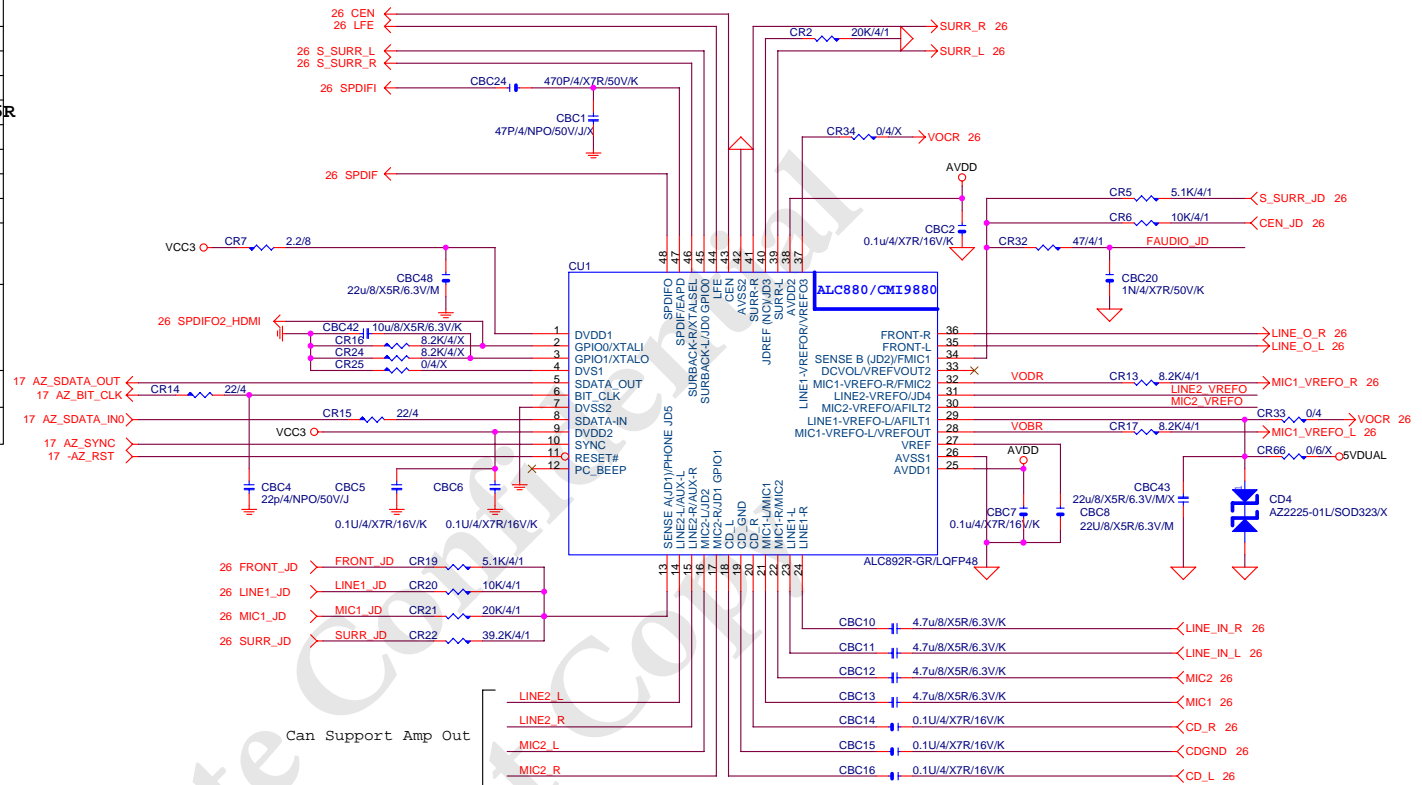
Phone charger circuit



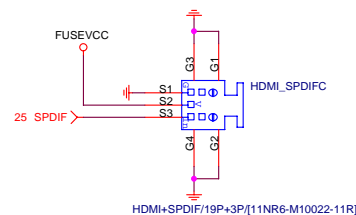
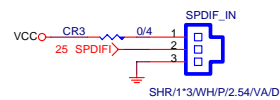
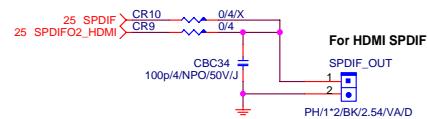
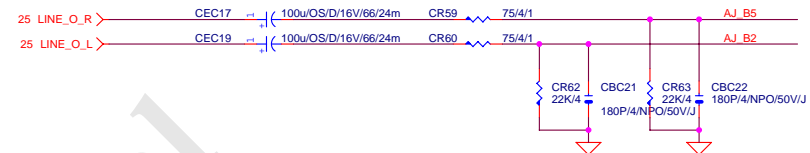
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File	COM/F_USB/I_PWR	Rev	2.01
Size	Document Number	GA-890GPA-UD3H	
Date	Thursday, April 29, 2010	Sheet	24 of 38

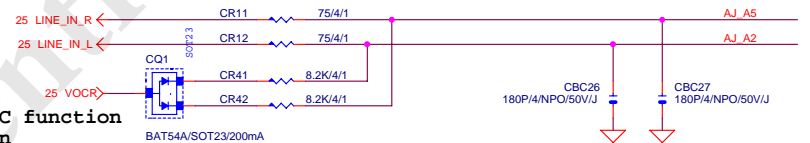
	ALC892R	ALC889	ALC889A	ALC888	ALC892
CR16	X	X	O	X	X
CR24	X	X	O	X	X
CR25	X	O	O	O	X
CBC42	10uF/X5R	X	X	X	10uF/X5R
CR2	20K/1%	20K/1%	20K/0.1%	20K/1%	20K/1%
CR9	O	O	X	X	O
CR10	X	X	O	O	X
CBC10/CBC11/CBC12/ CBC13/CBC44/CBC45	4.7uF /X5R	10uF /X5R	4.7uF /X5R	4.7uF /X5R	4.7uF /X5R
CR4/CR8/CR18/CR23/ CR11/CR12/CR27/CR29/ CR49/CR50/CR43/CR44/ CR45/CR48/CR59/CR60	75 ohm or lower	66 ohm or lower	75 ohm	75 ohm	75 ohm
CR33/CD1/CD2/CD3/CD4/ CBC25	O	O	O	O	X
CR34/CR66/CBC43/CD4	X	X	X	X	O



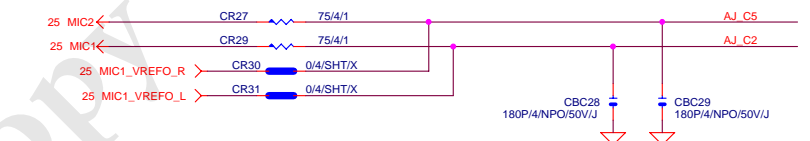
SPDIF

LINE OUT
FRONT OUT

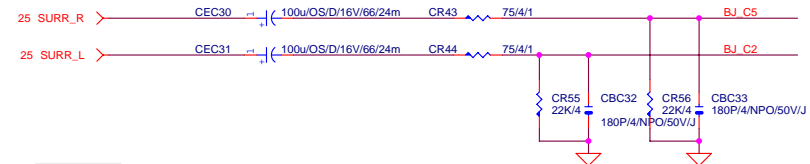
LINE-IN

Verify MIC function
in LINE-in

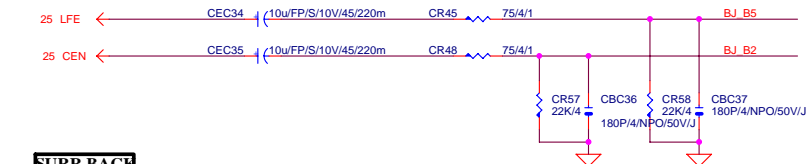
MIC



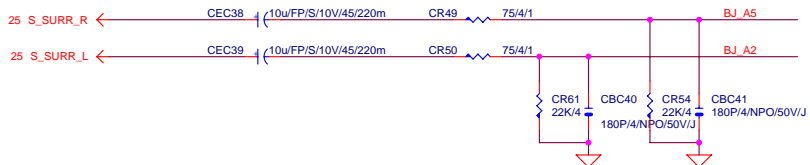
SURROUND



CEN/LFE



SURR BACK



GIGABYTE

Title

AUDIO JACK

Size

Document Number

Custm

GA-890GPA-UD3H

Date:

Thursday, April 29, 2010

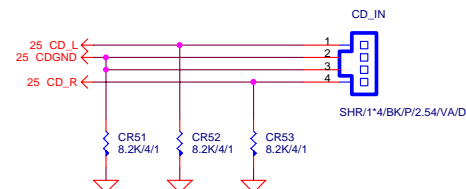
Sheet

26 of 38

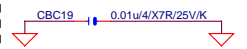
Rev

2.01

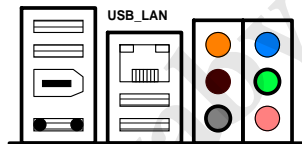
CD IN



For Audio precision test



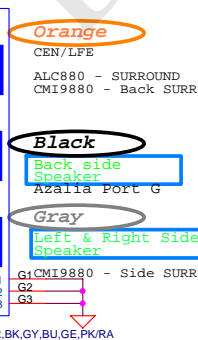
USB_1394_ESATA

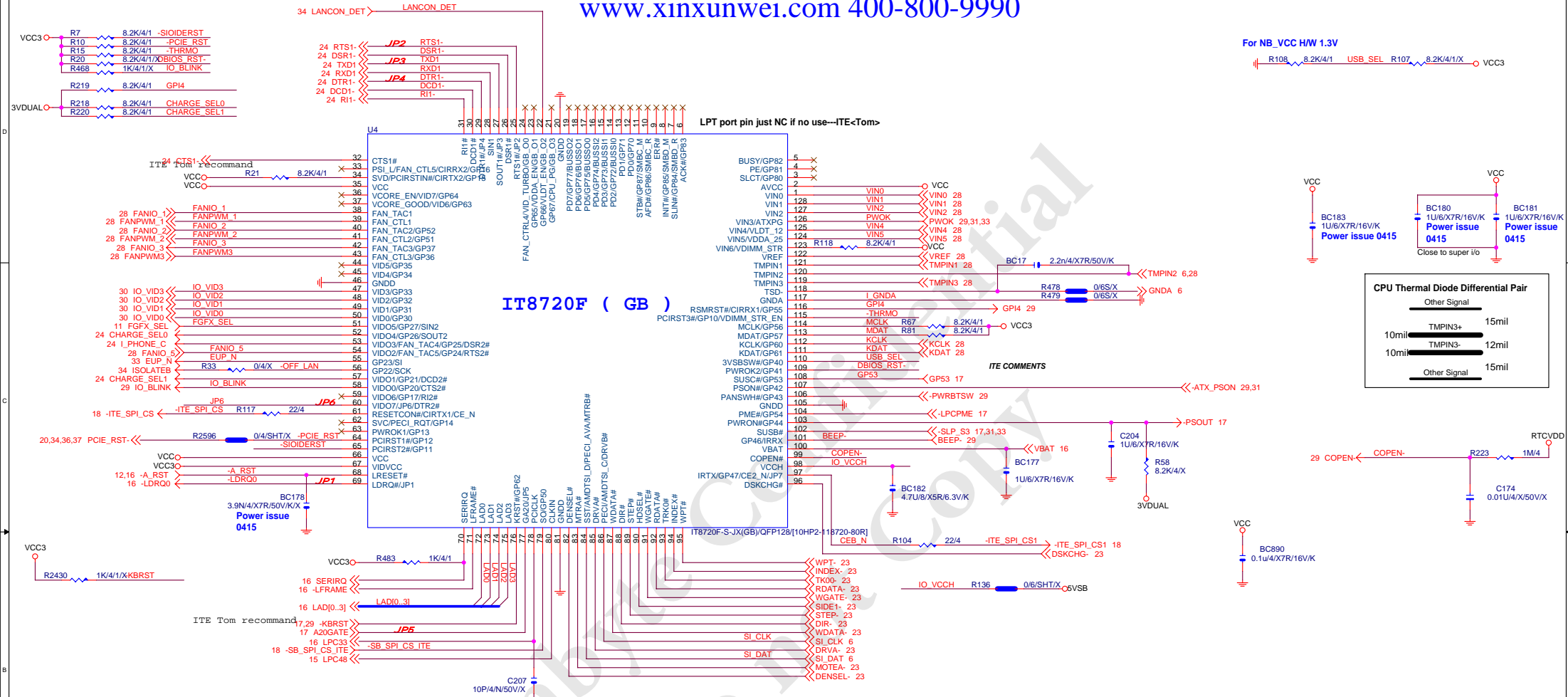


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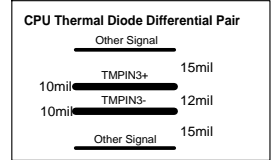
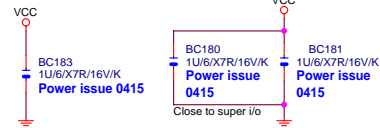
AUDIOA

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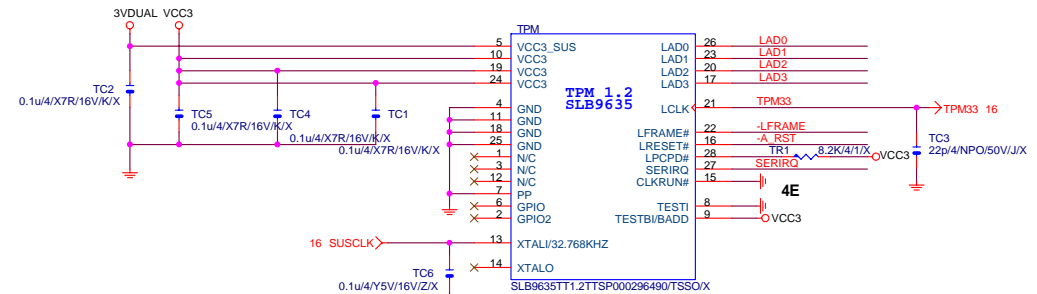


For NB_VCC HW 1.3V

R108 8.2K/4/1 USB_SEL R107 8.2K/4/1/X VCC3



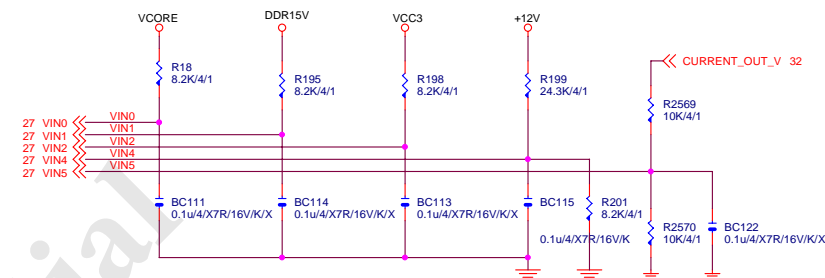
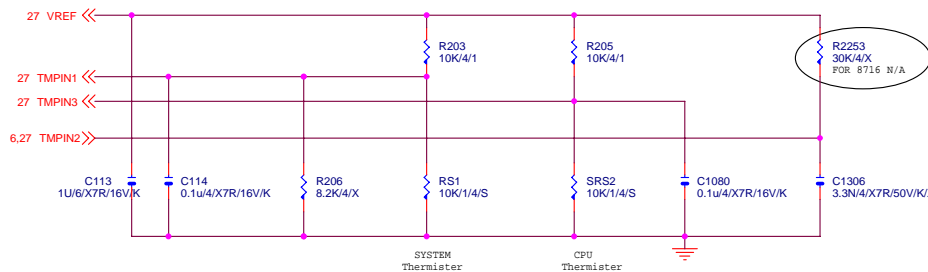
BC890 0.1u/4/X/7R/16V/K



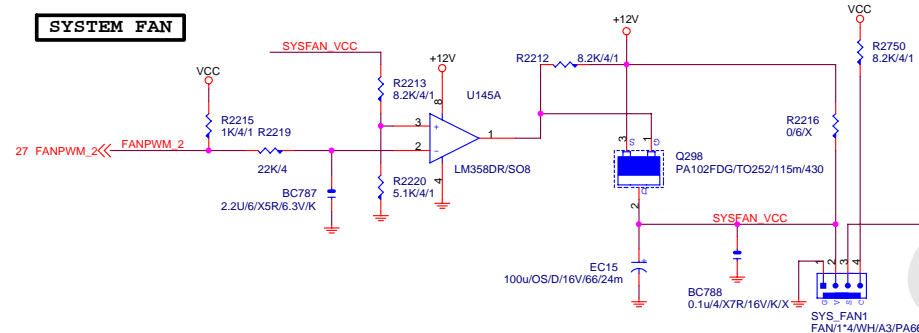
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Size	Document Number	Rev	
Custom	GA-890GPA-UD3H	2.01	
Date:	Thursday, April 29, 2010	Sheet	27 of 38

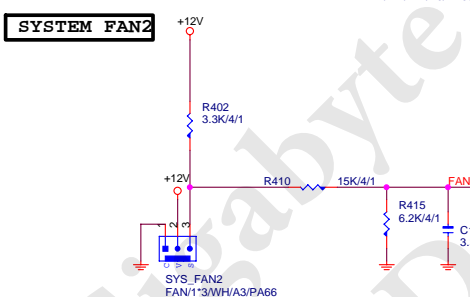
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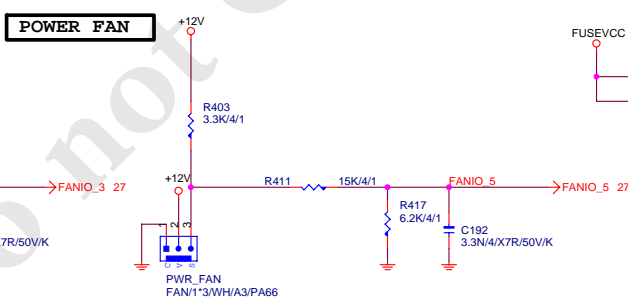
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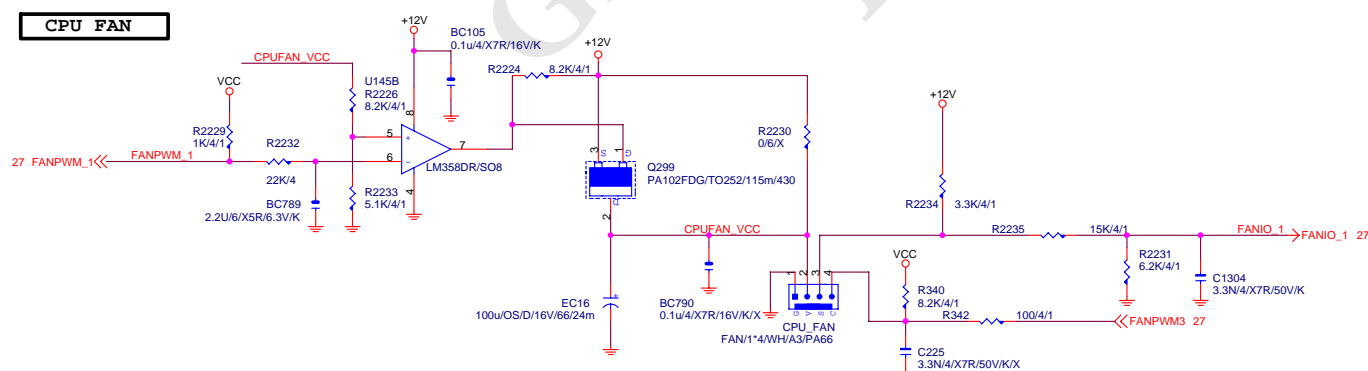
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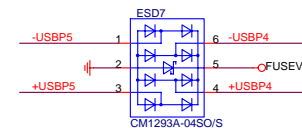
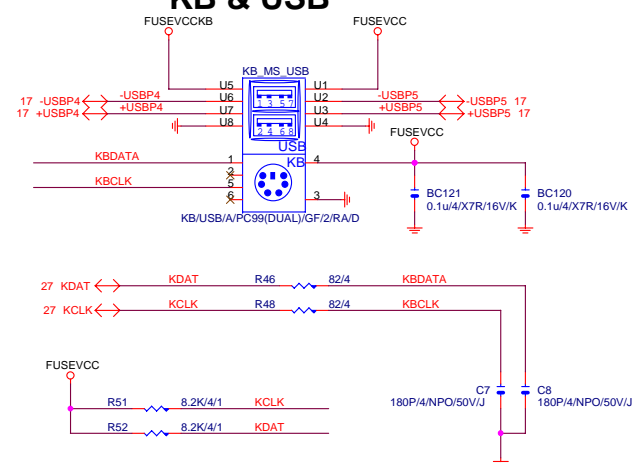
POWER FAN

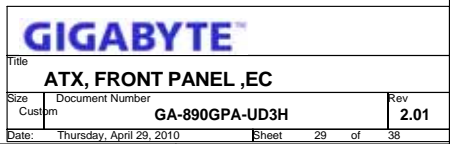


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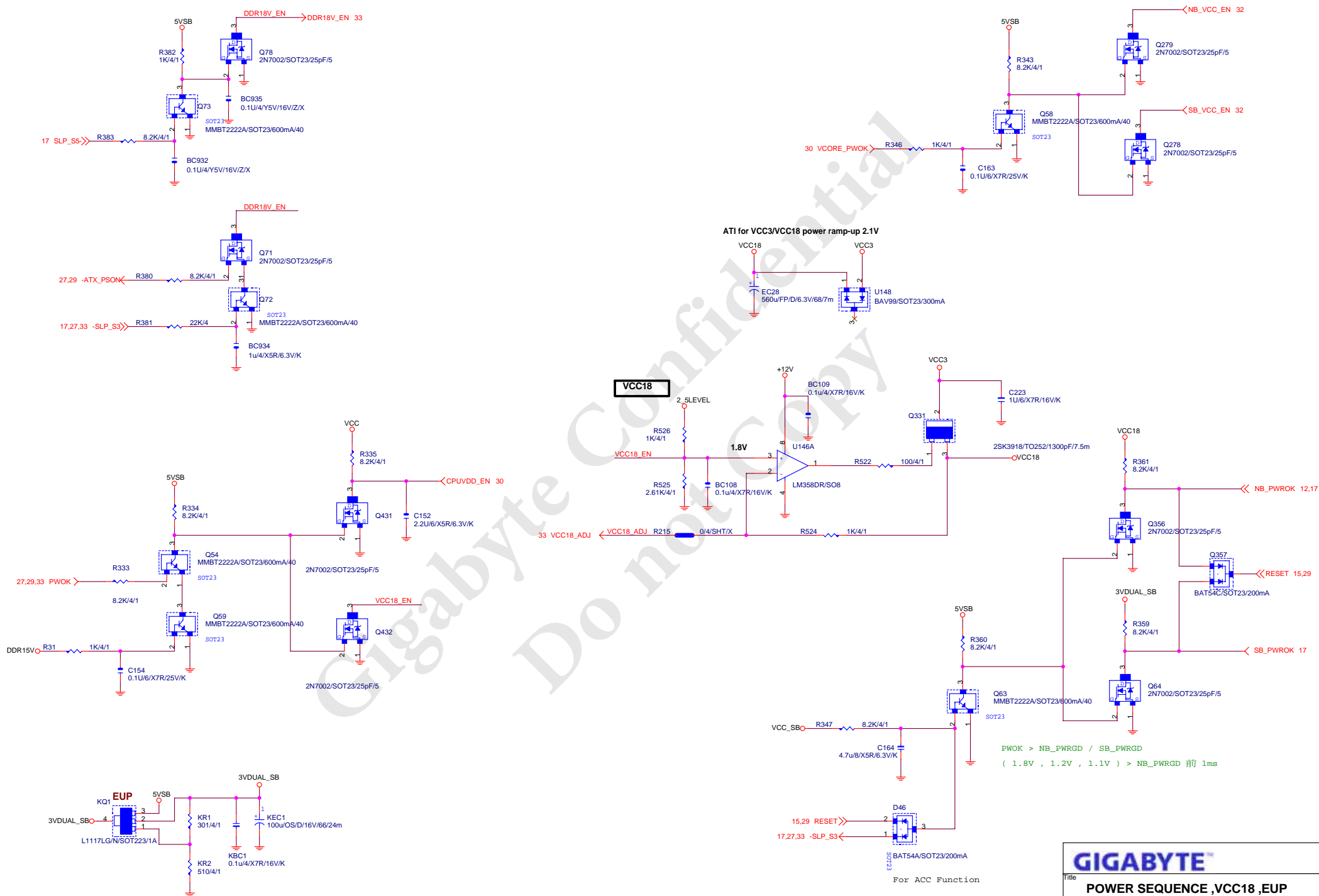


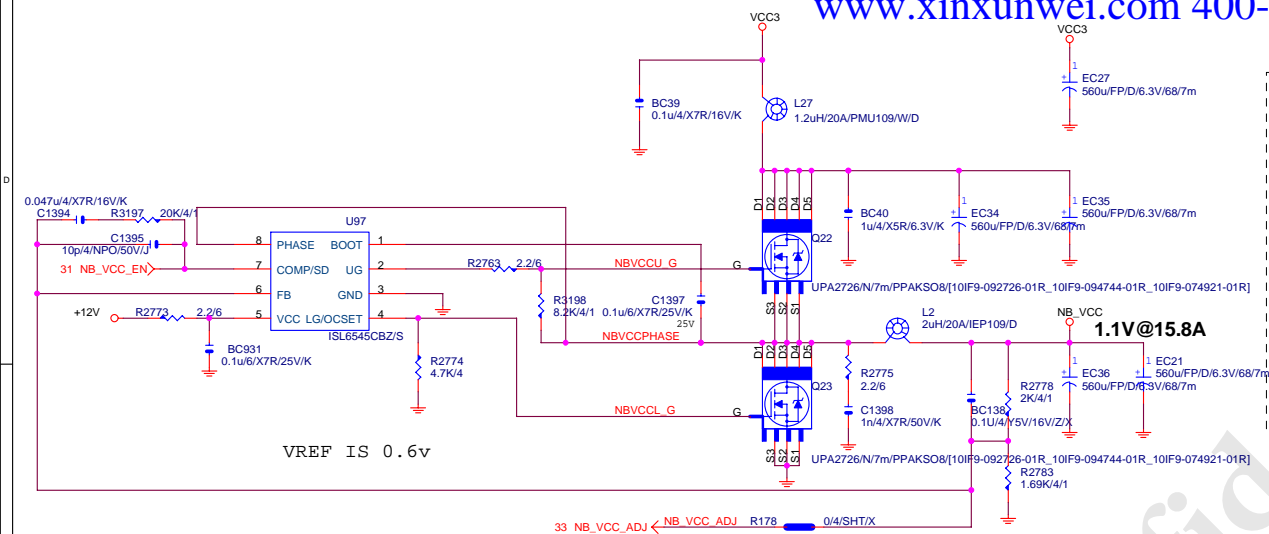
KB & USB









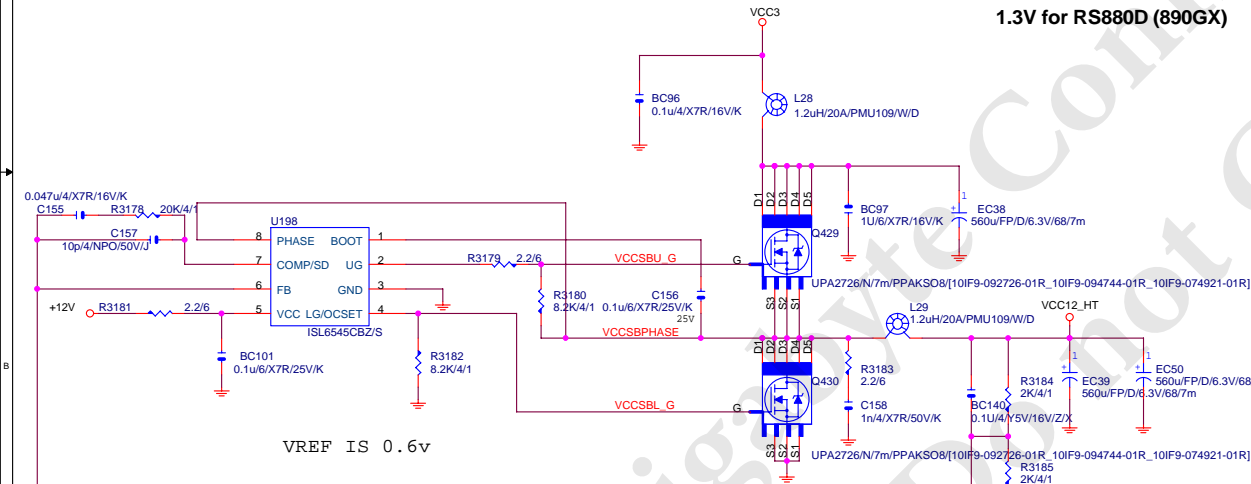


VREF IS 0.6v

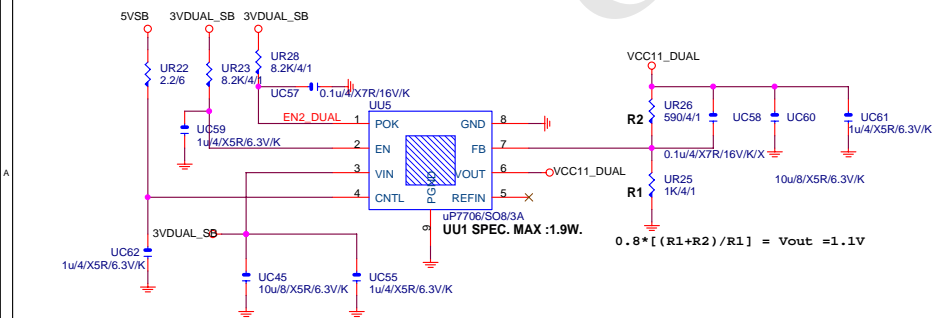
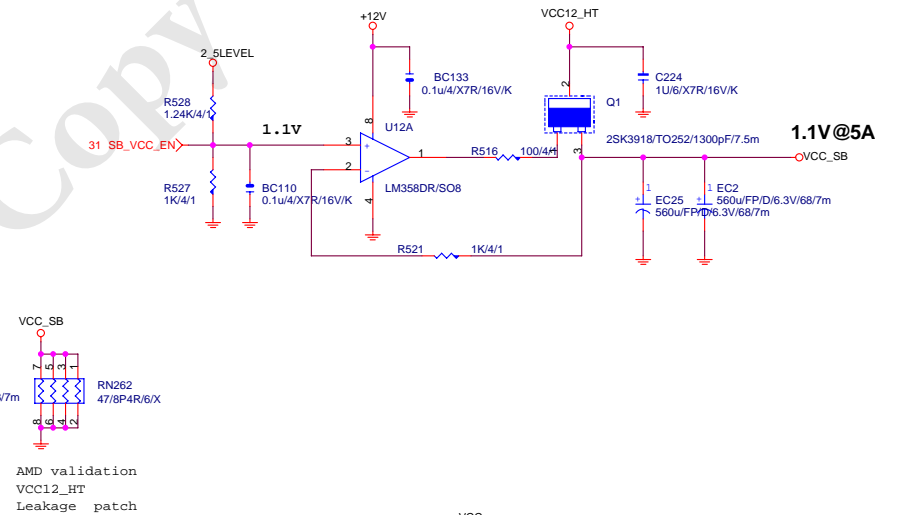
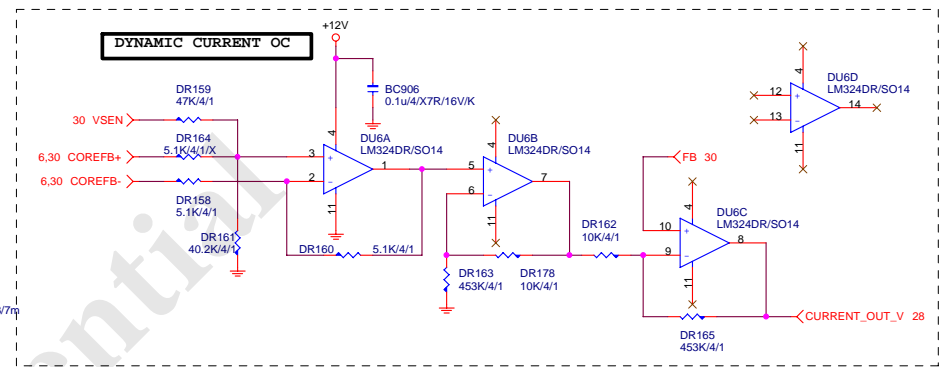
P109/D 1.1V@15.8A

$$0.6 \cdot (1 + 2K/1.69K) = 1.3V$$

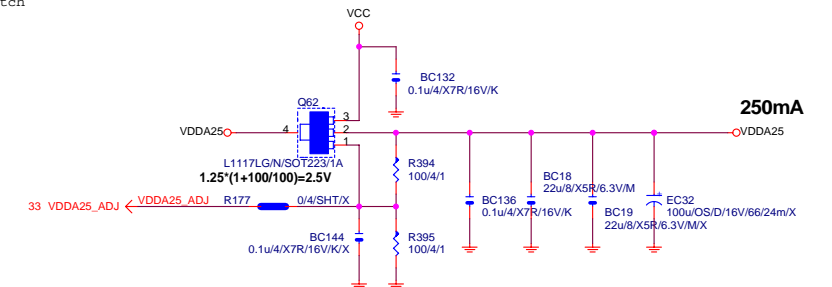
1.3V for RS880D (890GX)



VREF IS 0.6v

$$0.6 \cdot (1 + 2K/2K) = 1.20V$$

$$0.8 * [(R1+R2)/R1] = V_{out} = 1.1V$$


AMD validation
VCC12_HT
Leakage patch



250mA

$$1.25 \times (1 + 100/100) = 2.5V$$

25_ADJ R177 0/4/SH

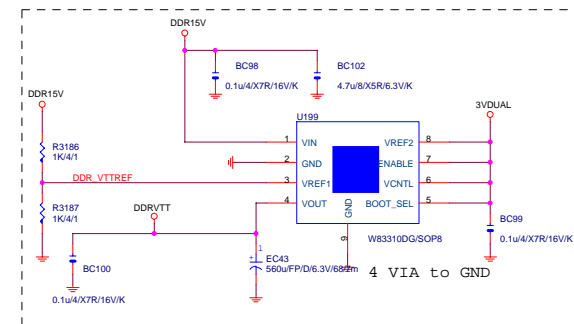
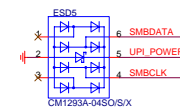
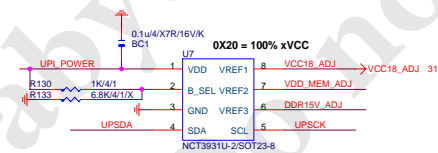
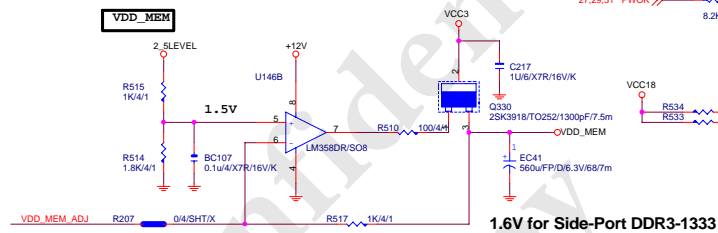
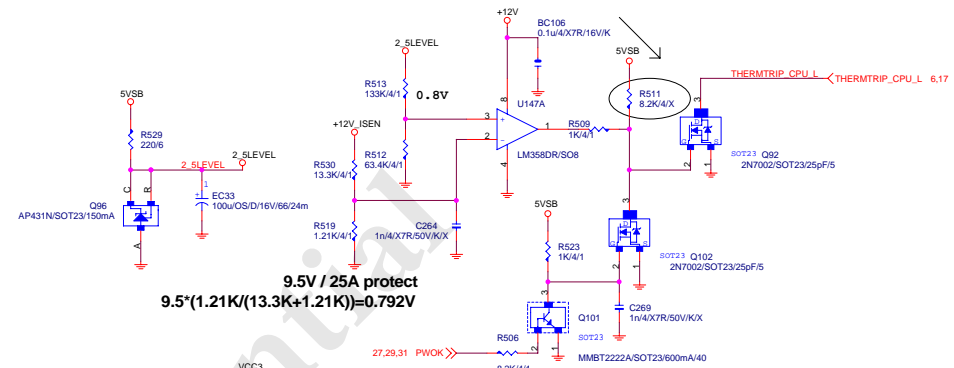
BC1
0.4.../4Y7B/16V/

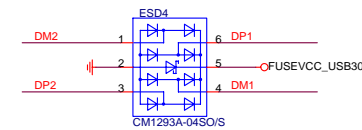
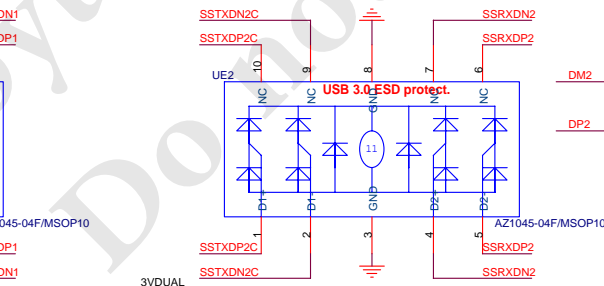
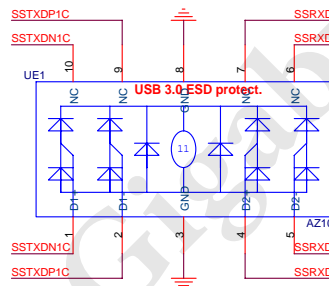
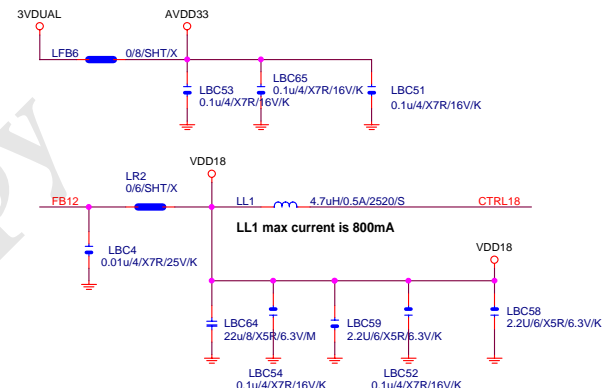
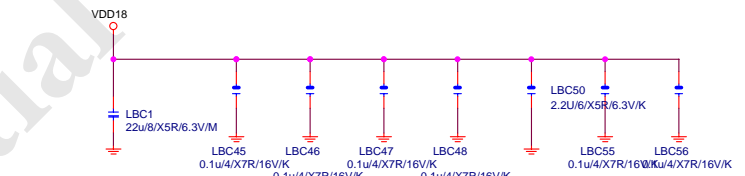
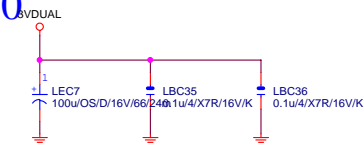
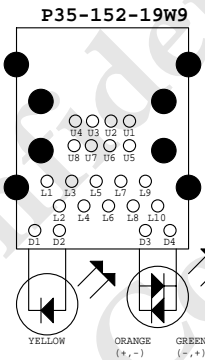
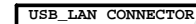
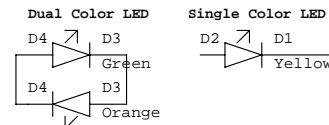
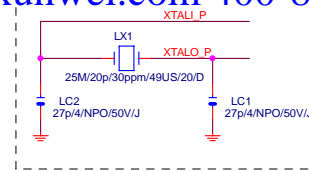
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Title
NB/SB POWER,VCC12HT,VDDA25,VCC11Dual

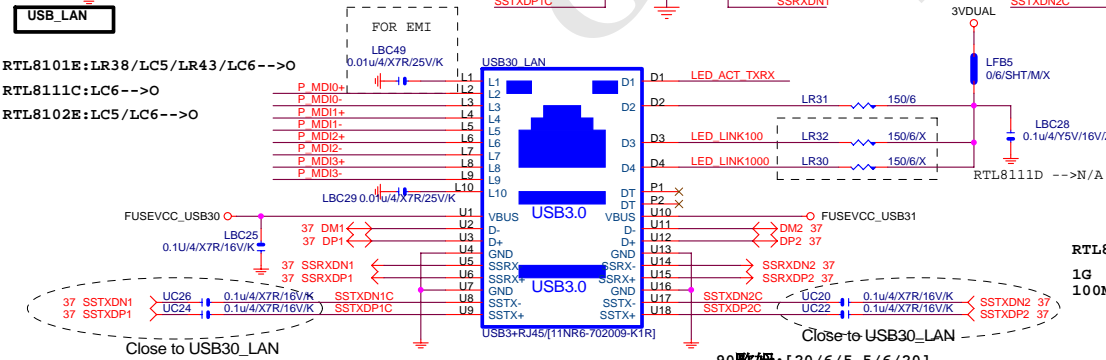
Size	Document Number	Rev
Custom	GA-890GPA-UD3H	2.01

Date:	Thursday, April 29, 2010	Sheet	32	of	38
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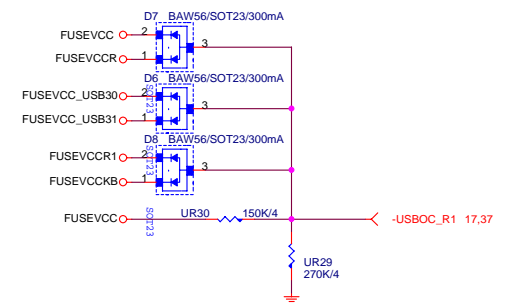
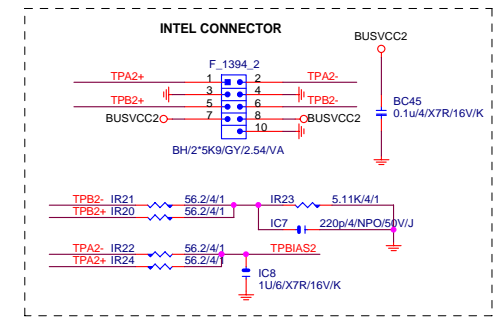
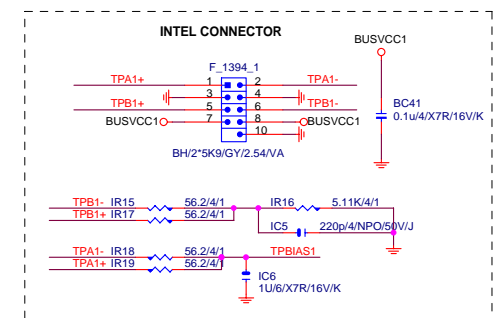
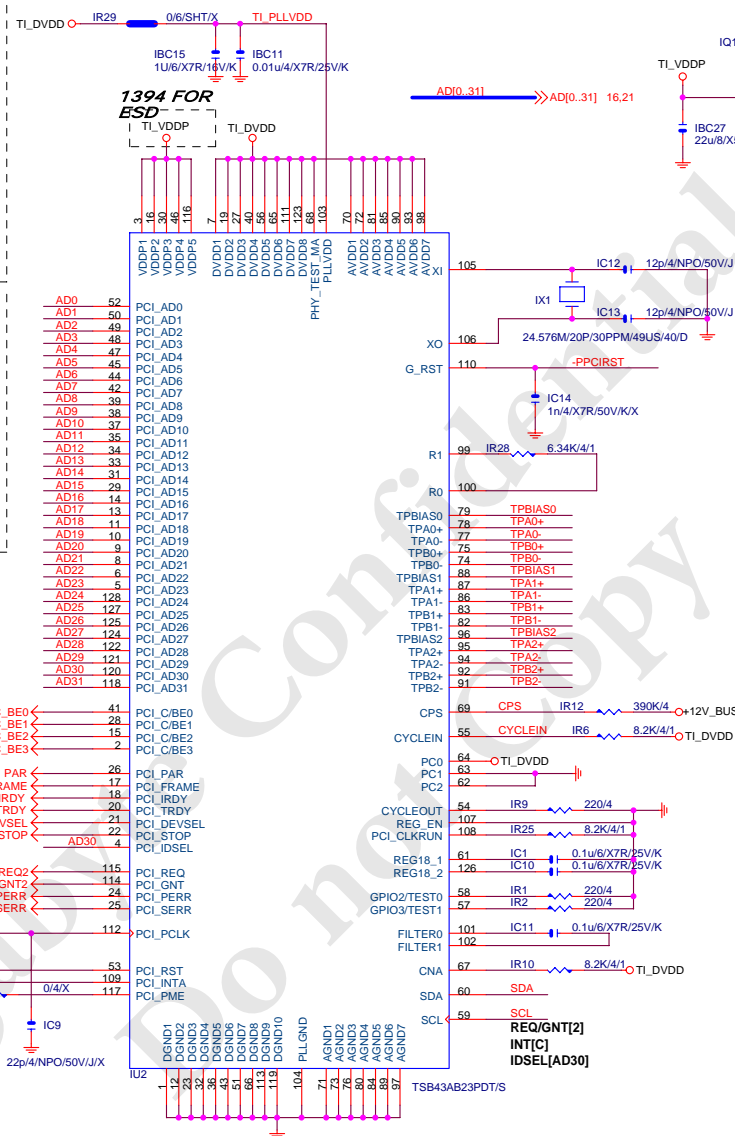
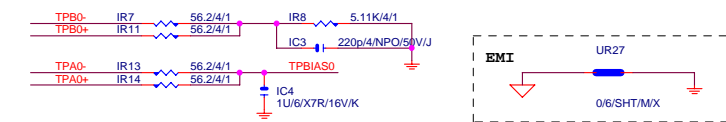
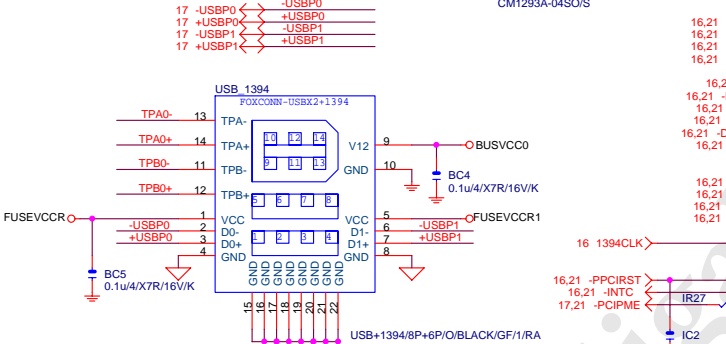
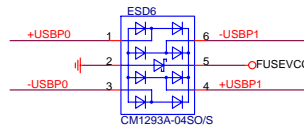
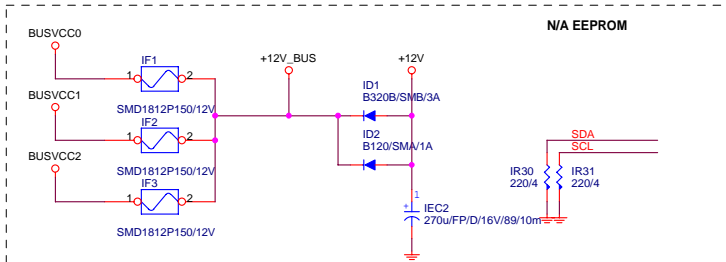
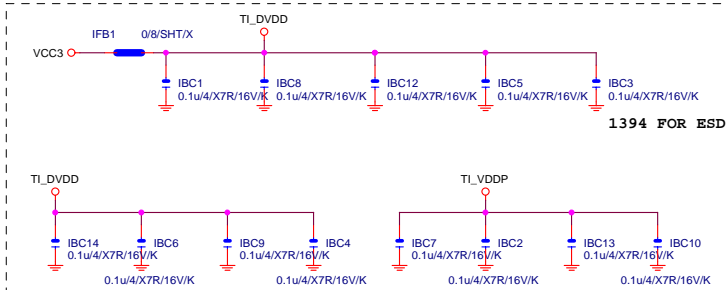




USB_LAN



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1G   :USB+LAN/1G/GO,Y/OS/RA/D/1
100M:USB+LAN/100/GO,Y/OS/RA/D/1
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TI TSB43AB23 1394A

Size	Document Number	Rev
Custom	GA-890GPA-UD3H	2.01

Date:	Thursday, April 29, 2010	Sheet	35	of	38
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