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RALPH1.1

SI

2011.10.11

03-AUG-2011		
DATE	CHANGE NO.	REV

	EE	DATE	POWER	DATE	INVENTEC			
DRAWER								
DESIGN								
CHECK								
RESPONSIBLE								
SIZE								
FILE NAME					SIZE	CODE	DOC NUMBER	REV
PN					C	CS	1310xxxx-0-0	X01
Drawer Name					SHEET	1	of 65	

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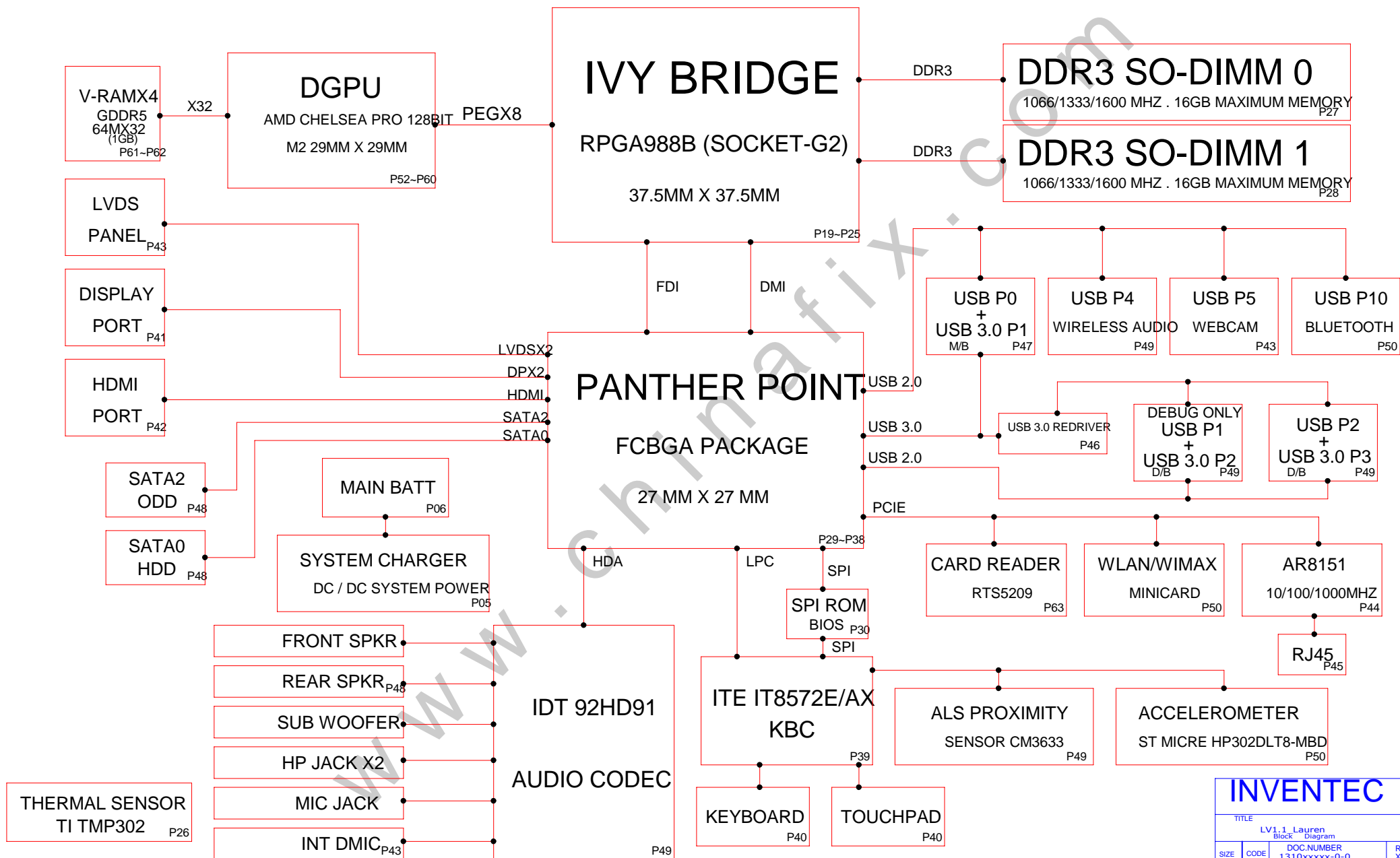
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02. INDEX	35. PCH-6-GPIO & CPU/MISC
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LV1.1 Lauren Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

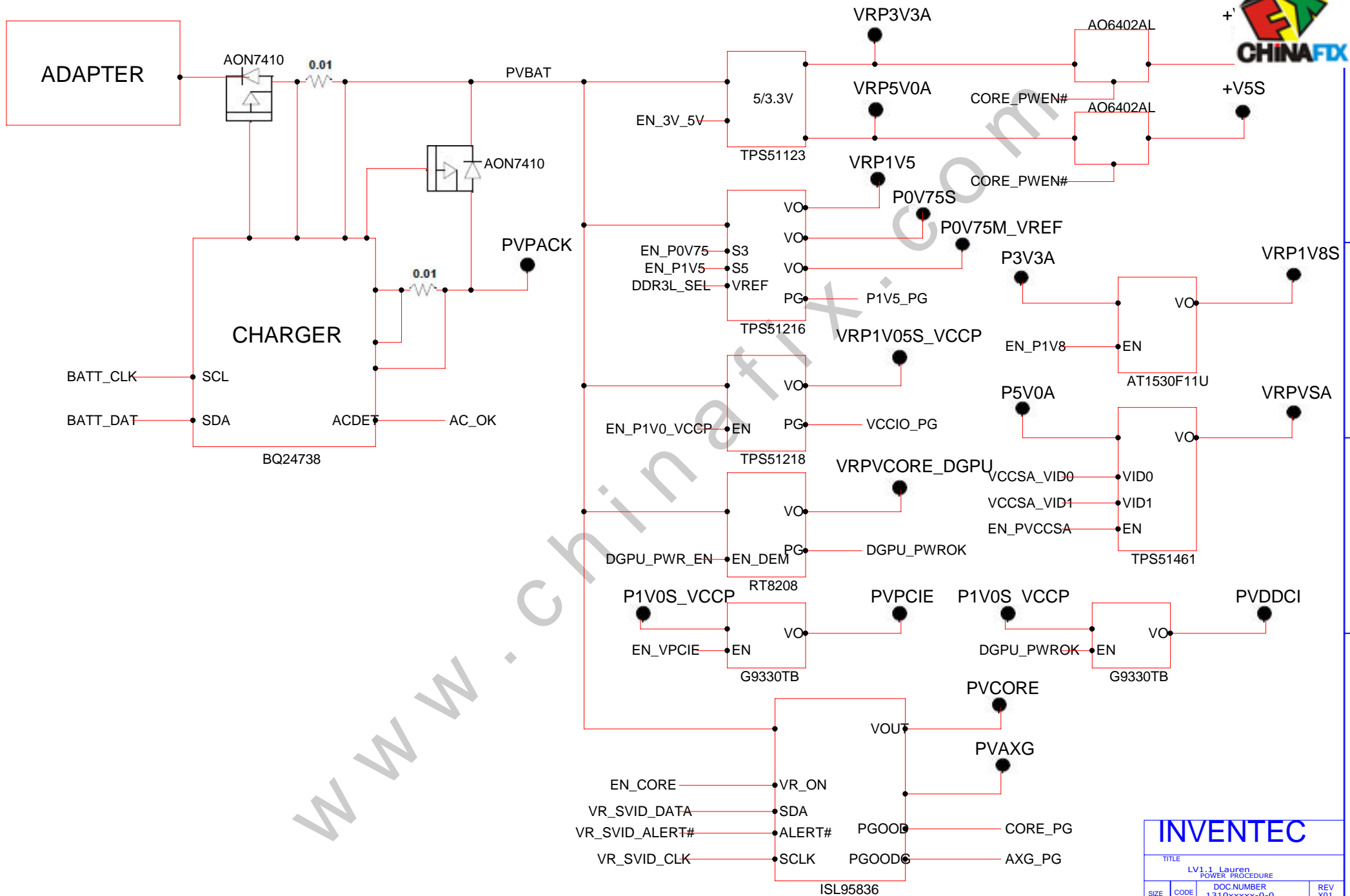
CHANGE by: Drawer Name DATE 03-AUG-2011

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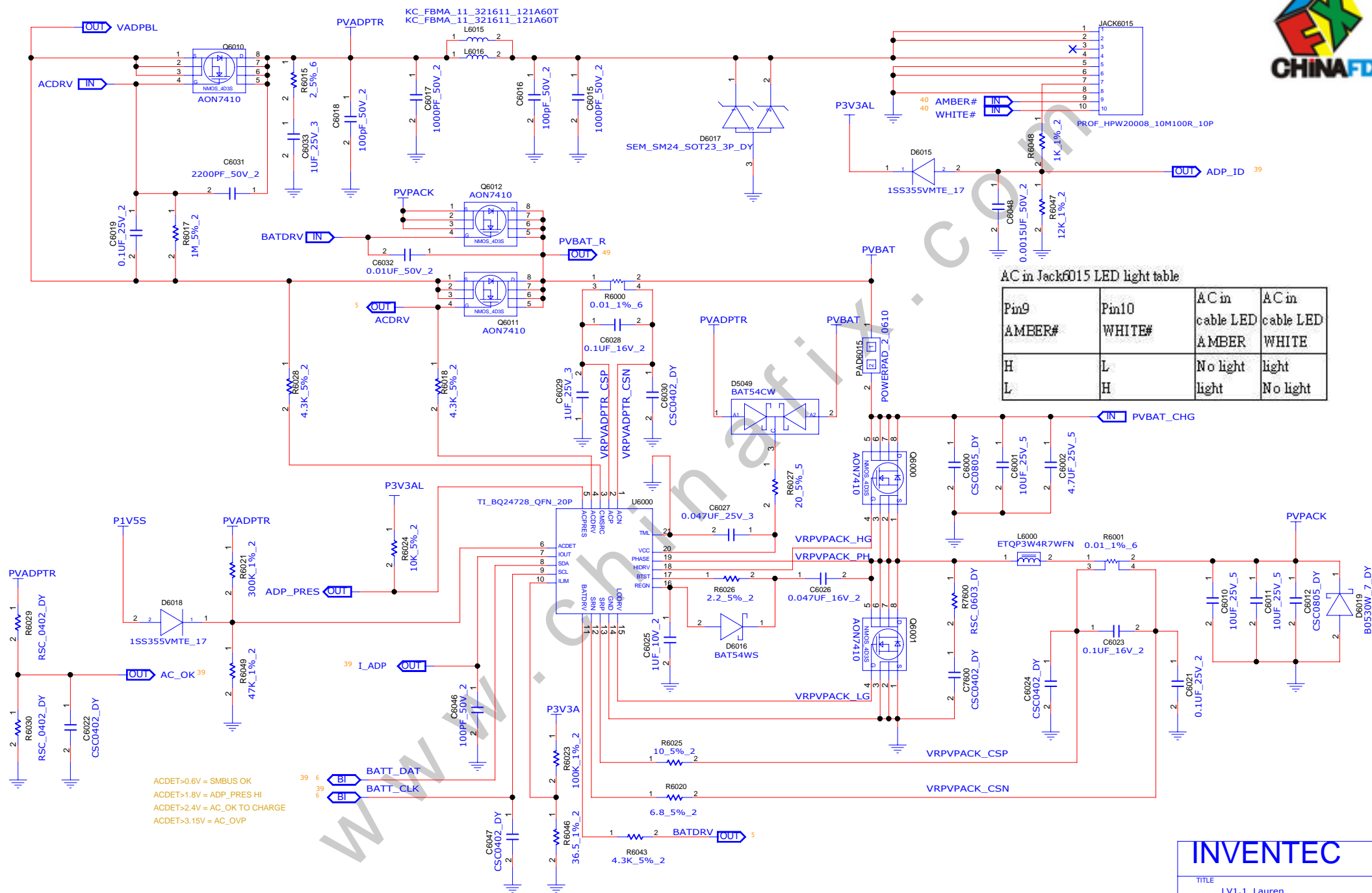
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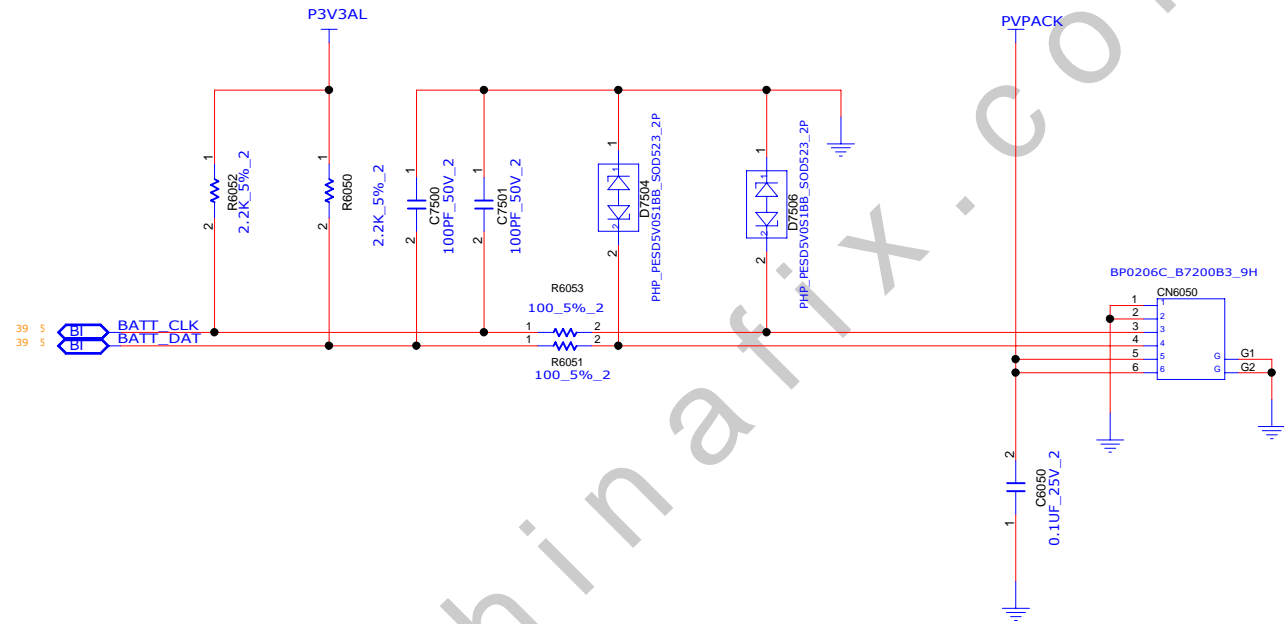
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LV1.1 Lauren POWER PROCEDURE			
SIZE		DOC NUMBER	
A3		1310xxxxx-0-0	
CODE		REV	
CS		X01	



Pin9 AMBER#	Pin10 WHITE#	AC in cable LED AMBER	AC in cable LED WHITE
H	L	No light	light
L	H	light	No light

- ACDET>0.6V = SMBUS OK
- ACDET>1.8V = ADP_PRESENSE HI
- ACDET>2.4V = AC_OK TO CHARGE
- ACDET>3.15V = AC_OVP

INVENTEC				
TITLE				
LV1.1 Lauren Block Diagram				
SIZE A3	CODE CS	DOC NUMBER 1310xxxxxx-0-0		REV X01
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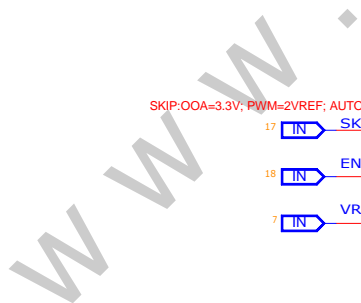
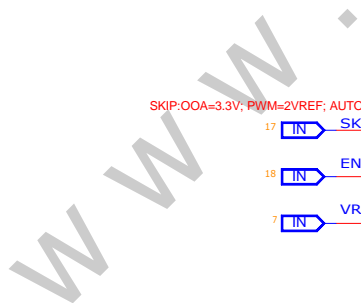


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SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0
REV X01		

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C

B

A

1

1

1

1



STATE	S3	S5	VREF	VDDQ	VTTREF	VTT
S0	HI	HI	ON	ON	ON	ON
S3	LO	HI	ON	ON	ON	OFF(High-Z)
S4/S5	LO	LO	OFF	OFF(Discharge)	OFF(Discharge)	OFF(Discharge)

INVENTEC

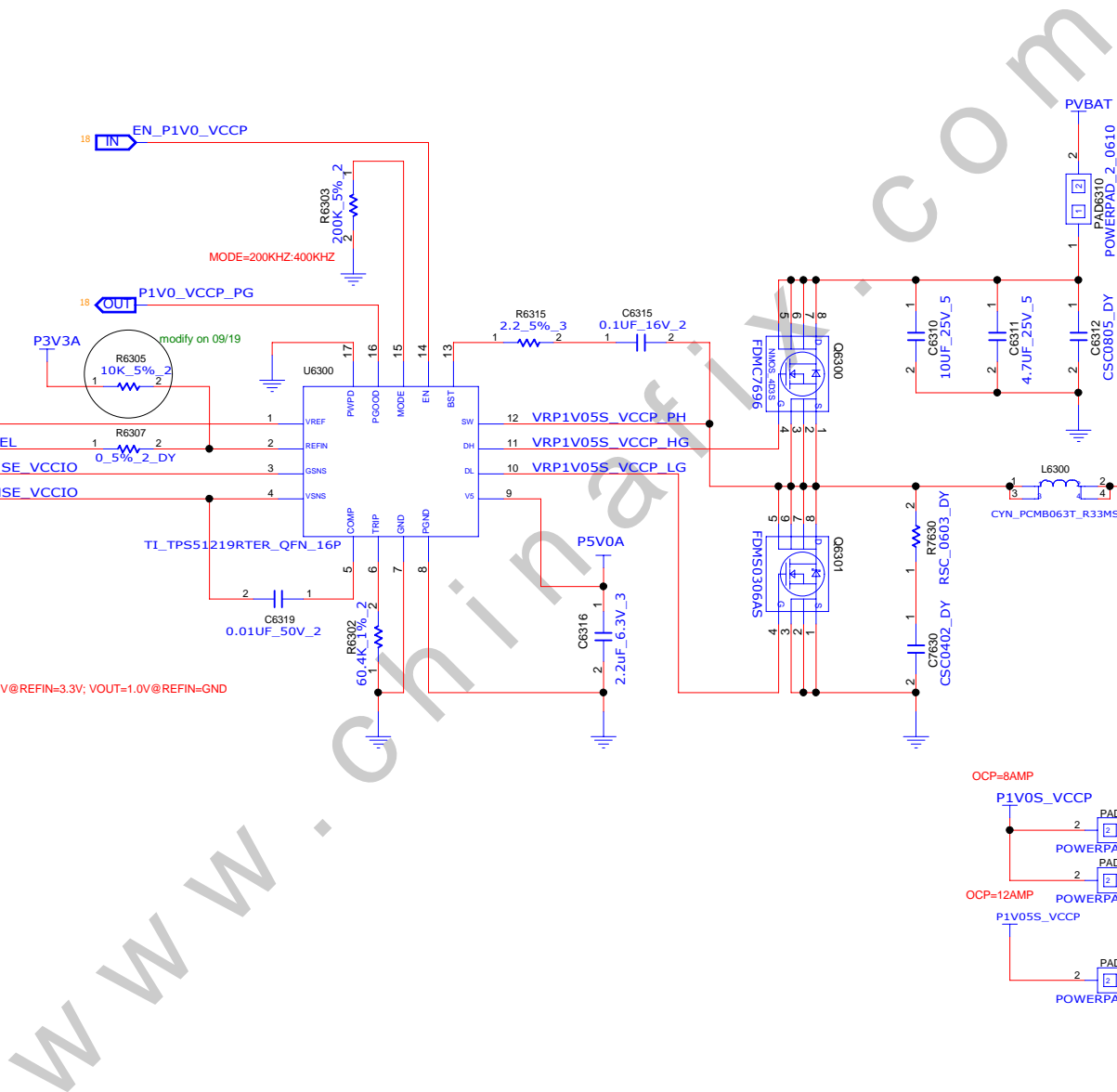
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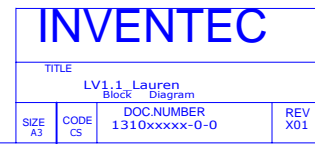
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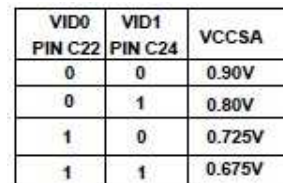
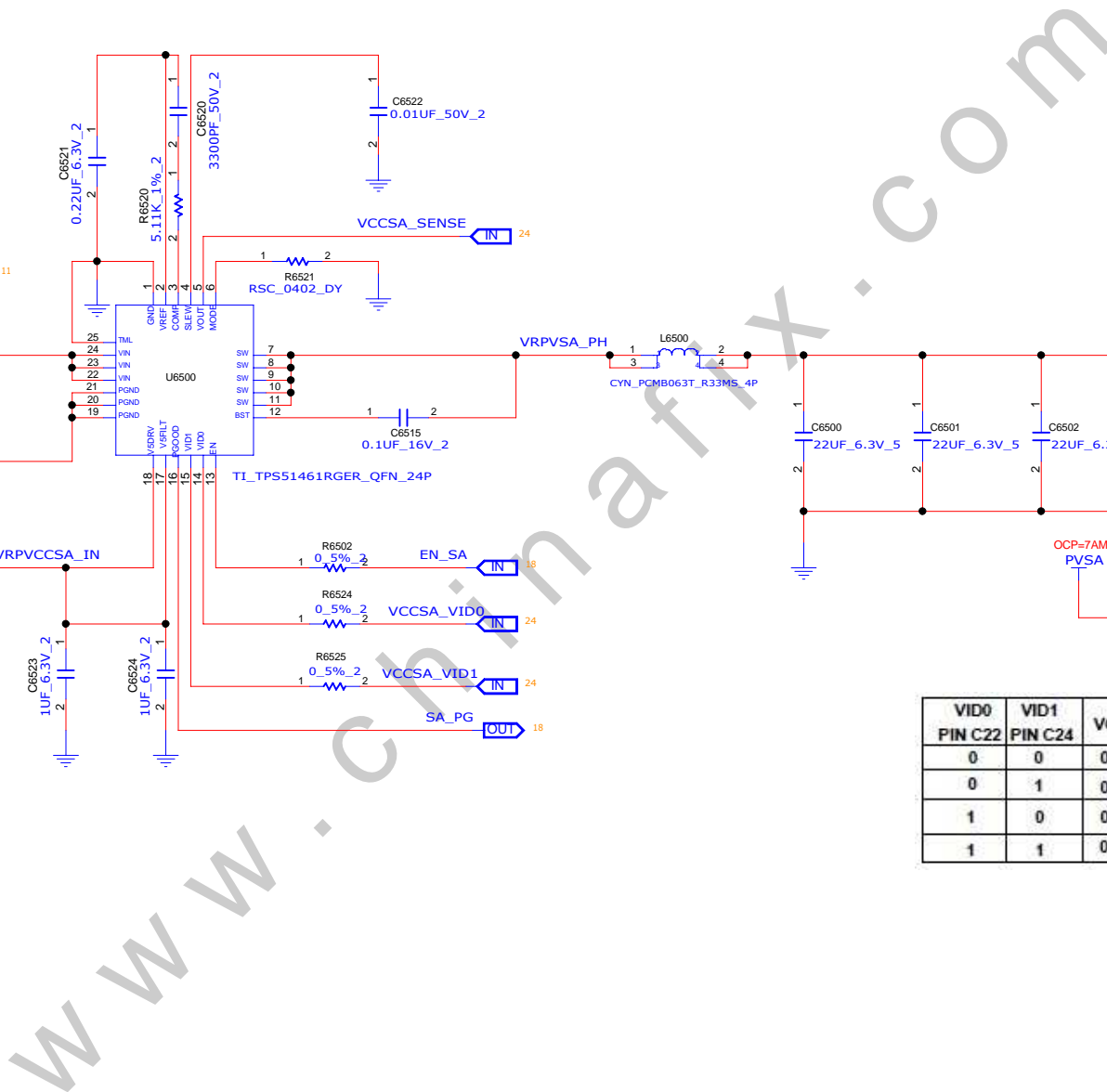
REV	
X01	

CHANGE by	Drawer Name	DATE	03-AUG-2011
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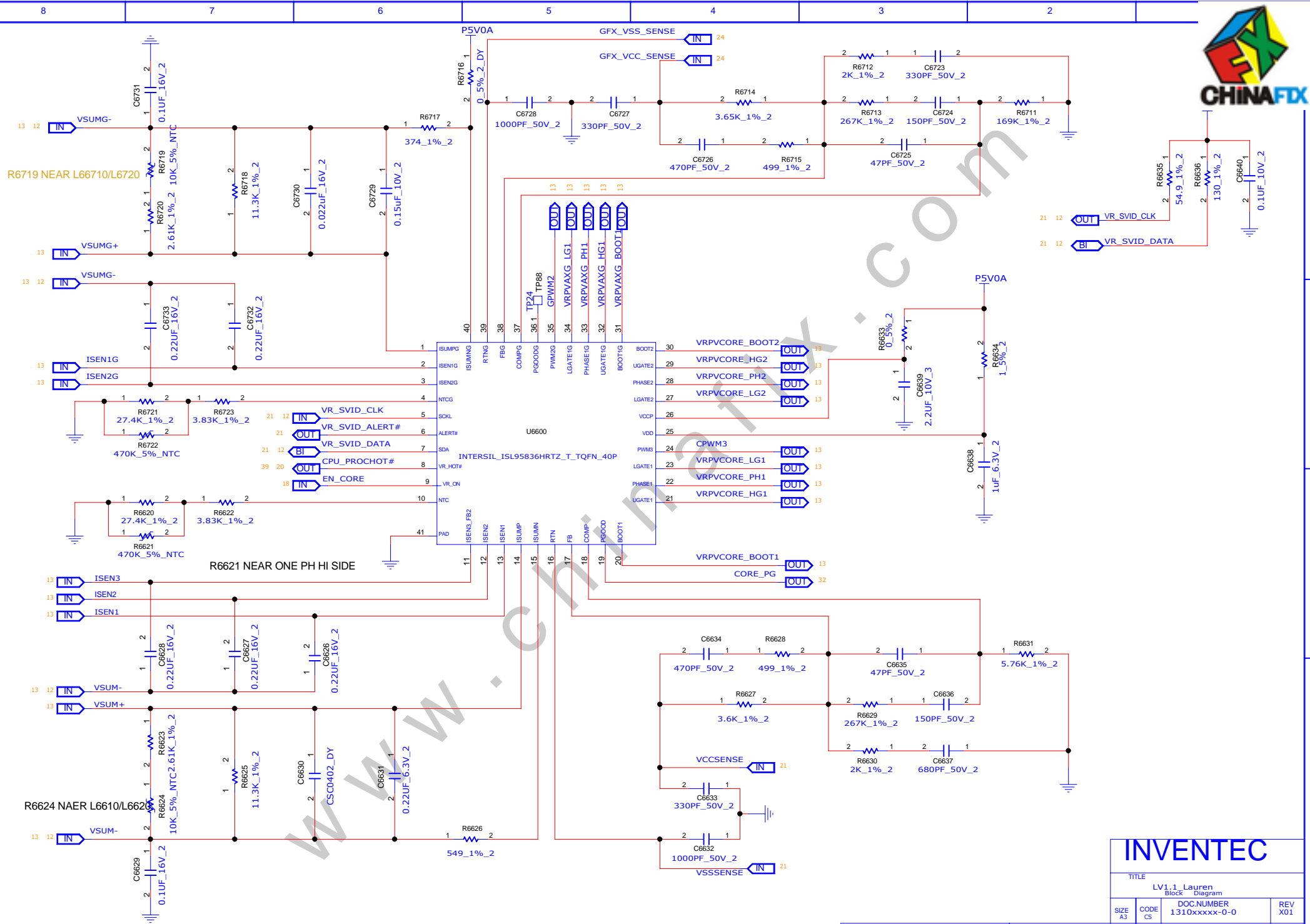
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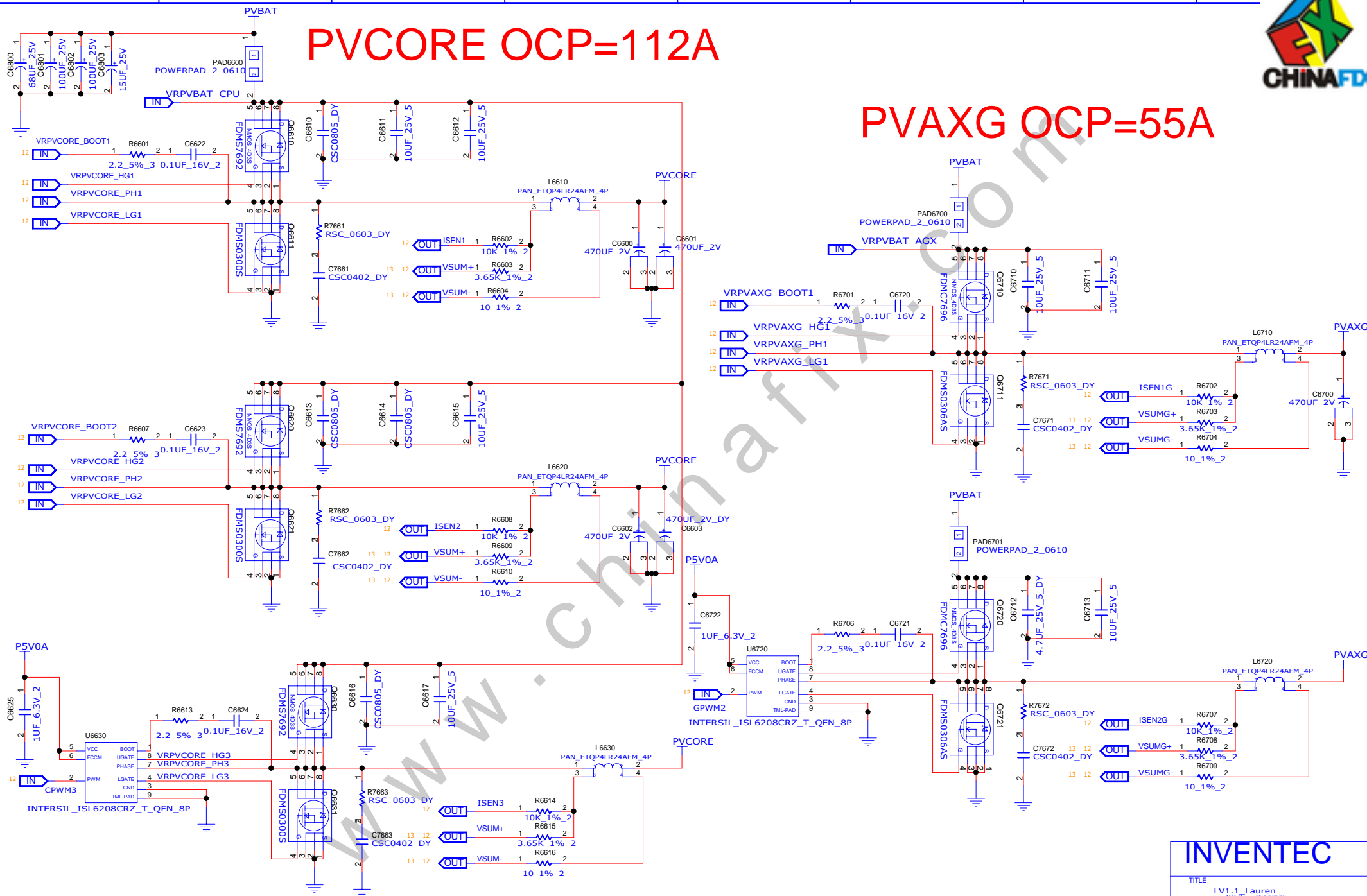
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SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01



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TITLE			
LV1.1 Lauren Block Diagram			
SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01



PVAXG OCP=55A

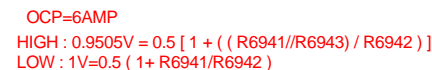
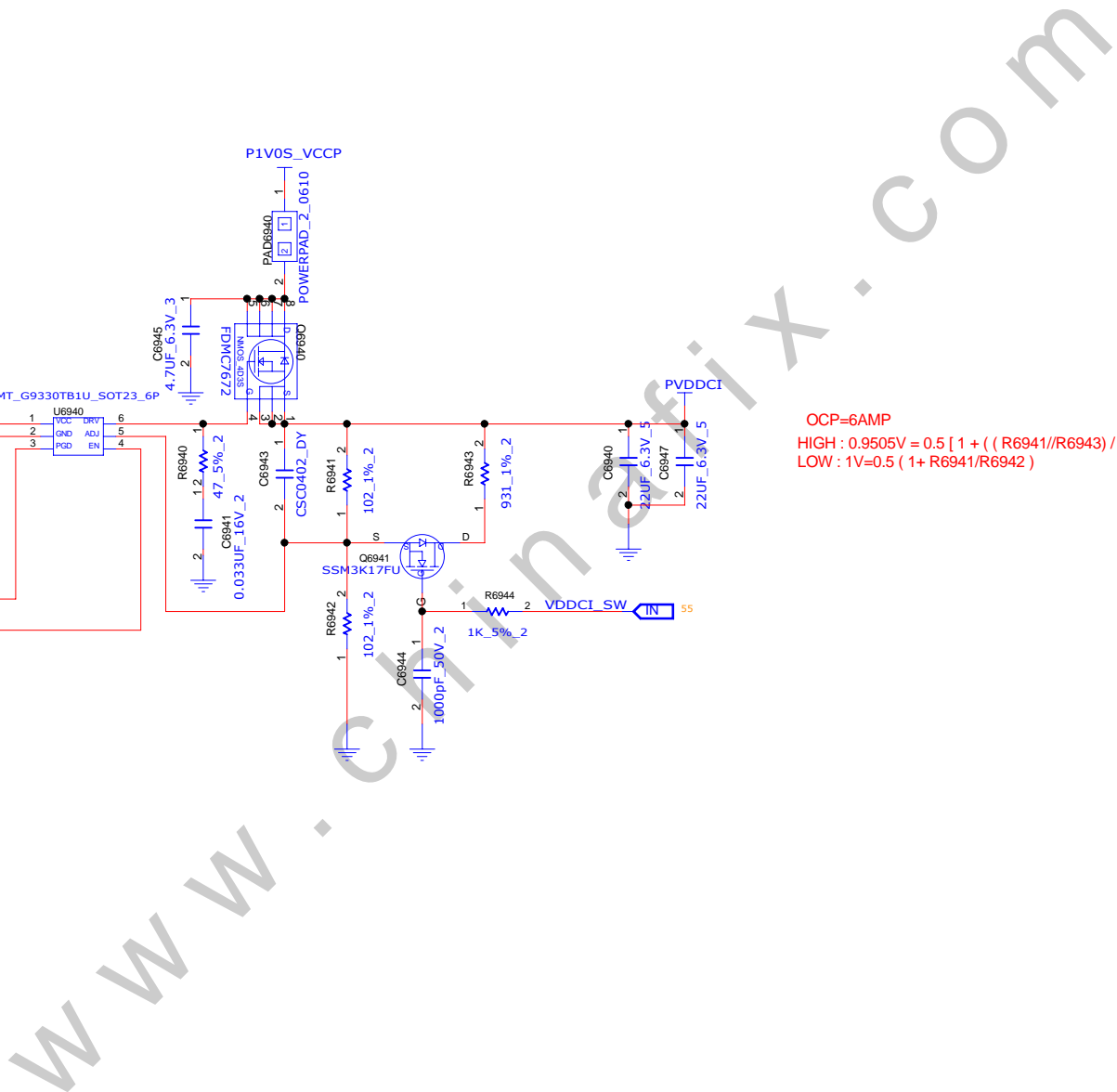


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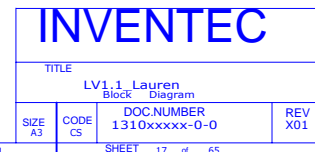
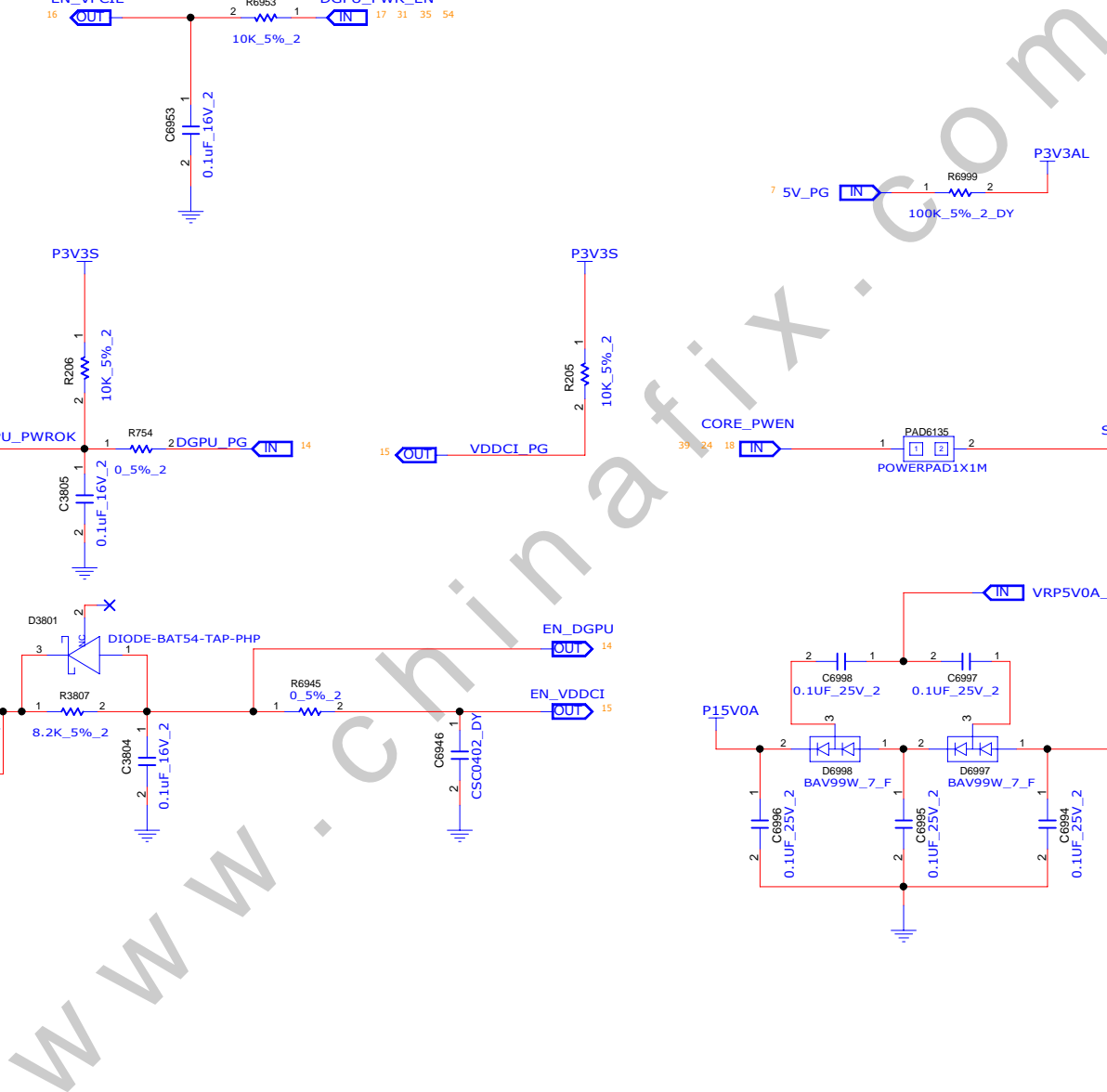


RT8208A		RT8208B		Output Voltage Equation	
G0	G1	G0	G1		
0	0	1	1	$V_{OUT} = \frac{R1+R2}{R2} \times 0.75$	0.843V
1	0	0	1	$V_{OUT} = \frac{R1+(R2/R3)}{(R2/R3)} \times 0.75$	0.914V
0	1	1	0	$V_{OUT} = \frac{R1+(R2/R4)}{(R2/R4)} \times 0.75$	1.016V
1	1	0	0	$V_{OUT} = \frac{R1+(R2/R3/R4)}{(R2/R3/R4)} \times 0.75$	1.087V

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TITLE			
LV1.1 Lauren Block Diagram			
SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01





	25	35	SHEET 12 of 65		
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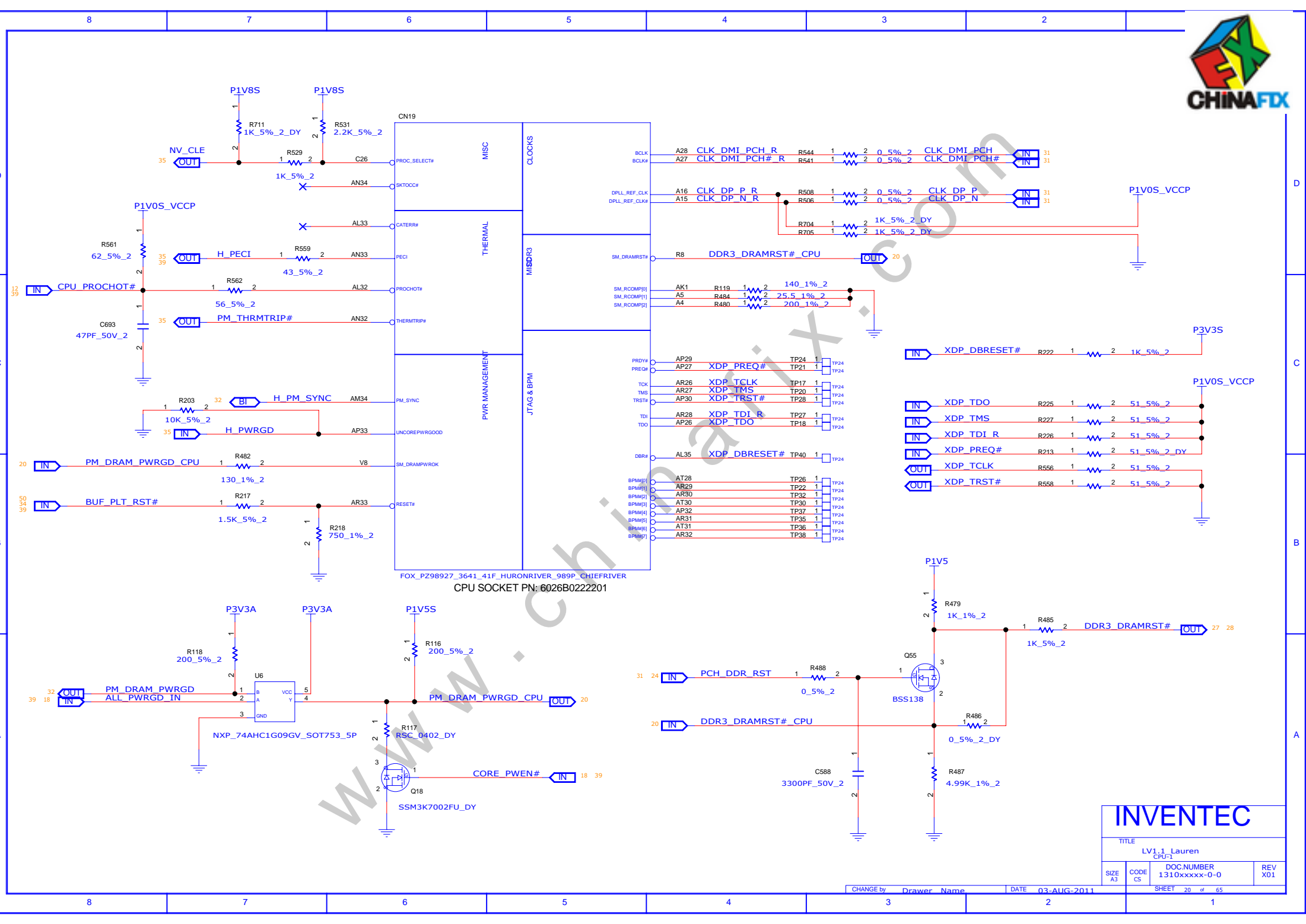


CPU

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TITLE			
LV1.1 Lauren BLANK			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01



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TITLE
LV1.1-Lauren

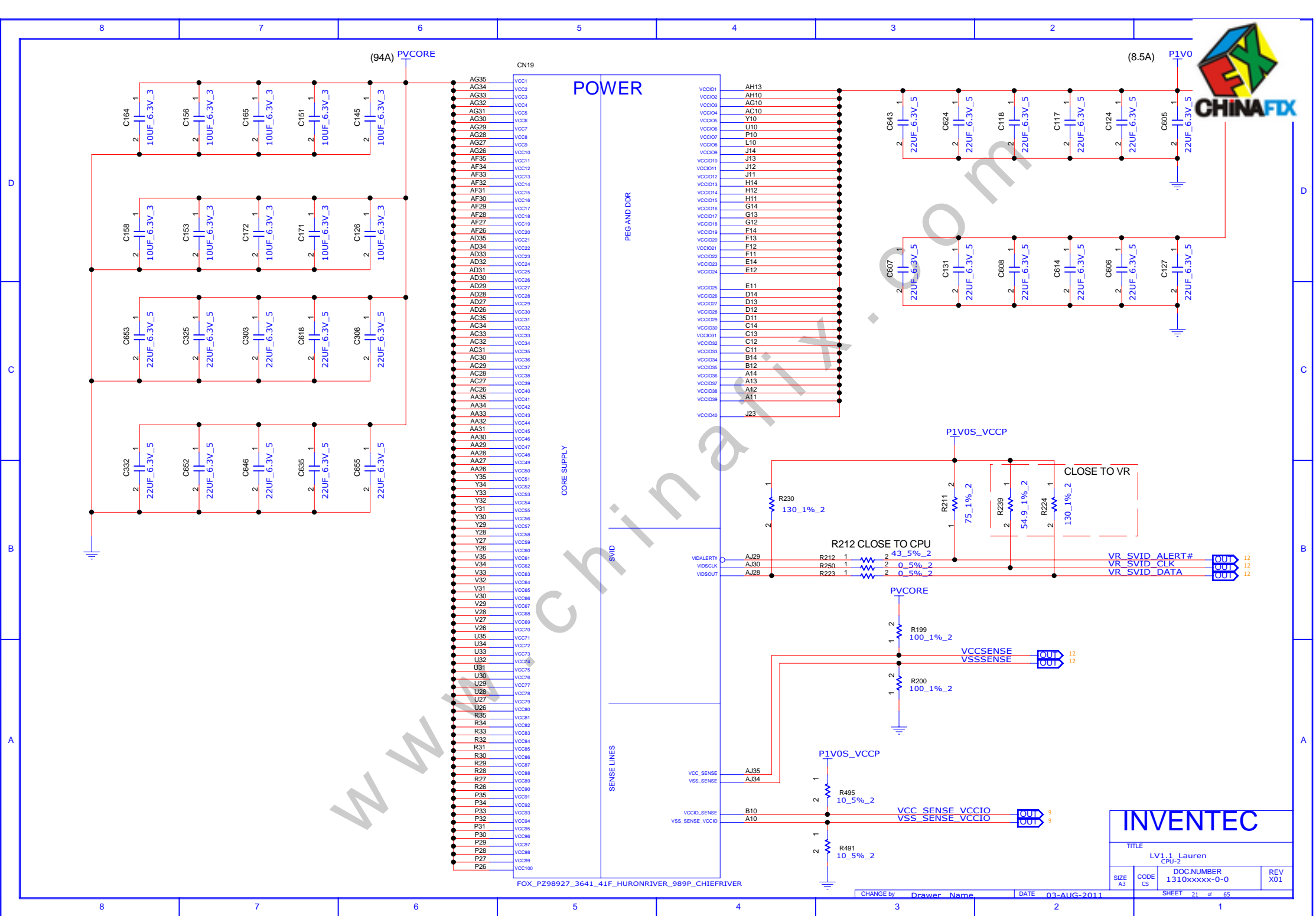
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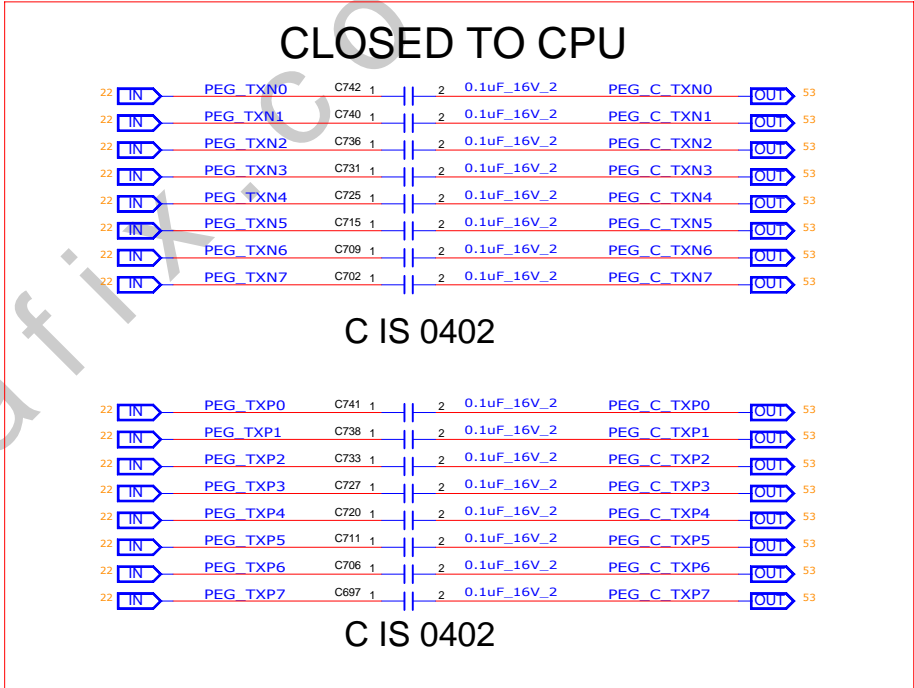
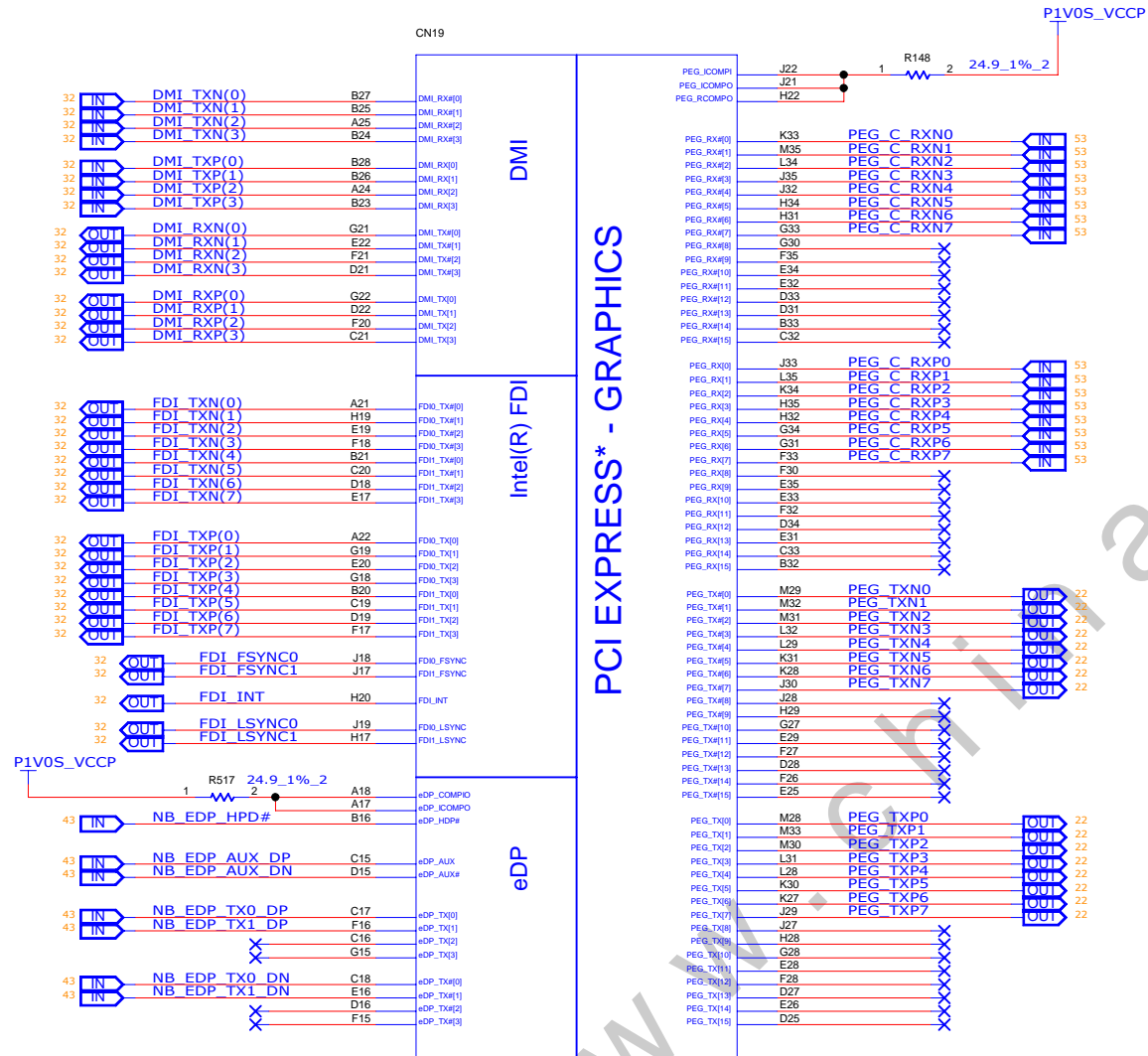
REV
X01

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Drawer_Name

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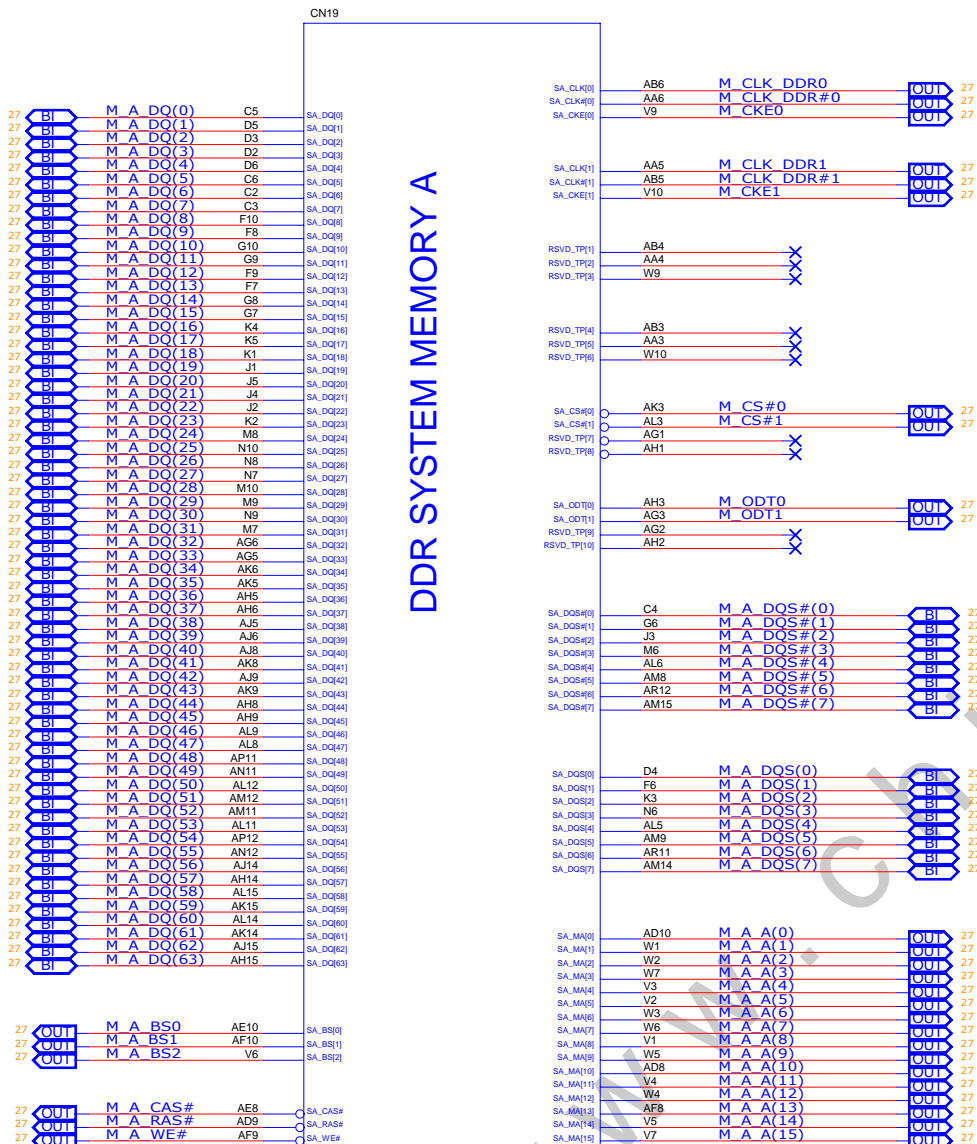
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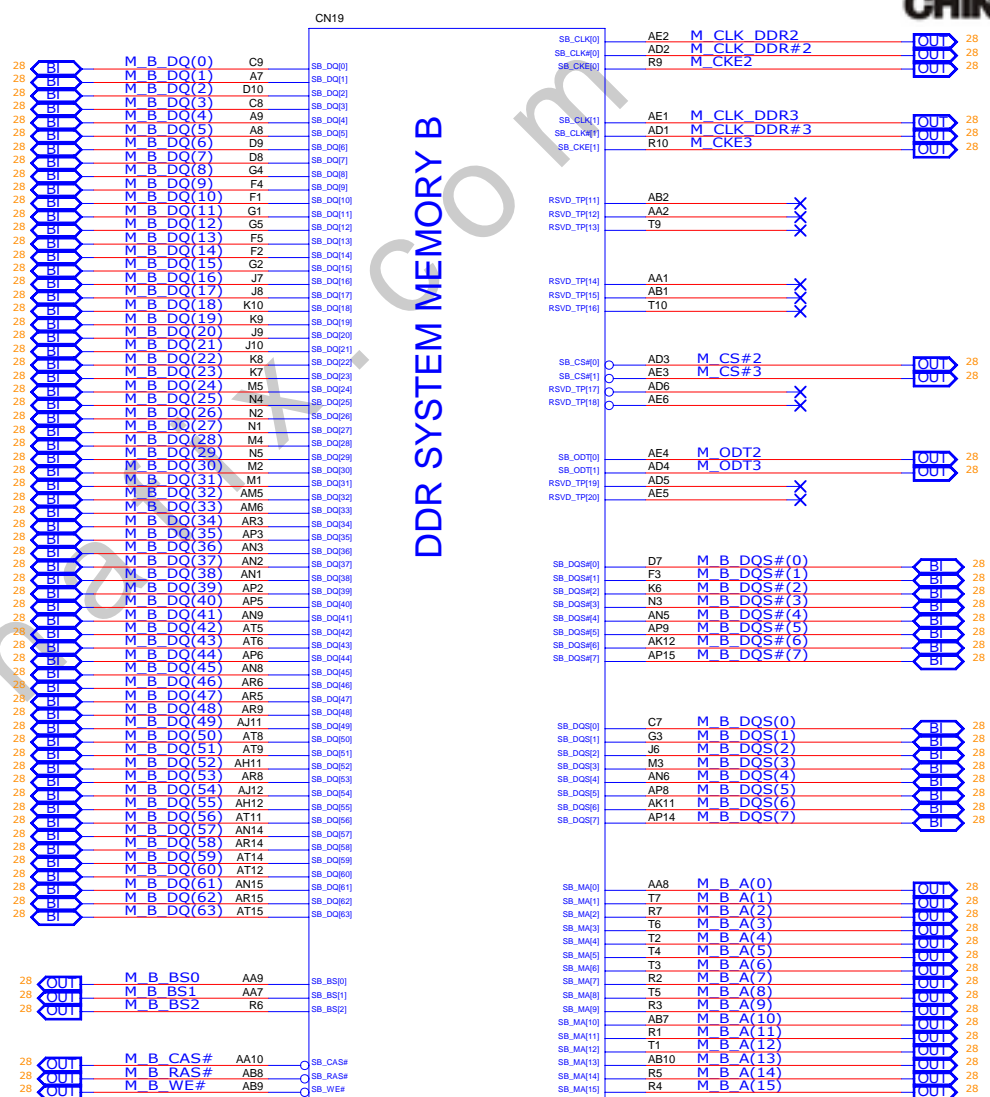


DDR SYSTEM MEMORY A



FOX_PZ98927_3641_41F_HURONRIVER_989P_CHIEFRIVER

DDR SYSTEM MEMORY B



FOX_PZ98927_3641_41F_HURONRIVER_989P_CHIEFRIVER

INVENTEC

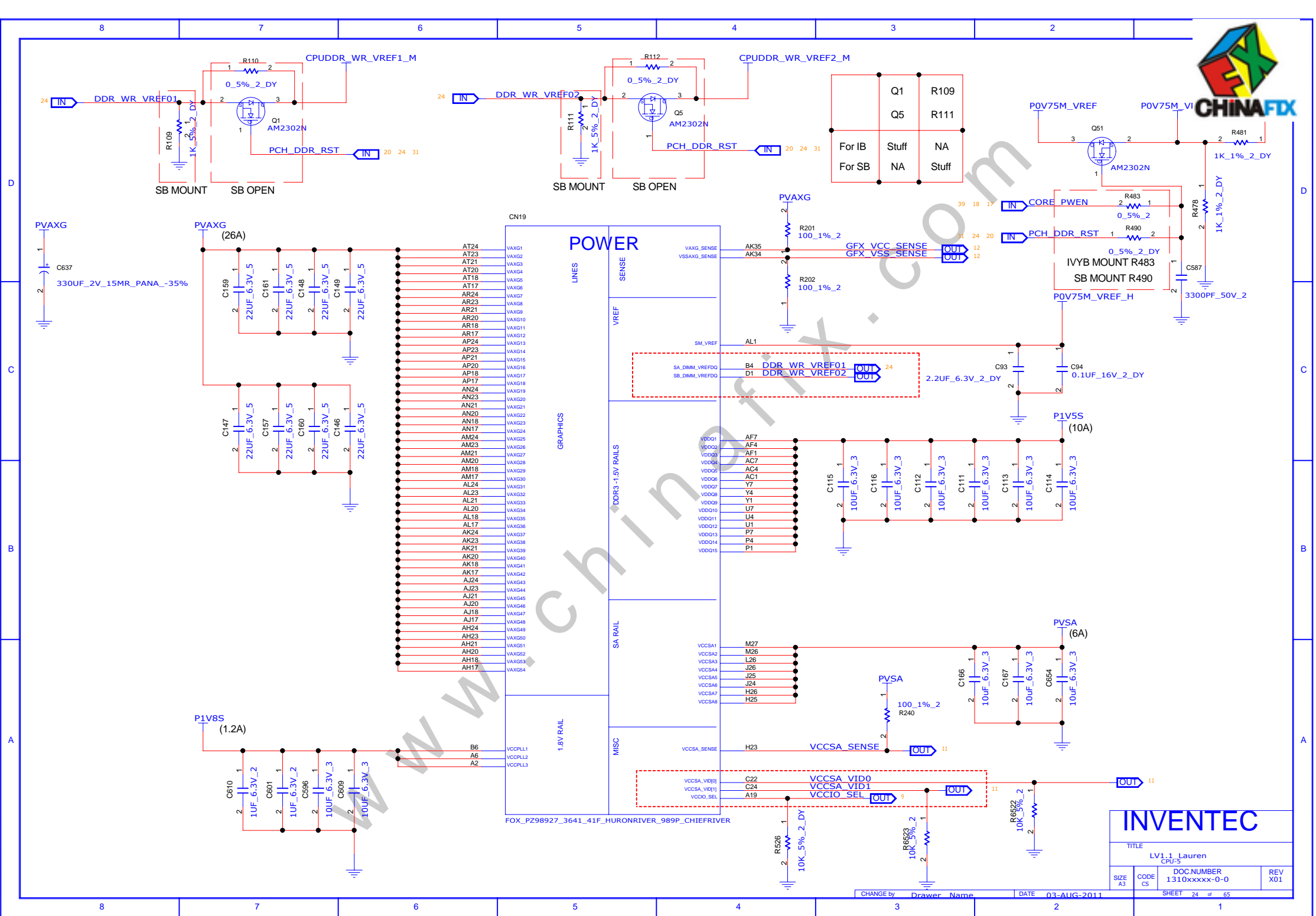
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CPU-4

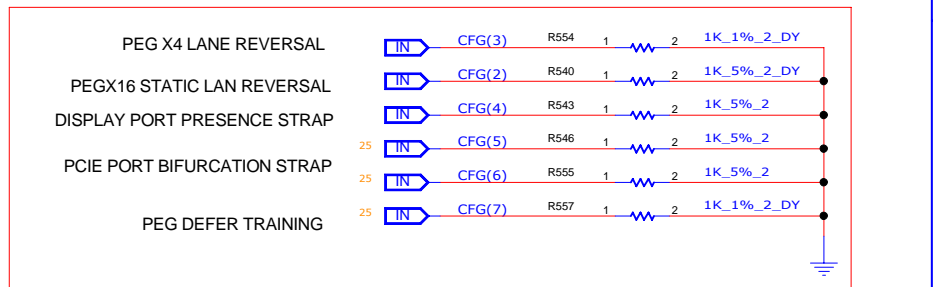
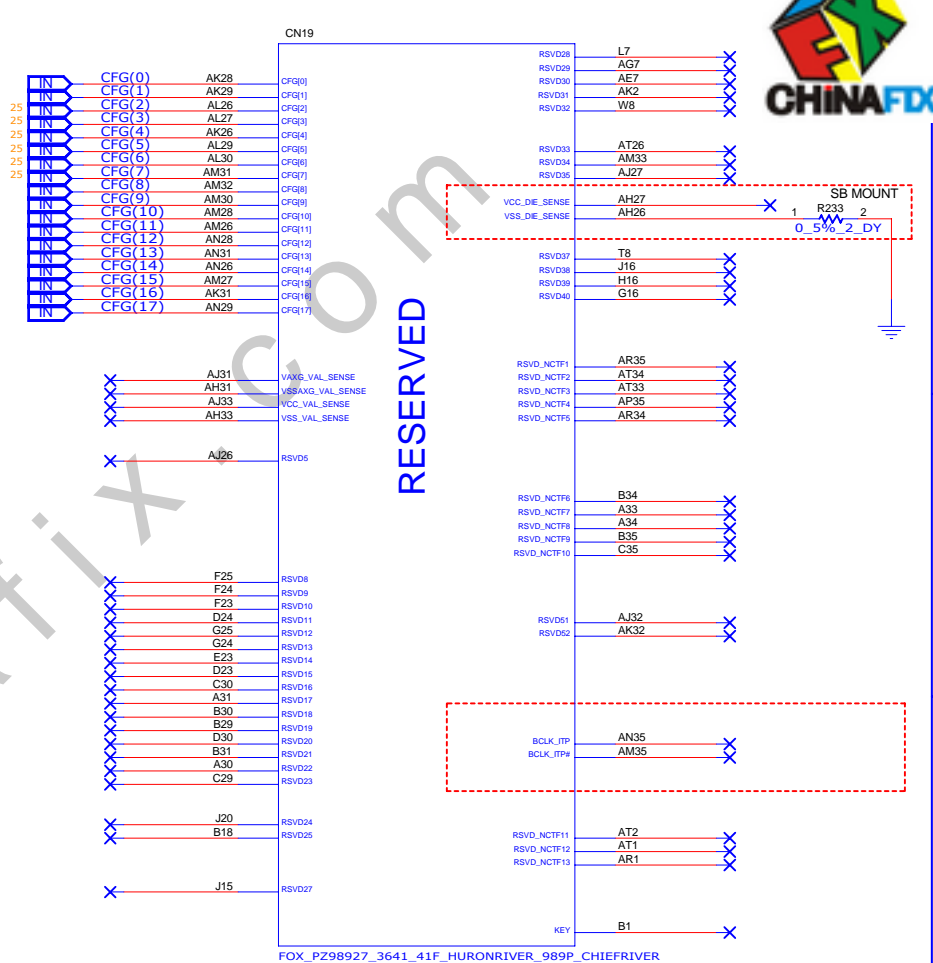
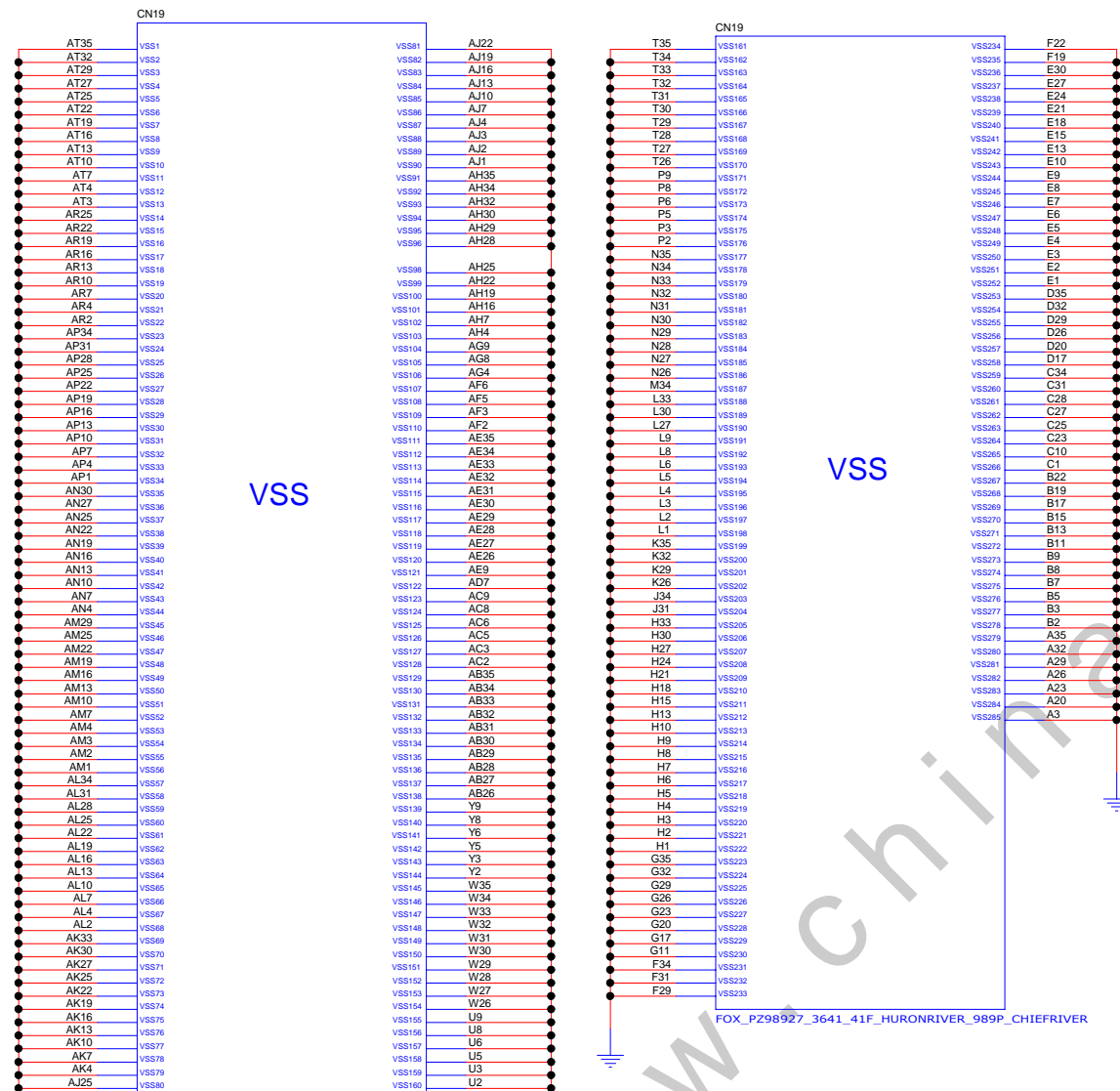
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REV
X01

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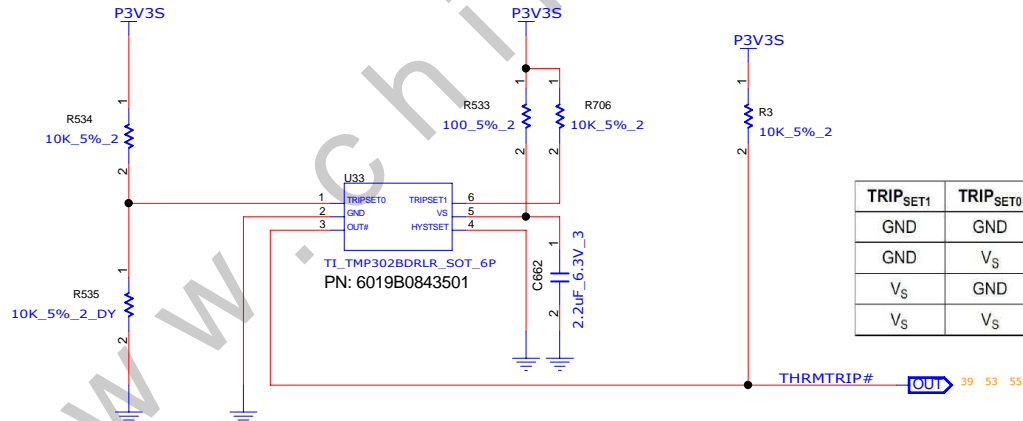
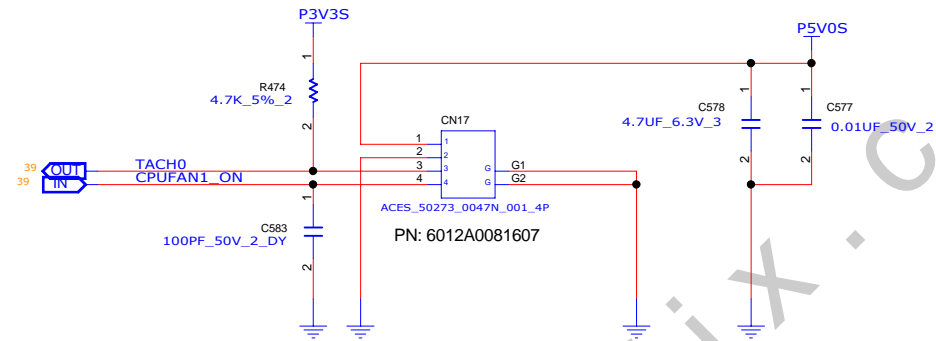


STRAP PIN

INVENTEC

TITLE			
LV1.1-Lauren			
CODE NUMBER			
1310xxxxx-0-0			
REV			
X01			

FAN CONN



TRIP _{SET1}	TRIP _{SET0}	TMP302B
GND	GND	+70°C
GND	V _S	+75°C
V _S	GND	+80°C
V _S	V _S	+85°C

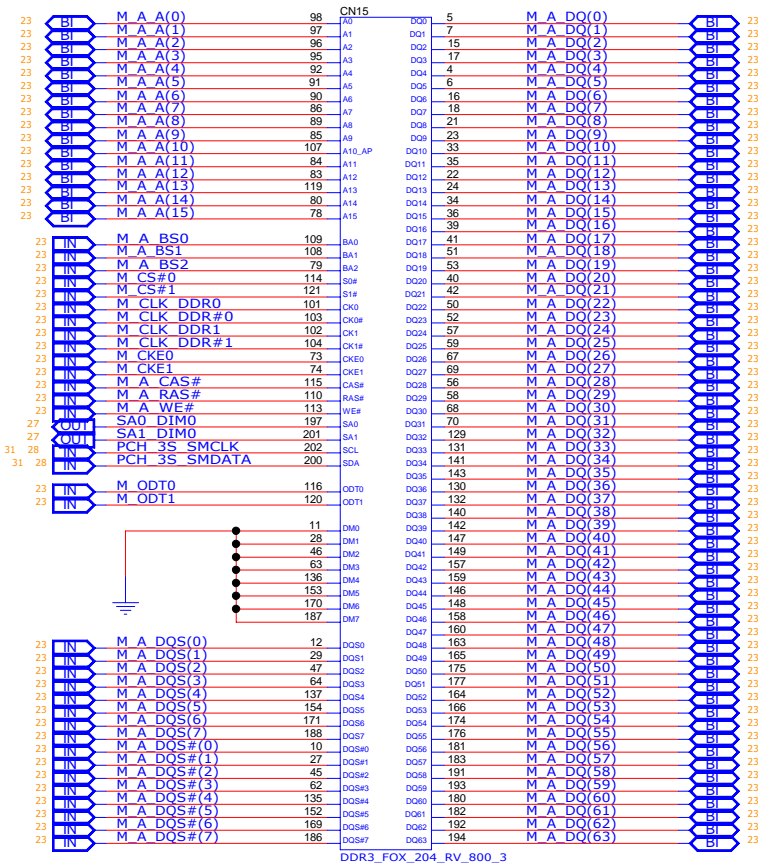
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SIZE	CODE	DOC NUMBER
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REV		X01

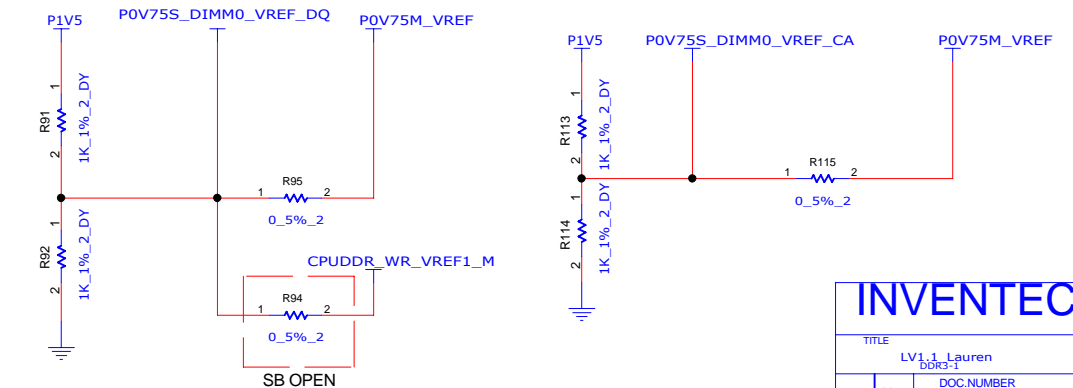
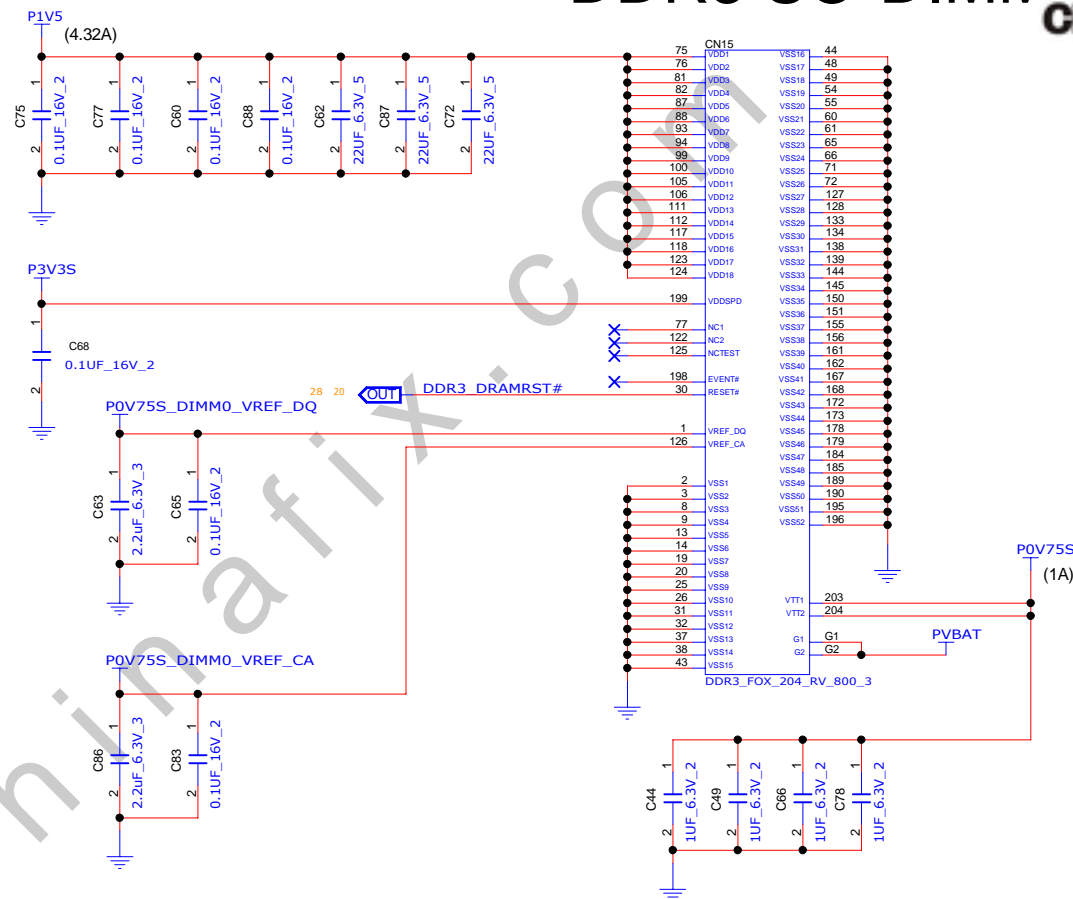
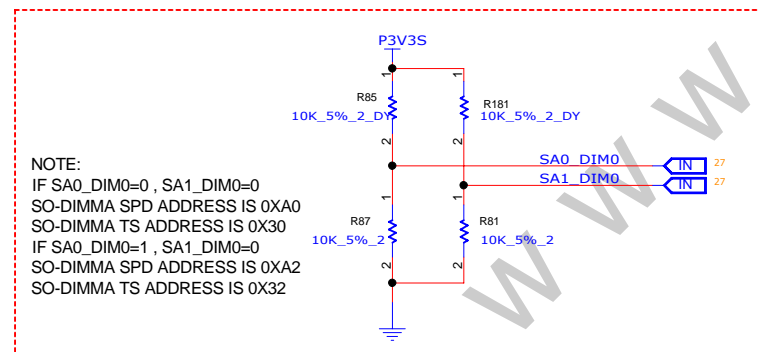
CHANGE by: Drawer Name DATE: 03-AUG-2011

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DDR3 SO-DIMM



DDR3 SOCKET (RV_800) PN: 6026B0221101



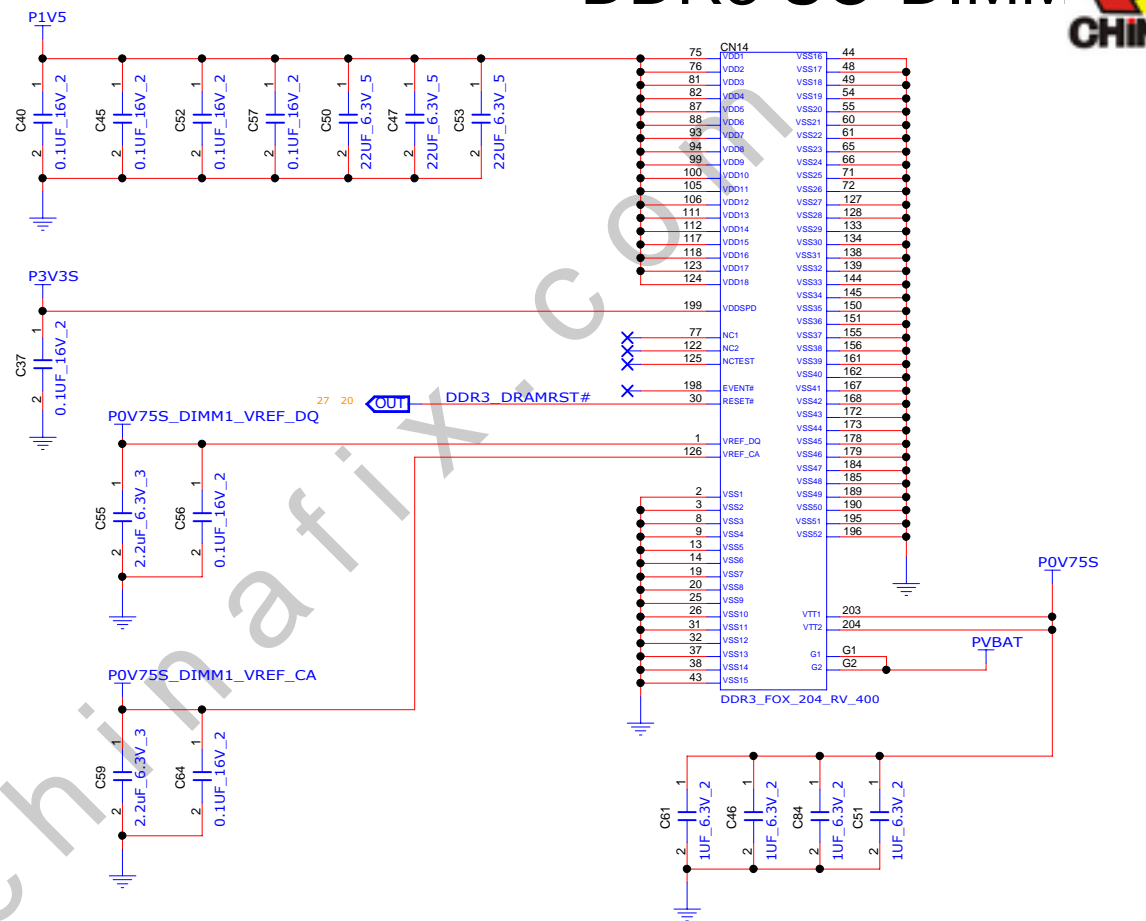
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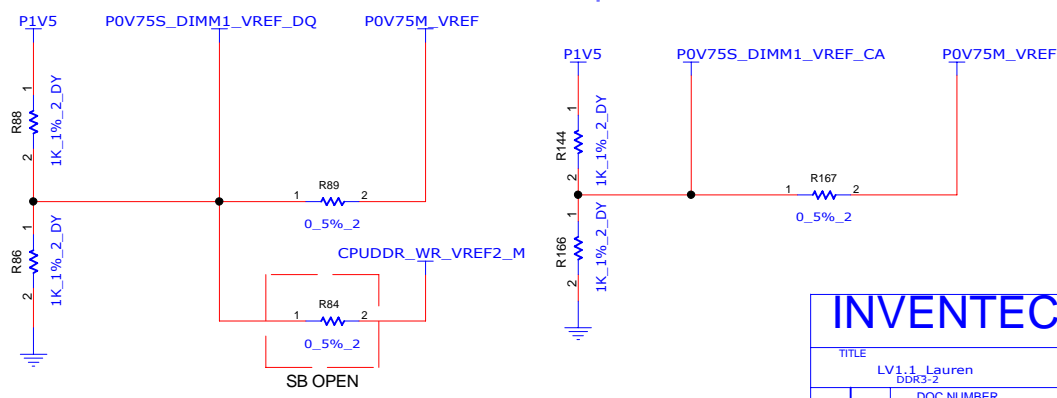
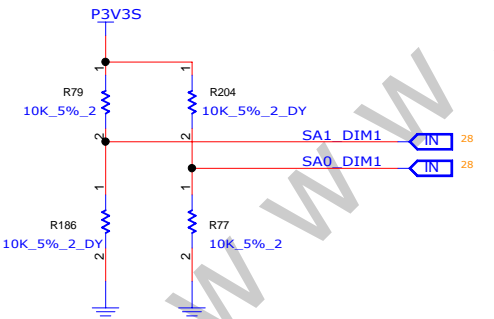
DDR3 SO-DIMM



DDR3 SOCKET (RV_400) PN: 6026B0221601



NOTE:
SO-DIMMB SPD ADDRESS IS 0XA4
SO-DIMMB TS ADDRESS IS 0X34



INVENTEC

TITLE			
LV1.1 Lauren			
DDR3-2			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01
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PCH

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INVENTEC

TITLE			
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SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01

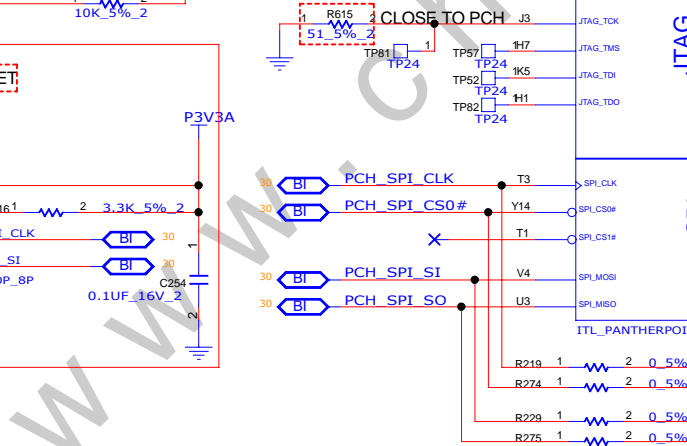
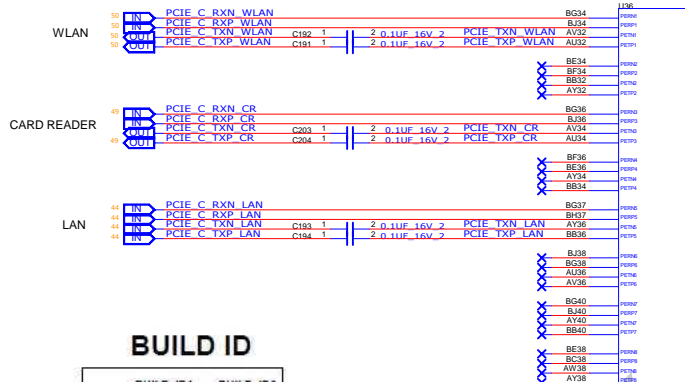
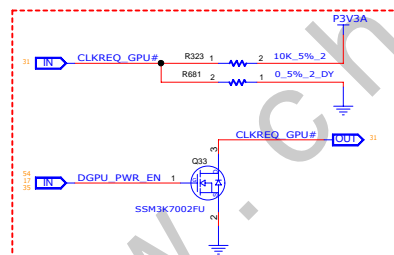
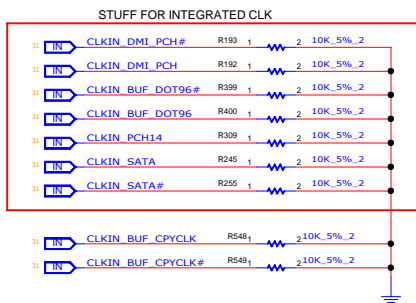
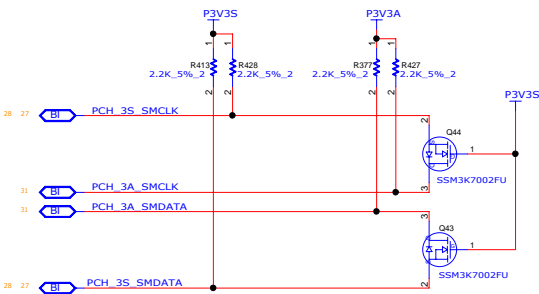
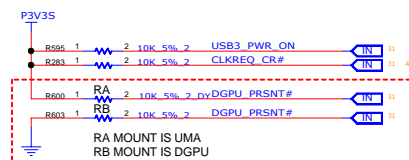
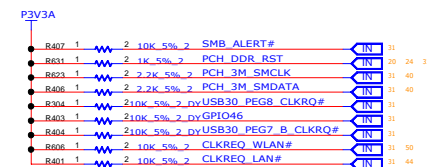
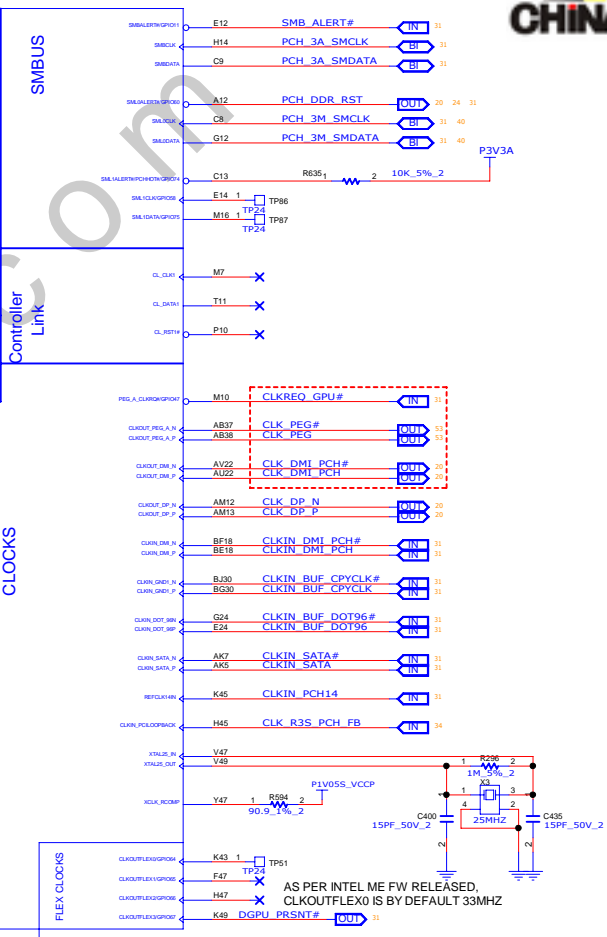
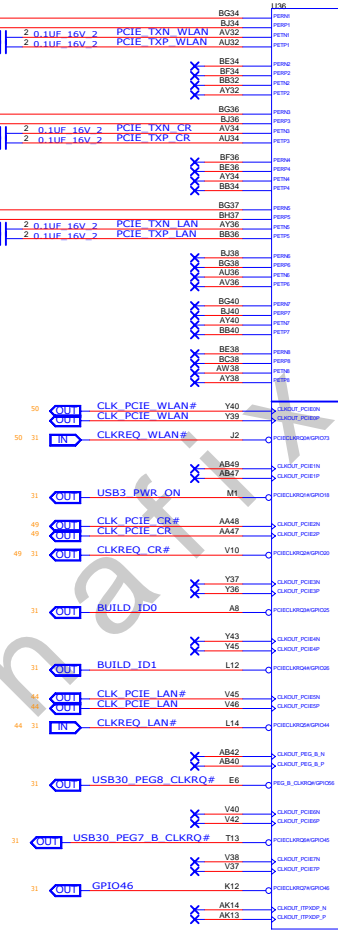
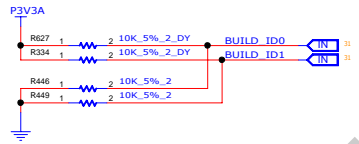


Diagram illustrating the FLASH_DESCRIPTOR_SECURITY_OVERRIDE register configuration. The register is divided into two 8-bit fields: HDA_SDO_R (bits 15-8) and HIGH:ENABLE LOW:DISABLE (bits 7-0). The HDA_SDO_R field is connected to the HDA_SDO_1R pin of the R647 2ME FLASH EN chip. The HIGH:ENABLE LOW:DISABLE field is connected to the HDA_SDO_2 pin of the same chip. The chip is also connected to a 1K 3% resistor.



BUILD ID

	BUILD_ID1	BUILD_ID0
DB	0	0
SI	0	1
PV	1	0
MV	1	1



CLOCKS

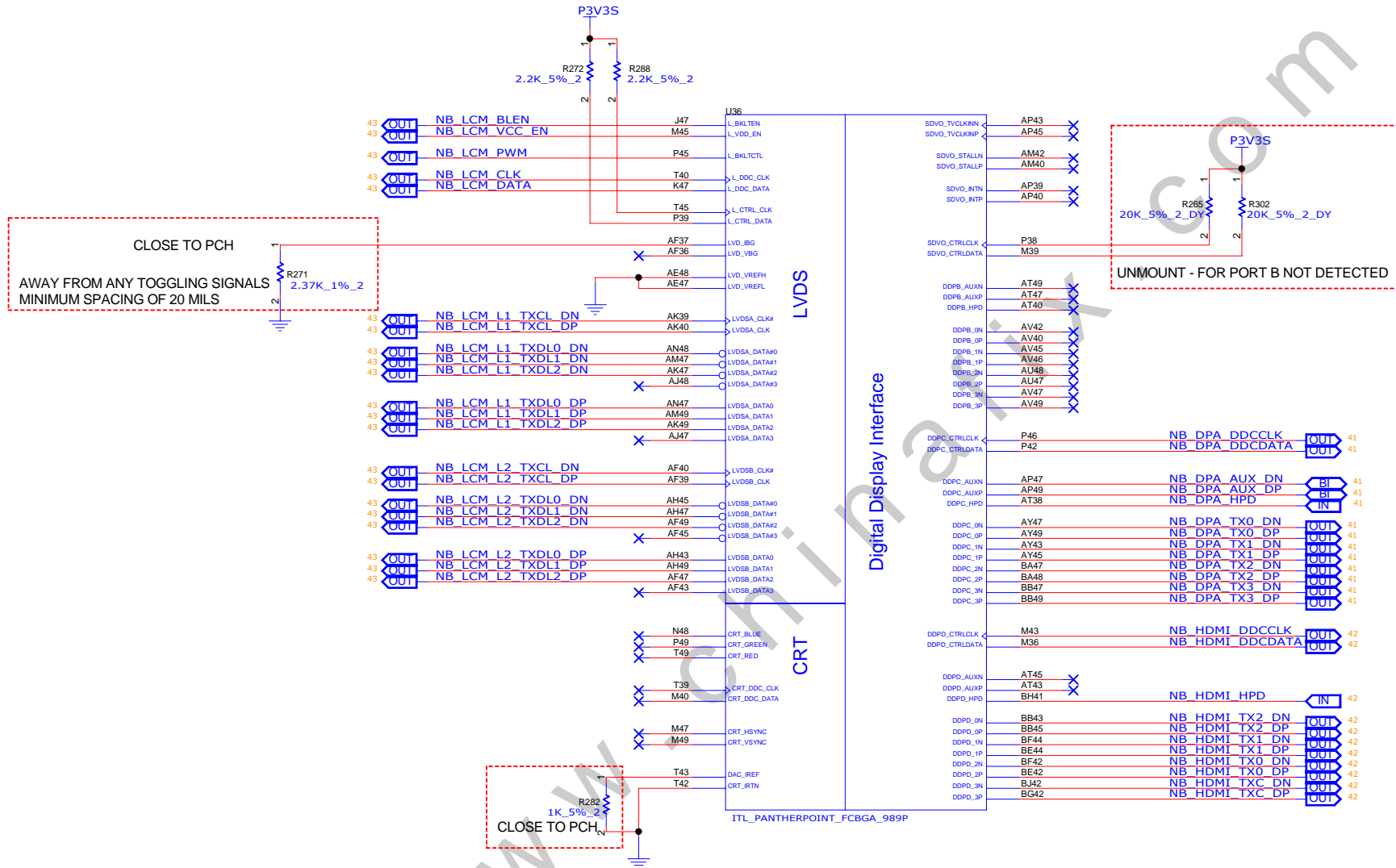
FLEX CLOCKS

ITL_PANTHERPOINT_FCBGA_989P

AS PER INTEL ME FW RELEASED, CLKOUTFLEX0 IS BY DEFAULT 33MHZ

INVENTEC

TITLE			
LV1.1_Lauren			
PCH-2			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310XAXX-0-0	X01
SHEET		31	65



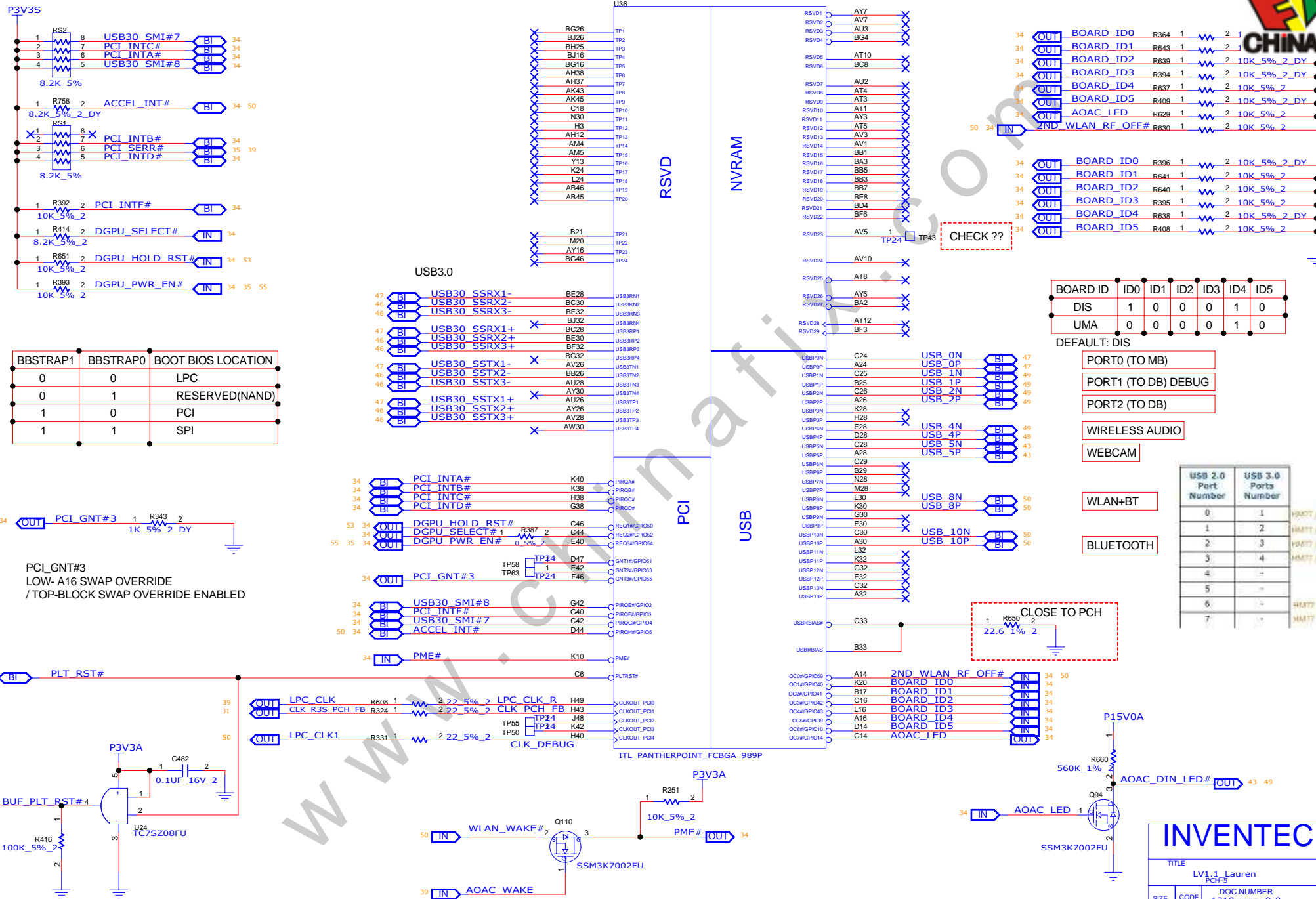
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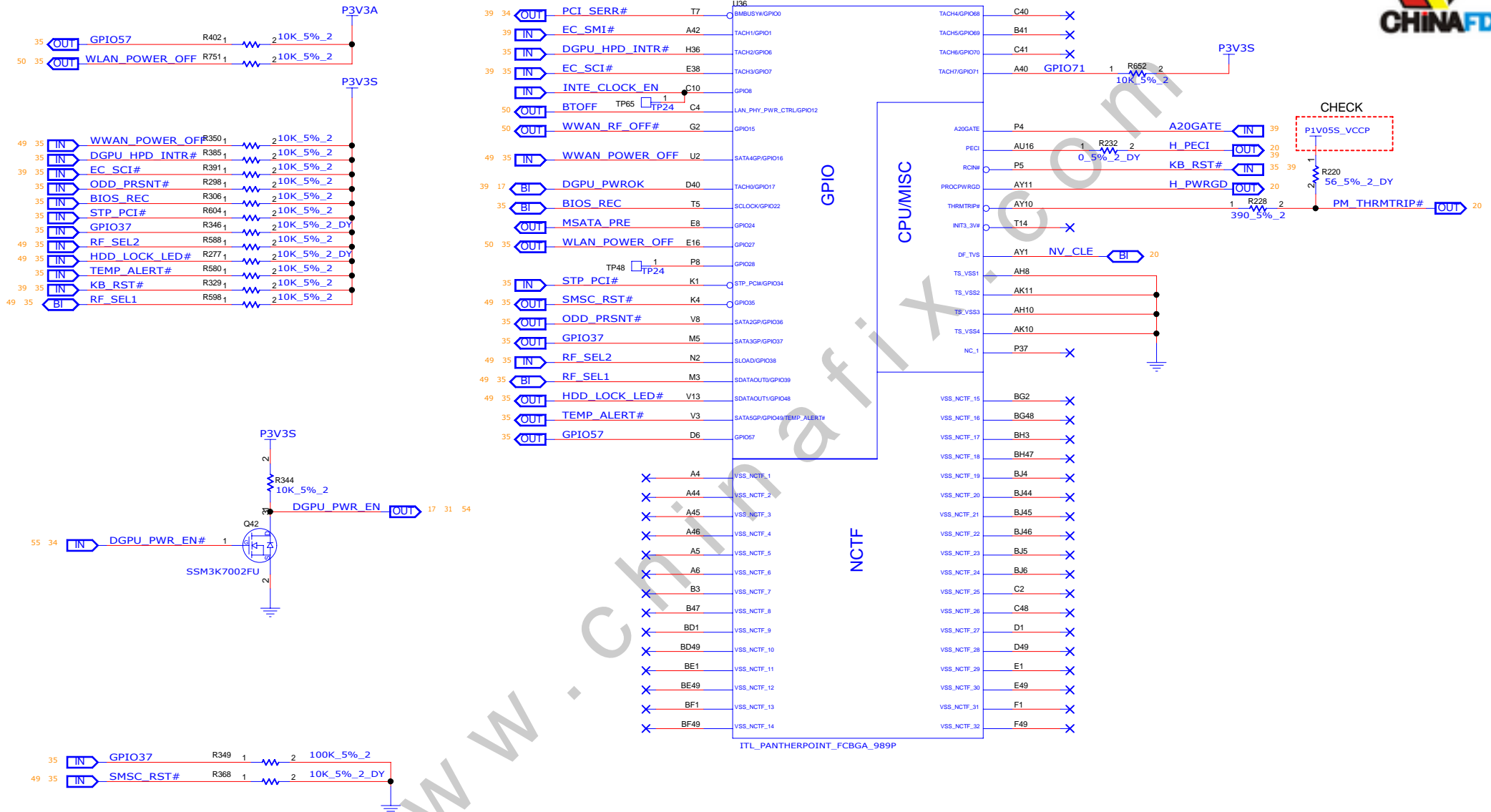
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LV1.1_Lauren
PCF4

SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
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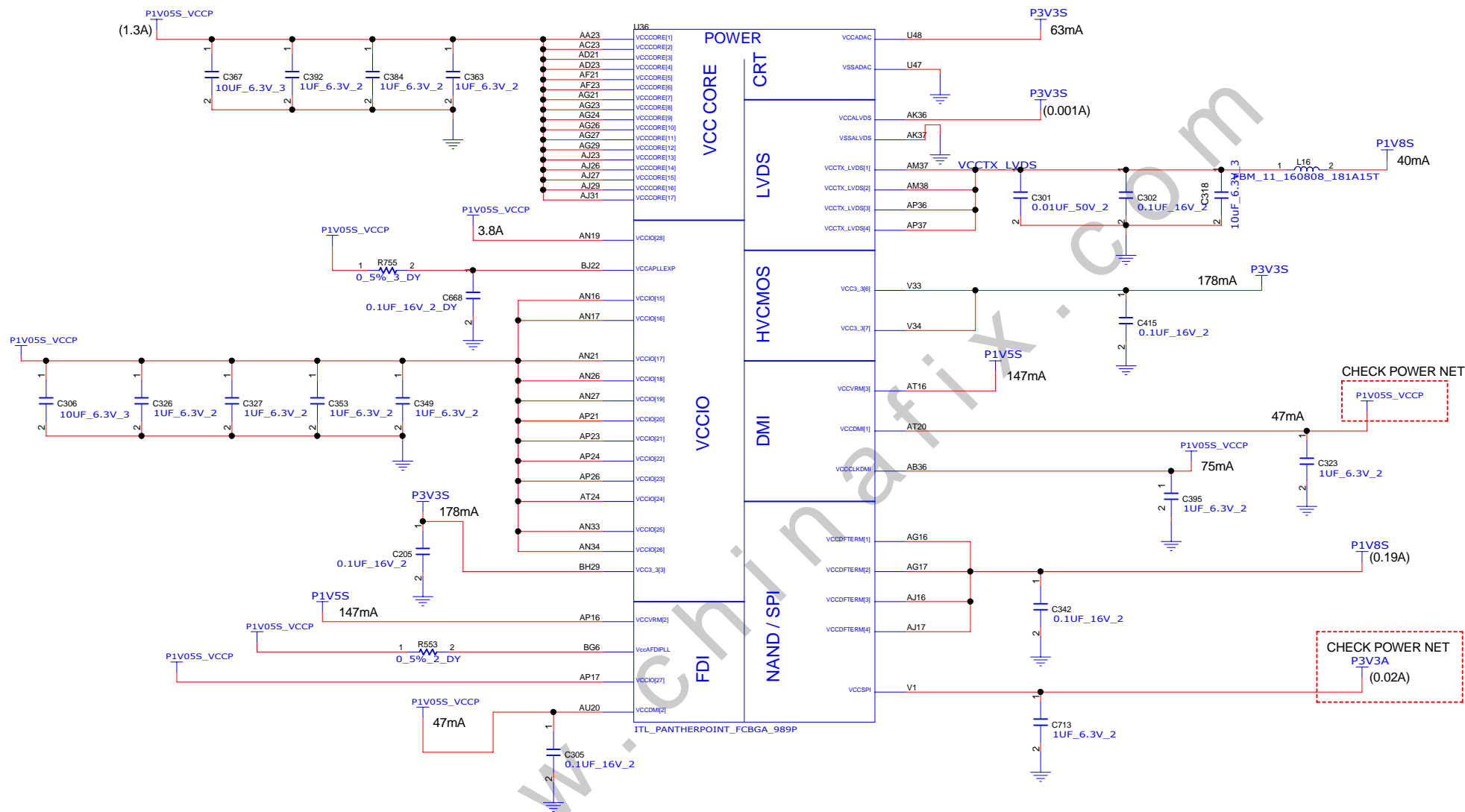


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INVENTEC

TITLE LV1.1-Lauren

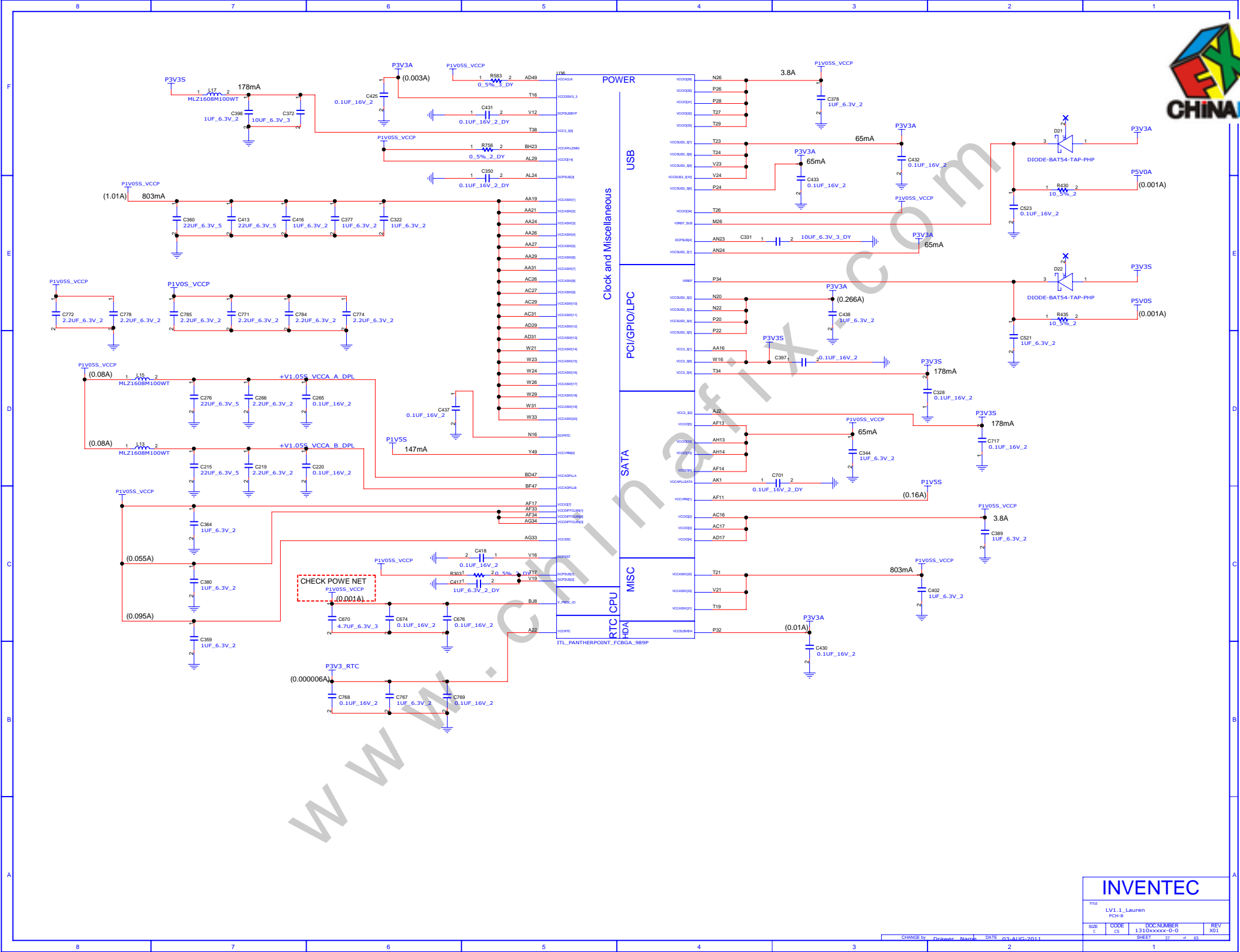
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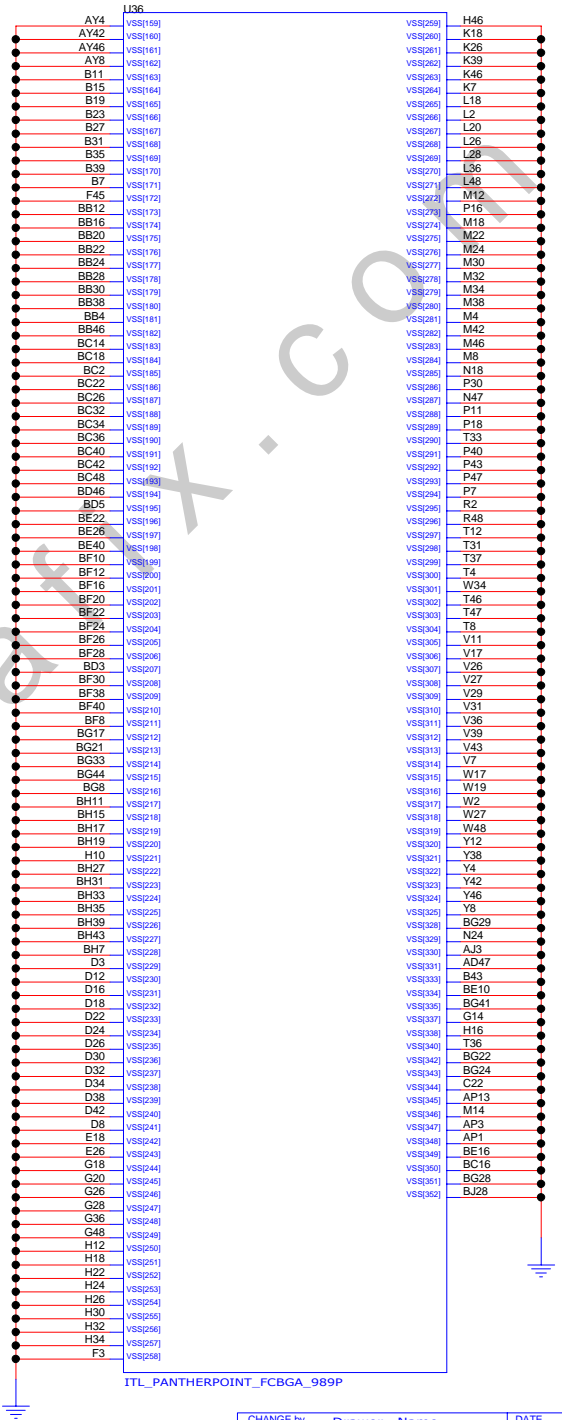
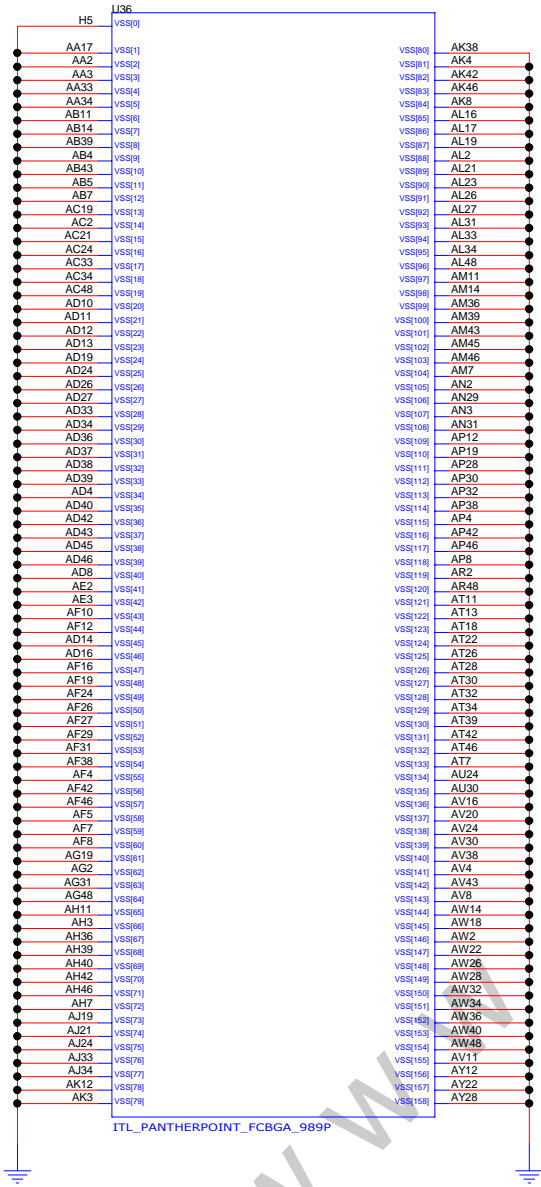
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REV X01

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INVENTEC

TITLE
LV1.1_Lauren
PCR19

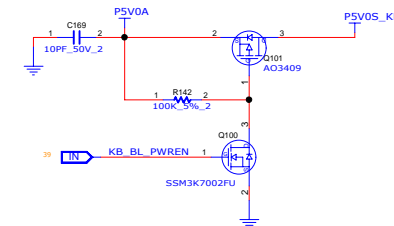
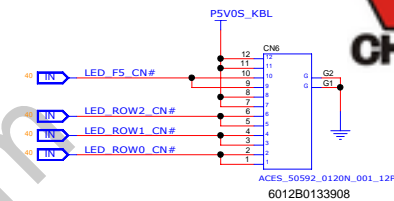
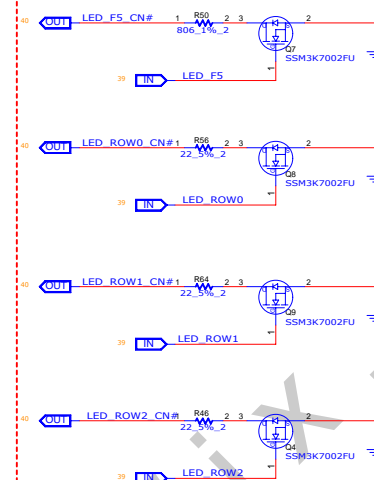
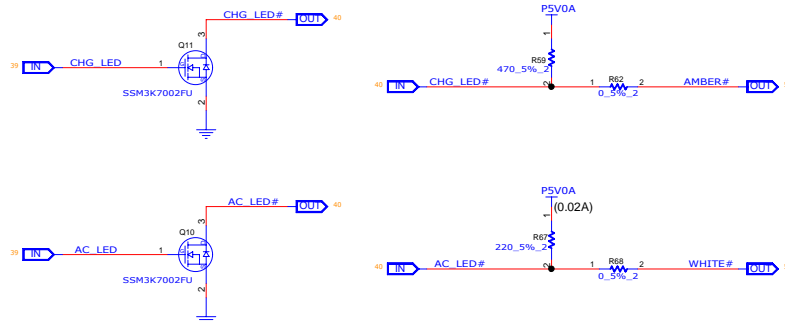
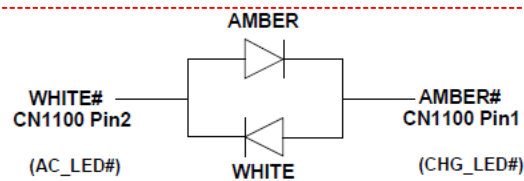
SIZE CODE DOC NUMBER REV
A3 CS 1310xxxxx-0-0 X01

CHANGE by DATE 03-AUG-2011 SHEET 38 of 65

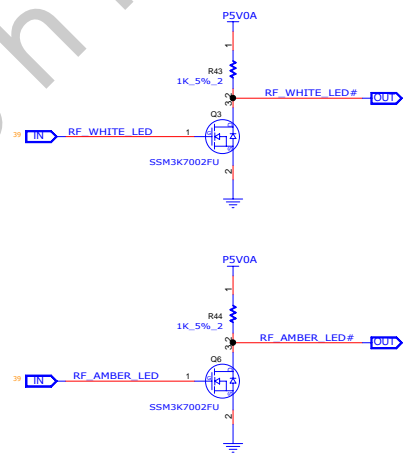
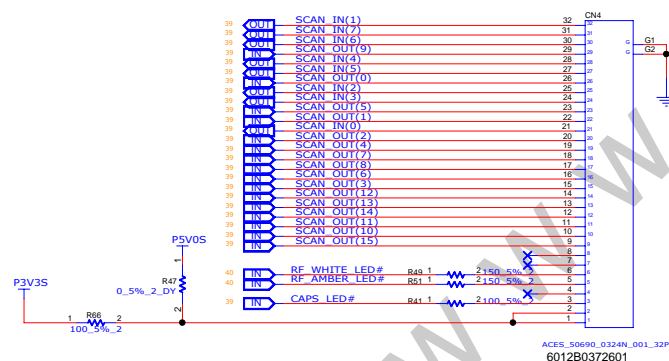


TITLE			
LV1.1_Lauren KBC			
SIZE C	CODE CS	DOC NUMBER 1310xxxxxx-0-0	REV X01
SHEET 39 of 65			

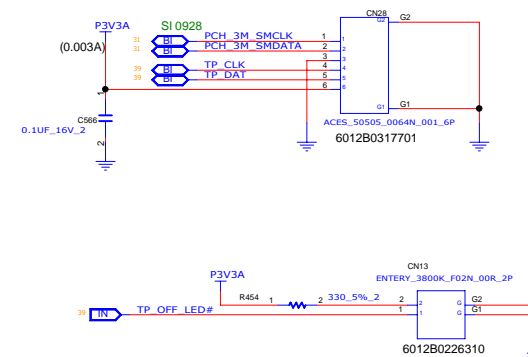
DC-JACK LED



KEYBOARD CONN



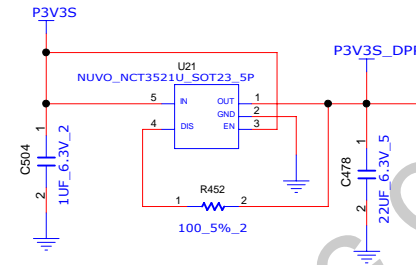
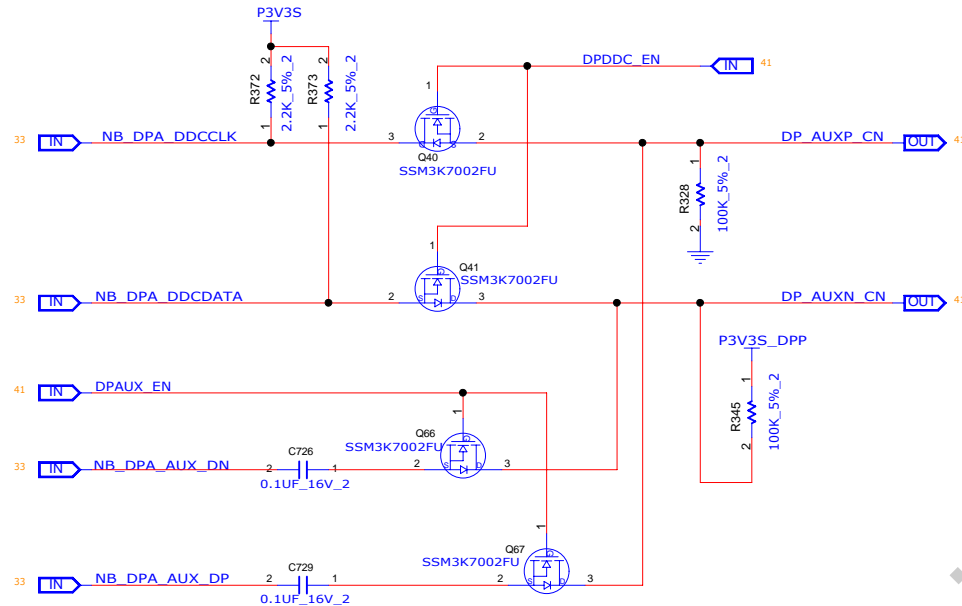
TOUCHPAD MODULE CONN



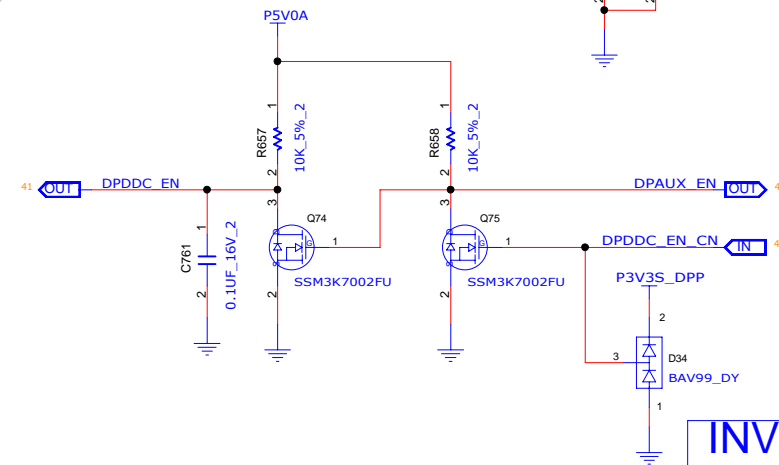
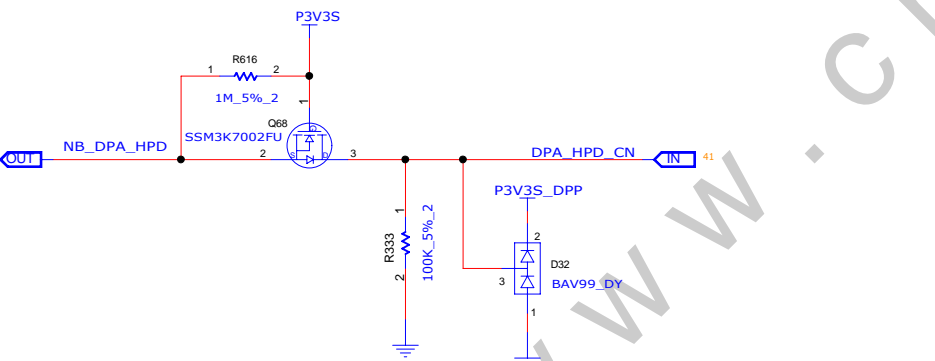
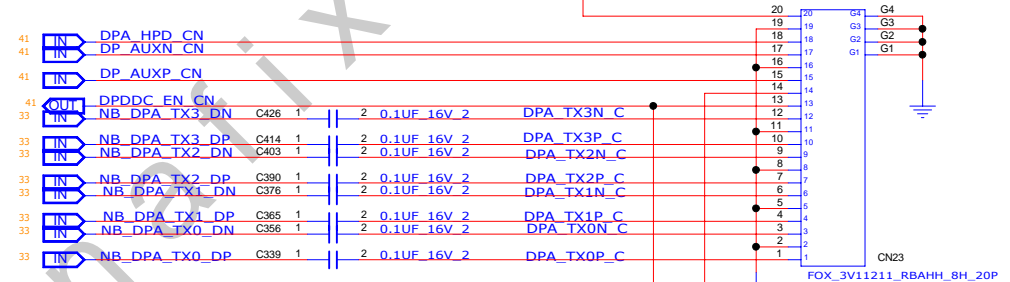
INVENTEC

TITLE		LV1.1_Lauren	
KEYBOARD & TOUCHPAD			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310XXXX-0-0	X01

DISPLAY PORT



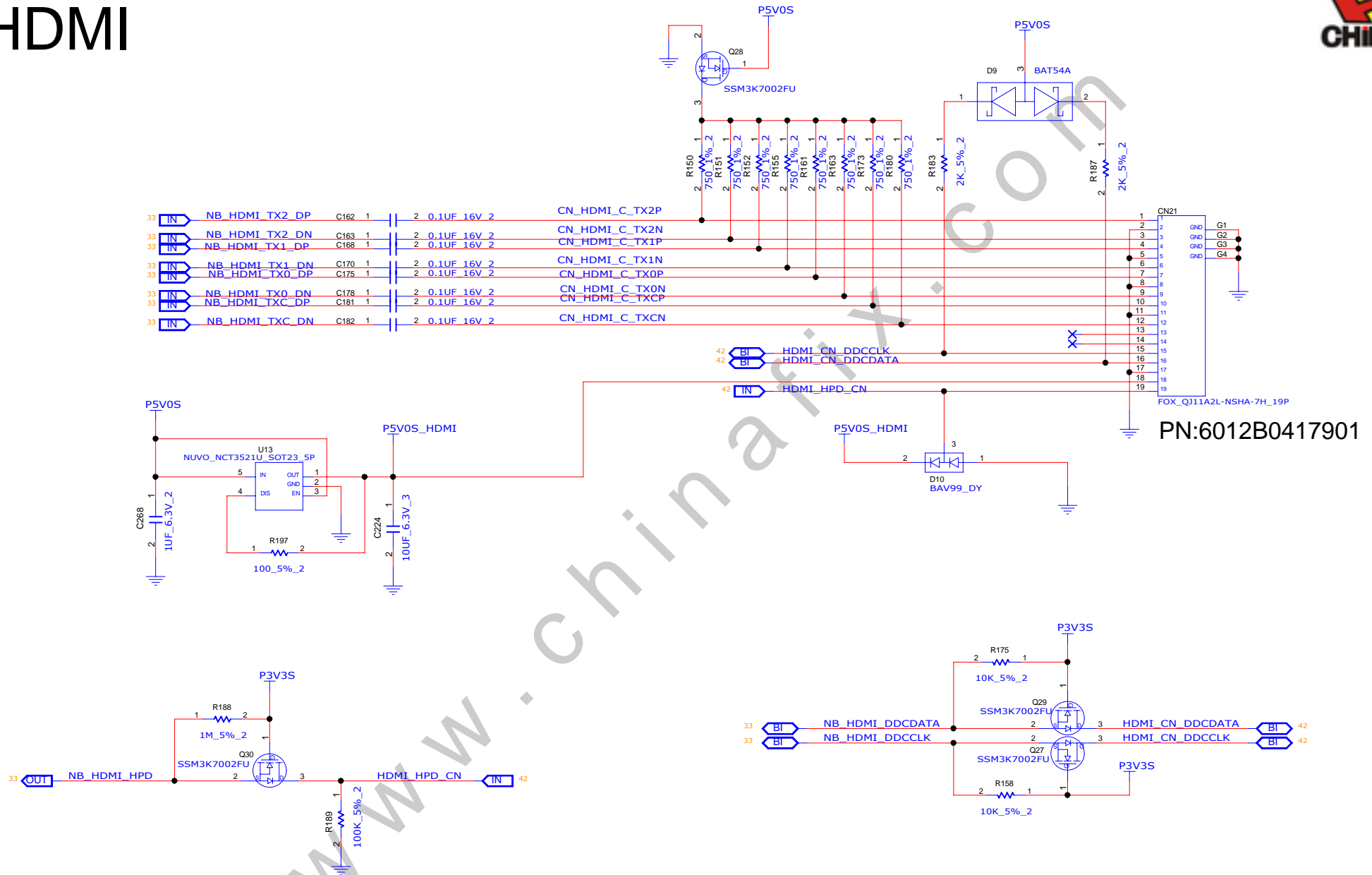
PN:6012B0416401



INVENTEC

TITLE			
LV1.1 Lauren			
DISPLAY PORT CONN			
DOCNUMBER			
1310xxxxx-0-0			
REV			
X01			
SIZE	CODE	SHEET	
A3	CS	41 of 65	

HDMI



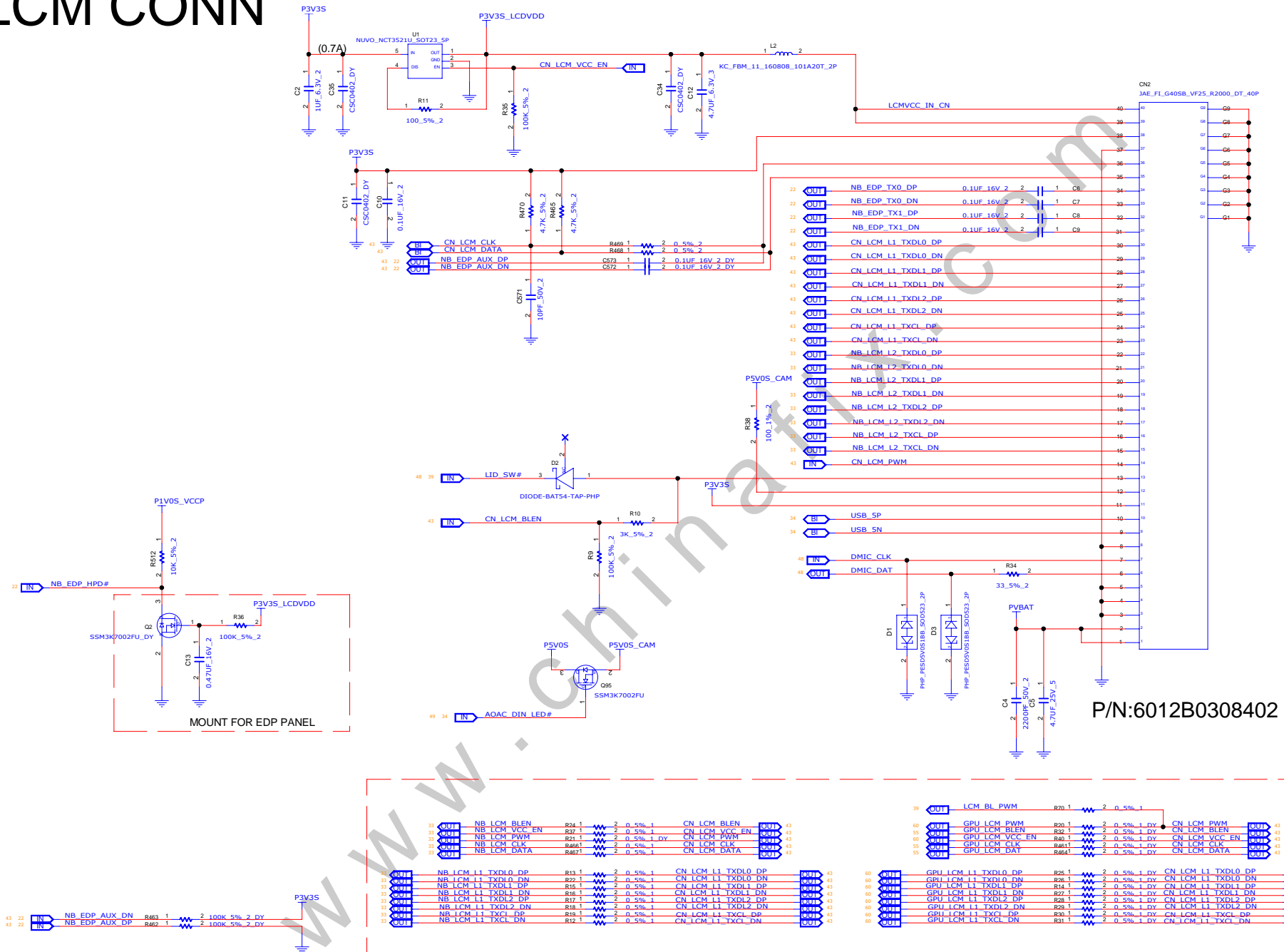
INVENTEC

TITLE			
LV1.1 Lauren HDMI_CONN			
DOC NUMBER 1310xxxxx-0-0			
SIZE A3	CODE CS	REV X01	

CHANGE by Drawer_Name DATE 03-AUG-2011

SHEET 42 of 65

LCM CONN



P/N:6012B0308402

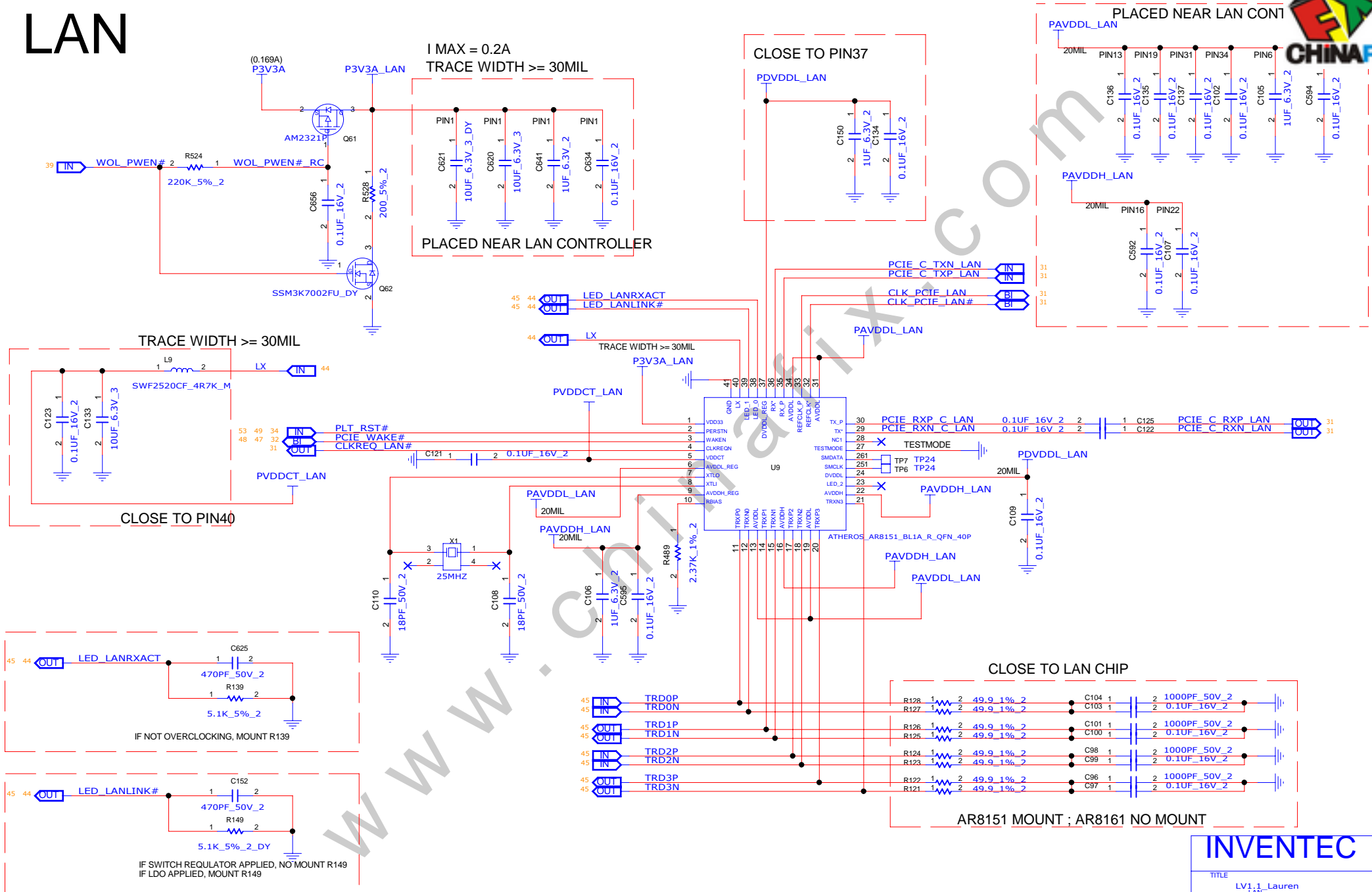
0201 RESISTOR

INVENTEC

Title			
LV1.1_Lauren			
LVDS			
Size	Code	Doc Number	Rev
C	05	1310xxxx-0-0	X01
Sheet		41	of 65

CHANGE by: *Drawn: Namik* DATE: 03-AUG-2011

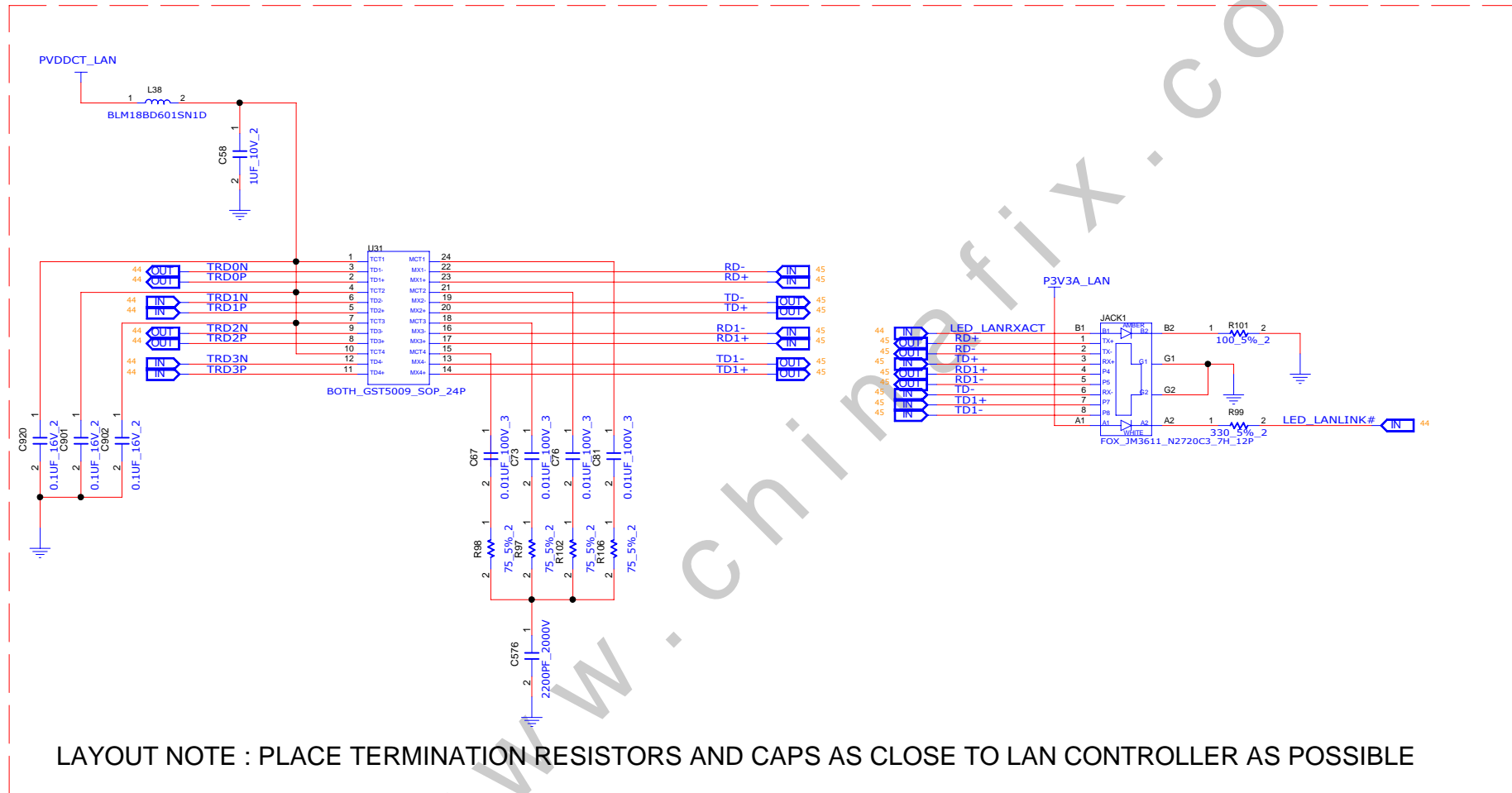
LAN



INVENTEC

TITLE			
LV1.1_Lauren LAN			
SIZE A3	CODE CS	DOC.NUMBER 1310xxxxx-0-0	REV X01
SHEET 44 of 65			

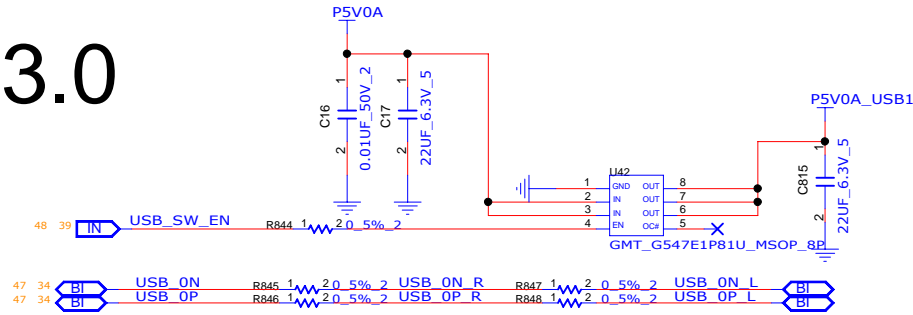
RJ45



INVENTEC			
TITLE			
LV1.1_Lauren			
RJ-45			
SIZE	CODE	DOC.NUMBER	REV
A3	CS	1310xxxx-0-0	X01
SHEET 45 of 65			

CHANGE by Drawer Name DATE 03-AUG-2011

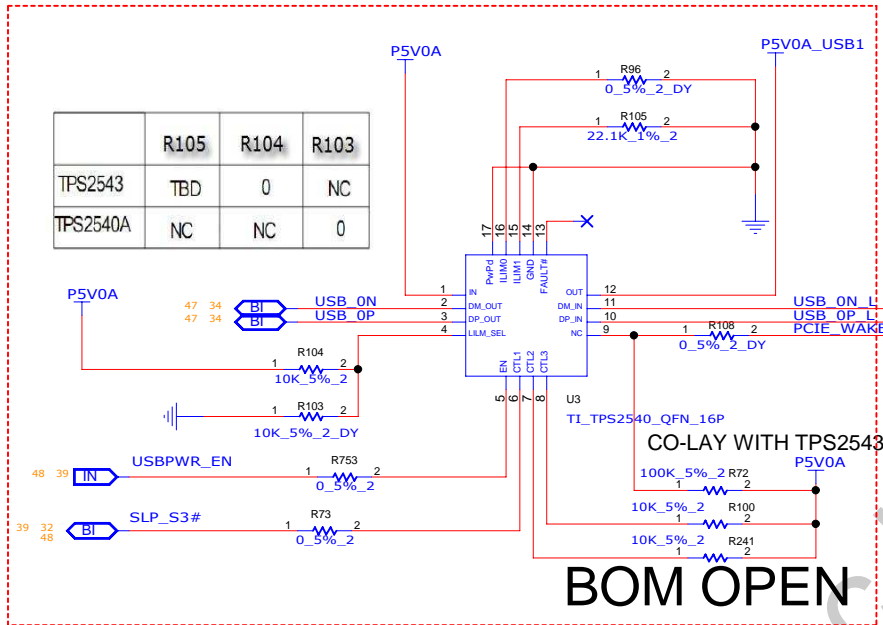
USB 3.0



TPS2543/44 Control Truth Table

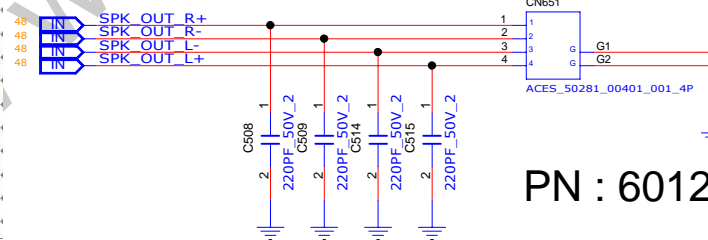
Input Logic Level				Logic Output	
CTL1	CTL2	CTL3	ILIM_SEL	Charging Mode	WAKE C
0	0	0	x	OUT discharge, power switch off	
0	x	1	0	Dedicated charging port, auto-detect	off
0	x	1	1	Dedicated charging port, auto-detect, w/ Mouse/Keyboard detect + pass through enabled (back to auto detect when detached)	active low if DCP load present
x	1	0	x	Standard downstream port, USB 2.0 Mode	off
1	0	0	x	Dedicated charging port, BC1.2 only	off
1	0	1	x	Dedicated charging port, divider	off
1	1	1	0	Standard downstream port, USB 2.0 Mode	off
1	1	1	1	Charging downstream port, BC1.2	active low if CDP load present

	R105	R104	R103
TPS2543	TBD	0	NC
TPS2540A	NC	NC	0



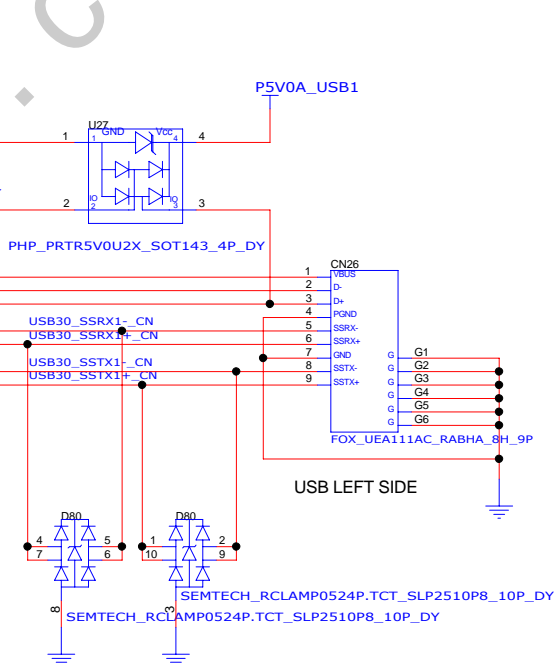
BOM OPEN

REAR SPEAKER



PN : 6012B0096202

USB CONN01



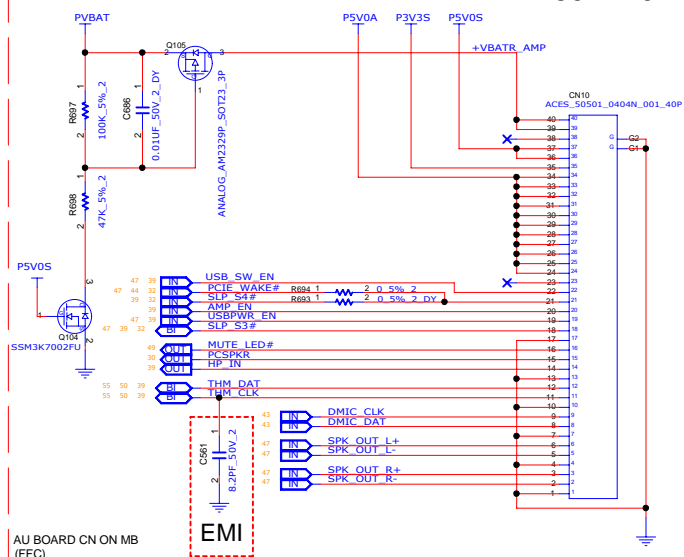
	USB charger port (TPS2540)			Standard USB port		
	S0	S3	S4,S5	S0	S3	S4,S5
AC	ON (EN=1) (1,1,1) (CDP MODE)	ON (EN=1) (0,1,1) (DCP auto MODE)	ON (EN=1) (0,1,1) (DCP auto MODE)	ON	ON	ON
DC (normal batt)	ON (EN=1) (1,1,1) (CDP MODE)	ON (EN=1) (0,1,1) (DCP auto MODE)	ON (EN=1) (0,1,1) (DCP auto MODE)	ON	OFF	OFF
DC (low batt 10%)	ON (EN=1) (1,1,1) (CDP MODE)	OFF (EN=0) (0,1,1)	OFF (EN=0) (0,1,1)	ON	OFF	OFF

INVENTEC

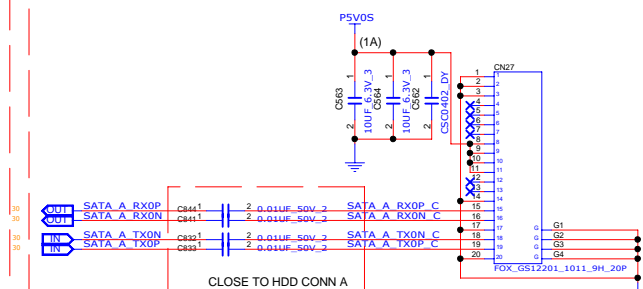
TITLE			
LV1.1 Lauren USB3.0 CONN			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01

AU BOARD CN ON MB

PN : 6012B0218428



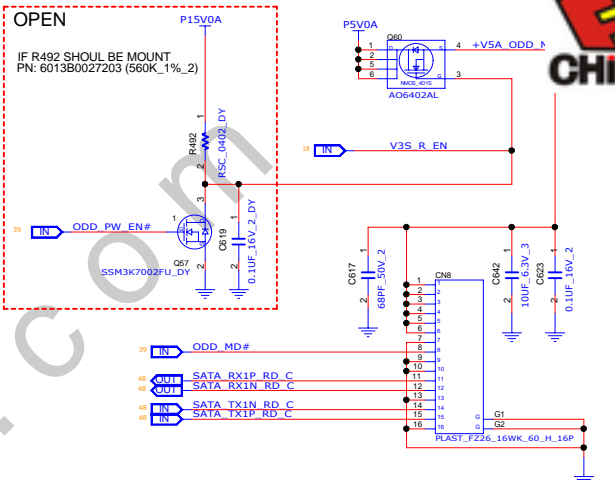
SATA HDD CONN A



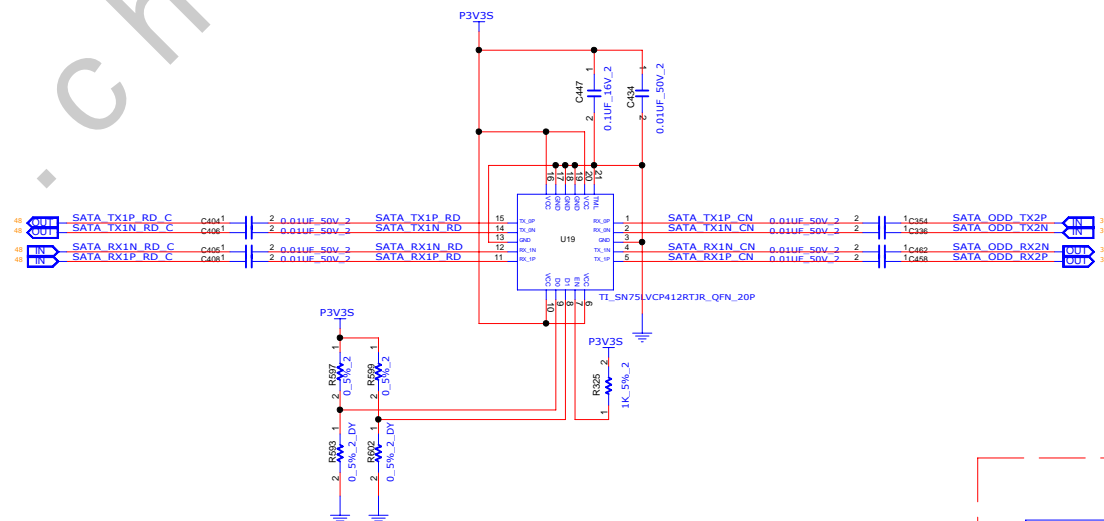
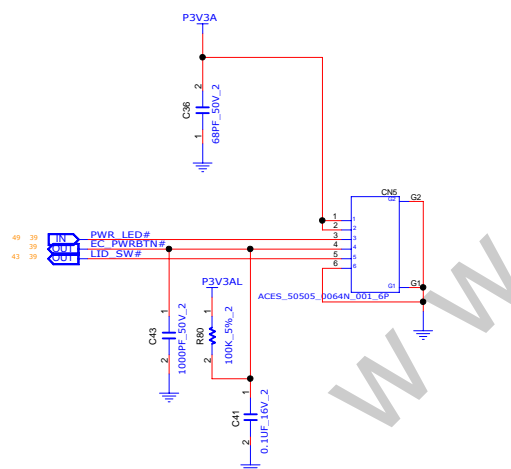
SATA ODD FFC CONN ON ME

OPEN

IF R492 SHOULD BE MOUNT
PN: 6013B0027203 (560K_1%_2)



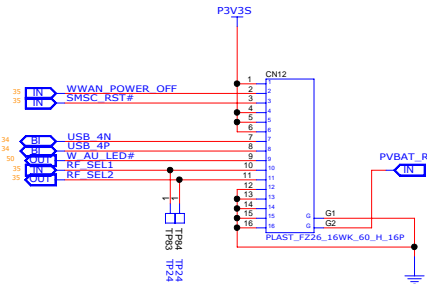
PBN CABLE CN ON MB



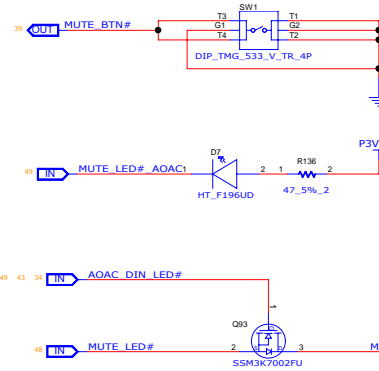
INVENTEC

TITLE			
LV1.1_Lauren AUDIO, PWB, ODD BOARD & HDD CONN			
SIZE C	CODE CS	DOC NUMBER 1310xxxxxx-0-0	R X

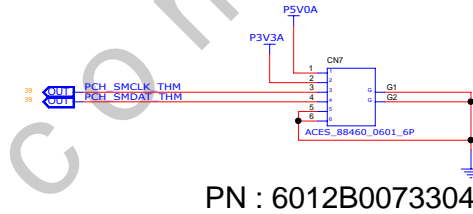
WIRELESS AUDIO BOARD CN ON MB MUTE BUTTON



MUTE BUTTON SWITCH

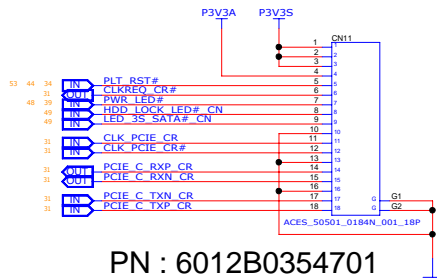


LDPS BOARD CN ON MB



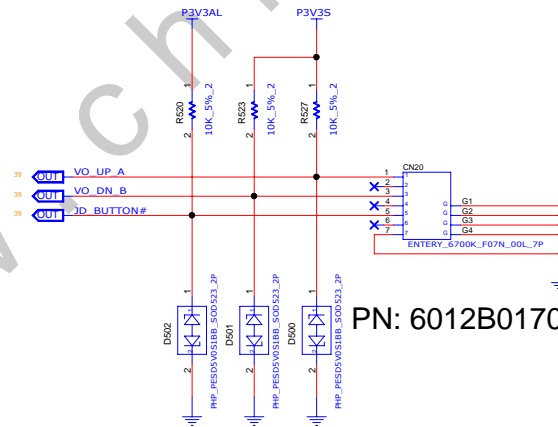
PN : 6012B0073304

CR BOARD CN ON MB



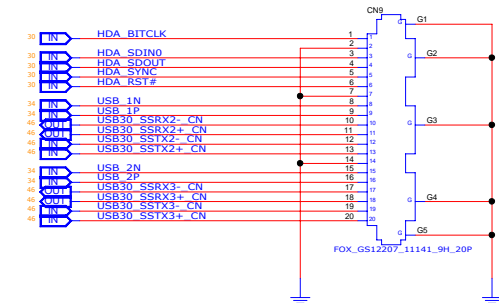
PN : 6012B0354701

JOOG DIAL CN ON MB



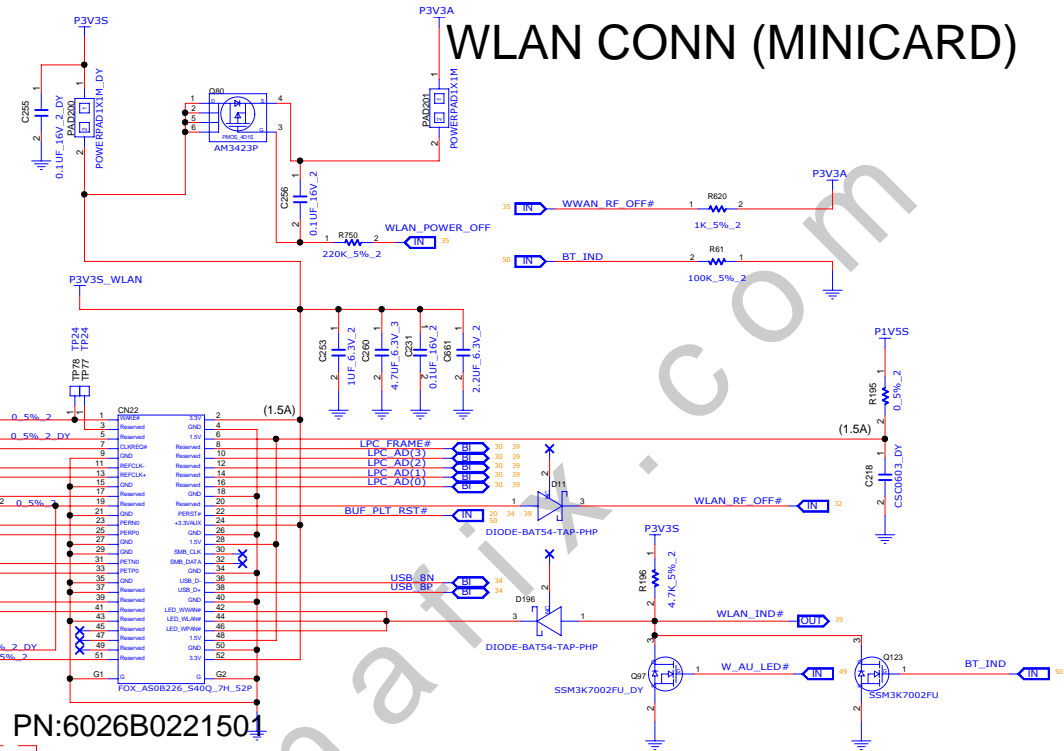
PN: 6012B0170703

AU-USB30 CN ON MB (WIRE OR COXIAL)

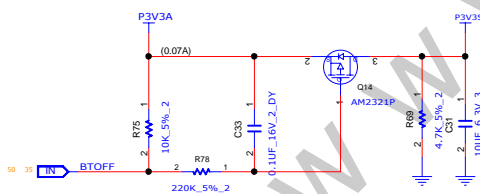


INVENTEC

FILE	LV1_1_Lauren	CONN
SIZE	WIRELESS AUDIO,LDPS,CR,JOOG,USB	REV
CODE	1310XXXX-0-0	201
SHEET	49	65



PN : 612B0073304



HARDDRIVE PROTECTION

PN:6019B0914201

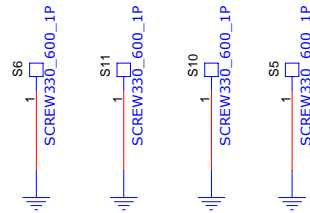
SMBUS ADDRESS IS "001100XB"

IF SA0 PAD IS CONNECTED TO VOLTAGE, LSB IS "1"

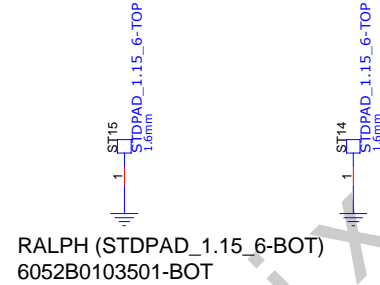
IF SA0 PAD IS CONNECTED TO GND, LSB IS "0"

TITLE			
LV1.1_Lauren WLAN & HDD PROTECTION			
SIZE C	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 50 of 65			

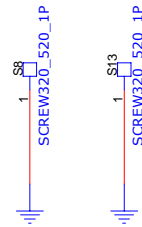
CPU SCREWS



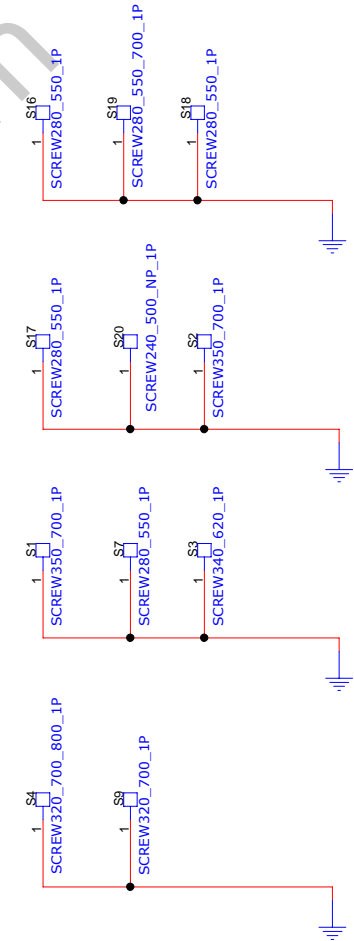
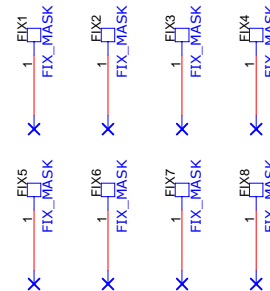
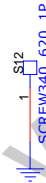
WWAN SCREWS



VGA SCREWS



FAN SCREWS



INVENTEC

TITLE
LV1.1-Lauren
EMI CAP & SCREW

DOC NUMBER
1310xxxxx-0-0

REV
X01

CHANGE by Drawer_Name DATE 03-AUG-2011

SHEET 51 of 65



GPU

www.chinafix.com

INVENTEC

TITLE			
LV1.1 Lauren BLANK			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01

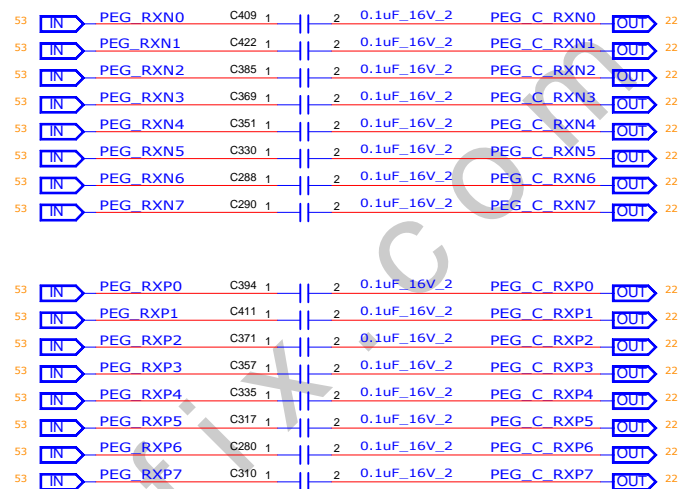
CHANGE by Drawer Name DATE 03-AUG-2011

SHEET 52 of 65

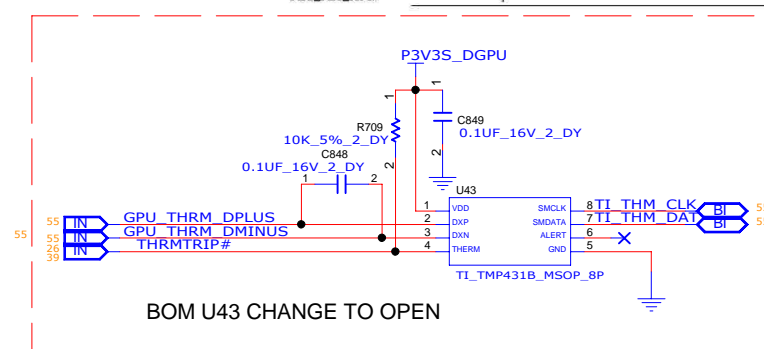
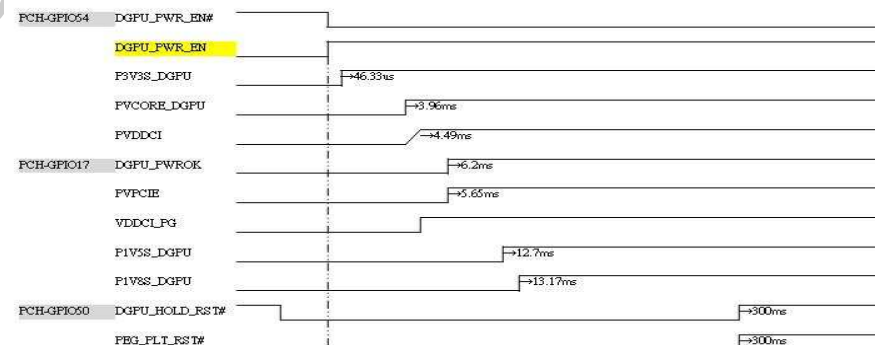


WHISTLER M2

CLOSE TO GPU



C IS 0402



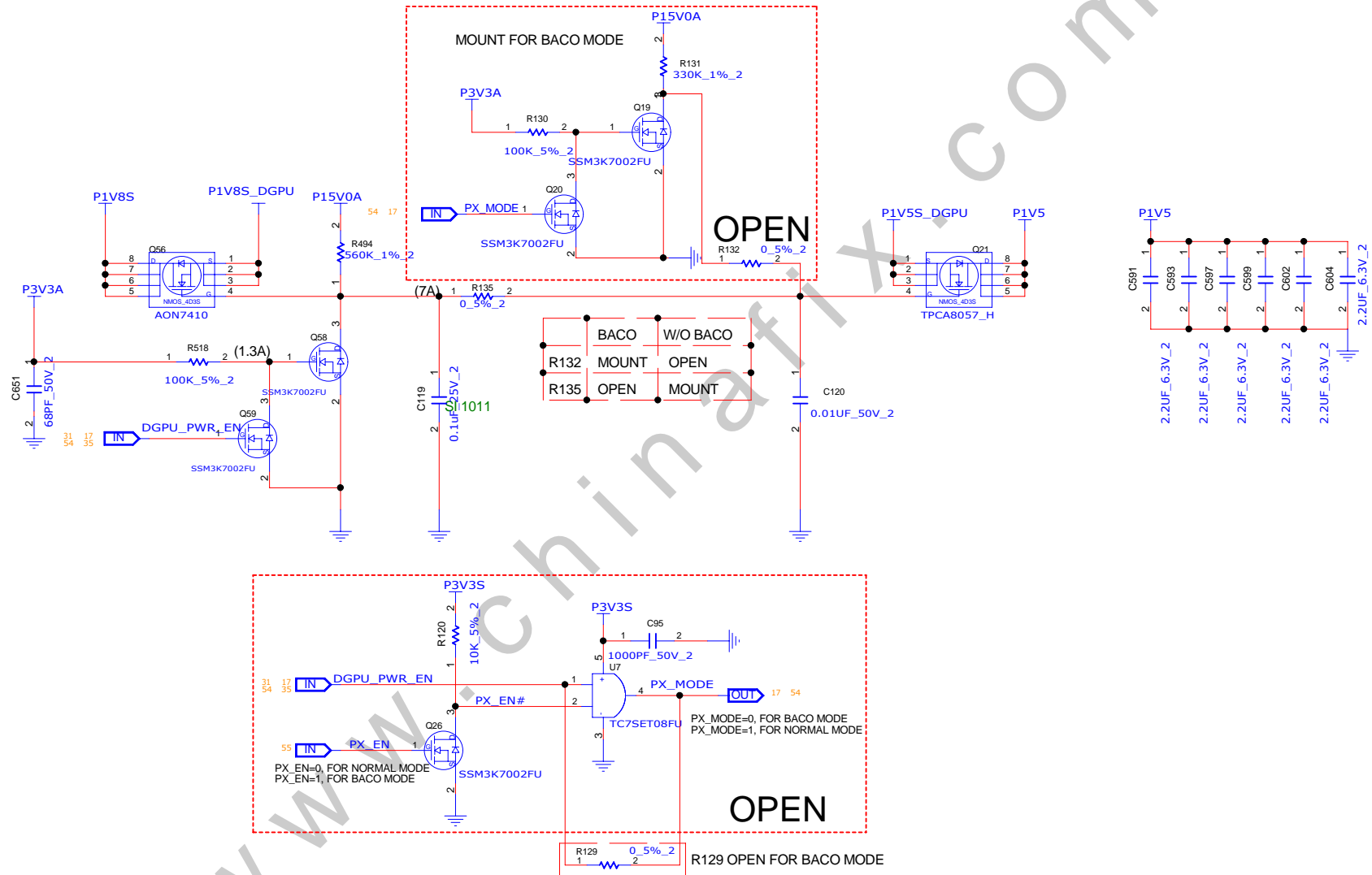
BOM U43 CHANGE TO OPEN

INVENTEC

TITLE			
LV1.1_Lauren			
GPU1			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

CHANGE by Drawer Name DATE 03-AUG-2011

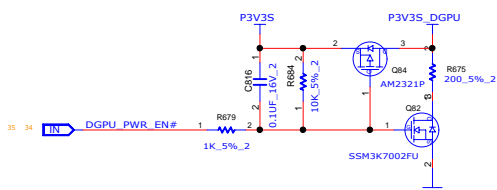
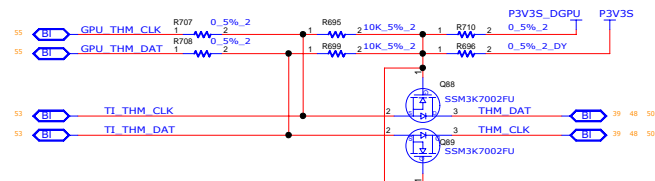
SHEET 53 of 65



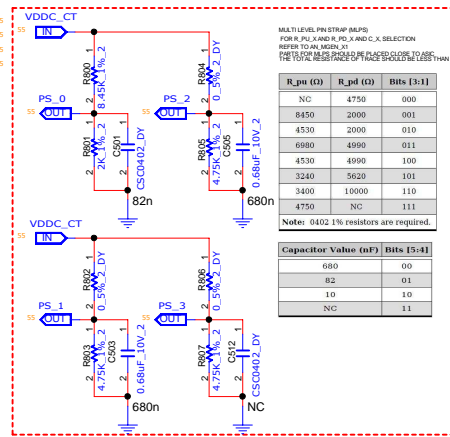
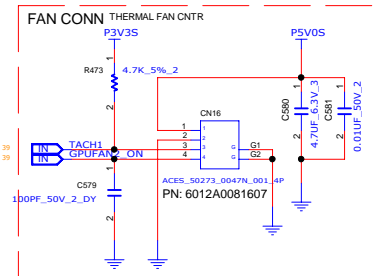
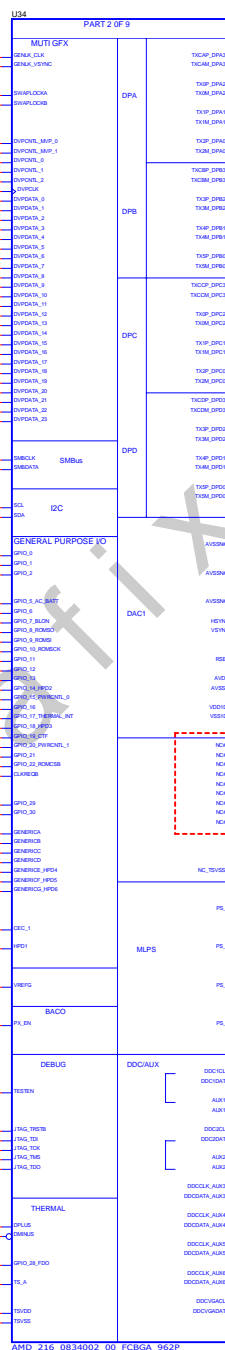
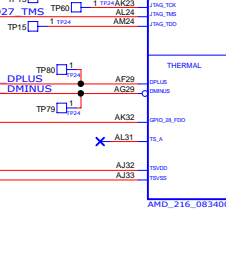
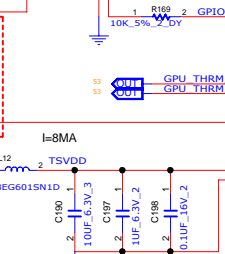
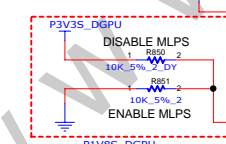
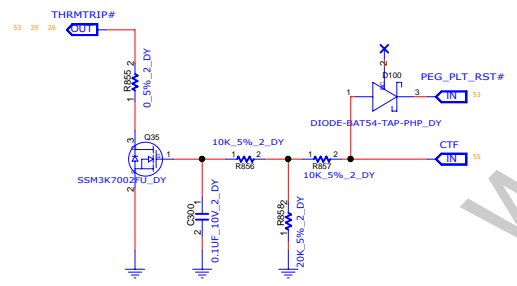
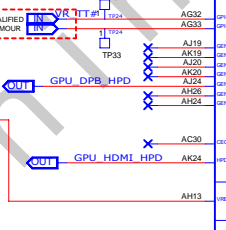
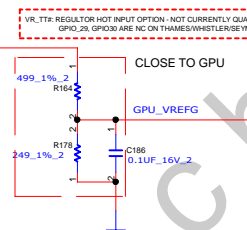
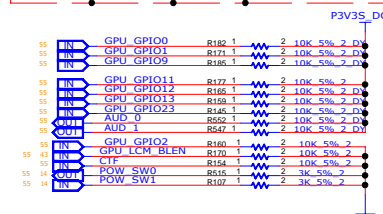
INVENTEC

TITLE			
LV111_Lauren Block Diagram			
DOC NUMBER			
1310xxxxx-0-0			
SIZE	CODE	REV	
A3	CS	X01	

MEM_ID3	MEM_ID2	MEM_ID1	MEM_ID0	VENDOR
0	0	0	0	HYNIX (1GB) (H5GQ1H24BFR-T2C)
0	0	1	0	SAMSUNG (1GB) (K4G10325FC-HC04)
0	0	0	0	HYNIX (2GB) (H5GQ2H24MFR-T2C)
0	0	0	0	SAMSUNG (2GB) (DEFAULT) (K4G20325FC-HC04)
0	1	0	0	ALPIDA (2GB)



GPIO_13	GPIO_12	GPIO_11	MEMORY APERTURE SIZE
0	0	0	2GB / 1GB (DEFAULT)
1	1	1	RESERVED



R _{pin} (Ω)	R _{pin} (Ω)	Bits (3-1)
NC	4750	000
8450	2000	001
4530	2000	010
6980	4990	011
4530	4990	100
3240	5620	101
3400	10000	110
4750	NC	111

Capacitor Value (nF)	Bits (15-1)
680	00
82	01
10	10
NC	11

THAMES/WHISTLER/SEYMOUR ONLY
DO NOT INSTALL FOR HEATHROW/CHELSEA
NC, TSVSSQ SHOULD BE TIED TO GND ON THAMES/WHISTLER/SEYMOUR
PS_0 SHOULD BE TIED TO GND ON THAMES/WHISTLER/SEYMOUR

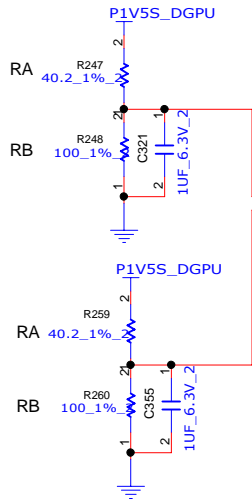
INVENTEC

LV1_1 Lauren
GPU-2

CHANNEL A

DDR3/GDDR3MEMORY STUFF OPTION

	GDDR5	GDDR3	DDR3
MVDDQ	1.5V	1.8V/1.5V	1.5V
RA	40.2R	40.2R	40.2R
RB	100R	100R	100R



FOR M97,BROADWAY,MADISO AND PARK ONLY
IF R258,R249,R146,R244 SHOULD BE MOUNT,
P/N 6013A0087806 (243OHM,1%)



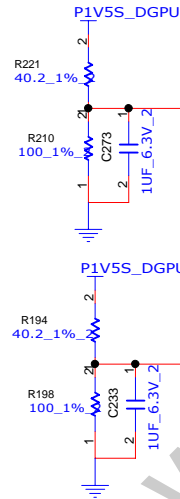
INVENTEC

TITLE			
LV1.1_Lauren			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

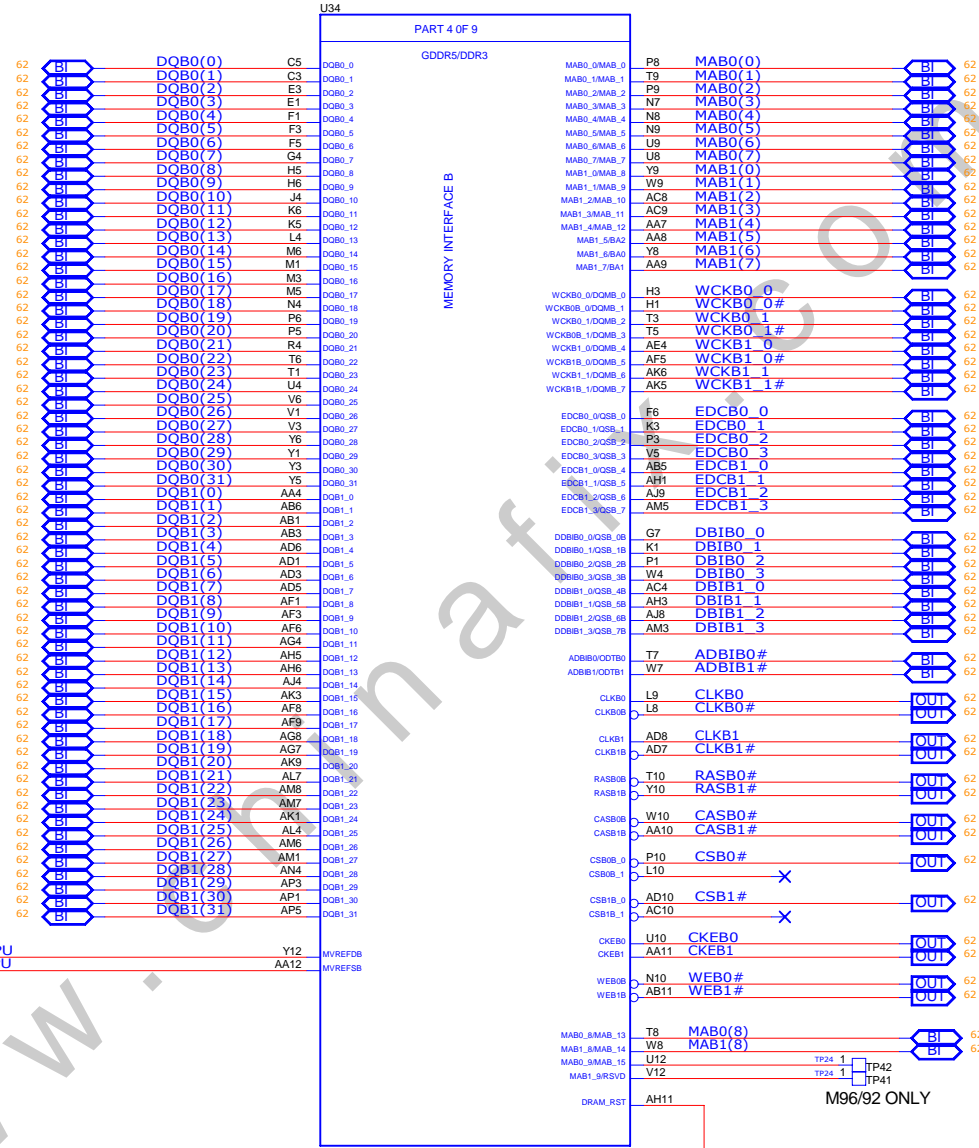
CHANNEL B

DDR3/GDDR3MEMORY STUFF OPTION

	GDDR5	GDDR3	DDR3
MVDDQ	1.5V	1.8V/1.5V	1.5V
RA	40.2R	40.2R	40.2R
RB	100R	100R	100R



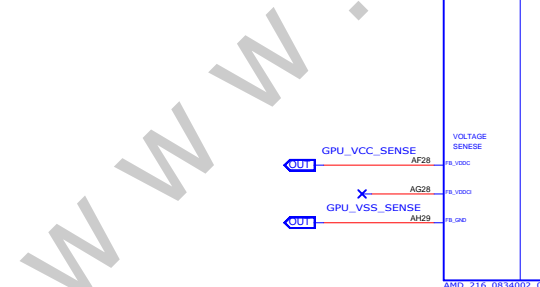
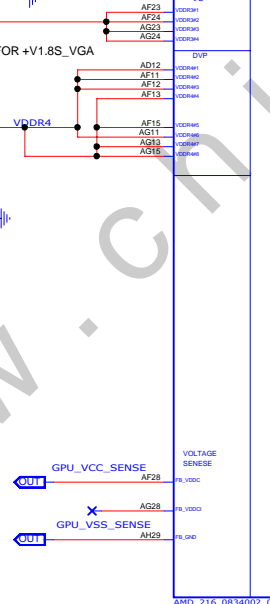
MVREFDB_GPU
MVREFSB_GPU



Place all these components vry close to GPU (Within 25mm)
and keep all component close to each other (within 5mm) except Rser2
* This basic topology should be used for DDR3/GDDR3/GDDR5
These Capacitors and Resistor values are an example only.
The Series R and || Cap values will depend on the DRAM load and will have to be
calculated for different Memory , DRAM Load and board to pass Reset Signal Spec.

INVENTEC

TITLE			
LV1.1_Lauren			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01





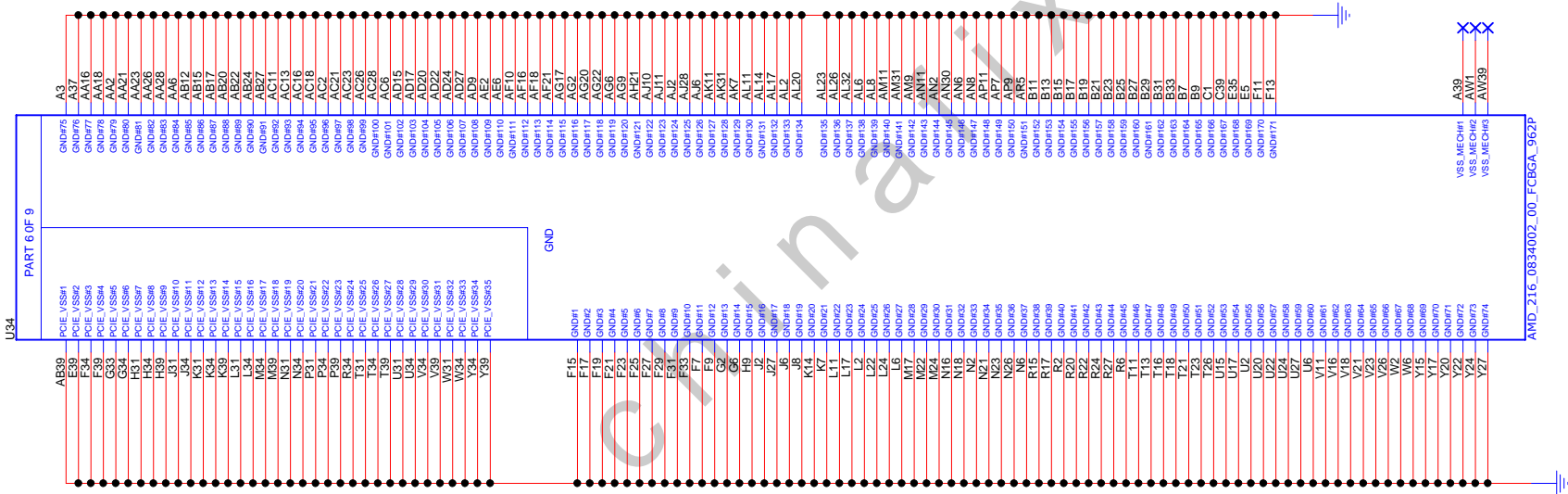
INVENTEC

TITLE LV1.1_Lauren GPU6

SIZE A3 CODE CS DOC NUMBER 1310xxxxx-0-0 REV X01

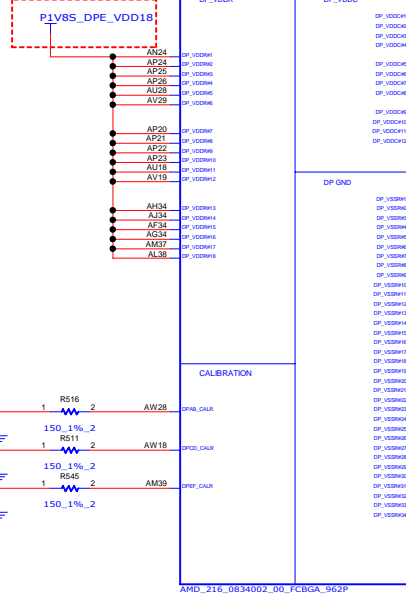
SHEET 59 of 65

CHANGE by Drawer Name DATE 03-AUG-2011



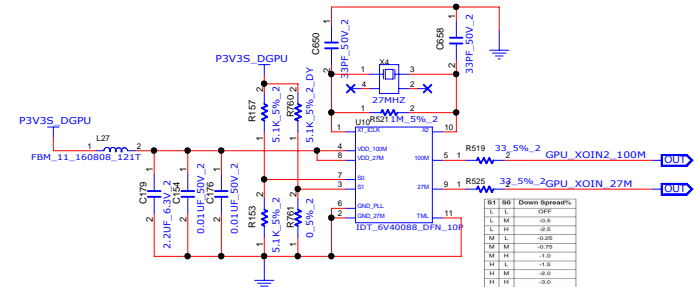
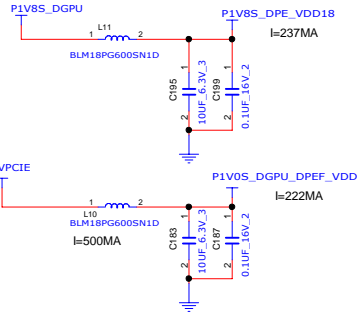
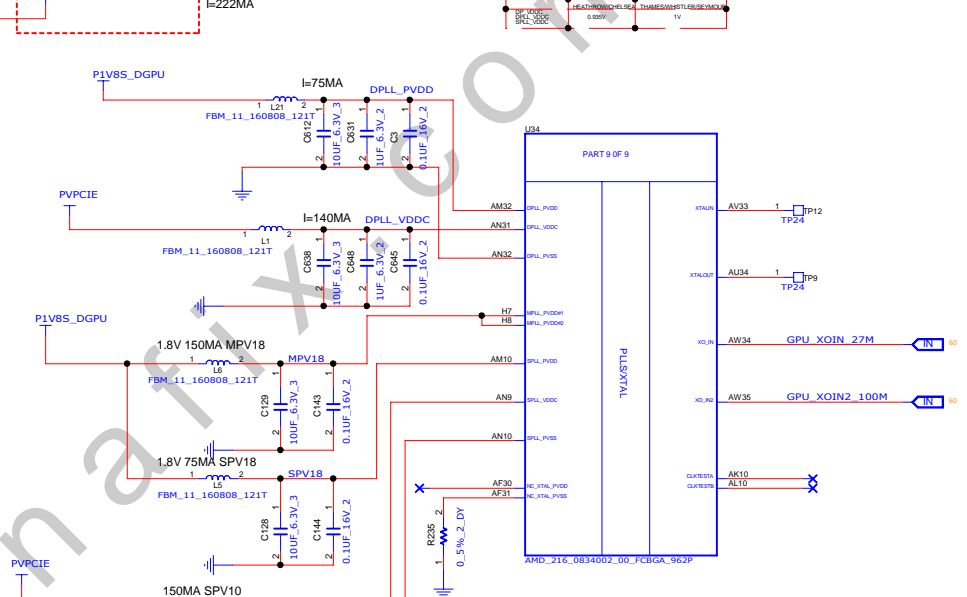
CHECK POWER NET

I=237MA



CHECK POWER NET

I=222MA

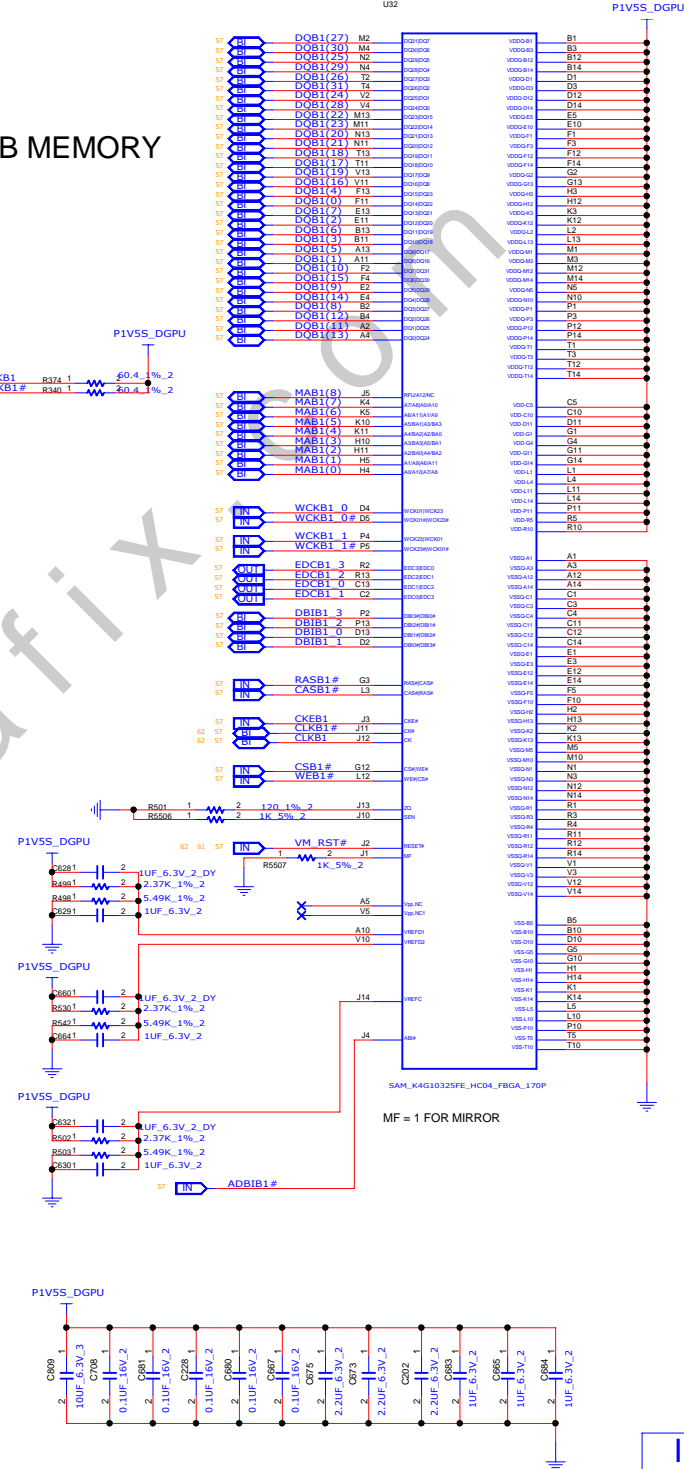




VENDER	DENSITY	VENDER PN	IEC PN
SAMSUNG	32MX32	K4G10325FG-HC04	601908889201
HYNIX	32MX32	H5GQ1H24BFR-T2C	601908866701
SAMSUNG	64MX32	K4G20325FC-HC04	601908842201
HYNIX	64MX32	H5GQ2H24MFR-T2C	601908843001

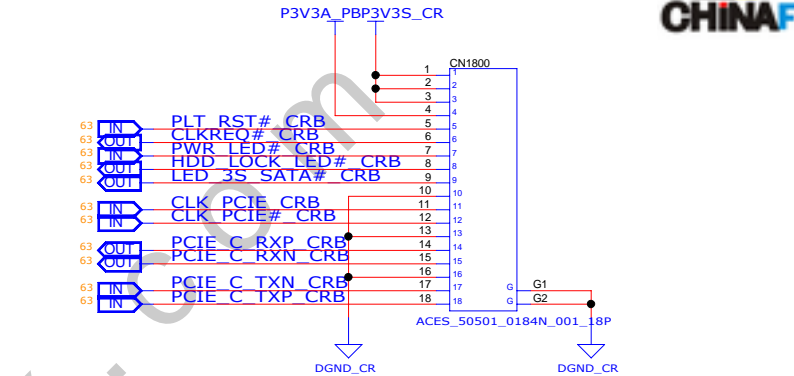
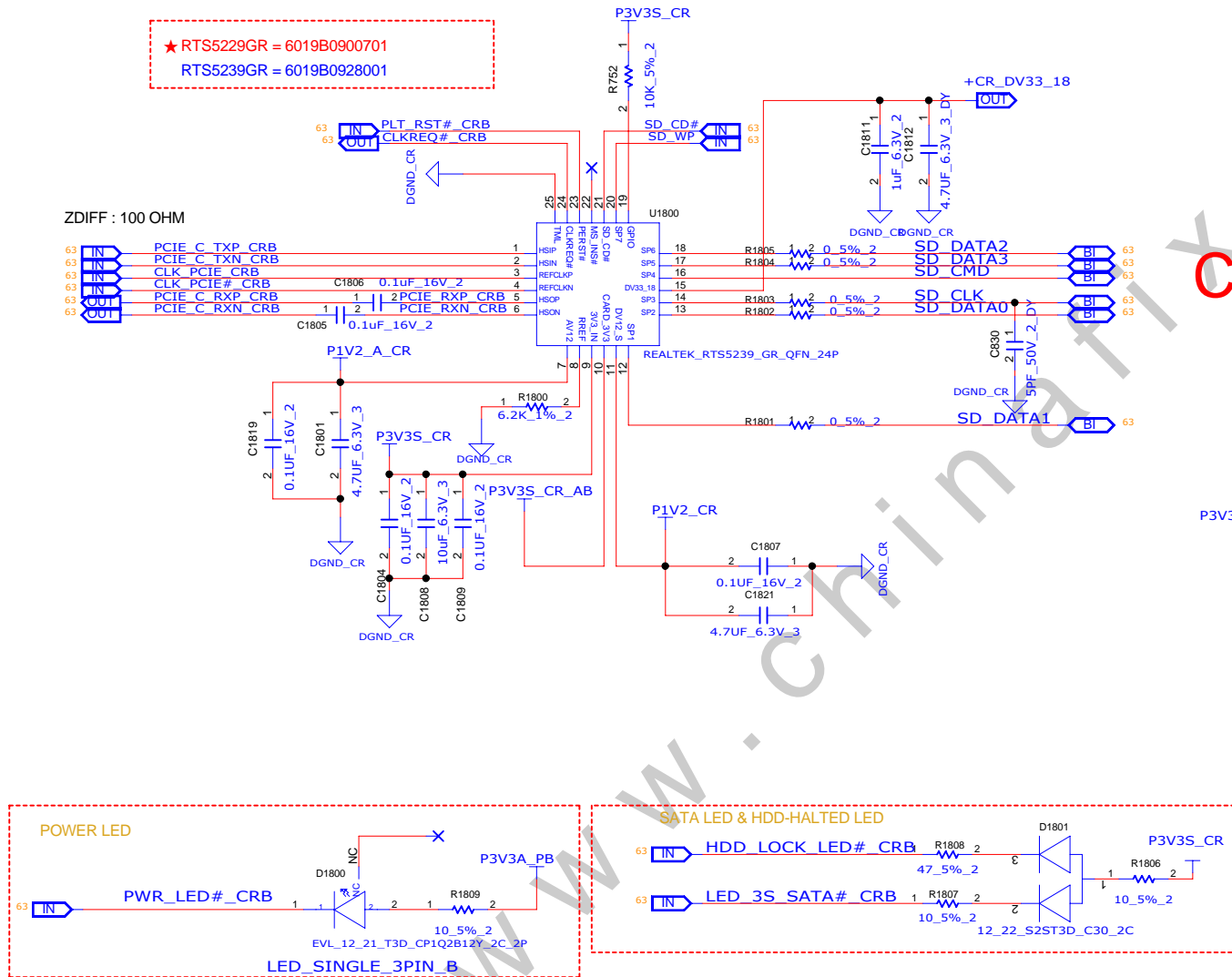
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HYNIX	64MX32	H5GQ2H24MFR-T2C	601908843001

TITLE			
LV1.1_Lauren VRAM1 & VRAM2			
SIZE C	CODE CS	DOC NUMBER 1310xxxxxx-0-0	
SHEET 61 of 65			

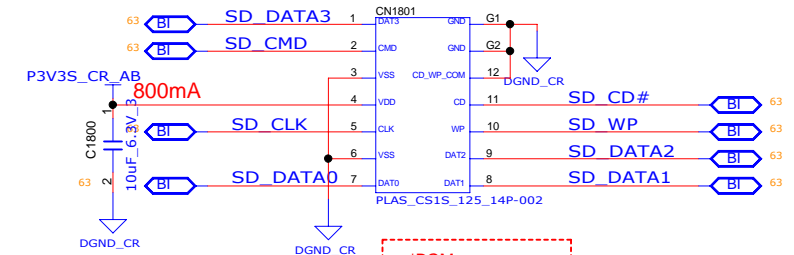


TITLE			
LV1.1_Lauren VRAM3 & VRAM4			
SIZE C	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 62 of 65			

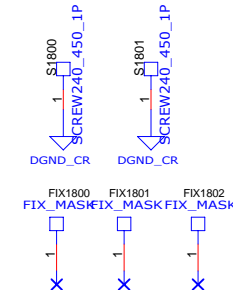
CARDREADER BOARD



CARD READER CONN



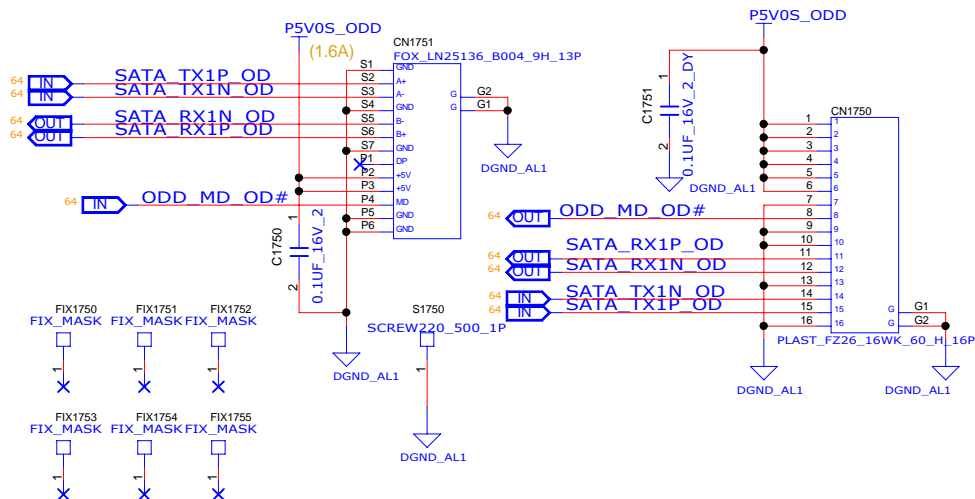
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CN1801
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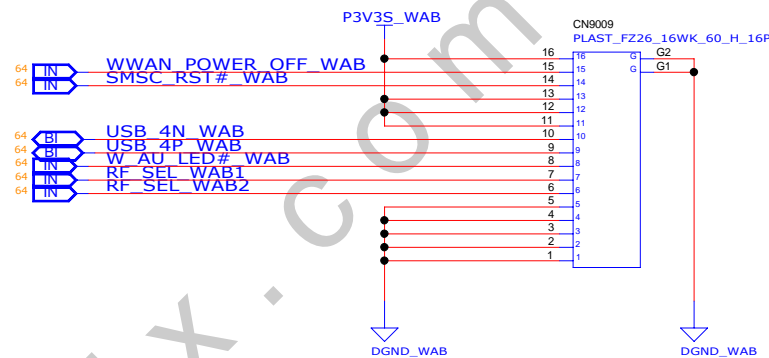
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TITLE			
LV1.1 Lauren CARDREADER BOARD			
DOC NUMBER		REV	
1310xxxxx-0-0		X01	
SIZE	CODE	SHEET	
A3	CS	63 of 65	

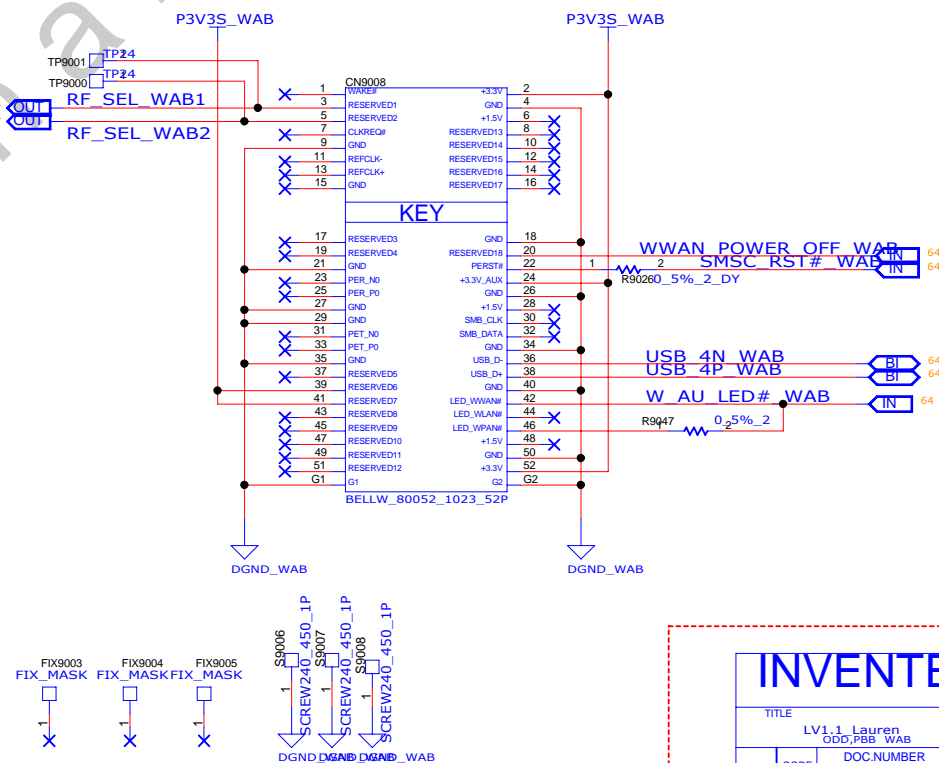
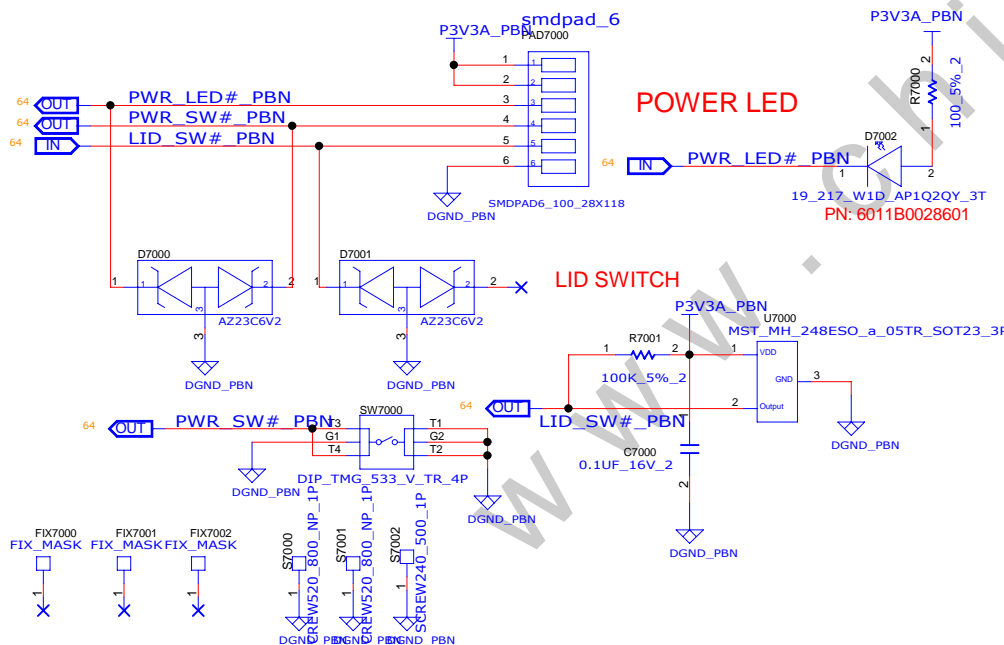
ODD Board



WIRELESS AUDIO BOARD



Power Button Board



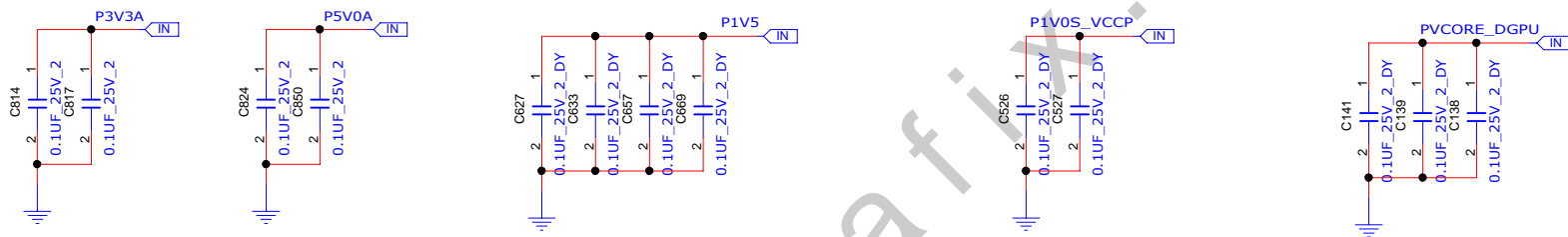
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TITLE			
LV1.1 Lauren ODD/PBB WAB			
SIZE		DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

CHANGE by Drawer Name DATE 03-AUG-2011

SHEET 64 of 65

EMI



INVENTEC

TITLE
LV1.1_Lauren
Block Diagram
DOC NUMBER
1310xxxxx-0-0
REV
X01

CHANGE by Drawer Name DATE 03-AUG-2011

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