

THIS DRAWING AND SPECIFICATIONS, HEREIN, ARE THE PROPERTY OF INVENTEC CORPORATION AND SHALL NOT BE REPRODUCED, COPIED, OR USED IN WHOLE OR IN PART AS THE BASIS FOR THE MANUFACTURE OR SALE OF ITEMS WITHOUT WRITTEN PERMISSION, INVENTEC CORPORATION, 2009 ALL RIGHT RESERVED.

HSF Property:ROHS or Halogen-Free

15SBGT  
SHARK BAY PGA

DB Build  
2012.08.17

		MV	A03
		MV	A02
		PV	A01
		S12	A01
		S12	A01
21-OCT-2002		DB2	X02
2012-5-22		DB	X01
DATE	CHANGE NO.	REV	

DRAWER		EE	DATE	POWER	DATE	INVENTEC			
DESIGN									
CHECK									
RESPONSIBLE									
						TITLE	MODEL,PROJECT,FUNCTION		
						Main Board			
SIZE=				VER:		SIZE	CODE	DOC-NUMBER	REV
FILE NAME:						C	CS	1310XXXXX-D-0	X01
PN	YYY					SHEET		#	70

# PAGE INDEX

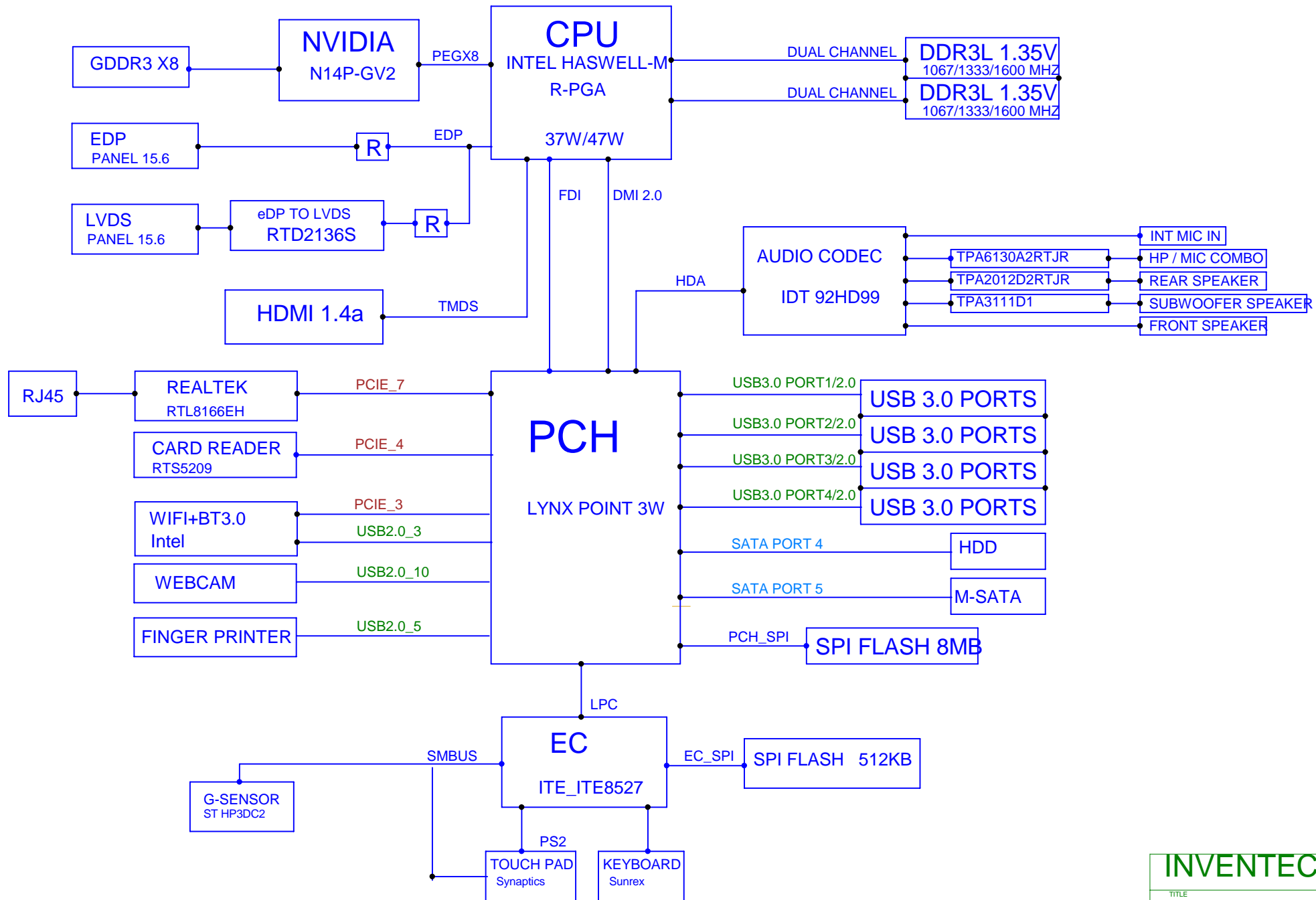
01	Project Name	26	PCH-4	51	PBN DB\USB DB
02	Page Index	27	PCH-5	52	GPU-1
03	Block Diagram	28	PCH-6	53	GPU-2
04	Charger	29	PCH-7	54	GPU-3
05	Battery Connector	30	PCH-8	55	GPU-4
06	P3V3A, P5V0A	31	PCH-9	56	GPU-5
07	P1V35	32	PCH-10	57	VRAM-1
08	P1V05S_PCH	33	EC ITE8527	58	VRAM-2
09	P1V5S_PCH	34	KB & LED	59	VRAM-3
10	PVCORE-1	35	EDP2LVDS	60	VRAM-4
11	PVCORE-2	36	LCM CONN	61	P3V3S_DGPU
12	PORT & EMI PART	37	HDMI	62	PVCORE_DGPU
13	P3V3S, P5V0S	38	SATA HDD	63	P1V5S_DGPU
14	Thermal & Fan	39	LAN		
15	CPU-1	40	RJ-45 CONN		
16	CPU-2	41	CARD READER		
17	CPU-3	42	AUDIO-1		
18	CPU-4	43	AUDIO-2		
19	CPU-5	44	AUDIO-3		
20	CPU-6	45	WLAN		
21	DDR3L-1	46	FP\TOUCH SCREEN\TP\KBBL		
22	DDR3L-2	47	G-SENSOR		
23	PCH-1	48	USB3.0 CONN		
24	PCH-2	49	USB3.0 CONN		
25	PCH-3	50	MB2DB CONN		

INVENTEC

TITLE  
MODEL, PROJECT, FUNCTION  
INDEX

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

CHANGE by XXX DATE 21-OCT-2002 SHEET 2 of 70



INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxx-0-0	X01

D

C

B

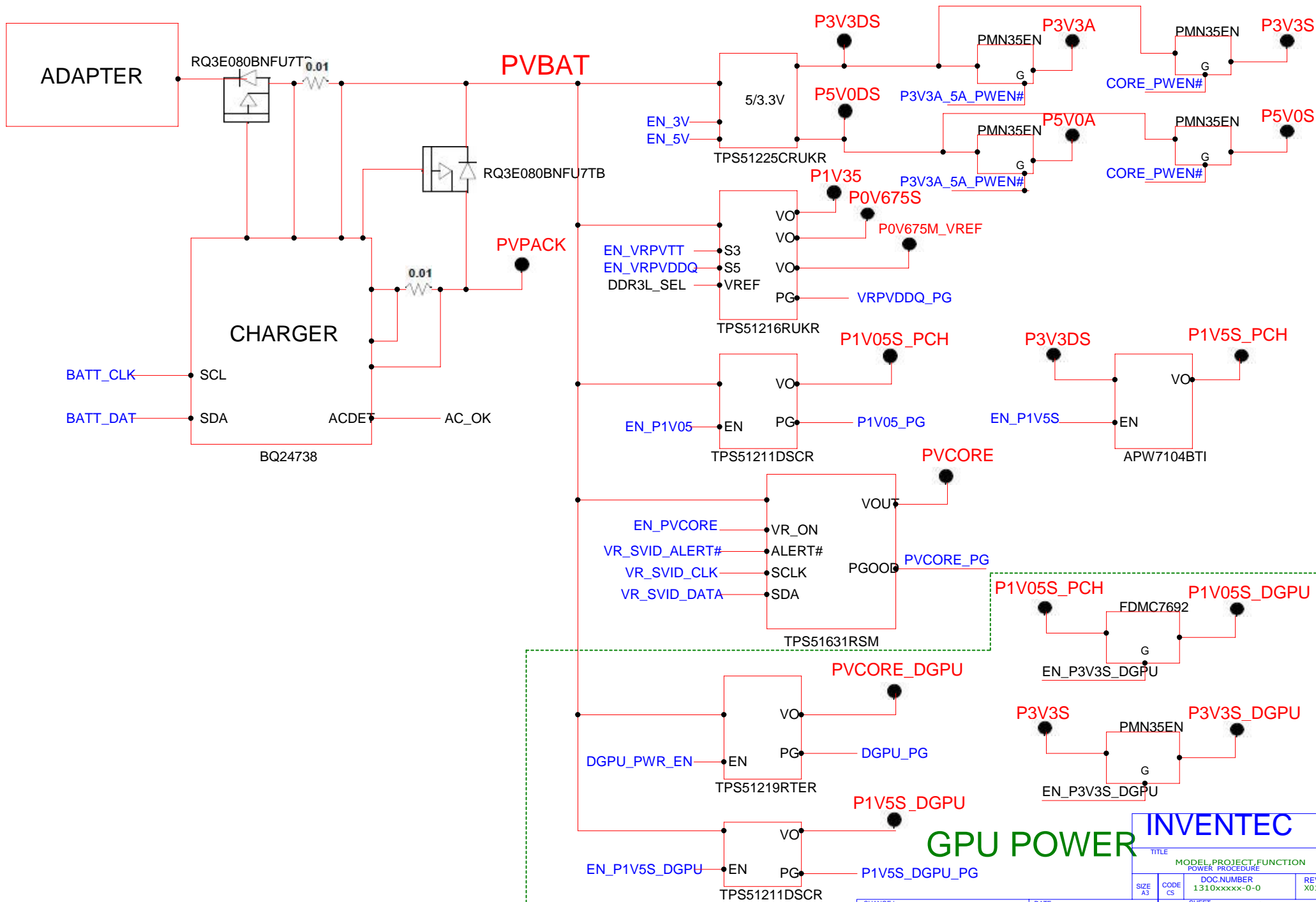
A

D

C

B

A









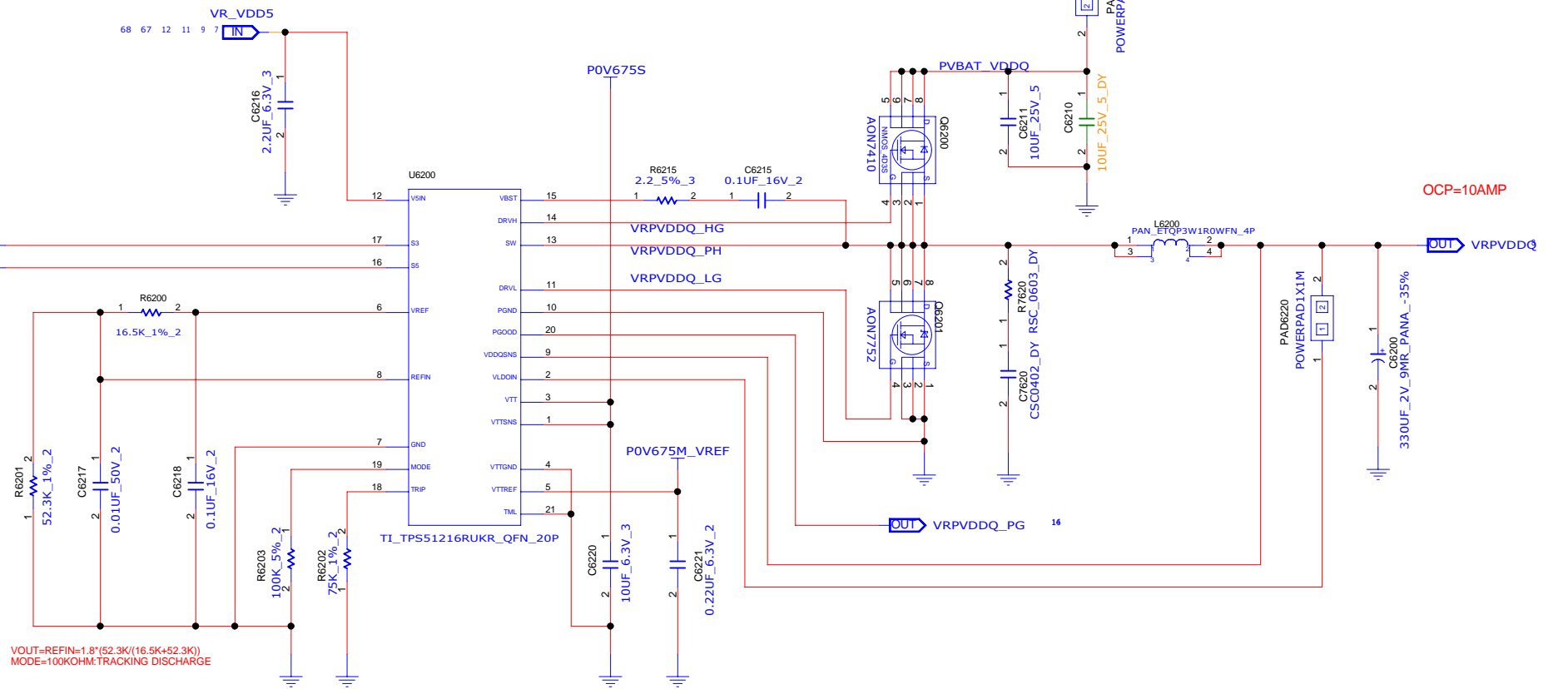


Table 1. S3/S5 Power State Control

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

TITLE MODEL,PROJECT,FUNCTION

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

CHANGE by XXX DATE 21-OCT-2002

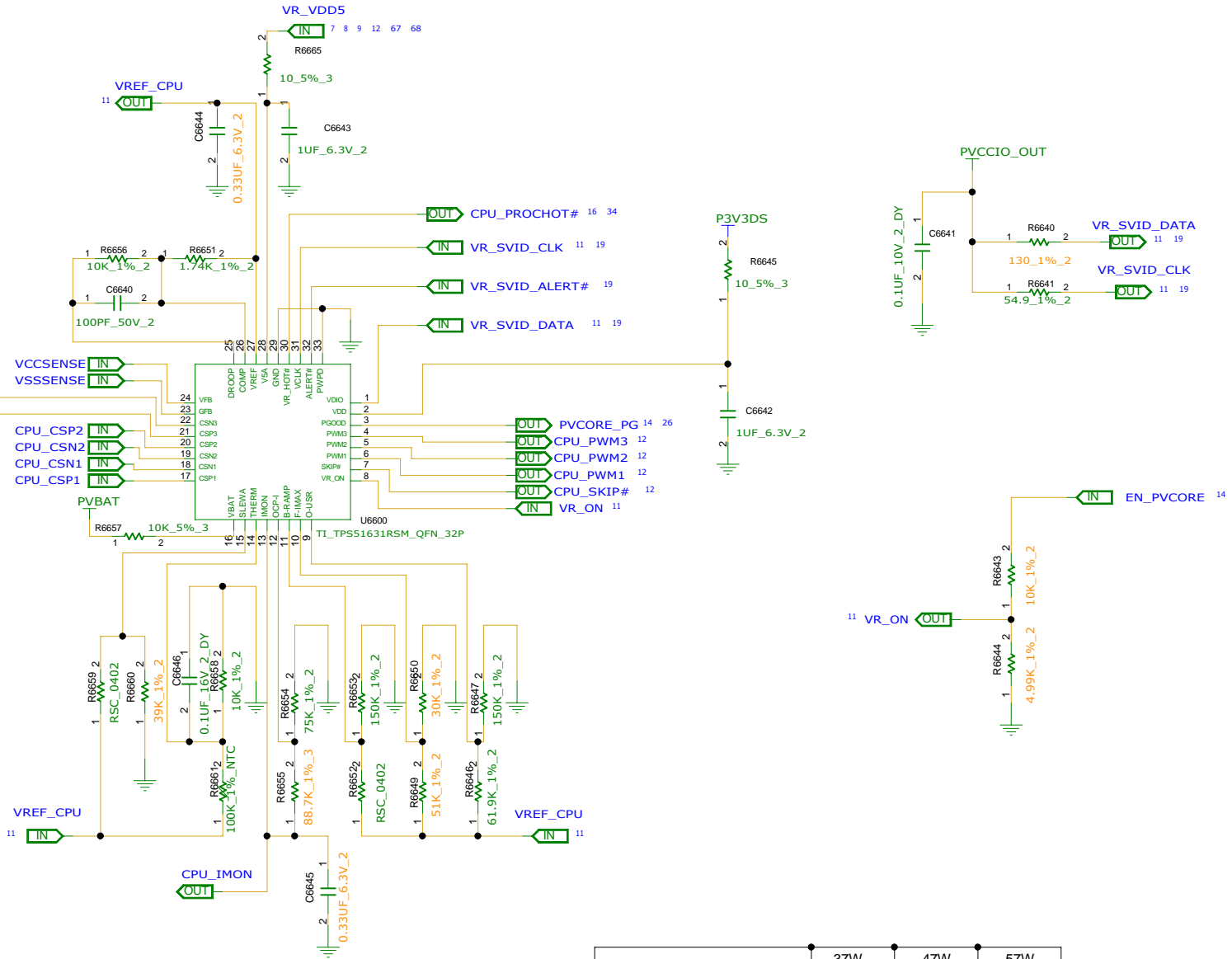
SHEET 8 of 70





	37W 2 PHASE	47W 3 PHASE	57W 3 PHASE
R6646	487K	274K	274K
R6649	549K	300K	255K
R6655	178K	95K	91K
R6662	POP	DNP	DNP
R6663	POP	DNP	DNP
R6619 R6629 R6639	17.8K	25.2K	17.8K
R6651	2.94K	2.74K	2.94K

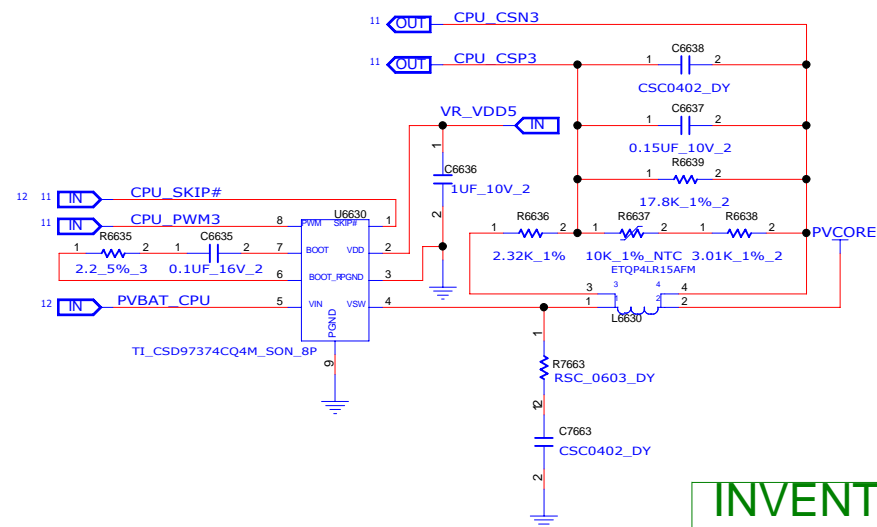
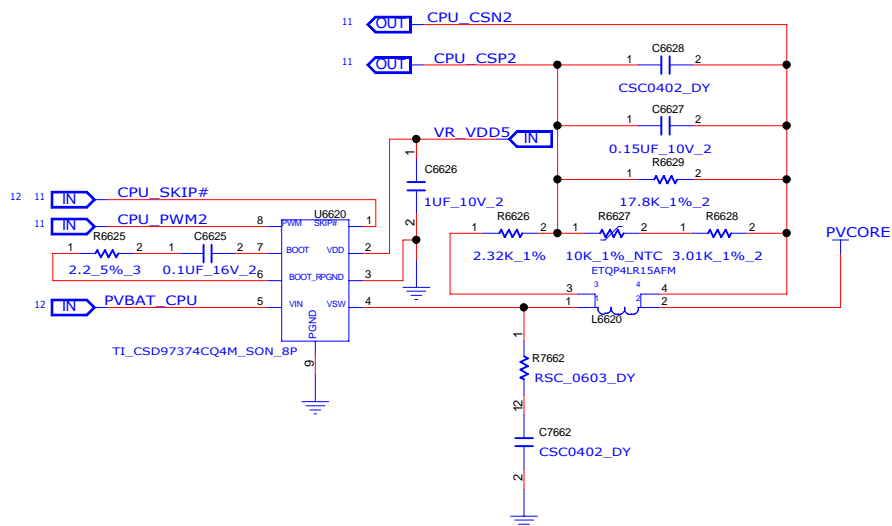
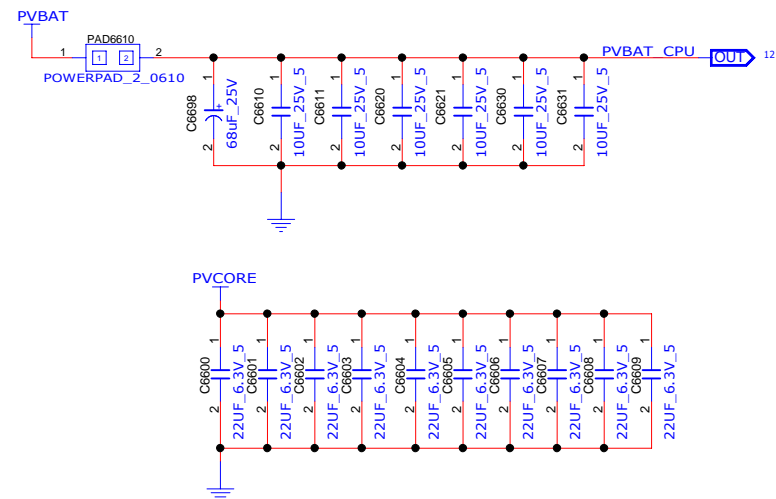
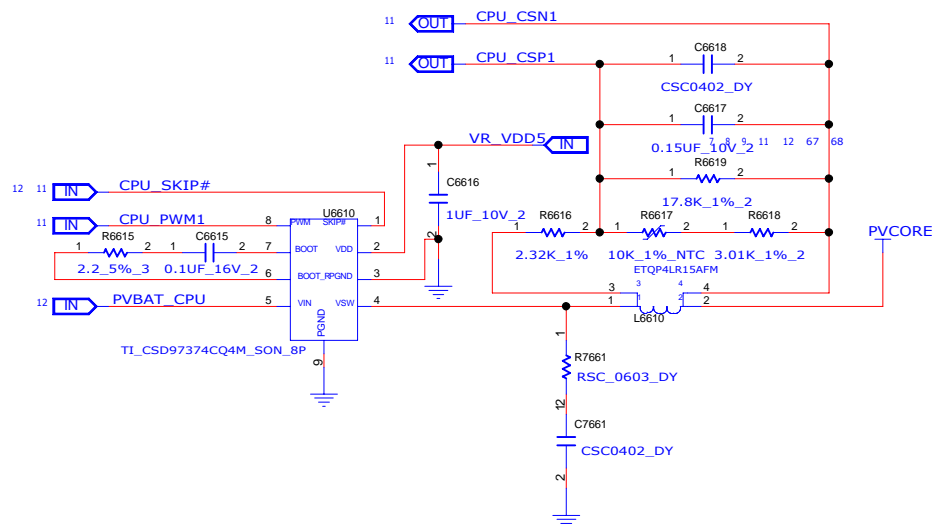
PS: TOTAL OUTPUT CAPACITOR IS 38X22UF (0805) WITH 1MHZ SWITCHING FREQUENCY IS DEPEND ON -2.85MV/A DROOP SPEC



	37W	47W	57W
INPUT VOLTAGE RANGE	9V TO 20V	9V TO 20V	9V TO 20V
MAX CURRENT	55A	85A	95A
THERMAL DESIGN CURRENT	21A	27A	33A
DYNAMIC CURRENT	35A	60A	60A
OVER CURRENT LEVEL	70A	105A	105A
SWITCHING FREQUENCY	1MHZ	1MHZ	1MHZ
BOOT VOLTAGE	1.7V	1.7V	1.7V
DC LOAD-LINE	1.5MOHM	1.5MOHM	1.5MOHM

INVENTEC

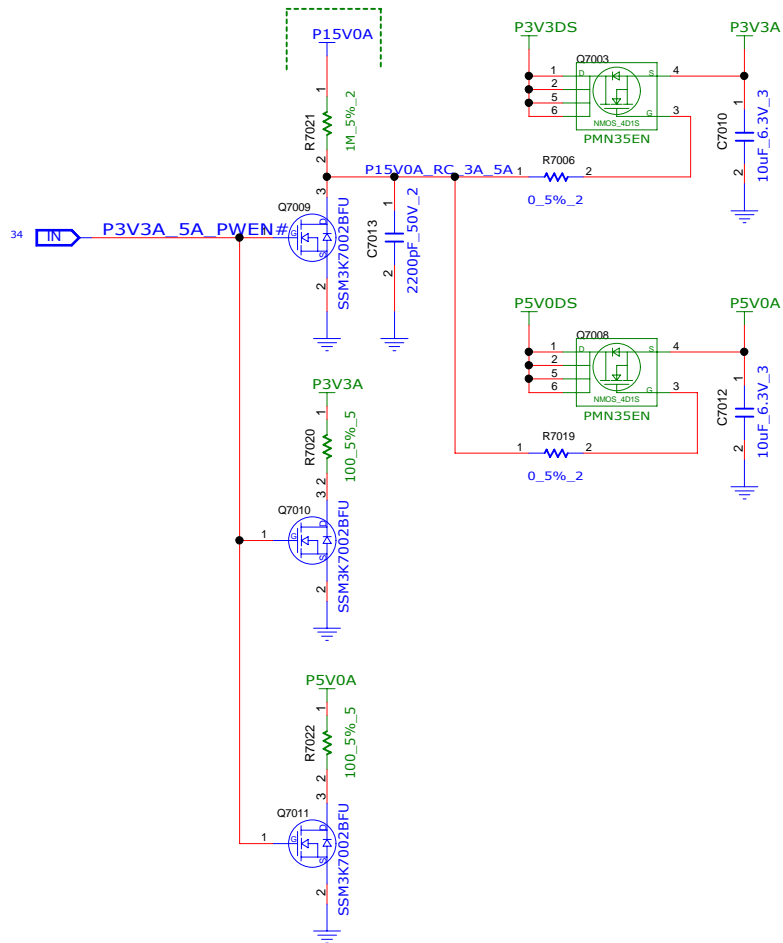
TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 11 of 70			

**INVENTEC**TITLE  
MODEL,PROJECT,FUNCTION  
Block DiagramSIZE CODE DOC NUMBER REV  
A3 CS 1310xxxxx-0-0 X01

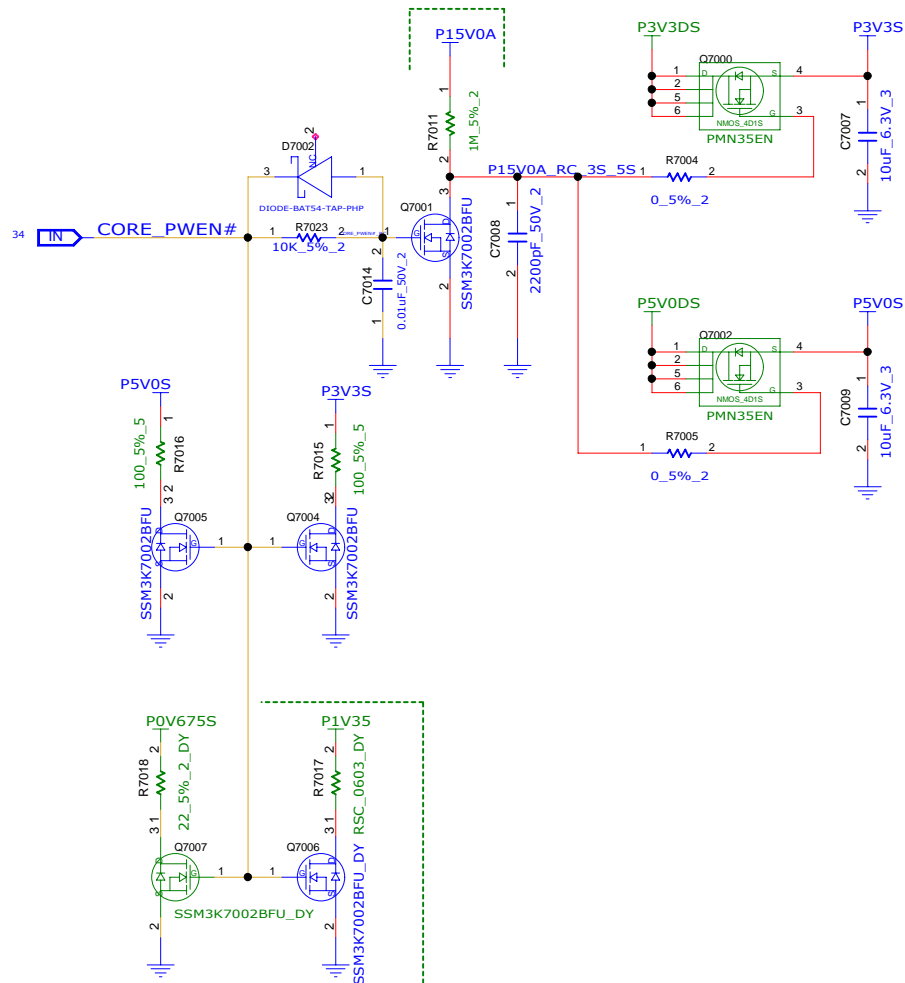
CHANGE by XXX DATE 21-OCT-2002

SHEET 12 of 70

CHECK !



CHECK !



CHECK !

INVENTEC

TITLE MODEL, PROJECT, FUNCTION  
Block Diagram

DOC NUMBER 1310xxxxx-0-0 REV X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 13 of 70

D

C

B

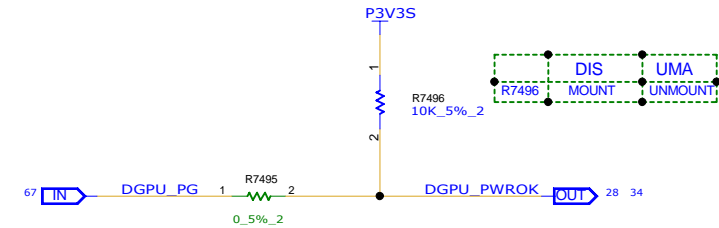
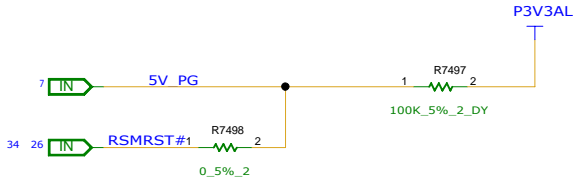
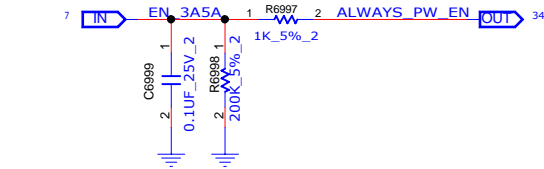
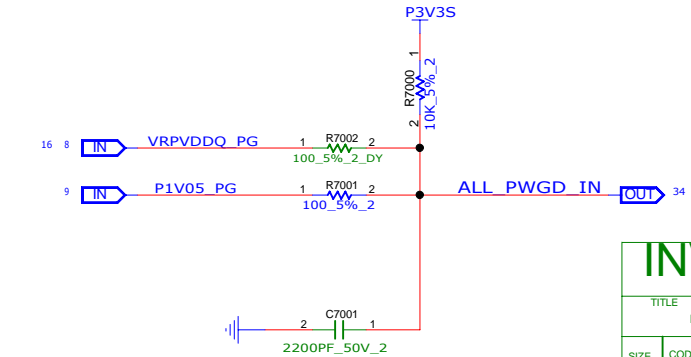
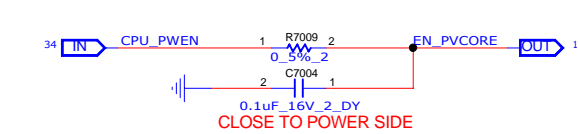
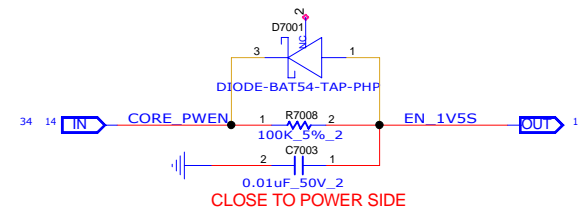
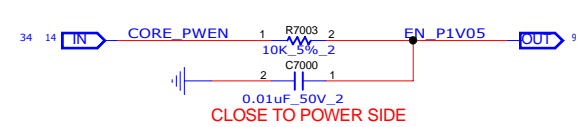
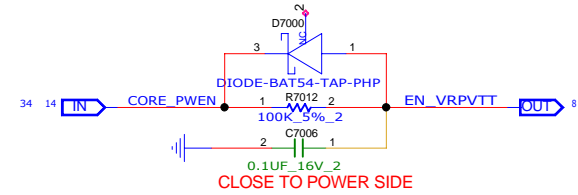
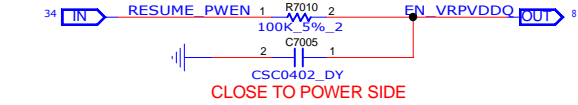
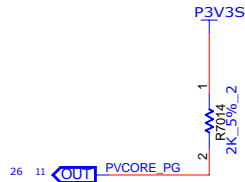
A

D

C

B

A

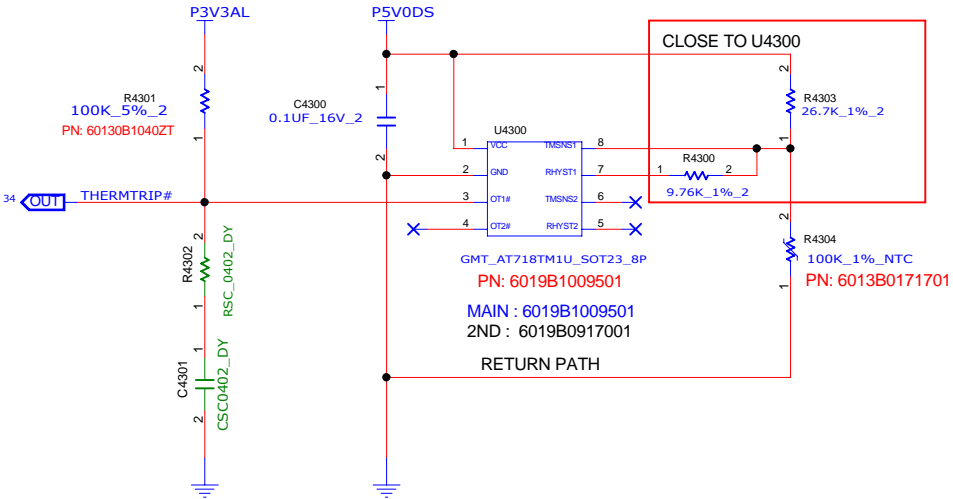
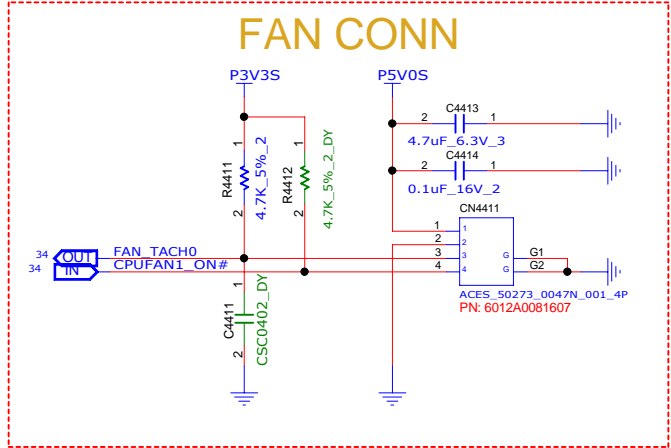


INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 14 of 70



# INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
THERMAL & FAN			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

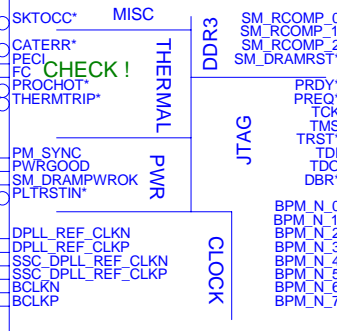
CHANGE by XXX DATE 21-OCT-2002

SHEET 15 of 70

CPU  
LOCATION 4500-4699  
VER.01\_20120808

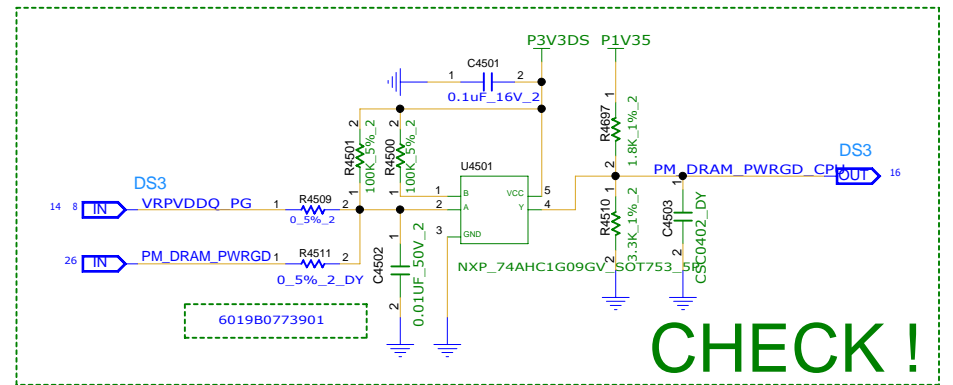
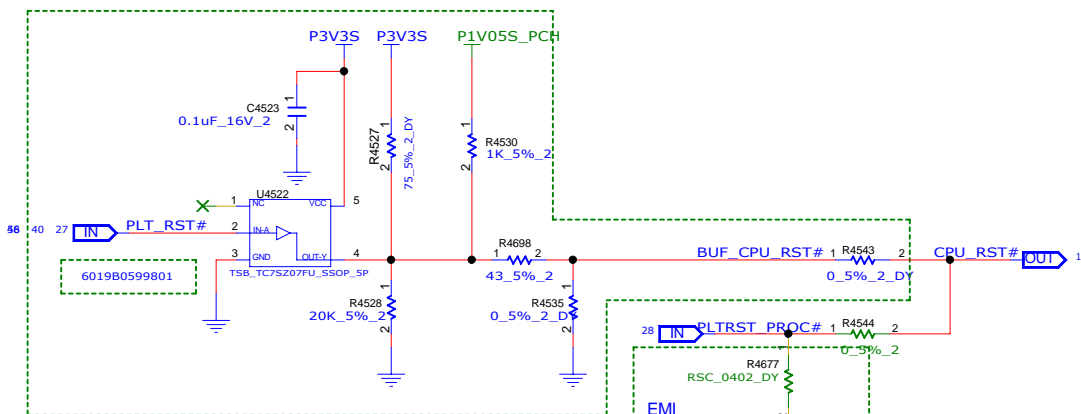
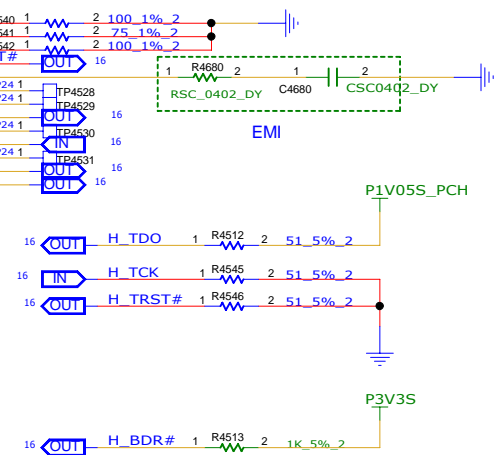
Haswell rPGA EDS

CN4500

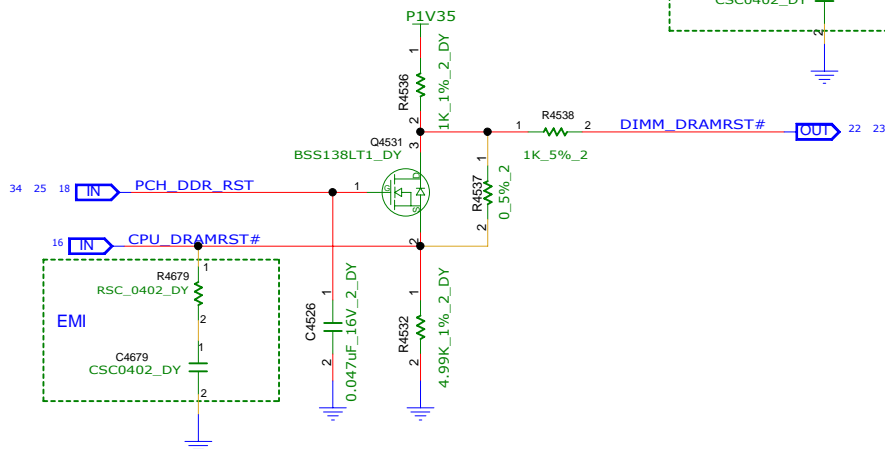


SOCKET,CPU,947P,1.0mm,1.0cc,GOLD,15U,BGA,TRAY

CN4500  
6026B0231701



CHECK!



INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
DOC NUMBER			
1310xxxxx-0-0			
REV			
X01			

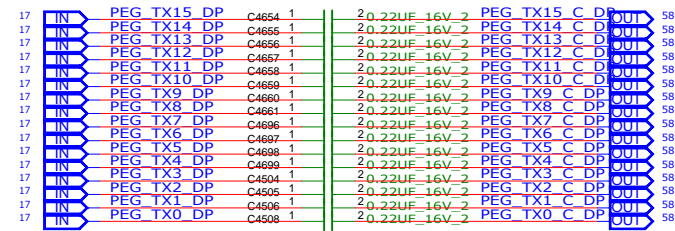
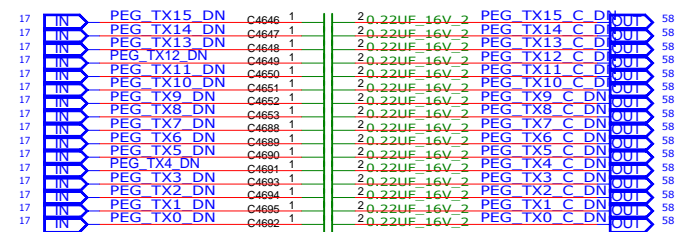
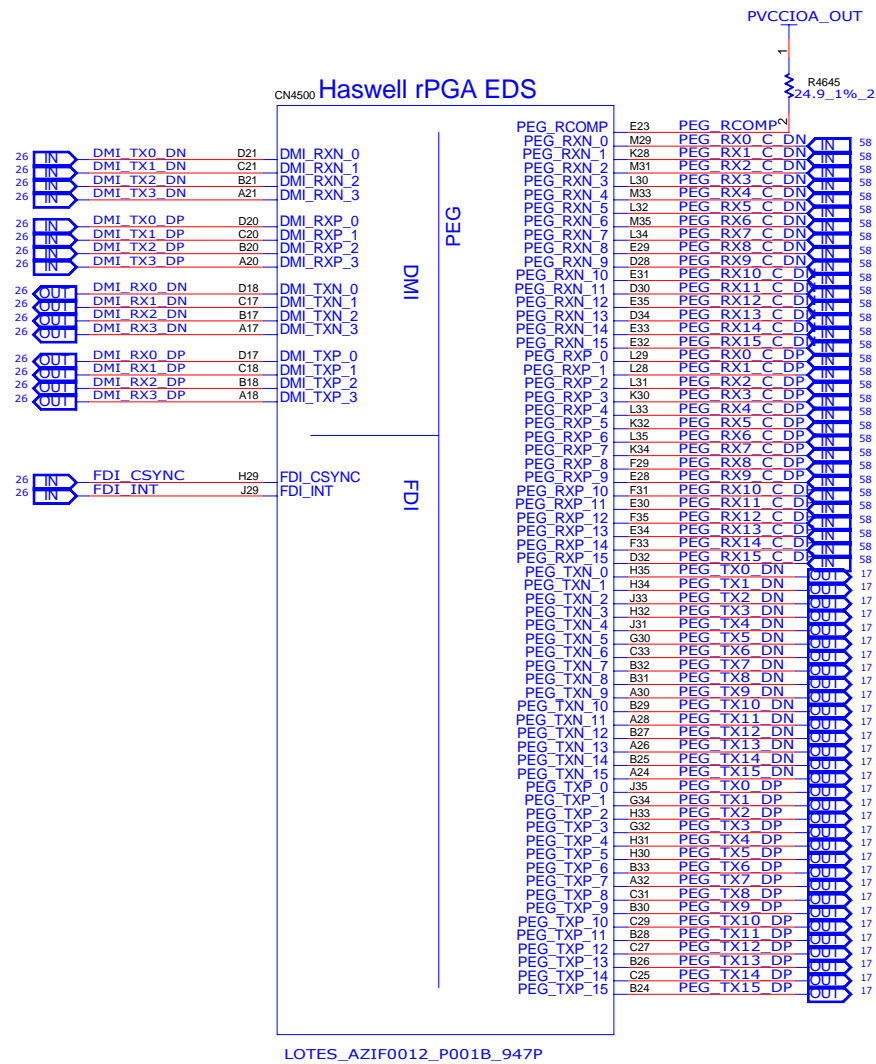
CHANGE by XXX DATE 21-OCT-2002

SHEET 16 of 70

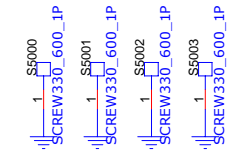
CPU  
LOCATION 4500-4699  
VER.01\_20120808

# GT

CLOSE TO CPU



FOR DGPU SCREW



## INVENTEC

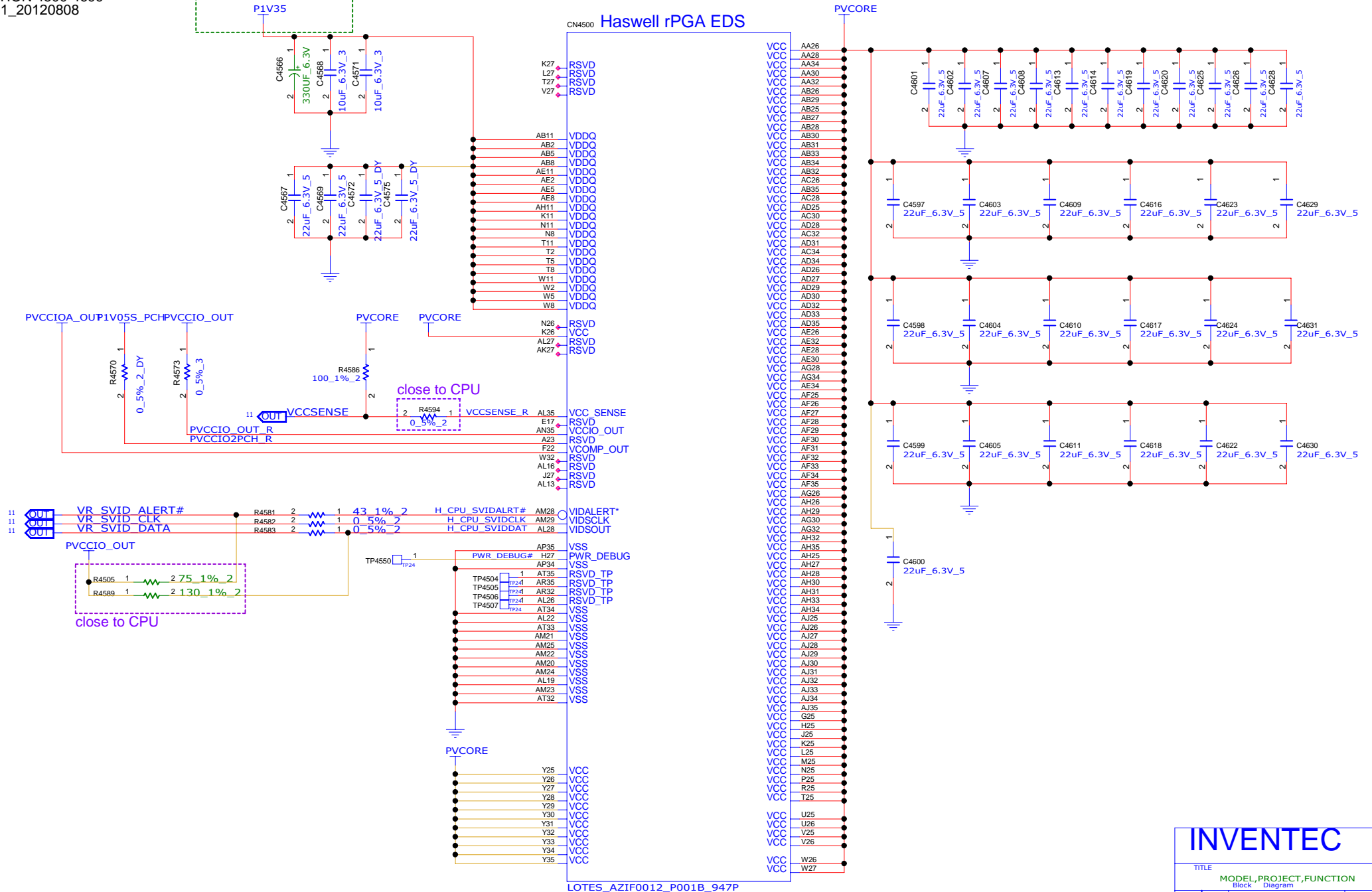
TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01



CPU  
LOCATION 4500-4699  
VER.01\_20120808

CHECK! intel seems to disable CPU S3 power reduction.

## Haswell rPGA EDS



# INVENTEC

SIZE A3	CODE CS	DOC.NUMBER 1310xxxx-0-0	REV X01
------------	------------	----------------------------	------------

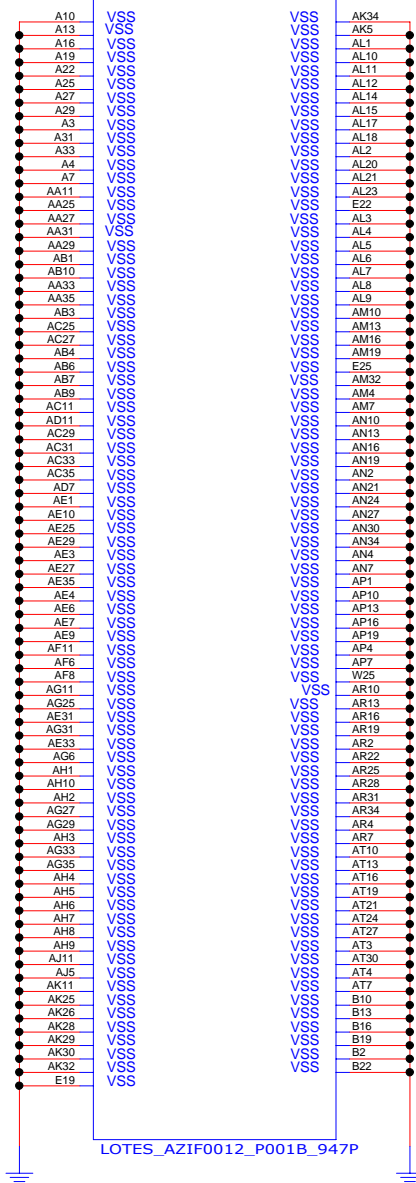
SHEET 19 of 70

CHANGE by	XXX	DATE	21-OCT-2002
-----------	-----	------	-------------

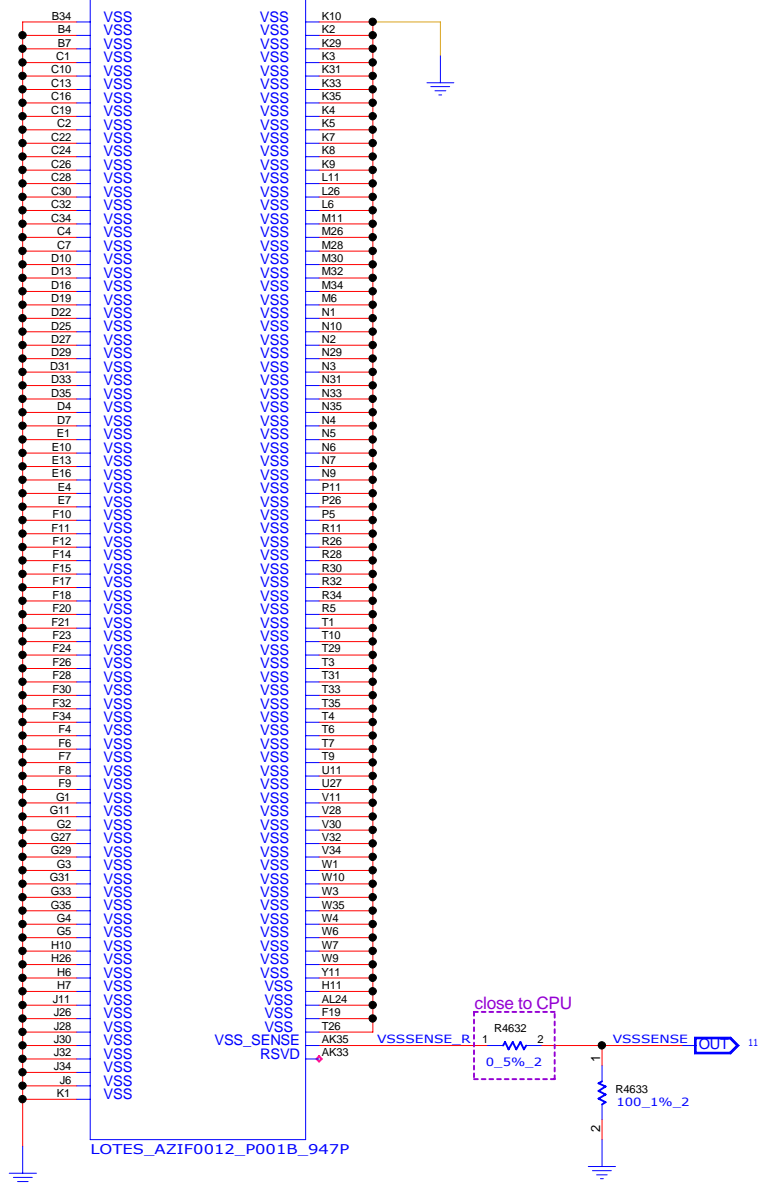
SHEET 19 of 70

CPU  
LOCATION 4500-4699  
VER.01\_20120808

### Haswell rPGA EDS



### Haswell rPGA EDS



# INVENTEC

TITLE  
MODEL,PROJECT,FUNCTION

DOC NUMBER  
1310xxxx-0-0

REV  
X01

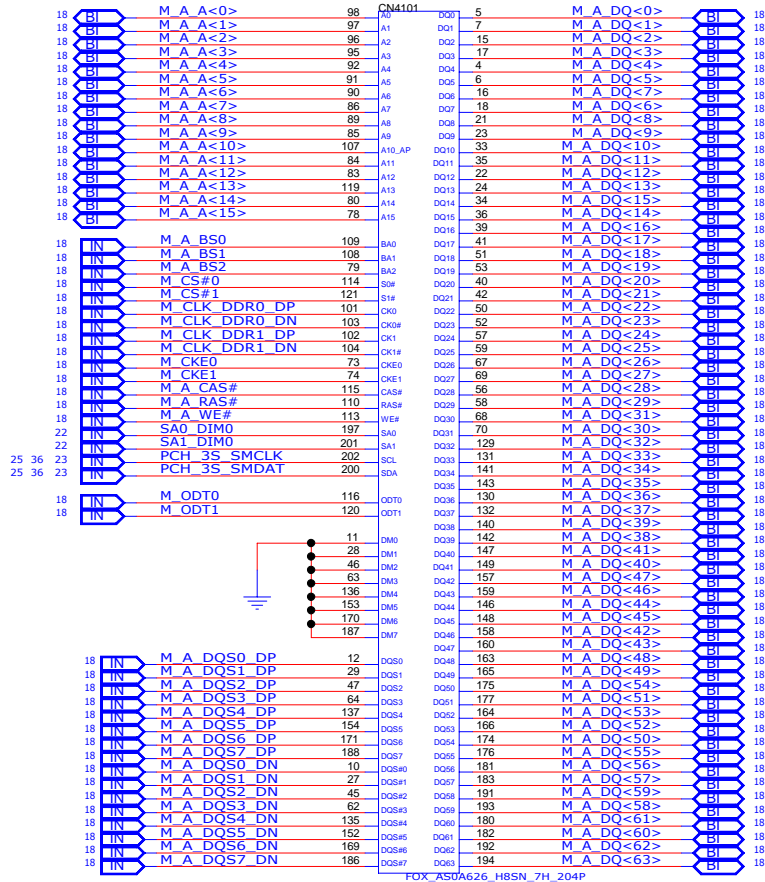
CHANGE by XXX DATE 21-OCT-2002

SHEET 20 of 70



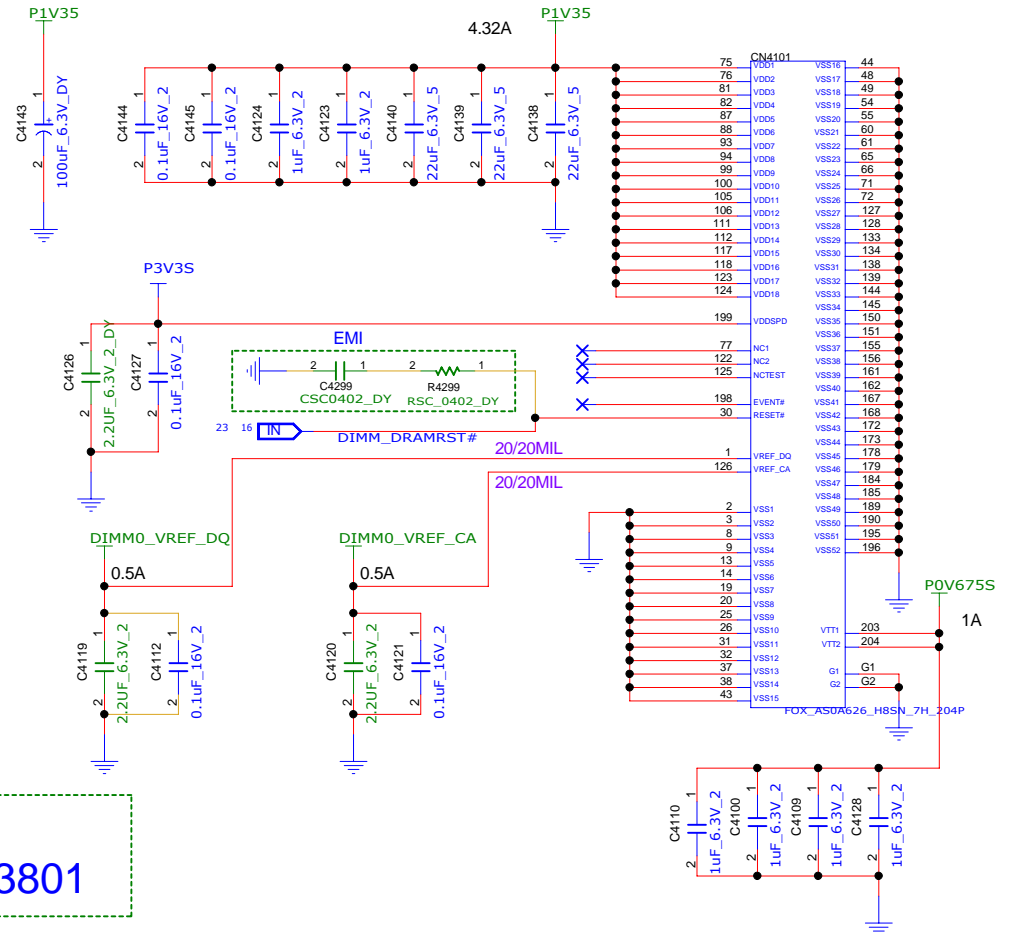
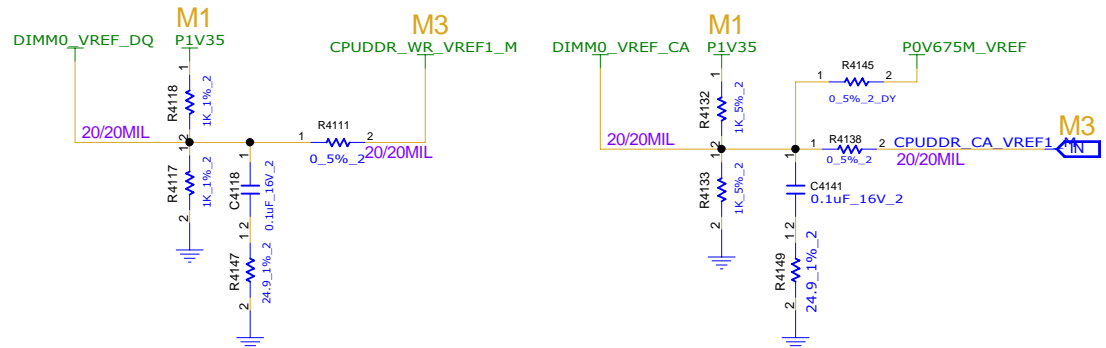
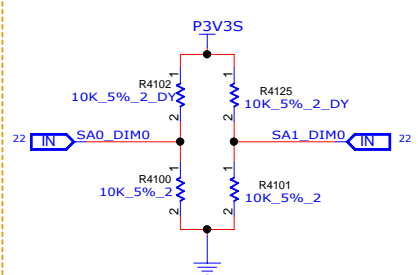
# CH A - DIMM0, H = 8MM STD

6026B0223801



CN4101  
6026B0223801

NOTE:  
SO-DIMMA SPD ADDRESS IS 0XA0  
SO-DIMMA TS ADDRESS IS 0X30



INVENTEC

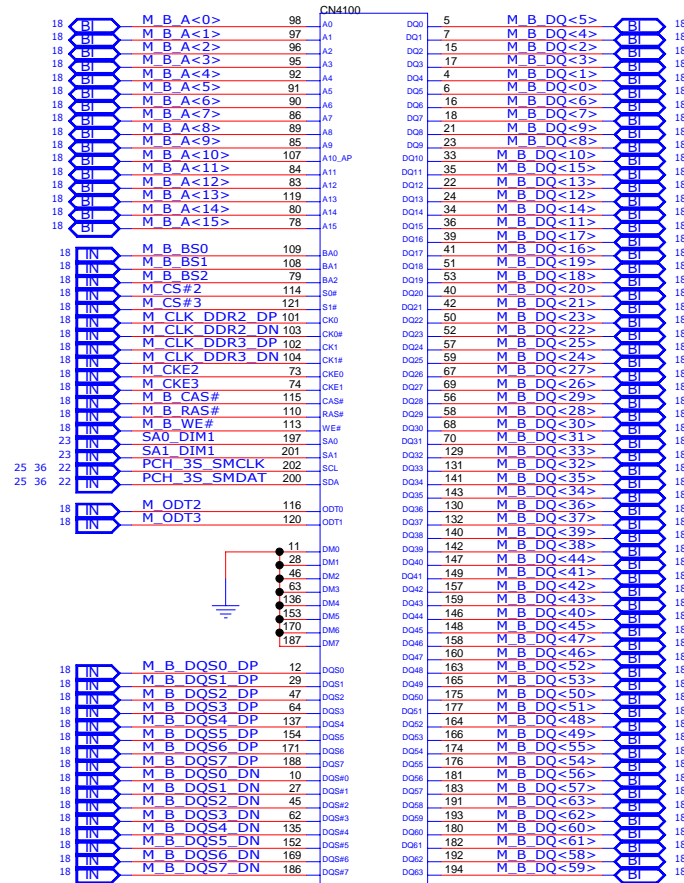
TITLE  
MODEL,PROJECT,FUNCTION  
Block Diagram  
DOC NUMBER  
1310xxxxx-0-0  
REV  
X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 22 of 70

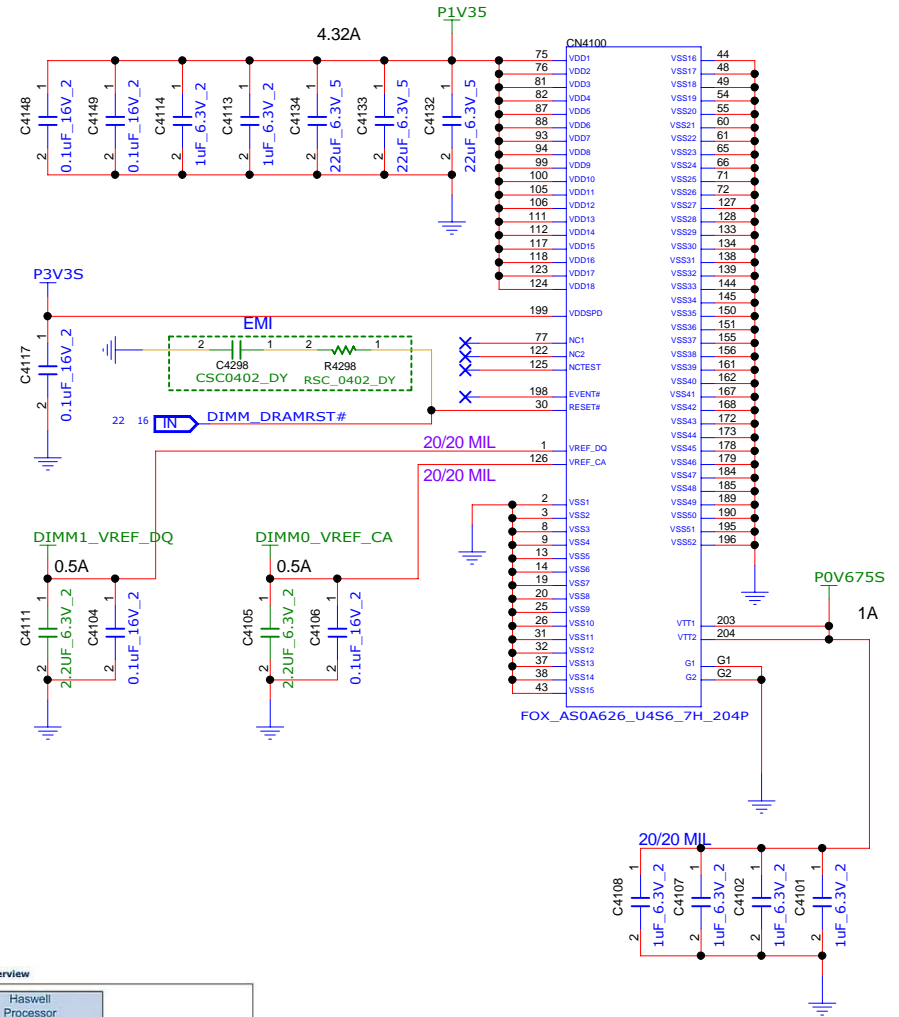
# CH B - DIMM1, H = 4MM STD

6026B0223701



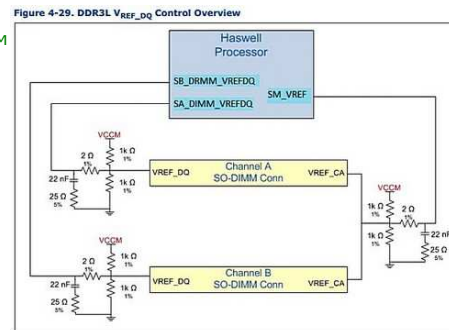
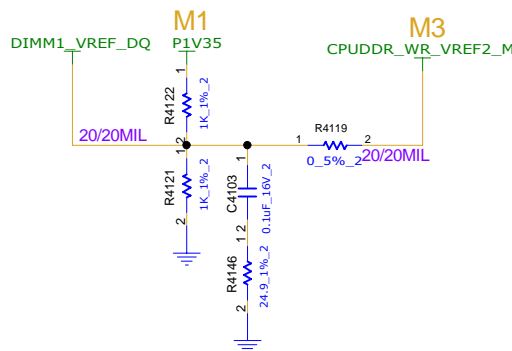
FOX\_AS0A626\_U456\_7H\_204P

CN4100  
6026B0223701



FOX\_AS0A626\_U456\_7H\_204P

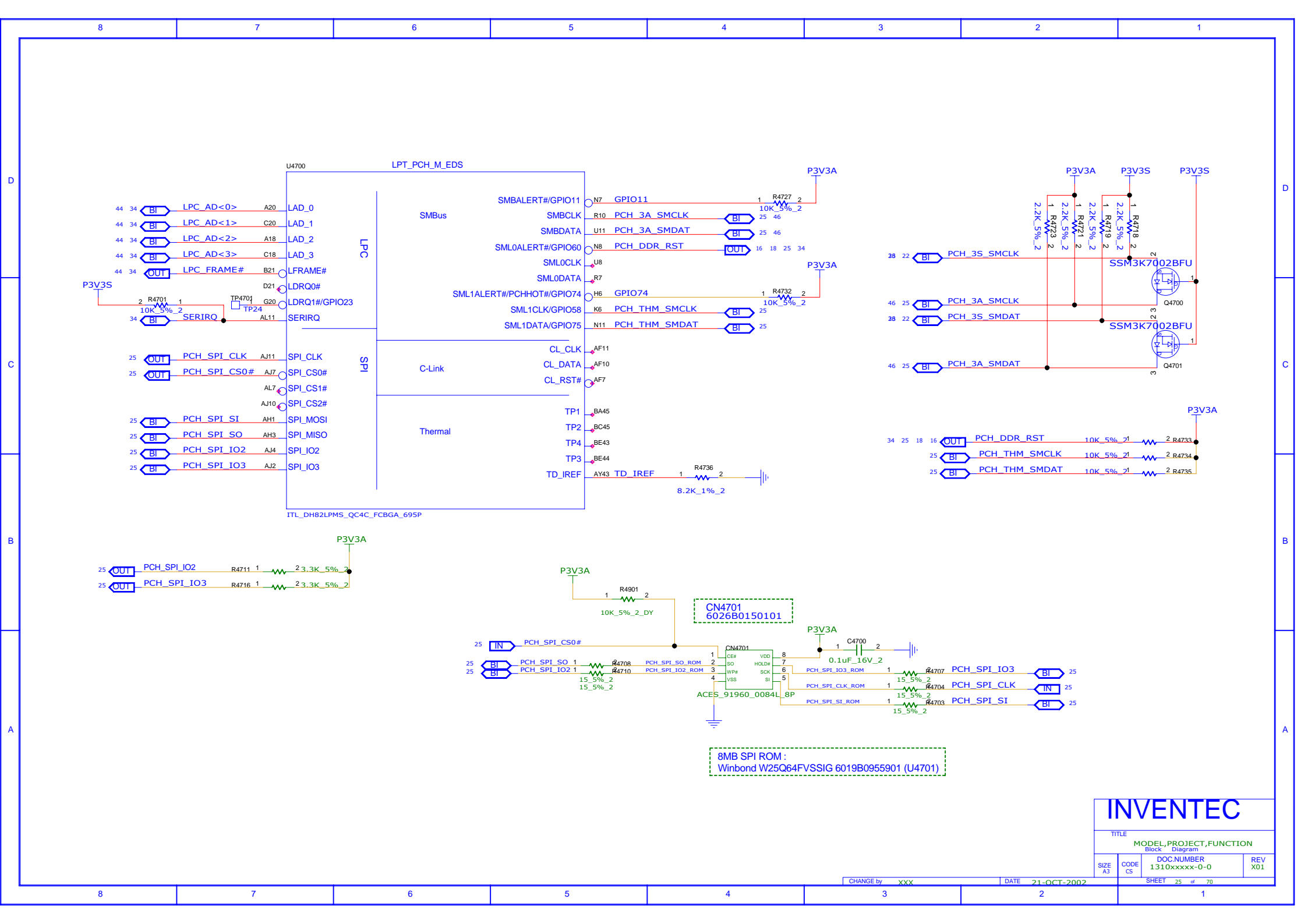
NOTE:  
SO-DIMM SPD ADDRESS IS 0XA4  
SO-DIMM TS ADDRESS IS 0X34



INVENTEC

TITLE  
MODEL,PROJECT,FUNCTION  
SIZE A3 CODE CS DOC NUMBER 1310xxxxx-0-0 REV X01  
CHANGE by XXX DATE 21-OCT-2002 SHEET 23 of 70





INVENTEC

TITLE MODEL,PROJECT,FUNCTION

SIZE CODE DOC NUMBER REV

A3 CS 1310xxxxx-0-0 X01

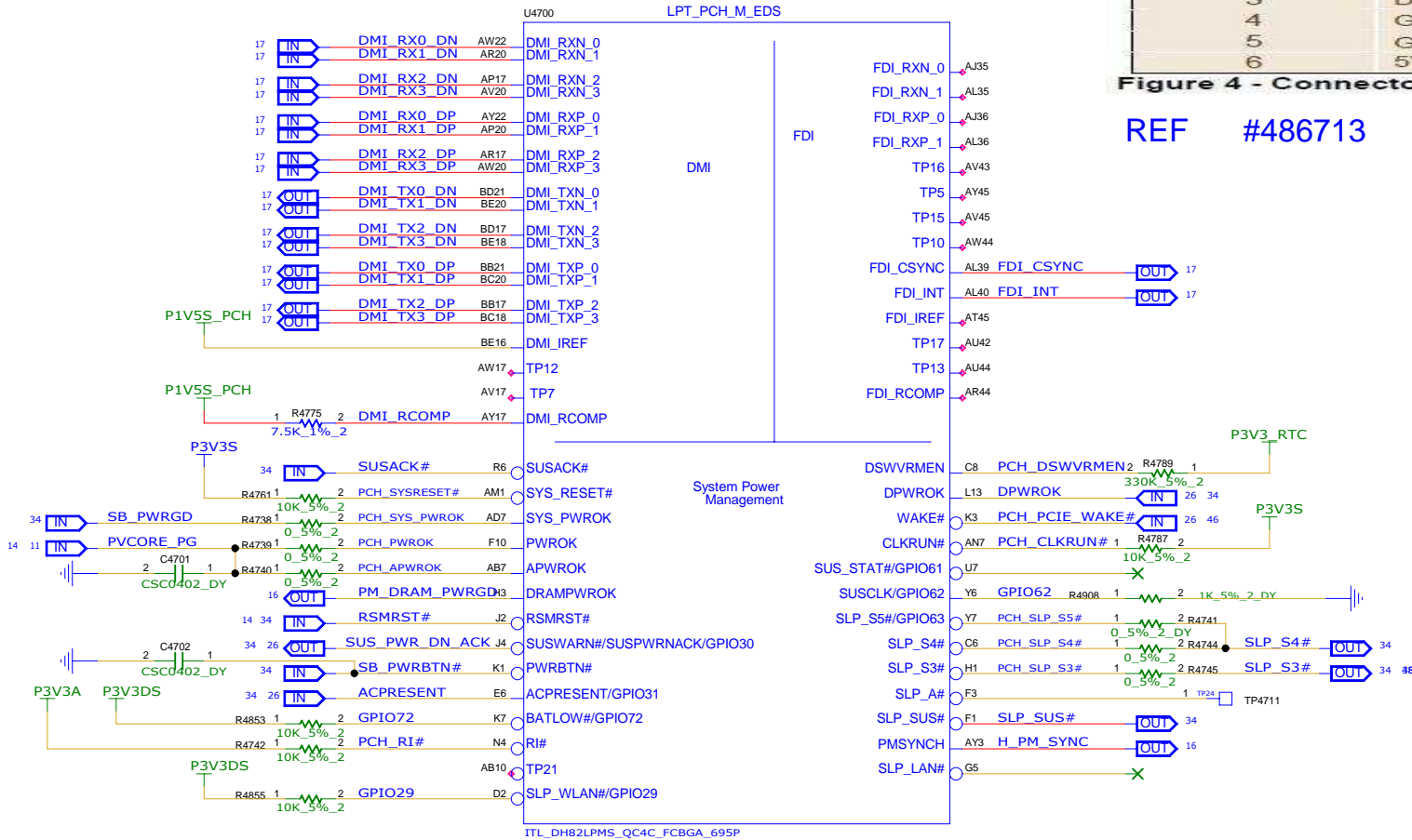
CHANGE by XXX DATE 21-OCT-2002 SHEET 25 of 70

# VFM5302-3192 PIN ASSIGNMENTS

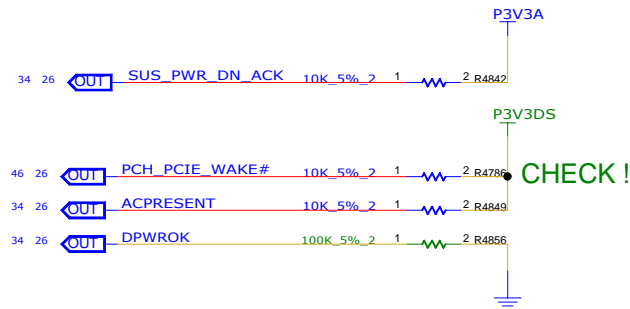
Pin Number	Signal Name	Test Point
1	3.3V <sub>CC</sub>	TP3
2	DP	TP1
3	DM	TP2
4	GND	TP4
5	GND	TP4
6	5V <sub>CC</sub>	TP6

Figure 4 - Connector Pin-out

REF #486713 INTEL SBY DG V1.0

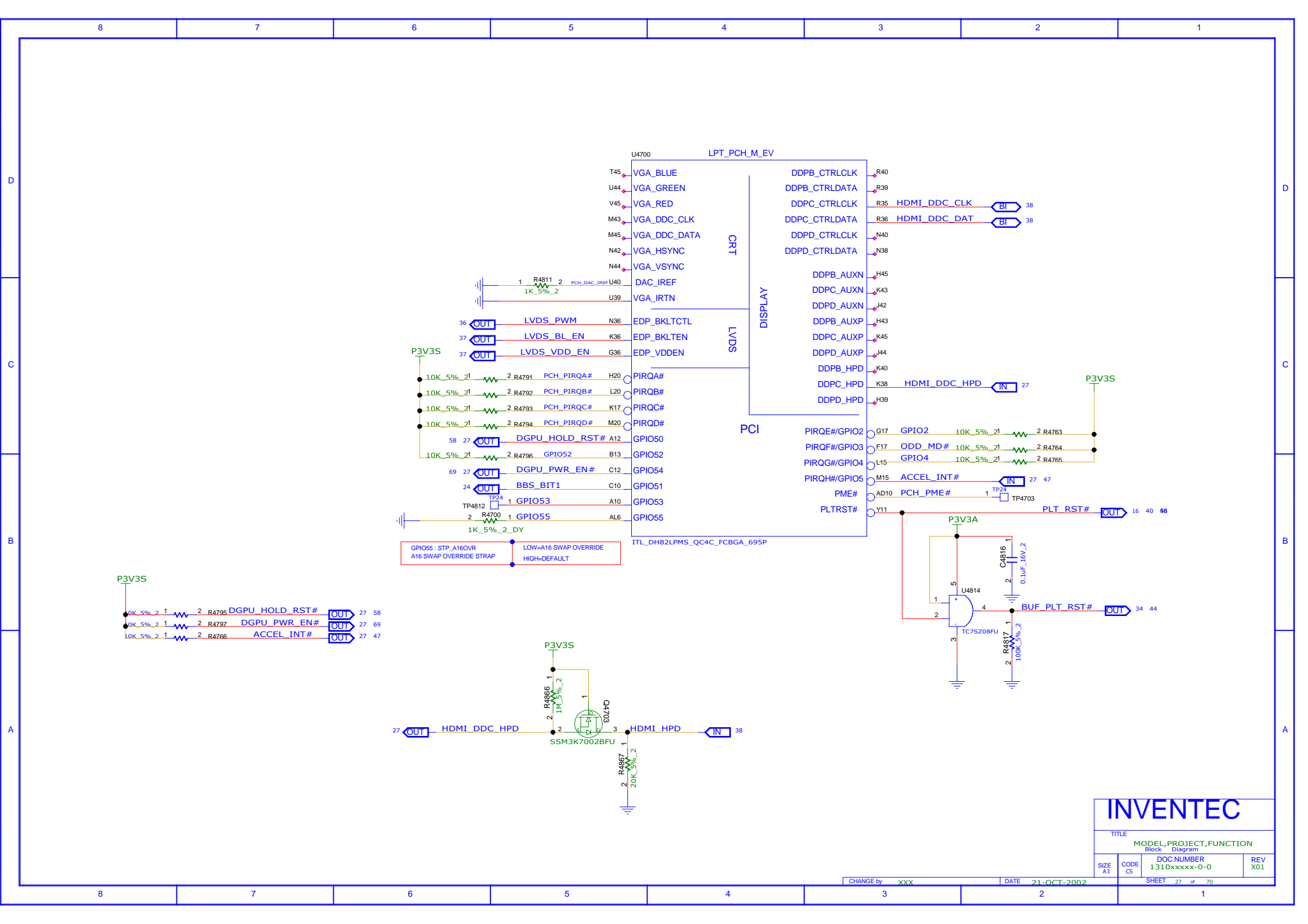


power rail ->DSW :  
 SLP\_A#  
 SLP\_S3#  
 SLP\_S4#  
 SLP\_SUS#  
 SLP\_LAN#  
 SLP\_WLAN#/GPIO29  
 GPIO27  
 PWRBTN#  
 WAKE#  
 ACPRESENT/GPIO31  
 BATLOW#/GPIO72  
 VCCDSW3\_3  
 LAN\_PHY\_PWR\_CTRL/GPIO12



INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01



INVENTEC

TITLE MODEL,PROJECT,FUNCTION

Block Diagram

DOC NUMBER 1310xxxxx-0-0

REV X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 27 of 70

D

C

B

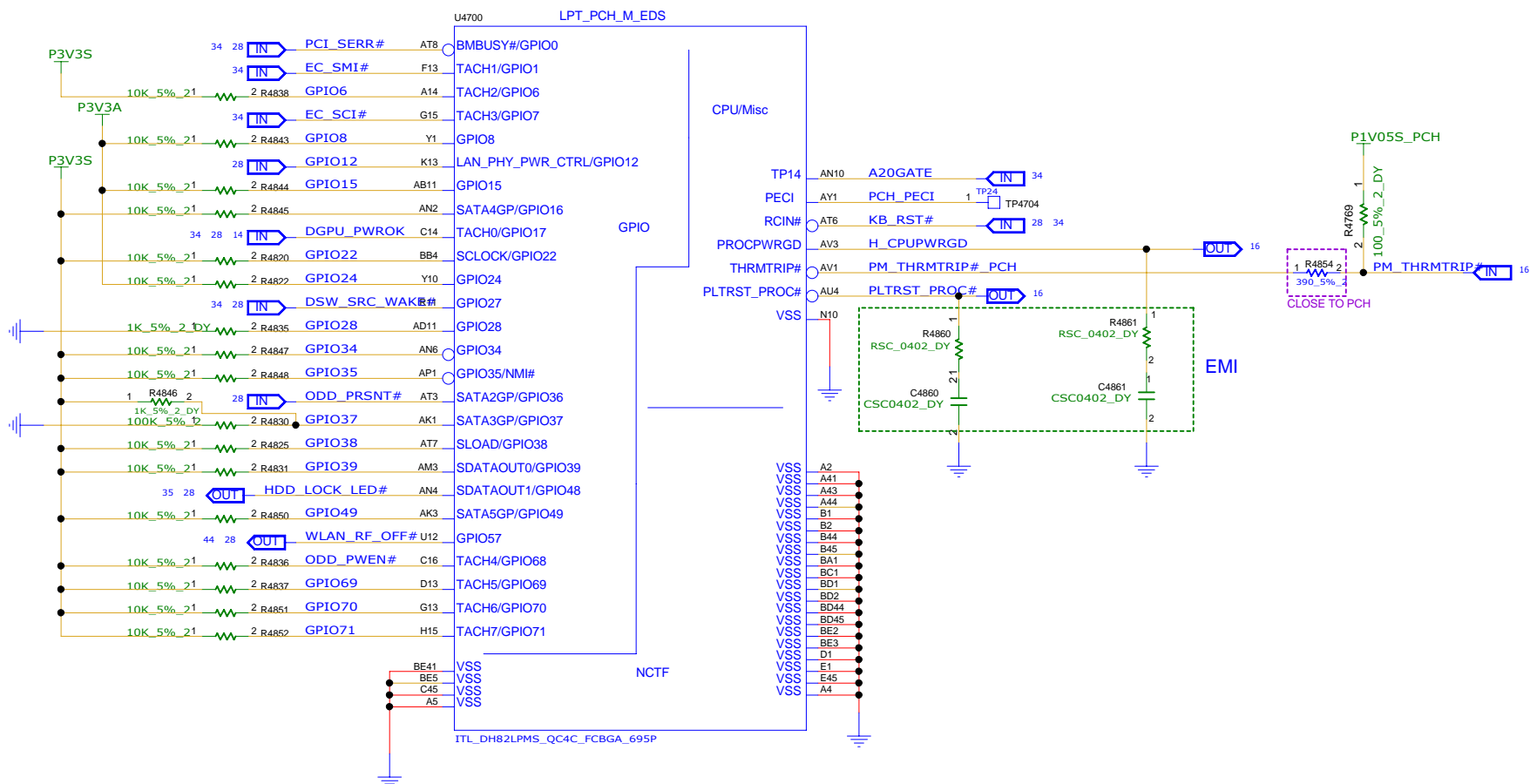
A

D

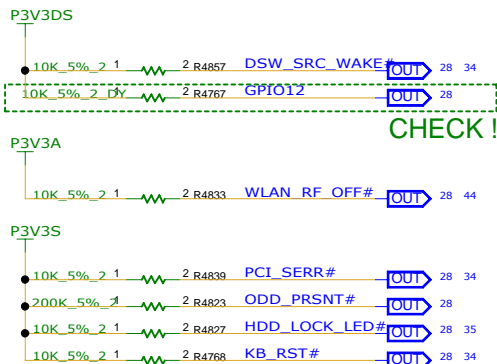
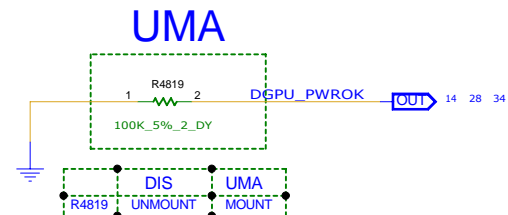
C

B

A



GPIO36	RSVD	Rising edge of PWROK	This signal has a weak internal pull-down. <b>NOTE:</b> The internal pull-down is disabled after PLTRST# deasserts.
SATA3GP/GPIO37	TLS Confidentiality	Rising edge of PWROK pin	Low = Intel ME Crypto Transport Layer Security (TLS) cipher suite with no confidentiality High = Intel ME Crypto TLS cipher suite with confidentiality This signal has a weak internal pull-down. <b>NOTES:</b> 1. A strong pull-up may be needed for GPIO functionality 2. This signal must be pulled up to support Intel AMT with TLS. Intel ME configuration parameters also need to be set correctly to enable TLS.

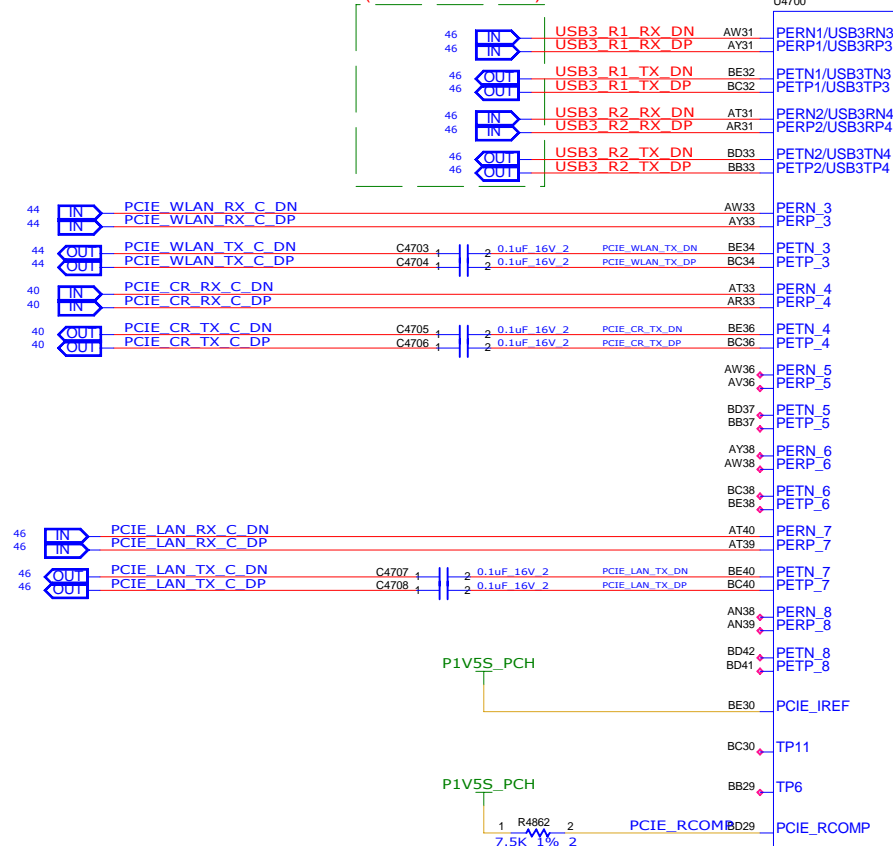


INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

# USB3.0 CONN (RIGHT SIDE DB)

U4700 LPT\_PCH\_M\_EDS



DEBUG PORT

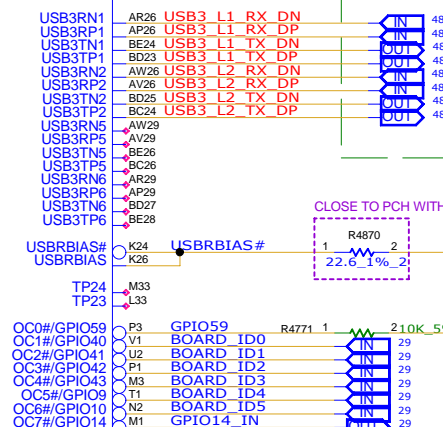
DEBUG PORT

USB3.0 CONN (LEFT SIDE MB)  
USB3.0 CONN (LEFT SIDE MB)  
USB3.0 CONN (RIGHT SIDE DB)  
USB3.0 CONN (RIGHT SIDE DB)

TOUCHSCREEN  
FINGER PRINTER  
WLAN combo

WEBCAM

USB3.0 CONN (LEFT SIDE MB)



CLOSE TO PCH WITHIN 450 MILS

R4870 22.6 1% 2

R4771 210K 5% 2

R4772 210K 5% 2

R4773 210K 5% 2

R4774 210K 5% 2

R4775 210K 5% 2

R4776 210K 5% 2

R4777 210K 5% 2

R4778 210K 5% 2

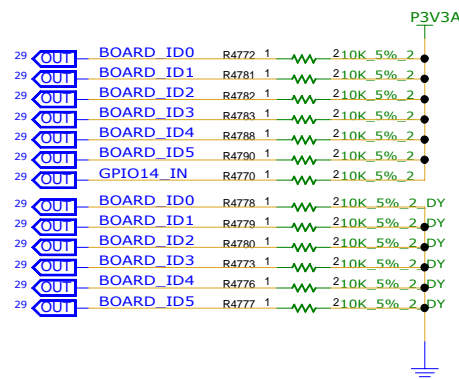
R4779 210K 5% 2

R4780 210K 5% 2

R4781 210K 5% 2

Table 1-5. Mobile Lynx Point SKUs Flexible I/O Map

SKU	High Speed I/O Ports																	
	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6	Port 7	Port 8	Port 9	Port 10	Port 11	Port 12	Port 13	Port 14	Port 15	Port 16	Port 17	Port 18
QM87	USB 3.0 Port 1	USB 3.0 Port 2	USB 3.0 Port 5	USB 3.0 Port 6	USB 3.0 Port 3	USB 3.0 Port 4	PCIe* Port 3	PCIe* Port 4	PCIe* Port 5	PCIe* Port 6	PCIe* Port 7	PCIe* Port 8	SATA 6Gb/s Port 4	SATA 6Gb/s Port 5	SATA 6Gb/s Port 0	SATA 6Gb/s Port 1	SATA 3Gb/s Port 2	SATA 3Gb/s Port 3
HM87	USB 3.0 Port 1	USB 3.0 Port 2	USB 3.0 Port 5	USB 3.0 Port 6	USB 3.0 Port 3	USB 3.0 Port 4	PCIe* Port 3	PCIe* Port 4	PCIe* Port 5	PCIe* Port 6	PCIe* Port 7	PCIe* Port 8	SATA 6Gb/s Port 4	SATA 6Gb/s Port 5	SATA 6Gb/s Port 0	SATA 6Gb/s Port 1	SATA 3Gb/s Port 2	SATA 3Gb/s Port 3
HM86	USB 3.0 Port 1	USB 3.0 Port 2	NA	NA	USB 3.0 Port 3	USB 3.0 Port 4	PCIe* Port 3	PCIe* Port 4	PCIe* Port 5	PCIe* Port 6	PCIe* Port 7	PCIe* Port 8	SATA 6Gb/s Port 4	SATA 6Gb/s Port 5	SATA 3Gb/s Port 0	NA	SATA 3Gb/s Port 2	NA



INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
SIZE A3	CODE CS	DOC NUMBER 1310xxxx-0-0	REV X01
SHEET 29 of 70			

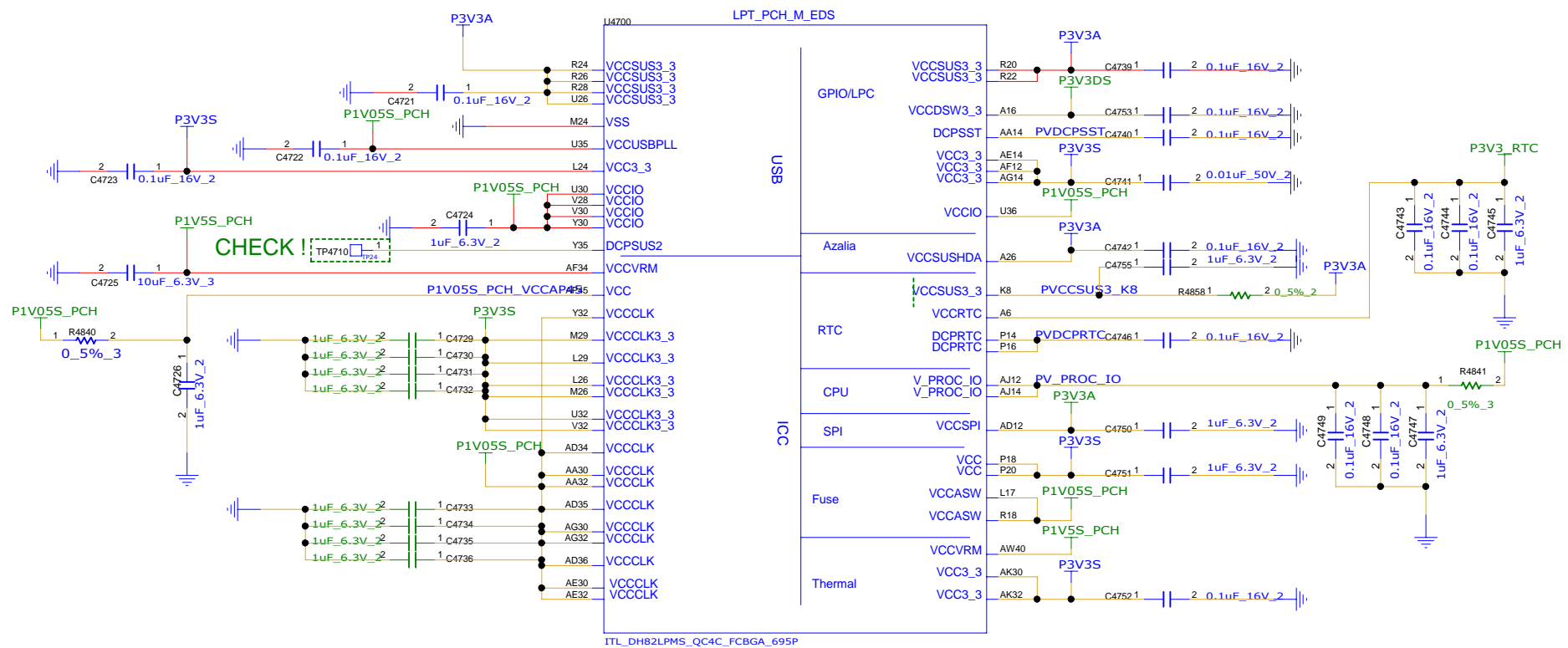
CHANGE by XXX DATE 21-OCT-2002





# REF INTEL SBY DG #486713 V1.0

V3.3 <sub>SS</sub> (3.3V)		USB3: AJ30, AJ32
		USB2: R24, R26, R28, U26
		Sus: R20, R22
		AZALIA: A26
		RTC: K8



## INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxx-0-0	X01

D

C

B

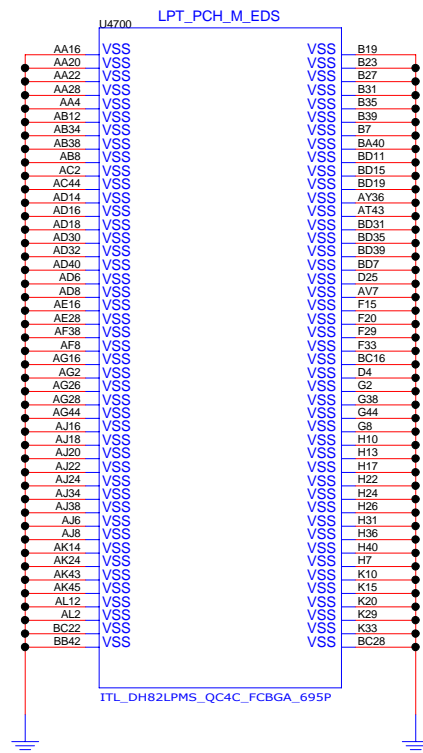
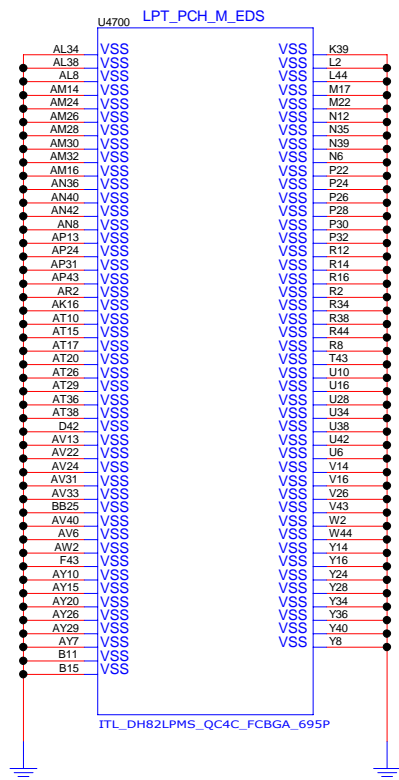
A

D

C

B

A



INVENTEC

TITLE  
MODEL,PROJECT,FUNCTION  
Block Diagram

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

CHANGE by XXX DATE 21-OCT-2002

SHEET 33 of 70

EC 2013EE1B  
Location 300 ~ 389  
Ver.04\_20120808

D300  
6011A0026801 - 1st  
60110GA0367T - 2nd

P3V3AL  
BAT54\_30V\_0.2A  
6011A0026801  
100K\_5%\_2

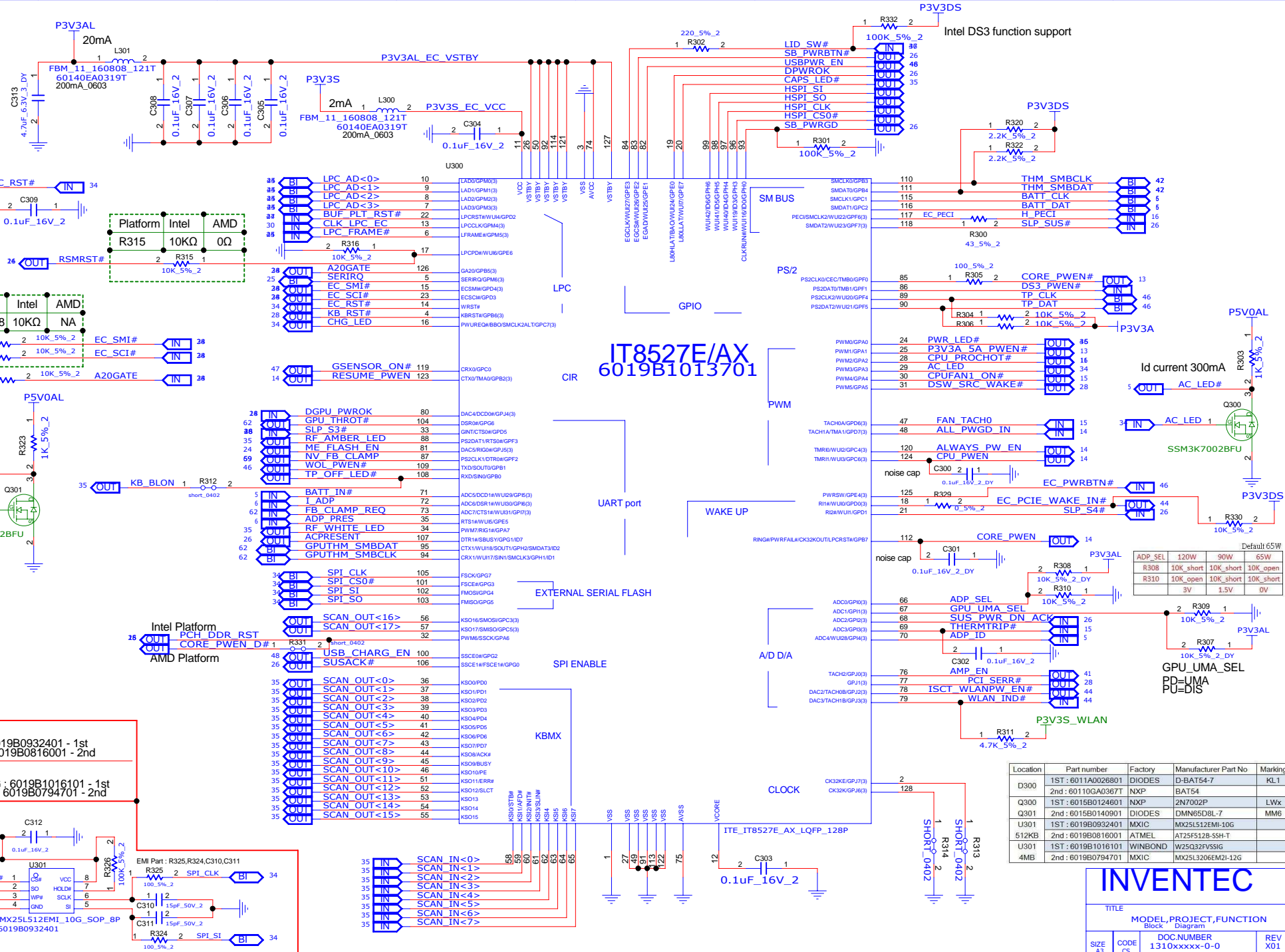
P3V3S  
R319, R318  
10K\_5%\_2  
R317  
10K\_5%\_2

Id current 300mA  
CHG\_LED#  
Q301  
SSM3K7002BFU  
Q300, Q301  
1st: 6015B0124601  
2nd: 6015B0140901

512KB EC ROM  
MX25L512EMI-10G: 6019B0932401 - 1st  
AT25F512B\_SSH\_T: 6019B0816001 - 2nd

4MB EC ROM  
WINB\_W25Q32FVSSIG: 6019B1016101 - 1st  
MX25L3206EM2I\_12G: 6019B0974701 - 2nd

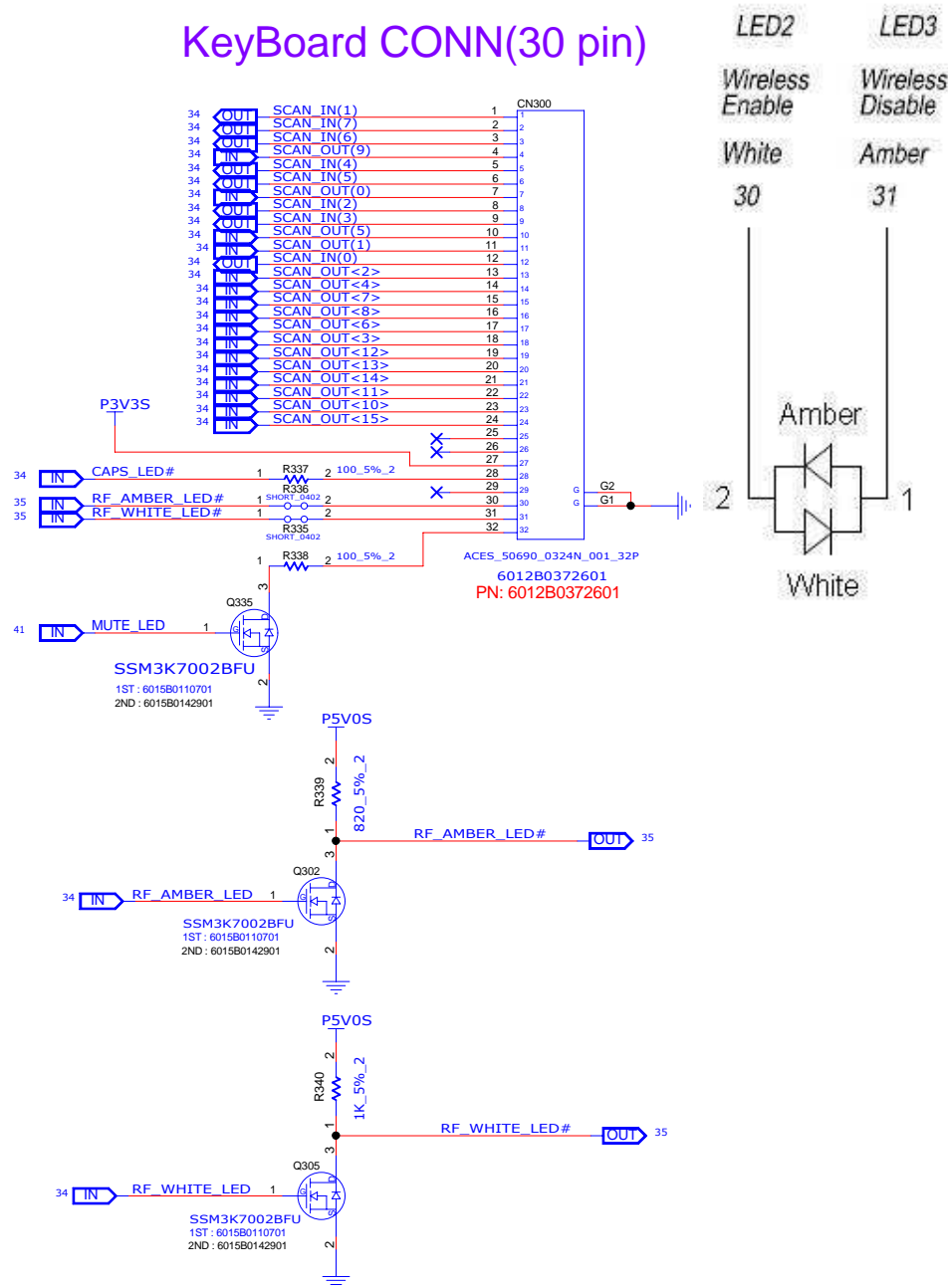
Socket: 6026B0150101



Location	Part number	Factory	Manufacturer Part No	Marking
D300	1ST: 6011A0026801	DIODES	D-BAT54-7	KL1
	2nd: 60110GA0367T	NXP	BAT54	
Q300	1ST: 6015B0124601	NXP	2N7002P	LWx
Q301	2nd: 6015B0140901	DIODES	DMN65D8L-7	MM6
U301	1ST: 6019B0932401	MXIC	MX25L512EMI-10G	
512KB	2nd: 6019B0816001	ATMEL	AT25F512B-SH-T	
U303	1ST: 6019B1016101	WINBOND	W25Q32FVSSIG	
4MB	2nd: 6019B0794701	MXIC	MX25L3206EM2I-12G	

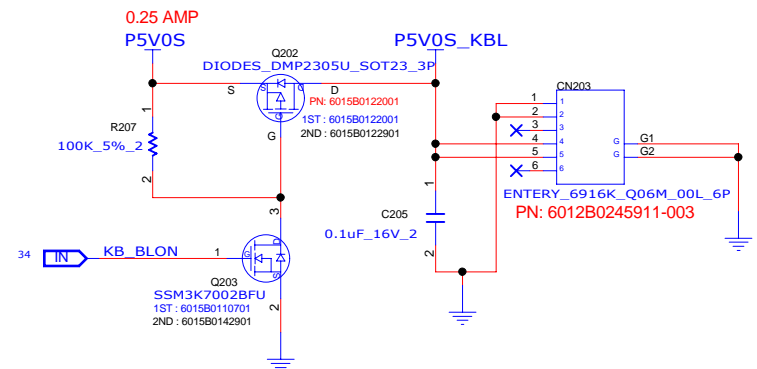
INVENTEC			
TITLE			
MODEL, PROJECT, FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01
CHANGE by		DATE	21-OCT-2002
SHEET		34	of 70

## KeyBoard CONN(30 pin)



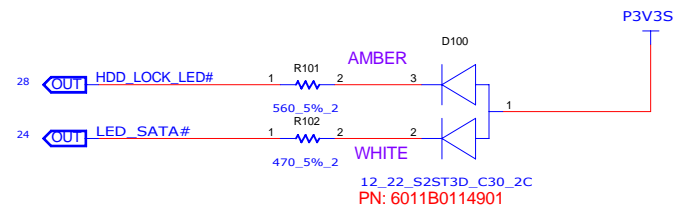
CONNECTOR KEY BOARD 200~299

## KEYBOARD BACKLIGHT

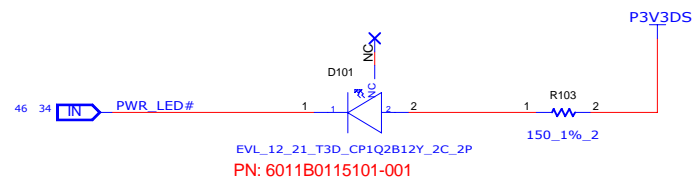


LED 100~199

## HDD LED



## POWER LED



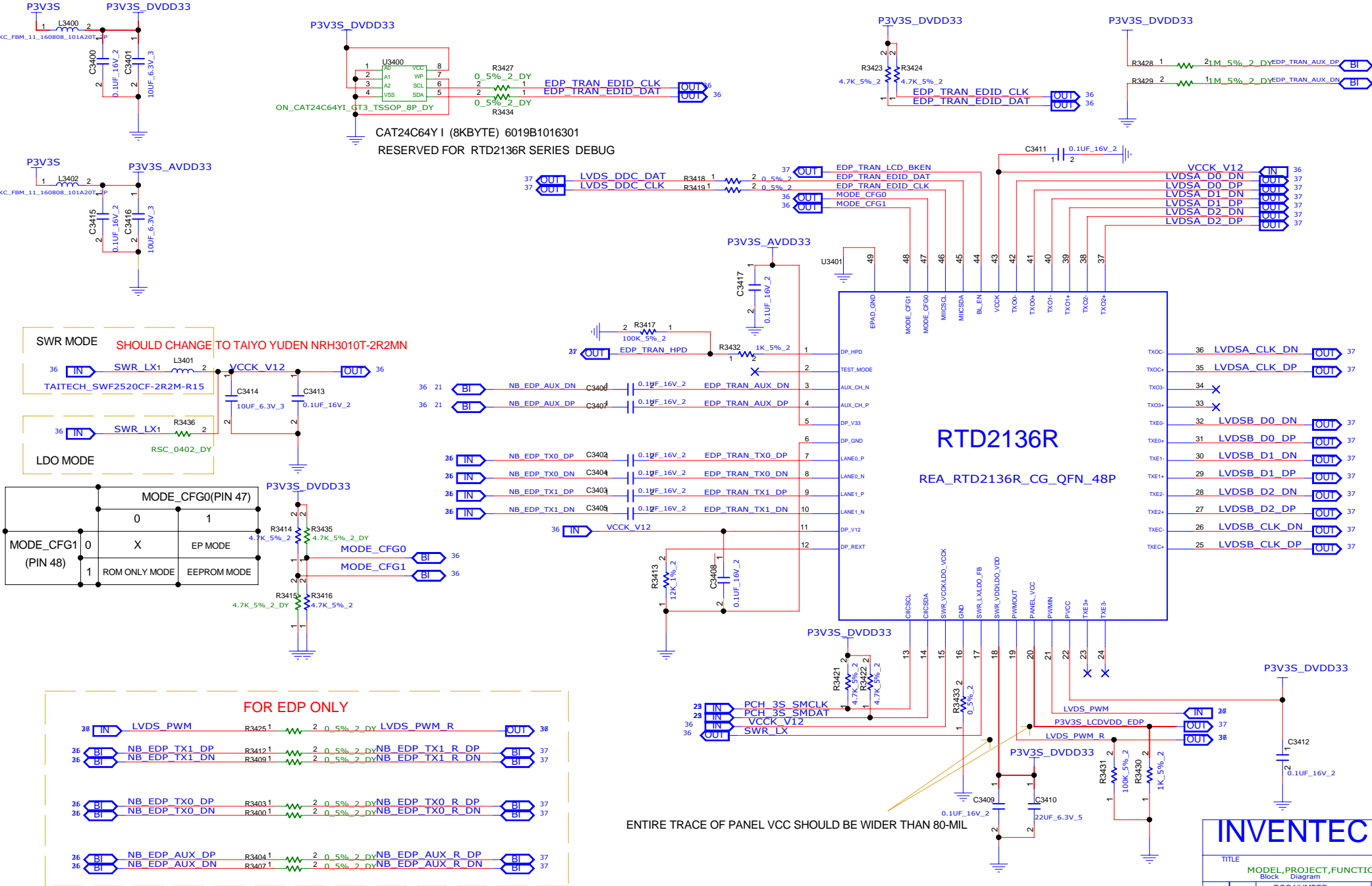
INVENTEC

TITLE			
MODEL PROJECT FUNCTION			
KB CONN & LED			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

CHANGE by XXX DATE 21-OCT-2002

SHEET 35 of 70

ENTIRE TRACE OF PANEL VCC SHOULD BE WIDER THAN 80-MIL



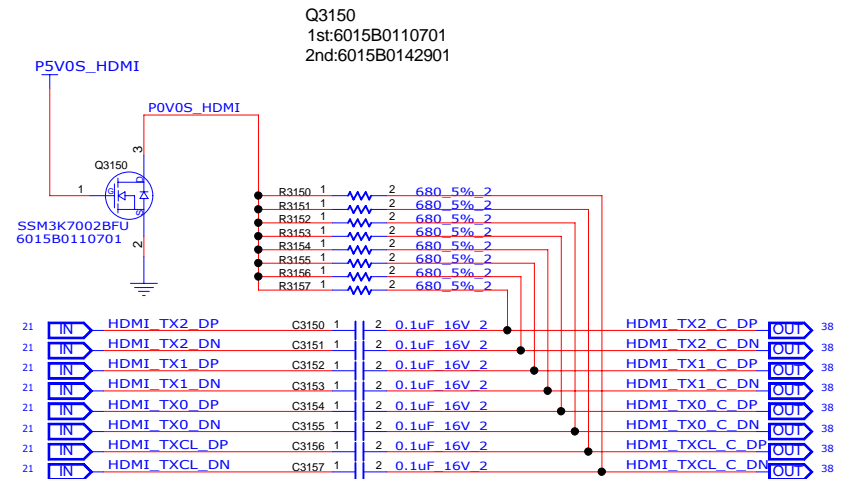
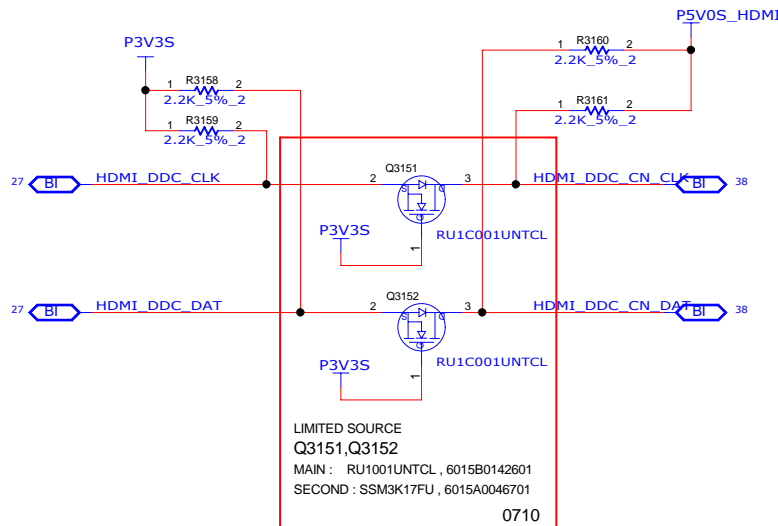
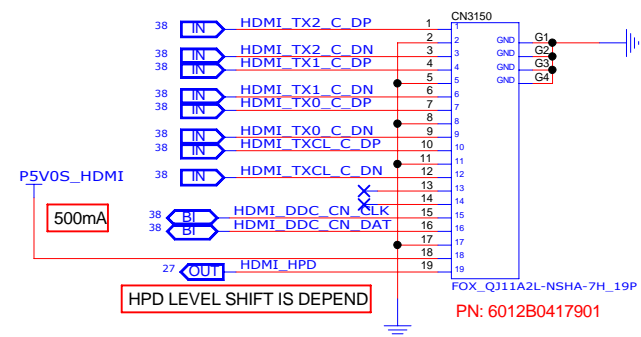
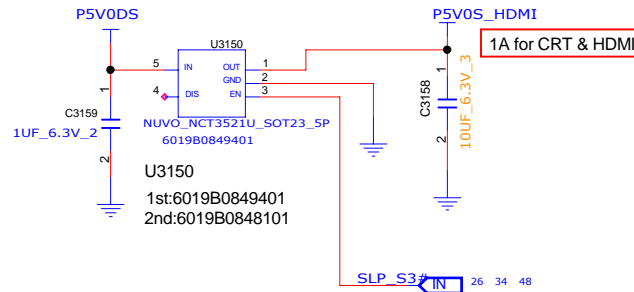
INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
DOC NUMBER			
1310xxxxx-0-0			
REV			
X01			



# HDMI

Location 3150 ~ 3199  
Ver.02\_20120809



Location	Part number	Factory	Manufacturer Part No	Marking
D300	1ST : 6011A0026801	DIODES	D-BAT54-7	KL1
	2nd : 60110GA0367T	NXP	BAT54	
Q300	1ST : 6015B0124601	NXP	2N7002P	LWx
Q301	2nd : 6015B0140901	DIODES	DMN65D8L-7	MM6
U301	1ST : 6019B0932401	MXIC	MX25L512EMI-10G	
512KB	2nd : 6019B0816001	ATMEL	AT25F512B-SSH-T	
U301	1ST : 6019B1016101	WINBOND	W25Q32FVSSIG	
4MB	2nd : 6019B0794701	MXIC	MX25L3206EM2I-12G	

## INVENTEC

TITLE  
MODEL,PROJECT,FUNCTION  
HDMI\_CONN

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

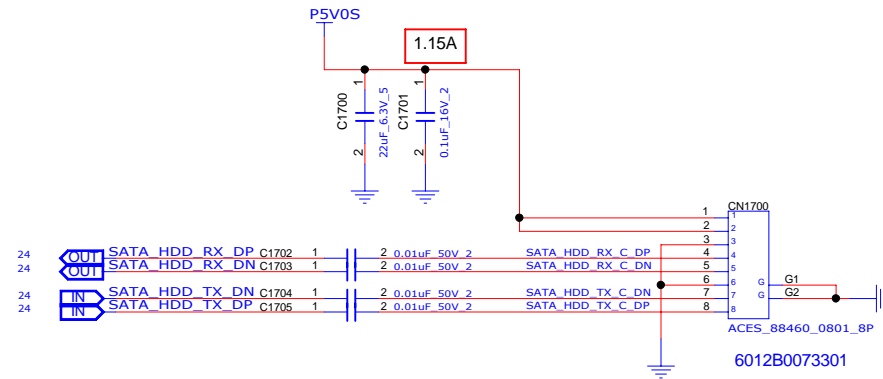
CHANGE by XXX DATE 21-OCT-2002

SHEET 38 of 70

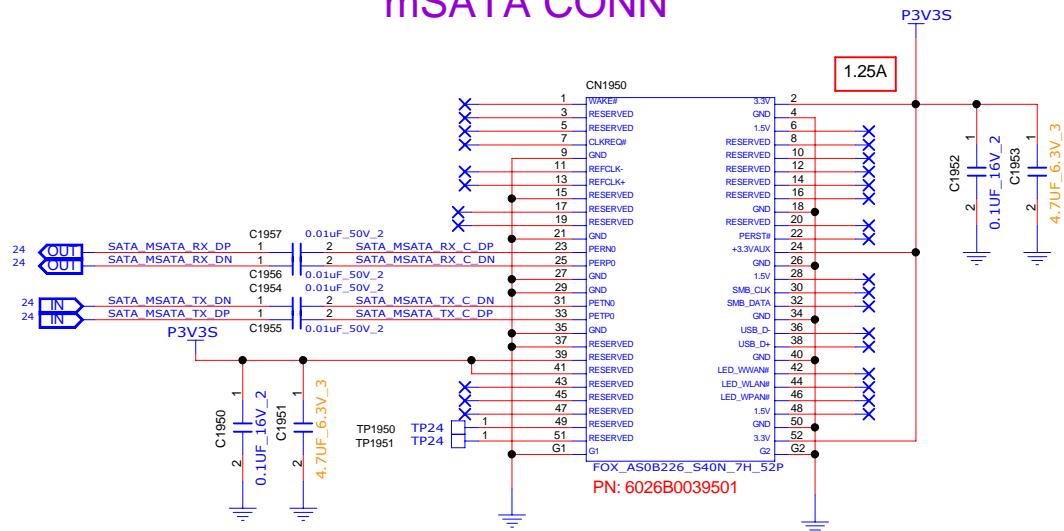
SATA HDD  
Location 1700 ~ 1749

mSATA  
Location 1950 ~ 1999  
Ver.01\_20120808

## SATA HDD CABLE CONN on MB



## mSATA CONN



INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
SATA_HDD & SATA_ODD			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

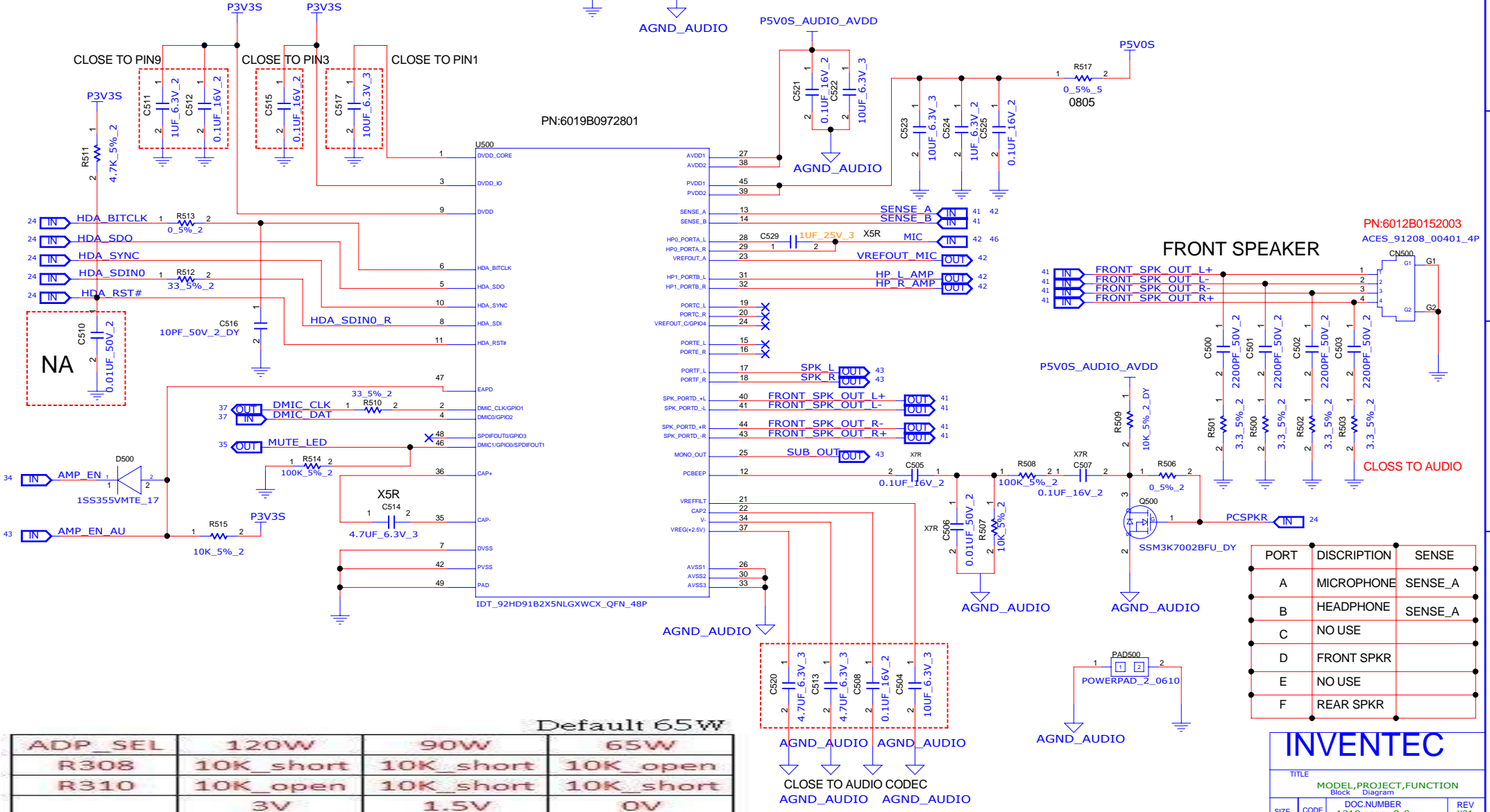


# AUDIO-1

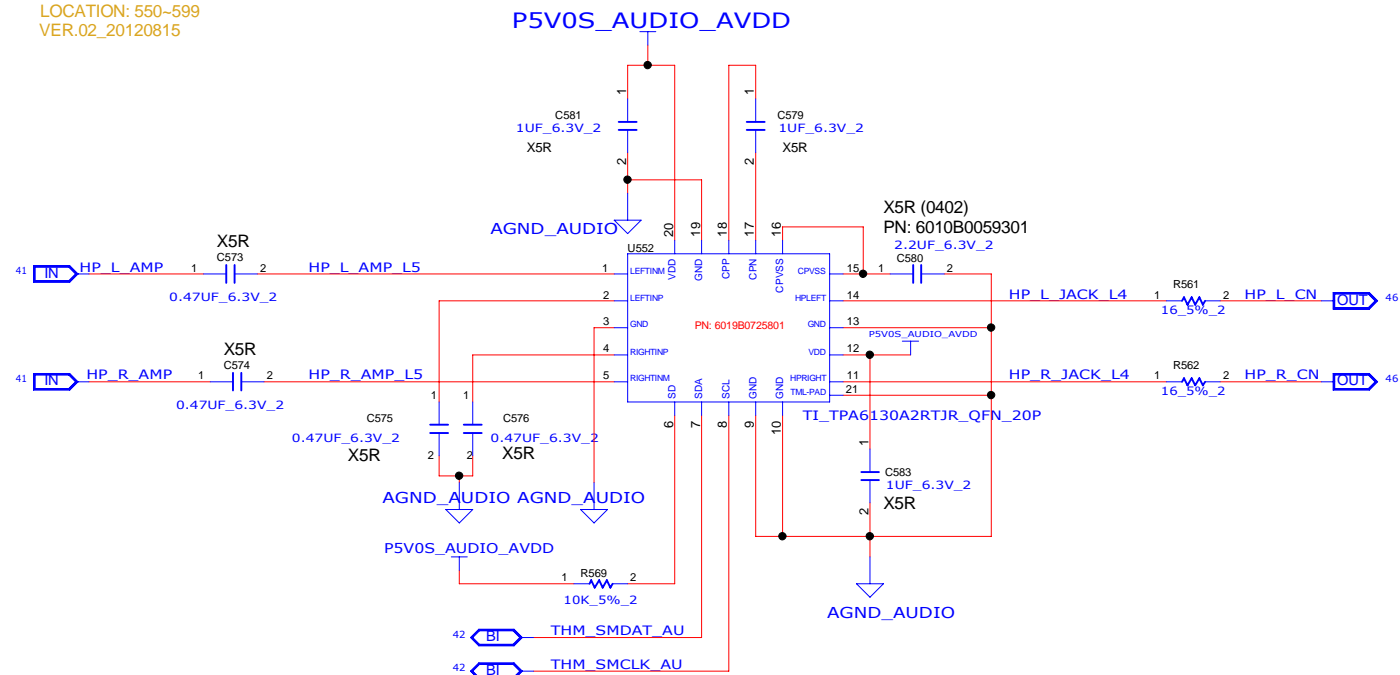
## CODEC

LOCATION: 500-549  
VER.02\_20120815

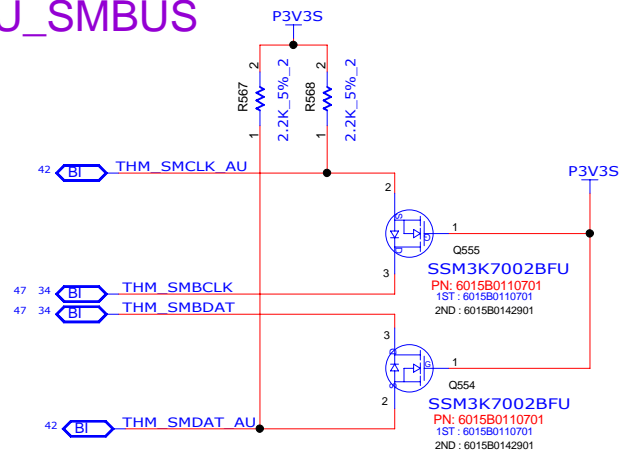
DVDD 0.025AMP  
AVDD 0.06AMP  
PVDD 0.01.3AMP



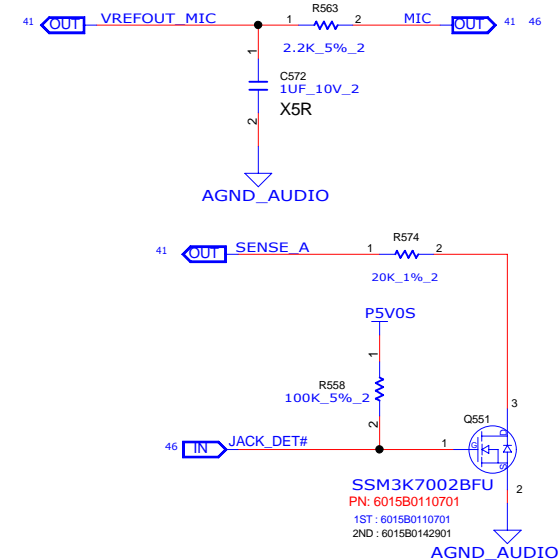
# AUDIO-2 CODEC

LOCATION: 550-599  
VER.02\_20120815

## AU\_SMBUS



## COMBO JACK



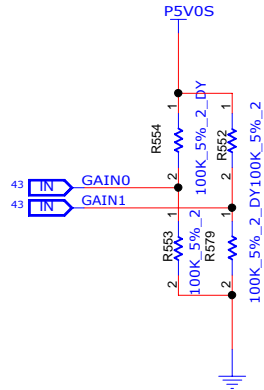
Location	Part number	Factory	Manufacturer Part No	Marking
Q9401	1st : 6015B0122001	DIODES	DMP2305U	23P
	2nd : 6015B0122901	TOSHIBA	SSM3J327R	KFG
L9401	1st : 6014B0200401	TAI-TECH	SWF2520CF-2R2M-R15	
	2nd : 6014B0190301	CYNTEC	PHI25201B-2R2MS	
X9401	1st : 6018B0060301	EPSON	FA-238G	2500M
	2nd : 6018B0054701	TXC	7V25000014	T250

**INVENTEC**

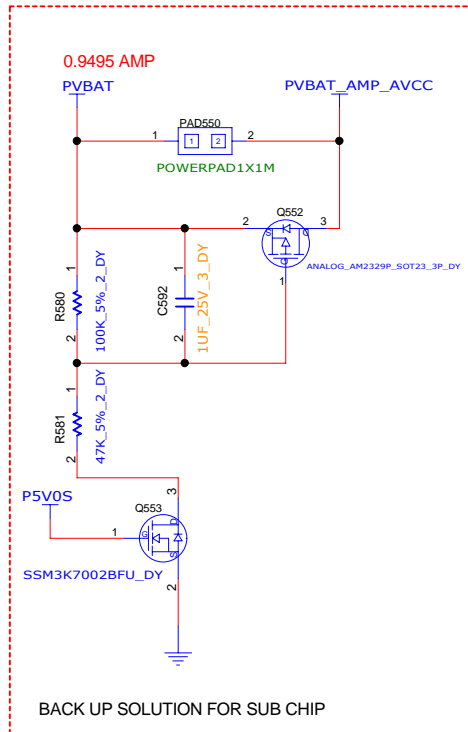
TITLE			
MODEL,PROJECT,FUNCTION			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

## AUDIO-3

## CODEC

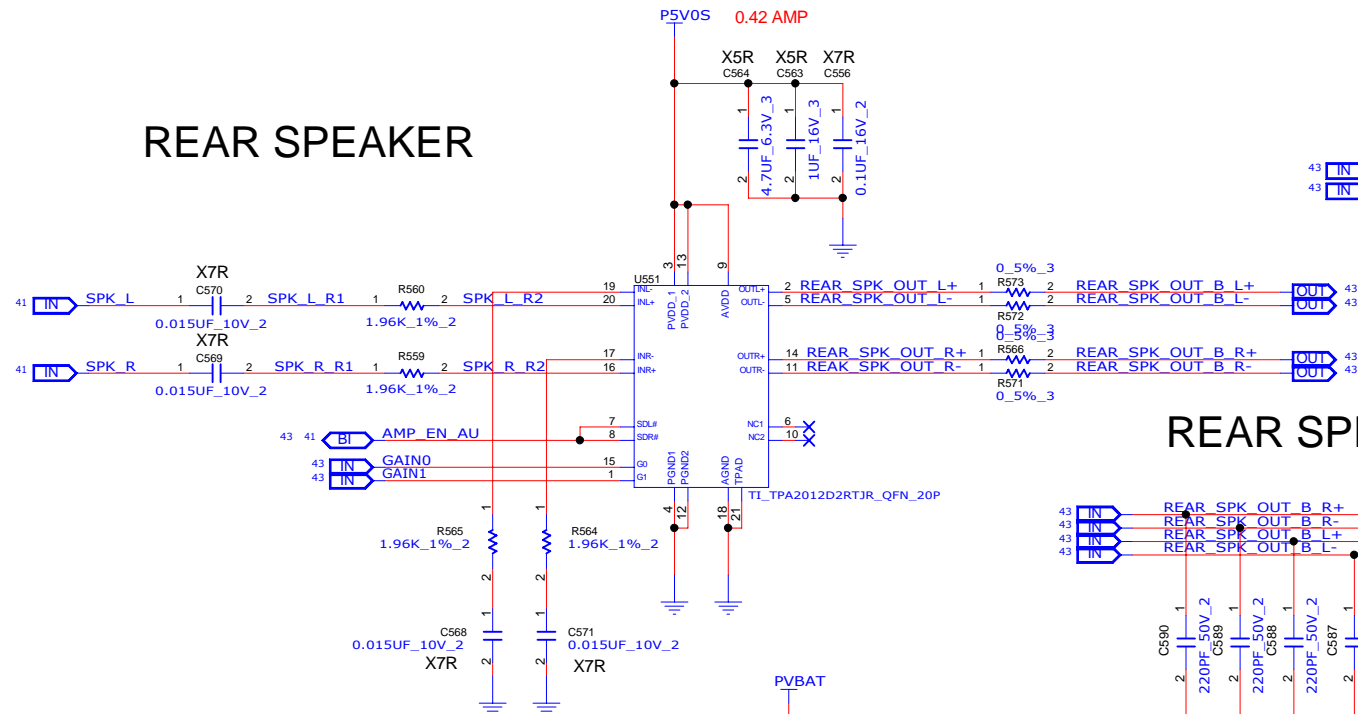
LOCATION: 550-599  
VER.02\_20120815

## SUBWOOFER

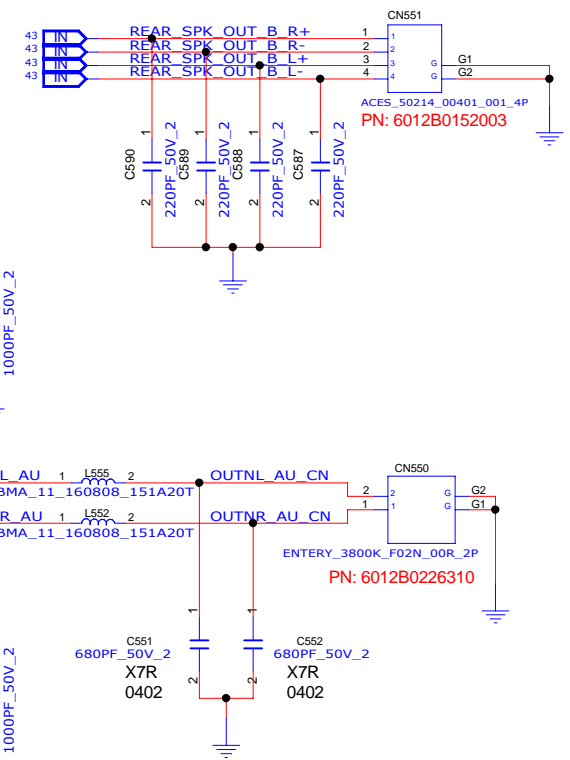


BACK UP SOLUTION FOR SUB CHIP

## REAR SPEAKER



## REAR SPEAKER



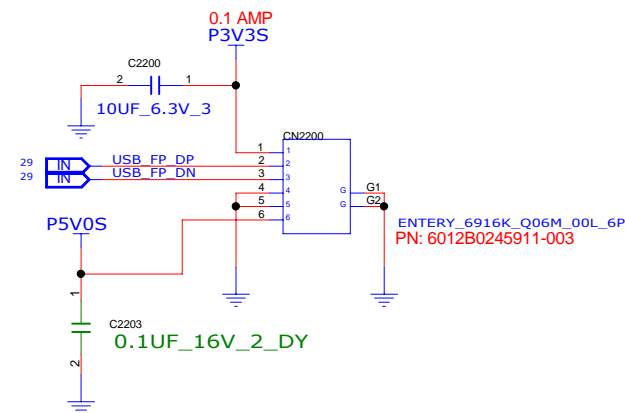
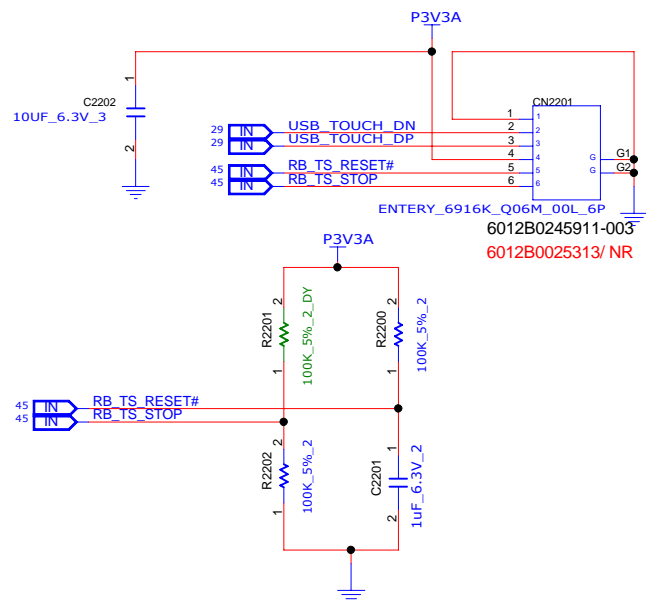
TI TPA311D1 (HP PART NUMBER HPA00836PWPR)

INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01



# FINGER PRINT



## VFM5302-3192 PIN ASSIGNMENTS

Pin Number	Signal Name	Test Point
1	3.3V <sub>CC</sub>	TP3
2	DP	TP1
3	DM	TP2
4	GND	TP4
5	GND	TP4
6	5V <sub>CC</sub>	TP6

### Figure 4 - Connector Pin-out

CORRECT PN  
CN2201  
6012B0025313

INVENTEC

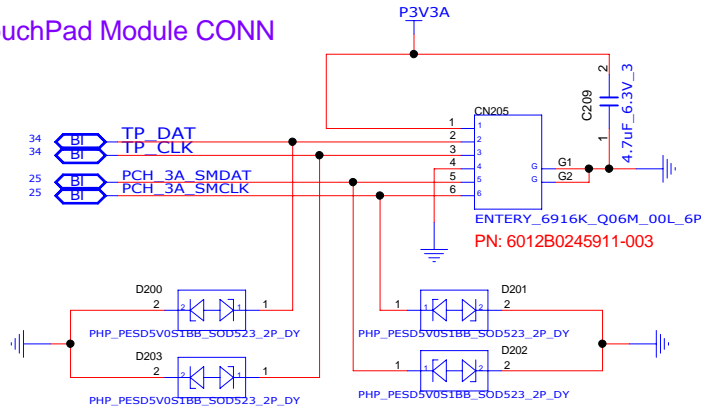
TITLE	MODEL,PROJECT,FUNCTION
	Block Diagram

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

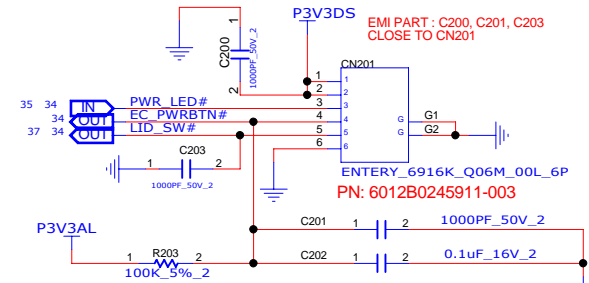
SHEET 45 of 70

CHANGE by	yyy	DATE	31-OCT-2003
-----------	-----	------	-------------

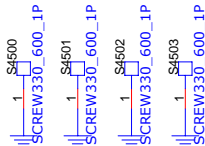
## TouchPad Module CONN



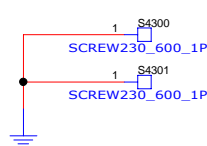
## POWER BUTTON CONN ON MB



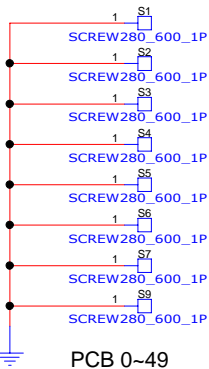
## FOR CPU



## FOR FAN

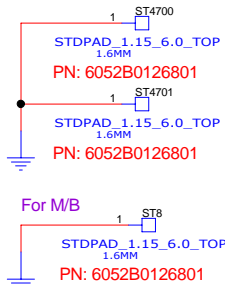


## For MB

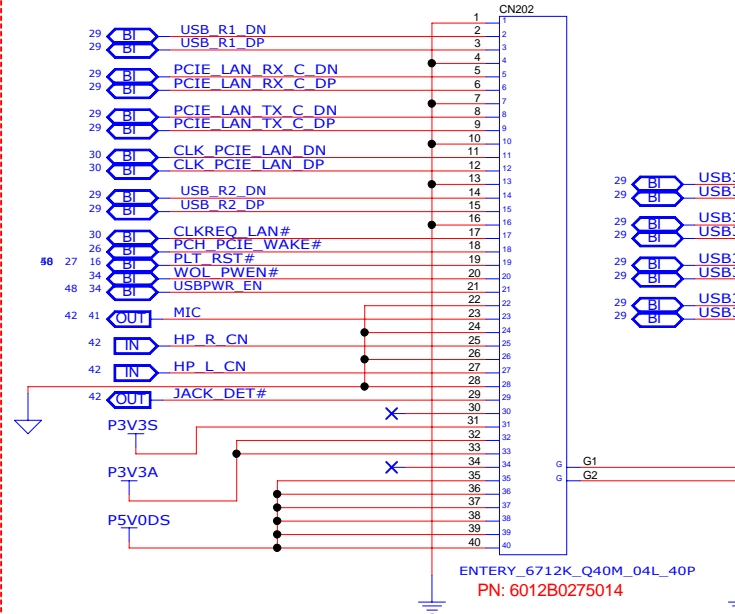
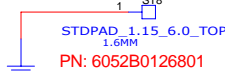


PCB 0-49

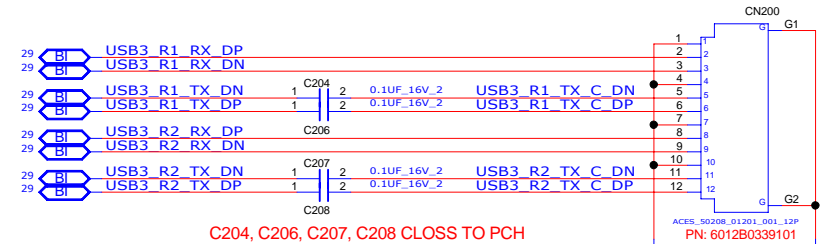
## FOR PCH



## For MB



## MB CONNECTOR TO AUB



# INVENTEC

TITLE			
MODEL PROJECT,FUNCTION			
POWER BUTTON			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

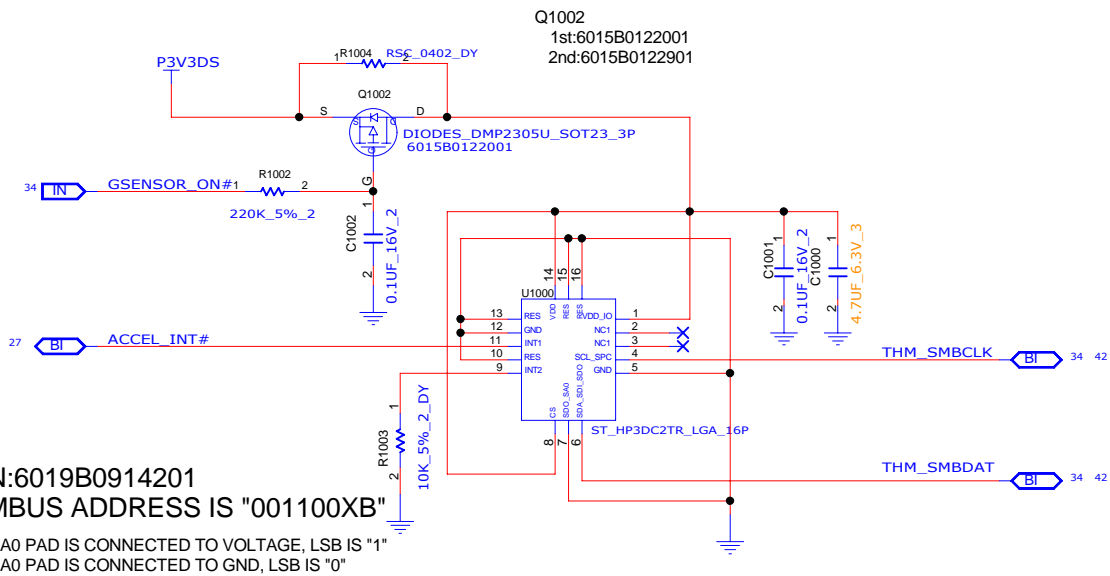
CHANGE by XXX DATE 21-OCT-2002

SHEET 46 of 70

# G-Sensor

Loctaion 1000 ~ 1099  
Ver.01\_20120807

## HARDDRIVE PROTECTION

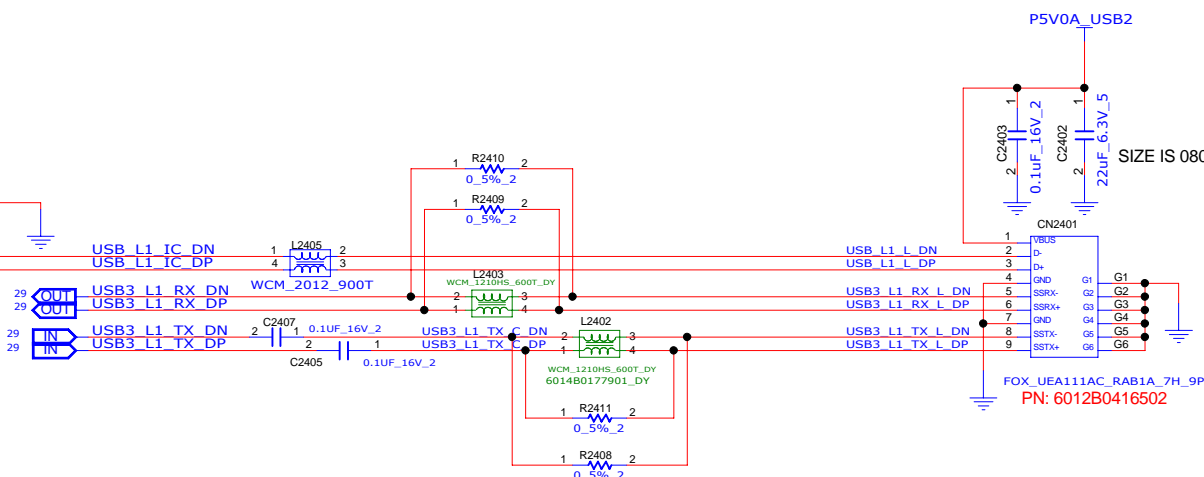
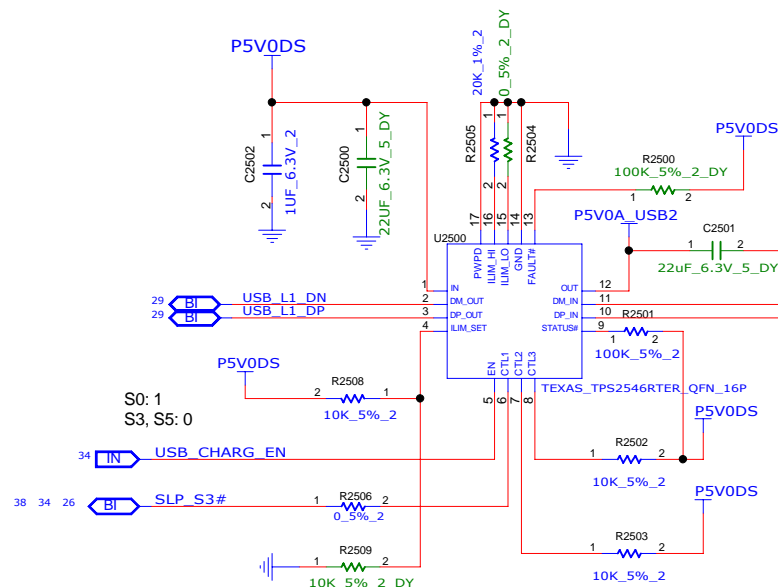
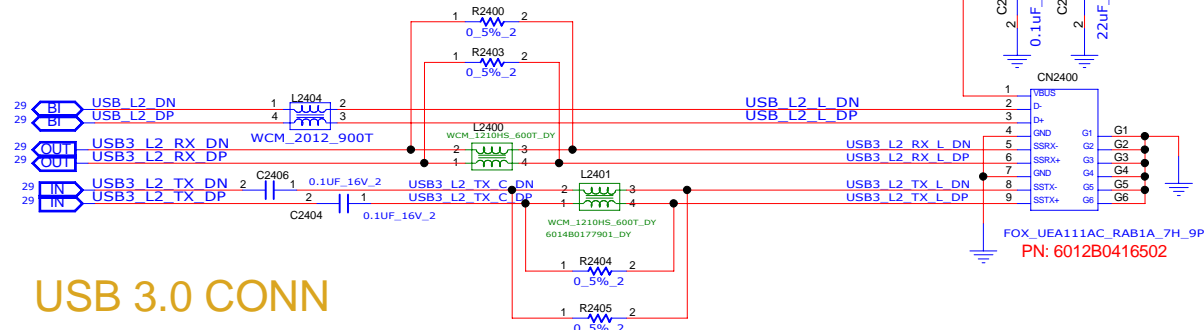
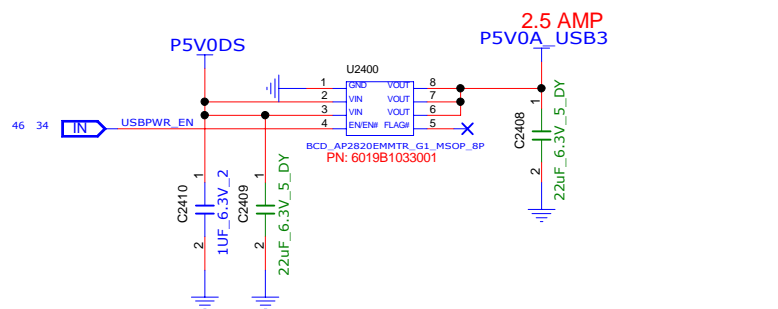


Location	Part number	Factory	Manufacturer Part No
Q1002	1ST : 6015B0122001	DIODES	DMP2305U
	2nd : 6015B0122901	TOSHIBA	SSM3J327R

INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE A3	CODE CS	DOC NUMBER 1310xxxxx-0-0	REV X01
SHEET 47 of 70			

Location	Part number	Factory	Manufacturer Part No	Color
D9400	6011B0115101	EVERLIGHT	T3D_CP1Q2B12Y_2C	White
D9401	6011B0101001	EVERLIGHT	S2C_AL1M2VY_3C	Amber



USB CHARGING TPS2546  
PN: 6019B1035901

INVENTEC			
TITLE			
MODEL PROJECT FUNCTION			
USB 3.0 CONN & M/B TO D/B CONN			
DOC NUMBER		REV	
1310xxxxx-0-0		X01	
SIZE	CODE	SHEET	
A3	CS	48 of 70	

CHANGE by XXX DATE 21-OCT-2002

# AUB BOARD

INVENTEC

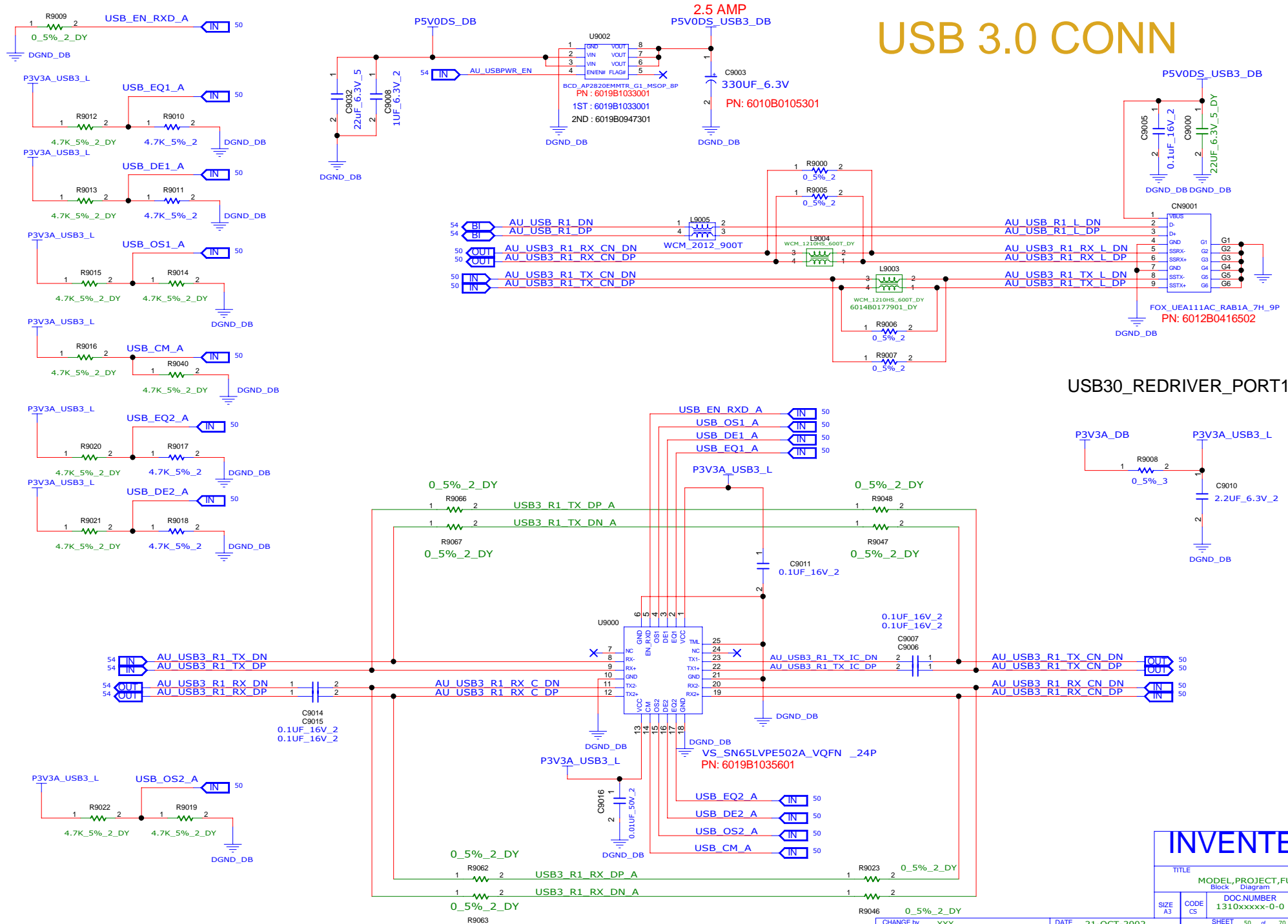
TITLE  
MODEL,PROJECT,FUNCTION  
Block Diagram

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

CHANGE by XXX DATE 21-OCT-2002

SHEET 49 of 70

# USB 3.0 CONN



USB30\_REDRIIVER\_PORT1

INVENTEC

TITLE MODEL,PROJECT,FUNCTION

SIZE CODE DOC NUMBER REV

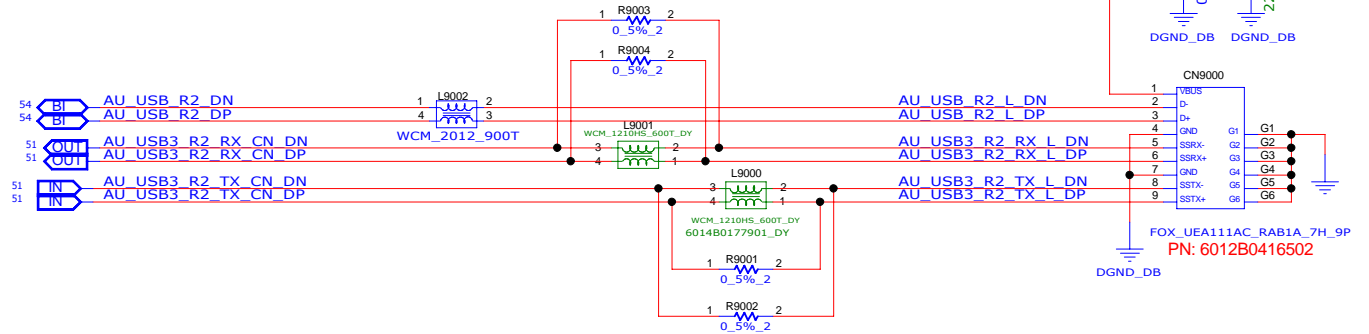
A3 CS 1310xxxxx-0-0 X01

DATE 21-OCT-2002

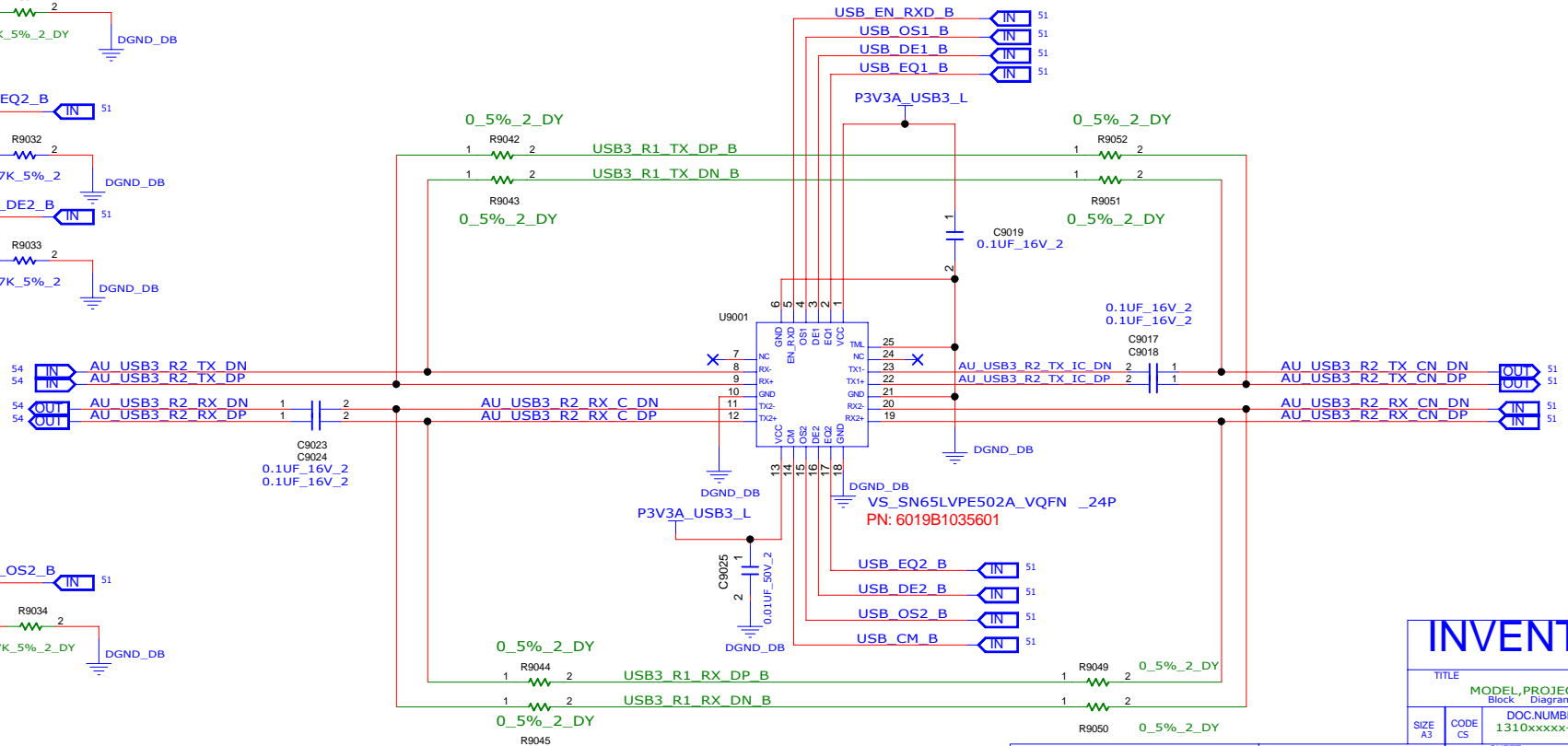
SHEET 50 of 70

CHANGE by XXX

# USB 3.0 CONNN



## USB30\_REDRIIVER\_PORT2



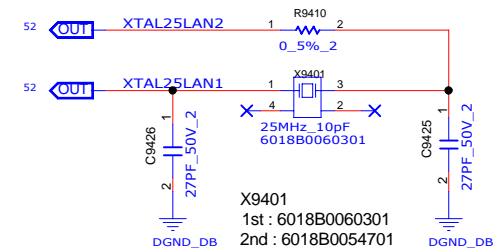
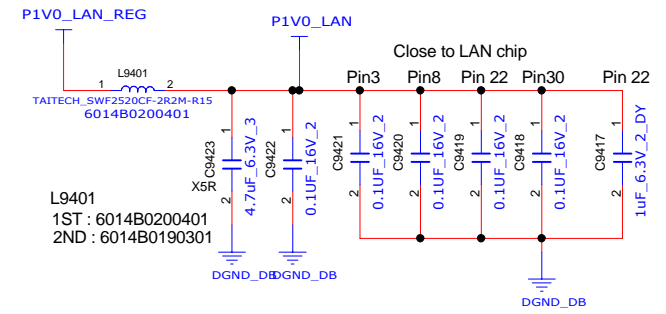
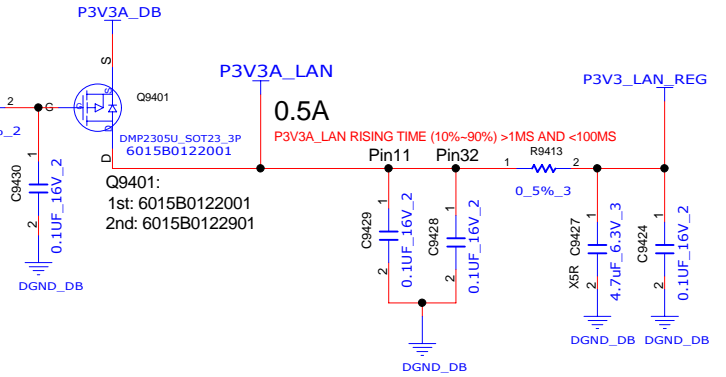
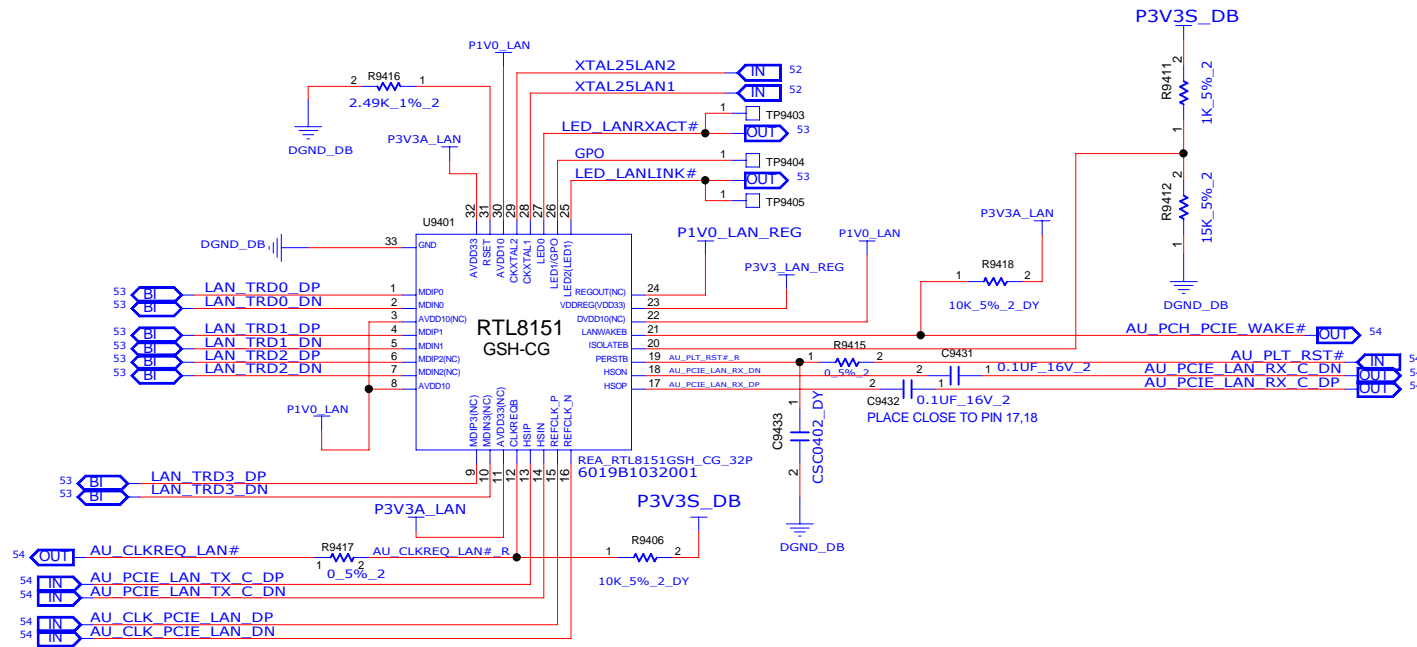
INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

# LAN ( Controller)

Location 9400 ~ 9499  
Ver.03\_20120807

6019B1032101\_RTL8161GSH-CG\_10/100/1000  
6019B1032001\_RTL8151GSH-CG\_10/100/1000



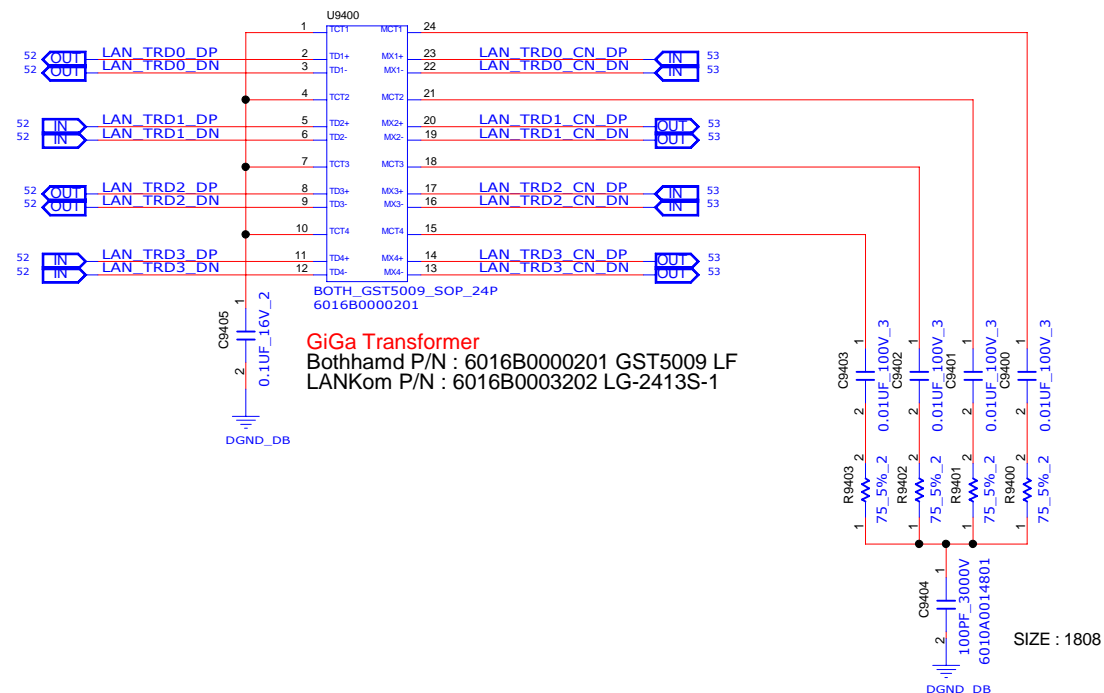
Location	Part number	Factory	Manufacturer Part No	Marking
Q9401	1st : 6015B0122001	DIODES	DMP2305U	23P
	2nd : 6015B0122901	TOSHIBA	SSM3J327R	KFG
L9401	1st : 6014B0200401	TAI-TECH	SWF2520CF-2R2M-R15	
	2nd : 6014B0190301	CYNTEC	PHI25201B-2R2MS	
X9401	1st : 6018B0060301	EPSON	FA-238G	2500M
	2nd : 6018B0054701	TXC	7V25000014	T250

## INVENTEC

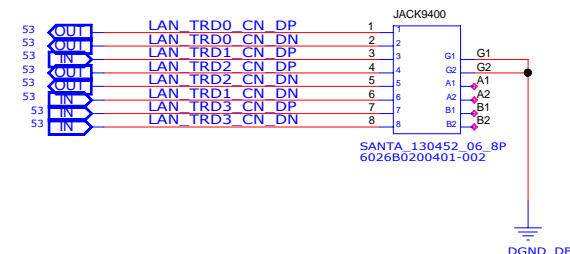
TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

# LAN ( Transformer & RJ45 )

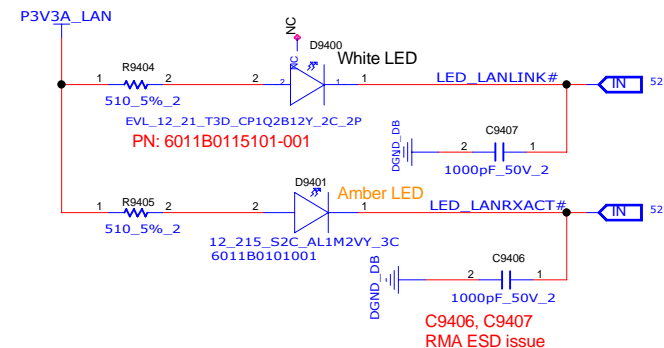
Location 9400 ~ 9499  
Ver.06\_20120813



## RJ-45



★Layout  
D9400 White LED place on TOP side.  
D9401 Amber LED place on Bottom side.



Location	Part number	Factory	Manufacturer Part No	Color
D9400	6011B0115101	EVERLIGHT	T3D_CP1Q2B12Y_2C	White
D9401	6011B0101001	EVERLIGHT	S2C_AL1M2VY_3C	Amber

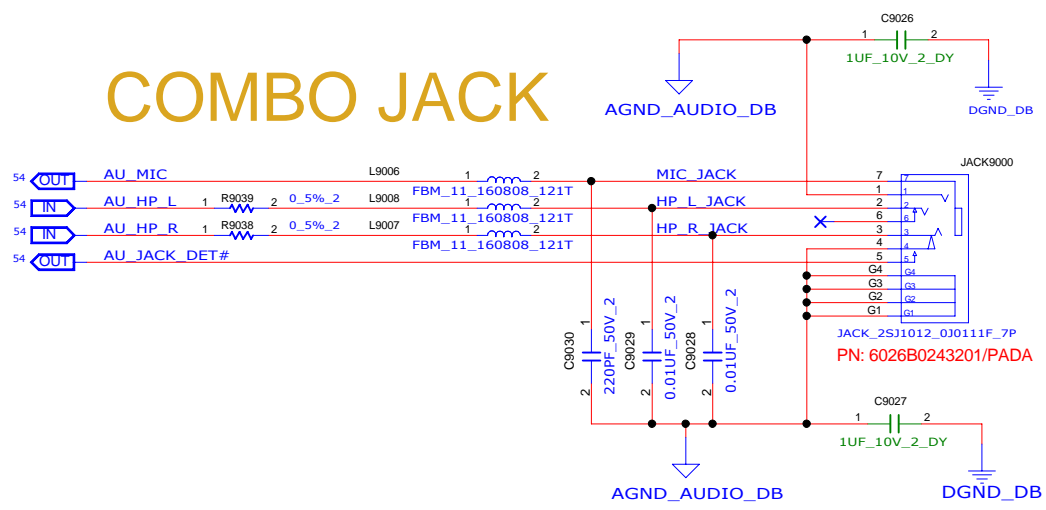
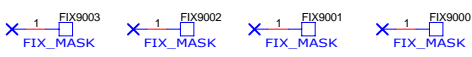
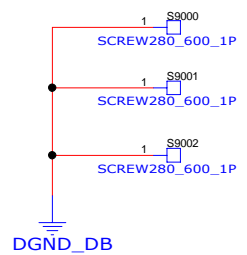
Location	Part number	Factory	Manufacturer Part No
U9400	1st:6016B0000201	BothHamd	GST5009LF
	2nd:6016B0003202	LanKom	LG-2413S-1

## INVENTEC

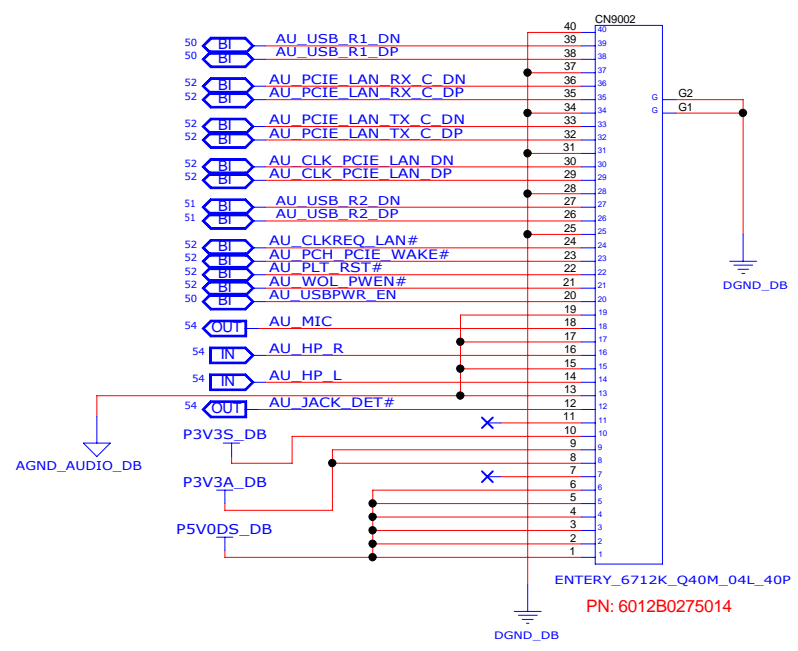
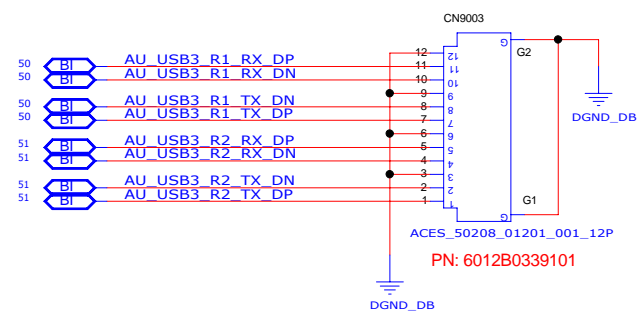
TITLE			
MODEL,PROJECT,FUNCTION			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

# CONNECTOR

## COMBO JACK



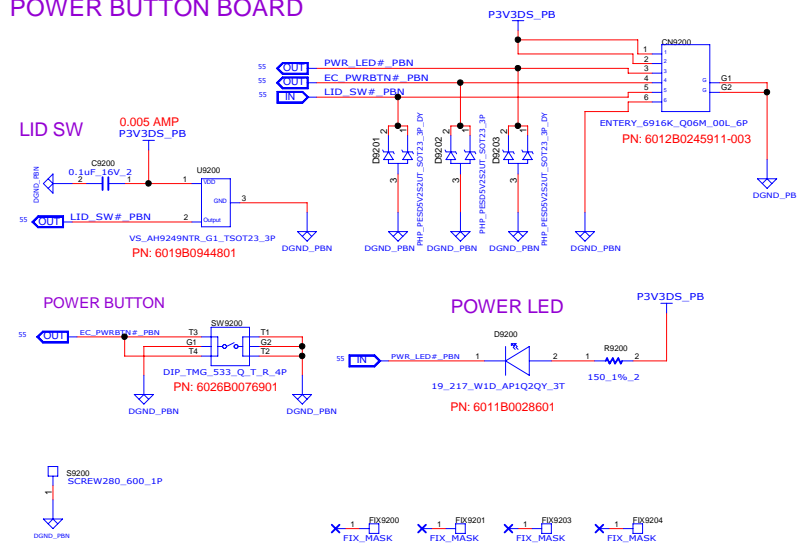
## MB TO AUB CONNECTOR



INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

## POWER BUTTON BOARD

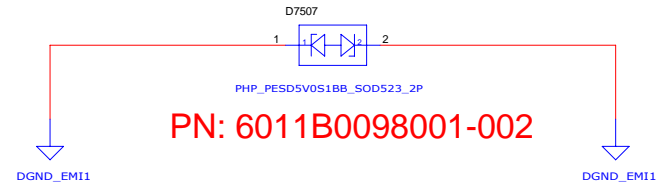


INVENTEC

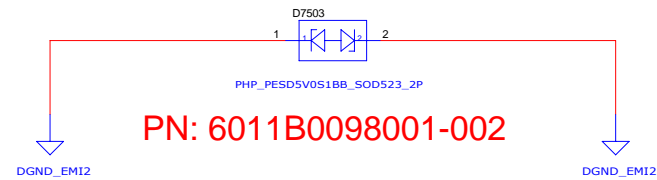
TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310XXXX-0-0	X01
SHEET		55	of 59

CHANGE BY: YXX DATE: 21-OCT-2002

# ESD BOARD 1



# ESD BOARD 2



INVENTEC

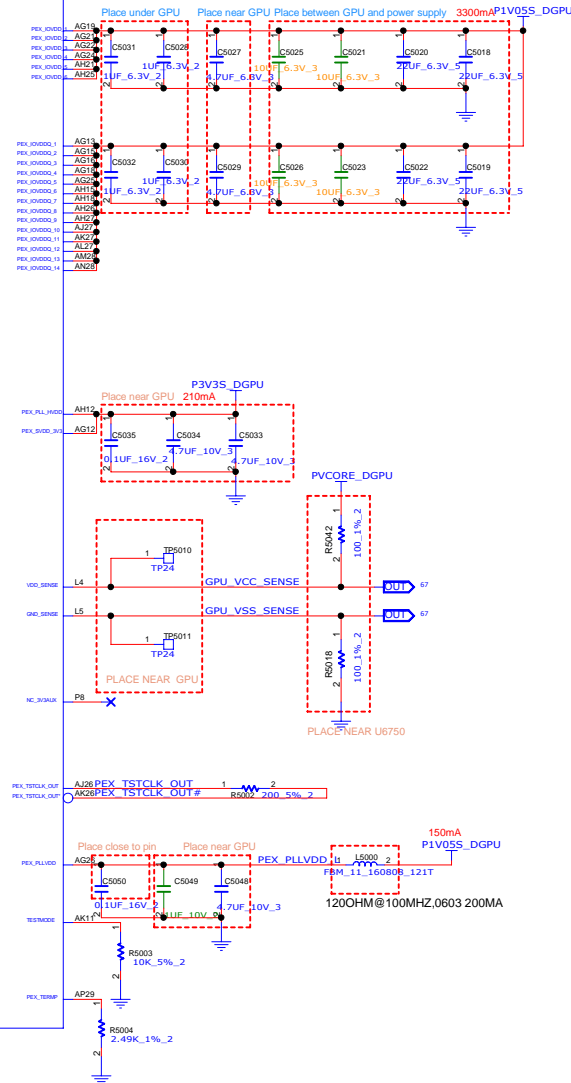
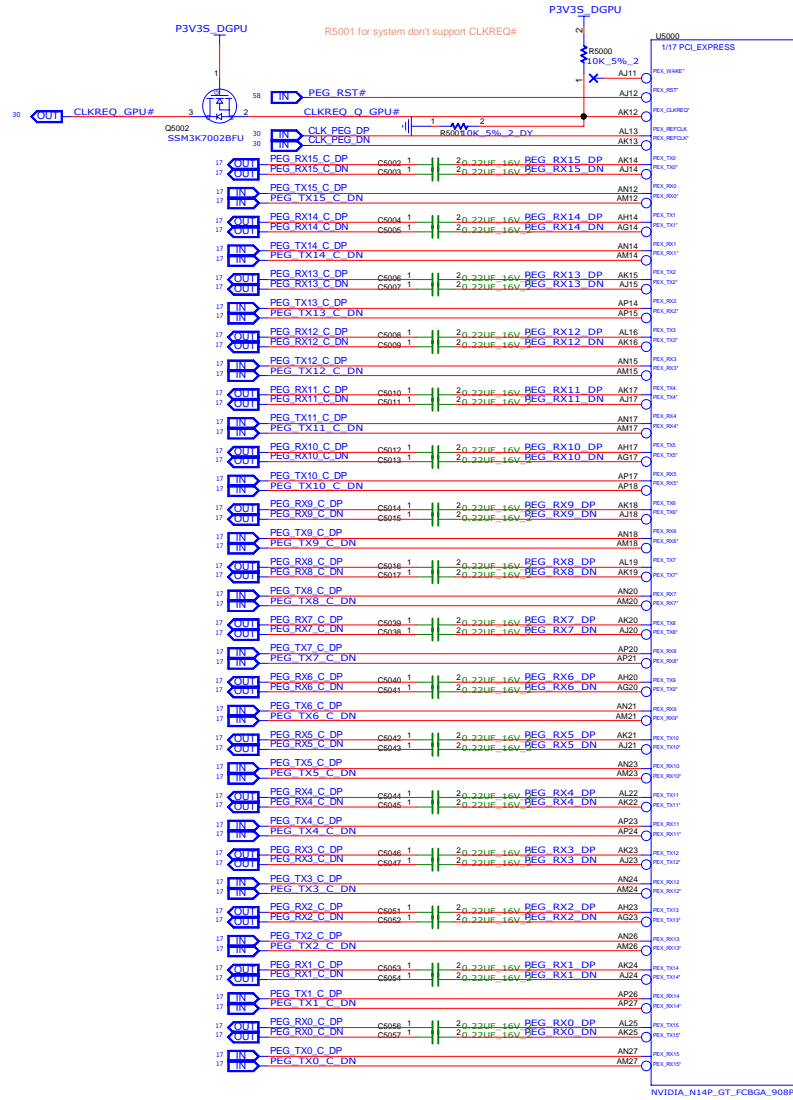
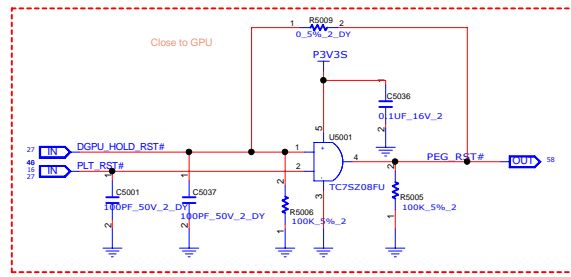
TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01

GPU  
Location:GPU 5000~5499 VRAM 5500~5799 GPU SWITCH 7400~7499  
VER.03\_20120815

NVIDIA N14P-GT GB4-128 GDDR5 35W

INVENTEC			
TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01
CHANGE by		xxx	DATE
			21-OCT-2002
SHEET		57	of 70

# GPU



INVENTEC

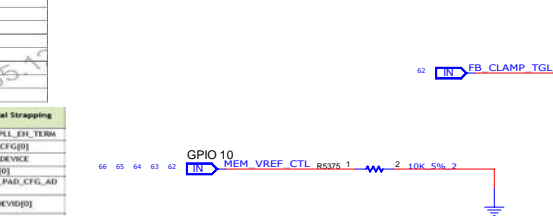
TITLE			
MODEL,PROJECT,FUNCTION			
GPU-1			
SIZE	CODE	DOC NUMBER	REV
C	CS	1310100000-0-0	001
SHEET			
38	40	41	42







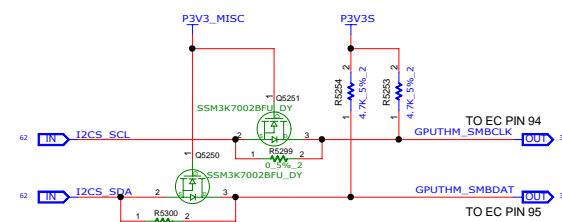
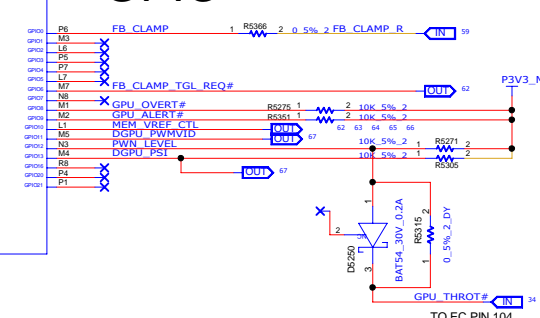
A
B
C
D
E
F



Strap Pin Name	Logical Strapping Bit 3	Logical Strapping Bit 2	Logical Strapping Bit 1	Logical Strapping Bit 0
ROM_SCLK	PCL_DEV[4]	SUB_VEHOR	PCL_DEV[1]	PCL_PX_LH_TERM
ROM_SI	RAM_CFG[4]	RAM_CFG[2]	RAM_CFG[1]	RAM_CFG[0]
ROM_SO	RAM_CFG[3]	RAM_CFG[1]	RAM_CFG[0]	RAM_CFG[4]
STRAP0	USER[3]	USER[2]	USER[1]	USER[0]
STRAP1	3G0_PAD_CFG_AD[2]	3G0_PAD_CFG_AD[2]	3G0_PAD_CFG_AD[1]	3G0_PAD_CFG_AD[0]
STRAP2	PCL_DEV[2]	PCL_DEV[2]	SOR1_EXPOSED	PCL_DEV[0]
STRAP3	SOR3_EXPOSED	SOR3_EXPOSED	SOR1_EXPOSED	SOR3_EXPOSED
STRAP4	RESERVED	PCL_SPEED_CHANGE_CFG[0]	PCL_MAX_SPEED	DP_PLL_VDDI3V

STRAP1	Description	Notes
0000-0101	RESERVED	
0110 35K	Notebook	Notebook Default
0111-1111	RESERVED	

STRAP4	Configuration
0000	reserved
0001	reserve for PCIE GEN3 speed function
0010	0: default
0011	0: limit to PCIE Gen1
0100	1: PCIE Gen2/3 capable
0101	reserve for future use
0110	0: default
0111	



GPIO	Function
GPIO 0	Debug Service Header
GPIO 1	<b>MEM_VDD_CTL/FAN_PWM</b>
GPIO 2	LCD Brightness Control (BL PWM)
GPIO 3	LCD Power Enable (PPEN)
GPIO 4	LCD Backlight Enable (BLEN)
GPIO 5	<b>NVVDD_PWM_VID_BOOT_EN</b>
GPIO 6	Remote Sensor Error Correction
GPIO 7	3D STEREO
GPIO 8	GPU Overtemp
GPIO 9	GPU Thermal Alert/FAN_PWM
GPIO 10	F8 Vref Control
GPIO 11	<b>NVVDD_PWM_VID</b>
GPIO 12	PWR_Level AC Detect
GPIO 13	<b>NVVDD_PSI</b>
GPIO 14	FB_CLAMP_TGL_REG/HPD for I/F AB (not used)
GPIO 15	HPD for I/F C (DP)
GPIO 16	Fan <b>PWM/MEM_VDD_CTL/NVVDD_PSI/FRAME LOCK</b>
GPIO 17	HPD for I/F D (aDP)
GPIO 18	HPD for I/F E (DP)
GPIO 19	HPD for I/F F (DP)
GPIO 20	~not used~
GPIO 21	~not used~

RAMCFG[3:]		Configuration
ROM_SI		
0000	5K	<reserved>
0001	10K	<reserved>
0010	15K	<reserved>
0011	20K	<reserved>
0100	25K	<reserved>
0101	30K	Samsung 32Mx32
0110	35K	<reserved>
0111	45K	<reserved>

ROM SO	Configuration
0000	5K
0001	10K
0010	15K
0011	20K
0100	25K
0101	30K
0110	35K
0111	45K

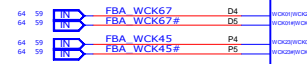
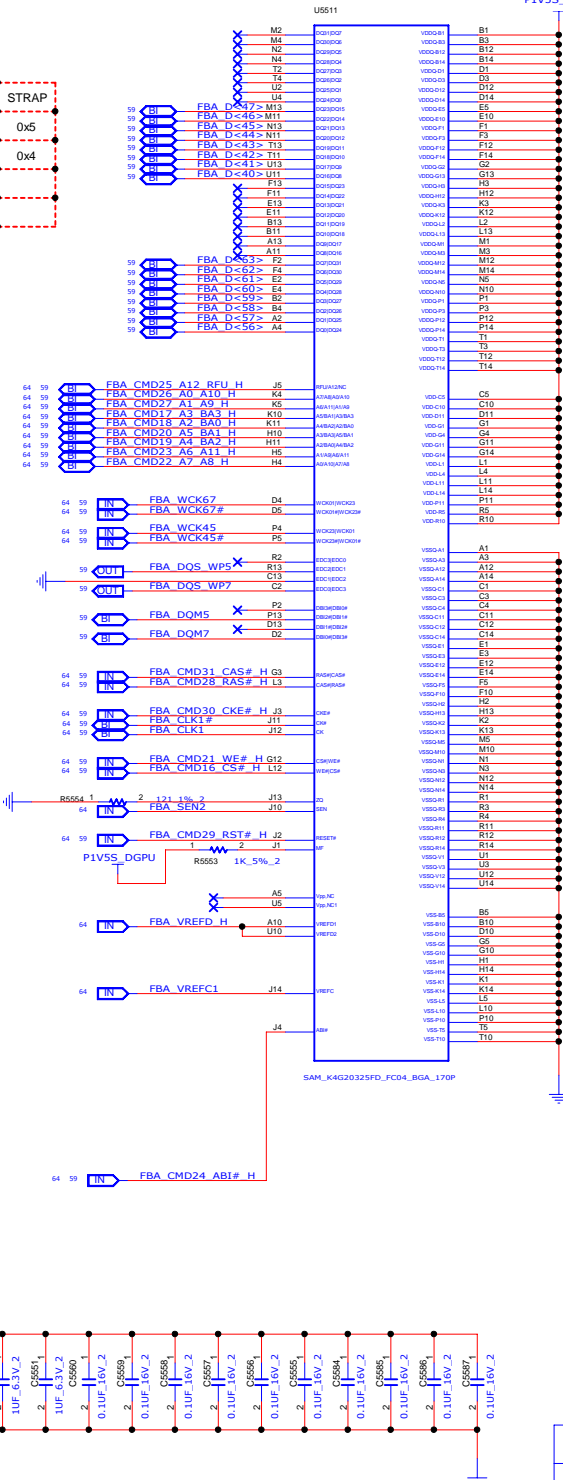
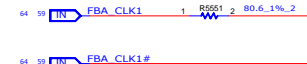
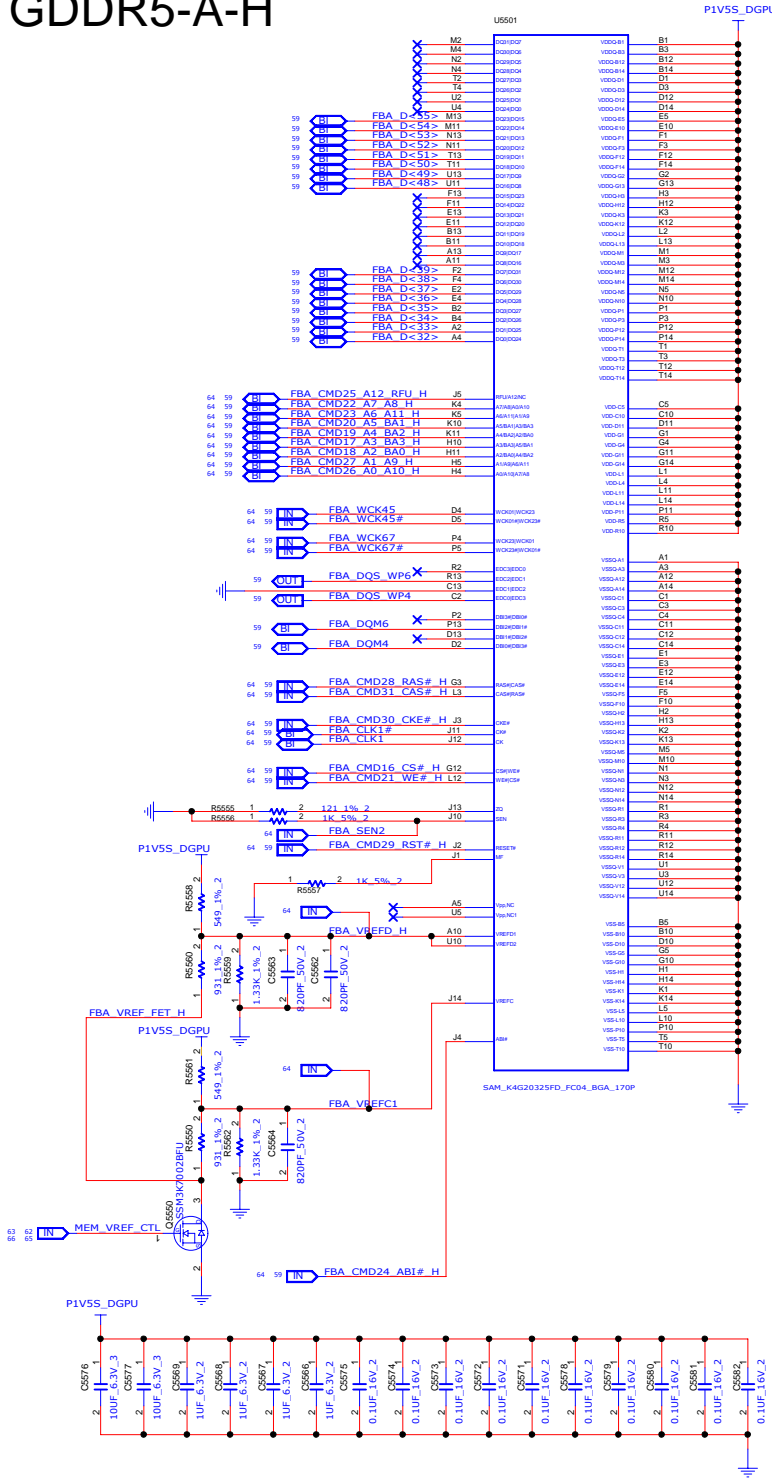
ROM SCLK		Configuration
0000	5K	GPU device ID
0001	10K	0: No VBIOS ROM
0010	15K	1: VBIOS ROM is present
0011	20K	0: Disable PCIe PLL termination
0100	25K	1: Enable PCIe PLL termination
0101	30K	
0110	35K	
0111	45K	



# GDDR5-A-H

## CHANNEL A MEMORY

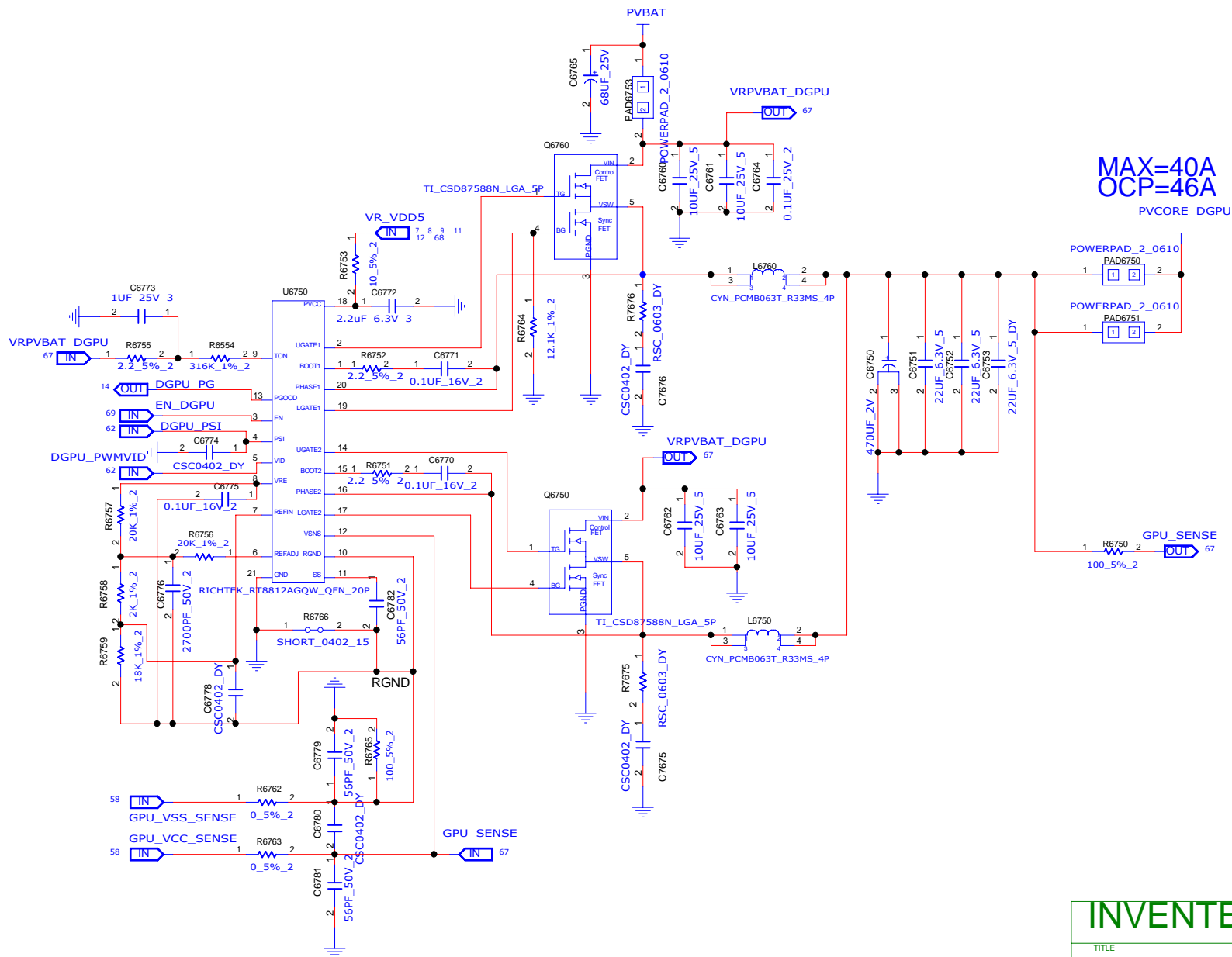
VENDER	DENSITY	VENDER PN	IEC PN	STRAP
SAMSUNG	128MX16	K4G20325FD-FC04	6019B0971801	0x5
HYNIX	128MX16	H5GQ2H24AFR-T2C	6019B0971701	0x4







VMAX=1.2V BY PWM D=100%  
 VMIN=0.6V PWM D=0%  
 VBOOT=0.875~0.9V BY PWM TRISTATE  
 VSTB=0.3V BY EXT MOS INPUT  
 FPWM=1.125MHZ  
 PWM PULSE MIN.=9.26NS  
 VID TRANS. TIME=90US



MAX=40A  
 OCP=46A  
 PVCORE\_DGPU

INVENTEC

TITLE			
MODEL,PROJECT,FUNCTION			
Block Diagram			
SIZE	CODE	DOC NUMBER	REV
A3	CS	1310xxxxx-0-0	X01





