

Aegis M/B

**MS14-Additional
2010.12.10**

A01 Build

Friday, December 10, 2010		
DATE	CHANGE NO.	REV

INVENTEC			
TITLE Aegis			
SIZE Custom	CODE ES	DOC.NUMBER CS-131	REV A01

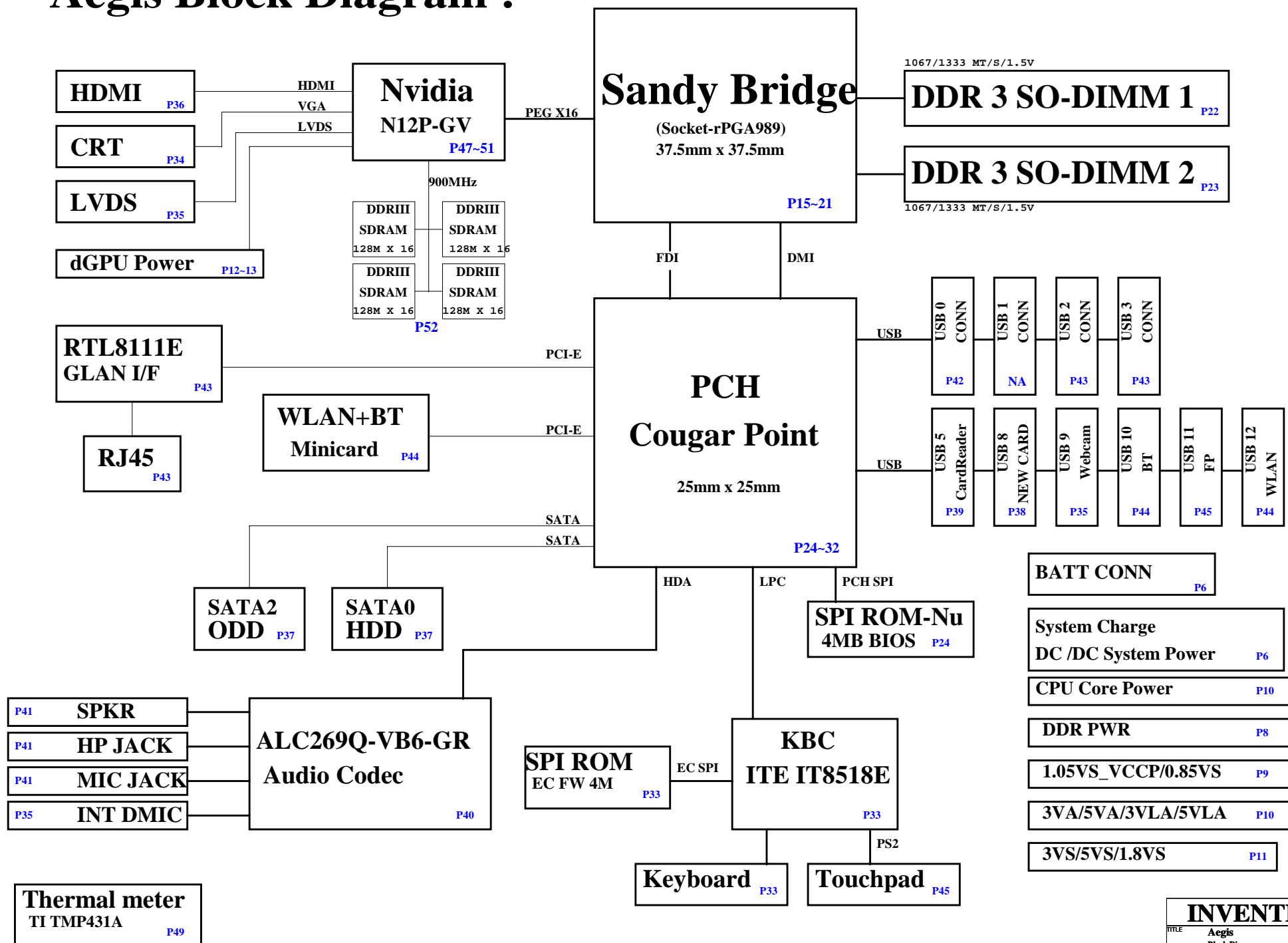
Schematic Page Description :

- | | |
|----------------------------|----------------------|
| 01. Title | 32. PCH (9/9) |
| 02. Schematic Page DESCR | 33. KBC |
| 03. Block Diagram | 34. CRT CONN |
| 04. Power Block Diagram | 35. LCD CONN |
| 05. Annotations | 36. HDMI CONN |
| 06. PWR_Adaptor in/Charge | 37. SATA HDD /ODD |
| 07. PWR_3VA/5VA/3VLA/5VLA | 38. New Card |
| 08. PWR_1.5V/0.75V | 39. Card Reader |
| 09. PWR_0.85VS/1.05VS_VCCP | 40. Audio Codec |
| 10. PWR_CPU Core Power | 41. Audio Jack |
| 11. PWR_3VS/5VS/1.8VS | 42. PWR OFF Charge |
| 12. GPU Power-1 | 43. RJ45 I/F USB I/F |
| 13. GPU Power-2 | 44. WLAN / BT |
| 14. POWER SEQUENCE | 45. PSW/LID/ TP |
| 15. Processor(1/6) | 46. LED / SCREW |
| 16. Processor(2/6) | 47. N12P-GV (1/5) |
| 17. Processor(3/6) | 48. N12P-GV (2/5) |
| 18. Processor(4/6) | 49. N12P-GV (3/5) |
| 19. Processor(5/6) | 50. N12P-GV (4/5) |
| 20. Processor(6/6) | 51. N12P-GV (5/5) |
| 21. Fan/Thermal | 52. DDR3 VRAM |
| 22. DDR3 DIMM0 | 53. USB Board Title |
| 23. DDR3 DIMM1 | 54. RTL8111E-VL-CG |
| 24. PCH (1/9) | 55. USB Port |
| 25. PCH (2/9) | 56. SW Board Title |
| 26. PCH (3/9) | 57. SW_Board |
| 27. PCH (4/9) | 58. FP Board Title |
| 28. PCH (5/9) | 59. FP Board |
| 29. PCH (6/9) | 60. GP Board Title |
| 30. PCH (7/9) | 61. GP Board |
| 31. PCH (8/9) | |

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TITLE			
Aegis			
schematics page DESCR			
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Aegis Block Diagram :



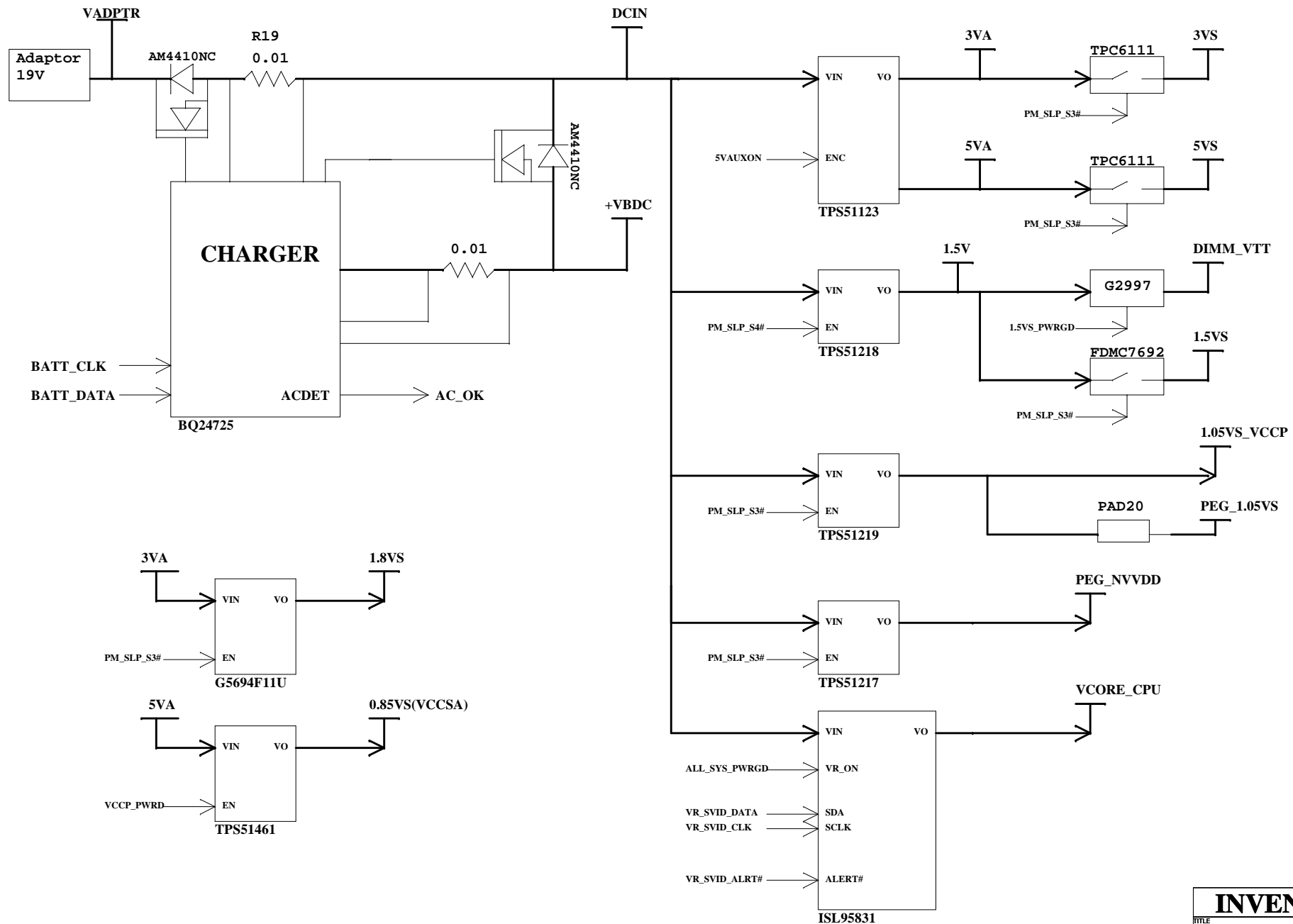
INVENTEC

TITLE			
Aegis Block Diagram			
SIZE	CODE	DOC NUMBER	REV
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Power Block Diagram :

Laptopblue.vn

www.qdzbwx.com



Net name Description :

Board Stack up Description

Voltage Rails

DCIN	Primary DC system power supply
3VLA	3.3V always on power rail by DCIN
5VLA	5.0V always on power rail by DCIN
3VLA_EC	3.3V always on power rail by 5VAUXON
3VA	3.3V always on power rail by LATCH_ON
5VA	5.0V always on power rail by LATCH_ON
5VACP	5.0V always on power rail by 5VAUXON

1.5V	1.5V switched power rail by PM_SLP_S4#
1.8V	1.8V power rail by PM_SLP_S4#

3VS	3.3V power rail by PM_SLP_S3#
5VS	5.0V power rail by PM_SLP_S3#
1.5VS	1.5V power rail by PM_SLP_S3#
1.05VS_VCCP	1.05V power rail by PM_SLP_S3#
DIMM_VTT	0.75V DDR Termination Voltage by 1.5VS_PWRGD

PEG_1.5VS	1.5V switched power rail for N12P-GV by PM_SLP_S3#
PEG_1.05VS	1.05V switched power rail for N12P-GV by PM_SLP_S3#
PEG_NVVDD	Variable switched power rail for N12P-GV by PM_SLP_S3#

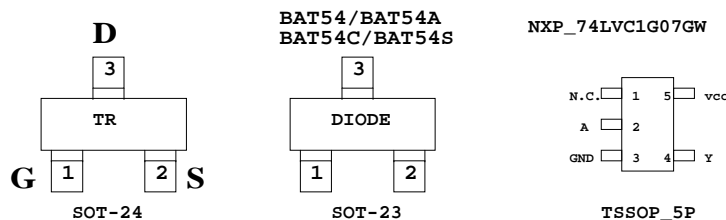
VCORE_CPU	Core switched power rail for CPU by ALL_SYS_PWRGD
1.8VS	1.8V power rail by PM_SLP_S3#

Part Naming Conventions

C = Capacitor	Q = Transistor
CN = Connector	R = Resistor
D = Diode	RP = Resistor Pack
F = Fuse	U = Arbitrary Logic Device
L = Inductor	Y = Crystal and Osc

Name Suffix

= Active Low signal
NU = No Stuff



PCB Layers

Layer 1		Component Side, Microstrip signal Layer
Layer 2		Ground Plane
Layer 3		Stripline Layer
Layer 4		Power Plane
Layer 5		Stripline Layer
Layer 6		Stripline Layer
Layer 7		Ground Plane
Layer 8		Solder Side, Microstrip signal Layer

	Differential Impedance for Microstrip(5-mils)	Differential Impedance for Stripline(4-mils)
Host Clock	95 ohm +/- 20%	100 ohm +/- 20%
PCI-E Clock	95 ohm +/- 20%	100 ohm +/- 20%
DDR2 CLK	70 ohm +/- 20%	70 ohm +/- 20%
DDR2 Strobe	85 ohm +/- 20%	90 ohm +/- 20%
DMI Bus	95 ohm +/- 20%	100 ohm +/- 20%
PCI-E Bus	95 ohm +/- 20%	100 ohm +/- 20%
SDVO	95 ohm +/- 20%	100 ohm +/- 20%
SATA	95 ohm +/- 20%	100 ohm +/- 20%
USB	90 ohm +/- 20%	95 ohm +/- 20%
LVDS		100 ohm +/- 20%
Lan	95 ohm +/- 20%	100 ohm +/- 20%

Mother Board ID setting by PCH

FJ Mother Board ID setting by PCH			
Project	MB_ID2	MB_ID1	MB_ID0
	0	0	0
Aegis (Discrete)	0	0	1
Neuron (UMA)	0	1	0
Neuron-V (Optimus)	0	1	1
Strike (UMA)	1	0	0
Strike-V (Optimus)	1	0	1
Silk (UMA)	1	1	0
Silk-V (Optimus)	1	1	1
PCH ----->	GPIO41	GPIO40	GPIO59

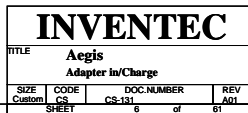
Mother Board ID setting by EC

FJ Mother Board ID setting by EC	
Project	EC_ID0
Aegis (Discrete)	1
Neuron (UMA)	0
Neuron-V (Optimus)	1
Strike (UMA)	0
Strike-V (Optimus)	1
Silk (UMA)	0
Silk-V (Optimus)	1
EC ----->	GPC0 (pin 119)

Please pull up 10k for "1". Pull down 10k for "0"

INVENTEC

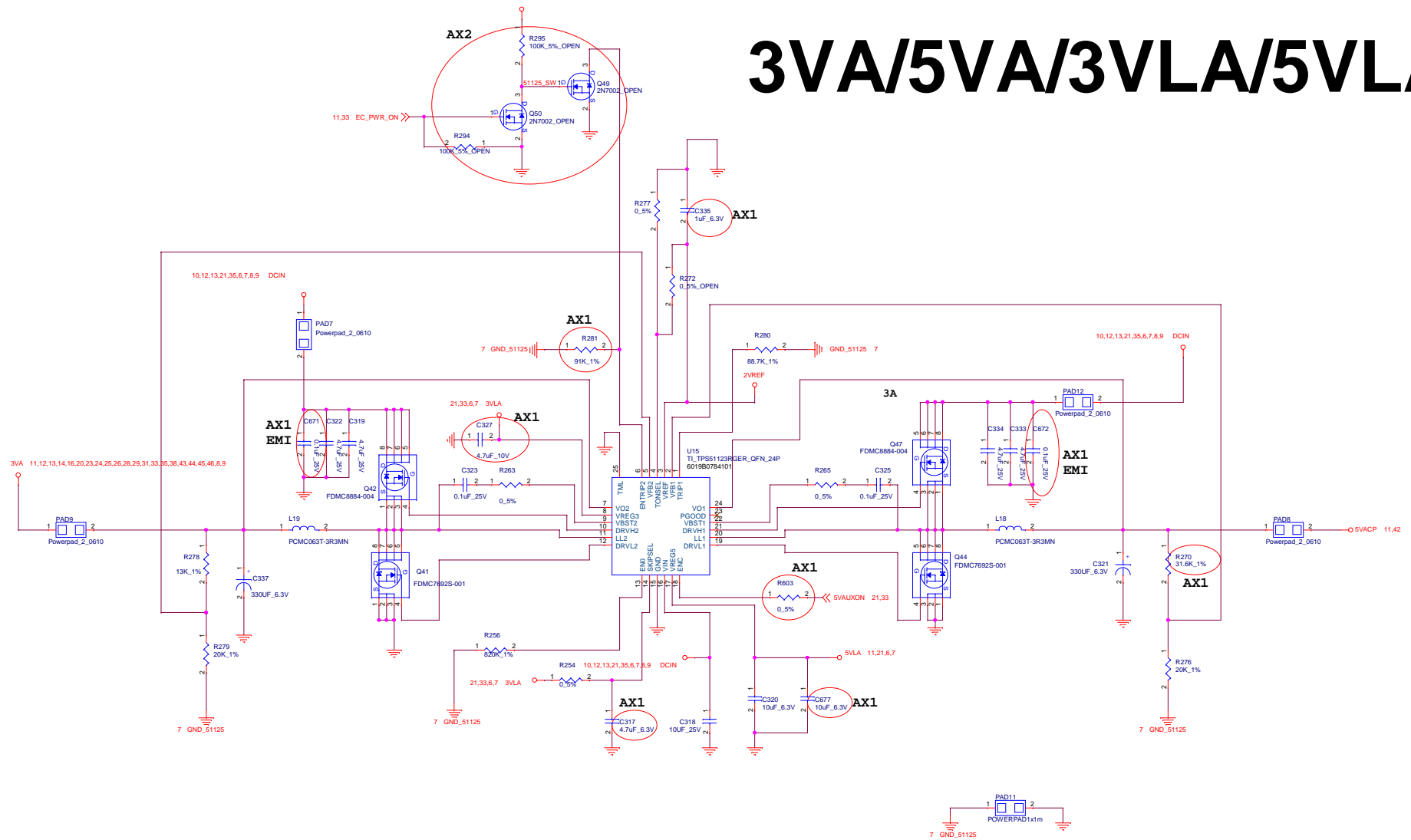
Aegis Annotations			
SIZE	CODE	DOCNUMBER	REV
C	ES	CS-131	A01
SHEET		5 of	61



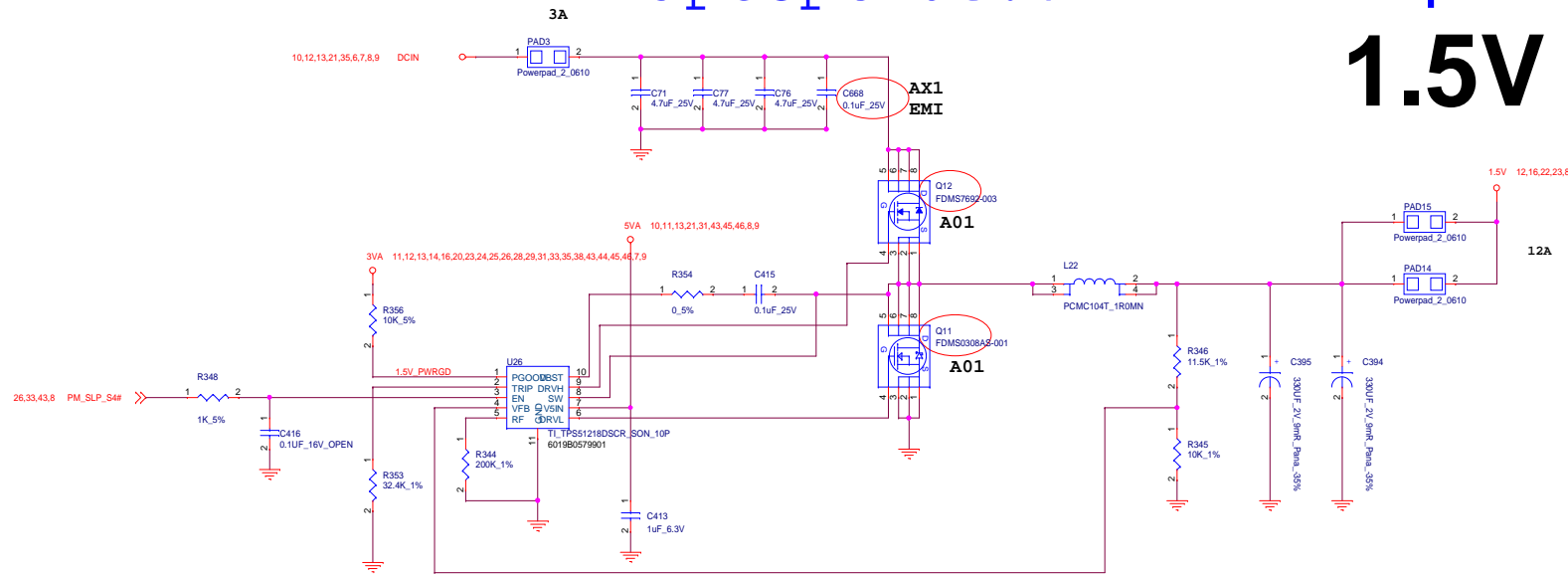
3VA/5VA/3VLA/5VLA

3.395V@5A

5.16V@5A

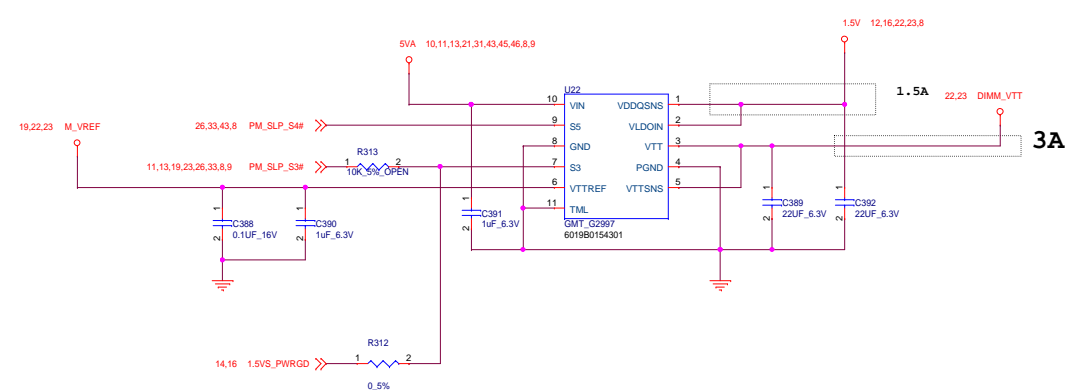
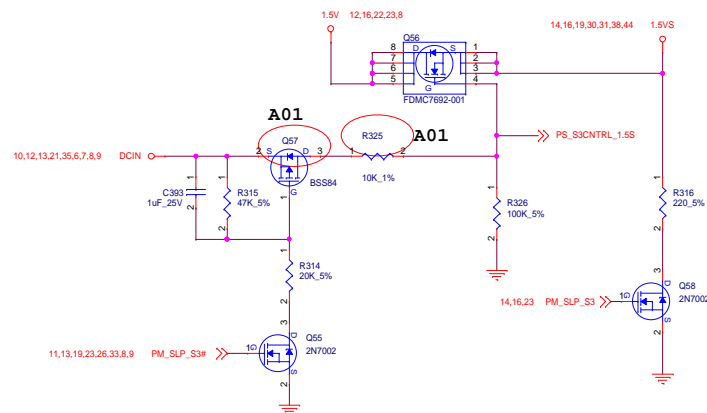


1.5V



1.5VS

0.75V



INVENTEC

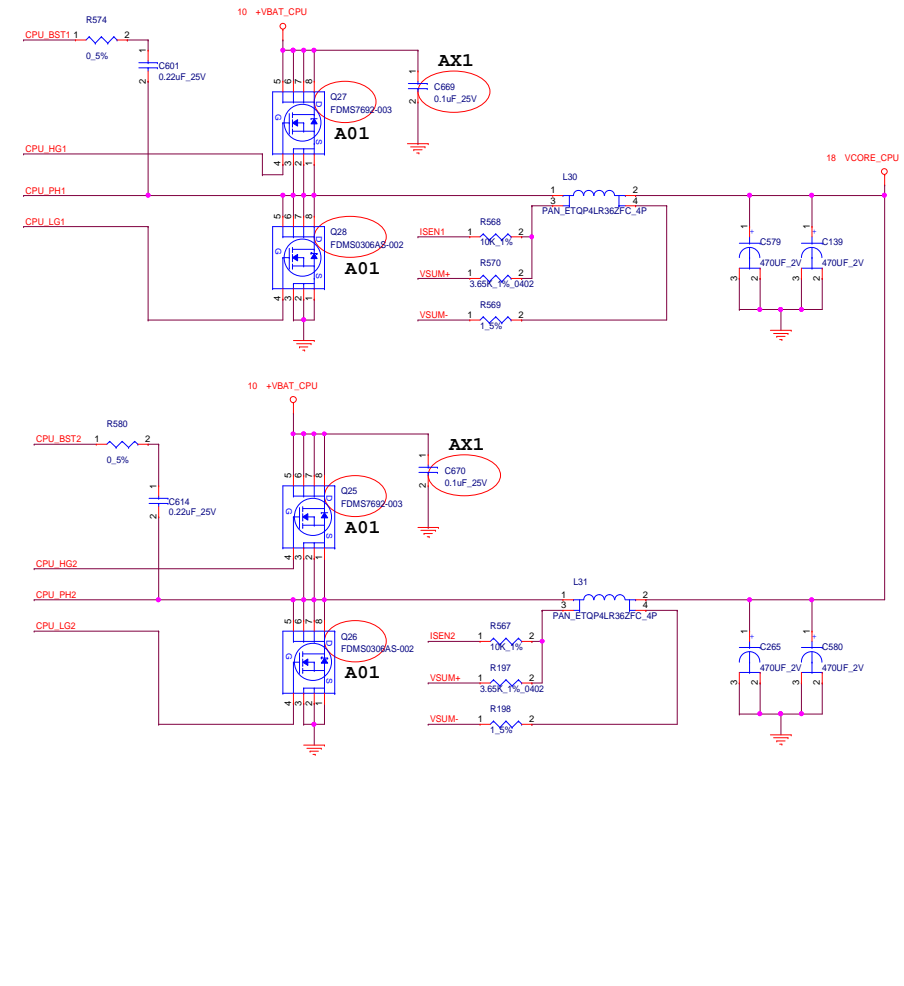
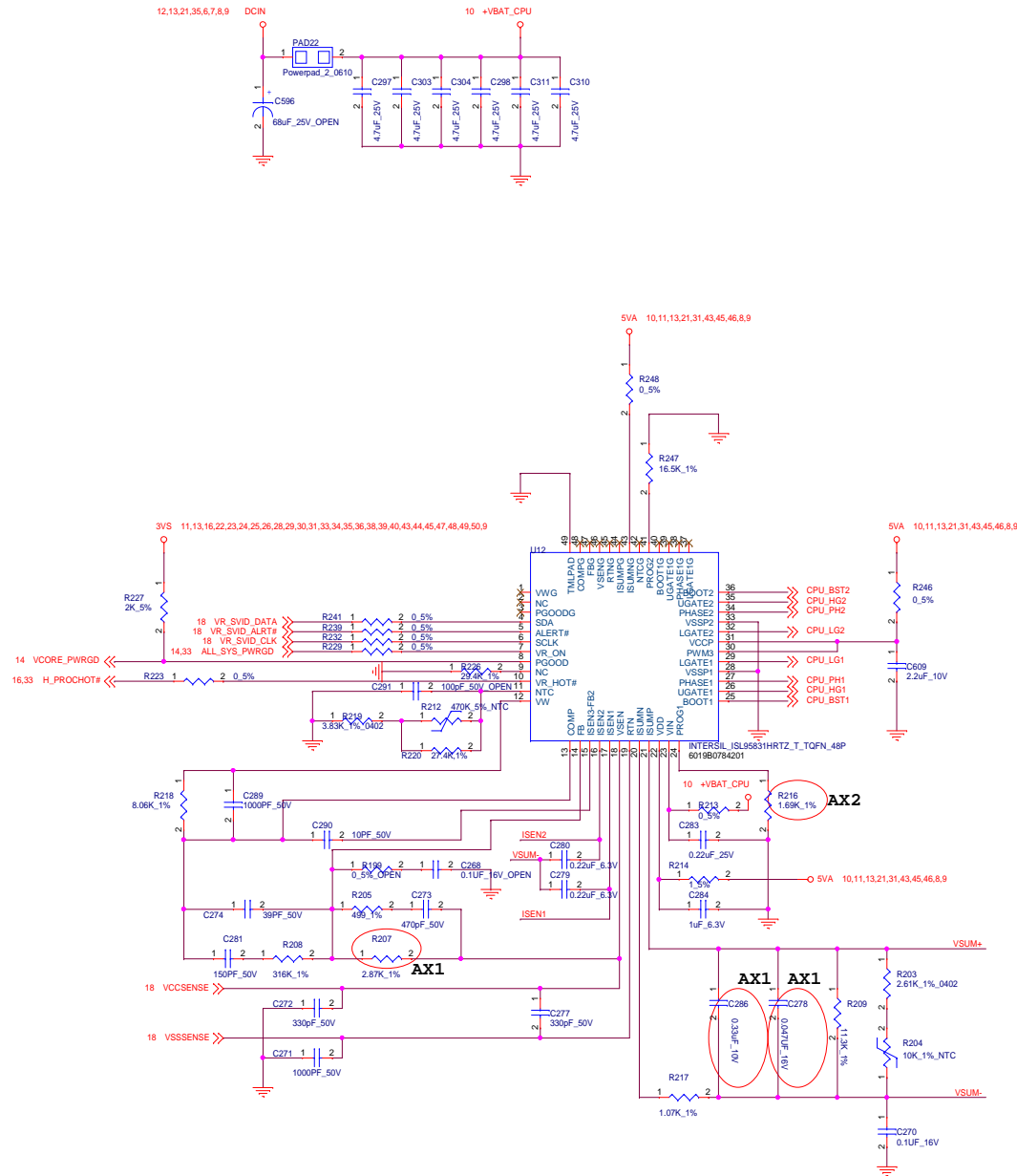
TITLE			
Aegis			
1.5V / 0.75V / 1.5VS			
SIZE	CODE	DOCNUMBER	REV
C	ES	CS-131	A01
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PEG_1.05VS



VCORE_CPU

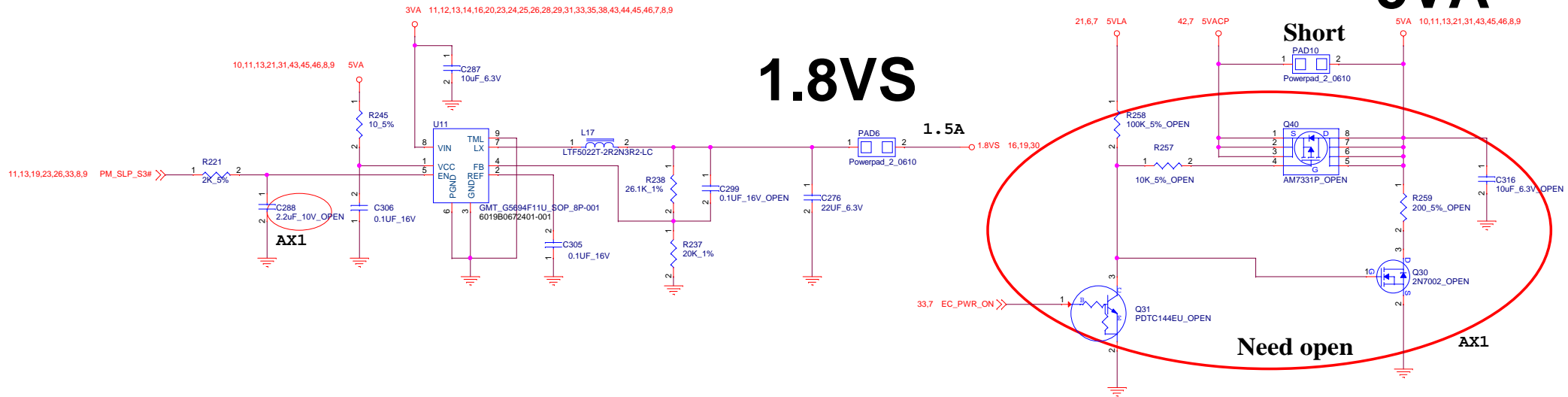


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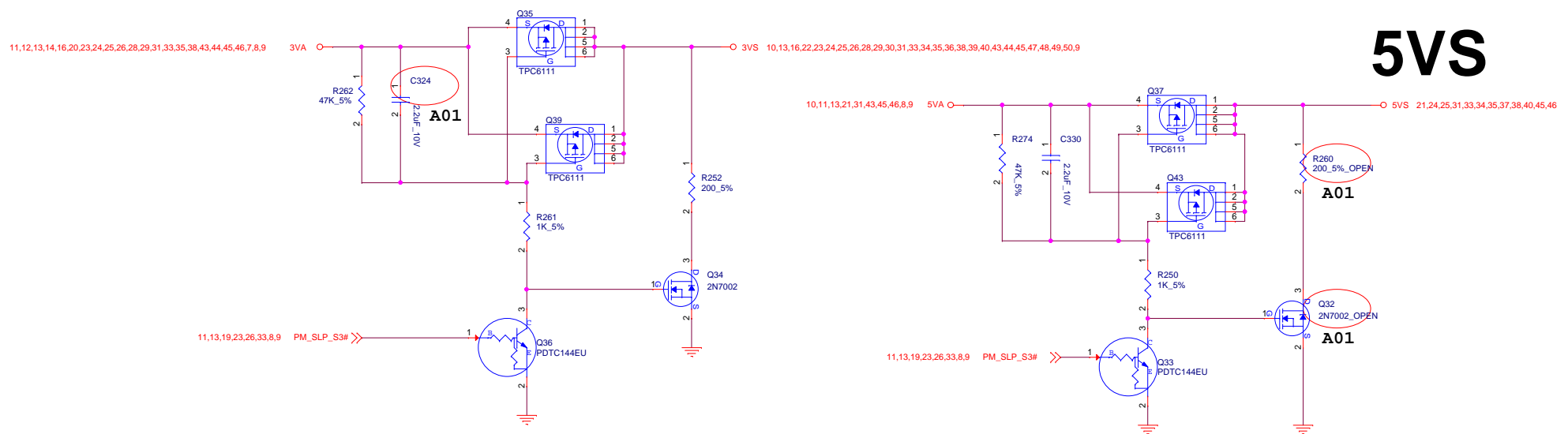
TITLE			
Aegis PWR_CPU Core Power			
SIZE	CODE	DOC NUMBER	REV
C	ES	CS-131	A01
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5VA

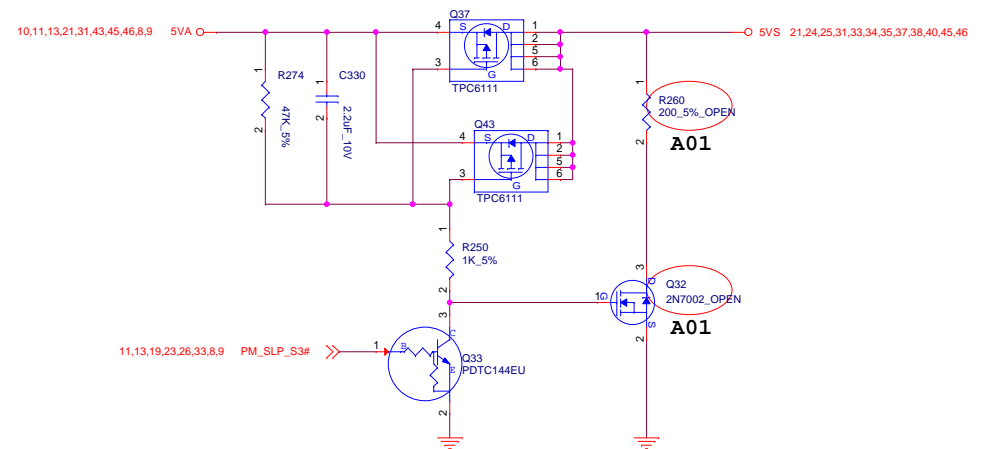
1.8VS



3VS



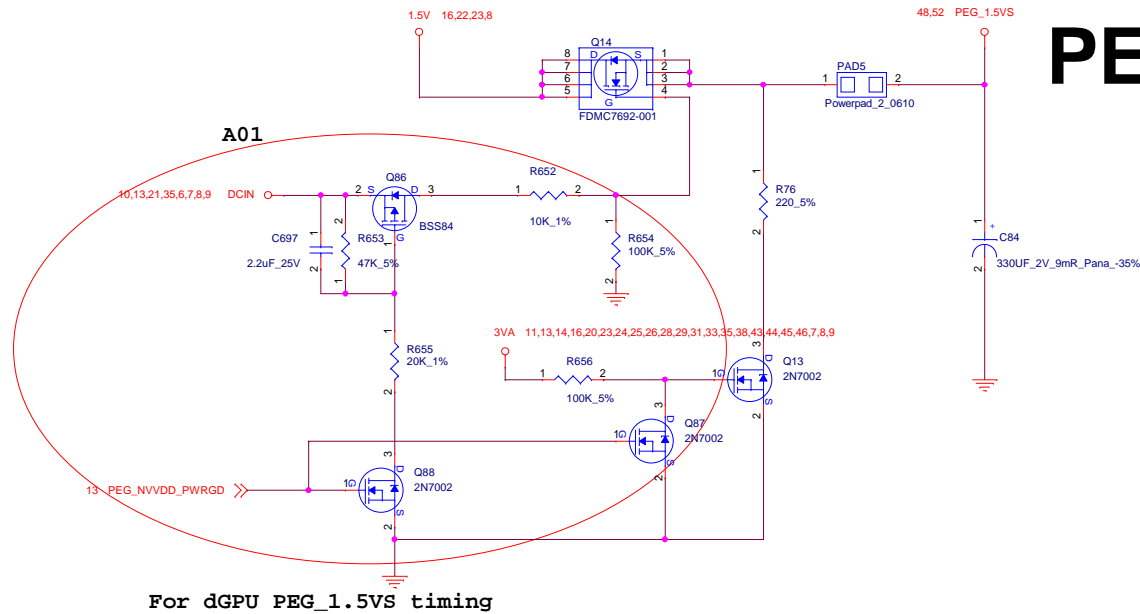
5VS



INVENTEC

TITLE			
Aegis			
3VS/5VS/1.8VS			
SIZE	CODE	DOC NUMBER	REV
Custom	ES	CS-131	A01
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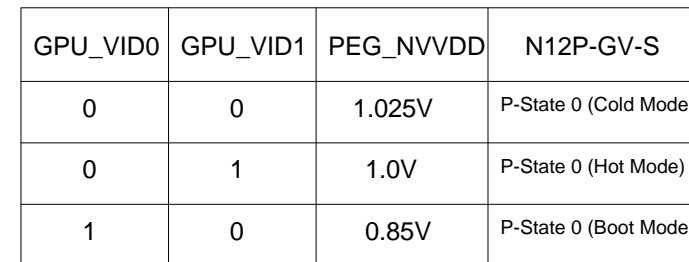
PEG_1.5VS

**INVENTEC**TITLE
**Aegis
GPU Power-1**

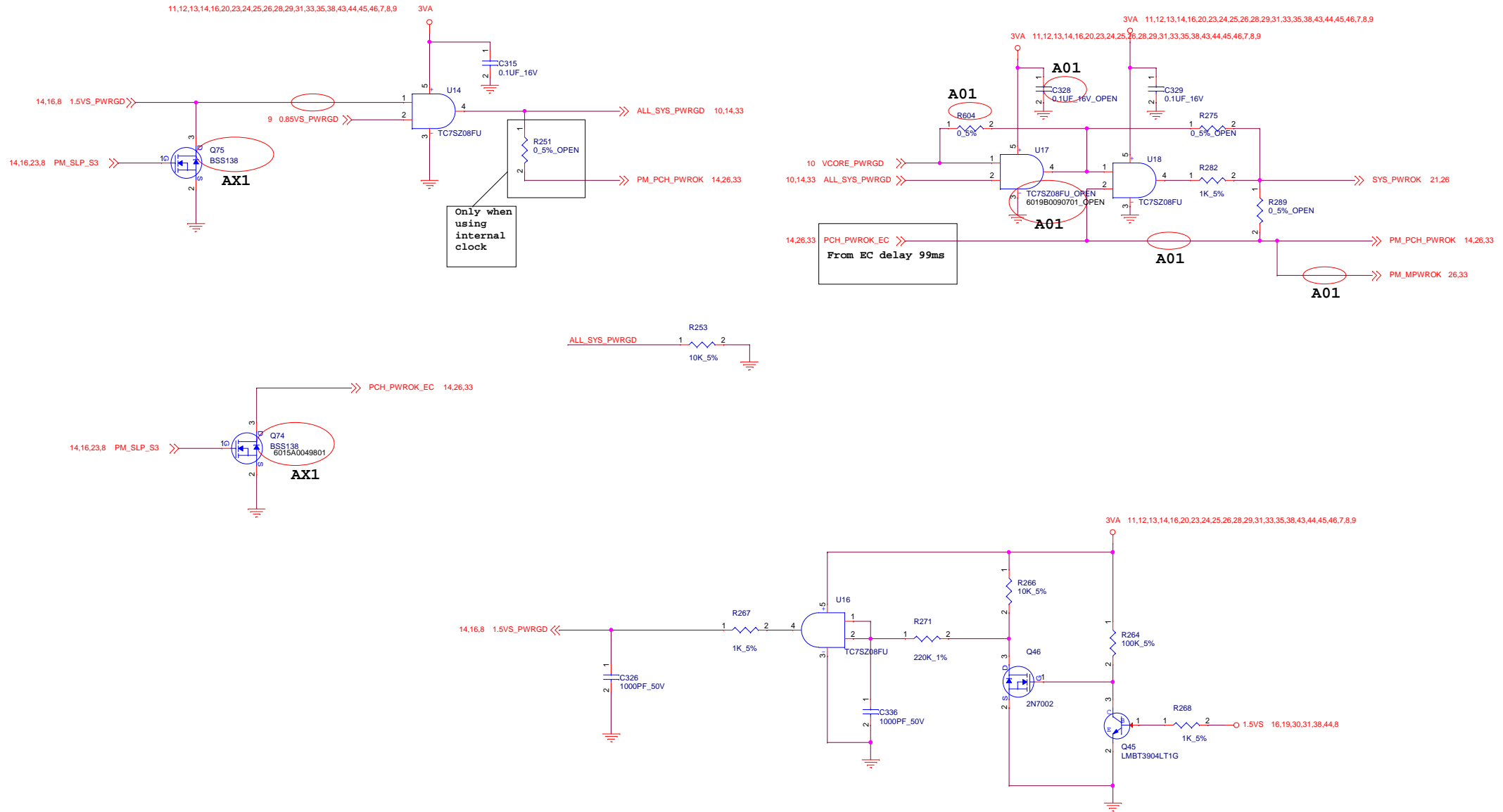
SIZE	CODE	DOC.NUMBER	REV
Custom	ES	CS-131	A01

CHANGE by	IEC	DATE
2		Friday, December 10, 2010

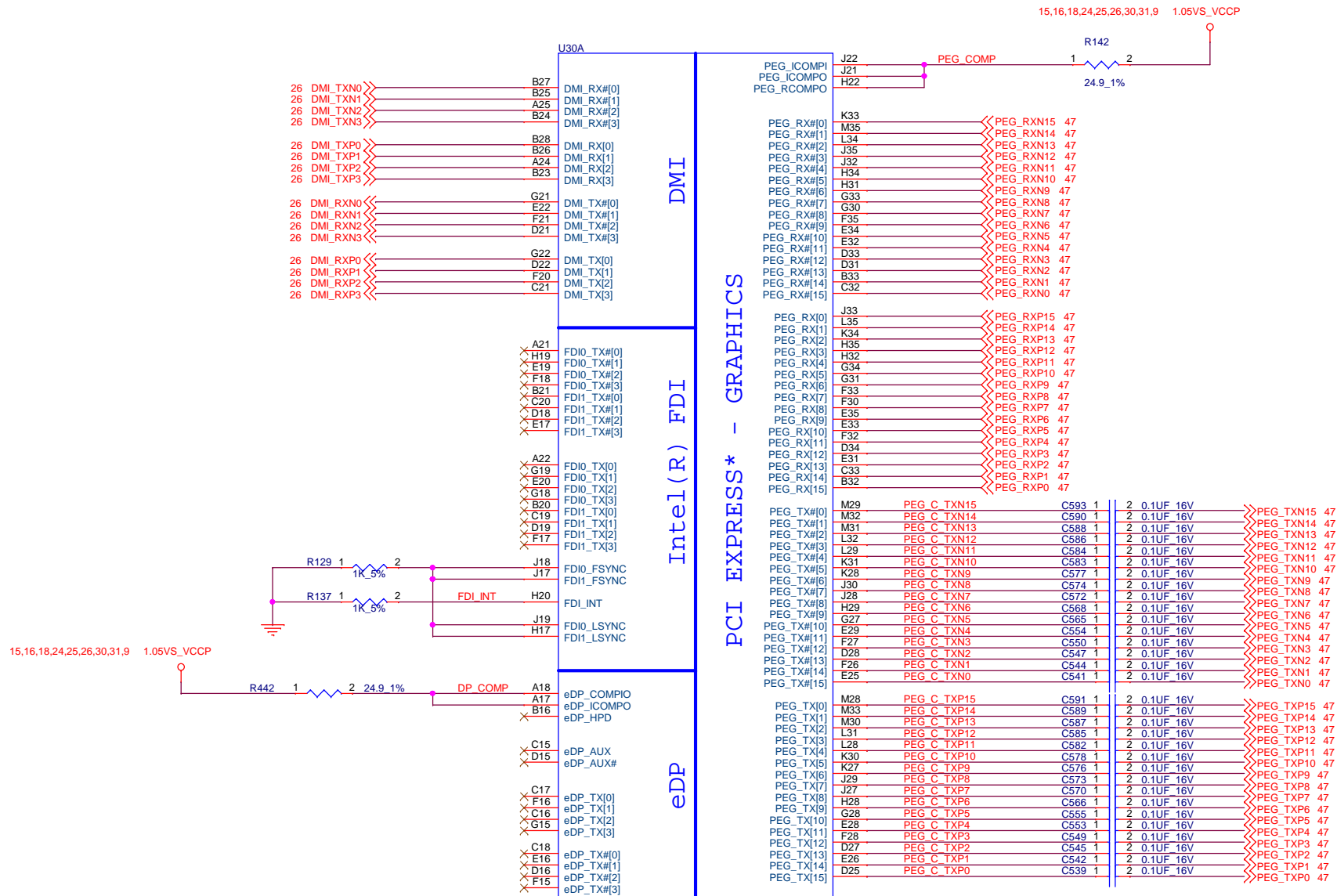
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1			



Main S0 PWROK Logic

**INVENTEC**

TITLE			
Aegis			
Power Sequence			
SIZE	CODE	DOC NUMBER	REV
Custom	ES	CS-131	A01
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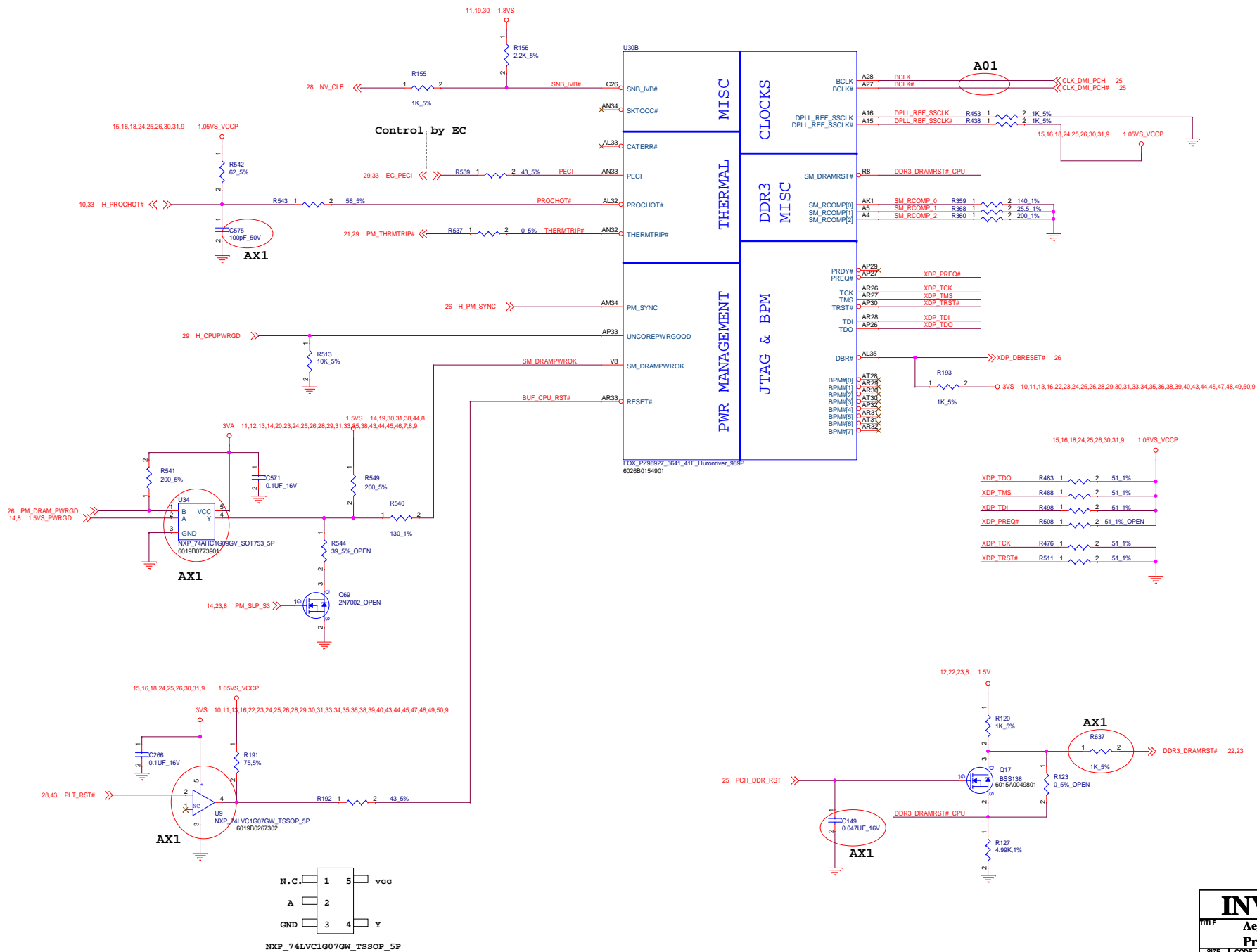
FOX PZ98927_3641_41F_Huronriver_989P
6026B0154901

CLOSED TO CPU

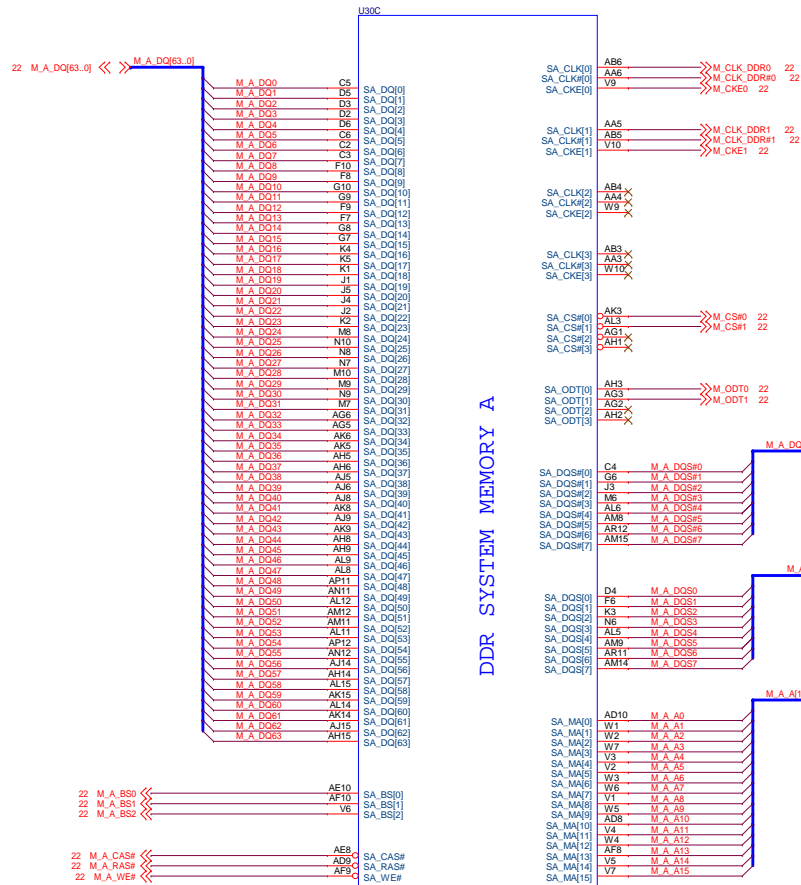
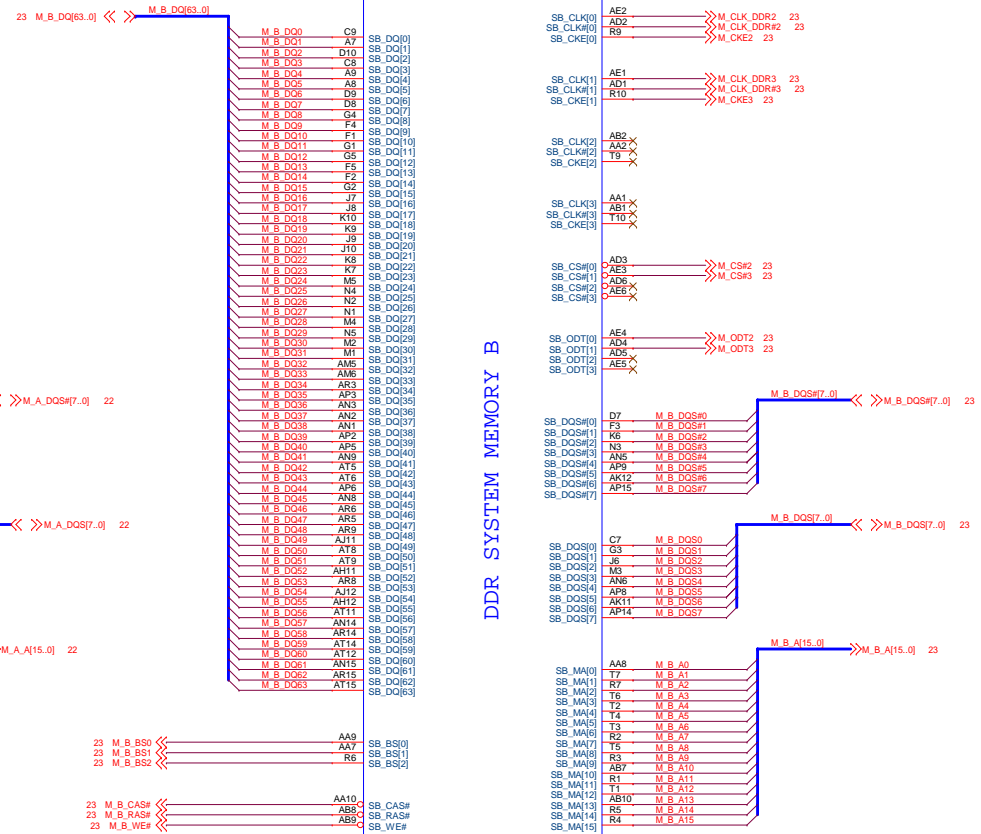
INVENTEC

TITLE			
Aegis			
Processor(1/6)			
SIZE	CODE	DOC.NUMBER	REV
B	ES	CS-131	A01
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**INVENTEC**

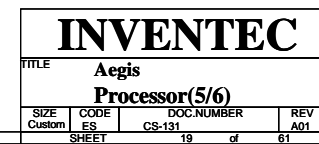
TITLE Aegis Processor(2/6)			
SIZE C	CODE ES	DOC NUMBER CS-131	REV A01
SHEET 16	of	61	

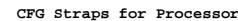
FOX P286927_3641_41F_Huronriver_969P
6026B0154901FOX P286927_3641_41F_Huronriver_969P
6026B0154901

INVENTEC

TITLE Aegis			
Processor(3/6)			
SIZE	CODE	DOC NUMBER	REV
ES	CS-131	17	A01
SHEET			

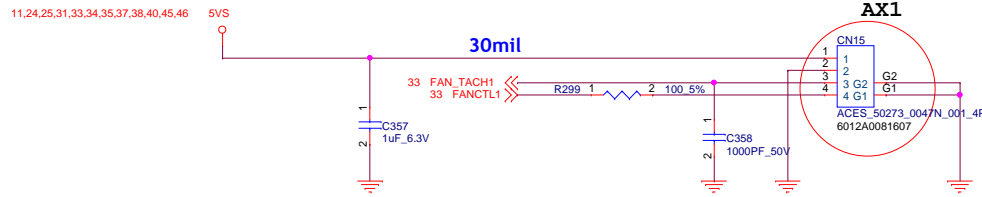




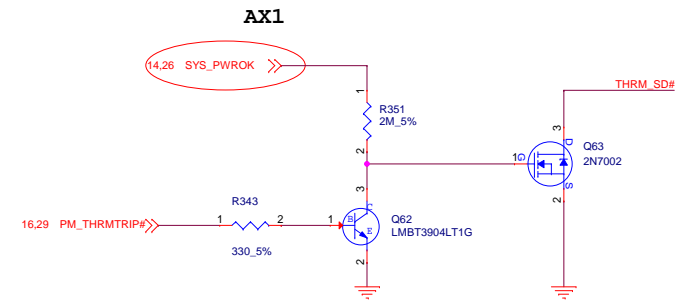
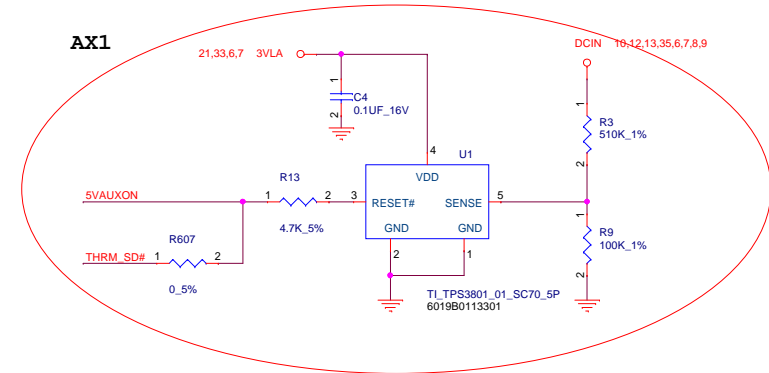
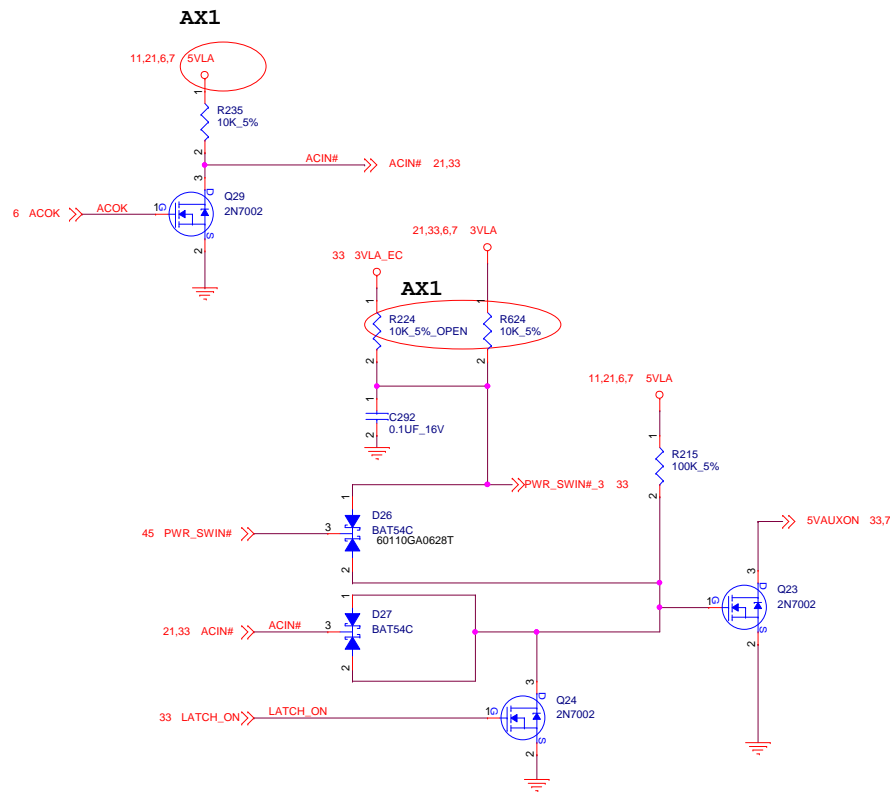
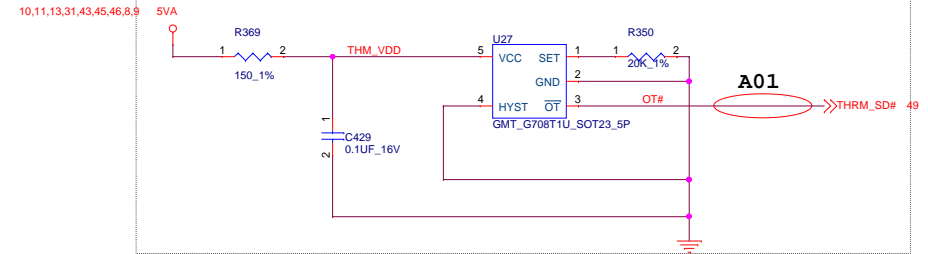


TITLE			
Aegis Processor(6/6)			
SIZE	CODE	DOC NUMBER	REV
C	ES	CS-131	A01
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Fan control



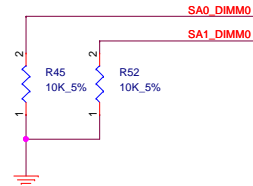
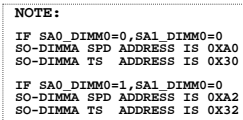
Temperature Security



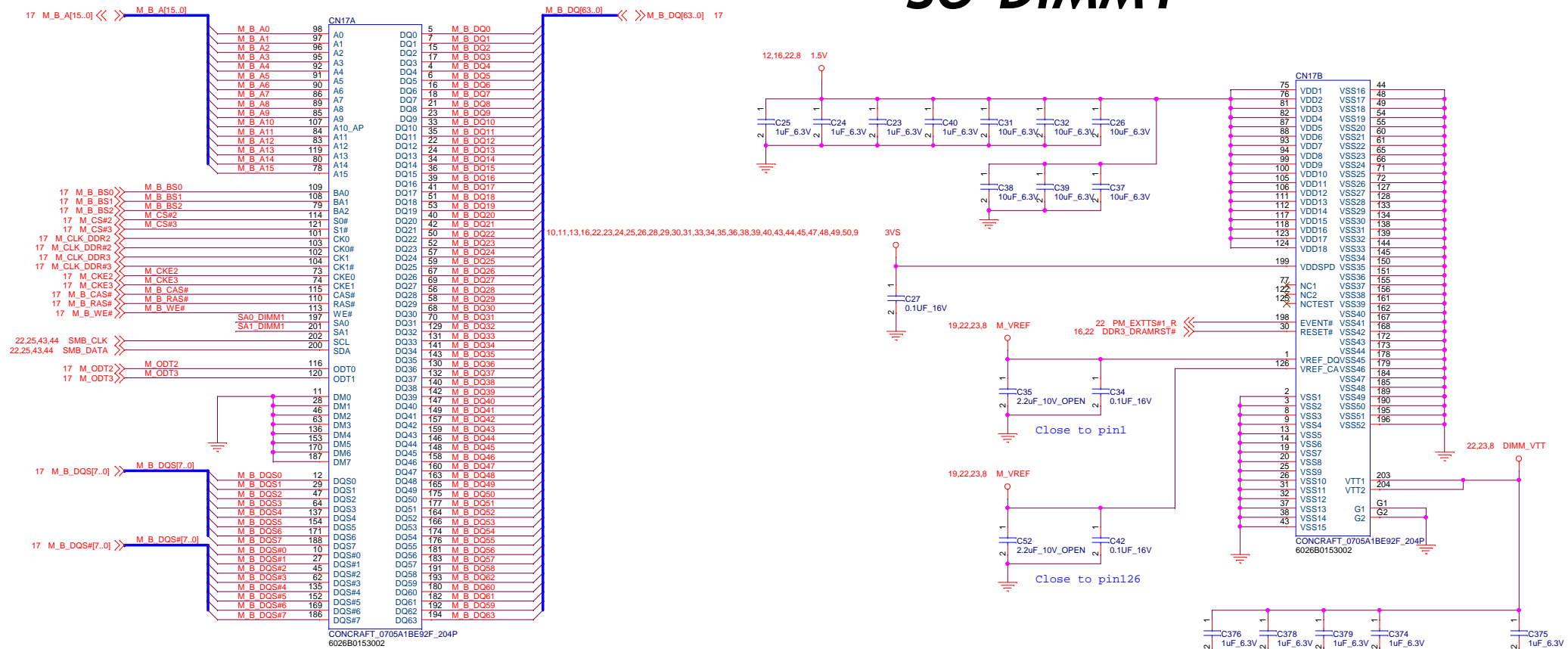
INVENTEC

TITLE			
Aegis			
FAN / THERMAL			
SIZE	CODE	DOC NUMBER	REV
Custom	ES	CS-131	A01
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SO-DIMMO



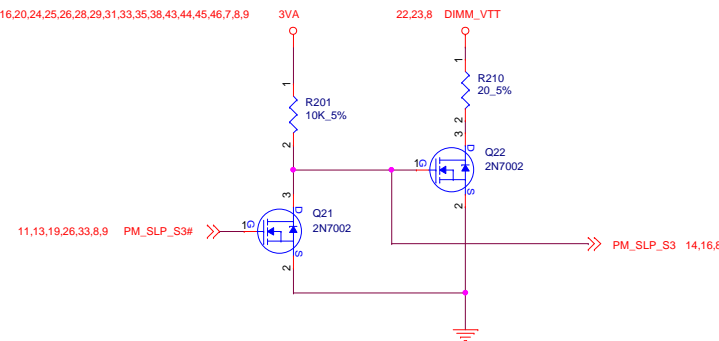
SO-DIMM 1



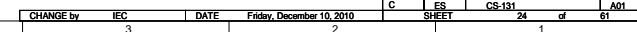
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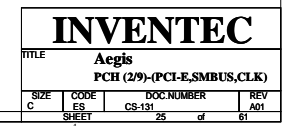
```
IF SA0_DIMM0=0,SA1_DIMM0=0
SO-DIMMA SPD ADDRESS IS 0XA0
SO-DIMMA TS ADDRESS IS 0X30

IF SA0_DIMM0=1,SA1_DIMM0=0
SO-DIMMA SPD ADDRESS IS 0XA2
SO-DIMMA TS ADDRESS IS 0X32
```

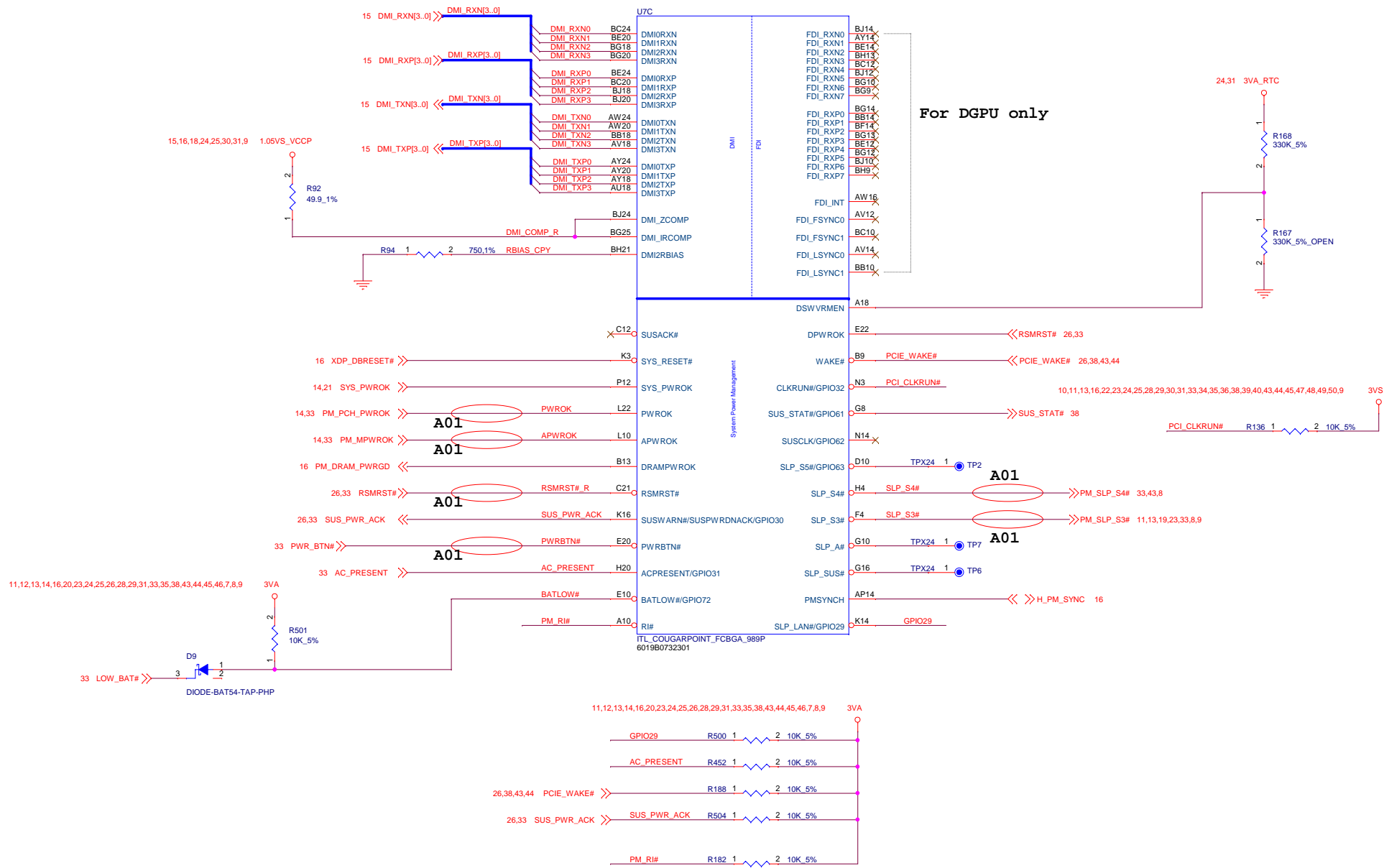
**INVENTEC**

TITLE			
Aegis DDR3 SODIMM-B			
SIZE Custom	CODE ES	DOC.NUMBER CS-131	REV A01
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(DMI, FDI, GPIO)

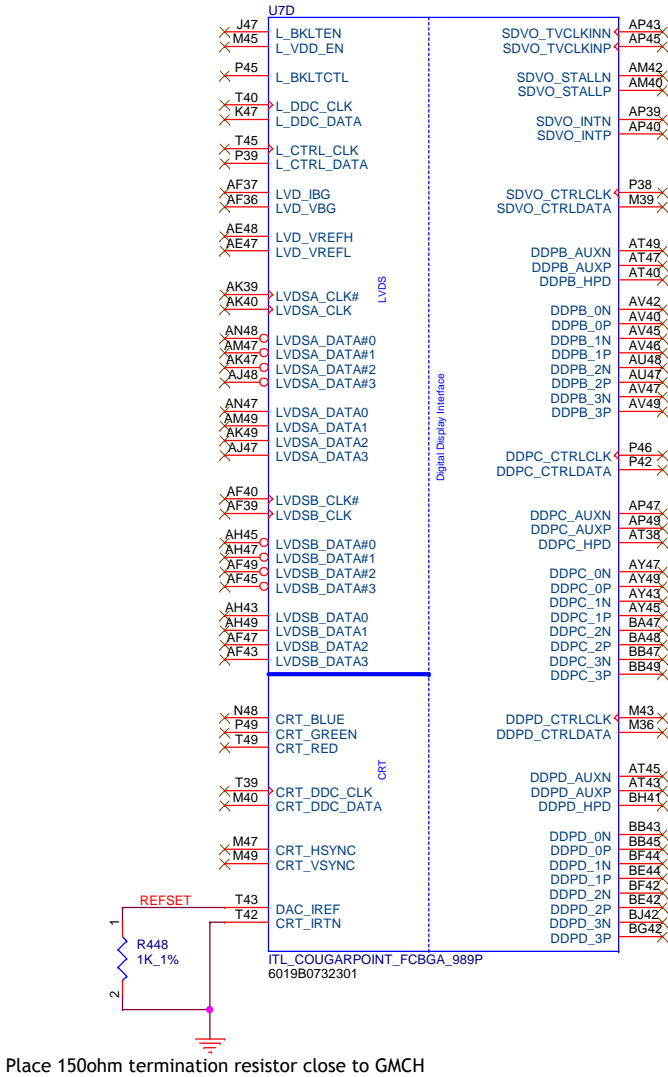
**INVENTEC**TITLE
Aegis
PCH (3/9)-(DMI,FDI,GPIO)

SIZE	CODE	DOC NUMBER	REV
Custom	ES	CS-131	A01

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(LVDS , DDI)



INVENTEC				
TITLE				
Aegis				
PCH (4/9)-(LVDS,DDI)				
SIZE	CODE	DOC.NUMBER	REV	
B	ES	CS-131	A01	
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(PCI,USB,NVRAM)

FJ Mother Board ID setting

Project	MB_ID2	MB_ID1	MB_ID0
	0	0	0
Aegis (Discrete)	0	0	1
Neuron (UMA)	0	1	0
Neuron-V (Optimus)	0	1	1
Strike (UMA)	1	0	0
Strike-V (Optimus)	1	0	1
Silk (UMA)	1	1	0
Silk-V (Optimus)	1	1	1
PCH ----->	GPIO41	GPIO40	GPIO59

For Debug

AX1

Mother Board ID setting

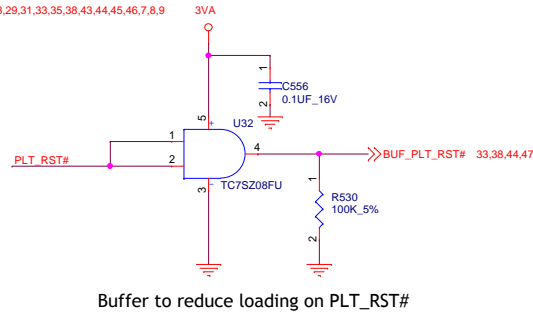
INVENTEC

TITLE
Aegis
PCH (59)-(PCI,USB,NVRAM)

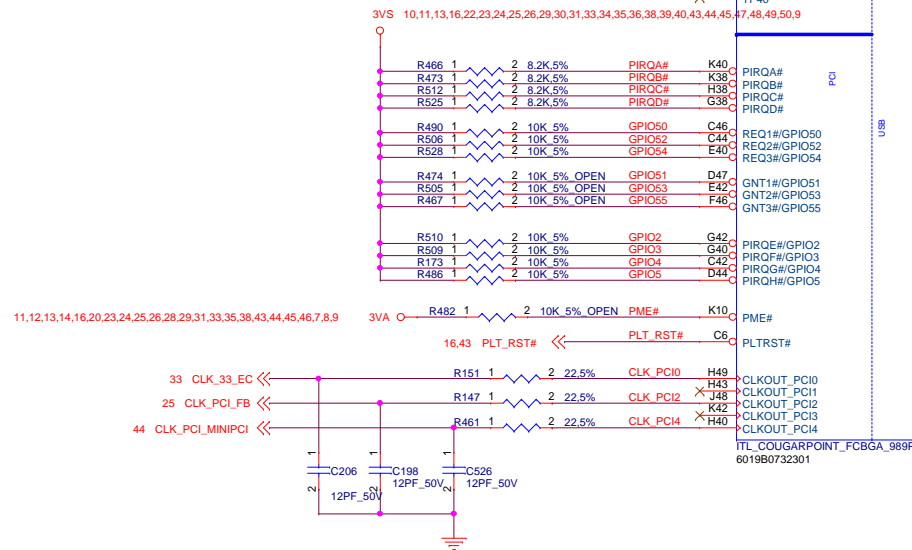
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CHANGE by IEC DATE Friday, December 10, 2010

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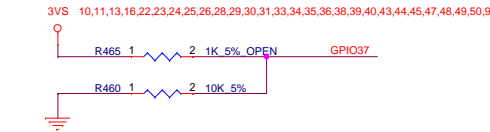
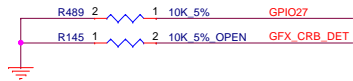
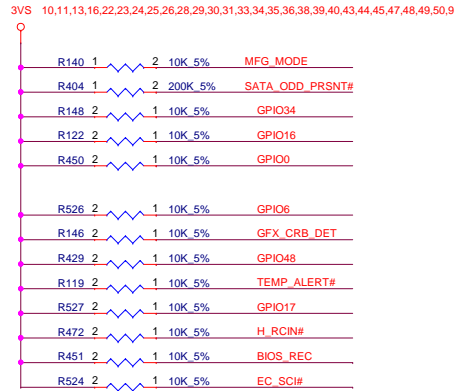
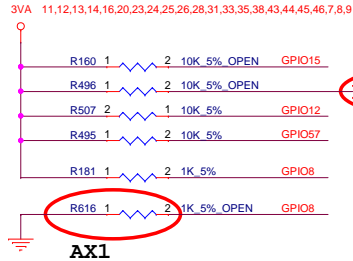


Buffer to reduce loading on PLT_RST#



A01

AX1



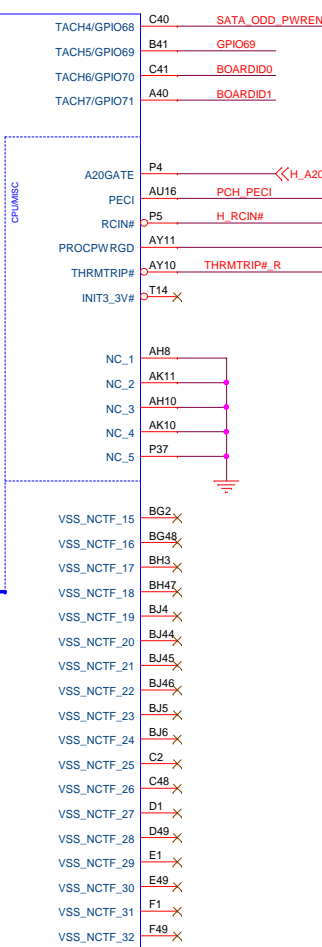
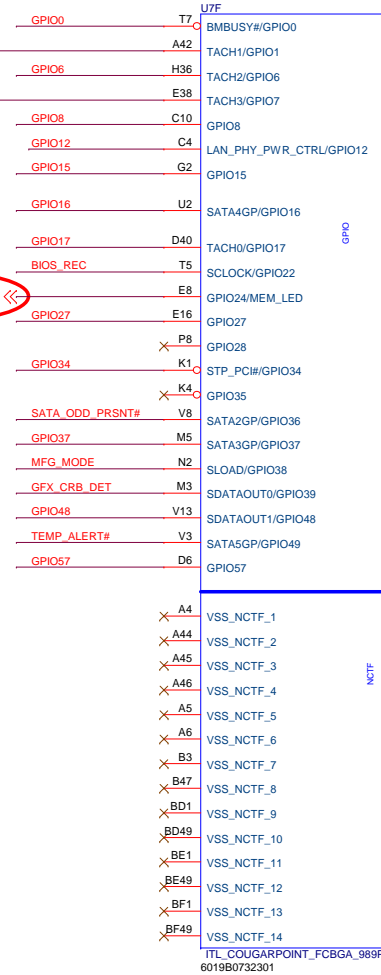
AX2

NEWCARD_SHDN# 29,33

AX2

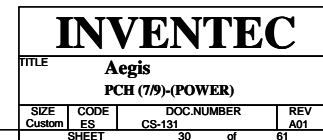
NEWCARD_SHDN# 3,38

(GPIO,VSS,NCTF,RSVD)



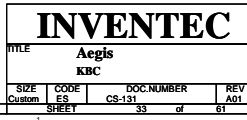
INVENTEC			
TITLE Aegis			
PCH (69)-(GPIO,VSS,NCTF,RSVD)			
SIZE Custom	CODE ES	DOC NUMBER CS-131	REV A01
SHEET 29		of 61	

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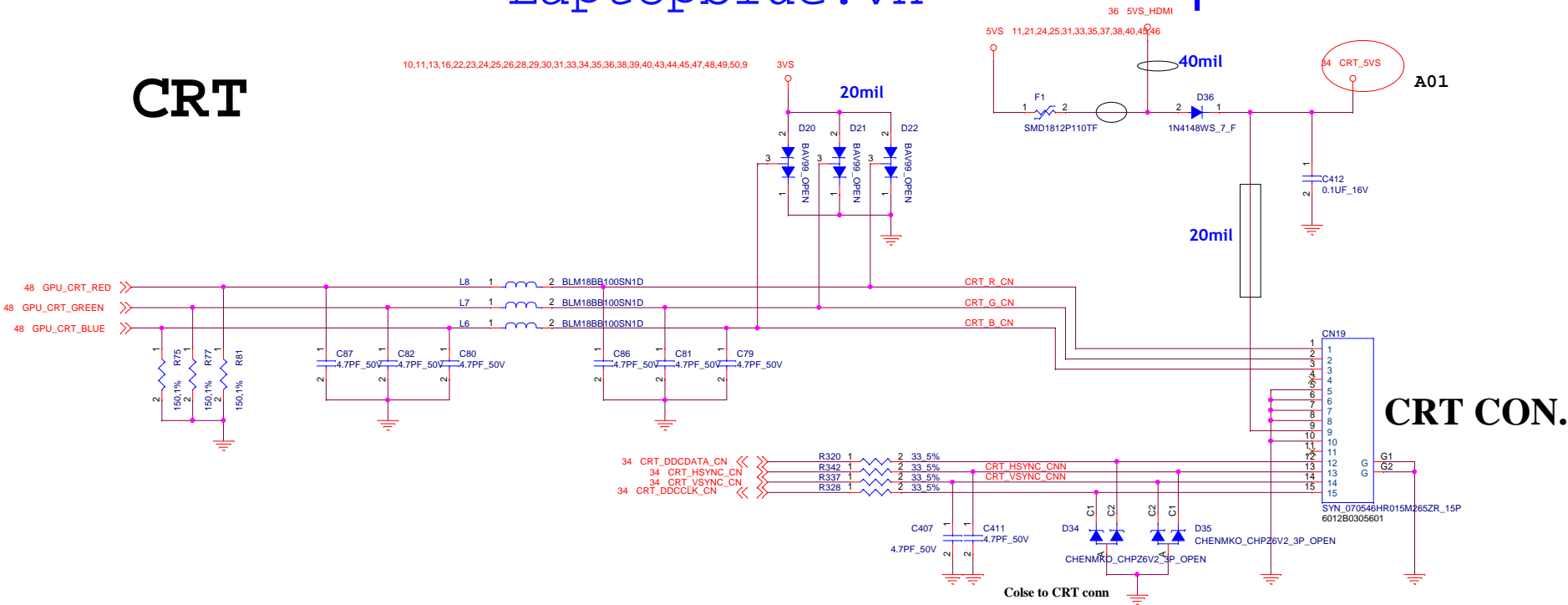




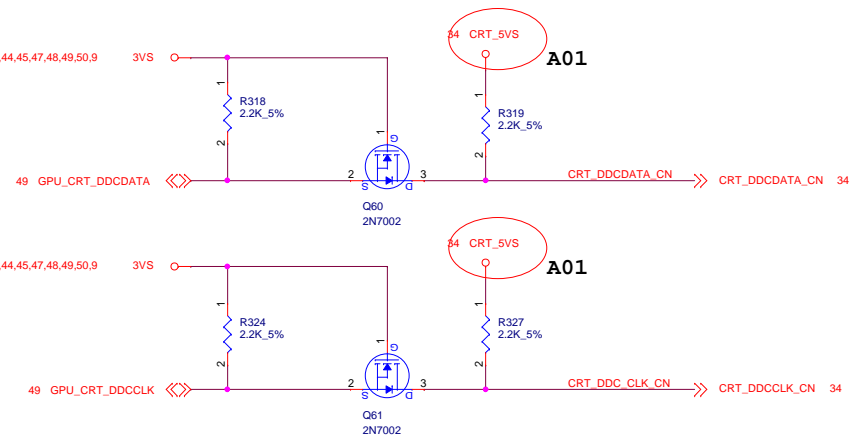
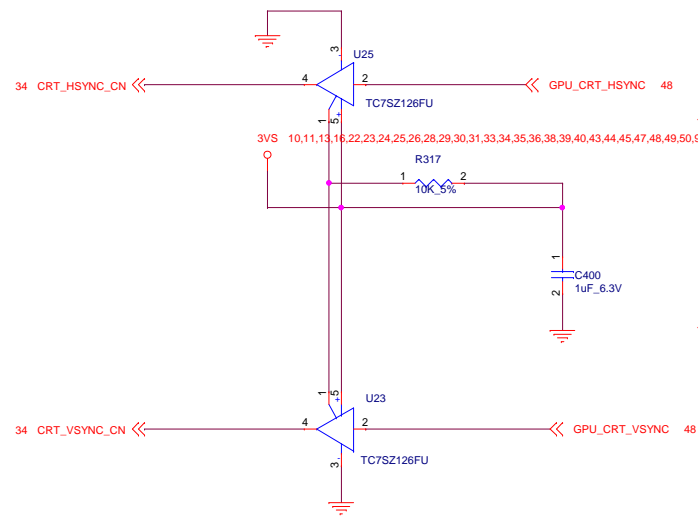




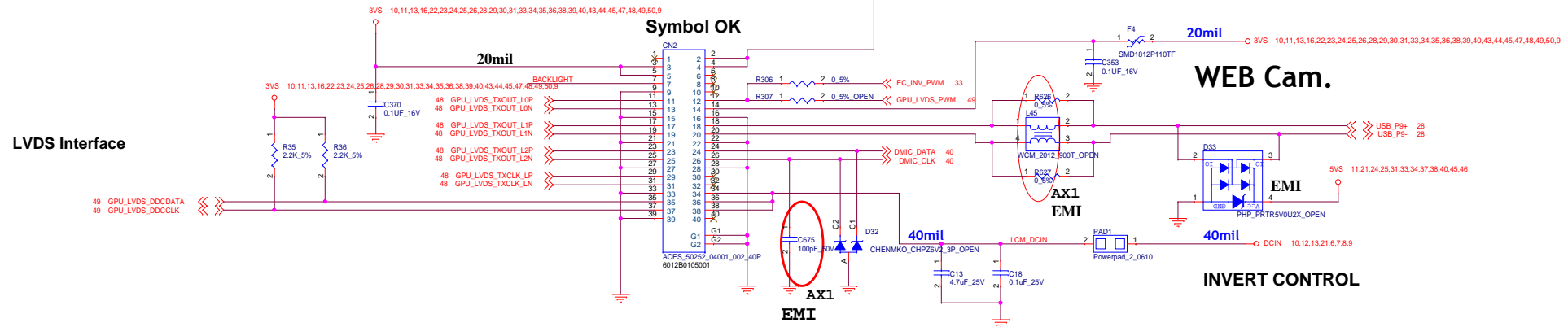
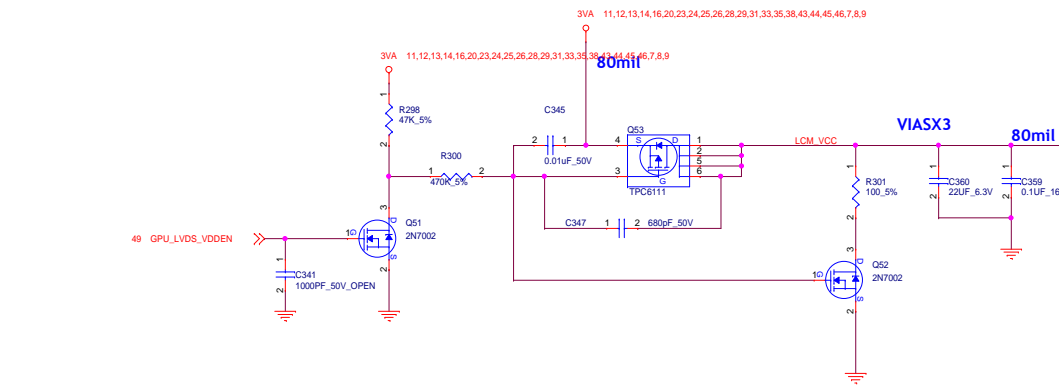
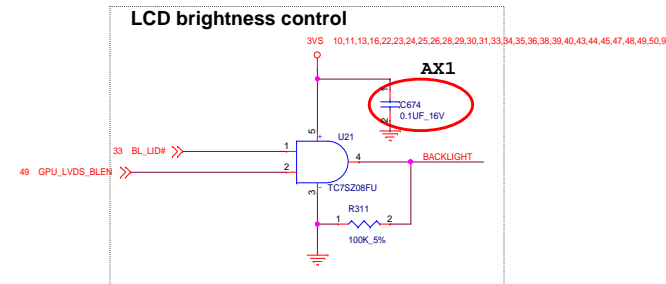
CRT



CRT CON.

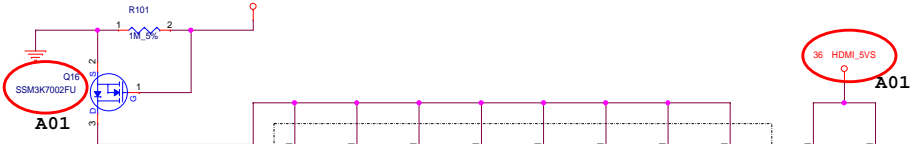


INVENTEC			
TITLE Aegis CRT			
SIZE Custom	CODE ES	DOC.NUMBER CS-131	REV A01
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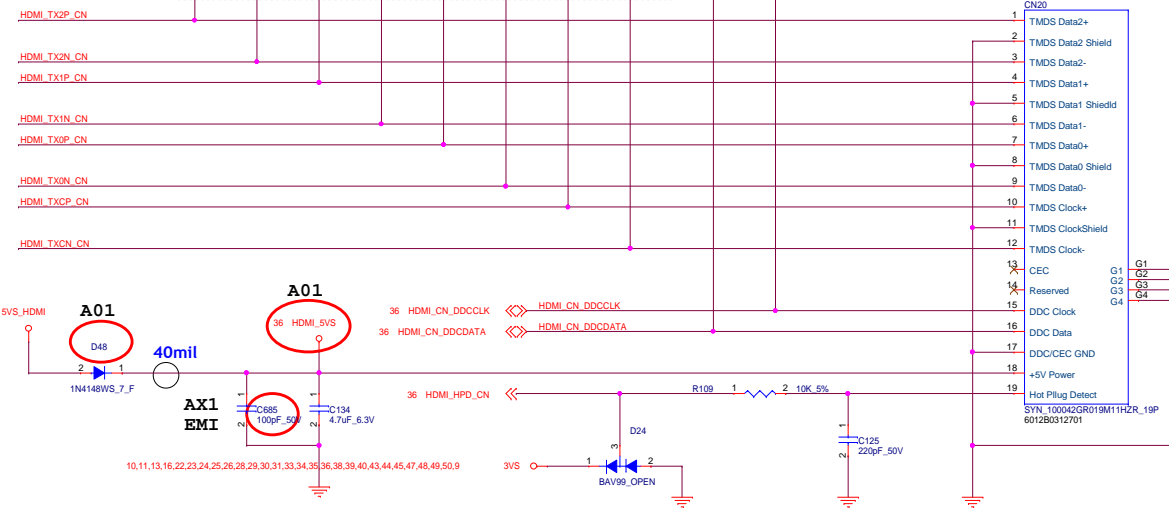


Please as close as possible to the LVDS CONN

10,11,13,16,22,23,24,25,26,28,29,30,31,33,34,35,36,38,39,40,43,44,45,47,48,49,50,9

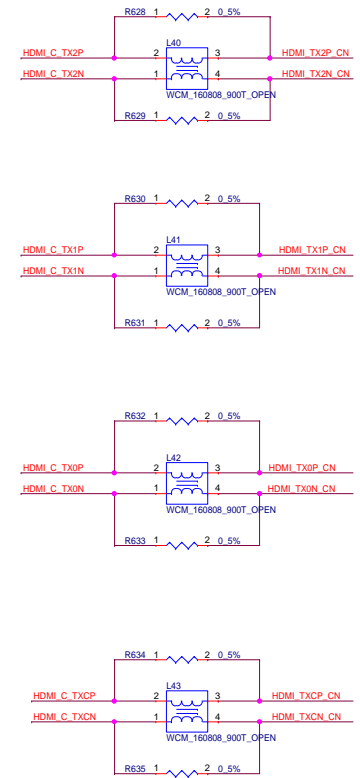


HDMI CONN

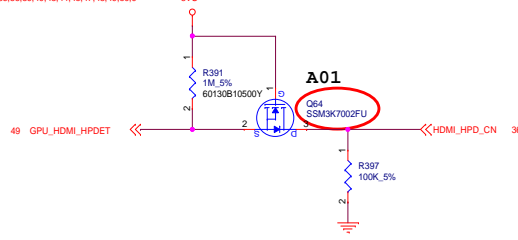


49 GPU_HDMI_TX2P	>>	C536	1	2	0.1UF_16V	HDMI_C_TX2P
49 GPU_HDMI_TX2N	>>	C535	1	2	0.1UF_16V	HDMI_C_TX2N
49 GPU_HDMI_TX1P	>>	C521	1	2	0.1UF_16V	HDMI_C_TX1P
49 GPU_HDMI_TX1N	>>	C511	1	2	0.1UF_16V	HDMI_C_TX1N
49 GPU_HDMI_TX0P	>>	C471	1	2	0.1UF_16V	HDMI_C_TX0P
49 GPU_HDMI_TX0N	>>	C463	1	2	0.1UF_16V	HDMI_C_TX0N
49 GPU_HDMI_TXCP	>>	C489	1	2	0.1UF_16V	HDMI_C_TXCP
49 GPU_HDMI_TXCN	>>	C485	1	2	0.1UF_16V	HDMI_C_TXCN

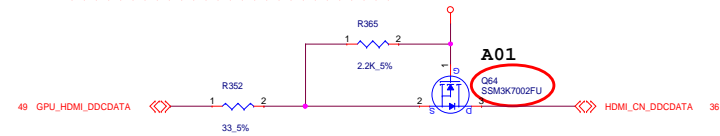
AX1



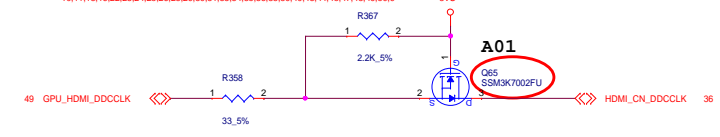
10,11,13,16,22,23,24,25,26,28,29,30,31,33,34,35,36,38,39,40,43,44,45,47,48,49,50,9



10,11,13,16,22,23,24,25,26,28,29,30,31,33,34,35,36,38,39,40,43,44,45,47,48,49,50,9



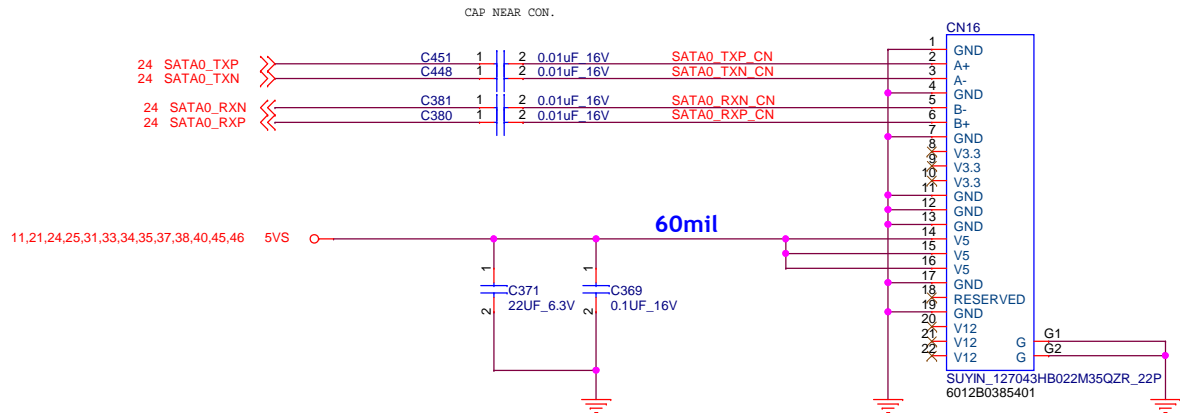
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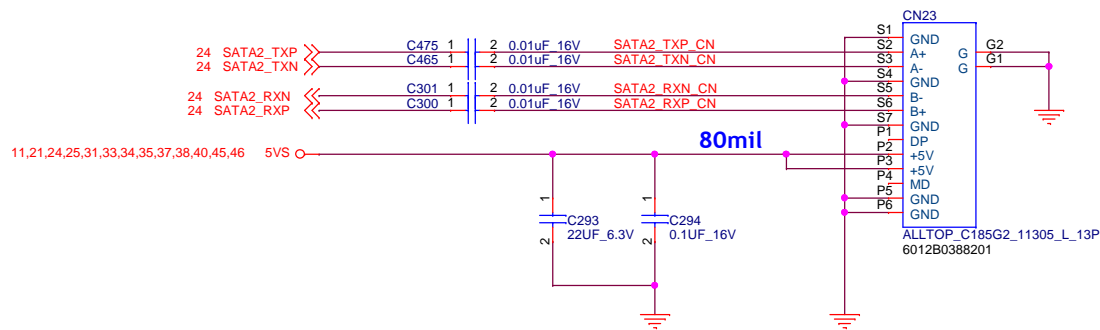
INVENTEC

TITLE			
Aegis			
HDMI			
SIZE	CODE	DOCNUMBER	REV
C	ES	CS-131	A01
SHEET		36	61

HDD I/F



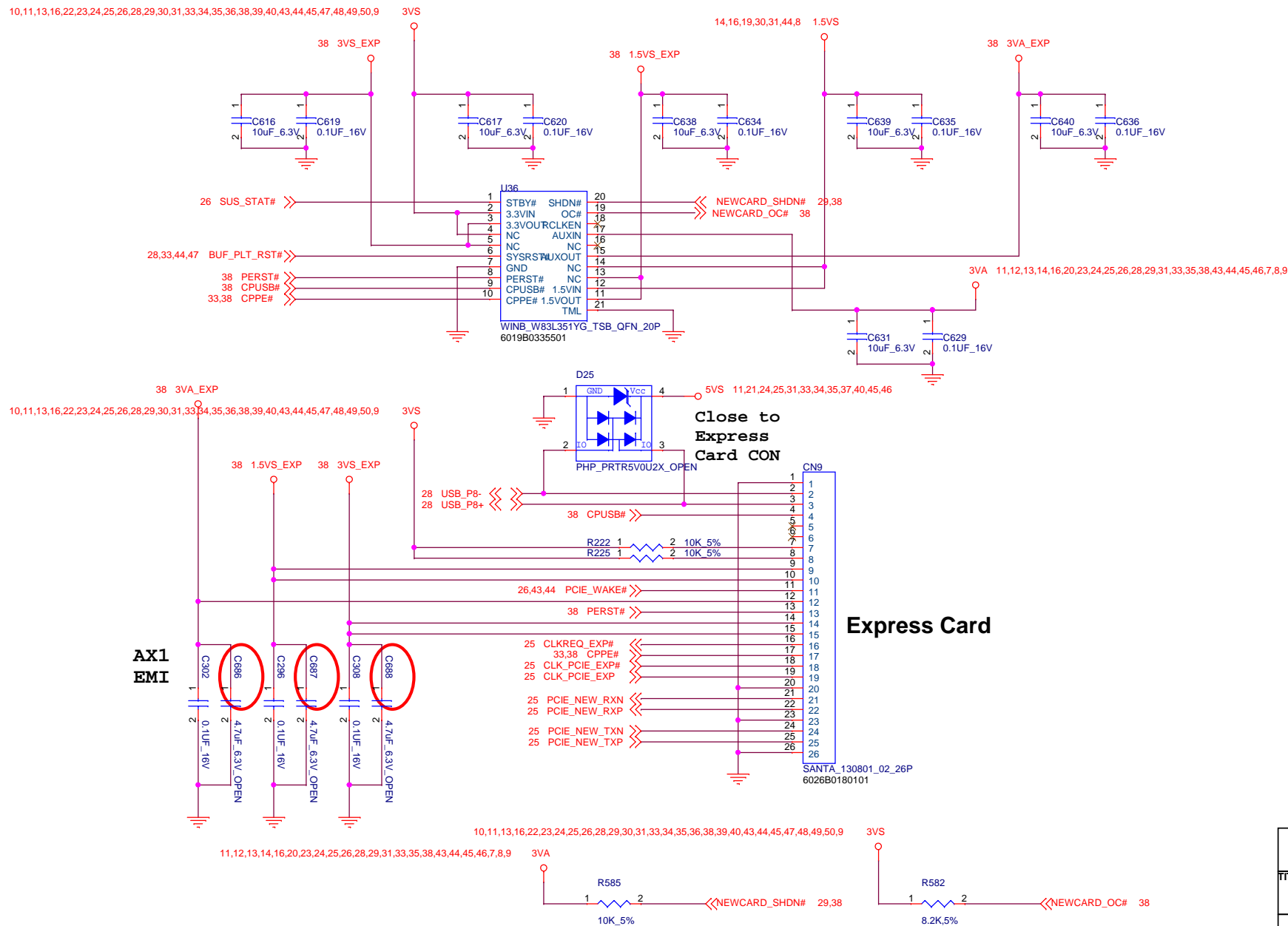
ODD I/F



INVENTEC

TITLE			
Aegis			
SATA HDD/ODD			
SIZE	CODE	DOC.NUMBER	REV
B	ES	CS-131	A01
SHEET		37	of 61

CHANGE by IEC DATE Friday, December 10, 2010



INVENTEC

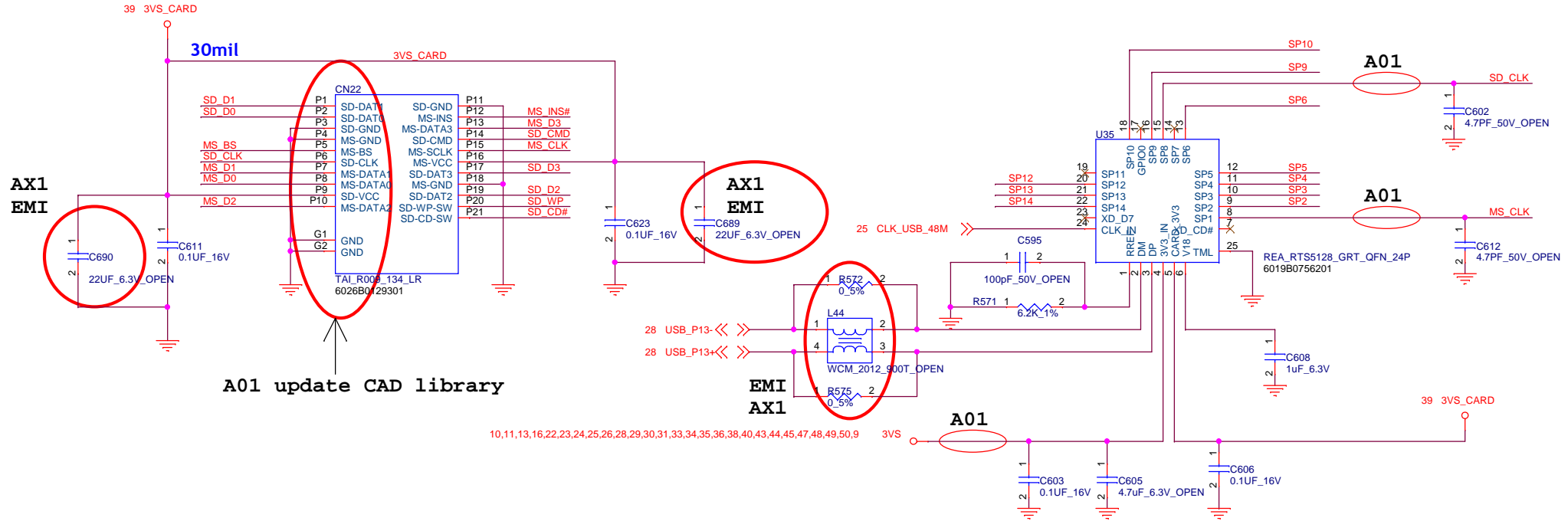
TITLE			
Aegis			
Express Card			
SIZE	CODE	DOC.NUMBER	REV
B	ES	CS-131	A01
SHEET		38	of 61

CHANGE by IEC DATE Friday, December 10, 2010

SP1 SD_WP MS_CLK
SP2 MS_INS#
SP3 SD_D1
SP4 SD_D0 MS_D7
SP5 SD_D7 MS_D3
SP6 SD_CD#

SP8 SD_CLK MS_D2
SP9 SD_D5 MS_D0
SP10 SD_CMD
SP12 SD_D3 MS_D1
SP13 SD_D2 MS_D5
SP14 MS_BS

SD_CLK, MS_CLK trace layout be stripline layer.

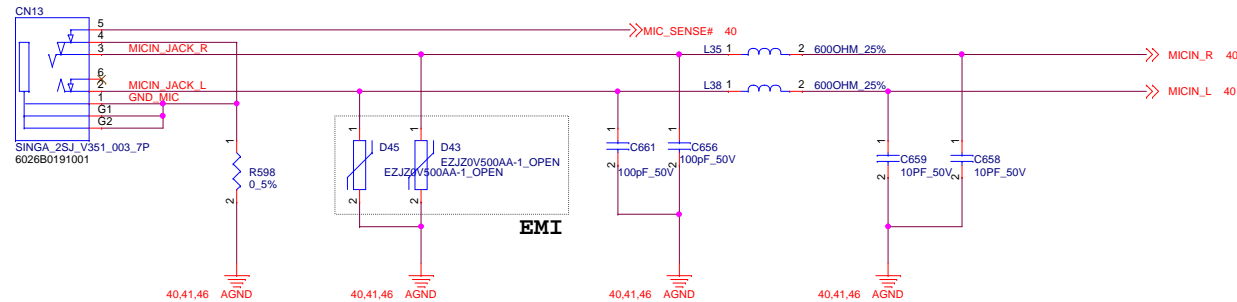


INVENTEC

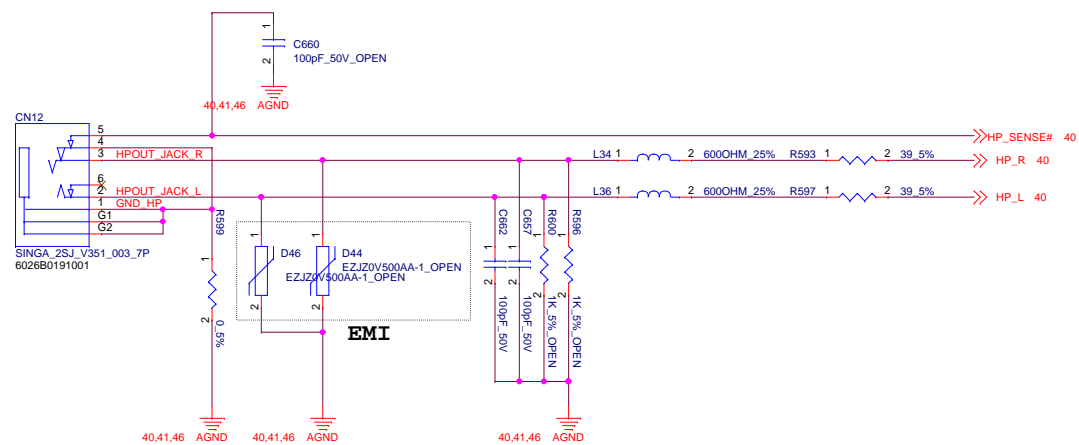
TITLE			
Aegis Card Reader			
SIZE	CODE	DOC.NUMBER	REV
Custom	ES	CS-131	A01
SHEET		39 of 61	

CHANGE by IEC DATE Friday, December 10, 2010

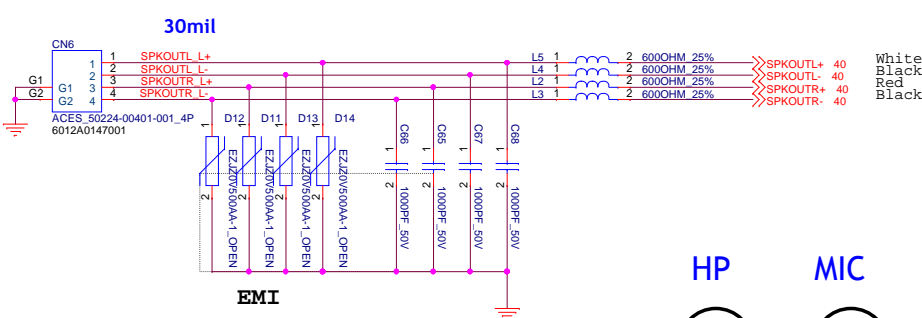
MIC



HEADPHONE

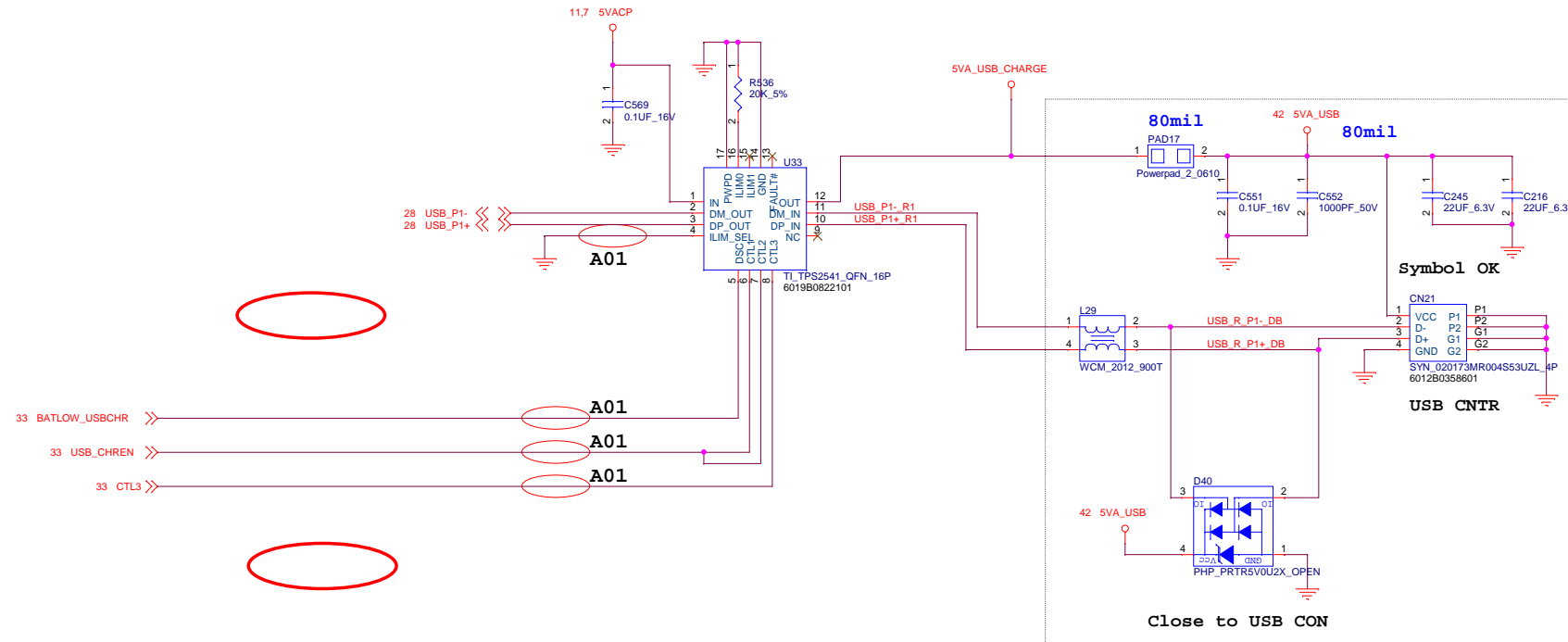


SPEAKER



INVENTEC			
TITLE			
Aegis			
HP/ MIC JACK/SPK			
SIZE	CODE	DOC.NUMBER	REV
Custom	ES	CS-131	A01
SHEET		41	of 61

Power OFF Charge USB

**INVENTEC**TITLE
Aegis
USB power off charger

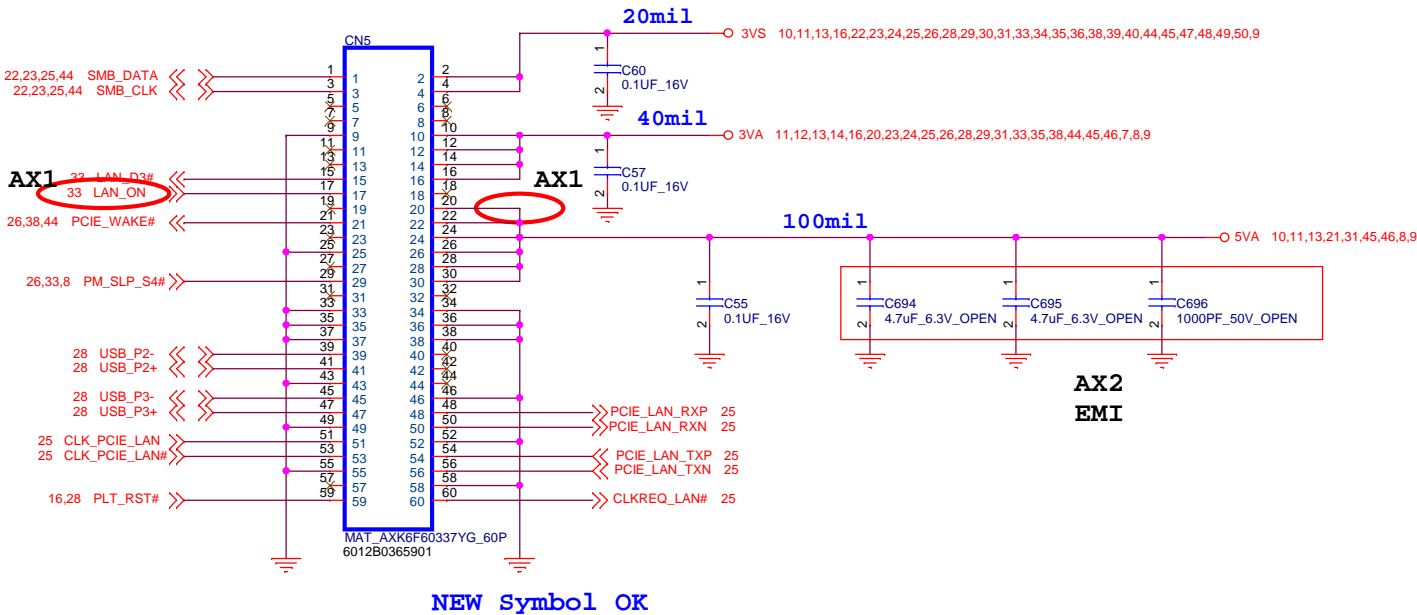
SIZE	CODE	DOC.NUMBER	REV
Custom	ES	CS-131	A01

CHANGE by IEC DATE Friday, December 10, 2010

SHEET 42 of 61

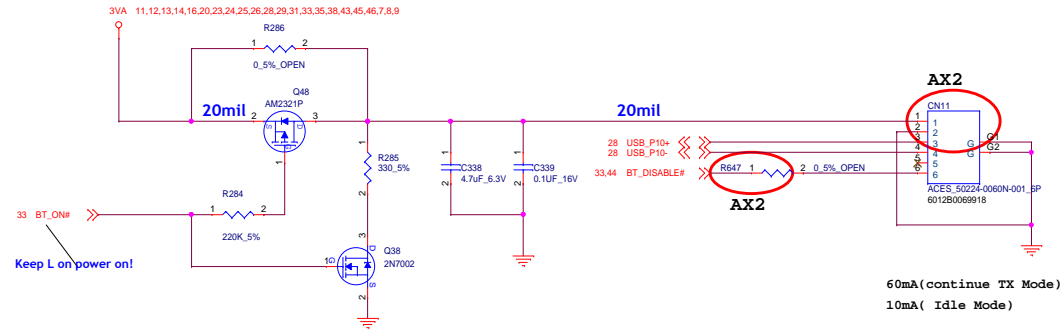
Symbol Ok

TO USB/LAN BOARD

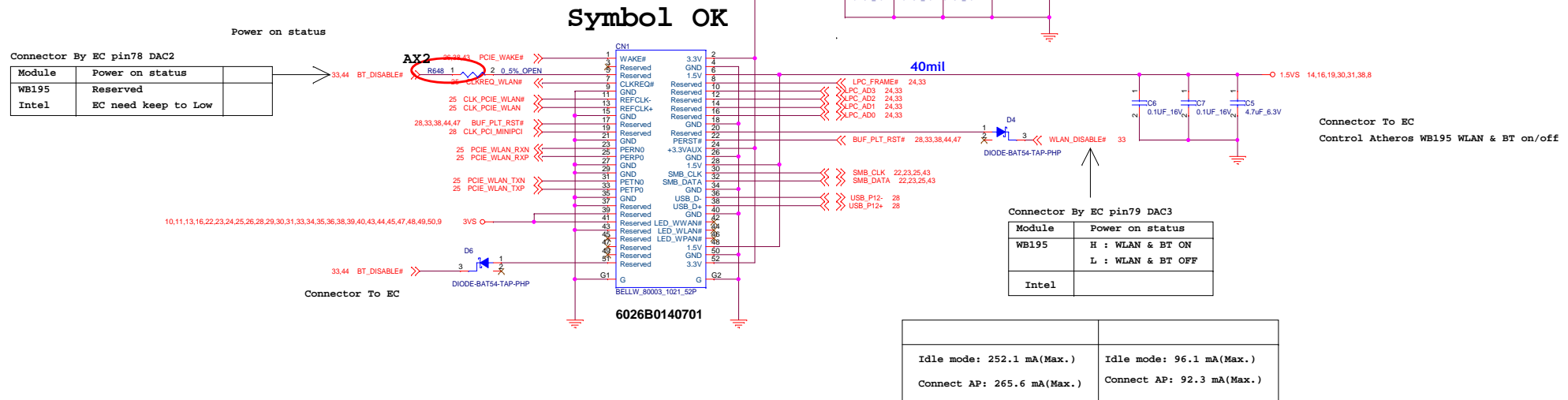


INVENTEC			
TITLE Aegis USB/LAN I/F			
SIZE B	CODE ES	DOC.NUMBER CS-131	REV A01
SHEET 1 of 61			

Bluetooth CNN.

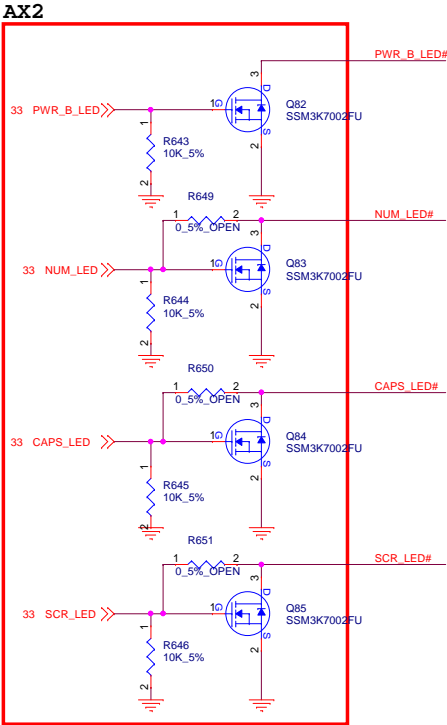


PCIE Mini Card(WLAN)

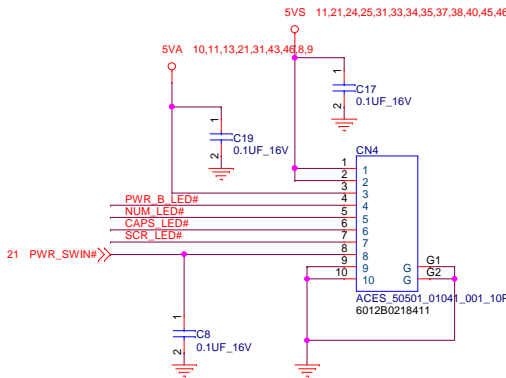


INVENTEC

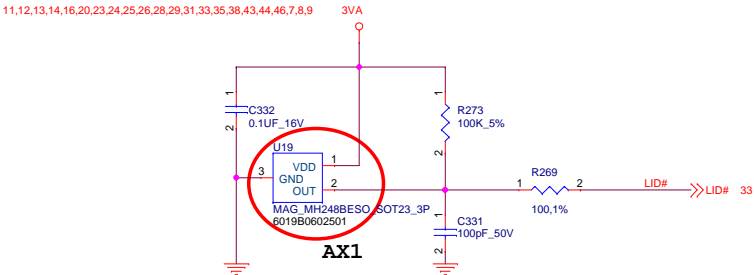
TITLE			
Aegis			
WLAN/BT			
SIZE	CODE	DOC NUMBER	REV
C	ES	CS-131	A01
SHEET		44	of 61



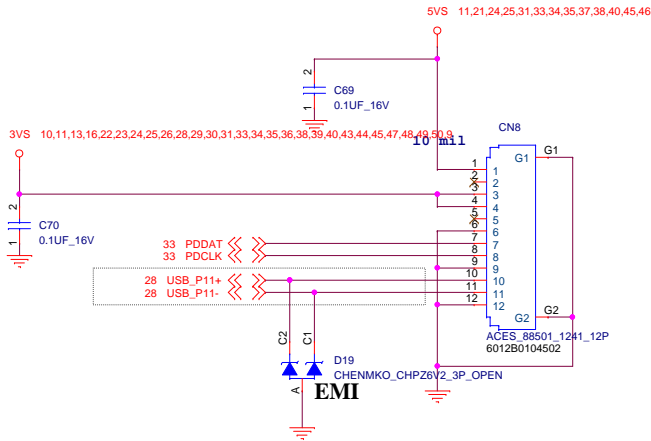
PWS + LED CNN.



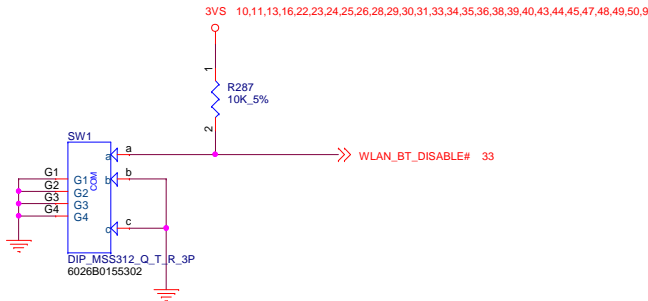
HALL Switch



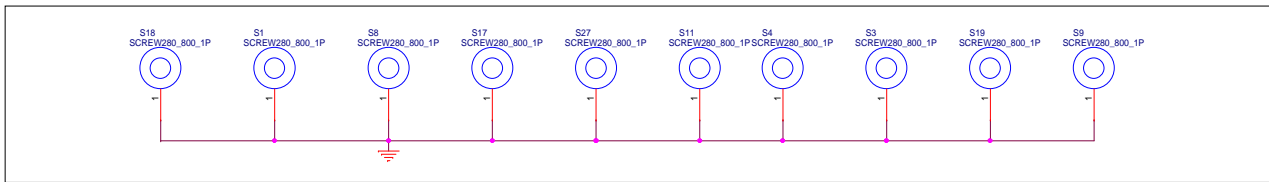
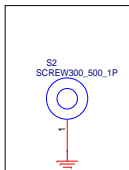
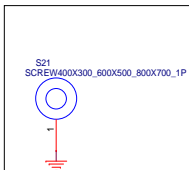
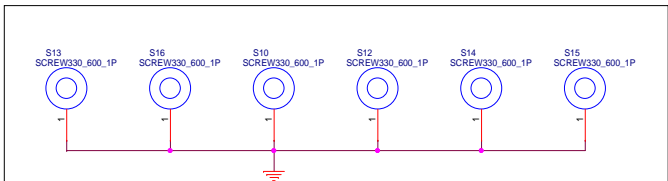
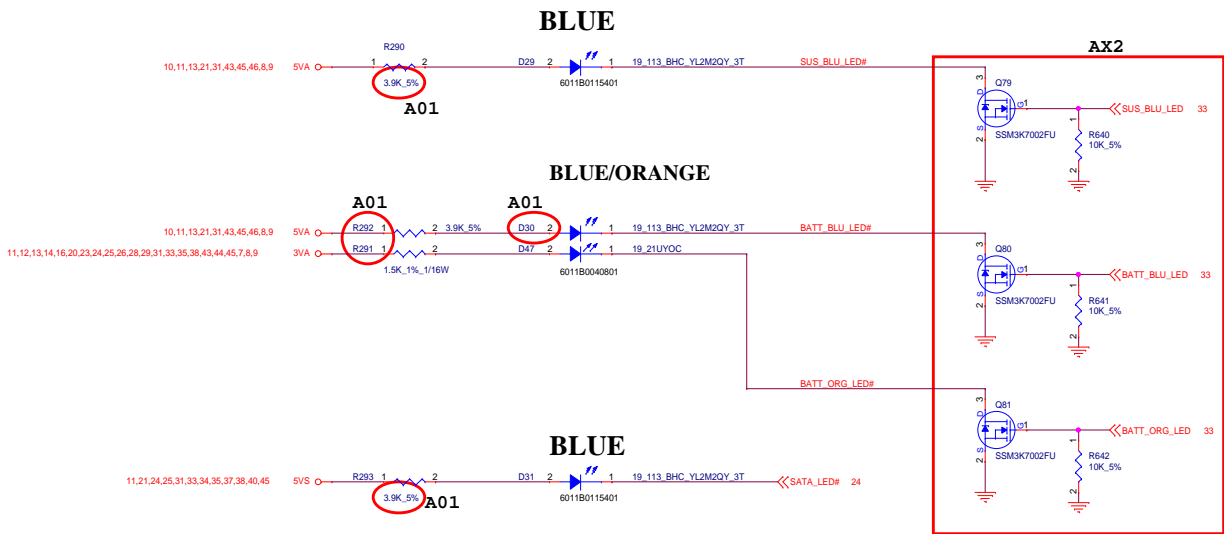
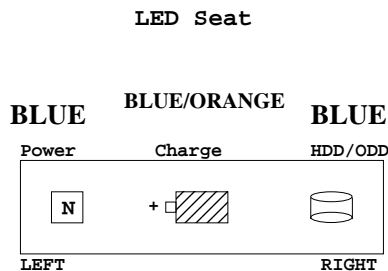
GP + FP CNN.



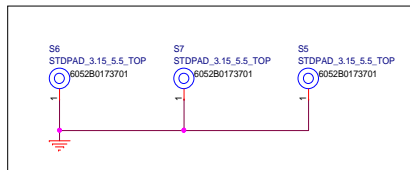
(W-LAN, BT) sliding switch



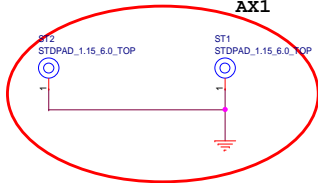
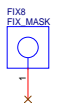
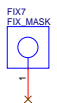
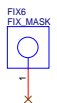
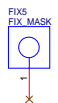
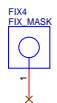
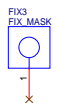
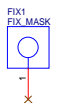
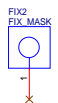
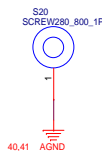
INVENTEC			
TITLE			
Aegis			
PSW/LID/ GP/FP/SL SW			
SIZE	CODE	DOC NUMBER	REV
Custom	ES	CS-131	A01
SHEET 45 of 61			



For USB B to B NUT

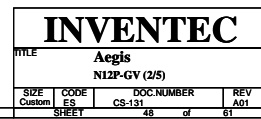


SCREW

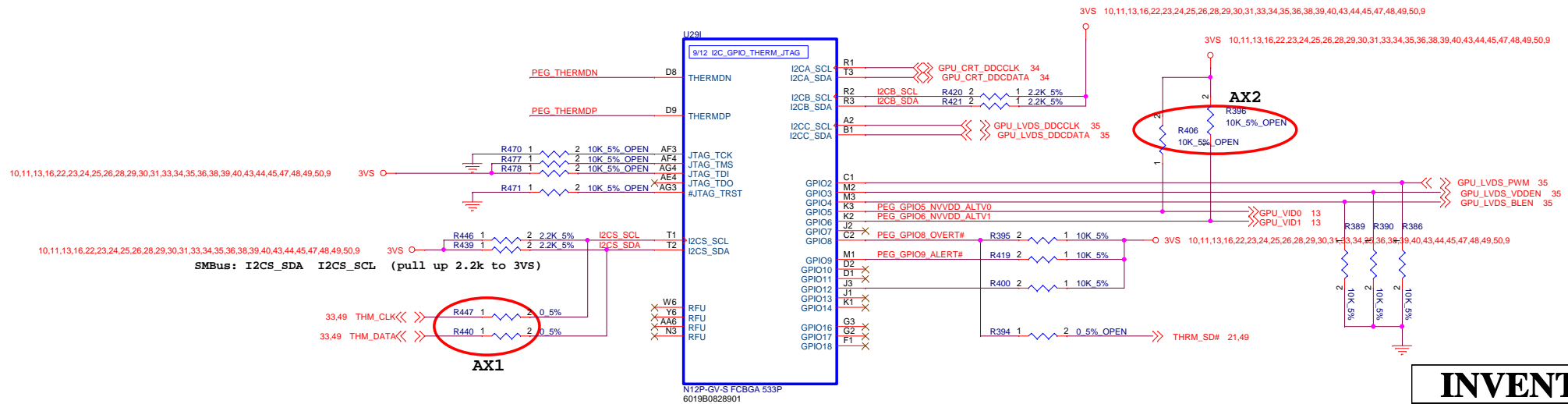
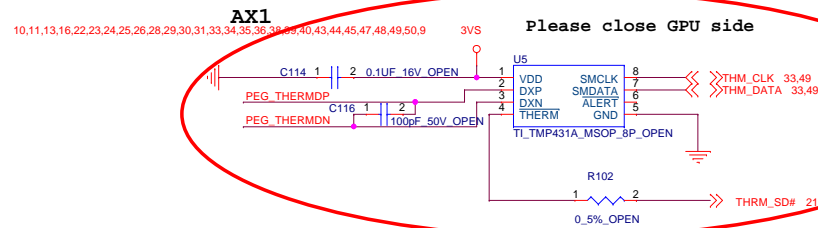


INVENTEC			
TITLE			
Aegis			
LED / SCREW			
SIZE	CODE	DOC NUMBER	REV
C	ES	CS-131	A01
SHEET 46 of 61			





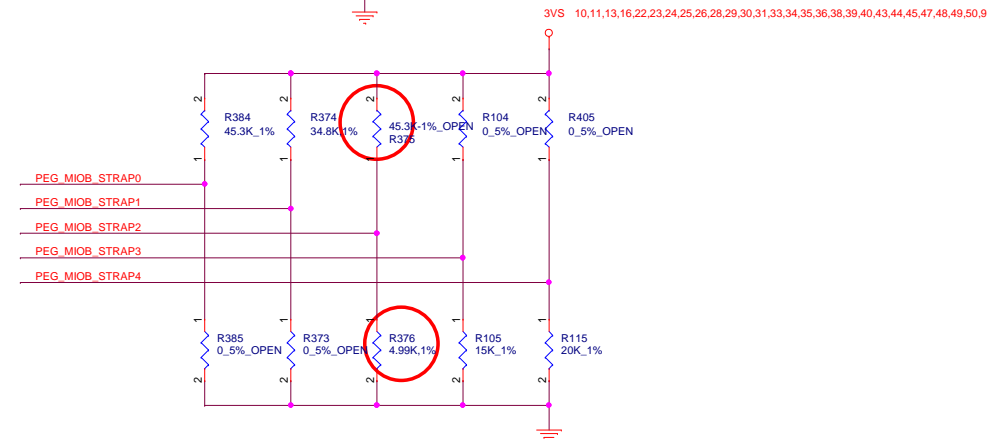
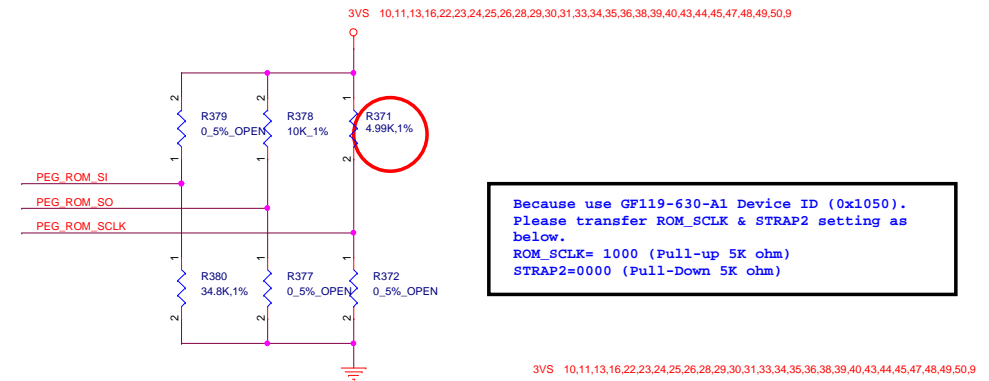
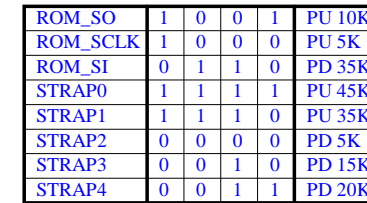
GPU Thermal sensor

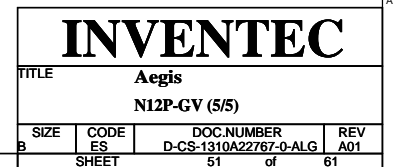
**INVENTEC**

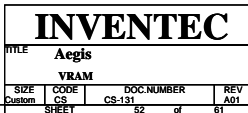
TITLE	Aegis N12P-GV (3/5)
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SIZE Custom	CODE ES	DOC.NUMBER CS-131	REV A01
SHEET		49 of	61

CHANGE by	IEC	DATE	Friday, December 10, 2010
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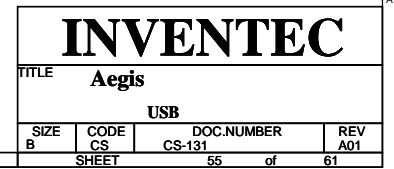
Aegis USB Board

2010.12.10 A01 Build

Thursday, Jun 26, 2008	1 st issue	A01
Monday, May 26, 2008	Second issue	A01
Thursday, April 17, 2008	Final issue	A01
DATE	CHANGE NO.	REV

	EE	DATE	POWER	DATE	<div>INVENTEC</div> <div>TITLE</div> <div>USB Board</div>					
DRAWER										
DESIGN										
CHECK										
RESPONSIBLE										
SIZE=					VER:		SIZE	CODE	DOC NUMBER	REV
FILE NAME: XXXX-XXXXXX-XX							C	CS	K-CS-1310A22218-ALG	A01
PN XXXXXXXXXX							SHEET	53	of	91



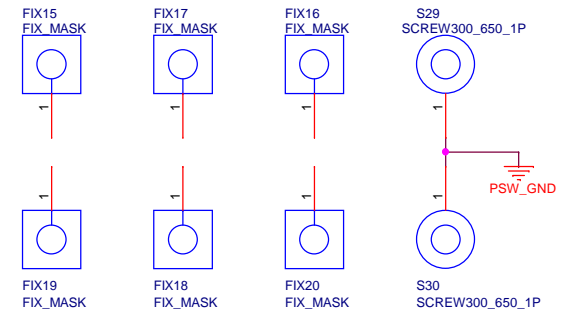
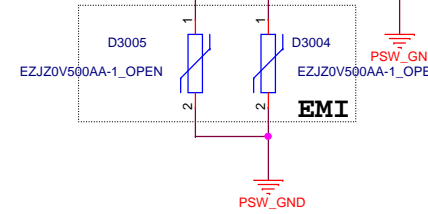
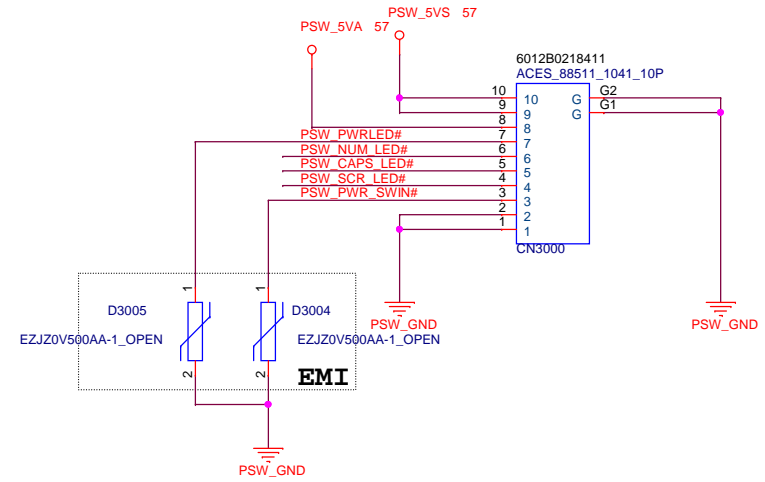
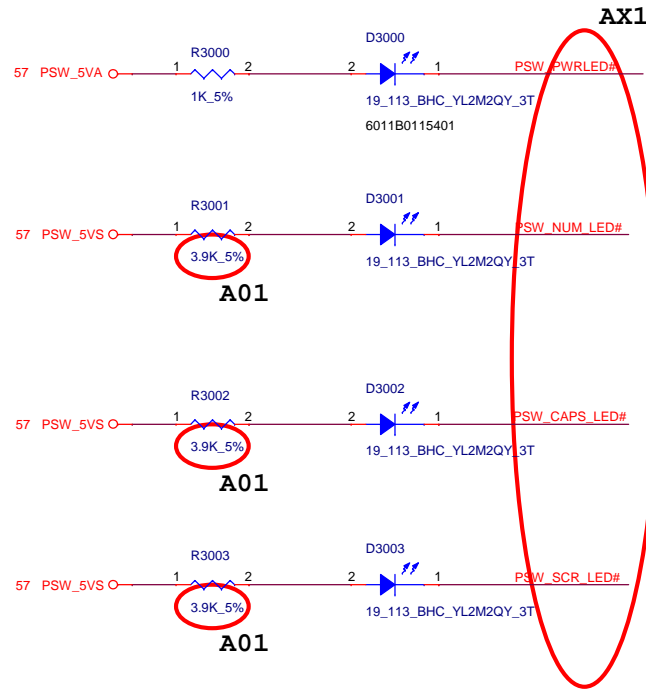
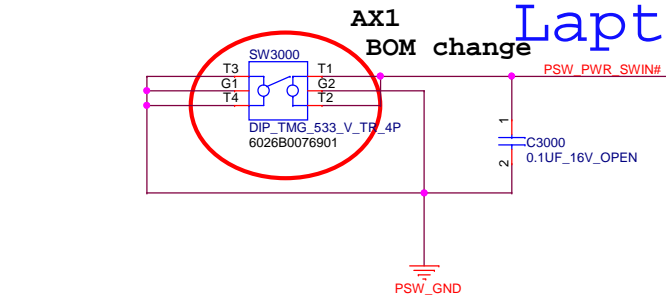


Aegis

PWR_SW BOARD

2010.12.10 A01 Build

		EE	DATE	POWER	DATE	<h1>INVENTEC</h1>
DRAWER						
DESIGN						
CHECK						
RESPONSIBLE						TITLE
<h2>PWR SW BOARD</h2>						
SIZE=				VER:		
FILE NAME: XXXXX-XXXXXXX-XX						SIZE
P/N XXXXXXXXXX						CODE
						CUSTOMER
						DOC NUMBER
						REV
						A01
						SHEET
						56 of 61



INVENTEC			
TITLE Aegis			
Power Switch			
SIZE B	CODE CS	DOC NUMBER K-CS-1310A2219-ALG	REV A01
SHEET	57	of	61

CHANGE by BEN LEE DATE Friday, December 10, 2010

Aegis

Finger Print board


2010.12.10

A01 Build

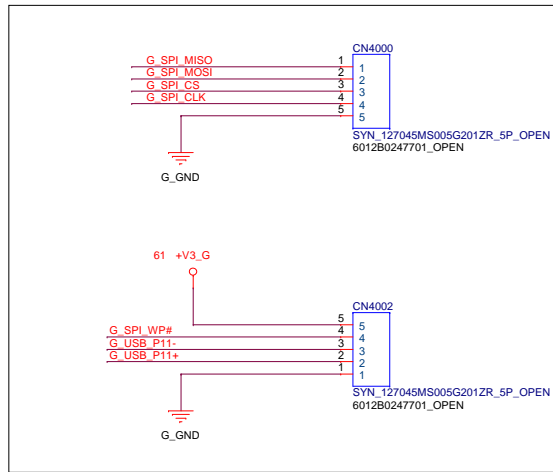
Friday, December 10, 2010		
DATE	CHANGE NO.	REV

	EE	DATE	POWER	DATE	INVENTEC			
DRAWER					TITLE			
DESIGN								
CHECK					Finger Print board			
RESPONSIBLE								
SIZE=				VER:	SIZE	CODE	DOC NUMBER	REV
FILE NAME: XXXX-XXXXXX-XX					CustomCS		K-CS-1310A22499	A01
P/N	XXXXXXXXXXXX				SHEET	58	of	61

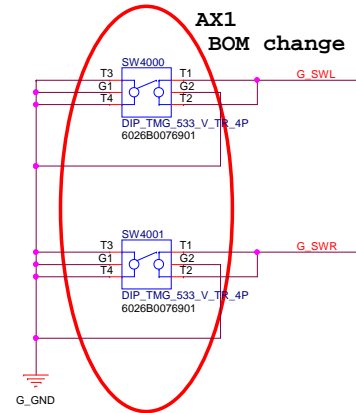
A01 Build

	EE	DATE	POWER	DATE	
DRAWER					
DESIGN					
CHECK					
RESPONSIBLE					
TITLE GP Board					
SIZE=		VER:			
FILE NAME: XXXX-XXXXXX-XX					SIZE
P/N: J. XXXXXXXXXX					CODE
					DOC NUMBER
					CustomerCS
					K-CS-1310A22489
					REV
					A01
					SHEET
					60 of 61

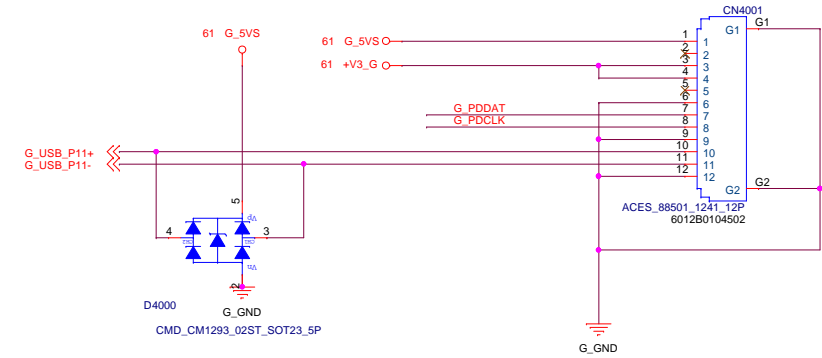
TO FP PIN HEADER



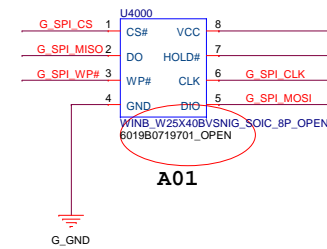
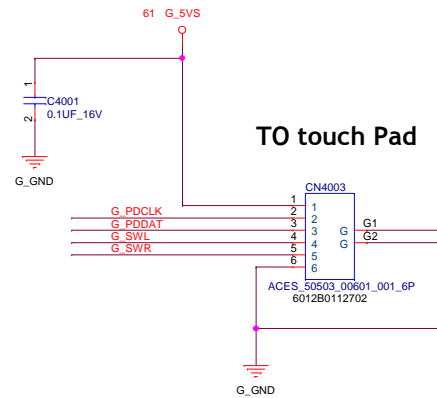
GP Button



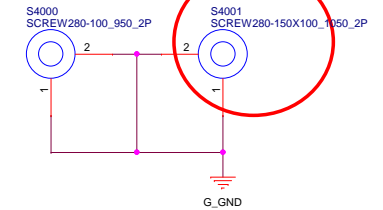
TO MB



TO touch Pad



AX2



INVENTEC

TITLE			
Aegis			
USB Board/GP			
SIZE	CODE	DOC NUMBER	REV
CustomCS		K-CS-1310A22499	A01

CHANGE by BEN LEE DATE Friday, December 10, 2010

SHEET 61 of 61