Inventec Corporation
R&D Division

Board name : Mother Board Schematic

Project : J11Eagle (Santa Rosa)

Version : 0.4

Initial Date : January 05, 2007

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Title
J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: Title | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 1 of 55

1. Schematic Page Description :

J11Eagle (Santa Rosa) Schematic Ver : 0.4

1. Title
2. Schematic Page DESCR
3. Block Diagram
4. ANNOTATIONS
5. Schematic Modify
6. DDRII Layout Guideline
7. Merom Processor(1/2)
8. Merom Processor(2/2)
9. CPU Thermal
10. Clock Generator
11. Crestline Host(1/6)
12. Crestline DMI/Graph2/6)
13. Crestline DDR2(3/6)
14. Crestline Power(4/6)
15. Crestline Power(5/6)*
16. Crestline Ground(6/6)
17. DDR2 SDRAM SO-DIMM0
18. DDR2 SDRAM SO-DIMM1

20. ICH8M PCI/PCIE/DMI(2/4)
21. ICH8M GPIO(3/4)
22. ICH8M Power/GND(4/4)
23. BIOS/SMBUS_SW/80 PORT
24. LCD&CRT
25. TV OUT & CRT SW
26. OZ711MP1I(1/3)
27. OZ711MP1I(2/3)
28. OZ711MP1I(3/3)
29. LAN--88E8055
30. MINI_PCIE/USB/Bluetooth
31. Audio Codec(1/2)
32. AUDIO JACK(2/2)
33. G-S/TPM1.2/SATA/MDC/BAY
34. BENN
35. SUPER IO (1/2)
36. SUPER IO (2/2)
37. DVI Transmitter Sil1368
38. DOCK/KB/ST-LCD CN
39. RESET
40. CPU Core Power(MAX8770)
41. LDO/SWITCH
42. Battery
43. Charger
44. 5VPMU/5VSTD/3VPMU/3VSTD
45. 1.8V_DIMM
46.GPU_CORE
47. BATTERY CN
48. 1.05V/ETC0
49. EC control
50. BAY TR /GP/Stick BOARD
51. USB BOARD
52. GLIDE SW BOARD W/FP
53. STICK SW BOARD
54. EMI/ESD
55. GLIDE SW BOARD W/O FP

2. PCI & IRQ & DMA Description :

IDSEL	CHIP
AD19	OZ711MP1

PCIINT	CHIP
PCI_INT#0	OZ711MP1
PCI_INT#1	N/A
PCI_INT#2	N/A
PCI_INT#3	N/A

BUSMASTER

REQ	CHIP
REQ0 / GNT0	N/A
REQ1 / GNT1	OZ711MP1
REQ2 / GNT2	N/A
REQ3 / GNT3	N/A

19. ICH8M CPU/IDE/SATA(1/4)

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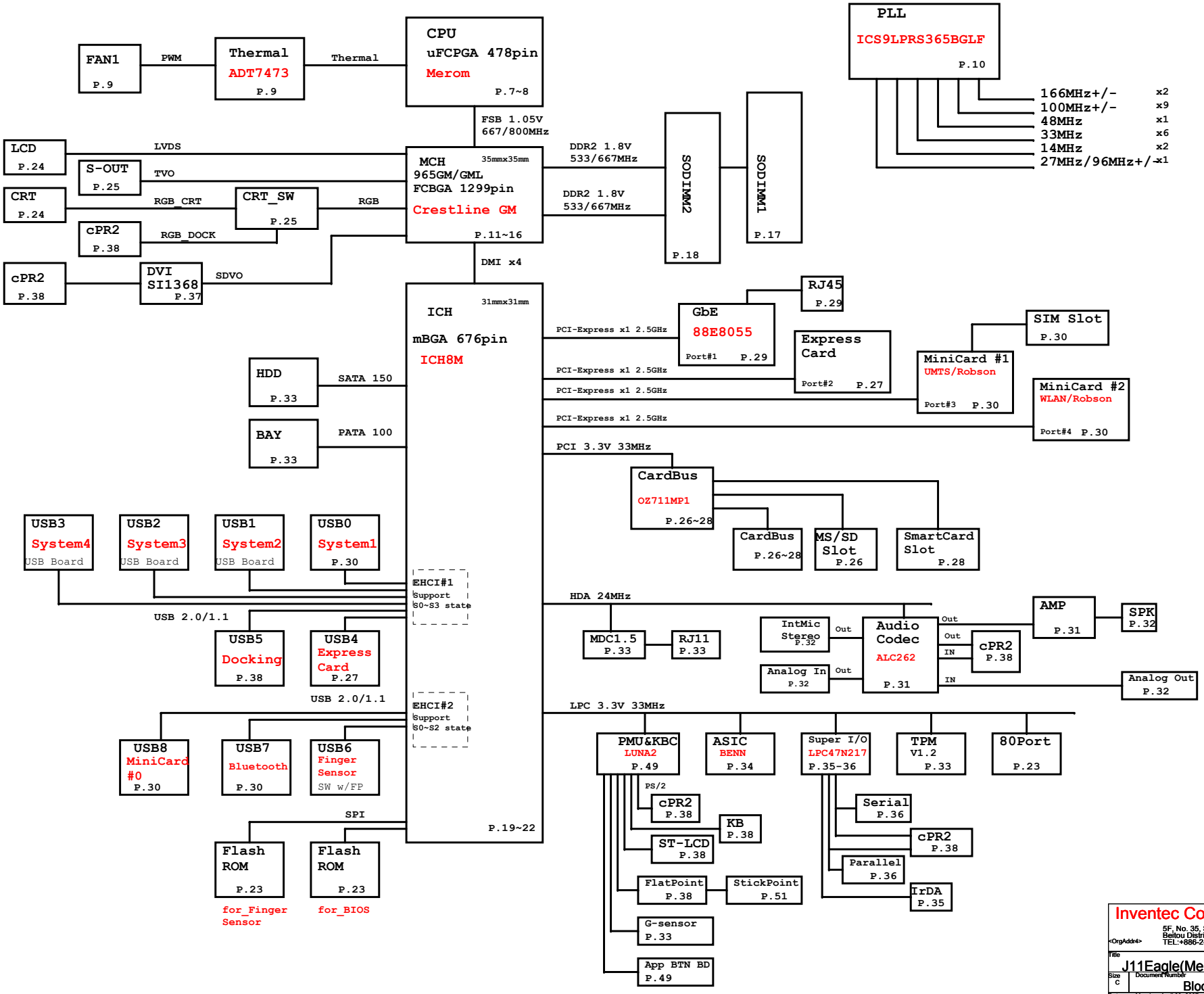
Title: J11Eagle(Merom+Crestline+ICH8M)
Size: C | Document Number: Schematic Page DESCR | Rev: 0.3
Date: Monday, April 09, 2007 | Sheet 2 of 55

3. Block Diagram :



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Size: C | Document Number: Block Diagram | Rev: 0.3

Date: Monday, April 09, 2007 | Sheet 3 of 55

4. Nat name Description :

Voltage Rails

PWR_DCIN	Primary DC system power supply
+5VLA	5.0V always on power rail by LATCH or ACIN
PWR_3VSTD	3.3V always on power rail by LATCH or ACIN
PWR_PMU	3.3V always on power rail by ECPWON
PWR_5VSUS	5.0V power rail by SLP_S5#_3R
PWR_3VSUS	3.3V power rail by SLP_S5#_3R
PWR_5VMAIN	5.0V switched power rail by SLP_S3#_3R
PWR_3VMAIN	3.3V switched power rail by SLP_S3#_3R
PWR_CPUCORE	Core Voltage for CPU
PWR_1.05VMAIN	1.05V power rail for AGTL+ termination/Core for GMCH by SLP_S3#_3R
PWR_1.5VMAIN	1.5V power rail for CPU PLL/DMI;PCIE;DDRII DLLs for GMCH/Core;PCIE for ICH7m by SLP_S3#_3R
PWR_1.8VSUS	1.8V power rail for DDRII by SLP_S5#_3R
PWR_DIMM_VTT	0.9V DDRII Termination Voltage by SLP_S3#_3R

Part Naming Conventions

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

Net Name Suffix

#	=	Active Low signal

5. Board Stack up Description

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

	Single End Impedance	Differential Impedance for Microstrip	Differential Impedance for Stripline
Host Clock	55 ohm +/- 15%	95 ohm +/- 15%	100 ohm +/- 15%
SRC Clock	55 ohm +/- 15%	95 ohm +/- 15%	100 ohm +/- 15%
Host Bus	55 ohm +/- 15%		
DDR2 CLK	42 ohm +/- 15%	70 ohm +/- 20%	70 ohm +/- 20%
DDR2 Strobe	55 ohm +/- 15%		85 ohm +/- 20%
DDR2 Bus	55 ohm +/- 15%		
DMI Bus	55 ohm +/- 15%	95 ohm +/- 15%	100 ohm +/- 15%
PCIE Bus	55 ohm +/- 15%	95 ohm +/- 15%	100 ohm +/- 15%
SATA		95 ohm +/- 15%	100 ohm +/- 15%
SDVO	55 ohm +/- 15%	95 ohm +/- 15%	100 ohm +/- 15%
LVDS		100 ohm +/- 15%	100 ohm +/- 15%
USB		90 ohm +/- 15%	90 ohm +/- 15%
IEEE1394		110 ohm +/- 15%	110 ohm +/- 15%
Lan	50 ohm +/- 15%		

Power Rail	Destination	Voltage	S0 Current
PWR_CPUCORE	Merom HFM:	1.3319V~1.4375V~1.4591V	36A
	LFM:	0.9221V~0.9625V~0.9739V	
PWR_1.05VMAIN	Merom: AGTL+ termination	0.997V~1.05V~1.102V	2.5A
	965GM: Core	1.0V~1.05V~1.1V	4.6A
	965GM: AGTL+ termination	0.9475V~1.05V~1.1025V	1.4A
	ICH8m:		
PWR_1.5VMAIN	Merom PLL	1.425V~1.5V~1.575V	120mA
	965GM: PCIE	1.425V~1.5V~1.575V	1.5A
	965GM: LVDS	1.425V~1.5V~1.575V	60mA
	965GM: TVDAC	1.425V~1.5V~1.575V	24mA
	965GM: Various PLLS analog supply	1.425V~1.5V~1.575V	320mA
	965GM: DDR DLLS,DDRII,FSB HSIO	1.425V~1.5V~1.575V	1.885A
	ICH8m:		
	ICH8m:		
	ICH8m:		
	ICH8m:		
	Mini Card:		
	Express Card:		
PWR_1.8VSUS	965GM: DDRII System Memory	1.7V~1.8V~1.9V	3.1A
	SO-DIMM:		
	965GM: LVDS analog	1.7V~1.8V~1.9V	10mA
	965GM: LVDS I/O	1.7V~1.8V~1.9V	60mA
	965GM: PCIE analog		2mA
	CLOCK GEN.		
PWR_DIMM_VTT	DDRII Terminator:	0.855V~0.9V~0.945V	1.0A
PWR_3VSUS	965GM: HV CMOS	3.135V~3.3V~3.465V	40mA
	965GM: TVDAC analog	3.135V~3.3V~3.465V	120mA
	ICH8m:		
	ICH8m:		
	ICH8m:		
	ICH8m:		
	ICH8m:		
	Mini Card:		
	Express Card:		
	CLK Generator: ICS9LPRS365AGLF	3.135V~3.3V~3.465V	400mA
	Mini PCIe: WirelessLan		
	Azalia Codec: ALC262	3.0V~3.3V~3.6V	
	Azalia MDC:		
	HDD: SATA		
	965GM: CRT DAC		70mA
PWR_3VMAIN	CardBus: OZ711MP1	3.0V~3.3V~3.6V	
	CardBus: Slot voltage		
	Lan: Broadcom 88E8055		
	Card Reader: SD/MMC/MS		
	Azalia MDC: For wake up		
	Mini PCI: For wake up		
PWR_3VSTD	ICH8m:		
	ICH8m:		
	ICH8m:		
	LCD:	3.0V~3.3V~3.6V	1.0A
PWR_3VMAIN	Azalia Codec: ALC262	3.0V~3.3V~3.6V	
	Azalia MDC:		
	HDD: SATA	4.75V~5.0V~5.25V	Max: 1.0A ; R/W: 460mA ; STDBY: 70mA
	ODD: PATA	4.75V~5.0V~5.25V	Max: 1.8A ; R/W: 900mA ; STDBY: 45mA
	Audio AMP: G1412		
	Woofer AMP: G1432		
	Inverter:		
PWR_5VMAIN	CardBus: Slot voltage		
	USB: x 4 ports	5V	2.0A
PWR_3VSTD	EC:		
	ICH8m: RTC		
	Flash ROM: BIOS		

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Size: C | Document Number: ANNOTATIONS | Rev: 0.3
Date: Monday, April 09, 2007 | Sheet 4 of 55

6.Schematic modify Item and History :

V0.1 MODIFY LIST

1. Change R75 from 10K to 100K. (Page 39)
2. Change R291 from 470K to NU. (Page 27)

V0.2 MODIFY LIST

1. ADD DVI function. (Page 37)
2. U27 pin K1 and M1 (AVCC) have to be connected from CORE_VCC to PCI_VCC. (Page 26)
3. DG_AMP_SD# change from U54 Pin 47 to U54 Pin 3. (Page 26)
4. R457,R468 change to 100 Ohm 1%, R462 change to 5.1K Ohm 1%, R127 change to 100K 1% add R758 0 Ohm---- Adjust OCP 10A (Page 45)
5. R98 change to 2.2K 0.5%, R93 change to 39K 0.5% ---- Adjust Changer current. (Page 48)
6. Change X2 pin5 from GND to PWR_PMU (Page 34)
7. R102 change from 10K to 20K 1% ---- Adjust OCP 10A (Page 44)
8. Change R176 from 10K to 12K1% ---- Adjust OCP 7A (Page 47)
9. Change R616 from 4.7K to 475 Ohm ---- CLKREQ damping (Page 10)
10. R515 change from 1.3K to 1.27K ---- adjust CRT REFSET. (Page 12)
11. Del R622 and change D35 (PP gate) from PWR_3VSTD to PWR_5VSUS, change D35 (P gate) from PWR_3VSTD to PWR_3VSUS --- improve leakage. (Page 22)
12. R271 change from 3.48K to 3.9K, R238, R228 change from 2.1K to 2.67K.---- Ajust CPU Core load line (Page 39)
13. Change R132 from 243 Ohm to 249 Ohm ---- Ajust PWR_3VMAIN_ATBG (Page 15).
14. Change R433 (0 Ohm) to NU. (Page 30)
15. Change R56 from 1K to NU.--- Set DOCK EXIST. (Page 34)
16. Change R444 connect from DLY_SUSB# to DLY_SUSC#.--- Modify PWR_1.8VSUS power syquence. (Page 44)
17. R293,R641,R642,R564,R569 change power plane from PWR_3VSUS to PWR_3VMAIN. ---- for S3 leakage. (Page 10)
18. CL_VREF1_ICH pull up change from PWR_3VSTD to PWR_3VMAIN. (Page 21)
19. R351 from 100K to NU ---- follow FJ schematics. (Page 47)
20. Add 470k ohm to LCDCL##_LUNA (Page 49)
21. change Speaker lines dumping-resistersR391,R390,R389,R388 to Filter L66,L67,L68,L69. (Page 32)
22. C307, C311 change from 10PF to 15PF fro RTC. (Page 19)
23. Add R759 470K, R758 0 Ohm. (Page49)
24. R673 change 10K to 220K. (Page 30)
25. C654,C655 change from 0.1uf/10V to 0.1uf/25V.
26. R214,R215 change from 0 Ohm to 2.2 Ohm.
27. Change R719,R721 from 10K to 12.4K (Page 31)
28. Add R767,R768 voltage divide to add "Maximum Power Clampping Function" to avoide damaging the speaker. (Page 31)
29. Change G-sensor from KXPS5-3176 to LIS302ALK (Page 33)
30. M_VREF add R760 0 Ohm to connect to U37 Pin6. (Page 45)
31. TP16 connect to change from PWR_DIMM_VTT to M_VREF. (Page 17)
32. Add C842~C867, C870~C876 for EMI.
33. Change Q53, Q54 from SI2301BDS-T1-E3 to RVE002P03. (Page 43)
34. U34 Pin5 change from PWR_3VSTD to PWR_5VMAIN. (Page 39)
35. C354,C359,C337,C674,C676,C679 change from NU to 5P 50V for EMI.
36. RS47,RS52,RS53,RS55 change from 2.2K to NU, RS29,RS30,RS48,RS54change from 1K to NU. (Page33)
37. Change R31: 47K => 1K, R37:4.7K => 1K, C63: 0.01uF => None
38. Change R1,R2,C1,C2,U30 to NU (Page29)
39. R356 (0.01ohm)-> 0.015ohm, R33 (18k ohm)-> 12 k ohm, R28 (33k ohm) -> 10k ohm, R24 (30k ohm)-> 39k ohm (Page43)

V0.3 MODIFY LIST

1.Change Q113~Q120 from PDTC144EU to 2SC2412KR for SMBUS issue.
2.Change LAN_DISABLE# pull-up from PWR_PMU to PWR_3VLAN, Change U30,R1,R2 from NU to install. Add L72,L73,L74,L75 common chock for EMI. (Page 29)
3.Change D35 Pin P from PWR_3VSUS to PWR_3VSTD (Page 22)
4. Add "L71" between these signals as below picture for reduce the noise on 1.5VS_TVDAC (Page 15)
5. Remove U41, U48, Mount R664. Add the Pull-up for "SPI_CE#0" with PWR_3VMAIN(RS31 Pin 4) (Page 23).
6. Change U18 from PI5V330SQE to PI5V330SQ1(Page 25)
7. Change U50 from OZ2216S to OZ2206SN.(Page 27)
8. Change C700 from 1000pF/NU to 0.01uF for TPS2231_CLKEN drop. (Page 28)
9. Add R773, R772 0 Ohm between L57, C419 & L56 & C420. Swap Q112 Pin S & Pin D(Page 32)
10. Add MS request the micrphone performance. (Page 32)
11. Change Bay con pin for move glide pad con. and stick con. to bay board. (Page 33)
12. Change RF_ON_SW from SW1 Pin3 to pin1. (page 34)
13.Please add R774 & D37, D36, change r733 from 10K to 1K to the DVI control signals. (Page 37)
14. Change R63,R64,R65 from 75 to 200 fro VESA mesurement. (Page 38)
15. Add D38,D39 for discharge. (Page 39)
16. Change U26 PWRGD & CLKEN# pull up from PWR_3VMAIN. (Page 40)
17. Change R654 from 470K to 100K, and R646 from 47K to 10K. power on/off,S4 fail issue.(Page 41)
18. Change circuit for fix PWR_BT1ROM/PWR_BT2ROM signals don't work issue. (Page 42)
19. Change GPU VID0~VID4 default from 00100 to 00010. (Page 46)
20. Add and reserve USB switch circuit (page 51)
21. Change U1002 from AAT4610AIGV to FPF2101, Add RS1001 for A6,A7,D6,D7 to GND. (Page 52)

V0.3 MODIFY LIST

22. Change R772, R773 from 0 Ohm to 47 Ohm. (Page 32)
23. Del R123, R124, R758, and mount R769. (Page 46)
24. Del U56, R320, R321, R287, C772, and mount R288, R308, R309, R310, R311, R312, R313 , and OZ711MP1 change to OZ711SP2(Page 26)
25. LAN_RST# tie to GND.(Page 21)
26. Remove R189, R193 (Page 21)

V0.4 MODIFY LIST

1. LAN_RST# pull down with 10K Ohm. (Page 21)
2. Delete Pull-up(R2) for LAN_Disable.(Page 29)
3. Delete RS1001, and A6,A7,D6,D7 tie to GND(SW with FP Page 52)
4. ALG_HP_R_DOCK & ALG_HP_L_DOCK add 22K pull down, and change R59,R62 from 0 Ohm to 27K Ohm at V04. (Page 38)
5. CN14 pin37 tie to GND. (Page 30)
6. Change the G-sensor vender from ST-micro to KIONX. Change U14 and R101(1K)/R95 (NU) (Page 33).
7. For Express Card leakage issue, please consider following. * U45 pin2 : From "PWR_3VMAIN" to "PWR_3VSTD". * U45 pin20 : From "SUSC#" to "PWR_3VSTD". * U44 pin5 : From "PWR_3VMAIN" to "PWR_3VSTD" (Page 28)
8. Add U62(NU), R796 for SC_CD#, change R298 from NU to 10K, C398 from NU to 0.01uF, C391 from NU to 0.1uF. (Page26, 28)
9. Change R691,R698 : 22K => 100K, C743,C749 : 1000pF => 220pF for the internal MIC volume small (Page 32)
10. Change C395 from NU to 470uF
11. Delete L72,L73,L74,L75 (Page 29)
12.Change C307,C311 from 10pF to 15pF. (Page 19)
13. Add L72(100ohm bead)---NU, C890 (10uF)----NU for PWR_BL noise. (Page 24)
14. Change R684 from 10K to 1K.(Page 44)
15. Change R63,R64,R65 from 200 Ohm to 150 Ohm at V04 (Page 38)
16. Change C119 from 0.1uF to 1uF at V04 (Page30)

V0.2 Daughter Board Modify LIST

1.Change R1005 from 15K Ohm to 1.5K Ohm, and Net G_USBON add R1012 (NU) to CN1003 pin 14. (FingerPrinter Board)
2.C1011 change from U1001 Pin D8 to Pin D9.

V0.3 Daughter Board Modify LIST

1.Cut CN1-11pin & SW_GND1,then add zero-ohm resister between CN1-11pin & SW_GND1.(SW board)
2.Change R1012 to NU (Finger Printer board)
~~3.Mount: R1301, R1302, U1301, Remove: R1305, R1306 (FP board)~~

V0.4 Daughter Board Modify LIST

1. Delete RS1001, and A6,A7,D6,D7 tie to GND(Page 52)

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Size: C | Document Number: Schematic Modify | Rev: 0.4
Date: Monday, April 09, 2007 | Sheet 5 of 55

8. Layout Guideline :

Crestline DDRII Layout Guidelines

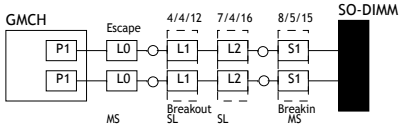
DDRII Signal Groups

Group	Signal Name
Data	M_A_DQ[63..0]/M_B_DQ[63..0] M_A_DM[7..0]/M_B_DM[7..0] M_A_DQS[7..0]/M_A_DQS#[7..0] M_B_DQS[7..0]/M_B_DQS#[7..0]
Address	M_A_A[13..0]/M_B_A[13..0] M_A_BS[2..0]/M_B_BS[2..0] M_A_RAS#/M_B_RAS# M_A_CAS#/M_B_CAS# M_A_WE#/M_B_WE#
Control	M_CS#[3..0] M_CKE[3..0] M_ODT[3..0]
Clock	M_CLK_DDR[3..0] M_CLK_DDR#[3..0]
FeedBack	SA_RCVEN#/SB_RCVEN#

Length Matching and Length Formulas

Signal Group	Minimum Length	Maximum Length
Control-to-Clock	Clock - 1.0"	Clock - 0.0"
Command-to-Clock	Clock - 1.0"	Clock + 1.0"
Strobe-to-Clock	Clock - 0.5"	Clock + 1.0"
Data-to-Strobe	Strobe - 220mils	Strobe - 180mils

CLK group : M_CLK_DDR[3..0],M_CLK_DDR#[3..0]

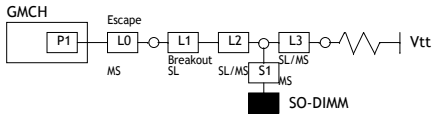


Topology	Differential Pair Point-to-Point
Reference Plane	Ground
Single Ended Trace Impedance	42 +/- 15%
Differential Mode Impedance	70 +/- 20%
Package Length Range - P1	350 mils ~ 625 mils
Min. Serpentine Spacing	25 mils
Trace Length Limit - L0 (MS)	Length Limit: Max = 50 mils (Escape)
Trace Length Limit - L1 (SL) (Breakout length segment)	Length Limit: Max = 700 mils Min. Trace Spacng (Other) : 12 mils
Trace Length Limit - L2 (SL)	Min. Trace Spacng (Other) : 16 mils Nominal Trace Width : Outer: 8.5/4/8.5 Inner: L3= 7/4/7, L5&L6=8/4/8 Min. Trace Spacng (pair) : 4mils
Stub Length S1-Stub from via to SO-DIMM	Max = 200 mils (Breakin)
MB Length Limits - L0 + L1 + L2 + S1	Min = 500 mils Max = 4000 mils
Total Length - P1 + L0 + L1 + L2 + S1	Max = 4500 mils Total Length for Channel A : X0 Total Length for Channel B : X1
Maximim Via Count	2 (Per side)
SCK to SCK# Length Matching	Match total length to within 5 mils
Clock to Clock Length Match (Total Length)	Match Channel A clocks to X0 +/- 20mils Match Channel A clocks to X1 +/- 20mils
Breakout Exceptions (Reduce geometries for GMCH break-out region)	Inner Layer : 4/12 mils to other DDR2 Outer Layer : 5/15 mils to other DDR2 Max. breakout length is 500 mils
Breakin Exceptions (Reduce geometries for SO-DIMM break-in region)	CK to CK# spacing rule waived at connector spacing of 15 mils to other DDR2 Max. breakin length is 200 mils

Feedback group :
M_A_RCVENIN#,M_A_RCVENOUT#,M_B_RCVENIN#,M_B_RCVENOUT#

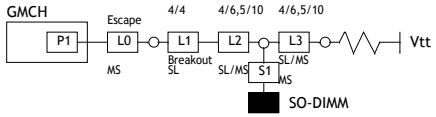
These signals are routed internally on the GMCH package and don't require any routing on the MB. As a result, can be left as NC.

Control group : M_CKE[3..0],M_CS#[3..0],M_ODT[3..0]



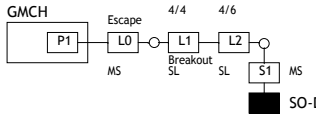
Topology	Point-to-Point with parallel termination
Reference Plane	Ground
Characteristic Trace Impedance	55 +/- 15% L2 Seg.= 45Ohm +/- 15%
Nominal Trace Width	Inner Layer : L3=5.5 mils, L5&L6= 7 mils Outer Layer : 5 mils
Minimum CTRL Trace Spacing	Inner Layer : 6 mils Outer Layer : 8 mils
Minimum Spacing to Other DDR2	Inner Layer : 12 mils Outer Layer : 15 mils
Minimum Isolation Spacing to non-DDR2	25 mils
Package Length P1	400~800 mils
Trace Length Limit - L0	Max = 250 mils (Escape)
Trace Length Limit - L1	Max = 700 mils (Breakout)
Stub Length S1-Stub from via to SO-DIMM	Max = 250 mils (Breakin)
MB Length Limits - L0 + L1 + L2 + S1 - From GMCH ball to SO-DIMM pad	Min = 500 mils Max = 4500 mils
Total Length - P1 + L0 + L1 + L2 + S1 - From GMCH die to SO-DIMM pad	Max = 5000 mils
Trace Length L3	Max = 1500 mils
Parallel Termination Resistor	56 +/- 5%
Maximim Via Count	3
CTRL to SCK/SCK# Length Matching (Total Length including package)	(CLK-1.0") </= CTRL </= (CLK-0.0")
Breakout Exceptions (Reduce geometries for GMCH break-out region)	Inner Layer : 4 mils spacing allowed Outer Layer : 5 mils spacing allowed Max. breakout length is 500 mils

Command group :
M_A_A[13..0],M_B_A[13..0],M_A_BS[2..0],M_B_BS[2..0],M_A_RAS#, M_B_RAS#,M_A_CAS#,M_B_CAS#,M_A_WE#,M_B_WE#



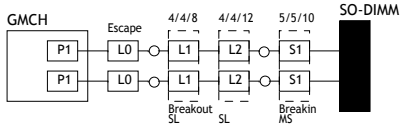
Topology	Point-to-Point with parallel termination
Reference Plane	Ground
Characteristic Trace Impedance	55 +/- 15%
Nominal Trace Width	Inner Layer : L5&L6= 4.5 mils Outer Layer : 5 mils
Minimum CMD Bus Trace Spacing	Inner Layer : 6 mils Outer Layer : 8 mils
Minimum Spacing to Other DDR2	Inner Layer : 12 mils Outer Layer : 15 mils
Minimum Isolation Spacing to non-DDR2	25 mils
Package Length P1	250~750 mils
Trace Length Limit - L0	Max = 250 mils (Escape)
Trace Length Limit - L1	Max = 700 mils (Breakout)
Stub Length S1-Stub from via to SO-DIMM	Max = 250 mils (Breakin)
MB Length Limits - L0 + L1 + L2 + S1 - From GMCH ball to SO-DIMM pad	Min = 500 mils Max = 4500 mils
Total Length - P1 + L0 + L1 + L2 + S1 - From GMCH die to SO-DIMM pad	Max = 5000 mils
Trace Length L3	Max = 1500 mils
Parallel Termination Resistor	56 +/- 5%
Maximim Via Count	3
CTRL to SCK/SCK# Length Matching (Total Length including package)	(CLK-1.0") </= CMD </= (CLK+1.0")
Breakout Exceptions (Reduce geometries for GMCH break-out region)	Inner Layer : 4 mils spacing allowed Outer Layer : 5 mils spacing allowed Max. breakout length is 500 mils

Data group : M_A_DQ[63..0],M_B_DQ[63..0],M_A_DM[7..0],M_B_DM[7..0]



Topology	Point-to-Point
Reference Plane	Ground
Characteristic Trace Impedance	55 +/- 15%
Nominal Trace Width	Inner Layer : L5&L6= 4.5 mils Outer Layer : 5 mils
Minimum DQ Bus Trace Spacing	Inner Layer : 6 mils Outer Layer : 8 mils
Minimum Serpentine Spacing	Same as DQ-to-DQ routing
Minimum Spacing to Other DDR2	Inner Layer : 12 mils Outer Layer : 15 mils
Minimum Isolation Spacing to non-DDR2	25 mils
Package Length P1	750 mils +/- 350 mils
Trace Length Limit - L0	Max = 250 mils (Escape)
Trace Length Limit - L1	Max = 700 mils (Breakout)
Stub Length S1-Stub from via to SO-DIMM	Max = 250 mils (Breakin)
MB Length Limits - L0 + L1 + L2 + S1 - From GMCH ball to SO-DIMM pad	Min = 500 mils Max = 4500 mils
Total Length - P1 + L0 + L1 + L2 + S1 - From GMCH die to SO-DIMM pad	Max = 4800 mils
Trace Length L3	Max = 1500 mils
Maximim Via Count	2
DQ/DM to DQS Length Matching (Total Length including package)	Match DQ/DM to [SDQS - 200mils] +/- 20mils, per byte lane
Breakout Exceptions (Reduce geometries for GMCH break-out region)	Inner Layer : 4 mils spacing allowed Outer Layer : 5 mils spacing allowed Max. breakout length is 500 mils

Data Strobe group : M_A_DQS[7..0],M_A_DQS[7..0]#,M_B_DQS[7..0],M_B_DQS[7..0]#



Topology	Differential Pair Point-to-Point
Reference Plane	Ground
Single Ended Trace Impedance	55 +/- 15%
Differential Mode Impedance	85 +/- 20%
Nominal Trace Width	Inner Layer :L3:5/5/5, L5&L6= 5/4/5 mils Outer Layer : 6/5/6 mils
Nominal DQS to DQS# Spacing (edge to edge)	Inner Layer : 4 mils Outer Layer : 5 mils
Minimum DQS to DQ Spacing	Inner Layer : 12 mils Outer Layer : 15 mils
Minimum Serpentine Spacing	Inner Layer : 8 mils Outer Layer : 10 mils
Minimum Spacing to Other DDR2	Inner Layer : 12 mils Outer Layer : 15 mils
Minimum Isolation Spacing to non-DDR2	25 mils
Package Length Range - P1	425~925 mils
Trace Length Limit - L0	Max = 250 mils (Escape)
Trace Length Limit - L1	Max = 500 mils (Breakout)
Stub Length S1-Stub from via to SO-DIMM	Max = 250 mils (Breakin)
MB Length Limits - L0 + L1 + L2 + S1 - From GMCH ball to SO-DIMM pad	Min = 500 mils Max = 4500 mils
Total Length - P1 + L0 + L1 + L2 + S1 - From GMCH die to SO-DIMM pad	Max = 5000 mils
Maximim Via Count	2 (Per side)
DQS to DQS# Length Matching	Match total length to within 5 mils
Clock to Clock Length Match (Total Length include package)	(CLK-0.5") </= DQS </= (CLK+1.0")
Breakout Exceptions (Reduce geometries for GMCH break-out region)	Inner Layer : 8 mils to other DDR2 Outer Layer : 10 mils to other DDR2 Max. breakout length is 500 mils
Breakin Exceptions (Reduce geometries for SO-DIMM break-in region)	DQS to DQS# spacing rule waived at connector spacing of 10 mils to other DDR2 Max. breakin length is 200 mils

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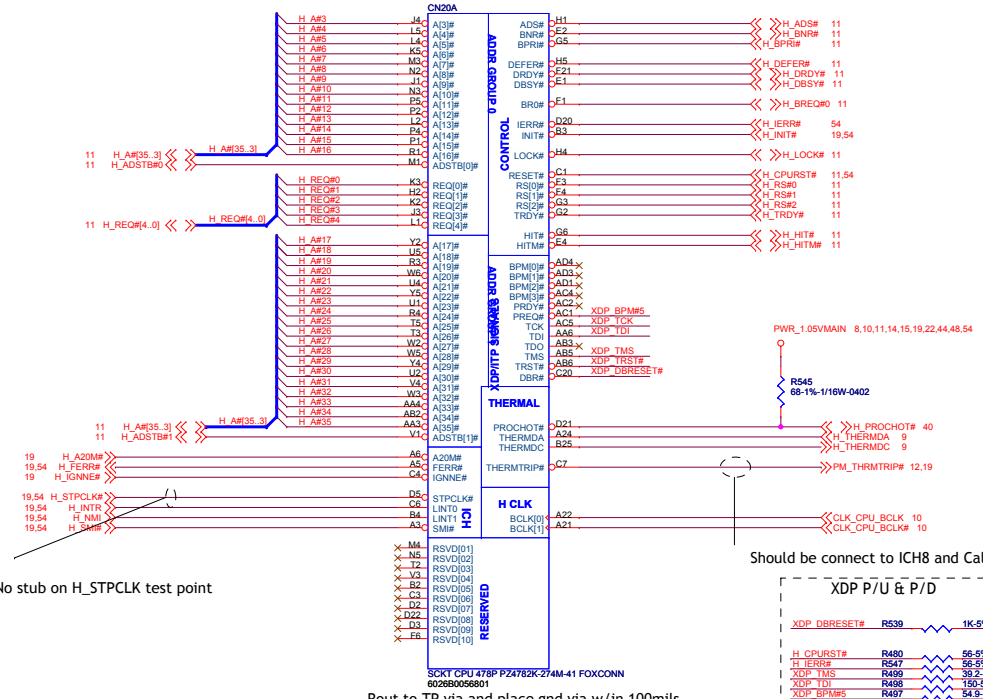
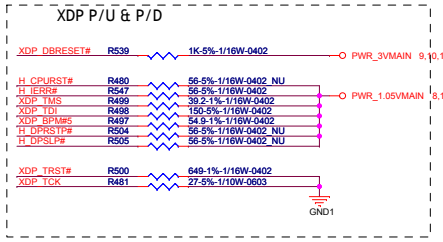
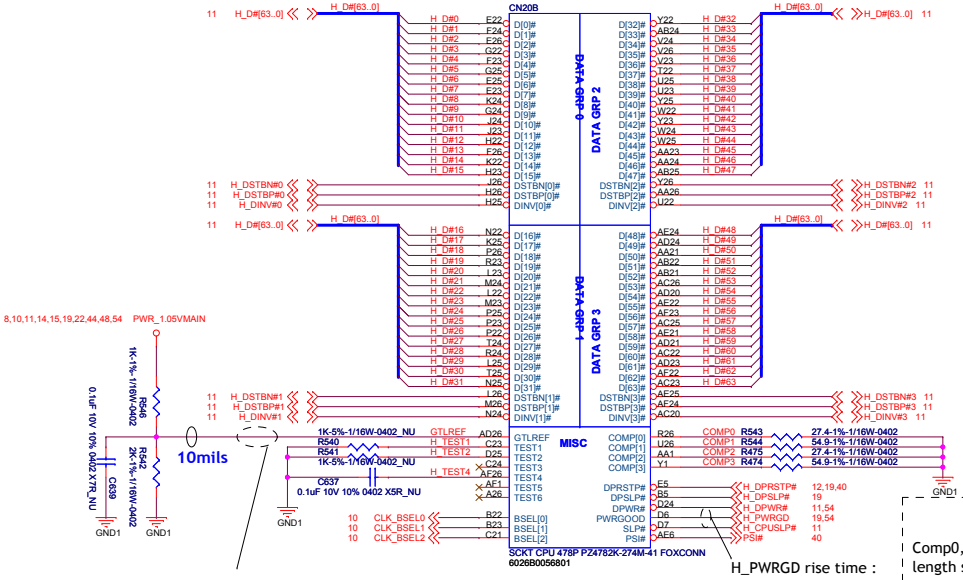
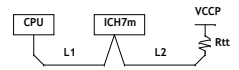


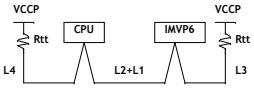




Topology : FERR#

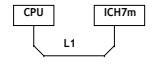


L1	L2	Rtt	Transmission Line
0.5" - 12"	0" - 3.0"	56 +/-5%	Micro-strip
0.5" - 12"	0" - 3.0"	56 +/-5%	Strip-line



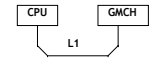
L1	L2	L3	L4	Rtt	Transmission Line
0.5" - 6.5"	0.5" - 6.5"	0" - 3.0"	0" - 3.0"	70 +/-5%	Micro-strip
0.5" - 6.5"	0.5" - 6.5"	0" - 3.0"	0" - 3.0"	70 +/-5%	Strip-line

Topology : PWRGOOD



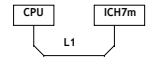
L1	Transmission Line
0.5" - 12"	Micro-strip
0.5" - 12"	Strip-line

Topology : CPUSLP#



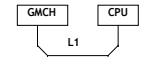
L1	Transmission Line
0.5" - 12"	Micro-strip
0.5" - 12"	Strip-line

Topology : INTR , NMI , A20M# , DPSLP# , IGNNE# , INIT# , SMI# , STPCLK#



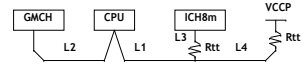
L1	Transmission Line
0.5" - 12"	Micro-strip
0.5" - 12"	Strip-line

Topology : RESET#



L1	Transmission Line
1" - 6"	Micro-strip
1" - 6"	Strip-line

Topology : THERMTRIP#



L1	L2	L1+L3	L3	L4	Rss	Rtt	Transmission Line
1" - 12"	1" - 6"	1" - 12"	0" - 3.0"	0" - 3.0"	24 +/-5%	56 +/-5%	Micro-strip
1" - 12"	1" - 6"	1" - 12"	0" - 3.0"	0" - 3.0"	24 +/-5%	56 +/-5%	Strip-line

FSB Common Clock Signal Layout Guide :

H_ADS# , H_BNR# , H_BPRI# , H_BRO# , H_DBSY# , H_DEFER# , H_DPWR# , H_DRDY# , H_HIT# , H_HITM# , H_LOCK# ,H_RS#[2..0] , H_TRDY# , H_CPURST#.

Transmission Line Type	Total Trace Length	Normal Impedance	Spacing (mils)
Strip-line(Int. Layer)	1.0 ~ 6.5 inch	55+/-15%	W=4 & S=8 mils
Micro-strip(Ext. Layer)			W=5 & S=10 mils

FSB Source Synchronous Data Length Variation and Strobe Matching Requirements :

Signals Name	Signals Matching	Strobes associated with the group	Strobe-to-Strobe Complement Matching
H_D#[15..0] , H_DINV#0	+/- 100 mils	H_DSTBP#0, H_DSTBN#0	+/- 25 mils
H_D#[31..16] , H_DINV#1	+/- 100 mils	H_DSTBP#1, H_DSTBN#1	+/- 25 mils
H_D#[47..32] , H_DINV#2	+/- 100 mils	H_DSTBP#2, H_DSTBN#2	+/- 25 mils
H_D#[63..48] , H_DINV#3	+/- 100 mils	H_DSTBP#3, H_DSTBN#3	+/- 25 mils

FSB Source Synchronous Data Signal Routing Topology#1 :

Signal Name	Transmission Line Type	Total Trace Length	Normal Impedance	Width & Spacing (mils)	
				Data-to-Data,Strobe-to-strobe	Strobe-to-Data
H_DINV#[3..0]	Strip-line	0.5 ~ 5.5 inch	55+/-15%	W=4 & S=8 mils	N/A
H_DATA#[63..0]	Strip-line	0.5 ~ 5.5 inch	55+/-15%	W=4 & S=8 mils	N/A
H_DSTBN#[3..0]	Strip-line	0.5 ~ 5.5 inch	55+/-15%	W=4 & S=4 mils	W=4 & S=12 mils
H_DSTBP#[3..0]	Strip-line	0.5 ~ 5.5 inch	55+/-15%	W=4 & S=4 mils	W=4 & S=12 mils

FSB Source Synchronous Address Length Variation and Strobe Matching Requirements :

Signals Name	Signals Matching	Strobes associated with the group	Strobe to Assoc. Address Signal Matching
H_A#[16..3] , H_REQ#[4..0]	+/- 200 mils	H_ADSTB#0	+/- 200 mils
H_A#[35..17]	+/- 200 mils	H_ADSTB#1	+/- 200 mils

*** No length matching requirements exist between H_ADSTB#0 and H_ADSTB#1

FSB Source Synchronous Address Signal Routing :

Signal Name	Transmission Line Type	Total Trace Length	Normal Impedance	Width & Spacing (mils)
H_A#[35..3]	Strip-line	0.5 ~ 6.5 inch	55+/-15%	W=4 & S=8 mils
H_REQ#[4..0]	Strip-line	0.5 ~ 6.5 inch	55+/-15%	W=4 & S=8 mils
H_ADSTB#[1..0]	Strip-line	0.5 ~ 6.5 inch	55+/-15%	W=4 & S=12 mils

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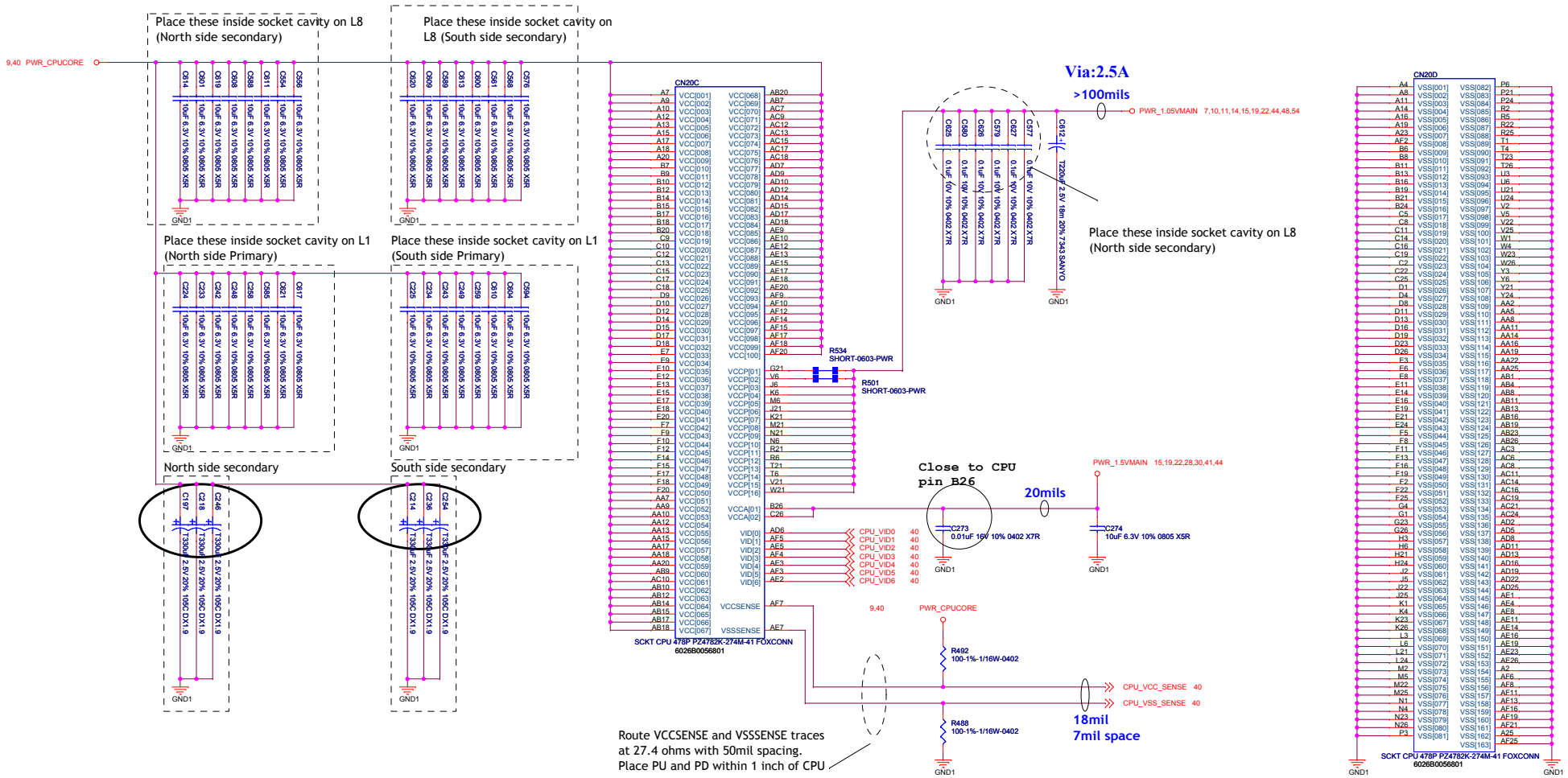

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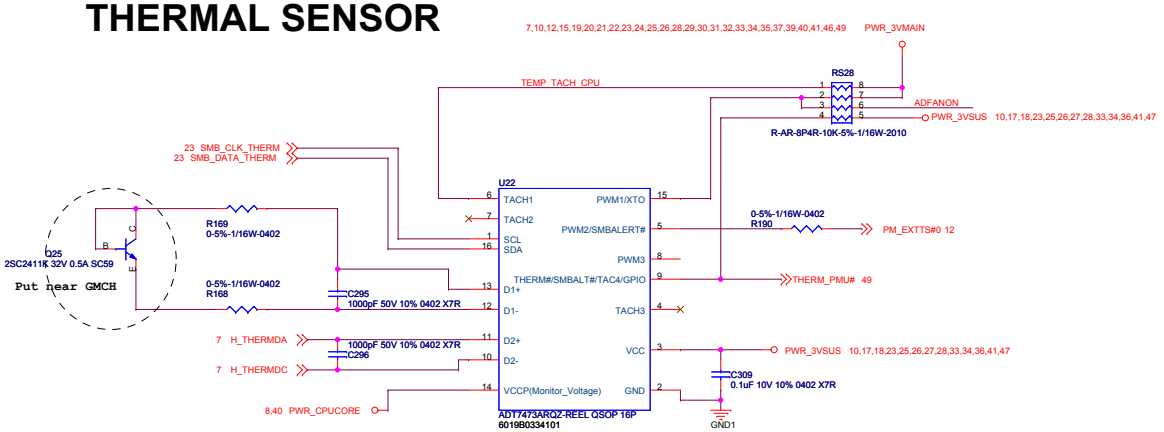
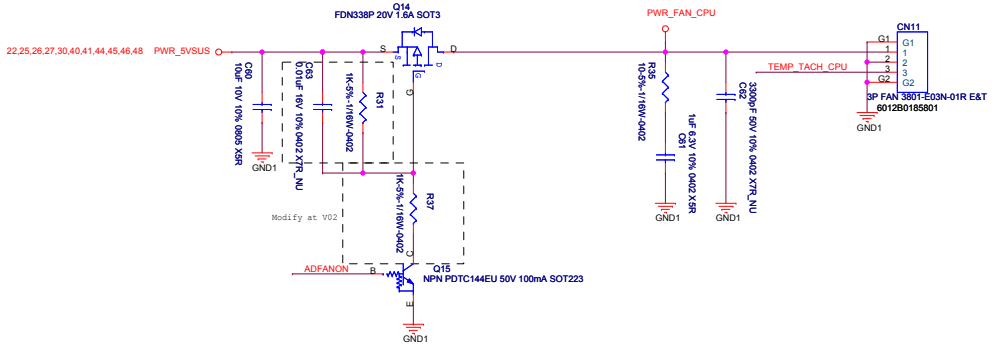
THERMAL SENSOR





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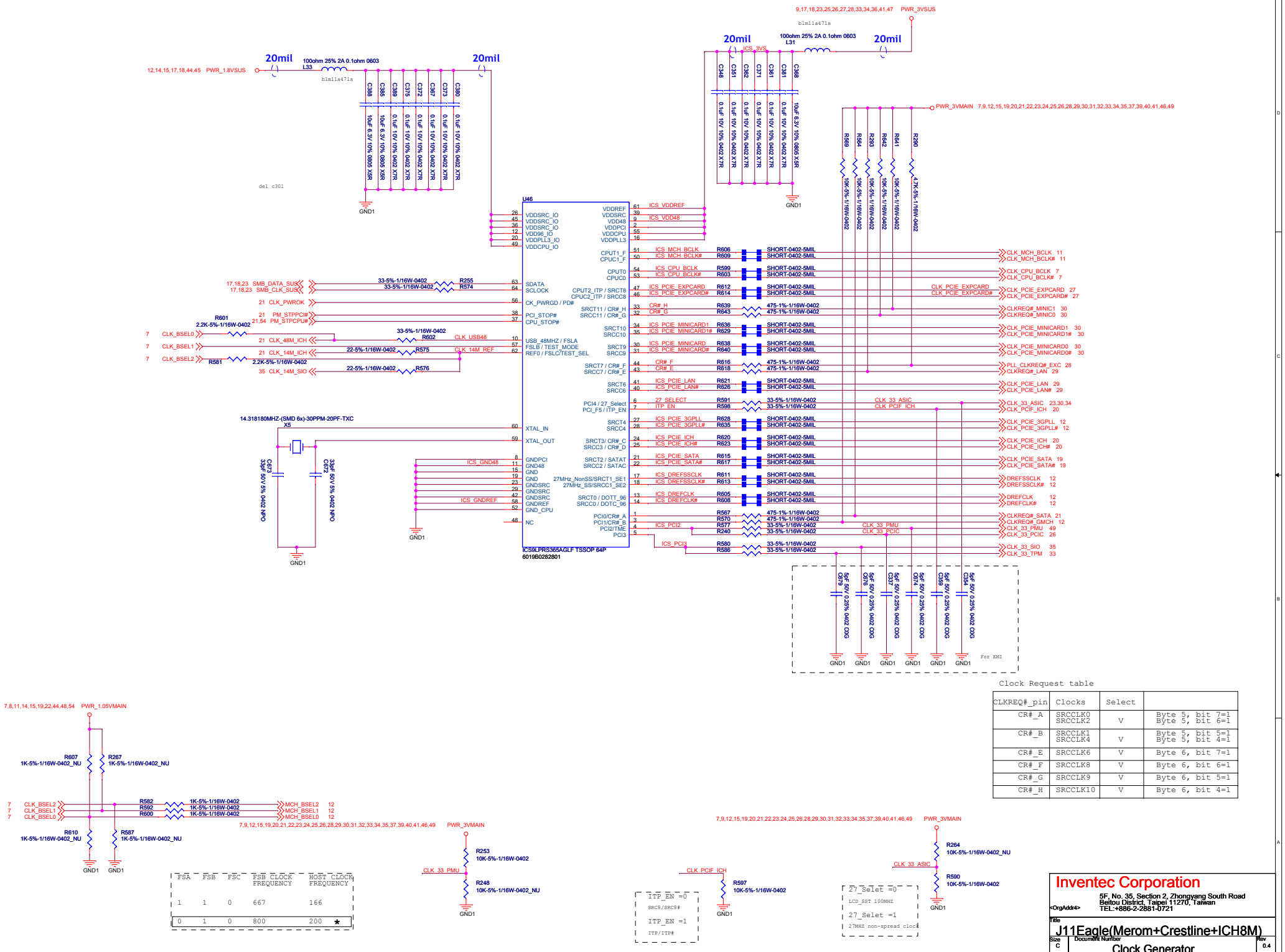
Title	J11Eagle(Merom+Crestline+ICH8M)	
Size: C	Document Number: CPU Thermal	Rev: 0.4
Date: Monday, April 09, 2007	Sheet 9 of 55	


U46
ICS9LPRS365AGLF TSSOP 64P
6019B0282801
14.318180MHZ-(SMD 6x)-30PPM-20PF-TXC
X5
Clock Request table
CLKREQ#_pin | Clocks | Select
CR#_A | SRCCLK0 SRCCLK2 | V | Byte 5, bit 7=1 Byte 5, bit 6=1
CR#_B | SRCCLK1 SRCCLK4 | V | Byte 5, bit 5=1 Byte 5, bit 4=1
CR#_E | SRCCLK6 | V | Byte 6, bit 7=1
CR#_F | SRCCLK8 | V | Byte 6, bit 6=1
CR#_G | SRCCLK9 | V | Byte 6, bit 5=1
CR#_H | SRCCLK10 | V | Byte 6, bit 4=1
FSA FSB FSC FSB CLOCK FREQUENCY HOST CLOCK FREQUENCY
1 1 0 667 166
0 1 0 800 200 ★
ITP_EN =0
SRC8/SRC8#
ITP_EN =1
ITP/ITP#
27_Selet =0
LCD_SST 100MHZ
27_Selet =1
27MHZ non-spread clock
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Size C
Document Number
Clock Generator
Rev 0.4
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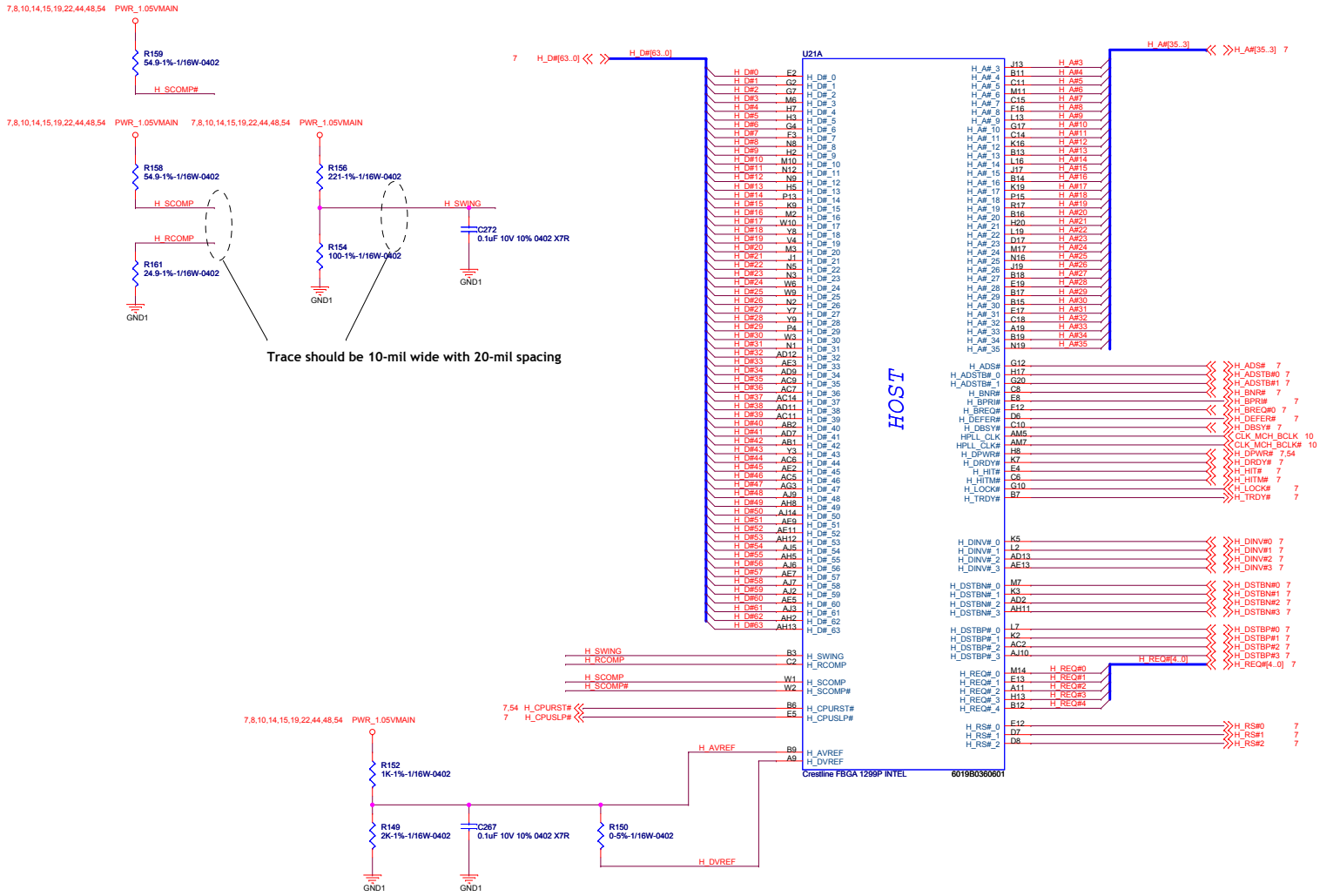
Sheet 10 of 55



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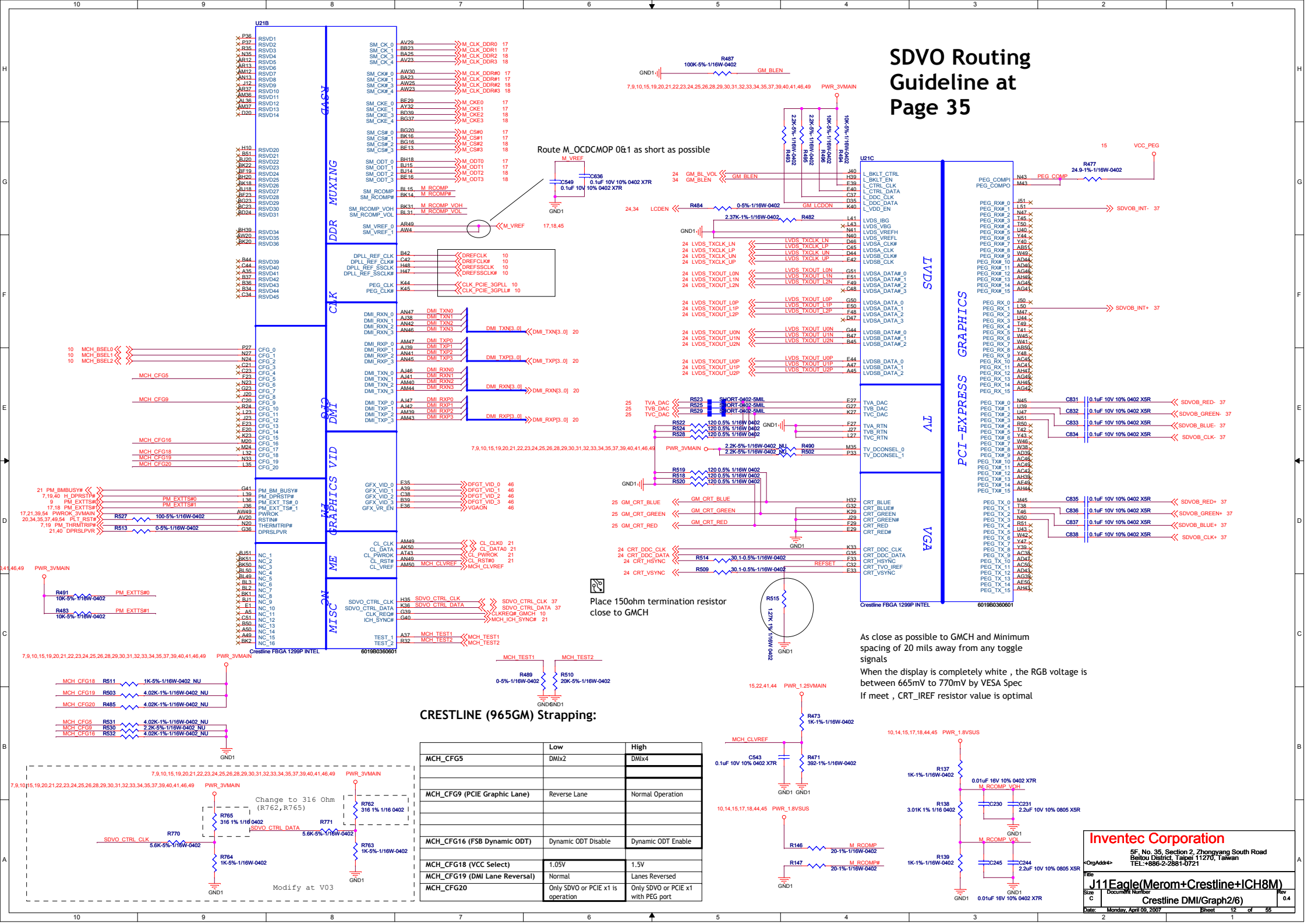
SDVO Routing Guideline at Page 35



CRESTLINE (965GM) Strapping:

	Low	High
MCH_CFG5	DMIx2	DMIx4
MCH_CFG9 (PCIE Graphic Lane)	Reverse Lane	Normal Operation
MCH_CFG16 (FSB Dynamic ODT)	Dynamic ODT Disable	Dynamic ODT Enable
MCH_CFG18 (VCC Select)	1.05V	1.5V
MCH_CFG19 (DMI Lane Reversal)	Normal	Lanes Reversed
MCH_CFG20	Only SDVO or PCIE x1 is operation	Only SDVO or PCIE x1 with PEG port

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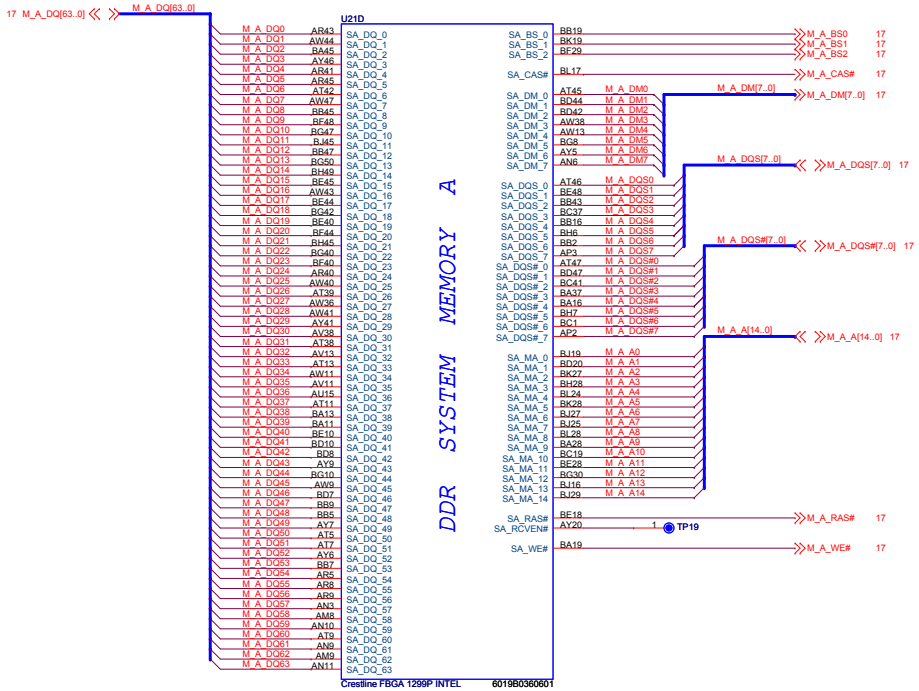

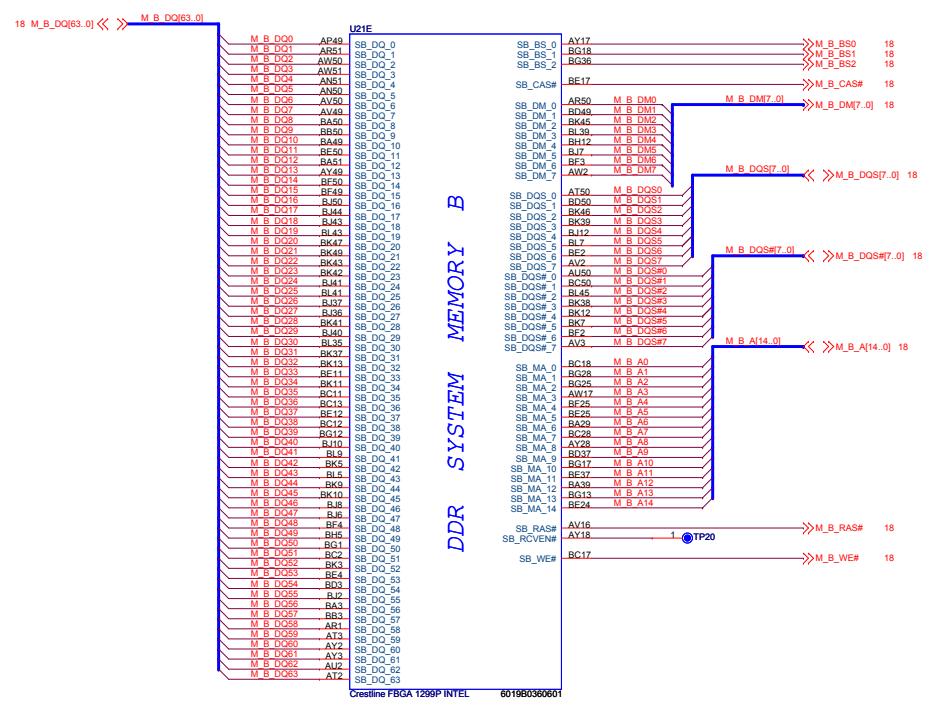

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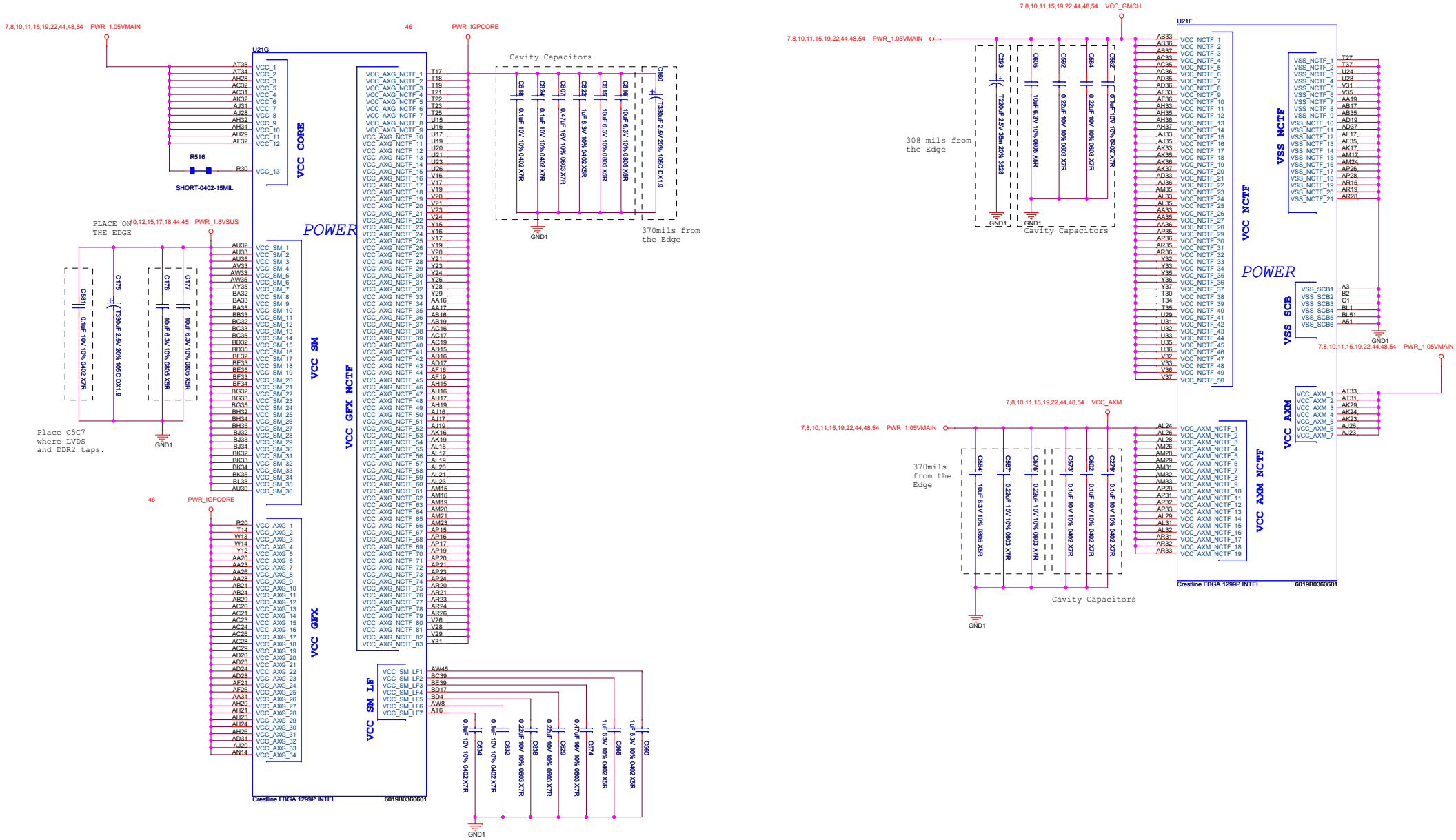

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Size: C | Document Number: Crestline Power(4/6) | Rev: 0.4

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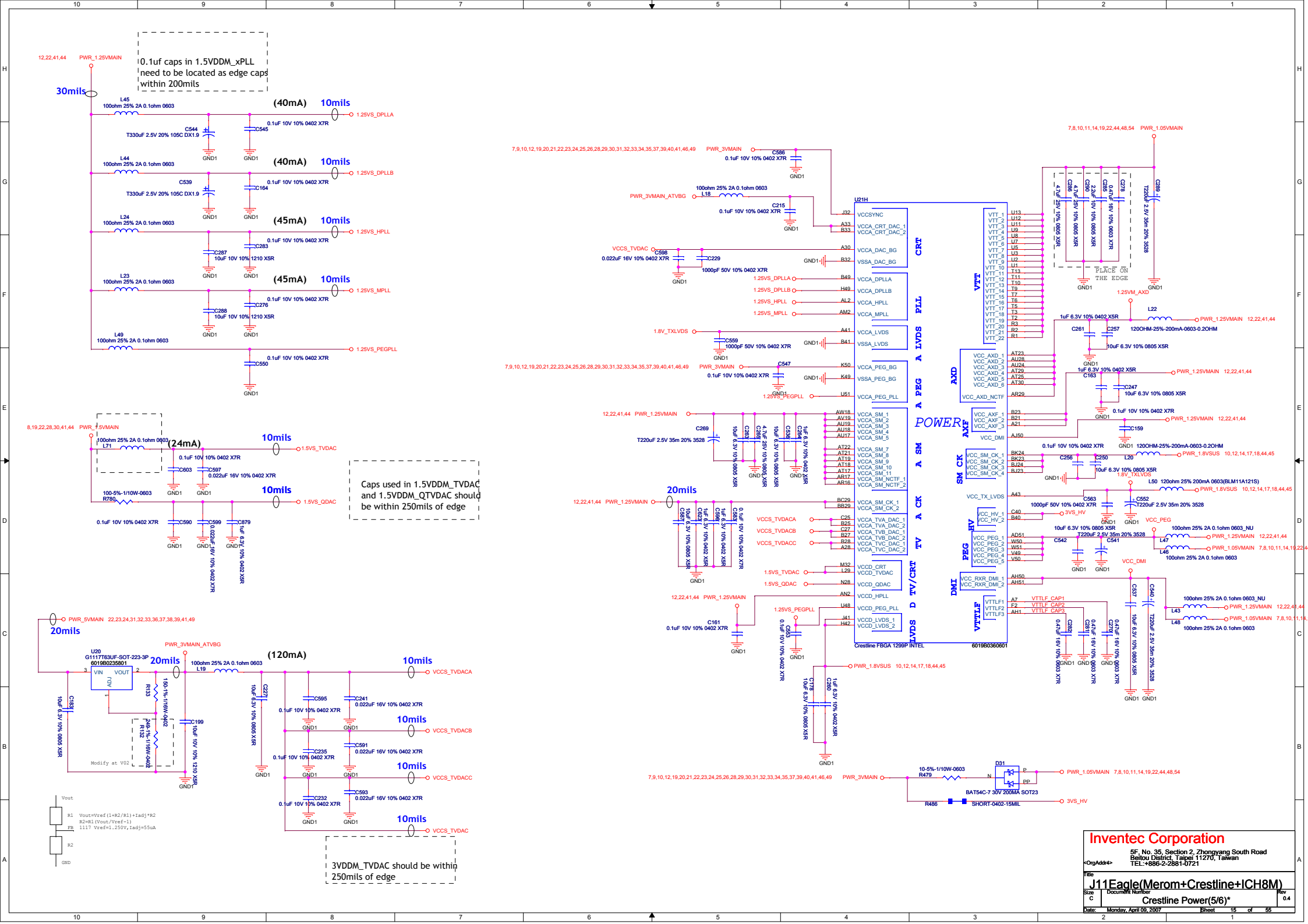

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Size: C | Document Number: Crestline Power(5/6)* | Rev: 0.4

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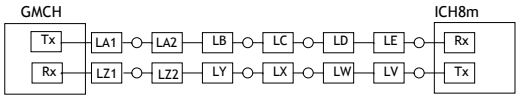
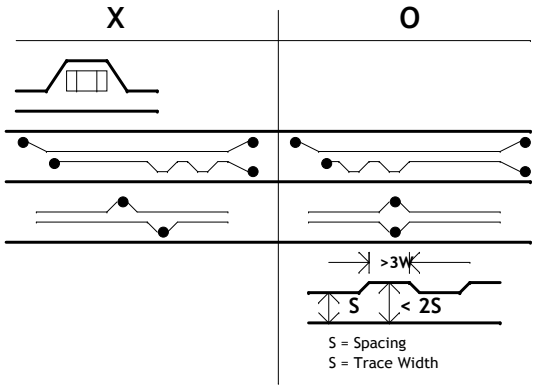
DMI Routing Guideline



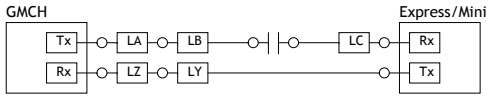
Breakout/in LA/LZ	Main Route LB/LY		Breakout/in LE/LV
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip
Microstrip	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Stripline
Stripline	Same Routing layer as LA/LZ	Same Routing layer as LE/LV	Microstrip

Parameter	Main Route Guideline	Breakout Guideline
Uncoupled Single End Impedance	55 +/- 15%	55 +/- 15%
Nominal Trace Width	Inner Layer : 4 mils Outer Layer : 5 mils	
Nominal Didderential Pair-Pitch	Inner Layer : 7 mils Outer Layer : 7 mils	Inner Layer : 4 mils Outer Layer : 5 mils
Pair-to-Pair Pitch	Inner Layer : 37 mils Outer Layer : 37 mils	Inner Layer : 27 mils Outer Layer : 27 mils
Bus-to-Bus Pitch	Inner Layer : 22 mils Outer Layer : 20 mils	Inner Layer : 15 mils Outer Layer : 12 mils
Reference Plane	Ground	Ground
Splits/Voids	No routing over plane splits No routing over voids	
Trace Length-LA (GMCH Breakout)	Max = 250 mils	
Trace Length-LB (GMCH Breakout to Via2)	Max = 3600 mils	
Trace Length-LC (Via2 to Via3)	Max = 5900 mils	
Trace Length-LD (Via3 to ICH7m Breakout)	Max = 3600 mils	
Trace Length-LE (ICH7m Breakout)	Max = 400 mils	
Trace Length-L1 (LA+LB+LC+LD+LE)	Max = 8000 mils	
Trace Length-LV (ICH7m Breakout)	Max = 400 mils	
Trace Length-LW (ICH7m Breakout to Via2)	Max = 3600 mils	
Trace Length-LX (Via2 to Via3)	Max = 5900 mils	
Trace Length-LY (Via3 to GMCH Breakout)	Max = 3600 mils	
Trace Length-LZ (GMCH Breakout)	Max = 400 mils	
Trace Length-L2 (LV+LW+LX+LY+LZ)	Max = 8000 mils	

*** When routing near the edge of their reference plane , trace should maintain at least 40 mils space to the edge of the plane
*** Match the trace lengths of the complementary signals within each differential pair to +/- 5 mils



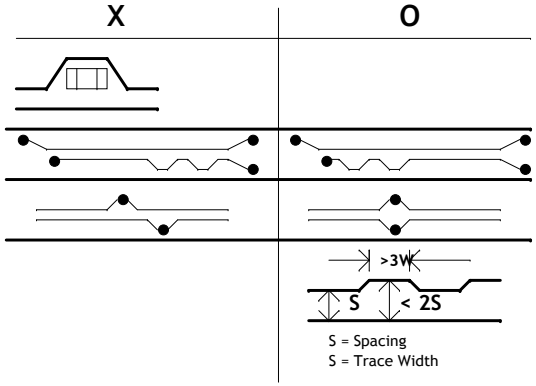
PCIE Routing Guideline



Breakout/in LA/LZ	Main Route LB/LC/LY	Main Route LD/LW	Breakout/in LE/LV
Stripline	Microstrip	Same Routing layer as LE/LV	Microstrip

Parameter	Main Route Guideline	Breakout Guideline
Uncoupled Single End Impedance	55 +/- 15%	55 +/- 15%
Nominal Trace Width	Inner Layer : 4 mils Outer Layer : 5 mils	
Nominal Differential Trace Space	Inner Layer : 7 mils Outer Layer : 7 mils	Inner Layer : 4 mils Outer Layer : 5 mils
Pair-to-Pair Pitch	Inner Layer : 37 mils Outer Layer : 37 mils	Inner Layer : 27 mils Outer Layer : 27 mils
Bus-to-Bus Pitch	Inner Layer : 20 mils Outer Layer : 20 mils	Inner Layer : 15 mils Outer Layer : 12 mils
Reference Plane	Ground	Ground
Splits/Voids	No routing over plane splits No routing over voids	
Trace Length-LA (ICH7m Breakout)	Max = 400 mils	
Trace Length-LB (ICH7m Breakout to AC cap)	Max = 10750 mils	
Trace Length-LC (AC cap to PCIe CN)	Max = 10750 mils	
Trace Length-L1 (LA+LB+LC)	Max = 12000 mils	
Trace Length-LY (PCIe CN to ICH7m Breakout)	Max = 11950 mils	
Trace Length-LZ (ICH7m Breakout)	Max = 400 mils	
Trace Length-L2 (LY+LZ)	Max = 12000 mils	

*** When routing near the edge of their reference plane , trace should maintain at least 40 mils space to the edge of the plane
*** Match the trace lengths of the complementary signals within each differential pair to +/- 5 mils



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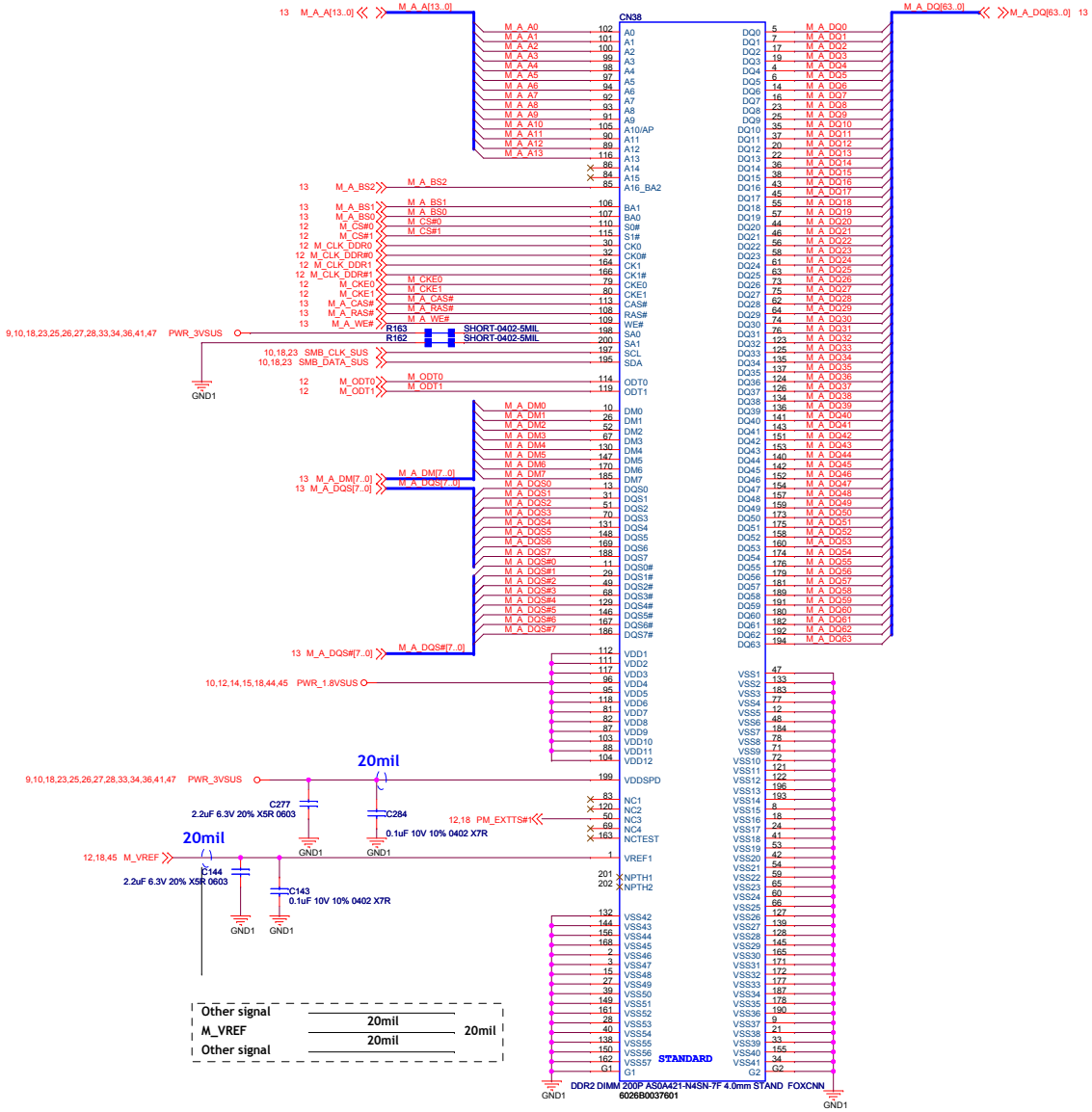
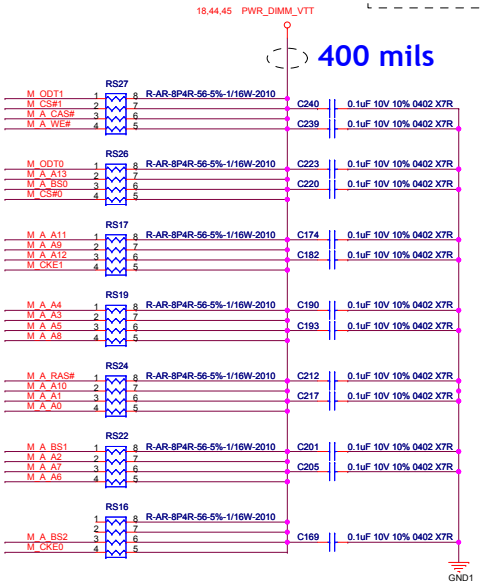
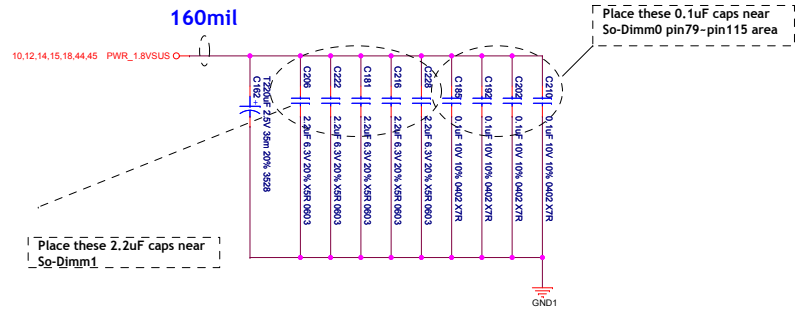
Title: J11Eagle(Merom+Crestline+ICH8M)
Size: C | Document Number: Crestline Ground(6/6) | Rev: 0.4
Date: Monday, April 09, 2007 | Sheet 16 of 55

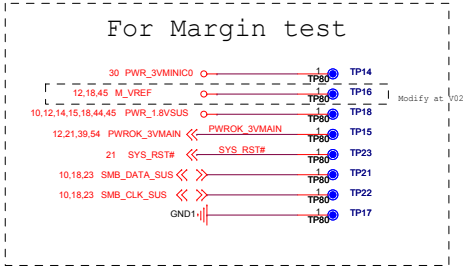
SO-DIMM0



Place one cap close to every 2 pullup resistors terminated to 0.9VDDT_DDRII







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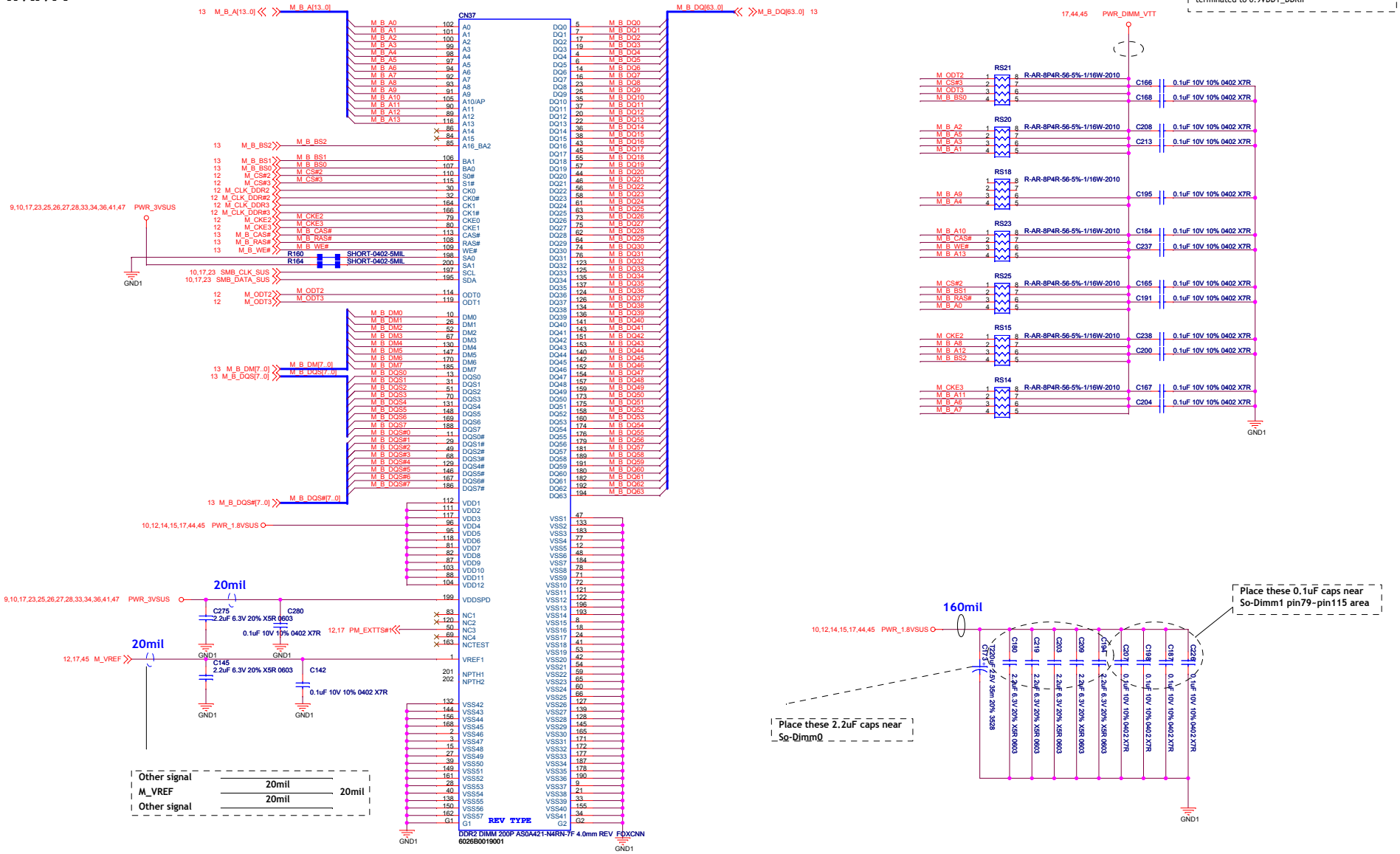
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: DDR2 SDRAM SO-DIMM0 | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 17 of 55

SO-DIMM1



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Title: J11Eagle(Merom+Crestline+ICH8M)

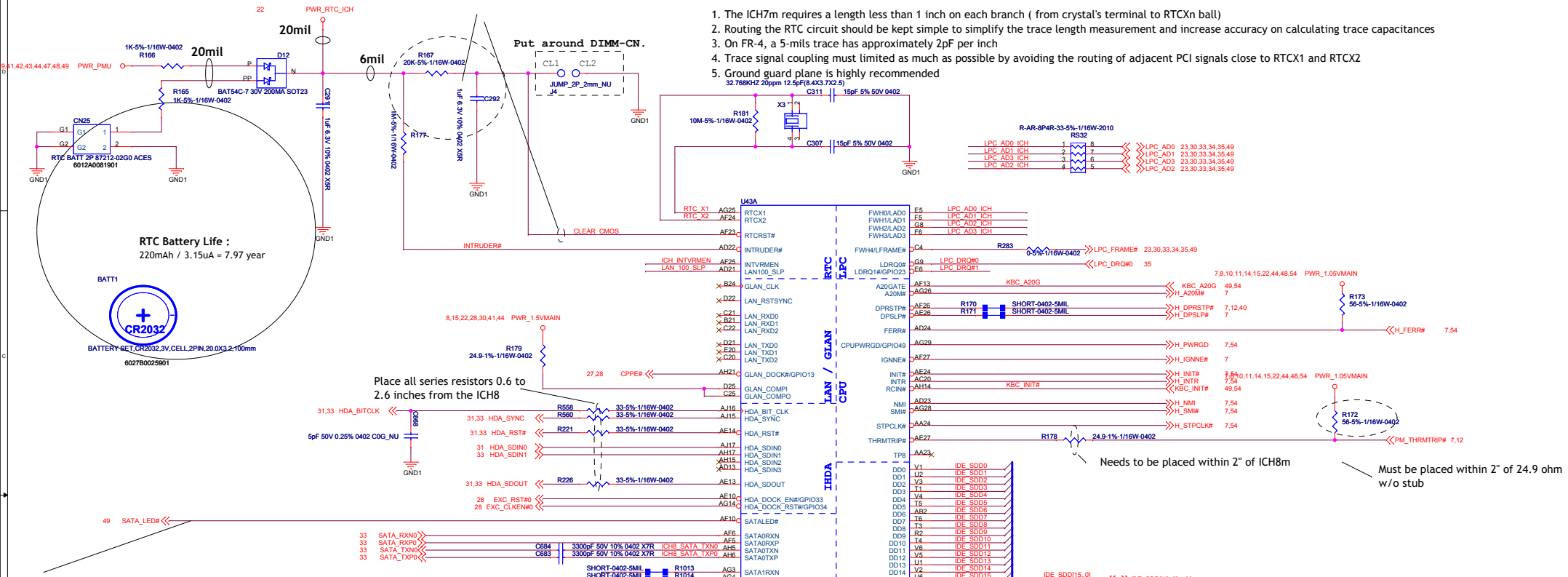
Size: C | Document Number: DDR2 SDRAM SO-DIMM1 | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 18 of 55

RTC Circuit

1. RC delay time should be in the range of 18~25ms
2. It is recommended that this larger capacitor and small resistor value in order to reduce the likelihood of glitching of RTCRST#

1. The ICH7m requires a length less than 1 inch on each branch (from crystal's terminal to RTCXn ball)
2. Routing the RTC circuit should be kept simple to simplify the trace length measurement and increase accuracy on calculating trace capacitances
3. On FR-4, a 5-mils trace has approximately 2pF per inch
4. Trace signal coupling must limited as much as possible by avoiding the routing of adjacent PCI signals close to RTCX1 and RTCX2
5. Ground guard plane is highly recommended



ICH8m internal VR enable strap

	Enable	Disable
INTVRMEN	1(Default)	0

ACZ_SDATAOUT strap functionality base on RSVD9 strap
XOR chain entrance (RSVD9 pulled low)
PCIE port config bit 1(RSVD9 not pulled low)

ICH8-M LAN100_SLP Strap (Internal VR for VccLAN1_05 and VccCL1_05)	
LAN100_SLP	Low = Internal VR Disabled High = Internal VR Enabled (Default)

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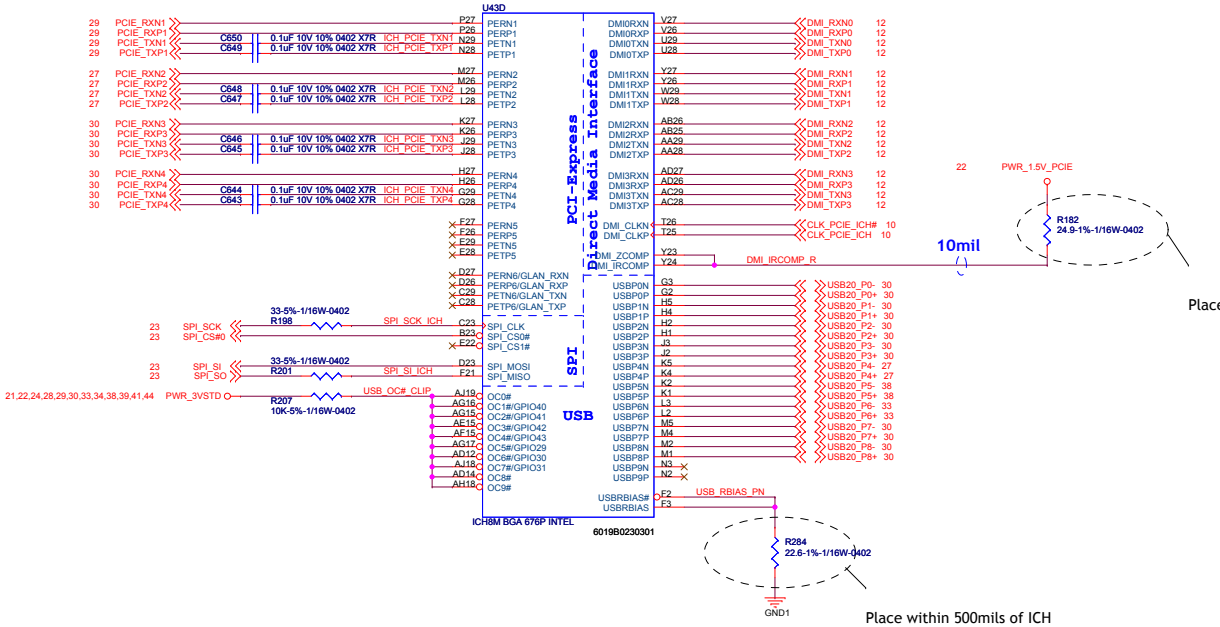
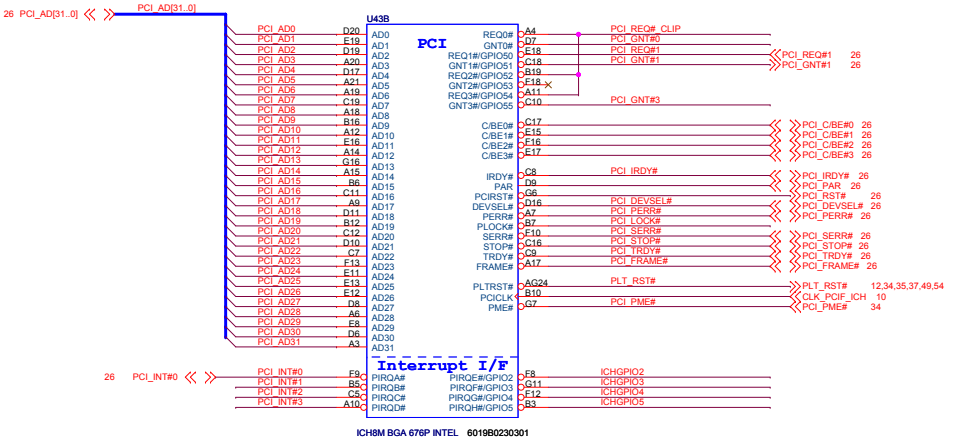
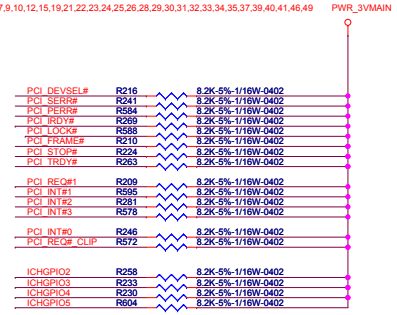
Title: J11Eagle(Merom+Crestline+ICH8M)
Size: C | Document Number: ICH8M CPU/IDE/SATA(1/4) | Rev: 0.4
Date: Monday, April 09, 2007 | Sheet 19 of 55

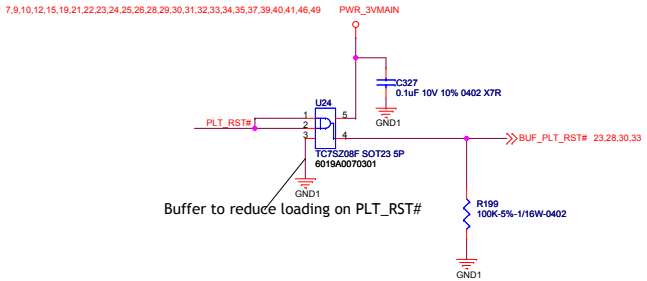
PCIE AC coupling caps need to be within 250mils of the driver

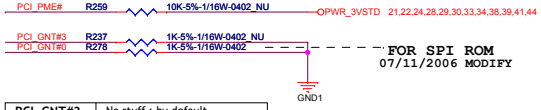




PCI Pull up







PCI_GNT#3	No stuff : by default Stuff : For A16 swap override

PCI_GNT#0	SPI_CS1#	
1	1	LPC
1	0	PCI
0	1	SPI

Check BIOS type

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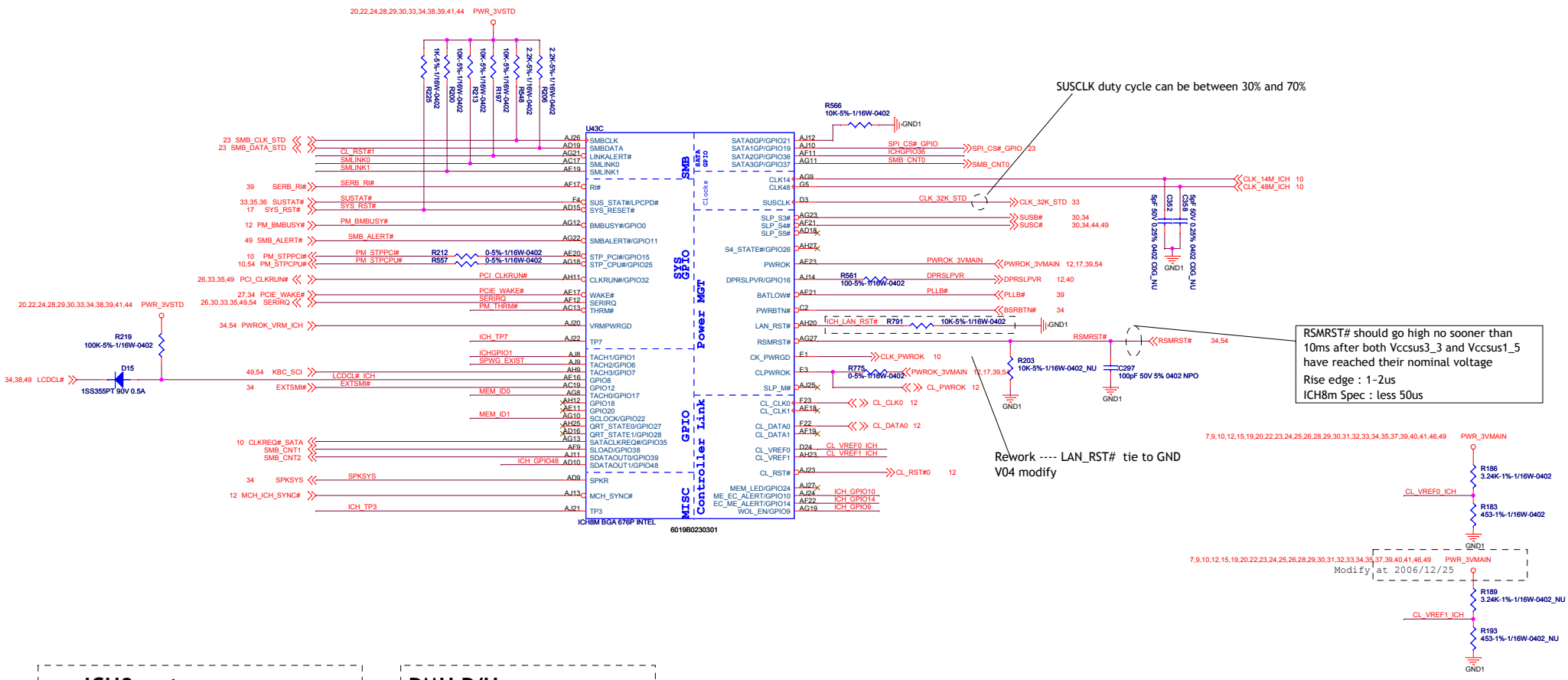
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: ICH8M PCI/PCIE/DMI/USB(2/4) | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 20 of 55



ICH8m strap

ACZ_SPKR	No stuff : by default Stuff : For NO reboot

SPKSYS R249 1K-5%-1/16W-0402_NU

ICH_TP3 R555 1K-5%-1/16W-0402_NU

Stuff for XOR chain testing

GND1

PMU P/U

EXTSMI#	R196	10K-5%-1/16W-0402
PLLB#	R91	8.2K-5%-1/16W-0402
PCIE_WAKE#	R217	1K-5%-1/16W-0402
SMB_ALERT#	R194	10K-5%-1/16W-0402
SERB_RI#	R208	10K-5%-1/16W-0402
PM_THRM#	R234	8.2K-5%-1/16W-0402
PCI_CLKRUN#	R568	8.2K-5%-1/16W-0402
ICHGPIO1	R589	10K-5%-1/16W-0402
PM_STPPCI#	R211	10K-5%-1/16W-0402_NU
PM_STPCPU#	R556	10K-5%-1/16W-0402_NU
SERIRQ	R245	10K-5%-1/16W-0402
SPWG_EXIST	R579	10K-5%-1/16W-0402
MEM_ID0	R596	10K-5%-1/16W-0402
MEM_ID1	R573	10K-5%-1/16W-0402
ICH_GPIO48	R257	10K-5%-1/16W-0402
ICH_TP7	R551	1K-5%-1/16W-0402_NU
ICHGPIO36	R242	10K-5%-1/16W-0402
DPRSLPVR	R562	100K-5%-1/16W-0402
ICH_GPIO10	R550	10K-5%-1/16W-0402
ICH_GPIO14	R188	10K-5%-1/16W-0402
ICH_GPIO9	R204	100K-5%-1/16W-0402
PWROK_3VMAIN	R72	10K-5%-1/16W-0402
PWROK_VRM_ICH	R78	100K-5%-1/16W-0402
SMB_CNT0	R755	10K-5%-1/16W-0402
SMB_CNT1	R756	10K-5%-1/16W-0402
SMB_CNT2	R757	10K-5%-1/16W-0402

GND1

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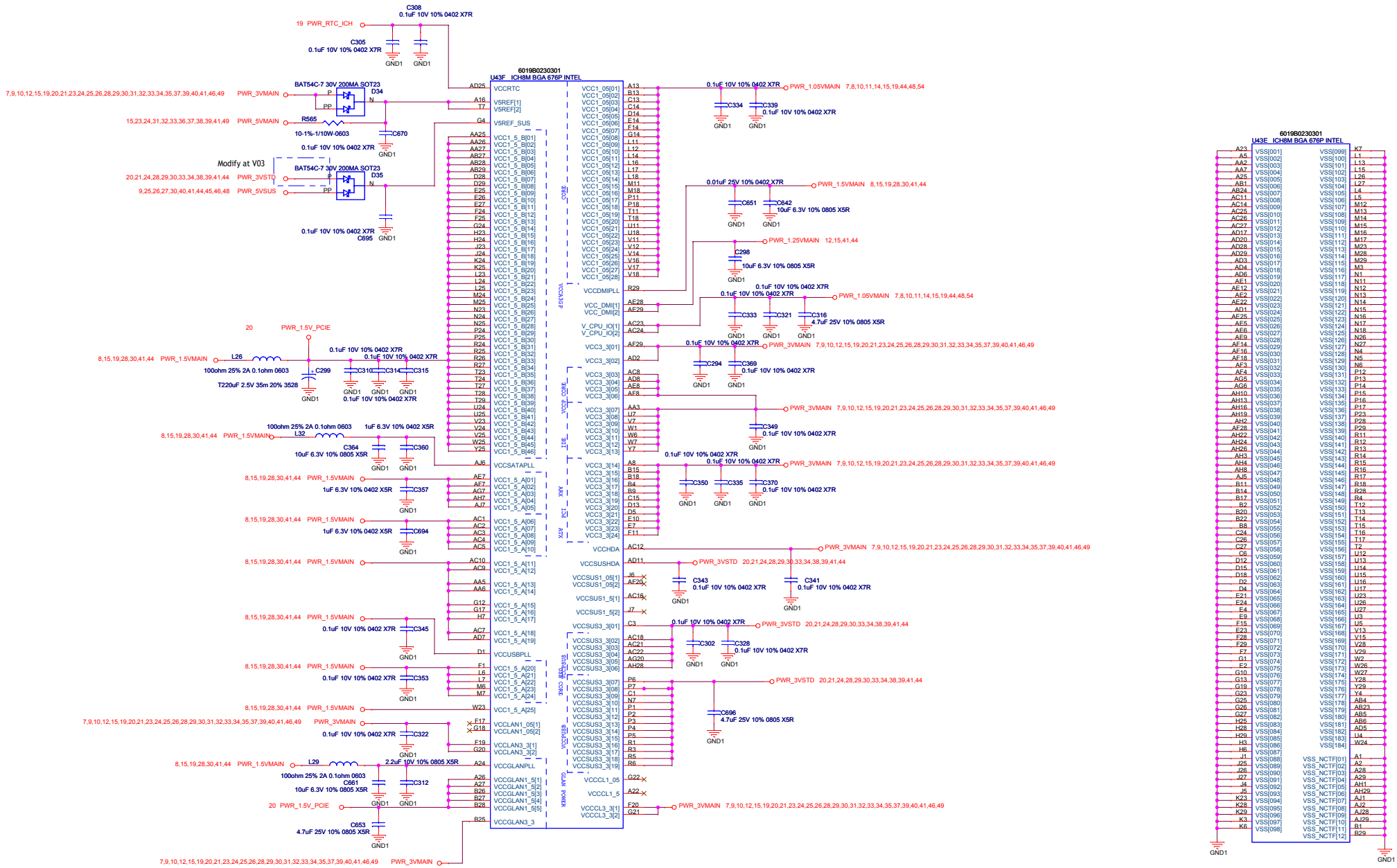
Title	J11Eagle(Merom+Crestline+ICH8M)
Size C	Document Number: ICH8M GPIO(3/4) Rev 0.4
Date: Monday, April 09, 2007	Sheet 21 of 55



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<OrgAddr4>

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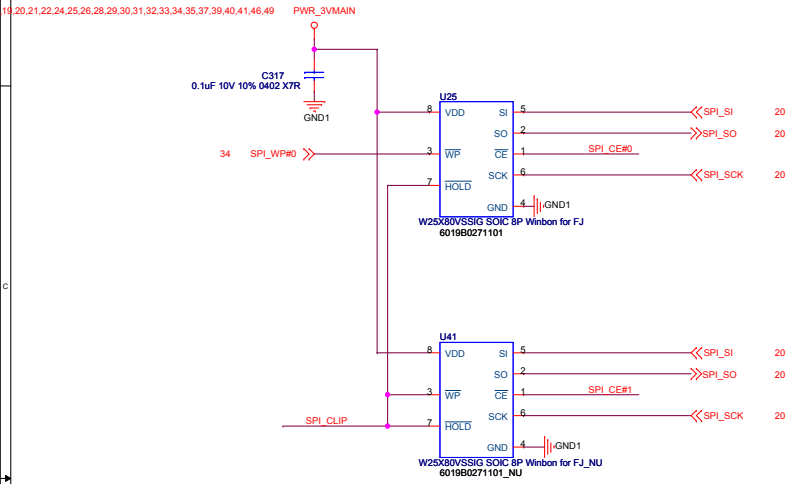
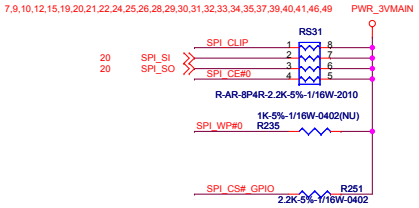
Title: J11Eagle(Merom+Crestline+ICH8M)

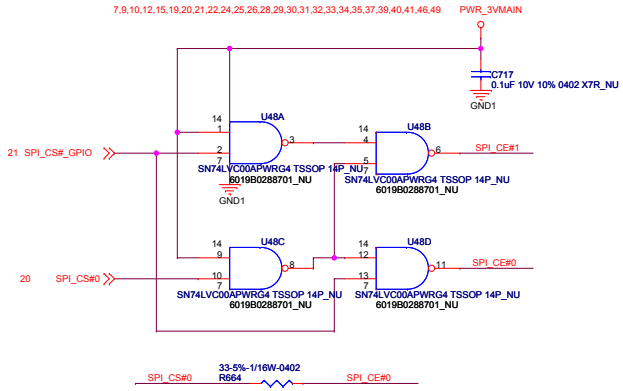
Size: Custom | Document Number: ICH8M Power/GND(4/4) | Rev: 0.4

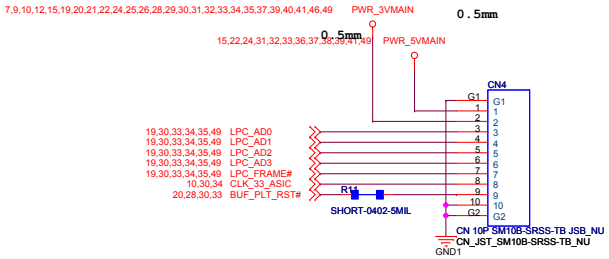
Date: Monday, April 09, 2007 | Sheet 22 of 55

Delete at 2006/12/20

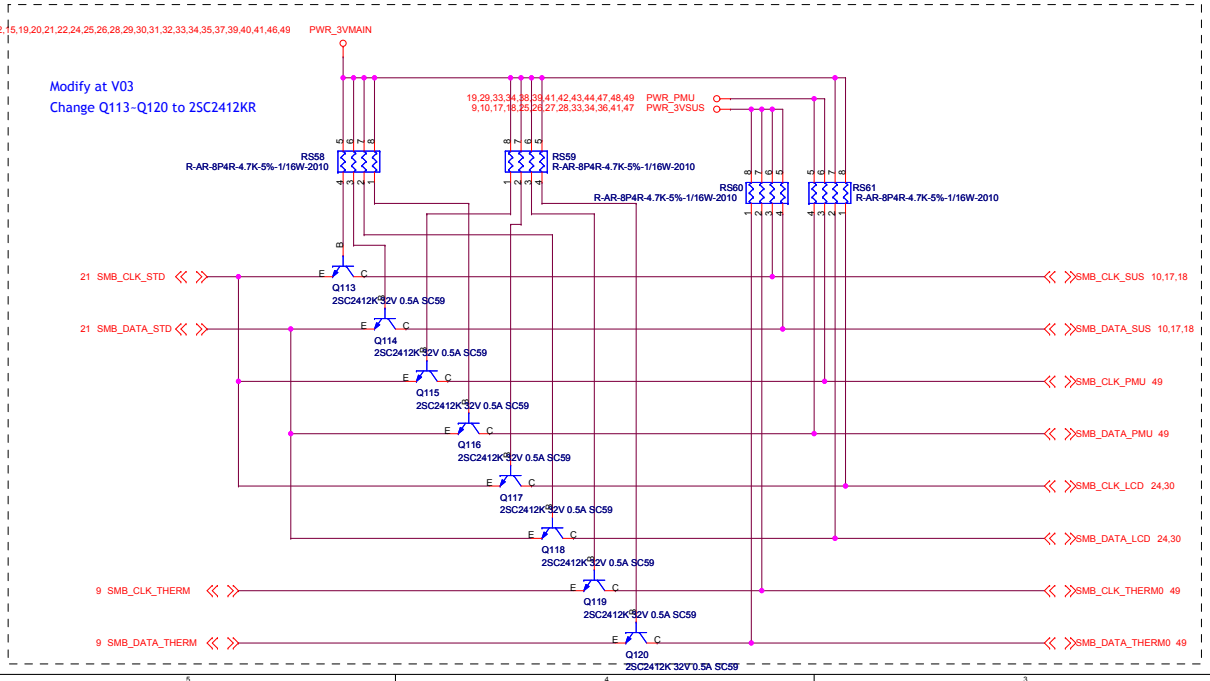








PORT80



Device	Hex	Address
ADT7473	5Ch	0101 110x b
MEM slot0	A2h	1010 000x b
MEM slot1	A4h	1010 010x b
PMU	32h	0011 001x b
LCD(SPWG)	A0h	1010 000x b
JEPICO	90h	1001 000x b

CBT3253 NPUTS FUNCTION
OE S1 S0 FUNCTION
L L L A port = B1 port
L L H A port = B2 port
L H L A port = B3 port
L H H A port = B4 port
H X X Disconnect

SMBCNT[2:0]	Device
0,0,0	DIMM SLOT 0/1,CLK GEN.
0,0,1	EC control
0,1,0	EC control,ADT7473
0,1,1	LCD(SPWG),MiniCard

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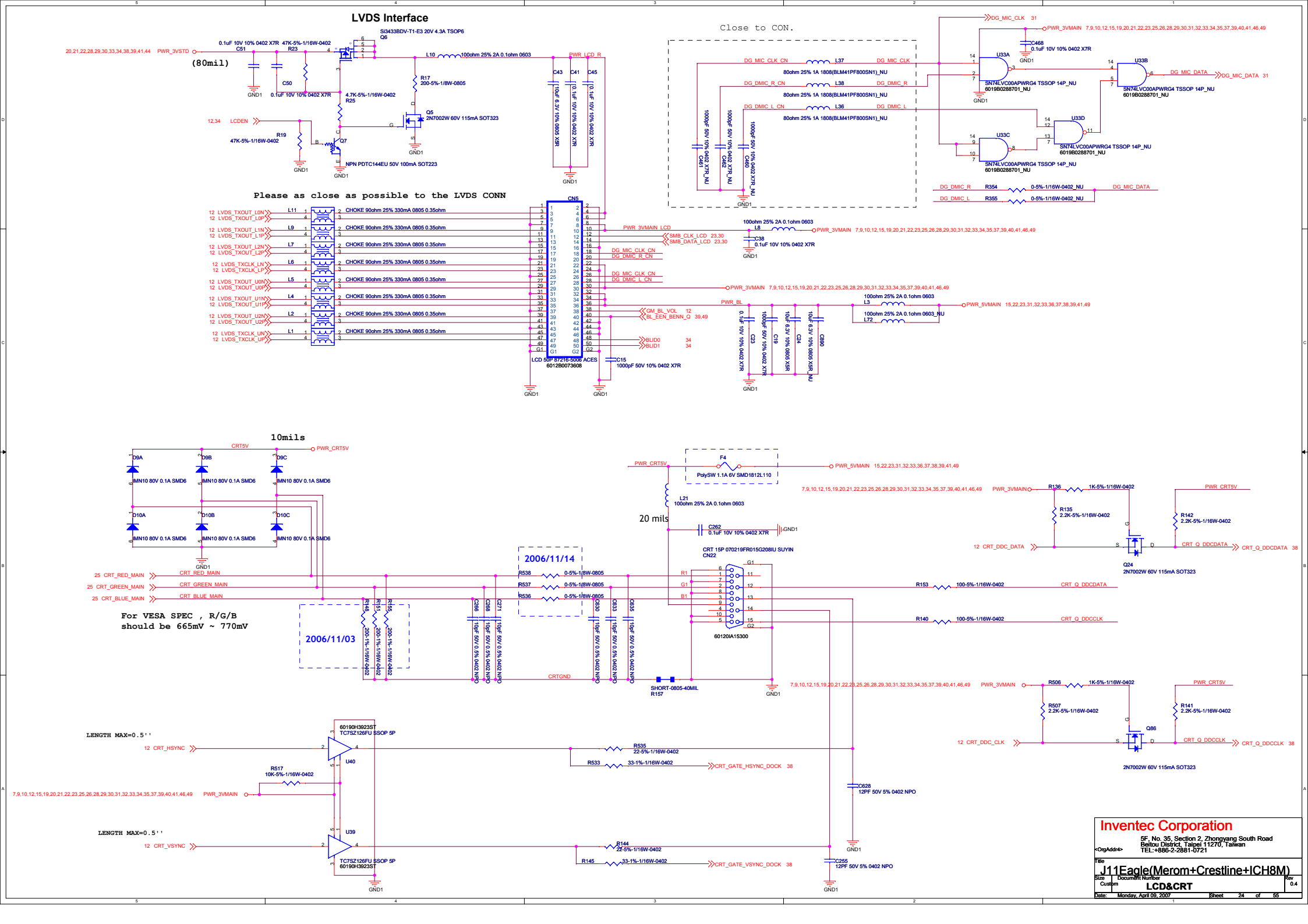
Title: J11Eagle(Merom+Crestline+ICH8M)
Size: C | Document Number: BIOS/SMBUS_SW/80 PORT | Rev: 0.4
Date: Monday, April 09, 2007 | Sheet 23 of 55


LVDS Interface
Close to CON.
Please as close as possible to the LVDS CONN
(80mil)
10mils
20 mils
2006/11/14
2006/11/03
For VESA SPEC , R/G/B
should be 665mV ~ 770mV
LENGTH MAX=0.5''
LENGTH MAX=0.5''
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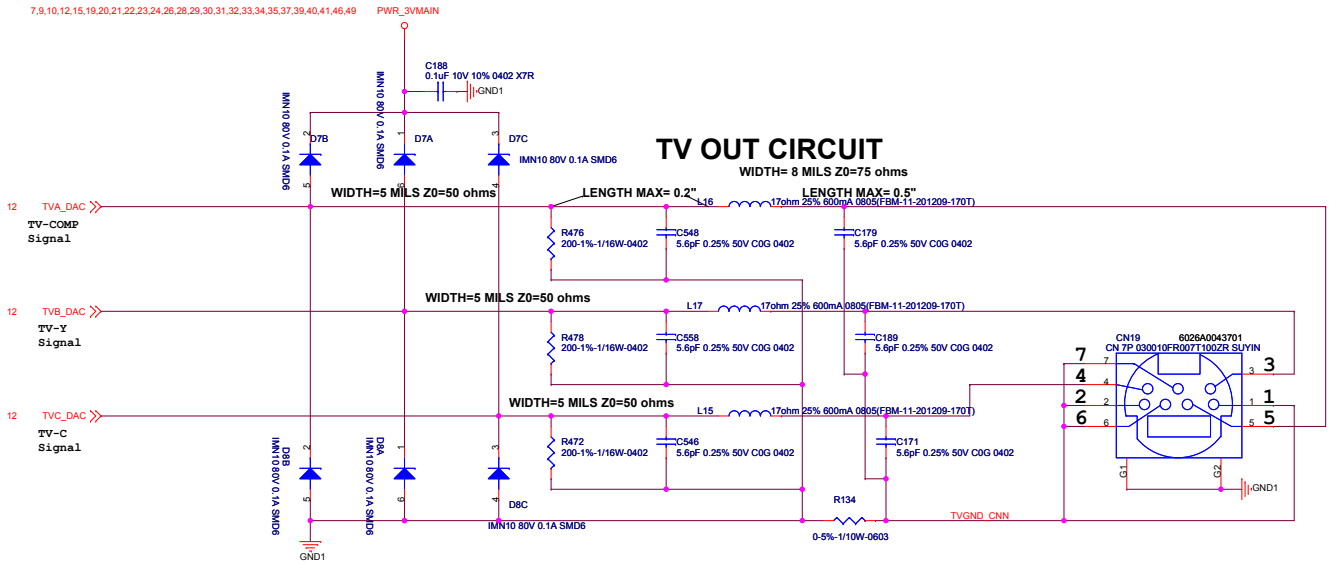
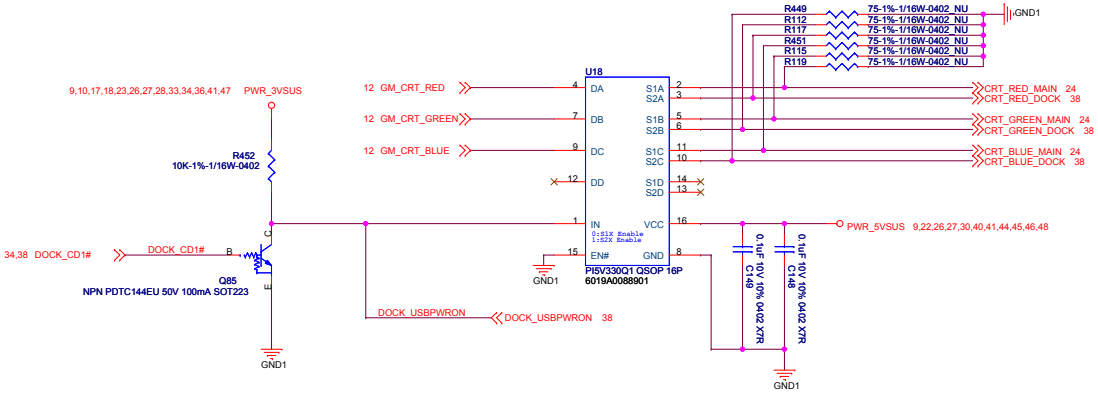
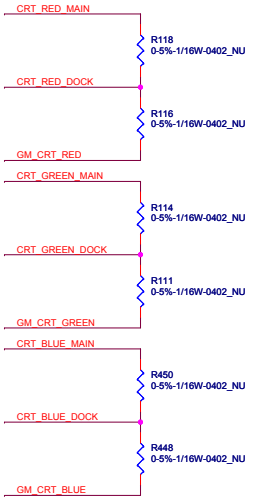
Beitou District, Taipei 11270, Taiwan
TEL:+886-2-2881-0721
J11Eagle(Merom+Crestline+ICH8M)
LCD&CRT
Monday, April 09, 2007







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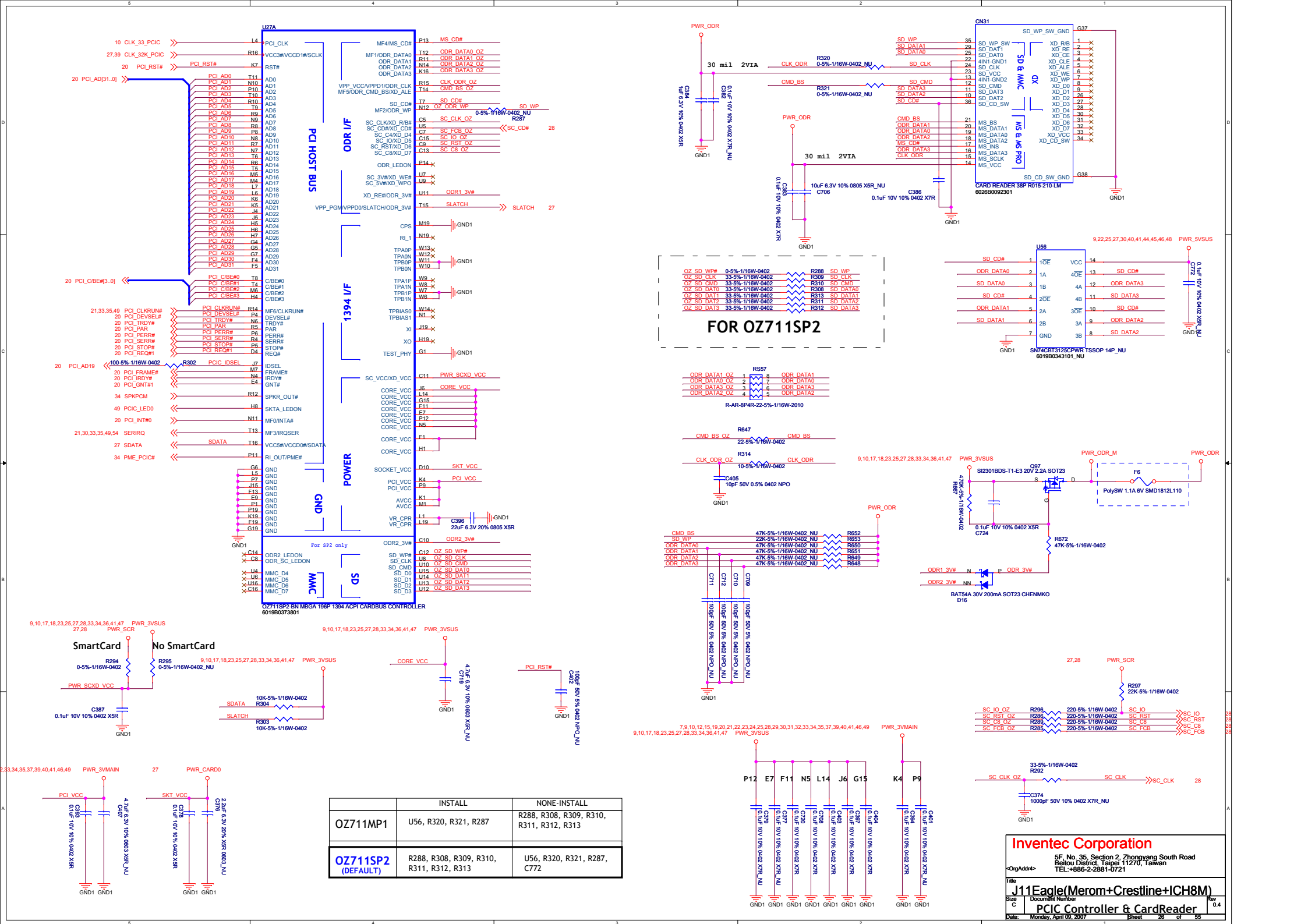
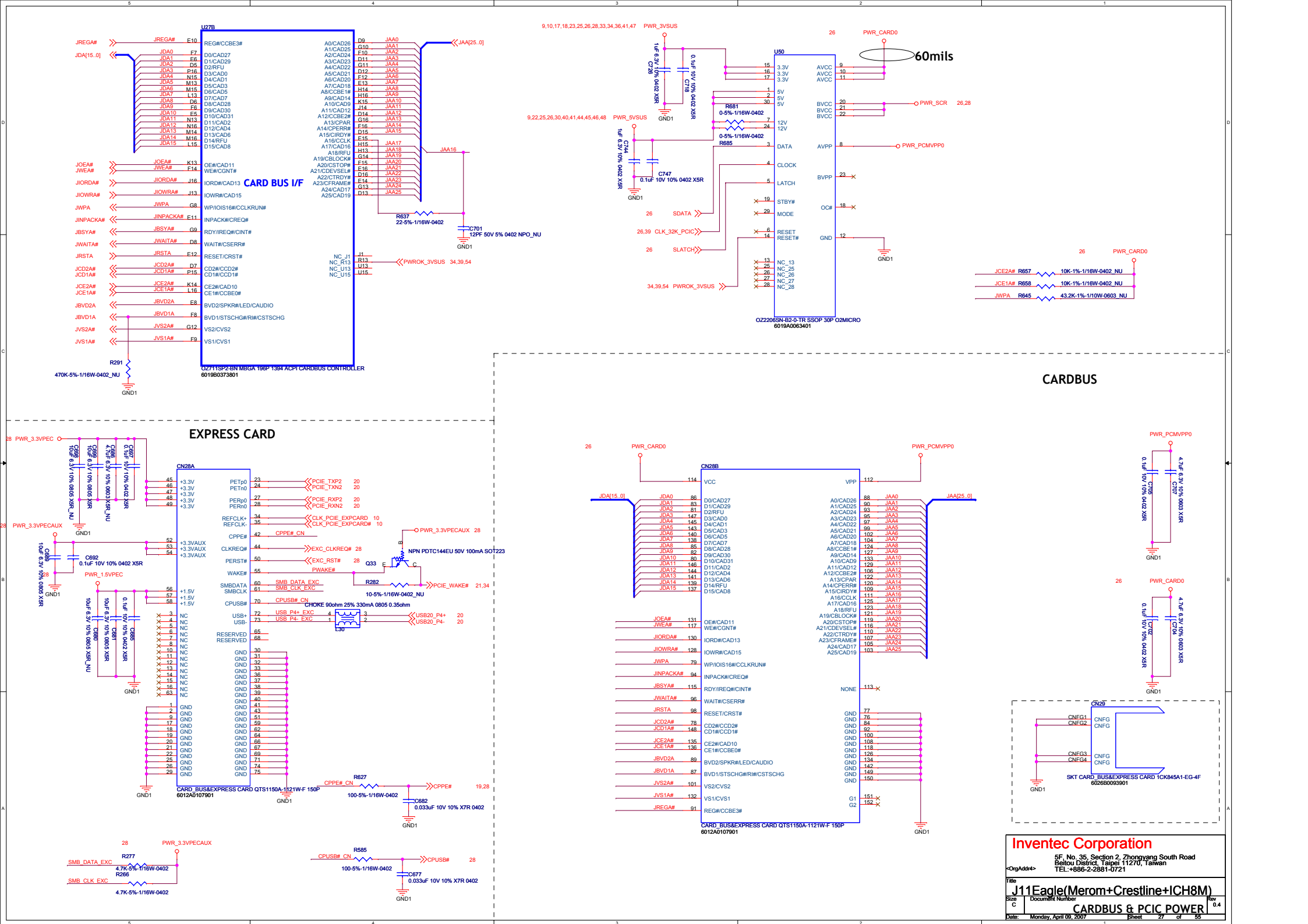
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: TV OUT & CRT SW | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 25 of 55



	INSTALL	NONE-INSTALL
OZ711MP1	U56, R320, R321, R287	R288, R308, R309, R310, R311, R312, R313
OZ711SP2 (DEFAULT)	R288, R308, R309, R310, R311, R312, R313	U56, R320, R321, R287, C772


CARDBUS
EXPRESS CARD
U27B
CARD BUS I/F
OZ711SP2-BN MBGA 196P 1394 ACPI CARDBUS CONTROLLER
6019B0373801
U50
OZ2206SN-B2-0-TR SSOP 30P O2MICRO
6019A0063401
60mils
CN28A
CN28B
CARD_BUS&EXPRESS CARD QTS1150A-1121W-F 150P
6012A0107901
CN29
SKT CARD_BUS&EXPRESS CARD 1CK845A1-EG-4F
6026B0093901
NPN PDTC144EU 50V 100mA SOT223
CHOKE 90ohm 25% 330mA 0805 0.35ohm
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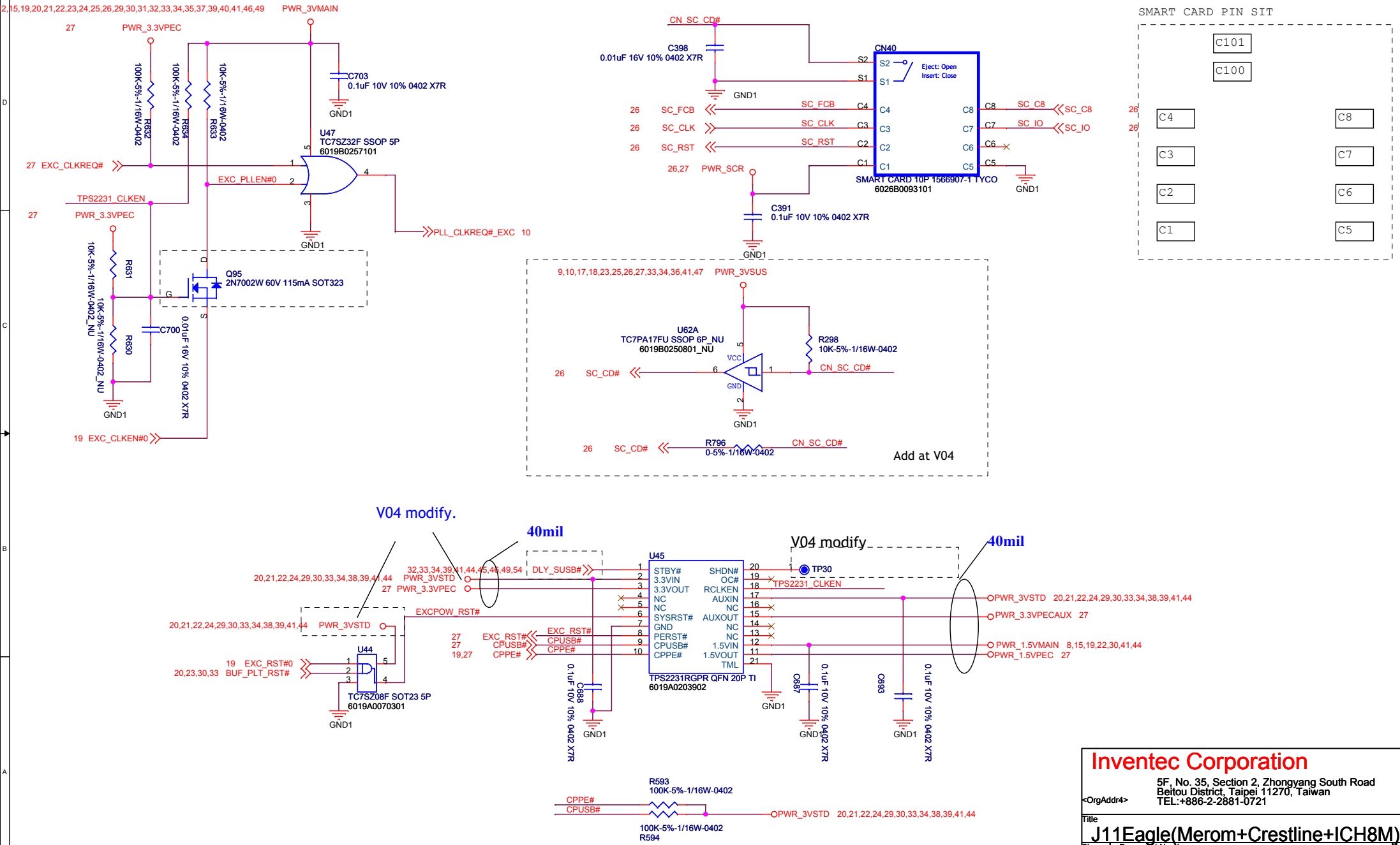
TEL:+886-2-2881-0721
J11Eagle(Merom+Crestline+ICH8M)
CARDBUS & PCIC POWER
Monday, April 09, 2007



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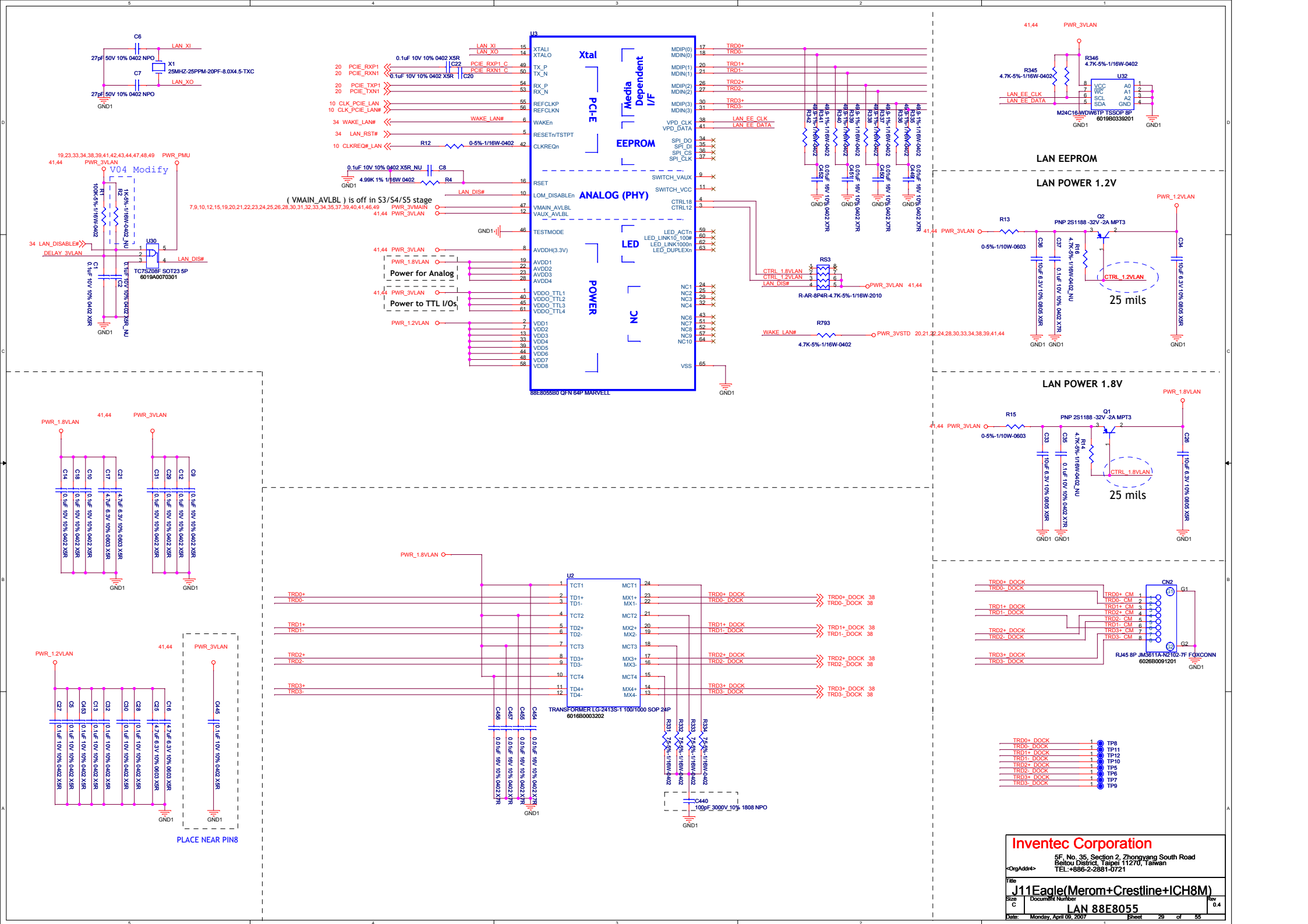
Title: J11Eagle(Merom+Crestline+ICH8M)

Size	Document Number	Rev
B	OZ711MP1I SMART CARD(1/3)	0.4

Date: Monday, April 09, 2007 Sheet 28 of 55


LAN EEPROM
LAN POWER 1.2V
LAN POWER 1.8V
U3
88E8055B0 QFN 64P MARVELL
Xtal
Media Dependent I/F
PCI-E
EEPROM
ANALOG (PHY)
LED
POWER
NC
Power for Analog
Power to TTL I/Os
(VMAIN_AVLBL) is off in S3/S4/S5 stage
V04 Modify
U30
TC7SZ08F SOT23 5P
6019A0070301
U2
TRANSFORMER LG-2413S-1 100/1000 SOP 24P
6016B0003202
R-AR-8P4R-4.7K-5%-1/16W-2010
M24C16-WDW6TP TSSOP 8P
6019B0339201
Q1
Q2
PNP 2S1188 -32V -2A MPT3
CN2
RJ45 8P JM3611A-N2102-7F FOXCONN
6026B0091201
PLACE NEAR PIN8
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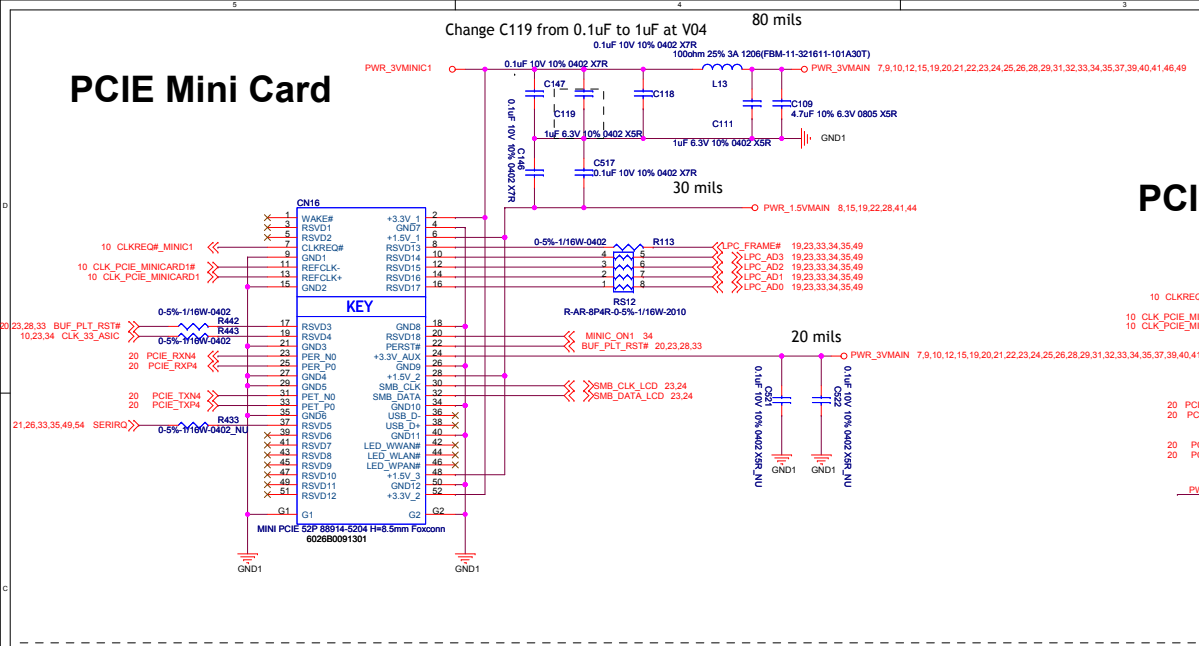
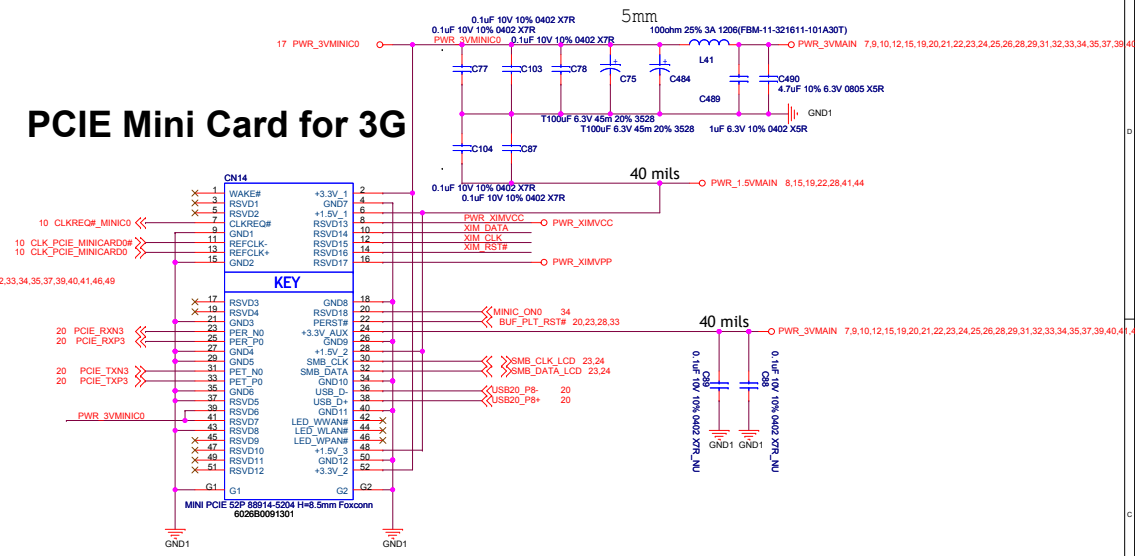
J11Eagle(Merom+Crestline+ICH8M)
LAN 88E8055
Monday, April 09, 2007
29 of 55

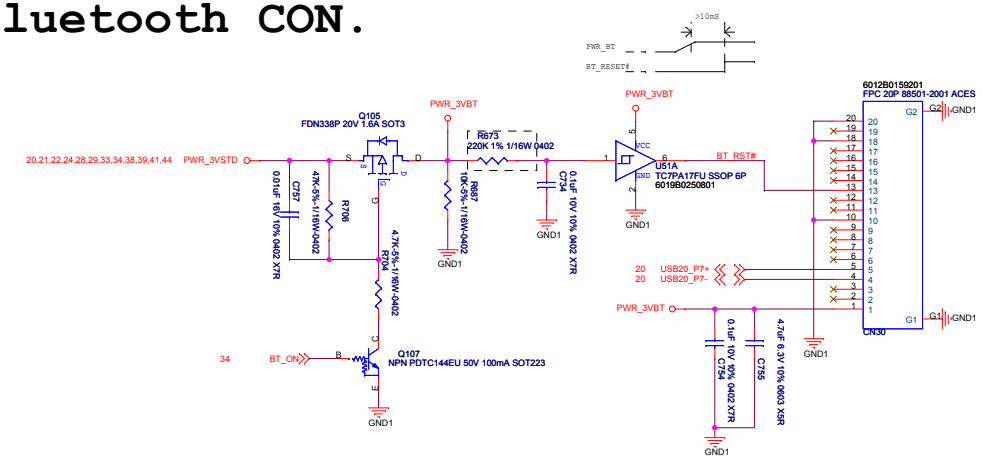
PCIE Mini Card



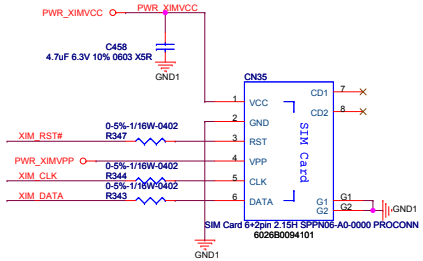
PCIE Mini Card for 3G



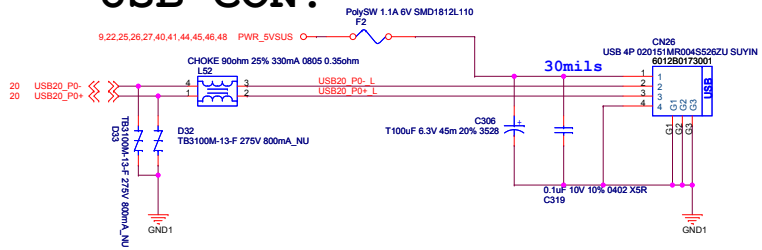
Bluetooth CON.

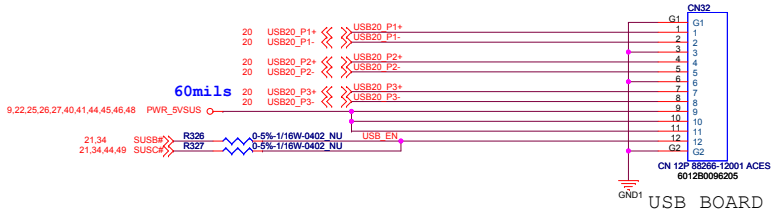


SIM CARD



USB CON.





USB BOARD CONN (MB)

Inventec Corporation
5F, No. 35, Section 2, Zhongyang South Road
Beitou District, Taipei 11270, Taiwan
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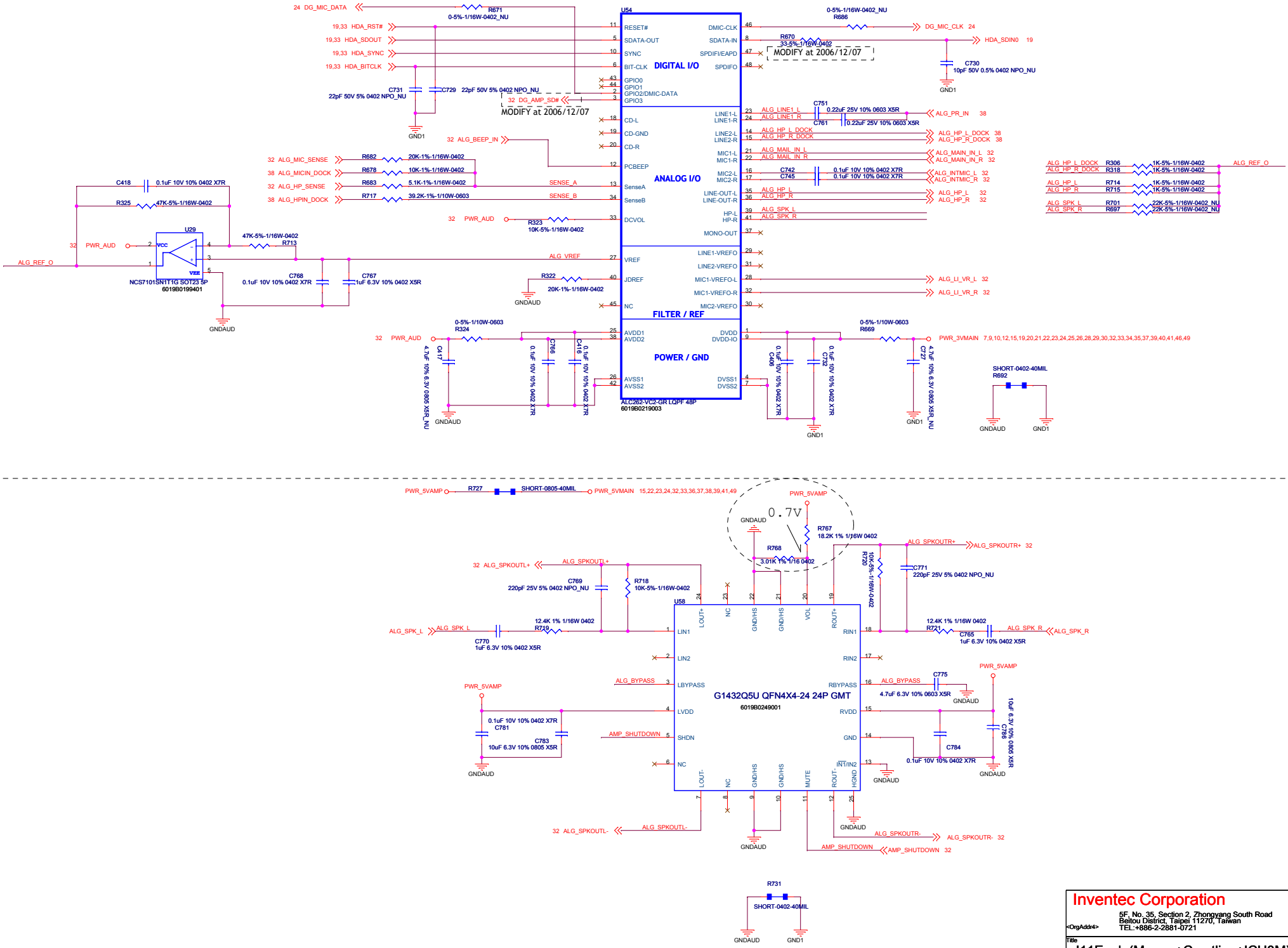
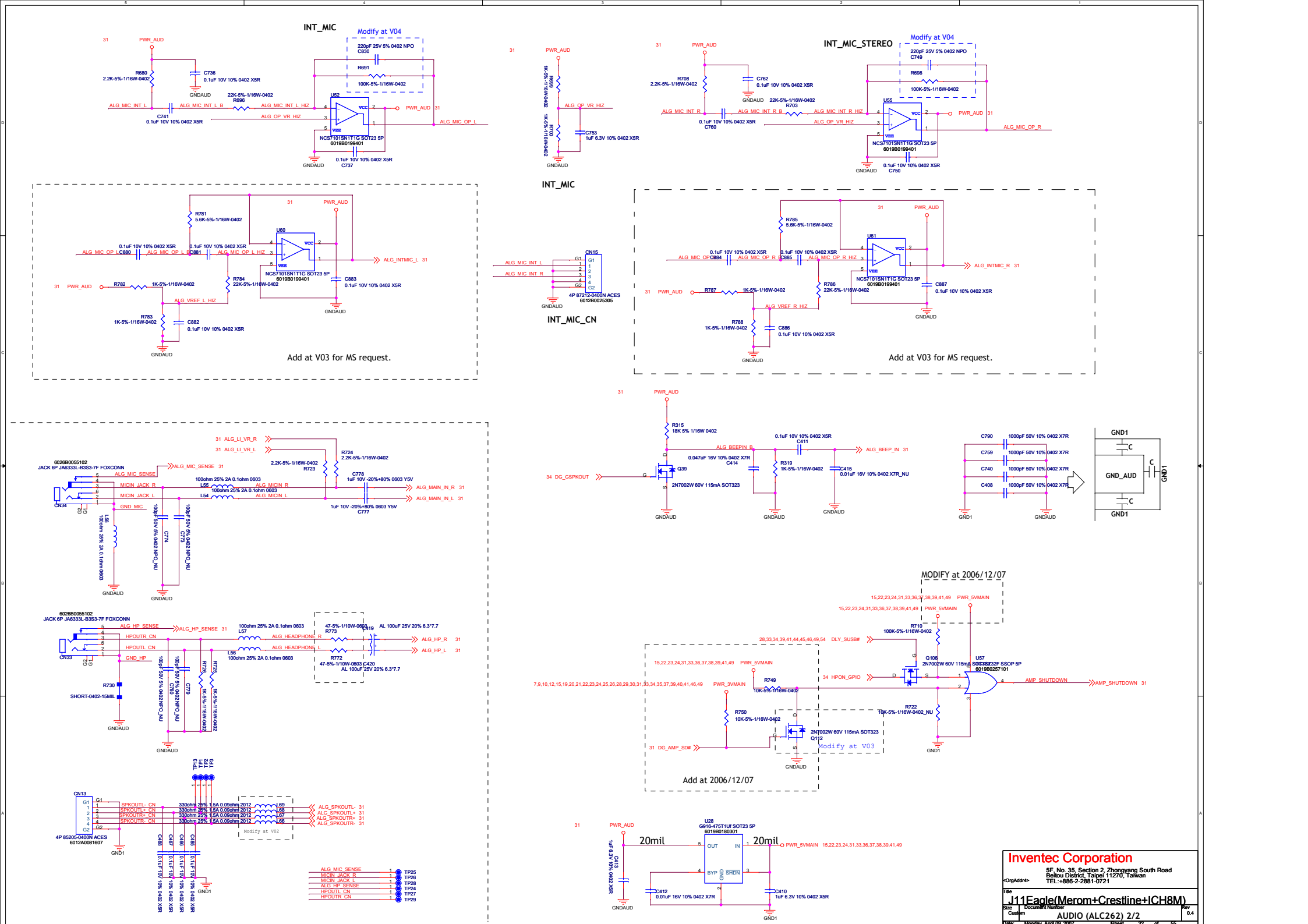
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: Custom | Document Number: MINI_PCIE/USB/Bluetooth | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 30 of 55


U54
ALC262-VC2-GR LQFP 48P
6019B0219003
DIGITAL I/O
ANALOG I/O
FILTER / REF
POWER / GND
RESET#
SDATA-OUT
SYNC
BIT-CLK
GPIO0
GPIO1
GPIO2/DMIC-DATA
GPIO3
CD-L
CD-GND
CD-R
PCBEEP
SenseA
SenseB
DCVOL
VREF
JDREF
NC
AVDD1
AVDD2
AVSS1
AVSS2
DMIC-CLK
SDATA-IN
SPDIFI/EAPD
SPDIFO
LINE1-L
LINE1-R
LINE2-L
LINE2-R
MIC1-L
MIC1-R
MIC2-L
MIC2-R
LINE-OUT-L
LINE-OUT-R
HP-L
HP-R
MONO-OUT
LINE1-VREFO
LINE2-VREFO
MIC1-VREFO-L
MIC1-VREFO-R
MIC2-VREFO
DVDD
DVDD-IO
DVSS1
DVSS2
MODIFY at 2006/12/07
U29
NCS7101SN1T1G SOT23 5P
6019B0199401
U58
G1432Q5U QFN4X4-24 24P GMT
6019B0249001
0.7v
SHORT-0805-40MIL
SHORT-0402-40MIL
Inventec Corporation
5F, No. 35, Section 2, Zhongyang South Road
Beitou District, Taipei 11270, Taiwan
TEL:+886-2-2881-0721
J11Eagle(Merom+Crestline+ICH8M)
AUDIO (ALC262) 1/2
Monday, April 09, 2007


INT_MIC
Modify at V04
220pF 25V 5% 0402 NPO C830
R691 100K-5%-1/16W-0402
R680 2.2K-5%-1/16W-0402
C736 0.1uF 10V 10% 0402 X5R
C741 0.1uF 10V 10% 0402 X5R
R696 22K-5%-1/16W-0402
U52
NCS7101SN1T1G SOT23 5P 6019B0199401
C737 0.1uF 10V 10% 0402 X5R
INT_MIC_STEREO
Modify at V04
C749 220pF 25V 5% 0402 NPO
R698 100K-5%-1/16W-0402
R708 2.2K-5%-1/16W-0402
C762 0.1uF 10V 10% 0402 X5R
C760 0.1uF 10V 10% 0402 X5R
R703 22K-5%-1/16W-0402
U55
NCS7101SN1T1G SOT23 5P 6019B0199401
C750 0.1uF 10V 10% 0402 X5R
R699 1K-5%-1/16W-0402
R700 1K-5%-1/16W-0402
C753 1uF 6.3V 10% 0402 X5R
ALG_OP_VR_HIZ
PWR_AUD 31
GNDAUD
ALG_MIC_OP_L
ALG_MIC_OP_R
R781 5.6K-5%-1/16W-0402
R782 1K-5%-1/16W-0402
R784 22K-5%-1/16W-0402
R783 1K-5%-1/16W-0402
C882 0.1uF 10V 10% 0402 X5R
U60
NCS7101SN1T1G SOT23 5P 6019B0199401
C880 0.1uF 10V 10% 0402 X5R
C881 0.1uF 10V 10% 0402 X5R
C883 0.1uF 10V 10% 0402 X5R
ALG_VREF_L_HIZ
ALG_INTMIC_L 31
Add at V03 for MS request.
INT_MIC
INT_MIC_CN
CN15
4P 87212-0400N ACES 60128002S305
R785 5.6K-5%-1/16W-0402
R787 1K-5%-1/16W-0402
R786 22K-5%-1/16W-0402
R788 1K-5%-1/16W-0402
C886 0.1uF 10V 10% 0402 X5R
U61
NCS7101SN1T1G SOT23 5P 6019B0199401
C884 0.1uF 10V 10% 0402 X5R
C885 0.1uF 10V 10% 0402 X5R
C887 0.1uF 10V 10% 0402 X5R
ALG_VREF_R_HIZ
ALG_INTMIC_R 31
Add at V03 for MS request.
6026B0055102
JACK 6P JA6333L-B3S3-7F FOXCONN
CN34
ALG_MIC_SENSE
MICIN_JACK_R
MICIN_JACK_L
GND_MIC
R724 2.2K-5%-1/16W-0402
R723 2.2K-5%-1/16W-0402
L55 100ohm 25% 2A 0.1ohm 0603
L54 100ohm 25% 2A 0.1ohm 0603
L58 100ohm 25% 2A 0.1ohm 0603
C778 1uF 10V -20%+80% 0603 Y5V
C777 1uF 10V -20%+80% 0603 Y5V
C774 100pF 50V 5% 0402 NPO_NU
C779 100pF 50V 5% 0402 NPO_NU
ALG_MICIN_R
ALG_MICIN_L
ALG_MAIN_IN_R 31
ALG_MAIN_IN_L 31
R315 18K 5% 1/16W 0402
Q39 2N7002W 60V 115mA SOT323
C414 0.047uF 16V 10% 0402 X7R
C411 0.1uF 10V 10% 0402 X5R
R319 1K-5%-1/16W-0402
C415 0.01uF 16V 10% 0402 X7R_NU
ALG_BEEPIN_R
ALG_BEEP_IN 31
DG_GSPKOUT 34
C790 1000pF 50V 10% 0402 X7R
C759 1000pF 50V 10% 0402 X7R
C740 1000pF 50V 10% 0402 X7R
C408 1000pF 50V 10% 0402 X7R
GND1
GND_AUD
6026B0055102
JACK 6P JA6333L-B3S3-7F FOXCONN
CN33
ALG_HP_SENSE
HPOUTR_CN
HPOUTL_CN
GND_HP
L57 100ohm 25% 2A 0.1ohm 0603
L56 100ohm 25% 2A 0.1ohm 0603
R773 47-5%-1/10W-0603
R772 47-5%-1/10W-0603
C419 AL 100uF 25V 20% 6.3*7.7
C420 AL 100uF 25V 20% 6.3*7.7
ALG_HEADPHONE_R
ALG_HEADPHONE_L
ALG_HP_R 31
ALG_HP_L 31
R730 SHORT-0402-15MIL
R728 1K-5%-1/16W-0402
R725 1K-5%-1/16W-0402
C780 100pF 50V 5% 0402 NPO_NU
C779 100pF 50V 5% 0402 NPO_NU
MODIFY at 2006/12/07
15,22,23,24,31,33,36,37,38,39,41,49 PWR_5VMAIN
28,33,34,39,41,44,45,46,49,54 DLY_SUSB#
7,9,10,12,15,19,20,21,22,23,24,25,26,28,29,30,31,33,34,35,37,39,40,41,46,49 PWR_3VMAIN
R710 100K-5%-1/16W-0402
R749 10K-5%-1/16W-0402
R750 10K-5%-1/16W-0402
R722 10K-5%-1/16W-0402_NU
Q106 2N7002W 60V 115mA SOT323
Q112 2N7002W 60V 115mA SOT323
U57 SDC2532F SSOP 5P 6019B0257101
34 HPON_GPIO
31 DG_AMP_SD#
AMP_SHUTDOWN
AMP_SHUTDOWN 31
Modify at V03
Add at 2006/12/07
CN13
4P 85205-0400N ACES 6012A0081607
SPKOUTL- CN
SPKOUTL+ CN
SPKOUTR+ CN
SPKOUTR- CN
330ohm 25% 1.5A 0.09ohm 2012
L69
L68
L67
L66
ALG_SPKOUTL- 31
ALG_SPKOUTL+ 31
ALG_SPKOUTR+ 31
ALG_SPKOUTR- 31
Modify at V02
C488 0.1uF 10V 10% 0402 X5R
C487 0.1uF 10V 10% 0402 X5R
C486 0.1uF 10V 10% 0402 X5R
C485 0.1uF 10V 10% 0402 X5R
ALG_MIC_SENSE
MICIN_JACK_R
MICIN_JACK_L
HP_SENSE
HPOUTL_CN
HPOUTR_CN
TP25
TP26
TP28
TP24
TP27
TP29
U28
G916-475T1Uf SOT23 5P 6019B0180301
20mil
20mil
C413 1uF 6.3V 10% 0402 X5R
C412 0.01uF 16V 10% 0402 X7R
C410 1uF 6.3V 10% 0402 X5R
PWR_5VMAIN 15,22,23,24,31,33,36,37,38,39,41,49
Inventec Corporation
5F, No. 35, Section 2, Zhongyang South Road
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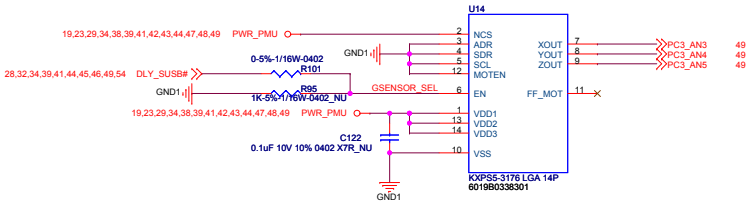
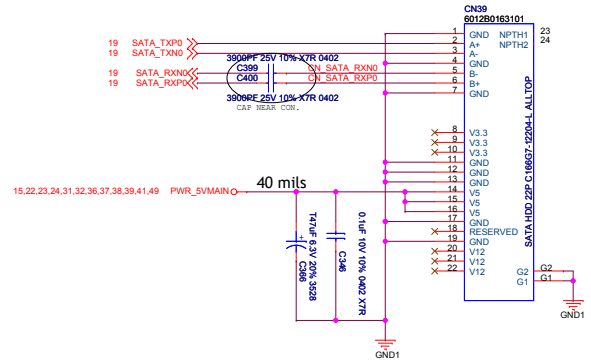
TEL:+886-2-2881-0721
<OrgAddr4>
Title
J11Eagle(Merom+Crestline+ICH8M)
Size Custom
Document Number
AUDIO (ALC262) 2/2
Rev 0.4
Date: Monday, April 09, 2007
Sheet 32 of 55



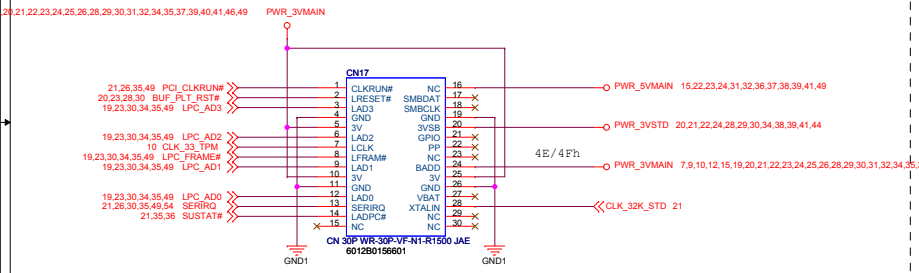
GSENSOR_SEL ---

0 : LIS302ALK	R101 reverse, R95 mount
0 : KXPB5	R101 reverse, R95 mount
1 : KXPS5-3176	R95 reverse, R101 mount

SATA CON.

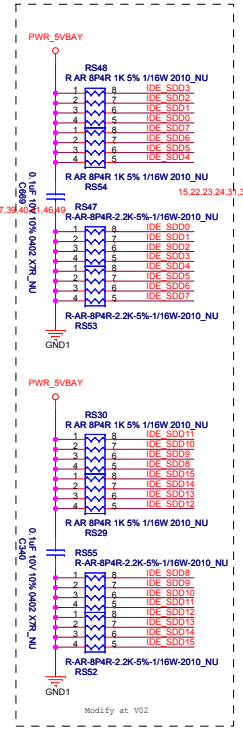


TPM CON.

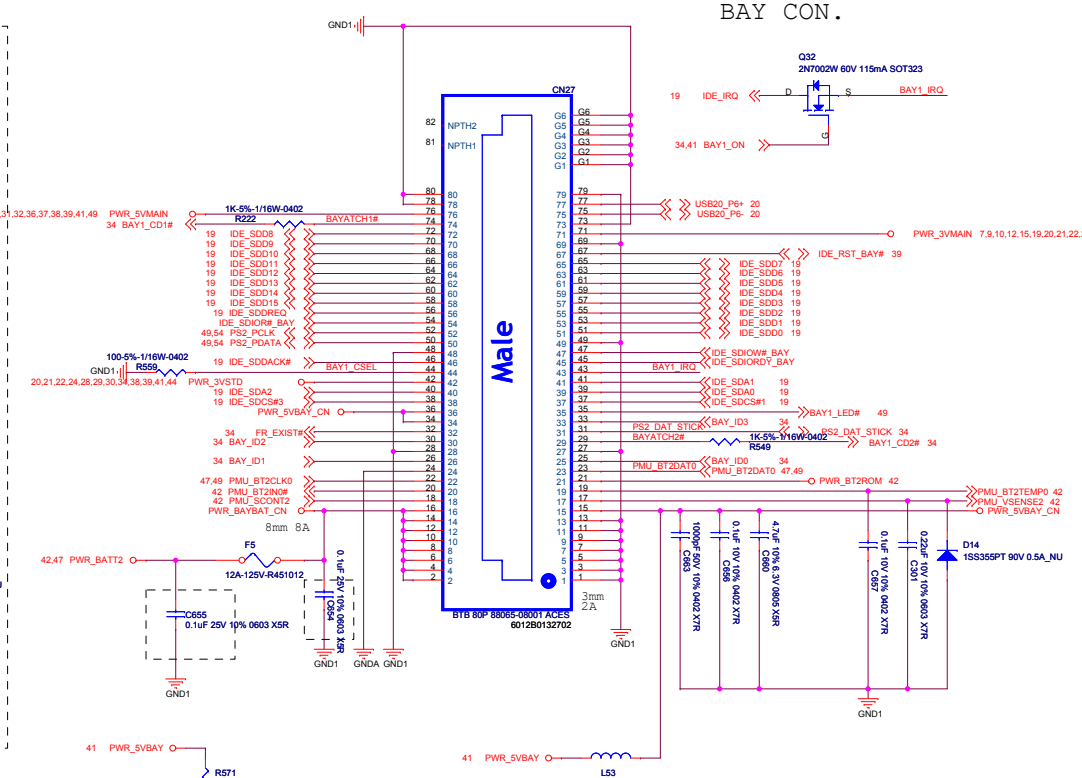


TPM Configuration

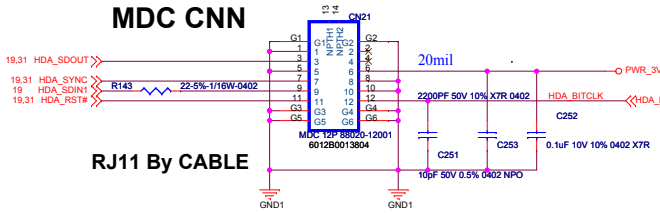
	High	Low
TPM_BADDR	4E/4Fh	2E/2Fh
TPM_PACCESS	Physical Presence ON	Physical Presence OFF



BAY CON.



MDC CNN



RJ11 By CABLE

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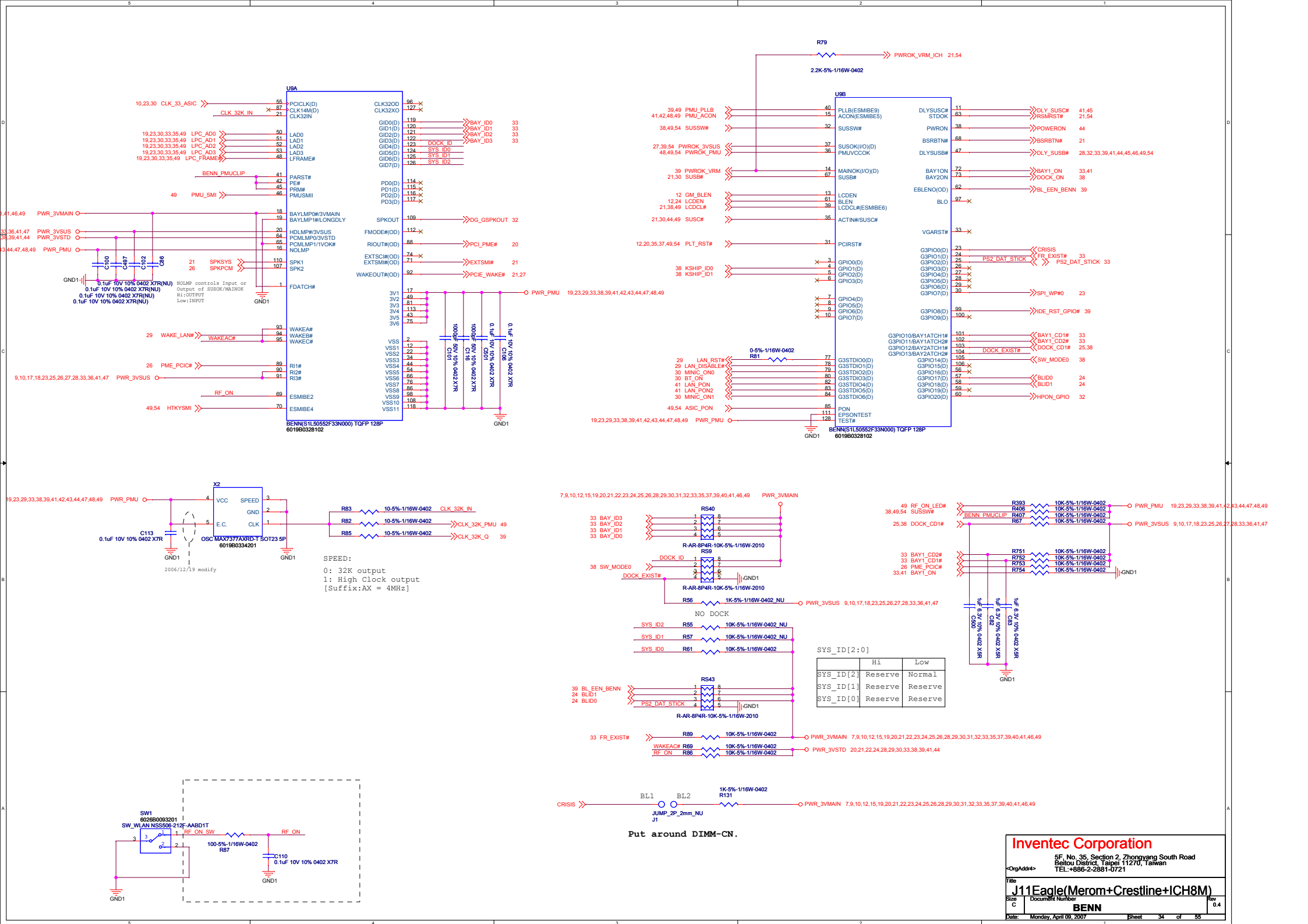
Beitou District, Taipei 11270, Taiwan
<OrgAddr4> TEL:+886-2-2881-0721

Title: J11Eagle(Merom+Crestline+ICH8M)

Size: Custom | Document Number: G SENSER/TPM1.2/SATA-CN/MDC-CN/BAY-CN | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 33 of 55



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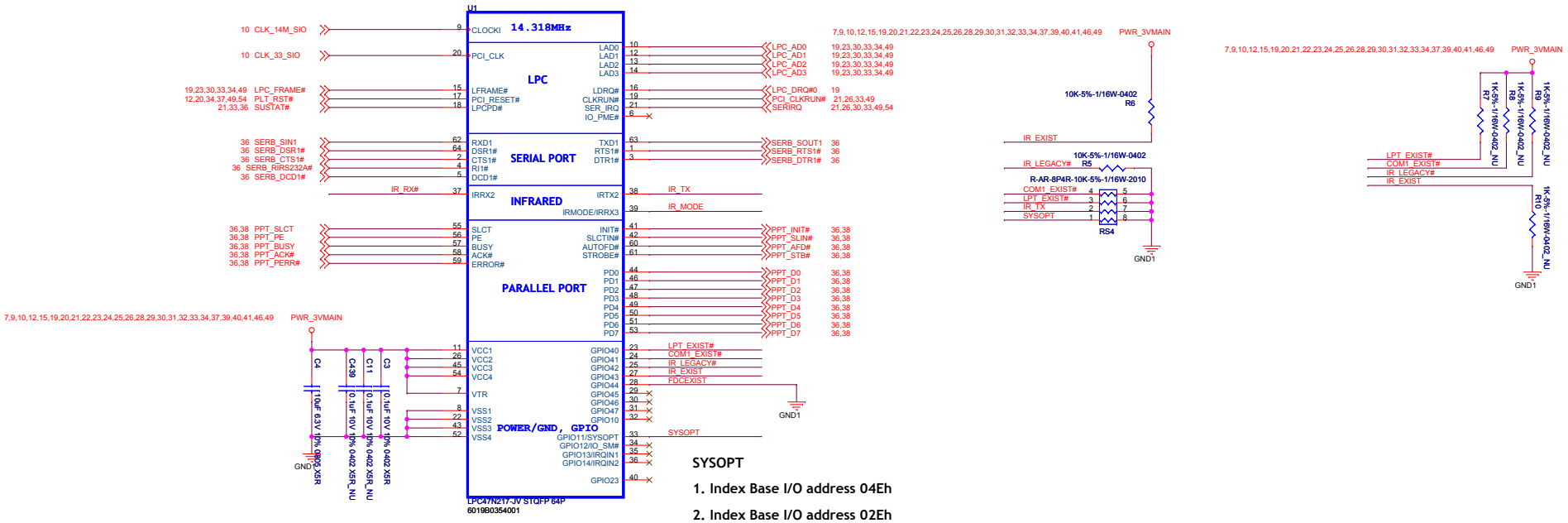
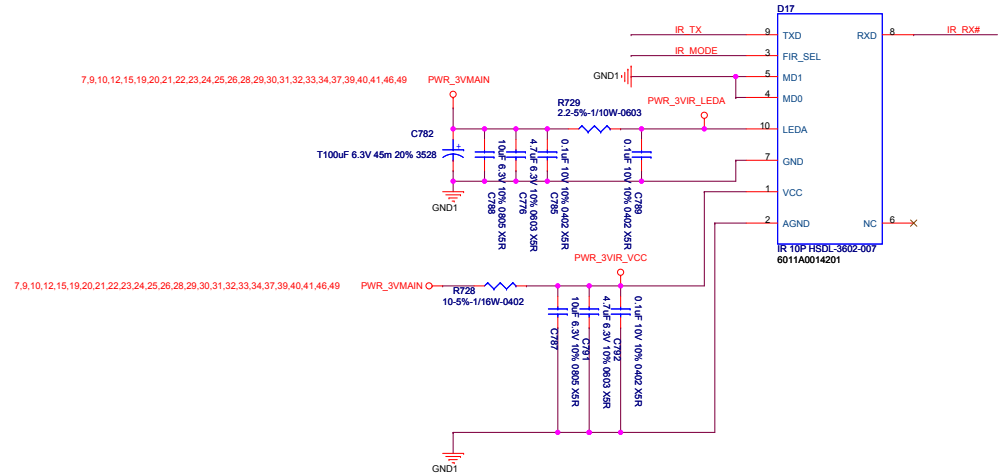
TEL:+886-2-2881-0721
<OrgAddr4>

Title: J11Eagle(Merom+Crestline+ICH8M)

Size	Document Number	Rev
C	BENN	0.4

Date: Monday, April 09, 2007 Sheet 34 of 55



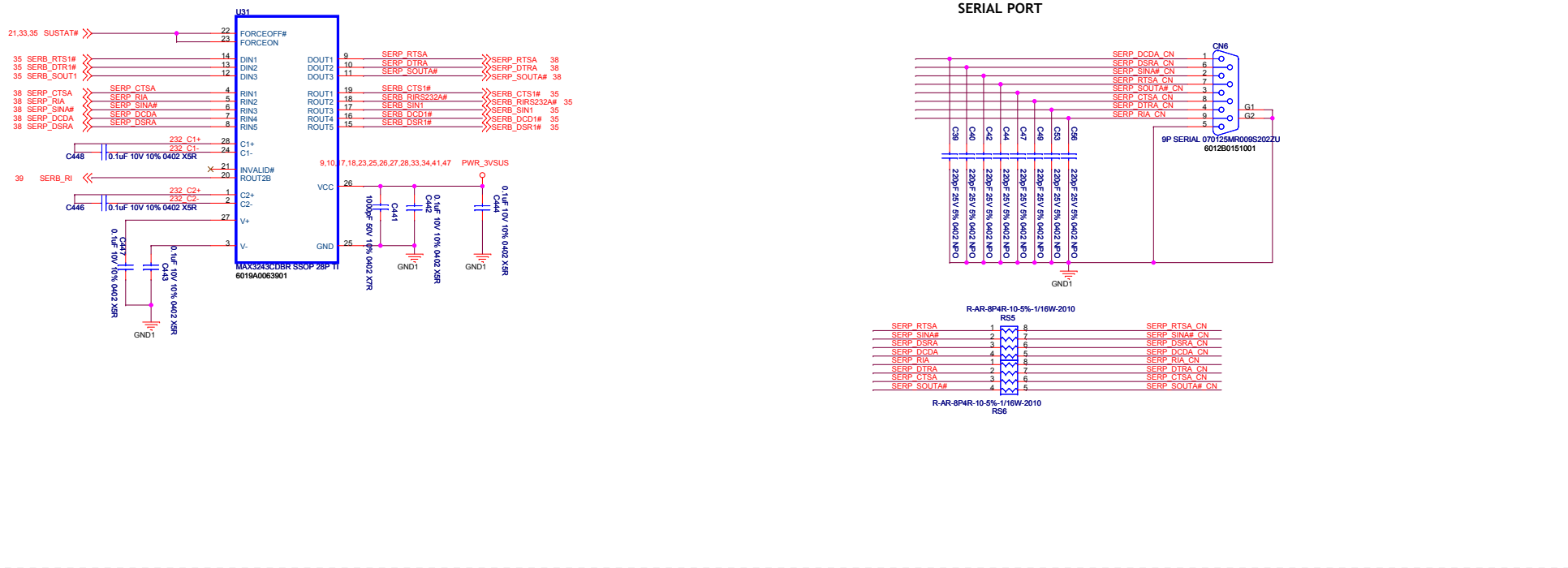


Inventec Corporation
5F, No. 35, Section 2, Zhongyang South Road
Beitou District, Taipei 11270, Taiwan
<OrgAddr4>
TEL:+886-2-2881-0721

Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: SUPER I/O & IrDA | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 35 of 55

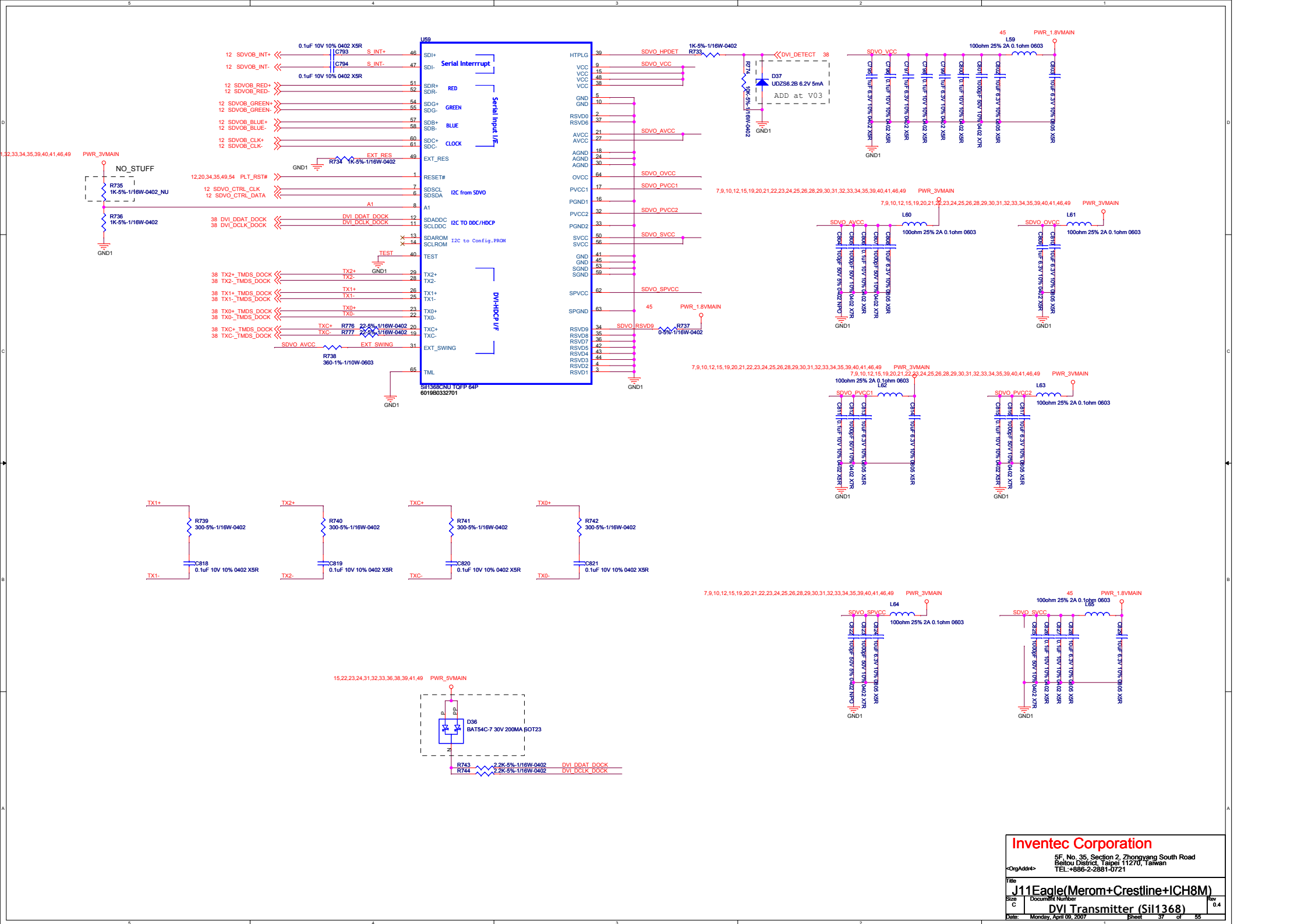


Inventec Corporation
5F, No. 35, Section 2, Zhongyang South Road
Beitou District, Taipei 11270, Taiwan
<OrgAddr4> TEL:+886-2-2881-0721

Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: SERIAL PORT & PARALLEL PORT | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 36 of 55



Inventec Corporation
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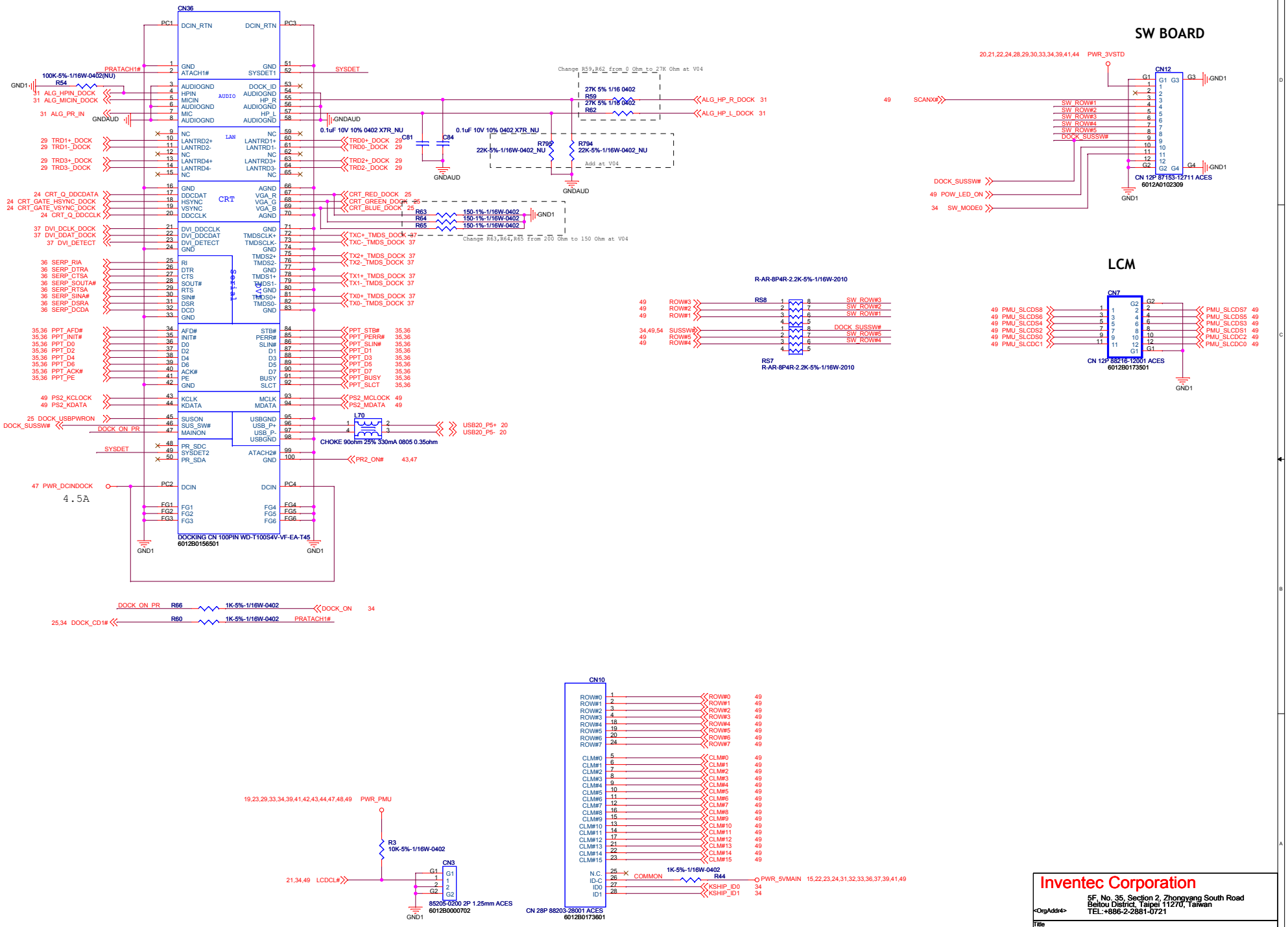
Beitou District, Taipei 11270, Taiwan
<OrgAddr4>
TEL:+886-2-2881-0721

Title	J11Eagle(Merom+Crestline+ICH8M)	
Size: C	Document Number: DVI Transmitter (Sil1368)	Rev: 0.4
Date: Monday, April 09, 2007	Sheet 37 of 55	


CN36
DOCKING CN 100PIN WD-T100S4V-VF-EA-T45
6012B0156501
4.5A
100K-5%-1/16W-0402(NU)
0.1uF 10V 10% 0402 X7R_NU
22K-5%-1/16W-0402_NU
27K 5% 1/16 0402
150-1%-1/16W-0402
1K-5%-1/16W-0402
10K-5%-1/16W-0402
CHOKE 90ohm 25% 330mA 0805 0.35ohm
Change R59,R62 from 0 Ohm to 27K Ohm at V04
Change R63,R64,R65 from 200 Ohm to 150 Ohm at V04
Add at V04
SW BOARD
CN12
CN 12P 87153-12711 ACES
6012A0102309
LCM
CN7
CN 12P 88216-12001 ACES
6012B0173501
RS8
RS7
R-AR-8P4R-2.2K-5%-1/16W-2010
CN10
CN 28P 88203-28001 ACES
6012B0173601
CN3
85205-0200 2P 1.25mm ACES
6012B0000702
Inventec Corporation
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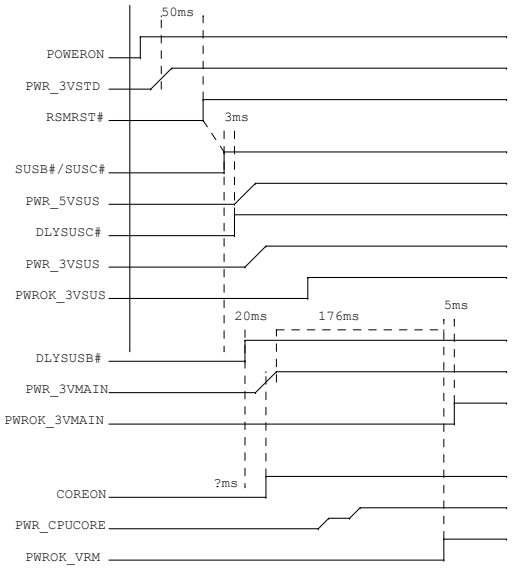
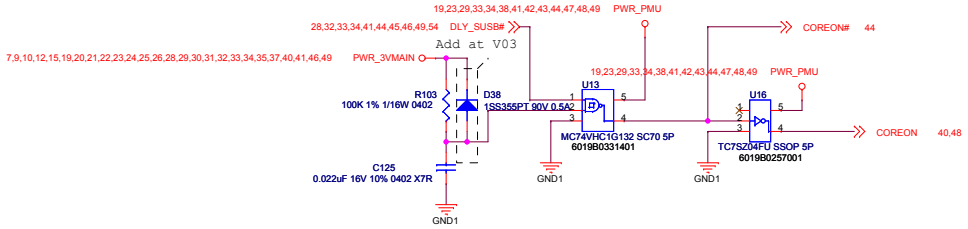
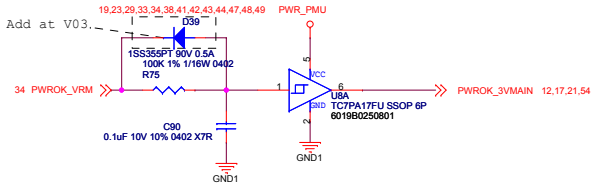
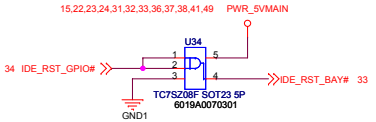
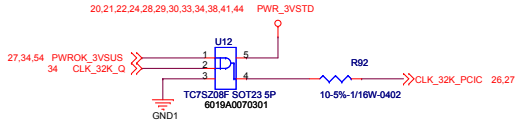
TEL:+886-2-2881-0721
J11Eagle(Merom+Crestline+ICH8M)
DOCK/KB/ST-LCD CON
Monday, April 09, 2007

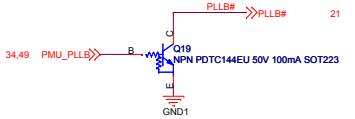






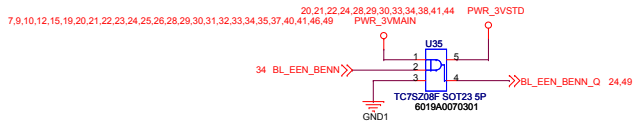


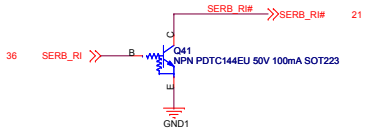


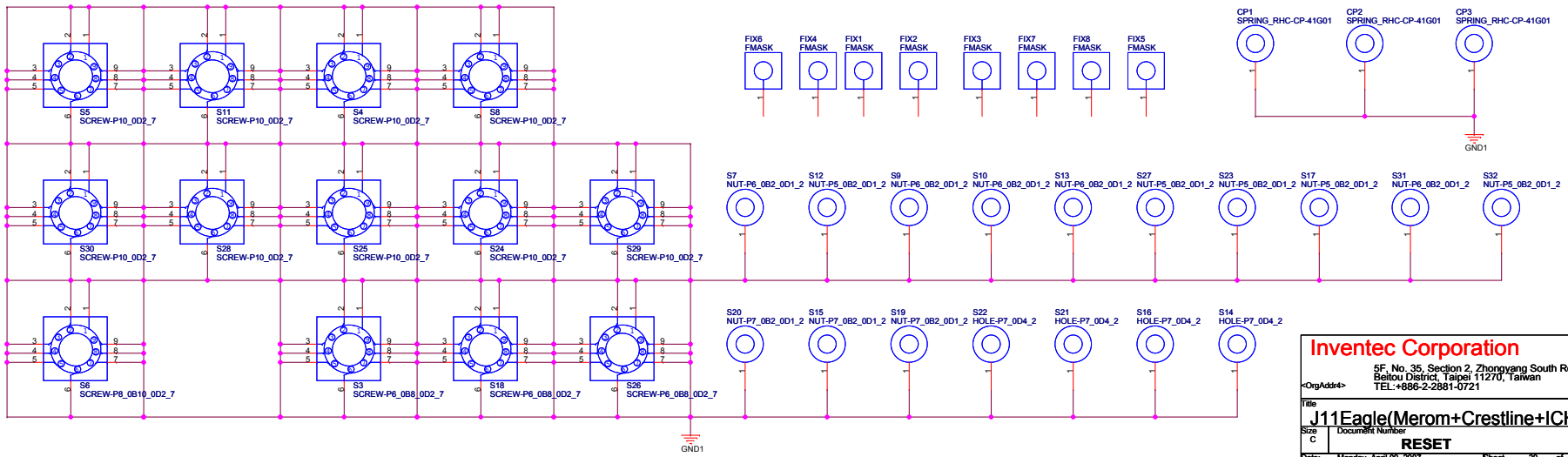


Power_Control_Tree

- PWR_3VSTD
  - RSMRST#
    - SUSC# → 5VSUS
    - (Delay) → 3VSUS/1.8VSUS
      - PWROK_3VSUS
    - (Delay) → DLY_SUSB# → 1.5VMAIN/2.5VMAIN/3VMAIN/5VMAIN
      - PWROK_VRM —(Delay)→ PWROK_3VSUS
      - COREON → CPUCORE/1.05VMAIN







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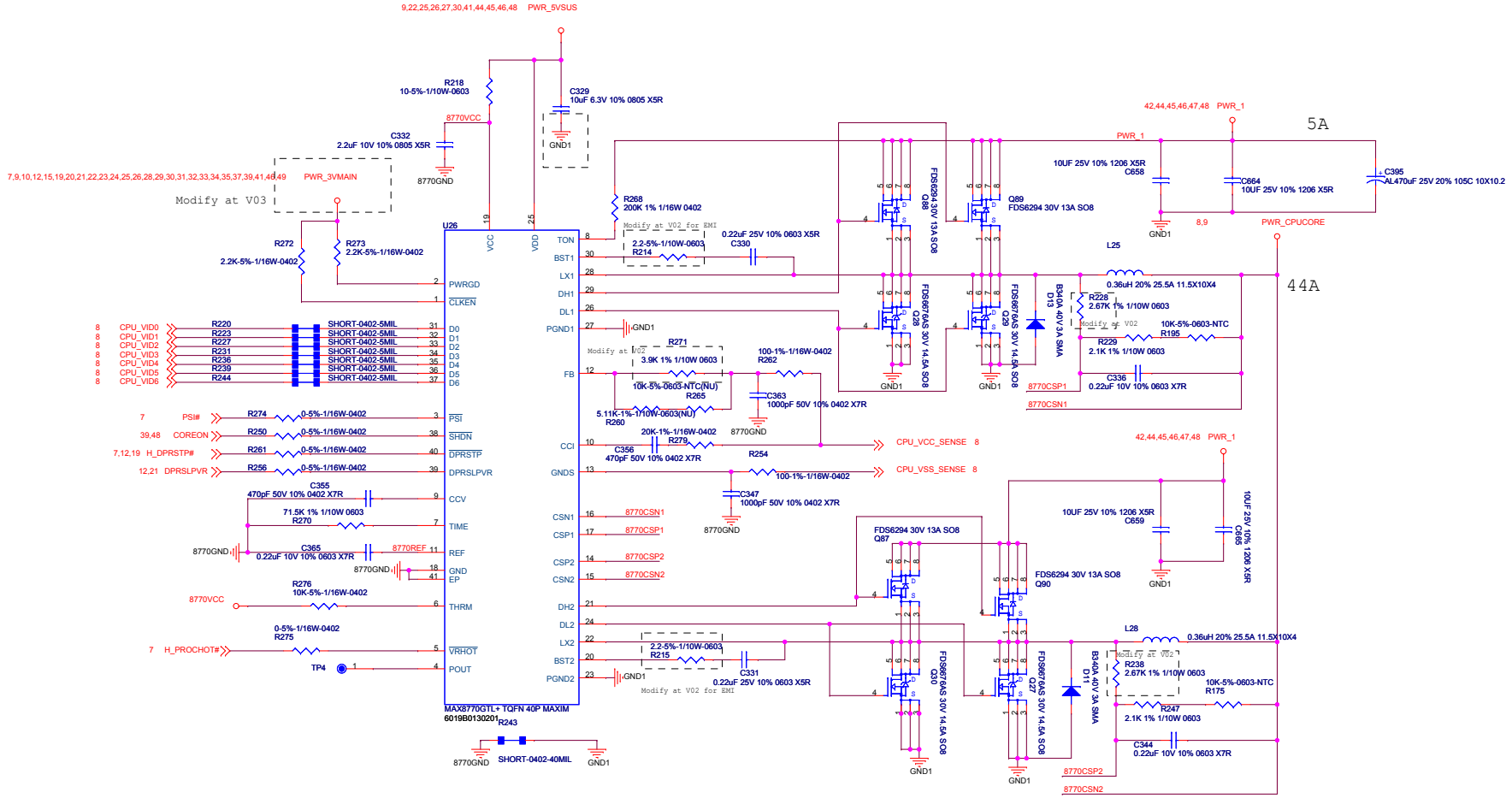
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: RESET | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 39 of 55



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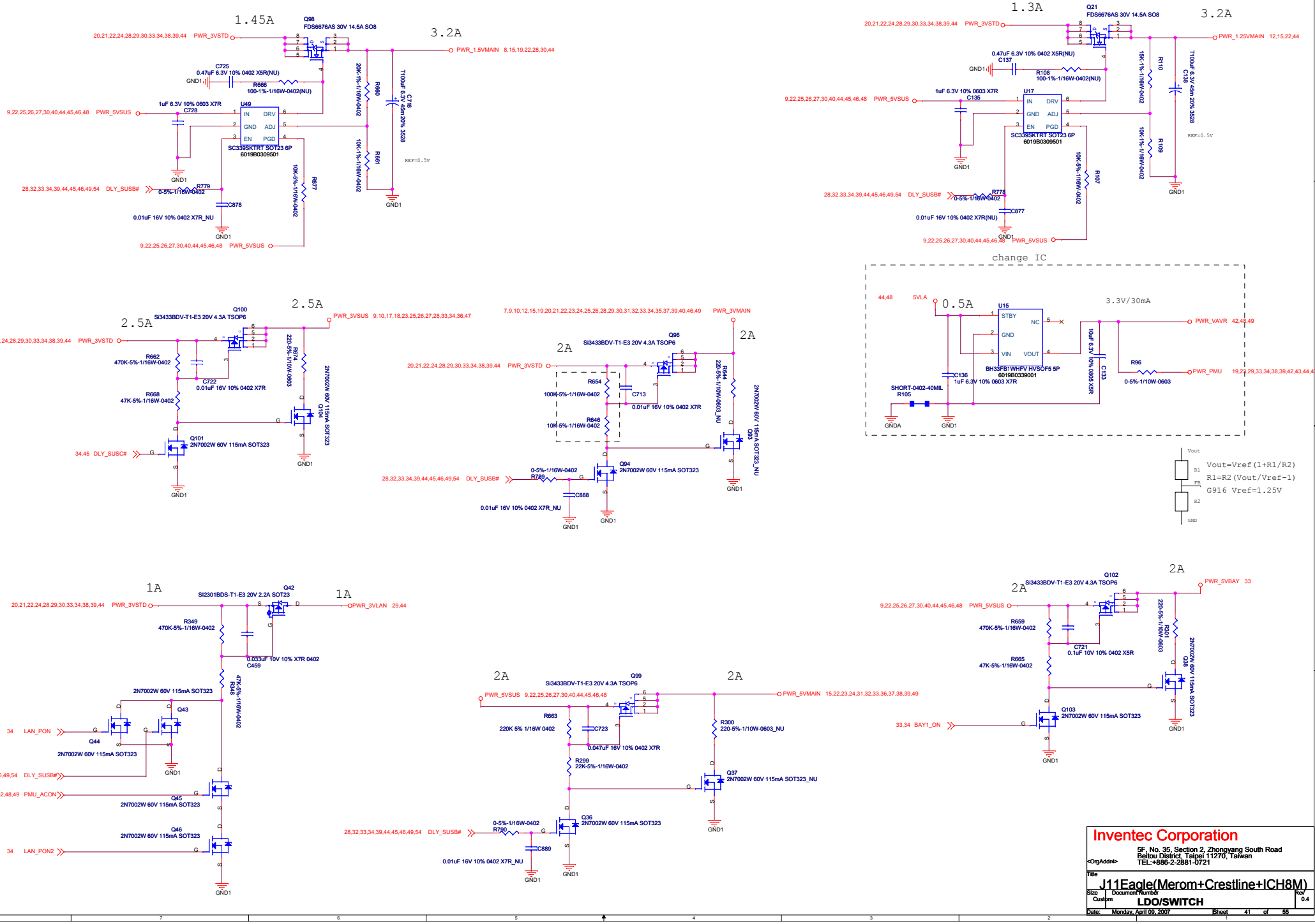
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: C | Document Number: CPU Core Power | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 40 of 55


1.45A
Q98
FDS6676AS 30V 14.5A SO8
3.2A
PWR_1.5VMAIN 8,15,19,22,28,30,44
20,21,22,24,28,29,30,33,34,38,39,44 PWR_3VSTD
C725
0.47uF 6.3V 10% 0402 X5R(NU)
R666
100-1%-1/16W-0402(NU)
1uF 6.3V 10% 0603 X7R
C728
U49
IN DRV
GND ADJ
EN PGD
SC3385KTRT SOT23 6P
6019B0309501
9,22,25,26,27,30,40,44,45,46,48 PWR_5VSUS
R779
0-5%-1/16W-0402
28,32,33,34,39,44,45,46,49,54 DLY_SUSB#
C878
0.01uF 16V 10% 0402 X7R_NU
220K-1%-1/16W-0402
R660
10K-1%-1/16W-0402
R661
10K-5%-1/16W-0402
R677
T100uF 6.3V 45m 20% 3528
C776
REF=0.5V
GND1
1.3A
Q21
FDS6676AS 30V 14.5A SO8
3.2A
PWR_1.25VMAIN 12,15,22,44
20,21,22,24,28,29,30,33,34,38,39,44 PWR_3VSTD
0.47uF 6.3V 10% 0402 X5R(NU)
C137
R108
100-1%-1/16W-0402(NU)
1uF 6.3V 10% 0603 X7R
C135
U17
IN DRV
GND ADJ
EN PGD
SC3385KTRT SOT23 6P
6019B0309501
9,22,25,26,27,30,40,44,45,46,48 PWR_5VSUS
R778
0-5%-1/16W-0402
28,32,33,34,39,44,45,46,49,54 DLY_SUSB#
C877
0.01uF 16V 10% 0402 X7R(NU)
15K-1%-1/16W-0402
R110
10K-1%-1/16W-0402
R109
10K-5%-1/16W-0402
R107
T100uF 6.3V 45m 20% 3528
C138
REF=0.5V
GND1
change IC
44,48 5VLA
0.5A
3.3V/30mA
U15
STBY NC
GND
VIN VOUT
BH33FB1WHFV HVSOF5 5P
6019B0033001
PWR_VAVR 42,48,49
PWR_PMU 19,22,29,33,34,38,39,42,43,44,47,4
C136
1uF 6.3V 10% 0603 X7R
10uF 6.3V 10% 0805 X5R
C133
R96
0-5%-1/10W-0603
SHORT-0402-40MIL
R105
GNDA
GND1
Vout
R1
FB
R2
GND
Vout=Vref(1+R1/R2)
R1=R2(Vout/Vref-1)
G916 Vref=1.25V
2.5A
Q100
SI3433BDV-T1-E3 20V 4.3A TSOP6
2.5A
PWR_3VSUS 9,10,17,18,23,25,26,27,28,33,34,36,47
20,21,22,24,28,29,30,33,34,38,39,44 PWR_3VSTD
R662
470K-5%-1/16W-0402
C722
0.01uF 16V 10% 0402 X7R
R668
47K-5%-1/16W-0402
R674
220-5%-1/10W-0603
2N7002W 60V 115mA SOT323
Q104
Q101
2N7002W 60V 115mA SOT323
34,45 DLY_SUSC#
GND1
7,9,10,12,15,19,20,21,22,23,24,25,26,28,29,30,31,32,33,34,35,37,39,40,46,49 PWR_3VMAIN
Q96
SI3433BDV-T1-E3 20V 4.3A TSOP6
2A
2A
20,21,22,24,28,29,30,33,34,38,39,44 PWR_3VSTD
R654
100K-5%-1/16W-0402
C713
0.01uF 16V 10% 0402 X7R
R646
10K-5%-1/16W-0402
R644
220-5%-1/10W-0603_NU
2N7002W 60V 115mA SOT323_NU
Q93
Q94
2N7002W 60V 115mA SOT323
0-5%-1/16W-0402
R780
28,32,33,34,39,44,45,46,49,54 DLY_SUSB#
C888
0.01uF 16V 10% 0402 X7R_NU
GND1
1A
Q42
SI2301BDS-T1-E3 20V 2.2A SOT23
1A
PWR_3VLAN 29,44
20,21,22,24,28,29,30,33,34,38,39,44 PWR_3VSTD
R349
470K-5%-1/16W-0402
0.033uF 10V 10% X7R 0402
C459
47K-5%-1/16W-0402
R348
2N7002W 60V 115mA SOT323
Q43
34 LAN_PON
Q44
2N7002W 60V 115mA SOT323
28,32,33,34,39,44,45,46,49,54 DLY_SUSB#
34,42,48,49 PMU_ACON
Q45
2N7002W 60V 115mA SOT323
Q46
2N7002W 60V 115mA SOT323
34 LAN_PON2
GND1
2A
Q99
SI3433BDV-T1-E3 20V 4.3A TSOP6
2A
2A
PWR_5VMAIN 15,22,23,24,31,32,33,36,37,38,39,49
PWR_5VSUS 9,22,25,26,27,30,40,44,45,46,48
R663
220K 5% 1/16W 0402
C723
0.047uF 16V 10% 0402 X7R
R299
22K-5%-1/16W-0402
R300
220-5%-1/10W-0603_NU
Q37
2N7002W 60V 115mA SOT323_NU
Q36
2N7002W 60V 115mA SOT323
0-5%-1/16W-0402
R780
28,32,33,34,39,44,45,46,49,54 DLY_SUSB#
C889
0.01uF 16V 10% 0402 X7R_NU
GND1
2A
Q102
SI3433BDV-T1-E3 20V 4.3A TSOP6
2A
PWR_5VBAY 33
9,22,25,26,27,30,40,44,45,46,48 PWR_5VSUS
R659
470K-5%-1/16W-0402
C721
0.1uF 10V 10% 0402 X5R
R665
47K-5%-1/16W-0402
R301
220-5%-1/10W-0603
2N7002W 60V 115mA SOT323
Q38
Q103
2N7002W 60V 115mA SOT323
33,34 BAY1_ON
GND1
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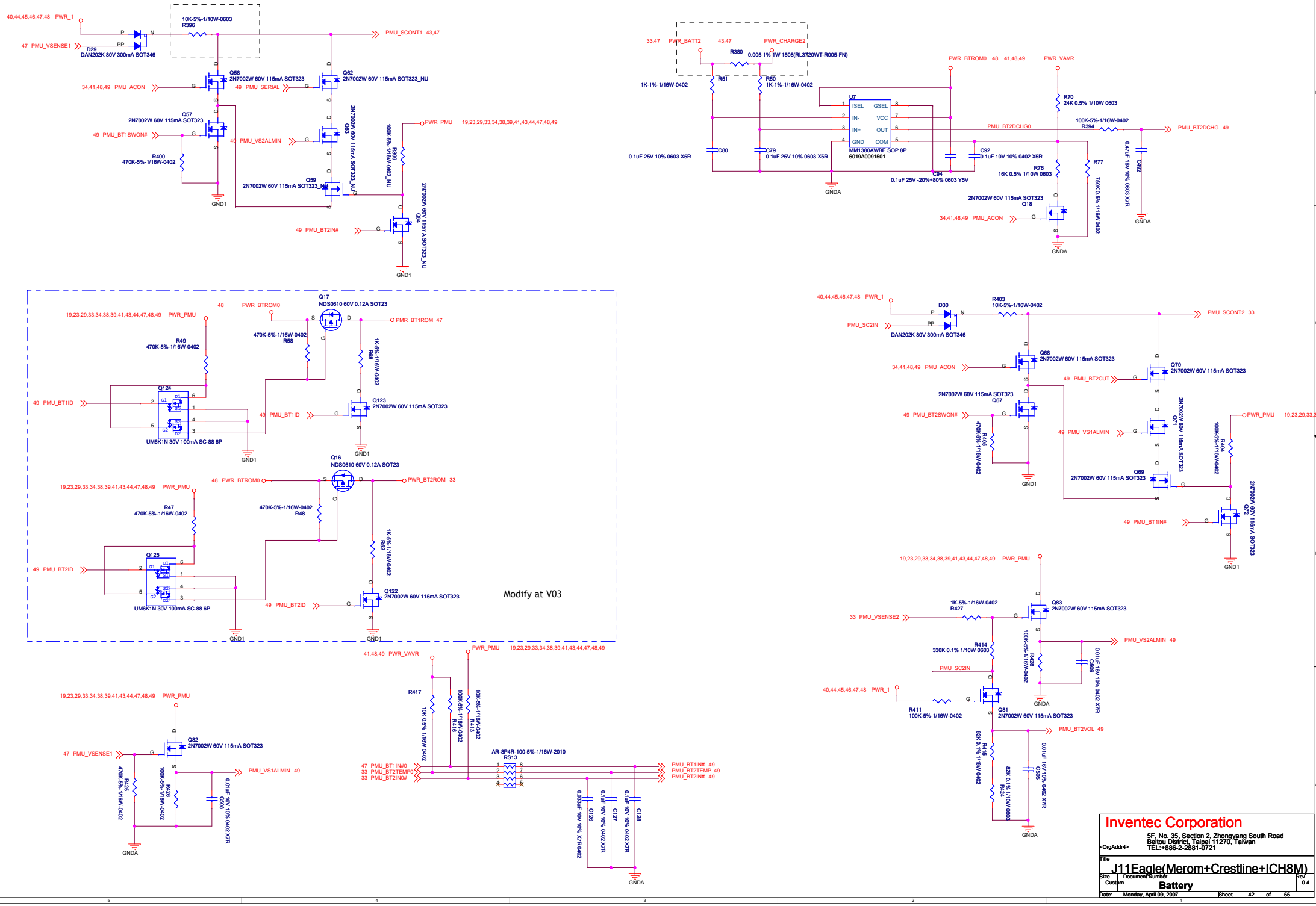
Title
J11Eagle(Merom+Crestline+ICH8M)
Size Custom
Document Number
LDO/SWITCH
Rev 0.4
Date: Monday, April 09, 2007
Sheet 41 of 55



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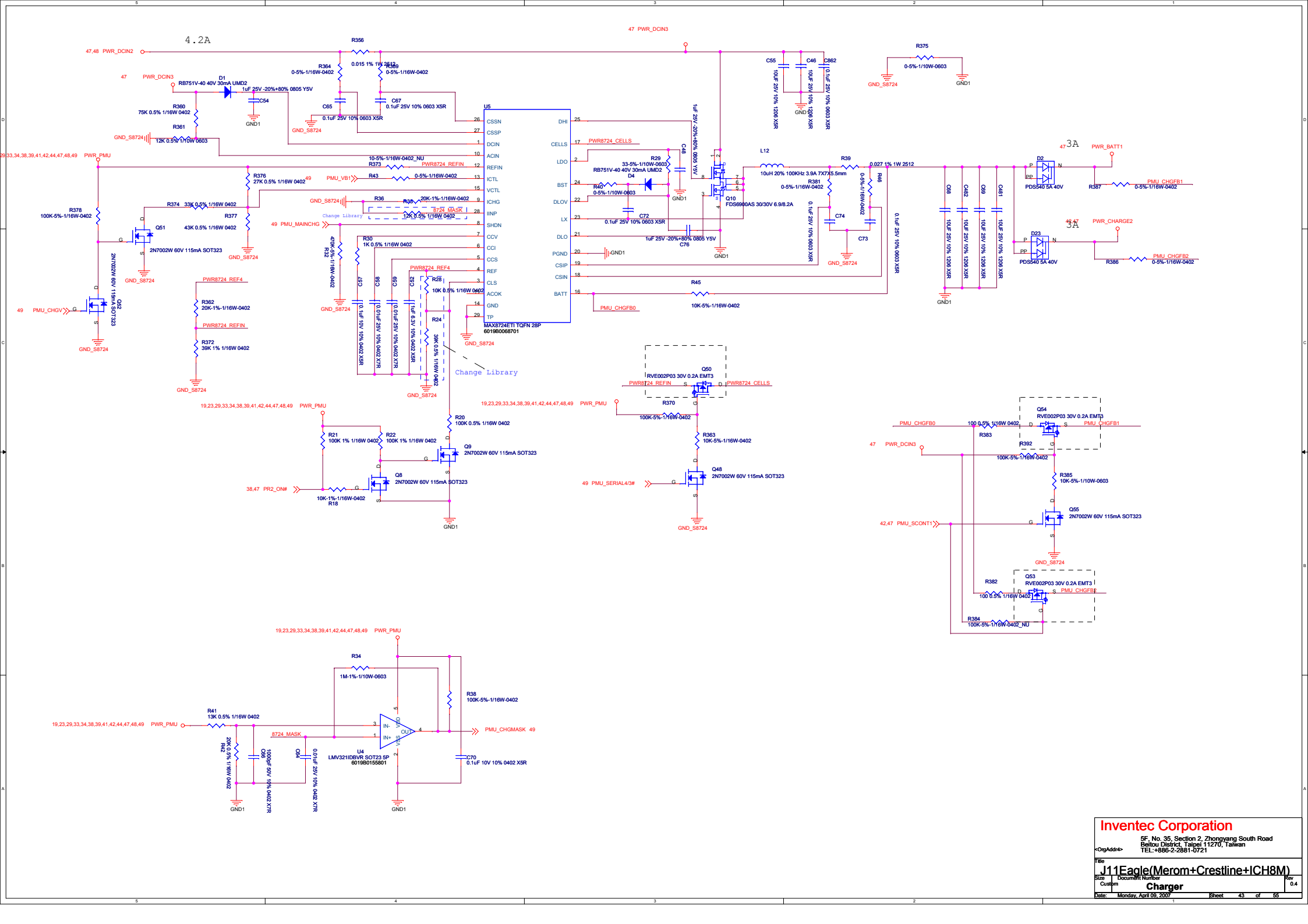
Size: Custom | Document Number: Battery | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 42 of 55



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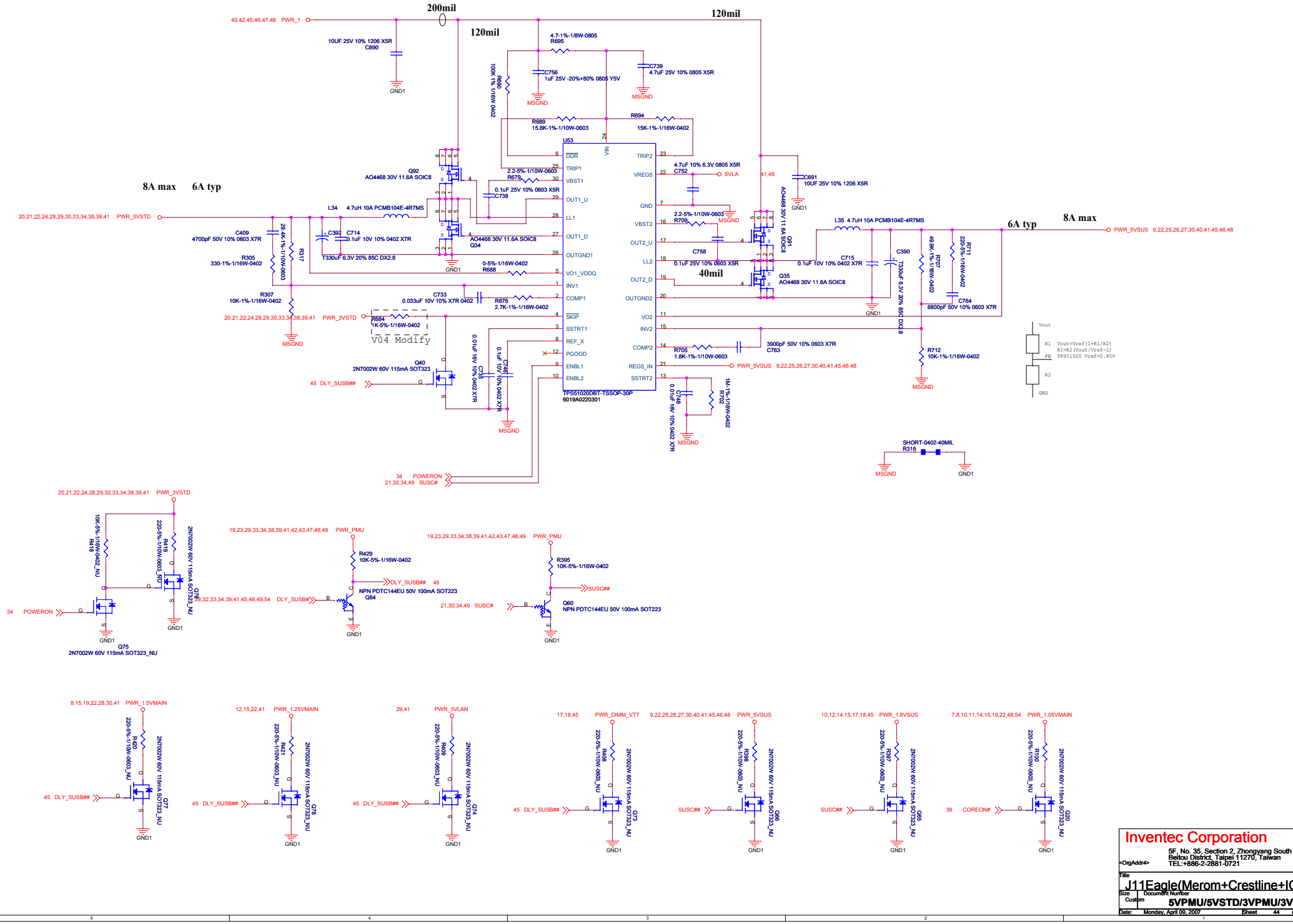
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: Custom | Document Number: Charger | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 43 of 55



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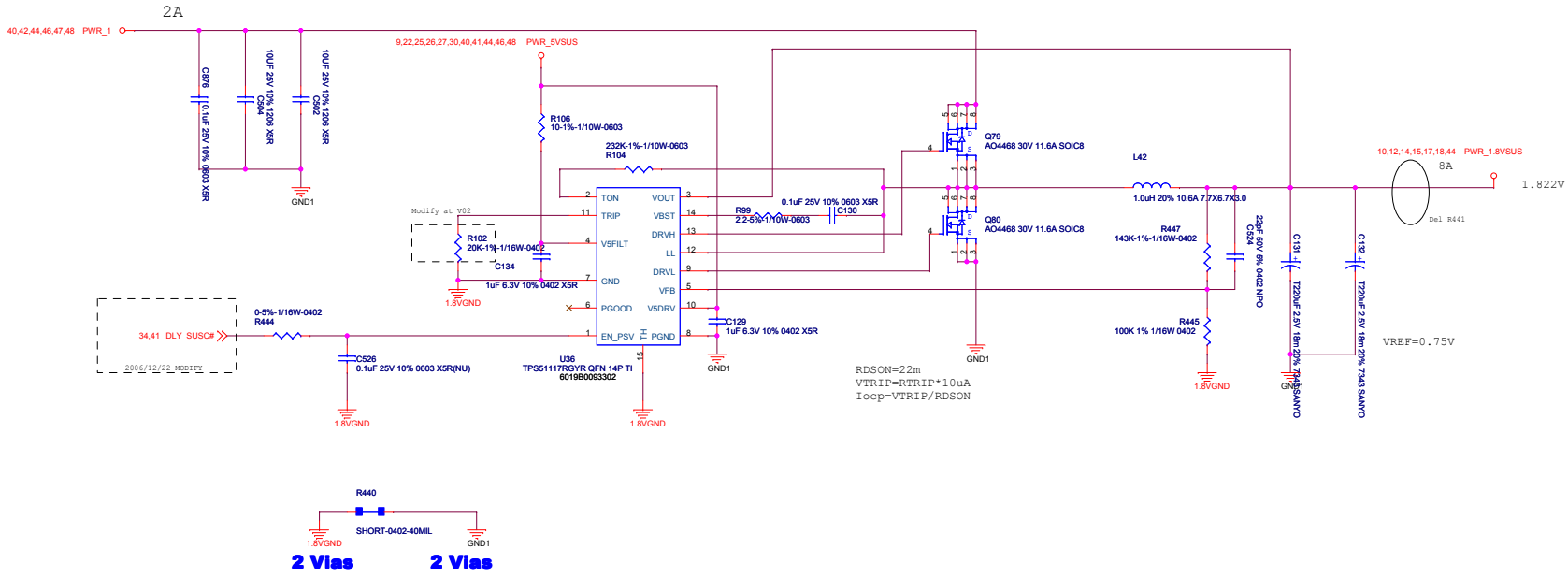
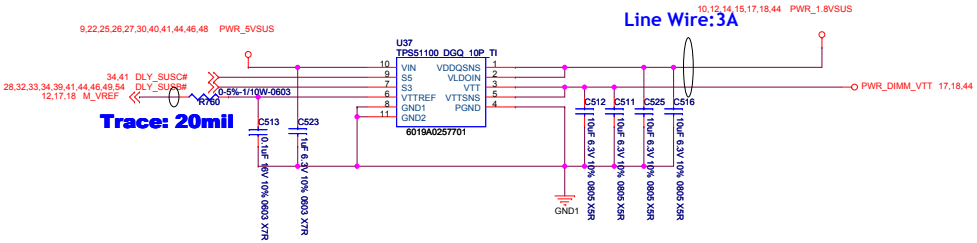
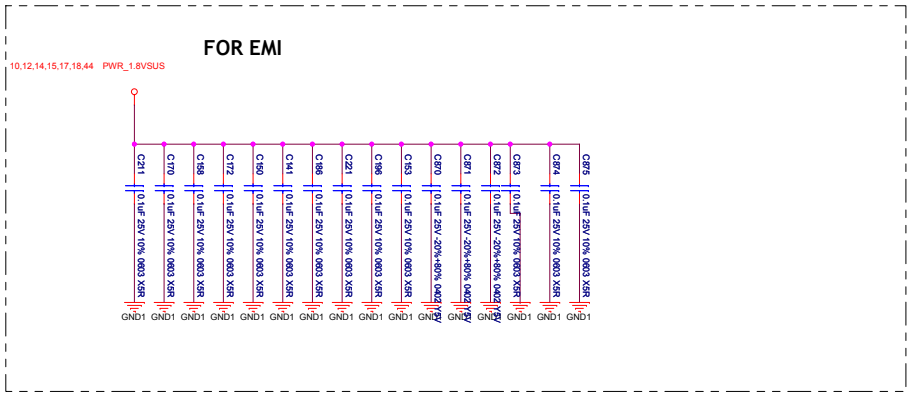
Date: Monday, April 09, 2007 | Sheet 44 of 55



DDRII Terminator Power





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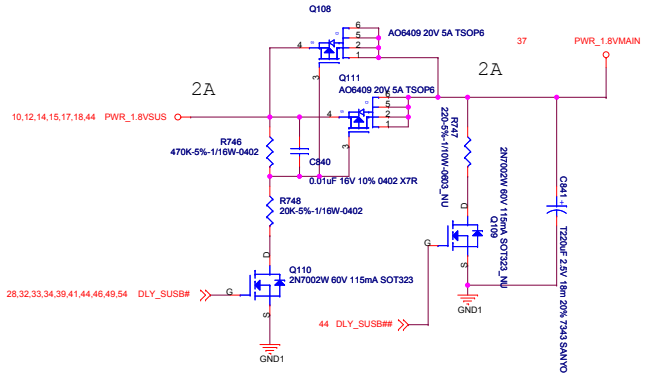

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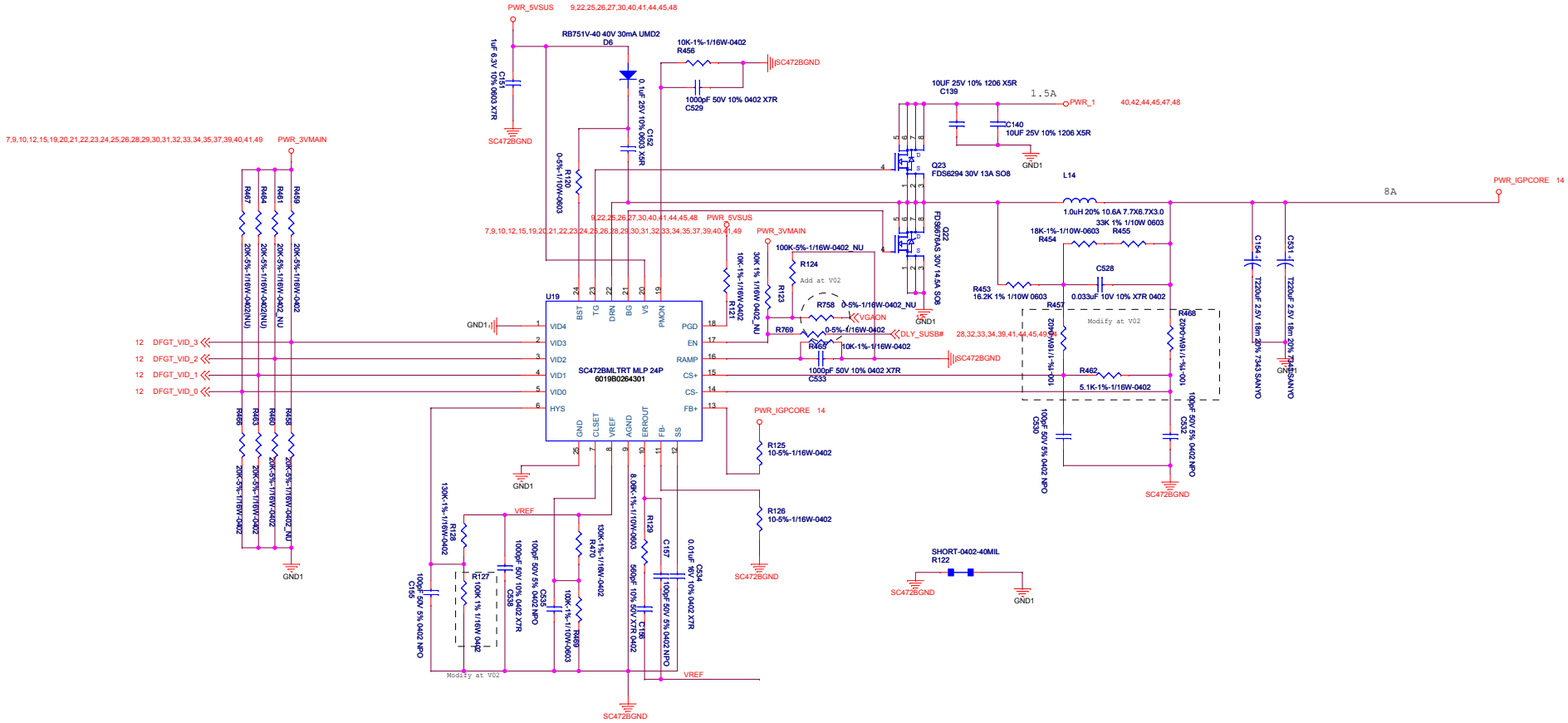
Title: J11Eagle(Merom+Crestline+ICH8M)

Size	Document Number	Rev
Custom	1.8V_DIMM	0.4

Date: Monday, April 09, 2007 Sheet 45 of 55



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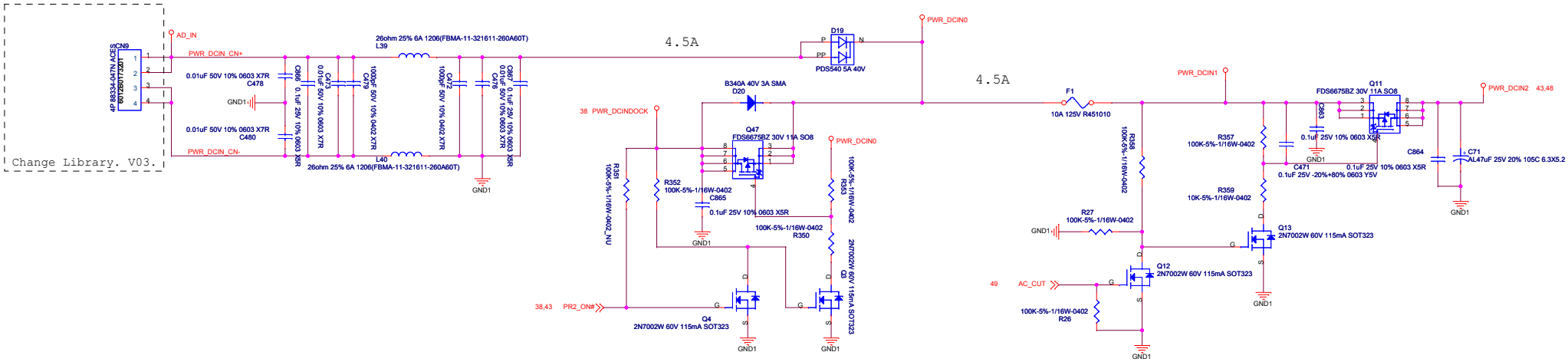
Title: J11Eagle(Merom+Crestline+ICH8M)

Size	Document Number	Rev
Custom	GPU_CORE	0.4

Date: Monday, April 09, 2007 Sheet 46 of 55



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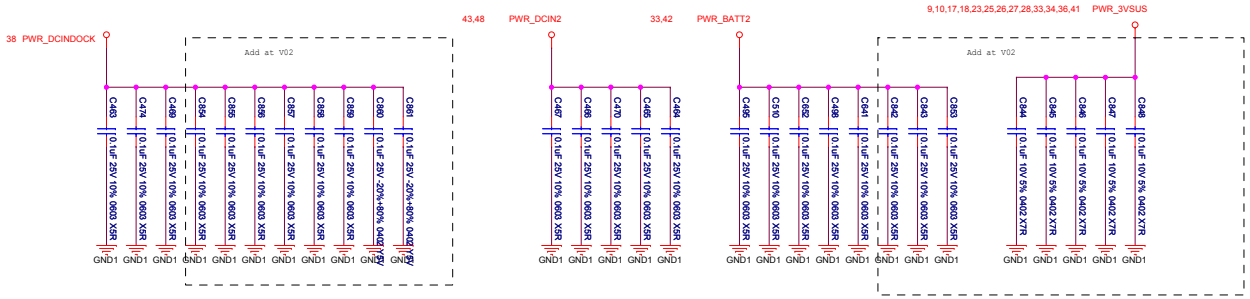

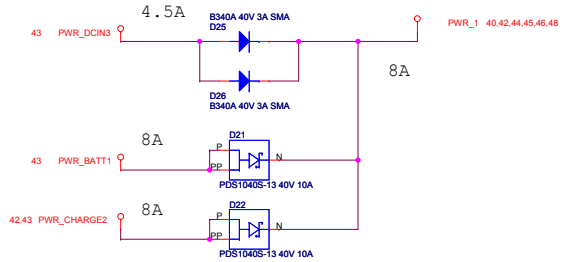

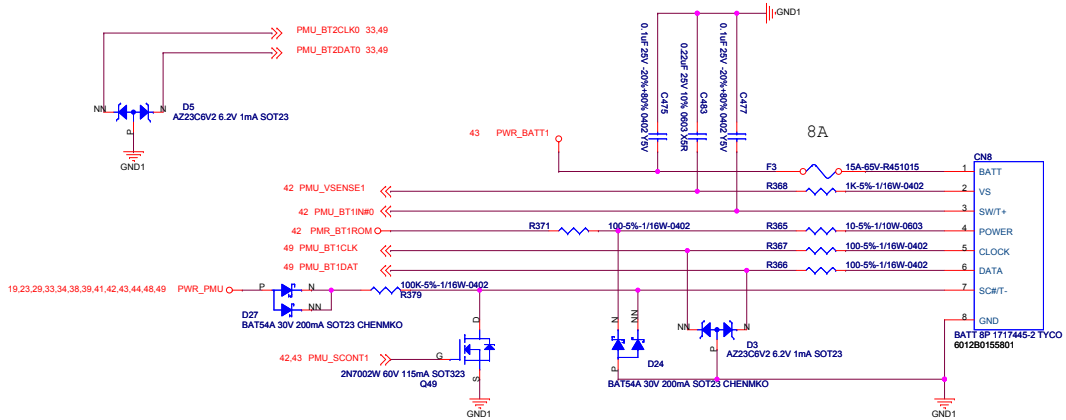

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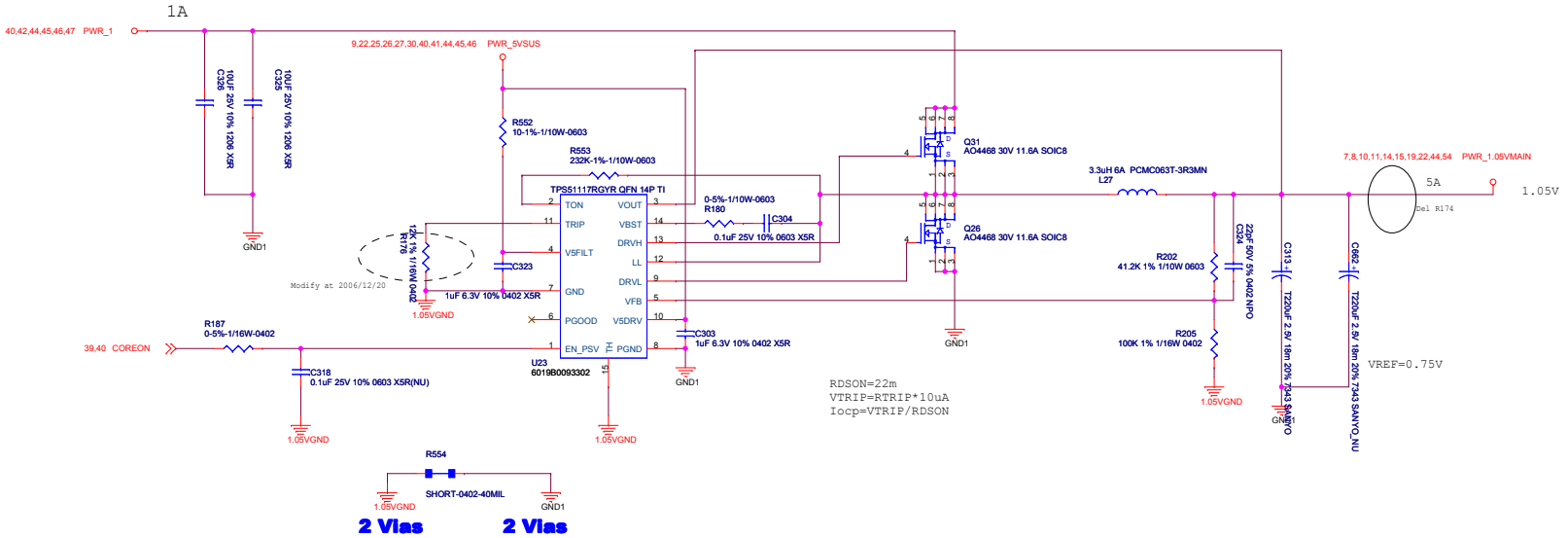
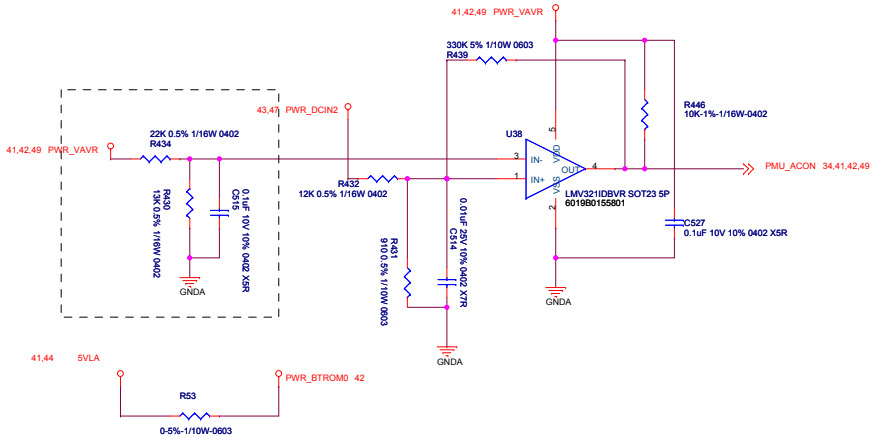
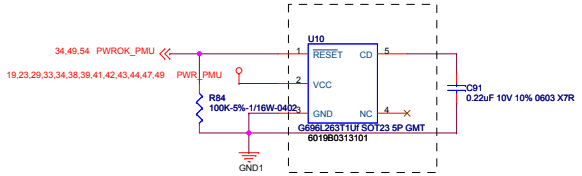
Size: Custom | Document Number: BATTERY CN | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 47 of 55







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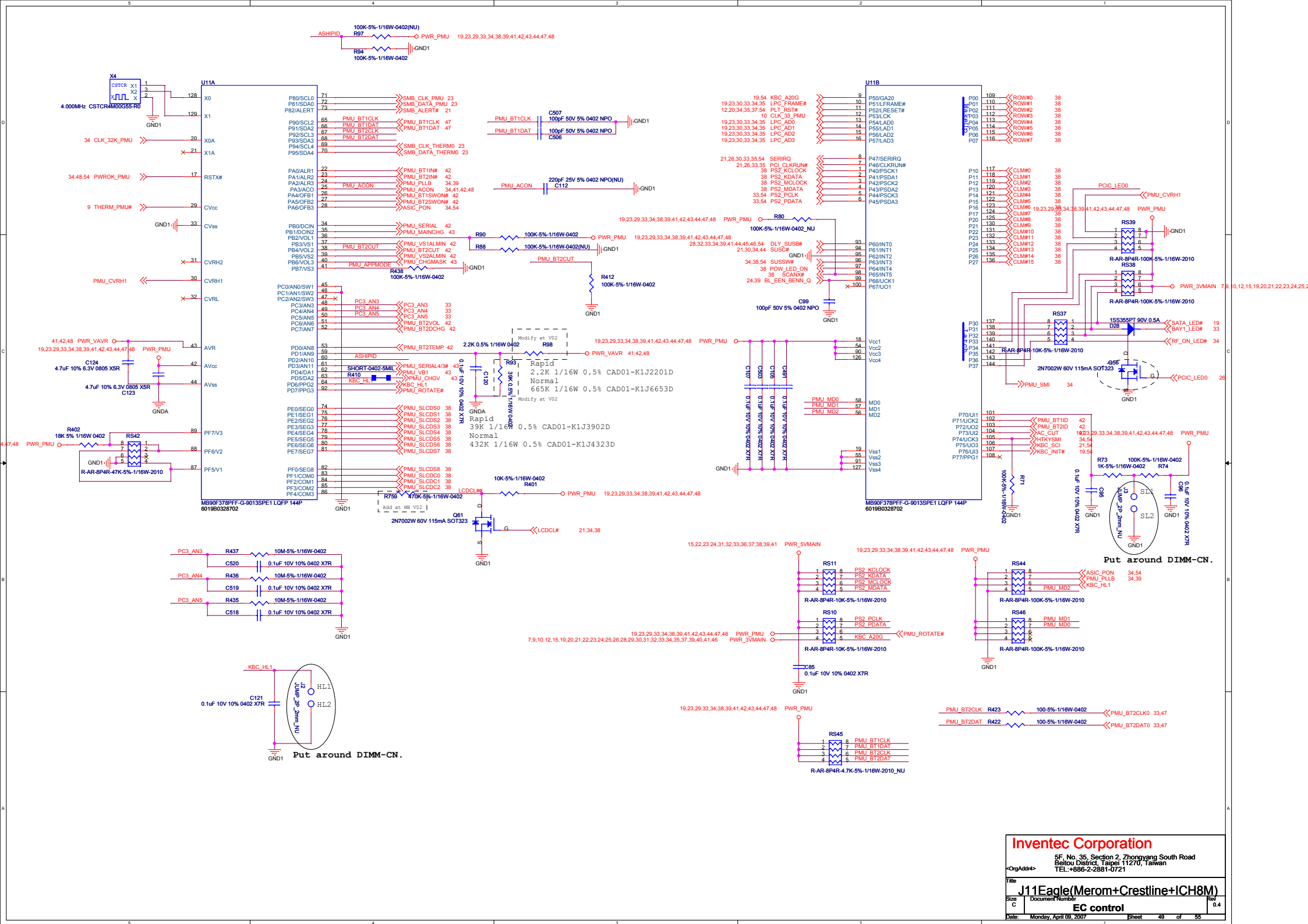
Title: J11Eagle(Merom+Crestline+ICH8M)

Size: Custom | Document Number: 1.05V/ETC0 | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 48 of 55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MB90F378PFF-G-9013SPE1 LQFP 144P
6019B0328702
U11B
MB90F378PFF-G-9013SPE1 LQFP 144P
6019B0328702
4.000MHz CSTCR4M00G55-R0
100K-5%-1/16W-0402(NU)
R97
R94
100K-5%-1/16W-0402
ASHIPID
PWR_PMU
GND1
C507
C506
100pF 50V 5% 0402 NPO
PMU_BT1CLK
PMU_BT1DAT
C112
220pF 25V 5% 0402 NPO(NU)
PMU_ACON
R90
R88
100K-5%-1/16W-0402
100K-5%-1/16W-0402(NU)
R438
R412
PMU_BT2CUT
R80
100K-5%-1/16W-0402_NU
C99
100pF 50V 5% 0402 NPO
R98
2.2K 0.5% 1/16W 0402
R93
39K 0.5% 1/16W 0402
C120
0.1uF 10V 10% 0402 X7R
Modify at V02
Rapid
2.2K 1/16W 0.5% CAD01-K1J2201D
Normal
665K 1/16W 0.5% CAD01-K1J6653D
Rapid
39K 1/16W 0.5% CAD01-K1J3902D
Normal
432K 1/16W 0.5% CAD01-K1J4323D
C124
4.7uF 10% 6.3V 0805 X5R
C123
4.7uF 10% 6.3V 0805 X5R
GNDA
R402
18K 5% 1/16W 0402
RS42
R-AR-8P4R-47K-5%-1/16W-2010
SHORT-0402-5MIL
R410
R759
470K-5%-1/16W-0402
Add at MB V02
R401
10K-5%-1/16W-0402
Q61
2N7002W 60V 115mA SOT323
LCDCL#
C107
C103
C105
C101
0.1uF 10V 10% 0402 X7R
PMU_MD0
PMU_MD1
PMU_MD2
R71
100K-5%-1/16W-0402
R73
1K-5%-1/16W-0402
R74
100K-5%-1/16W-0402
C95
0.1uF 10V 10% 0402 X7R
C96
0.1uF 10V 10% 0402 X7R
J3
JUMP-2P-2mm_NU
SL1
SL2
Put around DIMM-CN.
PCIC_LED0
PMU_CVRH1
RS39
RS38
R-AR-8P4R-100K-5%-1/16W-2010
RS37
R-AR-8P4R-10K-5%-1/16W-2010
1SS355PT 90V 0.5A
D28
2N7002W 60V 115mA SOT323
Q55
SATA_LED#
BAY1_LED#
RF_ON_LED#
PMU_SMI
PWR_3VMAIN
R437
R436
R435
C520
C519
C518
10M-5%-1/16W-0402
0.1uF 10V 10% 0402 X7R
RS11
RS10
RS44
RS46
R-AR-8P4R-10K-5%-1/16W-2010
R-AR-8P4R-100K-5%-1/16W-2010
C85
0.1uF 10V 10% 0402 X7R
PS2_KCLOCK
PS2_KDATA
PS2_MCLOCK
PS2_MDATA
PS2_PCLK
PS2_PDATA
KBC_A20G
PMU_ROTATE#
ASIC_PON
PMU_PLLB
KBC_HL1
PMU_MD1
PMU_MD0
KBC_HL1
C121
0.1uF 10V 10% 0402 X7R
J2
JUMP-2P-2mm_NU
HL1
HL2
Put around DIMM-CN.
RS45
R-AR-8P4R-4.7K-5%-1/16W-2010_NU
PMU_BT2CLK
PMU_BT2DAT
R423
R422
100-5%-1/16W-0402
PMU_BT2CLK0
PMU_BT2DAT0
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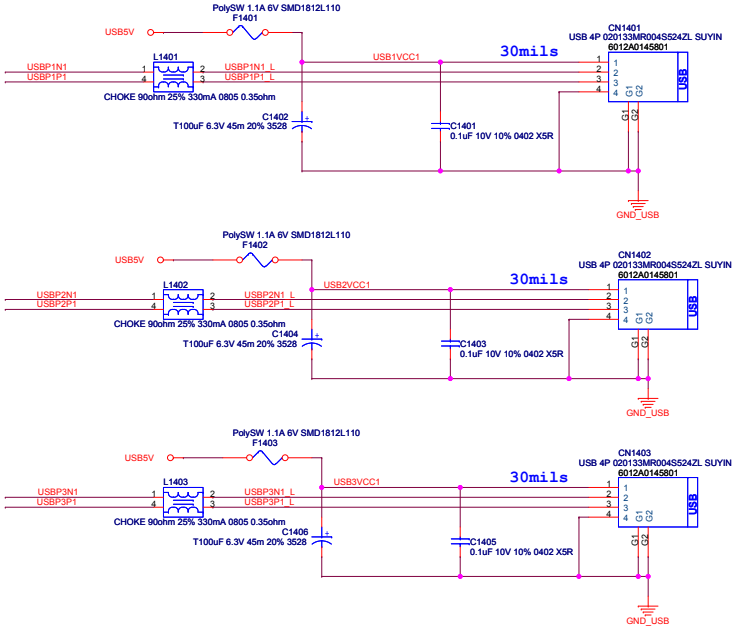
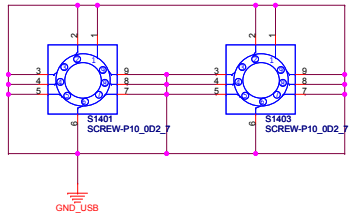
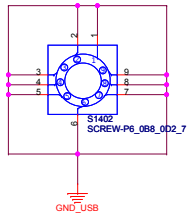
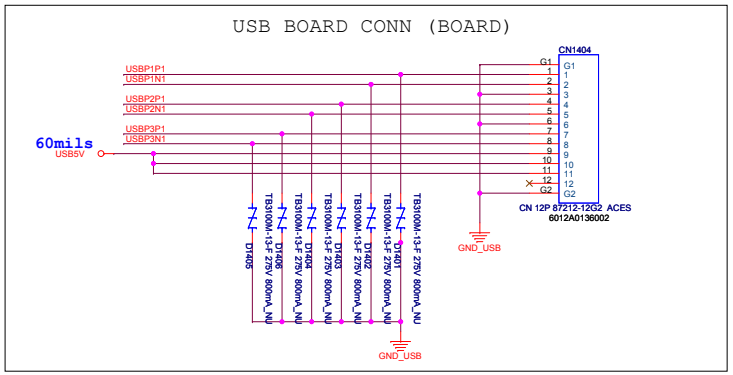
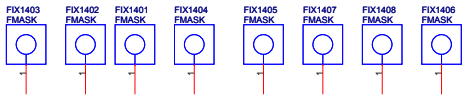
J11Eagle(Merom+Crestline+ICH8M)
EC control
Size C
Rev 0.4
Date: Monday, April 09, 2007
Sheet 49 of 55











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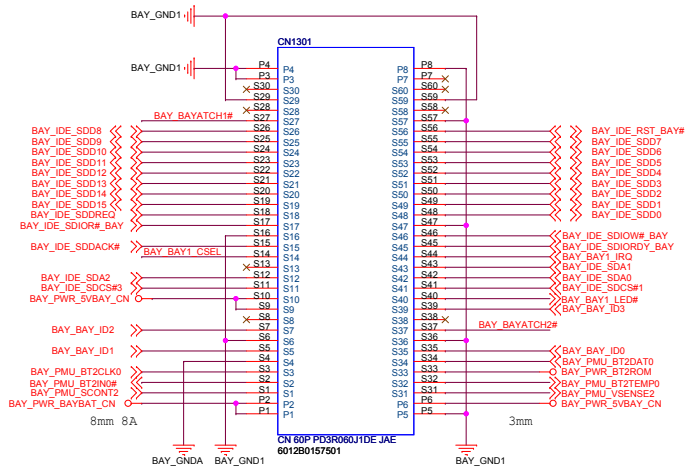
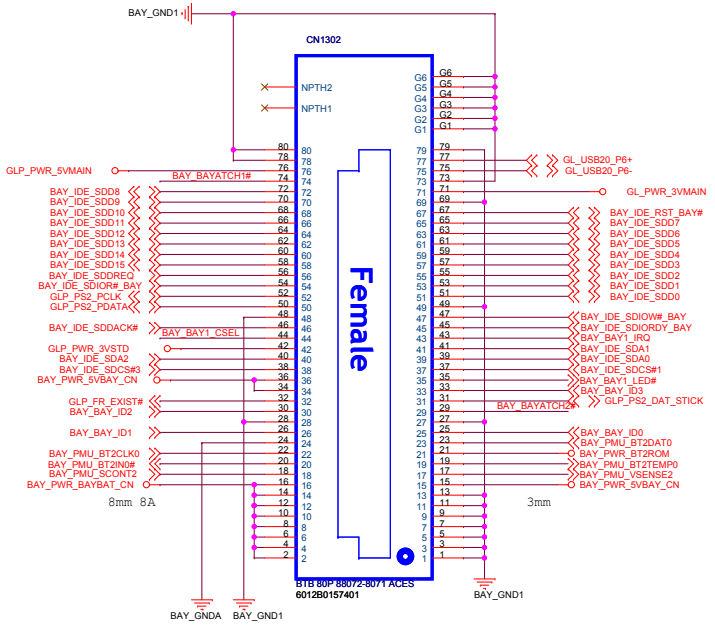
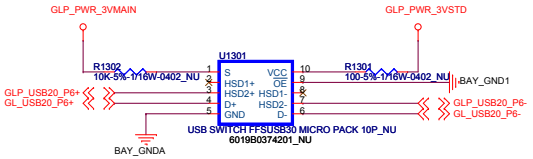
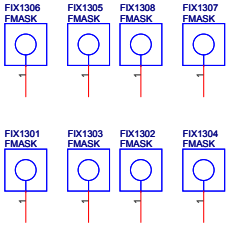
Size: Custom | Document Number: USB BOARD | Rev: 0.4

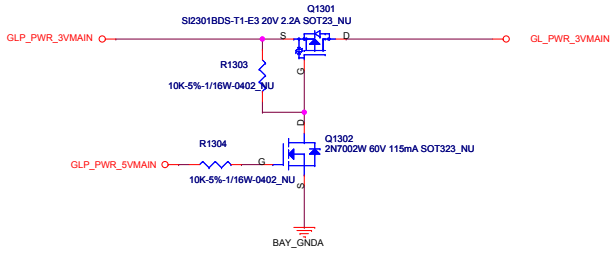
Date: Monday, April 09, 2007 | Sheet 50 of 55

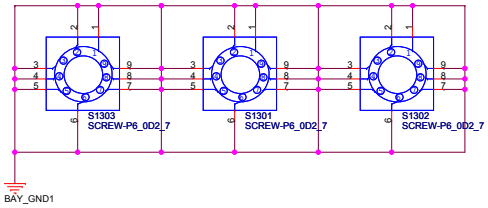


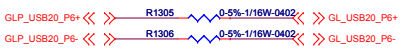


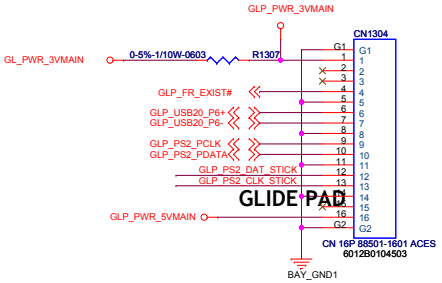


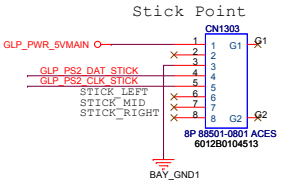












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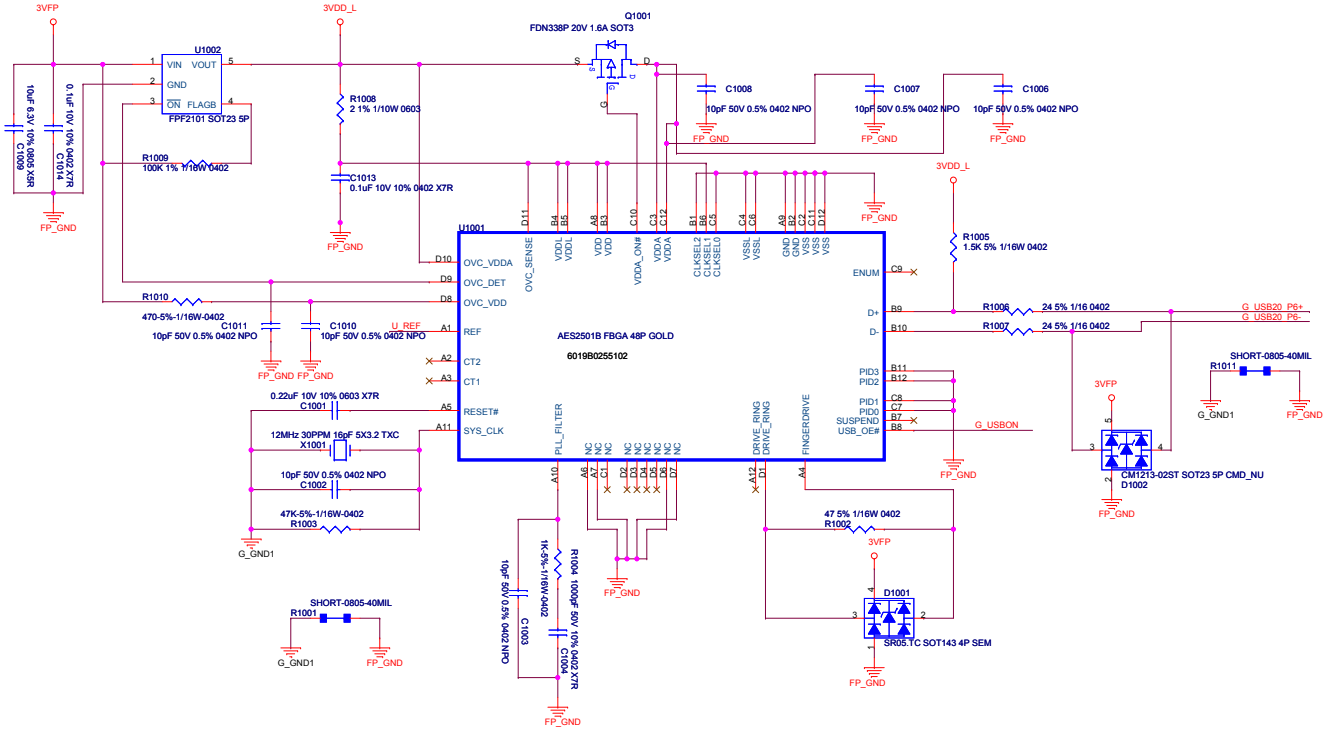
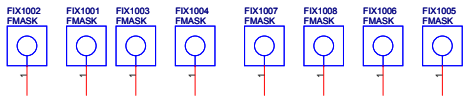
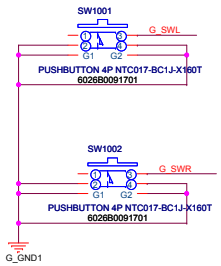
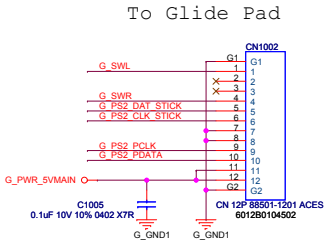
Size: C | Document Number: BAY TR BOARD | Rev: 0.4

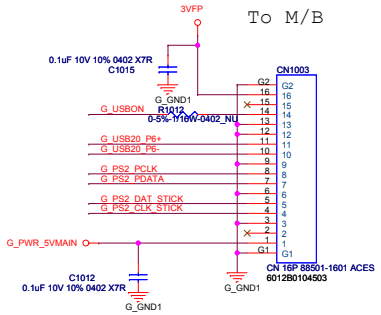
Date: Monday, April 09, 2007 | Sheet 51 of 55

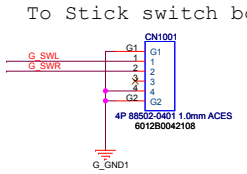












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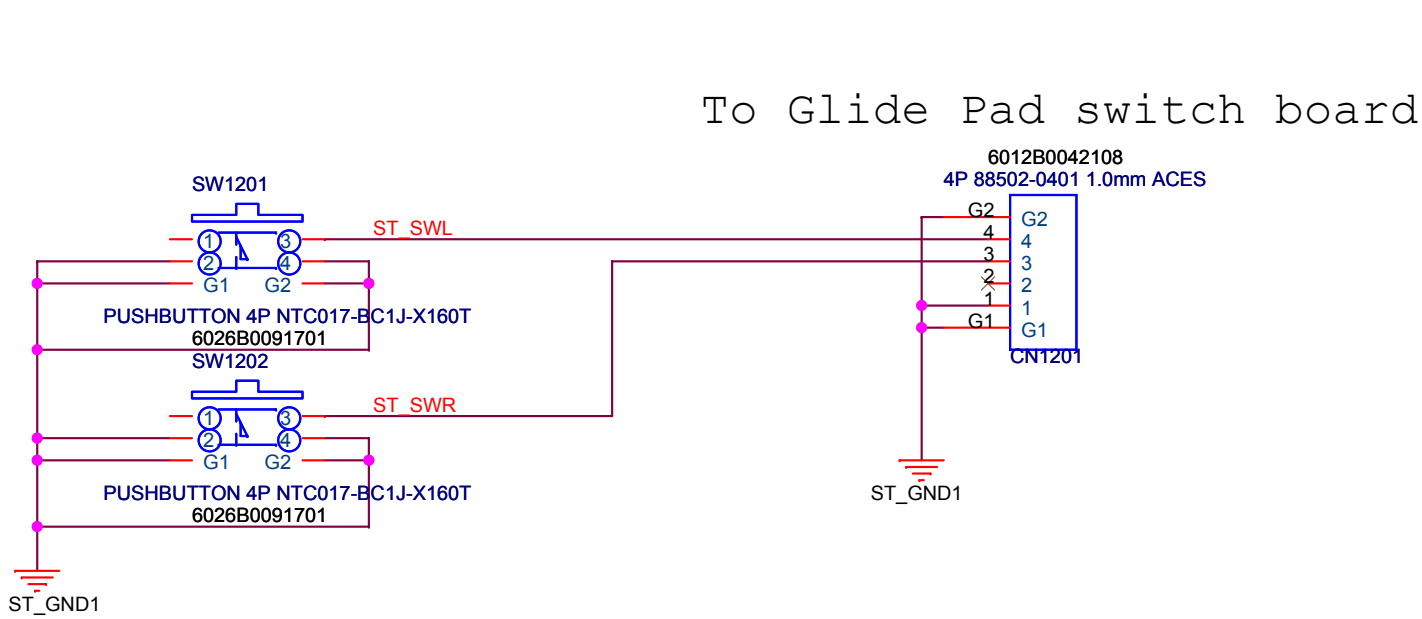
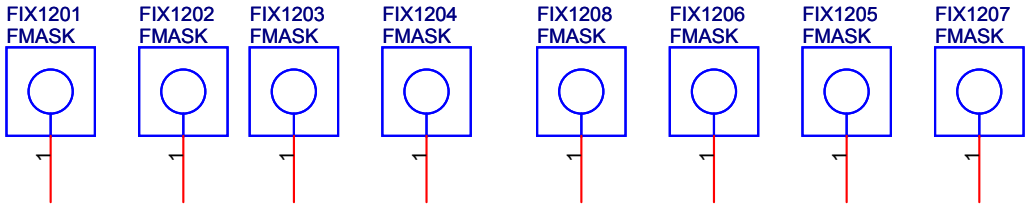
Size: Custom | Document Number: GLIDE SW BOARD | Rev: 0.4

Date: Monday, April 09, 2007 | Sheet 52 of 55





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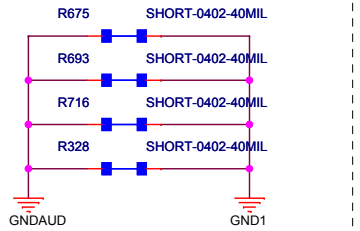
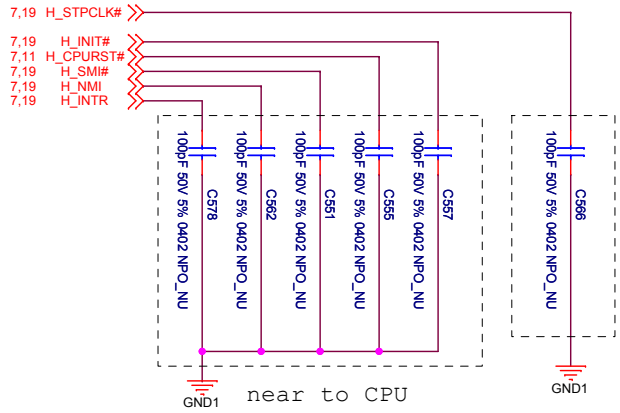
Size	Document Number	Rev
A	STICK SW BOARD	0.4

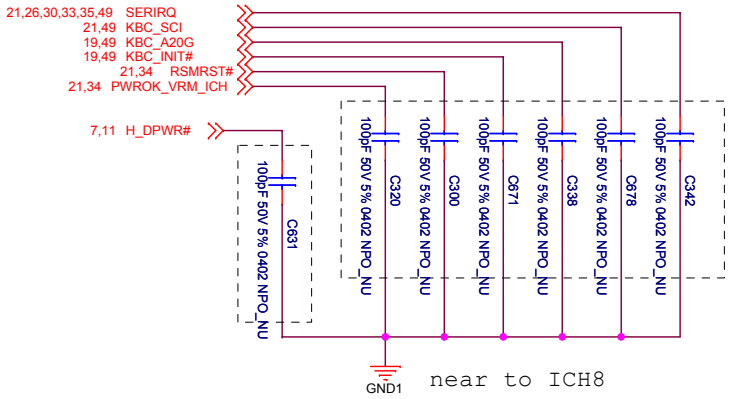
Date: Monday, April 09, 2007 Sheet 53 of 55

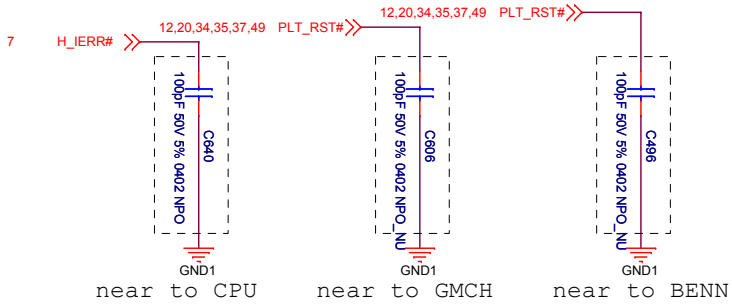
For EMI

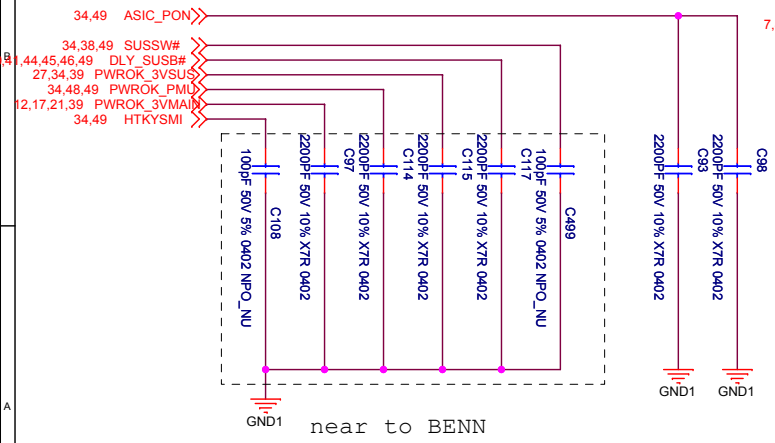
These resisters should be located the corner or Audio-GND.

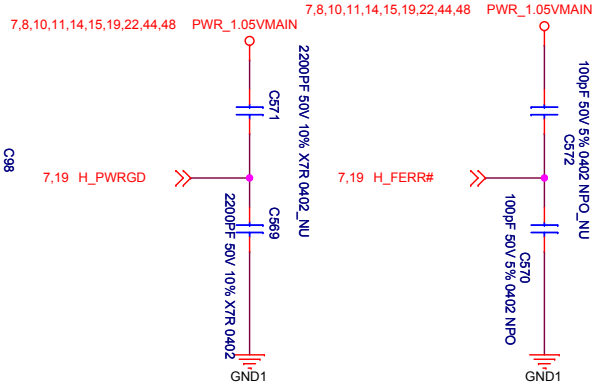


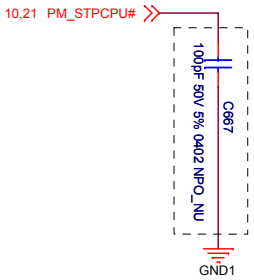


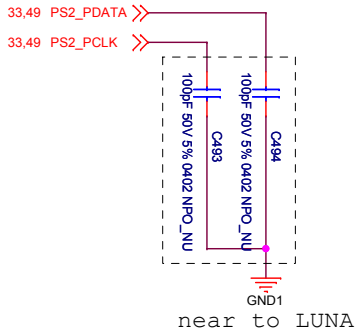












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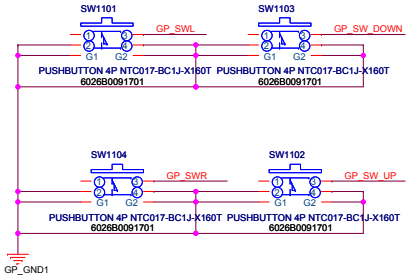
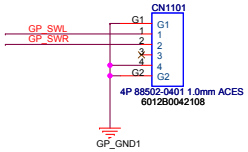
Size	Document Number	Rev
B	EMI/ESD	0.4

Date: Monday, April 09, 2007 Sheet 54 of 55



To Stick switch board



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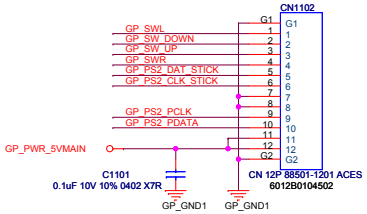

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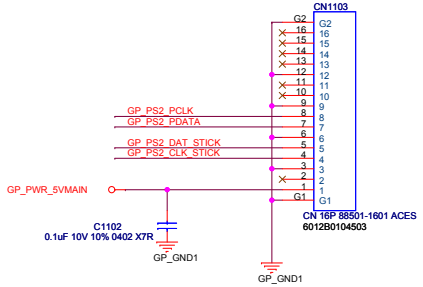

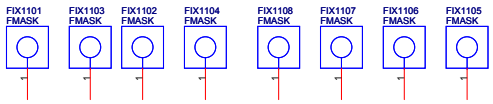

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Date: Monday, April 09, 2007 | Sheet 55 of 55