C-NOTE SYSTEM BLOCK DIAGRAM

CLOCK GENERATOR
ICS9248-157
SDRAM CLK BUFFER
ICS9112BM-17 PAGE:3

Thermal&Fan Controler
GMT G768B PAGE:22

CPU
Intel Mobile PIII/CELERON GEYSERVILIE
VCC_CORE : 1.7 V/1.35V VCC_IO : 1.5V
PAGE:4

PC100MHz

2 So-DIMM
64MB Mitsubishi MH8S64AQFP-6L
128MB Samsung M464S1724CT2-L75
128MB Infineon HYS64V16220GDL-7.5-C2
PAGE:12

CPU CORE REGULATOR
MAXIM MAX1717 PAGE:5

SYSTEM DC/DC REGULATOR
MAXIM MAX1631 PAGE:28

100MHz Host Bus

CRT PAGE:13

Trident TV EXPRESS PAGE:15
TV Out

NB
ALI M1632-C
WITH VGA /TRIDENT CYBERBLADE
PAGE:8

LCD PAGE:14
14' Samsung(LTN141X8-L00)
Hyuandai(HT14X14-101)
13' LG(LG/LP133X7-N2AD)
SANYO(TM133XG02L06B)

BATTERY CHARGER Controler
MAXIM MAX1772 PAGE:29

BATTERY CHARGER FirmWare (Ambit)
MC68HC908SR12 PAGE:30

PCI BUS/33MHz

1394Controller
TI TSB43AB22 PAGE:36

MINIPCI Socket Actiontec
802.11b/Modem card PAGE:19

LAN Intel
82550GY PAGE:31

SB
ALI M1535-B1B
(With SIO) PAGE:16

PCMCIA Controler
O2MICRO OZ6912 PAGE:18

Power Switch
MICREL MIC2562A PAGE:18

PAGE:18
ONE SLOT

ULTRA 33/66

PRIMARY HDD
IBM(IC25N010/15/30ATDA04)
Hitachi(DK23CA-10/15/30)
PAGE:20

UltraBay

USB 2 PORT PAGE:19

ISA BUS

RTC Benchmarq BQ3285LF PAGE:27

KBC Mitsubishi M38867 PAGE:23

BIOS MXIC MX29F004 4Mbit PAGE:27

CDC connector

AC LINK

MODEM CDCPORT (AMBIT) PAGE:19

AUDIO CODEC Realtec ALC200 PAGE:25

MIC In

PAGE:24

CD ROM
TEAC CD-224E-B25
LG CRN-8245B

DVD ROM
Hitachi GD-S250
MKE SR-8175B

CD-RW
SONY CRX700E-10

DVD/CD-RW
Toshiba SD-R2002

FDD

USB PORT
PAGE:34

FIR
Infineon IRMS6453 PAGE:27

Debug Port PAGE:27

TRACK POINT PAGE:21

INT KB PAGE:21

Printer PORT
Serial Port PAGE:24

OP AMP TI TPA0202 PAGE:26

Line Out

Port Replicator (244PIN) PAGE:35

Serial Printer CRT USB RJ45 RJ11 PS2 Legency FDD Line In Line Out AC In

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Taiwan,R.O.C.

Title: BLOCK DIAGRAM
Size: A3 | Document Number: C-Note | Rev: -4
Date: Monday, December 03, 2001 | Sheet 1 of 36

SHEET INDEX

History

Rev:SA

Rev:SB

1.(P.3) PCICLK0 assign for 1394 chip
2.(P.5) R187/492 change from 0 ohm to 4.7 ohm
3.(P.7) Change charger flash circuit,use NC7SZ125 U83/83
4.(P.7) change +1.5V generate circuit (0324)
5.(P.8) 1632 E22/G22 change power to M+3V
6.(P.9) Add +2.5V bypass cap BC544
7.(P.13) Add U85 for 24C02 switch
8.(P.14) Change LCD interface
9.(P.15) Change TV-Port connector SKT2
10.(P.16) Change PCIRST#_3 logic circuit
11.(P.16) SB 32K for NB reserve bypass trace
12.(P.16) Change GPIO assihnment
XFD_INST# / CHKPW /SERIAL_EN / SB_Fn
/ 24C08_WP
13.(P.17) BT_RESET_3 change to PL(SB HW setting)
14.(P.18) PME#_RSM block leakage circuit change
15.(P.19) PME#_RSM block leakage circuit change
16.(P.19)MINIPCI add AC97 interface
17.(P.19)Change MDC interface to CDC interface
18.(P.19)Change modem cable connector
19.(P.20)Change USB connectors
20.(P.21)Combin bluetooth interface to CDC interface
21.(P.22)G768B Thermal Alert add 100K PL to prevent abnormal low signal
22.(P.22)Change FAN/LID connector type
23.(P.22)Change 24C08 to 24RF08
24.(P.22)24RF08 write protect signal change to C02/RF08#
25. (P.23)Remove TP4 PS/2 mouse serial function
26. (P.23)Change KBC GPIO TP4/PS2# / KBID2 / 3_MODE# / BLUEIN#
27. (P.23)KBC SMBus change power to M+5V
28. (P.24)Add printer port FDD support
29. (P.24)1394 connecter add common mode choke
30. (P.26)Change speaker connector
31. (P.28)Change M+3V/+3.3V/+5V power switch on/off circuit
32. (P.29)Change charger current control circuit and
add Li-Ion battery full power charge function
33. (P.30)Change battery LED indicator circuit
34. (P.30)Change AD In logic,R224 to 18K ohm
35. (P.31)Conbine RJ45/RJ11 connector
36. (P.34)Change Ultra Bay power control with TPS2013D
37. (P.35)Change modem connector type
38. (P.36)Add 1394 circuit
39. (P.25/26) SPKR_L/R+1 connec to LINE_OUTL/R
40. (P.16)PNF / VRCHANGE# / XFD_INST# routing together
41. (P.6/14/15/21)U66 change HC14 to LCX14
42. (P.28)UBAY_+5VSB/M+5V/+5V/POWER_ON Logic change
43. (P.19)Modify CDC / MINIPCI interface.
44. (P.22)Add RA48 on FAN1_FG pin
45. (P.23)KBC P44 modify MDMIN#
46. (P.25)Add MDM_BEEP for BUZZER source
47. (P.19)Remove MiniPCI Pin-100 SERIRQ
48. (P.26)Change Audio Jack Type
49. (P.29)Change DC Power Jack Type
50. (P.22)HW_THERM_EN change always PH,not control by GPO
51. (P.16)RA41 mount
52. (P.25)RA43/RA44 mount,BC227/247 un-mount
53. (P.23)KBC port44 change to USB_WAKE_EN
54. (P.28)Add Q44 for Haedward Thermal Shutdown
55. (P.34)Change FDD LEDsignal to DR0/1#_5
56. (P.28)U96 pin connect error
57. (P.28)Remove BC47/49/50 TC6/9
58. (P.5) Add RC termination near D27 for EMI
59. (P.22)Add RA51 for FAN1_VCC
60. (P.15)BC2/10 change to 150P,BC14/15 change to Dummy
03/30
61. (P.36)1394 PCI_REQ/GNT change to REQ#3/GNT#3
62. (P.36)1394_PME# just Pull high to +3.3V
63. (P.34)CD_CSEL pull low change to 470 ohm
64. (P.16/17)Change SBFn connection
04/02
65. (P.15)SKT2 Pin1/Pin3 Swap
66. (P.25)U34 Pin4 to U95 Pin3 net name duplicate(BUZZER)
change to BUZZER_1
04/05
67. (P.3)RA30 and BC577 change circuit from RC filter to termination
68. (P.14)CN9 Pin15 change to BDC_LED
69. (P.16)RA53 mount 0 ohm
70. (P.17)SB_Fn PH(RP13 pin6) change to SBFn
71. (P.17)RA55 change to Dummy
72. (P.19)CN22 Pin31 change name to BDC_LED
73. (P.23)Swap net name KBC_SMBDATA and KBC_SMBSCLK
74. (P.32)Remove G16
75. (P.36)Change DR#_5 and MOT#_5 logic to 2 input DR0/1#_5 and MOT0/1#_5
04/07
76. (P.16)Change DRVRST# logic circuit,add U100(OR gate),not use Smittch trigger
04/08
78. (P.22) Change BC442 from 4.7uF to 10uF for FAN_VCC
79. (P.22) U26/RA6 Dummy, U36 DS75 mount for Hardware Thermal Shutdown
80. (P.22)Hardward Thermal Shutdown enable signal change from GPO to system powergood

REV: SC

1. (P.14) LCD I/F CN18 Pin39/40 SWAP
2. (P.36) 1394 TSBAB22 Pin 86 PH 3.3V / Pin 96 floating.
Add RB2 for cut signal.
3. (P.24) Remove Printer Port FDD function
4. (P.31) R332 change form 10K to 3.3K for S3 function
5. (P.34) Modify USB_WAKE_EN logic circuit
6. (P.12) Swap CKE1 and CKE3
7. (P.19)Remove MINIPCI/CDC Modem Switch
8. (P.26) Modify HP_IN function

06/02

09. (P.12) Change DM1 type(new location SKT4)
10. (P.15) Add BC578/579 for EMI
11. (P.19) Change MINI-PCI socket type
12. (P.20)Remove BC148,Add TC25 for HDD power
13. (P.20) Add serial resistor on SIRQI_5 for ATA spec
14. (P.25) Add RB4 on VREFOUT path to CODEC
15. (P.29) Modify charger circuit
16. (P.30) R90/92 change to 47K ohm
(P.28) R427 change to 33K,R426 change to 20K
RA8/9/10/11 change to 200K ohm
17. (P.36) R561 change to 390K ohm

06/08

18. (P.23) KBC port60 add AD-IN signal for fresh function
19. (P.15) TV-OUT add composite signal
20. (P.21) ST_SMI signal unconnect
21. (P.22) AT24RF08 WP/PROT pins circuit change
22. (P.25) CP_SPKR# add PL resistor
23. (P.23)KBC_BEEP add voltage division
24. (P.27) Add BC582 for +5V
25. (P.30) Add OFF_PWR1#_5RSM signal to Charger Controll IC
26. (P.18) Cardbus controller Pin34 PH change to +3V power
27. (P.25)Change Buzzer voltage division
28. (P.3) Add RB3 PL for CKG H/W setting

Rev:SD

1. (P.15) Add BC584 for EMI
2. (P.16) R547/R550 change from 1K to 10K
3. (P.20) R314 change to 33 ohm, R552/RB10 change to Dummy
4. (P.22) U78 RFID_Din3-PROT change connection.Use U44D to do level shift 5V->3V
5. (P.25) BC227/BC247 change to 47uF 0805,RA43/RA44 dummy for line out path change
6. (P.27) IrDA circuit change to 3V level.Add U106/U107 for level shift.
R363 change to 33 ohm,BC582 change to 47uF
7. (P.28) BC298/Bc299 change to 10u25VX5R for EMI(The schema is use 4.7uF for
temepary placement before P/N is avaliable)
8. (P.28) Add D32/D33 for undershoot solution
9. (P.28) Reserve RC4/RC5 for undershoot solution
10. (P.28) Change D5/D21/R21/BC575 for power on sequence
11. (P.29) Change RA12/RA15 for total power charge
12. (P.29) Change R53/BC61 for SANYO charge time solution
13. (P.29) Add D31/D30/RC1 change net for reserve voltage issue
14. (P.29) Change Bc288/BC252/BC272/BC295/BC278 for EMI issue
15. (P.31) Add L20 for EMI
16. (P.34) R140 change to 33 ohm,R137 dummy for IDE signal
17. (P35) CN20 pin16@169 net change.Add RC31/BC583 termination for high port issue
18. (P.36) U87 change to dummy,RA16/RA17 change to dummy,RB5/RB6 change
to 2.7K ohm for 1394 EEPROM remove issue

PS: P.25 RC2 (pull down resister of MDM_BEEP).
P.27 G26 and RCL# pin
P.28 U7 and U96 parts change to 4466
P.31 PME# _RSM to PWRBTN0#_KB

Rev:-1

1. (P.15) Add RD7,Unmount X1,BC4,BC3,R9,R13,R14,R15 for
TV-Out Issue
2. (P.16) Add RD5 for PCIRST# glitch issue
3. (P.17) Add RP15 for port retoicator ID
4. (P.18) R217 change to 0 ohm
5. (P.21)Remove BlueTooth I/F
6. (P.23) RD8/Q47 unmount(reserve)
7. (P.25) BC227/247 unmount,RA43/RA44 0 ohm
8. (P.26) R331 change 22K,R343 change 5.6K
9. (P.27) R361/358 change to 1.8 ohm
10. (P.28) BC292/19 change to 0.01uF,R21 change to 4.7K
11. (P.29) R379/380 change to 20K/10K,Add RD9/R365/381 change to 3.3K/10K
12. (P.31) TR4/TR3/L20 chabge for EMI
13. (P.32) Add G27 for EMI
14. (P.34) RN5 unmount

Rev:-2

01. (P.17) PRE#_RSM change circuit.Add RE3.RE4,Q48,
(Reserve,not mount)
02. (P.19) Add RE1 PL on AC_SDATA_IN1
03. (P.26) Add RE2 PL on KBC_BEEP
04. (P.29) D30 pin1 connect to AD+IN
05. (P.18) Q19 change to DTC124EKA
06. (P.19) Q18 change to DTC124EKA
07. (P.23) Q36/Q15 change to DTC124EKA
08. (P.20) TC25 change to 150uF
09. (P.25) BC168,BC169 change from 5P to 18P

Rev:-3

01. (P.12) Chnage CKE circuit,add RF1 PL
02. (P.25) Change X6 to 10pF part,BC168/169 change to 9pF
03 (P.17) D19 Un-mount for S3 solution

Rev:-4

01 (P.20) Change TC3/22 to 150uF

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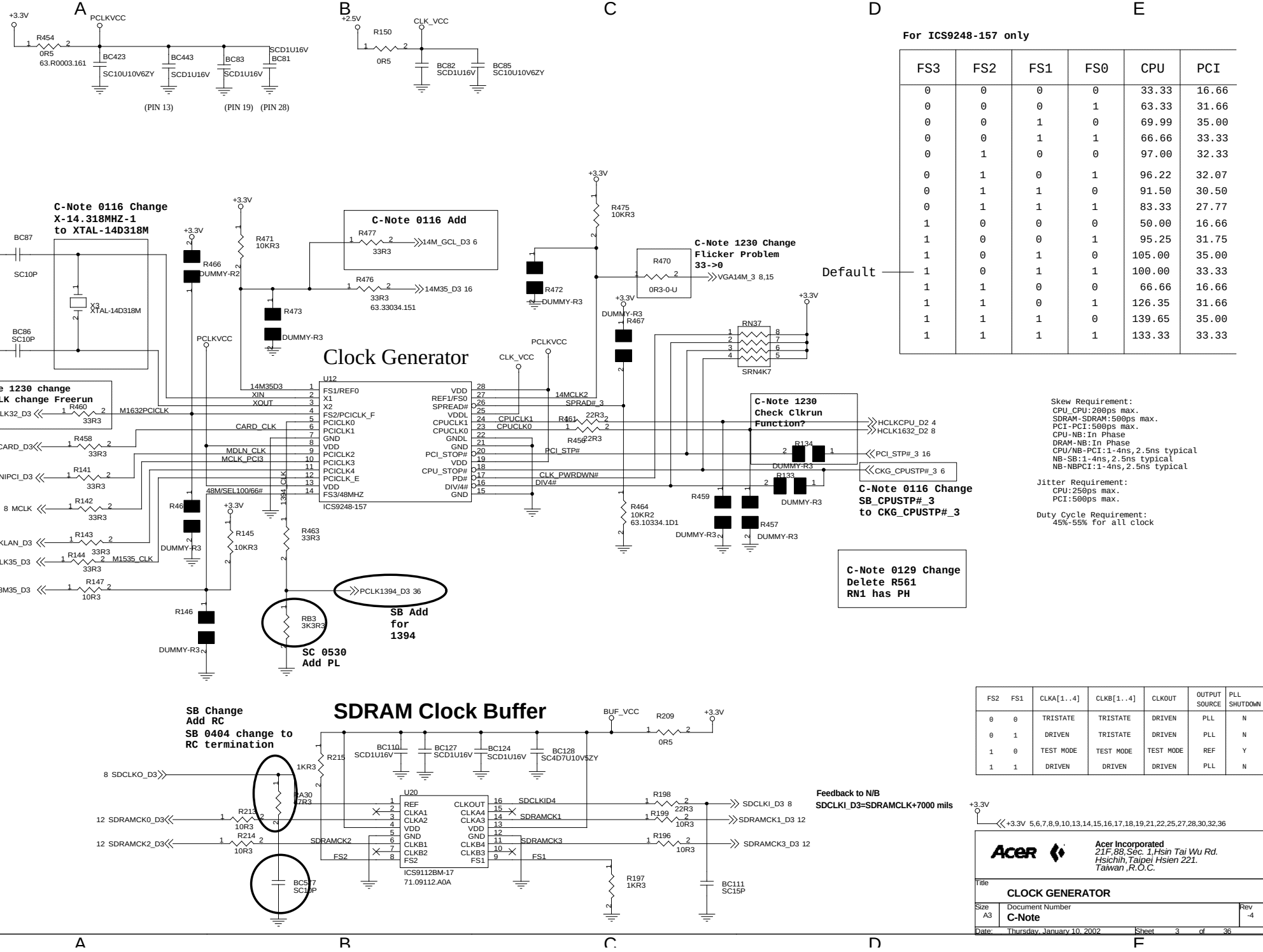
Title: Revision History
Size: A2 | Document Number: C-Note | Rev: -4
Date: Wednesday, December 05, 2001 | Sheet 2 of 36


For ICS9248-157 only
FS3 FS2 FS1 FS0 CPU PCI
0 0 0 0 33.33 16.66
0 0 0 1 63.33 31.66
0 0 1 0 69.99 35.00
0 0 1 1 66.66 33.33
0 1 0 0 97.00 32.33
0 1 0 1 96.22 32.07
0 1 1 0 91.50 30.50
0 1 1 1 83.33 27.77
1 0 0 0 50.00 16.66
1 0 0 1 95.25 31.75
1 0 1 0 105.00 35.00
Default 1 0 1 1 100.00 33.33
1 1 0 0 66.66 16.66
1 1 0 1 126.35 31.66
1 1 1 0 139.65 35.00
1 1 1 1 133.33 33.33
C-Note 0116 Change
X-14.318MHZ-1
to XTAL-14D318M
C-Note 0116 Add
C-Note 1230 Change
Flicker Problem
33->0
Clock Generator
C-Note 1230 change
1632CLK change Freerun
C-Note 1230
Check Clkrun
Function?
C-Note 0116 Change
SB_CPUSTP#_3
to CKG_CPUSTP#_3
Skew Requirement:
CPU_CPU:200ps max.
SDRAM-SDRAM:500ps max.
PCI-PCI:500ps max.
CPU-NB:In Phase
DRAM-NB:In Phase
CPU/NB-PCI:1-4ns,2.5ns typical
NB-SB:1-4ns,2.5ns typical
NB-NBPCI:1-4ns,2.5ns typical
Jitter Requirement:
CPU:250ps max.
PCI:500ps max.
Duty Cycle Requirement:
45%-55% for all clock
C-Note 0129 Change
Delete R561
RN1 has PH
SB Add
for
1394
SC 0530
Add PL
SDRAM Clock Buffer
SB Change
Add RC
SB 0404 change to
RC termination
Feedback to N/B
SDCLKI_D3=SDRAMCLK+7000 mils
FS2 FS1 CLKA[1..4] CLKB[1..4] CLKOUT OUTPUT SOURCE PLL SHUTDOWN
0 0 TRISTATE TRISTATE DRIVEN PLL N
0 1 DRIVEN TRISTATE DRIVEN PLL N
1 0 TEST MODE TEST MODE TEST MODE REF Y
1 1 DRIVEN DRIVEN DRIVEN PLL N
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Taiwan ,R.O.C.
Title
CLOCK GENERATOR
Size A3
Document Number C-Note
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Sheet 3 of 36

MOBILE PENTIUM III COPPERMINE

CPU VOLTAGE SPEC

CORE : 1.35V +/- 100mV
1.7V +/- 115mV
IO : 1.5V +/- 115mV

CPU CURRENT RATING

CORE : 600MHz ~ 11.2A MAX
650MHz ~ 12.1A MAX

IO : 2.5A MAX

VCC_CORE_CPU = 1.35V ~ 1.7V
VCC_IO_CPU = 1.5V
CLK_VCC = 2.5V
CLK_VREF = 1.25V= 2.5V * (2K / (2K + 2K))
CMOS_VREF = 1V = 2.5V * (2K / (2K + 3K))
GTL_VREF_CPU = 1V = VCC_IO_CPU * (2K / (1K + 2K))

Processor system bus speed selection

	BSEL1	BSEL0
66MHZ	0	0
100MHZ	0	1
X	1	0
133MHZ	1	1

C-Note 0129
Remove BC12

C-Note 0106 Change
TC26 Move to CPU_1.3V

C-Note 1230 Add

C-NOTE CHANGE

ZZ.2271V.9P1

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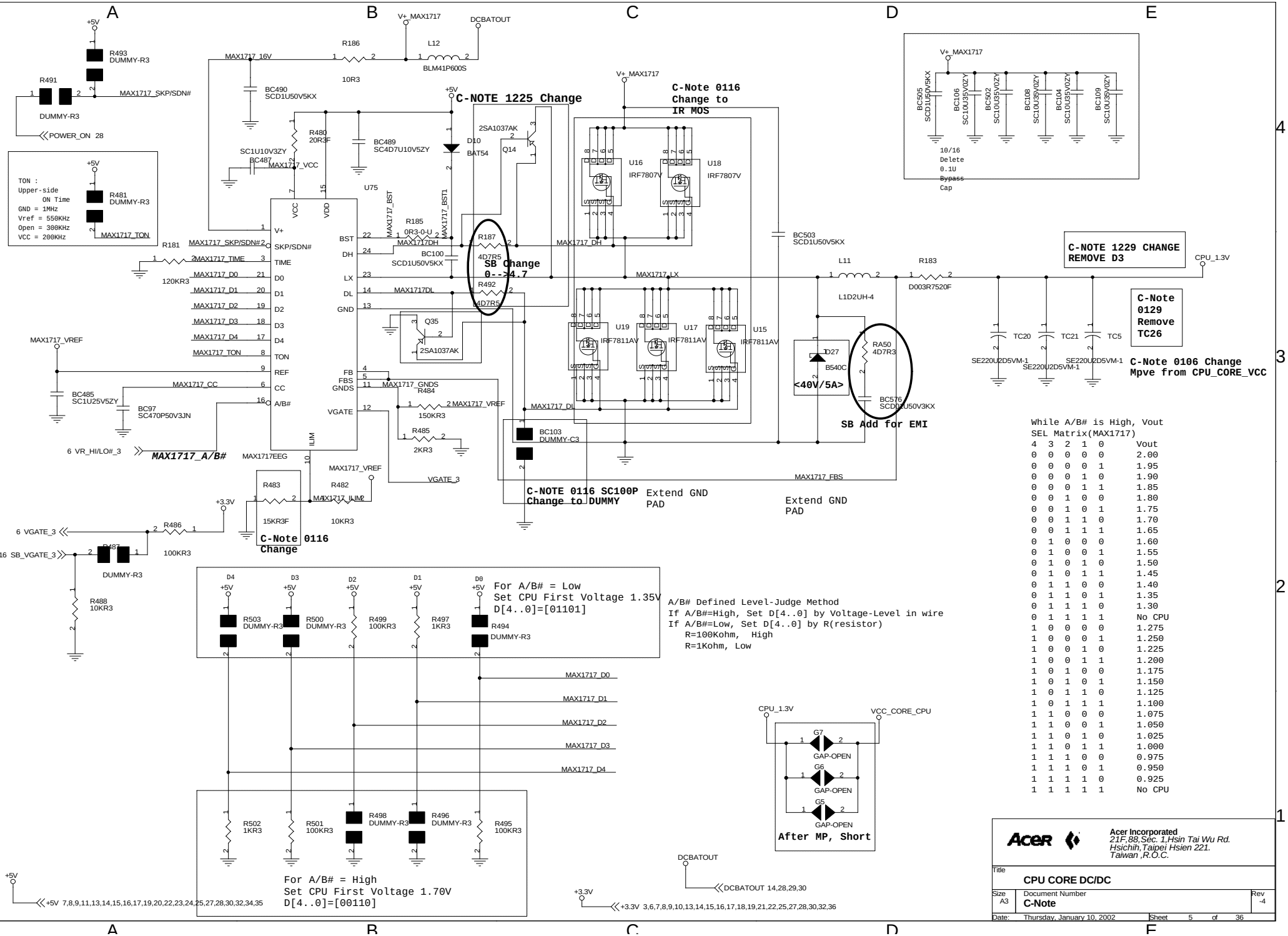
Title: INTEL Mobile CPU - COPPERMINE
Size: A2 | Document Number: C-Note | Rev: -4
Date: Thursday, January 10, 2002 | Sheet 4 of 36



While A/B# is High, Vout SEL Matrix(MAX1717)					
4	3	2	1	0	Vout
0	0	0	0	0	2.00
0	0	0	0	1	1.95
0	0	0	1	0	1.90
0	0	0	1	1	1.85
0	0	1	0	0	1.80
0	0	1	0	1	1.75
0	0	1	1	0	1.70
0	0	1	1	1	1.65
0	1	0	0	0	1.60
0	1	0	0	1	1.55
0	1	0	1	0	1.50
0	1	0	1	1	1.45
0	1	1	0	0	1.40
0	1	1	0	1	1.35
0	1	1	1	0	1.30
0	1	1	1	1	No CPU
1	0	0	0	0	1.275
1	0	0	0	1	1.250
1	0	0	1	0	1.225
1	0	0	1	1	1.200
1	0	1	0	0	1.175
1	0	1	0	1	1.150
1	0	1	1	0	1.125
1	0	1	1	1	1.100
1	1	0	0	0	1.075
1	1	0	0	1	1.050
1	1	0	1	0	1.025
1	1	0	1	1	1.000
1	1	1	0	0	0.975
1	1	1	0	1	0.950
1	1	1	1	0	0.925
1	1	1	1	1	No CPU

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Title: CPU CORE DC/DC

Size: A3 | Document Number: C-Note | Rev: -4

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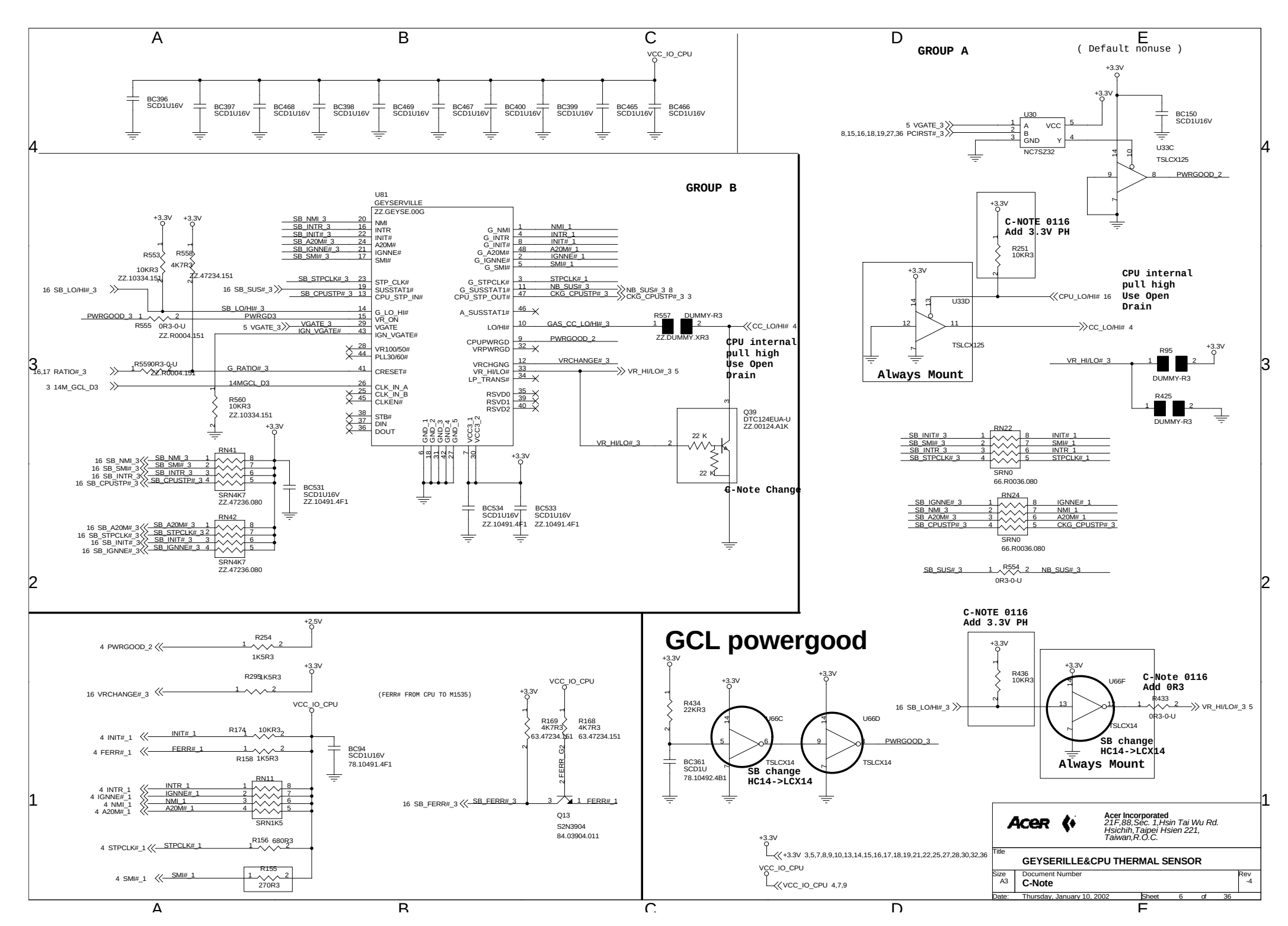

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Title: GEYSERILLE&CPU THERMAL SENSOR

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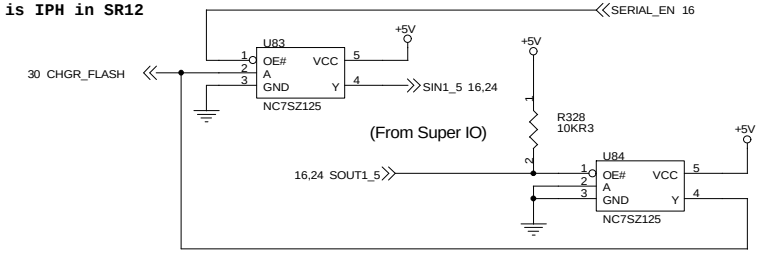
Charger F/W Flash Circuit

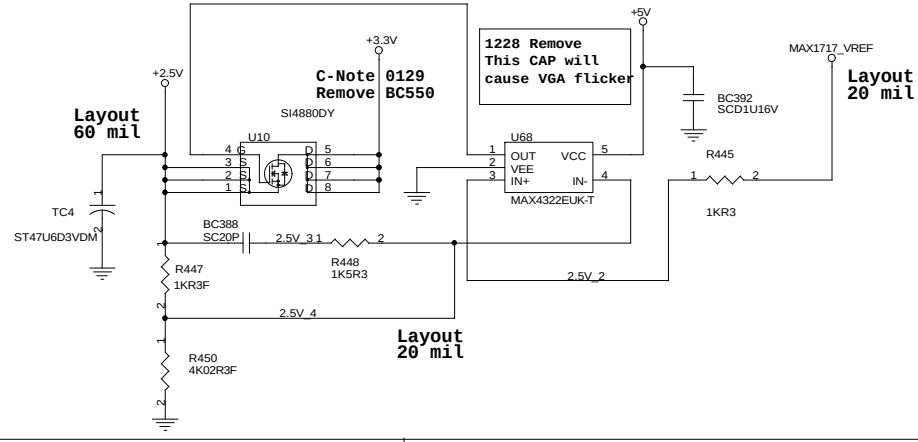
SB Change
Remove R329 Q21
TSAHC125 change to NC7SZ125
SERIAL_EN use GPO

Check if CHGR_FLASH is IPH in SR12



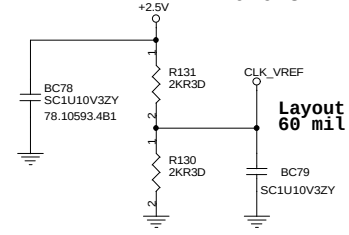
Generate CLK_VCC (2.5V)

TO CLOCKGEN



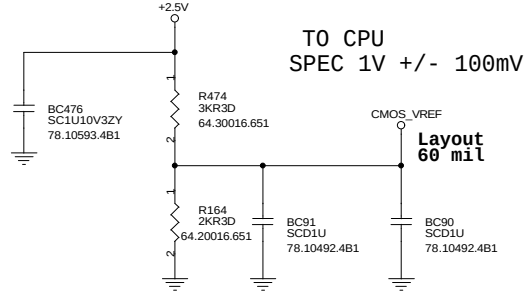
Generate CLK_VREF (1.25V)

TO CPU



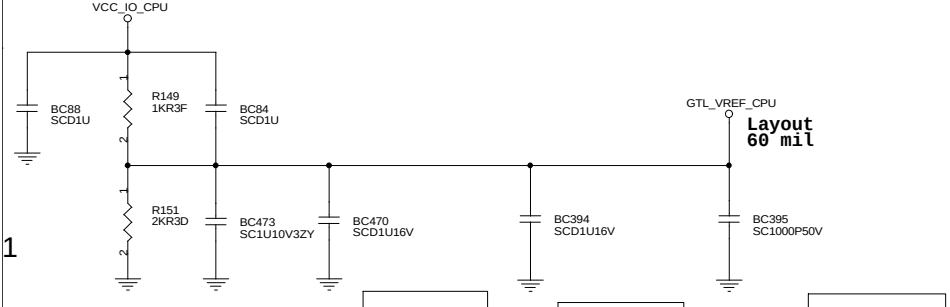
Generate CMOS_VREF (1V)

TO CPU
SPEC 1V +/- 100mV



+5V
+5V 5,8,9,11,13,14,15,16,17,19,20,22,23,24,25,27,28,30,32,34,35

Generate GTL_VREF_CPU (1V)

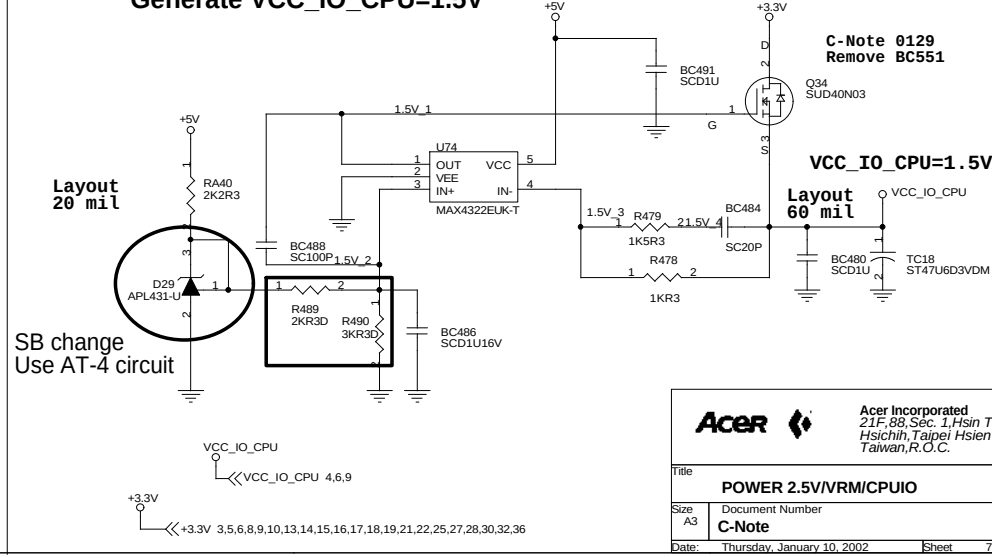


C-Note 0129 Remove BC113

C-Note 0129 Remove BC114

C-Note 0129 Remove BC116

Generate VCC_IO_CPU=1.5V



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Title	POWER 2.5V/VRM/CPUIO	
Size A3	Document Number C-Note	Rev -4
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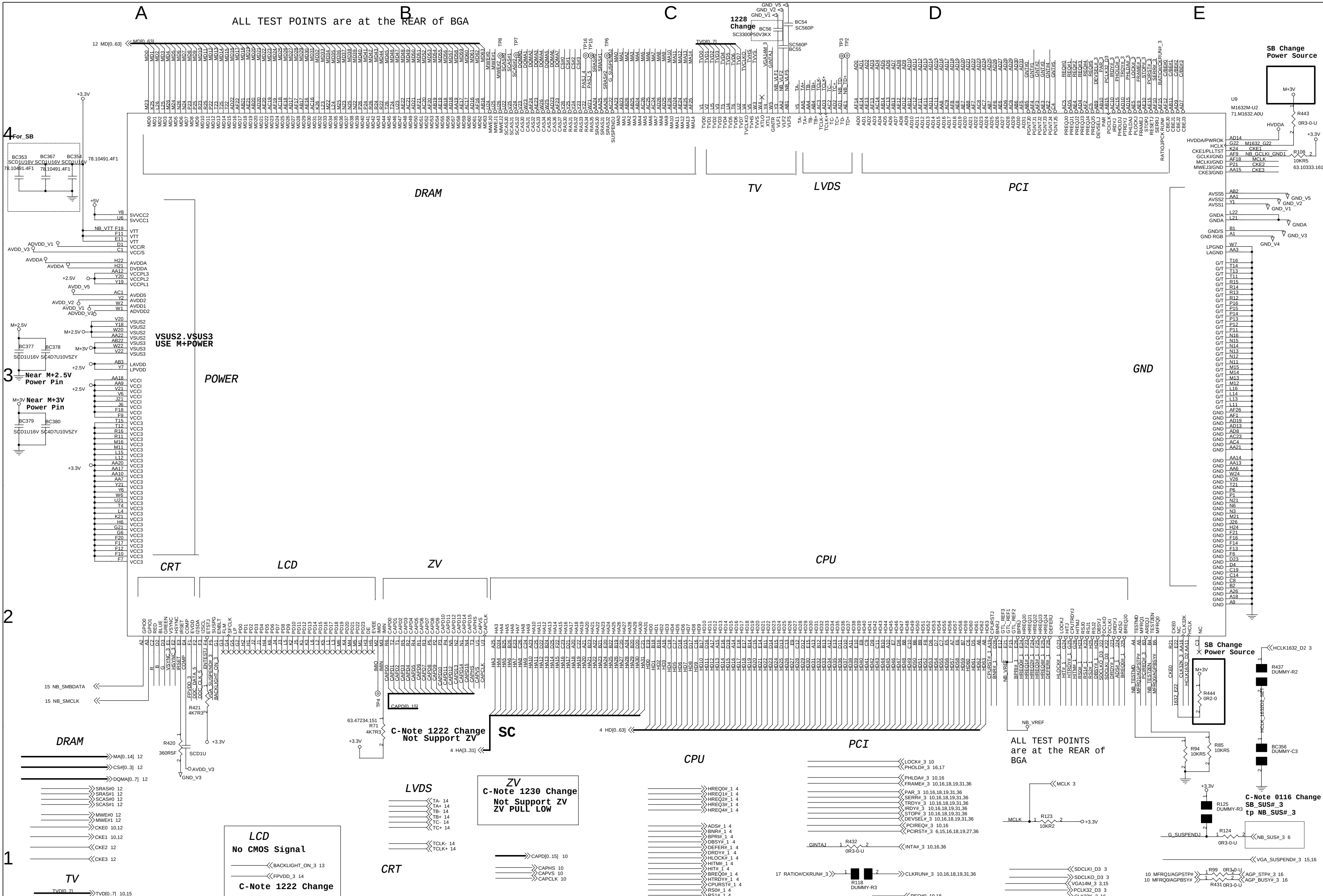
ALL TEST POINTS are at the REAR of BGA
1228 Change
DRAM
TV
LVDS
PCI
SB Change Power Source
U9
M1632M-U2
71.M1632.A0U
For_SB
VSUS2.VSUS3 USE M+POWER
POWER
Near M+2.5V Power Pin
Near M+3V Power Pin
GND
CRT
LCD
ZV
CPU
SB Change Power Source
C-Note 1222 Change Not Support ZV
SC
ALL TEST POINTS are at the REAR of BGA
ZV
C-Note 1230 Change Not Support ZV ZV PULL LOW
LCD
No CMOS Signal
C-Note 1222 Change
C-Note 0116 Change SB_SUS#_3 tp NB_SUS#_3

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Title	N0rthBridge -ALI M1632		
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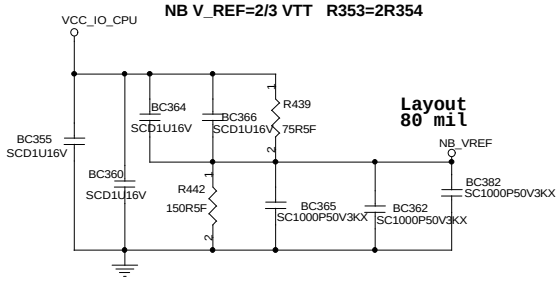
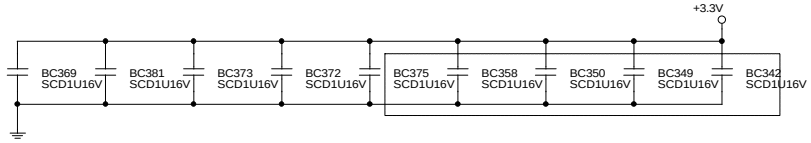
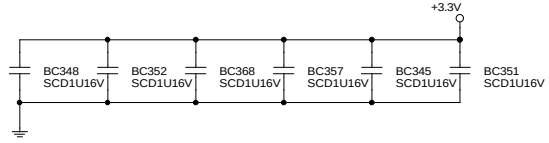
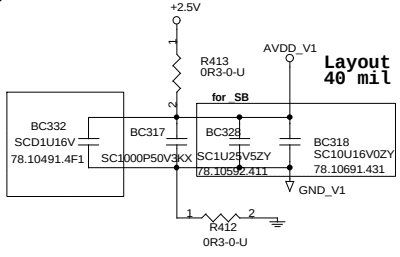
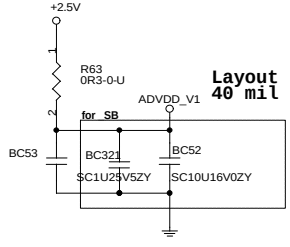
ALL CAP. are near NB power pins

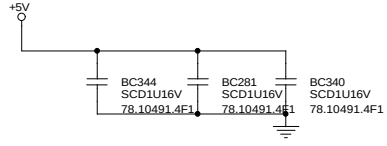


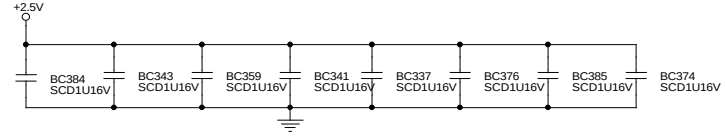


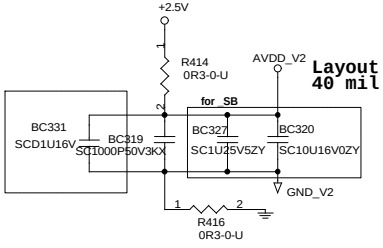


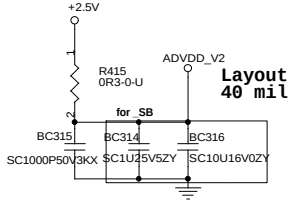


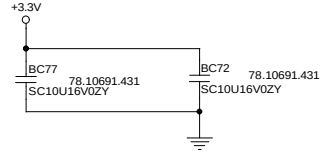


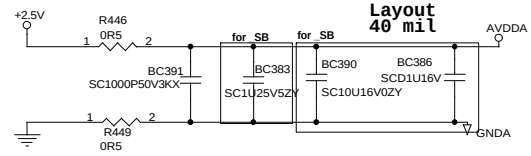


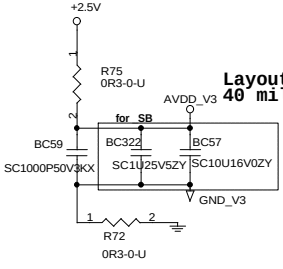


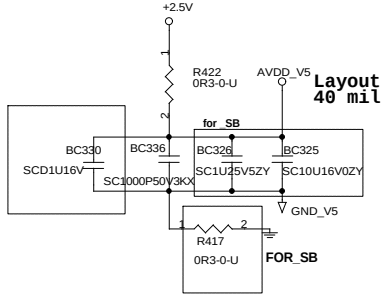


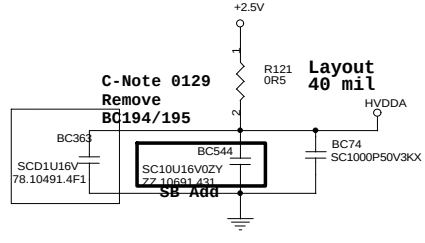












+5V 5,7,8,11,13,14,15,16,17,19,20,22,23,24,25,27,28,30,32,34,35

VCC_IO_CPU 4,6,7

+3.3V 3,5,6,7,8,10,13,14,15,16,17,18,19,21,22,25,27,28,30,32,36

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Title: VGA POWER&FILTER&DAMPING RES

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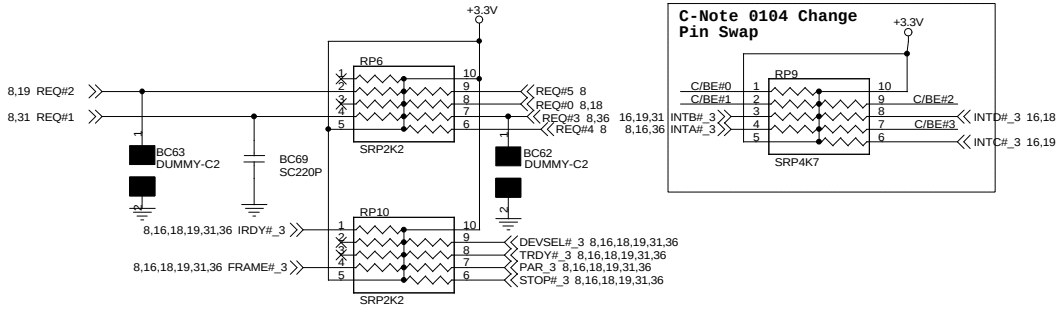
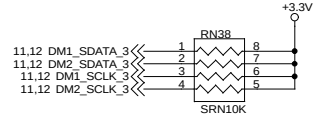
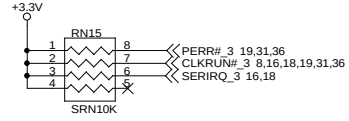
PCI PULL RESISTORS

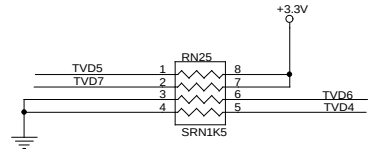


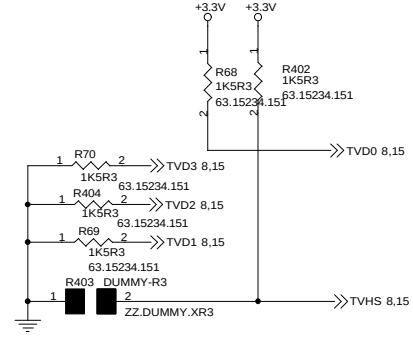
C-Note 0104 Change Pin Swap





M1632 GRAPHIC HARDWARE SETTING



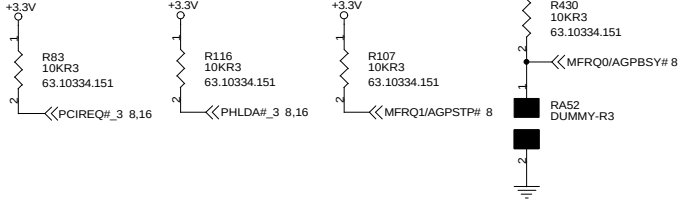


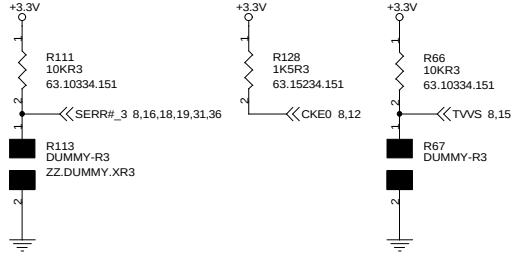
M1632 HARDWARE SETTING

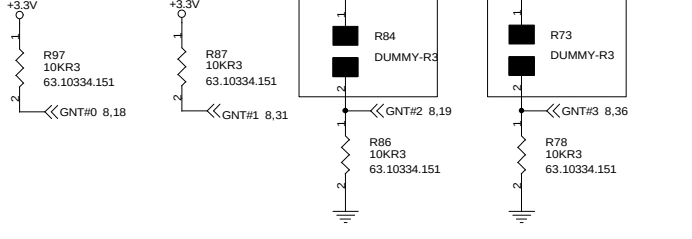
	Description	PULL UP	PULL DOWN
GNT#5	Internal HOST Clock	LEAD	LAG
GNT#4	HSEL_2	GNT#[4:2] 111=0stage 110=1stage	101=2stage
GNT#3	HSEL_1	100=3stage 011=4stage	010=5stage
GNT#2	HSEL_0	001=6stage 000=7stage	
GNT#1	HFRQ1	GNT#[1:0] 00=2XPCLK	01=3XPCLK
GNT#0	HFRQ0	10=Reserved	11=32HCLK

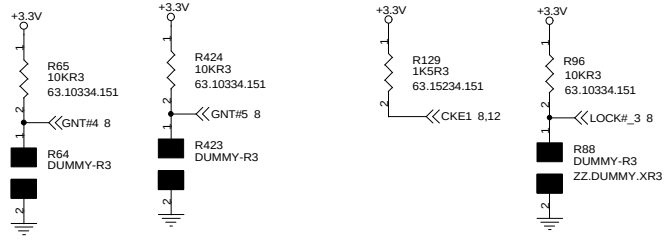
	Description	PULL UP	PULL DOWN
MFRQ1	MFRQ1	MFRQ[1:0] 00=2XPCLK	01=3XPCLK
MFRQ0	MFRQ0	10=Reserved	11=32HCLK
CKE1	AGP PLL	Enable	Disable
PCIREQ#	HOST PLL	Enable	Disable
PHLDA#	MEM PLL	Enable	Disable

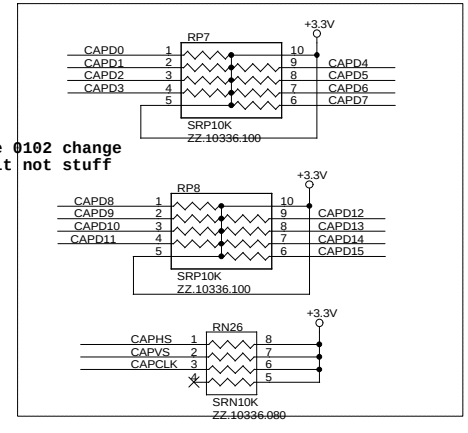
	Description	PULL UP	PULL DOWN
TVHS	SYNC_MODE	Synchronous	Asynchronous
TVD0	Graphics Test Mode	Normal Mode	Test Mode
TVD1	North Bridge Test Mode	Test Mode	Normal Mode
TVD2	Graphics Clock Select	Test Mode	Normal Mode
TVD3	Graphics Clock Select	Test Mode	Normal Mode











C-Note 0102 change default not stuff

C-Note 1230 Add ZV PORT pull low

CAPD[0..15] 8

CAPHS 8
CAPVS 8
CAPCLK 8

C/BE#[0..3] 8,16,18,19,31,36
TVD[0..7] 8,15

+3.3V
+3.3V 3,5,6,7,8,9,13,14,15,16,17,18,19,21,22,25,27,28,30,32,36

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Title: M1632 HardWare Setting

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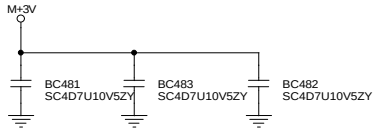
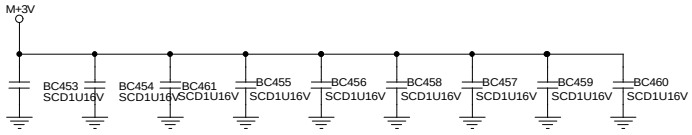
DIMM module power bypass Cap. are closed to DM1 power pins

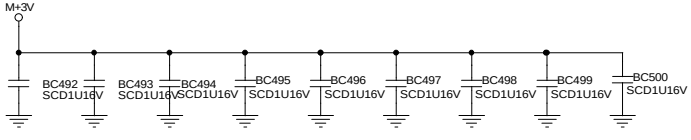
DIMM use M+3V





C-Note 0129
Remove BC217
BC216

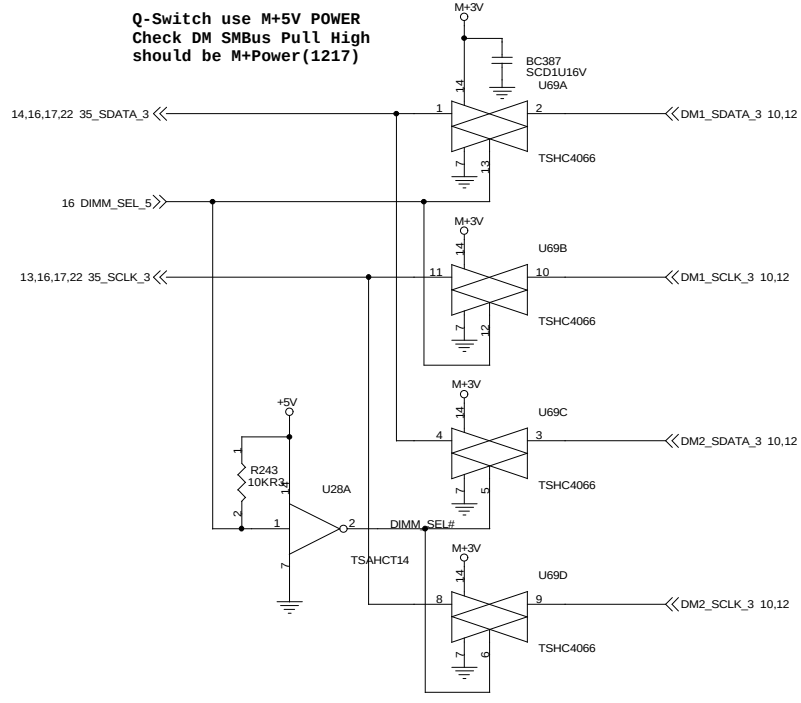
DIMM module power bypass Cap. are closed to DM2 power pins

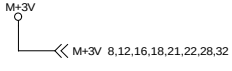


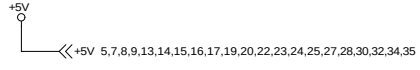
C-Note 0129
Remove BC231
BC230

DIMM SMBUS EEPROM SELECTOR

Q-Switch use M+5V POWER
Check DM SMBus Pull High
should be M+Power(1217)







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Title	**DIMM Selector**	
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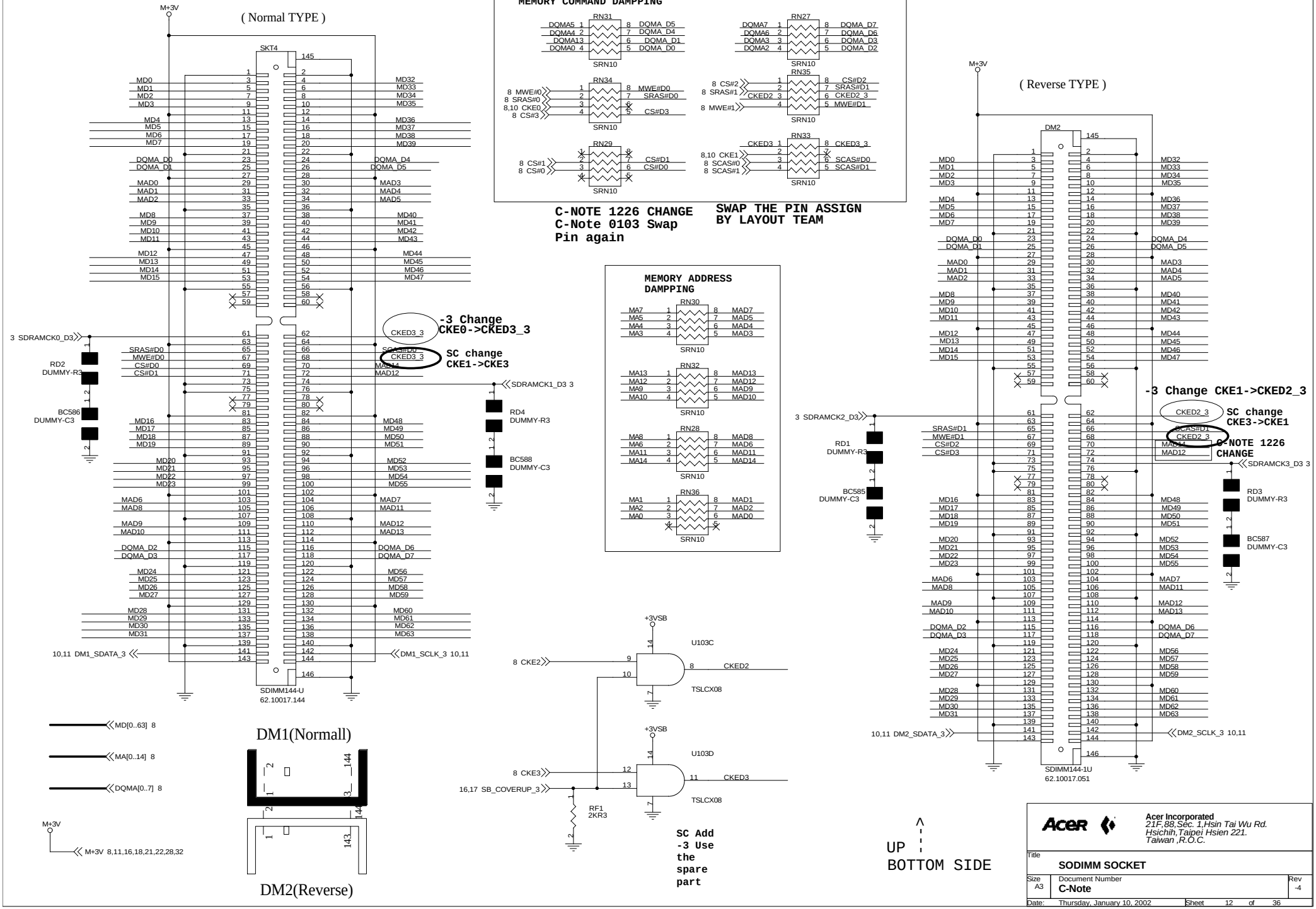
(Normal TYPE)
SKT4
SDIMM144-U
62.10017.144
DM1(Normall)
DM2(Reverse)
MEMORY COMMAND DAMPPING
RN31
RN27
RN34
RN35
RN29
RN33
SRN10
C-NOTE 1226 CHANGE
C-Note 0103 Swap
Pin again
SWAP THE PIN ASSIGN
BY LAYOUT TEAM
MEMORY ADDRESS
DAMPPING
RN30
RN32
RN28
RN36
-3 Change
CKE0->CKED3_3
SC change
CKE1->CKE3
RD2
DUMMY-R3
BC586
DUMMY-C3
SDRAMCK1_D3 3
RD4
DUMMY-R3
BC588
DUMMY-C3
U103C
U103D
TSLCX08
+3VSB
RF1
2KR3
SC Add
-3 Use
the
spare
part
(Reverse TYPE)
DM2
-3 Change CKE1->CKED2_3
SC change
CKE3->CKE1
C-NOTE 1226
CHANGE
SDRAMCK2_D3
SDRAMCK3_D3 3
RD1
DUMMY-R3
BC585
DUMMY-C3
RD3
DUMMY-R3
BC587
DUMMY-C3
SDIMM144-1U
62.10017.051
UP
BOTTOM SIDE
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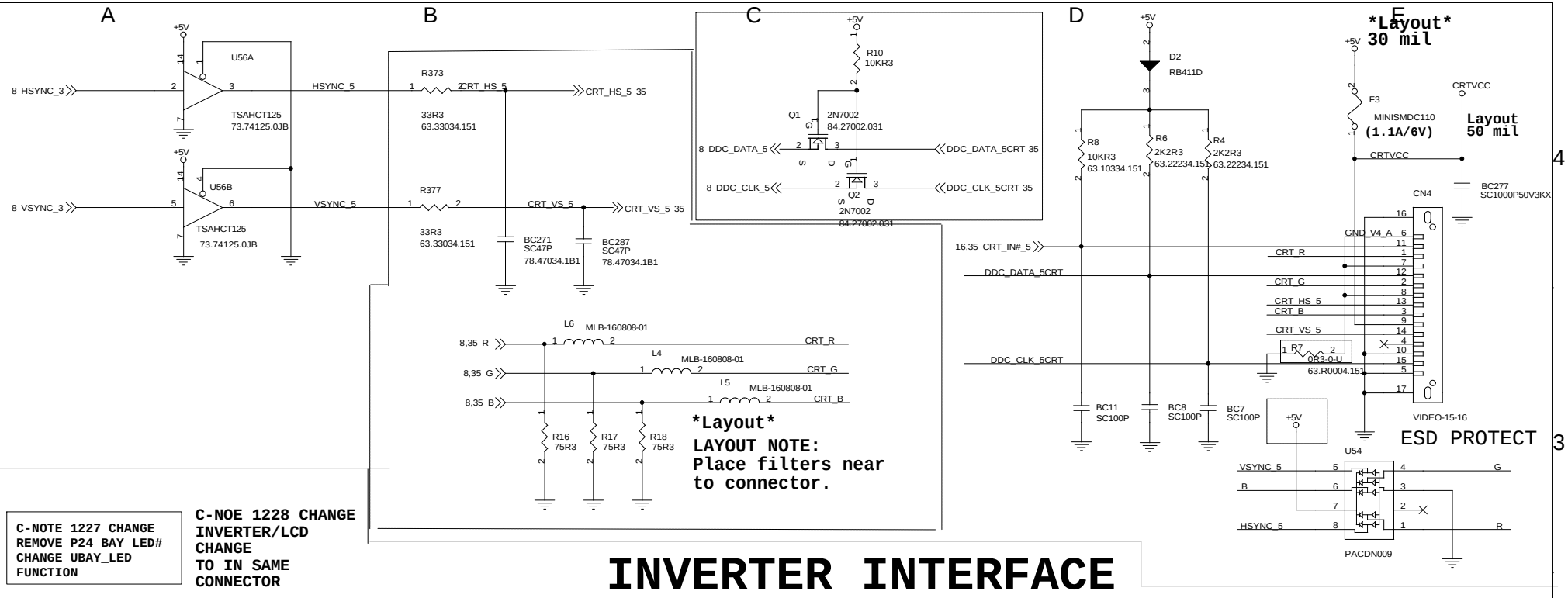
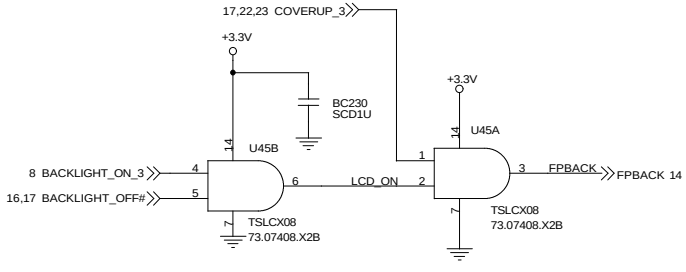
SODIMM SOCKET
C-Note
Thursday, January 10, 2002

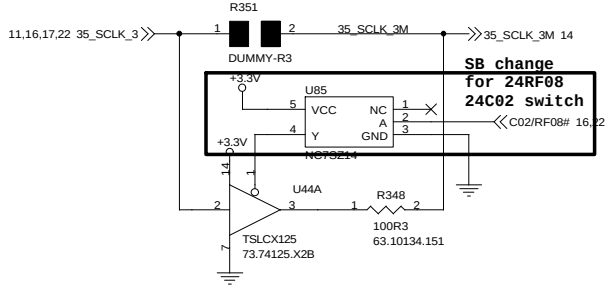


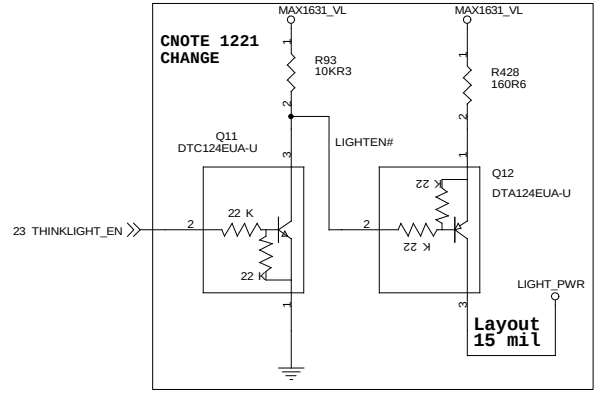
C-NOTE 1227 CHANGE
REMOVE P24 BAY_LED#
CHANGE UBAY_LED
FUNCTION

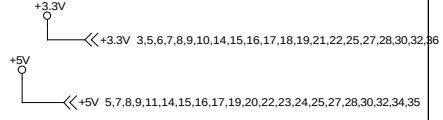
C-NOE 1228 CHANGE
INVERTER/LCD
CHANGE
TO IN SAME
CONNECTOR

INVERTER INTERFACE









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Title: CRT PORT & INVERTER INTERFACE

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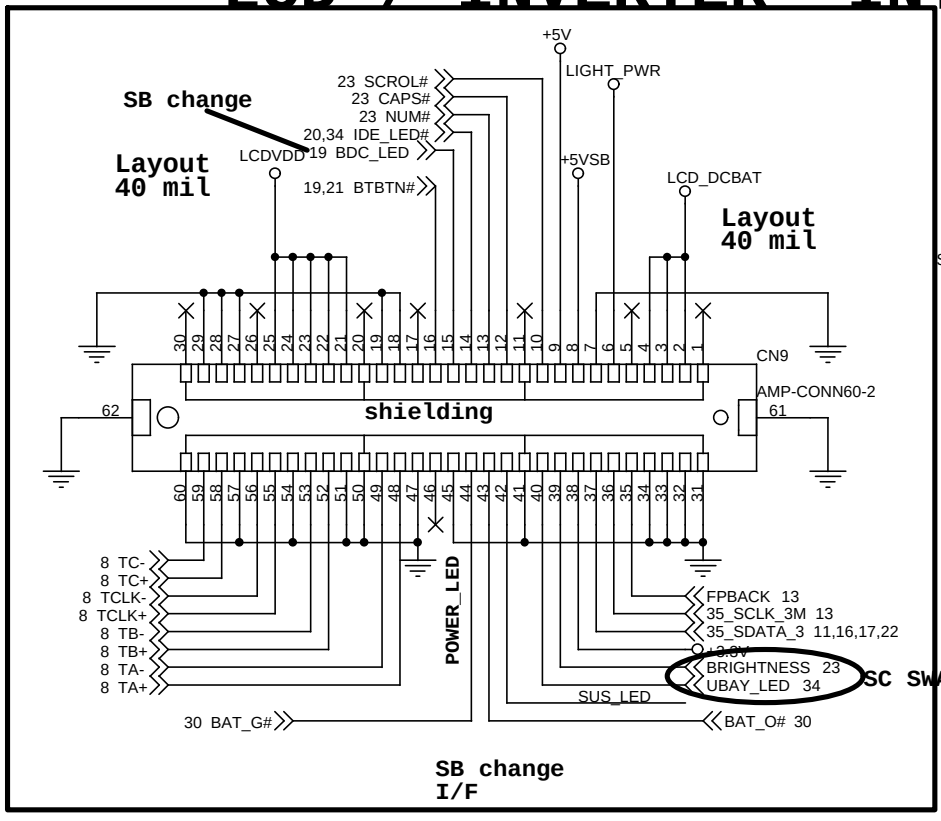
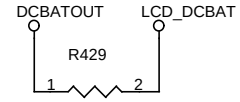
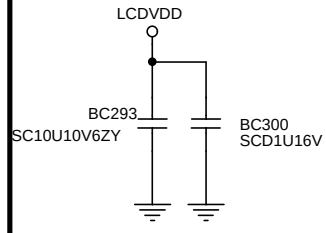
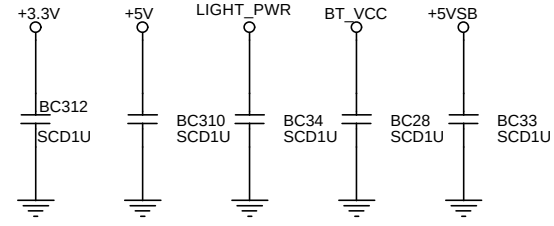
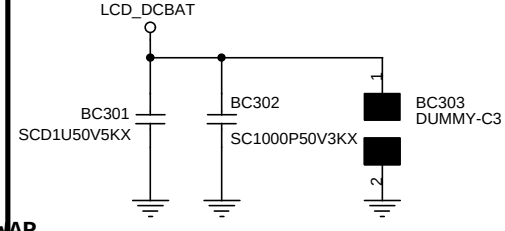
LCD / INVERTER INTERFACE



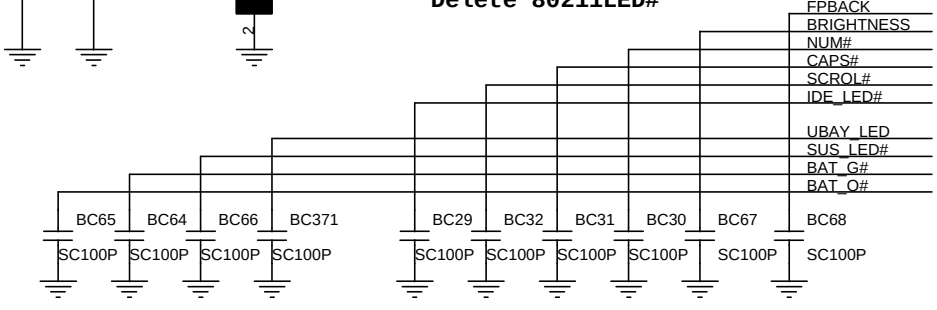


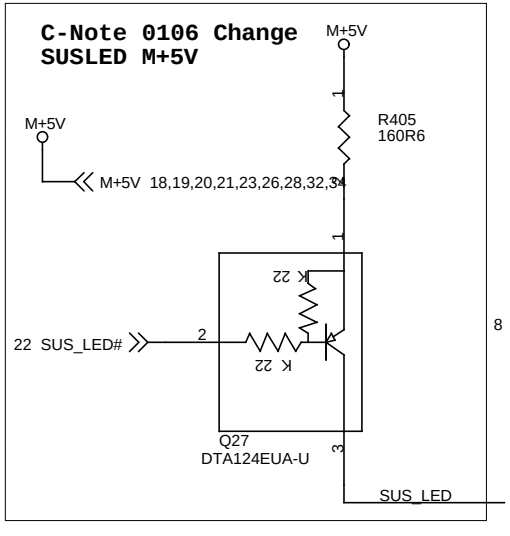


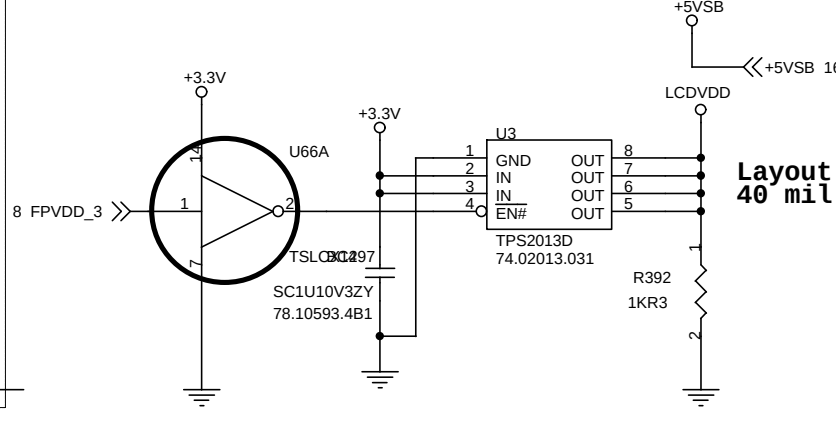


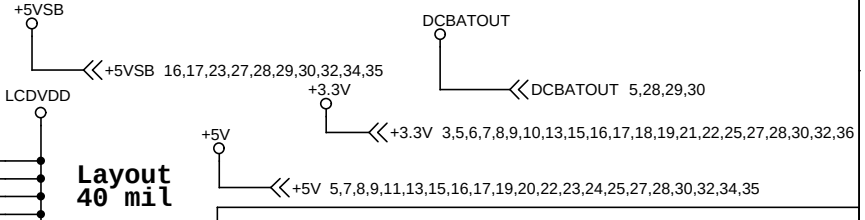


C-Note 0126
Delete 80211LED#









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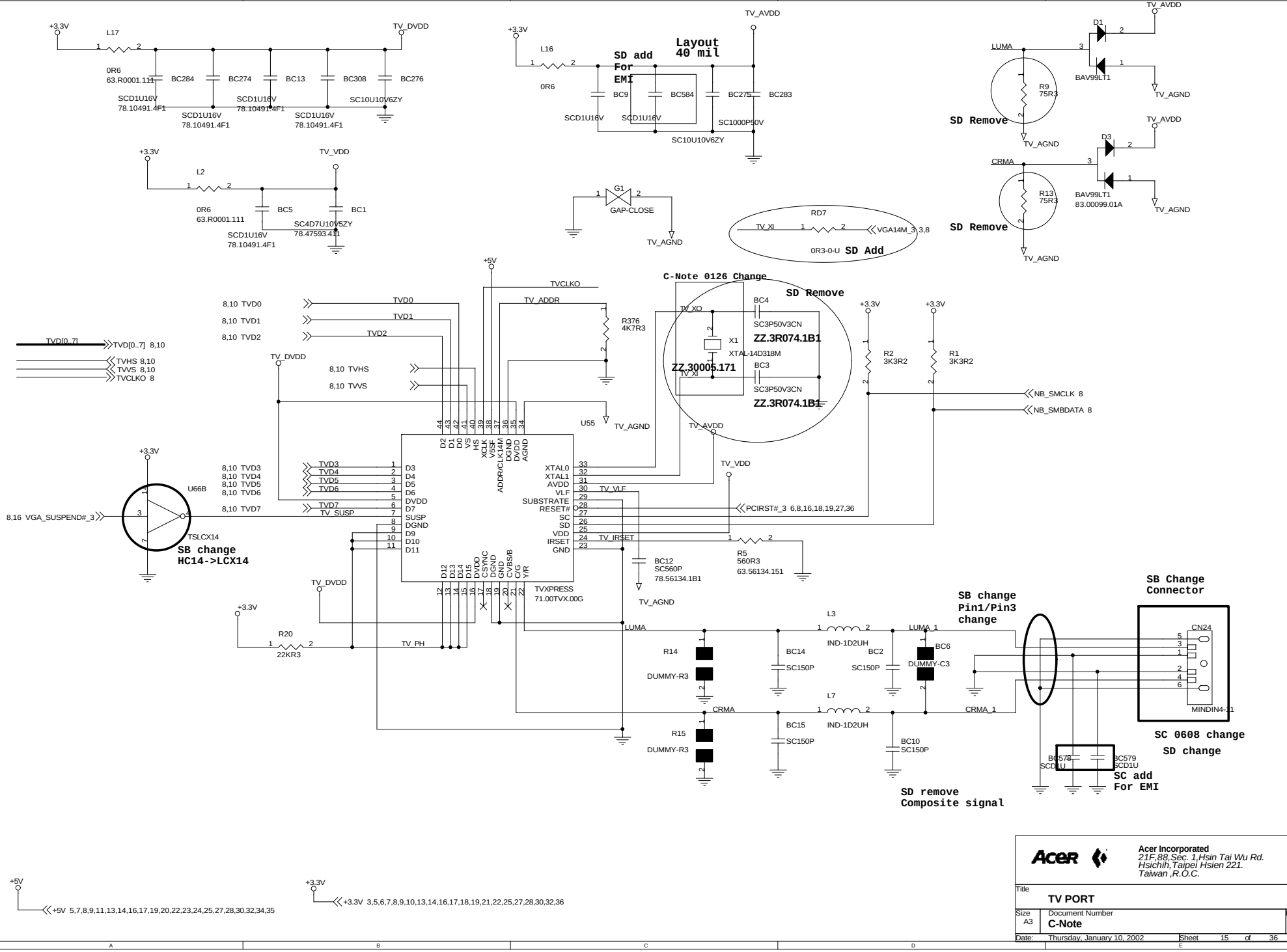
+3.3V
L17
TV_DVDD
0R6
63.R0001.111
BC284
BC274
BC13
BC308
BC276
SCD1U16V
78.10491.4F1
SC10U10V6ZY
L16
SD add
For
EMI
Layout
40 mil
TV_AVDD
BC9
BC584
BC275
BC283
SC1000P50V
SC10U10V6ZY
L2
TV_VDD
BC5
BC1
SC4D7U10V5ZY
78.47593.411
G1
GAP-CLOSE
TV_AGND
RD7
TV_XI
VGA14M_3
3,8
0R3-0-U
SD Add
LUMA
D1
BAV99LT1
R9
75R3
SD Remove
CRMA
D3
R13
83.00099.01A
C-Note 0126 Change
TVCLKO
TV_ADDR
R376
4K7R3
TV_XO
BC4
SC3P50V3CN
ZZ.3R074.1B1
X1
XTAL-14D318M
ZZ.30005.171
TV_XI
BC3
R2
3K3R2
R1
3K3R2
NB_SMCLK 8
NB_SMBDATA 8
TVD[0..7]
TVD[0..7] 8,10
TVHS 8,10
TVVS 8,10
TVCLKO 8
8,10 TVD0
8,10 TVD1
8,10 TVD2
8,10 TVHS
8,10 TVVS
U55
D2
D1
D0
VS
HS
XCLK
VSET
ADDR/CLK14M
DGND
DVDD
AGND
XTAL0
XTAL1
AVDD
VLF
SUBSTRATE
RESET#
SC
SD
VDD
IRSET
GND
PCIRST#_3 6,8,16,18,19,27,36
TV_VLF
TV_IRSET
BC12
SC560P
78.56134.1B1
R5
560R3
63.56134.151
U66B
TSLCX14
8,16 VGA_SUSPEND#_3
SB change
HC14->LCX14
8,10 TVD3
8,10 TVD4
8,10 TVD5
8,10 TVD6
8,10 TVD7
TV_SUSP
D3
D4
D5
D6
DVDD
D7
SUSP
DGND
D9
D10
D11
D12
D13
D14
D15
DVDD
CSYNC
DGND
CVBS/B
C/G
Y/R
TVXPRESS
71.00TVX.00G
R20
22KR3
TV_PH
L3
IND-1D2UH
LUMA_1
R14
DUMMY-R3
BC14
SC150P
BC2
SC150P
BC6
DUMMY-C3
L7
CRMA_1
R15
BC15
BC10
SC150P
SB change
Pin1/Pin3
change
SB Change
Connector
CN24
MINDIN4-11
SC 0608 change
SD change
BC578
SCD1U
BC579
SCD1U
SC add
For EMI
SD remove
Composite signal
+5V
+5V 5,7,8,9,11,13,14,16,17,19,20,22,23,24,25,27,28,30,32,34,35
+3.3V 3,5,6,7,8,9,10,13,14,16,17,18,19,21,22,25,27,28,30,32,36
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Title
TV PORT
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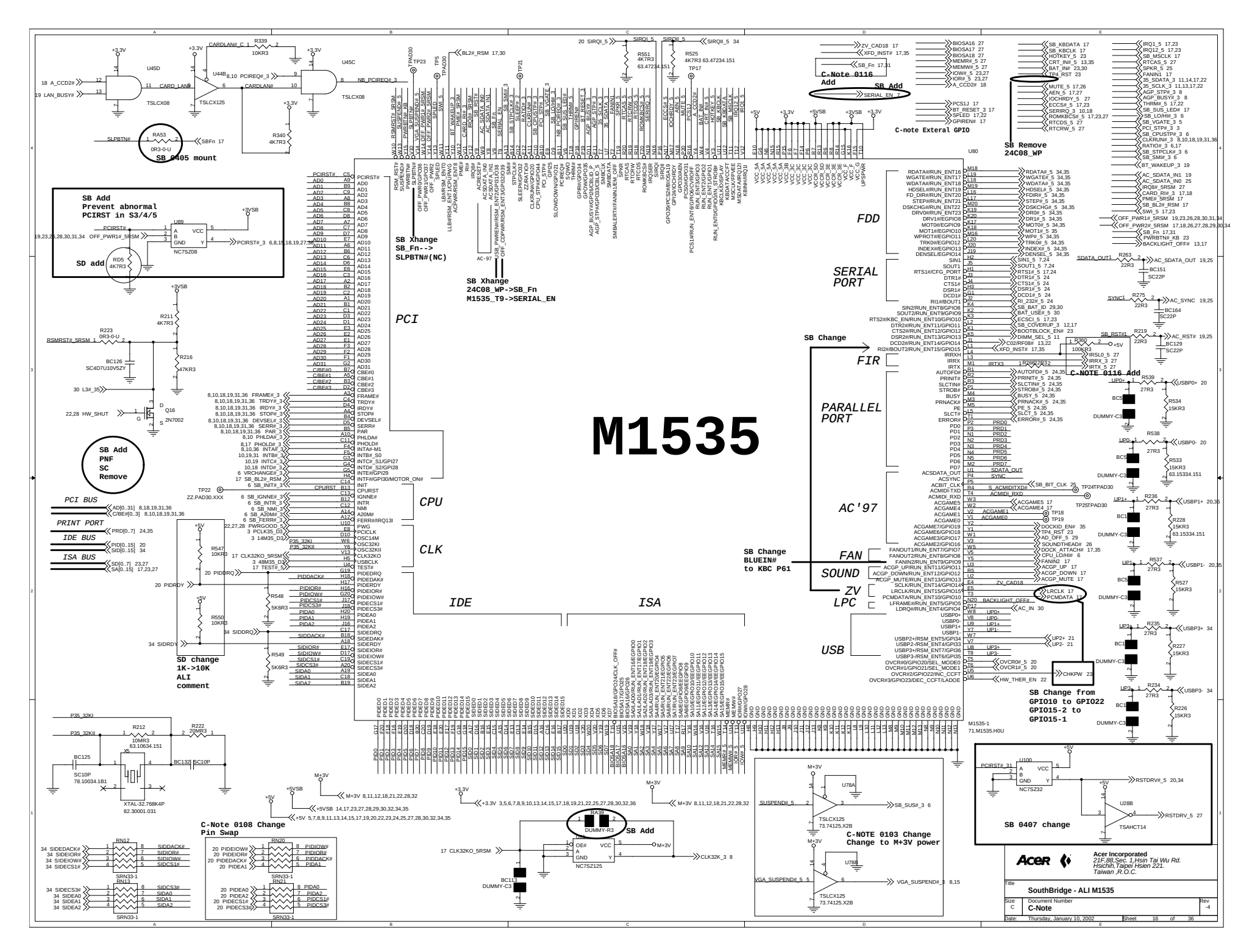
M1535
PCI
CPU
CLK
IDE
ISA
FDD
SERIAL PORT
PARALLEL PORT
FIR
AC'97
FAN
SOUND
ZV
LPC
USB
SB Add
Prevent abnormal
PCIRST in S3/4/5
SB Xhange
SB_Fn-->
SLPBTN#(NC)
SB Xhange
24C08_WP->SB_Fn
M1535_T9->SERIAL_EN
SB Change
BLUEIN#
to KBC P61
SB Change from
GPIO10 to GPIO22
GPIO15-2 to
GPIO15-1
SB Add
PNF
SC
Remove
SB 0405 mount
SD add
SD change
1K->10K
ALI
comment
C-Note 0108 Change
Pin Swap
C-NOTE 0103 Change
Change to M+3V power
SB 0407 change
SB Remove
24C08_WP
C-Note 0116
Add
C-note Exteral GPIO
SB Add
SB Change
C-NOTE 0116 Add
PCI BUS
PRINT PORT
IDE BUS
ISA BUS
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SouthBridge - ALI M1535
C-Note
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SB HARDWARE SETTING

C-Note 0129 Remove BC274

SB remove VGA_SUSPEND#_5

SB REMOVE ACMIDI_RXD

C-NOTE 0116 NC PH(MP_ACK) XFD_INST#

-3 remove SB_COVERUP_3 pull high

C-NOTE 0116 Remove ZV_CAUDIO GPIO10

SB Change Add PCMDATA PU

C-Note 0126 Remove ZV_CREQ#

ZV PORT not use For_SB

C-Note 0126 Add RUN_ENT15 PH 5V

C-Note 0126 ChangeGPIO7 PH Change FANOUT1 to DOCK_ATTACH#

C-Note 0116 Add 10k PL

SB 0405 change SB_Fn to SBFn

C-NOTE 0116 Change -3 change to Dummy

C-note Extend GPIO

-2 Add

SD Add

C-Note 0106 Change Rempve 2N7002 Use 0 ohm

C-NOTE 0116 ADD PH 5V

SB change pull low

P18--GPIRJ	*PULL HIGH*	*NORMAL OPERATION*	
T20--ROMKBCS#_5	*PULL HIGH*	*NORMAL OPERATION*	
P19--GPO35	*PULL LOW*	*NORMAL OPERATION*	
C11--PHOLDJ	*PULL HIGH*	*NORMAL OPERATION*	
P20--PCS0J	*PULL LOW*	*Enable 4Mb Flash Rom Size Function*	
R16--PCS1J	*PULL LOW*	*FOR IOCHRDY DEFAULT*	
N17--GPO29	*PULL HIGH*	*NORMAL OPERATION*	
N18--GPO30	*PULL HIGH*	*NORMAL OPERATION*	
V6--SQWO	*PULL HIGH*	*Pentium II CPU -> CPURST Low Active Reset*	
Y13--SPLED	*PULL LOW*	*ATX Mode*	
V13--CLK32KO	*PULL LOW*	*NORMAL OPERATION*	
H1--RTS1J	*PULL HIGH*	*Base Address of Configuration for SIO: 0x3F0h*	
K3--RTS2J	*PULL LOW*	*Disable Internal Keyboard Controller*	
W11--LBJ	*PULL LOW*	*OFF_PWR2 Low Active to Power Off Power Source*	

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Title: SouthBridge-HardWare Setting
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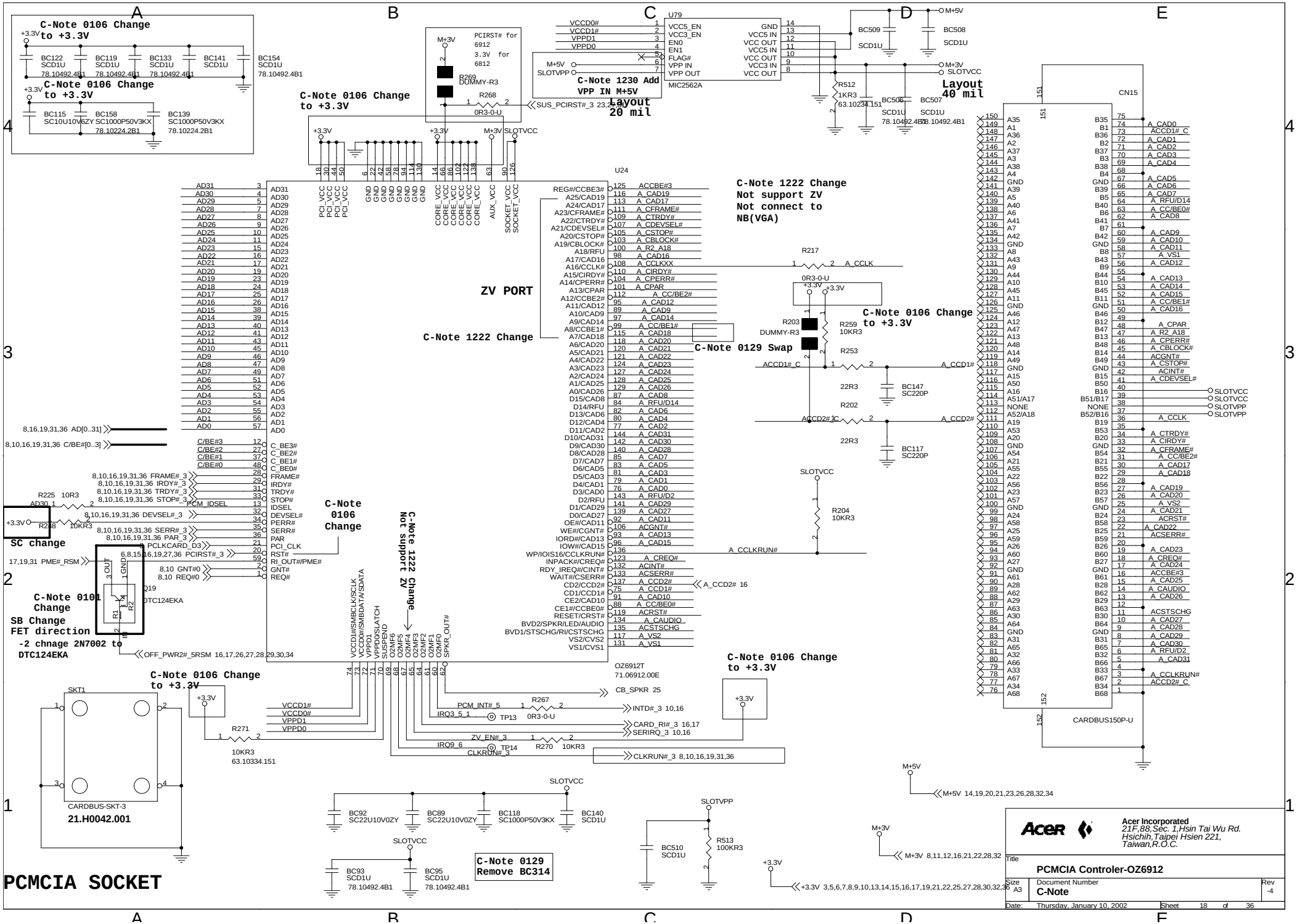
C-Note 0106 Change to +3.3V
C-Note 0106 Change to +3.3V
C-Note 1230 Add VPP IN M+5V
Layout 20 mil
Layout 40 mil
C-Note 1222 Change Not support ZV Not connect to NB(VGA)
ZV PORT
C-Note 1222 Change
C-Note 0129 Swap
C-Note 0106 Change to +3.3V
SC change
C-Note 0101 Change
SB Change FET direction
-2 chnage 2N7002 to DTC124EKA
C-Note 0106 Change
C-Note 1222 Change Not support ZV
C-Note 0106 Change to +3.3V
C-Note 0106 Change to +3.3V
C-Note 0129 Remove BC314
PCMCIA SOCKET
21.H0042.001
CARDBUS-SKT-3
CARDBUS150P-U
OZ6912T
71.06912.00E
MIC2562A
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Taiwan,R.O.C.
PCMCIA Controler-OZ6912
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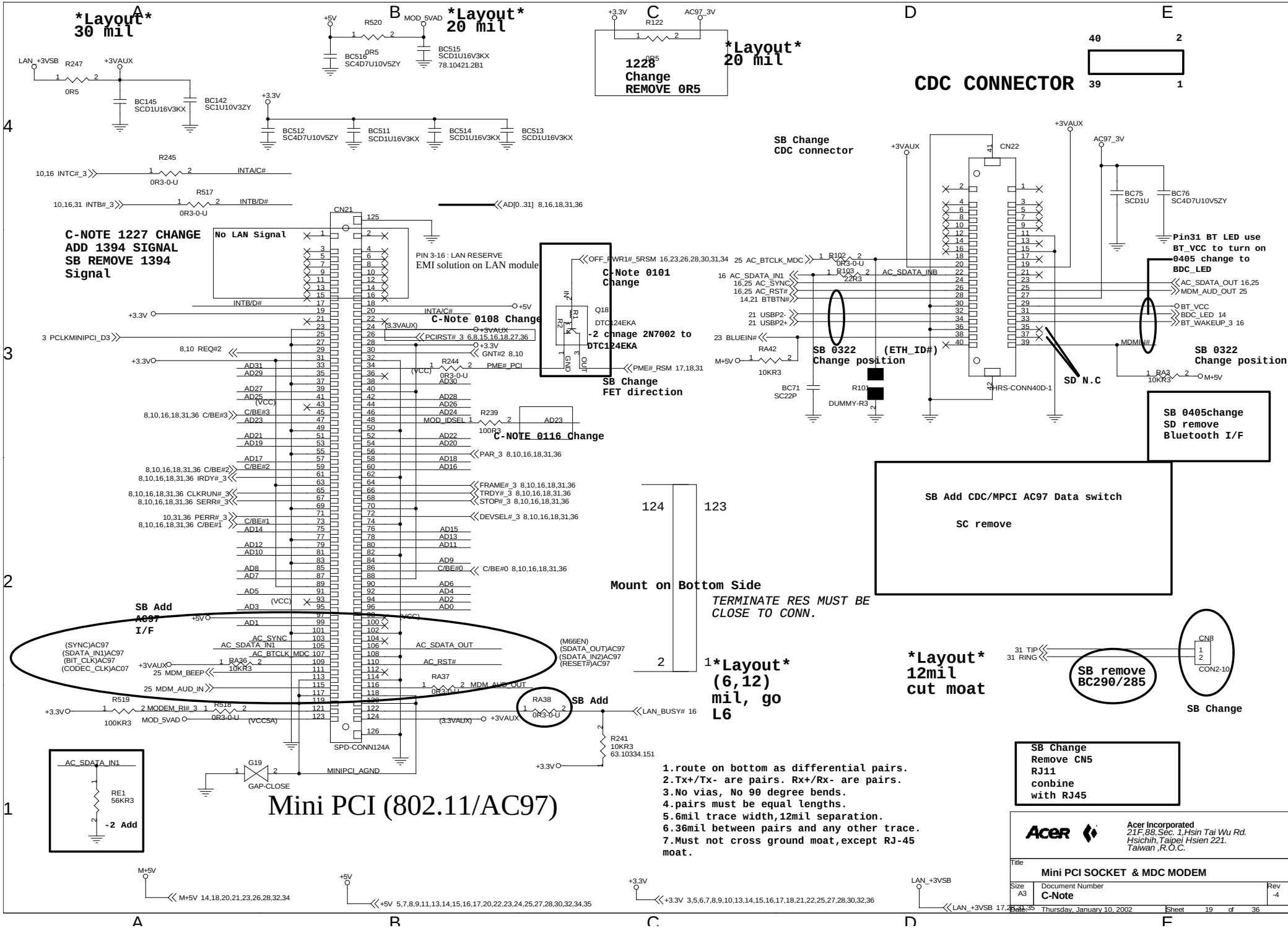
Layout 30 mil
Layout 20 mil
Layout 20 mil
1228 Change REMOVE 0R5
CDC CONNECTOR
SB Change CDC connector
C-NOTE 1227 CHANGE ADD 1394 SIGNAL SB REMOVE 1394 Signal
No LAN Signal
PIN 3-16 : LAN RESERVE
EMI solution on LAN module
C-Note 0101 Change
C-Note 0108 Change
-2 change 2N7002 to DTC124EKA
SB Change FET direction
C-NOTE 0116 Change
SB 0322 Change position
SB 0322 (ETH_ID#) Change position
SD N.C
SB 0405change SD remove Bluetooth I/F
SB Add CDC/MPCI AC97 Data switch
SC remove
SB Add AC97 I/F
Mount on Bottom Side
TERMINATE RES MUST BE CLOSE TO CONN.
Layout (6,12) mil, go L6
Layout 12mil cut moat
SB remove BC290/285
SB Change
SB Add
SB Change Remove CN5 RJ11 conbine with RJ45
-2 Add
Pin31 BT LED use BT_VCC to turn on 0405 change to BDC_LED
Mini PCI (802.11/AC97)
1.route on bottom as differential pairs.
2.Tx+/Tx- are pairs. Rx+/Rx- are pairs.
3.No vias, No 90 degree bends.
4.pairs must be equal lengths.
5.6mil trace width,12mil separation.
6.36mil between pairs and any other trace.
7.Must not cross ground moat,except RJ-45 moat.
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Title
Mini PCI SOCKET & MDC MODEM
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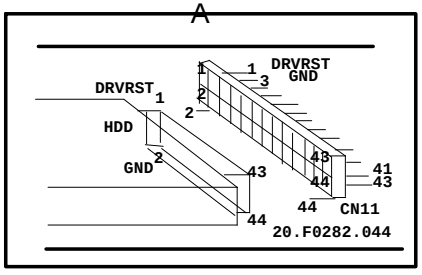
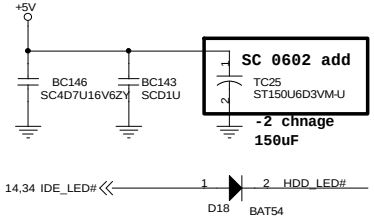
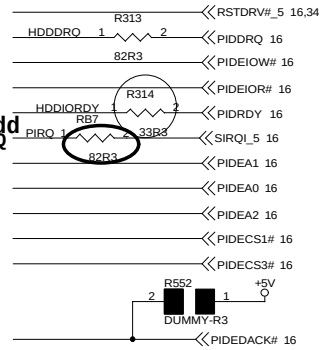
HDD

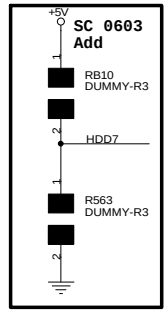


Layout
50 mil For HDD





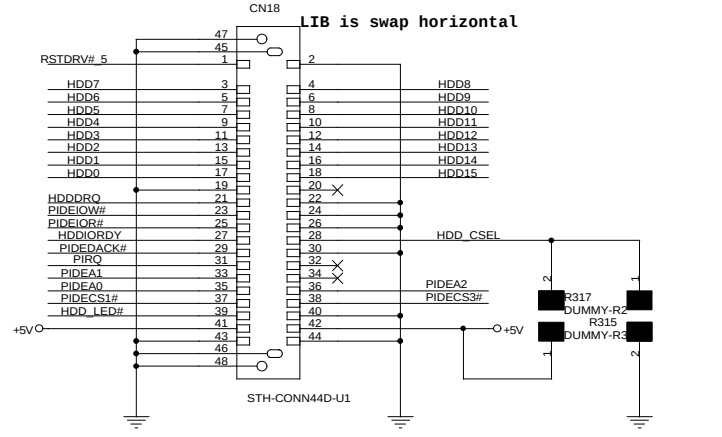
HDD Connector substitude
with FALCON2.5
AMP-CONN44 20.80071.044
->FOX-CON44 20.f0112.044
1229 temperary change to
FOX-CONN44D



C-Note 0106 Change
CN11 change new part
and swap pins

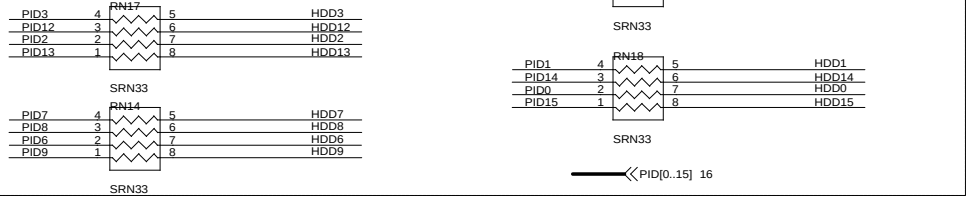
C-NOTE 1229 CHANGE
Temperary Substitude

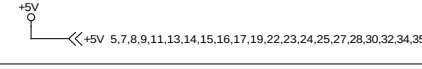
SC change
C-NOTE 0514
change CN18
type
C-Note 0531
change CN18
type



Layout
near
conn.

C-Note 0104 Change
Pin Swap
0108 Swap again



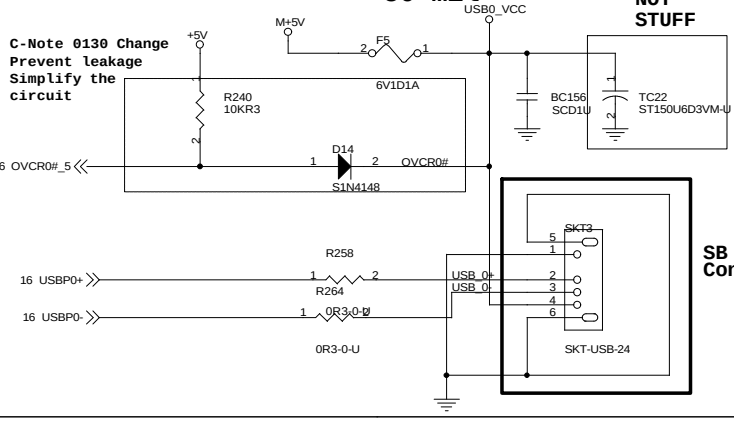


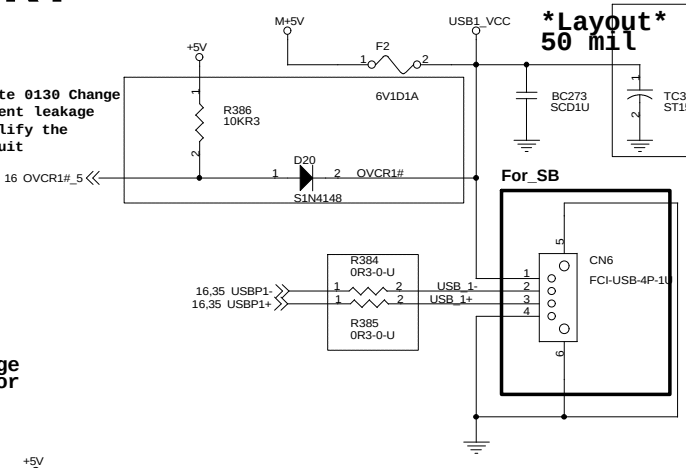
USB PORT

USB signal target
impedance=45ohm +- 10%

Layout
50 mil

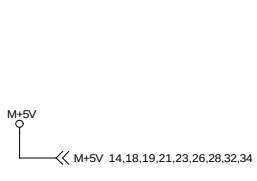
0104
Change
NOT
STUFF





Layout
50 mil

0104
Change
NOT
STUFF



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Title: IDE & USB INTERFACE

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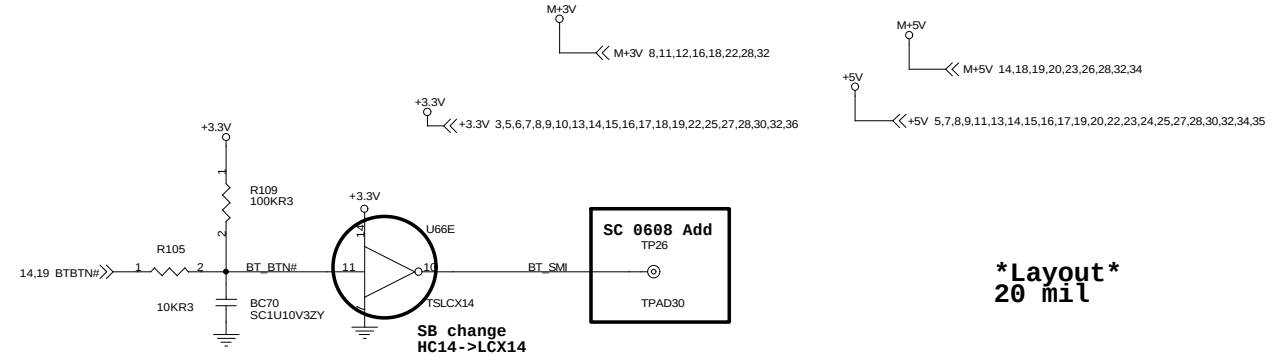


Layout
20 mil

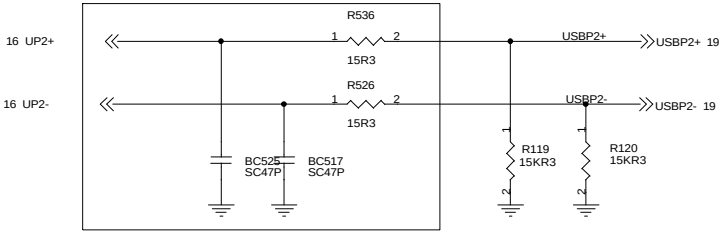
C-NOTE 1228 CHANGE
REMOVE U35(BLUELED#)
USE BT_VCC TO LIGHT THE BLUETOOTH LED

Enable bluetooth ppwer with S.W.

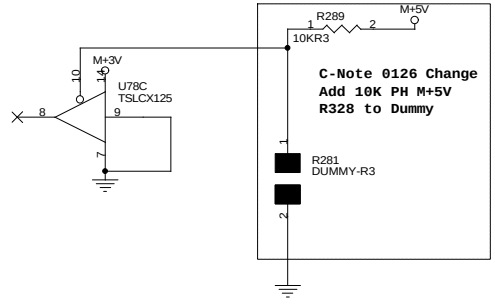
SD remove U8

Add R597, R598, R599, R600
to set B.T. and 802.11

NEAR M1535



C-NOTE 0116 Update



Check connect to KBC GPIO

BLUETOOTH MODULE CONN

USB:PCB impendance control : 90 ohm/pair
45 ohm/trace

S/W RESET ONLY
CHECK GPIO DEFAULT LOW

SB REMOVE U67
BT_RESET

C-Note 0116 Change
2.93V reset

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Title: BLUETOOTH MODULE

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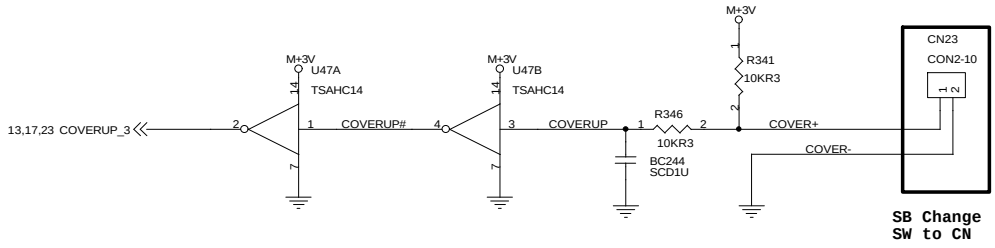
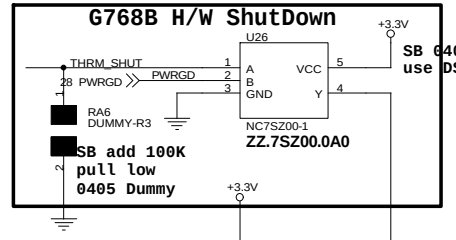
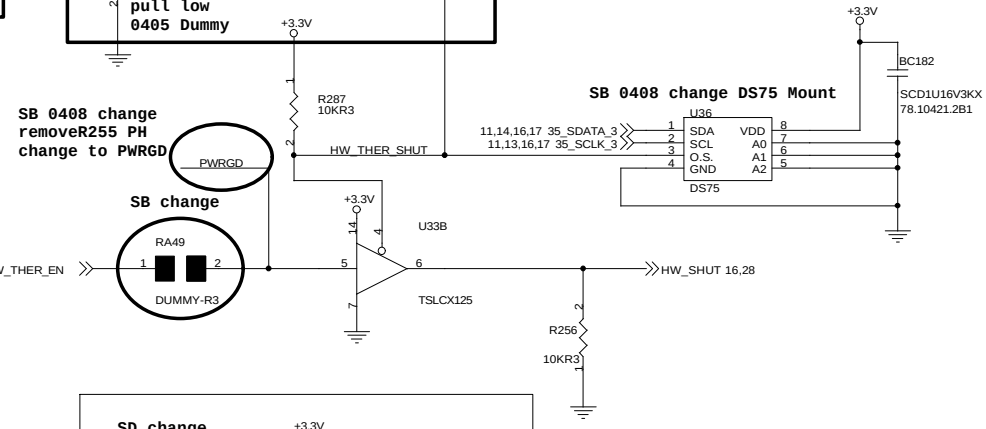
H/W THERMAL SHUTDOWN LM75

Cover Switch

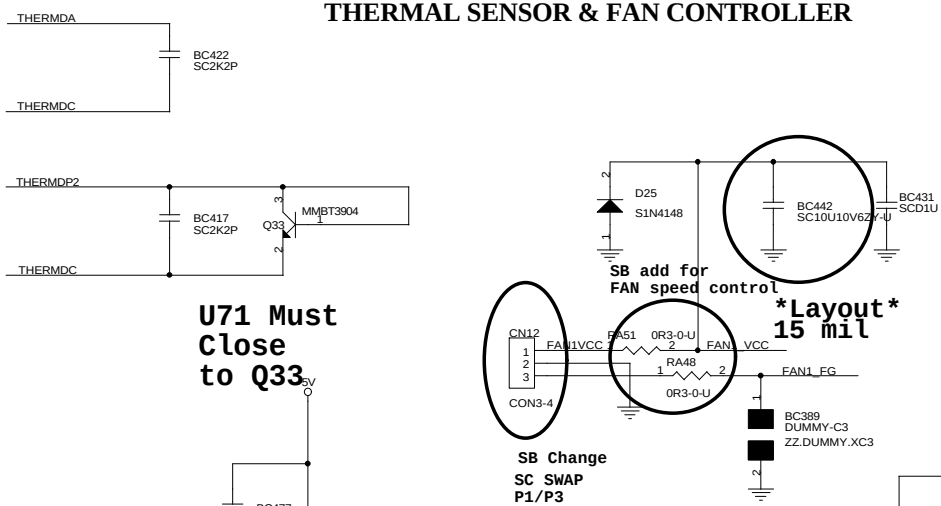


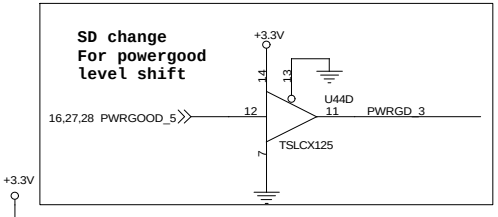
G768B H/W ShutDown

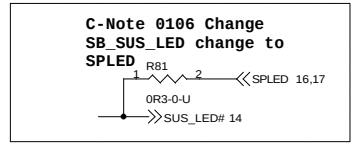


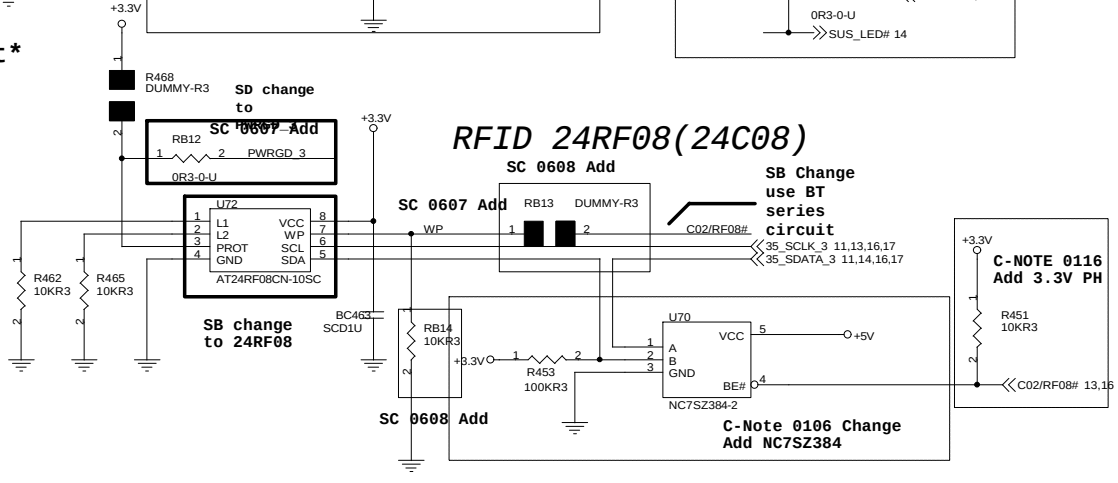


THERMAL SENSOR & FAN CONTROLLER









M+3V 8,11,12,16,18,21,28,32

+5V 5,7,8,9,11,13,14,15,16,17,19,20,23,24,25,27,28,30,32,34,35

+3.3V 3,5,6,7,8,9,10,13,14,15,16,17,18,19,21,25,27,28,30,32,36

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Title	BLUETOOTH INTERFACE&THERMAL/FAN CONTROLLER	
Size A3	Document Number C-Note	Rev -4
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M38867 KBC

HOTKEY SMI

C-NOTE 1227 CHANGE
REMOVE P24 BAT_LED#

C-Note 0116
Change CHKPW
to Fn ,CHKPW
change to SB
GPIO10

C-Note 1230 Change
Add P44 KBC_BEEP
for S3 Warnning
0116 Change to P57

C-Note 1230 Change
Remove R357

-2 chnage 2N7002
to DTC124EKA

SB Change
SC P60 change
to AD_IN
SD N.C
SD
->BT_Charge

Sc remove
BT_SMI

SB Remove
TP4/PS2# and
set KBID2

SB Change
KBID2->KBID0

SB add USB_WAKE_EN

C-Note 1229 CHANGE
SUBSITITUDE PART
FOR LAYOUT
0112 Change
Connector
is ready

SB Change
Pin
Define

C-Note 0115
Net Swap

C-Note 0115
Change

SB Add
Pull High

C-Note 0116
Add 10K PH

For _SB

C-NOTE 0116
Add +5V PH

Change GPIO(Default HI)

-2 chnage 2N7002
to DTC124EKA

C-Note 0101
Change

C-NOTE 0116
Change from P44

C-Note 0126
Change
BLUEIN# to
BT_DETACH_3
SD->N.C

SB Change
to M+5V

C-Note 0116 Add

C-Note 0116 Change
to M+5V

C-Note 0116 Change
Add KBC_CTRL#

SB 0405 change
Update KBC_SMBDATA
KBC_SMBSCLK

SB Add
For
AIW
Test

Near CN16

C-Note 1230 Change
Add Bus SW for
TP4/PS2 serial
Fuction

SB change
Remove TP4/PS2
mouse serial
function

SB remove
KBID1/2

DIP SW SETTING

	CHK PWD ENABLE	BBLOCK ENABLE
N. C		
N. C		
BOOTBLOCK_EN#		
CHECK PWD		
	OFF ON	OFF ON

Layout
near
chip,
check
PAD

Layout
near KBC

PS/2 PORT

85.47R01.001

M38867M8A

Internal Keyboard

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Title	KBC/PS2 PORT
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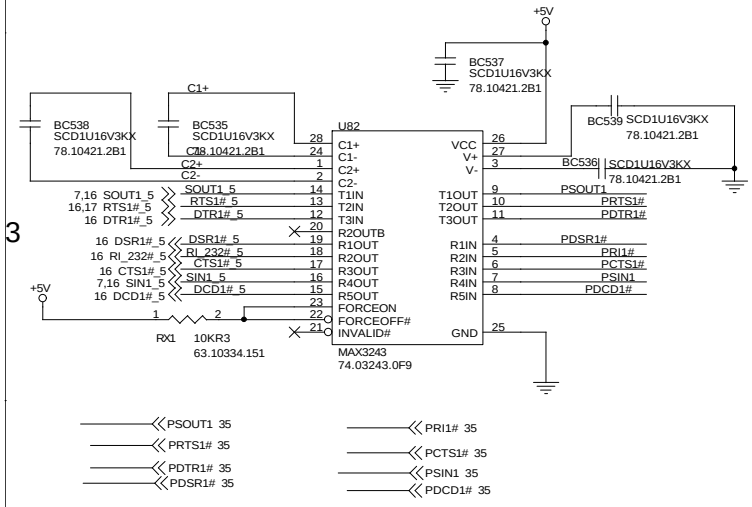
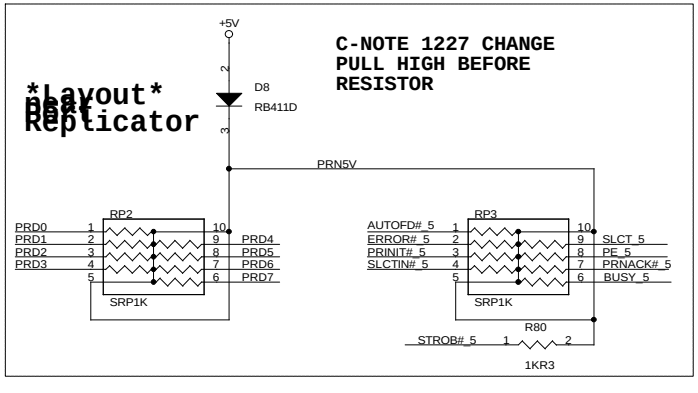
1394 Port change to P.36

SERIAL PORT

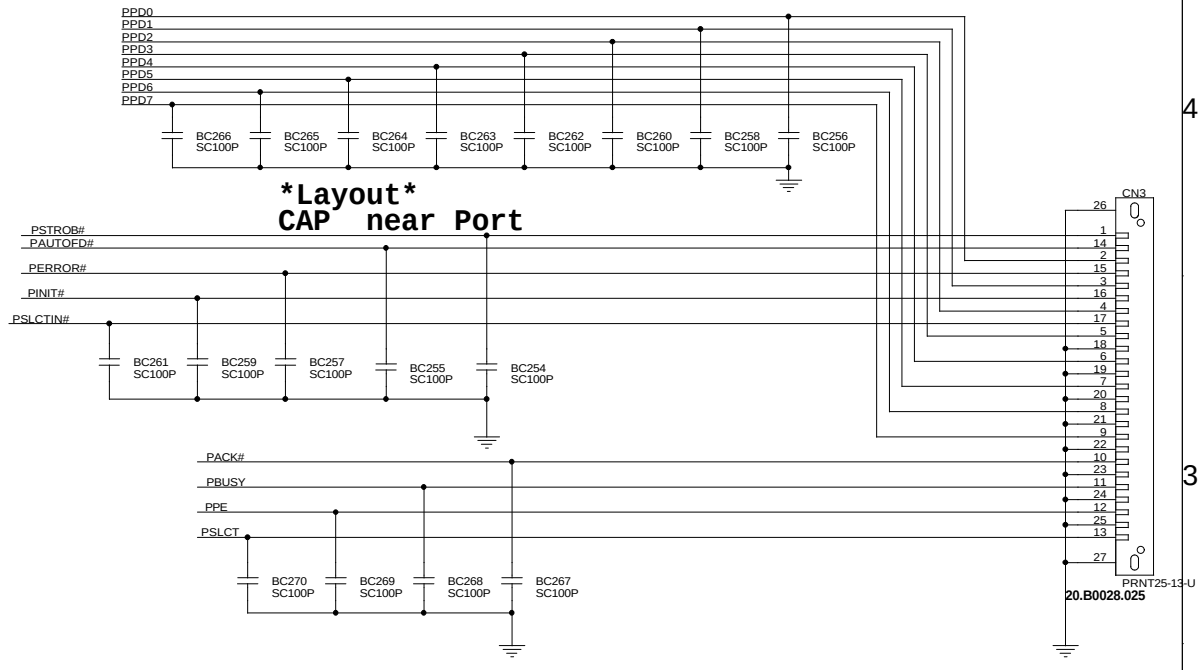


Layout
Near
Replicator

C-NOTE 1227 CHANGE
PULL HIGH BEFORE
RESISTOR

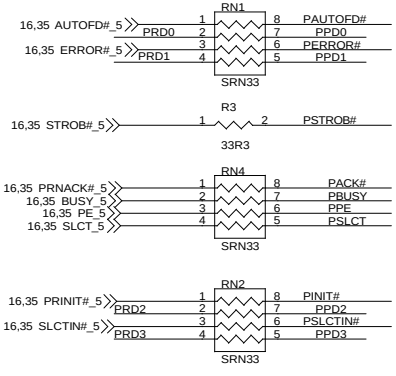


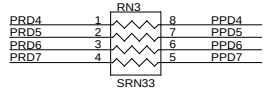
Printer Port



16,35 PRD[0..7]

C-Note 0104 Change
Pin Swap





SB change
add PrinterPort
FDD function
SC Remove again

+5V
+5V 5,7,8,9,11,13,14,15,16,17,19,20,22,23,25,27,28,30,32,34,35

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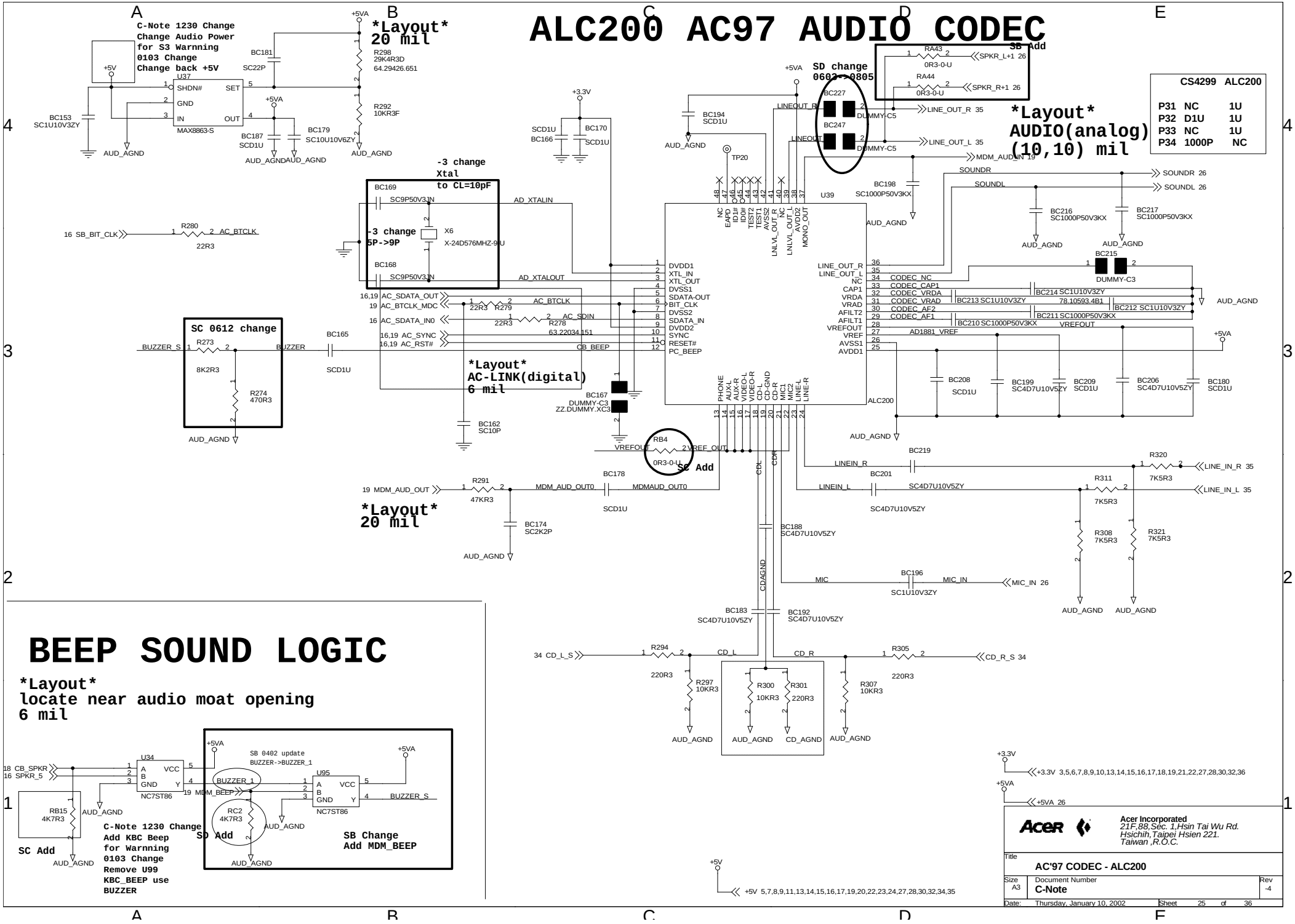
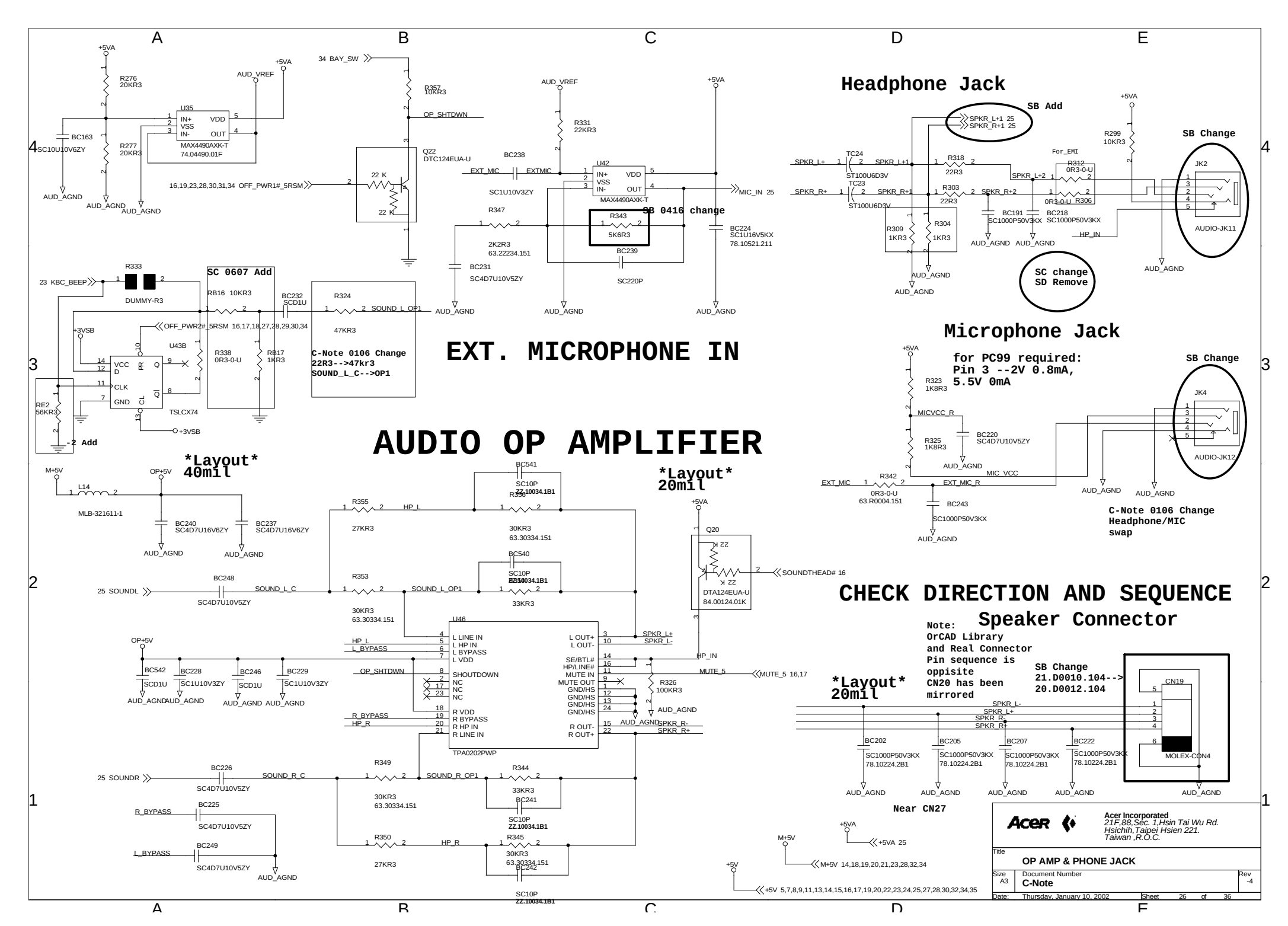
ALC200 AC97 AUDIO CODEC




Headphone Jack
SB Add
SB Change
SB 0416 change
SC 0607 Add
SC change
SD Remove
EXT. MICROPHONE IN
Microphone Jack
for PC99 required:
Pin 3 --2V 0.8mA,
5.5V 0mA
AUDIO OP AMPLIFIER
Layout
40mil
Layout
20mil
C-Note 0106 Change
22R3-->47kr3
SOUND_L_C-->OP1
C-Note 0106 Change
Headphone/MIC
swap
CHECK DIRECTION AND SEQUENCE
Speaker Connector
Note:
OrCAD Library
and Real Connector
Pin sequence is
oppisite
CN20 has been
mirrored
SB Change
21.D0010.104-->
20.D0012.104
Near CN27
TPA0202PWP
MAX4490AXK-T
74.04490.01F
DTA124EUA-U
84.00124.01K
TSLCX74
MLB-321611-1
AUDIO-JK11
AUDIO-JK12
MOLEX-CON4
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OP AMP & PHONE JACK
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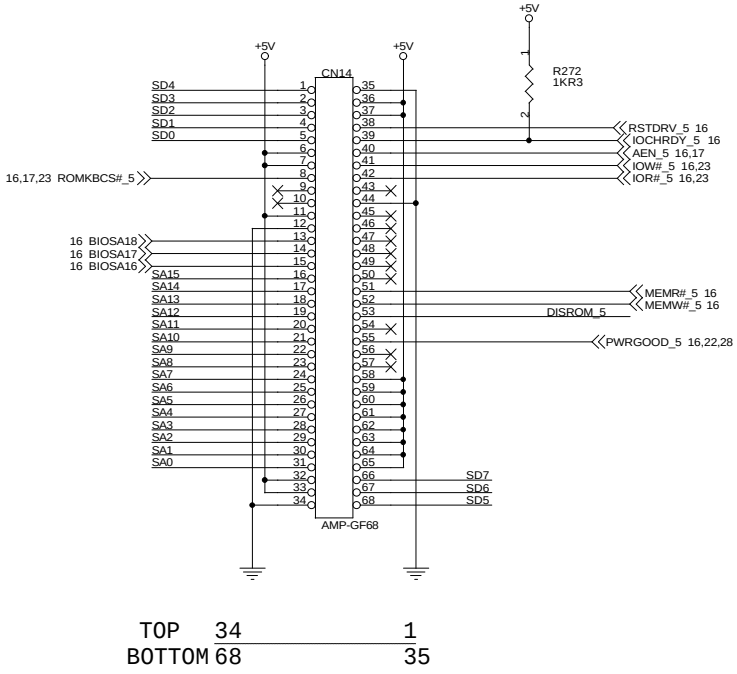
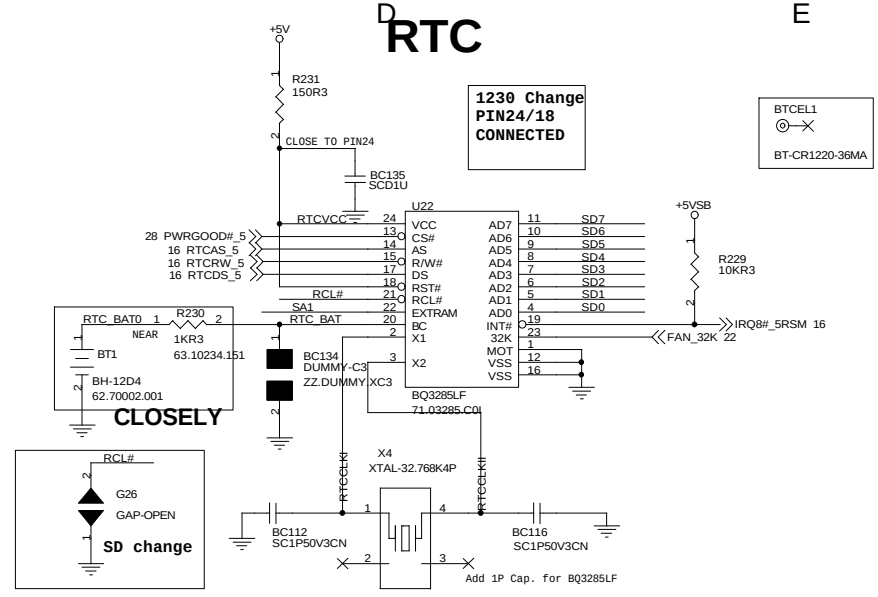
GOLD FINGER (PORT 80)

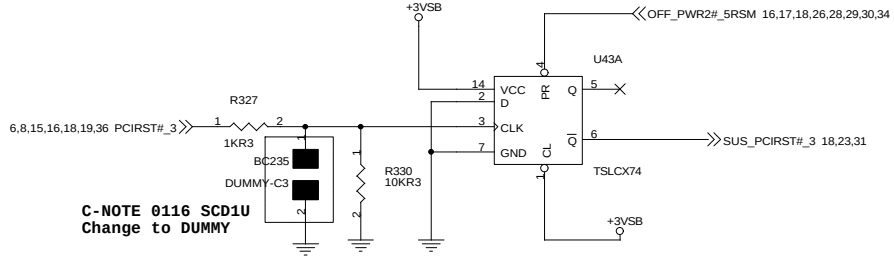


TOP 34 1
BOTTOM 68 35

RTC

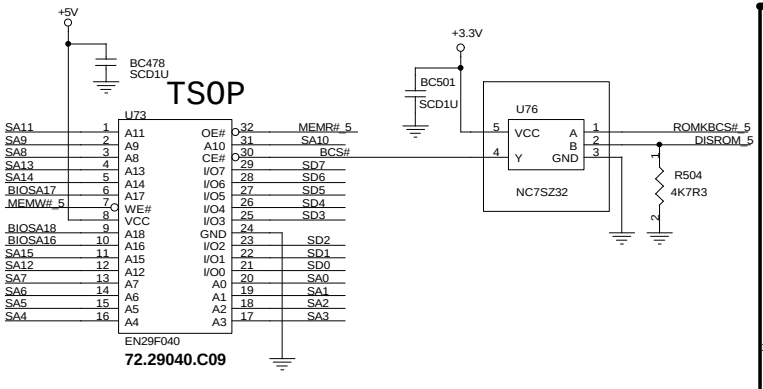


SUSPEND RESET CIRCUIT



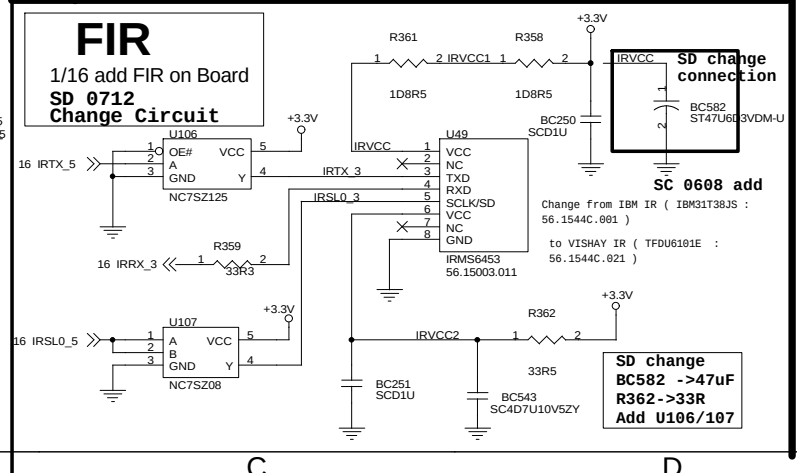
BIOS ROM

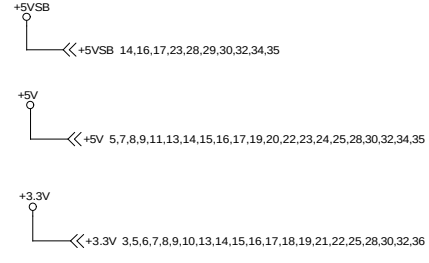
SD[0..7] 16,23
SA[0..15] 16,17,23



FIR

1/16 add FIR on Board
SD 0712
Change Circuit





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Title	BIOS & Debug Port & RTC	
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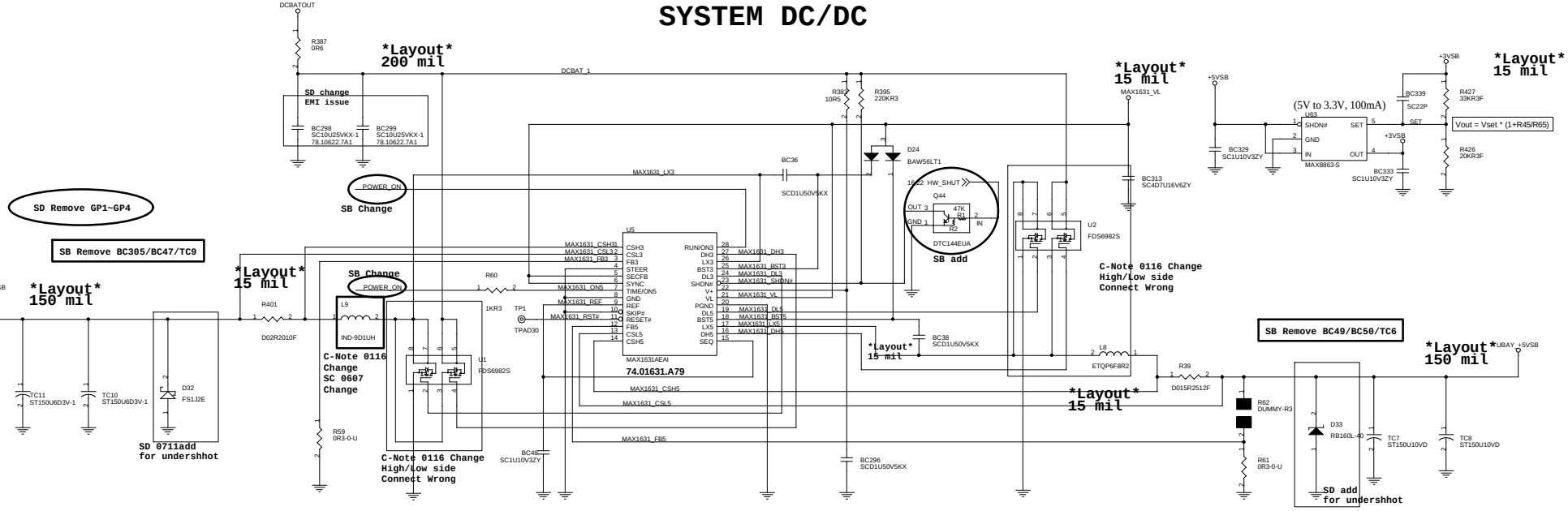
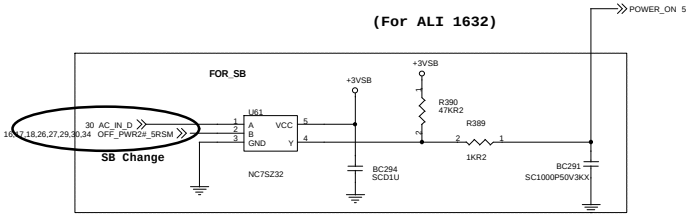
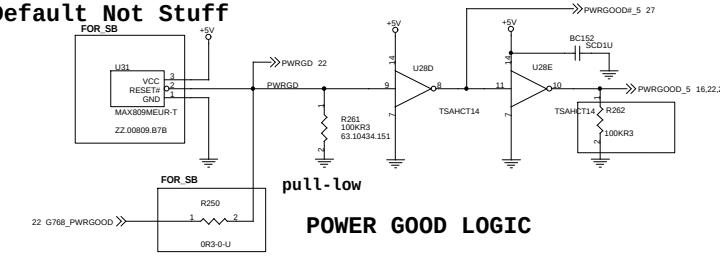
SYSTEM DC/DC



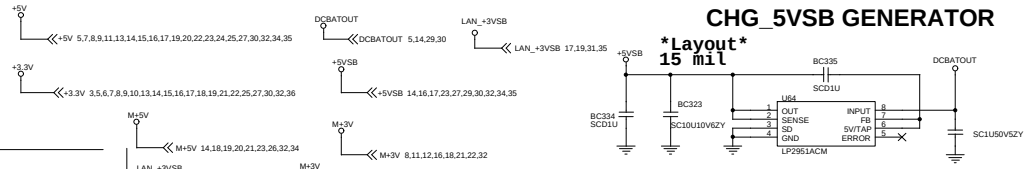
3V/5V DC_DC ENABLE LOGIC



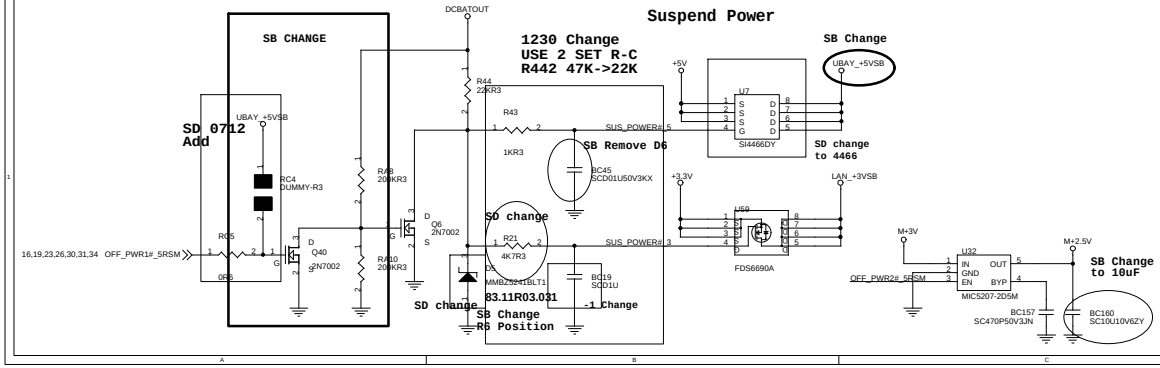
Default Not Stuff



CHG_5VSB GENERATOR



Suspend Power



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Title	SYSTEM DC/DC for 3V,5V,12V	
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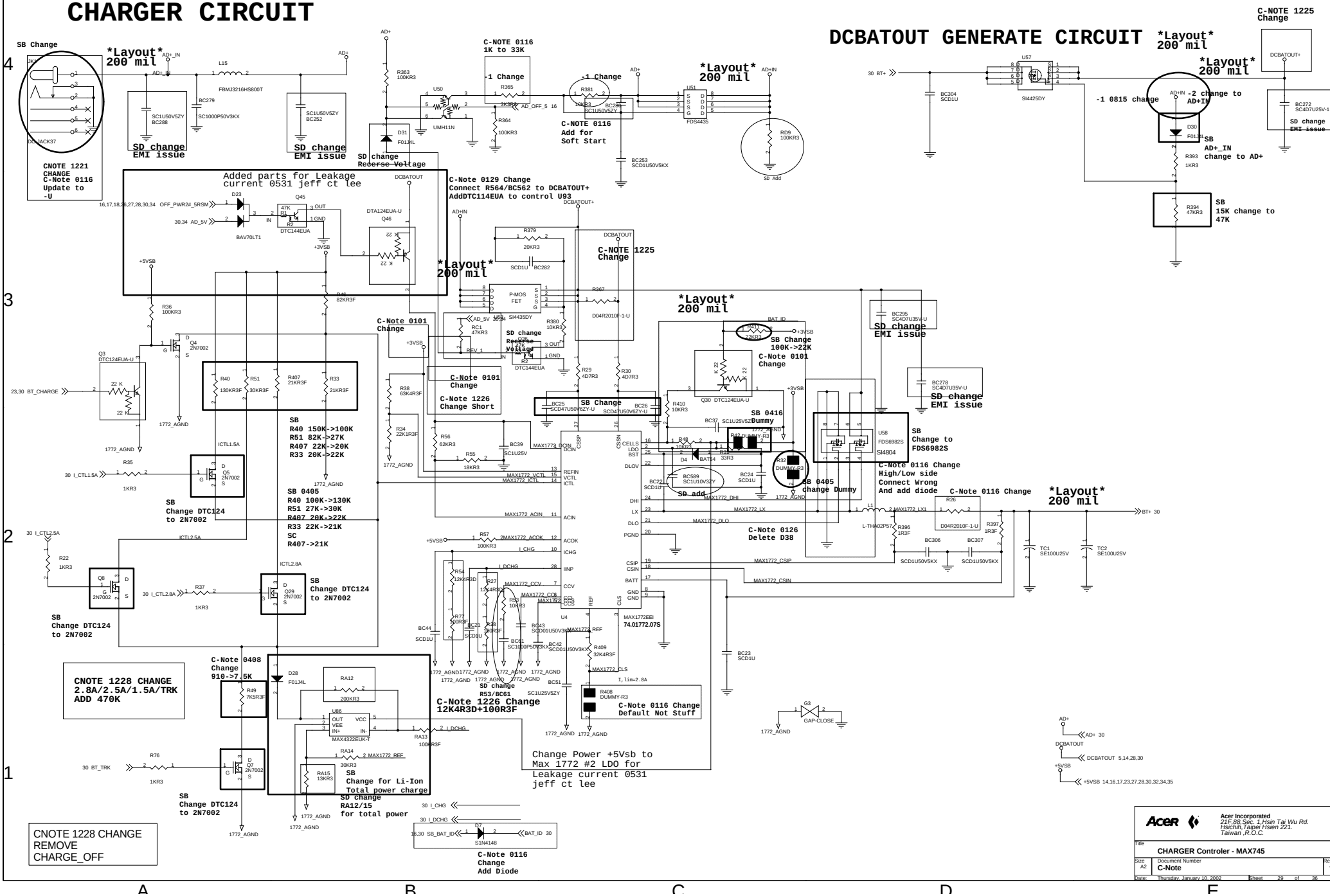
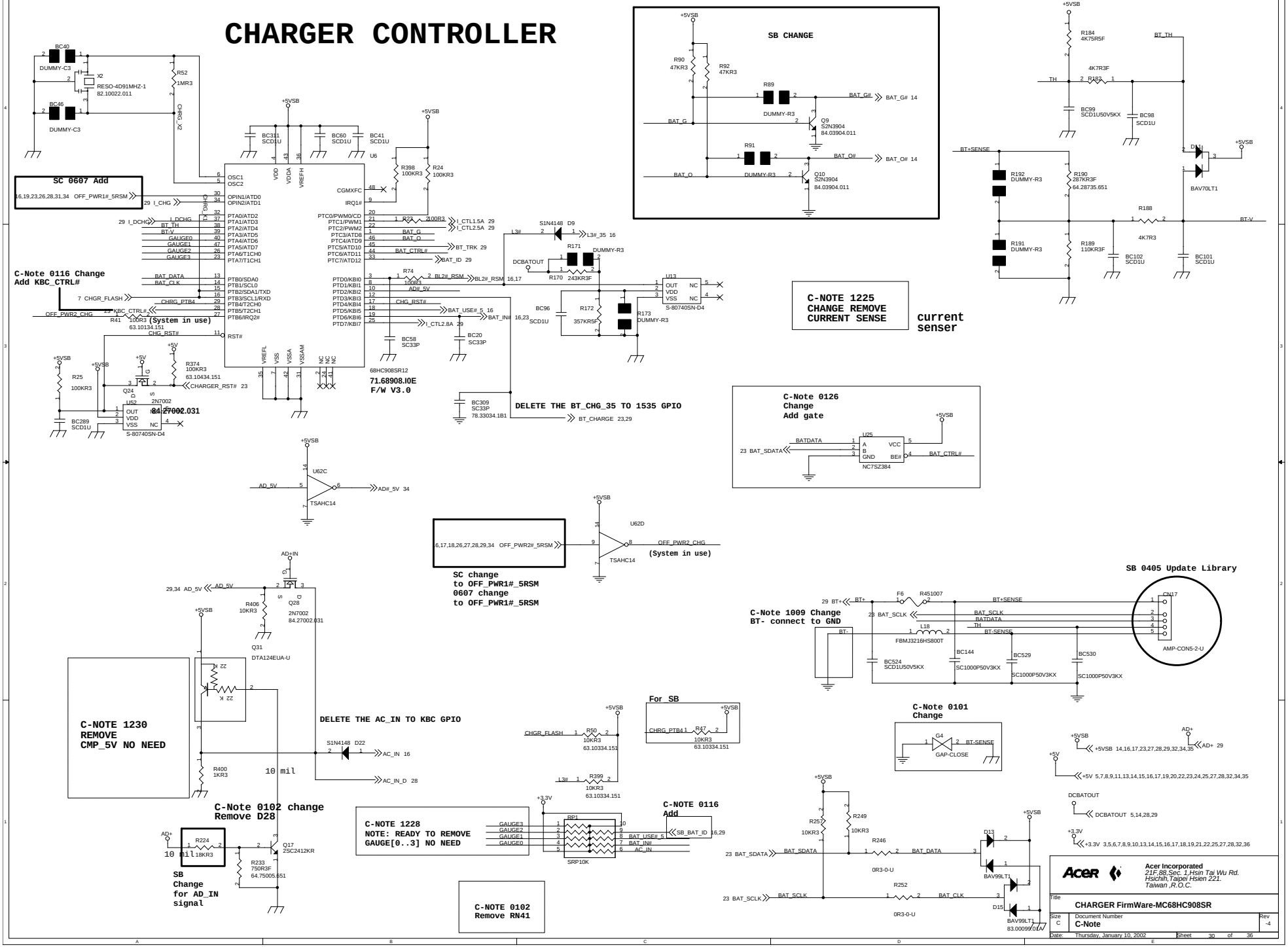
CHARGER CIRCUIT



CHARGER CONTROLLER



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Title: CHARGER FirmWare-MC68HC908SR

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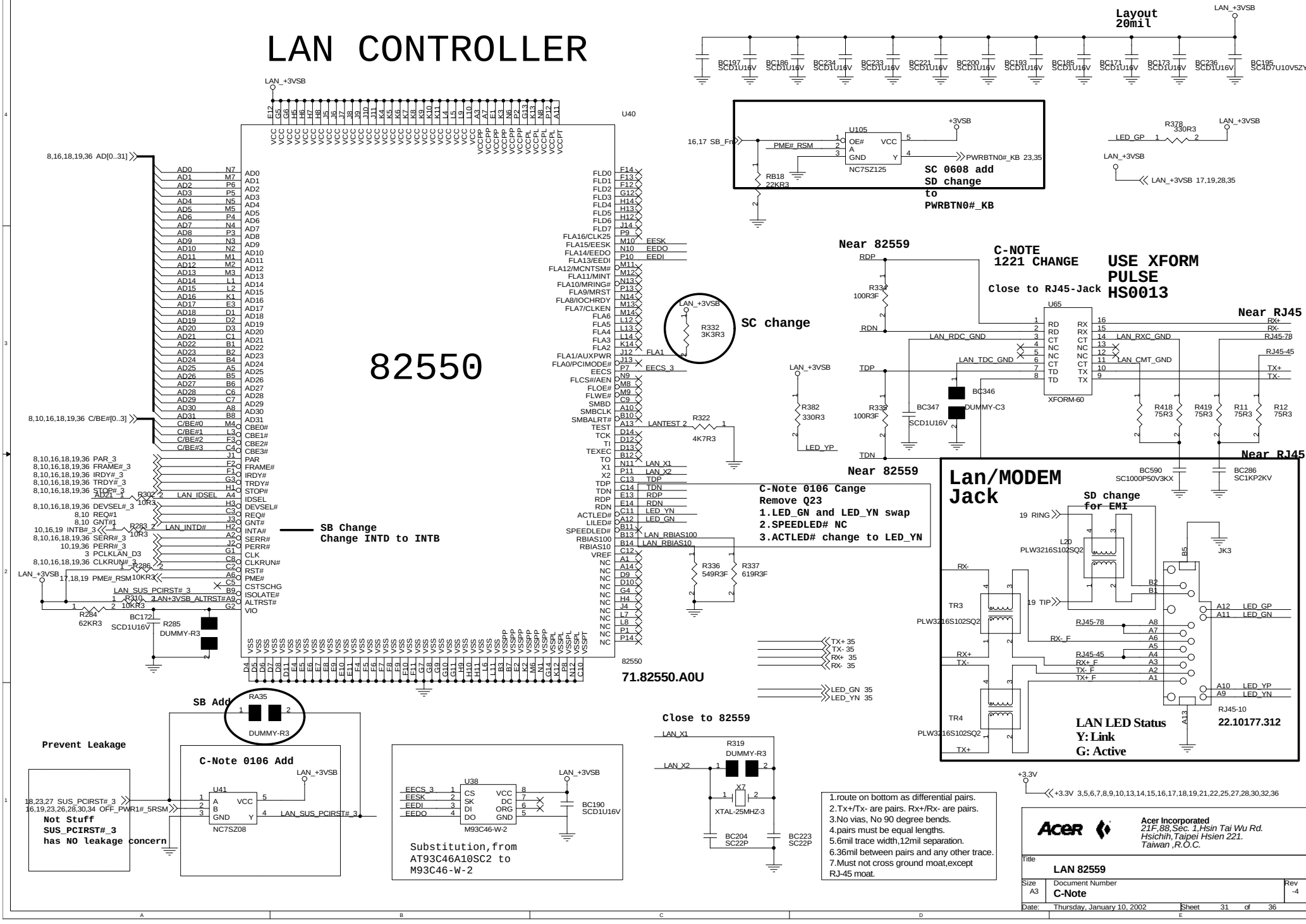
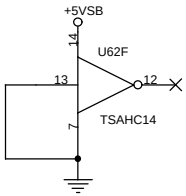
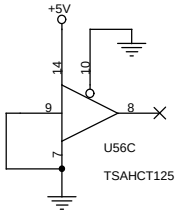
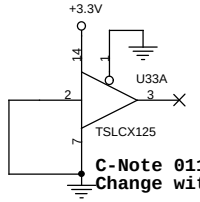
LAN CONTROLLER

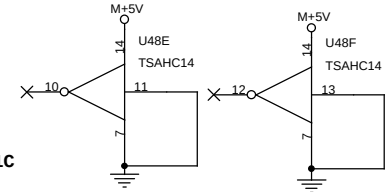


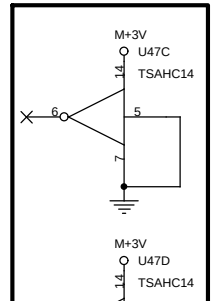


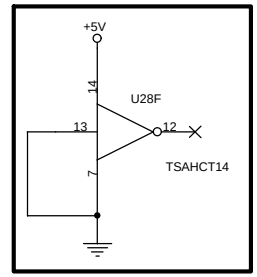


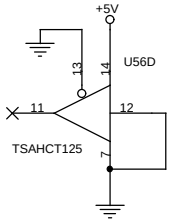


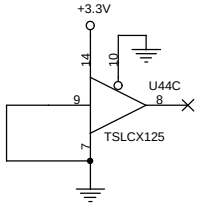
C-Note 0116
Change with U101C

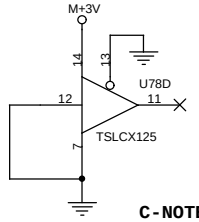


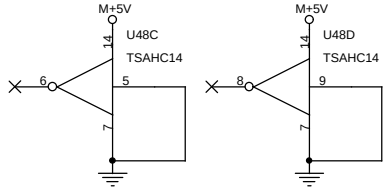




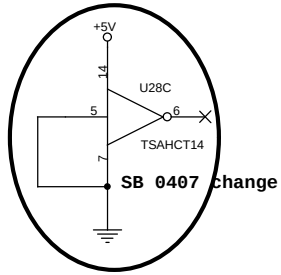




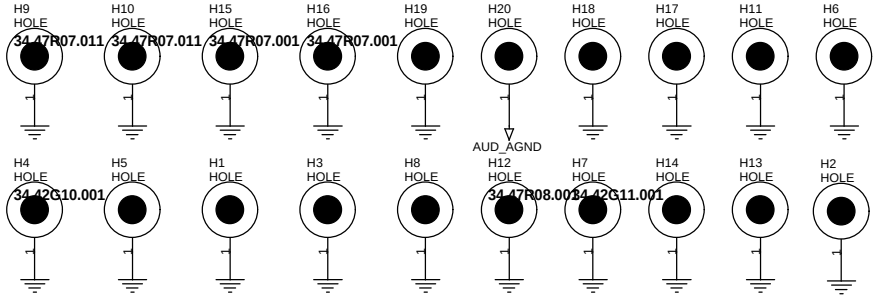




C-NOTE 0103 Change
NC Logic are increased

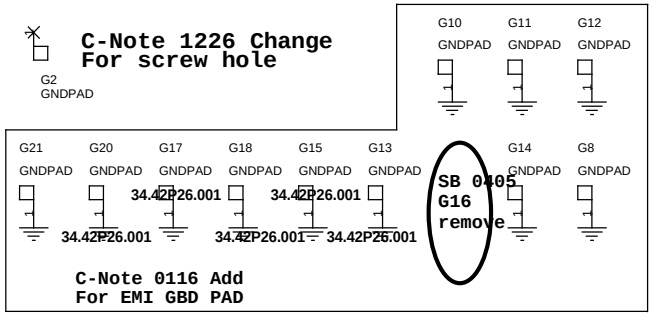


SB 0407 Change

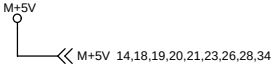


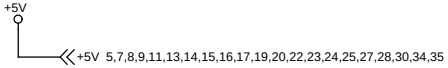
C-Note 0104 Add Hole

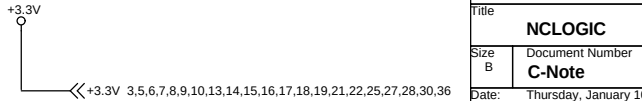
C-Note 1226 Change
For screw hole



C-Note 0116 Add
For EMI GBD PAD







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Title: NCLOGIC

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Title
TEST_POINTS

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C-Note 0104 Change
Pin Swap

CD-ROM I/F Signals

RN8: SID11 SID4 SID10 SID5 — CDD11 CDD4 CDD10 CDD5 — SRN33
RN9: CDD7 CDD8 CDD6 CDD9 — SID7 SID8 SID6 SID9 — SRN33

Layout near conn.

RN7: SID13 SID2 SID12 SID3 — CDD13 CDD2 CDD12 CDD3 — SRN33
RN6: CDD1 CDD14 CDD0 CDD15 — SID1 SID14 SID0 SID15 — SRN33

D17 RB731U: DR1#_5 16,35 — DR0#_5 — CDROM_LED# — 14,20 IDE_LED#

SB Change

C-NOTE 1227 CHANGE
UBAY_LED POWER
ATTACH/WARNNING

M+5V — R435 200R6 — Q32 DTA124EUA-U — 23 UBAY_LED_ON# — UBAY_LED 14

Bios need to program
to inverse DENSEL

CN13 (MLX-CON80)

25 CD_R_S
25 CD_L_S
CD_AGND
CD_MUTE
CDROM_LED#
SIDECS3#
SIDECS1#
SIDEA2
SIDEA0
SIDEA1
PDIAG
SIRQ
SIDEDACK#
CD_CSEL
SIDERDY
SIDEIOR#
SIDEIOW#
SIDEDRQ
CDD15 CDD0 CDD14 CDD1
CDD13 CDD2 CDD12 CDD3
UBAY_5V
CDD11 CDD4 CDD10 CDD5
CDD9 CDD6 CDD8 CDD7
RSTDRV#_5
UBAYD0
HDSEL#_5
RDATA#_5
WP#_5
DRATE0
TRK0#_5
CHG_REQ#
WGATE#_5
WDATA#_5
STEP#_5
FDIR#_5
(DRATE1)DENSEL_5
MOT0#_5
USBP3-
USBP3+
DSKCHG#_5
DR0#_5
INDEX#_5
UBAYD2
UBAYD1

M+5V — R45 10KR3 — SW2 — SW-SENSOR

23 BAY_SW# — U48A TSAHC14 — BAY_SW 26 — U48B TSAHC14 — R352 10KR3 — BC245 SCD1U

C-Note 0103
Change
Add Schmitt
Trigger

C-Note 0126
Change
PULL LOW

CD_MUTE — R455 0R3-0-U — CD_CSEL — R139 470R3

SB 0330 change
to 470 ohm

C-Note 0116 Change
For CD-ROM
Hi or Open-->Slave
Low --> Master
Cable Select (CSEL)

C-Note 0101
Add poly
switch

SB change
Add for
Nest
Support
Remove F4

Layout 50mil
for UltraBay

BC479 SC10U10V6ZY — BC464 SCD1U16V — BC462 SC1000P50V

R148 82R3: 16 SIDDRQ — 2 SIDEDRQ
16 SIDEIOR#
16,20 RSTDRV#_5 — SIDECS1# 16
16 SIDECS3# — SIDEA0 16
16 SIDEA2 — SIDEA1 16

16 SIDEIOW#
R135: 16 SIRQII_5 — SIRQ
R140 82R3: 16 SIDRDY — SIDERDY
33R3 SD change
+5V — R137 — DUMMY-R3: 16 SIDEDACK#
USBP3+ 16
USBP3- 16

FDD I/F Signal
WGATE#_5 16,35
MOT0#_5 16,35
16,35 DENSEL_5
DR0#_5 16,35
16,35 FDIR#_5

U102 NC7SZ08: 23 USB_WAKE_EN — +5VSB — PWR_EN6
U103A TSLCX08: 16,17,18,26,27,28,29,30 OFF_PWR2#_5RSM — CHG_REQ# — +3VSB — PWR_EN4
U62E TSAHC14 — CHG_REQ
U103B TSLCX08: 29,30 AD_5V — PWR_EN5
U104 NC7SZ32

SB change
Add for
Nest
Support

UBAY_+5VSB — UBAY_PWR_EN# — U92 TPS2013D — UBAY_5V

RA47 10KR3: CHG_REQ# — 30 AD#_5V
U97 NC7SZ32 — PWR_EN1#
U99 NC7SZ08 — PWR_EN2#
U62B TSAHC14 — USB_WAKE_EN# — PWR_EN3#
U98 NC7SZ08 — UBAY_PWR_EN#
U62A TSAHC14 — OFF_PWR1_5RSM — 16,19,23,26,28,30,31 OFF_PWR1#_5RSM

SB change
Add for
Nest
Support

TP9
R167 0R3-0-U — UBAYD0

+5VSB 14,16,17,23,27,28,29,30,32,35
+5V 5,7,8,9,11,13,14,15,16,17,19,20,22,23,24,25,27,28,30,32,35

C-Note 0104 Change
Pin Swap

RP11 SRP1K:
16,35 RDATA#_5 — RDATA#_5 — TRK0#_5 — TRK0#_5 16,35
16,35 INDEX#_5 — INDEX#_5 — STEP#_5 — STEP#_5 16,35
16,35 DSKCHG#_5 — DSKCHG#_5 — WP#_5 — WP#_5 16,35
16,35 HDSEL#_5 — HDSEL#_5 — WDATA#_5 — WDATA#_5 16,35

C-Note 0104 Change
Pin Swap

RN5 SRN10K: UBAYD1 UBAYD2 UBAYD4 UBAYD3

ZZ.10336.080

SID[0..15] 16 — UBAYD[1..4] 17

M+5V 14,18,19,20,21,23,26,28,32

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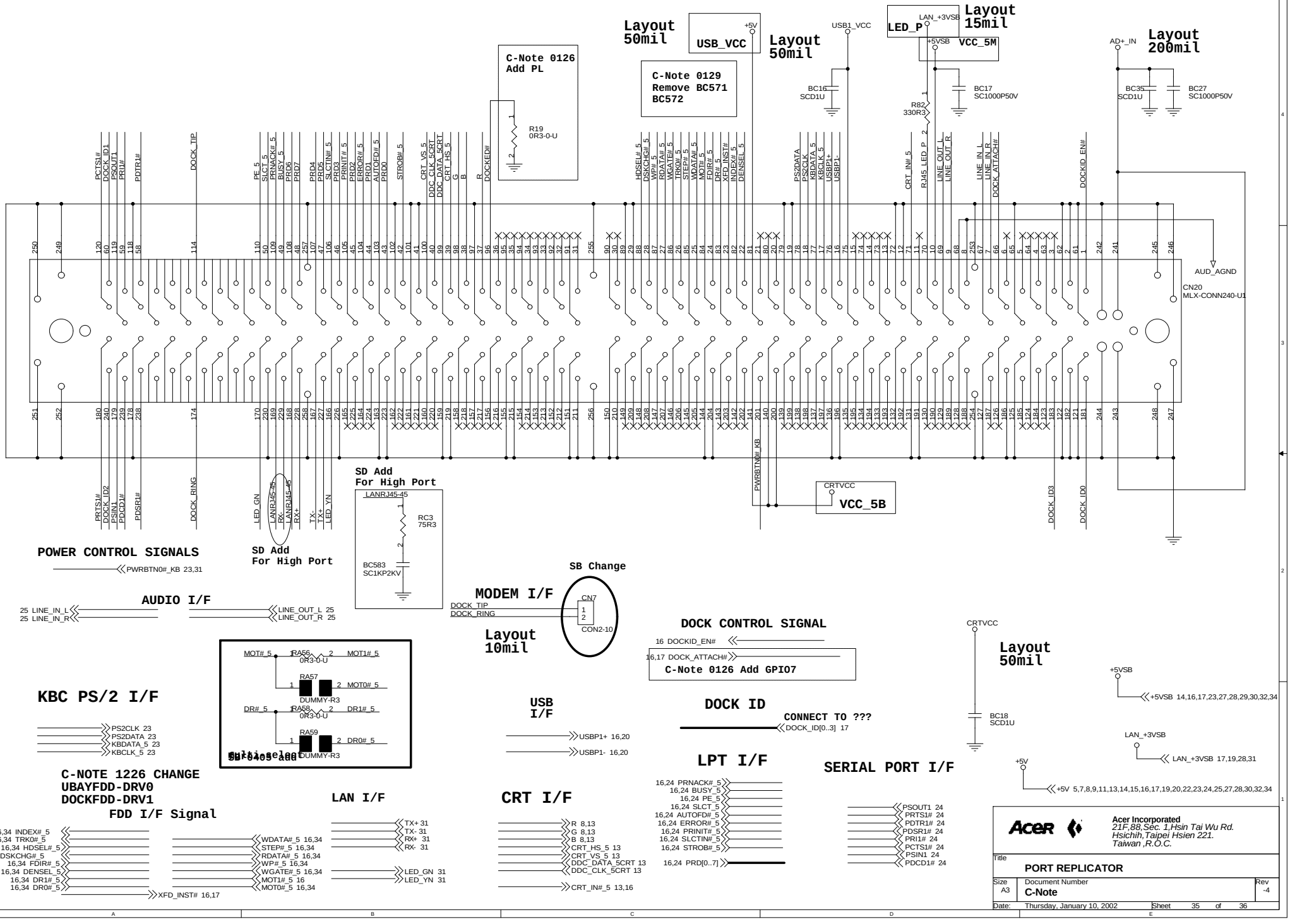
Layout 50mil
USB_VCC
+5V
C-Note 0126 Add PL
R19 0R3-0-U
C-Note 0129 Remove BC571 BC572
Layout 50mil
USB1_VCC
BC16 SCD1U
LED_P
LAN_+3VSB
Layout 15mil
+5VSB
VCC_5M
R82 330R3
BC17 SC1000P50V
AD+_IN
Layout 200mil
BC35 SCD1U
BC27 SC1000P50V
PCTS1#
DOCK_ID1
PSOUT1
PRI1#
PDTR1#
DOCK_TIP
PE_5
SLCT_5
PRNACK#_5
BUSY_5
PD6
PD7
PRD4
PRD5
SLCTIN#_5
PRD3
PRINIT#_5
PRD2
ERROR#_5
PRD1
AUTOFD#_5
PRD0
STROB#_5
CRT_VS_5
DDC_CLK_5CRT
DDC_DATA_5CRT
CRT_HS_5
G
B
R
DOCKED#
HDSEL#_5
DSKCHG#_5
WP#_5
RDATA#_5
WGATE#_5
STEP#_5
MDAT#_5
MOT#_5
FDIR#_5
DR#_5
XFD_INST#
INDEX#_5
DENSEL_5
PS2DATA
PS2CLK
KBDATA_5
KBCLK_5
USBP1-
USBP1+
CRT_IN#_5
RJ45_LED_P
LINE_OUT_L
LINE_OUT_R
LINE_IN_L
LINE_IN_R
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