

Compal Confidential

NAV70 Schematics Document

Intel Pineview Processor with Tigerpoint + DDRII

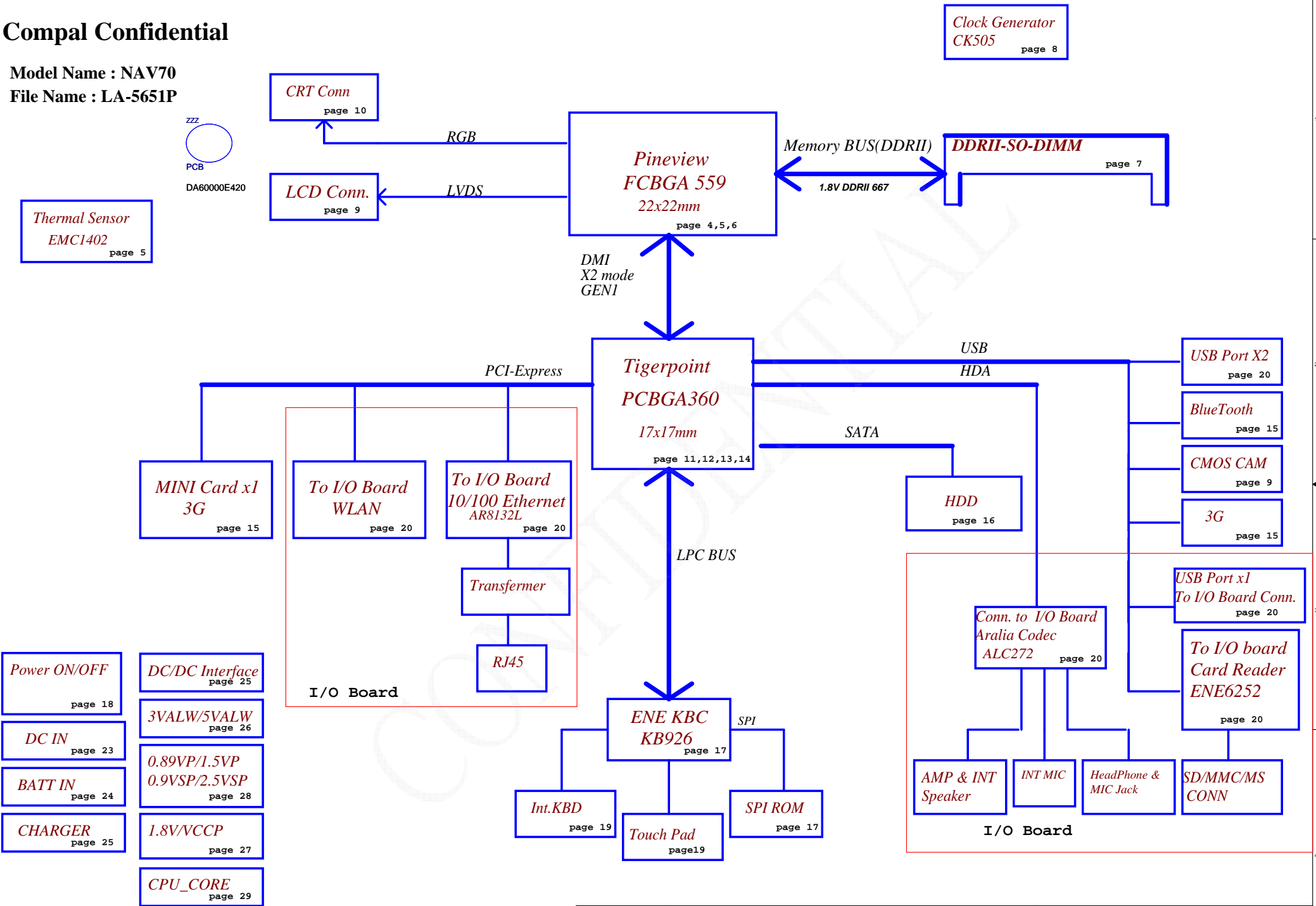
2010-04-29

REV: 2.0

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Model Name : NAV70
File Name : LA-5651P



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Voltage Rails

Power Plane	Description	S1	S3	S5
VIN	Adapter power supply (19V)	N/A	N/A	N/A
B+	AC or battery power rail for power circuit.	N/A	N/A	N/A
+CPU_CORE	Core voltage for CPU	ON	OFF	OFF
+0.9VS	0.9V switched power rail for DDR terminator	ON	OFF	OFF
+VCCP	VCCP switched power rail	ON	OFF	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8V	1.8V power rail for DDR	ON	ON	OFF
+0.89V	Graphic core power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3VS	3.3V switched power rail	ON	OFF	OFF
+5VALW	5V always on power rail	ON	ON	ON*
+5VS	5V switched power rail	ON	OFF	OFF
+VSB	VSB always on power rail	ON	ON	ON*
+RTCVCC	RTC power	ON	ON	ON

Note : ON* means that this power plane is ON only with AC power available, otherwise it is OFF.

STATE \ SIGNAL	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	ON	OFF	OFF	OFF

BOARD ID Table(Page 17)

	VCC	3.3V				
	Ra	100K				
	ID	BRD ID	Rb	Vab-Min	Vab-Typ	Vab-Max
NAV50	0	R01 (EVT)	0	0V	0V	0V
	1	R02 (DVT)	8.2K	0.216V	0.250V	0.289V
	2	R03 (PVT)	18K	0.436V	0.503V	0.538V
	3	R10A (MP)	33K	0.712V	0.819V	0.875V
NAV60	4	R01 (EVT)	56K	1.036V	1.185V	1.264V
	5	R02 (DVT)	100K	1.453V	1.650V	1.759V
	6	R03 (PVT)	200K	1.935V	2.200V	2.341V
	7	R10A (MP)	NC	2.500V	3.3V	3.3V

External PCI Devices

DEVICE	IDSEL #	REQ/GNT #	PIRQ
--------	---------	-----------	------

No PCI Device

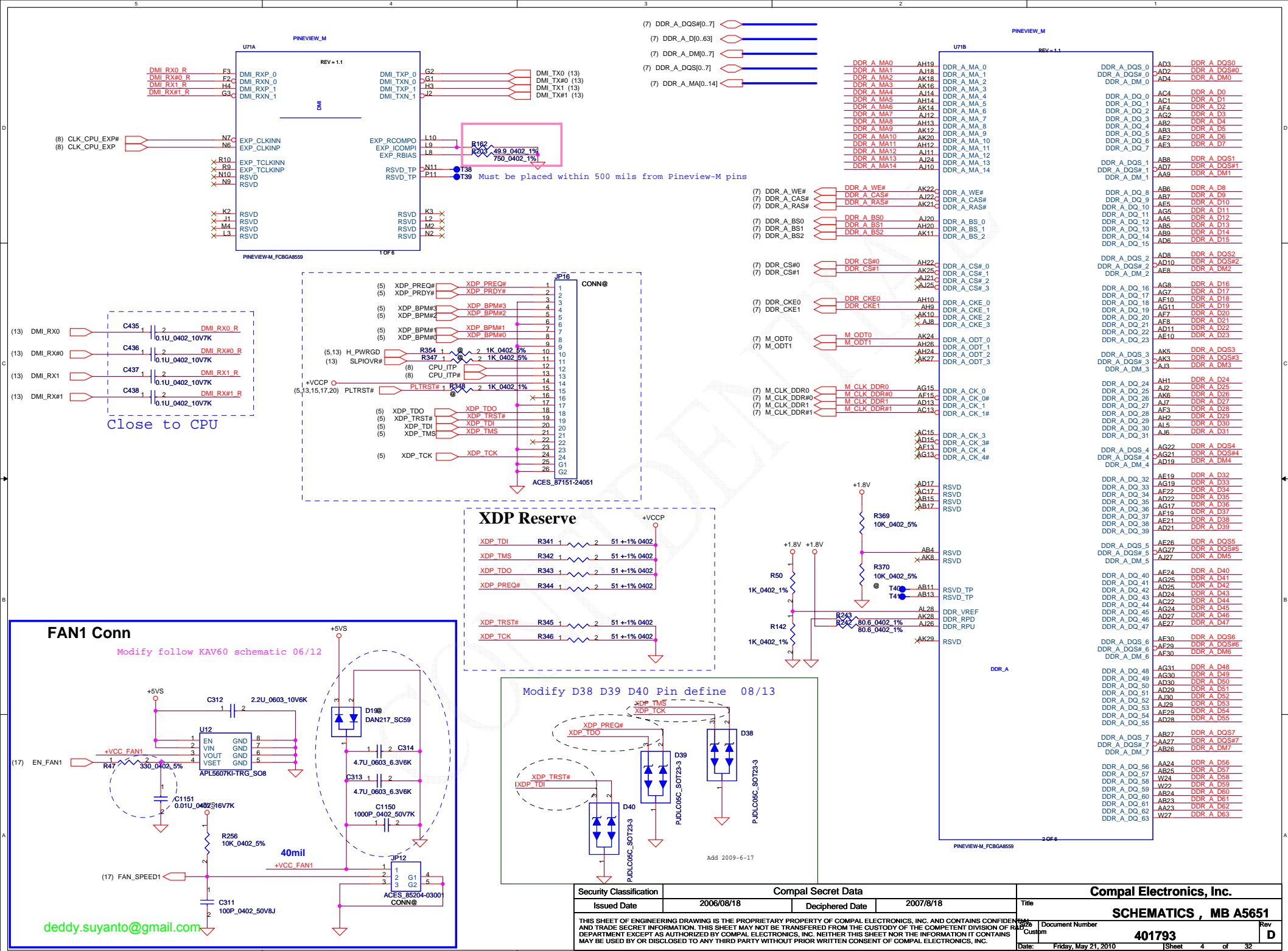
EC SM Bus1 address

EC SM Bus2 address

Device	Address	Device	Address
Smart Battery	0001 011X b	EMC1402	100_1100

ICH7M SM Bus address

Device	Address
Clock Generator (SLG8SP556VTR)	1101 001Xb
DDR DIMMA	1010 000Xb



GFX supply current: 1.38A
Sustained GFX supply current: 1.05A

DDR supply current 2.27A

Display PLL SFR and CRT DAC supply current: 0.154A

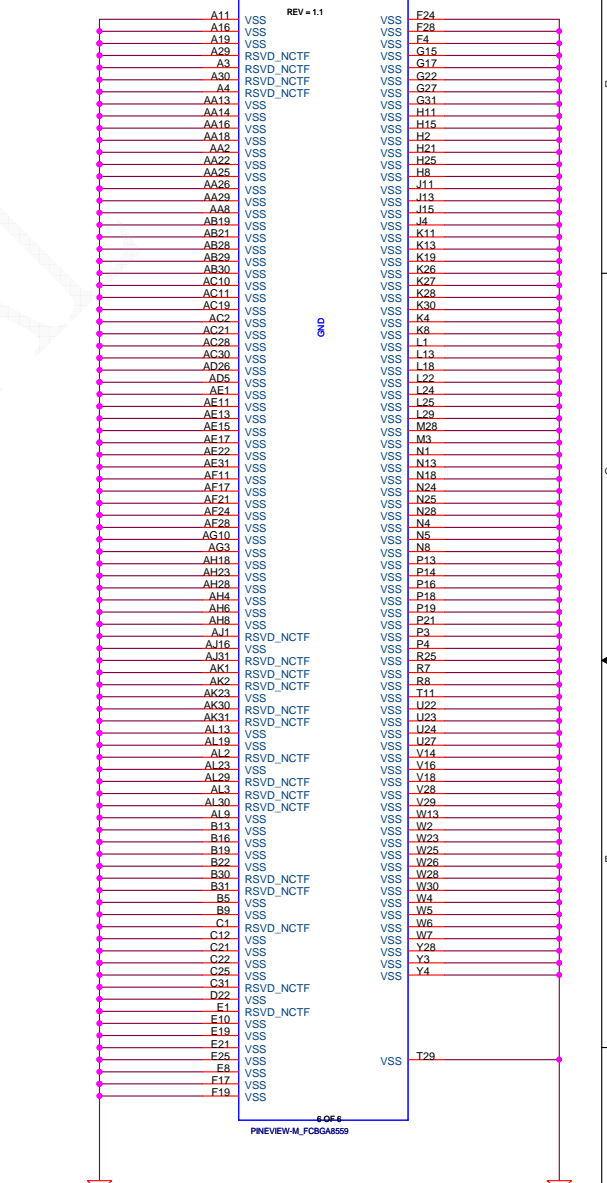
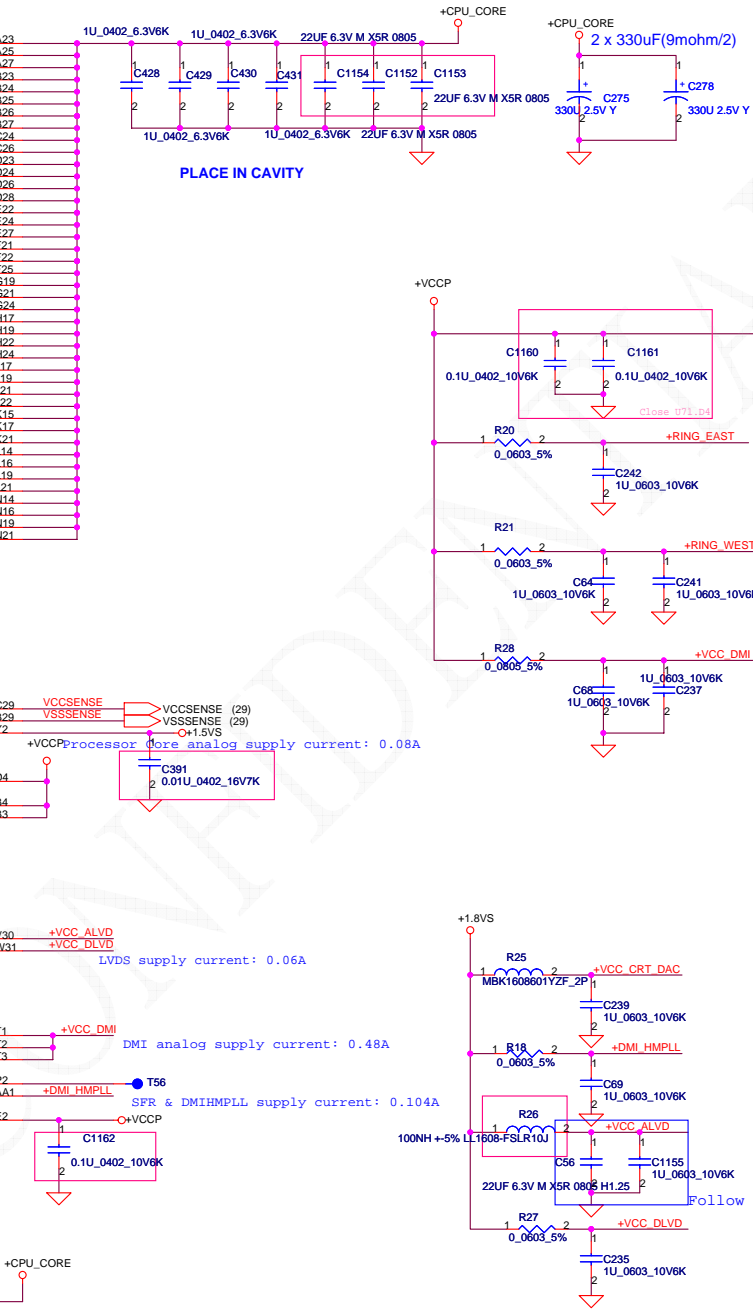
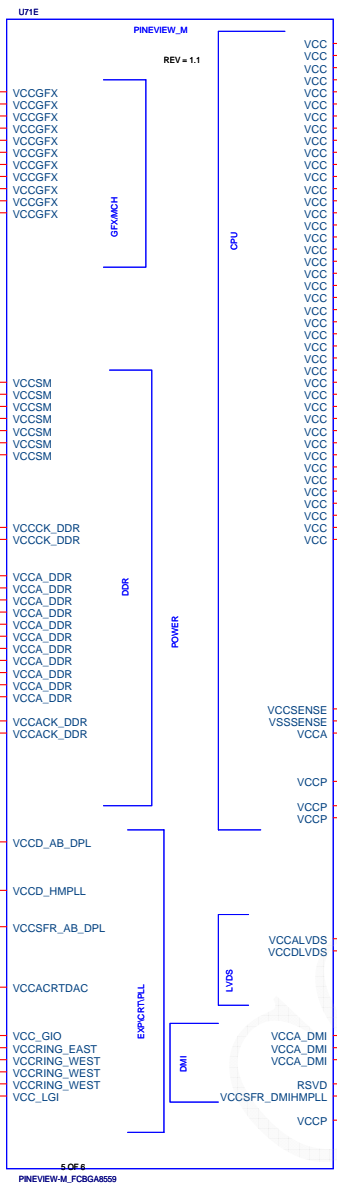
GIO supply current: 0.006A

DAC, GIO, LVDS, & LGIO, DPPLL, HMPLL supply current: 0.33A

Close Chipset pin

Modify to 2.2U 05/11

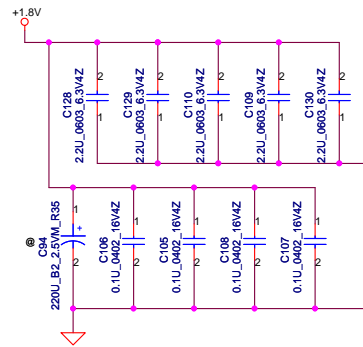
dedy.suyanto@gmail.com



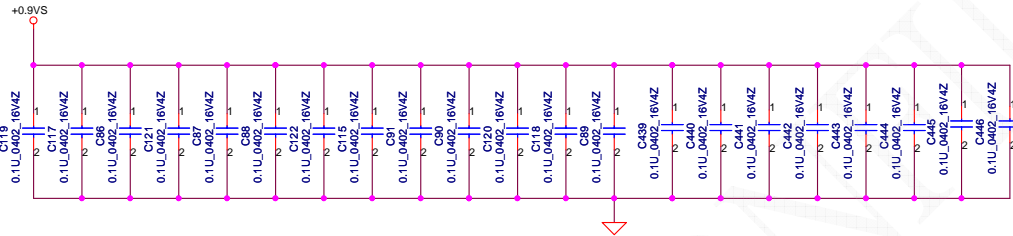
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- (4) DDR_A_DQS#[0..7]
- (4) DDR_A_D[0..63]
- (4) DDR_A_DM[0..7]
- (4) DDR_A_DQS[0..7]
- (4) DDR_A_MA[0..14]

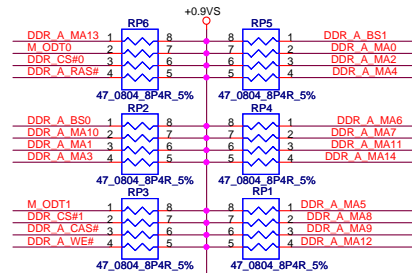
Layout Note:
Place near JDIM1



Layout Note:
Place one cap close to every 2 pullup resistors terminated to +0.9VS



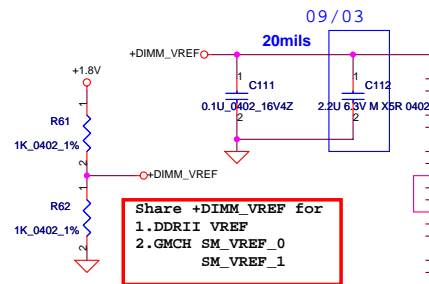
Layout Note:
Place these resistor closely DIMMA, all trace length < 750 mil



Layout Note:
Place these resistor closely DIMMA, all trace length Max=1.3"



daddy.suyanto@gmail.com

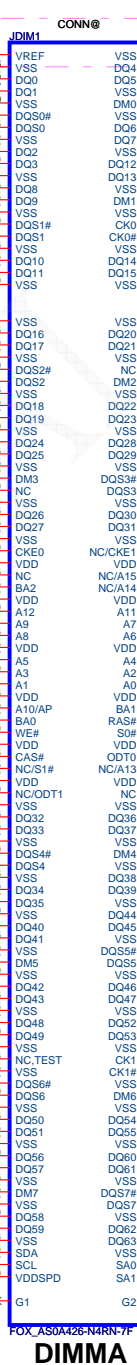
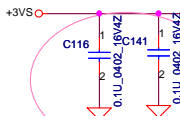


Share +DIMM_VREF for
1.DDRII VREF
2.GMCH SM_VREF_0
SM_VREF_1

- (4) DDR_CKE0
- (4) DDR_A_BS2
- (4) DDR_A_BS0
- (4) DDR_A_WE#
- (4) DDR_A_CAS#
- (4) DDR_CS#1
- (4) M_ODT1

- DDR_A D0
- DDR_A D1
- DDR_A DQS#0
- DDR_A DQS0
- DDR_A D2
- DDR_A D3
- DDR_A D8
- DDR_A D9
- DDR_A DQS#1
- DDR_A DQS1
- DDR_A D10
- DDR_A D11
- DDR_A D16
- DDR_A D17
- DDR_A DQS#2
- DDR_A DQS2
- DDR_A D18
- DDR_A D19
- DDR_A D24
- DDR_A D25
- DDR_A DM3
- DDR_A D26
- DDR_A D27
- DDR_CKE0
- DDR_A BS2
- DDR_A BS0
- DDR_A WE#
- DDR_A CAS#
- DDR_CS#1
- M_ODT1
- DDR_A D32
- DDR_A D33
- DDR_A DQS#4
- DDR_A DQS4
- DDR_A D34
- DDR_A D35
- DDR_A D40
- DDR_A D41
- DDR_A DM5
- DDR_A D42
- DDR_A D43
- DDR_A D48
- DDR_A D49
- DDR_A DQS#6
- DDR_A DQS6
- DDR_A D50
- DDR_A D51
- DDR_A D56
- DDR_A D57
- DDR_A DM7
- DDR_A D58
- DDR_A D59
- (8,15) CLK_SMBDATA
- (8,15) CLK_SMBCLK

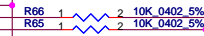
Follow Intel Layout checklist, add C141 05/12



DIMMA

Change to SP07F001720 04/30

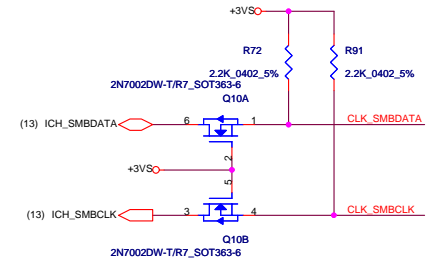
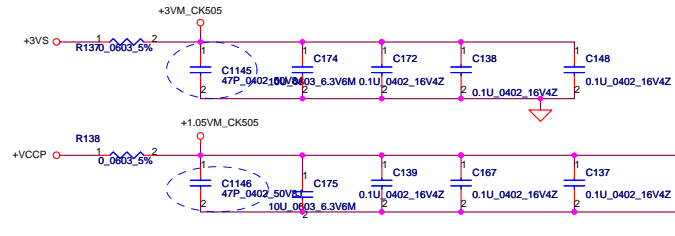
- DDR_A D4
- DDR_A D5
- DDR_A DM0
- DDR_A D6
- DDR_A D7
- DDR_A D12
- DDR_A D13
- DDR_A DM1
- M_CLK_DDR0
- M_CLK_DDR#0
- DDR_A D14
- DDR_A D15
- DDR_A D20
- DDR_A D21
- DDR_A DM2
- DDR_A D22
- DDR_A D23
- DDR_A D28
- DDR_A D29
- DDR_A DQS#3
- DDR_A DQS3
- DDR_A D30
- DDR_A D31
- DDR_CKE1
- DDR_A BS1
- DDR_A RAS#
- DDR_CS#0
- M_ODT0
- DDR_A MA13
- DDR_A D36
- DDR_A D37
- DDR_A DM4
- DDR_A D38
- DDR_A D39
- DDR_A D44
- DDR_A D45
- DDR_A DQS#5
- DDR_A DQS5
- DDR_A D46
- DDR_A D47
- DDR_A D52
- DDR_A D53
- M_CLK_DDR1
- M_CLK_DDR#1
- DDR_A DM6
- DDR_A D54
- DDR_A D55
- DDR_A D60
- DDR_A D61
- DDR_A DQS#7
- DDR_A DQS7
- DDR_A D62
- DDR_A D63



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FSC	FSB	FSA	CPU	SRC	PCI	REF	DOT_96	USB
CLKSEL2	CLKSEL1	CLKSEL0	MHz	MHz	MHz	MHz	MHz	MHz
0	0	0	266	100	33.3	14.318	96.0	48.0
0	0	1	133	100	33.3	14.318	96.0	48.0
0	1	0	200	100	33.3	14.318	96.0	48.0
0	1	1	166	100	33.3	14.318	96.0	48.0
1	0	0	333	100	33.3	14.318	96.0	48.0
1	0	1	100	100	33.3	14.318	96.0	48.0
1	1	0	400	100	33.3	14.318	96.0	48.0
1	1	1	Reserved					

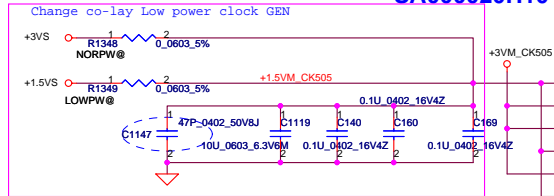
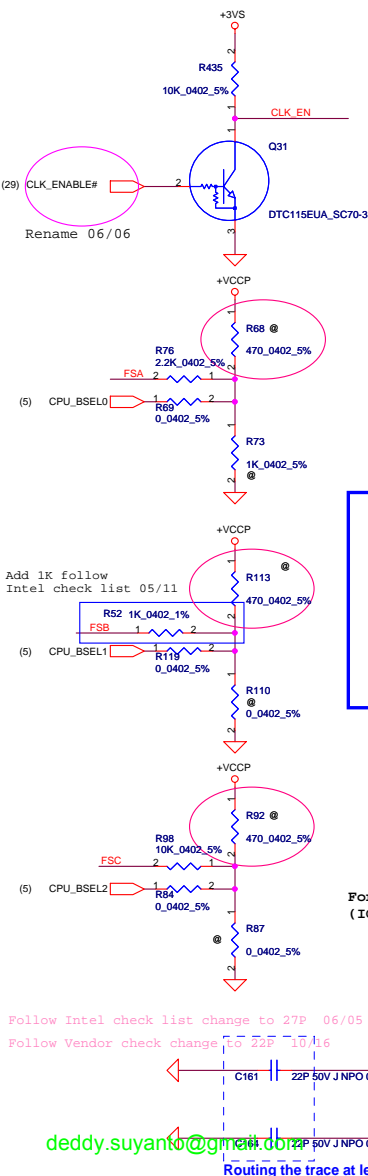
Change C174 C175 to 10U_0603 05/14



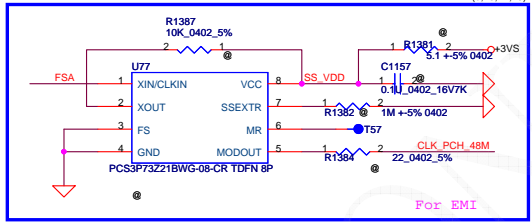
SA000020N00 (Realtek : RTM875N-397-GRT)
SA000020H10 (ICS : ICS9LPRS387BKLF)

SRC PORT LIST

PORT	DEVICE
SRC1	CPU_SSCDREFCLK
SRC2	
SRC3	
SRC4	PCIE_WLAN
SRC6	PCIE_SATA
SRC7	PCIE_PCH
SRC8	CPU_ITP
SRC9	CLK_CPU_EXP
SRC10	PCIE_LAN
SRC11	PCIE_WWAN

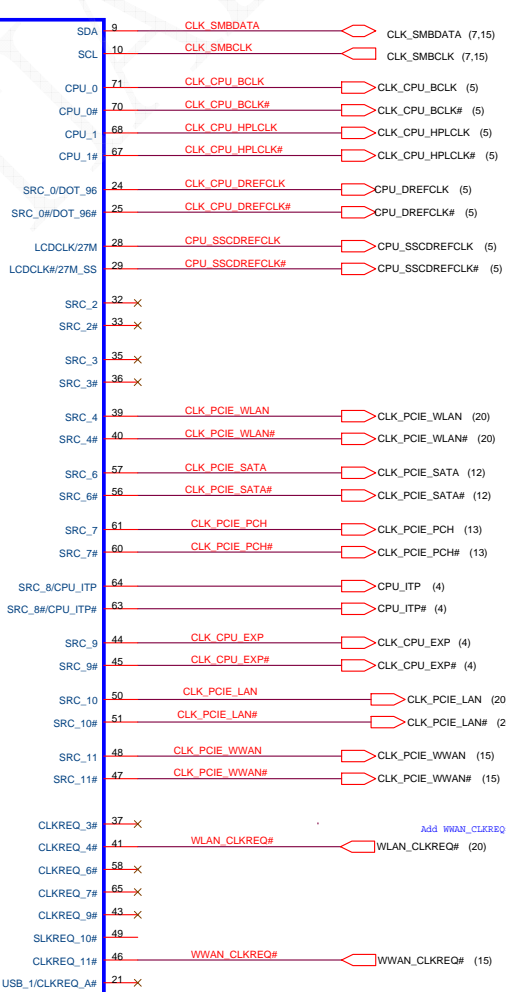
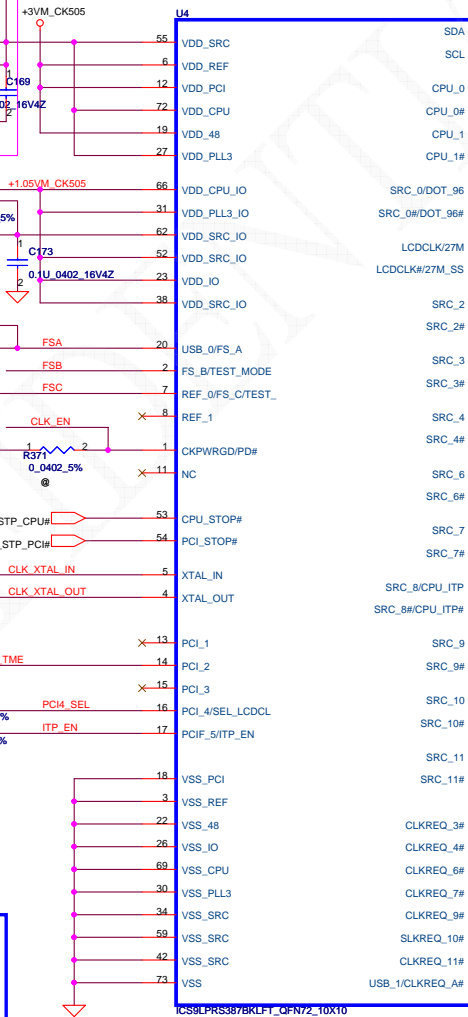
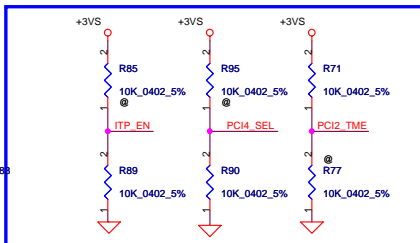


09/03 Modify



For ITP_EN, 0 = SRC8/SRC8#; 1 = ITP/ITP#
For PCI4_SEL, 0 = Pin24/25 : DOT96 / DOT96#
Pin28/29 : LCDCLK / LCDCLK#
1 = Pin24/25 : SRC_0 / SRC_0#
Pin28/29 : 27M/27M_SS

For PCI2_TIME=0=Overclocking of CPU and SRC allowed
(ICS only) 1=Overclocking of CPU and SRC NOT allowed



REQ PORT LIST

PORT	DEVICE
REQ_3#	
REQ_4#	PCIE_WLAN
REQ_6#	
REQ_7#	
REQ_9#	
REQ_10#	
REQ_11#	PCIE_WWAN
REQ_A#	

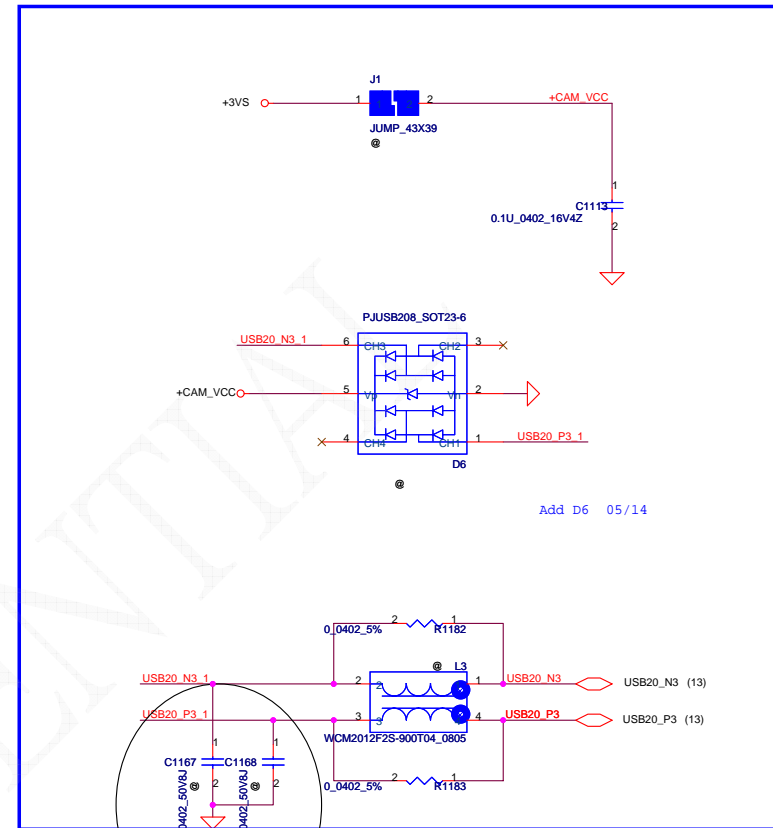
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LCD POWER CIRCUIT

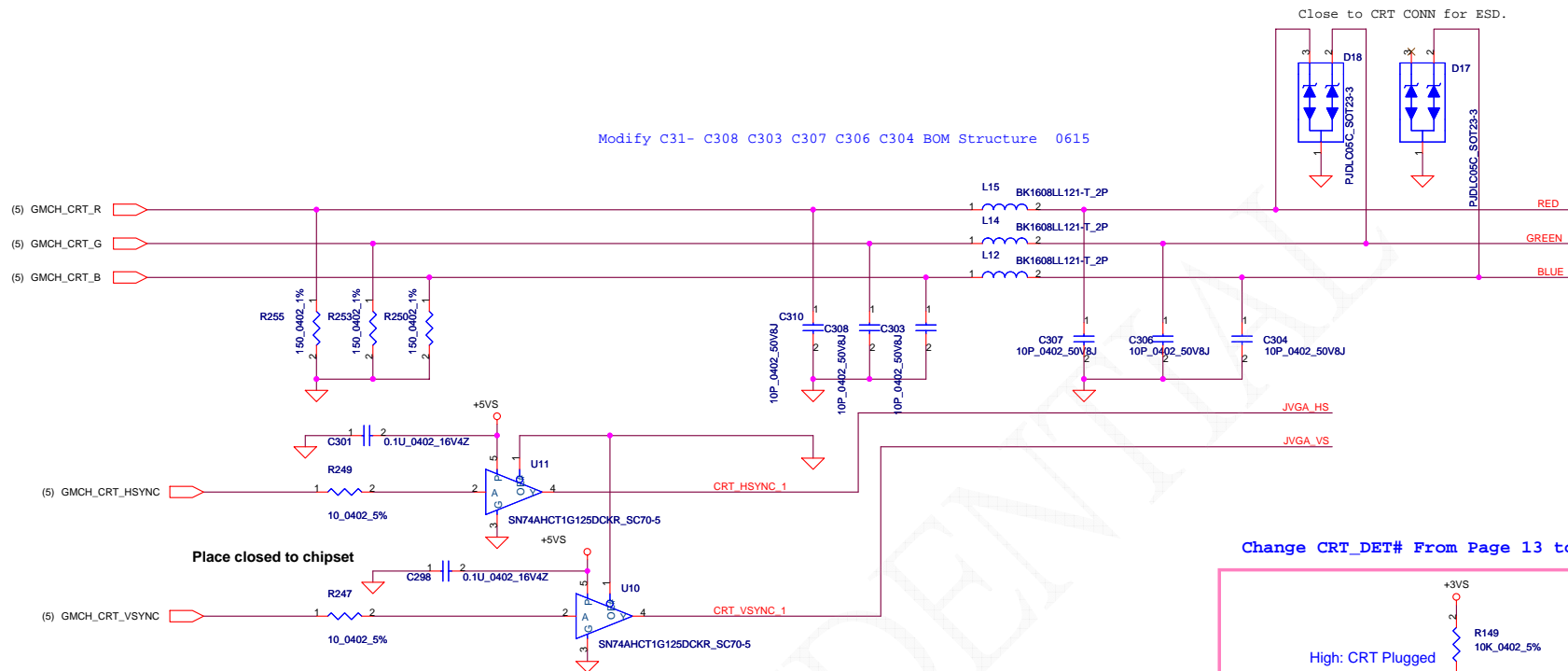
The schematic diagram illustrates the LCD Power Circuit. It features a +3VS input connected to a 470_0402_5% resistor (R577) and a 4.7K_0402_5% resistor (R579). A 2N7002W-T/R7_SOT323-3 MOSFET (Q4) is used as a switch for the +LCDVDD line. A 100K_0402_5% resistor (R578) is connected between +3VS and the gate of Q4. A 4.7U_0603_5.3V6K capacitor (C1106) is connected between the drain of Q4 and +LCDVDD. A 0.047U_0402_16V4Z capacitor (C1108) is connected between the gate of Q4 and +LCDVDD. A 0.1U_0402_16V4Z capacitor (C1105) is connected between the drain of Q4 and +LCDVDD. A 4.7U_0603_5.3V6K capacitor (C1107) is connected between the drain of Q4 and +3VS. A 4.7K_0402_5% resistor (R579) is connected between the gate of Q4 and +LCDVDD. A 100K_0402_5% resistor (R174) is connected between the gate of Q4 and GND. A 2N7002W-T/R7_SOT323-3 MOSFET (Q5) is used as a switch for the GMCH_ENVDD line. A 100K_0402_5% resistor (R174) is connected between the gate of Q5 and GMCH_ENVDD. A 4.7K_0402_5% resistor (R579) is connected between the gate of Q5 and +LCDVDD. A 4.7U_0603_5.3V6K capacitor (C1107) is connected between the drain of Q5 and +3VS. A 4.7U_0603_5.3V6K capacitor (C1106) is connected between the drain of Q5 and +LCDVDD. A 0.047U_0402_16V4Z capacitor (C1108) is connected between the gate of Q5 and +LCDVDD. A 0.1U_0402_16V4Z capacitor (C1105) is connected between the drain of Q5 and +LCDVDD. A 4.7U_0603_5.3V6K capacitor (C1107) is connected between the drain of Q5 and +3VS. A 4.7K_0402_5% resistor (R579) is connected between the gate of Q5 and +LCDVDD. A 100K_0402_5% resistor (R174) is connected between the gate of Q5 and GND.

CMOS & LCD/PANEL BD. Conn.

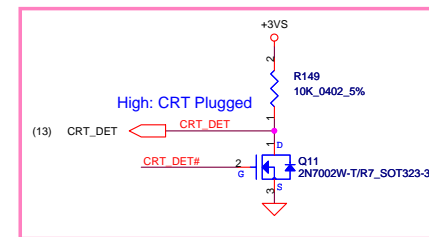
Modify JLVD51 08/04



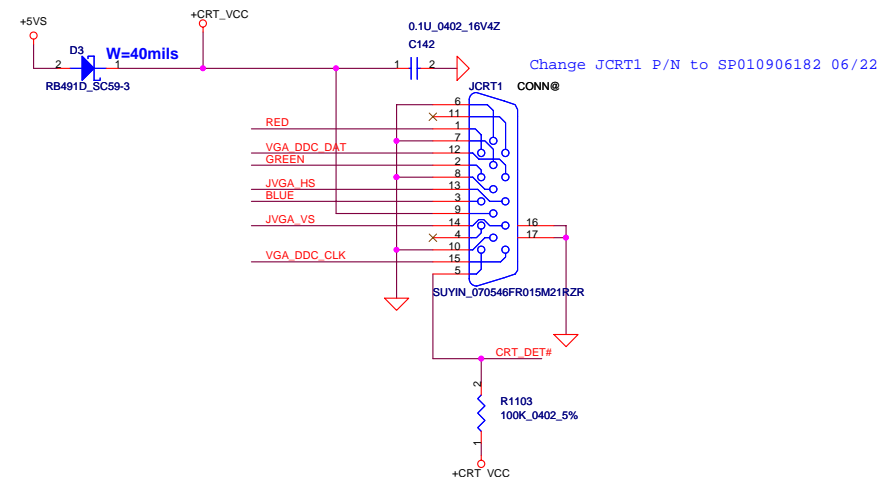
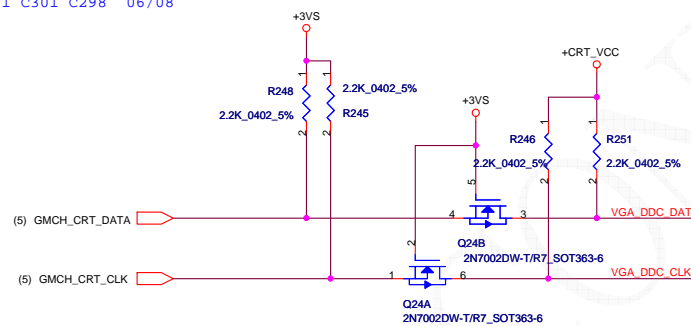
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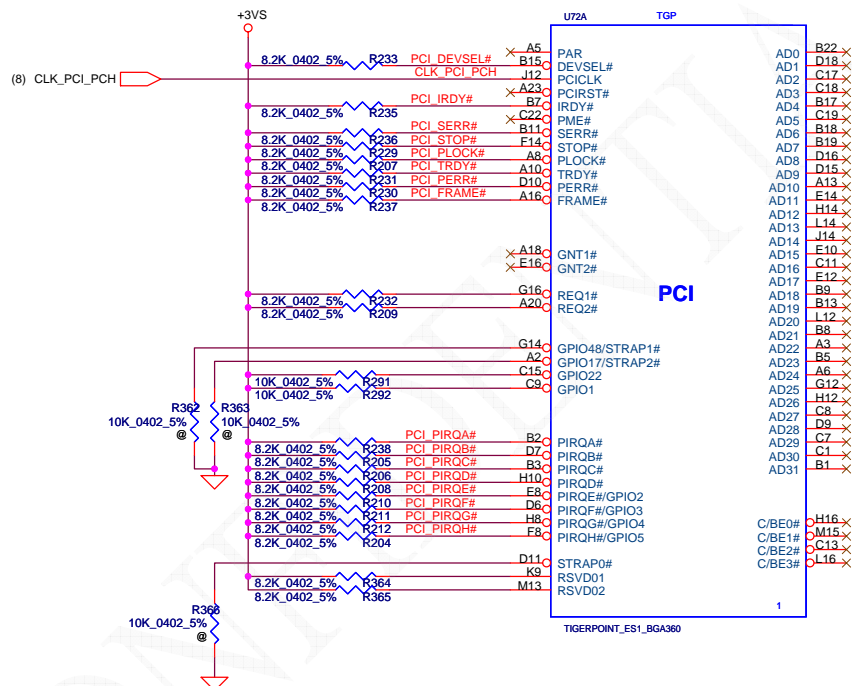
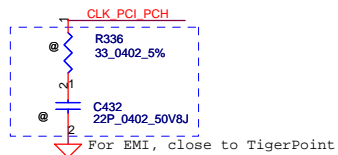


Change CRT_DET# From Page 13 to Page 10 06/12



CRT PORT

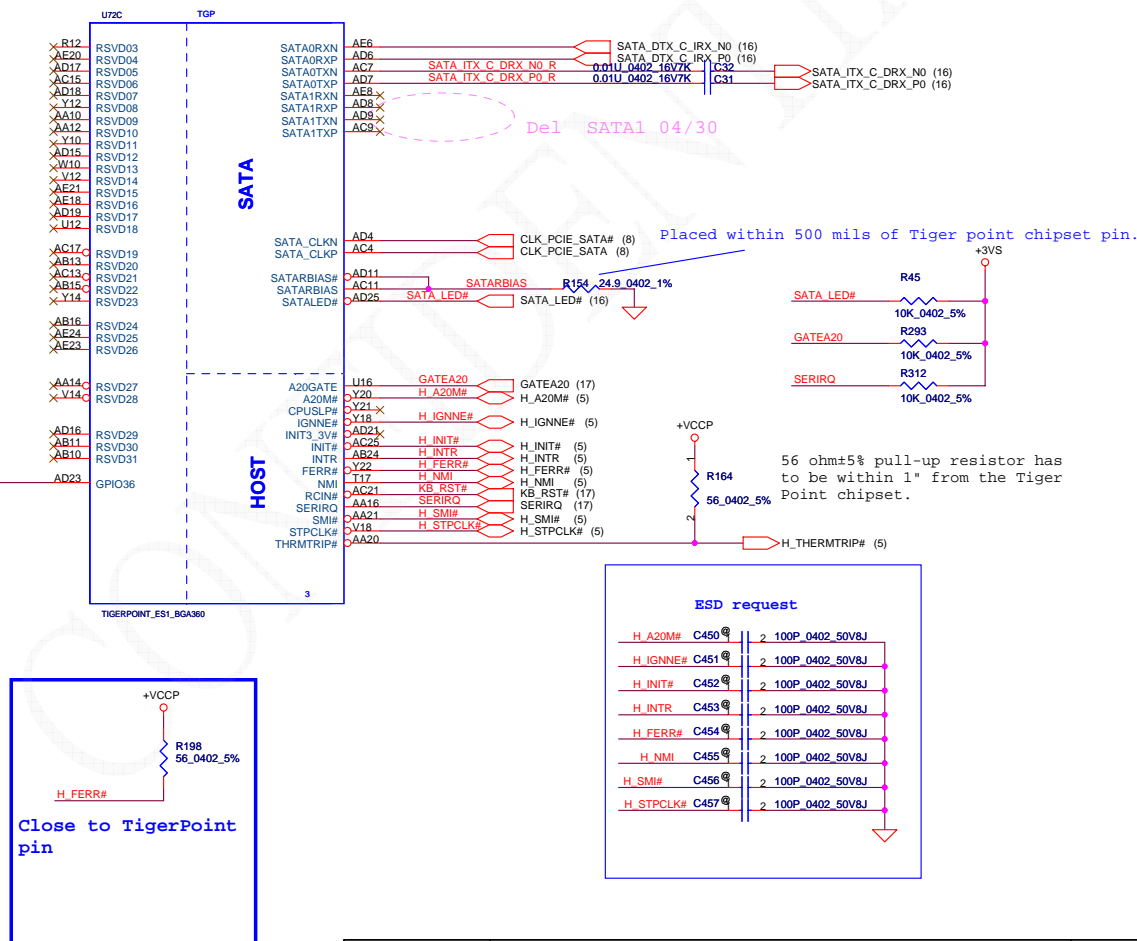




STRAP2# GPIO17	STRAP1# GPIO48	Boot BIOS
0	1	SPI
1	0	PCI
1	1	LPC

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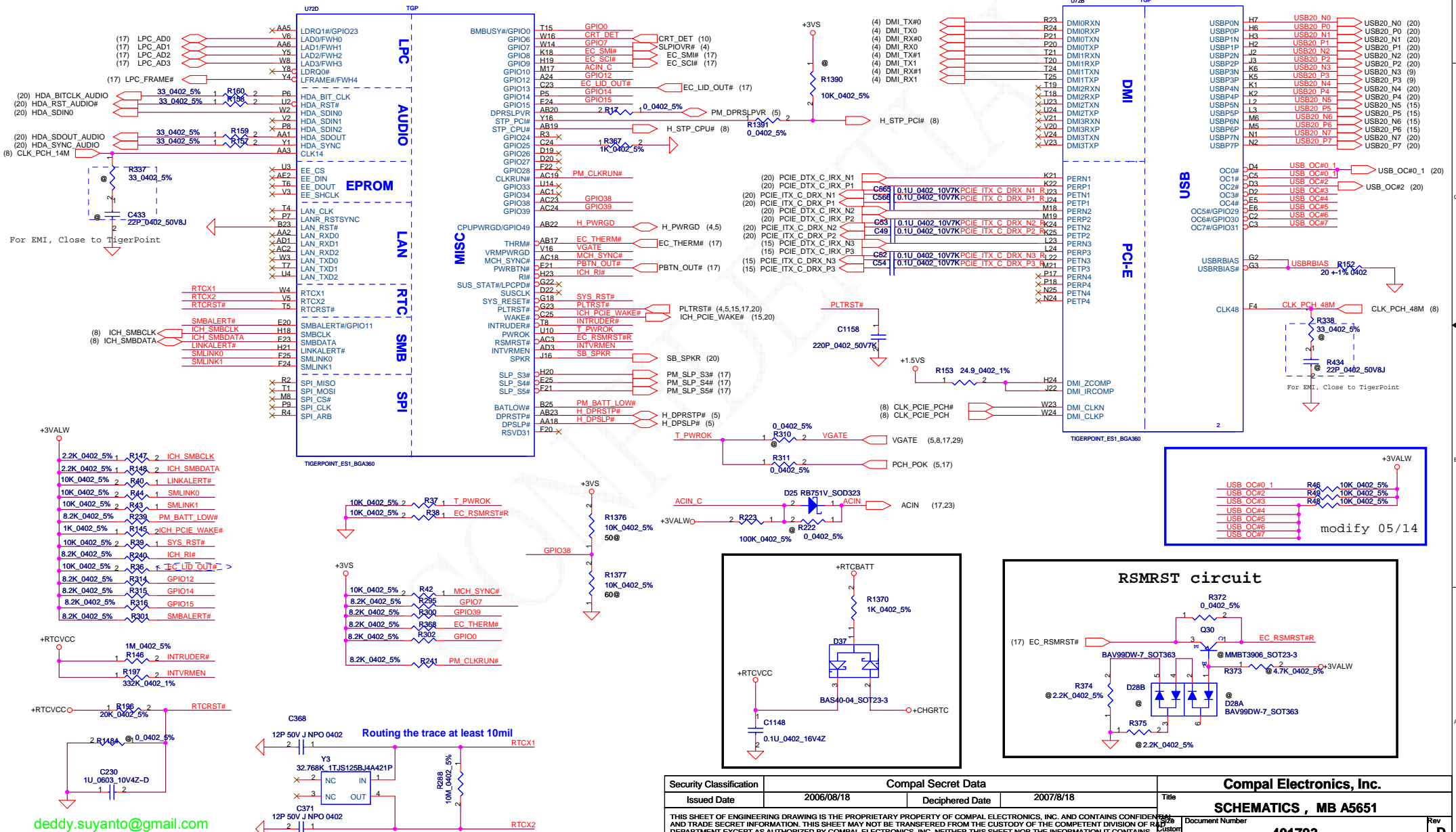
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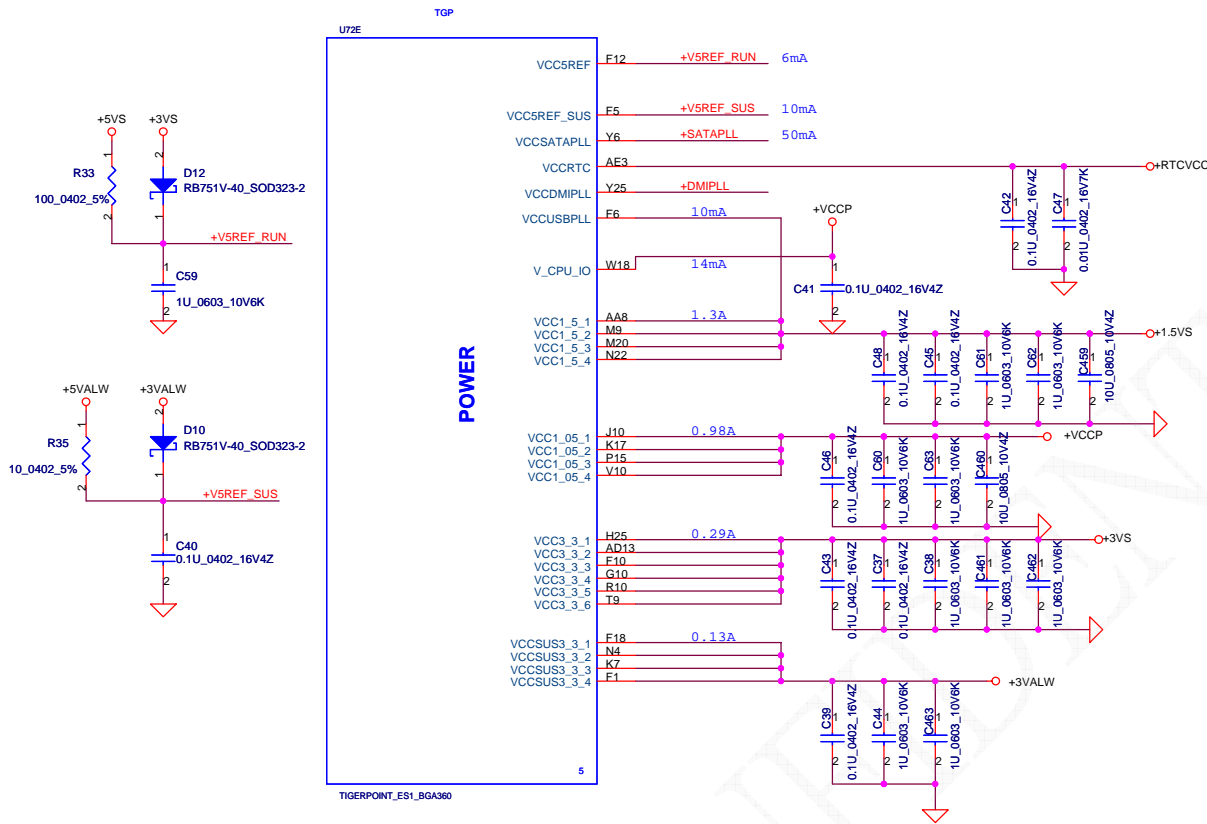


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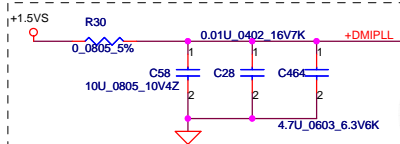
PCIE Port List	
1	LAN
2	WLAN
3	WWAN
4	

USB Port List	
0	USB Left1
1	USB Left2
2	USB Right2
3	CMOS
4	CardReader
5	WWAN
6	BT
7	WIMAX

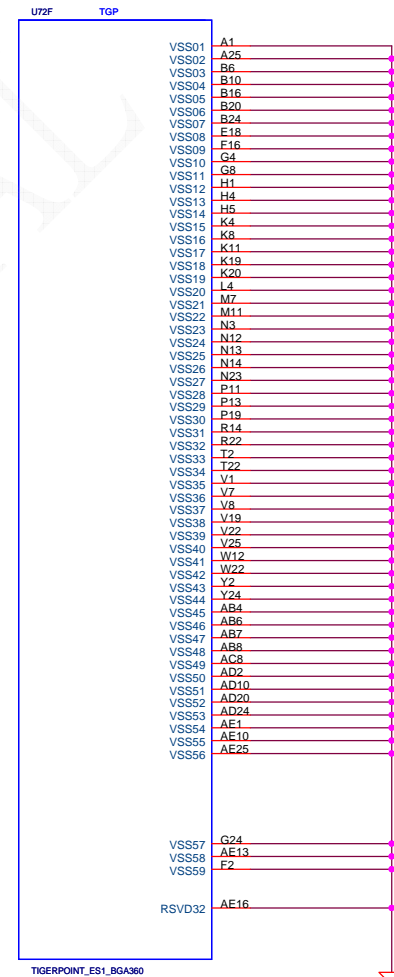
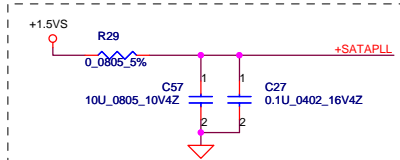




Place closely pin Y25 within 100mlis.



Place closely pin Y6 within 100mlis.



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				Rev	D

Mini-Express Card for WWAN

(17) EC_TX_P80_DATA R402 0.0402_5%
 (17) EC_RX_P80_CLK EC_RX_P80_CLK 1 2 EC_TX_P80_CLK R403 0.0402_5%

Change JMINI1 to FOX_AS0B246-S50U-7F_52P-T 06/29

(13,20) ICH_PCIE_WAKE# ICH_PCIE_WAKE#

(8) WWAN_CLKREQ# WWAN_CLKREQ#

(8) CLK_PCIE_WWAN#

(8) CLK_PCIE_WWAN#

(13) PCIE_DTX_C_IRX_N3

(13) PCIE_DTX_C_IRX_P3

Change to PCIE_P3 05/13

(13) PCIE_ITX_C_DRX_N3

(13) PCIE_ITX_C_DRX_P3

+3VS_WWAN

10U_0805_10V4Z

WWAN_WAKEUP_R#

UIM_VPP

UIM_DATA

UIM_RST

UIM_PWR

UIM_CLK

UIM_VPP

UIM_DATA

UIM_RST

UIM_PWR

UIM_CLK

UIM_VPP

UIM_DATA

UIM_RST

UIM_PWR

UIM_CLK

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UIM_PWR

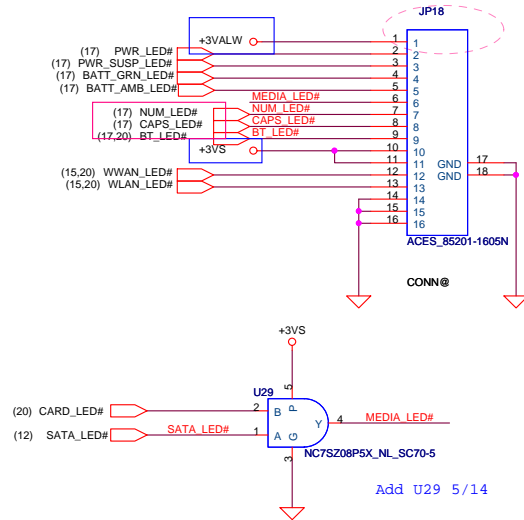
UIM_CLK

ADD LED PCB CONN 06/12

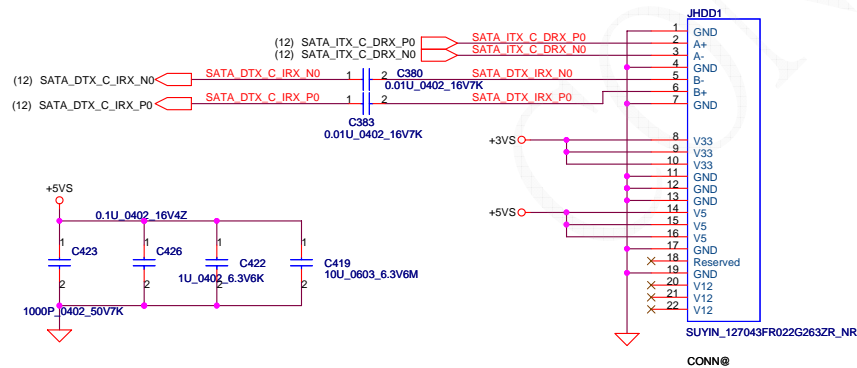
LED PCB CONN

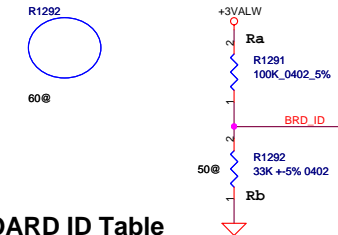
Change JP18 to NEW P/N 06/23

09/03 Change +5VALW , +5VS to +3VALW +3VS



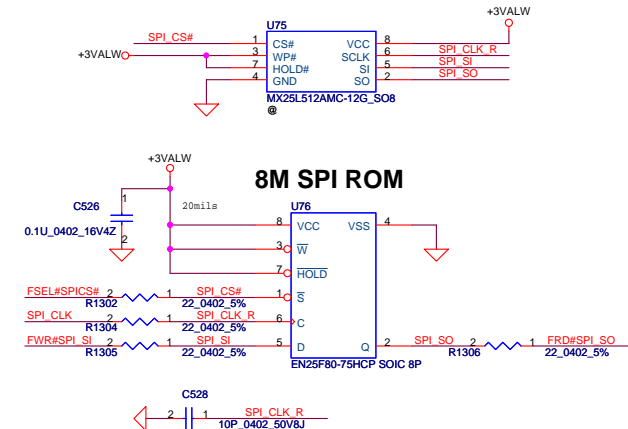
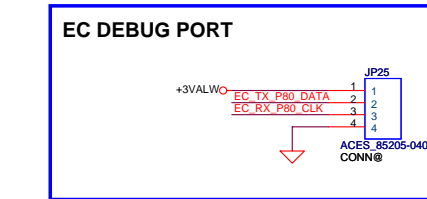
SATA HDD Conn.





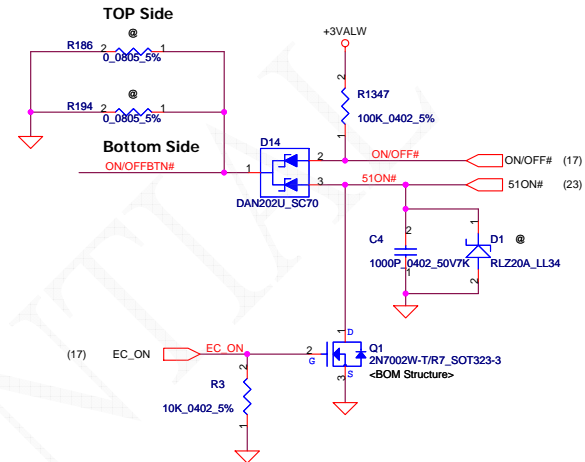
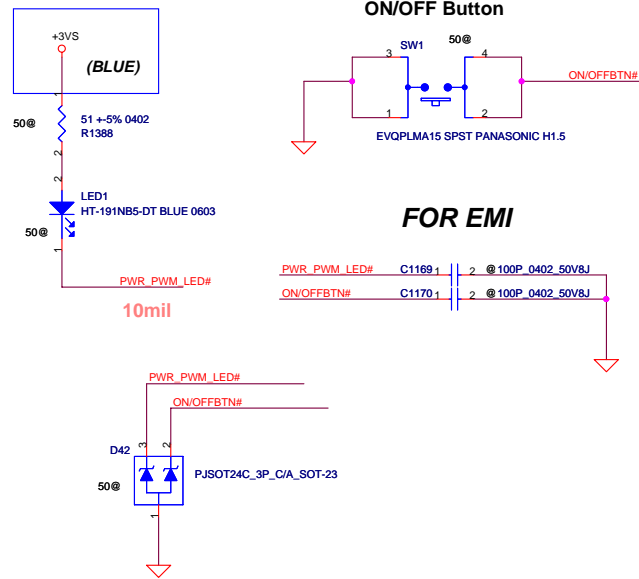
	VCC	3.3V				
	Ra	100K				
	ID	BRD ID	Rb	Vab-Min	Vab-Typ	Vab-Max
NAV50	0	R01 (EVT)	0	0V	0V	0V
	1	R02 (DVT)	8.2K	0.216V	0.250V	0.289V
	2	R03 (PVT)	18K	0.436V	0.503V	0.538V
	3	R10A (MP)	33K	0.712V	0.819V	0.875V
(18) NAV60	4	R01 (EVT)	56K	1.036V	1.185V	1.264V
	5	R02 (DVT)	100K	1.453V	1.650V	1.759V
	6	R03 (PVT)	200K	1.935V	2.200V	2.341V
	7	R10A (MP)	NC	2.500V	3.3V	3.3V

	KSO1
KSI1	WL_BTN#
KSI5	3G_BTN#

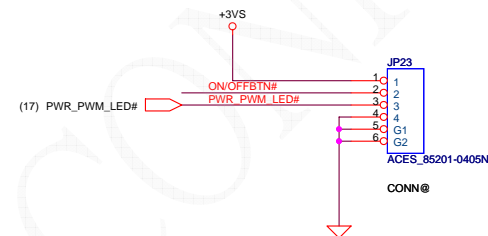


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Add For NAV50 07/06
09/03 Change +5VS to +3VS

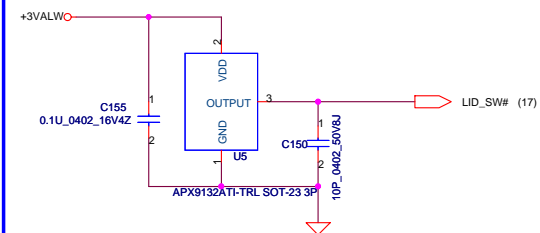


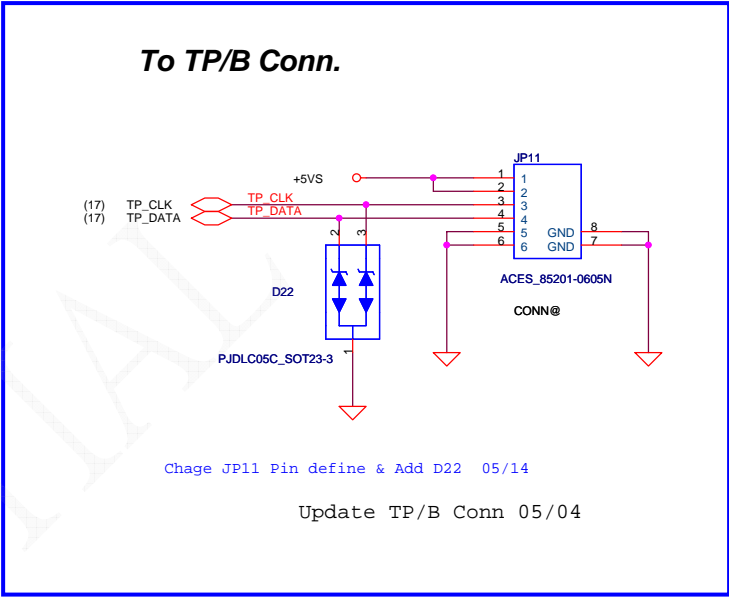
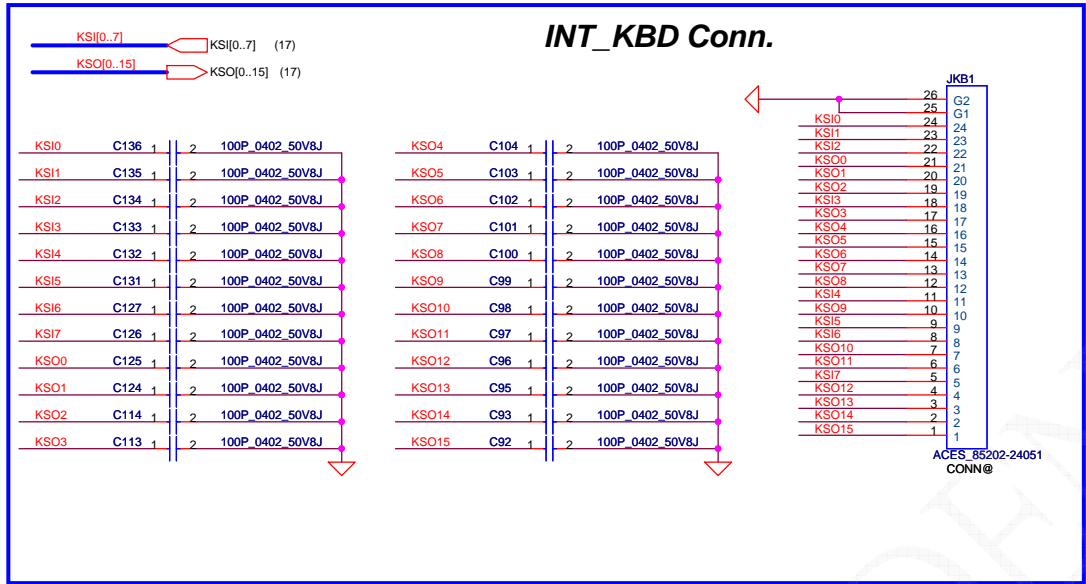
PWR/B Conn



Update PW/B Conn 0623

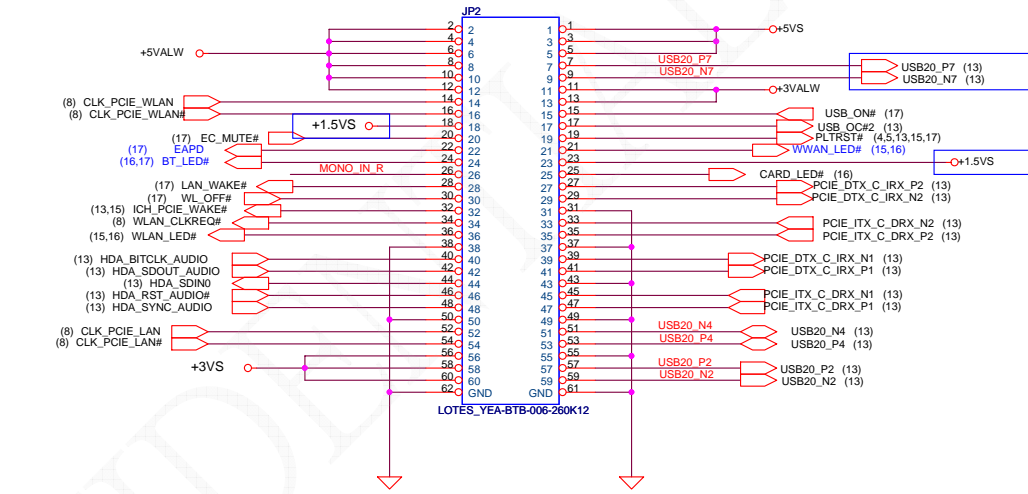
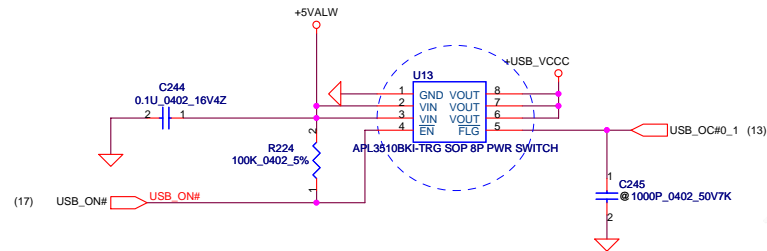
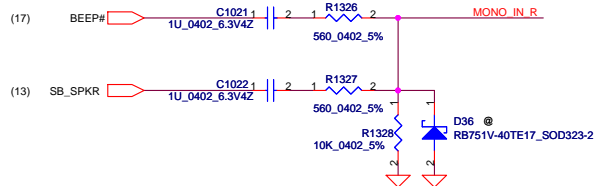
LID Switch



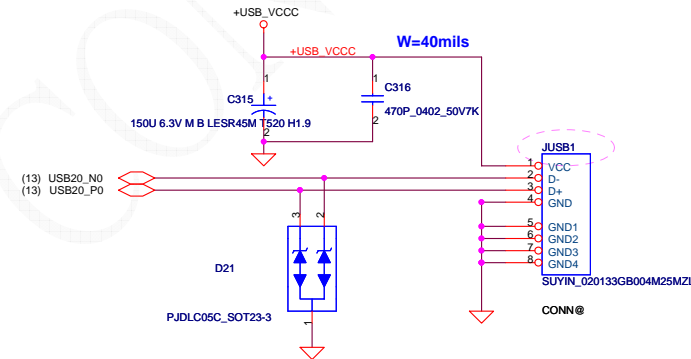


09/03 Change Pin 18, 23 to +1.5VS change Pin7 , 9 to USB20_P7 N7

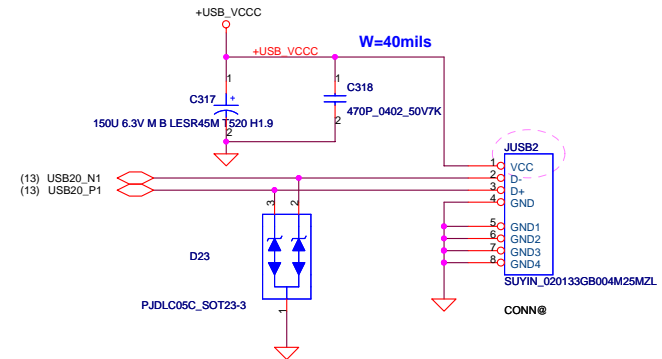
I/O Board Conn.



USB CONN.1



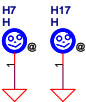
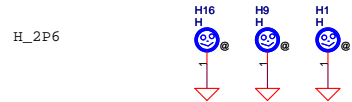
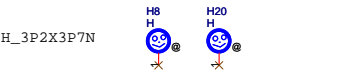
USB CONN.2



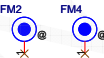
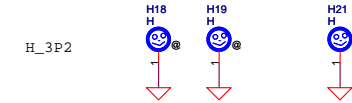
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								Document Number		401793		Rev	
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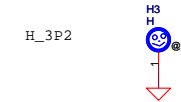
Modify Hole location by (ME Drawing 06/12) 0615



09/03 Del H12



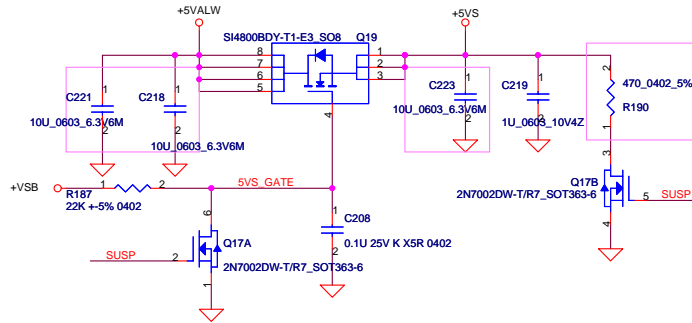
FIDUCIAL_C40M80



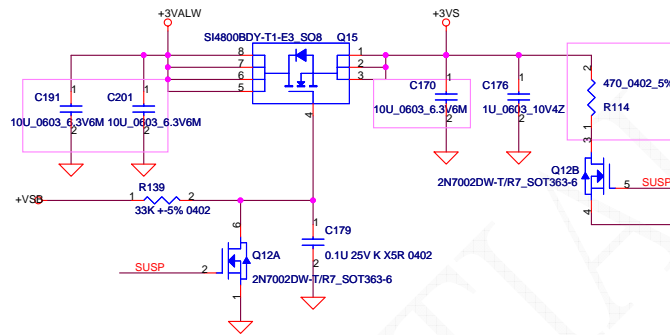
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Change R51 R57 R70 R63 R317 R114 R190 to 0402 SIZE 04/30
 Change C221 C218 C223 C 191 C201 C170 C392 C393 C394 to 0603 SIZE 04/30

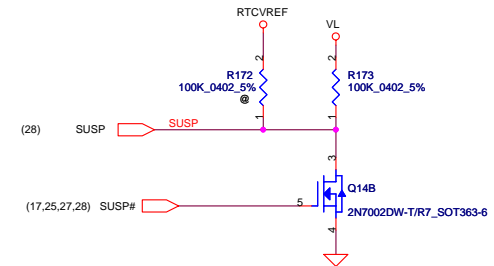
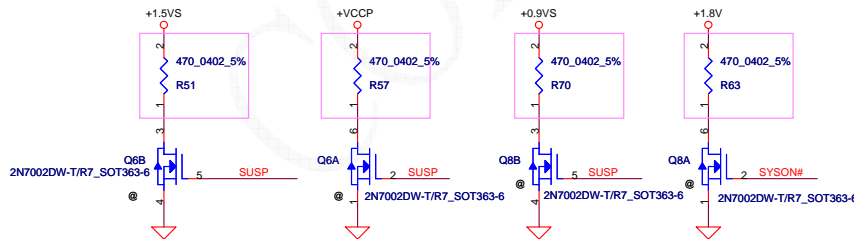
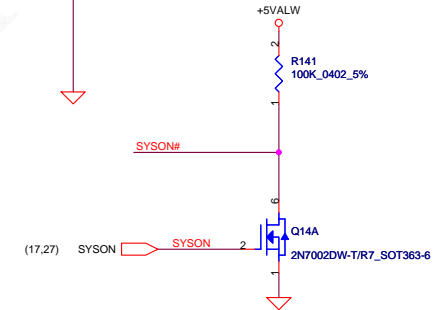
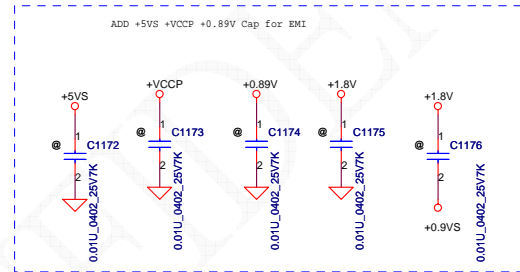
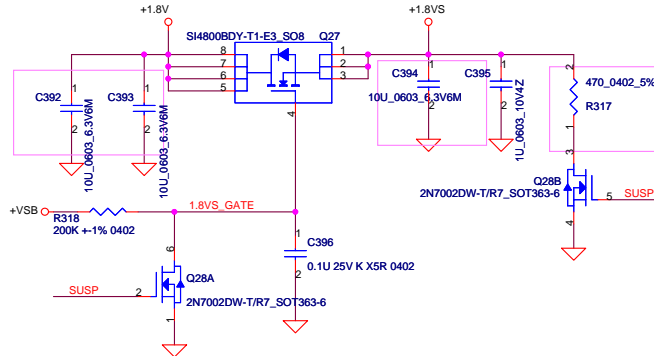
+5VALW TO +5VS

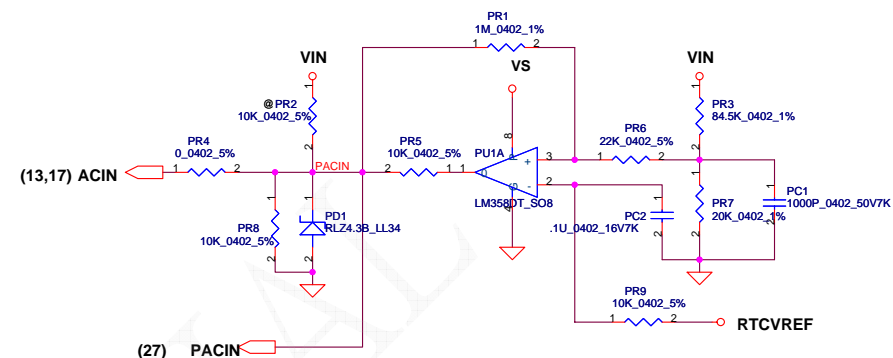
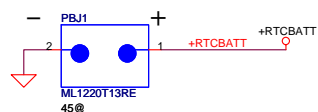
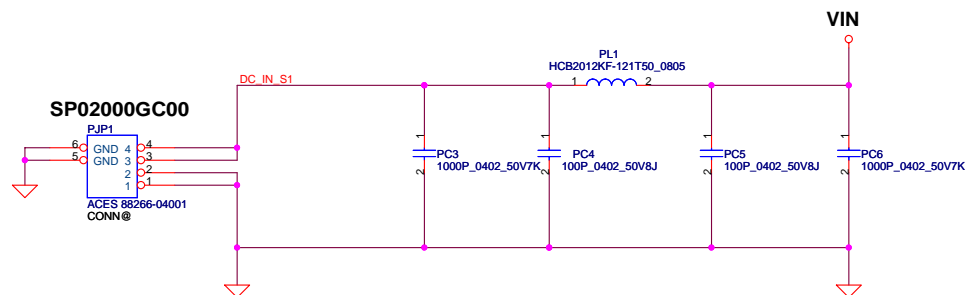


+3VALW TO +3VS

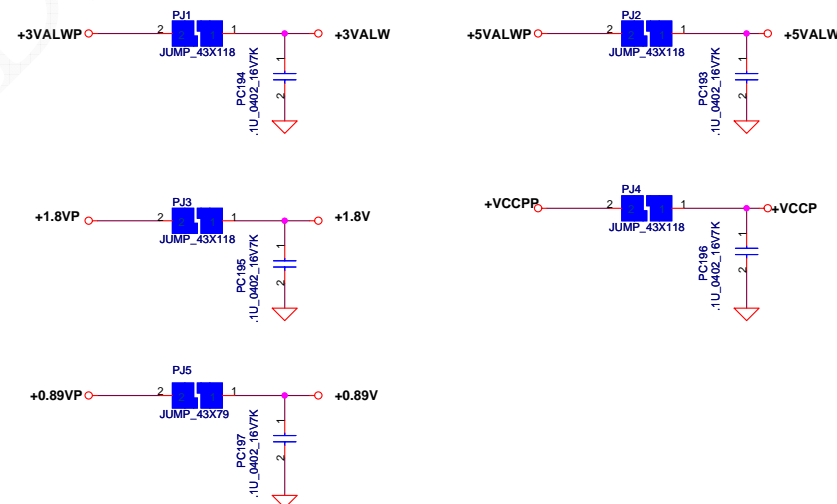
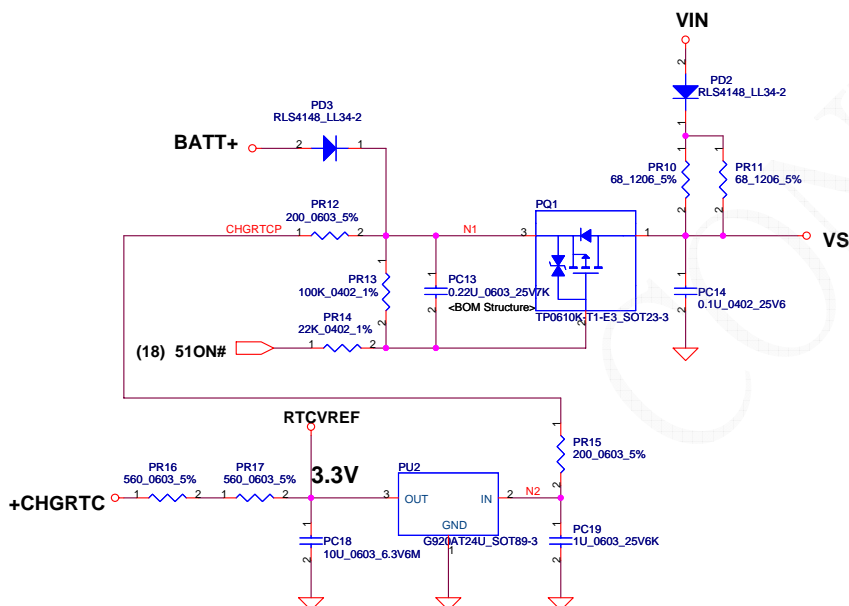


+1.8V to +1.8VS



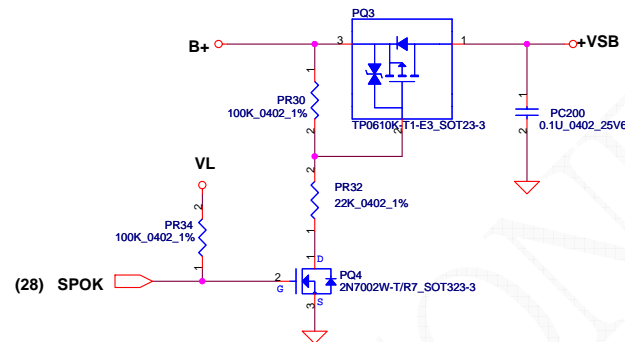
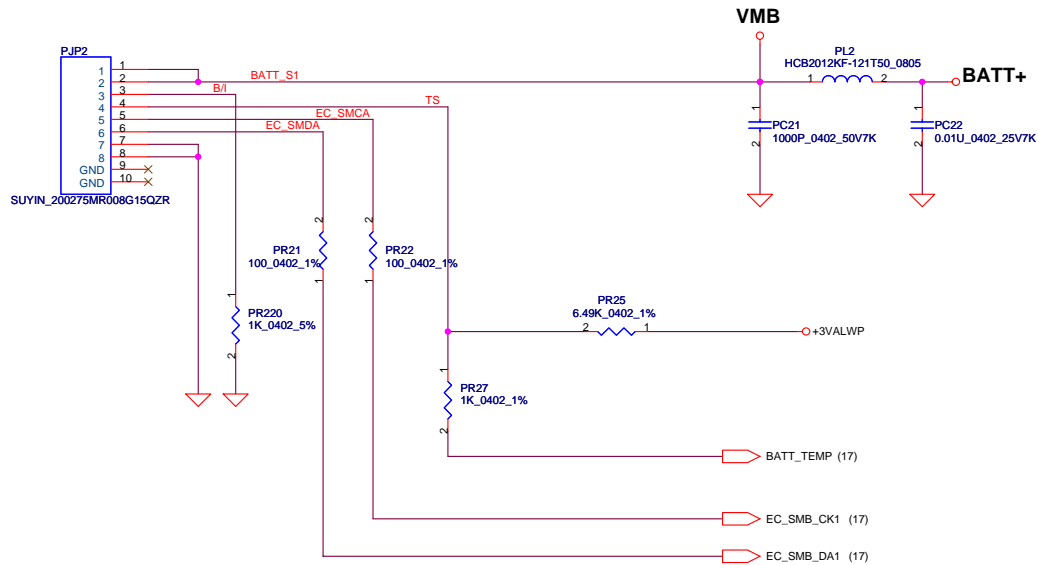


Vin Detector			
	Min.	Typ	Max.
H-->L	16.976V	17.525V	17.728V
L-->H	17.430V	17.901V	18.384V

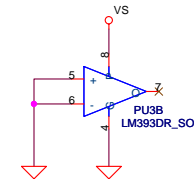
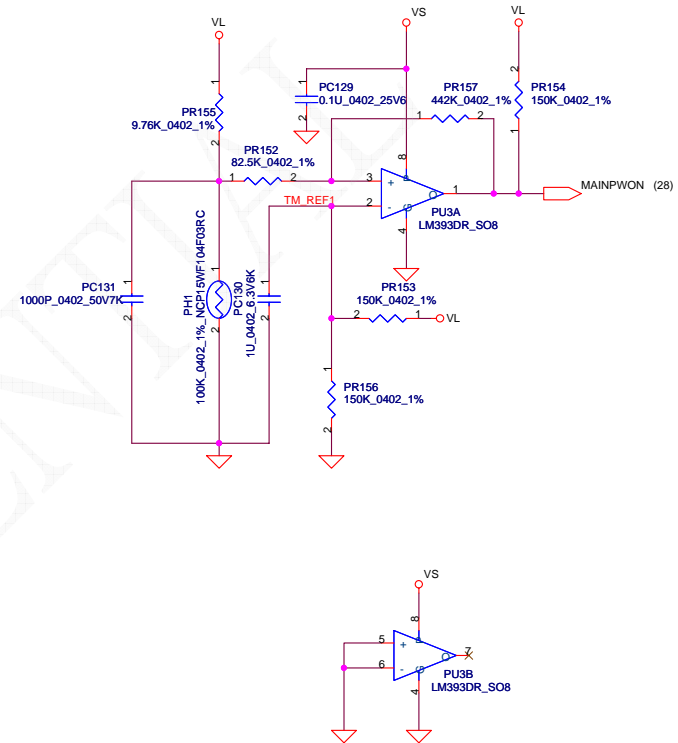


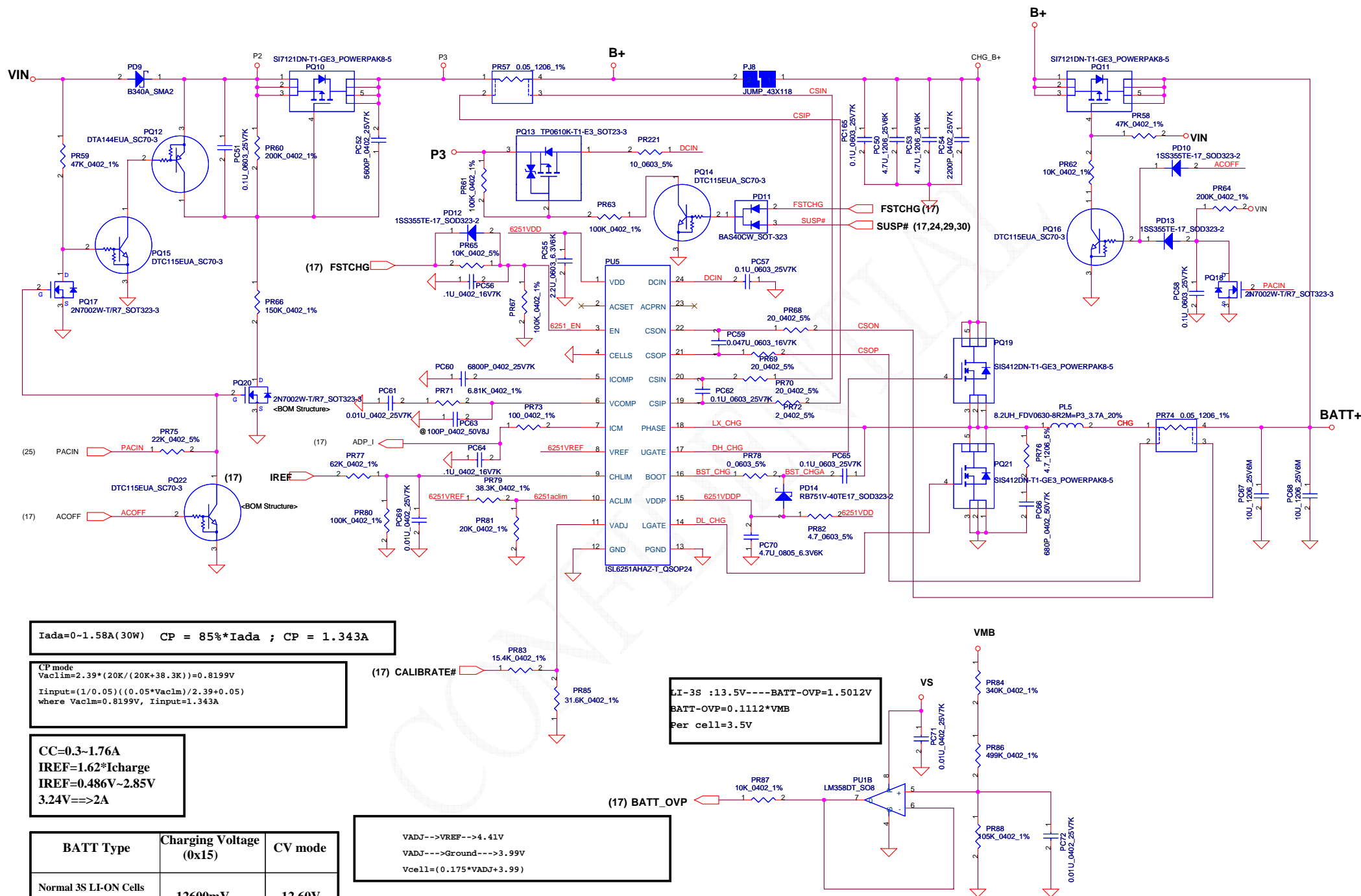
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PH1 under CPU bottom side :
CPU thermal protection at 90 degree C
Recovery at 70 degree C





$I_{ada}=0\sim 1.58A(30W)$ $CP = 85\% \cdot I_{ada}$; $CP = 1.343A$

CP mode
 $V_{ac1m}=2.39 \cdot (20K / (20K + 38.3K)) = 0.8199V$
 $I_{input} = (1 / 0.05) \cdot ((0.05 \cdot V_{ac1m}) / 2.39 + 0.05)$
 where $V_{ac1m}=0.8199V$, $I_{input}=1.343A$

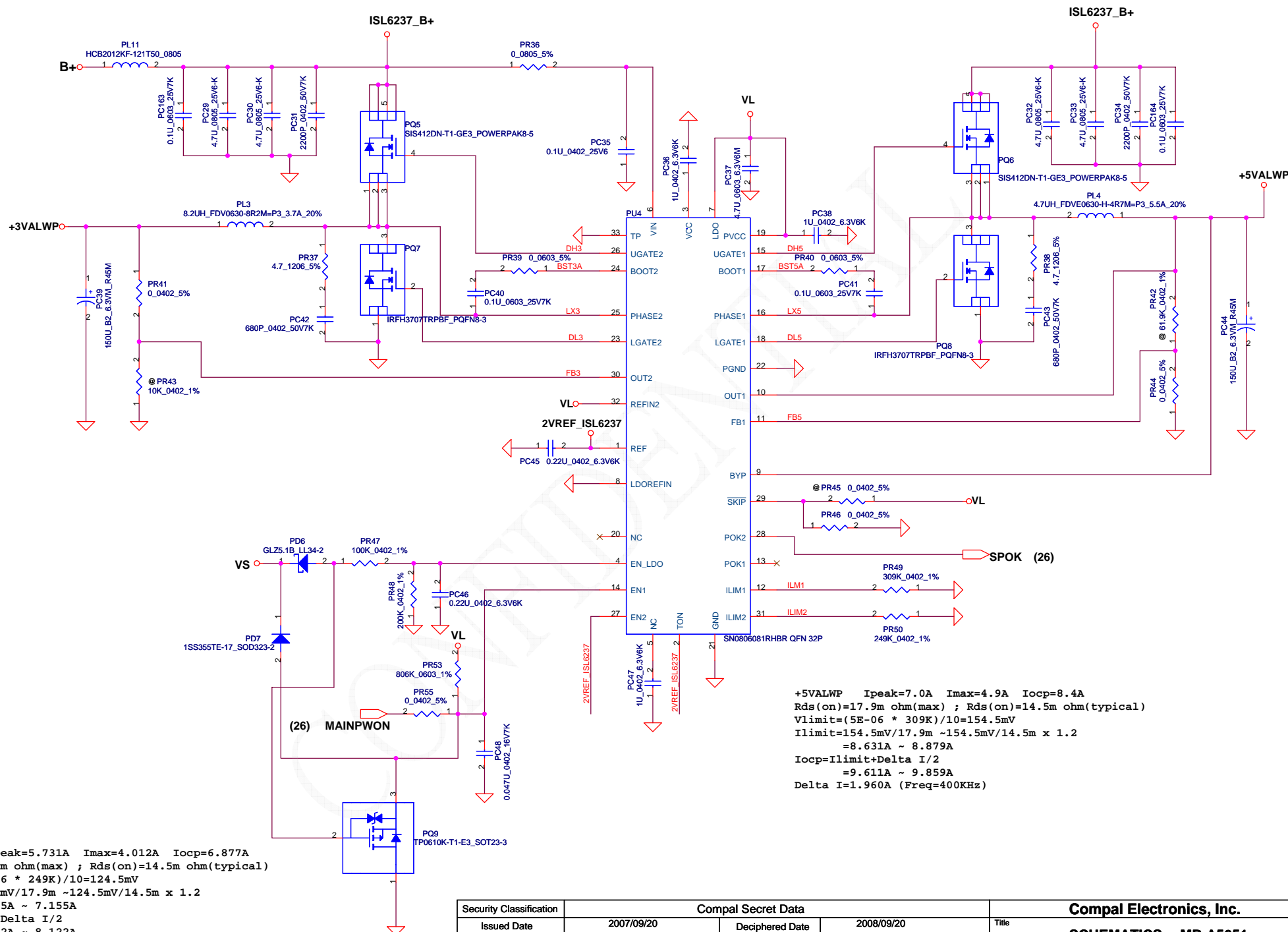
$CC=0.3\sim 1.76A$
 $I_{REF}=1.62 \cdot I_{charge}$
 $I_{REF}=0.486V\sim 2.85V$
 $3.24V \Rightarrow 2A$

BATT Type	Charging Voltage (0x15)	CV mode
Normal 3S LI-ON Cells	12600mV	12.60V

$V_{ADJ} \rightarrow V_{REF} \rightarrow 4.41V$
 $V_{ADJ} \rightarrow \text{Ground} \rightarrow 3.99V$
 $V_{cell} = (0.175 \cdot V_{ADJ} + 3.99)$

LI-3S :13.5V----BATT-OVP=1.5012V
 BATT-OVP=0.1112*VMB
 Per cell=3.5V

(17) BATT_OVP

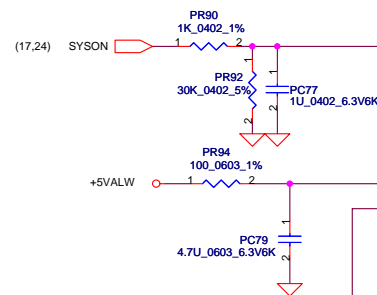


+3.3VALWP Ipeak=5.731A Imax=4.012A Iocp=6.877A
 Rds(on)=17.9m ohm(max) ; Rds(on)=14.5m ohm(typical)
 Vlimit=(5E-06 * 249K)/10=124.5mV
 Ilimit=124.5mV/17.9m ~124.5mV/14.5m x 1.2
 =6.955A ~ 7.155A
 Iocp=Ilimit+Delta I/2
 =7.922A ~ 8.122A
 Delta I=1.934A (Freq=300KHz)

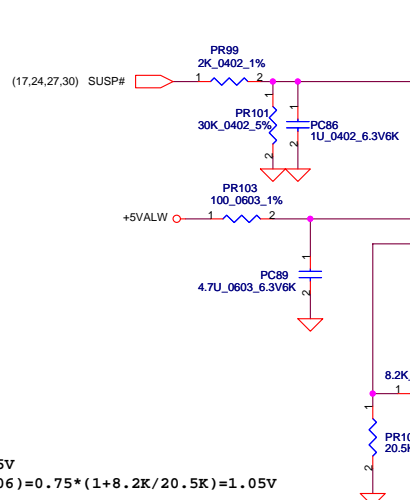
+5VALWP Ipeak=7.0A Imax=4.9A Iocp=8.4A
 Rds(on)=17.9m ohm(max) ; Rds(on)=14.5m ohm(typical)
 Vlimit=(5E-06 * 309K)/10=154.5mV
 Ilimit=154.5mV/17.9m ~154.5mV/14.5m x 1.2
 =8.631A ~ 8.879A
 Iocp=Ilimit+Delta I/2
 =9.611A ~ 9.859A
 Delta I=1.960A (Freq=400KHz)

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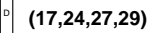


<Vo=1.8V> VFB=0.75V
 $V_o = V_{FB} * (1 + PR96 / PR97) = 0.75 * (1 + 28.7K / 20.5K) = 1.8V$
 $F_{sw} = 328KHz$
 $C_{out} ESR = 15m\ ohm$ $R_{dson(max)} = 17.9m$ $R_{dson(typical)} = 14.5m$
 $I_{peak} = 4.97A$, $I_{max} = 3.479A$, $I_{ocp} = 5.964A$
 $\Delta I = ((19 - 1.8) * (1.8 / 19)) / (2.2u * 328K) = 2.259A$
 $\Rightarrow 1/2 \Delta I = 1.129A$
 $V_{trip} = R_{trip} * I_{ocp} = 8.66K * 10uA = 0.0866V$
 $I_{ocpmin} = V_{trip} / (R_{dsonmax}) + 1.129 = 0.0866 / (0.0179) + 1.129 = 5.967A$
 $I_{ocpmax} = (0.0866 / (0.0145 * 1.2)) + 1.129A = 6.106A$
 $I_{ocp} = 5.967A \sim 6.106A$

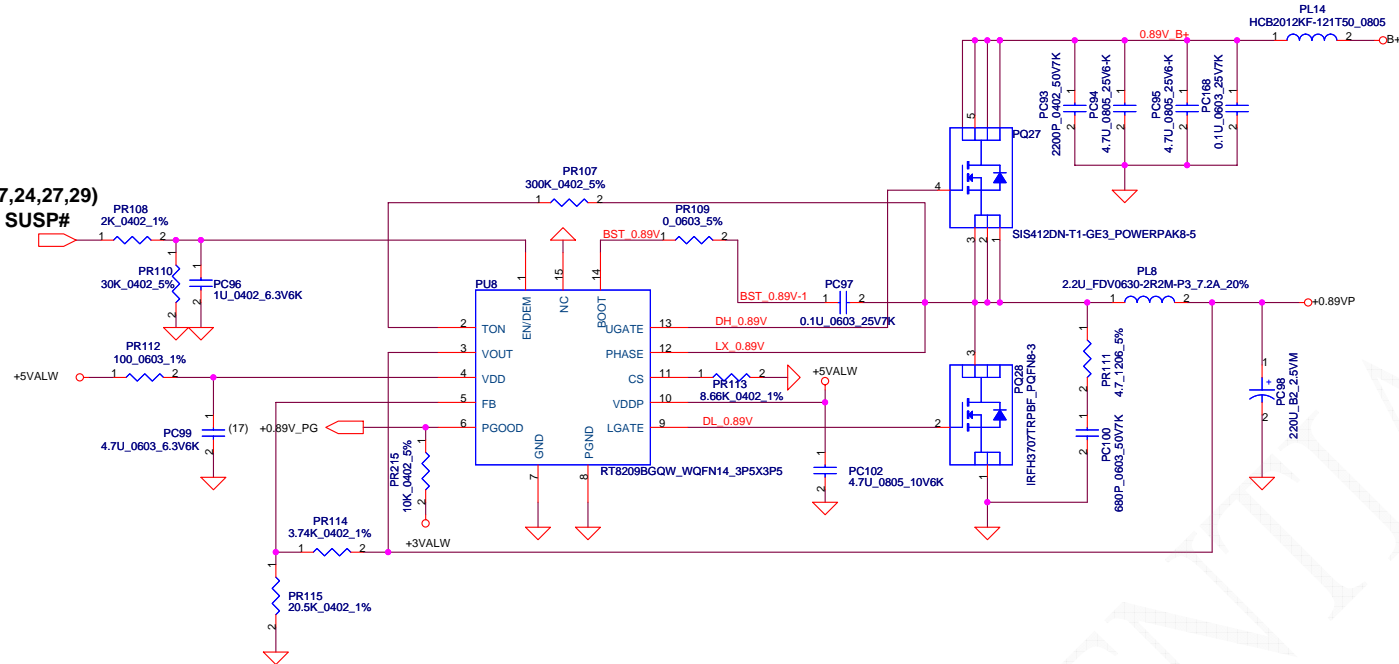


<Vo=1.05V> VFB=0.75V
 $V_o = V_{FB} * (1 + PR105 / PR106) = 0.75 * (1 + 8.2K / 20.5K) = 1.05V$
 $F_{sw} = 280KHz$
 $C_{out} ESR = 15m\ ohm$ $R_{dson(max)} = 17.9m$ $R_{dson(typical)} = 14.5m$
 $I_{peak} = 3.124A$, $I_{max} = 2.187A$, $I_{ocp} = 3.749A$
 $\Delta I = ((19 - 1.05) * (1.05 / 19)) / (1.5u * 280K) = 3.549A$
 $\Rightarrow 1/2 \Delta I = 1.774A$
 $V_{trip} = R_{trip} * I_{ocp} = 14K * 10uA = 0.14V$
 $I_{ocpmin} = V_{trip} / (R_{dsonmax}) + 1.774 = 0.14 / (0.0179) + 1.774 = 9.596A$
 $I_{ocpmax} = (0.14 / (0.0145 * 1.2)) + 1.774A = 9.820A$
 $I_{ocp} = 9.596A \sim 9.820A$

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SUSP#



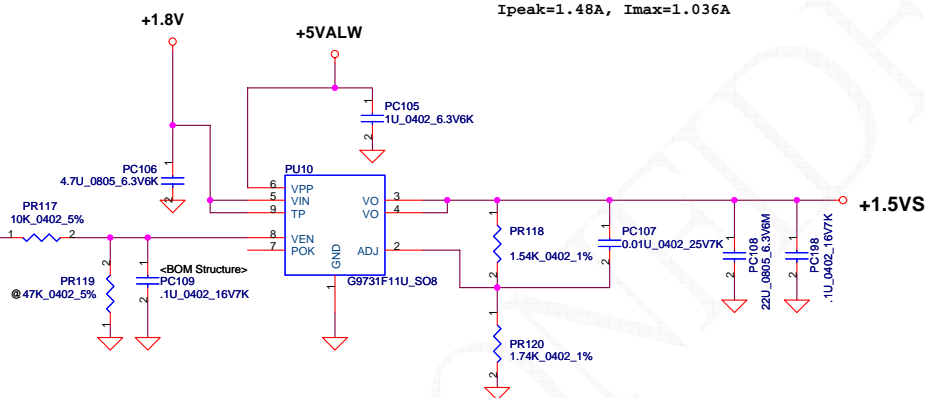
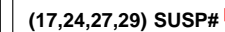
```
<Vo=0.89V>  VFB=0.75V
Vo=VFB*(1+PR114/PR115)=0.75*(1+28.7K/20.5K)=0.89V
Fsw=263KHz
```

```

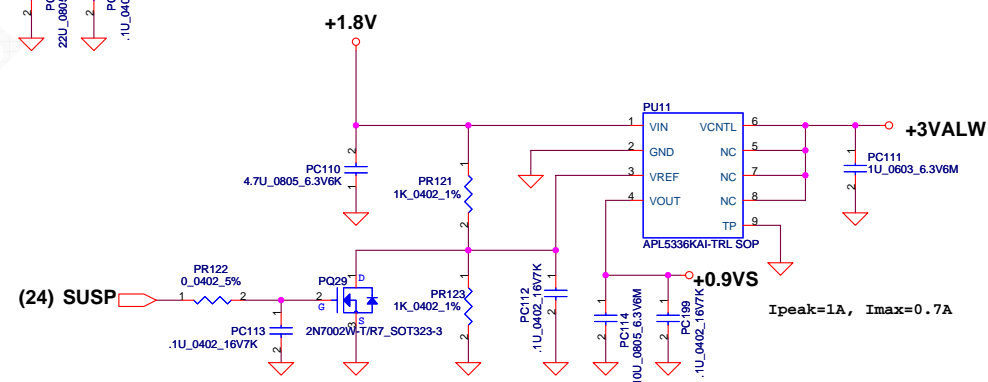
Cout ESR=15mh RdsOn RdsOn(max)=17.9m RdsOn(typical)=14.5m
Ipeak=1.38A, Ithm=0.966A, Iocp=1.656A
Delta I=((19-1.8)*(1.8/19))/((2.2u*263K)=1.467A
=>1/2DeltaI=0.7335A
Vtrip=Rtrip*10uA=8.66K*10uA=0.0866V
Iocpmin=Vtrip/(RdsOnmax)+0.7335
=0.0866/(0.0179)+0.7335=5.572A
Iocpmax=(0.0866/(0.0145*1.2))+0.7335A=5.711A
Iocp=5.572A-5.711A

```

$I_{peak}=1.48A$, $I_{max}=1.036A$



(24) SUSP



$I_{peak}=1A, \quad I_{max}=0.7A$

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Version change list (P.I.R. List)

Page 1 of 1 for PWR

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	add PC200	For design change	0.1	24		2009.5.15	EVT
2	add PC193,PC194	For design change	0.1	26		2009.5.15	EVT
3	add PC195,PC196	For design change	0.1	27		2009.5.15	EVT
4	add PC197,PC198,PC199	For design change	0.1	28		2009.5.15	EVT
5	change PL3,PL4	For design change	0.1	26	change PL3,PL4 to 4.7uH	2009.5.15	EVT
6	change PQ10,PQ11	For design change	0.1	25	change PQ10,PQ11 to P-Chanel	2009.6.5	EVT
7	add PC165	Solution for 3G noise reduce	0.1	25		2009.6.5	EVT
8	add PC163,PC164	Solution for 3G noise reduce	0.1	26		2009.6.5	EVT
9	add PC166,PC167	Solution for 3G noise reduce	0.1	27		2009.6.5	EVT
10	add PC168	Solution for 3G noise reduce	0.1	28		2009.6.5	EVT
11	delete PC103,PC1120	For design change	0.1	29		2009.6.5	
12	change PR94,PR102	For design change	0.1	27	change PR94,PR102 to 100ohm	2009.6.5	
13	change PC79,PC89	For design change	0.1	27	change PC79,PC89 to 4.7uF	2009.6.5	
14	change PR112	For design change	0.1	28	change PR112 to 100ohm	2009.6.5	
15	change PC99	For design change	0.1	28	change PC99 to 4.7uF	2009.6.5	
16	change +5VALW/+3VALW OCP	For design change	0.1	26	change PR49 to 309ohm & PR50 to 249ohm	2009.6.5	
17	add PJ1,PJ2,PJ3,PJ4,PJ5,PJ6,PJ7	For design change	0.1	25		2009.6.15	
18	add PJ9,PJ10	For design change	0.1	28		2009.6.15	
19	Change net name	For design change	0.1	25	Change net name +1.05V to +VCCP	2009.6.15	
20	Change PJP2	For design change	0.1	24	Change PJP2 to DC040903020	2009.6.15	
21	Change PBJ1	For design change	0.1	23	Change PBJ1 to SP020008Y00	2009.6.15	
22	delete PJ6,PJ7,PJ9,PJ10	For design change	0.1	28		2009.6.18	
23	Change net name	For design change	0.1	29	Change net name GND_SIGNAL to GND	2009.6.18	

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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1	Change PR194	For design change	0.1	29	change PR194 to 4.7K ohm	2009.6.30	EVT
2	add PR221	For design change	0.1	25		2009.6.30	EVT
3	Change PR4	For design change	0.1	23	change PR4 to 0 ohm	2009.7.2	EVT
4	Change PJP3 to PBJ1	For design change	0.1	23	change SP020008Y00 to SP093MX000	2009.8.4	EVT
5	Change PH1 & PH4	For design change	0.1	24	change SL210031F00 to SL200000V00	2009.8.12	EVT
6	Change PL10	For design change	0.1	29	change SH000006I80 to SH000000700	2009.8.12	EVT
7	Change PR99 & PR108	Modify power sequence	0.1	27	change SD028000080(0 ohm) to SD034200280(20K ohm)	2009.8.12	EVT
8	Change PR90	Modify power sequence	0.1	27	change SD028000080(0 ohm) to SD034100280(10K ohm)	2009.8.12	EVT
9	Change PR83	Modify ISL6251 Charger KV	0.1	25	change SD034182280(18.2 ohm) to SD034154280(15.4K ohm)	2009.8.24	EVT
10	Change PR117	Modify power sequence	0.1	28	change SD028000080(0 ohm) to SD034100280(10K ohm)	2009.8.24	EVT
11	Change PR99 & PR108	Modify power sequence	0.1	27	change SD034200280(20K ohm) to SD034200180(2K ohm)	2009.8.24	EVT
12	Change PR90	Modify power sequence	0.1	27	change SD034100280(10K ohm) to SD034100180 (1K ohm)	2009.8.24	EVT
13	Change PC77 & PC86 & PC96	Modify power sequence	0.1	27	Change PC77 & PC86 & PC96 to pop change SE076104KM8(0.1uf) to SE000000K80 (1uf)	2009.8.24	EVT
14	Change PC109	Change part number	0.1	27	change SE076104KM8(0.1uf) to SE076104K80(0.1uf)	2009.8.24	EVT
15	Change PL3.PL4	To slove high frequency noise	0.1	26	change SH000000BU00(4.7uH) to SH000000BS00(8.2uH)	2009.8.27	EVT
16	Change PL9	For design change	0.1	29	change SM01000BY00 to SM01000C000	2009.9.4	DVT
17	Change PL4	To improve +5VALWP efficiency	0.1	26	change SH000000BS00(8.2uH) to SH000000F900(4.7uH)	2009.9.10	DVT
18	Change PR209	Modify CPU CORE OCP	0.1	29	change SD028180180(1.8K ohm) to SD034237180 (2.37K ohm)	2009.9.30	PVT
19							
20							
21							
22							
23							

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Rev
D

<2009/4/28>
Update new power schematic,
release first version NAV50 schematic

<2009/04/29>
. Add R1182 R1183 L3 on page 9
. Change J3 to R1184 on page 13

<2009/04/30>
. Change JDIM1 to SP07F001720 on page 7
. Del SATA1 Port on page 12
. Change R51 R57 R70 R63 R317 R314 R190 to 0402 Size on page 21

<2009/05/04>
. Add WWAN_CLKREQ# and R107 pull-high to +3VS on page 8
. Add CRT_DET# on page 10
. Add CRT_DET# circuit on page 13
. Add 3 LEDS on page 16
. Add BT/BTN Board CONN. on page 16
. Update TP/B CONN. to SP01000LB00 on page 19

<2009/05/11>
. Add INVT_PWM on Page 5
. Del R323 on page 5
. C74 change to 2.2U_0603 on page 6
. C267 change to 22U on page 6
. C391 change to 0.1U on page 6
. Del C67 C35 C33 C36 on page 6
. Del +LGI_VID and U71.A21 direct connect to +VCCP on page 6
. Follow Intel checklist, add R52 on FSB on page 8
. Add D5 D7 D8 on page 4
. Add R174 on page 9
. Add PCI_RST# on page 11
. Add C1115 C1114 C1116 C1117 C1118 on page 15

<2009/05/12>
. Follow Intel Layout Checklist, Add C141 on VDDSPD on page 7
. Modify SRC CLK PORT LIST on page 8
. Del CLKREQ_LAN# on page 8
. Change PCIE Port list on page 13
. Change USB Port list on page 13
. Add W/L 3G SW on page 16
. Del R103 on page 18

<2009/05/13>
. Change JMINI1 to PCIE Port 3 on page 15

<2009/05/14>
. Page8 Change C174 C175 to 10U_0603

<2009/05/14>
. Update New Power schematic
. Del R376 R377 on page 8
. Del D5 D7 D8 on page 4
. Change JLVDS1 to SP010006810 on page 9
. Add D6 for EMI on page 9
. Change C1106 to C_0603 type on page 9
. Change USB_OC# on page 13
. Add USB Port2 on page 20
. Change JP11 Pin define & Add D22 on page 19
. Change C512 to 1u_0402 on page 15
. Add U29 (MEDIA_LED#) on page 16

<2009/05/19>
.Update new clock GEN co-lay schematic on page 8

<2009/06/05>
.Update new clock GEN co-lay schematic on page 8
.Follow Intel check list change C161 C165 to 27P on page 8
.Follow Intel check list change C56 to 22uF on page 6

<2009/06/08>
.Update New Power schematic 06/06 version
Page 13- a.Del R203 (pull-up GPIO6 Resister)
b.Change R1184 NU
Page 17- a. Add VGATE
b. Del R1294
c. Change D30 NU
d. Change R1295 to 0 ohm
e. Add R1309 0 ohm on EC_RSMRST#
f. Pull-up LAN_WAKE# +3VALW
g. ICH_POK change to PCH_POK
h. Pull-up KB_RST# to +3VS
Page 10- a. Add R1283 R1284 ,Change R247 R249 to 10 ohm
b. Add @ on U10 U11 C301 C298
c. Del C302 C300 R1281 R1287

<2009/06/10>
. Page 7- Add C116 @
. Page 22- Modify USB_OC#1_2 to USB_OC#2
. Page 17- Modify PLTRST# to PCI_RST#
. Page 17- Add @ on R1311

<2009/06/12>
. Page4 Add C314 C313 C1150 D19 on +VCC_FAN1
. Page8 Add C1145 C1146 C1147
. Page10 Move CRT_DET# from Page13 to Page10
. Page13 Add +RTCVCC circuit

<2009/06/15>
. Update New Power schematic (change PBJ1 to PJP3)
. Page 10 modify C310 C308 C303 C307 C306 C304 Bom Structure
. Page 22 Modify Hole location by (ME drawing 06/12)

<2009/06/16>
. Page7 Modify DDR Command Control Pin pull-high Resister location
. Page9 Change R577 to 0402 type

<2009/06/17>
. Update New Power schematic 06/17
. Page9 modify LVDS Conn. Pin define
. Page9 Del C1110
. Page4 Add EMI solution D38 D39 D40

<2009/06/18>
. Update New Power schematic 06/18
. Page8 modify U4 Pin define and Q31
. Page13 Add R1376, R1377
. Page15 Modify C403
. Page23 Modify H11

<2009/06/19>
. Page4 Add new signal CPU_ITP , CPU_ITP#
. Page5 ADD R1378
. Page6 ADD C1152,C1153,C1154 C1160,C1161,C1162
. Page7 DDR_A_D8與DDR_A_D9互換
. Page8 ADD R1379,R1380,U77,R1381,C1157,R1382,R1383,R1384,C1157
. Page8 DEL C390
. Page9 ADD C1156
. Page11 DEL R1322, R1154
. Page13 DEL U77, ADD C1158
. Page17 ADD C1159

<2009/06/22>
. Page22 change IO Conn. pin34 from 48M to USB_ON#
. Page10 change JCRT1 P/N to SP010906182

<2009/06/23>
. Page15 Add C1163 C1164 C1165 C1166
. Page18 change PWR/B Conn. P/N to SP01000H300
. Page22 change JUSB1 JUSB2 P/N

<2009/06/24>
. Page8 Change C1350 C1351 to 0402 type
. Page10 Add R1385 R1386 on JVGA_HS JVGA_VS

<2009/06/25>
. Page22 move some parts to I/O Board , Add the MONO_IN_R on M/B
.

<2009/06/29>
. Page16 Change JP24 to ACES_88266_05001
. Page15 Change JMINI1 to FOX_AS0B246-S50U-7F_52P-T

<2009/06/30>
. Page18 Change PWR_LED# to PWR_PWM_LED#
. Page17 Add PWR LED DETECT PIN on Pin97

<2009/07/02>
. Update New Power schematic 07/02
. Page9 Add C1167 C1168 for RF request.
. Page13 Change R223 to 100K
. Page16 change JP24 to ACES_85201-0505N
. Page17 Del R1387 R1388 on EC Pin97
. Page17 Add New Board ID to separate NAV50 NAV60
. Page17 Change 展頻IC to SA00003J400 (New)
. Page18 Add D41 for ESD

<2009/07/03>
. Page18 Add D41.2 to PWR_PWM_LED#
. Page8 Change co-lay net name to +1.5VM_CK505
. Page20 Change JP2 Pin42 to +5VS

<2009/07/06>
. Page18 Add pwr switch for NAV50

<2009/07/08>
. Page5 Add 470pf on H_SMI# for known issue.

<DVT START>

<2009/08/04>
. Page5 CLK_CPU_HPLCLK CLK_CPU_HPLCLK# exchange
. Page9 Change JLVDS1 to P/N ACES 88341-3001 30P
. Page17 del PM_1.8V(U6.82) ,Del R1310 R1311
. Page18 Del D41

<2009/09/03>
. Page7 Change C112 to 0402 type
. Page8 Add T6 on CLK_48M_CR
. Page16 Modify JP18 Pin define change +5VALW +5VS to +3VALW +3VS
. Page20 Change Pin 18, 23 to +1.5VS change Pin7 , 9 to USB20_P7 N7
. Page21 Del H12

<2009/09/08>
Update Power schematic 0904
. Page18 Change R1388 to 100 ohm 0402
. Page18 Change LED1 to SC591NB5A00

<2009/09/10>
Update Power schematic 0910
. Page22 unmount Q6 Q8

<2009/10/07>
. Page4 U71 Change to SA00003M800
. Page6 R26 Change to SHI00009C00
. Page13 R152 Change to SD034200A80
. Page18 R1388 Change to SD028510A80

<2010/04/29>
update new bom