

# Compal Confidential

## PEW71\_81\_91 UMA <LA-6582P> M/B Schematics Document

Intel Arrandale Processor with DDRIII + Ibex Peak-M

2010-06-18

REV:0.2

[www.masteram.su](http://www.masteram.su)

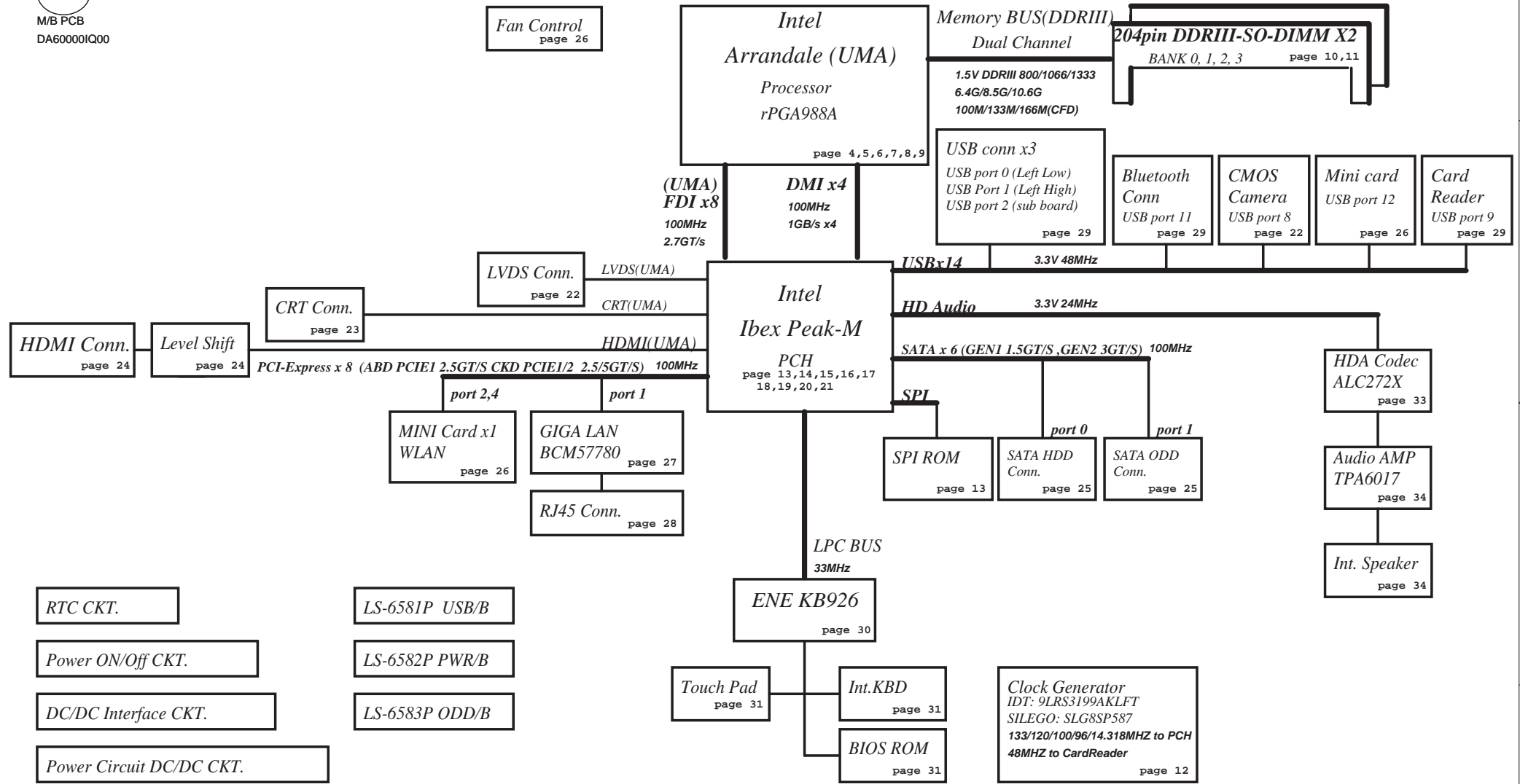
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Model Name PEW71\_81 UMA  
File Name : LA-6582P

ZZZ1  
M/B PCB  
DA60000IQ00



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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	ON	OFF
+0.75VS	0.75V switched power rail for DDR terminator	ON	OFF	OFF
+1.05VS	1.05V switched power rail for PCH	ON	OFF	OFF
+1.05VS_VTT	1.05V switched power rail (1.05 for AUB CPU)	ON	OFF	OFF
+1.5V	1.5V power rail for DDRIII	ON	ON	OFF
+1.5VS	1.5V switched power rail	ON	OFF	OFF
+1.8VS	1.8V switched power rail	ON	OFF	OFF
+3VALW	3.3V always on power rail	ON	ON	ON*
+3V_LAN	3.3V power rail for LAN	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

## External PCI Devices

**EC SM Bus1 address**

**EC SM Bus2 address**

**Ibex SM Bus address**

Device	Address
Clock Generator (9LRS3199AKLFT, SLG8SP587)	1101 0010b
DDR DIMM0	1001 000Xb
DDR DIMM2	1001 010Xb

STATE \ SIGNAL	SLP_S1#	SLP_S3#	SLP_S4#	SLP_S5#	+VALW	+V	+VS	Clock
Full ON	HIGH	HIGH	HIGH	HIGH	ON	ON	ON	ON
S1(Power On Suspend)	LOW	HIGH	HIGH	HIGH	ON	ON	ON	LOW
S3 (Suspend to RAM)	LOW	LOW	HIGH	HIGH	ON	ON	OFF	OFF
S4 (Suspend to Disk)	LOW	LOW	LOW	HIGH	ON	OFF	OFF	OFF
S5 (Soft OFF)	LOW	LOW	LOW	LOW	ON	OFF	OFF	OFF

Vcc	3.3V +/- 5%					
Ra/Rc	100K +/- 5%					
	Rb / Rd	VAD_BID min	VAD_BID typ	VAD_BID max	Board ID	Project ID
0	0	0 V	0 V	0 V	0.1	Original NEW70/80/90/50/71/91
1	8.2K +/- 5%	0.216 V	0.250 V	0.289 V	0.2	PEW71/81/91 Audio Mono/Crystal
2	18K +/- 5%	0.436 V	0.503 V	0.538 V	0.3	
3	33K +/- 5%	0.712 V	0.819 V	0.875 V	1.0	
4	56K +/- 5%	1.036 V	1.185 V	1.264 V		
5	100K +/- 5%	1.453 V	1.650 V	1.759 V		
6	200K +/- 5%	1.935 V	2.200 V	2.341 V		PEW71/81/91 Audio Mono/SUSCLK
7	NC	2.500 V	3.300 V	3.300 V		NEW71/91 Optumis

[illegible]

## USB Port Table

USB 2.0	USB 1.1	Port	4 External USB Port	3 External USB Port
EHCI1	UHCI0	0	Ext1 Left Low USB	Ext1 Left Low USB
		1	Ext2 Left High USB	Ext2 Left High USB
		2	Ext3 Right USB	Ext3 Right USB
	UHCI1	3		
		4		
	UHCI2	5		
		6		
	UHCI3	7		
EHCI2	UHCI4	8	Camera	Camera
		9	Card Reader	Card Reader
	UHCI5	10		
		11	Blue Tooth	Blue Tooth
	UHCI6	12	1st Min-Card	1st Min-Card
		13		

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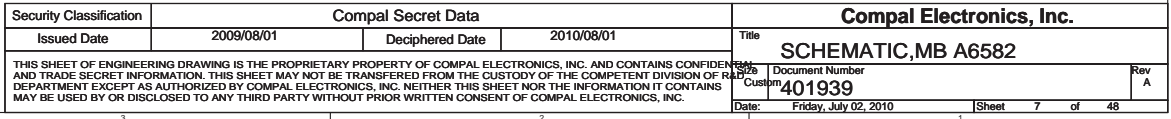




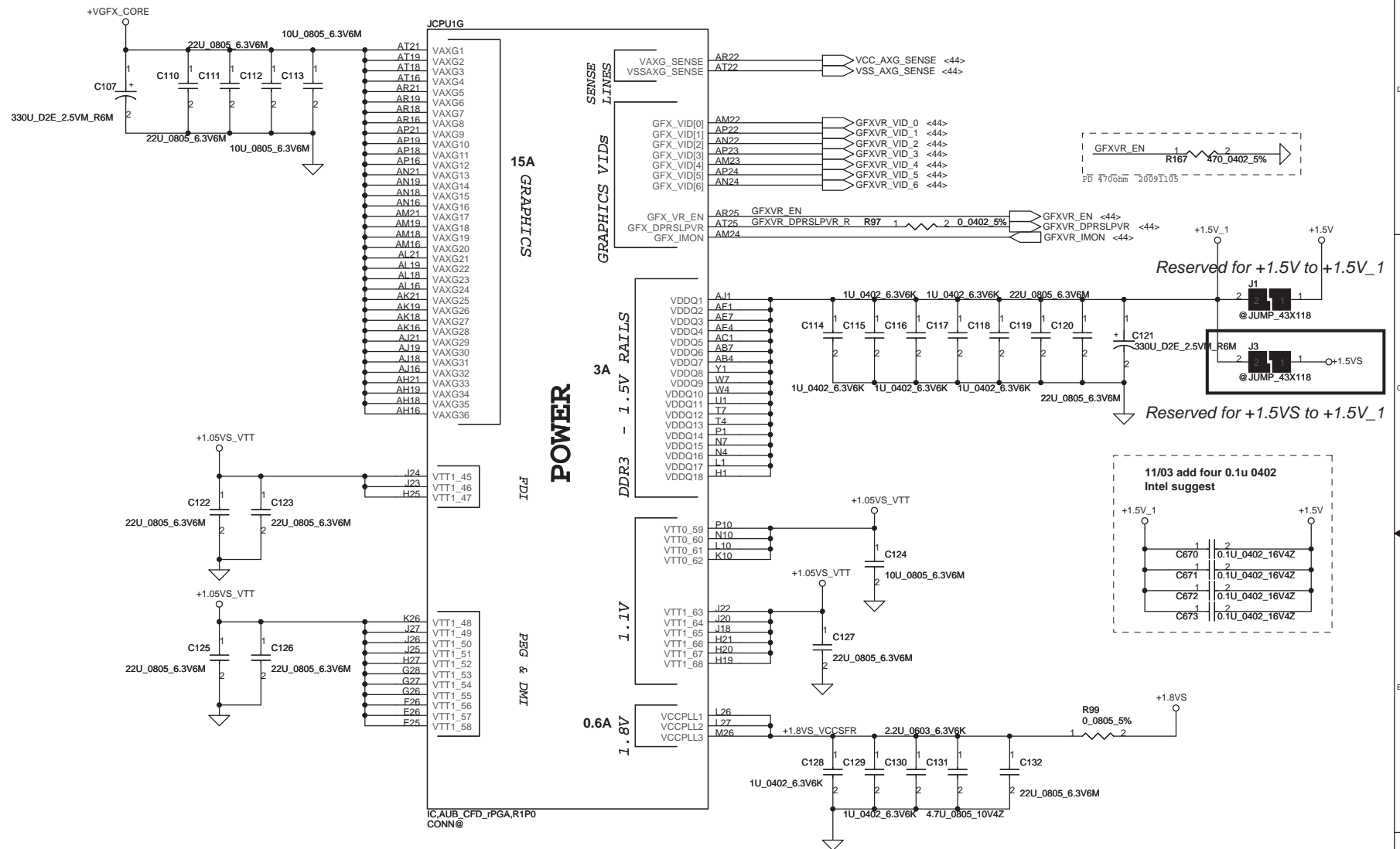




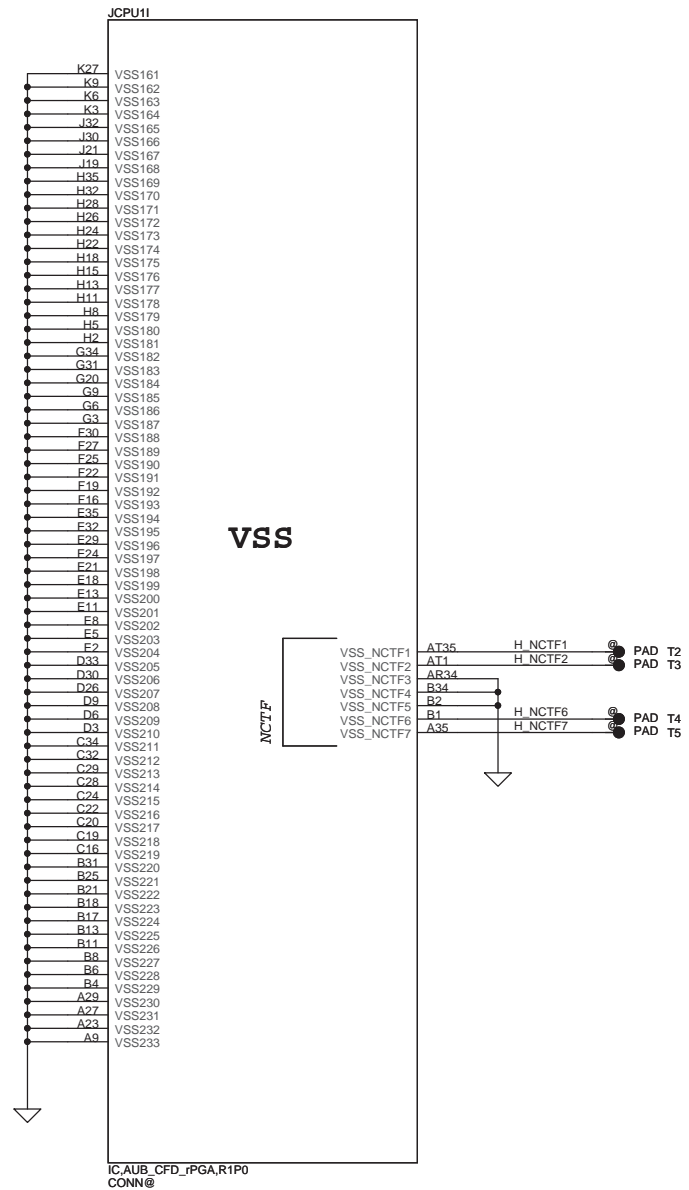
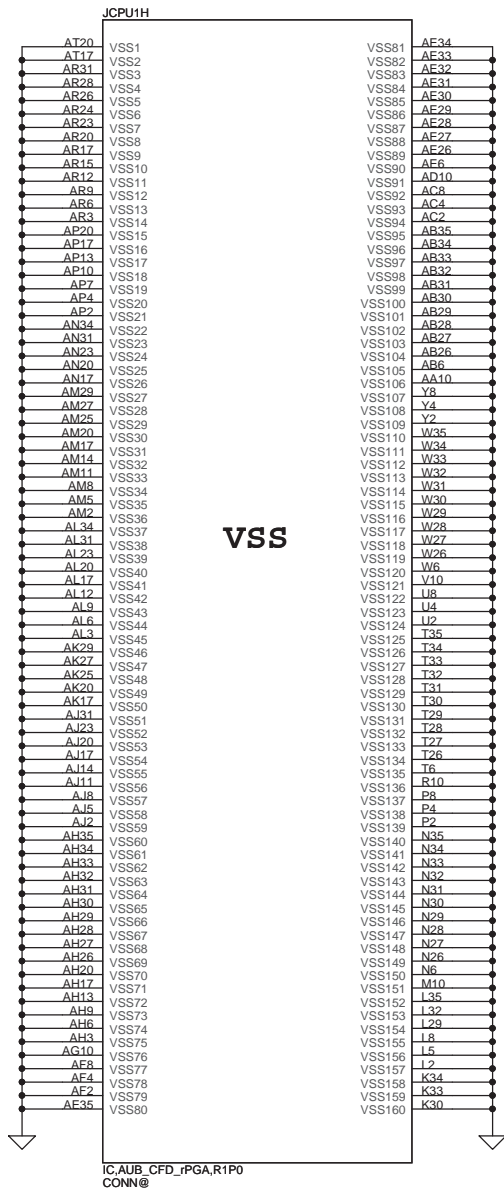






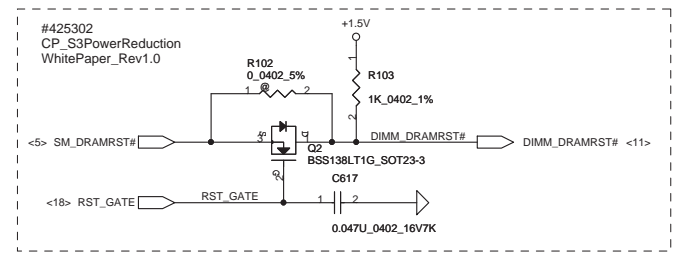
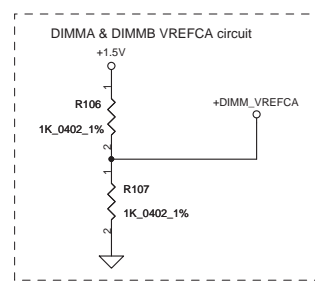
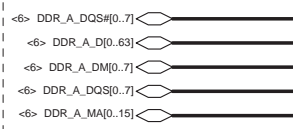
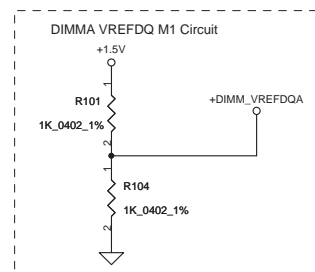




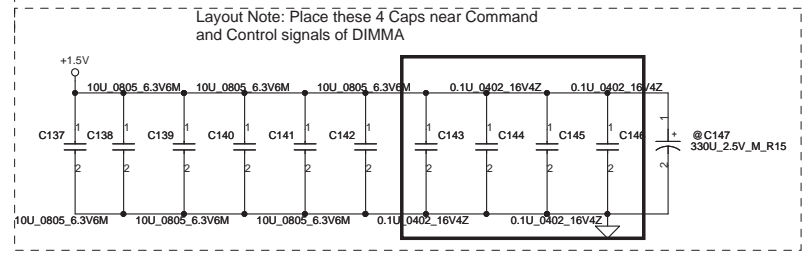


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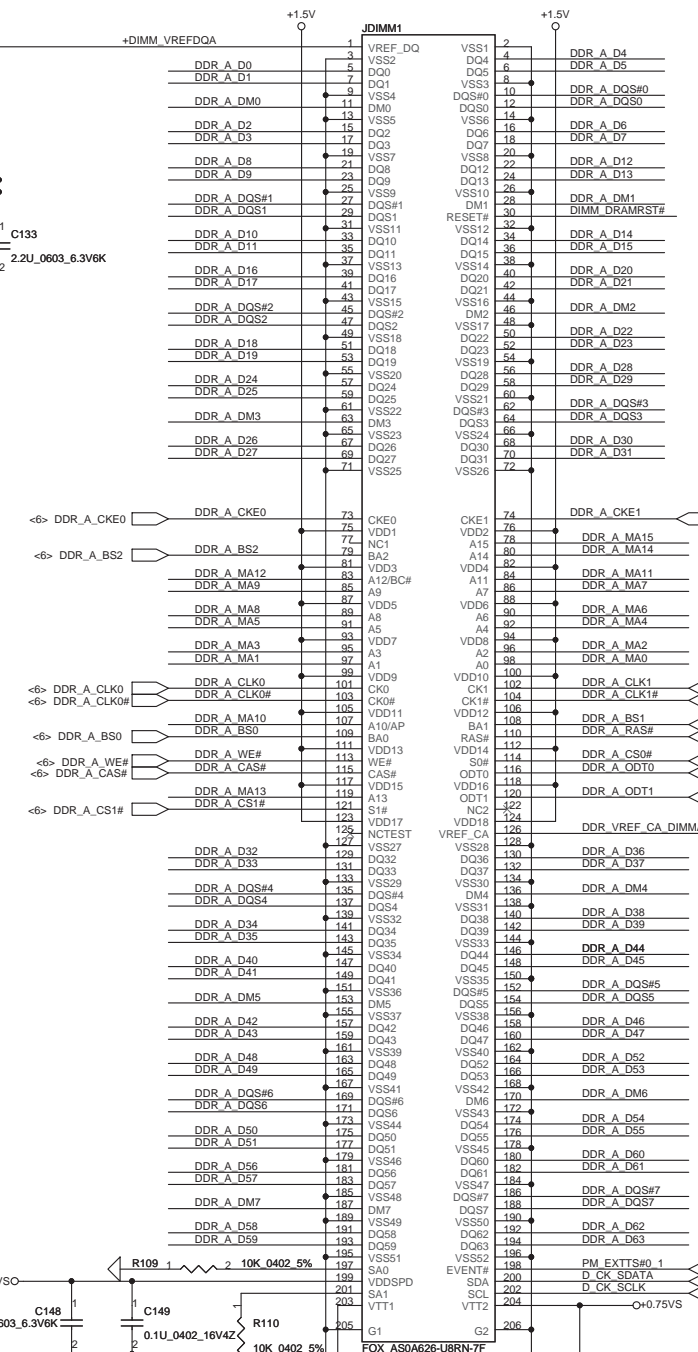
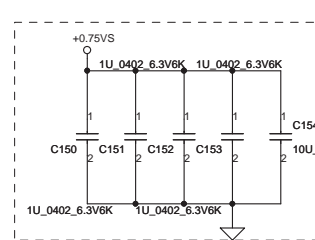




**Layout Note:**  
Place near JDIMM1



**Layout Note:**  
Place near JDIMM1.203 & JDIMM1.204



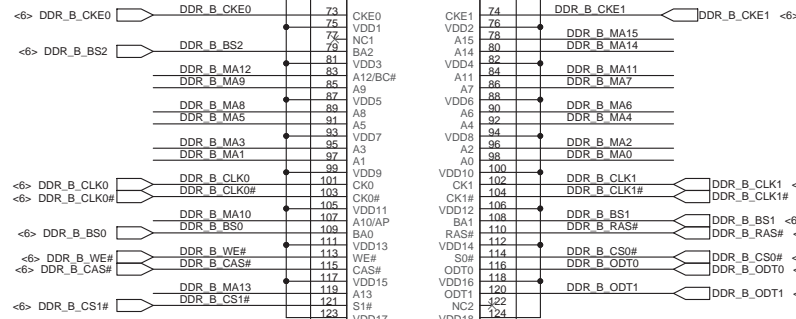
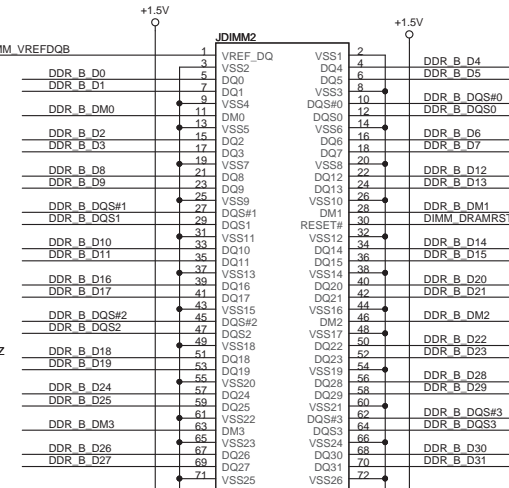
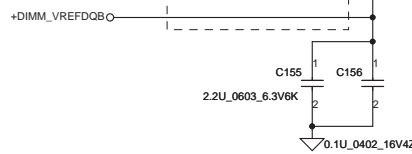
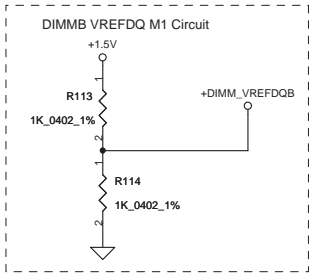
**DDR3 SO-DIMM A**  
**Change to Reverse Type**  
**8mm High**

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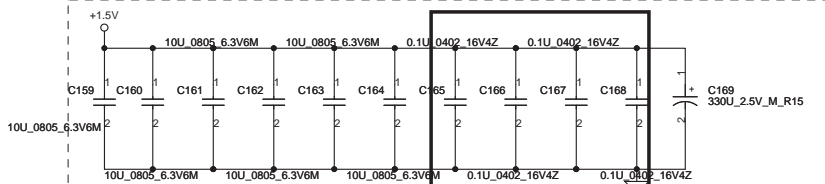
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<6> DDR\_B\_D[0..63]  
<6> DDR\_B\_DM[0..7]  
<6> DDR\_B\_DQS[0..7]  
<6> DDR\_B\_MA[0..15]

2008/9/8 #400755  
Calpella Clarkfield  
DDR3 SO-DIMM  
VREFDQ Platform  
Design Guide Change Details

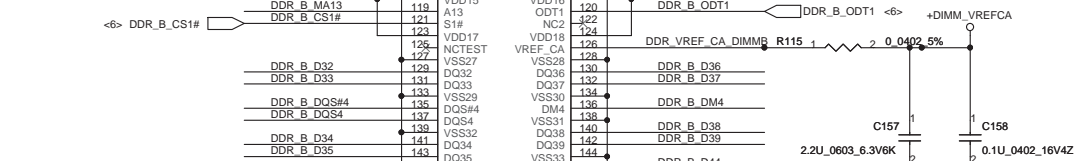
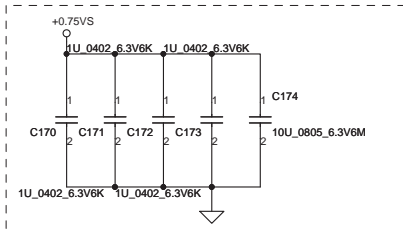


Layout Note:  
Place near JDIMM2

Layout Note: Place these 4 Caps near Command  
and Control signals of DIMMB



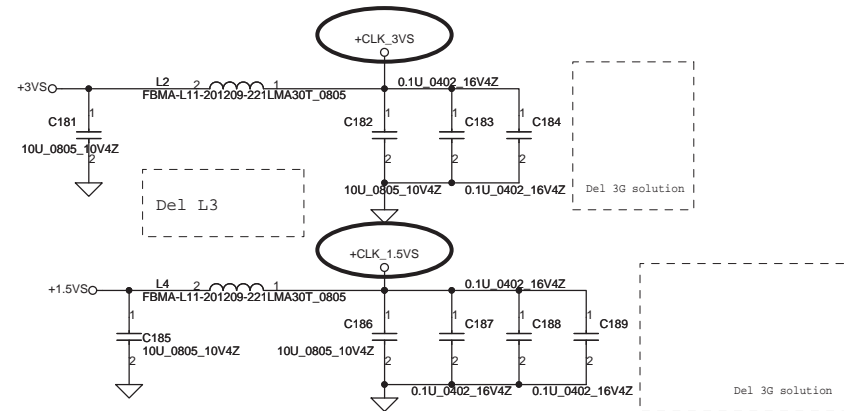
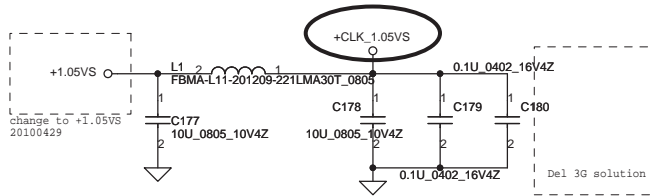
Layout Note:  
Place near JDIMM2.203 & JDIMM2.204



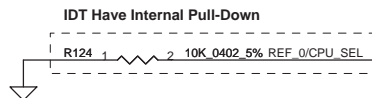
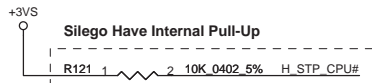
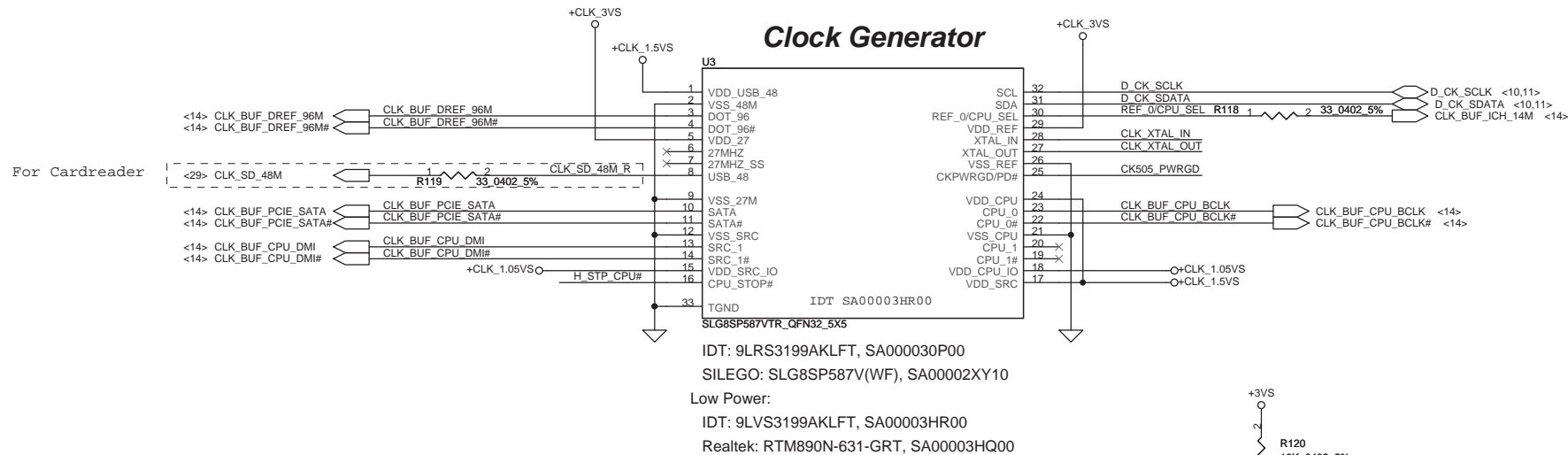
DDR3 SO-DIMM B  
Reverse Type  
4mm High

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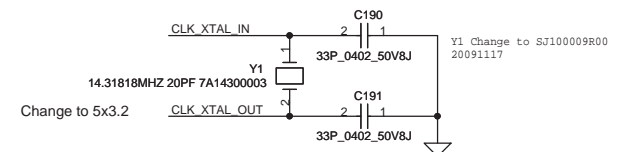
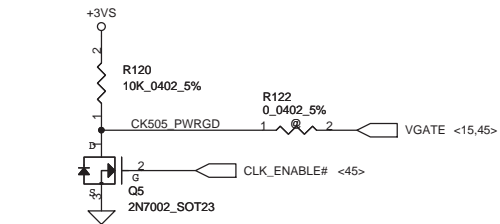
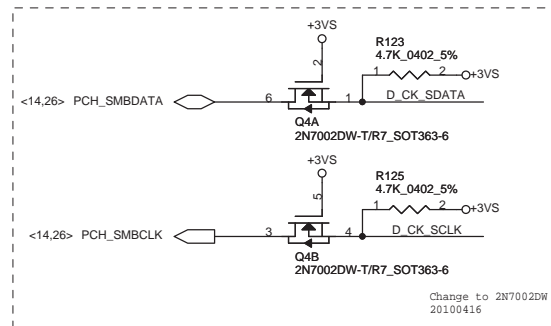




## Clock Generator

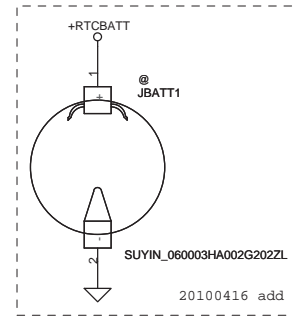
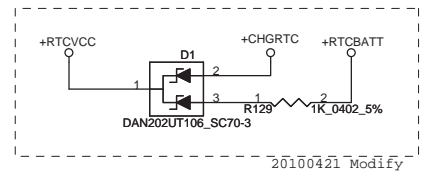
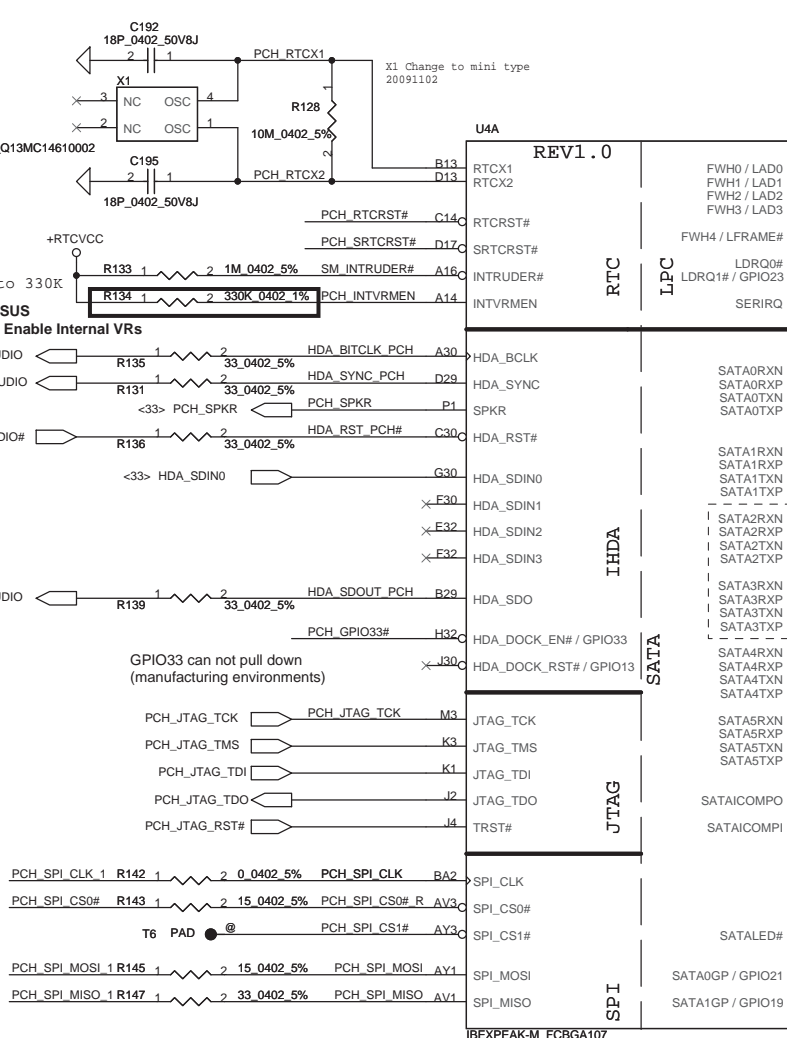
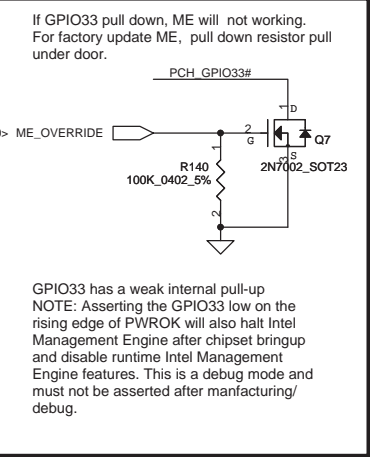
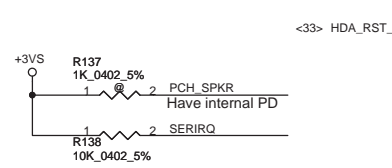
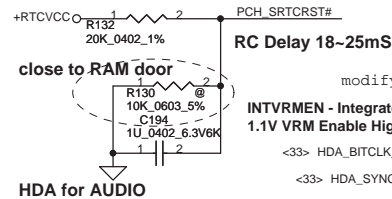
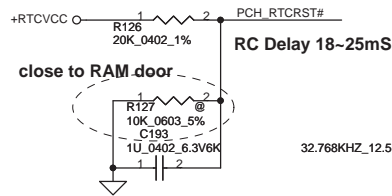


PIN 30	CPU_0	CPU_1
0 (Default)	133MHz	133MHz
1	100MHz	100MHz



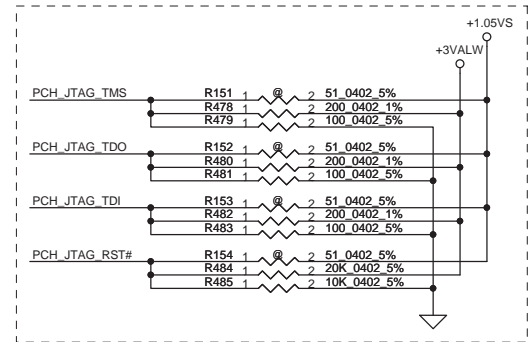
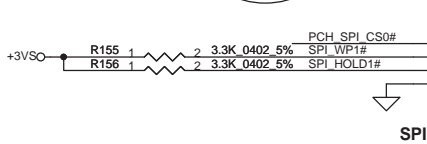
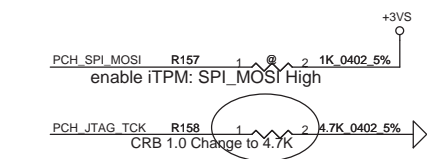
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GPIO21	Project
0	NEW50/70/80/90
1	NEW71/91

	GPIO19	GPIO37
	PCH_GPIO19	VGA_PRSNT_L#
dGPU	0	0
iGPU	0	1
SG	1	X

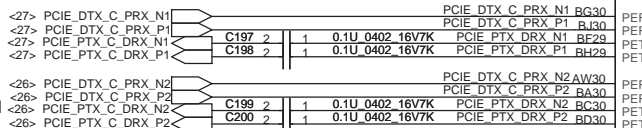


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For PCIE LAN

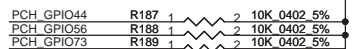
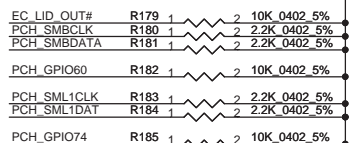
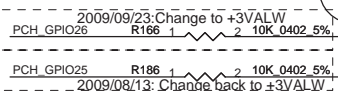
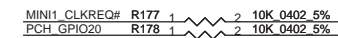
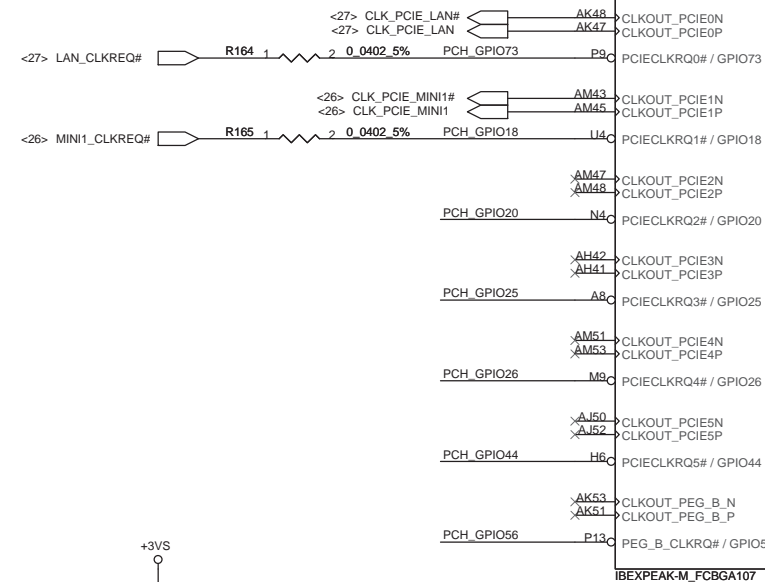
For Wireless LAN



2/10 PCIE7, PCIE8 not support on HM55

For PCIE LAN

For Wireless LAN



U4B

REV1.0

PCI-E \*

Controller

Link

PEG

From CLK BUFFER

Clock Flex

IBEXPEAK-M\_FCBGA107

CLKOUT\_PCIE0N

CLKOUT\_PCIE0P

CLKOUT\_PCIE1N

CLKOUT\_PCIE1P

CLKOUT\_PCIE2N

CLKOUT\_PCIE2P

CLKOUT\_PCIE3N

CLKOUT\_PCIE3P

CLKOUT\_PCIE4N

CLKOUT\_PCIE4P

CLKOUT\_PCIE5N

CLKOUT\_PCIE5P

CLKOUT\_PEG\_B\_N

CLKOUT\_PEG\_B\_P

PEG\_B\_CLKREQ# / GPIO56

CLKOUT\_FLEX0 / GPIO64

CLKOUT\_FLEX1 / GPIO65

CLKOUT\_FLEX2 / GPIO66

CLKOUT\_FLEX3 / GPIO67

CLKOUT\_FLEX4 / GPIO68

CLKOUT\_FLEX5 / GPIO69

CLKOUT\_FLEX6 / GPIO70

CLKOUT\_FLEX7 / GPIO71

CLKOUT\_FLEX8 / GPIO72

CLKOUT\_FLEX9 / GPIO73

CLKOUT\_FLEX10 / GPIO74

CLKOUT\_FLEX11 / GPIO75

CLKOUT\_FLEX12 / GPIO76

CLKOUT\_FLEX13 / GPIO77

CLKOUT\_FLEX14 / GPIO78

CLKOUT\_FLEX15 / GPIO79

CLKOUT\_FLEX16 / GPIO80

CLKOUT\_FLEX17 / GPIO81

CLKOUT\_FLEX18 / GPIO82

CLKOUT\_FLEX19 / GPIO83

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CLKOUT\_FLEX40 / GPIO104

CLKOUT\_FLEX41 / GPIO105

CLKOUT\_FLEX42 / GPIO106

CLKOUT\_FLEX43 / GPIO107

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CLKOUT\_FLEX76 / GPIO140

CLKOUT\_FLEX77 / GPIO141

CLKOUT\_FLEX78 / GPIO142

CLKOUT\_FLEX79 / GPIO143

CLKOUT\_FLEX80 / GPIO144

CLKOUT\_FLEX81 / GPIO145

CLKOUT\_FLEX82 / GPIO146

CLKOUT\_FLEX83 / GPIO147

CLKOUT\_FLEX84 / GPIO148

CLKOUT\_FLEX85 / GPIO149

CLKOUT\_FLEX86 / GPIO150

CLKOUT\_FLEX87 / GPIO151

CLKOUT\_FLEX88 / GPIO152

CLKOUT\_FLEX89 / GPIO153

CLKOUT\_FLEX90 / GPIO154

CLKOUT\_FLEX91 / GPIO155

CLKOUT\_FLEX92 / GPIO156

CLKOUT\_FLEX93 / GPIO157

CLKOUT\_FLEX94 / GPIO158

CLKOUT\_FLEX95 / GPIO159

CLKOUT\_FLEX96 / GPIO160

CLKOUT\_FLEX97 / GPIO161

CLKOUT\_FLEX98 / GPIO162

CLKOUT\_FLEX99 / GPIO163

CLKOUT\_FLEX100 / GPIO164

CLKOUT\_FLEX101 / GPIO165

CLKOUT\_FLEX102 / GPIO166

CLKOUT\_FLEX103 / GPIO167

CLKOUT\_FLEX104 / GPIO168

CLKOUT\_FLEX105 / GPIO169

CLKOUT\_FLEX106 / GPIO170

CLKOUT\_FLEX107 / GPIO171

CLKOUT\_FLEX108 / GPIO172

CLKOUT\_FLEX109 / GPIO173

CLKOUT\_FLEX110 / GPIO174

CLKOUT\_FLEX111 / GPIO175

CLKOUT\_FLEX112 / GPIO176

CLKOUT\_FLEX113 / GPIO177

CLKOUT\_FLEX114 / GPIO178

CLKOUT\_FLEX115 / GPIO179

CLKOUT\_FLEX116 / GPIO180

CLKOUT\_FLEX117 / GPIO181

CLKOUT\_FLEX118 / GPIO182

CLKOUT\_FLEX119 / GPIO183

CLKOUT\_FLEX120 / GPIO184

CLKOUT\_FLEX121 / GPIO185

CLKOUT\_FLEX122 / GPIO186

CLKOUT\_FLEX123 / GPIO187

CLKOUT\_FLEX124 / GPIO188

CLKOUT\_FLEX125 / GPIO189

CLKOUT\_FLEX126 / GPIO190

CLKOUT\_FLEX127 / GPIO191

CLKOUT\_FLEX128 / GPIO192

CLKOUT\_FLEX129 / GPIO193

CLKOUT\_FLEX130 / GPIO194

CLKOUT\_FLEX131 / GPIO195

CLKOUT\_FLEX132 / GPIO196

CLKOUT\_FLEX133 / GPIO197

CLKOUT\_FLEX134 / GPIO198

CLKOUT\_FLEX135 / GPIO199

CLKOUT\_FLEX136 / GPIO200

CLKOUT\_FLEX137 / GPIO201

CLKOUT\_FLEX138 / GPIO202

CLKOUT\_FLEX139 / GPIO203

CLKOUT\_FLEX140 / GPIO204

CLKOUT\_FLEX141 / GPIO205

CLKOUT\_FLEX142 / GPIO206

CLKOUT\_FLEX143 / GPIO207

CLKOUT\_FLEX144 / GPIO208

CLKOUT\_FLEX145 / GPIO209

CLKOUT\_FLEX146 / GPIO210

CLKOUT\_FLEX147 / GPIO211

CLKOUT\_FLEX148 / GPIO212

CLKOUT\_FLEX149 / GPIO213

CLKOUT\_FLEX150 / GPIO214

CLKOUT\_FLEX151 / GPIO215

CLKOUT\_FLEX152 / GPIO216

CLKOUT\_FLEX153 / GPIO217

CLKOUT\_FLEX154 / GPIO218

CLKOUT\_FLEX155 / GPIO219

CLKOUT\_FLEX156 / GPIO220

CLKOUT\_FLEX157 / GPIO221

CLKOUT\_FLEX158 / GPIO222

CLKOUT\_FLEX159 / GPIO223

CLKOUT\_FLEX160 / GPIO224

CLKOUT\_FLEX161 / GPIO225

CLKOUT\_FLEX162 / GPIO226

CLKOUT\_FLEX163 / GPIO227

CLKOUT\_FLEX164 / GPIO228

CLKOUT\_FLEX165 / GPIO229

CLKOUT\_FLEX166 / GPIO230

CLKOUT\_FLEX167 / GPIO231

CLKOUT\_FLEX168 / GPIO232

CLKOUT\_FLEX169 / GPIO233

CLKOUT\_FLEX170 / GPIO234

CLKOUT\_FLEX171 / GPIO235

CLKOUT\_FLEX172 / GPIO236

CLKOUT\_FLEX173 / GPIO237

CLKOUT\_FLEX174 / GPIO238

CLKOUT\_FLEX175 / GPIO239

CLKOUT\_FLEX176 / GPIO240

CLKOUT\_FLEX177 / GPIO241

CLKOUT\_FLEX178 / GPIO242

CLKOUT\_FLEX179 / GPIO243

CLKOUT\_FLEX180 / GPIO244

CLKOUT\_FLEX181 / GPIO245

CLKOUT\_FLEX182 / GPIO246

CLKOUT\_FLEX183 / GPIO247

CLKOUT\_FLEX184 / GPIO248

CLKOUT\_FLEX185 / GPIO249

CLKOUT\_FLEX186 / GPIO250

CLKOUT\_FLEX187 / GPIO251

CLKOUT\_FLEX188 / GPIO252

CLKOUT\_FLEX189 / GPIO253

CLKOUT\_FLEX190 / GPIO254

CLKOUT\_FLEX191 / GPIO255

CLKOUT\_FLEX192 / GPIO256

CLKOUT\_FLEX193 / GPIO257

CLKOUT\_FLEX194 / GPIO258

CLKOUT\_FLEX195 / GPIO259

CLKOUT\_FLEX196 / GPIO260

CLKOUT\_FLEX197 / GPIO261

CLKOUT\_FLEX198 / GPIO262

CLKOUT\_FLEX199 / GPIO263

CLKOUT\_FLEX200 / GPIO264

CLKOUT\_FLEX201 / GPIO265

CLKOUT\_FLEX202 / GPIO266

CLKOUT\_FLEX203 / GPIO267

CLKOUT\_FLEX204 / GPIO268

CLKOUT\_FLEX205 / GPIO269

CLKOUT\_FLEX206 / GPIO270

CLKOUT\_FLEX207 / GPIO271

CLKOUT\_FLEX208 / GPIO272

CLKOUT\_FLEX209 / GPIO273

CLKOUT\_FLEX210 / GPIO274

CLKOUT\_FLEX211 / GPIO275

CLKOUT\_FLEX212 / GPIO276

CLKOUT\_FLEX213 / GPIO277

CLKOUT\_FLEX214 / GPIO278

CLKOUT\_FLEX215 / GPIO279

CLKOUT\_FLEX216 / GPIO280

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CLKOUT\_FLEX218 / GPIO282

CLKOUT\_FLEX219 / GPIO283

CLKOUT\_FLEX220 / GPIO284

CLKOUT\_FLEX221 / GPIO285

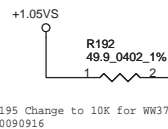
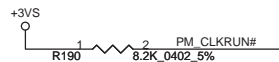
CLKOUT\_FLEX222 / GPIO286

CLKOUT\_FLEX223 / GPIO287

CLK



<4> DMI\_HTX\_PRX\_N[0..3] DMI HTX PRX N[0..3]  
<4> DMI\_HTX\_PRX\_P[0..3] DMI HTX PRX P[0..3]  
<4> DMI\_PTX\_HRX\_N[0..3] DMI PTX HRX N[0..3]  
<4> DMI\_PTX\_HRX\_P[0..3] DMI PTX HRX P[0..3]



U4C  
DMI HTX PRX N0 BC24  
DMI HTX PRX N1 B122  
DMI HTX PRX N2 AW20  
DMI HTX PRX N3 B120  
DMI HTX PRX P0 BD24  
DMI HTX PRX P1 BC22  
DMI HTX PRX P2 BA20  
DMI HTX PRX P3 BG20  
DMI PTX HRX N0 BE22  
DMI PTX HRX N1 BF21  
DMI PTX HRX N2 BD20  
DMI PTX HRX N3 BE18  
DMI PTX HRX P0 BD22  
DMI PTX HRX P1 BH21  
DMI PTX HRX P2 BC20  
DMI PTX HRX P3 BD18

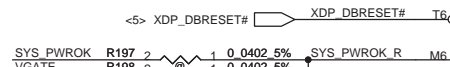
DMI0RXN  
DMI1RXN  
DMI2RXN  
DMI3RXN  
DMI0RXP  
DMI1RXP  
DMI2RXP  
DMI3RXP  
DMI0TXN  
DMI1TXN  
DMI2TXN  
DMI3TXN  
DMI0TXP  
DMI1TXP  
DMI2TXP  
DMI3TXP  
DMI\_ZCOMP  
DMI\_IRCOMP

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FDI\_RXN0 BA18 H\_FDI\_TXN0  
FDI\_RXN1 BH17 H\_FDI\_TXN1  
FDI\_RXN2 BD16 H\_FDI\_TXN2  
FDI\_RXN3 BJ16 H\_FDI\_TXN3  
FDI\_RXN4 BA16 H\_FDI\_TXN4  
FDI\_RXN5 BE14 H\_FDI\_TXN5  
FDI\_RXN6 BA14 H\_FDI\_TXN6  
FDI\_RXN7 BC12 H\_FDI\_TXN7  
FDI\_RXP0 BB18 H\_FDI\_TXP0  
FDI\_RXP1 BE17 H\_FDI\_TXP1  
FDI\_RXP2 BC16 H\_FDI\_TXP2  
FDI\_RXP3 BG16 H\_FDI\_TXP3  
FDI\_RXP4 AW16 H\_FDI\_TXP4  
FDI\_RXP5 BD14 H\_FDI\_TXP5  
FDI\_RXP6 BB14 H\_FDI\_TXP6  
FDI\_RXP7 BD12 H\_FDI\_TXP7

FDI\_INT BJ14 H\_FDI\_INT <4>  
FDI\_FSYNC0 BF13 H\_FDI\_FSYNC0 <4>  
FDI\_FSYNC1 BH13 H\_FDI\_FSYNC1 <4>  
FDI\_LSYNC0 BJ12 H\_FDI\_LSYNC0 <4>  
FDI\_LSYNC1 BG14 H\_FDI\_LSYNC1 <4>

H\_FDI\_TXN[0..7] H\_FDI\_TXN[0..7] <4>  
H\_FDI\_TXP[0..7] H\_FDI\_TXP[0..7] <4>



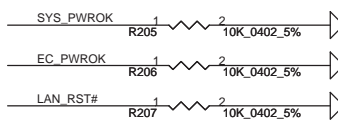
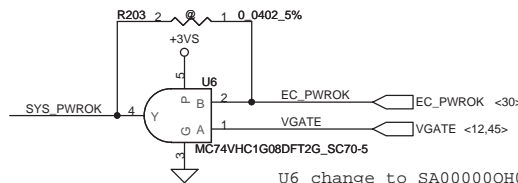
SYS\_PWROK B17  
MEPWROK K5  
LAN\_RST# A10  
DRAMPWROK D9  
RSMRST# C16  
SUS\_PWR\_ACK M1  
PWRBTN# P5  
PCH\_ACIN P7  
PCH\_GPIO72 A6  
EC\_SWI# F14

System Power Management  
SYS\_RESET#  
WAKE#  
CLKRUN# / GPIO32  
SUS\_STAT# / GPIO61  
SUSCLK / GPIO62  
SLP\_S5# / GPIO63  
SLP\_S4#  
SLP\_S3#  
SLP\_M#  
TP23  
PMSYNCH  
SLP\_LAN# / GPIO29

PCH\_PCIE\_WAKE# PCH\_PCIE\_WAKE# <26,27>  
PM\_CLKRUN# PM\_CLKRUN# <30>  
PCH\_GPIO61 @ PAD T7  
PCH\_SUSCLK <30>  
PM\_SLP\_S5# <30>  
PM\_SLP\_S4# <30>  
PM\_SLP\_S3# <30>  
PM\_SLP\_M# @ PAD T9  
PM\_SLP\_DS# @ PAD T10  
H\_PM\_SYNC <5>  
PM\_SLP\_LAN#

32.768KHZ ouput for remove EC crystal  
20091103

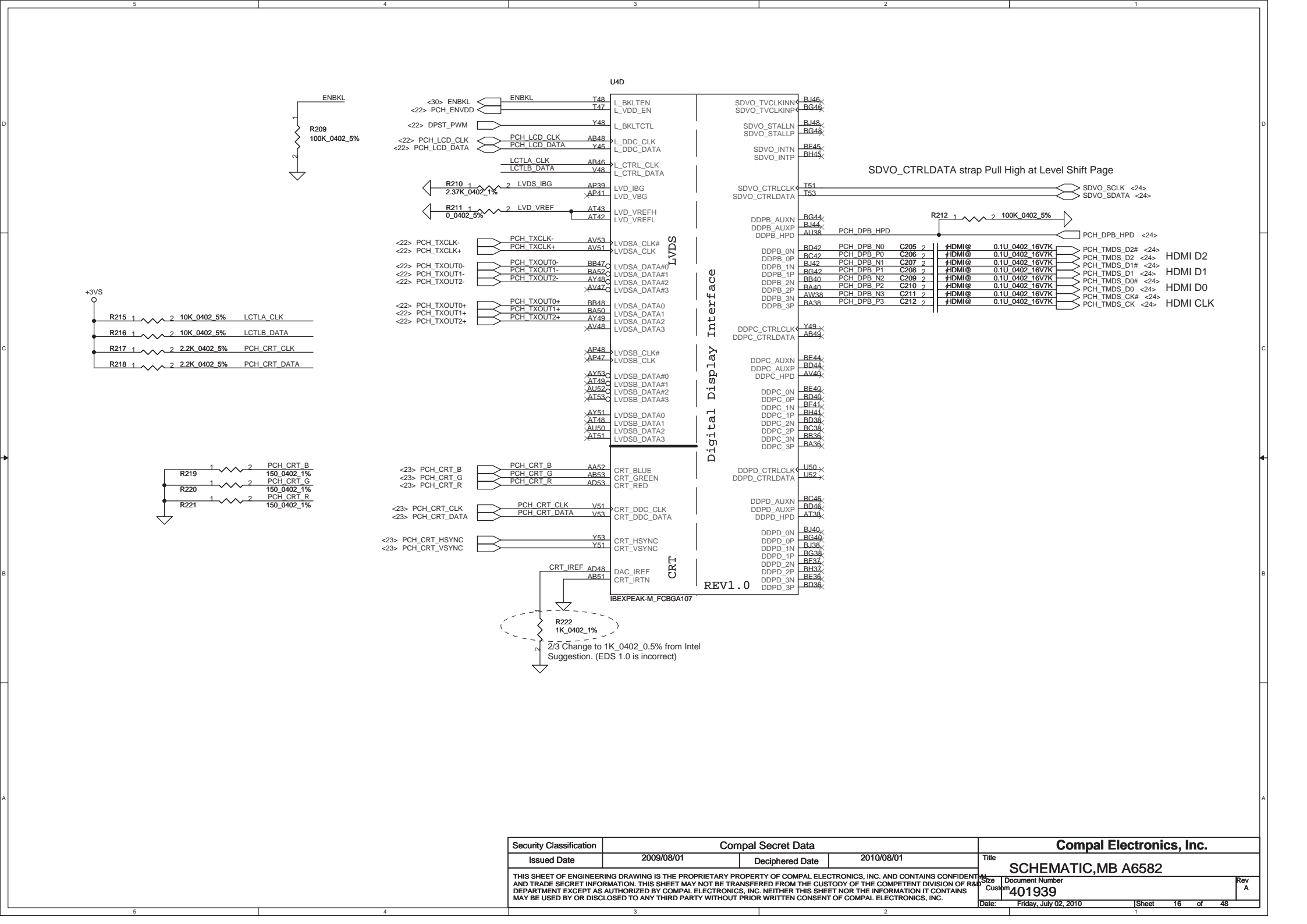
10/2  
R199 Intel suggestion change to 10K



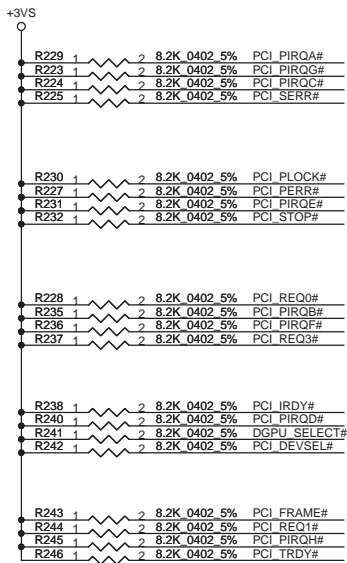
No used Integrated LAN,  
connecting LAN\_RST# to GND

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A16 swap override Strap/Top-Block Swap Override jumper

Low=A16 swap override/Top-Block Swap Override enabled High=Default \*

T11 PAD @

T12 PAD @

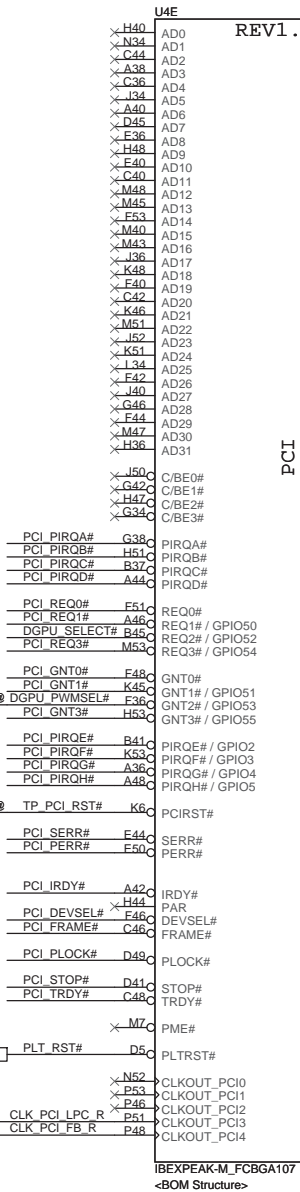
<30> CLK\_PCI\_LPC  
<14> CLK\_PCI\_FB

2008/1/6 2009MOW01 change to 22 ohm

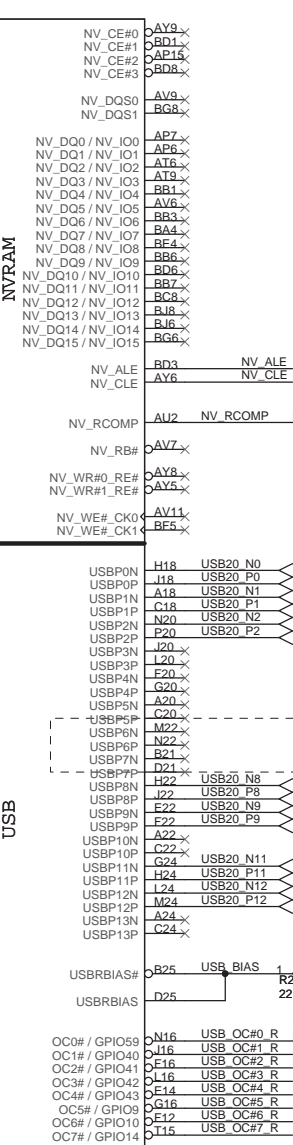
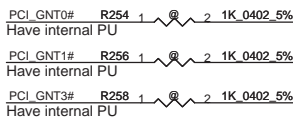
Boot BIOS Strap		
PCI_GNT#0	PCI_GNT#1	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

A16 swap override Strap/Top-Block Swap Override jumper

PCI\_GNT#3 Low = A16 swap High = Default



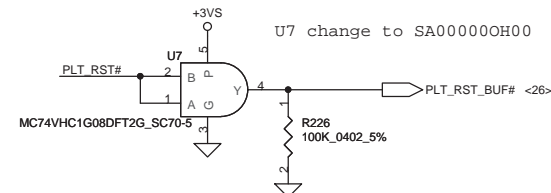
IBEXPEAK-M\_FCBGA107  
<BOM Structure>



USB/B (Left Side Low)  
USB Port (Left Side High)  
USB/B (Right Side)

CMOS Camera (LVDS)  
Card Reader  
Del SIM Card USB  
Bluetooth  
Mini Card(WLAN)  
Del 3G Card USB

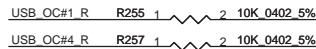
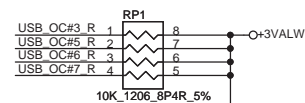
OC[0..3] use for EHCI 1  
OC[4..7] use for EHCI 2



Intel Anti-Theft Techonlogy	
NV_ALE	High=Endabled Low=Disabale(floating) *

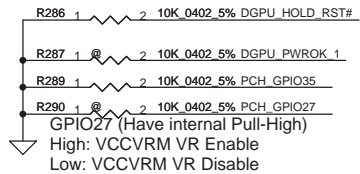
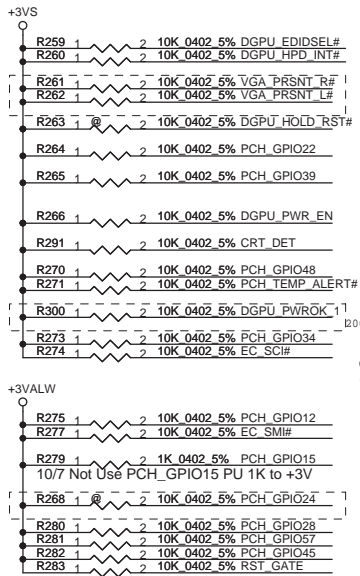
DMI Termination Voltage	
NV_CLE	Set to Vcc when HIGH Set to Vss when LOW

NV\_ALE  
Enable Intel Anti-Theft Technology : 8.2K PU to +3VS  
Disable Intel Anti-Theft Technology : floating(internal PD)  
NV\_CLE  
DMI termination voltage.  
weak internal PU, don't PD



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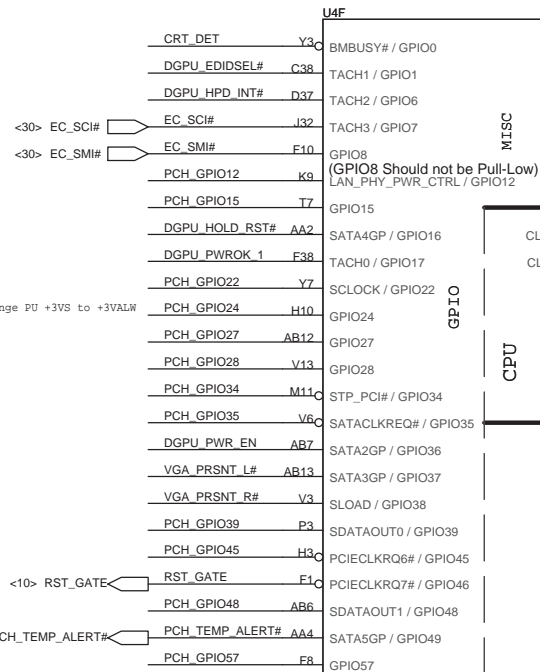
	GPIO19	GPIO37
	PCH_GPIO19	VGA_PRSENT_L#
dGPU	0	0
iGPU	0	1
SG	1	0

GPIO27  
On-Die PLL Voltage Regulator  
This signal has a weak internal pull up

\* H : On-Die voltage regulator enable  
L : On-Die PLL Voltage Regulator disable

GPIO8  
This signal has a weak internal pull up  
can't Pull low

GPIO15  
L : Intel ME Crypto Transport Layer Security(TLS) chiper suite with no confidentiality \*  
H : Intel ME Crypto Transport Layer Security(TLS) chiper suite with confidentiality  
It have weak internal PU 20K



- A4 VSS\_NCTF\_1
- A49 VSS\_NCTF\_2
- A5 VSS\_NCTF\_3
- A6 VSS\_NCTF\_4
- A62 VSS\_NCTF\_5
- A63 VSS\_NCTF\_6
- B2 VSS\_NCTF\_7
- B4 VSS\_NCTF\_8
- B62 VSS\_NCTF\_9
- B63 VSS\_NCTF\_10
- BE1 VSS\_NCTF\_11
- BE53 VSS\_NCTF\_12
- BF1 VSS\_NCTF\_13
- BE53 VSS\_NCTF\_14
- BH1 VSS\_NCTF\_15
- BH2 VSS\_NCTF\_16
- BH52 VSS\_NCTF\_17
- BH53 VSS\_NCTF\_18
- BJ1 VSS\_NCTF\_19
- BJ2 VSS\_NCTF\_20
- BJ4 VSS\_NCTF\_21
- BJ49 VSS\_NCTF\_22
- BJ5 VSS\_NCTF\_23
- BJ50 VSS\_NCTF\_24
- BJ52 VSS\_NCTF\_25
- BJ53 VSS\_NCTF\_26
- D1 VSS\_NCTF\_27
- D2 VSS\_NCTF\_28
- D53 VSS\_NCTF\_29
- E1 VSS\_NCTF\_30
- E53 VSS\_NCTF\_31

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IBEXPEAK-M\_FCBGA107

MISC

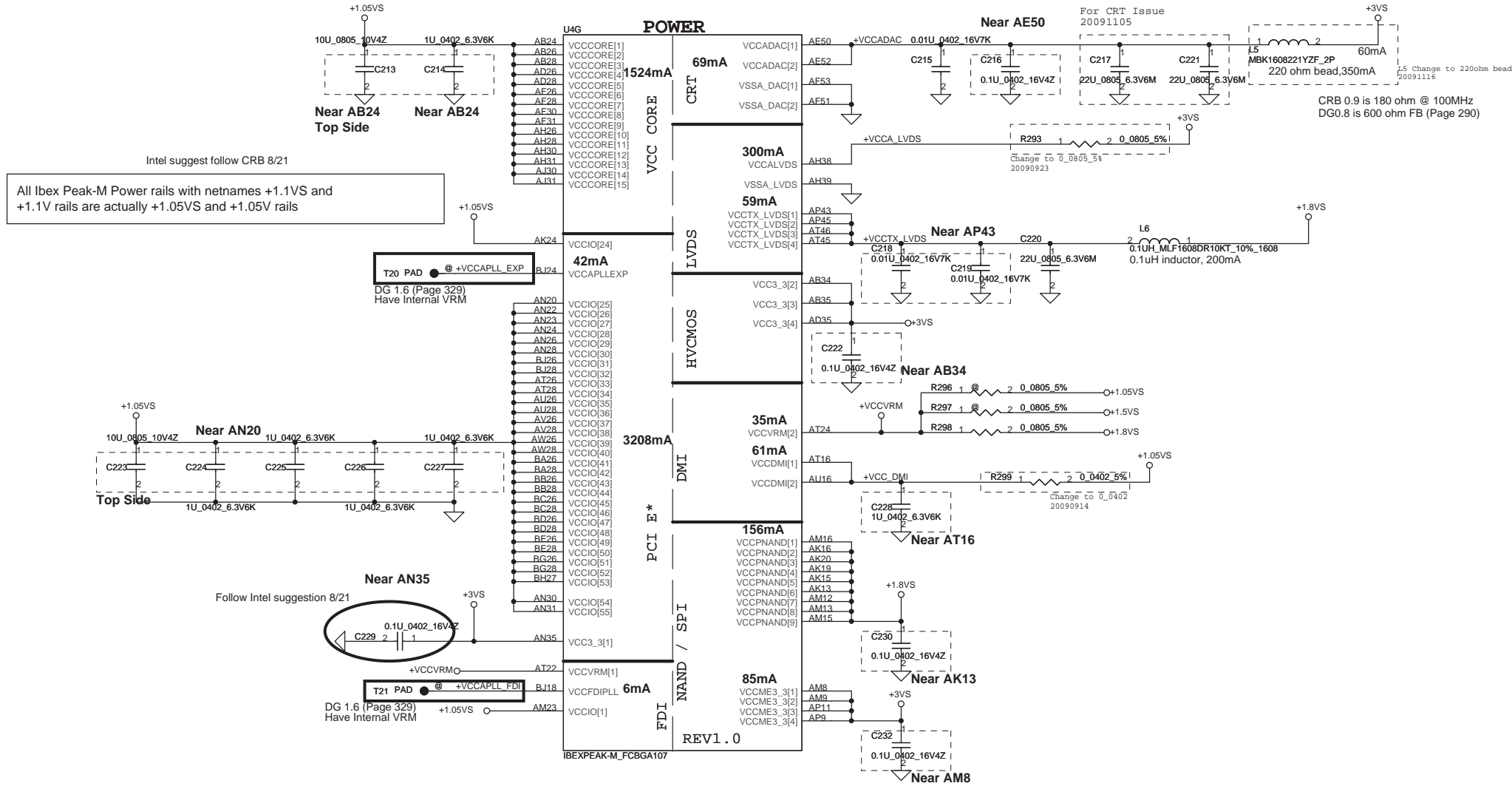
CPU

NCTF

RSVD

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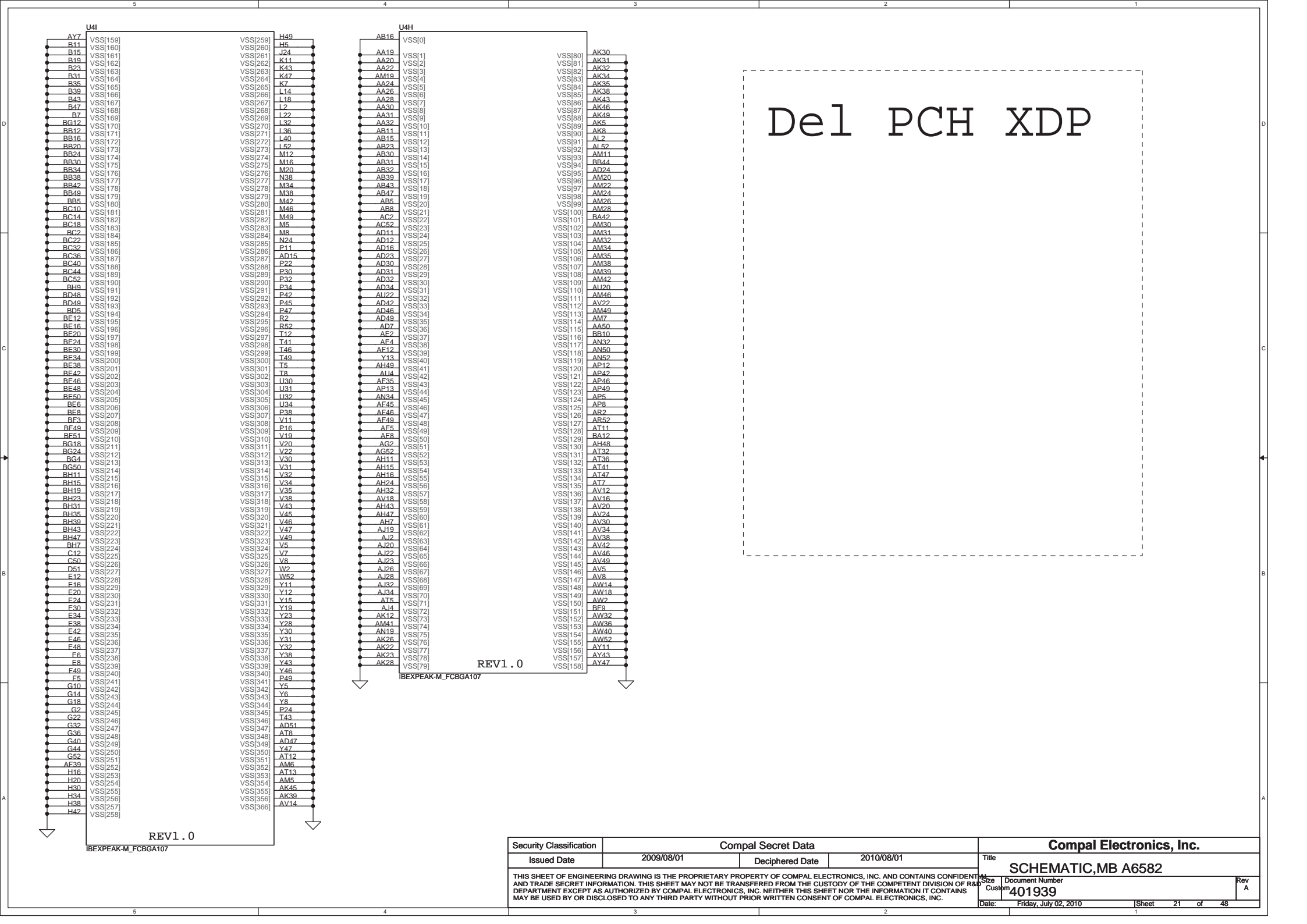












Del PCH XDP

REV1.0

IBEXPEAK-M\_FCBGA107

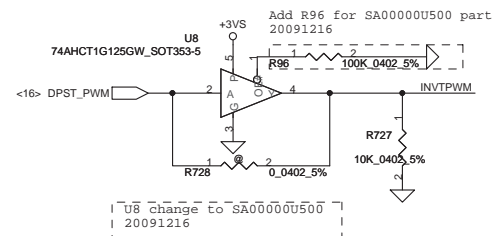
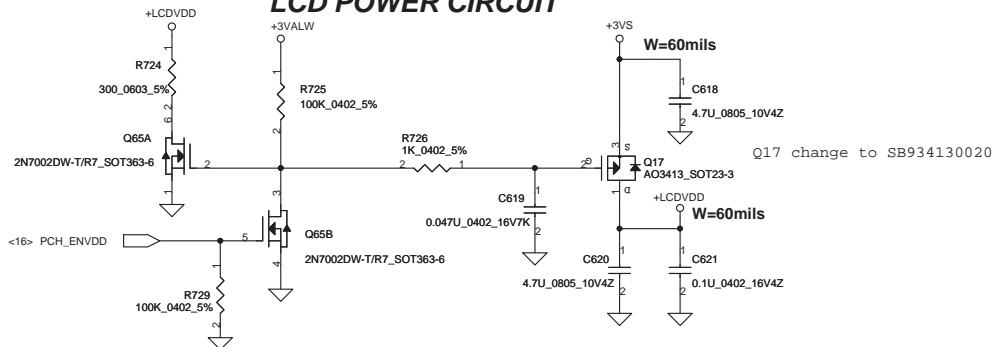
REV1.0

IBEXPEAK-M\_FCBGA107

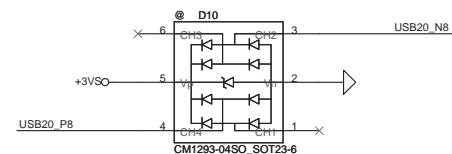
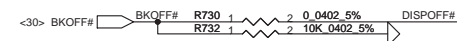
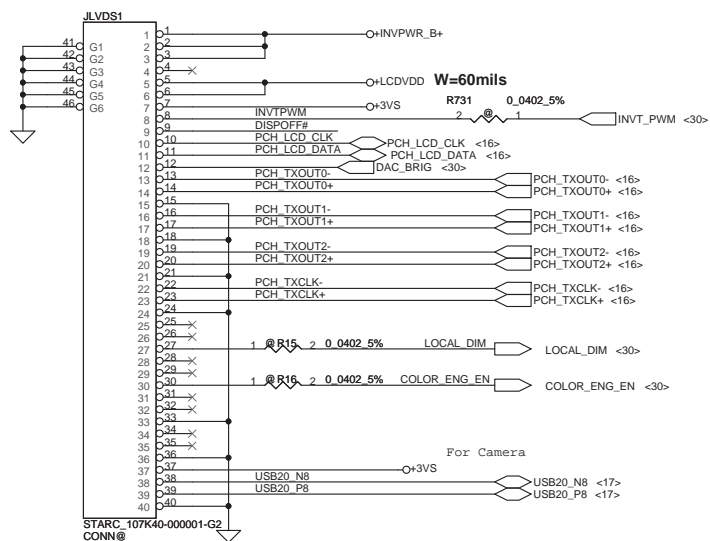
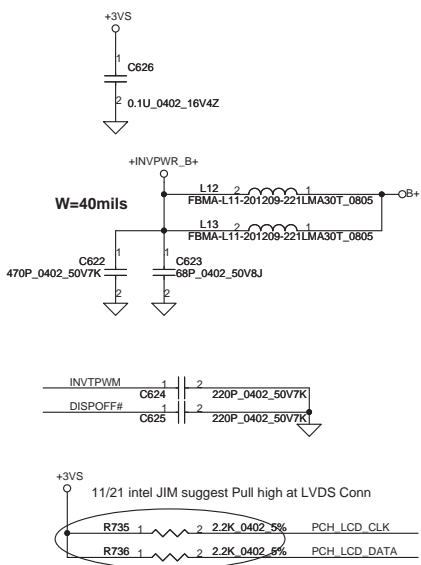
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## LCD POWER CIRCUIT



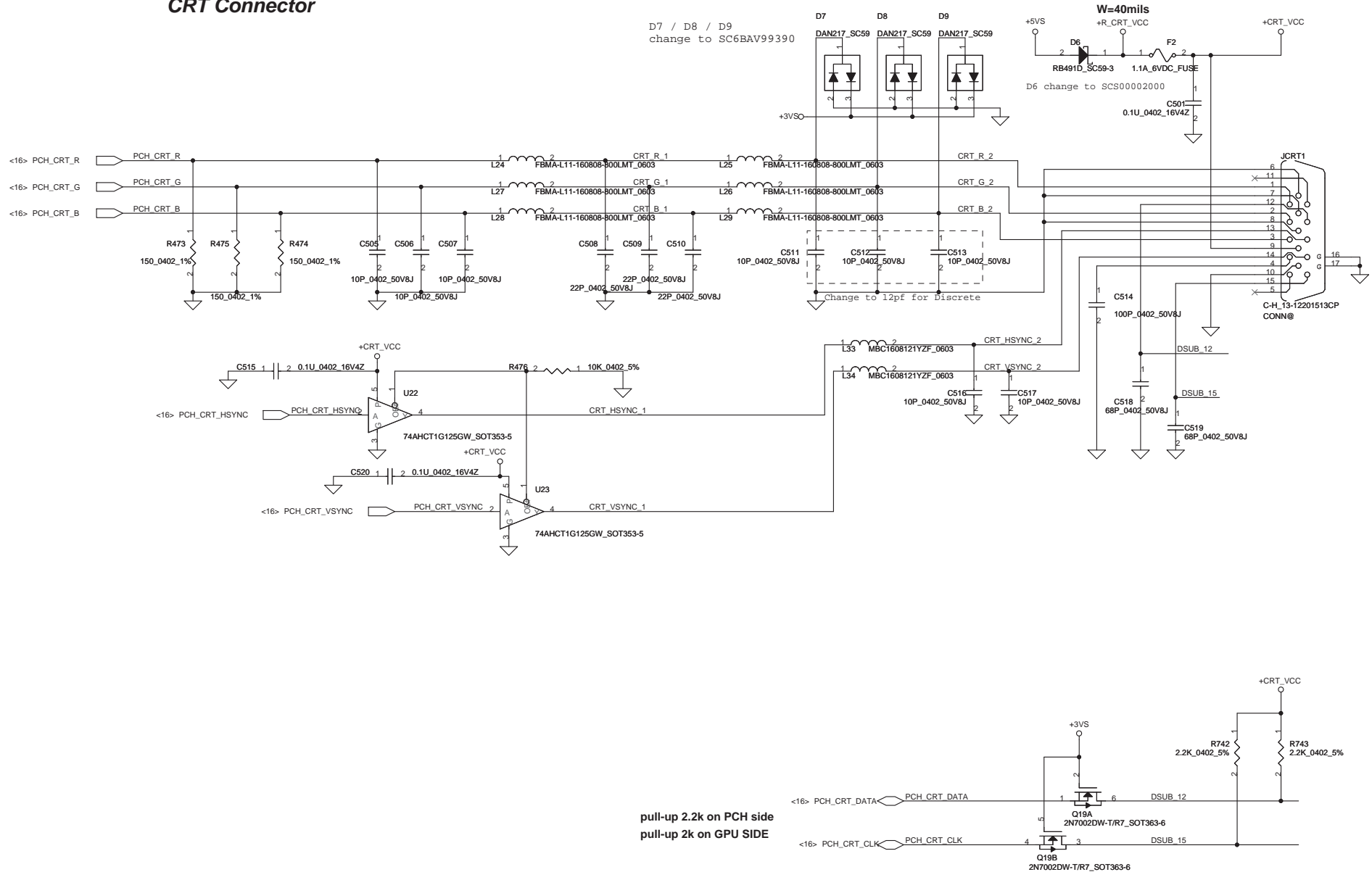
## LED PANEL Conn.



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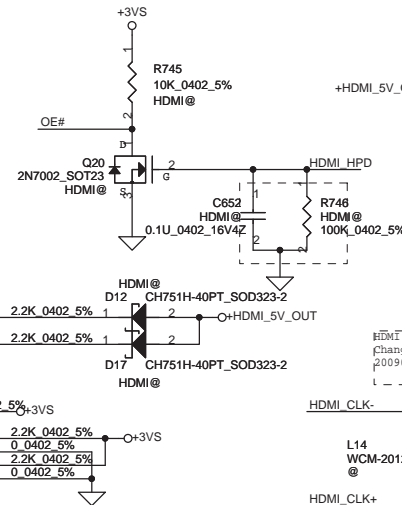
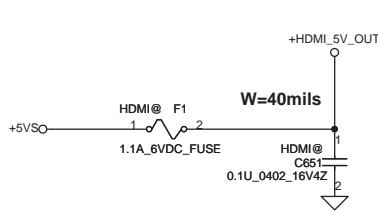
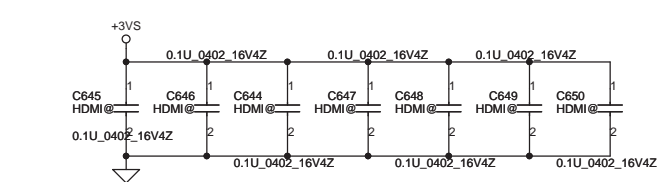
# CRT Connector



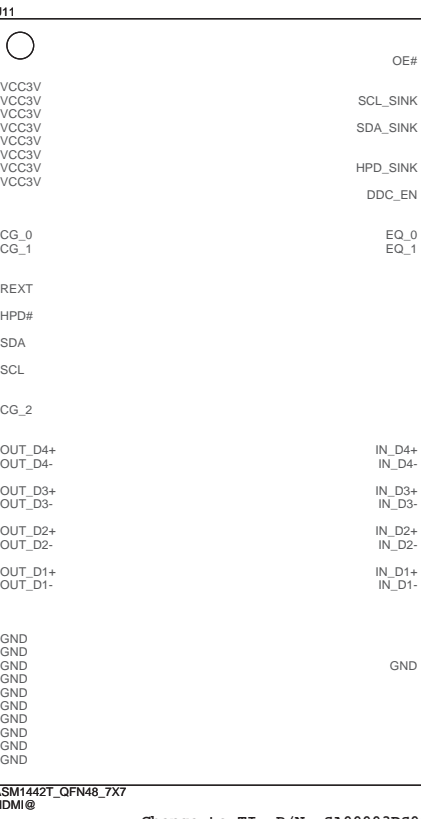
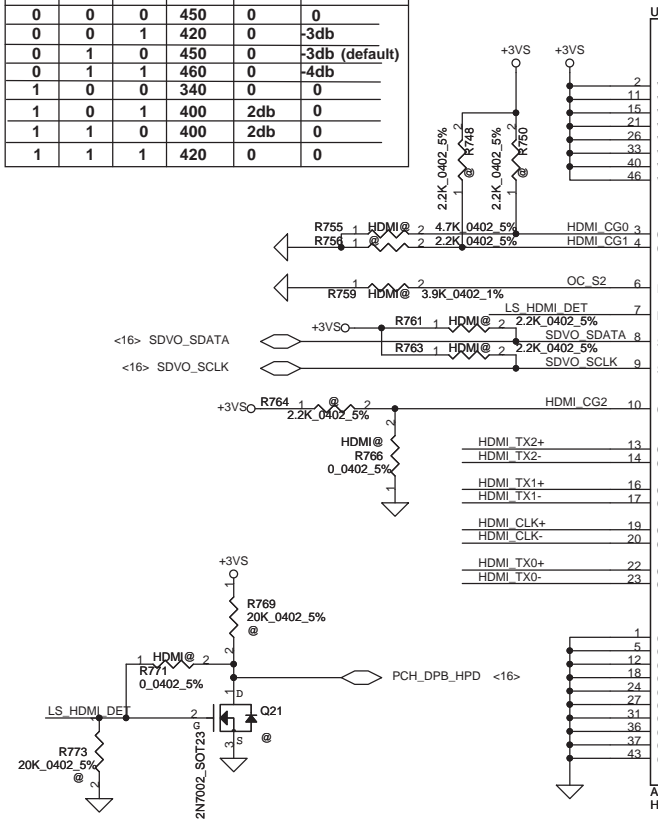
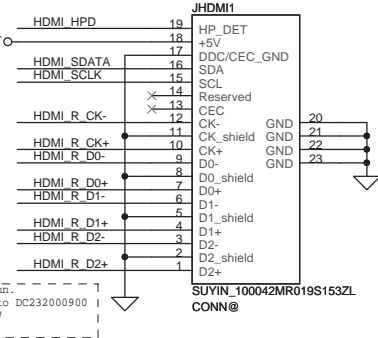
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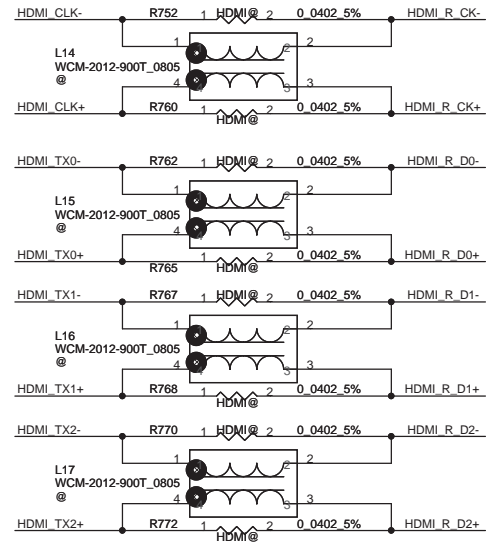
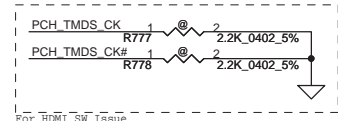
CG0	CG1	CG2	Swing	Pre-amp	Slew-rate
0	0	0	450	0	0
0	0	1	420	0	-3db
0	1	0	450	0	-3db (default)
0	1	1	460	0	-4db
1	0	0	340	0	0
1	0	1	400	2db	0
1	1	0	400	2db	0
1	1	1	420	0	0



## NAL00 HDMI connector



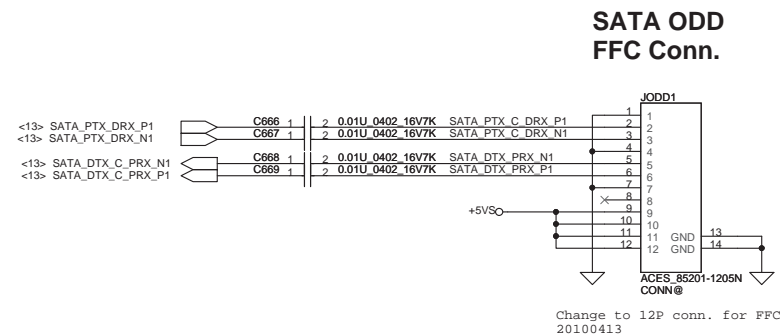
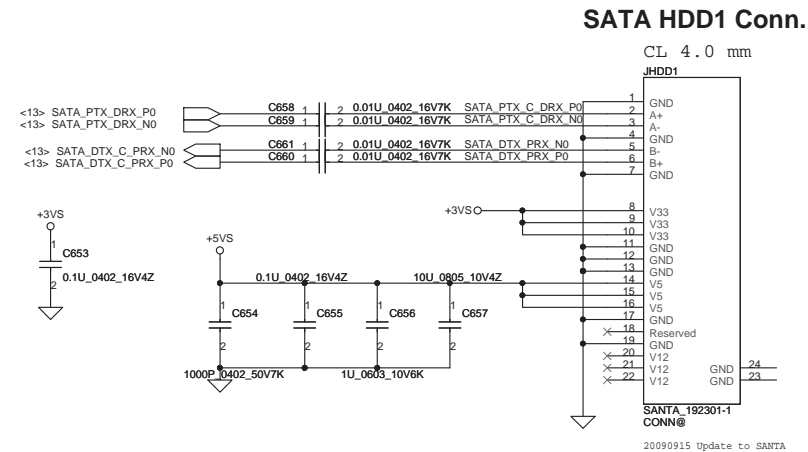
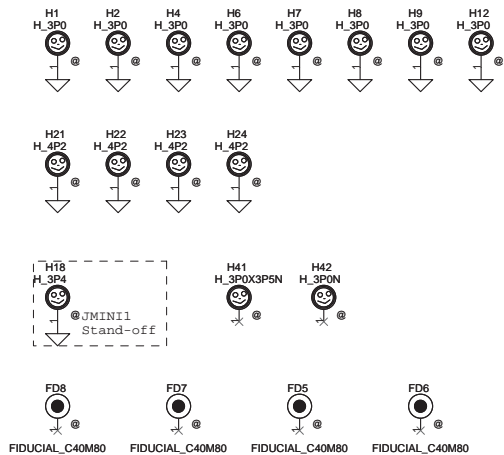
EQ0	EQ1	Equalization
0	0	12dB
0	1	9dB
1	0	6dB
1	1	3dB (default)



Change to TI P/N: SA00003DS00  
20100608

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								Size		Document Number		Rev	
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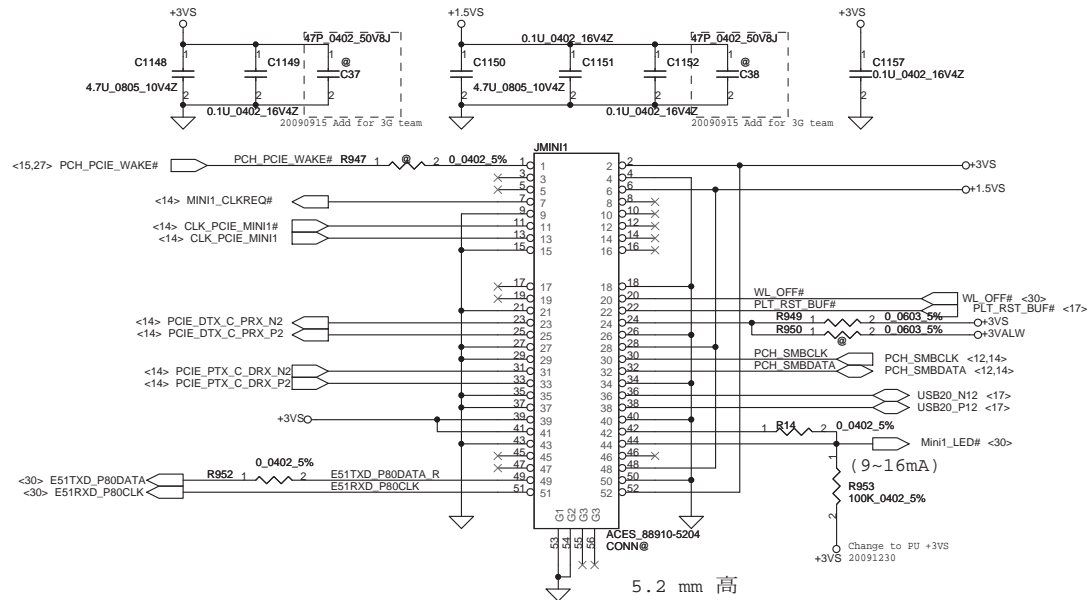




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## For Wireless LAN

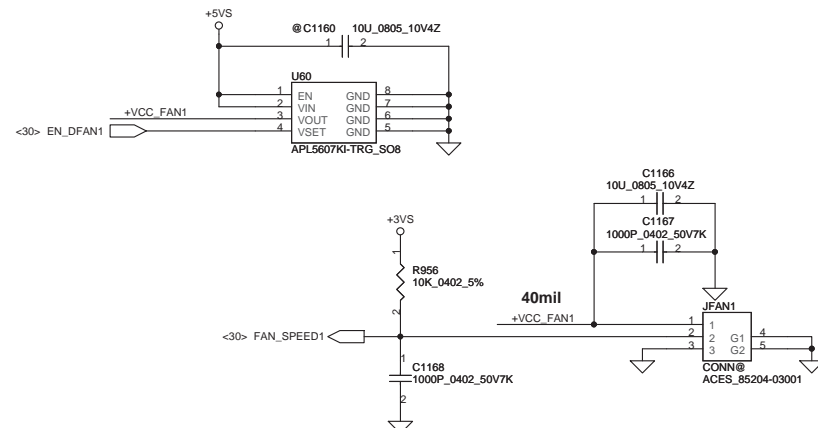


Mini Card Power Rating

Power	Primary Power (mA)		Auxiliary Power (mA)
	Peak	Normal	Normal
+3VS	1000	750	
+3V	330	250	250 (wake enable)
+1.5VS	500	375	5 (Not wake enable)

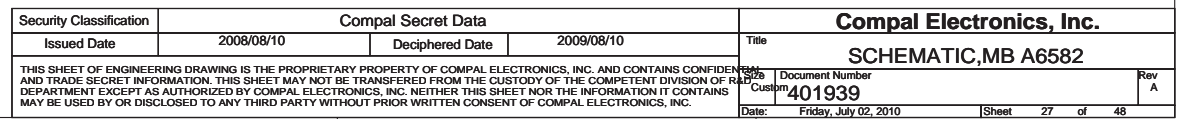
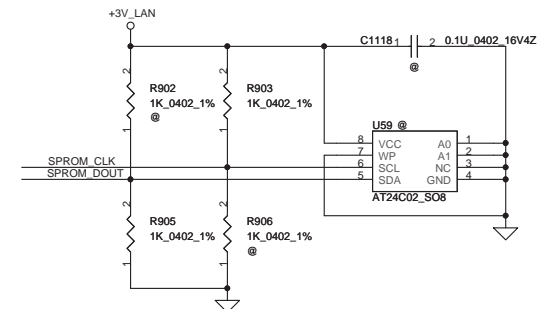
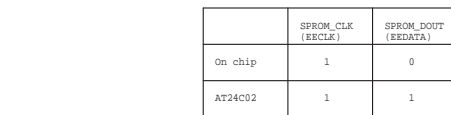
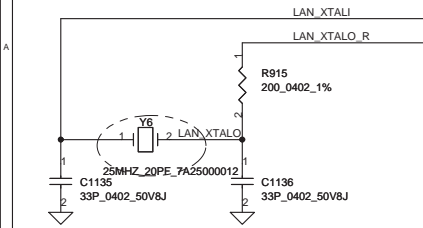
## Del 3G / GPS Module Connect

## FAN1 Conn



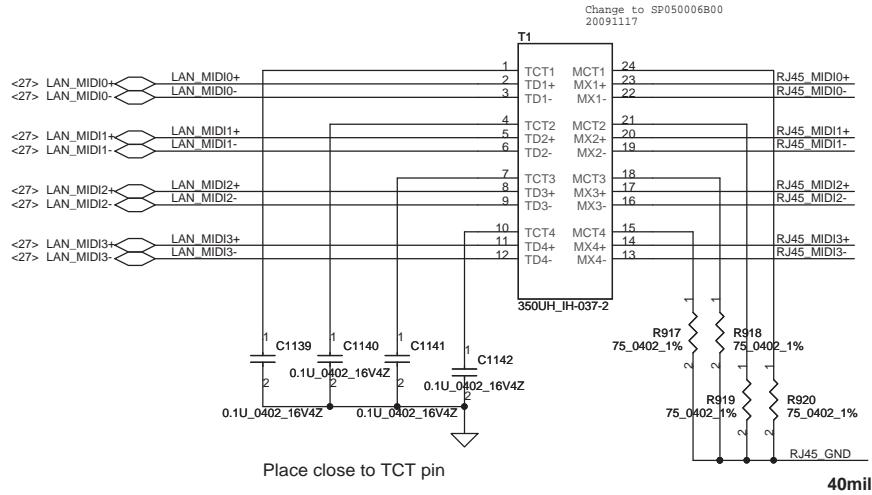
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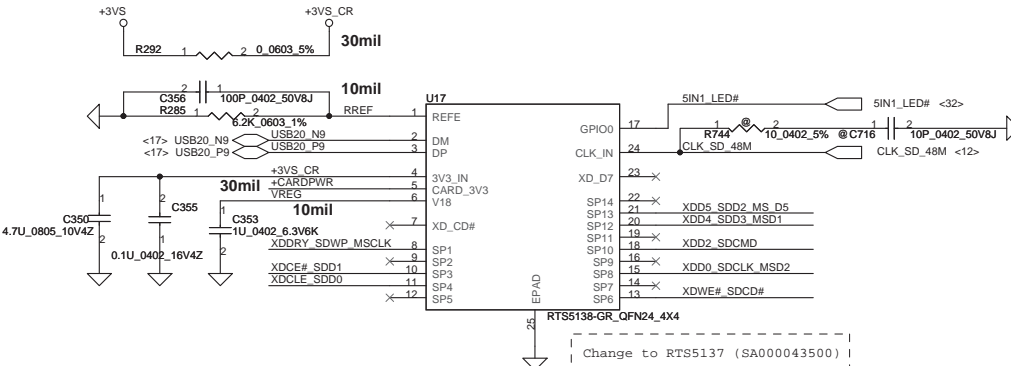


# LAN Connector

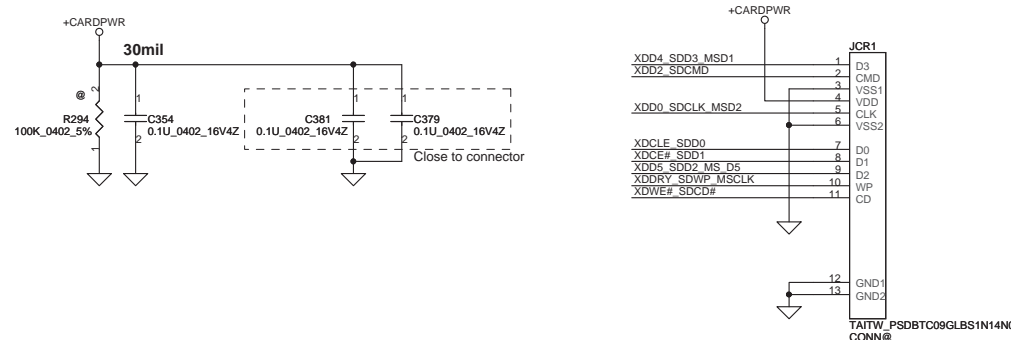




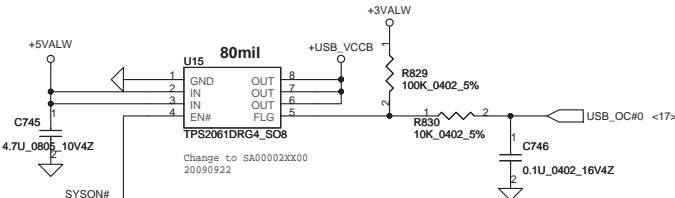
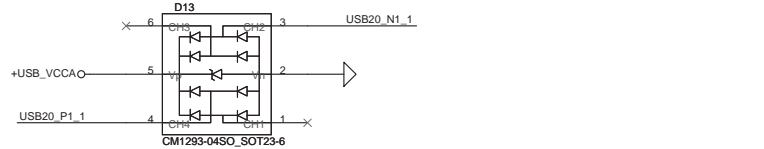
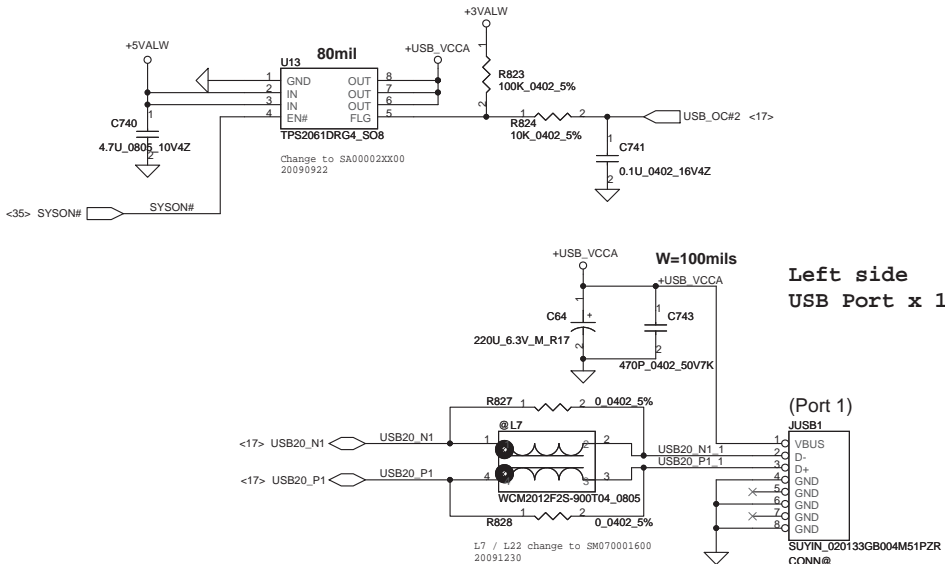
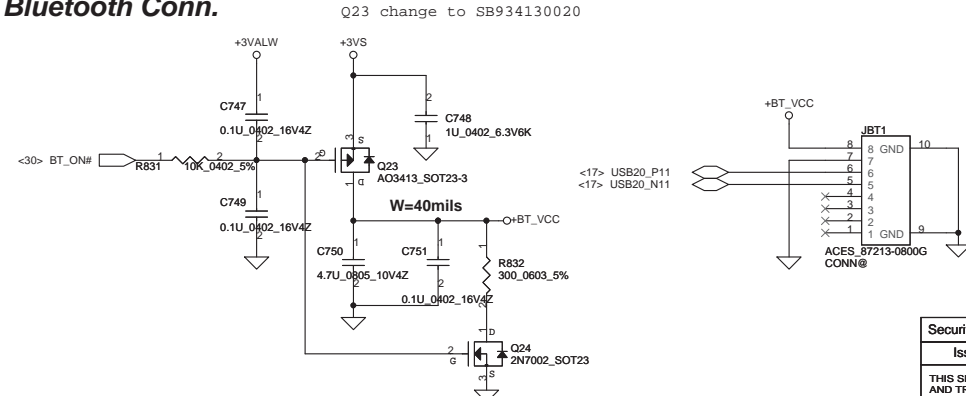
Card Reader RTS5138 / RTS5137  
(only SD+MMC function)



## Card Reader Connector

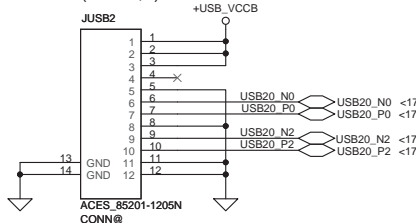


### **Bluetooth Conn.**



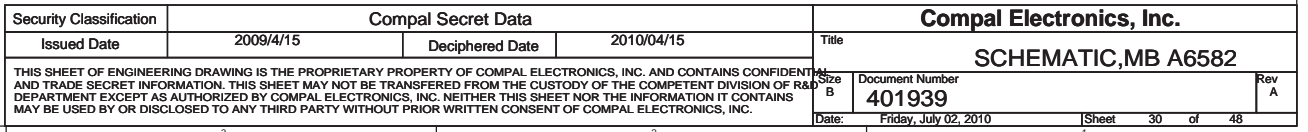
## USB/B Conn.

(Port 0,2)

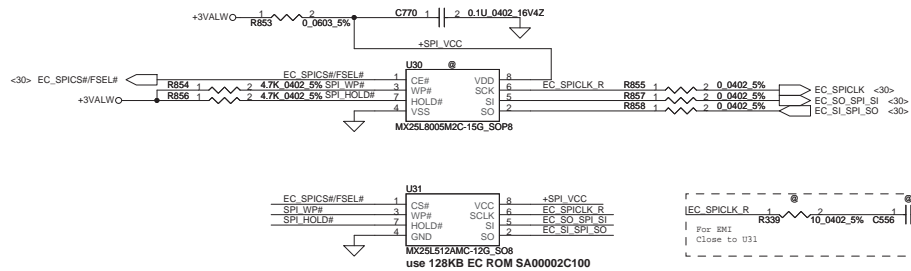
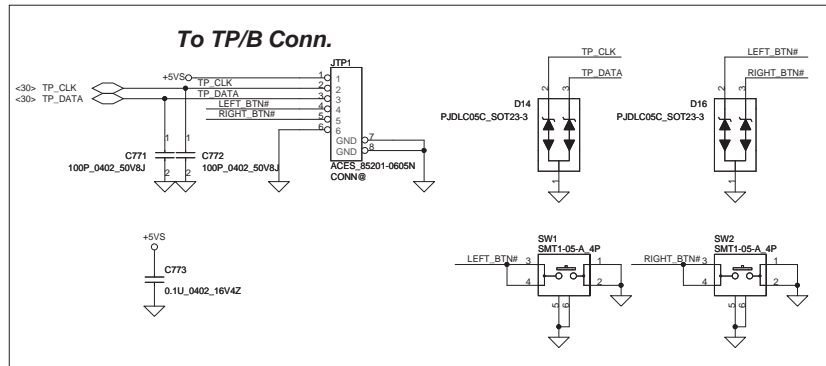
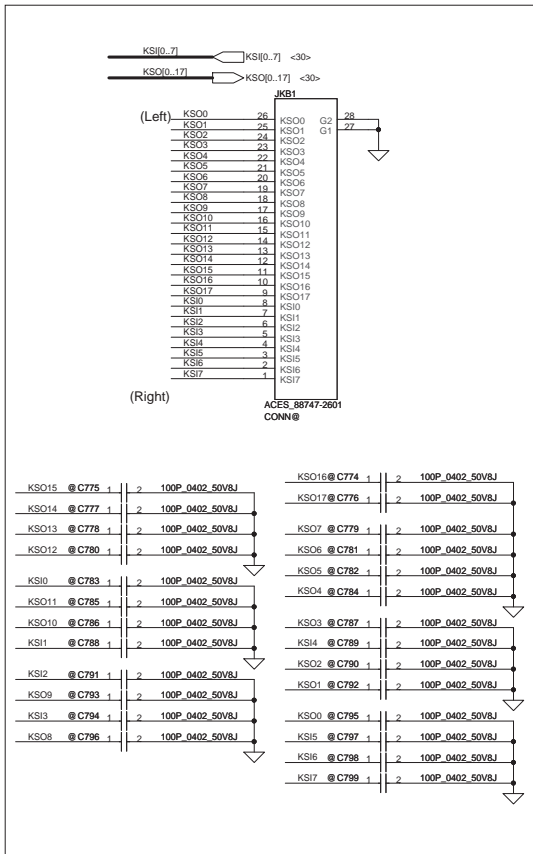


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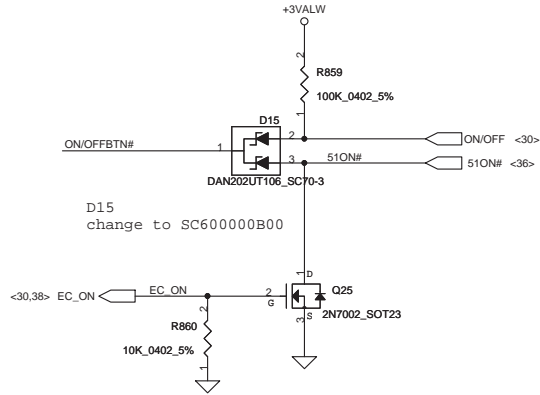
ENE suggestion SPI Frequency over 66MHz  
SST: 50MHz  
MXIC: 70MHz  
ST: 40MHz

### To BTN/B Conn.

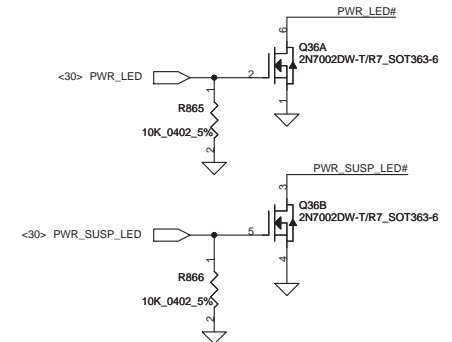
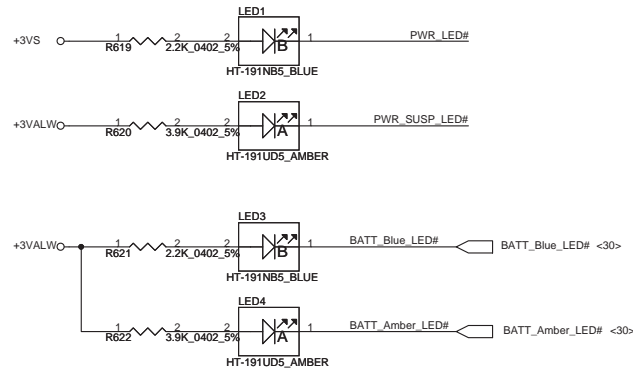
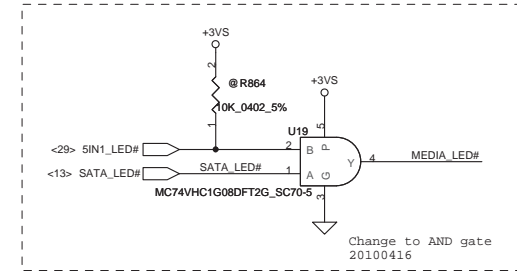
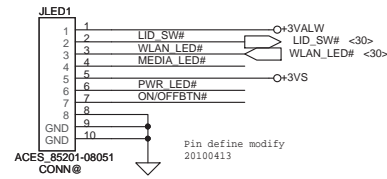
KSO0	KSO3
KSI1 KSI2 KSI3 KSI4 KSI5	Program_BTN# Volum up_BTN# Volum down_BTN# BT_BTN# Power save_BTN#



## Power Button

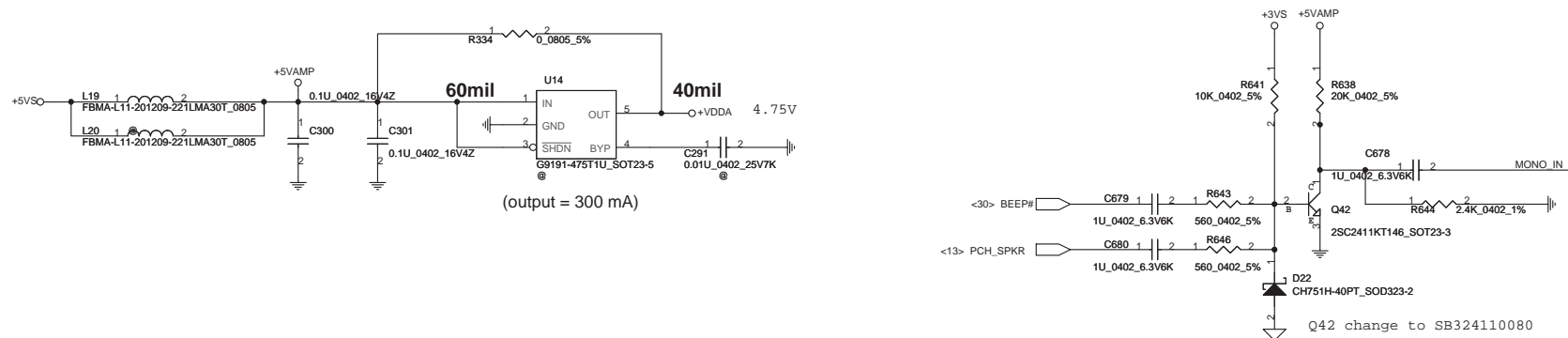


## LED/B LEFT

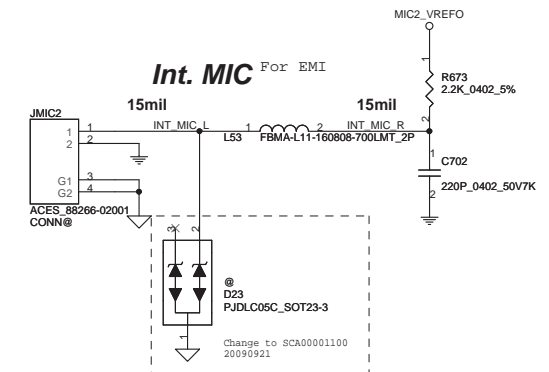
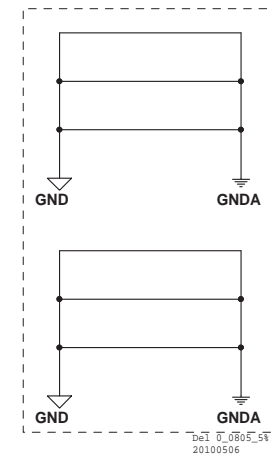
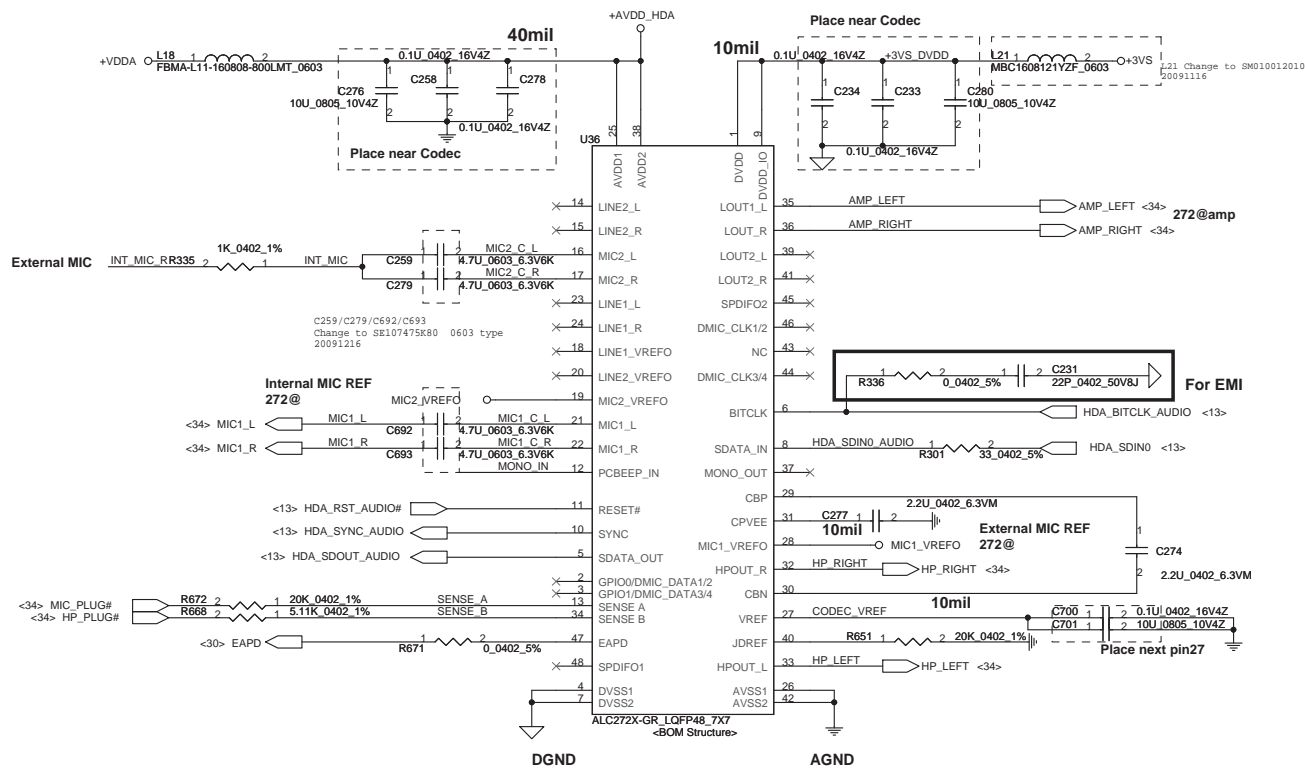


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### HD Audio Codec



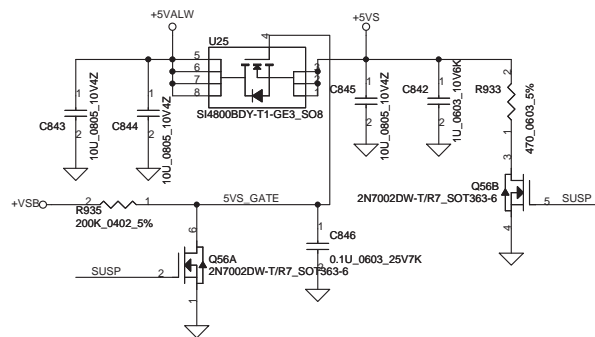
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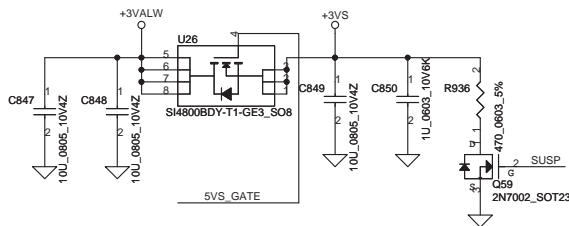




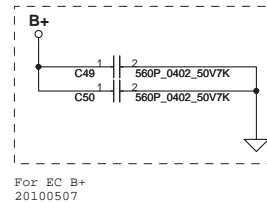
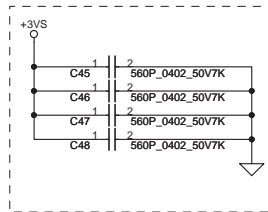
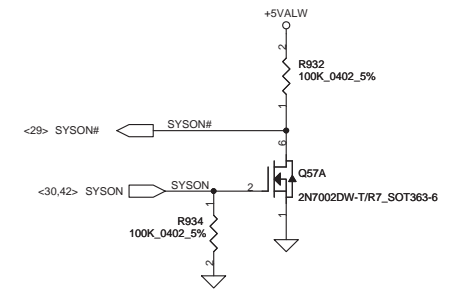
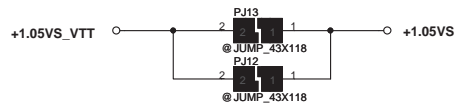
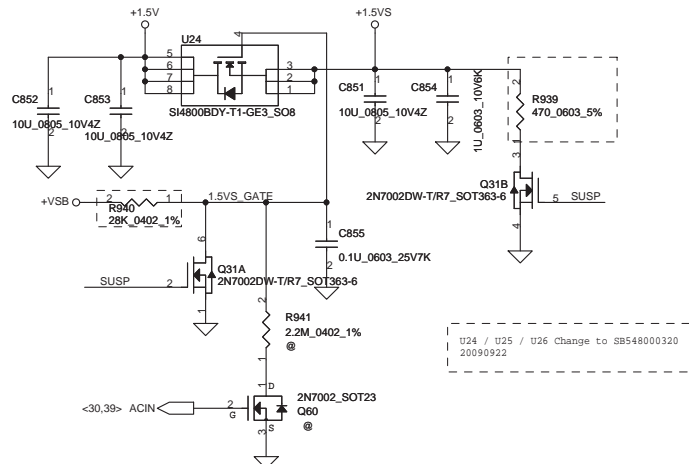
# +5VALW TO +5VS



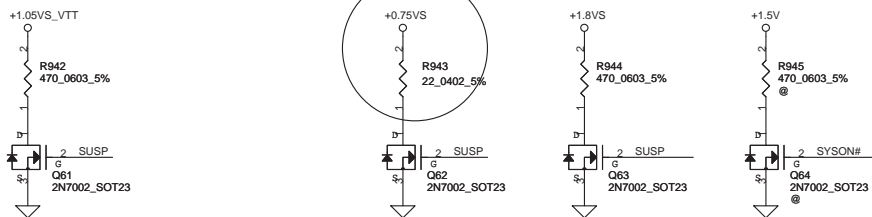
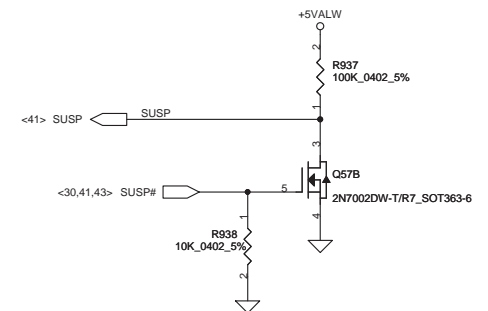
# +3VALW TO +3VS



# +1.5V to +1.5VS

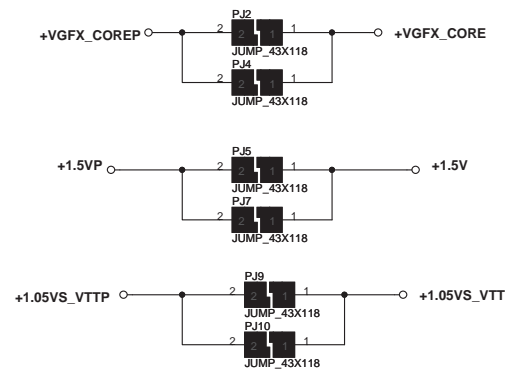
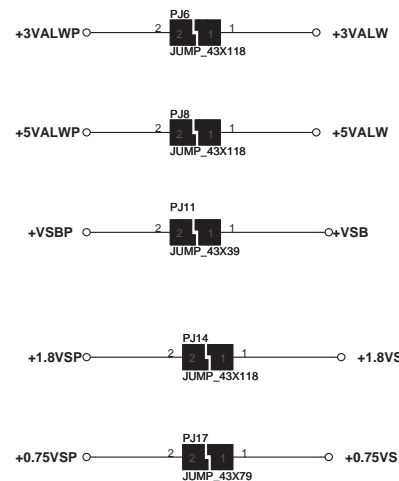
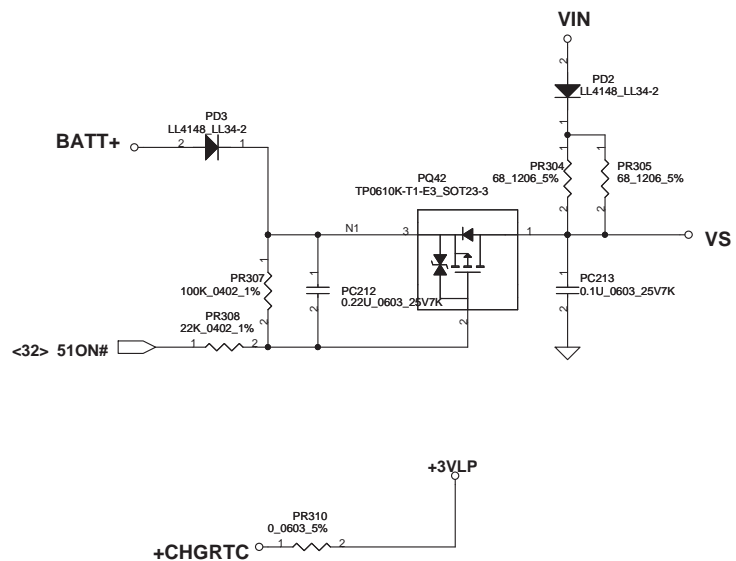
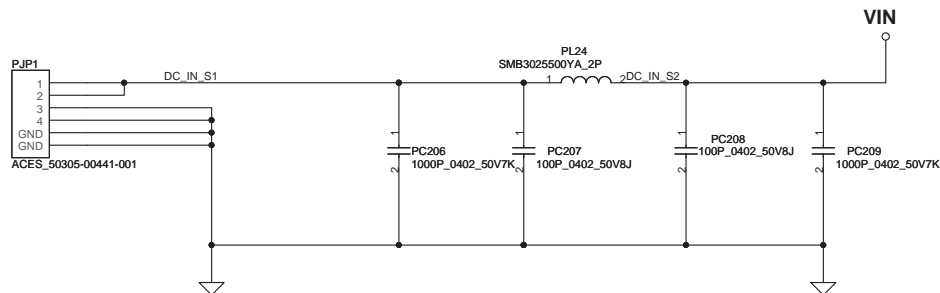


For LAM Common mode noise  
200911102330



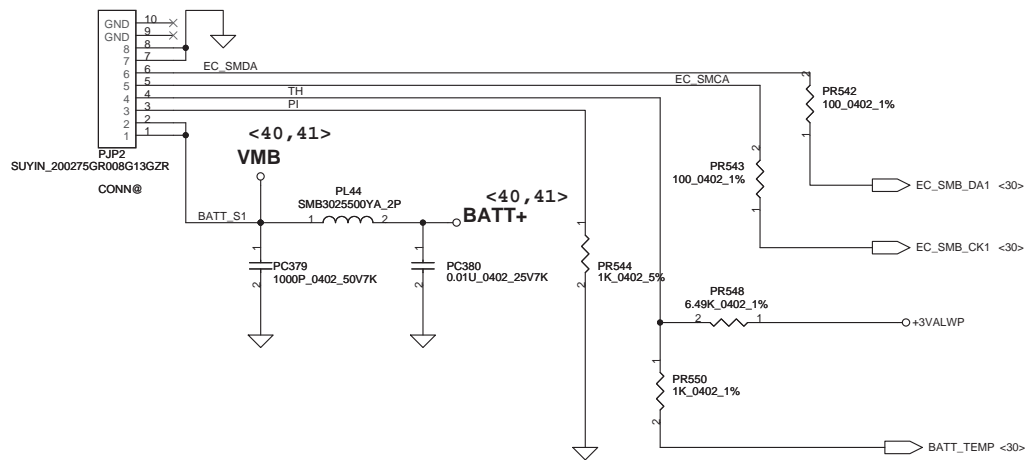
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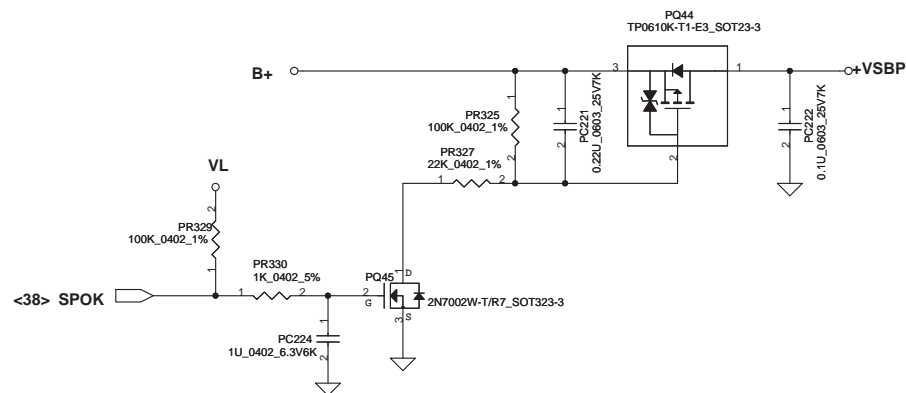
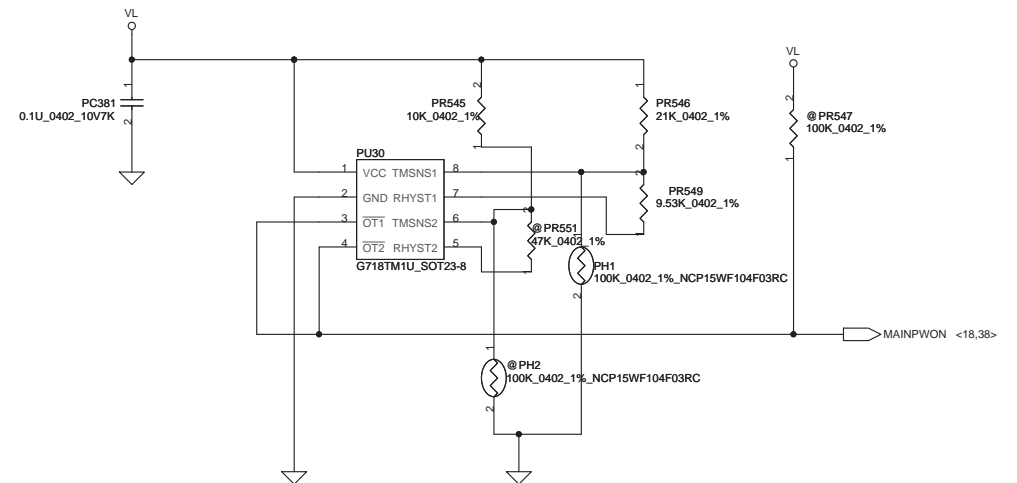


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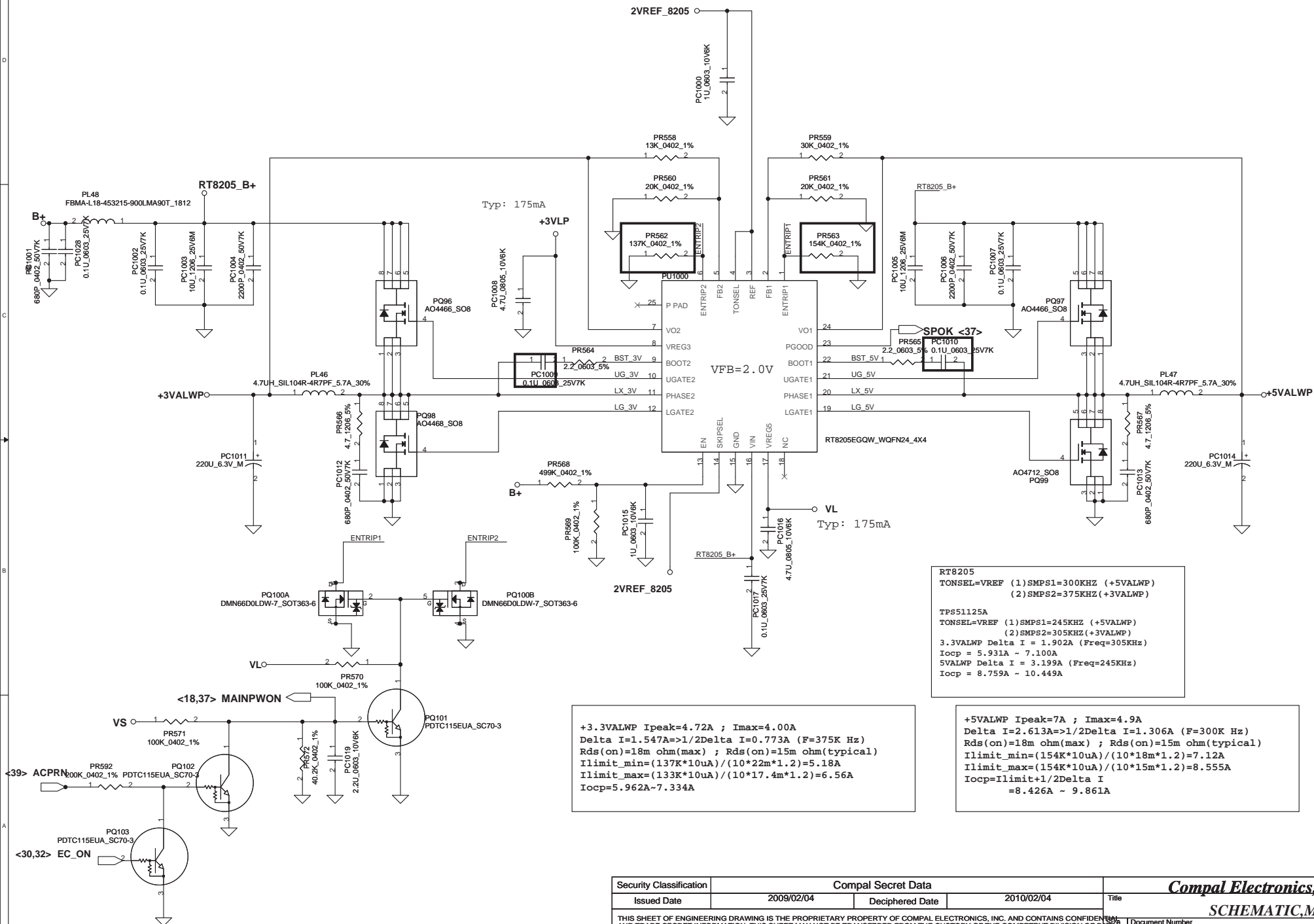
PH1 under CPU botten side :  
CPU thermal protection at 92 degree C  
Recovery at 56 degree C



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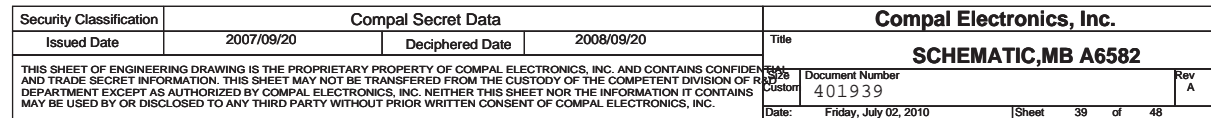


Note:  
Use TPS51125 IC can remove RTC refernece LDO  
Use TPS51427 IC must keep RTC refernece LDO



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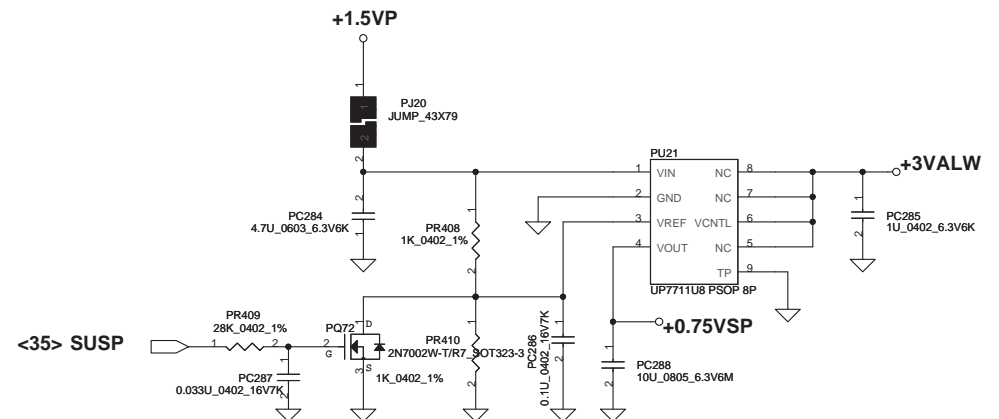
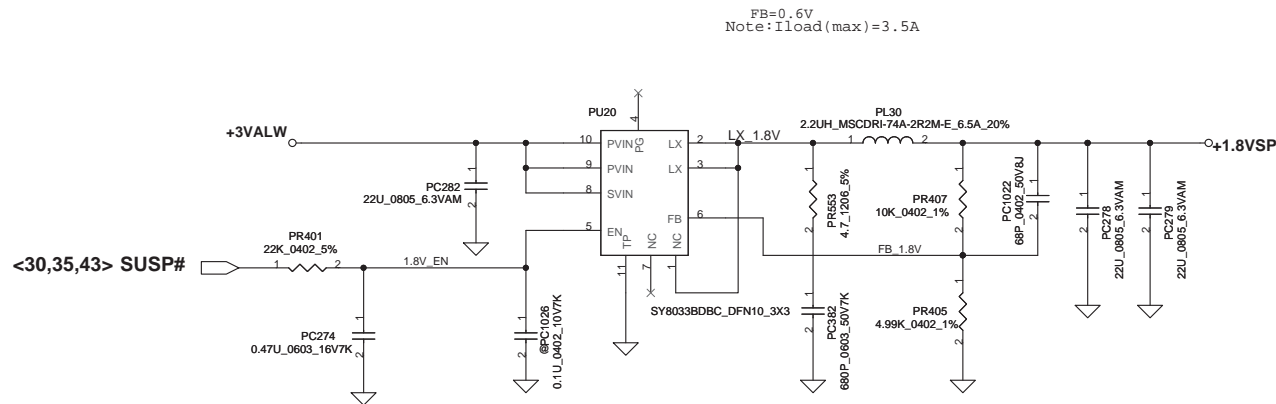


$$\begin{aligned} \text{CP} &= 85\% \cdot I_{\text{ada}} ; \text{CP} = 4.07\text{A} \\ \text{CP} &= 85\% \cdot I_{\text{ada}} ; \text{CP} = 2.91\text{A} \end{aligned}$$




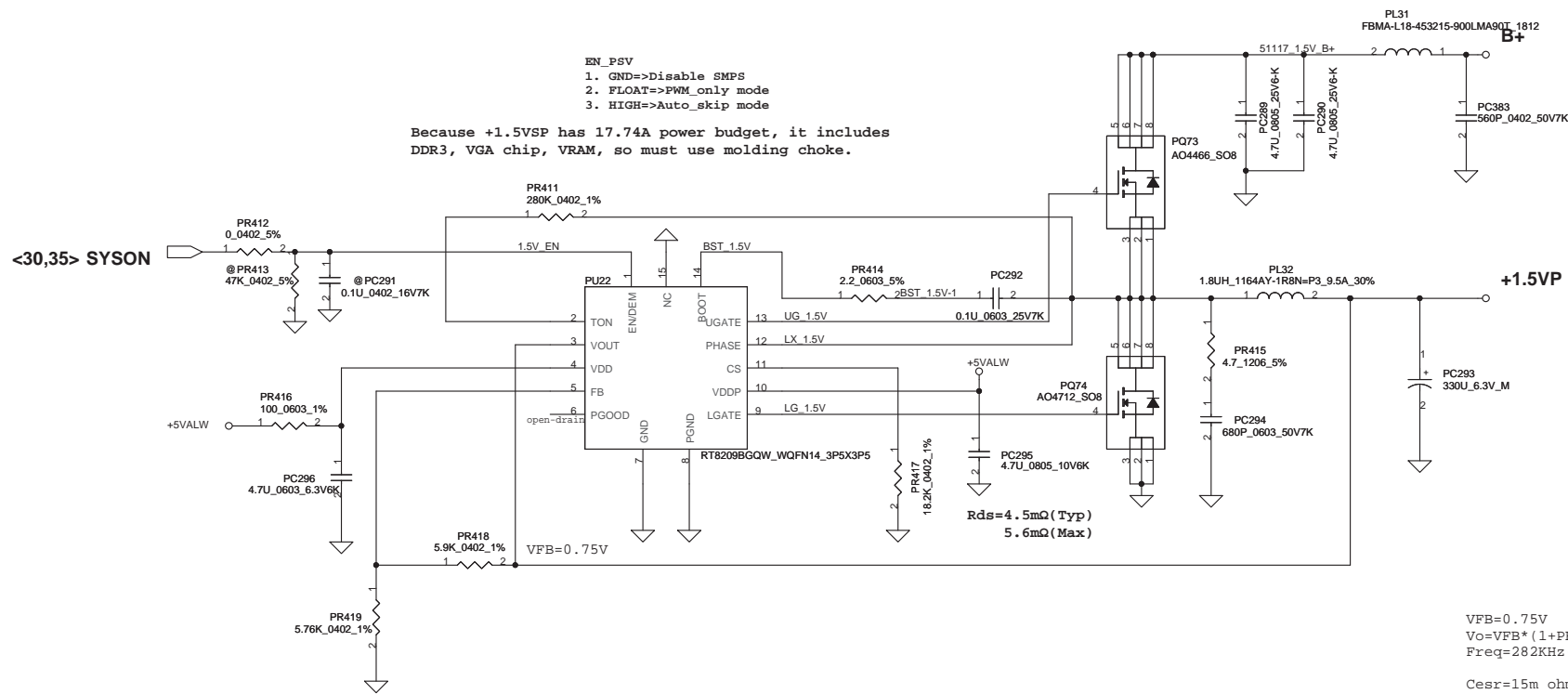






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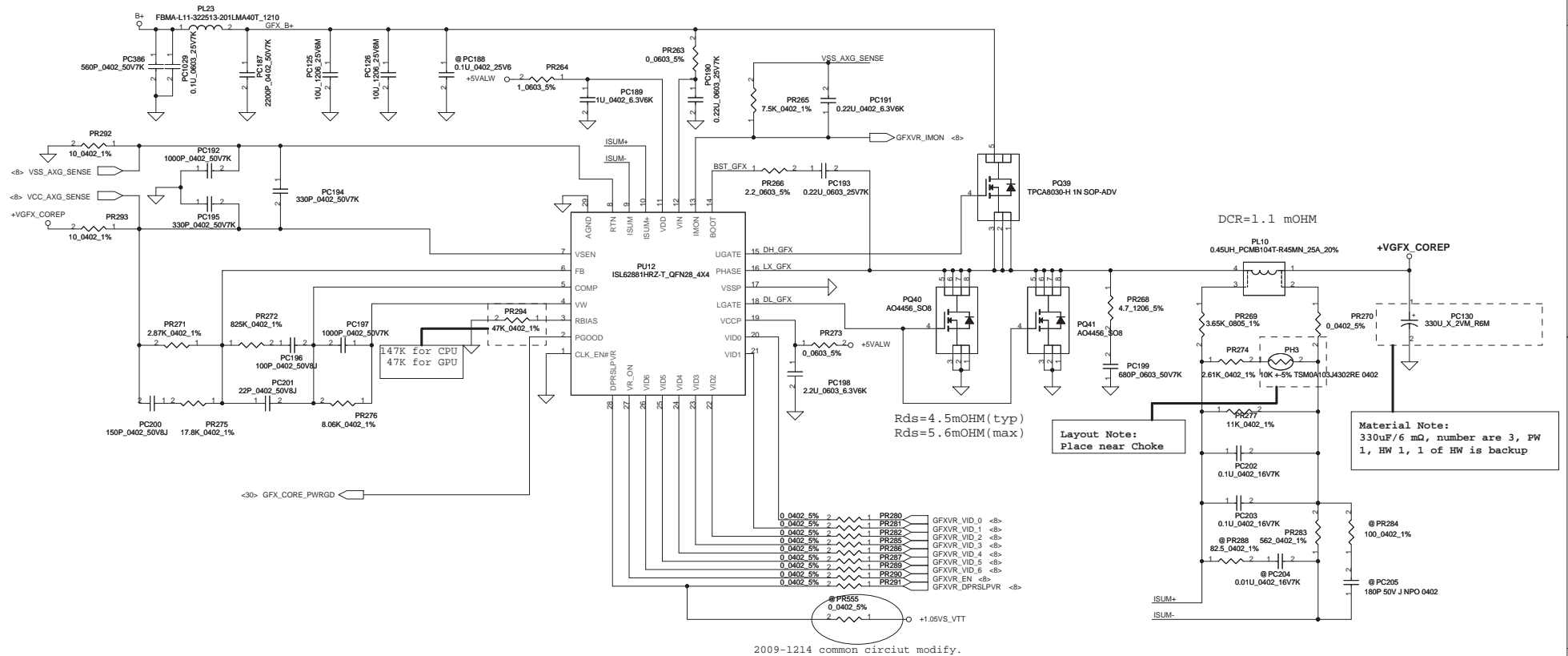




```

Intel Auburndale CPU(Integrate Graphics) Ipeak=22A Imax=15A
OCP calculation : (Assume DCR=1.1m ohm
G1=Rn/(Rn+Rsum)=0.617
       when Rn=PR277 // (PR274+PH3)=5.875k ohm
Rsum=PR269=3.65k ohm
LL=2*Rdroop*G1*DCR/Ri= 6.96m V/A
       when Rdroop=PR271=8.86k ohm, Ri=PR283=1.69k ohm
Iocp=OCP Threshold*Rdroop/LL=24.89A

```

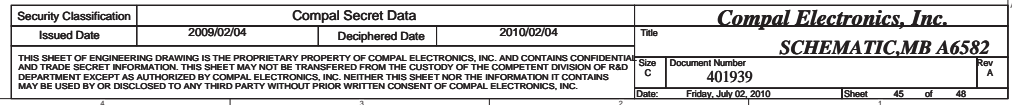


2009-1214 common circuit modify.

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	HFM_VID	HFM_Icc	LL	Icc_TDC	Icc_Dy
Auburndale 45W	1.075	50	1.9m	37	35
Auburndale 35W	0.975	38	1.9m	29	27
Clarksfield SV	0.95	51	1.9m	38	39
Clarksfield XE	0.95	65	TBD	48	TBD





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

Page 1 of 2 for PWR

Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
1					Change PR353 from SD034470280 to SD034200380.		
2	Pre-Charge circiut update.	Pre-Charge circiut disable in EVT, now modify and enable it.	0.1	39	Change PR371 from SD034220280 to SD034470280. Change PR587 from SD034100380 to SD034470280. Change PR590 from SD034200280 to SD034143280. Change PR591 from SD028470280 to SD028100380.	2010/06/08	to PVT
3					Add PC1027 SE074222K80(S CER CAP 2200P 0402 50V7K) Change PQ111 from SB000006800 to SB301150200		
4	Pre-Charge circiut update.	Pre-Charge circiut disable in EVT, now modify and enable it.	0.1	38	Add PQ102 and PQ103 SB301150200. Add PR592 SD034200380.	2010/06/08	to PVT
5	Pre-Charge circiut update.	Pre-Charge circiut disable in EVT, now modify and enable it.	0.1	40	Change PR386 from SD011000080 to SD011100180. Add PR388, PR390, PR391 SD011100180. Add PD14 SC100001Y80 LL4148_LL34-2	2010/06/08	to PVT
6					Add PR566 and PR567 SD001470B80 S RES 4.7 1206 5%		
7	EMI fail, add 3/5V snubber and Boost Resister to silve it.	EMI request to solve EMI issue.	0.1	38	Add PC1012 and PC1013 SE074681K80 S CER CAP 680P 0402 50V7K	2010/06/08	to PVT
8					Change PR564 and PR565 from SD013000080 to SD013220B80		
	EMI fail, add 1.5V snubber.	EMI request to solve EMI issue.	0.1	42	Add PR415 SD001470B80 4.7 1206 5%. Add PC294 SE025681K80 S CER CAP 680P 50V K X7R 0603	2010/06/08	to PVT
9					Add PR465 SD001470B80 4.7 1206 5%.		
	EMI fail, add 1.05V snubber. and Boost Resister.	EMI request to solve EMI issue.	0.1	43	Add PC332 SE025681K80 S CER CAP 680P 50V K X7R 0603	2010/06/08	to PVT
10					Change PR461 from SD013000080 to SD013220B80		
	EMI fail, add GFX_CORE snubber.	EMI request to solve EMI issue.	0.1	44	Add PR268 SD001470B80 4.7 1206 5%. Add PC199 SE025681K80 S CER CAP 680P 50V K X7R 0603	2010/06/08	to PVT
12	HW power sequence modify.	HW request.	0.1	43	Change PR466 from SD034576280 S RES 1/16W 57.6K +-1% 0402 to SD034806280 S RES 80.6K 0402 1%)	2010/06/08	to PVT
13					Change PC331 from SE076104K80 S CER CAP .1U 16V K X7R to SE00000R700 S CER CAP 0.22U 16V K X7R 0402		
14	BOM unique.	BOM unique.	0.1	38	Chnage PQ101 from SB301150000 to SB301150200.	2010/06/08	to PVT
15	EMI request.	EMI request.	0.1	38	Add PC1028 SE042104K80 S CER CAP .1U 25V K X7R 0603	2010/06/08	to PVT
16	EMI request.	EMI request.	0.1	44	Add PC1029 SE042104K80 S CER CAP .1U 25V K X7R 0603	2010/06/08	to PVT
17	Sourcer request to change a common part.	Sourcer request.	0.1	38	Change PC1019 from SE00000GC00 S CER CAP 2.2U 10V K X7R 0603 to SE000003H00 S CER CAP 2.2UF 10V K X5R 0603	2010/06/08	to PVT
18	Per sourcer request.	Sourcer request to change PC331 from SE00000R700 to SE026224K80 for common part.	0.1	43	change PC331 from SE00000R700 to SE026224K80	2010/06/08	to PVT
19	CPU transient issue.	Need modify PC362 to 330P due to transient fail.	0.1	45	Change PC362 from SE074561K80 S CER CAP 560P 50V K X7R 0402 to SE074331K80 S CER CAP 330P 50V K X7R 0402	2010/06/08	to PVT
20	Per sourcer request.	Per sourcer request.	0.1	43 44	Chnage PQ39/PQ82 from SB000008L80 to SB00000HL00.	2010/06/08	to PVT
21	Cost down.	Cost down 3VALWP and Charger Low Side MOS.	0.1	38 39	Change PQ98 from SB00000AJ00 to SB000009580(AO4468). Change PQ64 from SB00000CG00 to SB000009580(AO4468).	2010/06/08	to PVT
22	Cost down.	Cost down +1.5VP Low side MOS and choke.	0.1	42	Chnage PQ74 from SB000009F80 to SB00000AJ00(AO4712). CHnage PL32 from SH000009U00 to SH000009680.	2010/06/08	to PVT
23	Cost down.	re-caculate 1.5VP OCP.	0.1	42	Change PR417 from SD034110280 to SD034182280.	2010/06/08	to PVT

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Item	Fixed Issue	Reason for change	Rev.	PG#	Modify List	Date	Phase
24	Cost down.	re-caculate +3VALWP OCP.	0.1	38	Change PR562 from SD034107380 to SD034137380.	2010/06/08	to PVT
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Version change list (P.I.R. List)

Item	Phase	PAGE	DATE	Modifycatio list	Purpose
1	EVT		04 / 08 04 / 16  04 / 21   04 / 26 04 / 27 04 / 29  04 / 29 05 / 03  05 / 03 05 / 06  05 / 07 05 / 10 05 / 11 05 / 12 05 / 13	N/A Modify RTC SCH Change LAN to AR8152 Update Power SCH Update AND Gate symbol - U1 / U2 / U6 / U7 / U19 Update Power MOS symbol - U24 / U25 / U26 C196 change to 1U for INTEL design CLK GEN del C35 / C36 / C30 / C31 / C32 / C33 / C34 / L3 (for 3G@ and @ function) Q4+Q6 change to 2N7002DW Update U8 symbol Add DMIC function Modify USB define. Update Power SCH Add R17 for DMIC power Update Power SCH Change LAN to 61GA&10/100 co-lay Del R307 (LVDS conn.) Change +1.05VS_VTT to +1.05VS (CLK GEN) Change C842 / C850 / C854 / C656 to SE080105K80 1U_0603_10V6K Change R940 to 28K (S3 Power sequence) SW T1 pin define (LAN) Change R907 (0 0603) to 0 1206 5% Remove C40 / C41 / C42 / C43 / C44 Change FAN Conn. Update Power SCH Change LAN to BCM57780 61GA Del R637 / R639 / R640 / R645 / R647 / R648 (AUDIO) Del DMIC Update Power SCH Update Power SCH Add C49 / C50 (EC B+) Update Power SCH C764 / C765 change to 18P 0402_50V8J (EC) Reserve D13 / D24 / D30 (ESD) U17 change to RT55137 (SA000043500) Card reader Update Power SCH	
			06 / 01  06 / 02     06 / 03 06 / 04 06 / 10	Unpop L11 / C247 & Pop R304 for cost down Unpop C764 / X2 & Pop R13 & C765 Change to 100K for EC remove Crystal Pop R834 & R835 change to 200K for Project ID Unpop D24 / D30 Unpop R690 / R691 Pop C49 / C50 For HDMI  Unpop R753 / R757 , Add R754 / R758 to 0 ohm. Change R759 to 3.9K. Change R755 to 4.7K ohm , Unpop R748. Unpop R778.  R833 / R292 0 0805 change to 0 0603. C190 / C191 & C1135 / C1136 change to 33P 0402 50V8J for Vender test report Unpop C774~C799 for EMI cost down. Update Power SCH Add T25 / T26 / T27	