

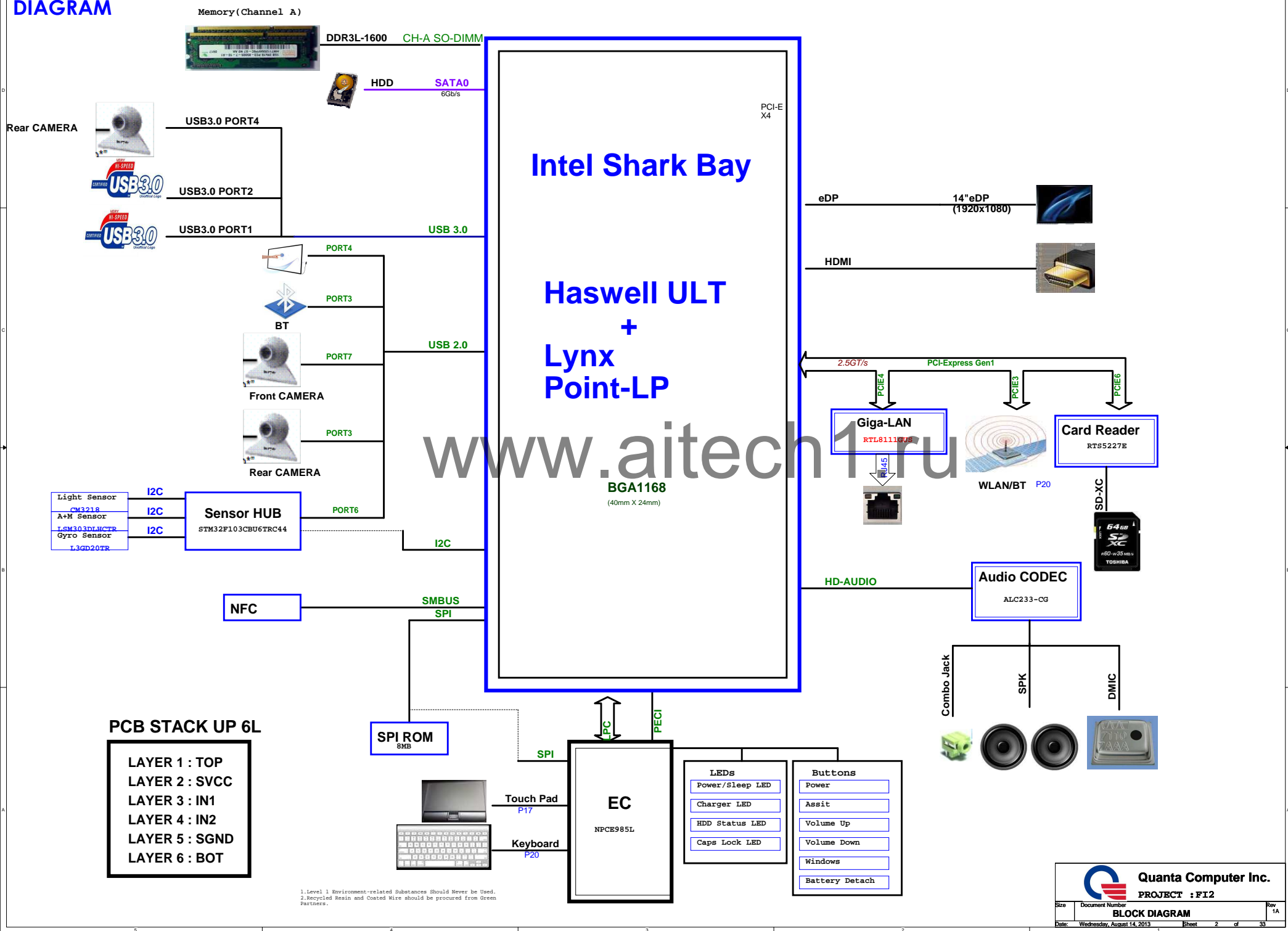
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05	HSW MCP(MEMORY/GND)	1A	
06	HSW MCP(CFG/PwrMGT)	1A	
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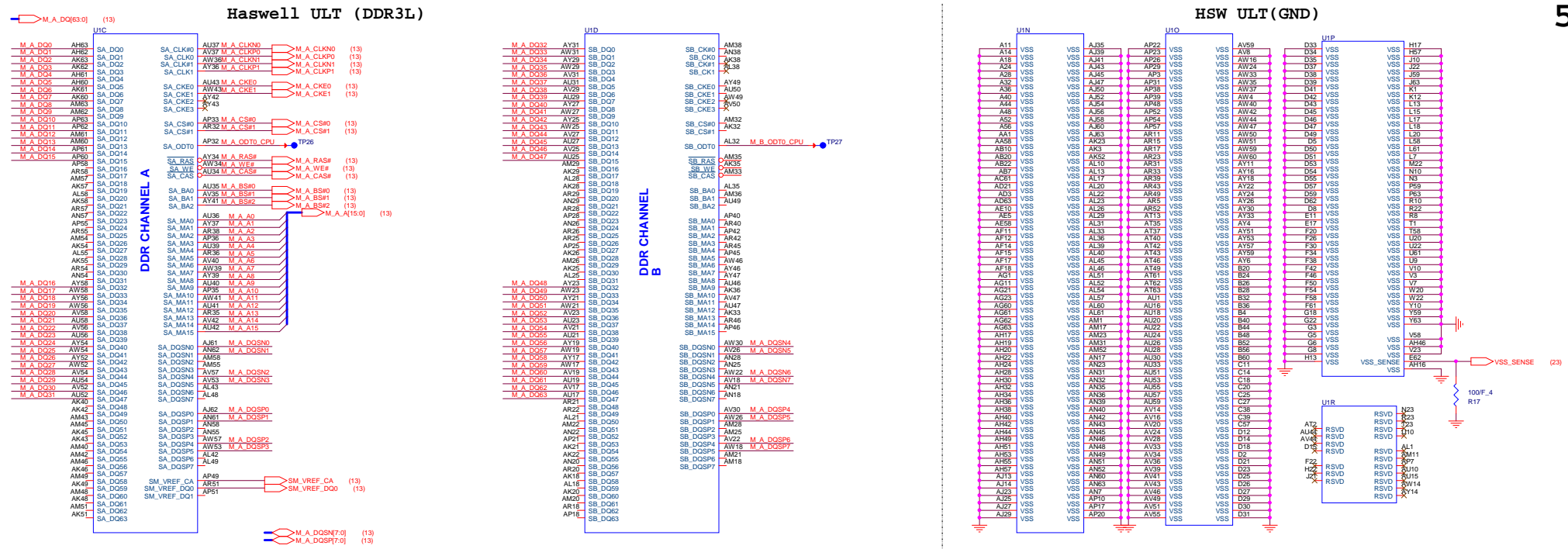
* : No mount
L@ : For LVDS output
D@ : For eDP output
E@ : For DIS GFX
I@ : For UMA

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FI2 BLOCK
DIAGRAM

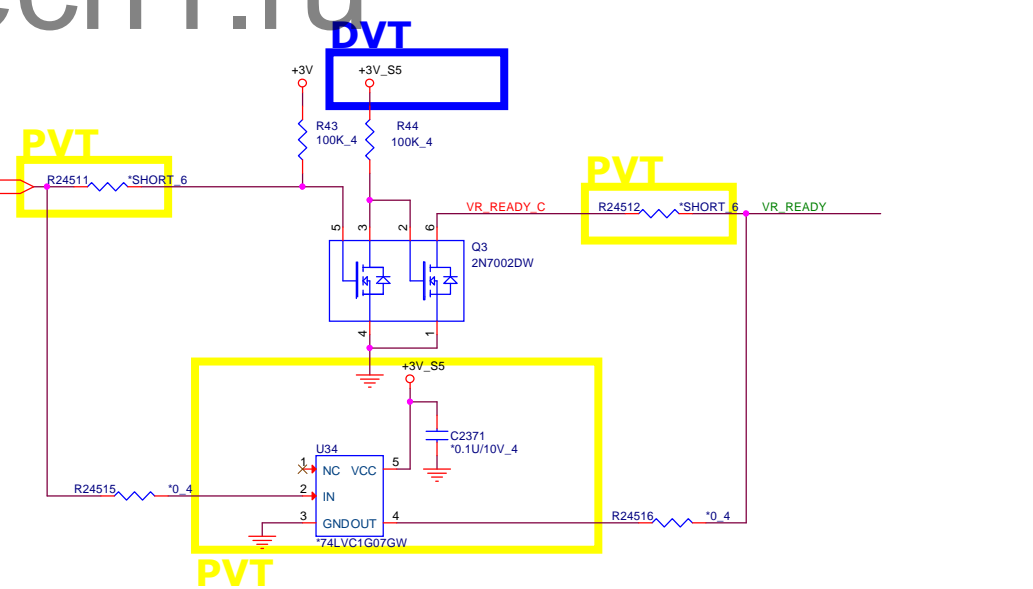
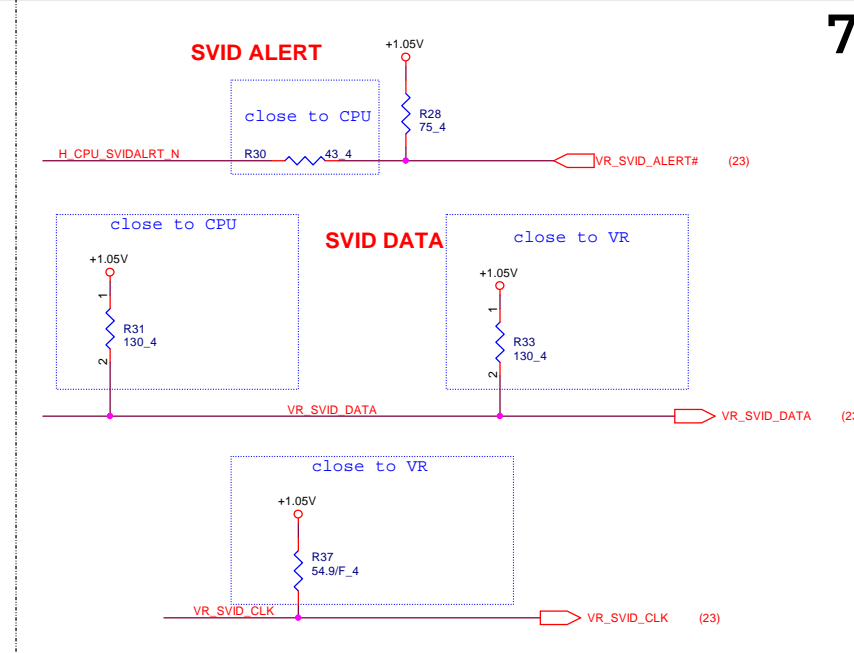
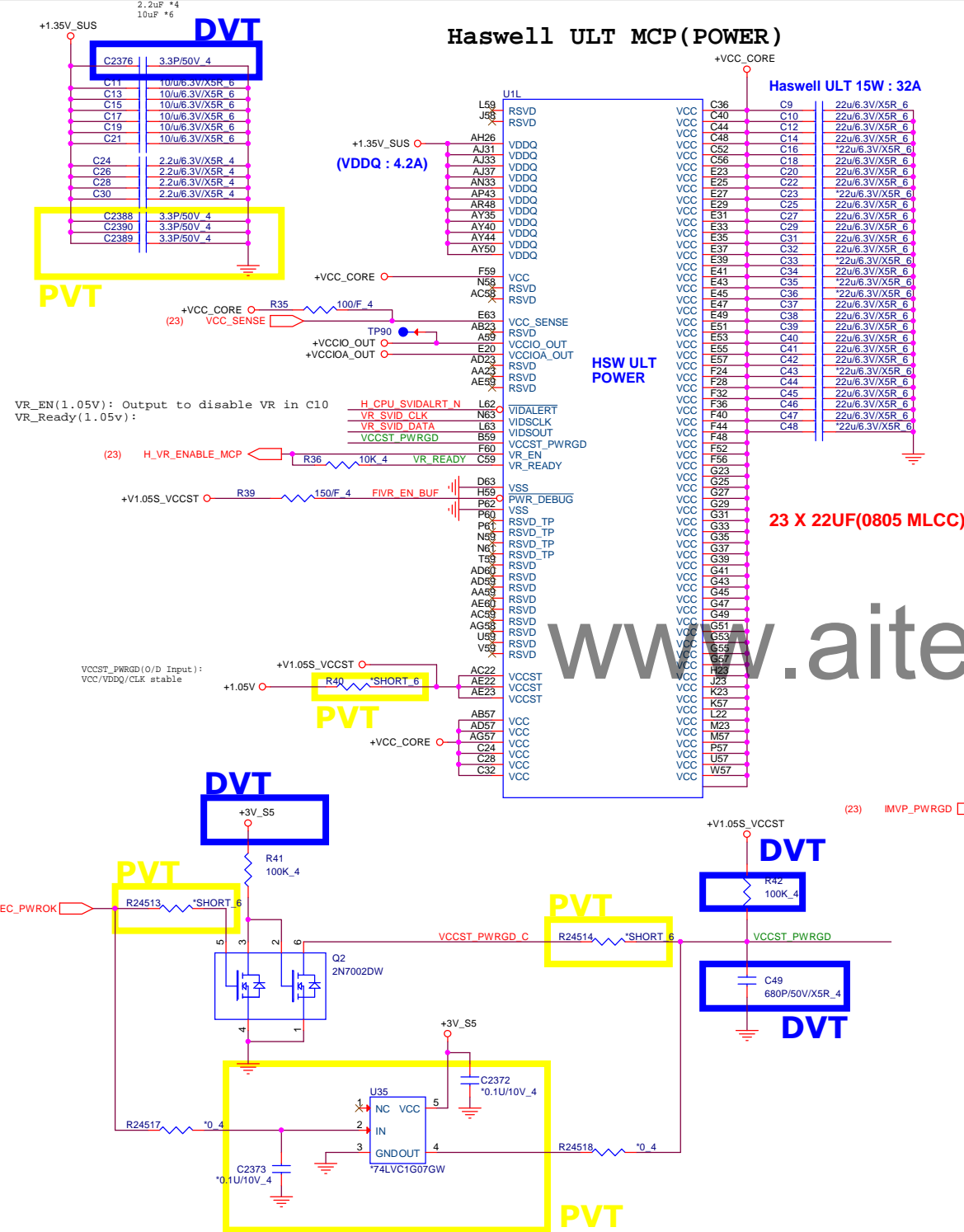


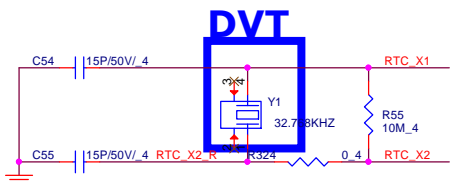
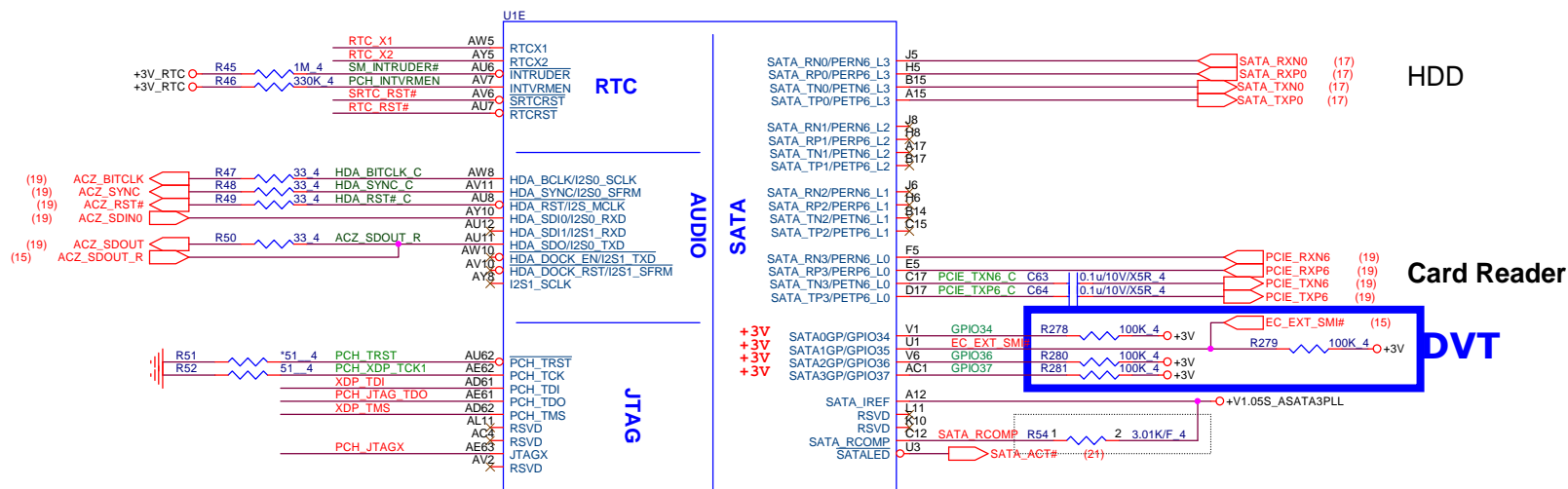
1.Level 1 Environment-related Substances should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.



CFG0	CFG1	CFG3	CFG4	CFG8	CFG9	CFG10
EAR-STALL/NOT STALL RESET SEQUENCE AFTER PCU PLL IS LOCKED	(DEFAULT) NORMAL OPERATION; NO STALL	STALL				
CFG1 PCH/ PCH LESS MODE SELECTION	(DEFAULT) NORMAL OPERATION	PCH-LESS MODE				
CFG3 PHYSICAL_DEBUG_ENABLED (DFX PRIVACY)	DISABLED	ENABLED SET DFX ENABLED BIT IN DEBUG INTERFACE MSR				
CFG4 DISPLAY PORT PRESENCE STRAP	DISABLED NO PHYSICAL DISPLAY PORT ATTACHED TO EMBEDDED DISPLAY PORT	ENABLED; NOA WILL BE AVAILABLE REGARDLESS OF THE LOCKING OF THE UNIT				
CFG8 ALLOW THE USE OF NOA ON LOCKED UNITS	DISABLED(DEFAULT); IN THIS CASE, NOA WILL BE DISABLED IN LOCKED UNITS AND ENABLED IN UN-LOCKED UNITS	ENABLED AN EXTERNAL DISPLAY PORT DEVICE IS CONNECTED TO THE EMBEDDED DISPLAY PORT				
CFG9 NO SVID PROTOCOL CAPABLE VR CONNECTED	VRS SUPPORTING SVID PROTOCOL ARE PRESENT	NO VR SUPPORTING SVID IS PRESENT. THE CHIP WILL NOT GENERATE (OR RESPOND TO) SVID ACTIVITY				
CFG10 SAFE MODE BOOT	POWER FEATURES ACTIVATED DURING RESET	POWER FEATURES (ESPECIALLY CLOCK GATINE ARE NOT ACTIVATED				

```
Haswell ULT MCP(POWER)
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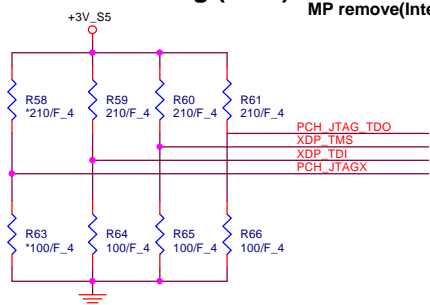




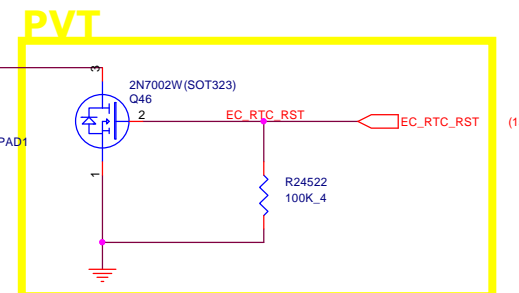
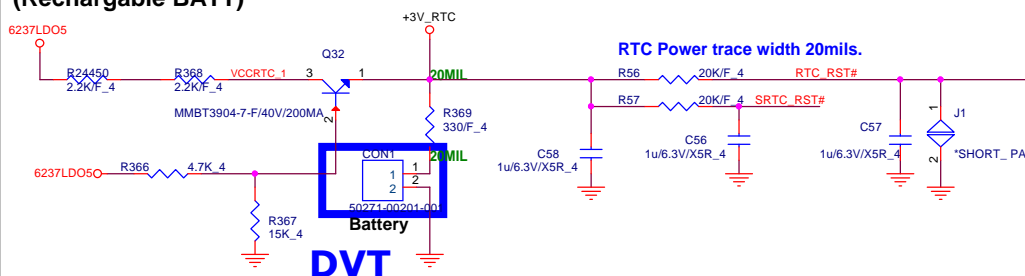
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PCH JTAG Debug (CLG)

MP remove(Intel)



RTC Circuitry (RTC) (Rechargeable BATT)



PCH Strap Table

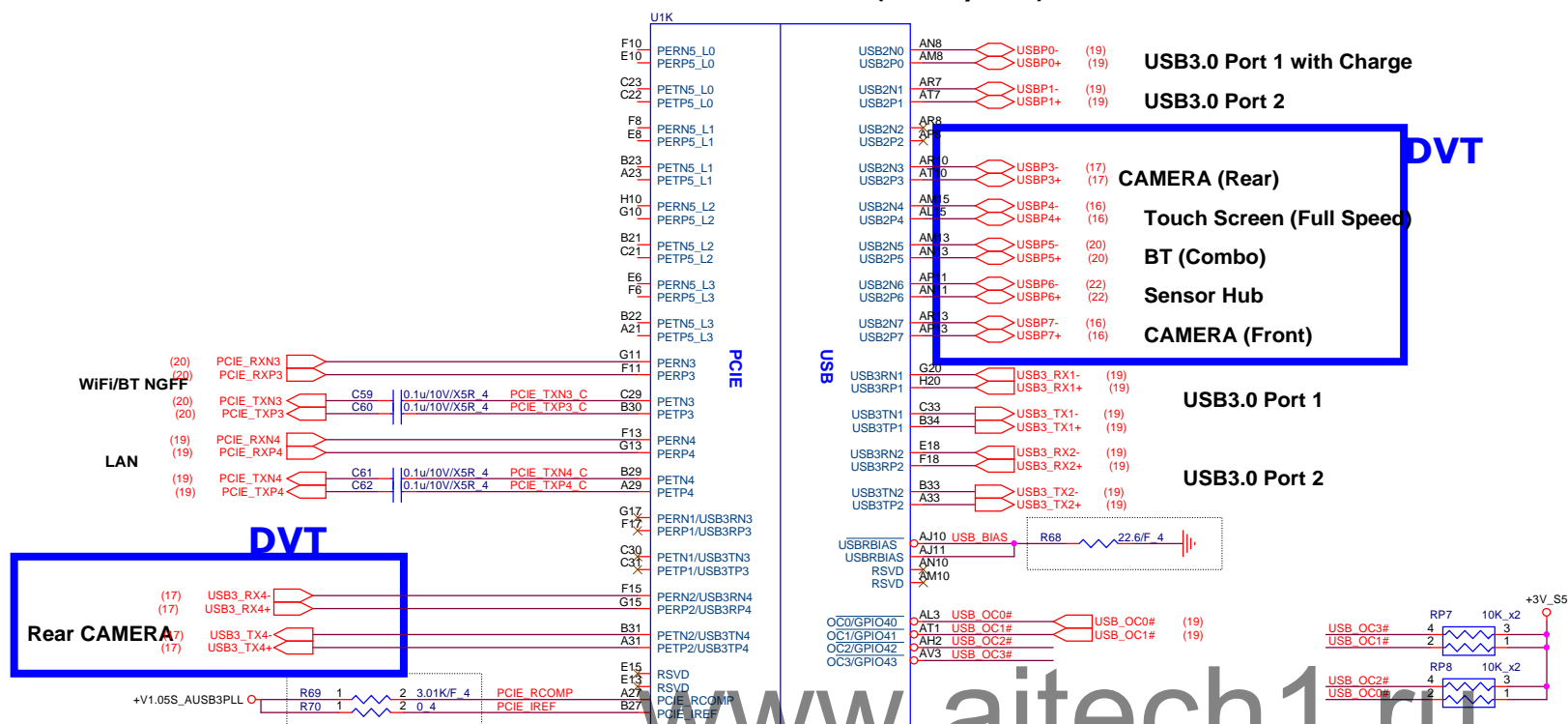
Pin Name	Strap description	Sampled	Configuration	note
SPKR	No reboot mode setting	PWROK	0 = Default (weak pull-down 20K) 1 = Setting to No-Reboot mode	+3V O R67 *1K_4 SPKR (11,19)
HDA_SDO	Flash Descriptor Security Override / Intel ME Debug Mode	PWROK	0 = Security Effect (Int PD) 1 = Can be Override	
INTVRMEN	Integrated 1.05V VRM enable	ALWAYS	Should be always pull-up	



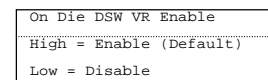
Quanta Computer Inc.
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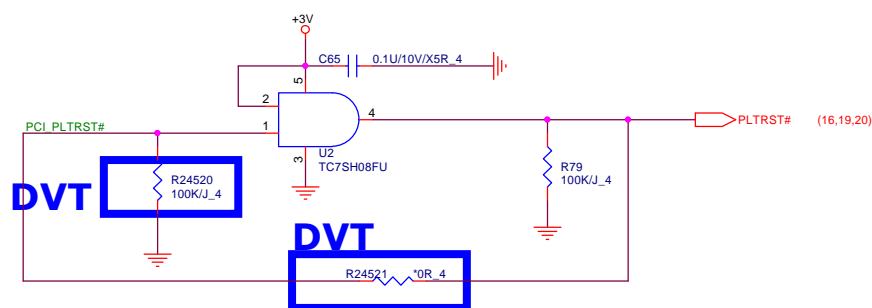
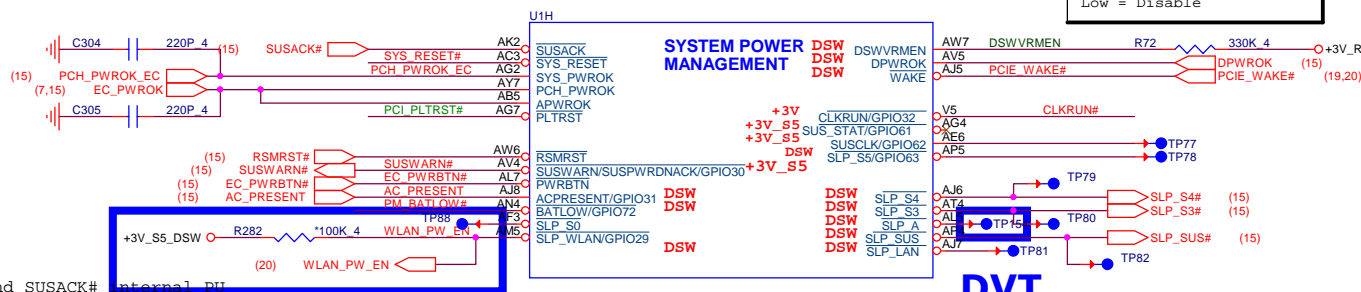
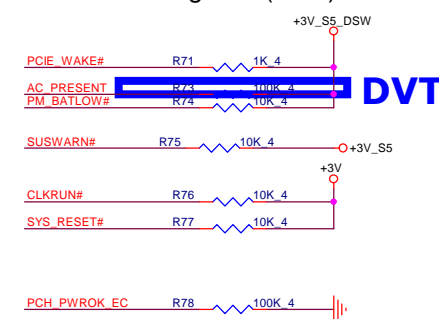
Haswell ULT (PCIE,USB)



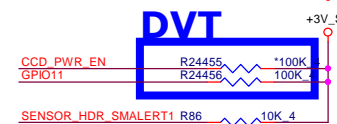
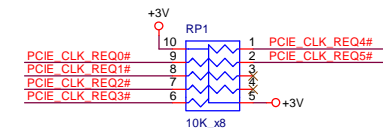
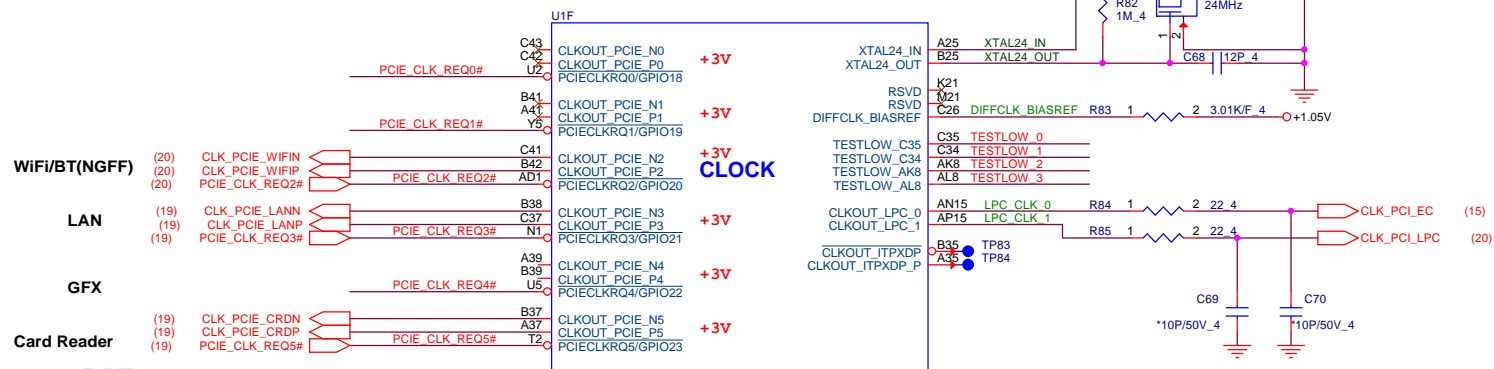
Haswell ULT (SYSTEM POWER MANAGEMENT)



PCH Pull-high/low(CLG)

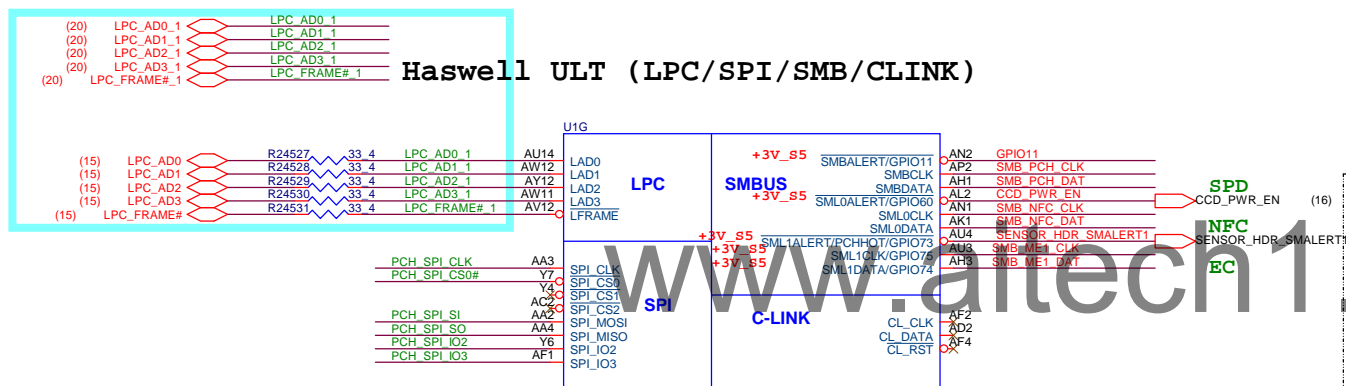


Haswell ULT (CLK)

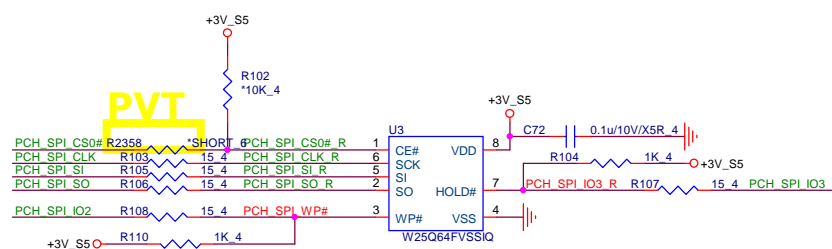
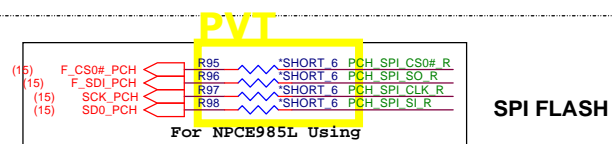
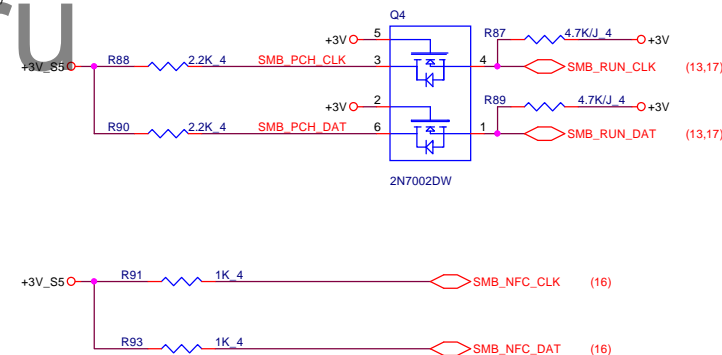


Do not short the testlow pins together.

Haswell ULT (LPC/SPI/SMB/CLINK)



SMBus/Pull-up(CLG)



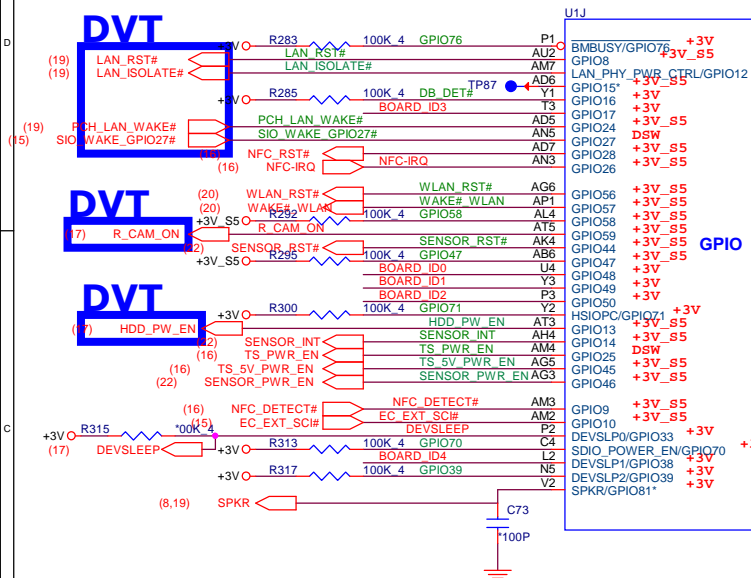
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Haswell ULT(GPIO,LPIO,MISC)

GPIO27

With Intel LAN:
Connect to LANWAKE# pin on the LAN
Without Intel LAN:
Used to wake event from DSX

DVT



DVT

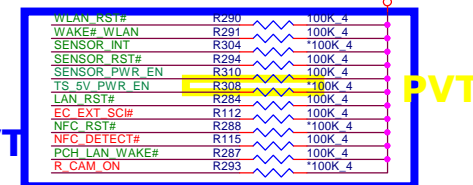
DVT

DVT



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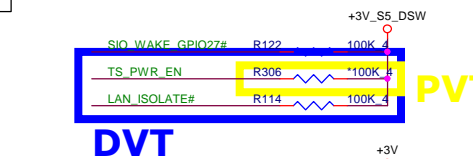
GPIO Pull-up/Pull-down(CLG)



PVT

DVT

DVT



PVT

DVT

GPIO86	
PU	LPC
PD	SPI (Default IPD)

No Reboot Strap(GPIO81)

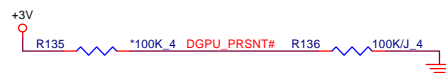
NC	Default
PU	EN

TLS CONFIDENTIALITY STRAP(GPIO15)

NC	Default
PU	EN

R127(Low) R125(Low)
R128(High) R126(High)

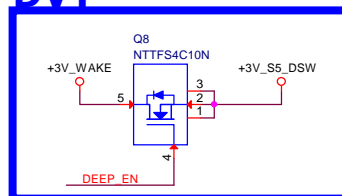
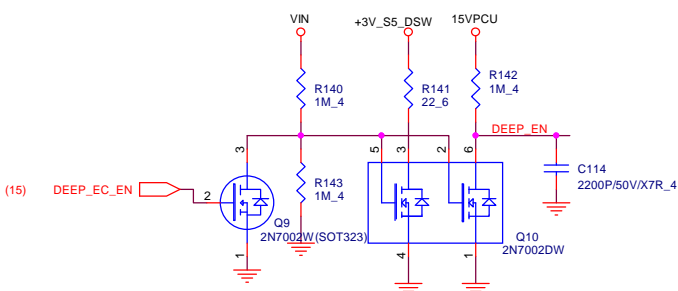
	Board ID1	Board ID0
Mule FI1	0	0
HuronSH1 FI2	0	1
HuronSH1 FI3_UMA	1	0
HuronSH1 FI3_DGPU	1	1

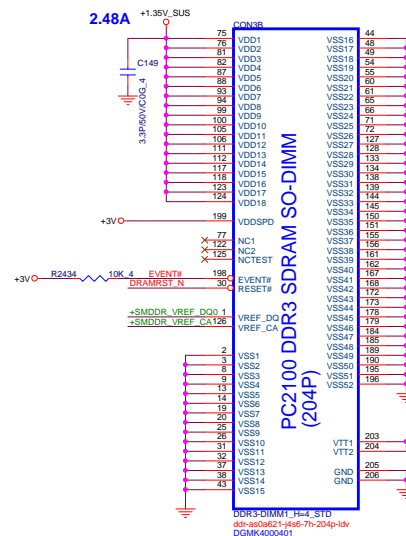
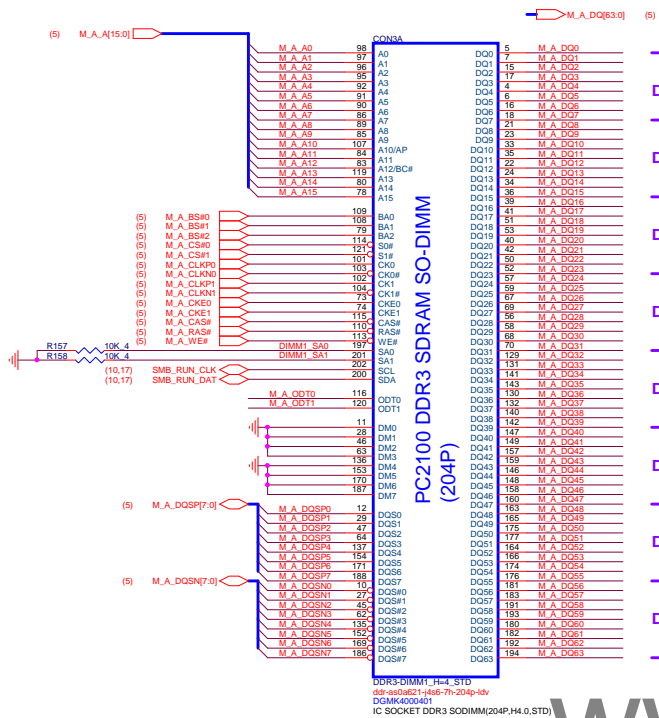


PCBA SKU	Discrete	UMA
R135(Pull High)	Stuff	No Stuff
R136(Pull Low)	No Stuff	Stuff

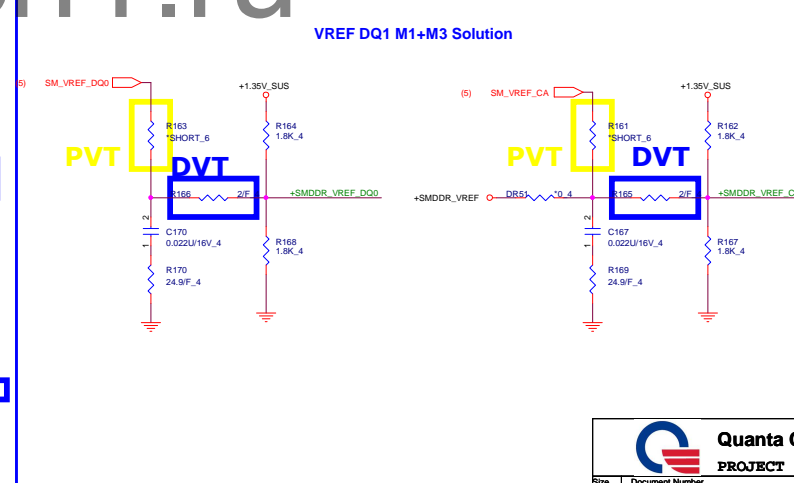
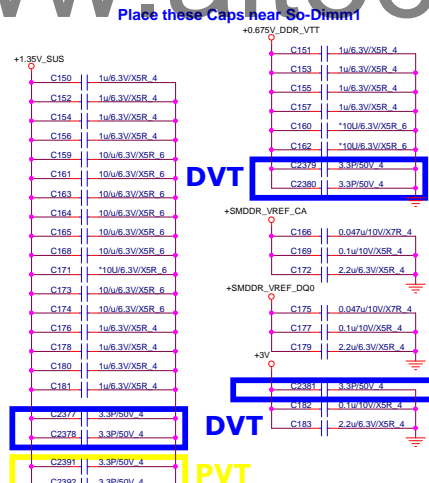
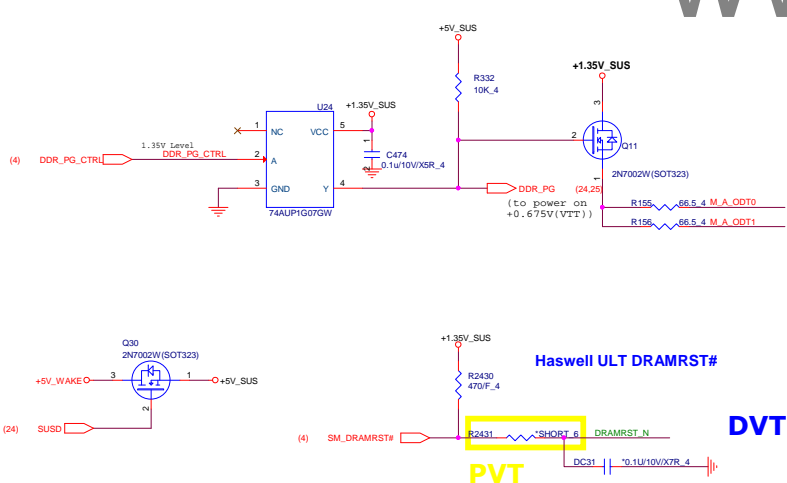


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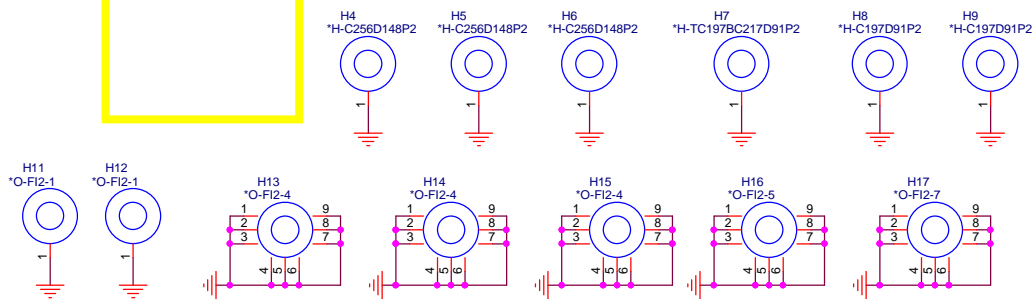


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HOLE

PVT

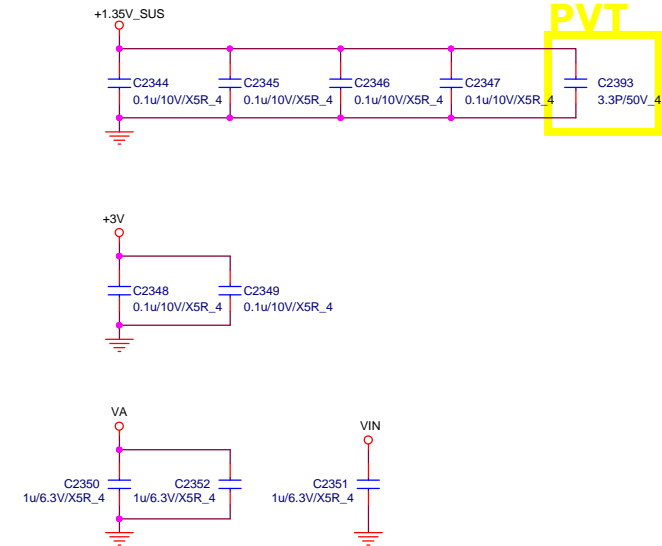


DVT

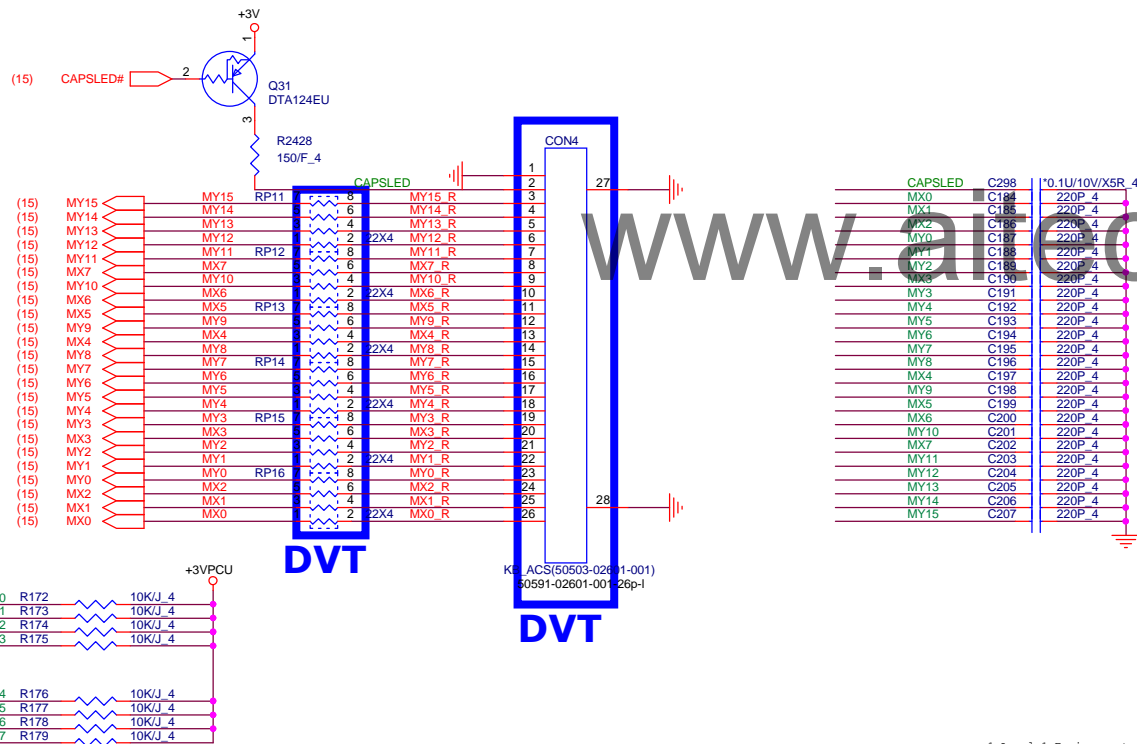
EMI

14


PVT

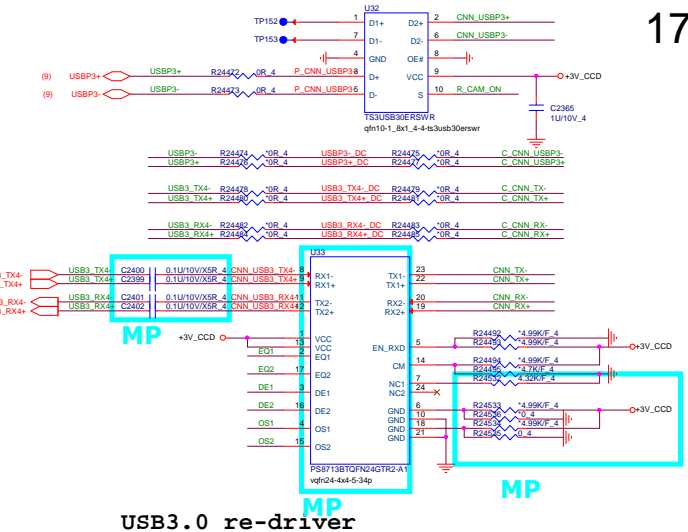
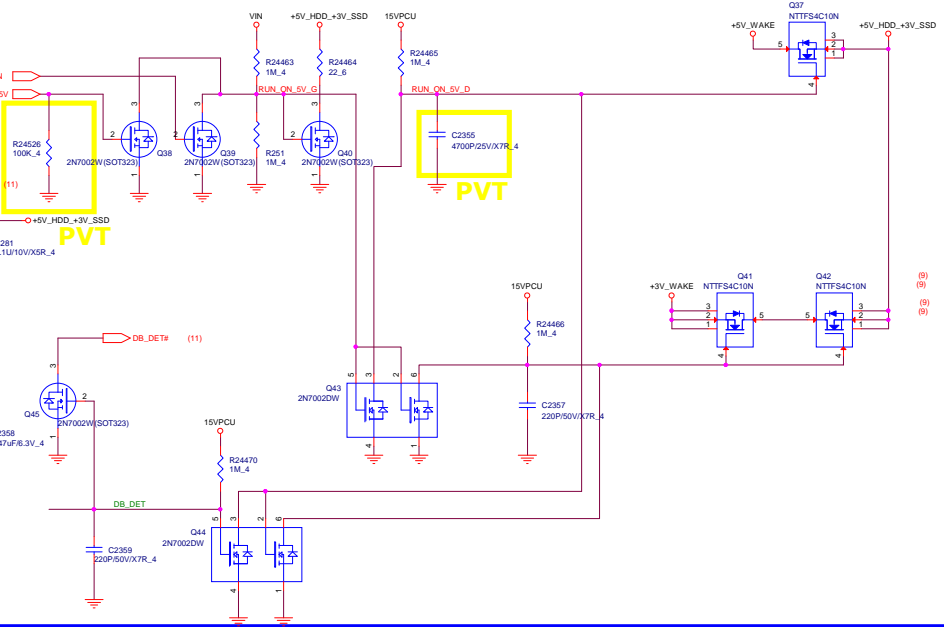
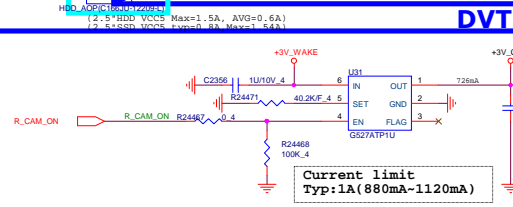
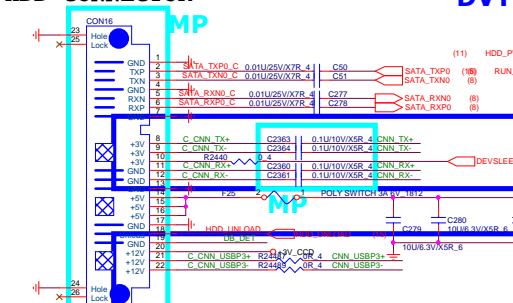


KEYBOARD Connector



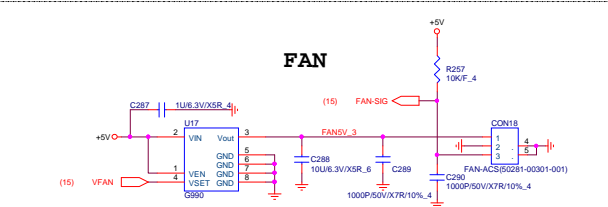
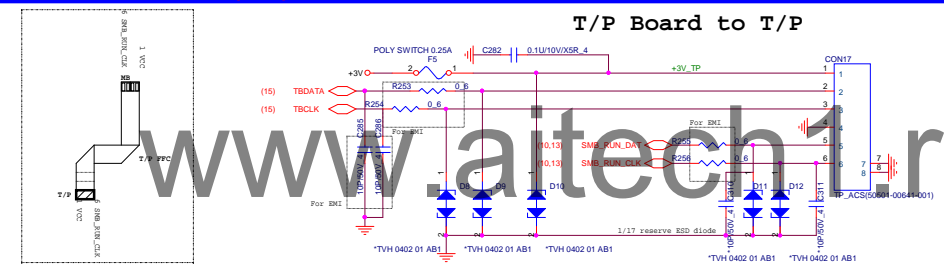
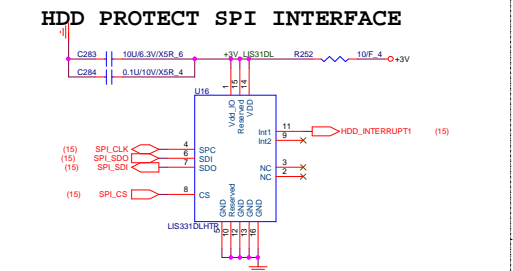
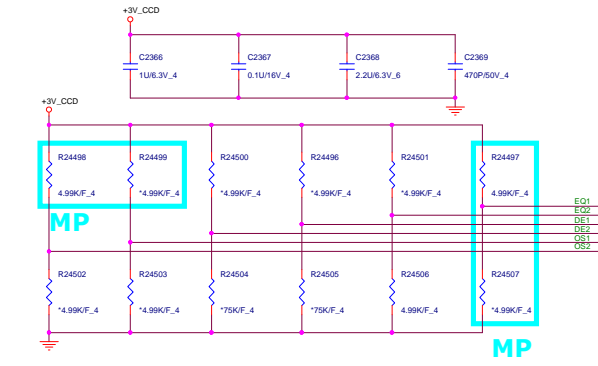
1.Level 1 Environment-related Substances Should Never be Used.
2.Recycled Resin and Coated Wire should be procured from Green Partners.

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HOLE/EMI/KB		
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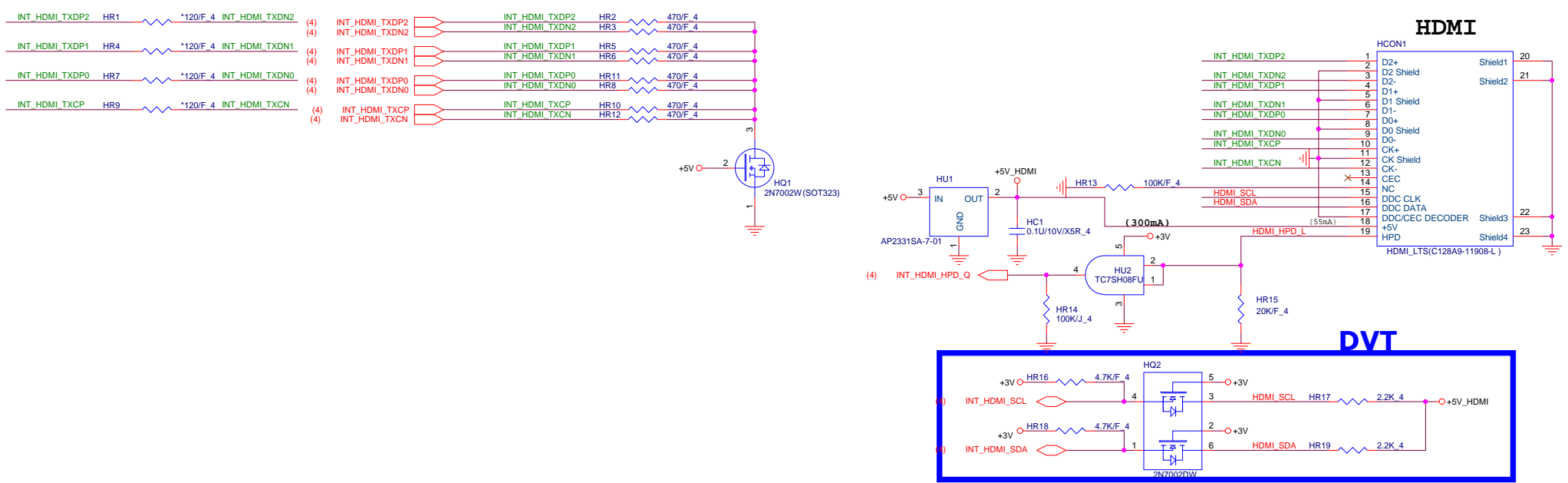


USB3.0 re-driver

Control pins setting			
EN_RXD	Device function	CM	Device function
1(default)	Normal Operation	0(default)	Normal Operation
0	Sleep Mode	1	Compliance Test Mode

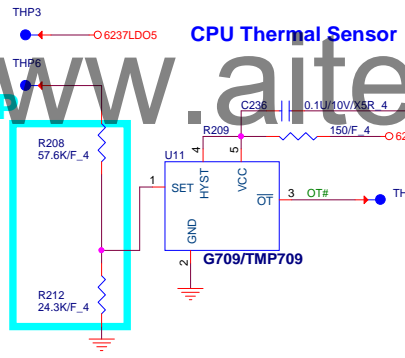


2 Recycled Resin and Coated Wire should be procured from Green Partners

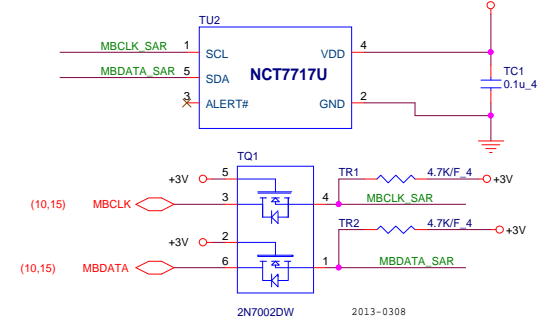


H/W Thermal Protect

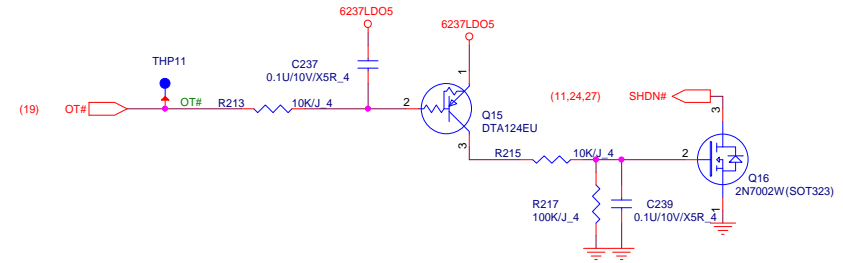
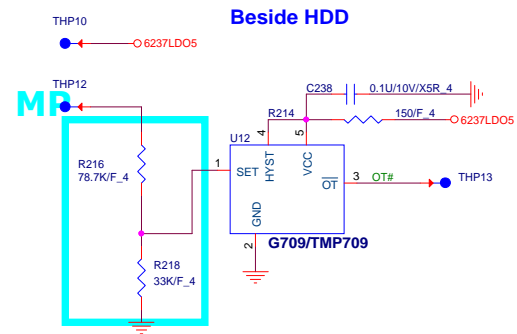
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Motherboard ambient temperature




Beside HDD



UMA SKU					
Location of IC	Temp	R-Set	Parts in BOM	Max	Min
Near CPU sensor temp	TBD	R208=68K	68K	TBD	TBD
Near AUDIO sensor temp	TBD	R216=113K	113K	TBD	TBD

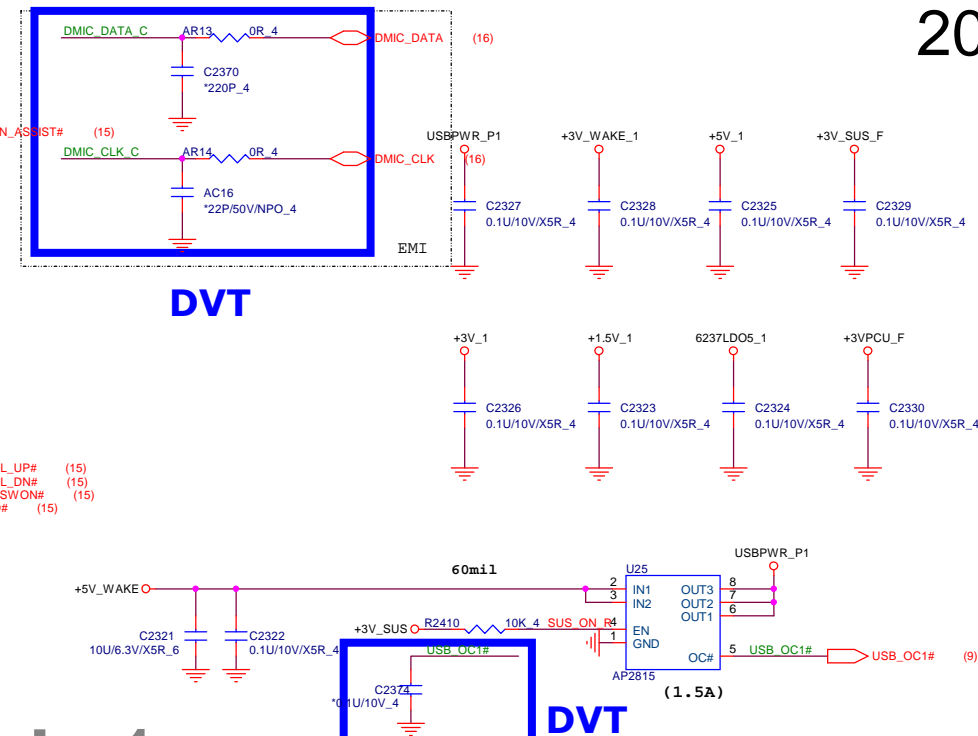
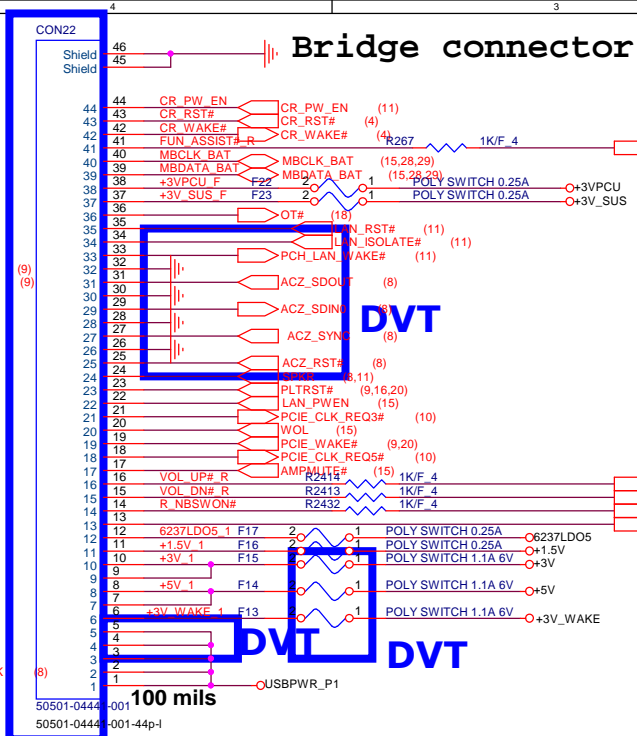
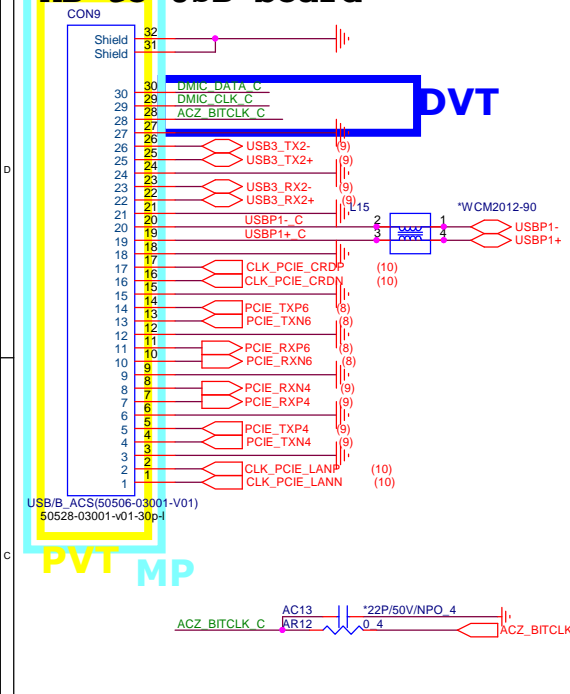
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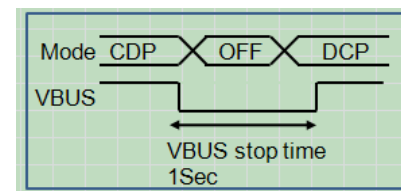
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	HDMI/Thermal	1A
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MB to USB board

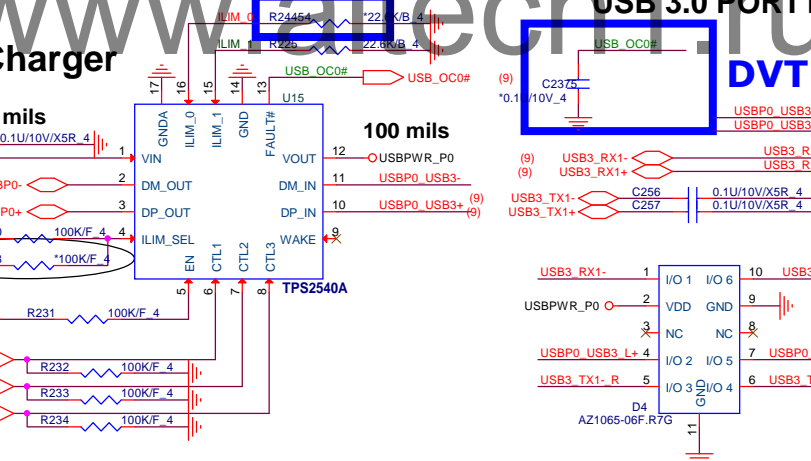


	TPS2540A	TPS2543
ILIM_SEL	Pin15	Pin16
High	V	V
Low	V	V

SDP : Standard Downstream Port
CDP : Charging downstream port
DCP : Dedicated Charging Port
Enable/Disable : setting by BIOS



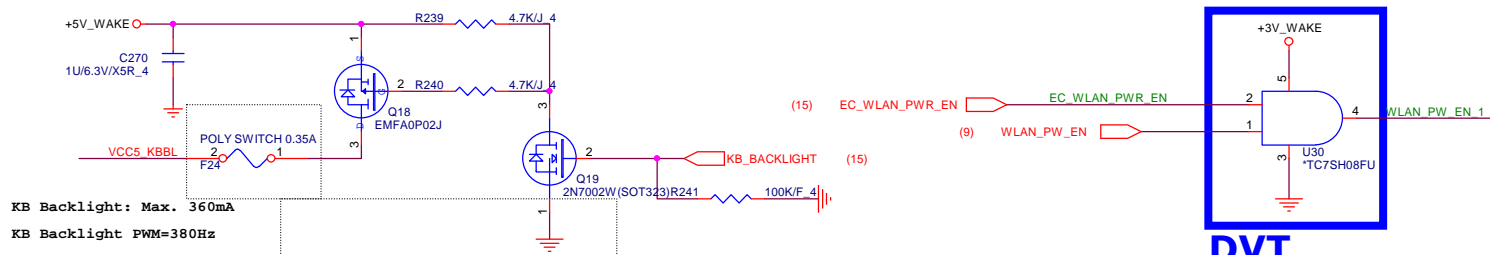
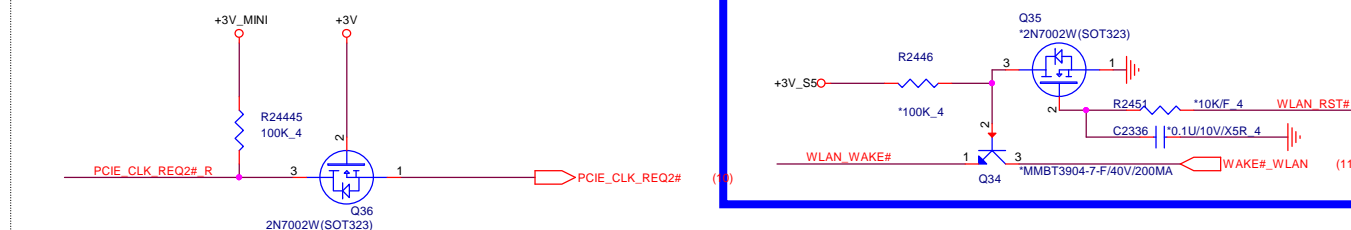
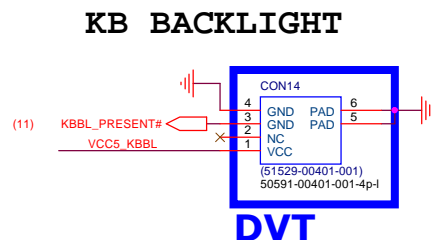
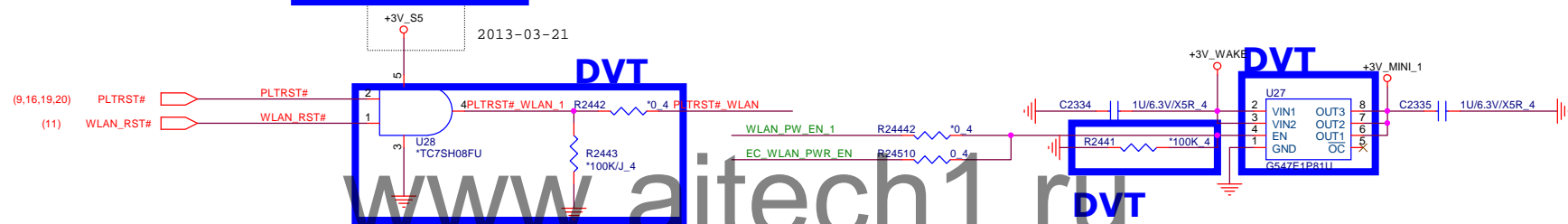
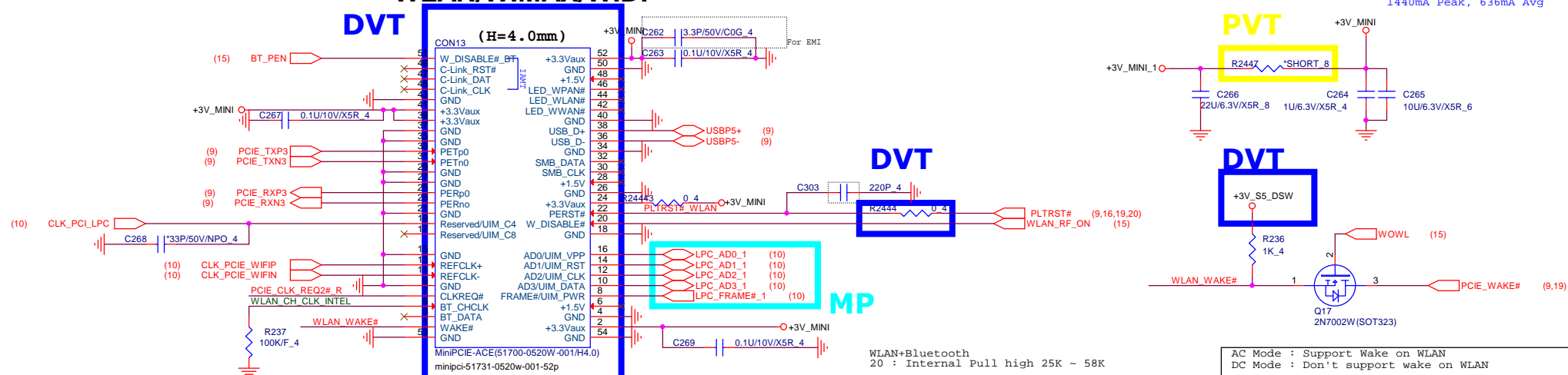
CTL_1	CTL_2	CTL_3	TPS 2540A/2543 Truth Table
0	0	0	OUT discharge, power switch OFF
0	X	1	DCP, Auto-detect(S3/S4/S5, 1.5A)
X	1	0	SDP, USB2.0 mode(S0, 0.5A)
1	0	0	DCP, BC SPEC1.2 only(S3/Deep standby/S4/S5, 1.5A)
1	0	1	DCP, Divider mode only(S3/S4/S5, 1.5A)
1	1	1	CDP (S0, 1.5A)



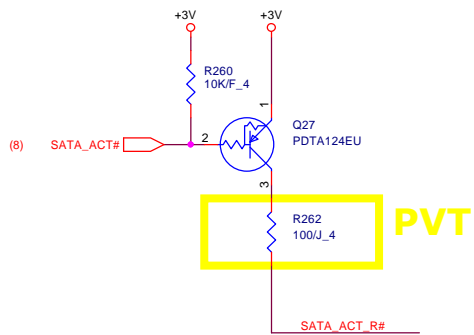
System State	USB Battery Charging Setting	
	Disable	Enable
S0	SDP (X 1 0)	CDP (1 1 1)
S3	SDP (X 1 0)	DCP BC (1 0 0)
DS3	Charger OFF (0 0 0)	DCP BC (1 0 0)
S4	Charger OFF (0 0 0)	DCP BC (1 0 0)
S5	Charger OFF (0 0 0)	DCP BC (1 0 0)

ILIM_SEL (I LIMIT(A)= 48000/R)	
HI	I_LIM_1
LO	I_LIM_0
48000/22.6K=2.123A	

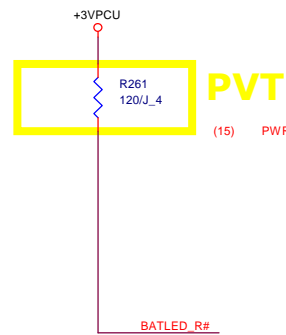
WLAN/WIMAX/WIDI



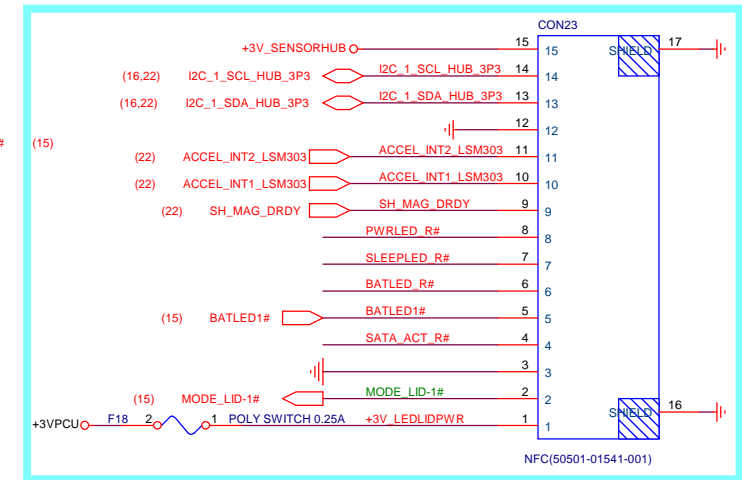
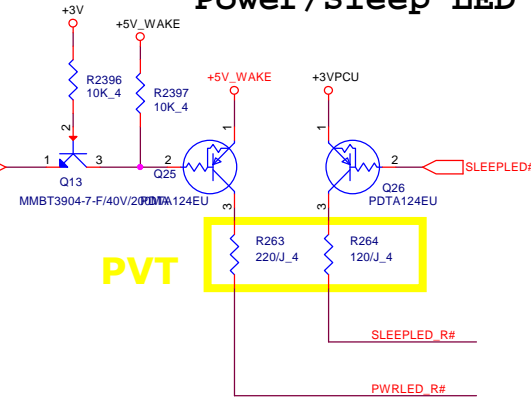
SATA LED



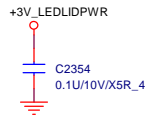
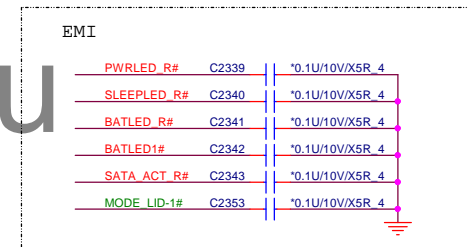
BATTERY LED



Power/Sleep LED

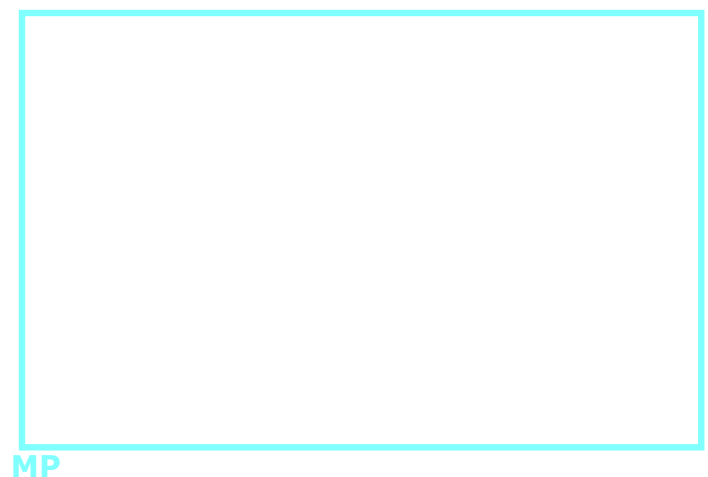



MP

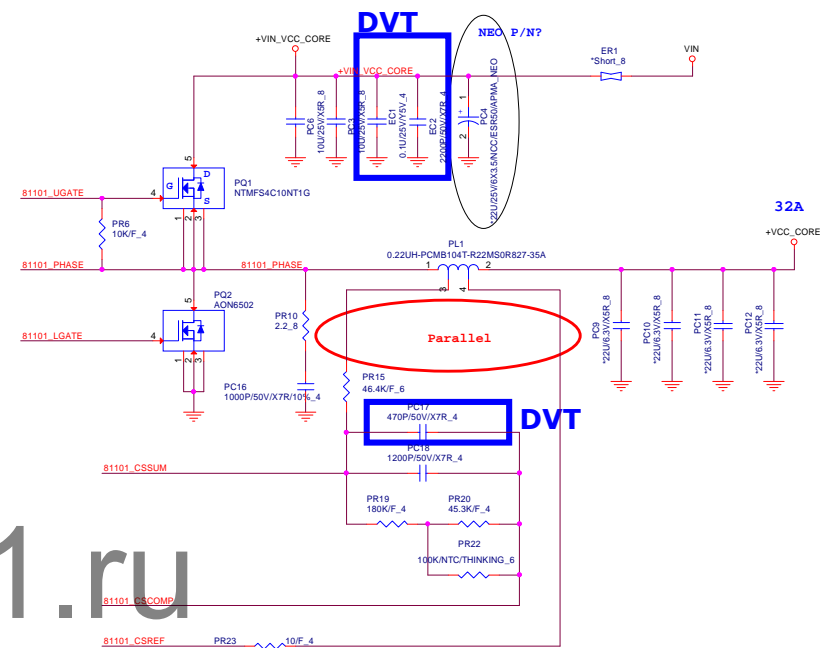

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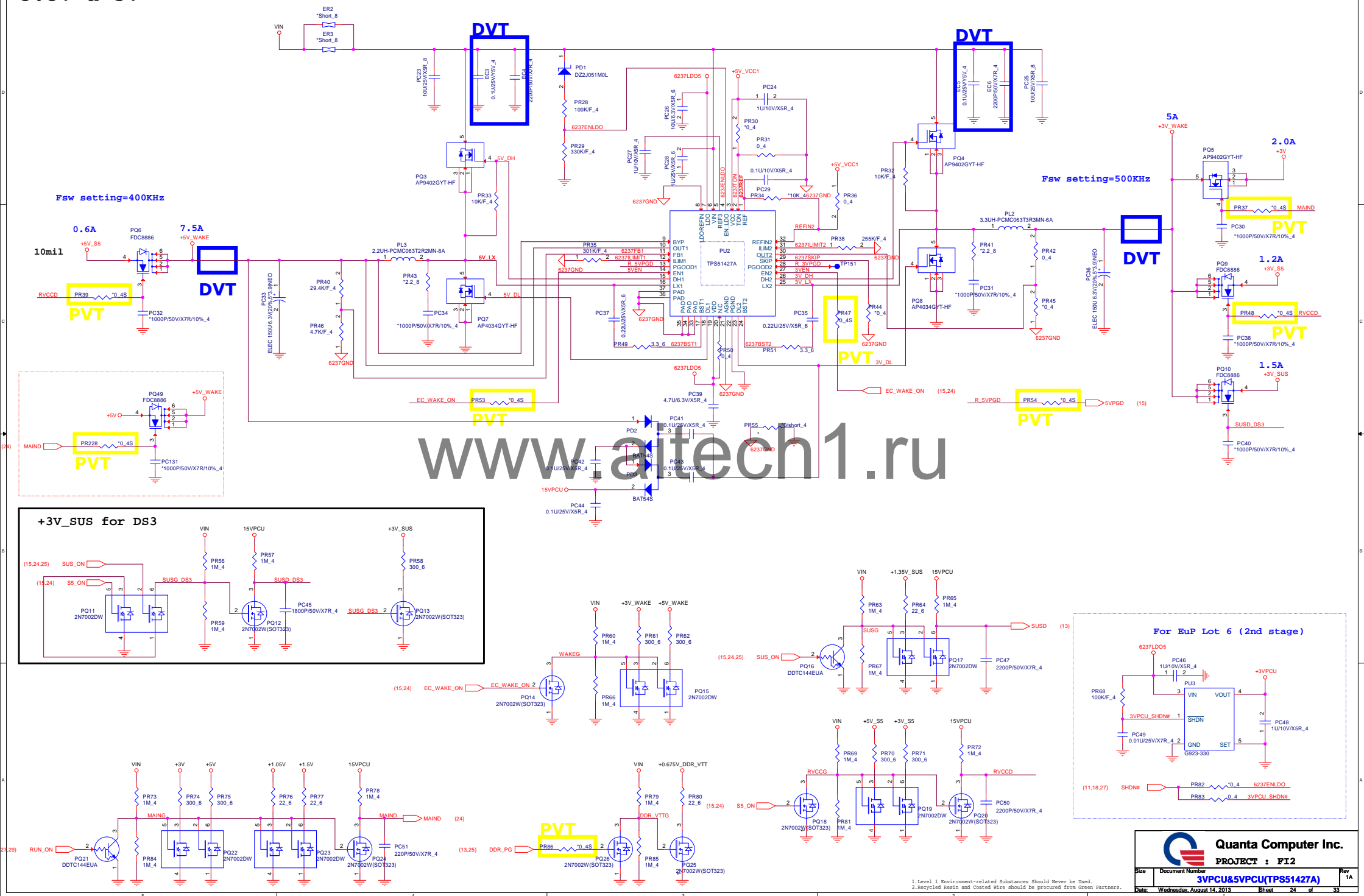

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	LED	1A
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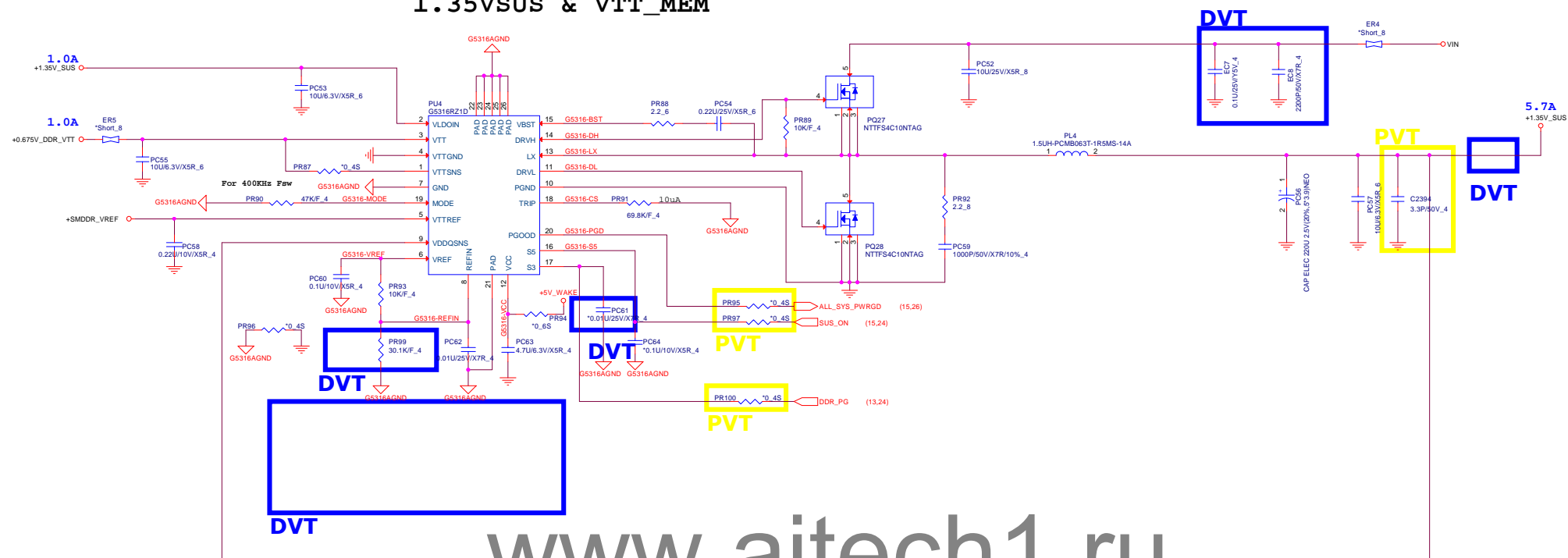


 <div> Quanta Computer Inc. PROJECT : FI2 </div>		
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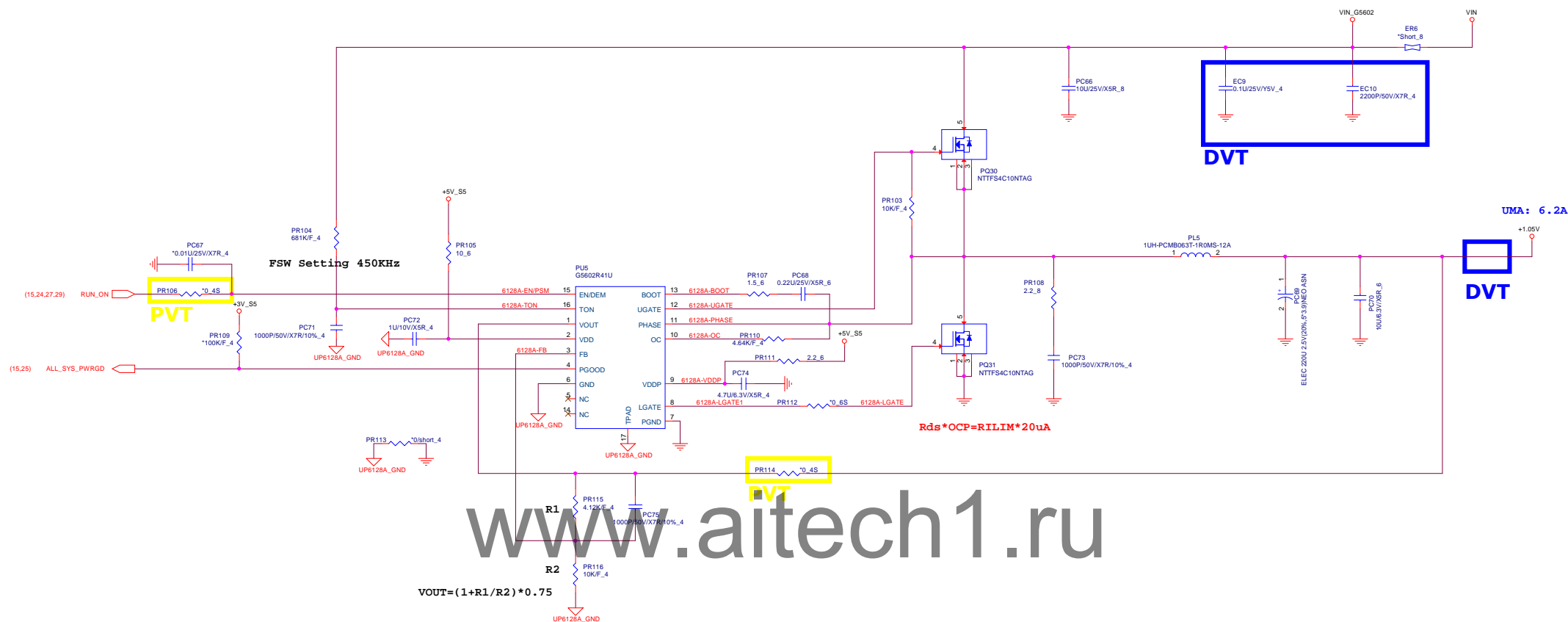
- 1.Level 1 Environment-related Substances Should Never be Used.
- 2.Recycled Resin and Coated Wire should be procured from Green Partners

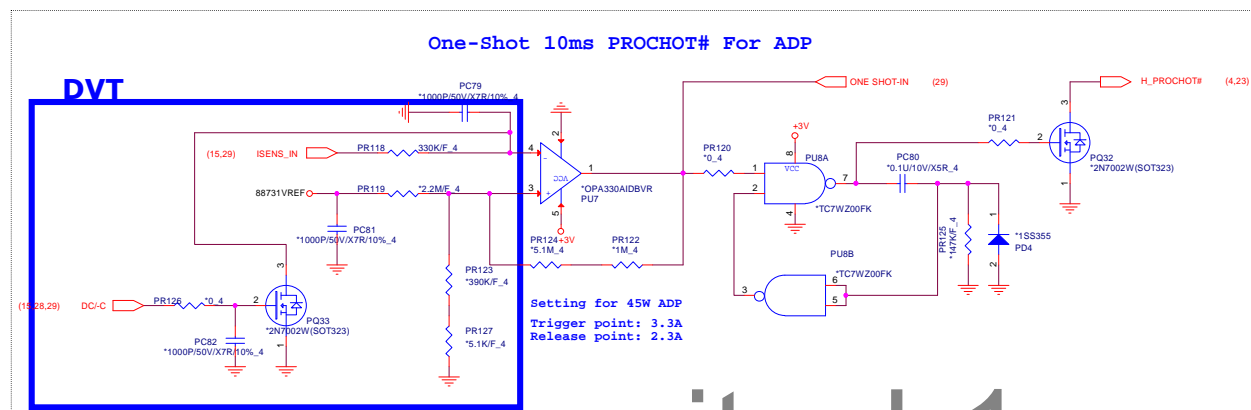
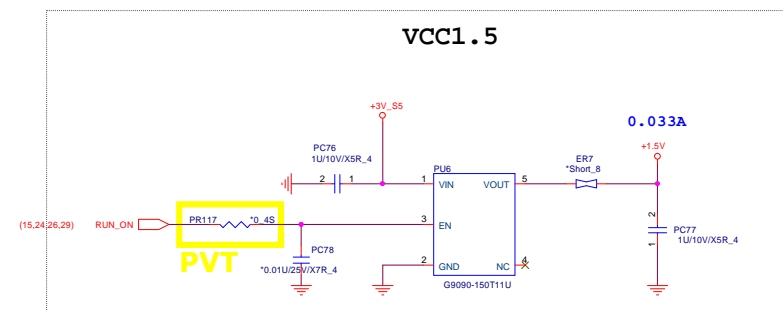


MODE	Resistor on Mode	Fsw	Discharge Mode
3	200Kohm	400KHz	Tracking discharge
2	100Kohm	300KHz	
1	68Kohm	300KHz	Non-tracking discharge
0	47Kohm	400KHz	

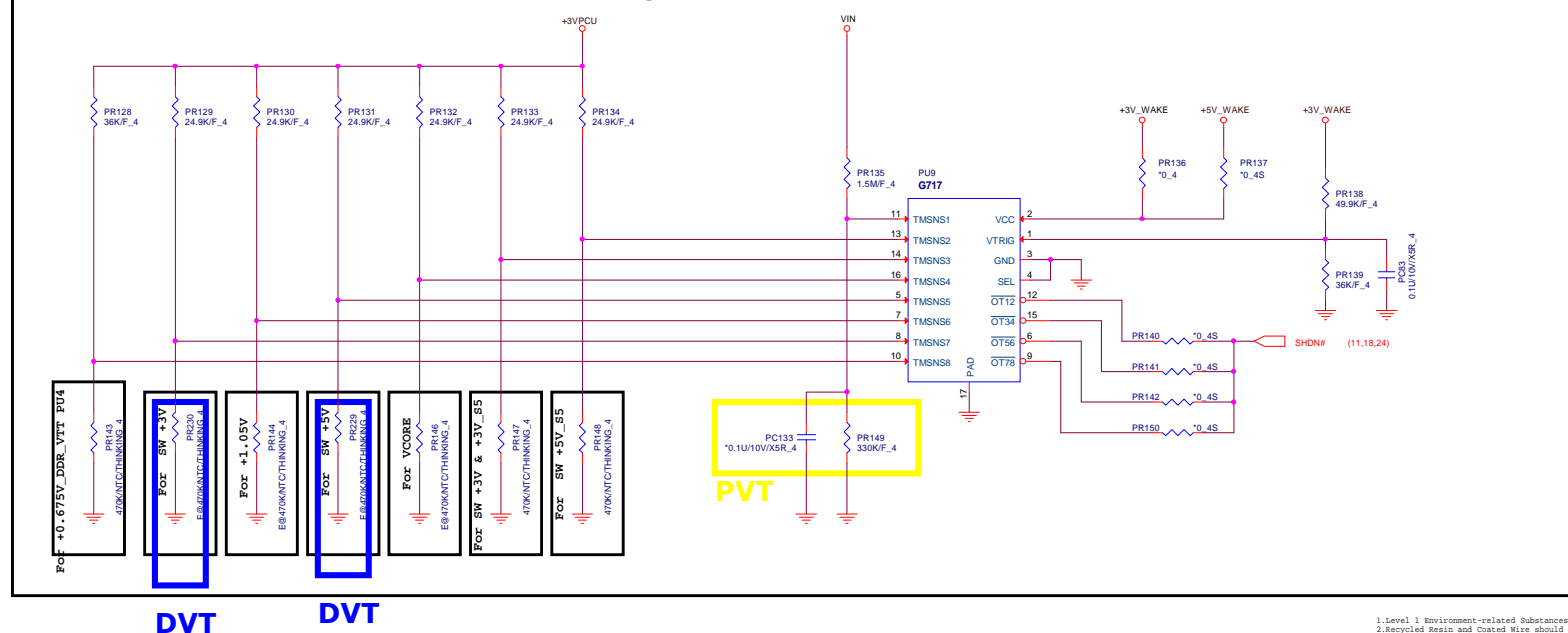
STATE	S3	S5	1.5VSUS	VTTREF	VTT
S0	1	1	On	On	On
S3	0	1	On	On	Off/High Z
S4/S5	0	0	Off	Off	Off

+1.05V





Thermal Protection and Battery UVP for VEDS Abnormal



USB PORT Architecture	
PORT 0	USB3.0
PORT 1	USB3.0
PORT 2	Touch Screen
PORT 3	WiMax/BT
PORT 4	Sensor Hub
PORT 5	Camera
PORT 6	N/A
PORT 7	N/A

PCIE BUS	
PORT 1	N/A
PORT 2	N/A
PORT 3	WLAN Port
PORT 4	GLAN(RTL8111GS)
PORT 5	N/A
PORT 6	CARD READER

SATA BUS	
PORT 0	HDD
PORT 1	N/A
PORT 2	N/A
PORT 3	N/A

SM BUS	MBCLK/MBDATA	WRITE	READ	Function
ISL88732	0001 001X	0001 0010	0001 0011	Charger
LIS331DL	0011 101X	0011 1010	0011 1011	G Sensor

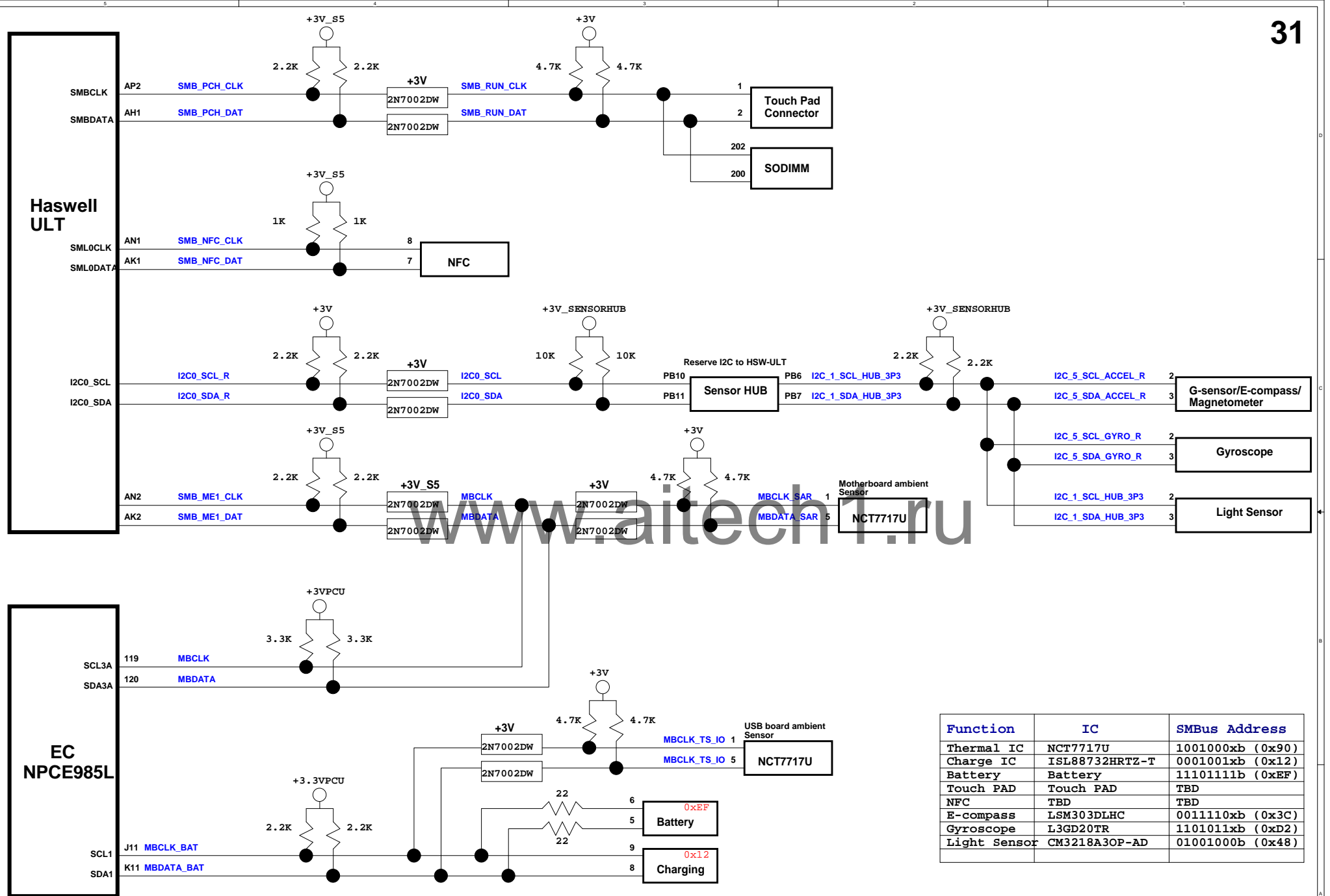
SM BUS	MBCLK_BAT/MBDATA_BAT	WRITE	READ	Function
T.B.D	0011 0010			Battery

SM BUS	SMB_PCH_CLK/SMB_PCH_DAT	WRITE	READ	Function
DIMM Module0	1010 000X	1010 0000	1010 0001	DDRIII
Synaptics	0010 110X	0010 1100	0010 1101	Click PAD

	R127(Low) R128(High)	R125(Low) R126(High)
Board ID1	Board ID0	
Mule FI1	0	0
HuronSHA1 FI2	0	1
HuronSHB1 FI3_UMA	1	0
HuronSHB1 FI3_DGPU	1	1

PCBA SKU	Discrete	UMA
R135(Pull High)	Stuff	No Stuff
R136(Pull Low)	No Stuff	Stuff

OS status	S0	S3	DS3	(Soft OFF)	(Soft OFF)	(Soft OFF)	(Soft OFF)	(Soft OFF)
H/W status	S0	S3	DS3	S4 (Win8 off) RTC wake Enable WOLAN Enable	S4 (Win8 off) RTC wake Disable WOLAN Disable	S5 Charge Enable	S5 Charge Disable WoL Disable	S5 WoL Enable
RUN_ON	H	L	L	L	L	L	L	L
+3V	H	L	L	L	L	L	L	L
+5V	H	L	L	L	L	L	L	L
+0.675V_DDR_VTT	H	L	L	L	L	L	L	L
+1.05V	H	L	L	L	L	L	L	L
+0.85V	H	L	L	L	L	L	L	L
+1.5V	H	L	L	L	L	L	L	L
+VCC_CORE	H	L	L	L	L	L	L	L
SUS_ON	H	H	H	L	L	L	L	L
+1.35V_SUS	H	H	H	L	L	L	L	L
+3V_SUS	H	H	H	L	L	L	L	L
S5_ON	H	H	L	H	L	L	L	H
+5V_S5	H	H	L	H	L	L	L	H
+3V_S5	H	H	L	H	L	L	L	H
EC_WAKE_ON	H	H	H	H	L	H	L	H
+3V_WAKE	H	H	H	H	L	H	L	H
+5V_WAKE	H	H	H	H	L	H	L	H
DEEP_EC_EN	H	H	H	H	L	L	L	L
+3V_S5_DSW	H	H	H	H	L	L	L	L
+3V_SUS	H	H	L	L	L	L	L	L



OS status	S0	S3	DS3	(Soft OFF)	(Soft OFF)	(Soft OFF)	(Soft OFF)	(Soft OFF)
H/W status	S0	S3	DS3	S4 (Win8 off) RTC wake Enable WOLAN Enable	S4 (Win8 off) RTC wake Disable WOLAN Disable	S5 Charge Enable	S5 Charge Disable WoL Disable	S5 WoL Enable
RUN_ON	H	L	L	L	L	L	L	L
+3V	H	L	L	L	L	L	L	L
+5V	H	L	L	L	L	L	L	L
+0.675V_DDR_VTT	H	L	L	L	L	L	L	L
+1.05V	H	L	L	L	L	L	L	L
+0.85V	H	L	L	L	L	L	L	L
+1.5V	H	L	L	L	L	L	L	L
+VCC_CORE	H	L	L	L	L	L	L	L
SUS_ON	H	H	H	L	L	L	L	L
+1.35V_SUS	H	H	H	L	L	L	L	L
+3V_SUS	H	H	H	L	L	L	L	L
S5_ON	H	H	L	H	L	L	L	H
+5V_S5	H	H	L	H	L	L	L	H
+3V_S5	H	H	L	H	L	L	L	H
EC_WAKE_ON	H	H	H	H	L	H	L	H
+3V_WAKE	H	H	H	H	L	H	L	H
+5V_WAKE	H	H	H	H	L	H	L	H
DEEP_EC_EN	H	H	H	H	L	L	L	L
+3V_S5_DSW	H	H	H	H	L	L	L	L
+3V_SUS	H	H	L	L	L	L	L	L



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Power Table		
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