

CONTENTS	SHEET
01 : TABLE OF CONTENTS	1
02 : SYSTEM BLOCK DIAGRAM	2
03 : CLK/SMBUS/RESET MAP	3
04 : AMD FT1 (1/2)	4
05 : AMD FT1 (2/2)	5
06 : DDR3 SODIMM A-1 CHANNEL	6
07 : DDR3 SODIMM A-2 CHANNEL	7
08 : SCALAR ANX3110	8
09 : AMD HUDSON D1 (1/3)	9
10 : AMD HUDSON D1 (2/3)	10
11 : AMD HUDSON D1 (3/3)	11
12 : AUDIO ALC269Q-VB	12
13 : LAN RTL8175E-CG/LED	13
14 : CR/HDD/ODD/WEBCAM/D-MIC	14
15 : USB/MINI PCI-E/FAN	15
16 : EC IT8519E	16
17 : DEBUG CIRCUIT	17
18 : SYSTEM +3V/+5V	18
19 : +VDDIO_MEM/MEM_VTT/DC-IN	19
20 : +1.8V/+12V/+1.2V/+1.1V/DIS	20
21 : +1.1V_S3/+1.05V	21
22 : VDDCR_CPU/VDDCR_NB	22
23 : STACK UP 6L	23
24 : SCREW HOLE/SILK SCREEN	24
25 : Power Sequence Diagram	25
26 : POWER SEQUENCE	26
27 : HISTORY	27

	PARTS	DIP/SMT	Frequency	PPM	CL
1	X2	SMT	25MHz	±20	12pF/15pF
2	X3	SMT	NC/25MHz	±20	10pF/10pF
3	X4	SMT	32.768KHz	±20	10pF/8.2pF
4	X5	SMT	25MHz	±20	12pF/15pF
5	X6	SMT	NC/32.768KHz	±20	12pF/12pF

## USB LIST

PORT	NET NAME	FUNCTION
USB_HSD0P/N	USB0_DEBUG_P/N	REAR IO
USB_HSD1P/N	USB1P/N	REAR IO
USB_HSD2P/N	USB2P/N	REAR IO
USB_HSD3P/N	USB3P/N	REAR IO
USB_HSD4P/N	USB4P/N	SIDE IO
USB_HSD5P/N	USB5P/N	SIDE IO
USB_HSD8P/N	USB8_WLAN_P/N	WLAN/BT
USB_HSD11P/N	USB11_WEBCAM_P/N	WEBCAM

## SATA LIST

PORT	NET NAME	FUNCTION
SATA_TX0P/N	SATA0_TXP/N	SATA HDD
SATA_RX0P/N	SATA0_RXP/N	
SATA_TX1P/N	SATA1_TXP/N	SATA ODD
SATA_RX1P/N	SATA1_RXP/N	

## PCI-E LIST

PORT	NET NAME	FUNCTION
GPP_TX3P/N	PCIE_WLAN_TXP/N	WIRELESS LAN
GPP_RX3P/N	PCIE_WLAN_RXP/N	
GPP_TX1P/N	PCIE_LAN_TXP/N	LAN
GPP_RX1P/N	PCIE_LAN_RXP/N	
GPP_TX2P/N	PCIE_CARD_TXP/N	CARDREADER
GPP_RX2P/N	PCIE_CARD_RXP/N	

## POWER STATES

STATE SIGNAL	VOTAGE	S0	S3	S5	G3	REMARK
FCH_SLP_S3#	-	HIGH	LOW	LOW	LOW	
FCH_SLP_S5#	-	HIGH	HIGH	LOW	LOW	
S5_PWR_ON	-	HIGH	HIGH	HIGH	LOW	S5_PWR_ON
+VBAT_IN	+3.3V	O	O	O	O	COIN BATTERY
+VIN	+19V	O	O	O	X	DC-IN
+3V_ALW/+5V_ALW	+3.3V/+5V	O	O	O	X	
+3V_S5	+3.3V	O	O	O	X	
+1.1V_S5	+1.1V	O	O	O	X	
+5V_S3	+5V	O	O	X	X	
+3V_S3	+3.3V	O	O	X	X	
+VDDIO_MEM	+1.5V	O	O	X	X	
+1.1V_S3	+1.1V	O	O	X	X	
+MEM_VTT	+0.75V	O	X	X	X	
+3V_S0/+5V_S0	+3.3V/+5V	O	X	X	X	
+1.8V_S0	+1.8V	O	X	X	X	
+12V_S0	+12V	O	X	X	X	
+1.1V_S0	+1.1	O	X	X	X	
+1.5V_S0	+1.5V	O	X	X	X	
+1.2V_S0	+1.2	O	X	X	X	
+1.05V_S0	+1.05V	O	X	X	X	
+VDDCR_CPU	SVC/SVD	O	X	X	X	
+VDDCR_NB	SVC/SVD	O	X	X	X	

ALWAYS

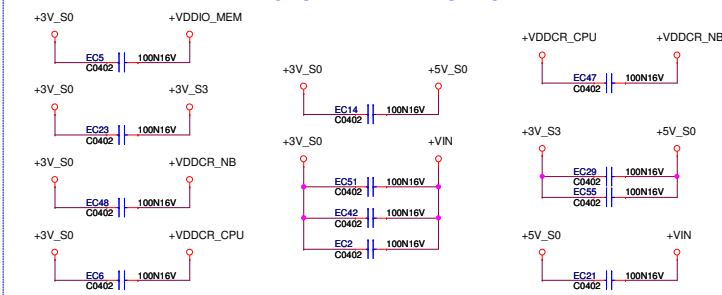
DC-in ALWAYS

S5

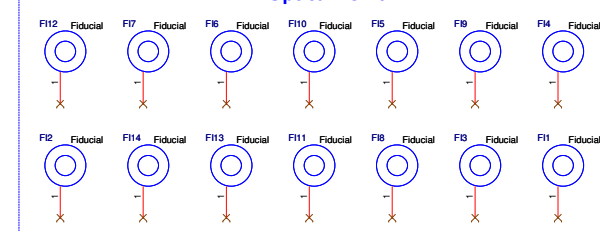
S3

S0

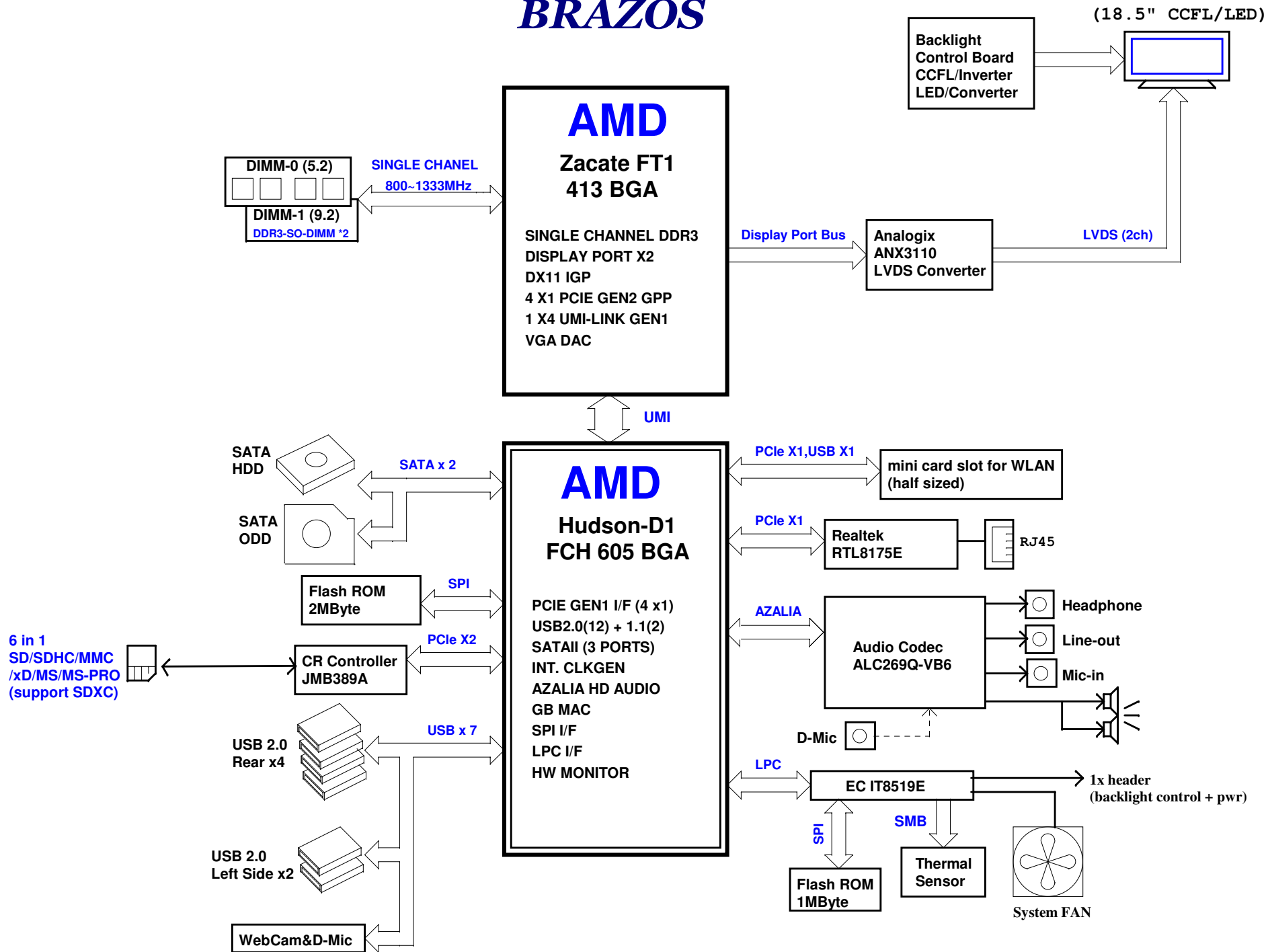
## EMC POWER PLANE MOAT CAP



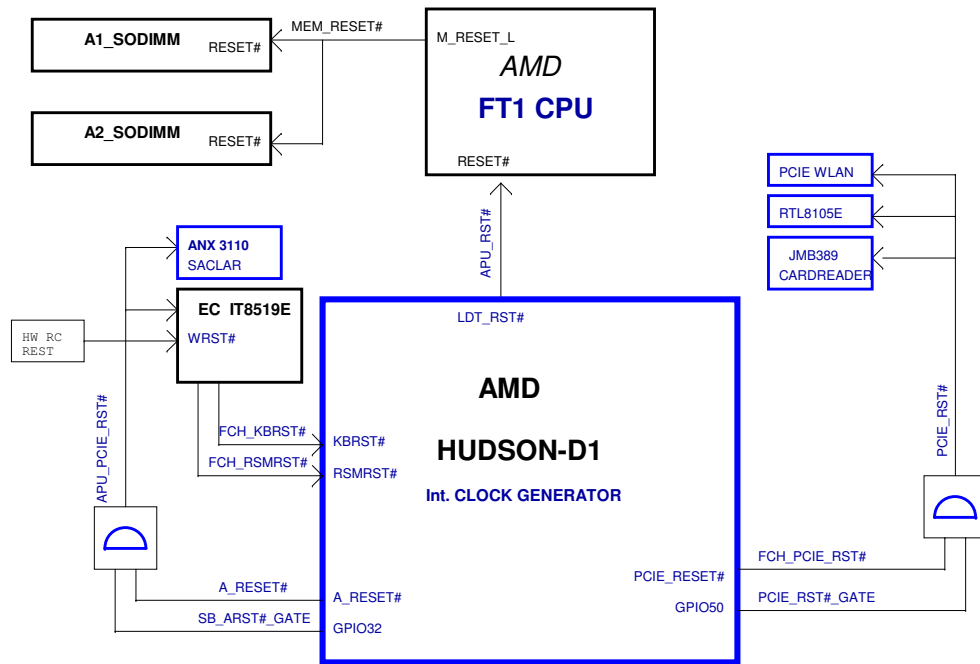
## Optical Point



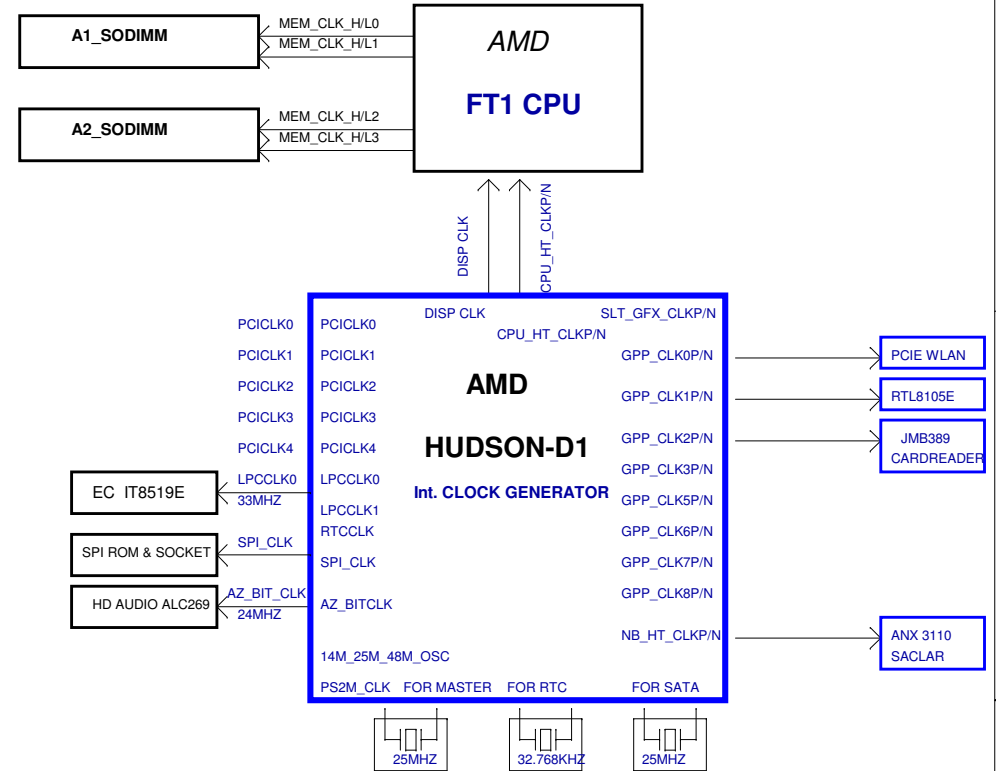
# BRAZOS



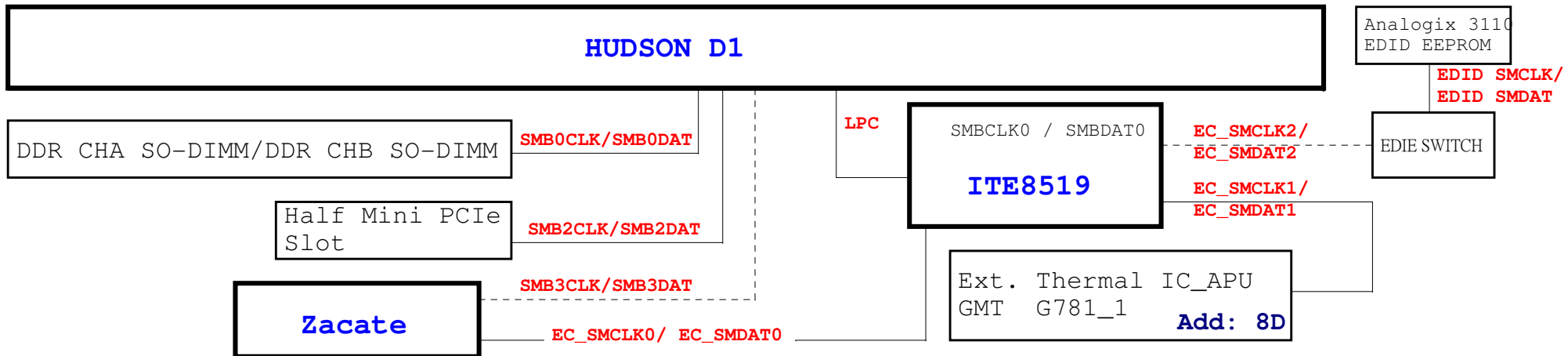
# RESET Block Diagram

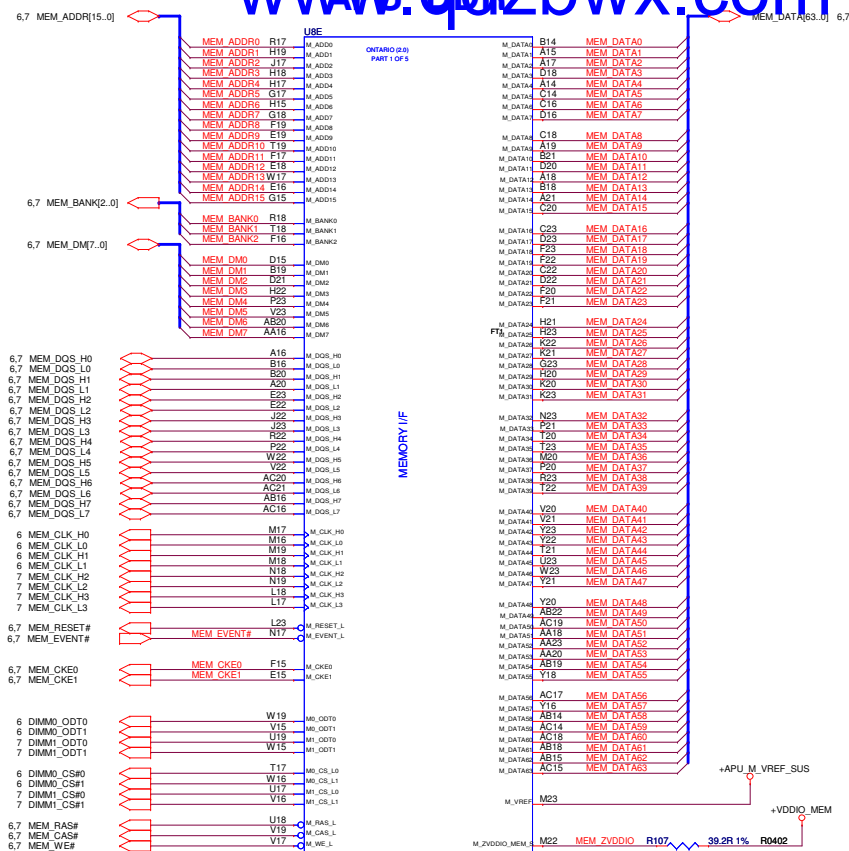


# INTERNAL BLOCK DIAGRAM



# SM Bus MAP





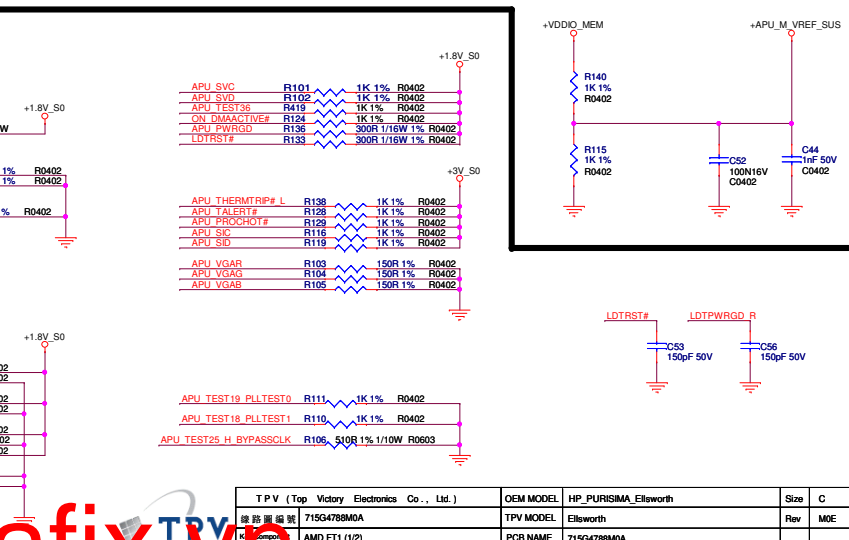
Close to APU

MEM\_CKED R542 NC698 R0402  
MEM\_CKET R543 NC699 R0402

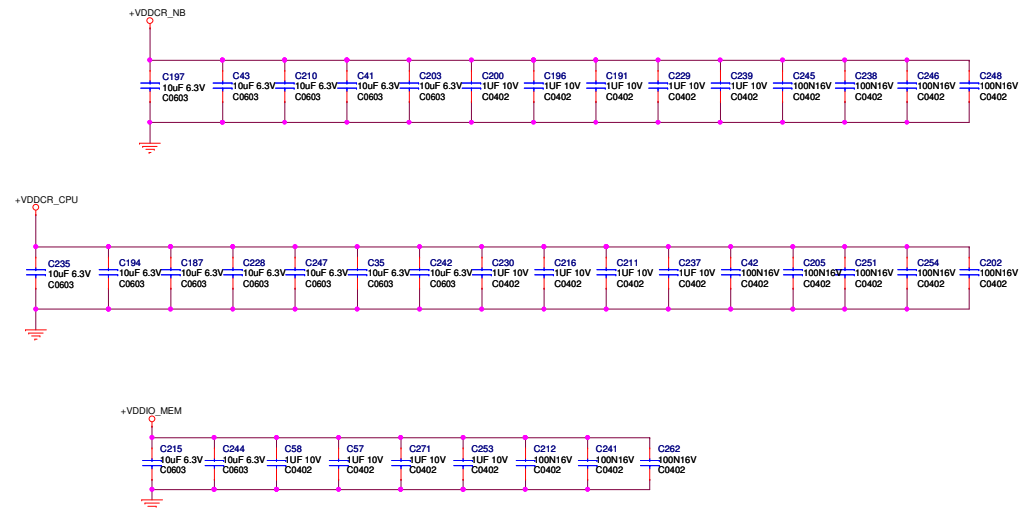
R103 connection to VDDIO\_SUS should be directly to the plane without a long trace

+VDDIO\_MEM R81 4.7k R0402 Q8 PMB33904

MEM\_EVENT# CPU\_MEM#HOT# 10

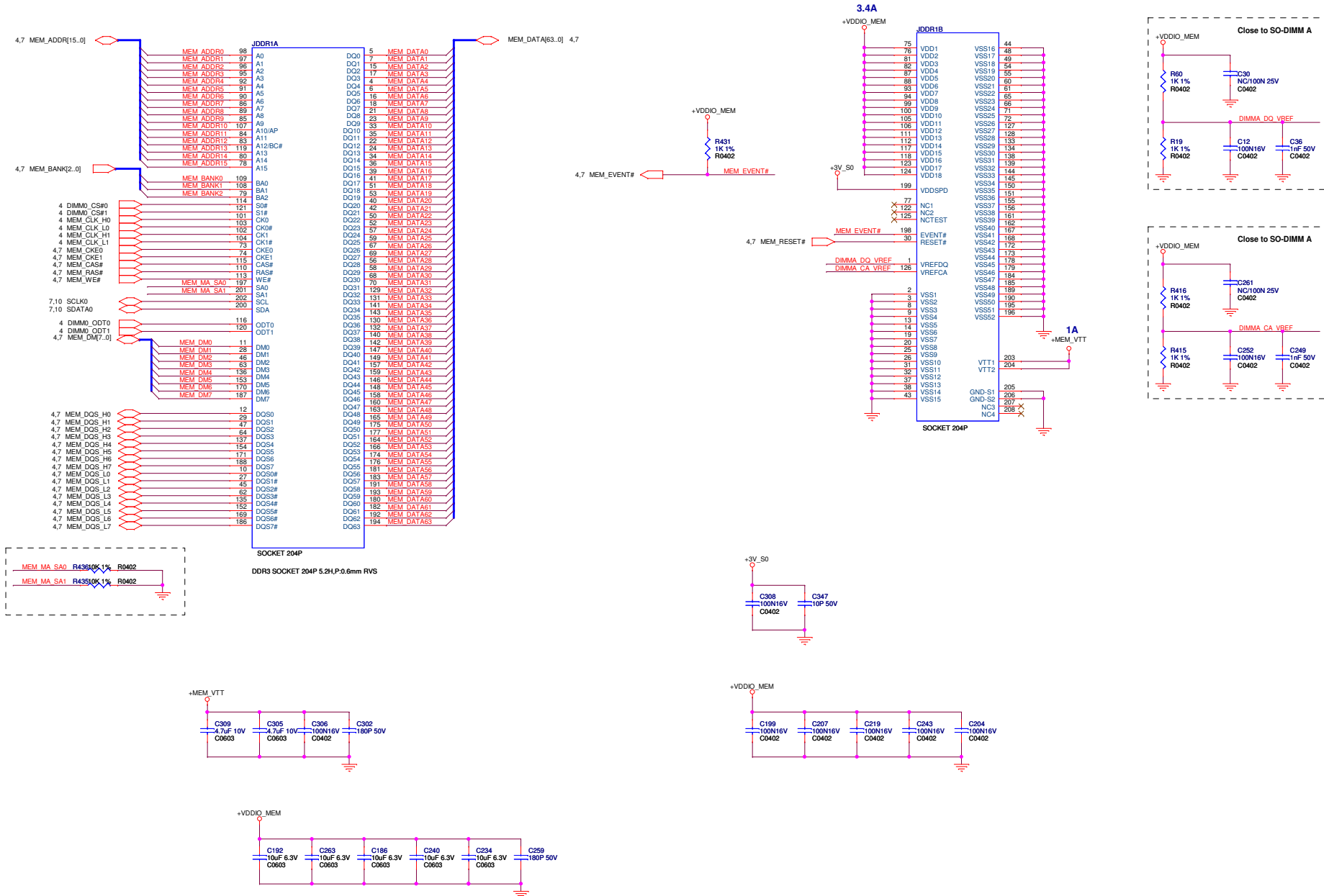


TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
線路圖編號	715G4788MOA	TPV MODEL	Ellsworth	Rev	MOE
Component	AMD FT1 (1/2)	PCB NAME	715G4788MOA	備註	<備註>
Date	Thursday, February 24, 2011	Sheet	4 of 27		

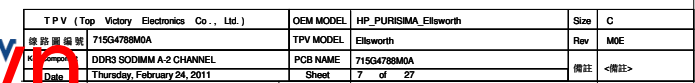


www.vinafix.vn

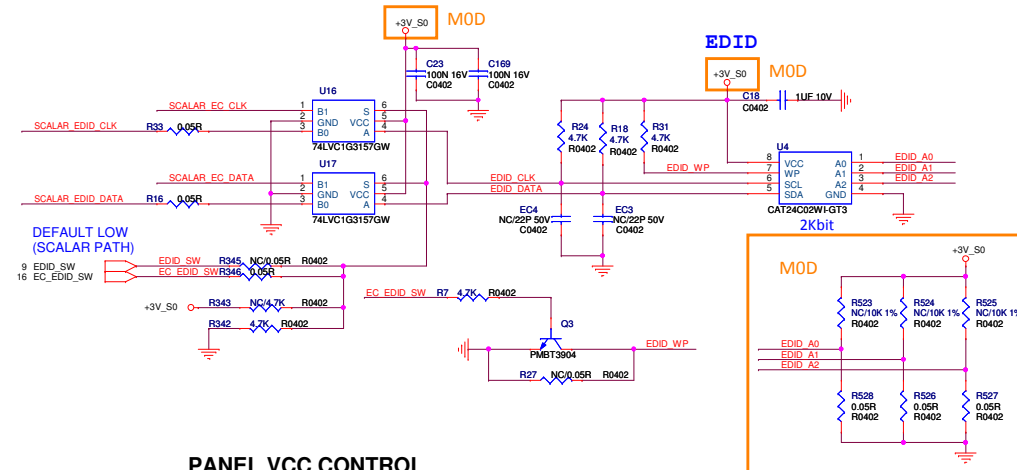
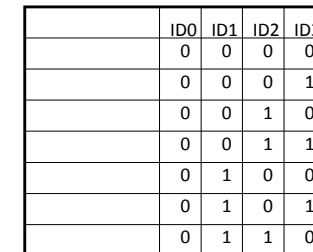
# CHA DDR 5.2H(DIMM-0)



www.vinafix.vn

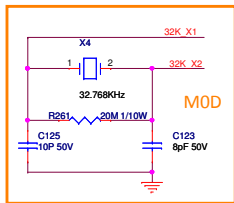






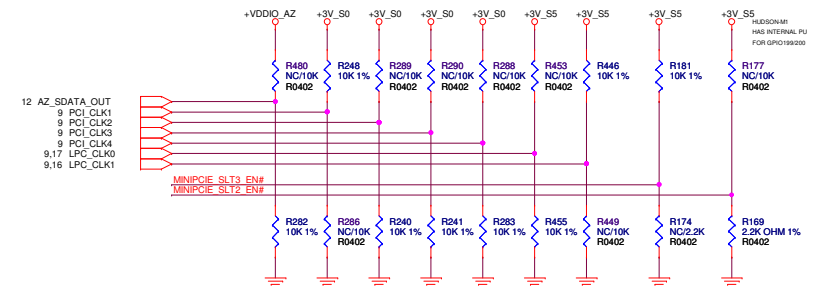
www.vinafix.vn



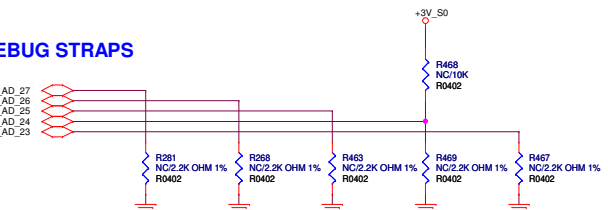


TPV (Top Victory Electronics Co., Ltd.)		GEM MODEL	HP_PURISMA, Ellsworth	Size	C
線路圖編號	715G4788MDA	TPV MODEL	Ellsworth	Rev	MOE
TPV 零件編號	AMD HUDSON D1 (1/3)	PCB NAME	715G4788MDA	備註	<備註>
Thereafter February 24, 2011		Sheet	9 of 27		

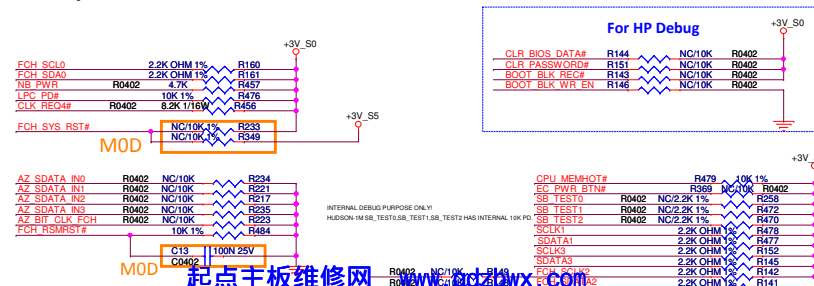
[www.qdzbwx.com](http://www.qdzbwx.com)  
STRAP PINS



## DEBUG STRAPS

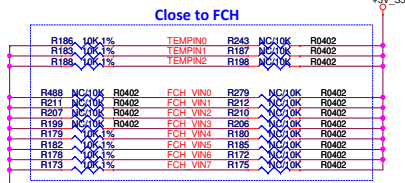


	PCI_AD27	PCI_AD26	PCI_AD25	PCI_AD24	PCI_AD23
PULL "HIGH"	USE PCI PLL DEFAULT	DISABLE ILA AUXILIARY DEFAULT	USE PC PLL DEFAULT	USE DEFAULT PCIE STRAPS DEFAULT	DISABLE PCI MEM ROOT DEFAULT
PULL "LOW"	BYPASS PCI PLL	ENABLE ILA AUTORUN	BYPASS PC PLL	USE EEPROM PCIE STRAPS	ENABLE PCI MEM ROOT



TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP_PURISIMA_Ellsworth	Size	C	
線路圖編號	71504788MDA	TPV MODEL	Ellsworth	Rev	MOE
AMD HUDSON D1 (2/3)		PCB NAME	71504788MDA	備註	<備註>
Thursday, February 24, 2011		Sheet	10 of 27		

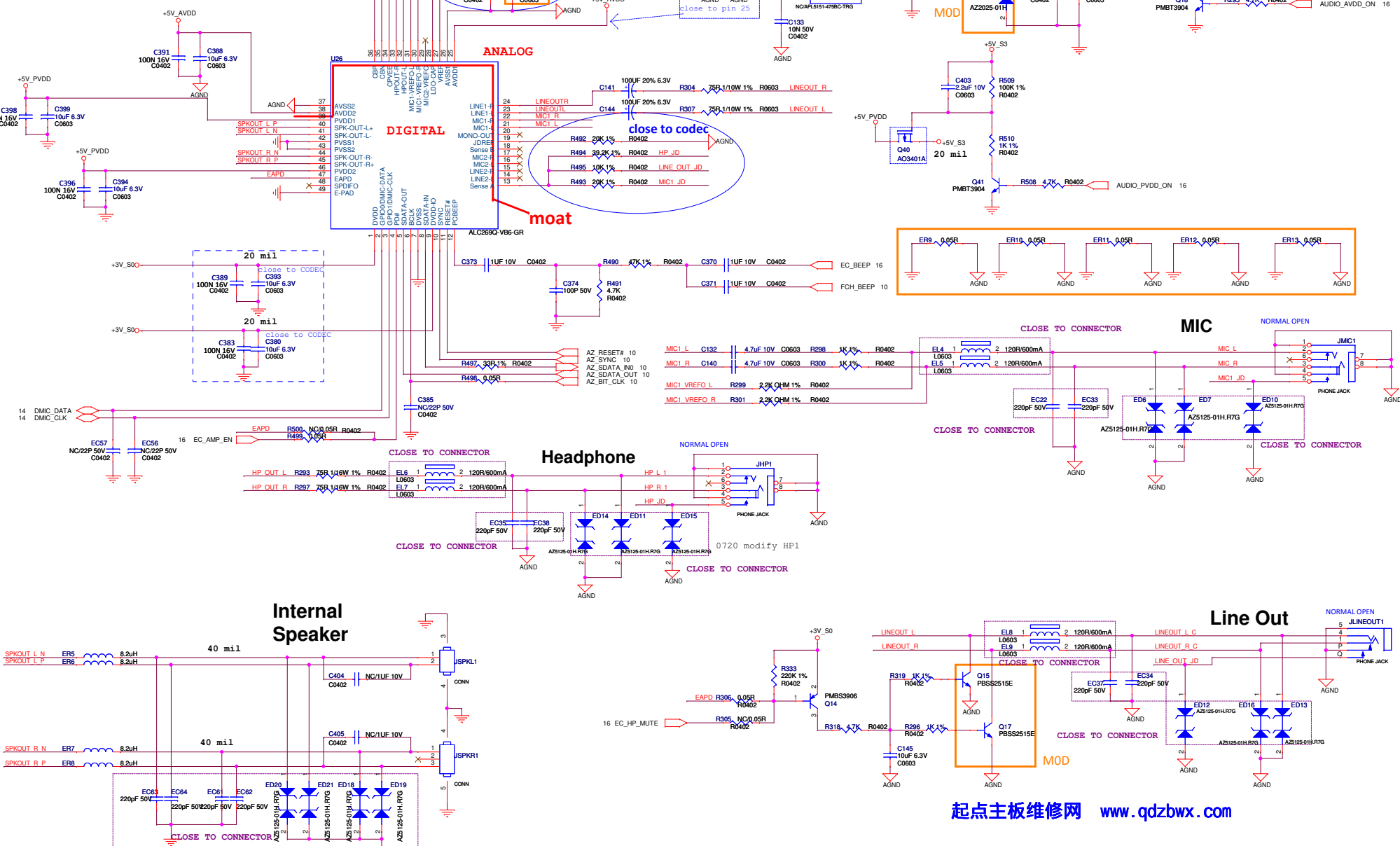
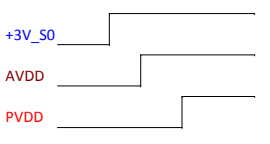
www.gdzbwx.com



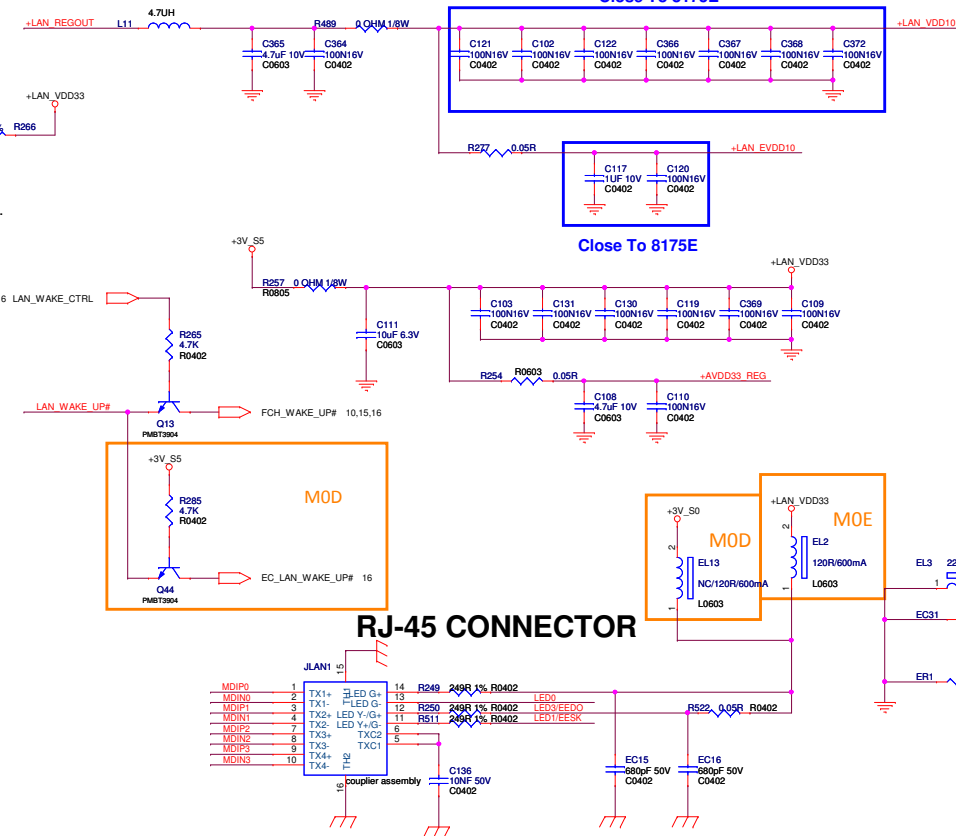
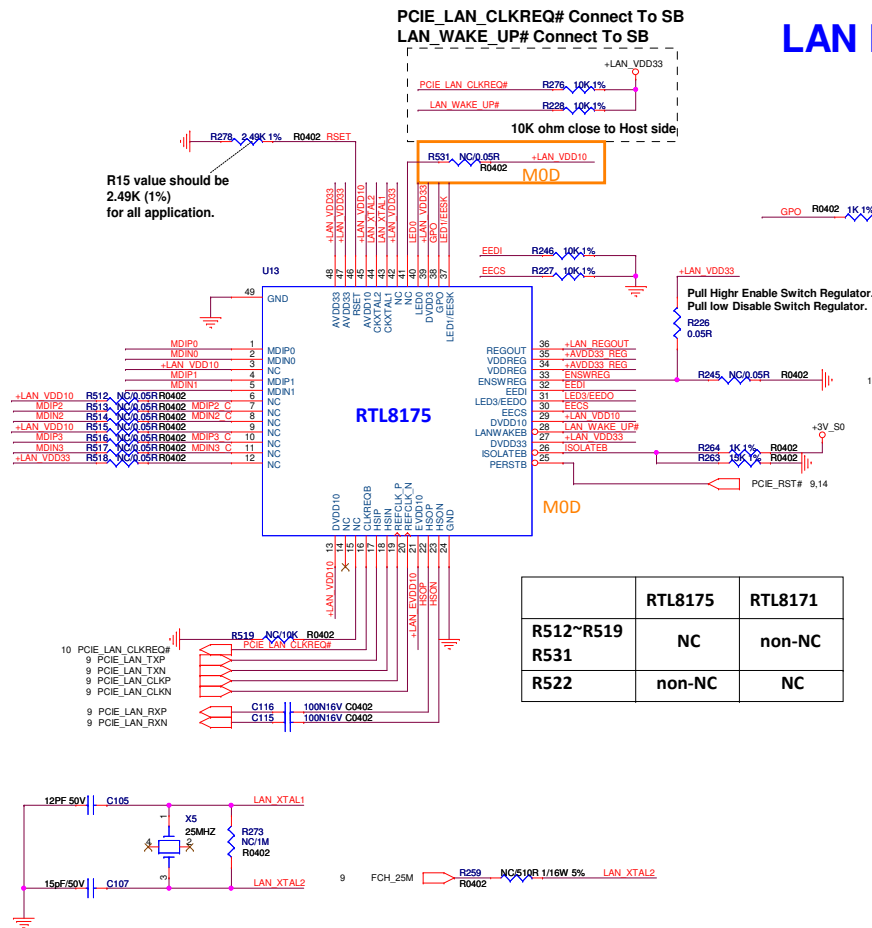
TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
線路圖編號 715G4788MDA	TPV MODEL	Ellsworth	Rev	MOE
AMD HUDSON D1 (3/3)	PCB NAME	715G4788MDA		
date Thursday, February 24, 2011	Sheet	11 of 27	備註	<備註>

# AUDIO CODEC (ALC269Q)

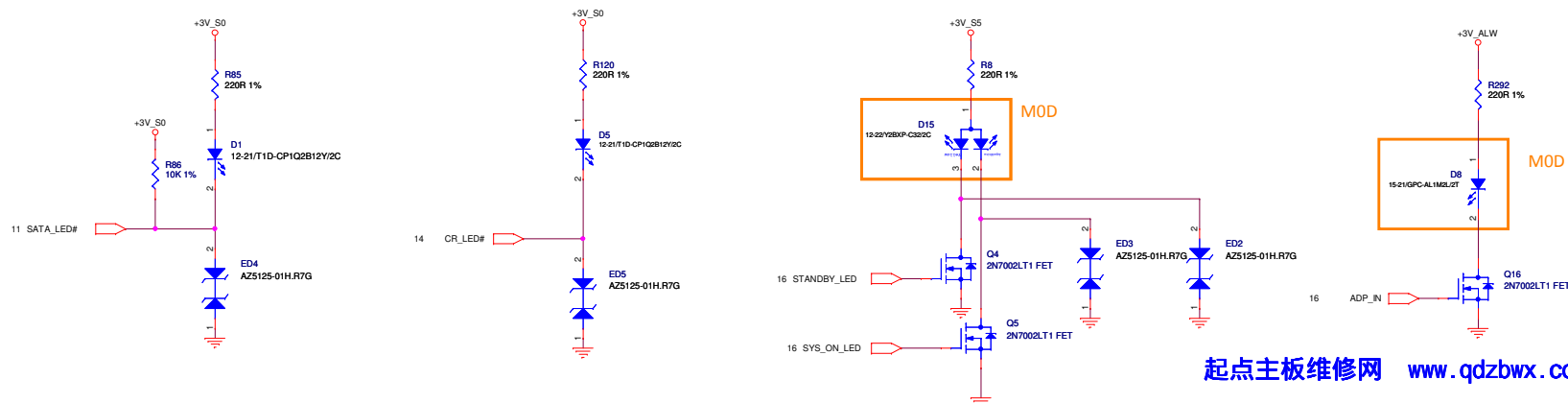
## Power Sequence



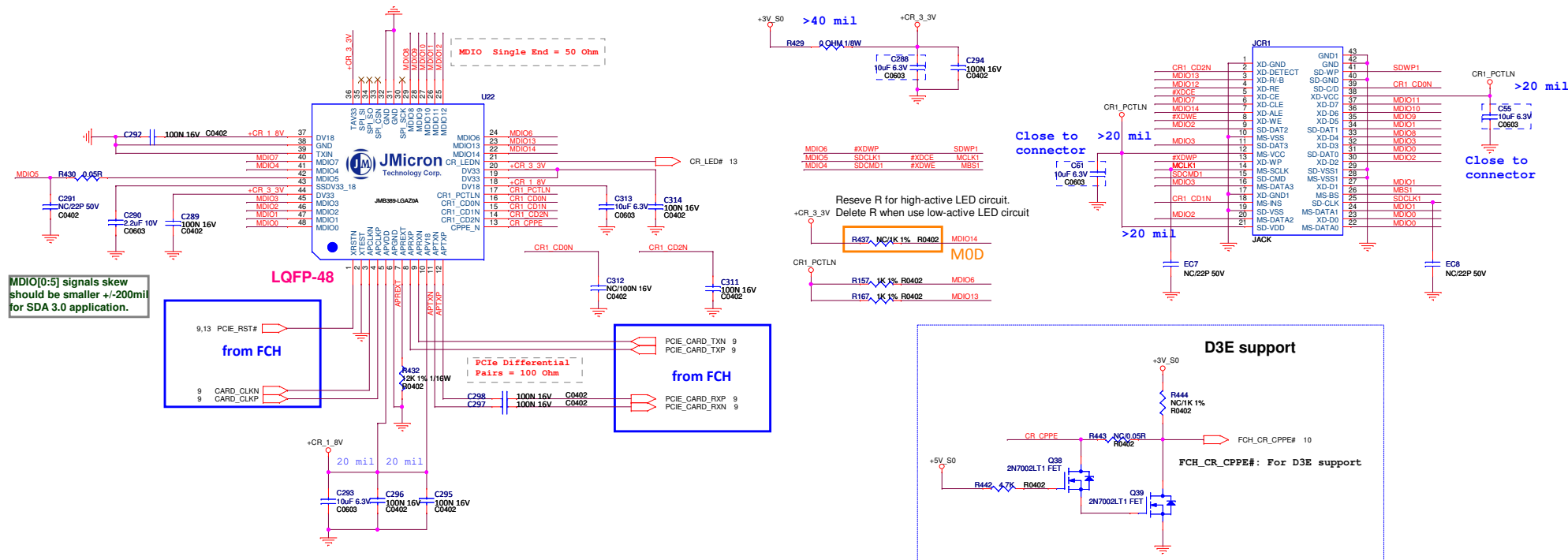
## LAN RTL8175E-CG



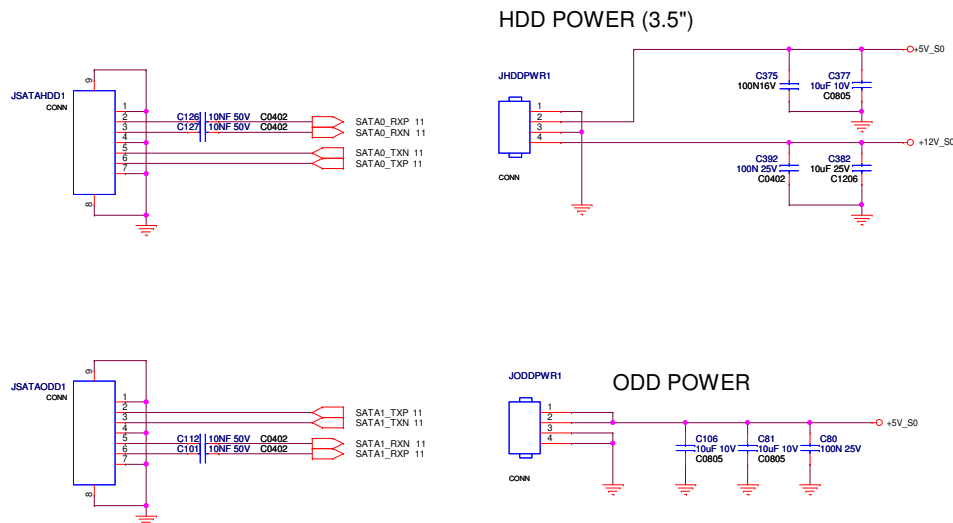
## LED



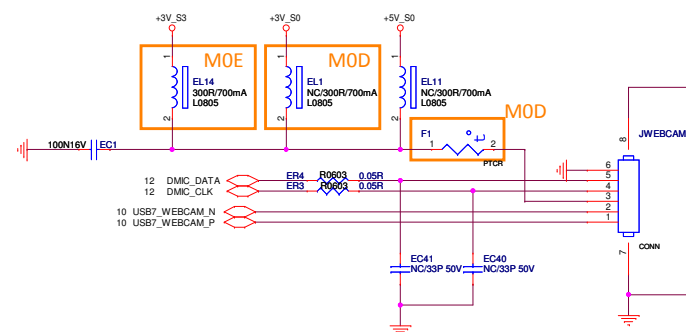
## Card Reader JMB389A



## HDD/ODD



**WEB CAM / D-MIC**

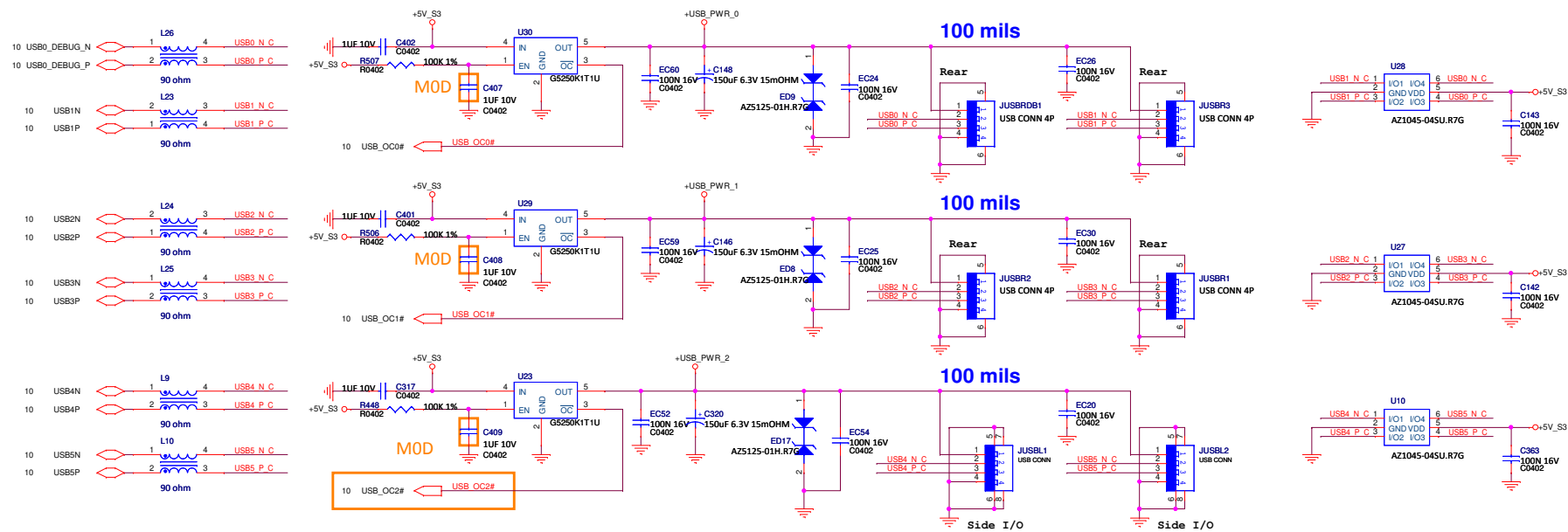


起点主板维修网 [www.qdzbwx.com](http://www.qdzbwx.com)

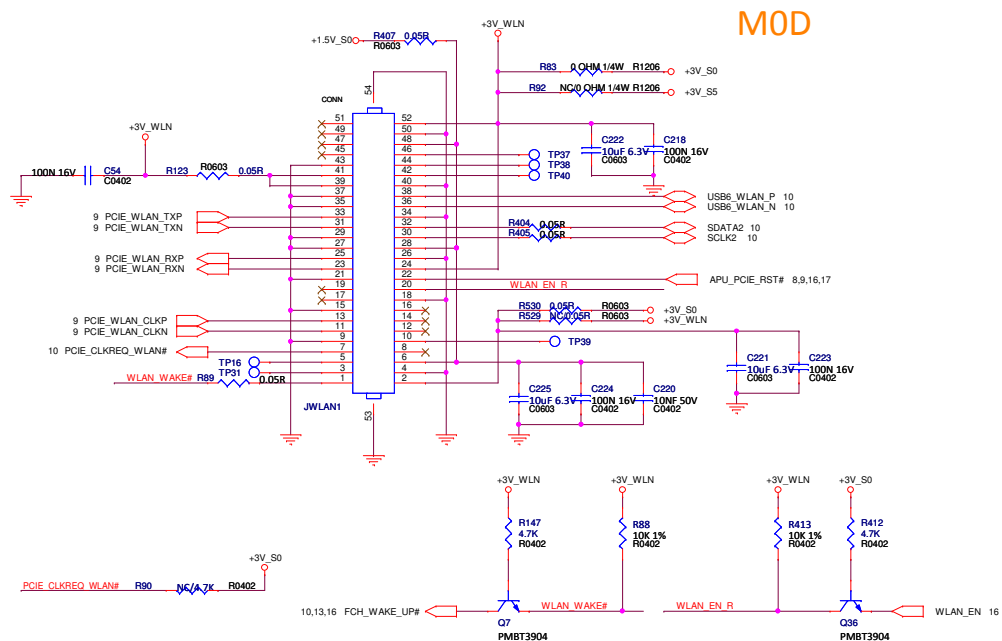
TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
線路圖編號		TPV MODEL	Ellsworth	Rev	MOE
Component		CR/HDD/ODD/WEBCAM/D-MIC	PCB NAME	715G4788MDA	<備註>
Date		Thursday, February 24, 2011	Sheet	14 of 27	



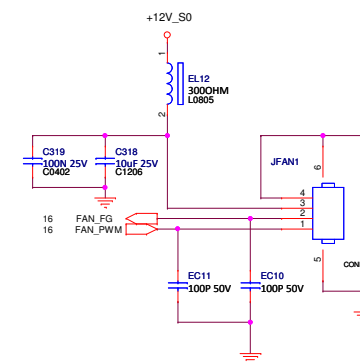
## USB 2.0 (Rear/L-Side)



## MINI PCI-E WLAN & BT



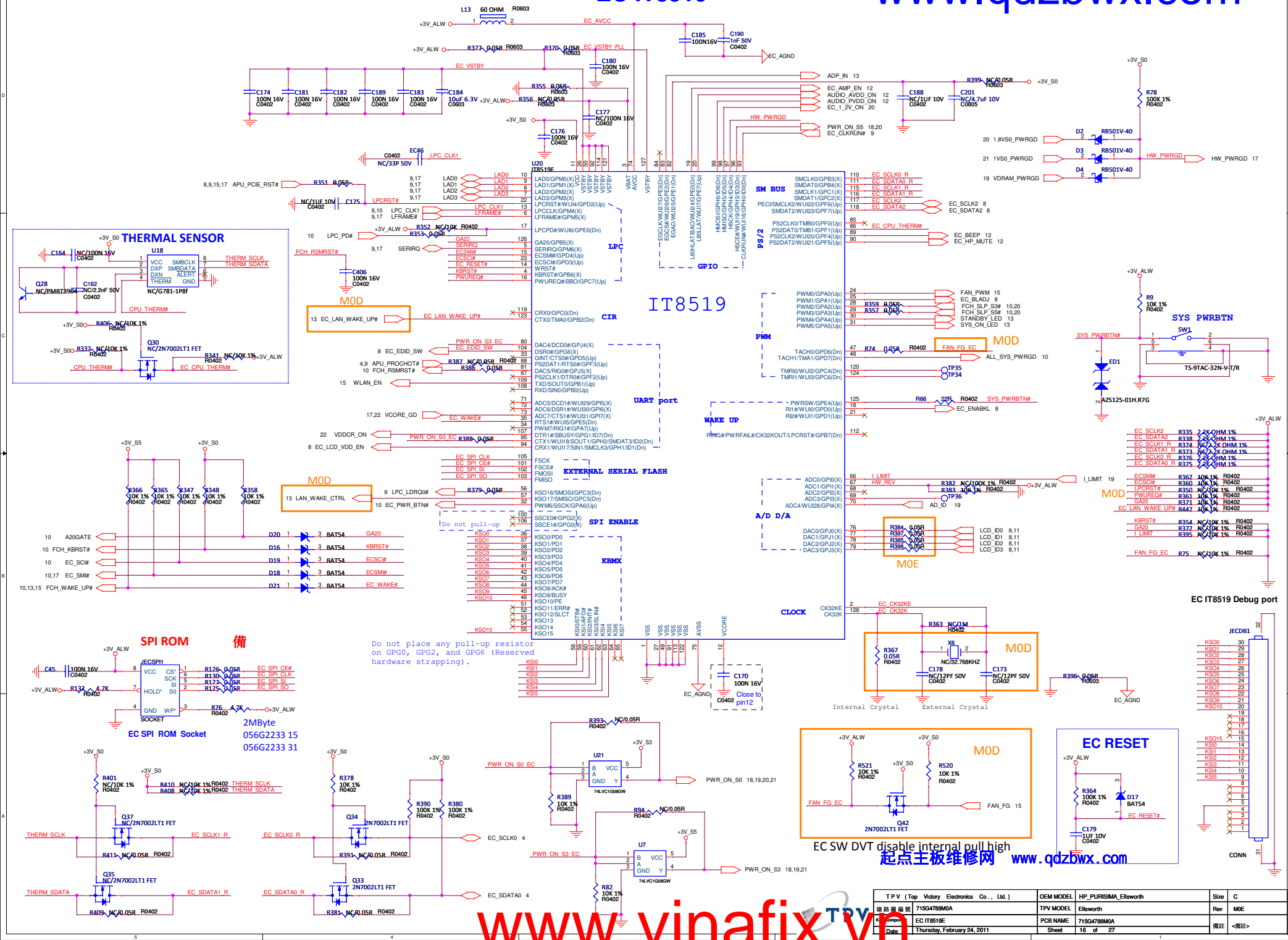
## CPU Linear FAN Control



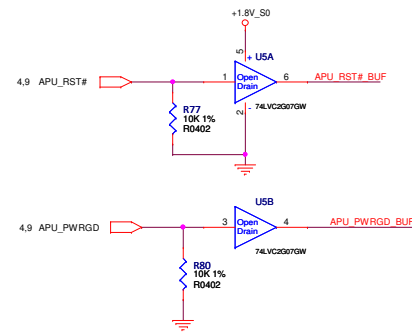
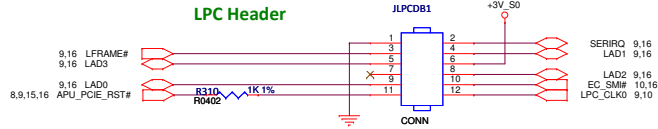
起点主板维修网 [www.qdzbwx.com](http://www.qdzbwx.com)

T P V (Top Victory Electronics Co., Ltd.)		OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
TPV4788M0A		TPV MODEL	Ellsworth	Rev	MOE
USB/Mini PCI-E/FAN		PCB NAME	715G4788M0A		
Thursday, February 24, 2011		Sheet	15 of 27	備註 <備註>	

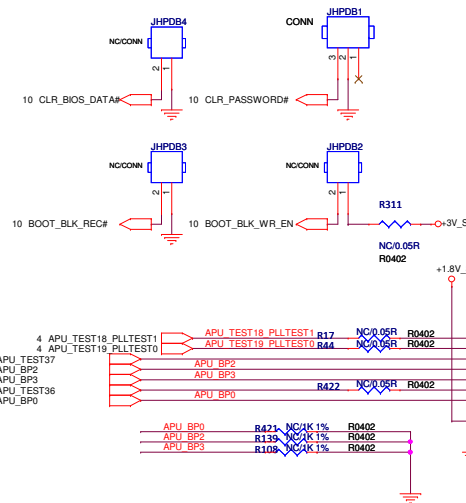




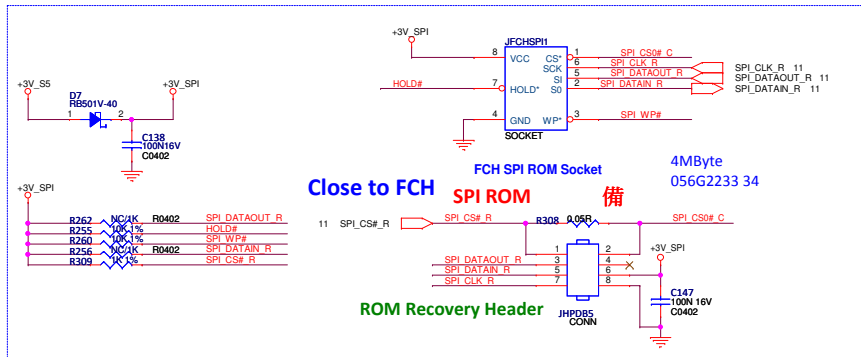
## HP LPC DEBUG PIN HEADER



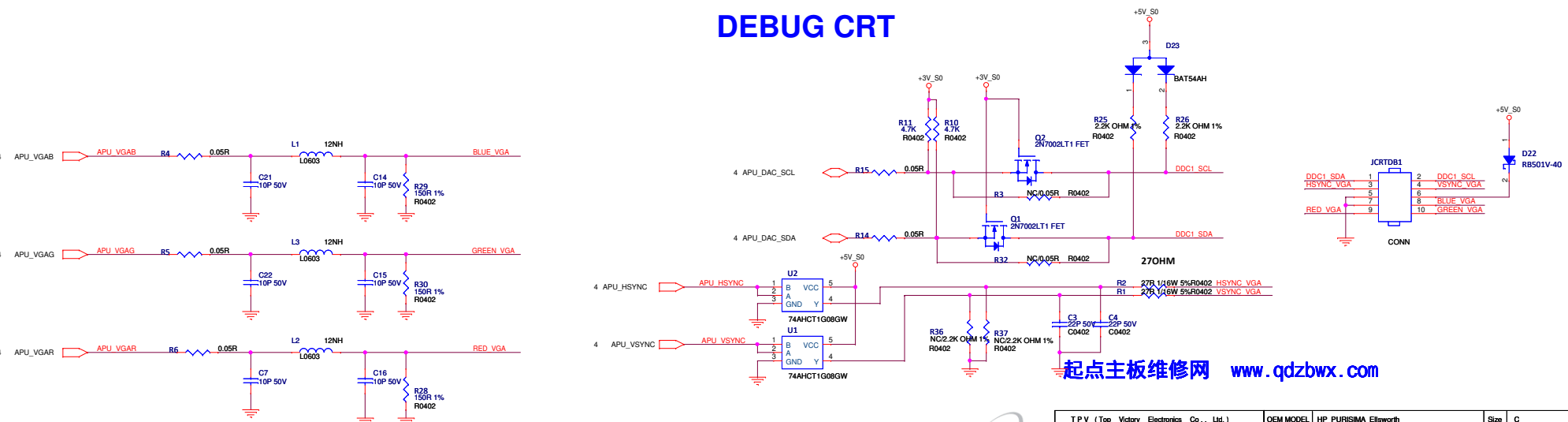
## Boot Block Write Enable



## HP ROM RECOVERY



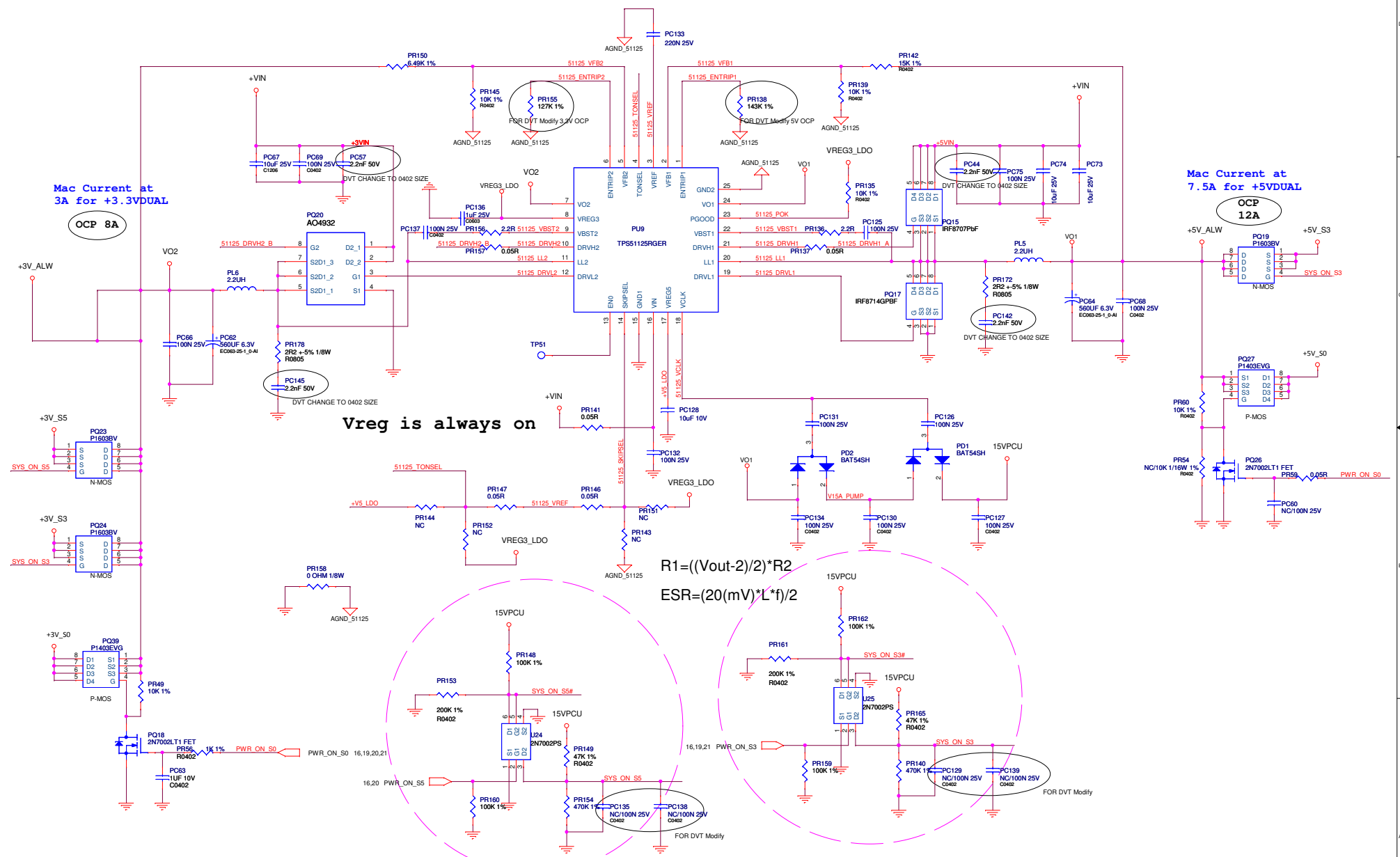
## DEBUG CRT



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TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP PURISIMA_Ellsworth	Size	C
TPV MODEL	715G4788M0A	Ellsworth	Rev	M0E
PCB NAME	715G4788M0A		備註	<備註>
Date	Thursday, February 24, 2011	Sheet	17 of 27	

# SYSTEM +3V\_ALW/+3V\_S5/+3V\_S3/+3V\_S0 +5V\_ALW/+5V\_S3/+5V\_S0

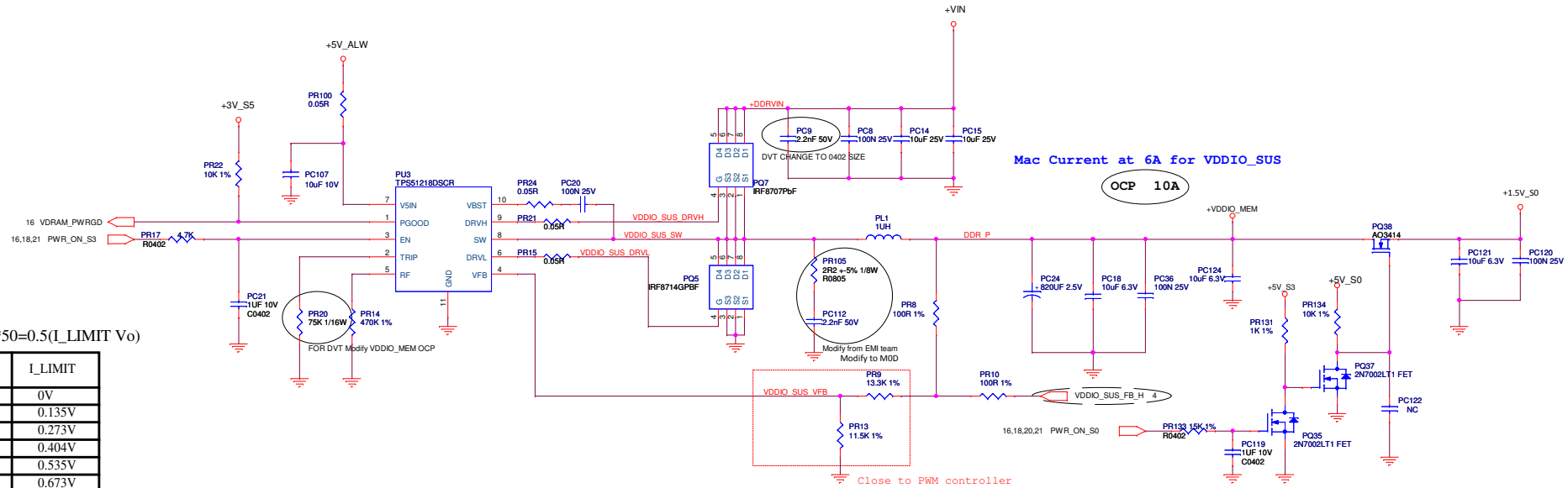


TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
715G4788M0A	TPV MODEL	Ellsworth	Rev	M0E
SYSTEM +3V/+5V	PCB NAME	715G4788M0A	18	of 27
Date	Thursday, February 24, 2011	Sheet	18	of 27
備註 <備註>				

# VDDIO\_SUS, MEM\_VTT, DC-IN

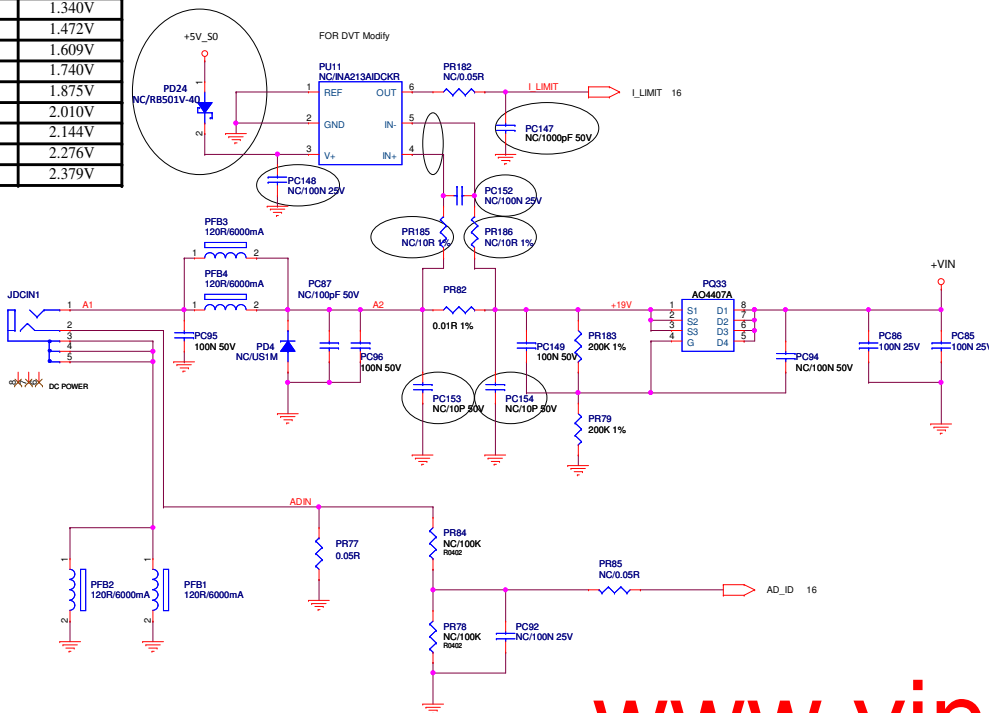
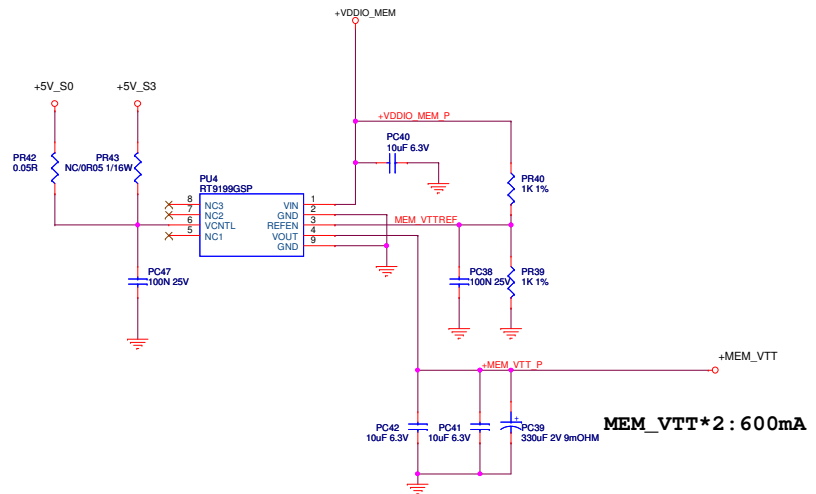
1A\*.01ohm\*50=0.5(I\_LIMIT Vo)

TOTAL POWER	I_LIMIT
0W	0V
5W	0.135V
10W	0.273V
15W	0.404V
20W	0.535V
25W	0.673V
30W	0.807V
35W	0.938V
40W	1.075V
45W	1.206V
50W	1.340V
55W	1.472V
60W	1.609V
65W	1.740V
70W	1.875V
75W	2.010V
80W	2.144V
85W	2.276V
90W	2.379V

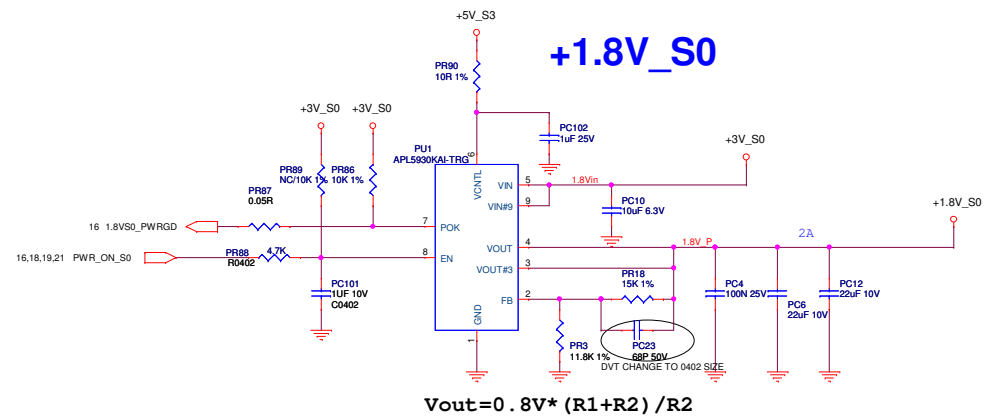


Vout=0.704V\* (R1+R2) /R2  
ESR=L\*f/70

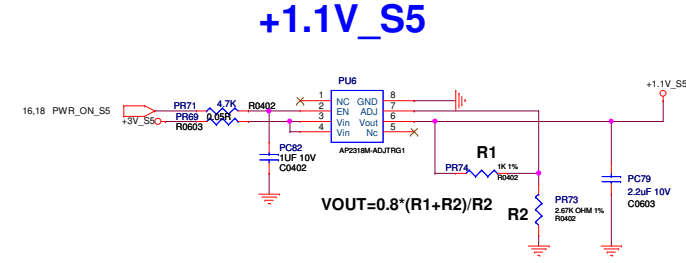
## MEM\_VTT Power



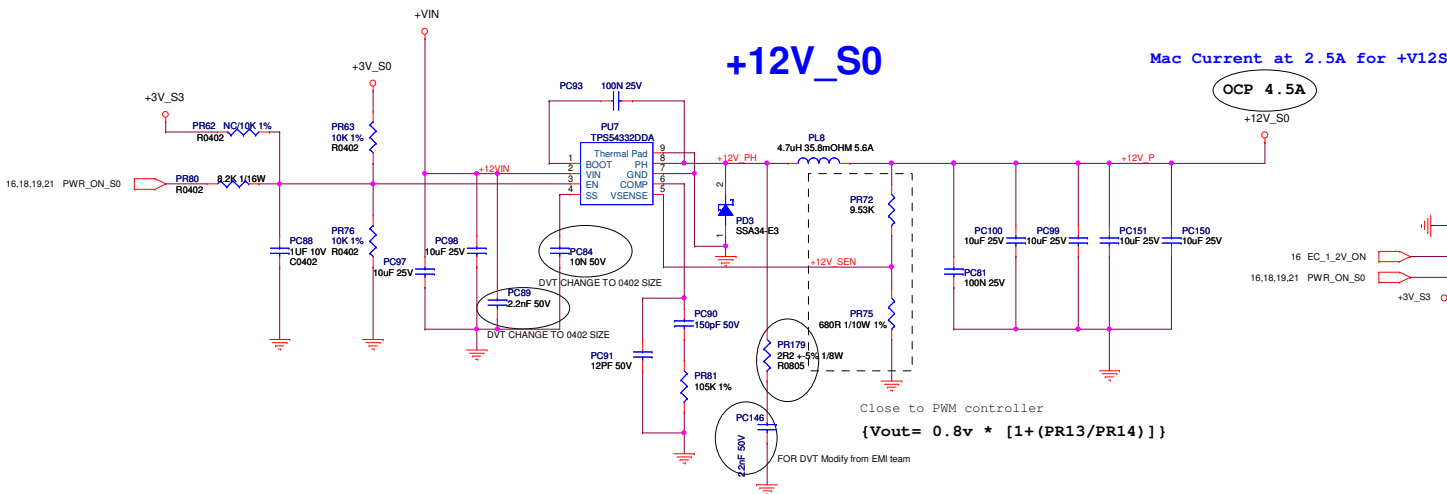
起点主板维修网 www.qdzbwx.com



$$V_{out} = 0.8V * (R1 + R2) / R2$$

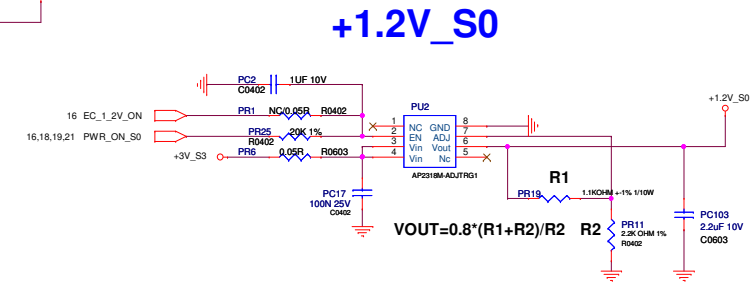


$$V_{OUT} = 0.8 * (R1 + R2) / R2$$



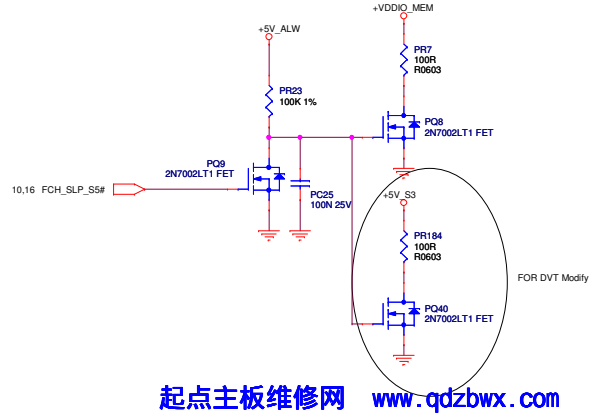
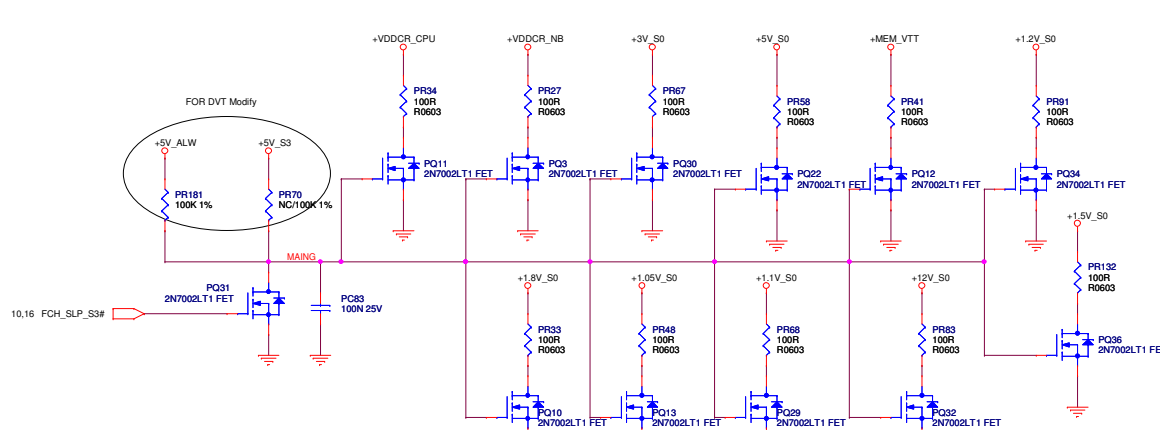
Mac Current at 2.5A for +V12S

OCP 4.5A



$$V_{OUT} = 0.8 * (R1 + R2) / R2$$

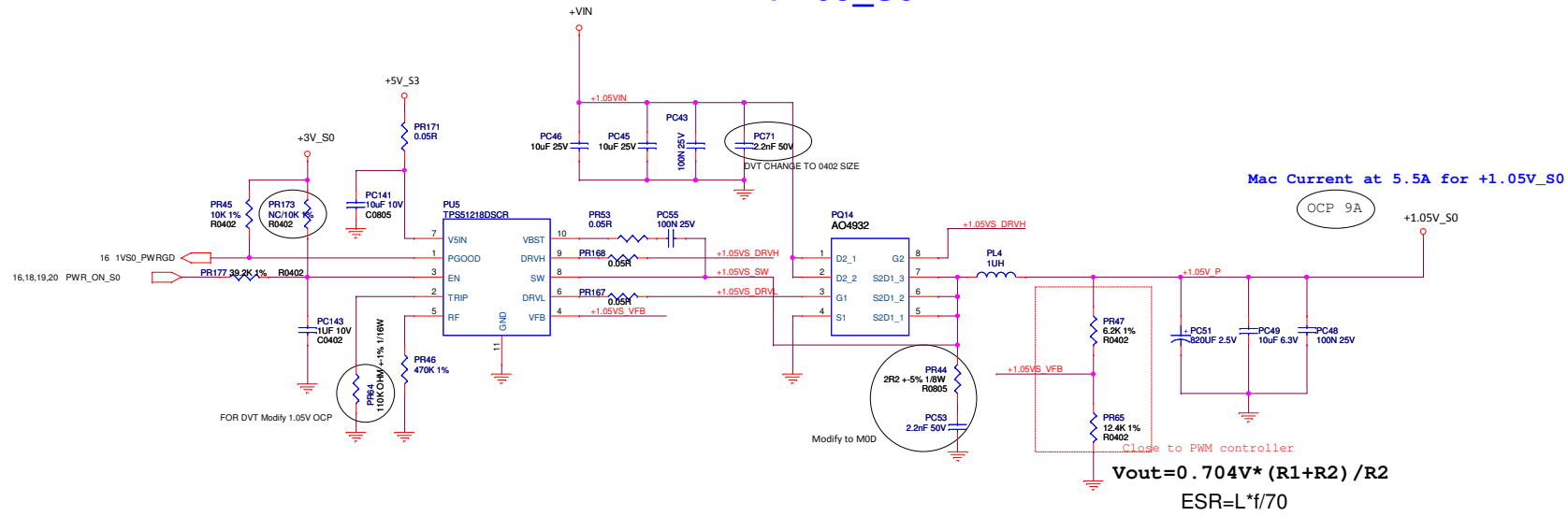
## DISCHARGE CIRCUIT



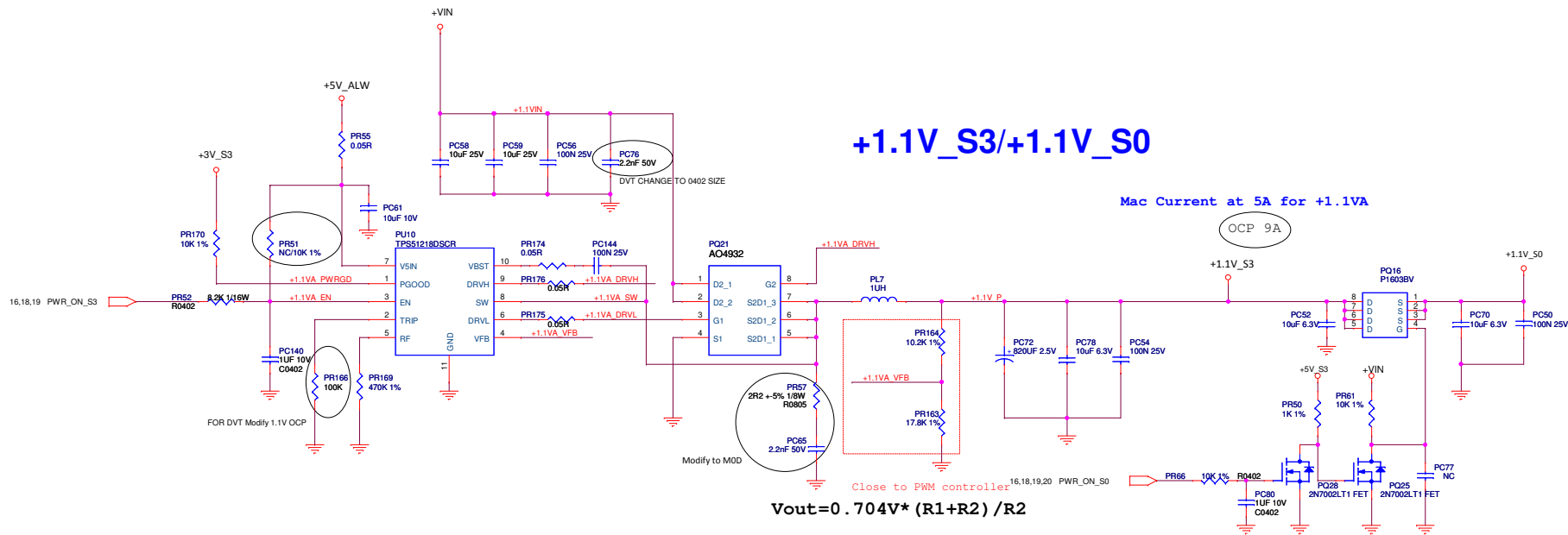
起点主板维修网 www.qdzbwx.com

TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP_PURISIMA_Elleworth	Size	C
TPV MODEL	715G4788M0A	Elleworth	Rev	M0E
PCB NAME	715G4788M0A		Sheet	20 of 27
Date	Thursday, February 24, 2011		備註	<備註>

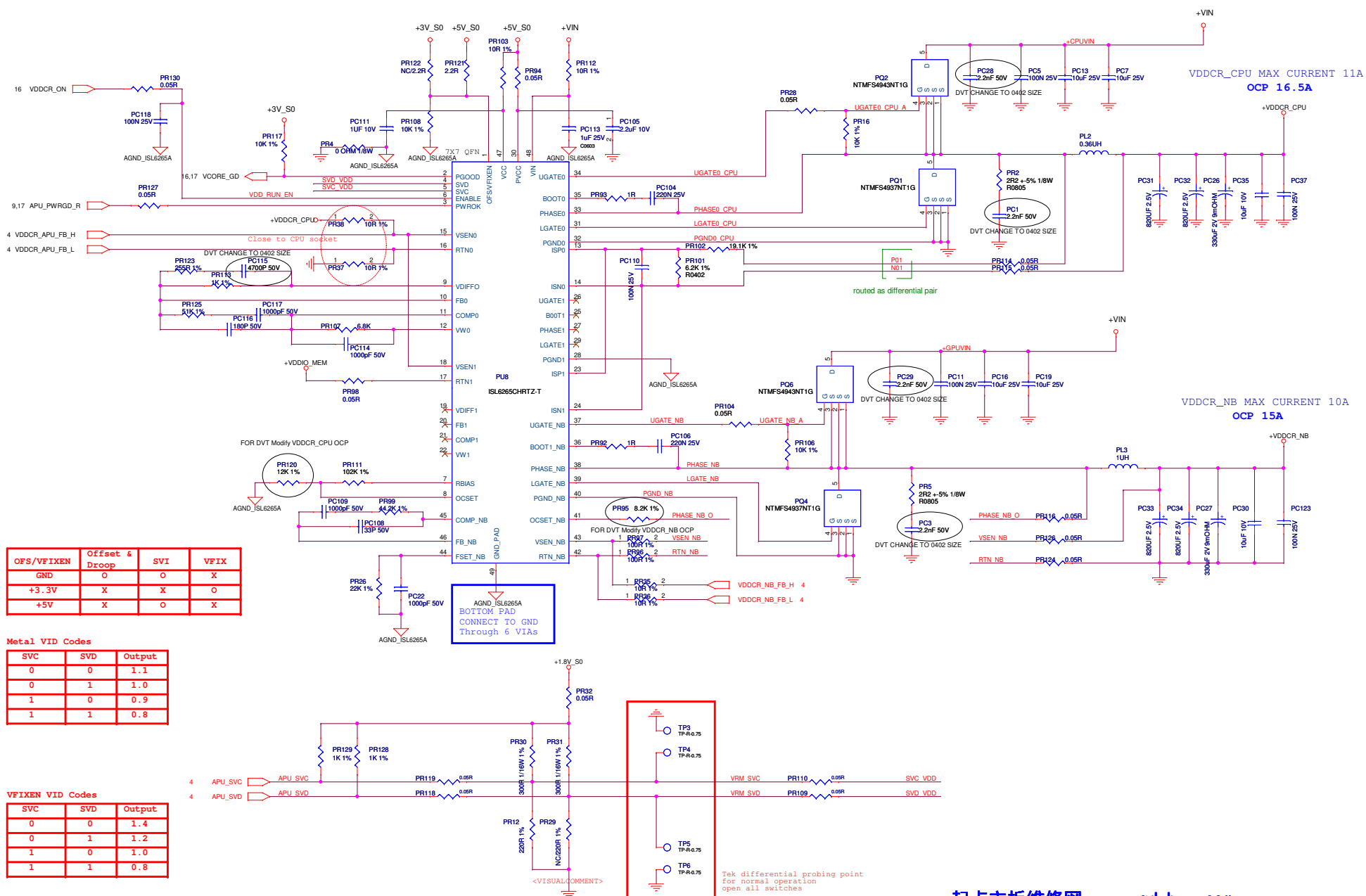
## +1.05V\_S0



## +1.1V\_S3/+1.1V\_S0



## VDDCR\_CPU & VDDCR\_NB



起点主板维修网 [www.qdzbwx.com](http://www.qdzbwx.com)

TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
線路圖編號		TPV MODEL	Ellsworth	Rev	MOE
Component	VDDCR_CPU/VDDCR_NB	PCB NAME	715G4788M0A		
Date	Thursday, February 24, 2011	Sheet	22 of 27	備註	<備註>



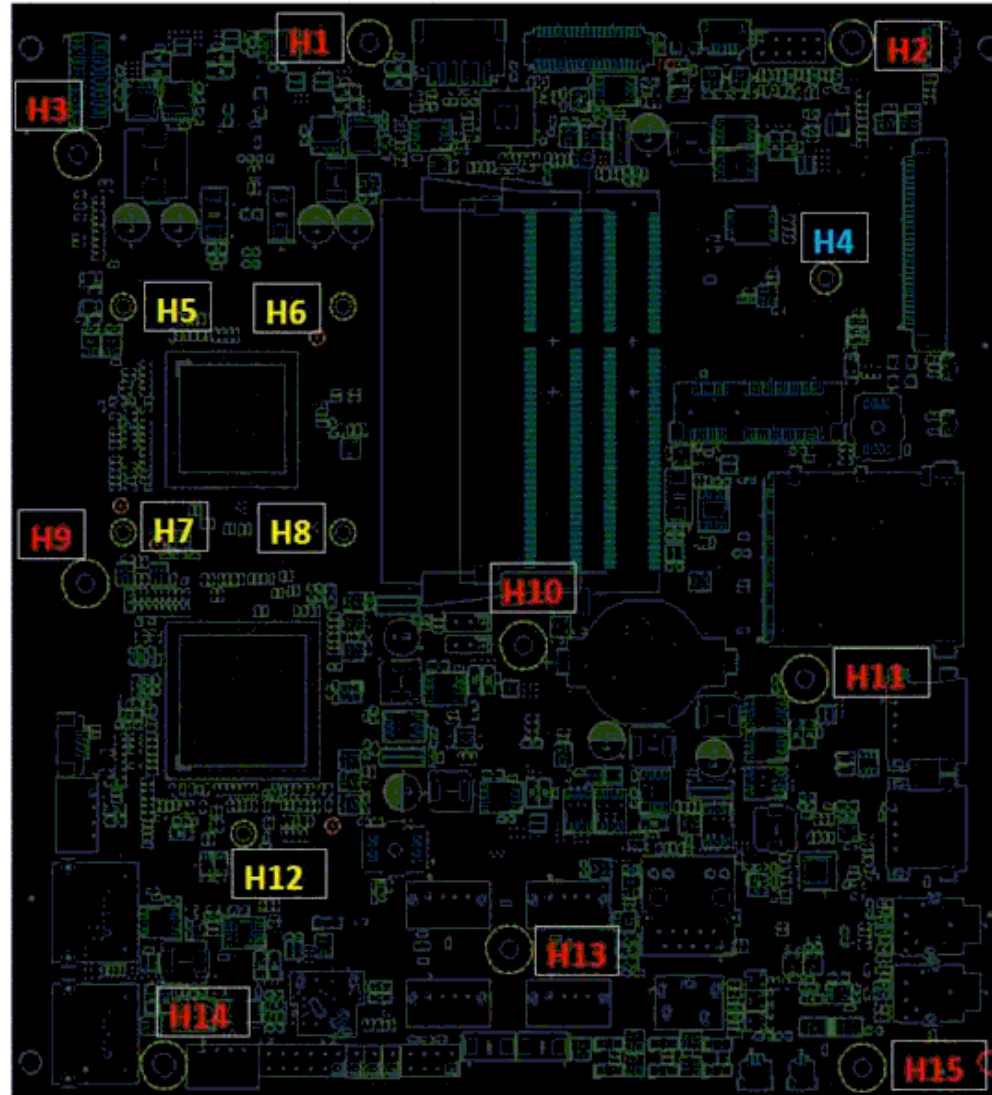
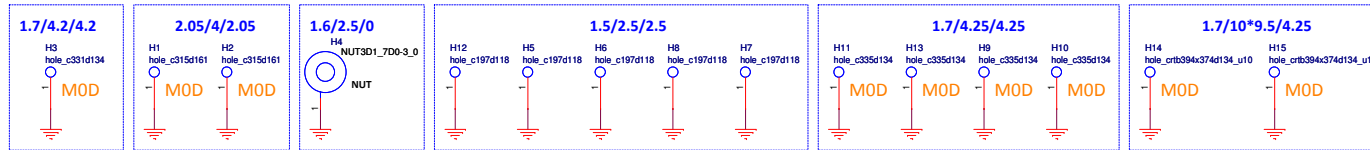
## STACK UP 6L

Stack Up							
PCB Stack Up				Impedance			
Layer	Type	Thickness (mil)					
Top side solder mask		1.00 mils		Single end	理論值	differential	理論值
L1	TOP	copper+plating	1.58 mils	4 mils, 50Ω±15% 8 mils, 40Ω±10% 10 mils, 35Ω±15%	53.94Ω 38.75Ω 34.22Ω	5/6/5 mils, 85Ω±10% 4/8/4 mils, 100Ω±10% 4/5/4 mils, 90Ω±10% 7/5/7 mils, 72Ω±10%	83.03Ω 97.18Ω 86.49Ω 70.72Ω
		Prepreg	3.50 mils				
L2		copper	1.30 mils				
		core	4.00 mils				
L3	IN1	copper	0.70 mils	4 mils, 50Ω±15% 8.5 mils, 40Ω±10% 10 mils, 35Ω±15%	56Ω 39.1Ω 35.68Ω	5/5/5 mils, 85Ω±10% 4/7/4 mils, 100Ω±10% 5/6/5 mils, 90Ω±10% 7.5/5/7.5 mils, 72Ω±10%	84.33Ω 98.09Ω 87.21Ω 70.39Ω
		Prepreg+core	36.00 mils				
L4	IN2	copper	0.70 mils	4 mils, 50Ω±15% 8.5 mils, 40Ω±10% 10 mils, 35Ω±15%	56Ω 39.1Ω 35.68Ω	5/5/5 mils, 85Ω±10% 4/7/4 mils, 100Ω±10% 5/6/5 mils, 90Ω±10% 7.5/5/7.5 mils, 72Ω±10%	84.33Ω 98.09Ω 87.21Ω 70.39Ω
		core	4.00 mils				
L5		copper	1.30 mils				
		Prepreg	3.50 mils				
L6	Bottom	copper+plating	1.58 mils	4 mils, 50Ω±15% 8 mils, 40Ω±10% 10 mils, 35Ω±15%	53.94Ω 38.75Ω 34.22Ω	5/6/5 mils, 85Ω±10% 4/8/4 mils, 100Ω±10% 4/5/4 mils, 90Ω±10% 7/5/7 mils, 72Ω±10%	83.03Ω 97.18Ω 86.49Ω 70.72Ω
Bottom side solder mask		1.00 mils					
TOTAL		60.16 mils					
		1.53 mm					

起点主板维修网 www.qdzbwx.com

# SCREW HOLE PLACEMENT

/ (T)/ (B)



## PCB SILK SCREEN

PCB color codes:

- EVT (Red); Silkscreen (White)
- DVT (Blue); Silkscreen (White)
- PVT (Gold); Silkscreen (White)
- Production (Green); Silkscreen (White)

- HW\_PWRGD --> D713,G (PS\_ON#)
- VCORE\_GD --> D721,G (VRM\_PWRGD)
- FCH\_PWRGD --> D715,G (POWERGOOD\_140MS)
- AUX\_POWER --> D720,G
- SLP\_S3 --> D716,G
- SLP\_S5 --> D717,G
- AMD HDT --> JHDT1
- LPC HEADER --> JLPADB1
- ROM Recovery --> JHPDB5
- BBW\_EN --> JHPDB4
- USB WinDbg --> JUSBRDB1
- DIMM0 --> JDDR52
- DIMM1 --> JDDR92

T&I PCB Version = 0A , 0B , 0C.....  
MP = M01 , M02.....

起点主板维修网 www.qdzbwx.com

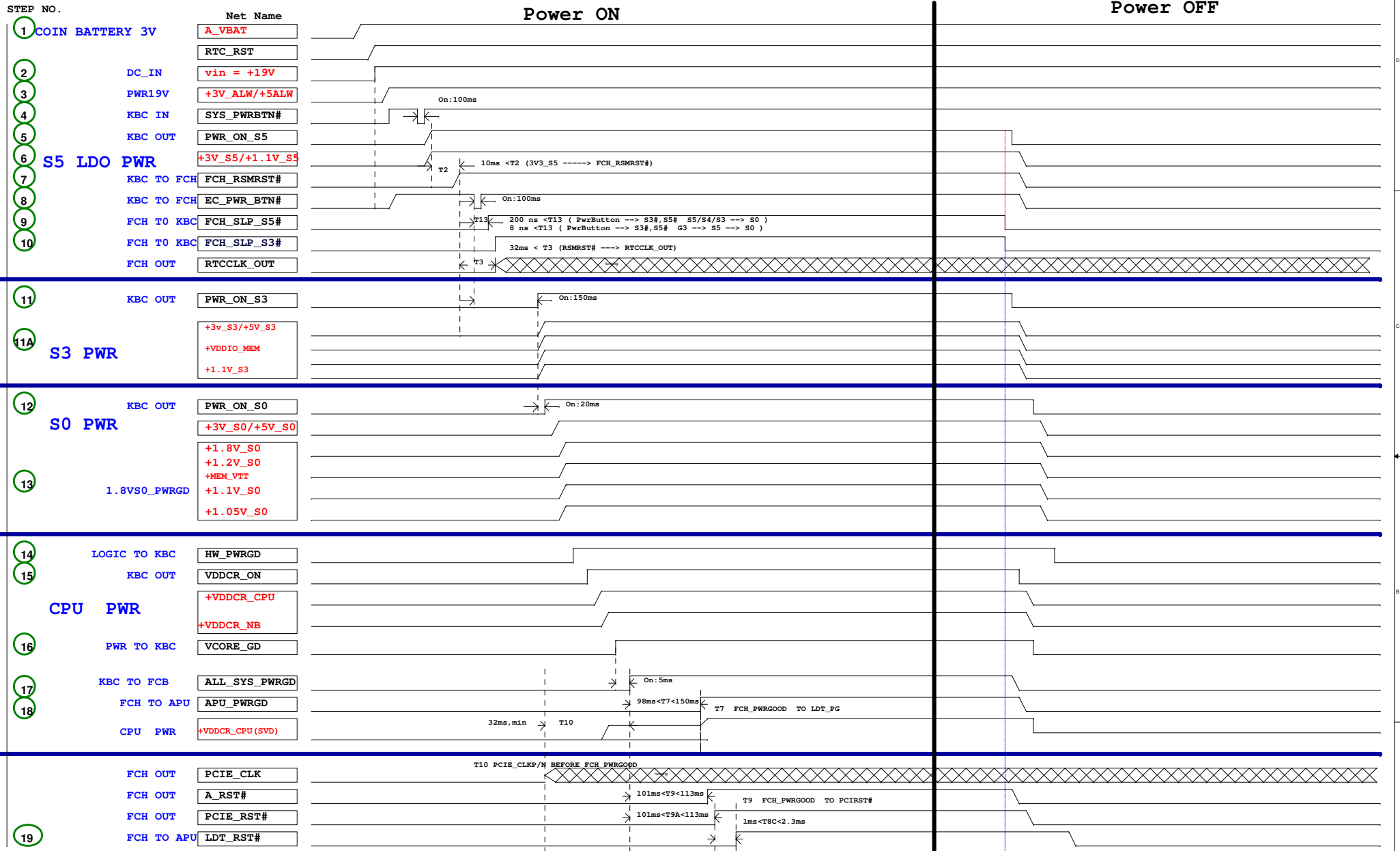
<Variant Name>

TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
TPV MODEL	715G4788M0A	Ellsworth	Rev	M0E
PCB NAME	SCREW HOLE/SILK SCREEN	715G4788M0A	Sheet	24 of 27
Date	Thursday, February 24, 2011		備註	<備註>



## POWER SEQUENCE

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起点主板维修网 www.qdzbwx.com

www.vinafix.vn

TPV (Top Victory Electronics Co., Ltd.)	OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
TPV MODEL	715G4788M0A	Ellsworth	Rev	M0E
POWER SEQUENCE	PCB NAME	715G4788M0A	Sheet	26 of 27
Date	Thursday, February 24, 2011			備註 <備註>

Schematic Modify History

M0A --> M0B    Modify date 2010/11/24~2010/11/25  
(2010/11/26 gerber out for EVT)

- 1. Add R511~R519 , R522 for co-design RTL8105E and RTL8111E.
- 2. Modify SATA pin define because of HDD location reversefor ME concern.

M0B --> M0D    Modify date 2010/12/29~2011/01/27  
(2011/01/28 gerber out for DVT)

- 1. Remove EL1, webcam power connect to +5V\_S0 and NC +3V\_S0, only change BOM.
- 2. Add EL13, for LAN RJ45 LED behavior
- 3. Remove R437, For cardreader LED can't bright when insert card.
- 4. Remove EC7 EC8, For MS card no function, EMI cap is too large.
- 5. Remove C178 C173 X6, Add R367, foe reduce components X'tal of 32.768kHz to utilize EC internal clock.
- 6. Modify MINI PCI-e circuit, for meet PCI-e 1.0/1.1/2.0 and WLAN module request
- 7. Change R218 R219 R220 R231 R465 R482 R483 R485 USB OC pins pull high plane from +3V\_S3 to +3V\_S5.
- 8. USB OC pin of U23 change control signal to USB\_OC2#.
- 9. ADD R158 R214, Add SM bus pull high resistors for SPD rom of DDR3.
- 10. Add EL13, For fix LAN LED status Matrix.
- 11.Change C381 from 10uf to 2.2uf, for internal speaker pop sound.
- 12. Change EC27 EC28 EC32 EC36 EC58 from 0.1uF to 0ohm, for HP pop sound
- 13. Remove R233, for avoid leak to +3V\_S0
- 14. FAN\_FG appear repeatedly, Close to the IC side changed its name to FAN\_FG\_EC
- 15. FAN\_FG pull high for read the fan speed information
- 16. Modify CPU thermal SMBus(SID,SIC) path, From FCH side change to EC side
- 17. Add PQ40 PR184 for +5V\_S3 discharge
- 18. Add R137 R539 Q43, Prevent Hudson leak to Zacate
- 19. Add PF1, for safety request
- 20. Add R321 R322 R325 R326 R327 R331 R334 R541 Q26 Q27 Q45 Q46 for ensure the stability of the panel when the power is turn on
- 21. Add R523~R528 for EDID ROM SMBus address
- 22. Add Q23 R351 R540, for EC to Hudson voltage two step issue
- 23. Remove R247, for APU\_PCIE\_RST# two step issue
- 24. Remove R164, Prevent Hudson leak to +3V\_S0 power plane
- 25. Add R349, reserve Hudson SYS\_RESET# external pull up.
- 26. Add R320 R323 R333 R368 R496 R501 R502 Q20 Q21 Q23 Q24 Q25, for reduce speaker pop sound
- 27. Change C105 from 10pF to 12pF, Change C107 from 10pF to 15pF, for LAN IC clock accuracy
- 28. Change C125 from 12pF to 10pF, change C123 from 12pF ro 8.2pF, for RTC accuracy
- 29. Remove R113 R114, Add R117 R118, Prevent Hudson leak to Zacate
- 30. Add R531, for co-design RTL8171 LAN controller
- 31. Modify RTL8175 wake up event circuit
- 32. Change D15, for HP power status LED color request
- 33. Add F1, for safety request
- 34. Add C407~C409, for USB power ramp issue
- 35. Add Q44 R285 and EC\_LAN\_WAKE\_UP# signal, reserve wake on LAN path for EC request
- 36. NC EL11,Add EL14 and modify WEBCAM module pin define, for fix WEBCAM module request

PVT & HP de-pop circuit

- page 16 for EC debug connector JECDB1
- page 17 for HP debug JLPADB1,R310,JHPDB5,C147,U31,Q22,D9~D14,R312~R317
- page 17 for AMD debug U5,R53,R56,R77,R80
- page 17 for Tnl HW debug (CRT output function) C3,C4,C7,C14,C15,C16,C21,C22,D22,D23,JCRTDB1 L1,L2,L3,Q1,Q2,R1,R2,R3,R4,R5,R6,R10,R11,R14 R15,R25,R26,R28,R29,R30,R32,R36,R37,U1,U2

TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	HP_PURISIMA_Ellsworth	Size	C
TPV MODEL		Ellsworth		Rev	M0E
HISTORY		PCB NAME	715G4788M0A	備註 <備註>	
Date		Sheet	27 of 27		
Thursday, February 24, 2011					