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P. Leader	Check by	Design by

**Project Code & Schematics Subject:** MS70 Main Board

**PCB P/N:** (FUBAI) 1P-0067100-6010  
 (NAN YA) 1P-0067200-6010  
 (HANSTAR) 1P-0067500-6010

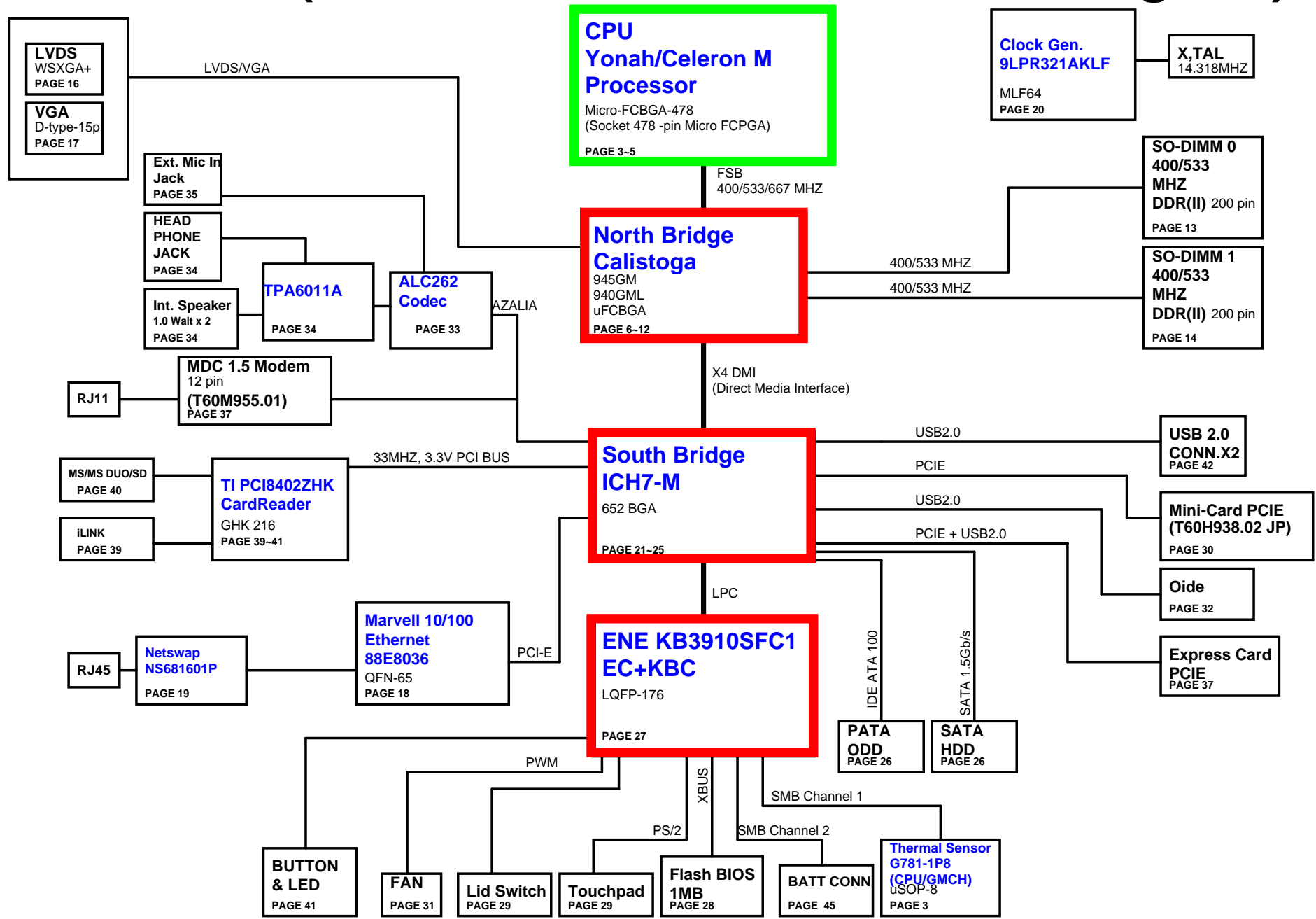
**FOXCONN** HON HAI Precision Ind. Co., Ltd.  
 CCPBG - R&D Division

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Size: A3 Document Number: MS70-1-01 Rev: 1.0

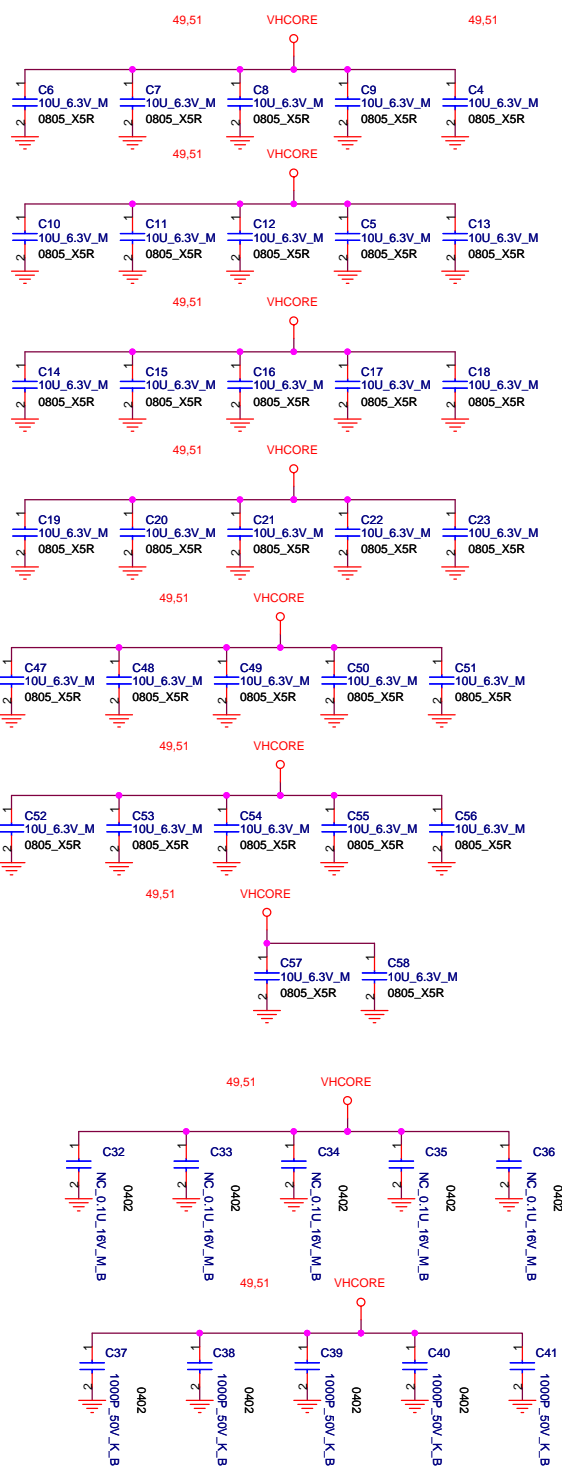
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# RAPTOR/MS70(CALISTOGA GM/GML Block Diagram)



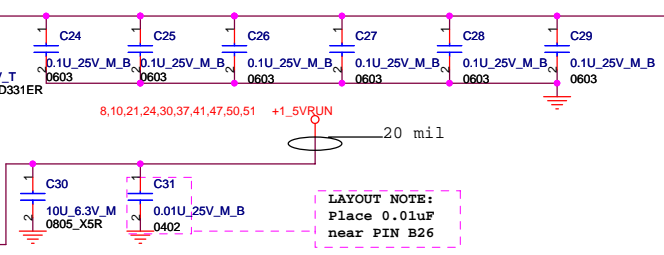




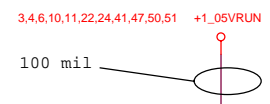


Pin	Signal	Value
A7	VCC[001]	AB20
A8	VCC[002]	AB7
A9	VCC[003]	AC7
A10	VCC[004]	AC9
A11	VCC[005]	AC12
A12	VCC[006]	AC13
A13	VCC[007]	AC15
A14	VCC[008]	AC17
A15	VCC[009]	AC18
A16	VCC[010]	AD7
A17	VCC[011]	AD9
A18	VCC[012]	AD10
A19	VCC[013]	AD12
A20	VCC[014]	AD14
B7	VCC[015]	AD15
B8	VCC[016]	AD17
B9	VCC[017]	AD18
B10	VCC[018]	AE9
B11	VCC[019]	AE10
B12	VCC[020]	AE12
B13	VCC[021]	AE13
B14	VCC[022]	AE15
B15	VCC[023]	AE17
B16	VCC[024]	AE18
B17	VCC[025]	AE20
B18	VCC[026]	AF9
B19	VCC[027]	AF10
B20	VCC[028]	AF12
B21	VCC[029]	AF14
B22	VCC[030]	AF15
B23	VCC[031]	AF17
B24	VCC[032]	AF18
B25	VCC[033]	AF20
B26	VCC[034]	AF20
C7	VCC[035]	VCCP[01]
C8	VCC[036]	VCCP[02]
C9	VCC[037]	VCCP[03]
C10	VCC[038]	VCCP[04]
C11	VCC[039]	VCCP[05]
C12	VCC[040]	VCCP[06]
C13	VCC[041]	VCCP[07]
C14	VCC[042]	VCCP[08]
C15	VCC[043]	VCCP[09]
C16	VCC[044]	VCCP[10]
C17	VCC[045]	VCCP[11]
C18	VCC[046]	VCCP[12]
C19	VCC[047]	VCCP[13]
C20	VCC[048]	VCCP[14]
C21	VCC[049]	VCCP[15]
C22	VCC[050]	VCCP[16]
C23	VCC[051]	VCC[051]
C24	VCC[052]	VCC[052]
C25	VCC[053]	VCC[053]
C26	VCC[054]	VCC[054]
C27	VCC[055]	VCC[055]
C28	VCC[056]	VCC[056]
C29	VCC[057]	VCC[057]
C30	VCC[058]	VCC[058]
C31	VCC[059]	VCC[059]
C32	VCC[060]	VCC[060]
C33	VCC[061]	VCC[061]
C34	VCC[062]	VCC[062]
C35	VCC[063]	VCC[063]
C36	VCC[064]	VCC[064]
C37	VCC[065]	VCC[065]
C38	VCC[066]	VCC[066]
C39	VCC[067]	VCC[067]
C40	VCC[068]	VCC[068]
C41	VCC[069]	VCC[069]
C42	VCC[070]	VCC[070]
C43	VCC[071]	VCC[071]
C44	VCC[072]	VCC[072]
C45	VCC[073]	VCC[073]
C46	VCC[074]	VCC[074]
C47	VCC[075]	VCC[075]
C48	VCC[076]	VCC[076]
C49	VCC[077]	VCC[077]
C50	VCC[078]	VCC[078]
C51	VCC[079]	VCC[079]
C52	VCC[080]	VCC[080]
C53	VCC[081]	VCC[081]
C54	VCC[082]	VCC[082]
C55	VCC[083]	VCC[083]
C56	VCC[084]	VCC[084]
C57	VCC[085]	VCC[085]
C58	VCC[086]	VCC[086]
C59	VCC[087]	VCC[087]
C60	VCC[088]	VCC[088]
C61	VCC[089]	VCC[089]
C62	VCC[090]	VCC[090]
C63	VCC[091]	VCC[091]
C64	VCC[092]	VCC[092]
C65	VCC[093]	VCC[093]
C66	VCC[094]	VCC[094]
C67	VCC[095]	VCC[095]
C68	VCC[096]	VCC[096]
C69	VCC[097]	VCC[097]
C70	VCC[098]	VCC[098]
C71	VCC[099]	VCC[099]
C72	VCC[100]	VCC[100]

CPU\_VCCA----->120mA  
 CPU\_VCCP----->2.5A  
 CPU\_VCC----->36A

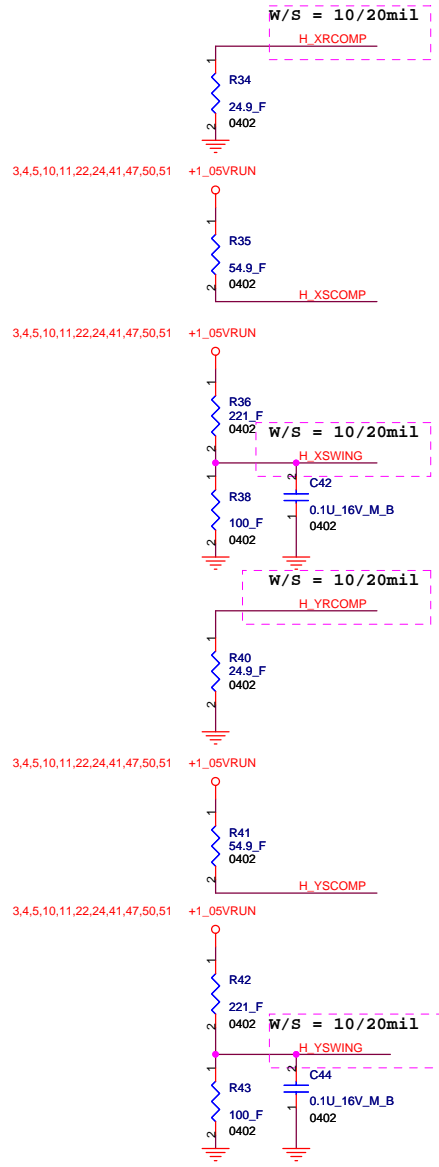


Layout Note: Route VCCSENSE traces at 27.4 Ohms with 50 mil spacing. Place PU and PD within 1 inch of cpu.  
 width=18 mil  
 spacing=7 mil



LAYOUT NOTE: Place 0.01uF near PIN B26

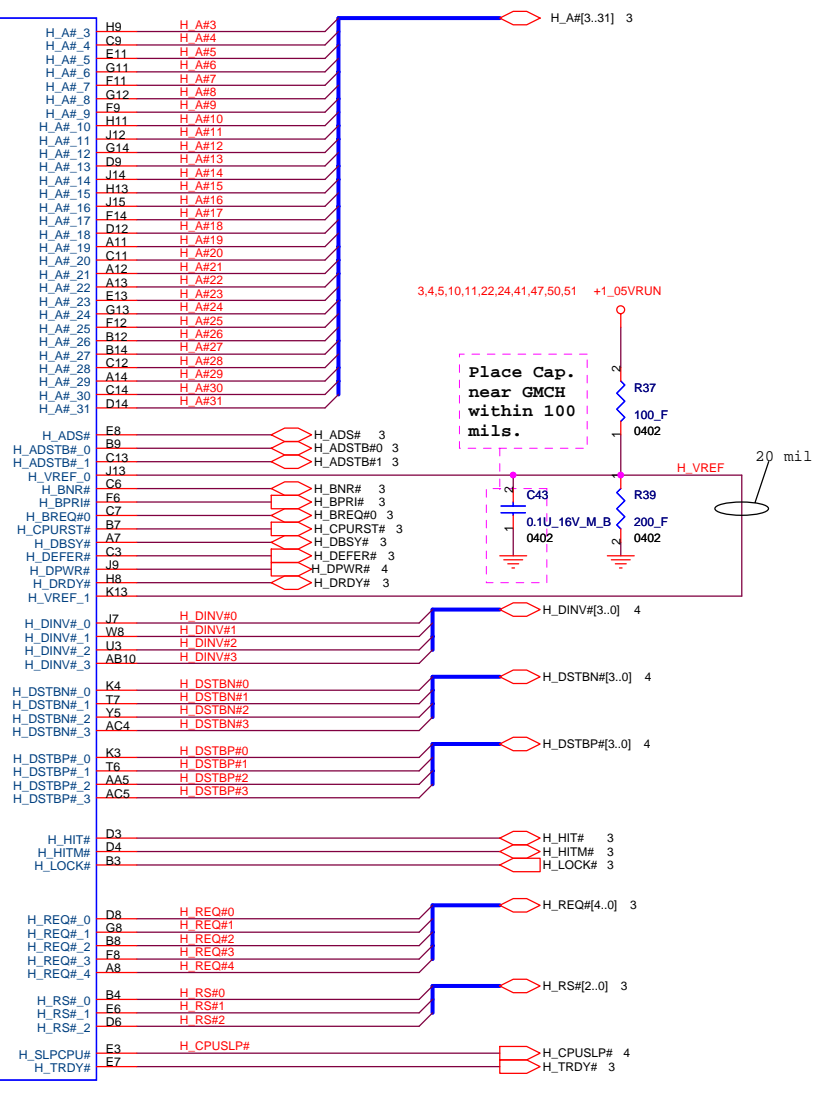
Pin	Signal	Value
A4	VSS[001]	VSS[082]
A8	VSS[002]	VSS[083]
A11	VSS[003]	VSS[084]
A14	VSS[004]	VSS[085]
A16	VSS[005]	VSS[086]
A19	VSS[006]	VSS[087]
A23	VSS[007]	VSS[088]
A26	VSS[008]	VSS[089]
B6	VSS[009]	VSS[090]
B8	VSS[010]	VSS[091]
B11	VSS[011]	VSS[092]
B16	VSS[012]	VSS[093]
B19	VSS[013]	VSS[094]
B21	VSS[015]	VSS[096]
B24	VSS[016]	VSS[097]
C5	VSS[017]	VSS[098]
C8	VSS[018]	VSS[099]
C11	VSS[019]	VSS[100]
C14	VSS[020]	VSS[101]
C16	VSS[021]	VSS[102]
C19	VSS[022]	VSS[103]
C22	VSS[023]	VSS[104]
C25	VSS[024]	VSS[105]
D1	VSS[025]	VSS[106]
D3	VSS[026]	VSS[107]
D4	VSS[027]	VSS[108]
D8	VSS[028]	VSS[109]
D11	VSS[029]	VSS[110]
D16	VSS[030]	VSS[111]
D19	VSS[031]	VSS[112]
D23	VSS[032]	VSS[113]
D26	VSS[033]	VSS[114]
E3	VSS[034]	VSS[115]
E6	VSS[036]	VSS[117]
E8	VSS[037]	VSS[118]
E11	VSS[038]	VSS[119]
E14	VSS[039]	VSS[120]
E16	VSS[040]	VSS[121]
E19	VSS[041]	VSS[122]
E21	VSS[042]	VSS[123]
E24	VSS[043]	VSS[124]
F8	VSS[044]	VSS[125]
F11	VSS[045]	VSS[126]
F13	VSS[047]	VSS[128]
F16	VSS[048]	VSS[129]
F19	VSS[049]	VSS[130]
F22	VSS[050]	VSS[131]
F25	VSS[051]	VSS[132]
G4	VSS[052]	VSS[133]
G1	VSS[054]	VSS[135]
G23	VSS[055]	VSS[136]
G26	VSS[056]	VSS[137]
H3	VSS[059]	VSS[140]
H6	VSS[057]	VSS[138]
H21	VSS[058]	VSS[139]
H24	VSS[060]	VSS[141]
J2	VSS[061]	VSS[142]
J5	VSS[062]	VSS[143]
J22	VSS[063]	VSS[144]
J25	VSS[064]	VSS[145]
K1	VSS[065]	VSS[146]
K4	VSS[066]	VSS[147]
K23	VSS[067]	VSS[148]
K26	VSS[068]	VSS[149]
L3	VSS[069]	VSS[150]
L6	VSS[070]	VSS[151]
L21	VSS[071]	VSS[152]
L24	VSS[072]	VSS[153]
M2	VSS[073]	VSS[154]
M5	VSS[074]	VSS[155]
M22	VSS[075]	VSS[156]
M25	VSS[076]	VSS[157]
N1	VSS[077]	VSS[158]
N4	VSS[078]	VSS[159]
N23	VSS[079]	VSS[160]
N26	VSS[080]	VSS[161]
P3	VSS[081]	VSS[162]

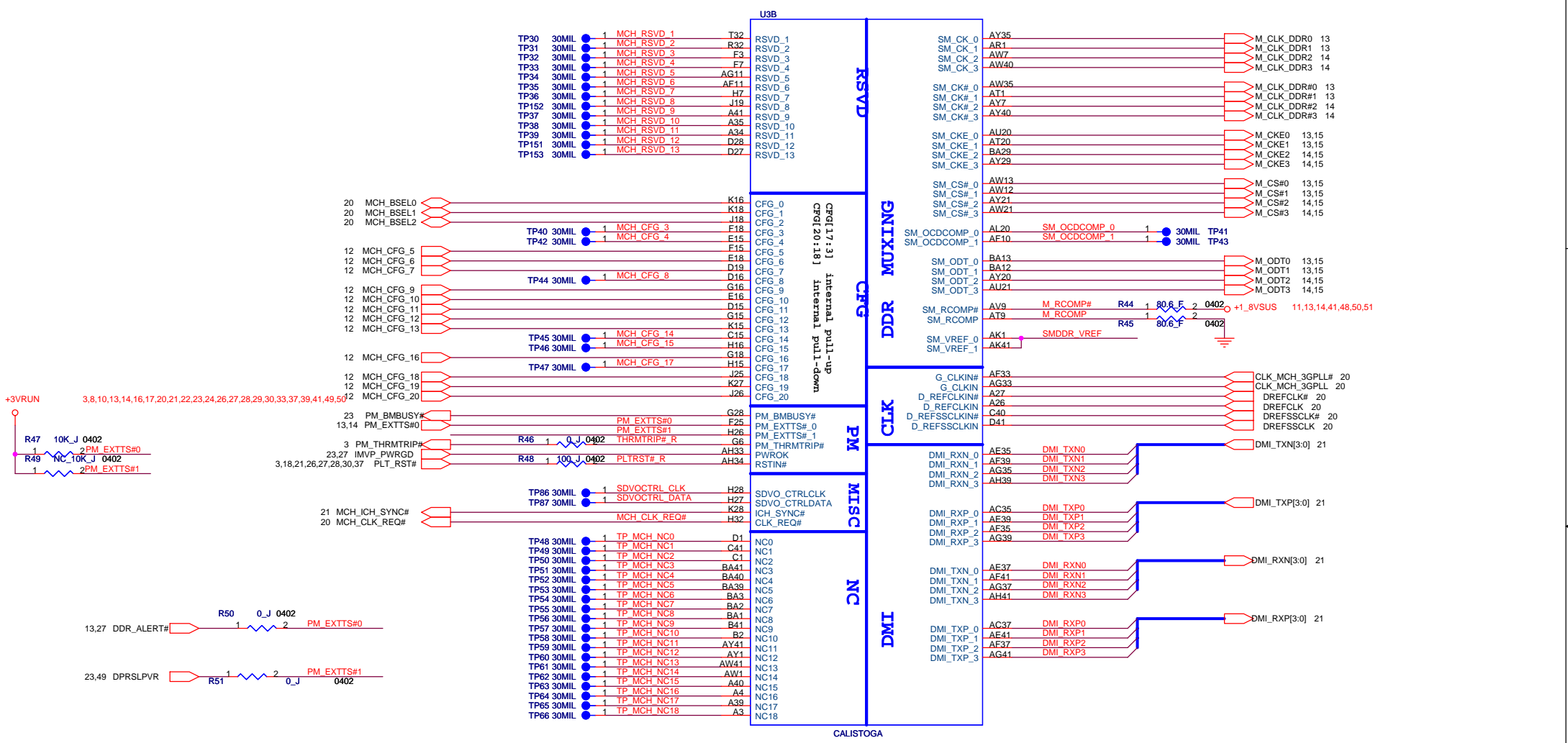


4 H\_D#[63..0] H\_D#[63..0]

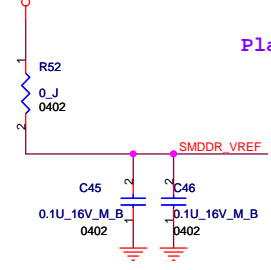
USA		CALISTOGA	
H_D#0	F1	H_XRCOMP	E1
H_D#1	J1	H_XSCOMP	E2
H_D#2	H1	H_XSWING	E4
H_D#3	J6	H_YRCOMP	Y1
H_D#4	H3	H_YSCOMP	U1
H_D#5	K2	H_YSWING	W1
H_D#6	G1	H_CLKIN	AG1
H_D#7	G2	H_CLKIN#	AG2
H_D#8	K9		
H_D#9	K1		
H_D#10	K7		
H_D#11	J8		
H_D#12	H4		
H_D#13	J3		
H_D#14	K11		
H_D#15	G4		
H_D#16	T10		
H_D#17	W11		
H_D#18	T3		
H_D#19	U7		
H_D#20	U9		
H_D#21	U11		
H_D#22	T11		
H_D#23	W9		
H_D#24	T1		
H_D#25	T8		
H_D#26	T4		
H_D#27	W7		
H_D#28	U5		
H_D#29	T9		
H_D#30	W6		
H_D#31	T5		
H_D#32	AB7		
H_D#33	AA9		
H_D#34	W4		
H_D#35	W3		
H_D#36	Y3		
H_D#37	Y7		
H_D#38	W5		
H_D#39	Y10		
H_D#40	AB8		
H_D#41	W2		
H_D#42	AA4		
H_D#43	AA7		
H_D#44	AA2		
H_D#45	AA6		
H_D#46	AA10		
H_D#47	Y8		
H_D#48	AA1		
H_D#49	AB4		
H_D#50	AC9		
H_D#51	AB11		
H_D#52	AC11		
H_D#53	AB3		
H_D#54	AC2		
H_D#55	AD1		
H_D#56	AD9		
H_D#57	AC1		
H_D#58	AD7		
H_D#59	AC6		
H_D#60	AB5		
H_D#61	AD10		
H_D#62	AD4		
H_D#63	AC8		

HOST

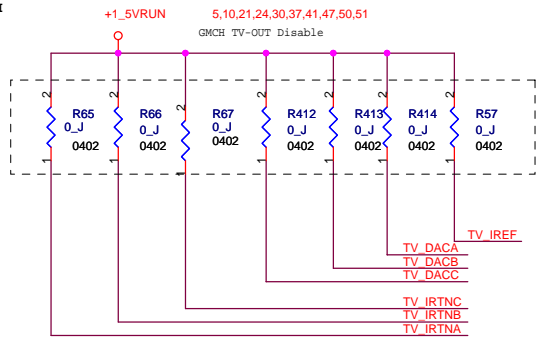
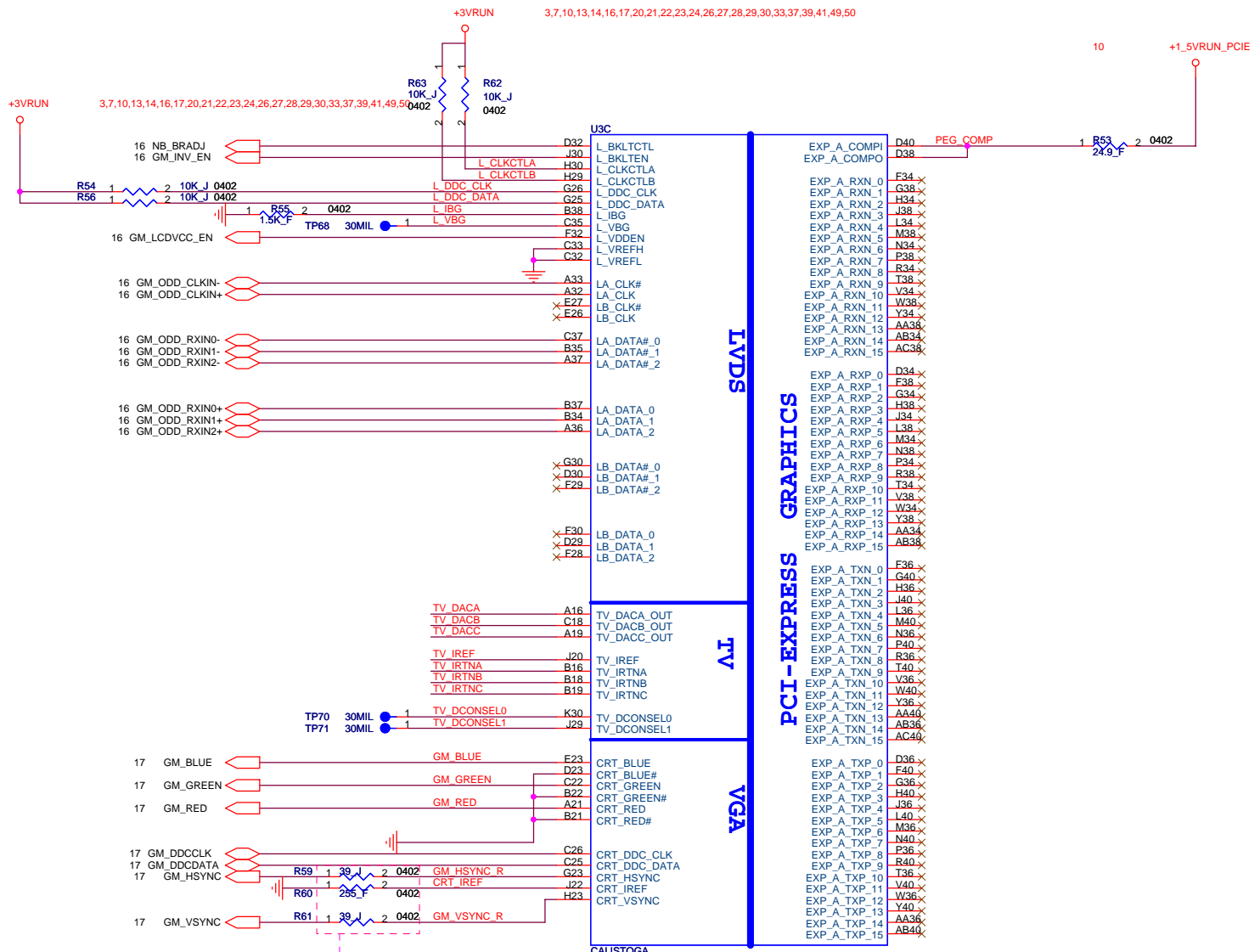




13.48 DDRDIMM\_VREF

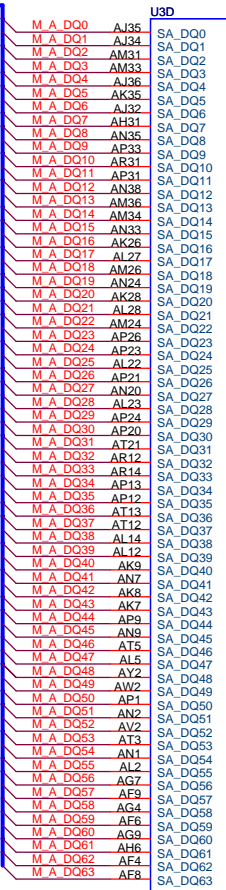


Place close to chipset





13 M\_A\_DQ[63.0]

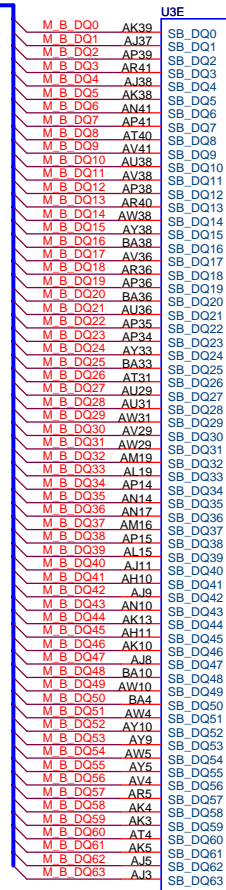


**DDR SYSTEM MEMORY A**

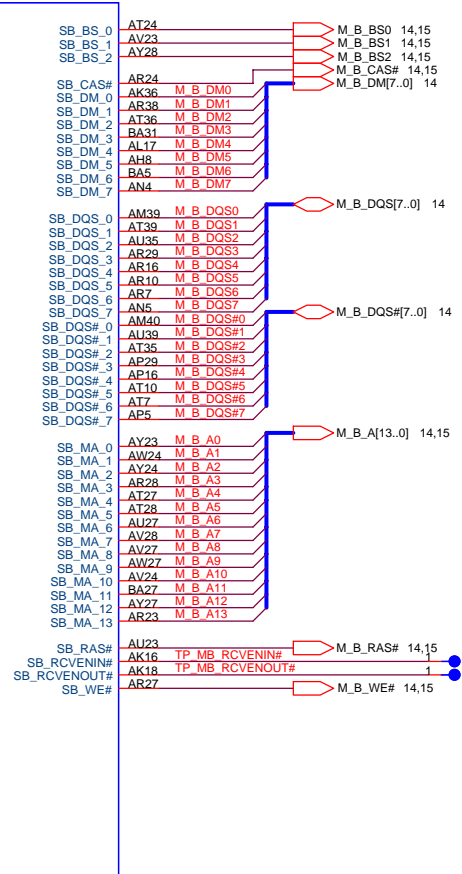


CALISTOGA

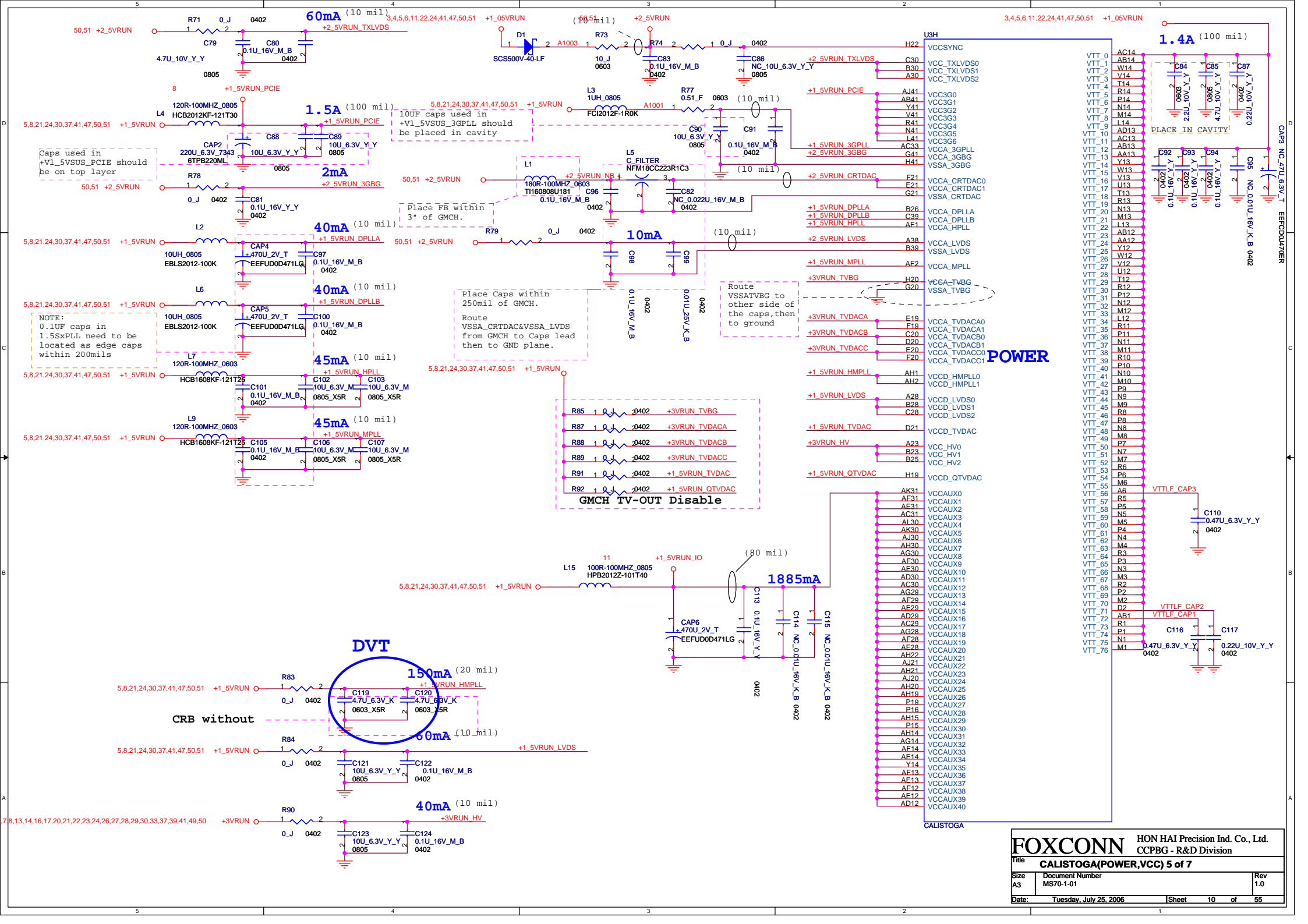
14 M\_B\_DQ[63.0]

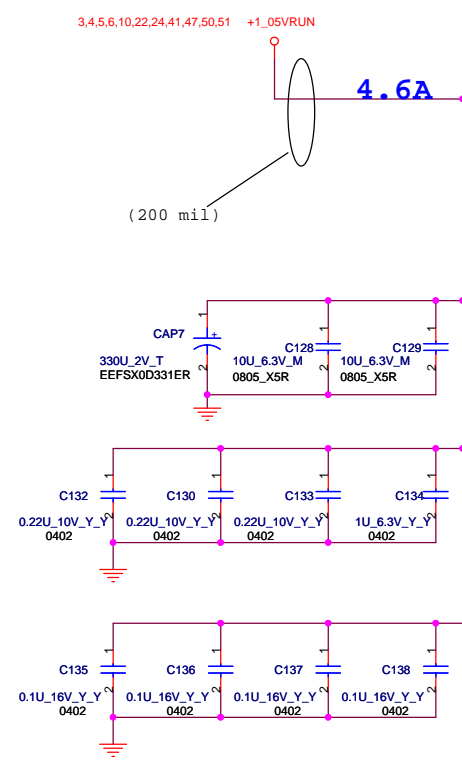


**DDR SYSTEM MEMORY B**



CALISTOGA

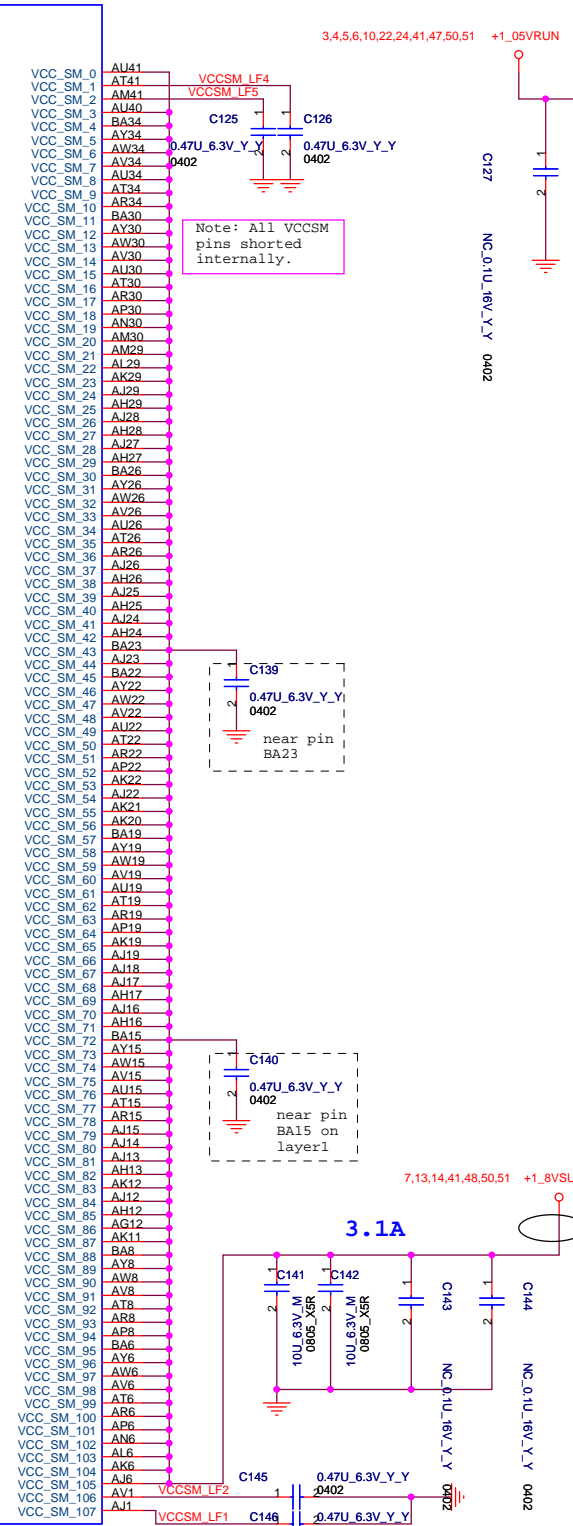




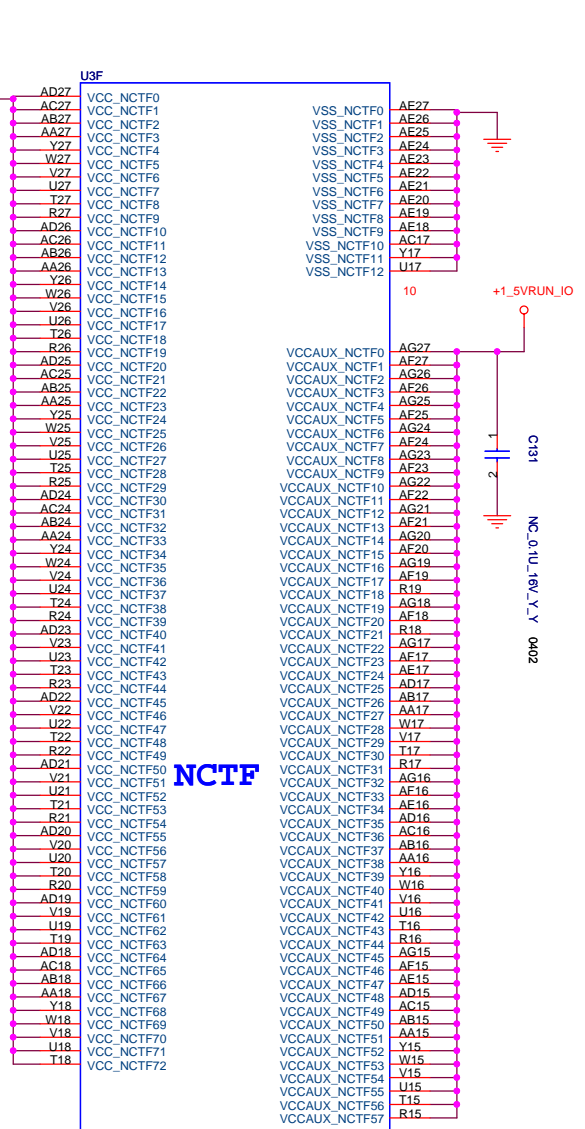
Pin	Label
AA33	VCC_0
W33	VCC_1
P33	VCC_2
L33	VCC_3
J33	VCC_4
AA32	VCC_5
Y32	VCC_6
W32	VCC_7
V32	VCC_8
P32	VCC_9
N32	VCC_10
M32	VCC_11
L32	VCC_12
J32	VCC_13
AA31	VCC_14
W31	VCC_15
V31	VCC_16
T31	VCC_17
R31	VCC_18
P31	VCC_19
N31	VCC_20
M31	VCC_21
AA30	VCC_22
W30	VCC_23
V30	VCC_24
U30	VCC_25
T30	VCC_26
R30	VCC_27
P30	VCC_28
N30	VCC_29
M30	VCC_30
L30	VCC_31
AA29	VCC_32
Y29	VCC_33
W29	VCC_34
V29	VCC_35
U29	VCC_36
P29	VCC_37
M29	VCC_38
L29	VCC_39
AA28	VCC_40
Y28	VCC_41
W28	VCC_42
V28	VCC_43
U28	VCC_44
P28	VCC_45
N28	VCC_46
M28	VCC_47
L28	VCC_48
AA27	VCC_49
Y27	VCC_50
W27	VCC_51
V27	VCC_52
U27	VCC_53
P27	VCC_54
N27	VCC_55
M27	VCC_56
L27	VCC_57
P26	VCC_58
N26	VCC_59
L26	VCC_60
N25	VCC_61
M25	VCC_62
L25	VCC_63
P24	VCC_64
N24	VCC_65
M24	VCC_66
AA23	VCC_67
Y23	VCC_68
P23	VCC_69
N23	VCC_70
M23	VCC_71
L23	VCC_72
AC22	VCC_73
Y22	VCC_74
W22	VCC_75
V22	VCC_76
P22	VCC_77
N22	VCC_78
M22	VCC_79
L22	VCC_80
AC21	VCC_81
AA21	VCC_82
W21	VCC_83
N21	VCC_84
M21	VCC_85
L21	VCC_86
AC20	VCC_87
AB20	VCC_88
Y20	VCC_89
W20	VCC_90
P20	VCC_91
N20	VCC_92
M20	VCC_93
L20	VCC_94
AB19	VCC_95
AA19	VCC_96
Y19	VCC_97
N19	VCC_98
M19	VCC_99
L19	VCC_100
N18	VCC_101
M18	VCC_102
L18	VCC_103
P17	VCC_104
N17	VCC_105
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N16	VCC_107
M16	VCC_108
N15	VCC_109
L16	VCC_110

VCC

CALISTOGA

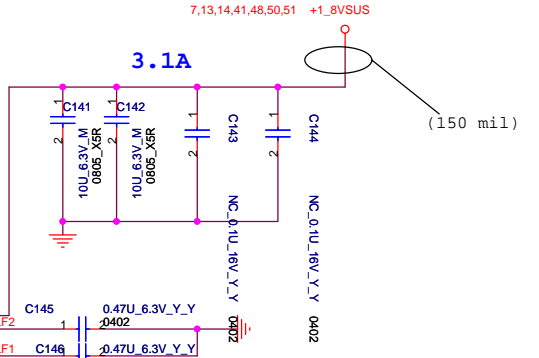


Note: All VCCSSM pins shorted internally.



NCTF

CALISTOGA



<b>FOXCONN</b>		HON HAI Precision Ind. Co., Ltd.	
		CCPBG - R&D Division	
Title <b>CALISTOGA(VCC CORE) 6 of 7</b>			
Size A3	Document Number MS70-1-01	Rev 1.0	
Date: Tuesday, July 25, 2006	Sheet 11	of 55	

7 MCH\_CFG\_5 ← 1 ● 30MIL TP76

MCH\_CFG\_5  
Low = DMIX2  
High = DMIX4

7 MCH\_CFG\_6 ← 1 ● 30MIL TP77

MCH\_CFG\_6  
Low = Moby Dick  
High = Calistoga  
DDR2 select (default high)

7 MCH\_CFG\_7 ← 1 ● 30MIL TP78

MCH\_CFG\_7 (CPU Strap)  
Low = RSVD  
High = Mobile Yonah processor

7 MCH\_CFG\_9 ← 1 ● 30MIL TP81

MCH\_CFG\_9 (PCIe Graphics Lane)  
Low = Reverse Lane operation  
High = Normal operation

For layout convenience

7 MCH\_CFG\_10 ← 1 ● 30MIL TP82

MCH\_CFG\_10 (HOST PLL VCC SELECT)  
Low = RESERVED  
High = MOBILITY

7 MCH\_CFG\_11 ← 1 ● 30MIL TP83

MCH\_CFG\_11 (PSB 4x CLK ENABLE)  
Low = Calistoga  
High = Reserved



7 MCH\_CFG\_12 ← 1 ● 30MIL TP84

7 MCH\_CFG\_13 ← 1 ● 30MIL TP85

MCH\_CFG\_[13:12] (XOR/ALLZ)  
00=Partial Clock Gating Disable  
01=XOR Mode Enable  
10=All-Z Mode Enable  
11=Normal Operation(Default)

7 MCH\_CFG\_16 ← 1 ● 30MIL TP160

MCH\_CFG\_16 (FSB Dynamic ODT)  
Low = Dynamic ODT Disabled  
High = Dynamic ODT Enable

MCH\_CFG\_18 (VCC\_CORE Select)  
Low = 1.05V(default)  
High = 1.5V

7 MCH\_CFG\_18 ← 1 ● 30MIL TP79

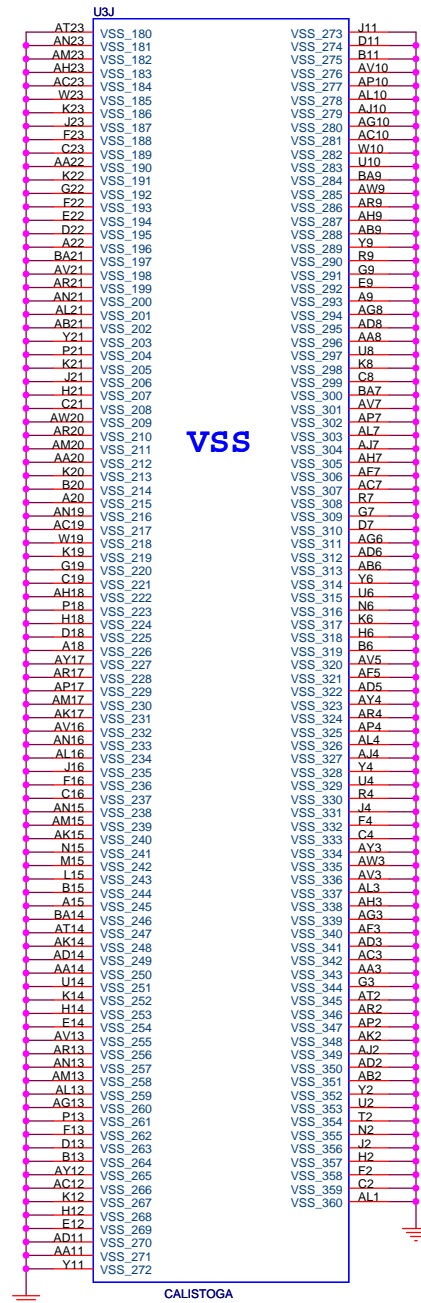
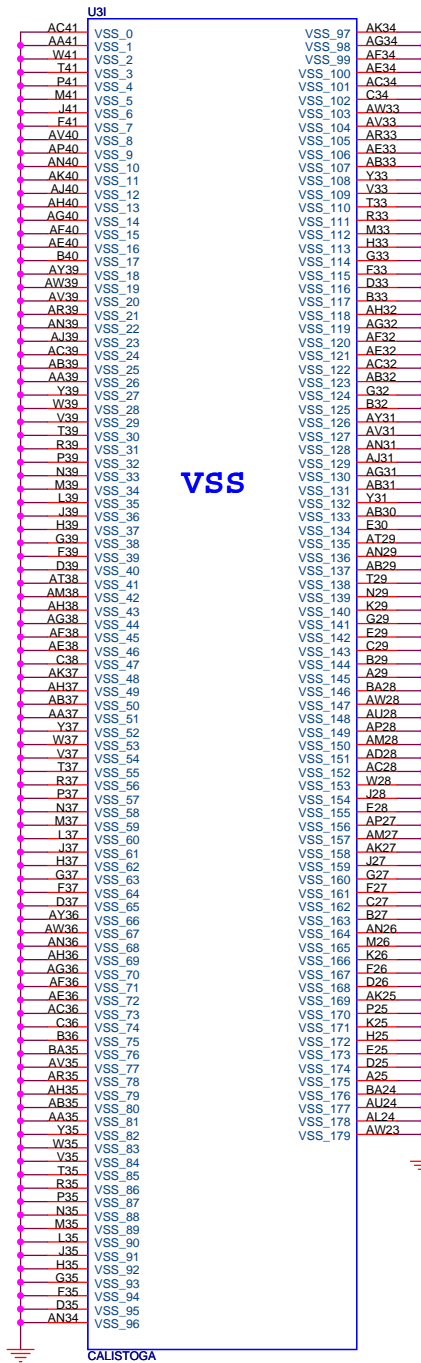
MCH\_CFG\_19 (DMI LANE REVERSAL)  
Low = Normal(default)  
High = LANES REVERSED

7 MCH\_CFG\_19 ← 1 ● 30MIL TP80

MCH\_CFG\_20 (PCIe Backward Interoperability mode)  
Low = Only SDVO or PCIe x1 is operational (defaults)  
High = SDVO and PCIe x1 are operating simultaneously via the PEG port

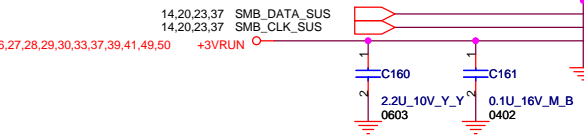
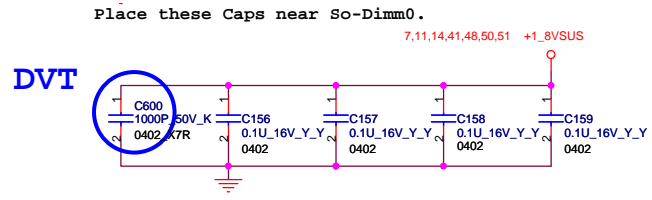
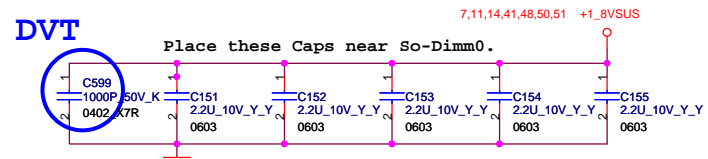
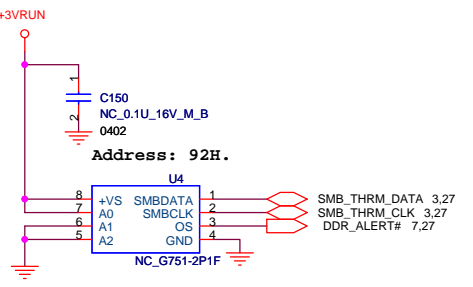
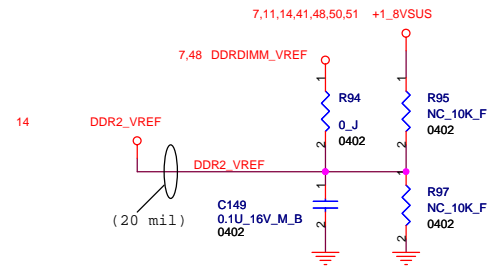
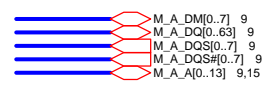
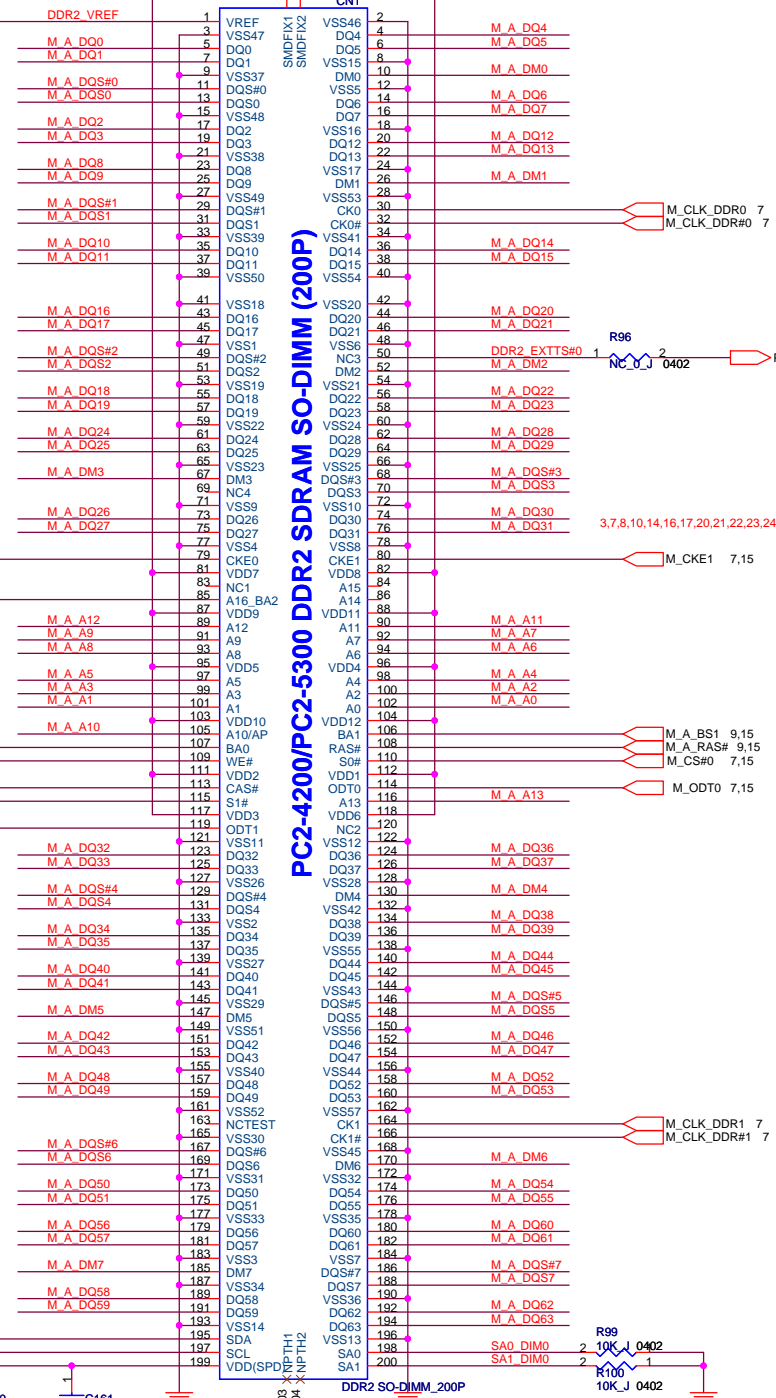
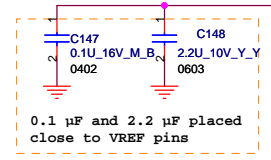
7 MCH\_CFG\_20 ← 1 ● 30MIL TP83

Layout Note:  
Location of all MCH\_CFG strap resistors needs to be close to trace to minimize stub



7,11,14,41,48,50,51 +1\_8VSUS

1.8V per DIMM=3.08A



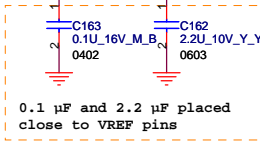
FOX\_AS0A426\_N4RC\_4F  
SMBus Address: A0(W)/A1(R)  
DIMM\_0  
Place DIMM\_0 near GMCH

**FOXCONN** HON HAI Precision Ind. Co., Ltd.  
CCPBG - R&D Division

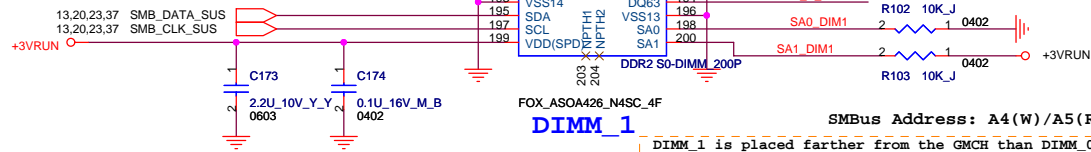
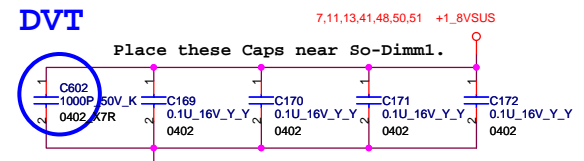
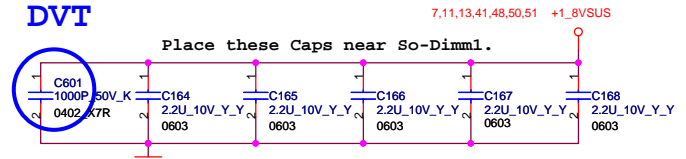
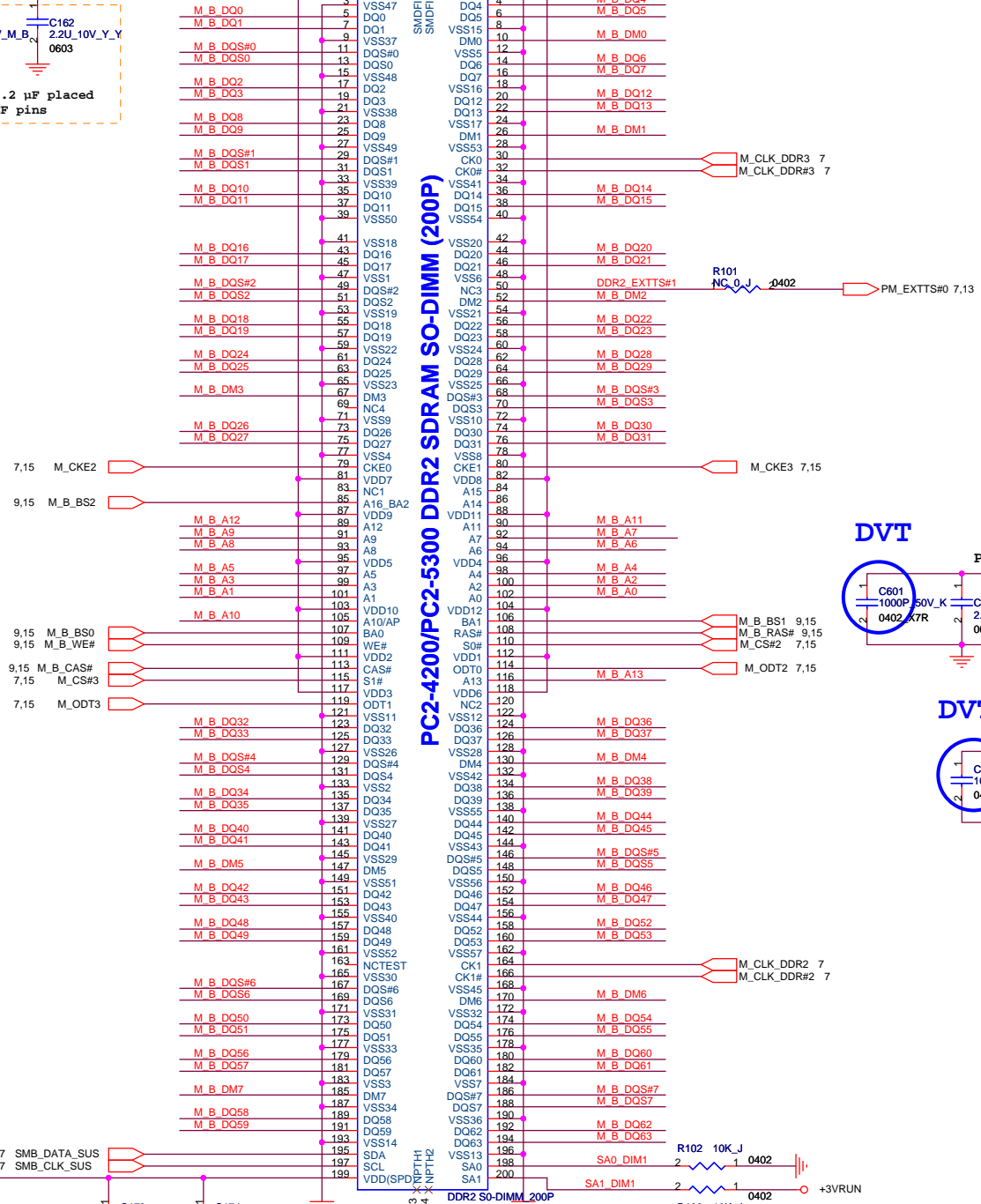
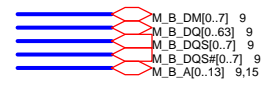
File: **DDR(H)SO-DIMM\_0**

Size A3	Document Number MS70-1-01	Rev 1.0
Date: Tuesday, July 25, 2006	Sheet 13	of 55



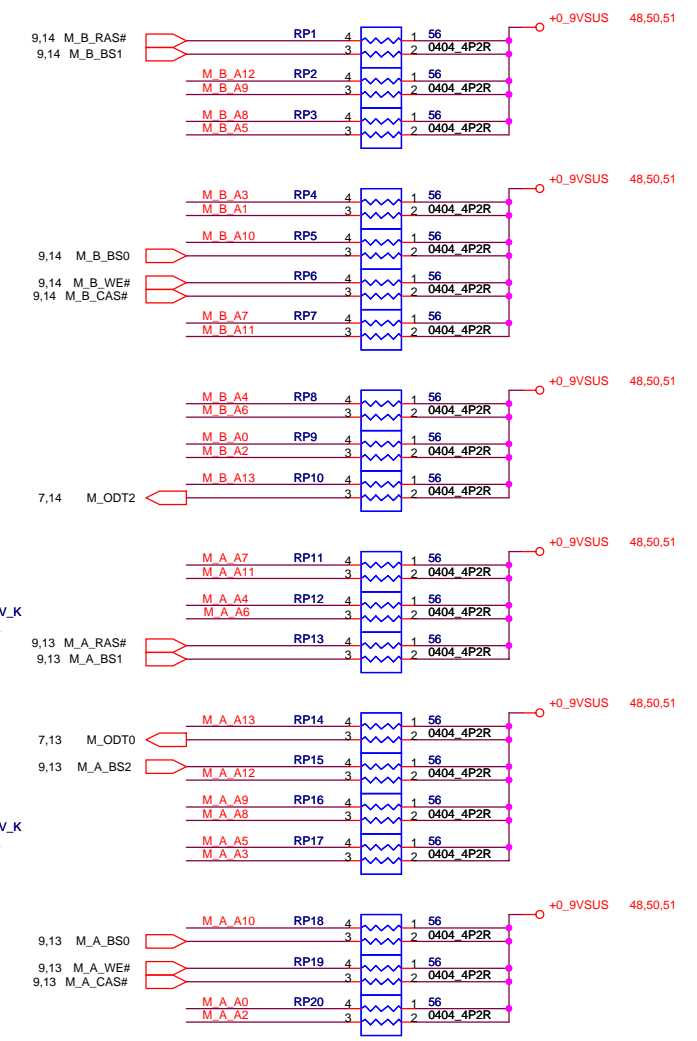
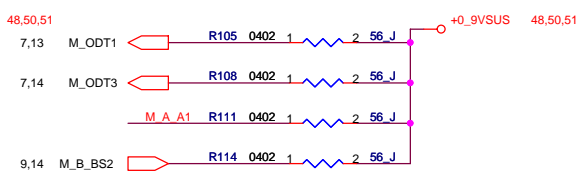
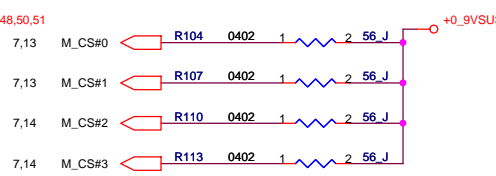
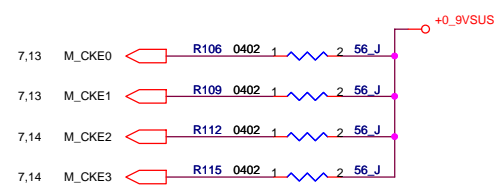
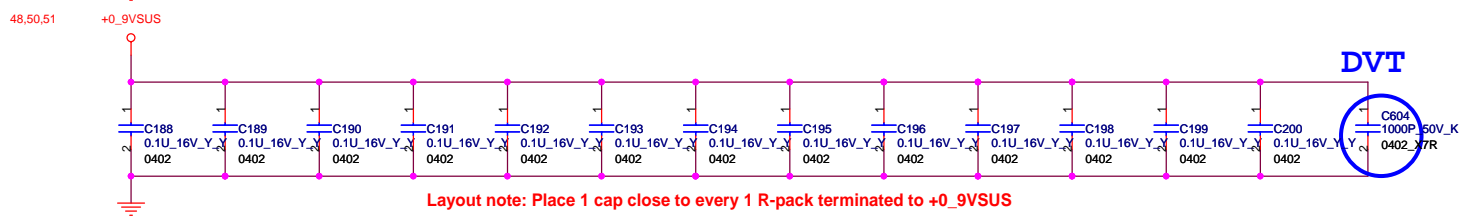
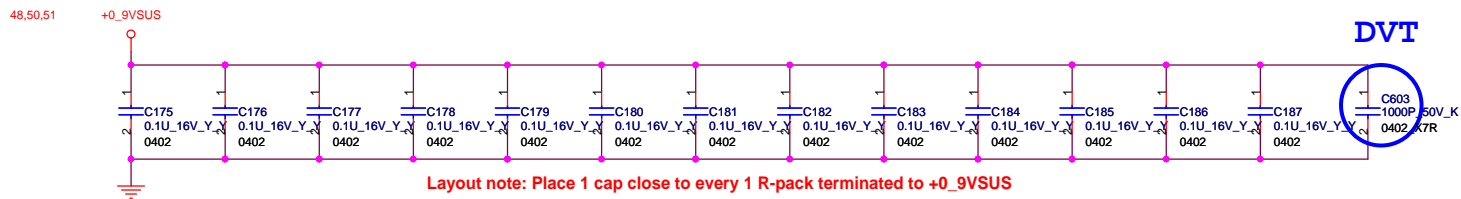


1.8V per DIMM=3.08A

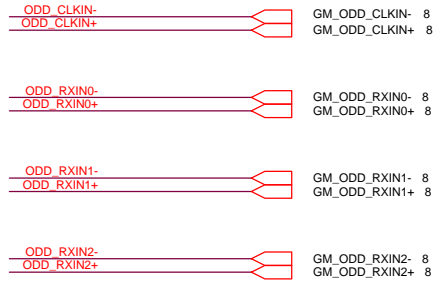


FOX\_AS0A426\_N4SC\_4F  
DIMM\_1  
SMBus Address: A4(W)/A5(R)  
DIMM\_1 is placed farther from the GMCH than DIMM\_0

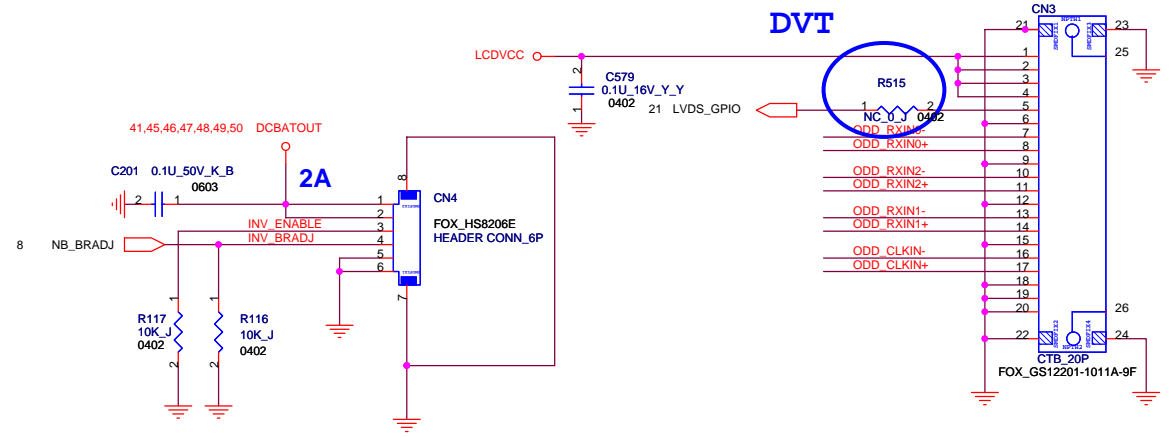
<b>FOXCONN</b> HON HAI Precision Ind. Co., Ltd.		
CCPBG - R&D Division		
File	DDR(I)SO-DIMM_1	
Size	Document Number	Rev
A3	MST0-1-01	1.0
Date:	Tuesday, July 25, 2006	Sheet 14 of 55



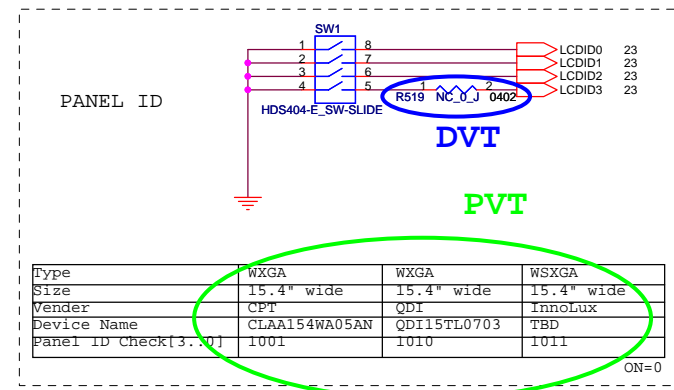
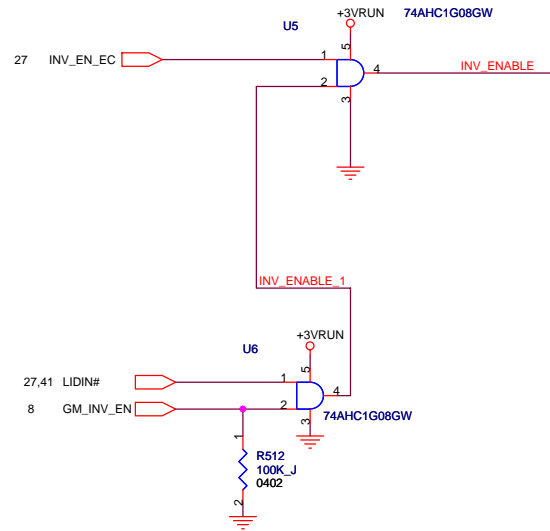
# LVDS



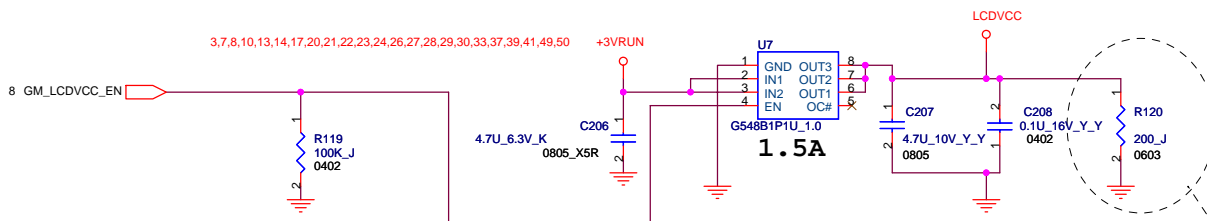
# LVDS CONNECTOR



# INVERTER CONNECTOR



Type	WXGA	WXGA	WSXGA
Size	15.4" wide	15.4" wide	15.4" wide
Vendor	CPT	QDI	InnoLux
Device Name	CLAA154WA05AN	QDI15TL0703	TBD
Panel ID Check[3..0]	1001	1010	1011

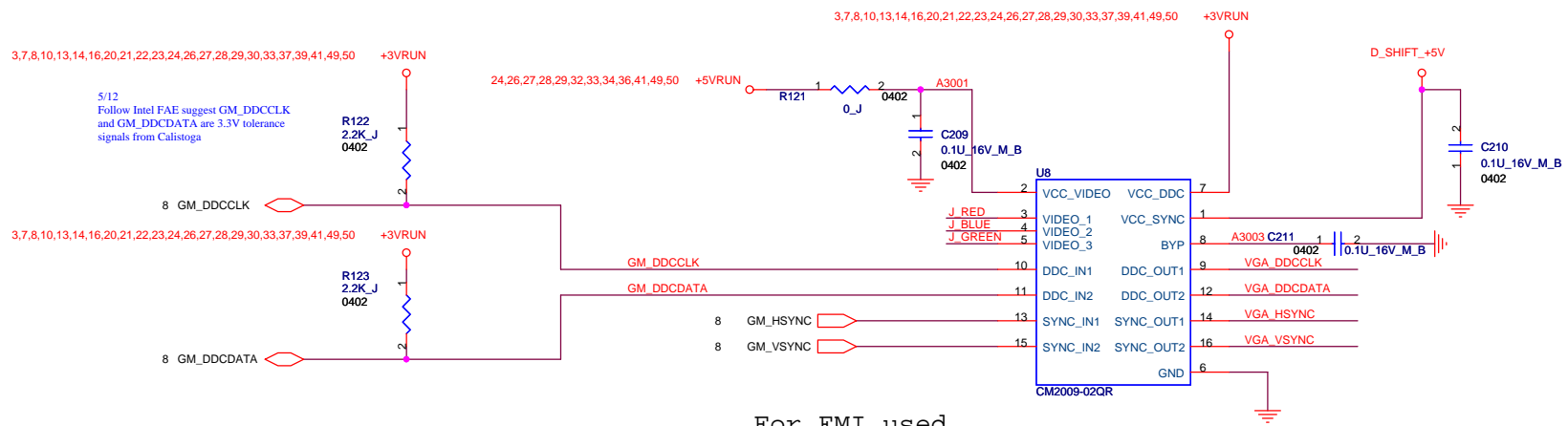


The R461 will consume about 0.054 Watt (3.3x3.3/200 = 0.054W). We changed resistor to 0603 size (1/8 Watt)

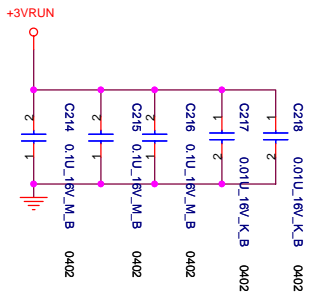
**FOXCONN** HON HAI Precision Ind. Co., Ltd.  
 CCPBG - R&D Division

**Title** LVDS  
**Size** A3  
**Document Number** MS70-1-01  
**Rev** 1.0  
**Date:** Tuesday, July 25, 2006 **Sheet** 16 **of** 55

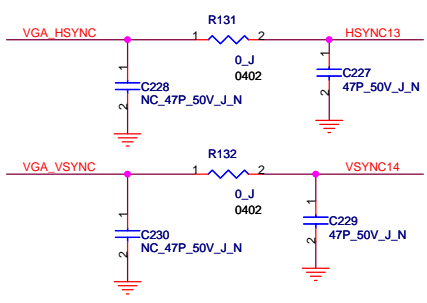
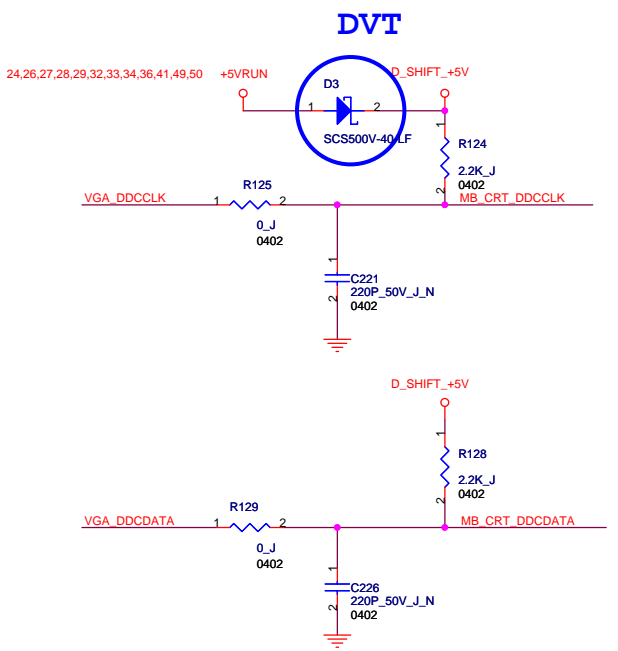
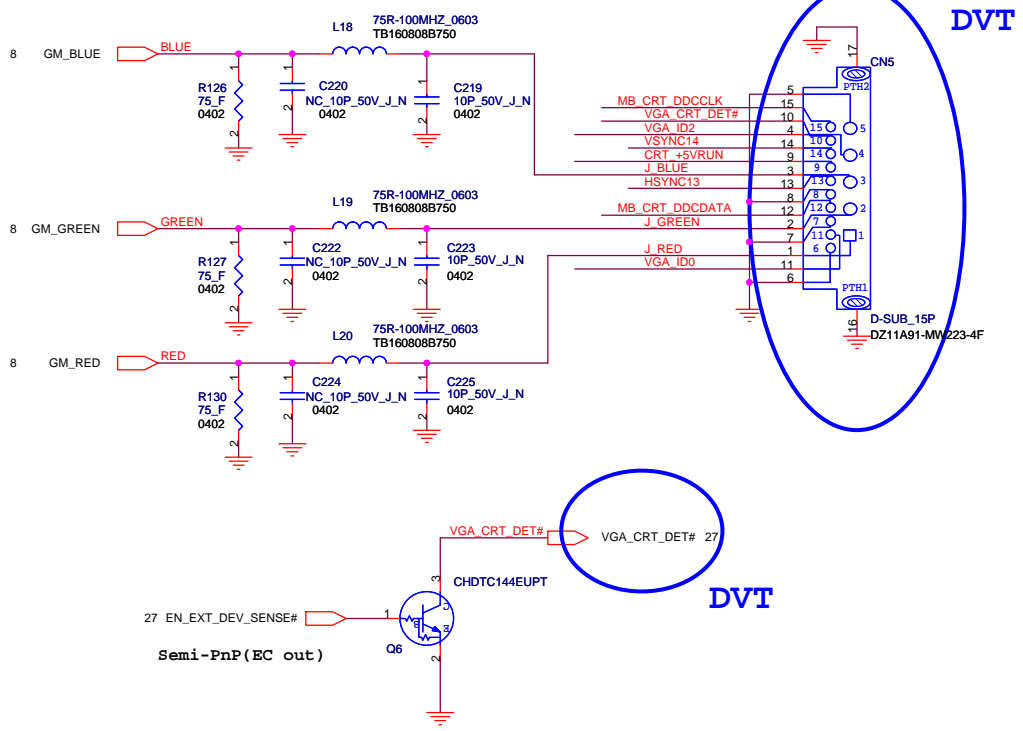




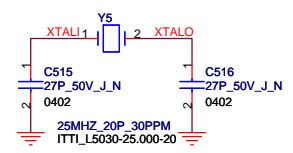
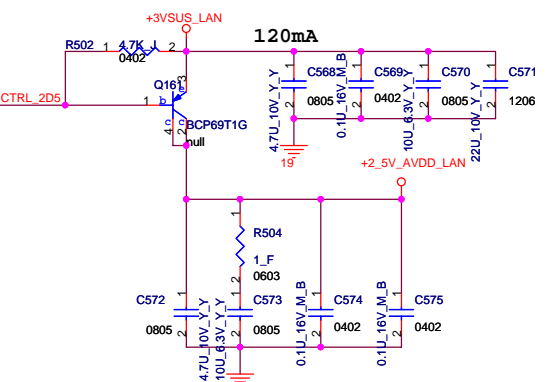
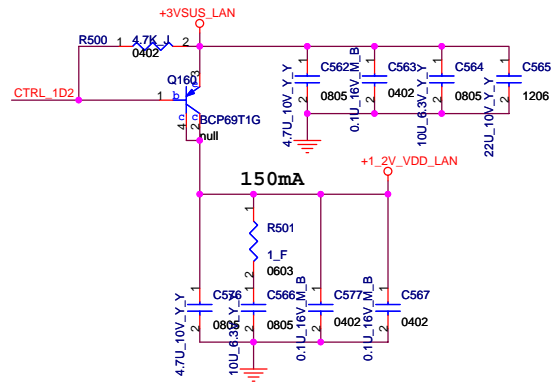
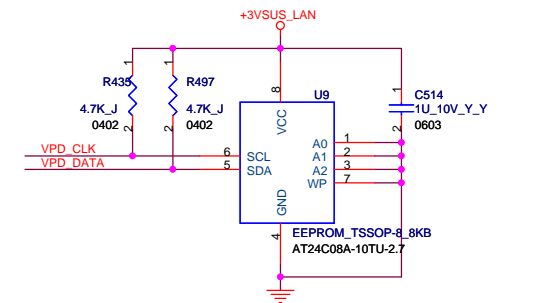
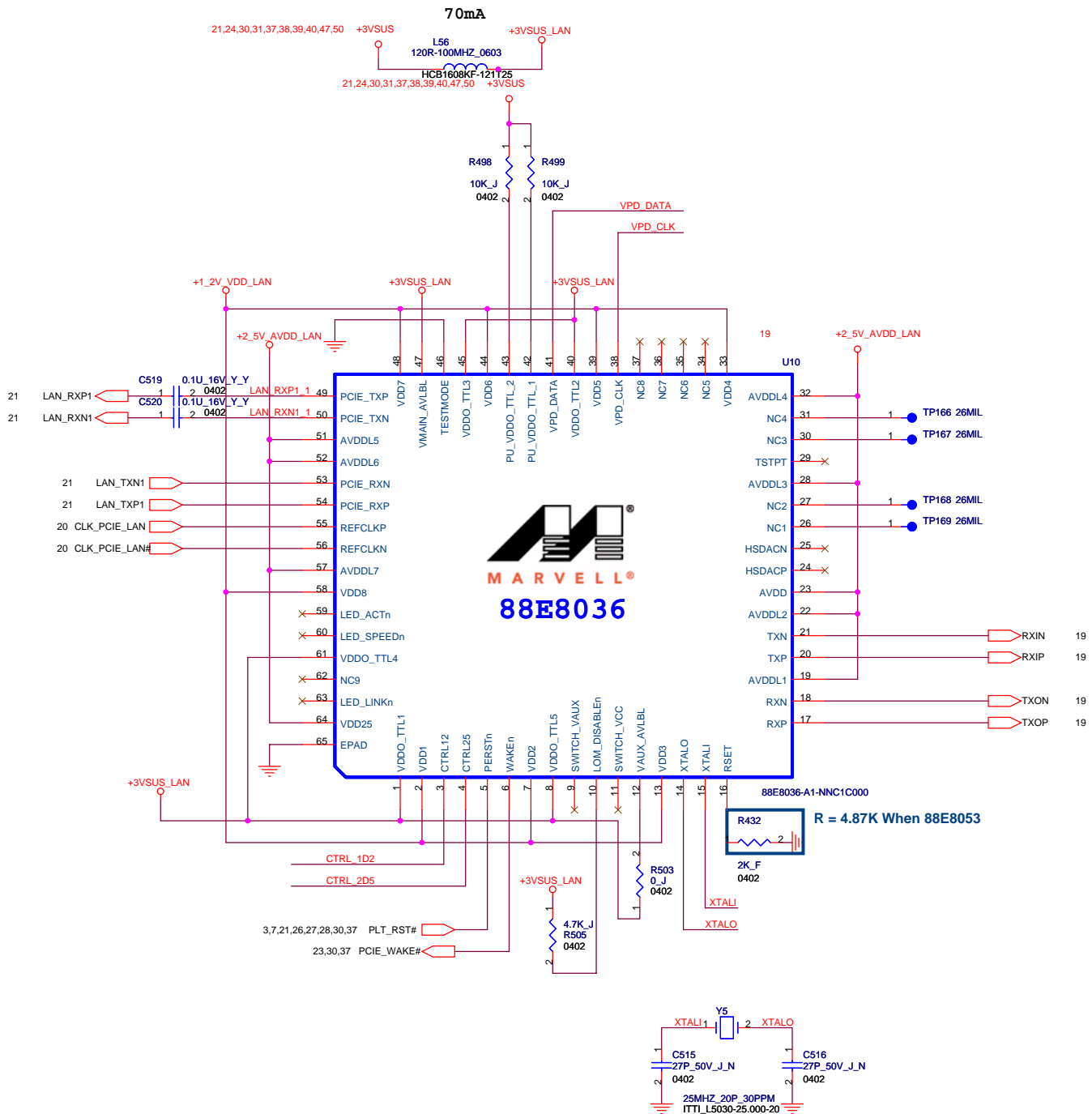
For EMI used

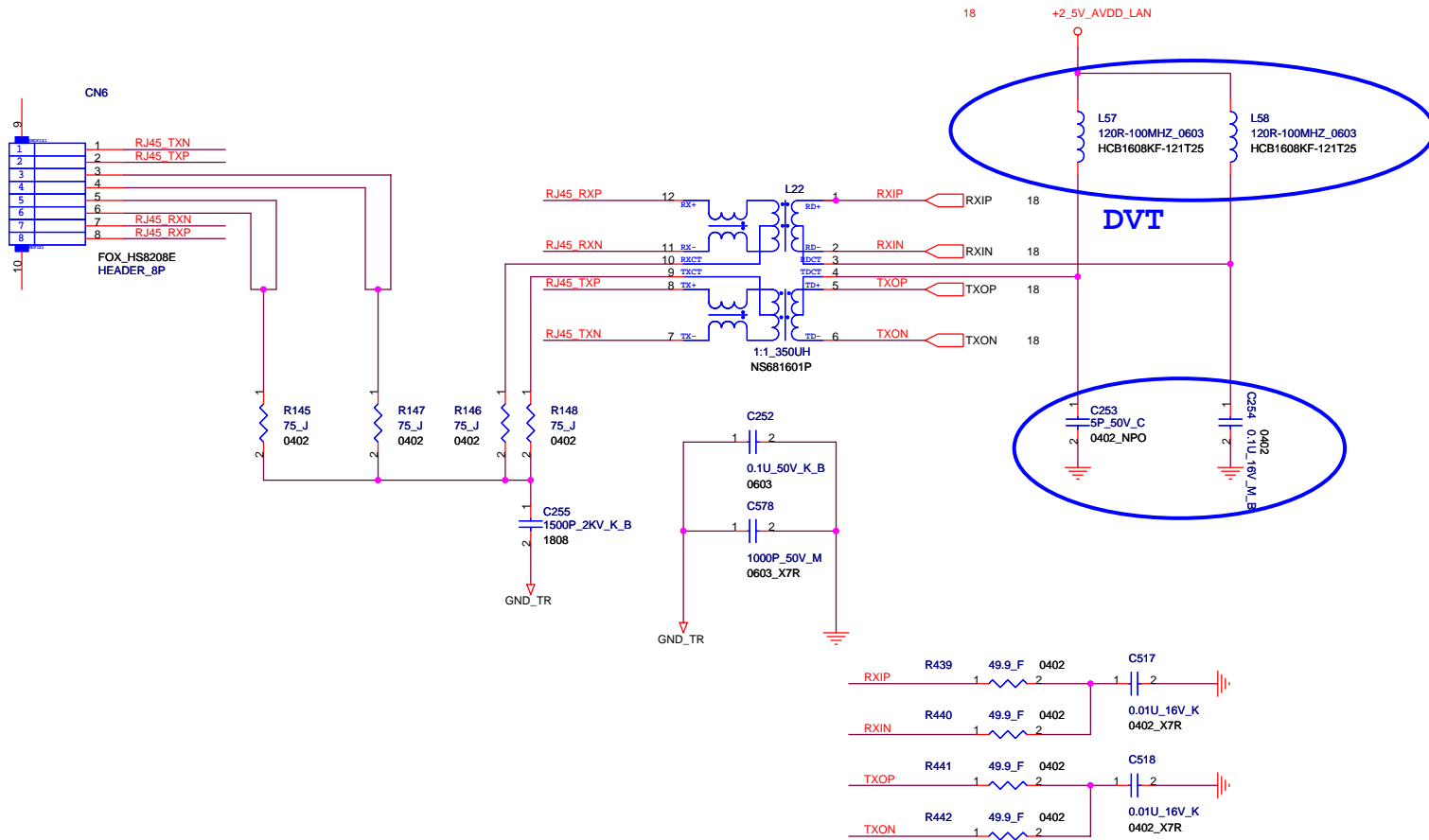


### CRT CONNECTOR



<b>FOXCONN</b> HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division		
File	CRT	
Size	Document Number	Rev
A3	MS70-1-01	1.0
Date:	Tuesday, Jul 25, 2006	Sheet 17 of 55





NC_10P_50V_E_N	2	1	CLK_CB48
NC_10P_50V_E_N	2	1	CLK_USB48
NC_10P_50V_E_N	2	1	CLK_KBCPCI
NC_10P_50V_E_N	2	1	PCLK_CB
NC_10P_50V_E_N	2	1	PCLK_FWH
NC_10P_50V_E_N	2	1	CLK_ICHPCI
NC_10P_50V_E_N	2	1	CLK_ICH14
NC_10P_50V_E_N	2	1	PCLK_JIG
NC_10P_50V_E_N	2	1	C256 0402
NC_10P_50V_E_N	2	1	C257 0402
NC_10P_50V_E_N	2	1	C258 0402
NC_10P_50V_E_N	2	1	C265 0402
NC_10P_50V_E_N	2	1	C266 0402
NC_10P_50V_E_N	2	1	C267 0402
NC_10P_50V_E_N	2	1	C268 0402
NC_10P_50V_E_N	2	1	C271 0402

close to clk gen (For EMI)

Length as short as possible.

38	CLK_CB48	R154	12K	J	2	0402
23	CLK_USB48	R152	12K	J	2	0402

CPU_BSEL0	R153	2.2K	J	2	0402
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CPU_BSEL1	R155	2.2K	J	2	0402
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28	PCLK_FWH	R156	12K	J	2	0402
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27	CLK_KBCPCI	R157	33	J	2	0402
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38	PCLK_CB	R158	33	J	2	0402
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28	PCLK_JIG	R159	33	J	2	0402
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21	CLK_ICHPCI	R160	33	J	2	0402
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13,14,23,37	SMB_CLK_SUS					
13,14,23,37	SMB_DATA_SUS					

21	CLK_PCIE_ICH					
21	CLK_PCIE_ICH#					

33		0404	4P2R	RP37		
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32	R_CLK_PCIE_ICH					
31	R_CLK_PCIE_ICH#					

3	SRCLK7					
7	SRCLK7					

7	DREFCLK					
7	DREFCLK#					

23,49	CLK_EN#					
23	CLK_ICH14					

7	DREFSSCLK					
7	DREFSSCLK#					

33		0404	4P2R	RP36		
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33		0404	4P2R	RP32		
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33		0404	4P2R	RP31		
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33		0404	4P2R	RP30		
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33		0404	4P2R	RP29		
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33		0404	4P2R	RP28		
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33		0404	4P2R	RP27		
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33		0404	4P2R	RP26		
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33		0404	4P2R	RP25		
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33		0404	4P2R	RP24		
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33		0404	4P2R	RP23		
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33		0404	4P2R	RP22		
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33		0404	4P2R	RP21		
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33		0404	4P2R	RP20		
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33		0404	4P2R	RP19		
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33		0404	4P2R	RP18		
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33		0404	4P2R	RP17		
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33		0404	4P2R	RP16		
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33		0404	4P2R	RP15		
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**FSB Frequency Table:**

FSLB	FSLA	CPU SRC[7:0]	PCI
0	0	100	100
0	1	133	100
1	0	200	100
1	1	166	100

33		0404	4P2R	RP14		
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33		0404	4P2R	RP13		
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33		0404	4P2R	RP12		
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33		0404	4P2R	RP11		
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33		0404	4P2R	RP10		
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33		0404	4P2R	RP9		
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33		0404	4P2R	RP8		
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33		0404	4P2R	RP7		
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33		0404	4P2R	RP6		
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33		0404	4P2R	RP5		
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33		0404	4P2R	RP4		
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33		0404	4P2R	RP3		
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33		0404	4P2R	RP2		
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33		0404	4P2R	RP1		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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33		0404	4P2R	RP0		
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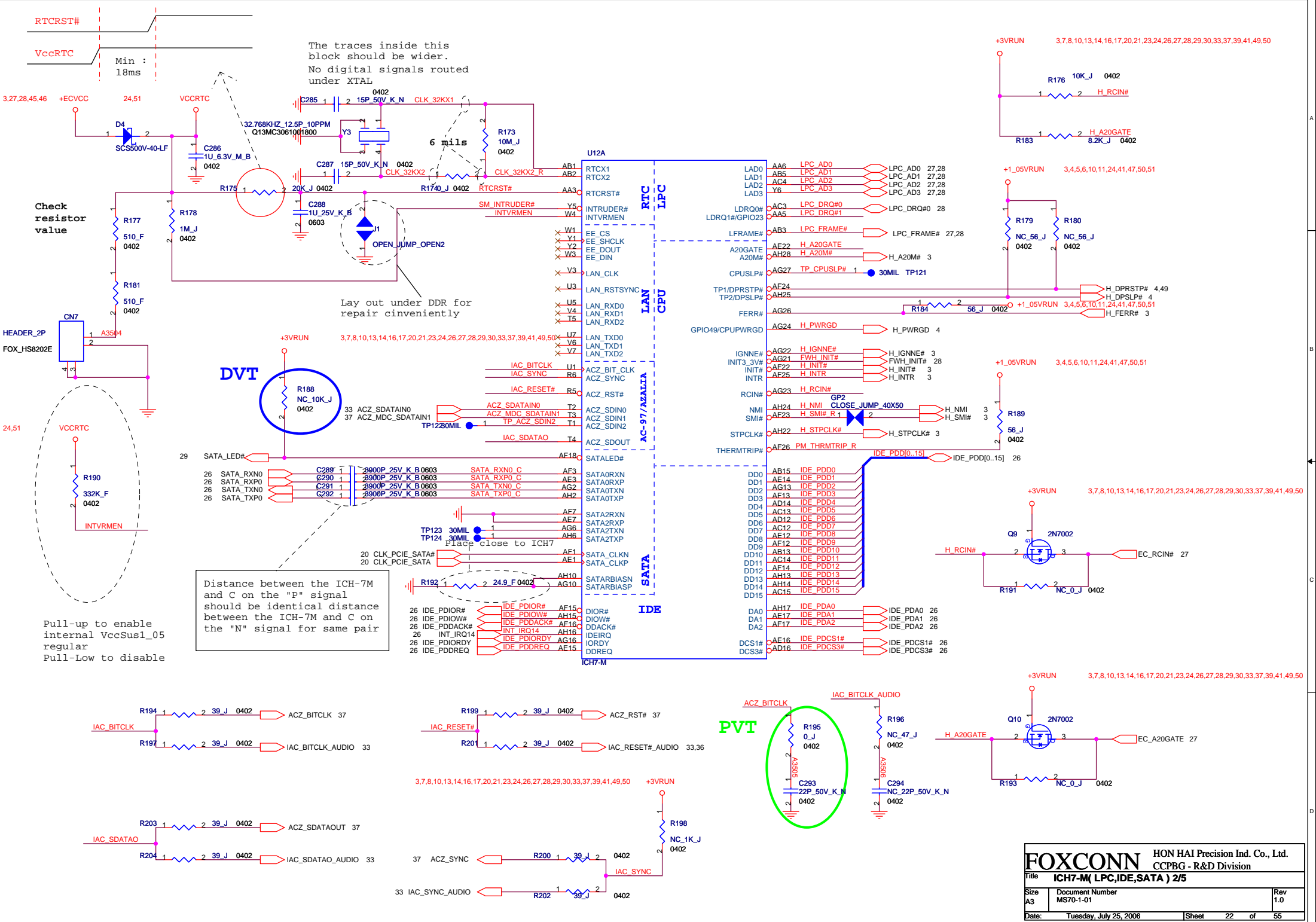
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----	--	------	------	-----	--	--

33		0404	4P2R	RP0		
----	--	------	------	-----	--	--

33		0404	4P2R	
----	--	------	------	--





The traces inside this block should be wider.  
No digital signals routed under XTAL

Lay out under DDR for repair cinveniently

Distance between the ICH-7M and C on the "P" signal should be identical distance between the ICH-7M and C on the "N" signal for C pair regular

Pull-up to enable internal VccSus1\_05 regular  
Pull-Low to disable

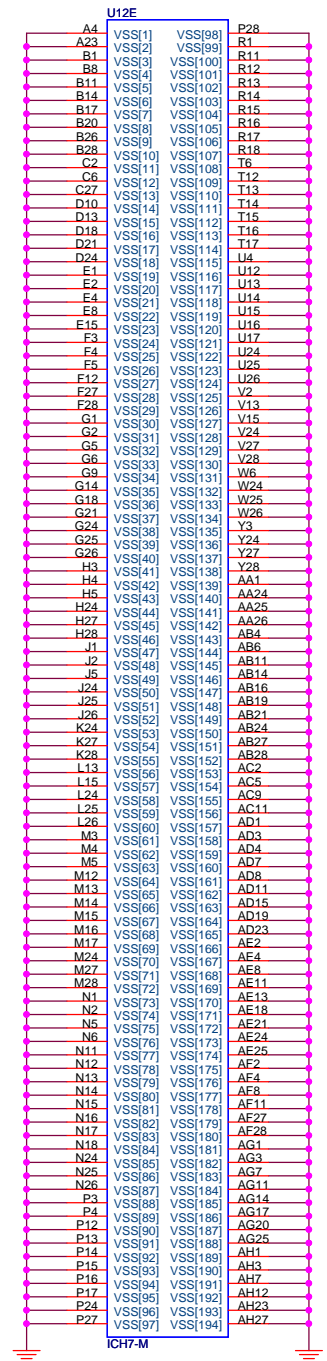
Check resistor value



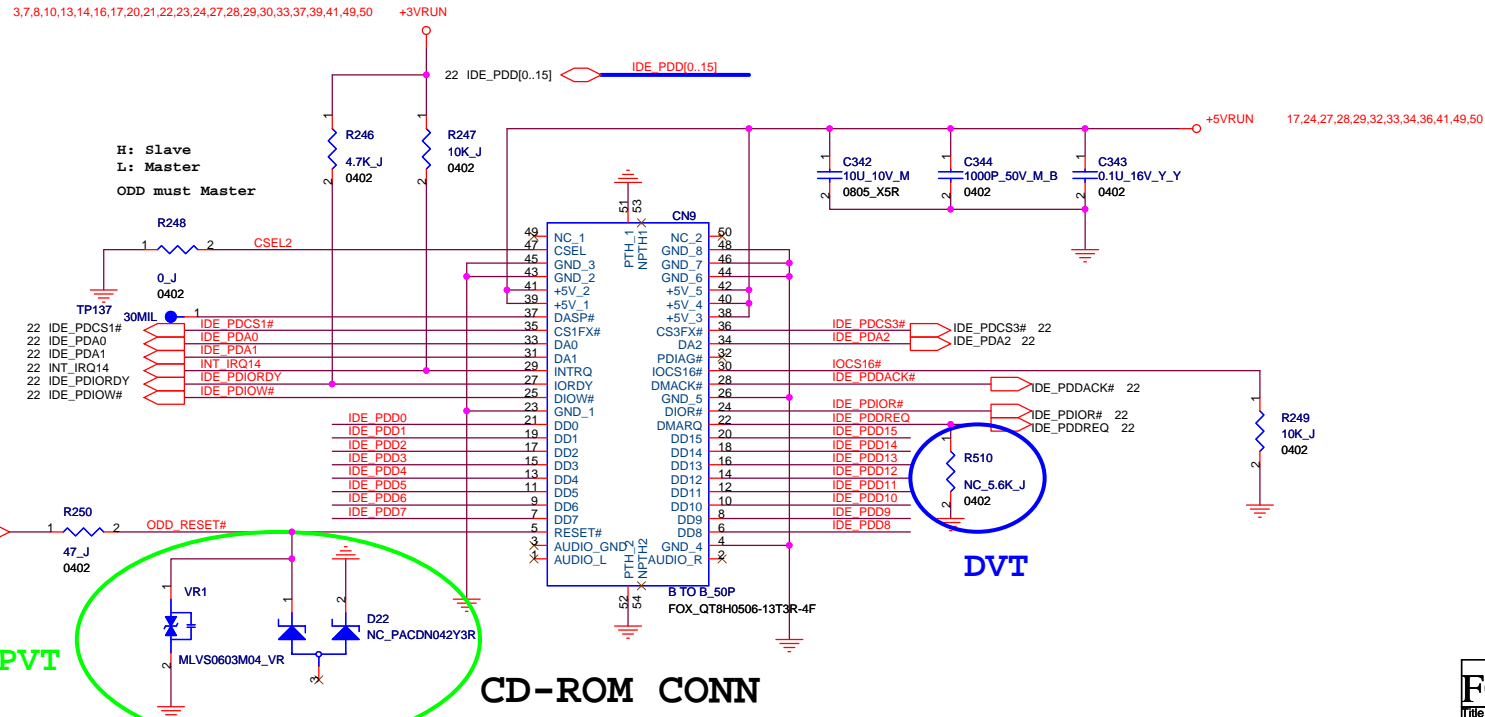
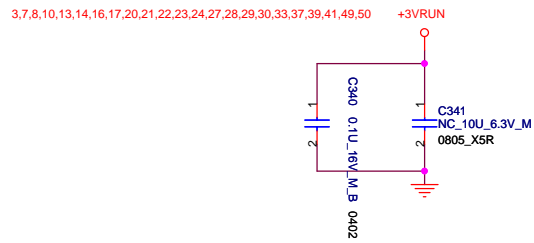
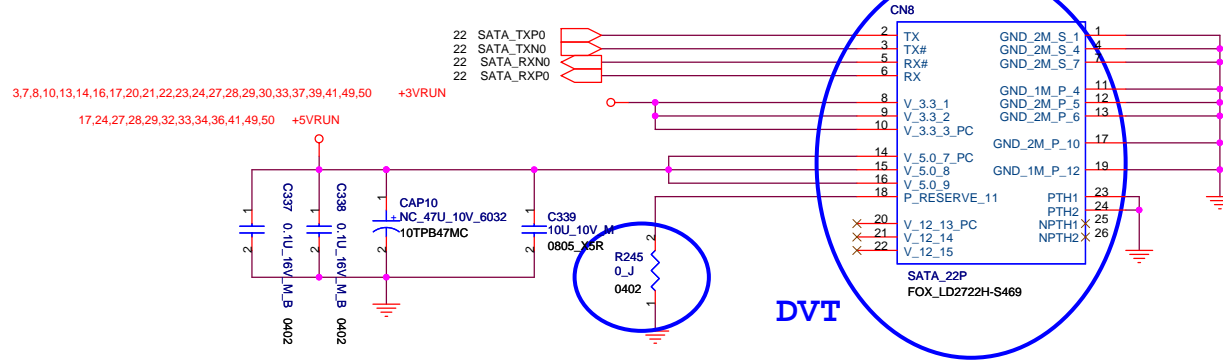








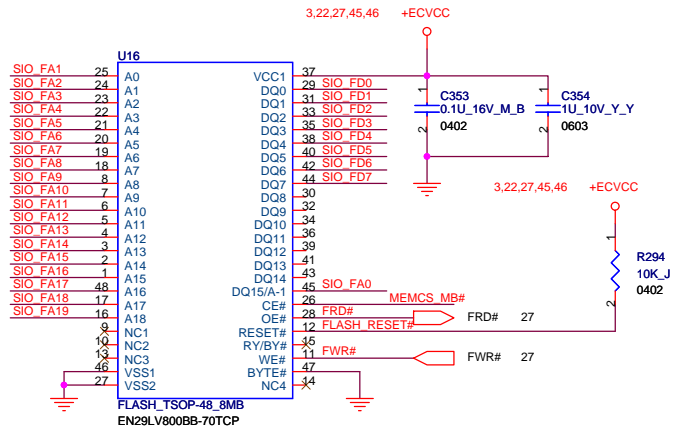
# SATA HDD CONN



Follow Adoi san suggest ODD: Master/HDD:Slave

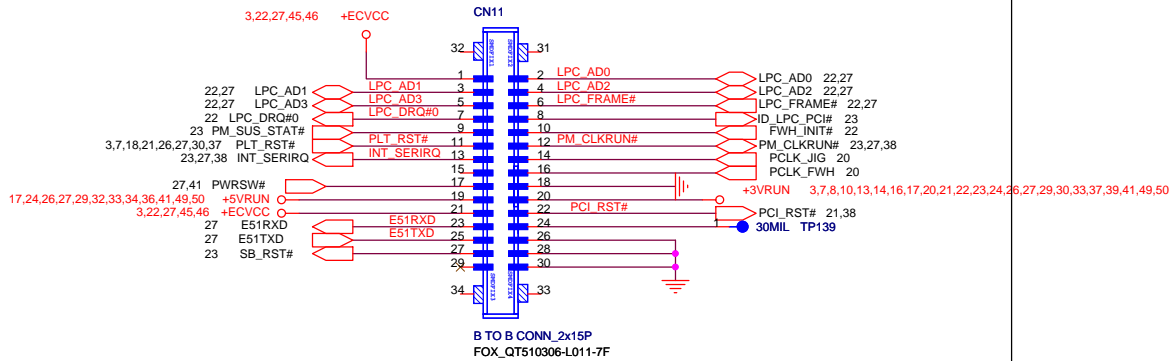


27 SIO\_FA[19..0]  
27 SIO\_FD[7..0]

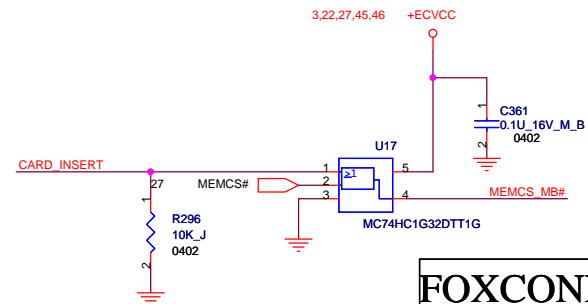
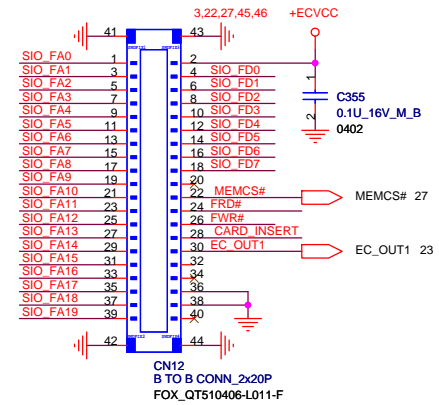


**FLASH BIOS**

**JIG-120**

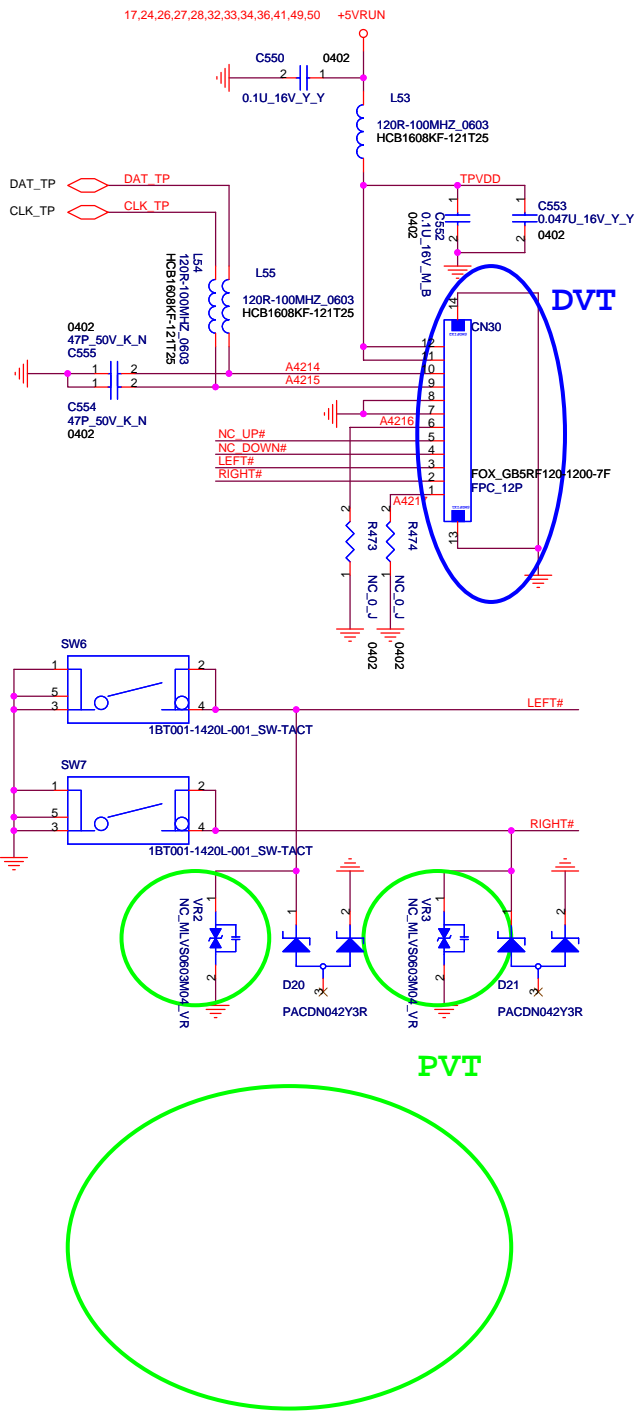


**X-BUS**

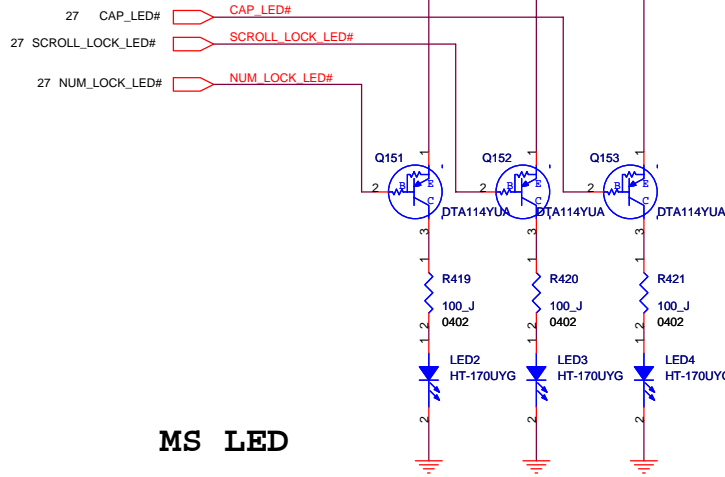


<b>FOXCONN</b> HON HAI Precision Ind. Co., Ltd.		
CCPBG - R&D Division		
Title <b>Flash ROM/X-Bus/LID SW#</b>		
Size A3	Document Number MS70-1-01	Rev 1.0
Date: Tuesday, July 25, 2006	Sheet 28	of 55

# Touch Pad Board

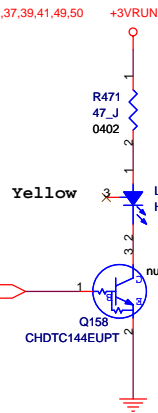


# CAP\_LED# SCROLL\_LOCK\_LED# NUM\_LOCK\_LED#

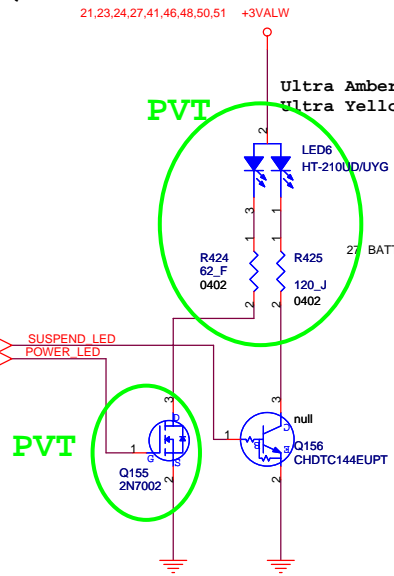


MS LED

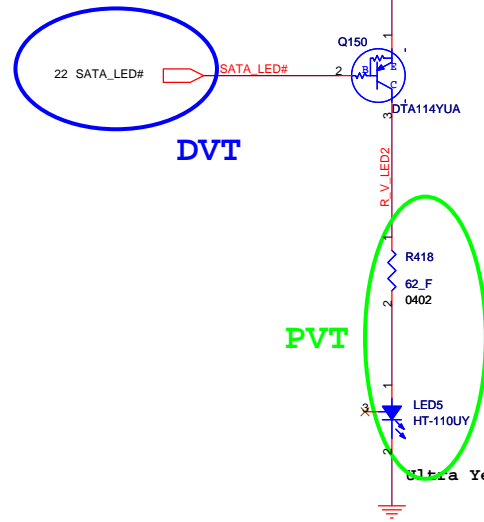
3,7,8,10,13,14,16,17,20,21,22,23,24,26,27,28,30,33,37,39,41,49,50



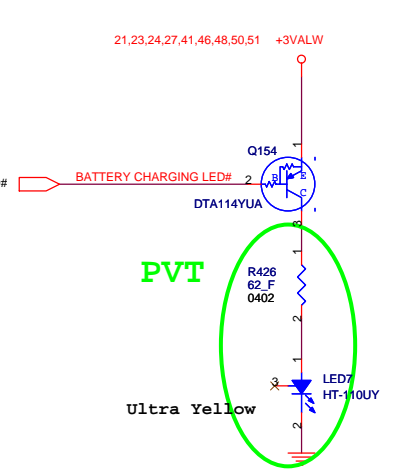
# POWER/SUSPEND LED

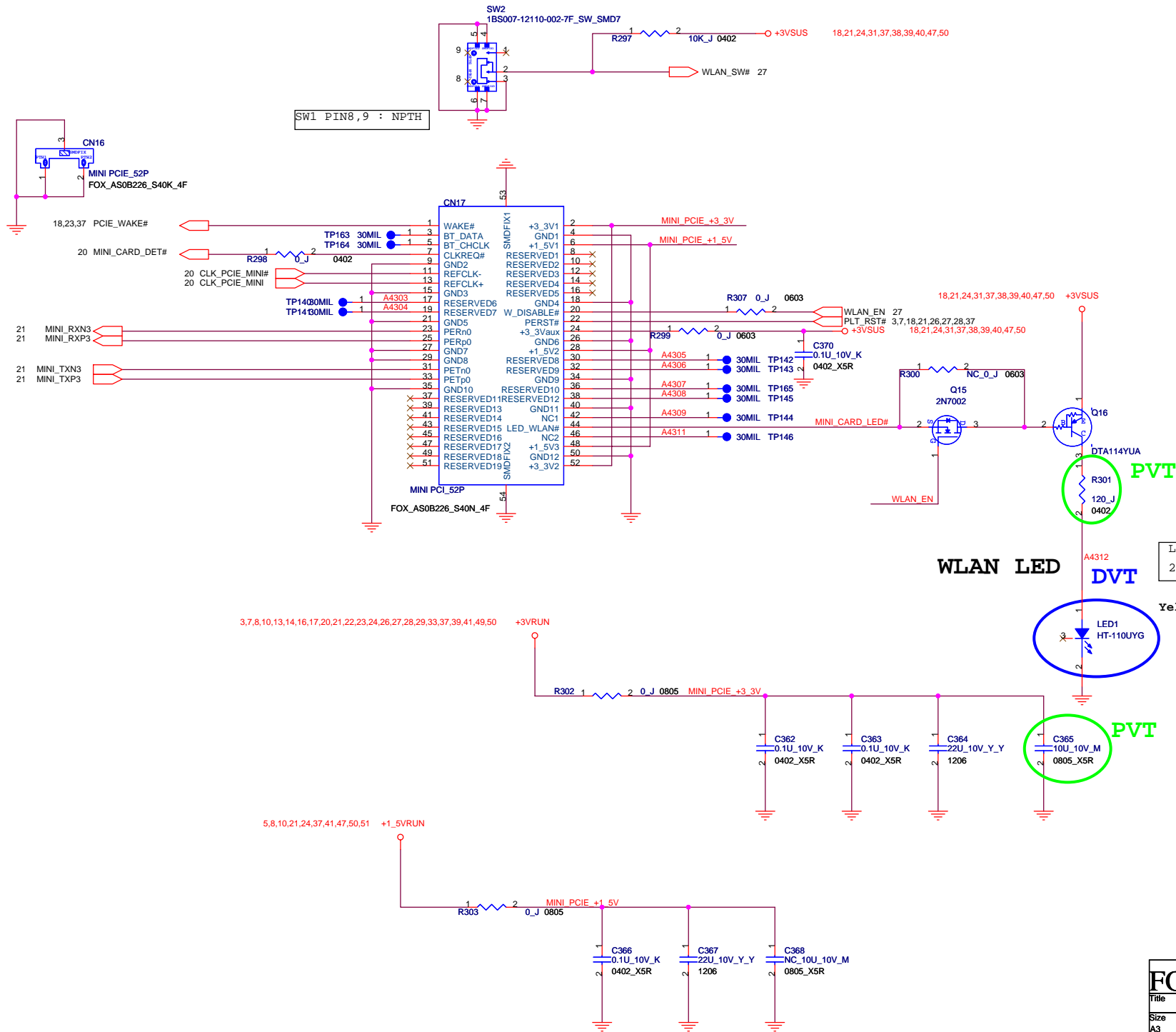


# HDD\_LED#

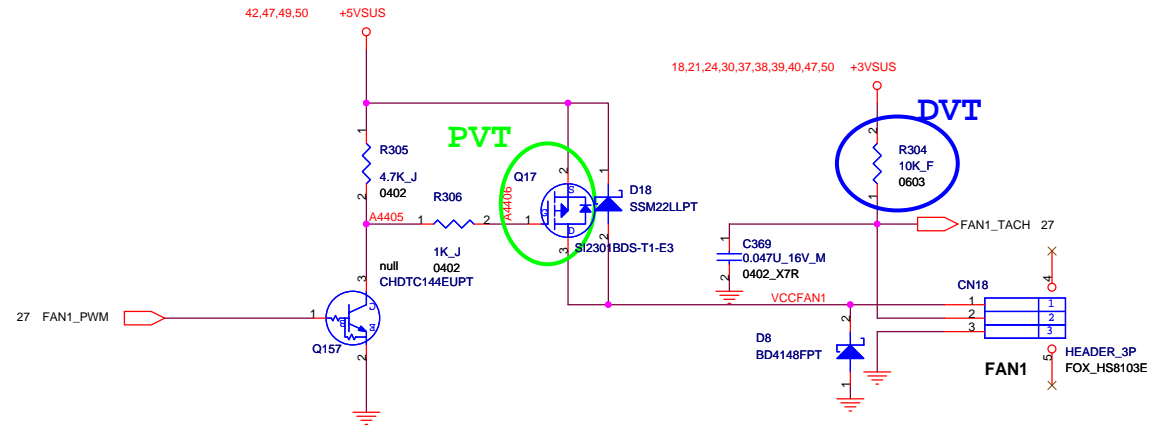


# BATTERY CHARGING LED#





# FAN1



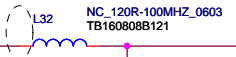
17,24,26,27,28,29,33,34,35,41,49,50

+5VRUN



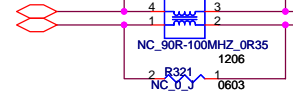
F1  
NC\_6V-0.35A\_1206  
1206L035

10mils

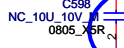


L32  
NC\_120R-100MHZ\_0603  
TB160808B121

21 USB\_PP4

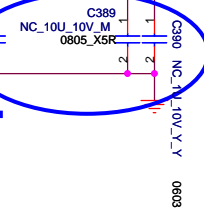


R320  
NC\_0 0603  
L33  
NC\_90R-100MHZ\_0R35  
1206  
R321  
NC\_0 0603



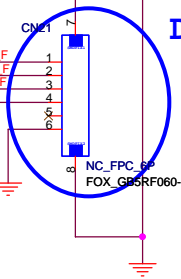
C598  
NC\_10U\_10V\_M  
0805\_X5R

DVT



C389  
NC\_10U\_10V\_M  
0805\_X5R  
C390  
NC\_1U\_10V\_Y\_Y  
0803  
C391  
NC\_470P\_50V\_K\_B

Oide



CNE1

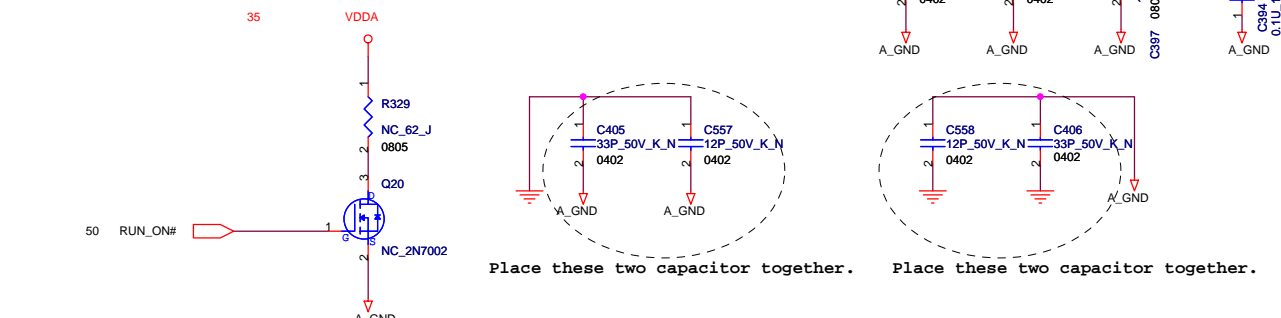
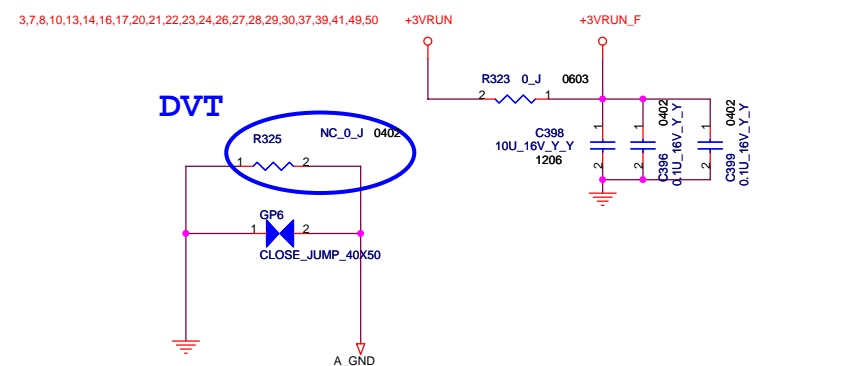
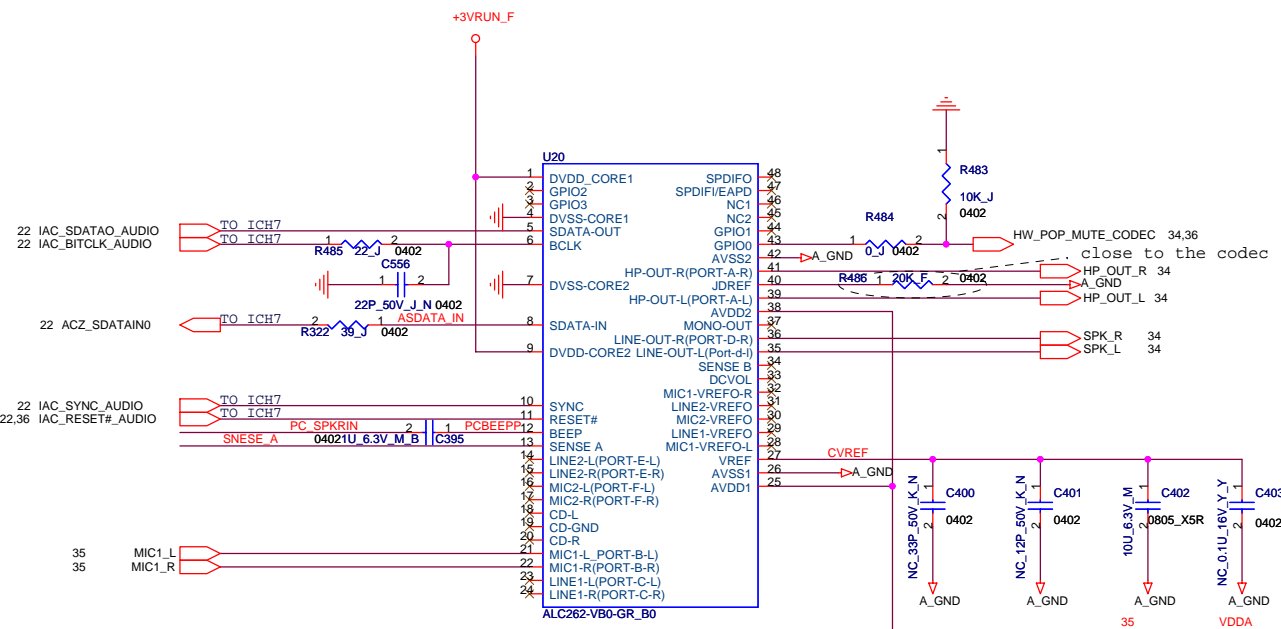
1 HUB\_VCC1 F  
2 USB\_VD4+ F  
3 USB\_VD4- F  
4  
5  
6  
7  
8 NC\_FPC\_6P  
FOX\_GB5RF060-1200-7F

DVT

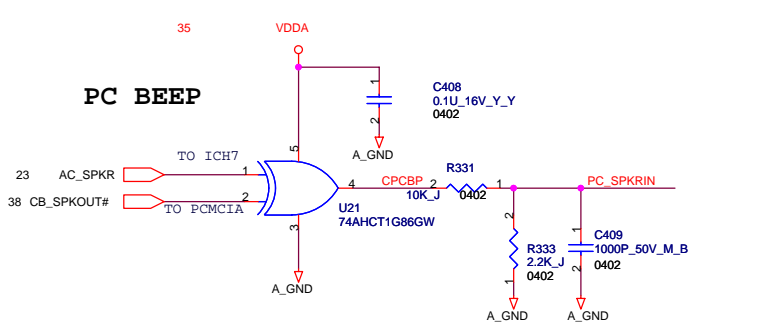
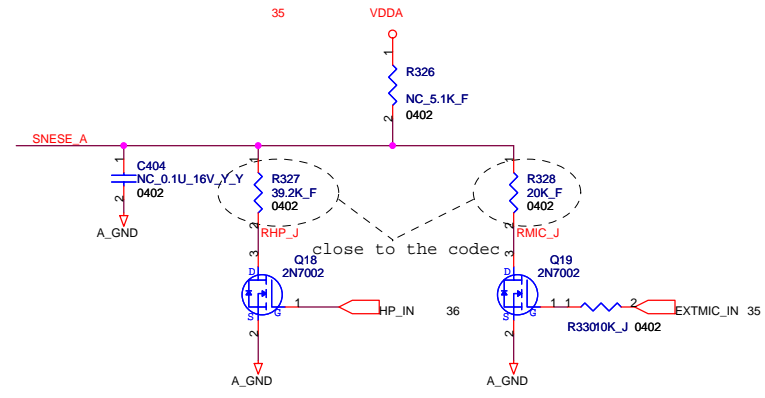
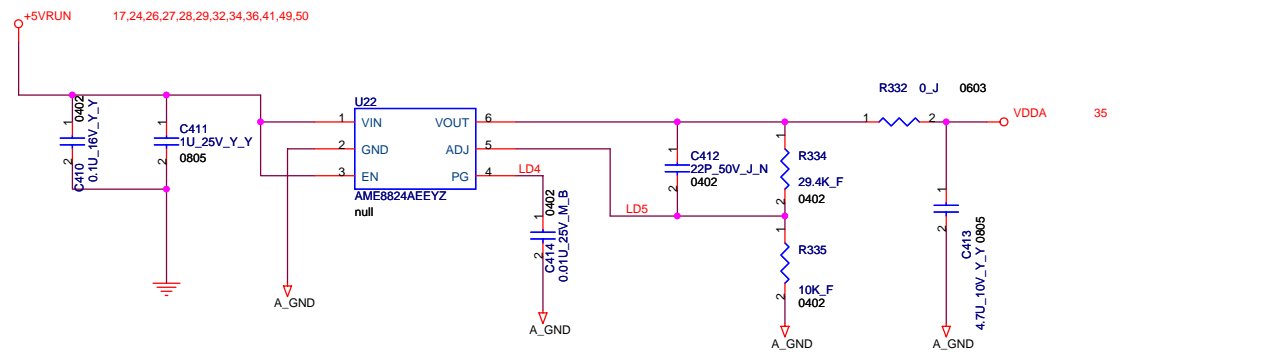
PVT

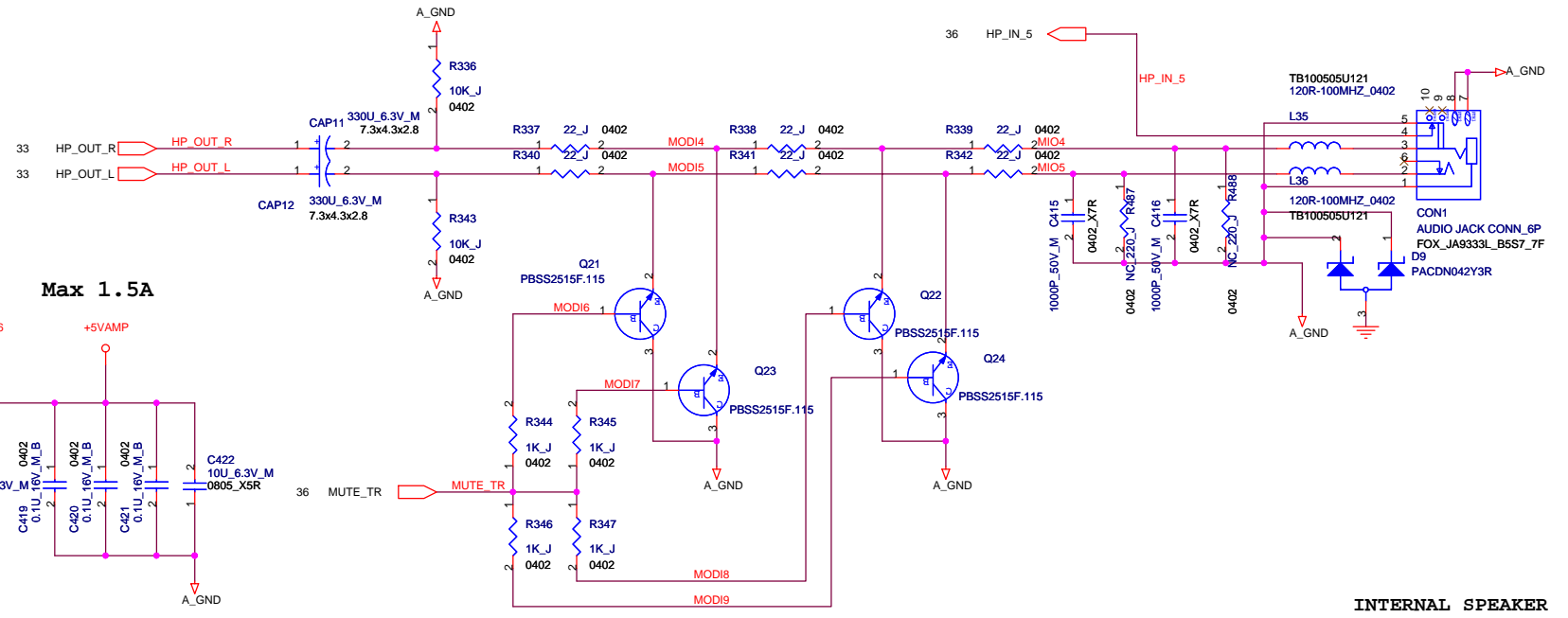
<b>FOXCONN</b>		HON HAI Precision Ind. Co., Ltd.	
Title <b>OIDE</b>		CCPBG - R&D Division	
Size A3	Document Number MS70-1-01	Rev 1.0	
Date: Tuesday, July 25, 2006	Sheet 32	of 55	





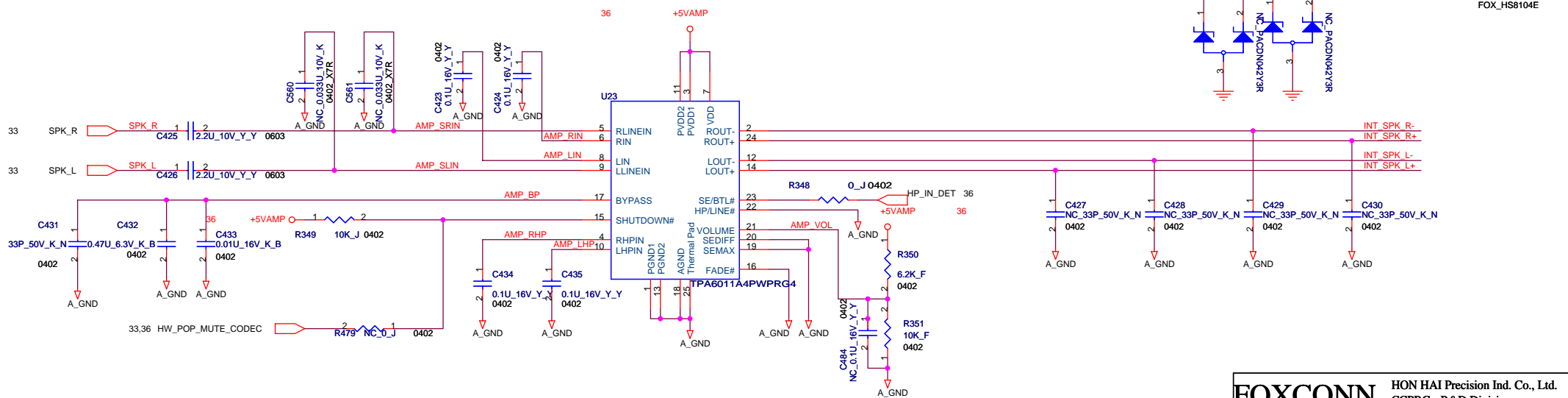
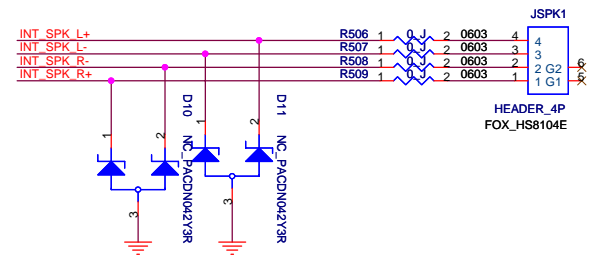
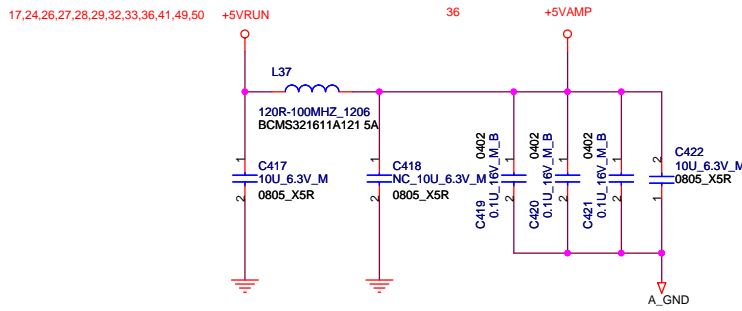
**AUDIO POWER(Change to 4.75V/200mA)**

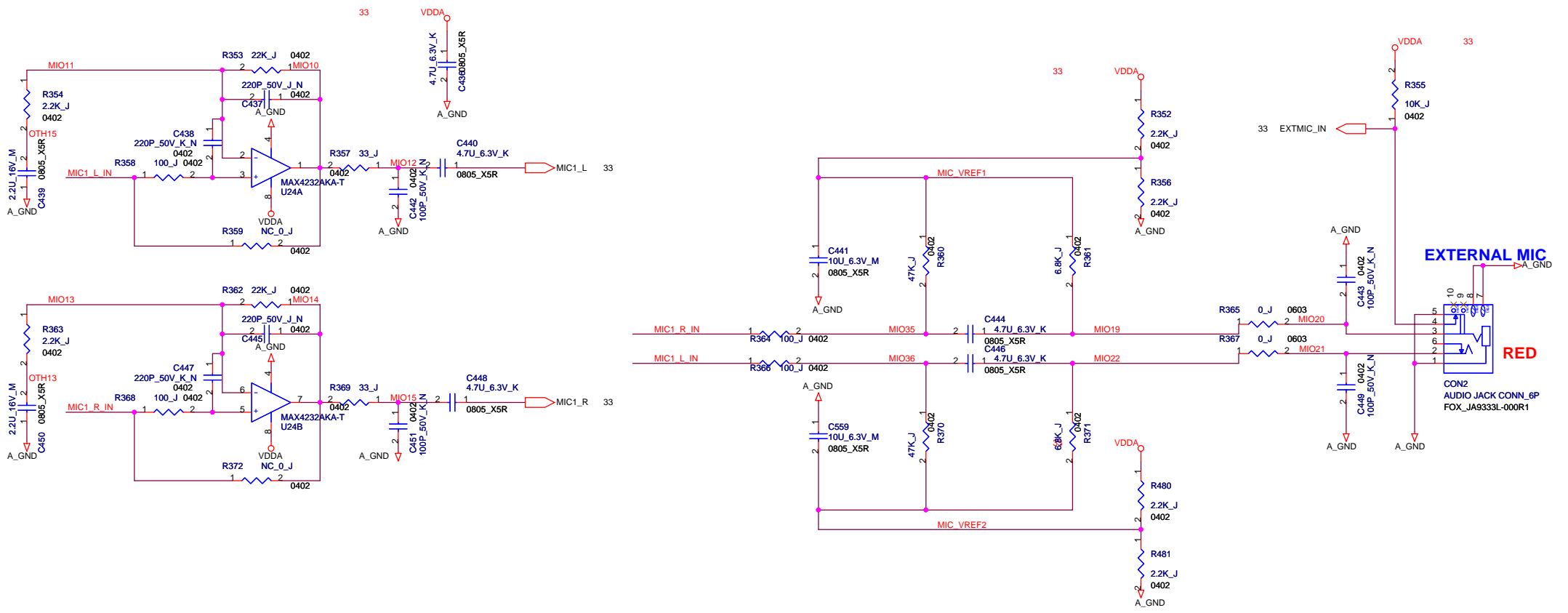


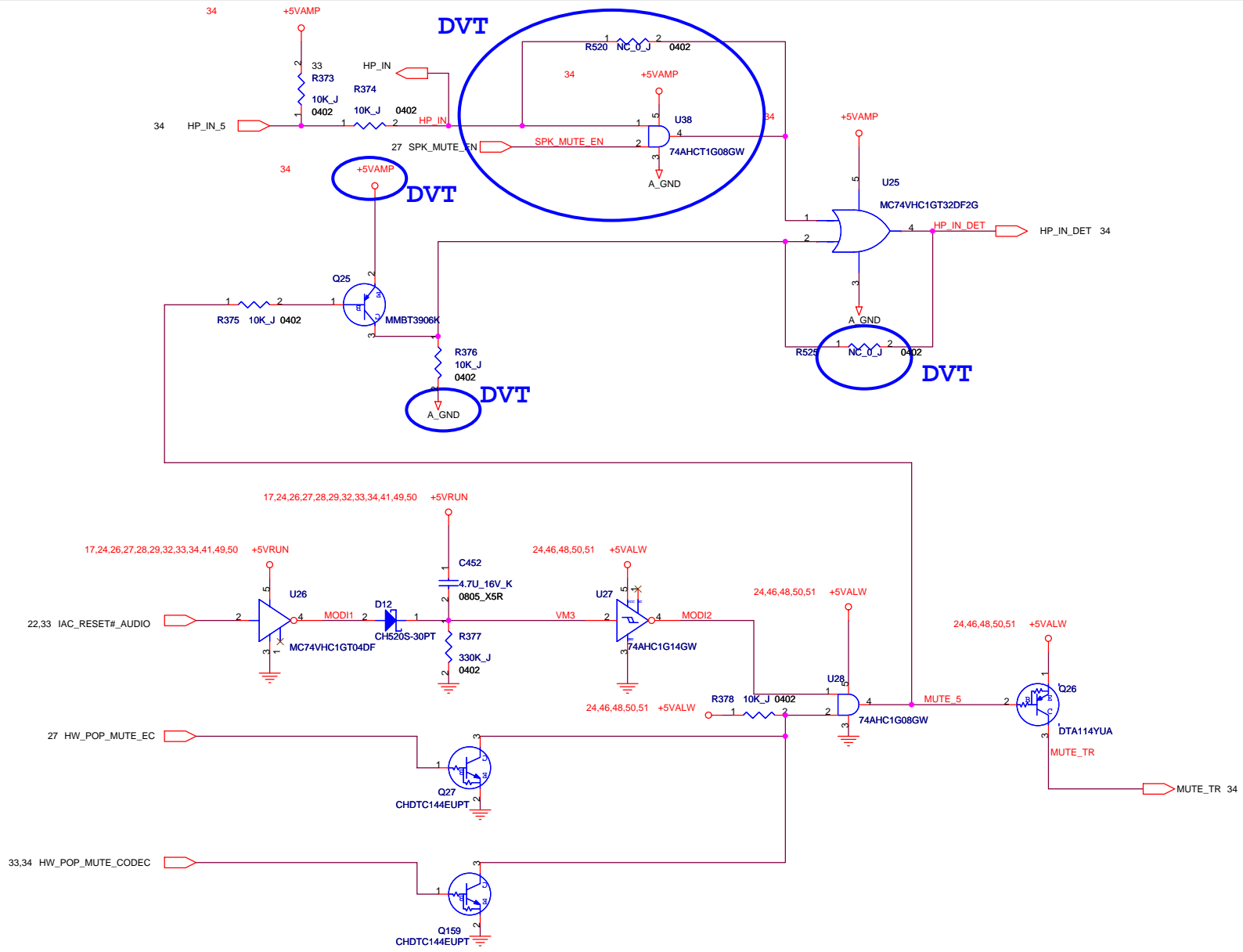


Max 1.5A

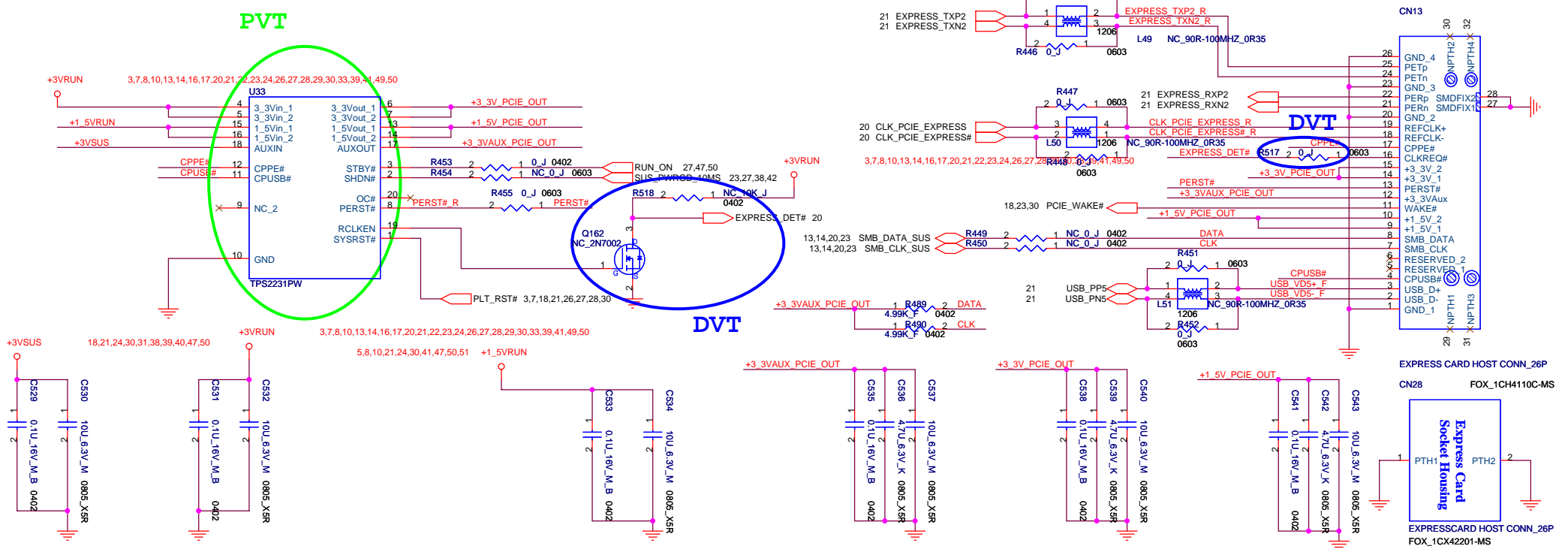
INTERNAL SPEAKER



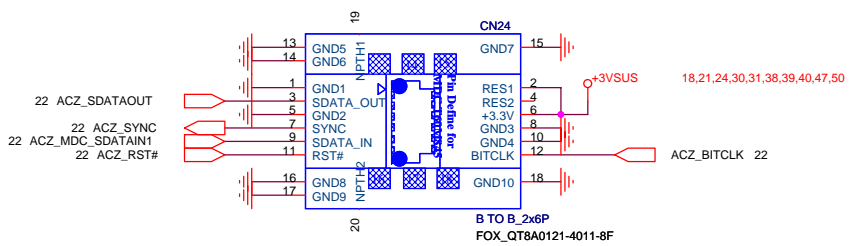


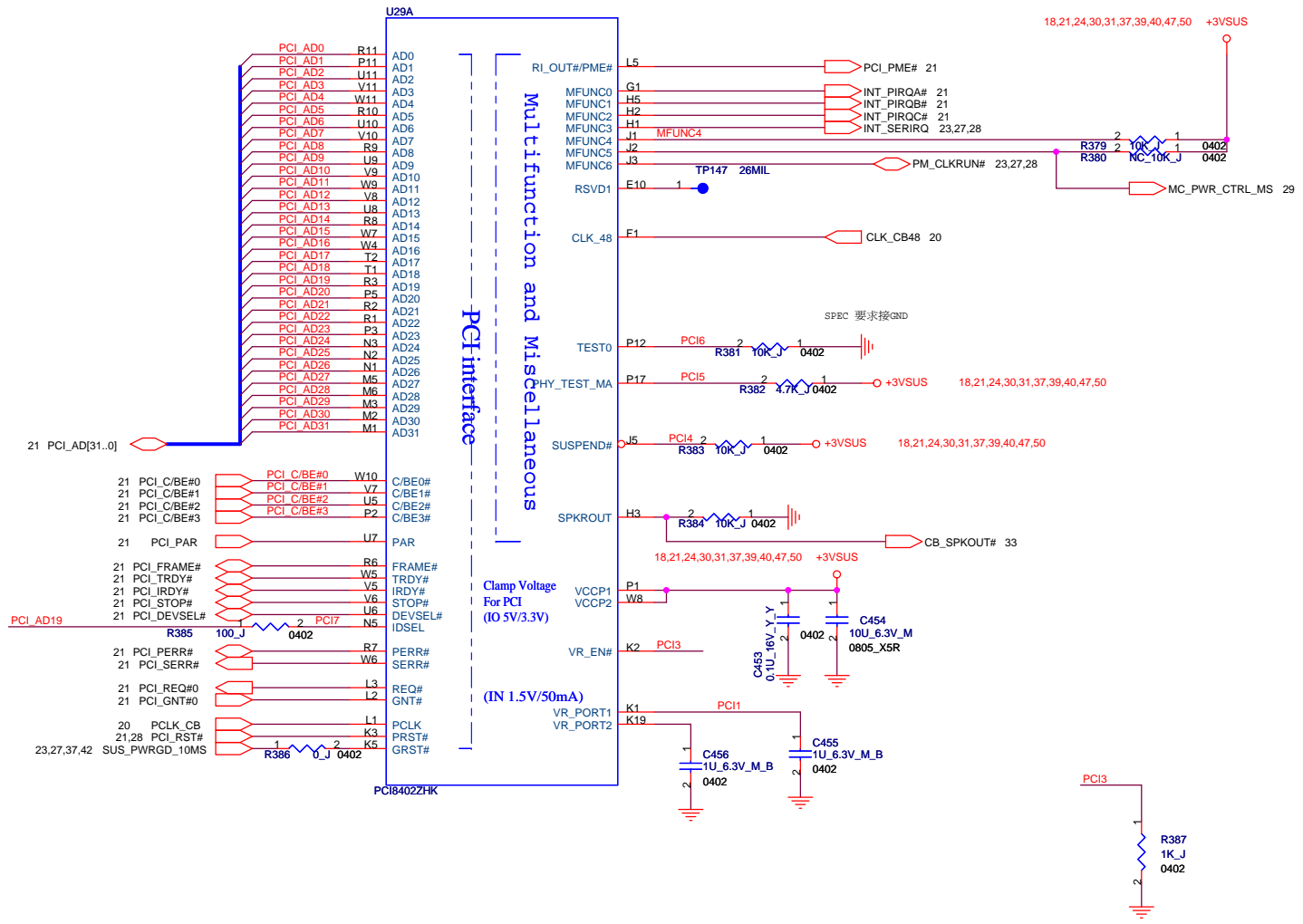


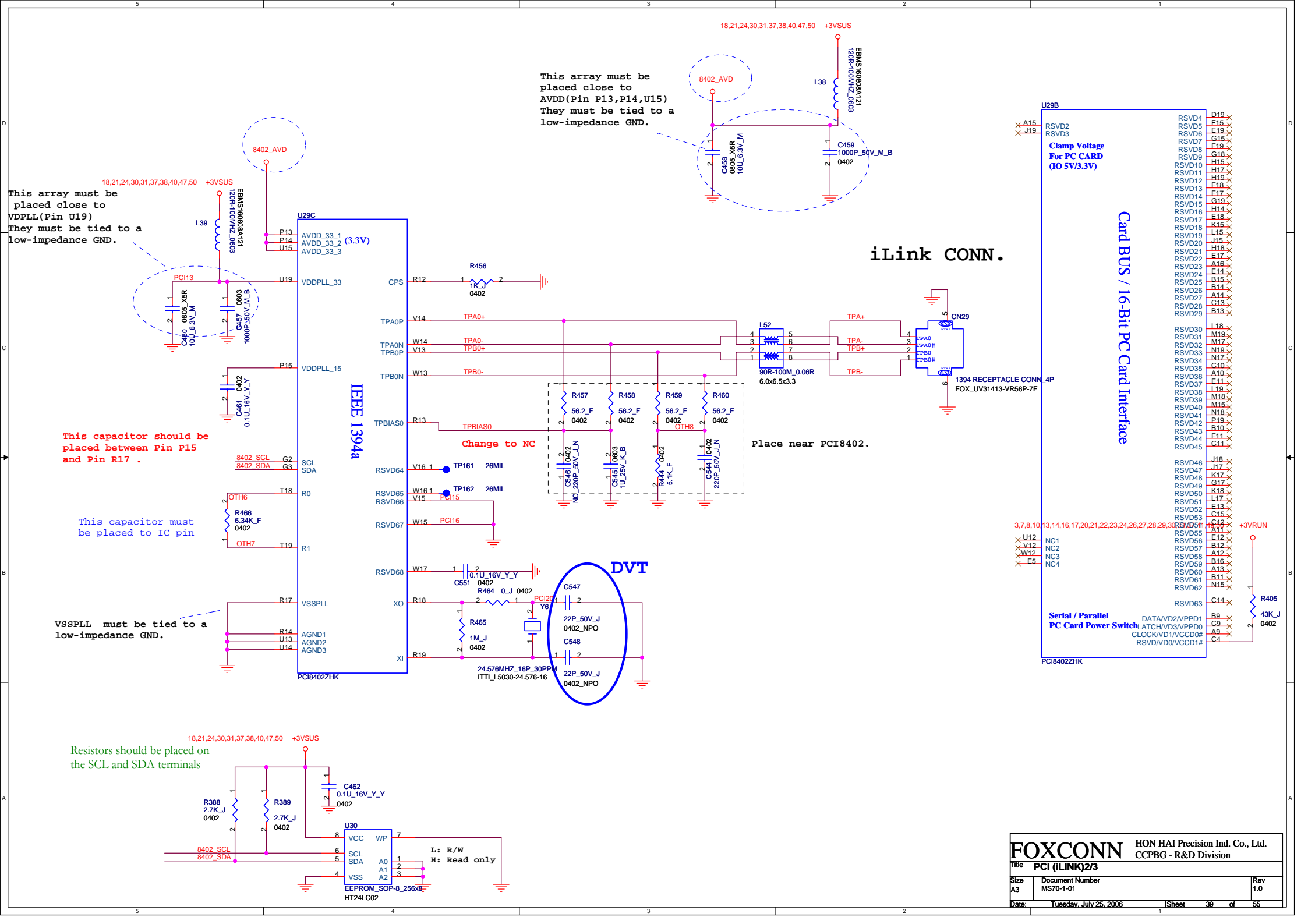
# EXPRESS CONN



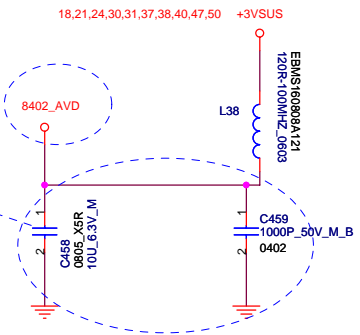
# MDC CONN.



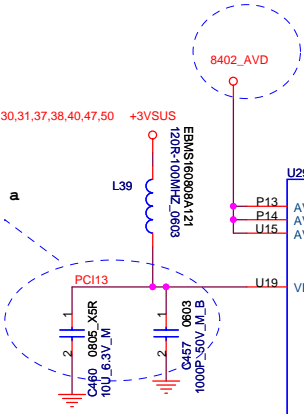




This array must be placed close to AVDD (Pin P13,P14,U15) They must be tied to a low-impedance GND.



This array must be placed close to VDDPLL (Pin U19) They must be tied to a low-impedance GND.



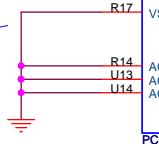
This capacitor should be placed between Pin P15 and Pin R17 .



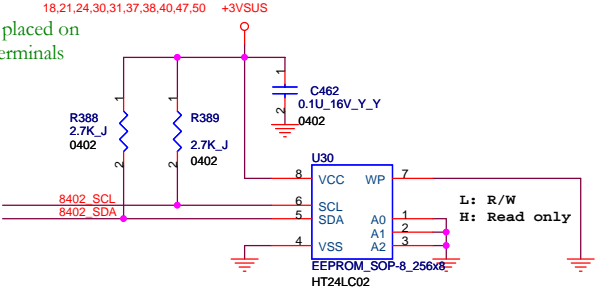
This capacitor must be placed to IC pin



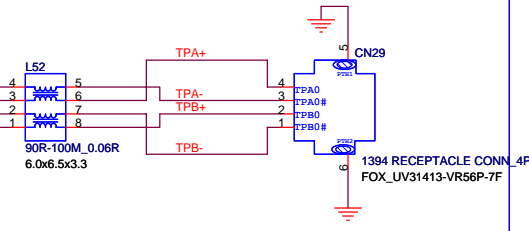
VSSPLL must be tied to a low-impedance GND.



Resistors should be placed on the SCL and SDA terminals



### iLink CONN.

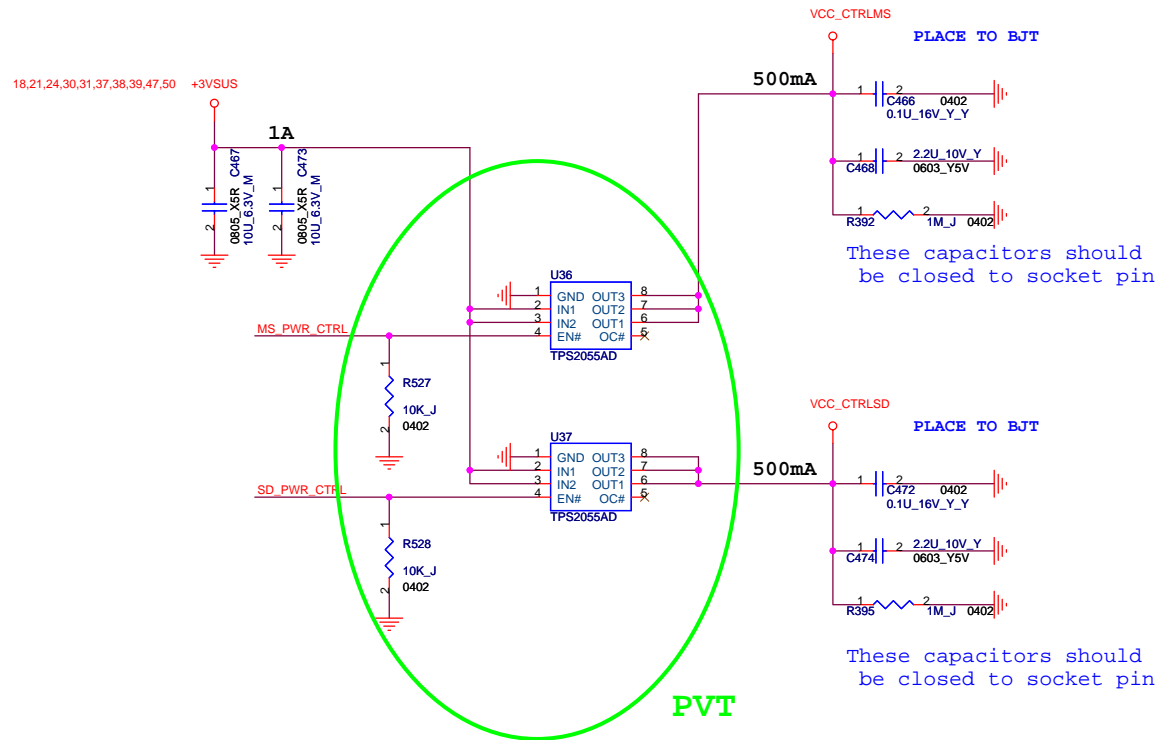
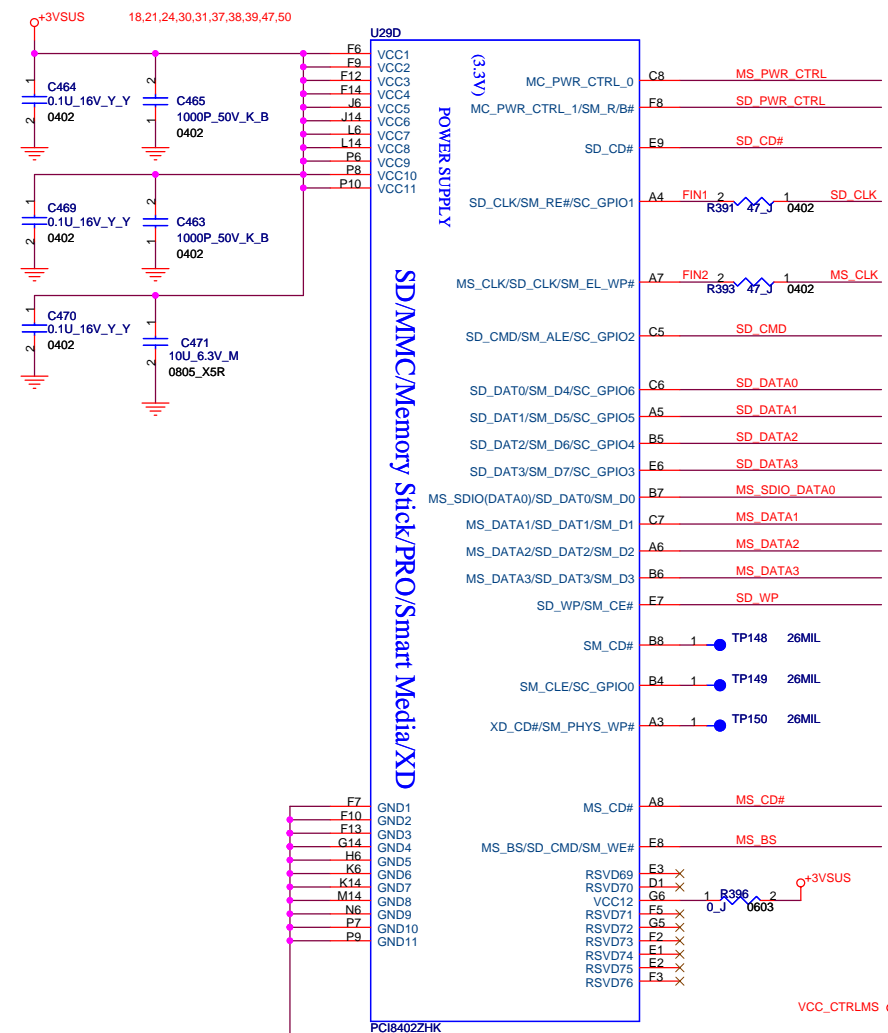


Place near PCI8402.

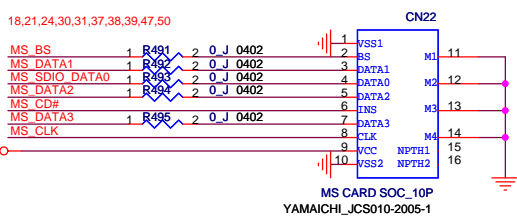
### Card BUS / 16-Bit PC Card Interface

U29B	RSVD2	RSVD4	D19
X A15	RSVD5	RSVD5	F15
X J19	RSVD6	RSVD6	G15
	RSVD7	RSVD7	F19
	RSVD8	RSVD8	G18
	RSVD9	RSVD9	H15
	RSVD10	RSVD10	H17
	RSVD11	RSVD11	H19
	RSVD12	RSVD12	F18
	RSVD13	RSVD13	F17
	RSVD14	RSVD14	G19
	RSVD15	RSVD15	H14
	RSVD16	RSVD16	F18
	RSVD17	RSVD17	K15
	RSVD18	RSVD18	L15
	RSVD19	RSVD19	H18
	RSVD20	RSVD20	E17
	RSVD21	RSVD21	A16
	RSVD22	RSVD22	E14
	RSVD23	RSVD23	B15
	RSVD24	RSVD24	A14
	RSVD25	RSVD25	C13
	RSVD26	RSVD26	B13
	RSVD27	RSVD27	C13
	RSVD28	RSVD28	B13
	RSVD29	RSVD29	L18
	RSVD30	RSVD30	M19
	RSVD31	RSVD31	N19
	RSVD32	RSVD32	N17
	RSVD33	RSVD33	C10
	RSVD34	RSVD34	A10
	RSVD35	RSVD35	E11
	RSVD36	RSVD36	M18
	RSVD37	RSVD37	L19
	RSVD38	RSVD38	M15
	RSVD39	RSVD39	N18
	RSVD40	RSVD40	P19
	RSVD41	RSVD41	B10
	RSVD42	RSVD42	F11
	RSVD43	RSVD43	C11
	RSVD44	RSVD44	J18
	RSVD45	RSVD45	K17
	RSVD46	RSVD46	K17
	RSVD47	RSVD47	G17
	RSVD48	RSVD48	K18
	RSVD49	RSVD49	L17
	RSVD50	RSVD50	L17
	RSVD51	RSVD51	E13
	RSVD52	RSVD52	C15
	RSVD53	RSVD53	A11
	RSVD54	RSVD54	A11
	RSVD55	RSVD55	A12
	RSVD56	RSVD56	A12
	RSVD57	RSVD57	B16
	RSVD58	RSVD58	A13
	RSVD59	RSVD59	B11
	RSVD60	RSVD60	N15
	RSVD61	RSVD61	C14
	RSVD62	RSVD62	B9
			C9
			A9
			C4
			43K_J
			0402

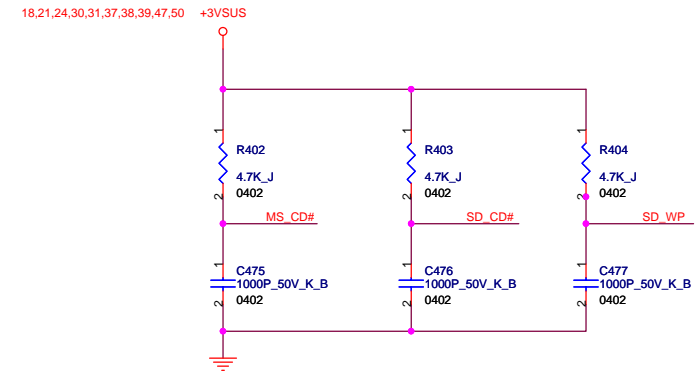
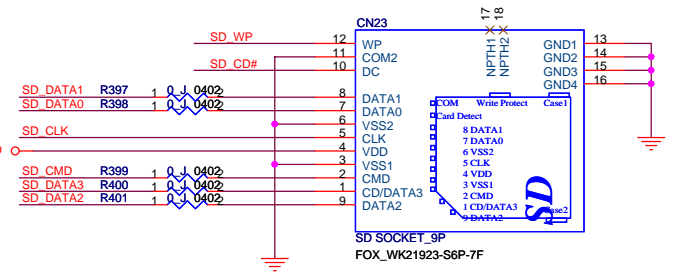
Serial / Parallel PC Card Power Switch  
 DATA/VD2/PPD1  
 LATCH/VD3/VPPD0  
 CLOCK/VD1/VCCD0#  
 RSVD/VD0/VCCD1#



**MS STD/DUO CONN.**

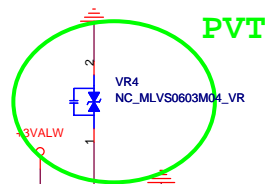
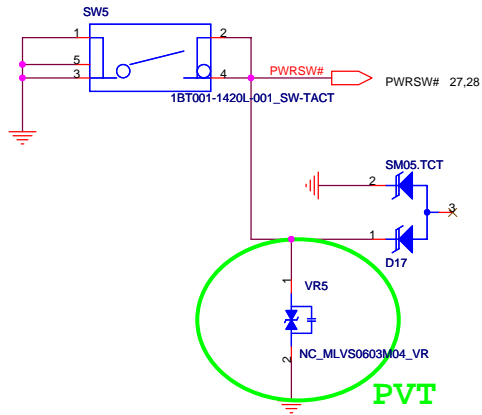


**SD CONN.**

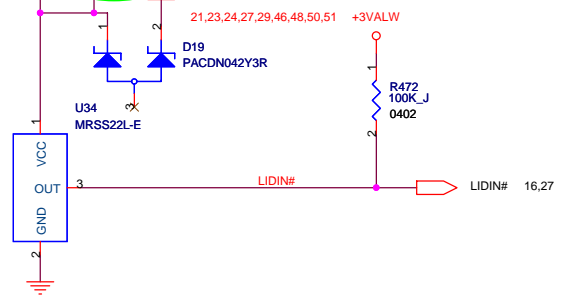




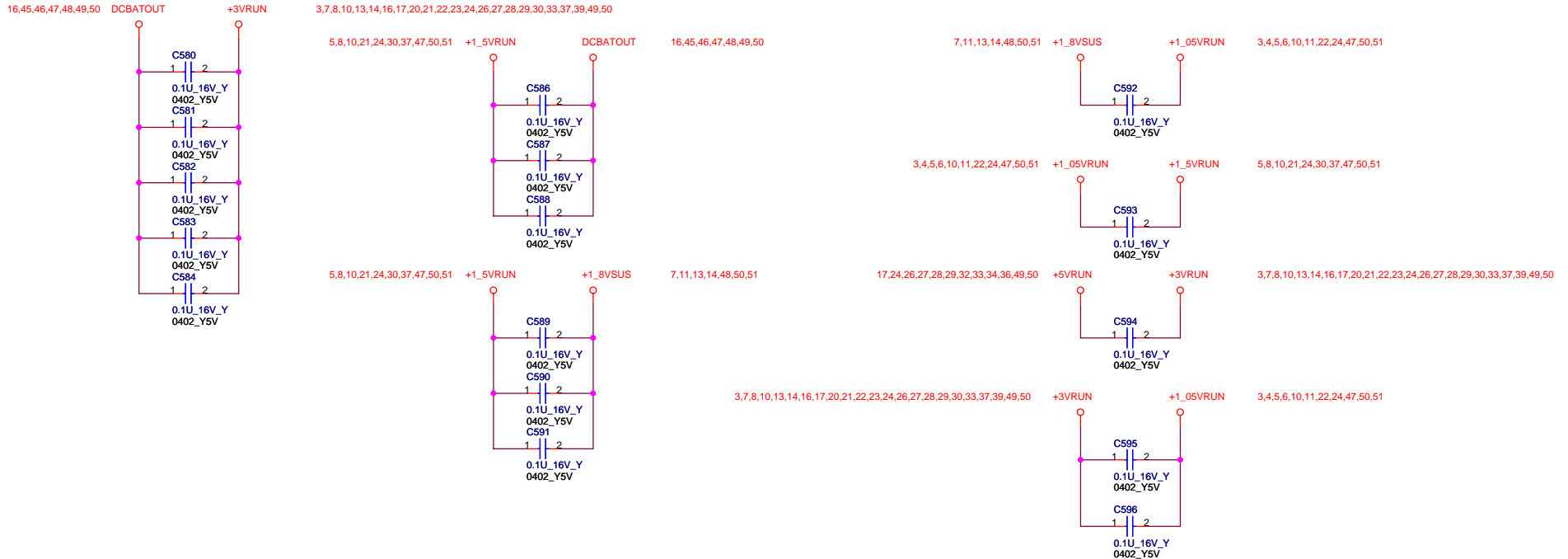
# POWER BUTTON



# LID Switch

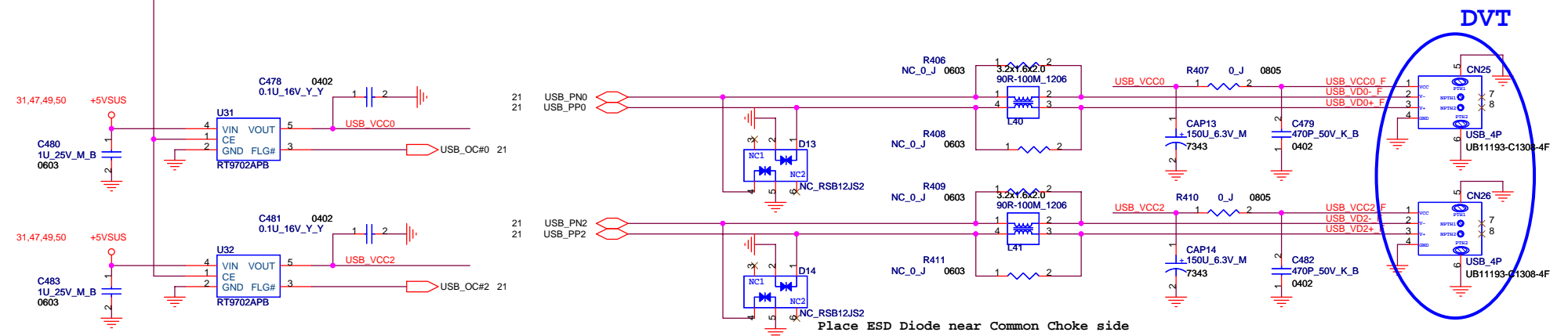


# EMI CAP



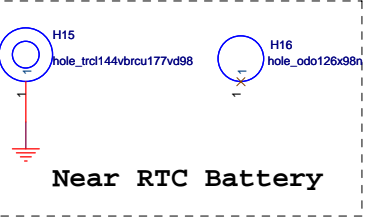
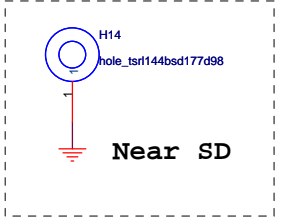
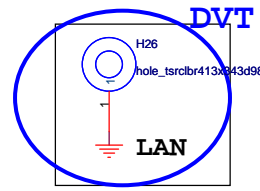
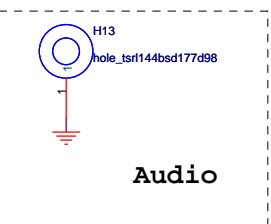
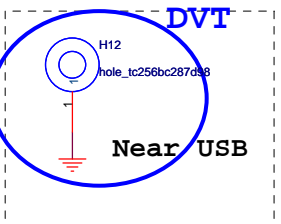
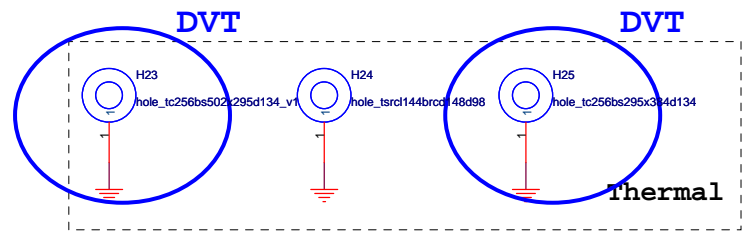
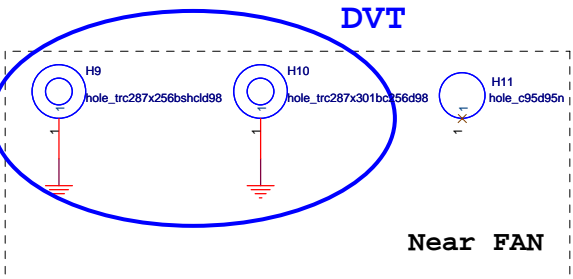
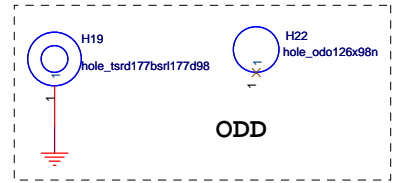
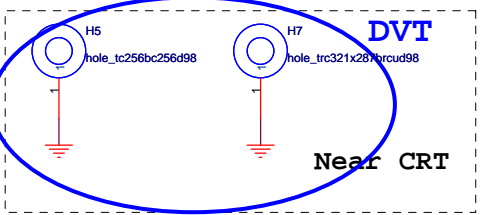
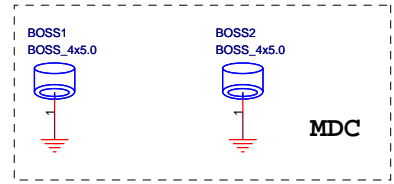
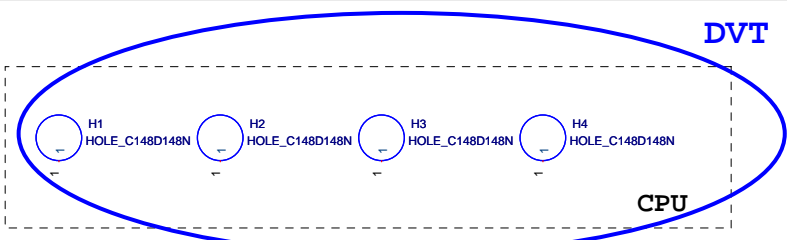
# USB CONN X 2

23,27,37,38 SUS\_PWRGD\_10MS

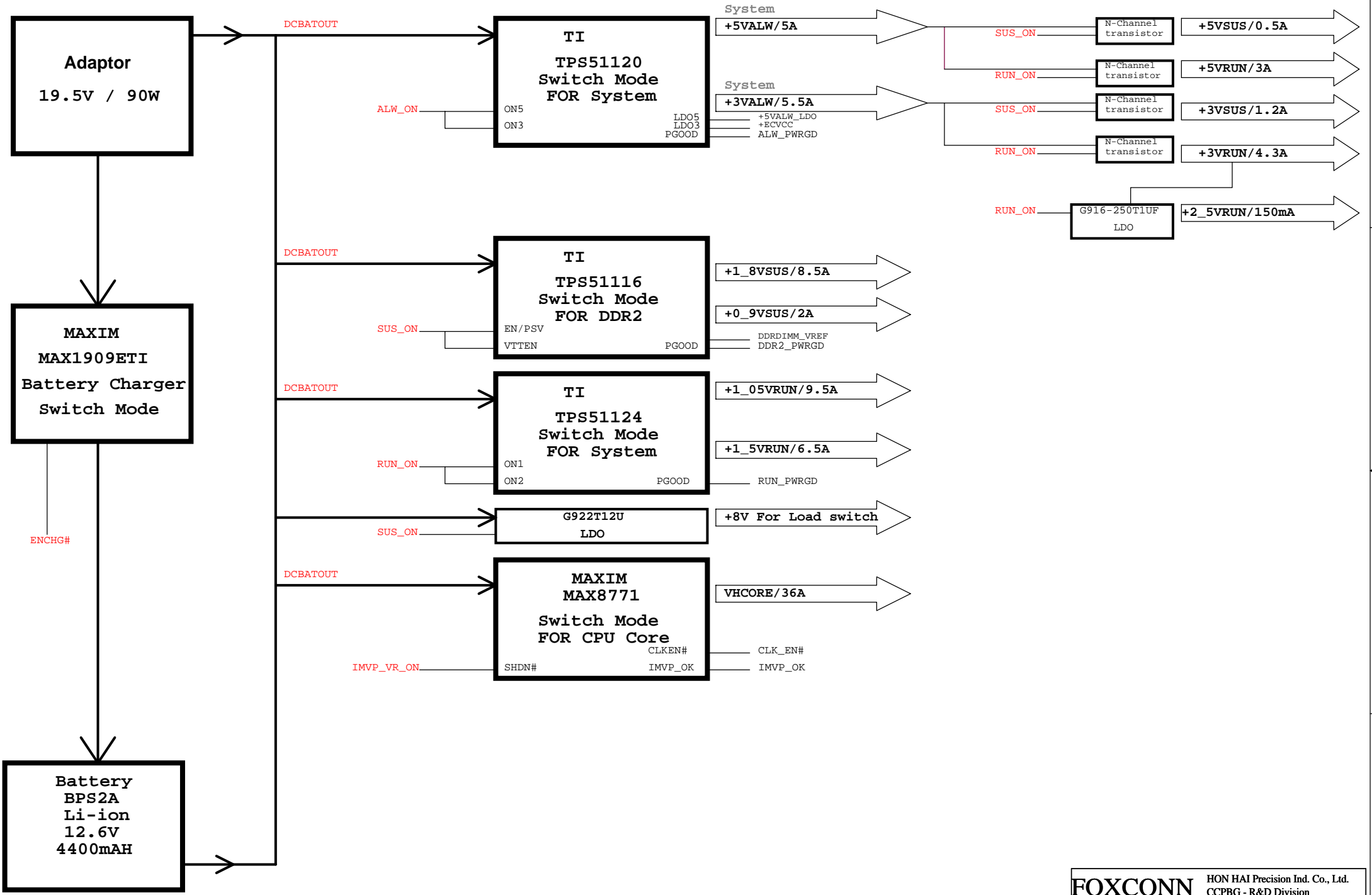


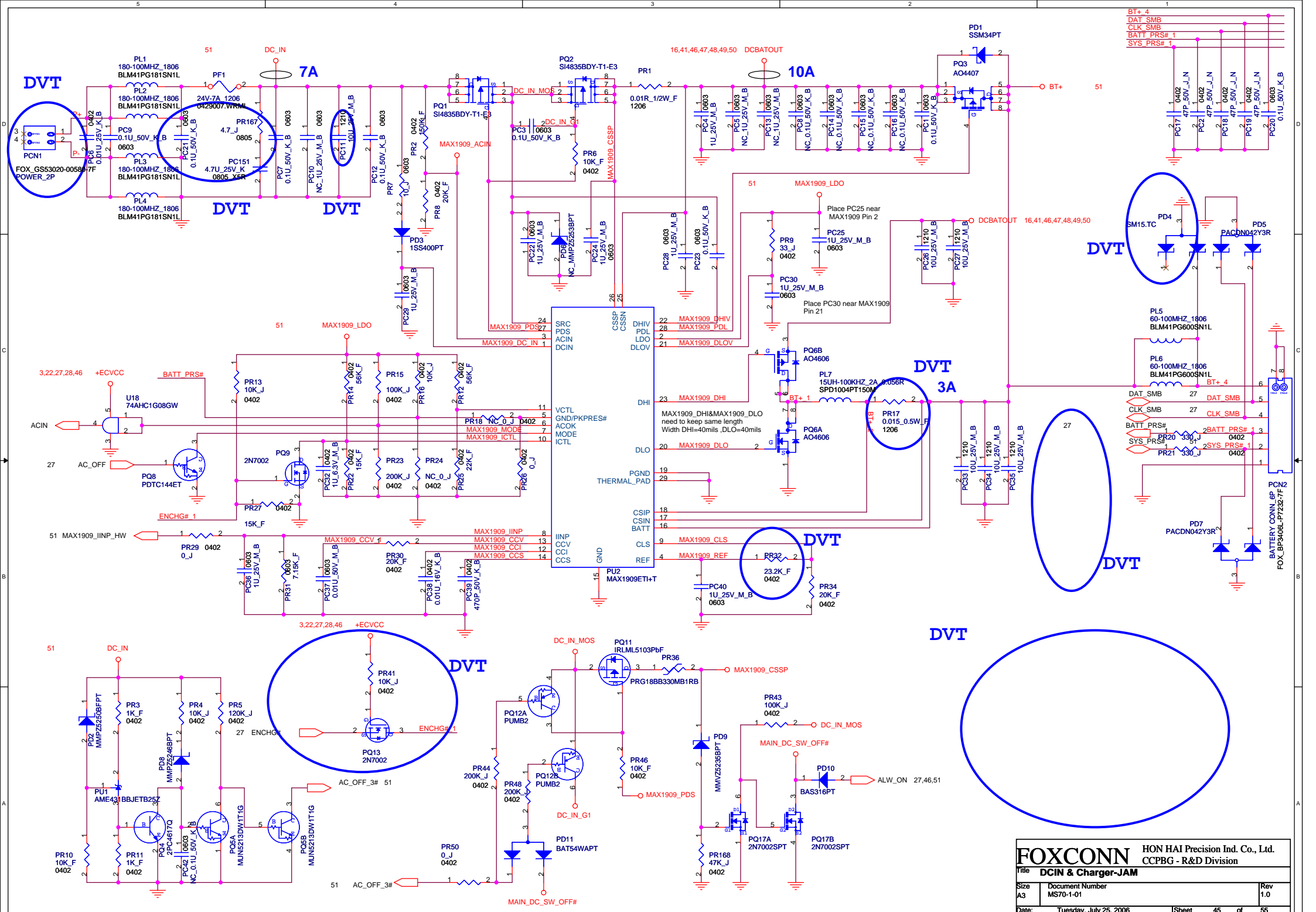
Place ESD Diode near Common Choke side

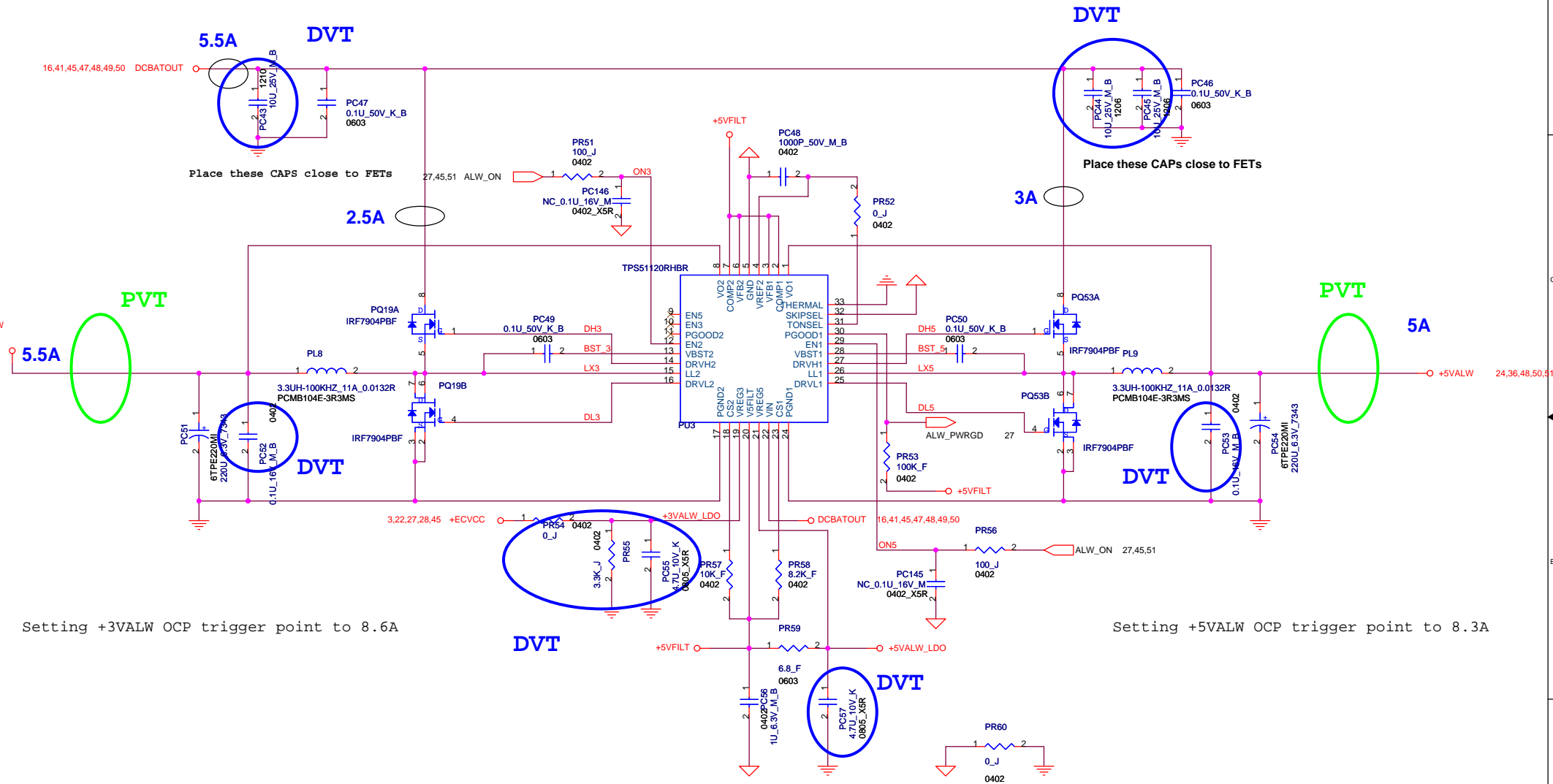
<b>FOXCONN</b>		HON HAI Precision Ind. Co., Ltd.	
Title <b>USB2.0</b>		CCPBG - R&D Division	
Size A3	Document Number MS70-1-01	Rev 1.0	
Date: Tuesday, July 25, 2006	Sheet 42	of 55	

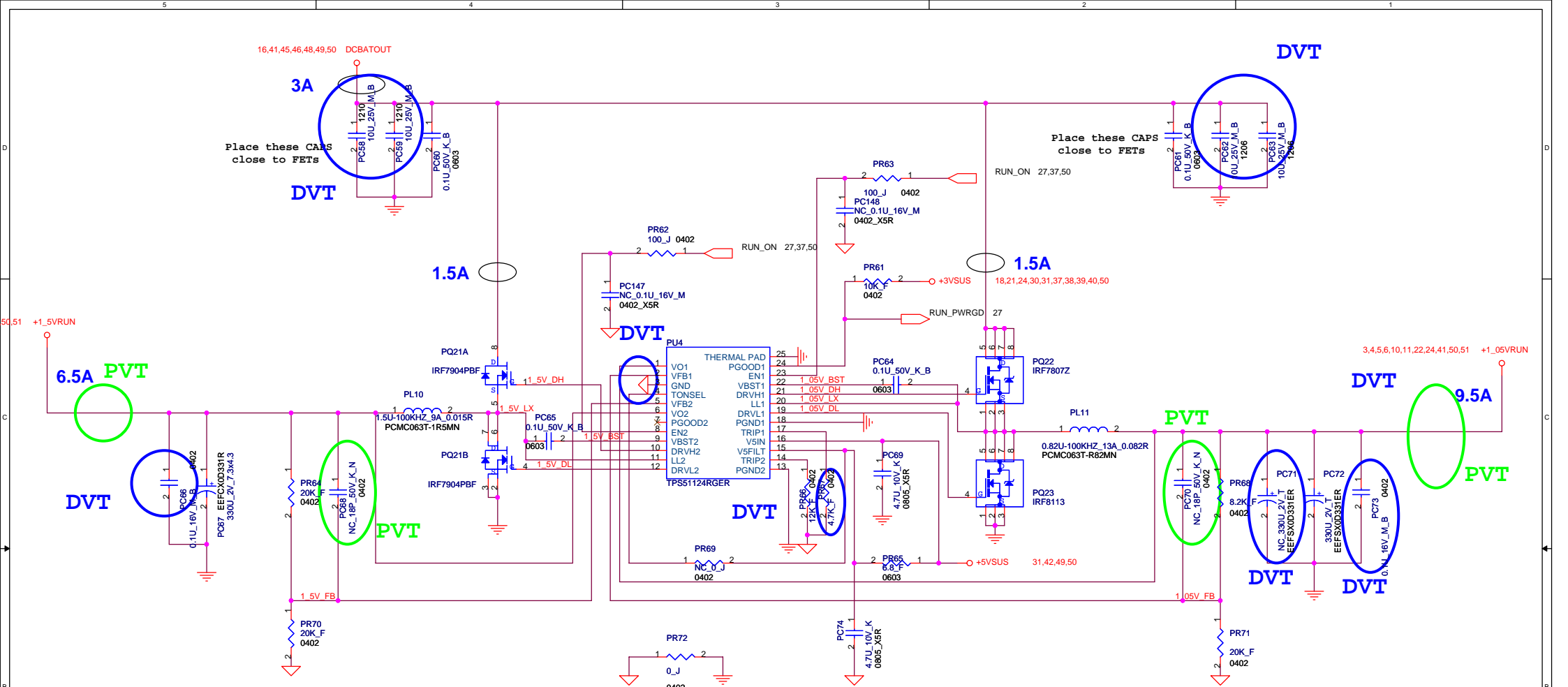


<b>FOXCONN</b>			HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title <b>HOLE</b>			
Size A3	Document Number MS70-1-01	Rev 1.0	
Date: Tuesday, July 25, 2006	Sheet 43	of 55	



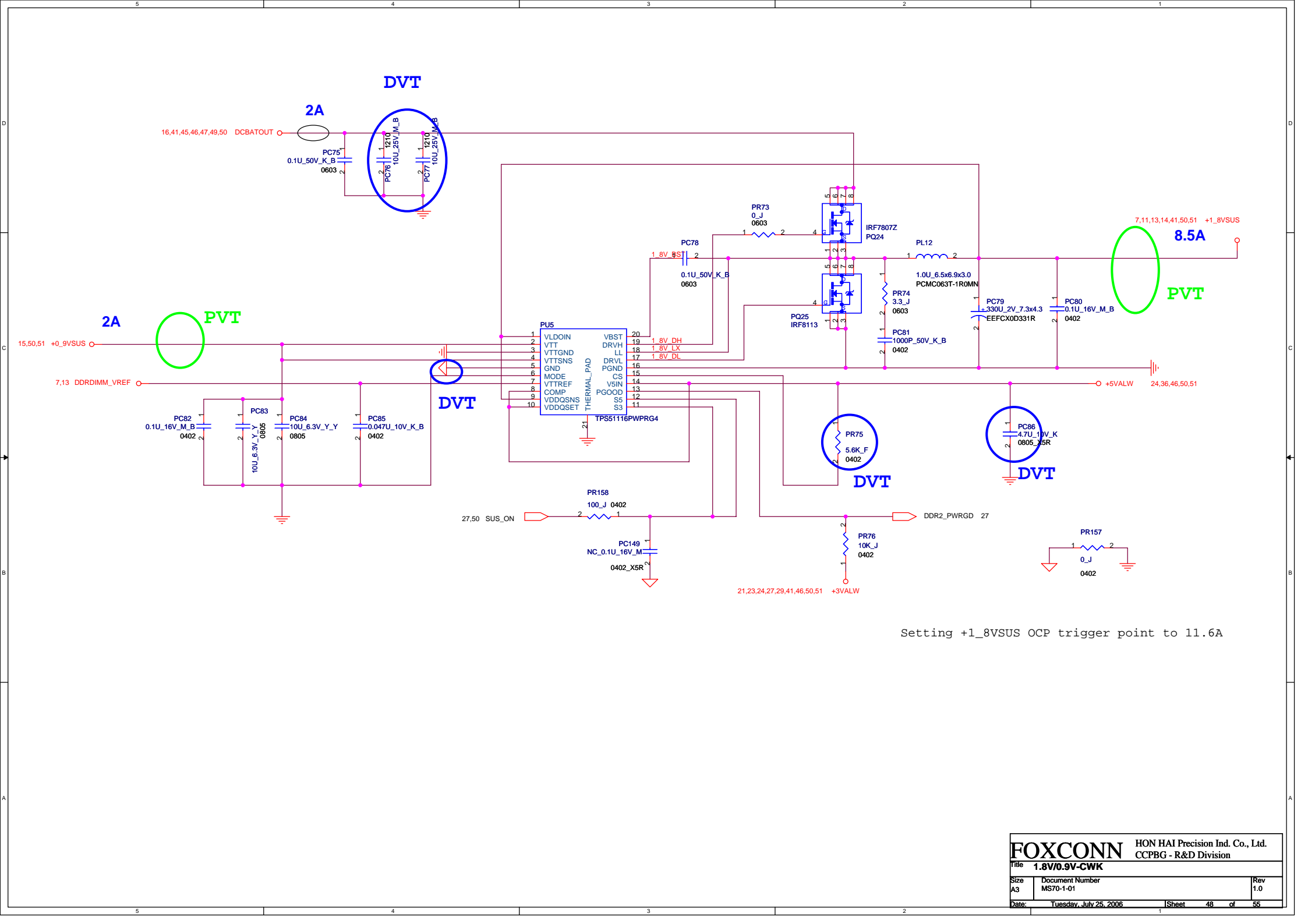






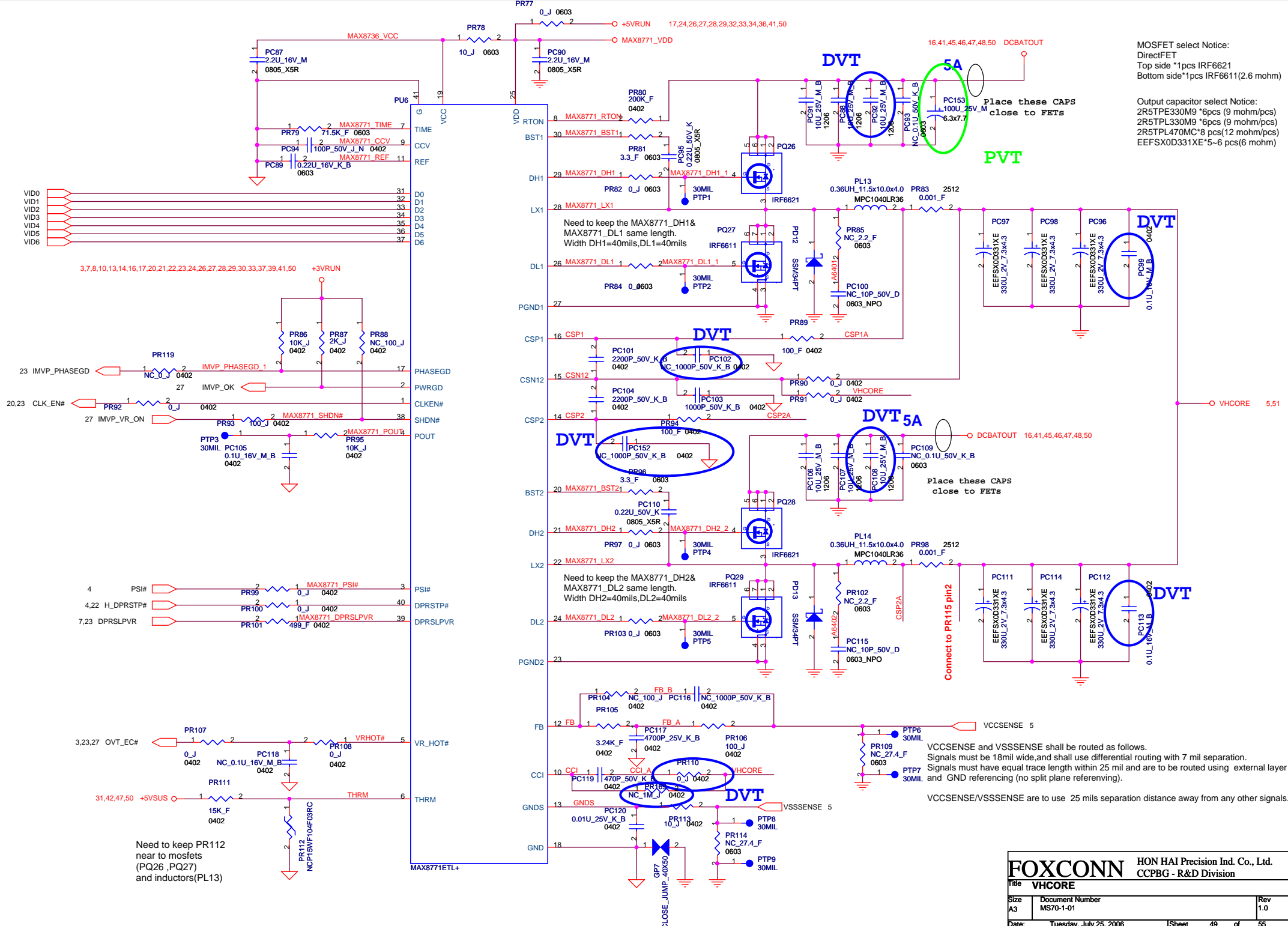
Setting +1\_5VRUN OCP trigger point to 10.5A

Setting +1\_05VRUN OCP trigger point to 12.8A



Setting +1\_8VSUS OCP trigger point to 11.6A





MOSFET select Notice:  
 DirectFET  
 Top side \*1pcs IRF6621  
 Bottom side \*1pcs IRF6611(2.6 mohm)

Output capacitor select Notice:  
 2R5TPE330M9 \*6pcs (9 mohm/pcs)  
 2R5TPL330M9 \*6pcs (9 mohm/pcs)  
 2R5TPL470MC\*8 pcs(12 mohm/pcs)  
 EEFSX0D331XE\*5-6 pcs(6 mohm)

Place these CAPS close to FETs

Place these CAPS close to FETs

Place these CAPS close to FETs

VCCSENSE and VSSSENSE shall be routed as follows.  
 Signals must be 18mil wide, and shall use differential routing with 7 mil separation.  
 Signals must have equal trace length within 25 mil and are to be routed using external layer and GND referencing (no split plane referencing).

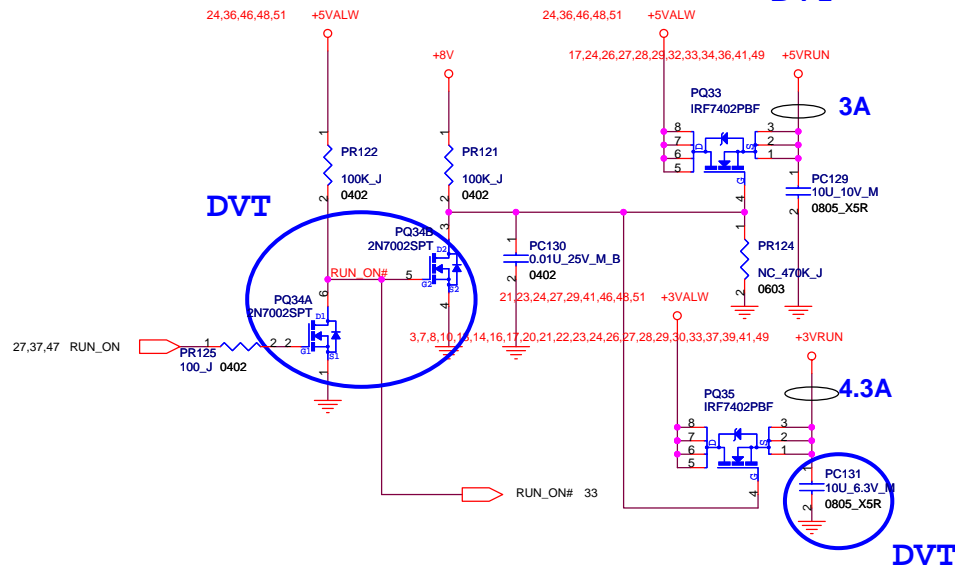
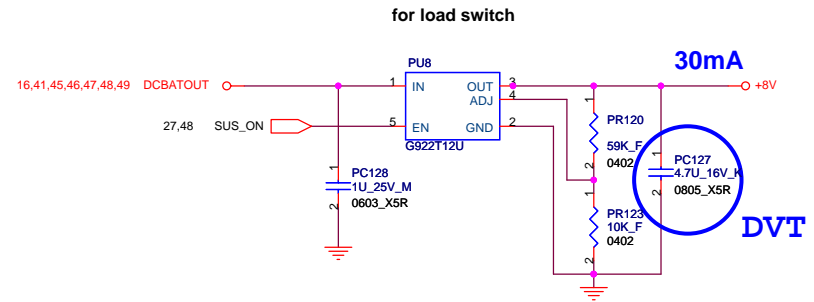
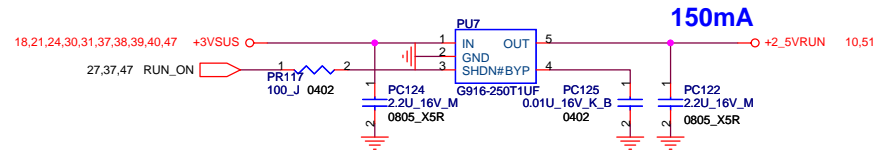
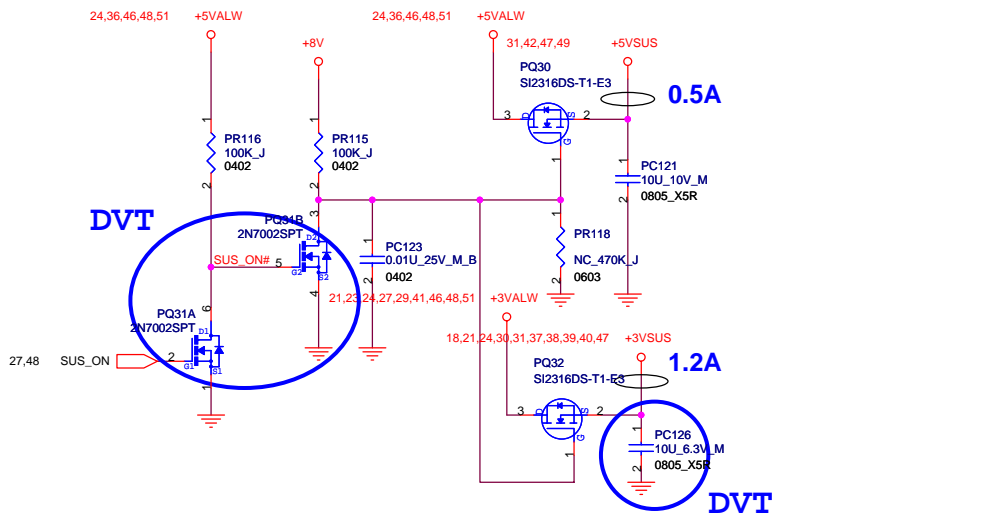
VCCSENSE/VSSSENSE are to use 25 mils separation distance away from any other signals.

Need to keep PR112 near to mosfets (PQ26, PQ27) and inductors(PL13)

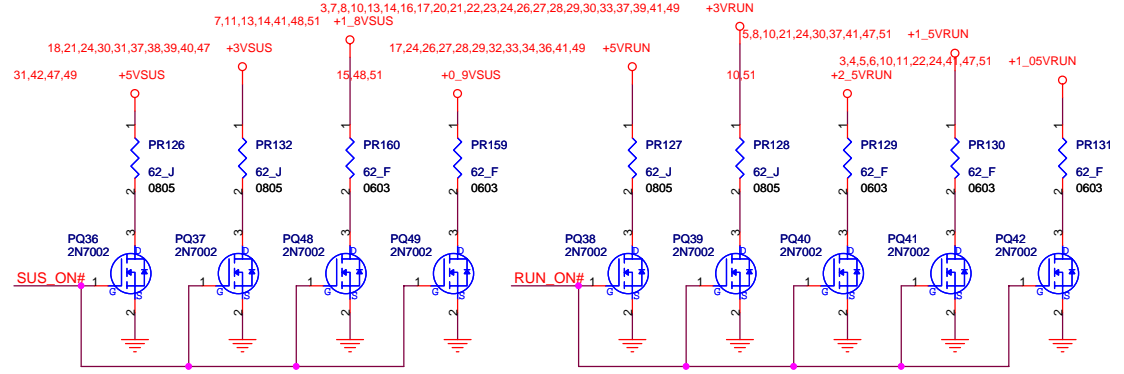
Need to keep the MAX8771\_DH1 & MAX8771\_DL1 same length. Width DH1=40mils, DL1=40mils

Need to keep the MAX8771\_DH2 & MAX8771\_DL2 same length. Width DH2=40mils, DL2=40mils

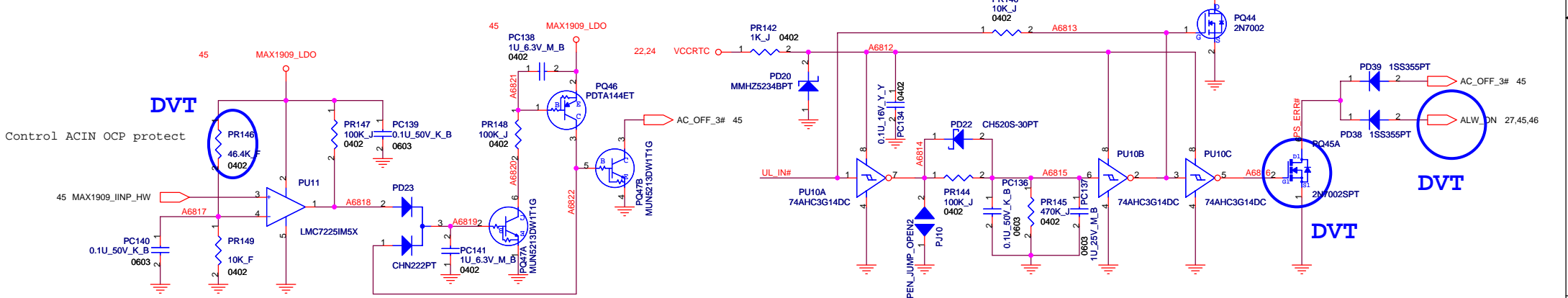
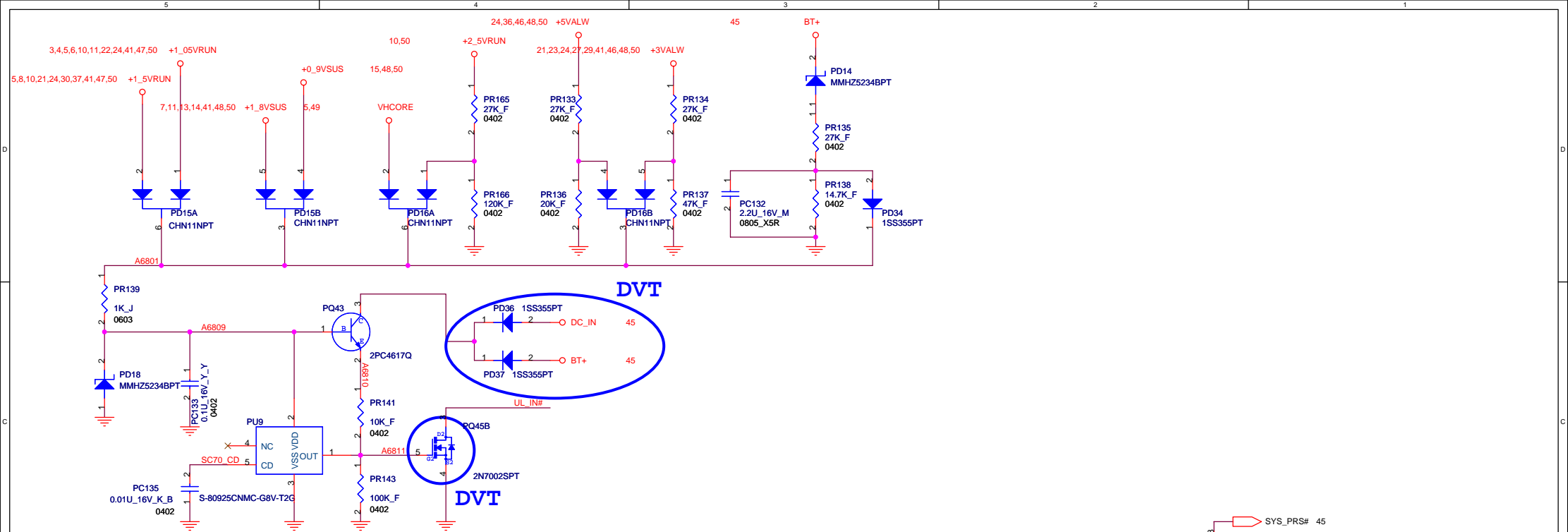
<b>FOXCONN</b>		HON HAI Precision Ind. Co., Ltd.	
		CCPBG - R&D Division	
Title <b>VHCORE</b>			
Size A3	Document Number MS70-1-01	Rev 1.0	
Date: Tuesday, July 25, 2006	Sheet 49	of 55	



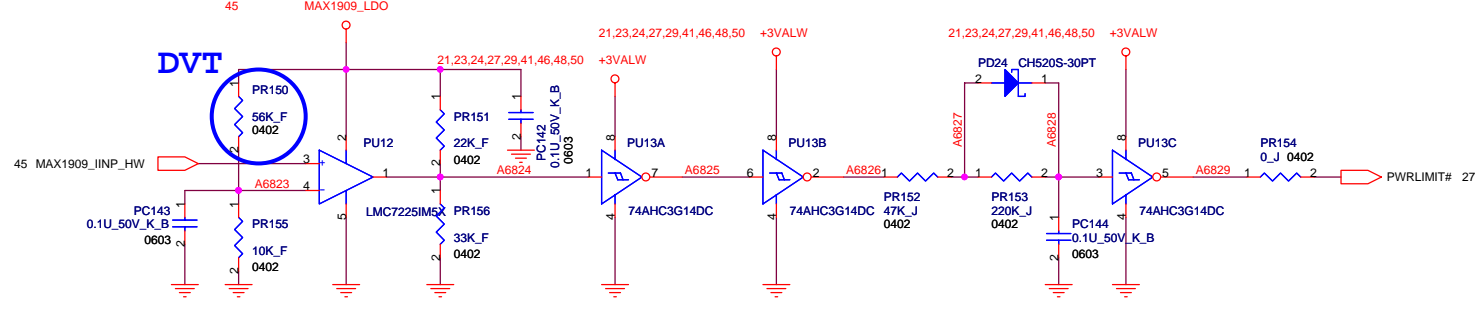
**Discharge circuit for power-off**



<b>FOXCONN</b> HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division		
Title <b>Other power plan-ZG</b>		
Size A3	Document Number MS70-1-01	Rev 1.0
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Setting ACIN OCP trigger point to 4.2A



Setting PWRLIMIT# trigger point to 3.6A

# HISTORY (1)

## (2006/04/25)

- P.16 CN3 pin5 Add R515 0ohm for QDI LCD Panel doesn't support gamma correction issue.
- P.17 Add VGA\_CRT\_DET# connect to U15 pin29 for Semi-PnP function fail issue.
- P.20 U11 pin57 add R516 10Kohm pull down for LAN can't be recognized issue.
- P.27 U15 pin29 add R513 10Kohm pull up for Semi-PnP function fail issue.
- P.27 U15 pin12 add R514 100Kohm pull down for EC hardware strap pin.
- P.27 U15 pin171 add C597 1000pF to ground for FAN can't be controlled issue.
- P.31 R304 change from 4.7k to 10k for FAN can't be controlled issue.

## (2006/05/03)

- P.49 Add netname(IMVP\_PHASEGD\_1) on the right side of PR119 for application modification.
- P.45 PC11, PC21, PC151, PR167 change from DNI to mount for DC\_IN spike issue
- P.45 PD4 pin1 and pin3 exchange for application modification
- P.46 PR54 change from 100 ohm to 0 ohm for PU3 output abnormal issue
- P.46 PR55 change from DNI to mount for can't boot up issue
- P.47 PU4 pin3 change from GND to GND\_SIGNAL\_1D5V for application modification
- P.48 PU5 pin5 change from GND to GND\_SIGNAL\_1D8V for application modification
- P.49 Add PR169 NC\_1M ohm for MAX8771 CCI issue
- P.49 PC96, PC97, PC98, PC111, PC112, PC114 change from SANYO 2R5TPL330M9 to Panasonic EEP5X0D331XE for purchase difficult

## (2006/05/04)

- P.37 Add Q162(NC), R517, R518(NC) for Express card power sequence issue

## (2006/05/15)

- P.45 PR32 change from 22K\_F to 23.2K\_F for ACIN Vcls function trigger point correct to 3.4A
- P.47 PR67 change from 8.2K\_F to 4.7K\_F for +1\_05VRUN OCP trigger point correct to 12.8A
- P.48 PR75 change from 6.8K\_F to 5.6K\_F for +1\_8VSUS OCP trigger point correct to 11.6A
- P.51 PR146 change from 51K\_F to 46.4K\_F for DCBATOUT OCP trigger point correct to 4.2A
- P.51 PR150 change from 62K\_F to 56K for PWRLIMIT# function trigger point correct to 3.6A
- P.46 Delete PJ1, PJ2
- P.47 Delete PJ3, PJ4, PJ5, PJ6
- P.48 Delete PJ7, PJ8, PJ9

## (2006/05/17)

- P.45 Add PR41 10K\_J\_0402 and PQ13 2N7002 for preventing leakage current
- P.45 PR17 change from 0.015\_J 0805 to 0.015\_F 1206 for application modification
- P.46 PR55 change from 1K\_J to 3.3K\_J and PC55, PC57 change from 10u\_25V X5R 1206 to 4.7u\_10V X5R 0805 for reducing +ECVCC static current
- P.47 PC71 change from mount to DNI for application modification
- P.49 PR110 change from 20K\_J to 0\_J and PC102 change from DNI to mount for MAX8771 CCI issue
- P.45 Delete PR19, PR28, PR33, PR35, PR37, PR38, PR39, PR40, PC31, PQ7, PQ10, PQ14, PQ16 For +ECVCC needed to work in battery only mode
- P.51 Delete PD36, PD37 for +ECVCC needed to work in battery only mode
- P.51 The net of VSOURCE (PQ43 pin3) change to DCBATOUT for +ECVCC needed to work in battery only mode
- P.51 The net of BATT\_EN (PD38 pin2) change to ALW\_ON for +ECVCC needed to work in battery only mode

## (2006/05/19)

- P.13 C155 change from 2.2U\_10V\_Y\_Y to 1000P\_16V\_K ; C159 change from 0.1U\_16V\_Y\_Y to 1000P\_50V\_K for EMC DDR2 solution
- P.14 C168 change from 2.2U\_10V\_Y\_Y to 1000P\_16V\_K ; C172 change from 0.1U\_16V\_Y\_Y to 1000P\_50V\_K for EMC DDR2 solution
- P.15 C177,C179,C181,C191,C192,C196 change from 0.1U\_16V\_Y\_Y to 1000P\_50V\_K for EMC DDR2 solution
- P.39 C547,C548 change from 18P\_50V\_J\_N to 22P\_50V\_J for PCI8402's Crystal issue
- P.30 LED1 change from HT-110Y to HT-110UYG for LED color requirement
- P.45 PCN1 change from MOLEX\_53259-0229 to FOX\_GS53020-00580-7F
- P.45 PC11 change from 10U\_25V\_M\_1206 to 10U\_25V\_M\_B\_1210 for purchase convenient
- P.46 PC43,PC44,PC45 change from 10U\_25V\_M\_B\_1206 to 10U\_25V\_M\_B\_1210 for purchase convenient
- P.47 PC58,PC59,PC62,PC63 change from 10U\_25V\_M\_B\_1206 to 10U\_25V\_M\_B\_1210 for purchase convenient
- P.48 PC76,PC77 change from 10U\_25V\_M\_B\_1206 to 10U\_25V\_M\_B\_1210 for purchase convenient
- P.48 PC86 change from 4.7U\_10V\_K\_B\_1206 to 4.7U\_10V\_K\_0805 for purchase convenient
- P.50 PC126,PC131 change from 10U\_10V\_M to 10U\_6.3V\_M for purchase convenient
- P.50 PC127 change from 4.7U\_25V\_K\_B\_1206 to 4.7U\_16V\_K\_0805 for purchase convenient

## (2006/05/22)

- P.32 CN21 change from FOXCONN\_GB11060\_0221\_7F to FOXCONN\_GB5RF060\_1200\_7F for ME's requirement
- P.29 CN30,CN31 change from foxconn\_gb11120\_0221\_7F to FOXCONN\_GB5RF120\_1200\_7F for ME's requirement
- P.29 CN31 change from mount to DNI for ME's requirement
- P.50 PQ31,PQ34 change from DIODES,2N7002DW-7-F to CHENMKO,2N7002SPT for purchase convenient
- P.51 PQ45 change from DIODES,2N7002DW-7-F to CHENMKO,2N7002SPT for purchase convenient
- P.27 Q149 change from DIODES,2N7002DW-7-F to CHENMKO,2N7002SPT for purchase convenient

## (2006/05/23)

- P.47 PC62,PC63 change from 10U\_25V\_M\_B\_1210 to 10U\_25V\_M\_B\_1206 for ME limit of height
- P.46 PC44,PC45 change from 10U\_25V\_M\_B\_1210 to 10U\_25V\_M\_B\_1206 for ME limit of height
- P.46 Add PJ1,PJ2 for test request
- P.47 Add PJ3,PJ4 for test request
- P.48 Add PJ7,PJ9 for test request

## (2006/05/24)

- P.42 CN25,CN26(USB CONN) change from FOX\_UB11193\_C1301\_4F to UB11193-C1308-4F for ME's requirement
- P.17 CN5(VGA CONN) change from FOX\_DZ11A91\_MB221\_4F to DZ11A91-MW223-4F for ME's requirement

## (2006/05/25)

- P.47 Add PJ6 for test request
- P.26 CN8 footprint change from FOXCONN\_LD2722H\_S469 to FOXCONN\_LD2722H\_S469\_MS70 for ME PAD request
- P.32 C389 change from 22U\_10V\_Y\_Y\_1206 to 10U\_10V\_M\_0805 and add C598 10U\_10V\_M\_0805 for limit of ME
- P.43 H1,H2,H3,H4 change from hole\_c158d158n to HOLE\_C148D148N for ME request
- P.43 H7 change from hole\_tsru144bsru177d98 to hole\_trc321x287brud98 for ME request
- P.43 H26 change from hole\_c120d100 to hole\_tsrlbr413x343d98 for ME request
- P.43 H23 change from hole\_tc256brcl295d98\_v1 to hole\_tc256bs502x295d134\_v1 for ME request
- P.43 H25 change from hole\_tc256brcl48d98 to hole\_tc256bs295x384d134 for ME request
- P.43 H5 change from hole\_tc256bc315d98 to hole\_tc256bc256d98 for ME request
- P.43 H10 change from hole\_tshrd144bc315d98 to hole\_trc287x301bc256d98 for ME request
- P.43 H9 change from hole\_trcd144brcl177d98 to hole\_trc287x321brcd98 for ME request
- P.43 H12 change from hole\_tc256bsrcu144d98 to hole\_tc256bc287d98 for ME request

## (2006/05/26)

- P.42 CN25,CN26 change from FOXCONN\_UB11193\_C1308\_4F to FOXCONN\_UB11193\_C1308\_4F\_HM for solder issue
- P.43 H9 change from hole\_trc287x321brcd98 to hole\_trc287x256bshcl98 for ME request
- P.17 D3 change from 16-CH500H4-0P00 to 16-SCS500V-4000 for purchase convenient
- P.10 C119 change from 1C-2B30105-K000 to 1C-2B30475-K100 ; C120 change from 1C-2B20103-K001(0402) to 1C-2B30475-K100(0603) for +1\_5VRUN\_HMPLL noise issue
- P.48 Add PJ8 for test request

## (2006/06/01)

- P.16 Add R519(0ohm 0402) for desinger set "LCDID3" to "0" by mistake.
- P.49 PC102 change from mount to NC for application modification
- P.46 PC52,PC53 change from 0.1U\_16V\_Y\_Y(Y5V) to 0.1U\_16V\_M\_B(X5R) for application modification
- P.47 PC66,PC73 change from 0.1U\_16V\_Y\_Y(Y5V) to 0.1U\_16V\_M\_B(X5R) for application modification
- P.49 PC99,PC113 change from 0.1U\_16V\_Y\_Y(Y5V) to 0.1U\_16V\_M\_B(X5R) for application modification
- P.36 Q25 pin2 netname change from +5VRUN to +5VAMP
- P.36 R376 pin2 netname change from GND to A\_GND
- P.36 Add U38,R520(NC) for SPK\_MUTE\_EN for Vista requirement
- P.36 Add NET "SPK\_MUTE\_EN" from U38 pin2 to U15 pin99 for Vista requirement
- P.40 Change U36,U37 from RT9702 to RT9703, Add R521-R524.
- P.27 Delete Q149.

## (2006/06/02)

- P.16 R515,R519 change from mount to NC
- P.36 Add R525(NC) for Audio mute option
- P.49 Add PC152 for application modification
- P.26 R510 change from mount to NC for application modification
- P.22 R188 change from mount to NC for application modification

## (2006/06/05)

- P.49 PC92,PC108 change from NC to mount for design rating
- P.40 U36,U37 change from RT9703 to RT9702, Del R521-R524 for RT9703 phase out issue
- P.49 Add PC153 for solving audible noise
- P.19 Add R526 for LAN application modification

## (2006/06/06)

- P.13 Add C599,C600(1000P\_50V\_K) ; C155 change from 1000P\_16V\_K to 2.2U\_10V\_Y\_Y ; C159 change from 1000P\_50V\_K to 0.1U\_16V\_Y\_Y for EMC solution
- P.14 Add C601,C602(1000P\_50V\_K) ; C168 change from 1000P\_16V\_K to 2.2U\_10V\_Y\_Y ; C172 change from 1000P\_50V\_K to 0.1U\_16V\_Y\_Y for EMC solution
- P.15 Add C603,C604(1000P\_50V\_K) ; C177,C179,C181,C191,C192,C196 change from 1000P\_50V\_K to 0.1U\_16V\_Y\_Y for EMC solution
- P.51 Add PD36,PD37 for application modification
- P.19 C253 change form 0.1U\_16V\_M\_B to 5P\_50V\_C ; C254 change from 5P\_50V\_C to 0.1U\_16V\_M\_B ; Add L58 ; Del R526 for LAN application modification

## HISTORY (2)

(2006/06/07)

P.26 R245 change from NC to mount for application modification

(2006/06/13)

P.33 R325 change from mount to NC for acoustic noise.

P.36 U38 change from 74AHCLG08GW to 74AHCTLG08GW for Vih can't meet EC spec.

## PVT

(2006/07/12)

P.47 Change PC68, PC70 from mount to NC for TPS51124 OVP issue.

P.27 Add R526 (1K ohm) series on ALW\_ON net to prevent EC damage issue.

P.46 Delete PJ1, PJ2

P.47 Delete PJ3, PJ4, PJ6

P.48 Delete PJ7, PJ8, PJ9

P.32 F1,R320,R321,L32,C598,C389,C390,C391,CN21 change from mount to NC for cancel Oide function

P.37 U33 change from 15-TPS2231-0000(24pin) to 15-TPS2231-0002(20pin) for purchase convenient

P.40 U36,U37 change from 15-RT9702A-0000 to 15-TPS2055-0000 ;

Add R527,R528 for MS\_PWR\_CTRL and SD\_PWR\_CTRL are recognized to be high level by accident

(2006/07/20)

P.26 CN9 vendor part number change from QT8H0506-13T3R-7F to QT8H0506-13T3R-4F for packing type change.

P.49 PC153 change from 1C-10X0107-M403 to 1C-1XX0107-M400 for purchase convenient.

P.29 Delete CN31 for touch pad application modification.

P.22 R195 change from 47ohm to 0ohm ; C293 change from NC to mount for EMI solution.

P.29 LED6 change from 16-HT210DY-G000 to 16-HT210UD-UY00 for ME brightness issue.

LED5,LED7 change from 16-HT110Y0-0000 to 16-HT110UY-0000 for ME brightness issue.

(2006/07/21)

P.26 Add D22(NC) for ESD solution

P.30 R301 change from 120ohm to 47ohm for ME brightness issue

(2006/07/25)

P.30 C365 change from NC to mount for WLAN power ripple noise issue

P.26 Add VR1 for ESD solution

P.29 Add VR2,VR3(NC) for ESD solution

P.41 Add VR4,VR5(NC) for ESD solution

(2006/07/28)

P.29 Q155 change from 17-CHDTC14-4E01 to 17-2N70020-0000 for ME brightness issue.

(2006/07/31)

P.30 R301 change from 47ohm to 120ohm (LED1 is 10mA) for ME brightness issue

P.29 R418 change from 47ohm to 62ohm (LED5 is 18.75mA) for ME brightness issue

P.29 R424 change from 47ohm to 62ohm (LED6 is 19.5mA)

R425 change from 47ohm to 120ohm (LED6 is 10mA)for ME brightness issue

P.29 R426 change from 47ohm to 62ohm (LED7 is 18.9mA)

(2006/08/01)

P.31 Q17 change from 17-ME2301T-1000 to 17-S12301B-DS00 for Fan rotational speed issue