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19	VGA(GDDR)#	1.0	07'06'22	54	DDR2 Power(+1_8V/+0_9V)	1.0	07'06'22
20	VGA(MULTIUSE)	1.0	07'06'22	55	CPU_Vcore---ISL6262A	1.0	07'06'22
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25	VGA(POWER) 2/3	1.0	07'06'22	60	HOLE	1.0	07'06'22
26	VGA(POWER) 3/3	1.0	07'06'22	61	EC+KBC(3925)	1.0	07'06'22
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30	CRT	1.0	07'06'22	65	History (1)	1.0	07'06'22
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BOM configuration

SKU	Stuff	No stuff
NB8M-256MB-Samsung	NV_,NVNB8M_,NV128bit_,NV16M_,NVH/S_,NVQ/S_	NC_*,NVNB8P_,NV64bit_,NV8M_,NVQ_,NVH_
NB8M-256MB-Qimonda	NV_,NVNB8M_,NV128bit_,NV16M_,NVQ_,NVQ/S_	NC_*,NVNB8P_,NV64bit_,NV8M_,NVH/S_,NVH_
NB8M-256MB-Hynix	NV_,NVNB8M_,NV128bit_,NV16M_,NVH/S_,NVH_	NC_*,NVNB8P_,NV64bit_,NV8M_,NVQ_,NVQ/S_
NB8M-128MB-Samsung	NV_,NVNB8M_,NV64bit_,NV16M_,NVH/S_,NVQ/S_	NC_*,NVNB8P_,NV128bit_,NV8M_,NVQ_,NVH_
NB8M-128MB-Qimonda	NV_,NVNB8M_,NV64bit_,NV16M_,NVQ_,NVQ/S_	NC_*,NVNB8P_,NV128bit_,NV8M_,NVH/S_,NVH_
NB8M-128MB-Hynix	NV_,NVNB8M_,NV64bit_,NV16M_,NVH/S_,NVH_	NC_*,NVNB8P_,NV128bit_,NV8M_,NVQ_,NVQ/S_
NB8M-64MB-Hynix	NV_,NVNB8M_,NV64bit_,NV8M_,NVH/S_,NVH_	NC_*,NVNB8P_,NV128bit_,NV16M_,NVQ/S_,NVQ_
NB8M-64MB-Samsung	NV_,NVNB8M_,NV64bit_,NV8M_,NVH/S_,NVQ/S_	NC_*,NVNB8P_,NV128bit_,NV16M_,NVQ_,NVH_
NB8P-256MB-Samsung	NV_,NVNB8P_,NV128bit_,NV16M_,NVH/S_,NVQ/S_	NC_*,NVNB8M_,NV64bit_,NV8M_,NVQ_,NVH_
NB8P-256MB-Qimonda	NV_,NVNB8P_,NV128bit_,NV16M_,NVQ_,NVQ/S_	NC_*,NVNB8M_,NV64bit_,NV8M_,NVH/S_,NVH_
NB8P-256MB-Hynix	NV_,NVNB8P_,NV128bit_,NV16M_,NVH/S_,NVH_	NC_*,NVNB8M_,NV64bit_,NV8M_,NVQ_,NVQ/S_
GM965/GL960	CA_	No CA_

Dropped the NB8P-SE/128MB and NB8P-SE/64M for MOR request

"no CA_" means all of other prefix including the "NC_" prefix.

Project Code & Schematics Subject: MS91 Main Board

PCB P/N: 1P-0076100-8010(FUBAI)
1P-0076500-8010(HANNSTAR)
1P-0076200-8010(NAN YA)

The "NC_*" include "NC_CA_"and "NC_NV*", the are prefix which comes from MS90 schematic,it means NC also, but if the component is needed again, "NC_CA_" is only for Low module only and "NC_NV*" only for HH/H/M module only.the rule is help to remind this.

P. Leader	Check by	Design by

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

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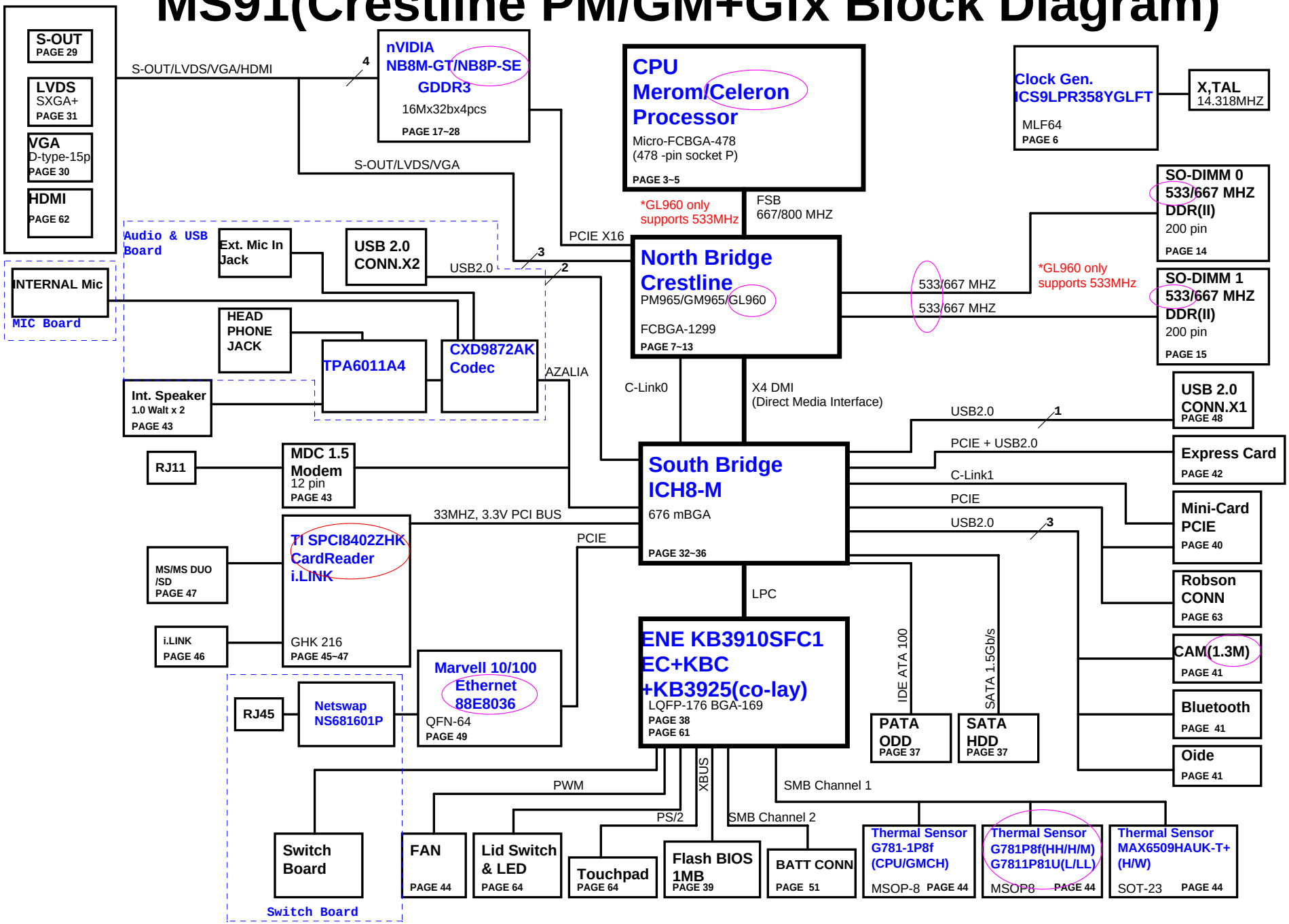
MS91(Crestline PM/GM+Gfx Block Diagram)



FOXCONN HON HAI Precision Ind. Co., Ltd.
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Title	Block Diagram		
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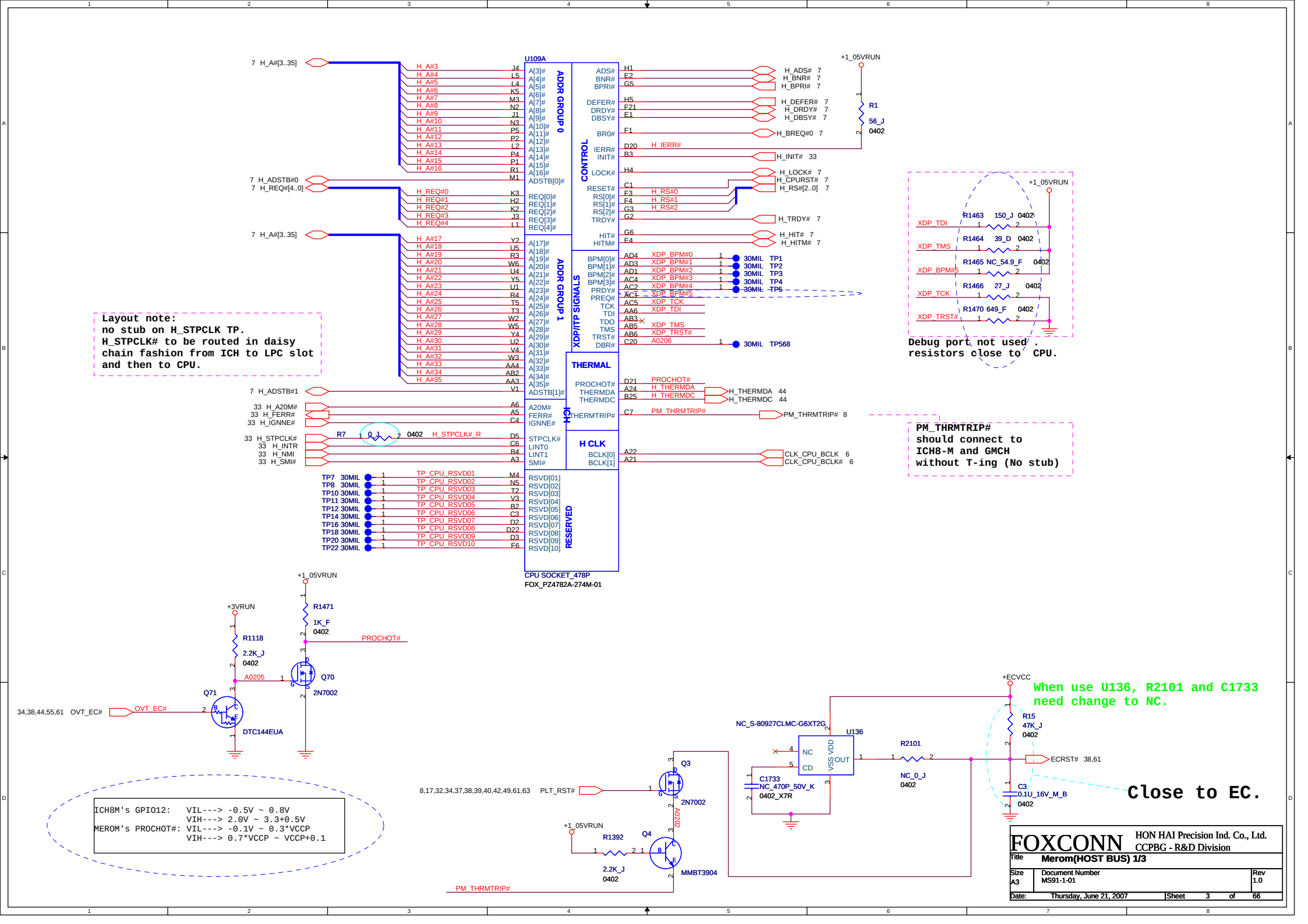
U109A
ADDR GROUP 0
ADDR GROUP 1
CONTROL
XDP/ITP SIGNALS
THERMAL
H CLK
RESERVED
CPU SOCKET_478P
FOX_PZ4782A-274M-01
+1_05VRUN
R1 56_J 0402
Layout note:
no stub on H_STPCLK TP.
H_STPCLK# to be routed in daisy chain fashion from ICH to LPC slot and then to CPU.
Debug port not used . resistors close to CPU.
PM_THRMTRIP# should connect to ICH8-M and GMCH without T-ing (No stub)
+3VRUN
R1471 1K_F 0402
R1118 2.2K_J 0402
PROCHOT#
Q70 2N7002
Q71 DTC144EUA
OVT_EC#
ICH8M's GPIO12: VIL---> -0.5V ~ 0.8V
VIH---> 2.0V ~ 3.3+0.5V
MEROM's PROCHOT#: VIL---> -0.1V ~ 0.3*VCCP
VIH---> 0.7*VCCP ~ VCCP+0.1
Q3 2N7002
Q4 MMBT3904
R1392 2.2K_J 0402
PLT_RST#
PM_THRMTRIP#
U136 NC_S-80927CLMC-G6XT2G
R2101 NC_0_J 0402
C1733 NC_470P_50V_K 0402_X7R
R15 47K_J 0402
C3 0.1U_16V_M_B 0402
+ECVCC
When use U136, R2101 and C1733 need change to NC.
Close to EC.
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HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title: Merom(HOST BUS) 1/3
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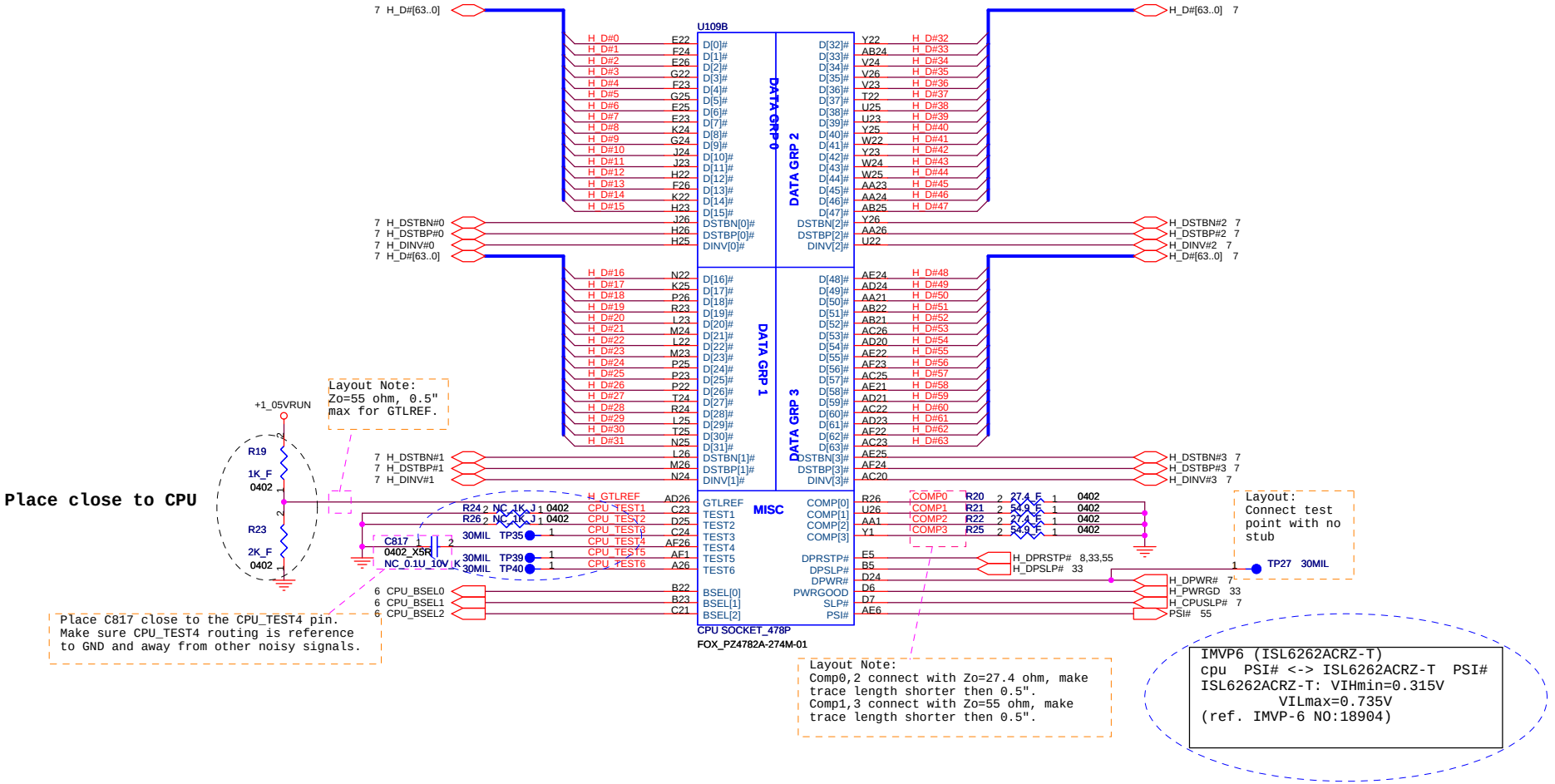

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Merom (HOST BUS) 2/3	
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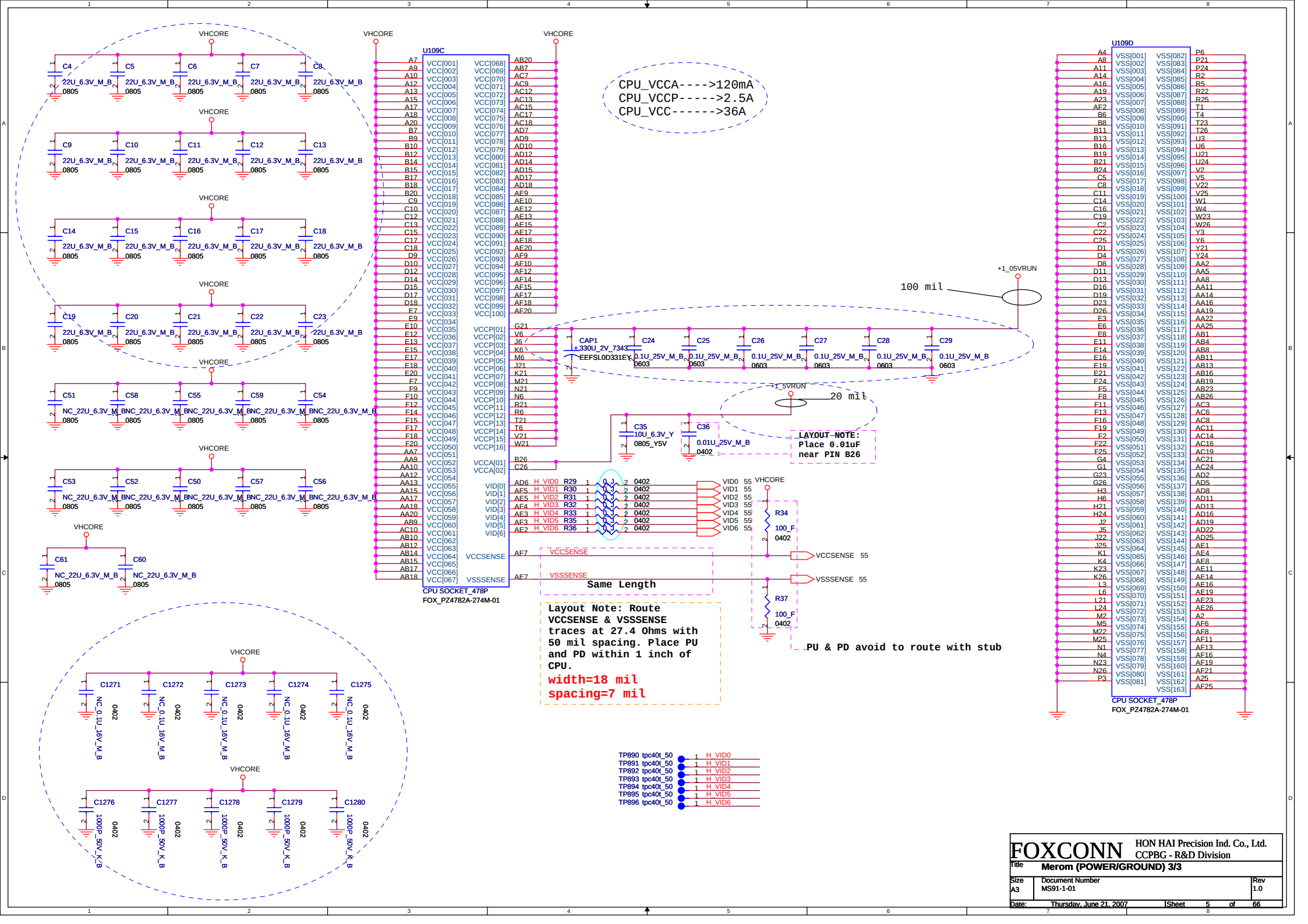

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Merom (POWER/GROUND) 3/3	
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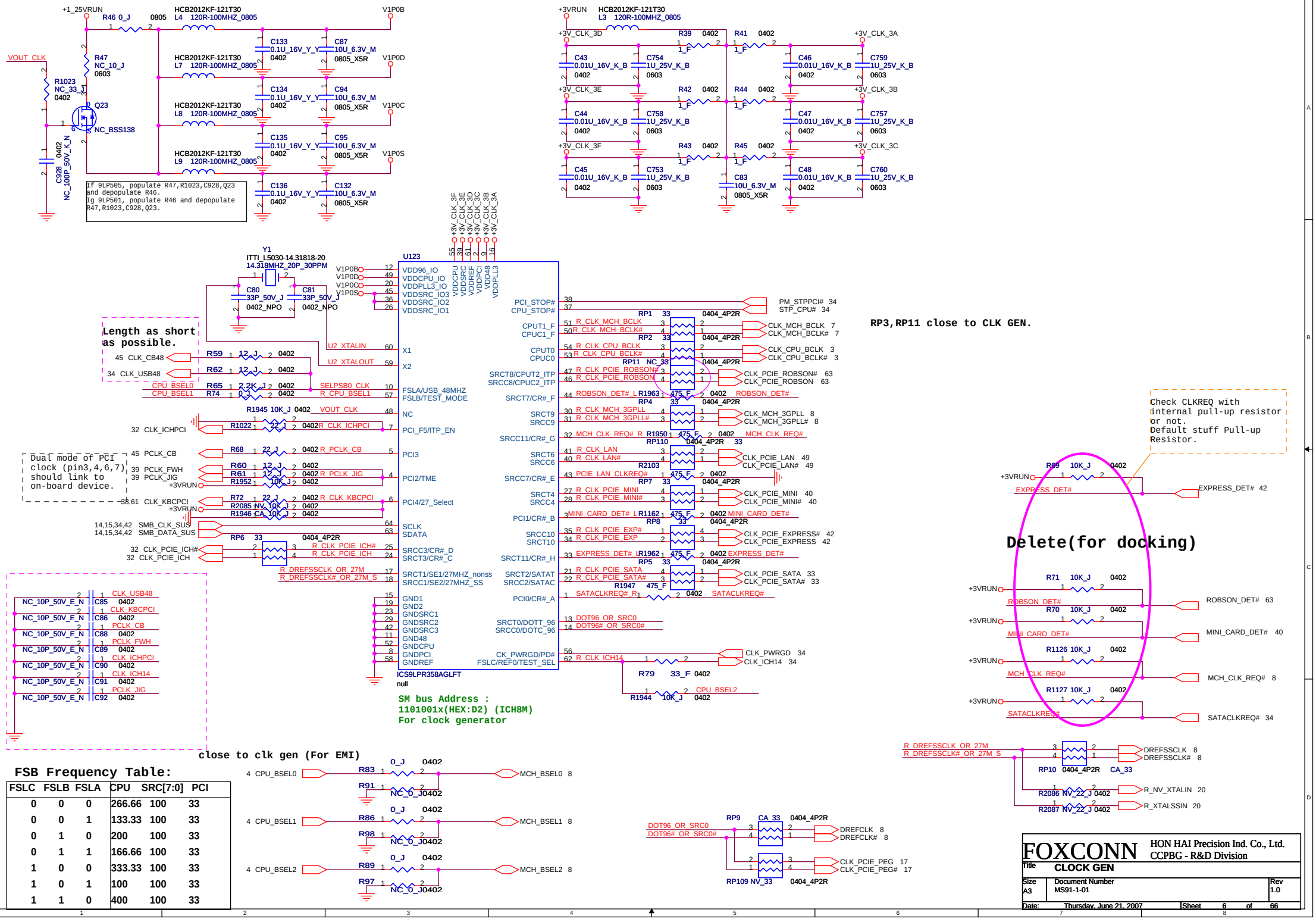

FSB Frequency Table:

FSLC	FSLB	FSLA	CPU	SRC[7:0]	PCI
0	0	0	266.66	100	33
0	0	1	133.33	100	33
0	1	0	200	100	33
0	1	1	166.66	100	33
1	0	0	333.33	100	33
1	0	1	100	100	33
1	1	0	400	100	33

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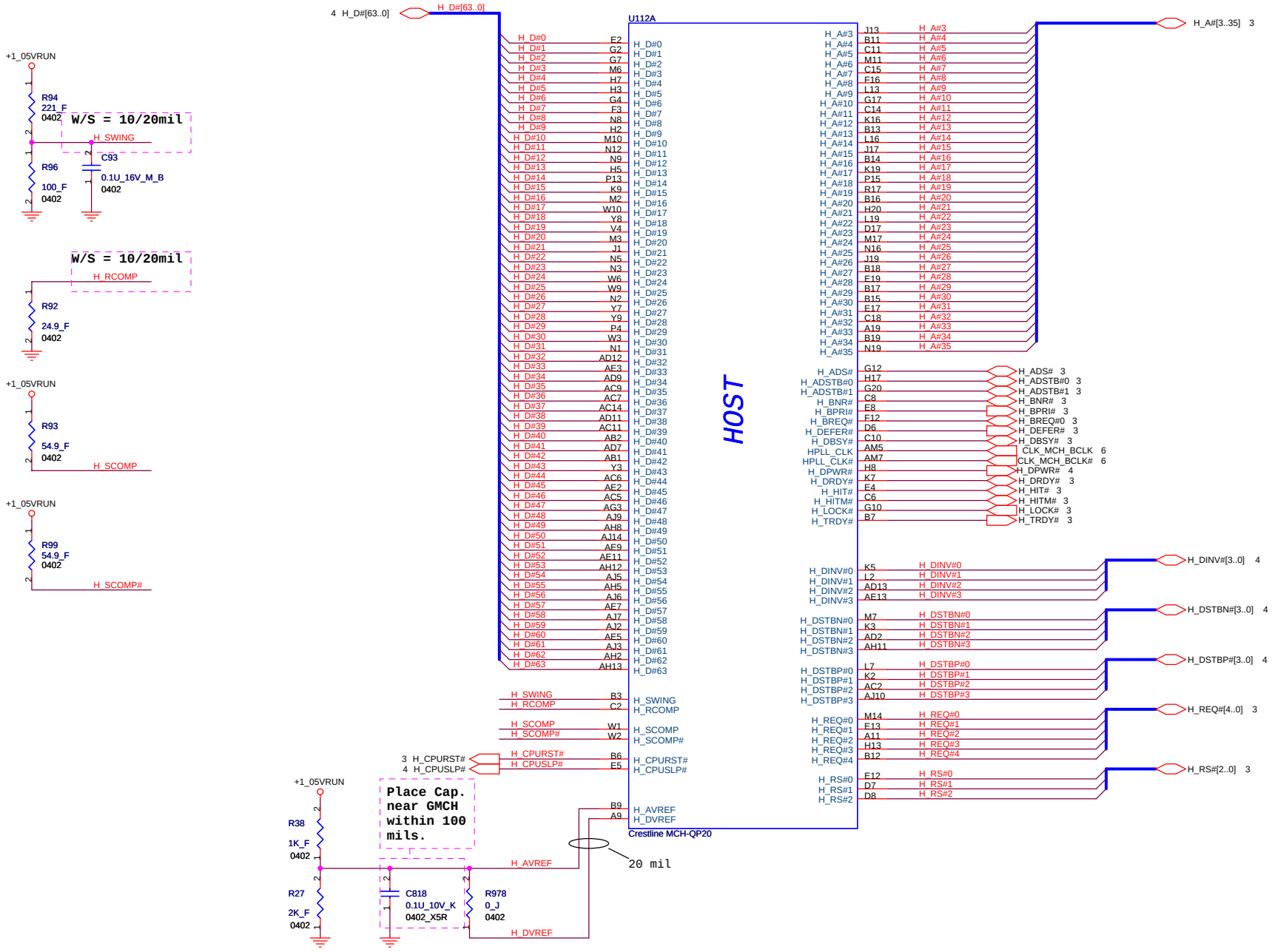

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Crestline (HOST) 1/7	
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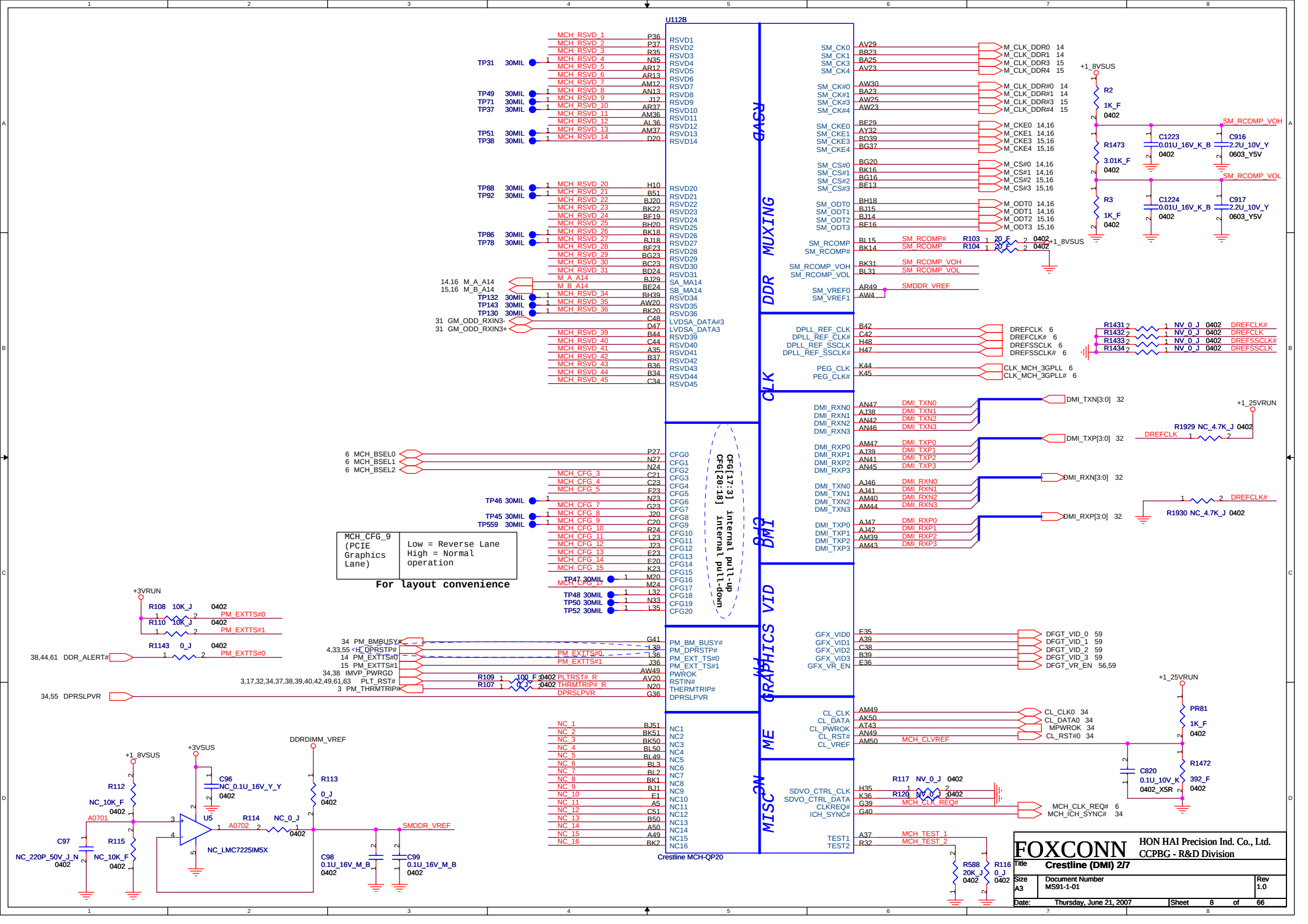
U112B
MCH_RSVD_1 P36
MCH_RSVD_2 P37
MCH_RSVD_3 R35
TP31 30MIL MCH_RSVD_4 N35
MCH_RSVD_5 AR12
MCH_RSVD_6 AR13
MCH_RSVD_7 AM12
TP49 30MIL MCH_RSVD_8 AN13
TP71 30MIL MCH_RSVD_9 J12
TP37 30MIL MCH_RSVD_10 AR37
MCH_RSVD_11 AM36
MCH_RSVD_12 AL36
TP51 30MIL MCH_RSVD_13 AM37
TP38 30MIL MCH_RSVD_14 D20
TP88 30MIL MCH_RSVD_20 H10
TP92 30MIL MCH_RSVD_21 B51
MCH_RSVD_22 BJ20
MCH_RSVD_23 BK22
MCH_RSVD_24 BF19
MCH_RSVD_25 BH20
TP86 30MIL MCH_RSVD_26 BK18
TP78 30MIL MCH_RSVD_27 BJ18
MCH_RSVD_28 BF23
MCH_RSVD_29 BG23
MCH_RSVD_30 BC23
MCH_RSVD_31 BD24
14,16 M_A_A14 M_A_A14 BJ29
15,16 M_B_A14 M_B_A14 BE24
TP132 30MIL MCH_RSVD_34 BH39
TP143 30MIL MCH_RSVD_35 AW20
TP130 30MIL MCH_RSVD_36 BK20
31 GM_ODD_RXIN3- C48
31 GM_ODD_RXIN3+ D47
MCH_RSVD_39 B44
MCH_RSVD_40 C44
MCH_RSVD_41 A35
MCH_RSVD_42 B37
MCH_RSVD_43 B36
MCH_RSVD_44 B34
MCH_RSVD_45 C34
RSVD1 RSVD2 RSVD3 RSVD4 RSVD5 RSVD6 RSVD7 RSVD8 RSVD9 RSVD10 RSVD11 RSVD12 RSVD13 RSVD14
RSVD20 RSVD21 RSVD22 RSVD23 RSVD24 RSVD25 RSVD26 RSVD27 RSVD28 RSVD29 RSVD30 RSVD31
SA_MA14 SB_MA14 RSVD34 RSVD35 RSVD36
LVDSA_DATA#3 LVDSA_DATA3
RSVD39 RSVD40 RSVD41 RSVD42 RSVD43 RSVD44 RSVD45
GASV
SM_CK0 SM_CK1 SM_CK3 SM_CK4
AV29 BB23 BA25 AV23
M_CLK_DDR0 14
M_CLK_DDR1 14
M_CLK_DDR3 15
M_CLK_DDR4 15
SM_CK#0 SM_CK#1 SM_CK#3 SM_CK#4
AW30 BA23 AW25 AW23
M_CLK_DDR#0 14
M_CLK_DDR#1 14
M_CLK_DDR#3 15
M_CLK_DDR#4 15
SM_CKE0 SM_CKE1 SM_CKE3 SM_CKE4
BF29 AY32 BD39 BG37
M_CKE0 14,16
M_CKE1 14,16
M_CKE3 15,16
M_CKE4 15,16
SM_CS#0 SM_CS#1 SM_CS#2 SM_CS#3
BG20 BK16 BG16 BE13
M_CS#0 14,16
M_CS#1 14,16
M_CS#2 15,16
M_CS#3 15,16
SM_ODT0 SM_ODT1 SM_ODT2 SM_ODT3
BH18 BJ15 BJ14 BE16
M_ODT0 14,16
M_ODT1 14,16
M_ODT2 15,16
M_ODT3 15,16
SM_RCOMP SM_RCOMP#
BL15 BK14
SM_RCOMP# R103 20_F 0402
SM_RCOMP R104 20_F 0402
+1_8VSUS
SM_RCOMP_VOH SM_RCOMP_VOL
BK31 BL31
SM_VREF0 SM_VREF1
AR49 AW4
SMDDR_VREF
DDR MUXING
DPLL_REF_CLK DPLL_REF_CLK# DPLL_REF_SSCLK DPLL_REF_SSCLK#
B42 C42 H48 H47
DREFCLK 6
DREFCLK# 6
DREFSSCLK 6
DREFSSCLK# 6
PEG_CLK PEG_CLK#
K44 K45
CLK_MCH_3GPLL 6
CLK_MCH_3GPLL# 6
CLK
DMI_RXN0 DMI_RXN1 DMI_RXN2 DMI_RXN3
AN47 AJ38 AN42 AN46
DMI_TXN0 DMI_TXN1 DMI_TXN2 DMI_TXN3
DMI_TXN[3:0] 32
DMI_RXP0 DMI_RXP1 DMI_RXP2 DMI_RXP3
AM47 AJ39 AN41 AN45
DMI_TXP0 DMI_TXP1 DMI_TXP2 DMI_TXP3
DMI_TXP[3:0] 32
DMI_TXN0 DMI_TXN1 DMI_TXN2 DMI_TXN3
AJ46 AJ41 AM40 AM44
DMI_RXN0 DMI_RXN1 DMI_RXN2 DMI_RXN3
DMI_RXN[3:0] 32
DMI_TXP0 DMI_TXP1 DMI_TXP2 DMI_TXP3
AJ47 AJ42 AM39 AM43
DMI_RXP0 DMI_RXP1 DMI_RXP2 DMI_RXP3
DMI_RXP[3:0] 32
DMI
R1431 R1432 R1433 R1434 NV_0_J 0402
DREFCLK# DREFCLK DREFSSCLK# DREFSSCLK
+1_25VRUN
R1929 NC_4.7K_J 0402
R1930 NC_4.7K_J 0402
6 MCH_BSEL0
6 MCH_BSEL1
6 MCH_BSEL2
P27 N27 N24
MCH_CFG_3 C21
MCH_CFG_4 C23
MCH_CFG_5 F23
TP46 30MIL N23
MCH_CFG_7 G23
TP45 30MIL MCH_CFG_8 J20
TP559 30MIL MCH_CFG_9 C20
MCH_CFG_10 R24
MCH_CFG_11 L23
MCH_CFG_12 J23
MCH_CFG_13 E23
MCH_CFG_14 E20
MCH_CFG_15 K23
TP47 30MIL M20
MCH_CFG_17 M24
TP48 30MIL L32
TP50 30MIL N33
TP52 30MIL L35
CFG0 CFG1 CFG2 CFG3 CFG4 CFG5 CFG6 CFG7 CFG8 CFG9 CFG10 CFG11 CFG12 CFG13 CFG14 CFG15 CFG16 CFG17 CFG18 CFG19 CFG20
CFG[17:3] internal pull-up
CFG[20:18] internal pull-down
MCH_CFG_9 (PCIE Graphics Lane)
Low = Reverse Lane
High = Normal operation
For layout convenience
CFG
+3VRUN
R108 10K_J 0402 PM_EXTTS#0
R110 10K_J 0402 PM_EXTTS#1
R1143 0_J 0402 PM_EXTTS#0
38,44,61 DDR_ALERT#
34 PM_BMBUSY# G41
4,33,55 H_DPRSTP# L39
14 PM_EXTTS#0 L36
15 PM_EXTTS#1 J36
34,38 IMVP_PWRGD AW49
3,17,32,34,37,38,39,40,42,49,61,63 PLT_RST# AV20
3 PM_THRMTRIP# N20
34,55 DPRSLPVR G36
R109 100_F 0402 PLTRST#_R
R107 0_J 0402 THRMTRIP#_R
PM_BM_BUSY#
PM_DPRSTP#
PM_EXT_TS#0
PM_EXT_TS#1
PWROK
RSTIN#
THERMTRIP#
DPRSLPVR
GRAPHICS VID
GFX_VID0 GFX_VID1 GFX_VID2 GFX_VID3 GFX_VR_EN
E35 A39 C38 B39 E36
DFGT_VID_0 59
DFGT_VID_1 59
DFGT_VID_2 59
DFGT_VID_3 59
DFGT_VR_EN 56,59
CL_CLK CL_DATA CL_PWROK CL_RST# CL_VREF
AM49 AK50 AT43 AN49 AM50
CL_CLK0 34
CL_DATA0 34
MPWROK 34
CL_RST#0 34
MCH_CLVREF
+1_25VRUN
PR81 1K_F 0402
R1472 392_F 0402
C820 0.1U_10V_K 0402_X5R
MISC
SDVO_CTRL_CLK SDVO_CTRL_DATA CLKREQ# ICH_SYNC#
H35 K36 G39 G40
R117 NV_0_J 0402
R120 NV_0_J 0402
MCH_CLK_REQ#
MCH_CLK_REQ# 6
MCH_ICH_SYNC# 34
TEST1 TEST2
A37 R32
MCH_TEST_1
MCH_TEST_2
R588 20K_J 0402
R116 0_J 0402
NC_1 NC_2 NC_3 NC_4 NC_5 NC_6 NC_7 NC_8 NC_9 NC_10 NC_11 NC_12 NC_13 NC_14 NC_15 NC_16
BJ51 BK51 BK50 BL50 BL49 BL3 BL2 BK1 BJ1 E1 A5 C51 B50 A50 A49 BK2
NC1 NC2 NC3 NC4 NC5 NC6 NC7 NC8 NC9 NC10 NC11 NC12 NC13 NC14 NC15 NC16
Crestline MCH-QP20
+1_8VSUS
+3VSUS
DDRDIMM_VREF
R112 NC_10K_F 0402
C96 NC_0.1U_16V_Y_Y 0402
R113 0_J 0402
A0701
U5
R114 NC_0_J 0402
A0702
SMDDR_VREF
C97 NC_220P_50V_J_N 0402
R115 NC_10K_F 0402
NC_LMC7225IM5X
C98 0.1U_16V_M_B 0402
C99 0.1U_16V_M_B 0402
R1 1K_F 0402
R2 1K_F 0402
R3 1K_F 0402
R1473 3.01K_F 0402
C1223 0.01U_16V_K_B 0402
C1224 0.01U_16V_K_B 0402
C916 2.2U_10V_Y 0603_Y5V
C917 2.2U_10V_Y 0603_Y5V
SM_RCOMP_VOH
SM_RCOMP_VOL
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title Crestline (DMI) 2/7
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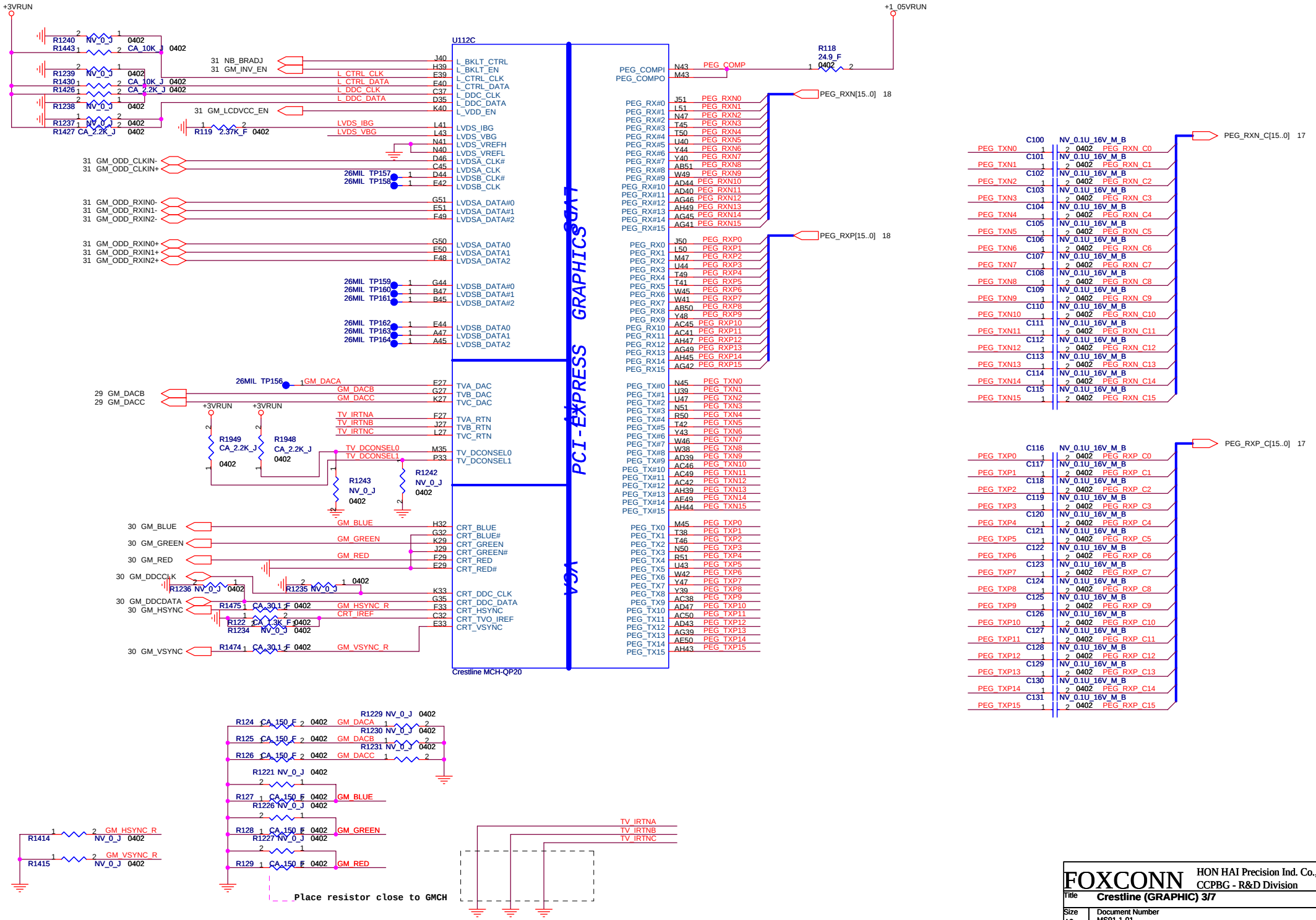
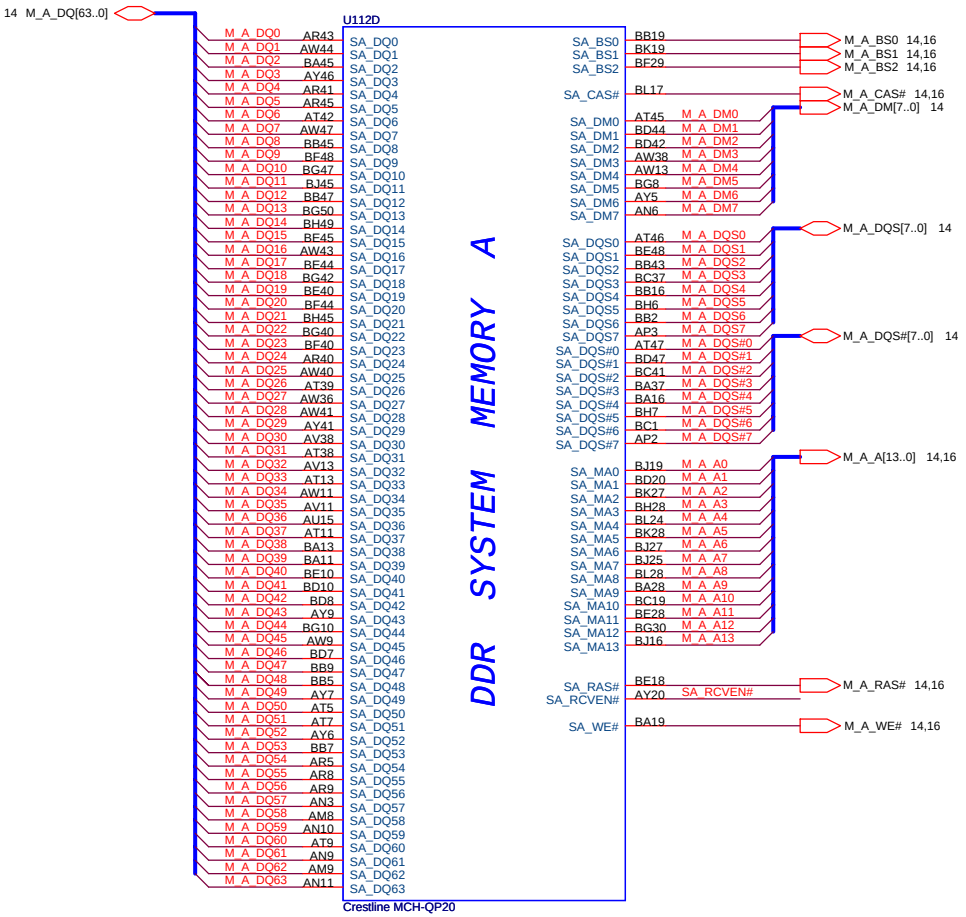
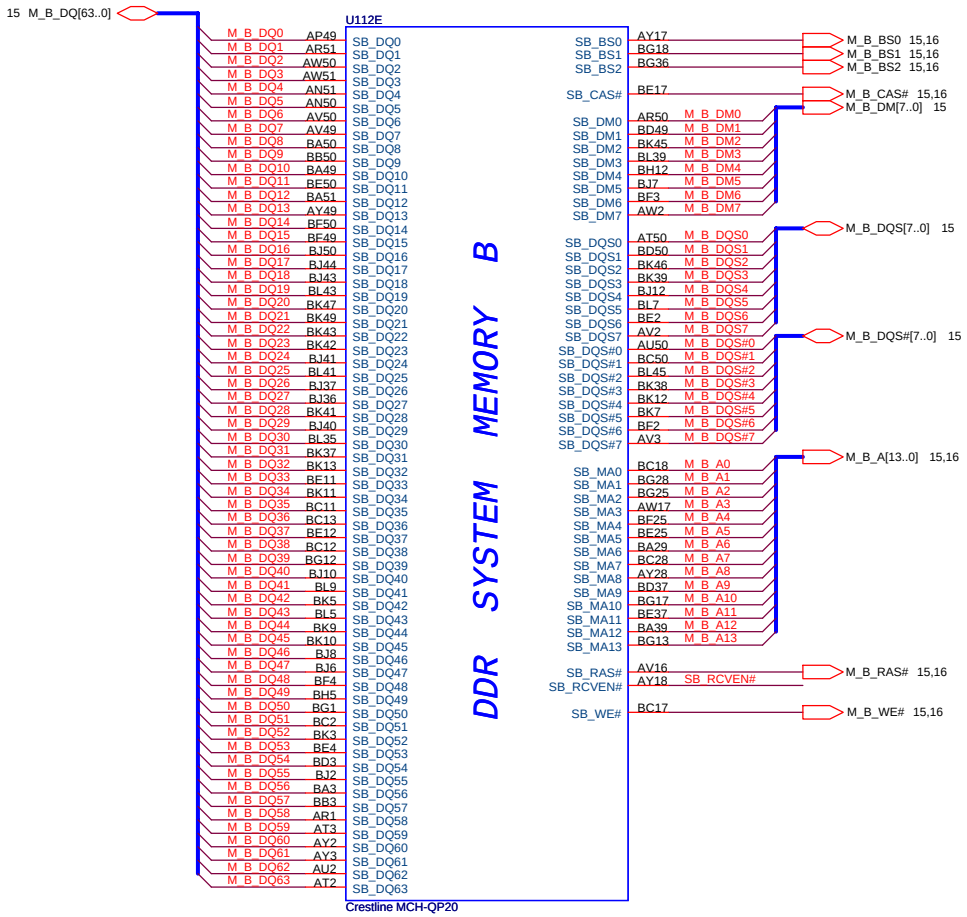
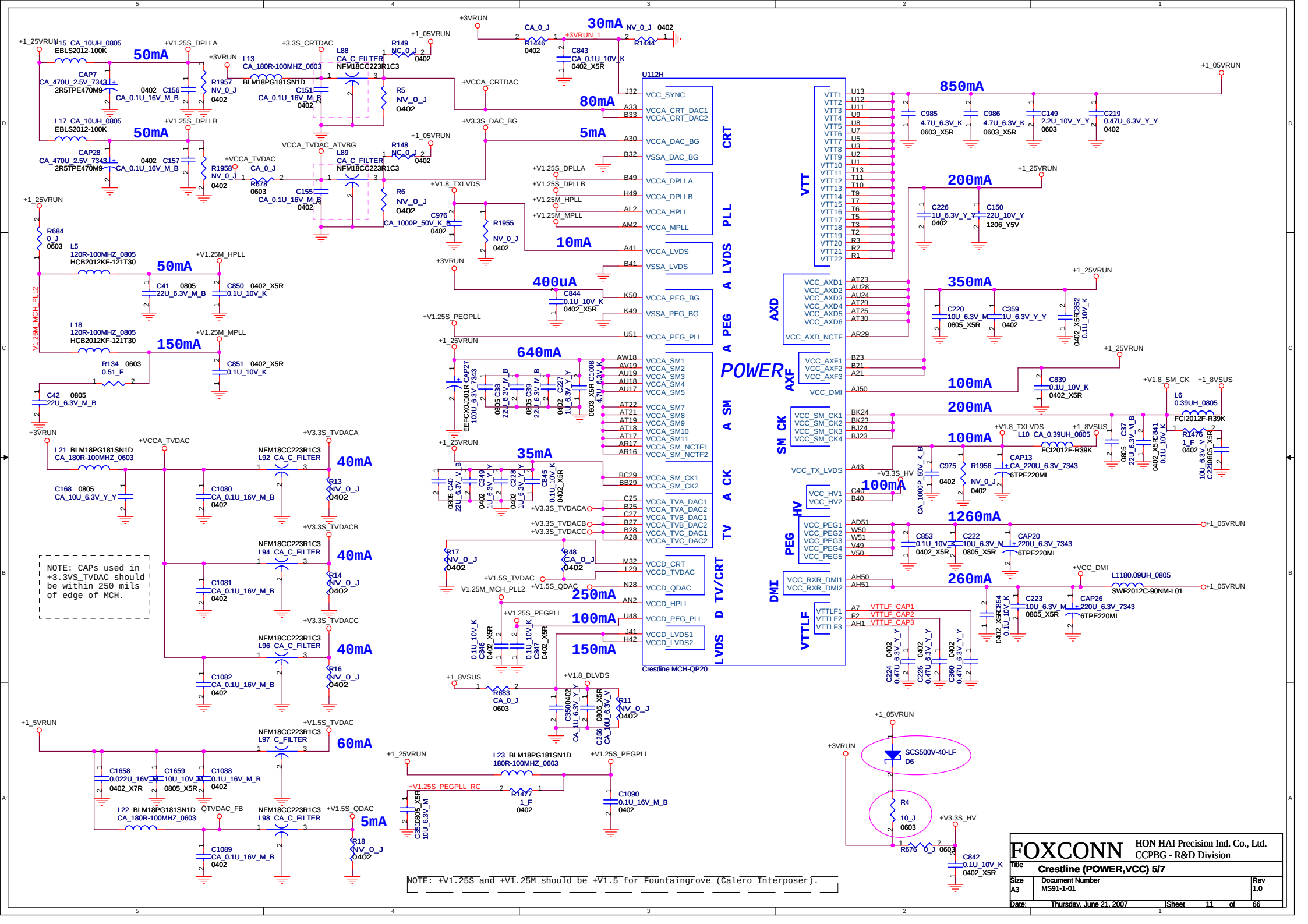

+3VRUN
+1_05VRUN
U112C
PCI-EXPRESS GRAPHICS
VGA
Crestline MCH-QP20
R1240 NV_0_J 0402
R1443 CA_10K_J 0402
R1239 NV_0_J 0402
R1430 CA_10K_J 0402
R1426 CA_2.2K_J 0402
R1238 NV_0_J 0402
R1237 NV_0_J 0402
R1427 CA_2.2K_J 0402
R118 24.9_F 0402
R119 2.37K_F 0402
31 NB_BRADJ
31 GM_INV_EN
31 GM_LCDVCC_EN
L_CTRL_CLK
L_CTRL_DATA
L_DDC_CLK
L_DDC_DATA
LVDS_IBG
LVDS_VBG
31 GM_ODD_CLKIN-
31 GM_ODD_CLKIN+
26MIL TP157
26MIL TP158
31 GM_ODD_RXIN0-
31 GM_ODD_RXIN1-
31 GM_ODD_RXIN2-
31 GM_ODD_RXIN0+
31 GM_ODD_RXIN1+
31 GM_ODD_RXIN2+
26MIL TP159
26MIL TP160
26MIL TP161
26MIL TP162
26MIL TP163
26MIL TP164
26MIL TP156
GM_DACA
GM_DACB
GM_DACC
29 GM_DACB
29 GM_DACC
R1949 CA_2.2K_J 0402
R1948 CA_2.2K_J 0402
TV_IRTNA
TV_IRTNB
TV_IRTNC
TV_DCONSEL0
TV_DCONSEL1
R1243 NV_0_J 0402
R1242 NV_0_J 0402
30 GM_BLUE
30 GM_GREEN
30 GM_RED
30 GM_DDCCLK
30 GM_DDCDATA
30 GM_HSYNC
30 GM_VSYNC
R1236 NV_0_J 0402
R1235 NV_0_J 0402
R1475 CA_30.1_F 0402
R122 CA_1.3K_F 0402
R1234 NV_0_J 0402
R1474 CA_30.1_F 0402
GM_HSYNC_R
CRT_IREF
GM_VSYNC_R
R1229 NV_0_J 0402
R124 CA_150_F 0402
R1230 NV_0_J 0402
R125 CA_150_F 0402
R1231 NV_0_J 0402
R126 CA_150_F 0402
R1221 NV_0_J 0402
R127 CA_150_F 0402
R1226 NV_0_J 0402
R128 CA_150_F 0402
R1227 NV_0_J 0402
R129 CA_150_F 0402
R1414 NV_0_J 0402
R1415 NV_0_J 0402
Place resistor close to GMCH
PEG_RXN[15..0] 18
PEG_RXP[15..0] 18
PEG_RXN_C[15..0] 17
PEG_RXP_C[15..0] 17
C100 NV_0.1U_16V_M_B 0402
C101 NV_0.1U_16V_M_B 0402
C102 NV_0.1U_16V_M_B 0402
C103 NV_0.1U_16V_M_B 0402
C104 NV_0.1U_16V_M_B 0402
C105 NV_0.1U_16V_M_B 0402
C106 NV_0.1U_16V_M_B 0402
C107 NV_0.1U_16V_M_B 0402
C108 NV_0.1U_16V_M_B 0402
C109 NV_0.1U_16V_M_B 0402
C110 NV_0.1U_16V_M_B 0402
C111 NV_0.1U_16V_M_B 0402
C112 NV_0.1U_16V_M_B 0402
C113 NV_0.1U_16V_M_B 0402
C114 NV_0.1U_16V_M_B 0402
C115 NV_0.1U_16V_M_B 0402
C116 NV_0.1U_16V_M_B 0402
C117 NV_0.1U_16V_M_B 0402
C118 NV_0.1U_16V_M_B 0402
C119 NV_0.1U_16V_M_B 0402
C120 NV_0.1U_16V_M_B 0402
C121 NV_0.1U_16V_M_B 0402
C122 NV_0.1U_16V_M_B 0402
C123 NV_0.1U_16V_M_B 0402
C124 NV_0.1U_16V_M_B 0402
C125 NV_0.1U_16V_M_B 0402
C126 NV_0.1U_16V_M_B 0402
C127 NV_0.1U_16V_M_B 0402
C128 NV_0.1U_16V_M_B 0402
C129 NV_0.1U_16V_M_B 0402
C130 NV_0.1U_16V_M_B 0402
C131 NV_0.1U_16V_M_B 0402
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title: Crestline (GRAPHIC) 3/7
Size: A3
Document Number: MS91-1-01
Rev: 1.0
Date: Thursday, June 21, 2007
Sheet 9 of 66

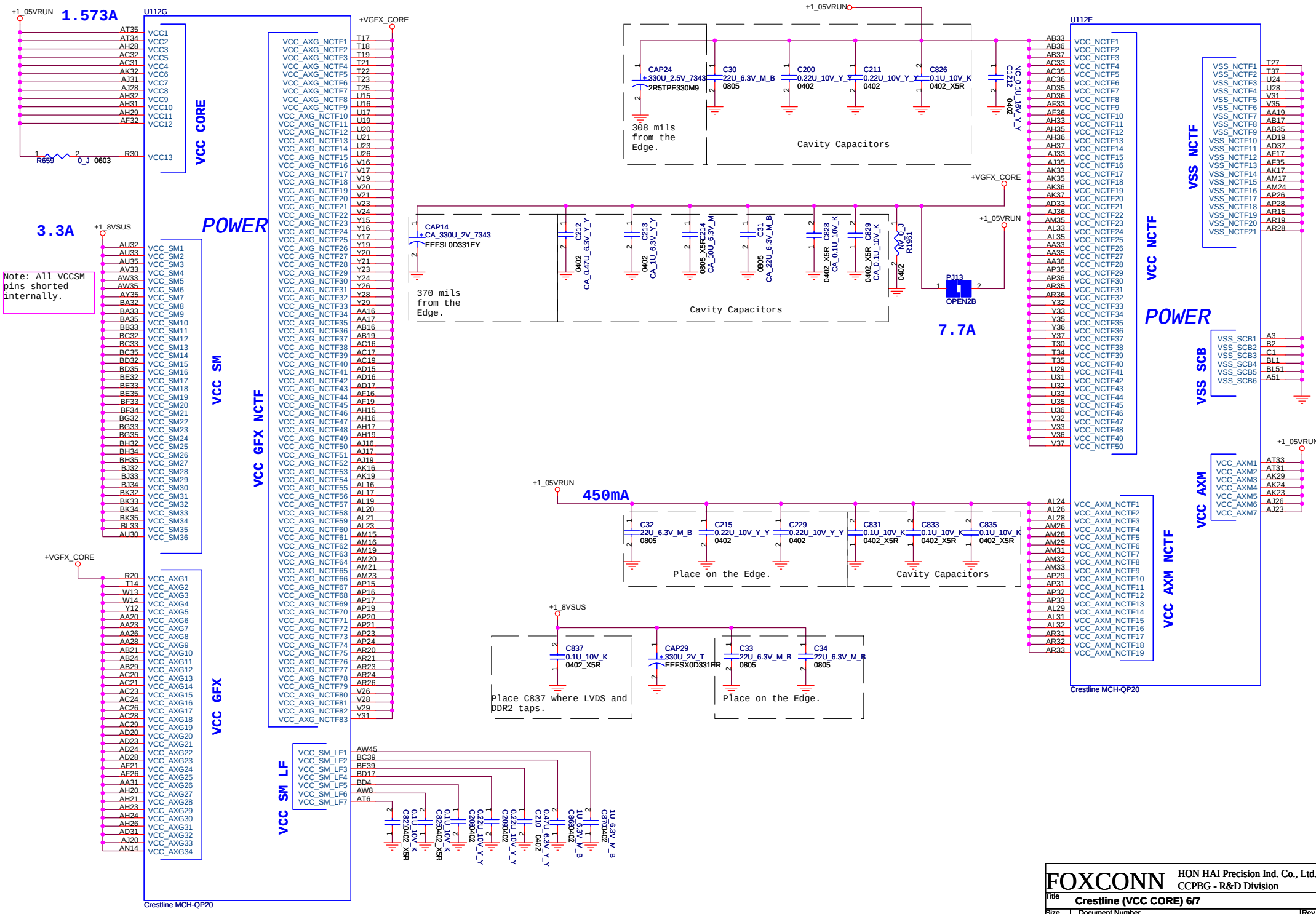


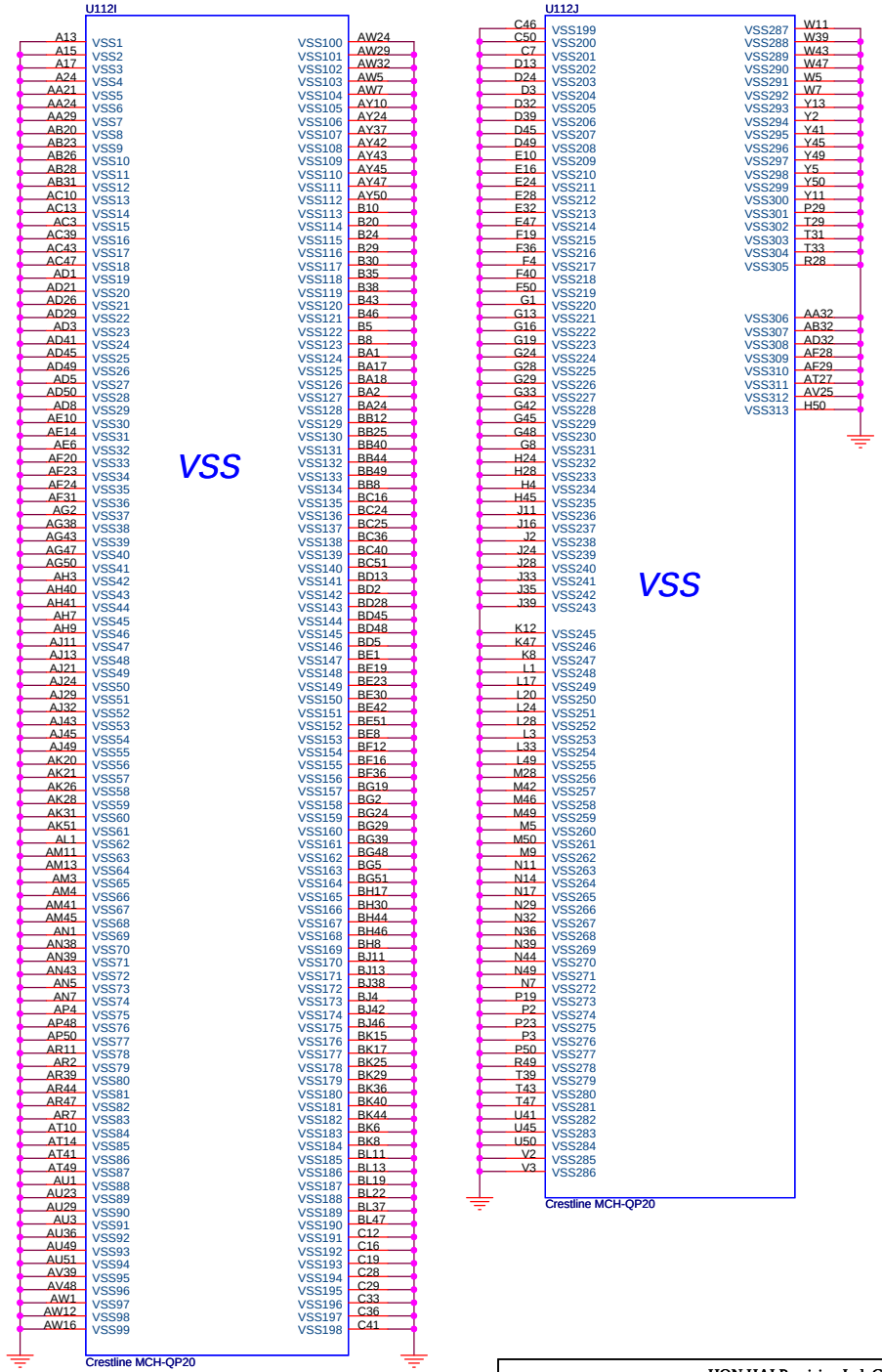


FOXCONN — HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

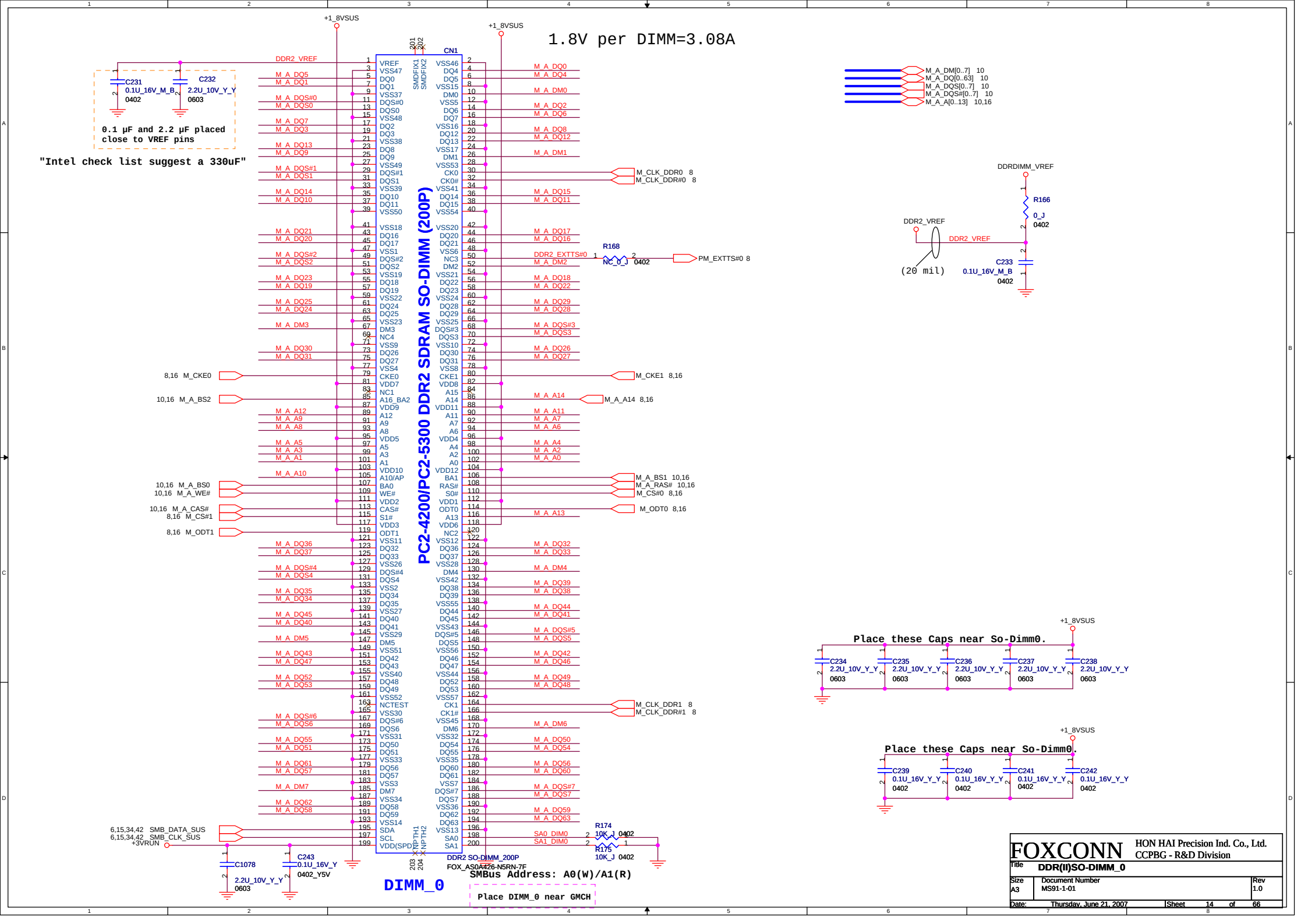
Title	Crestline (DDRII) 4/7	
Size: A3	Document Number: MS91-1-01	Rev: 1.0
Date: Thursday, June 21, 2007	Sheet 10 of 66	

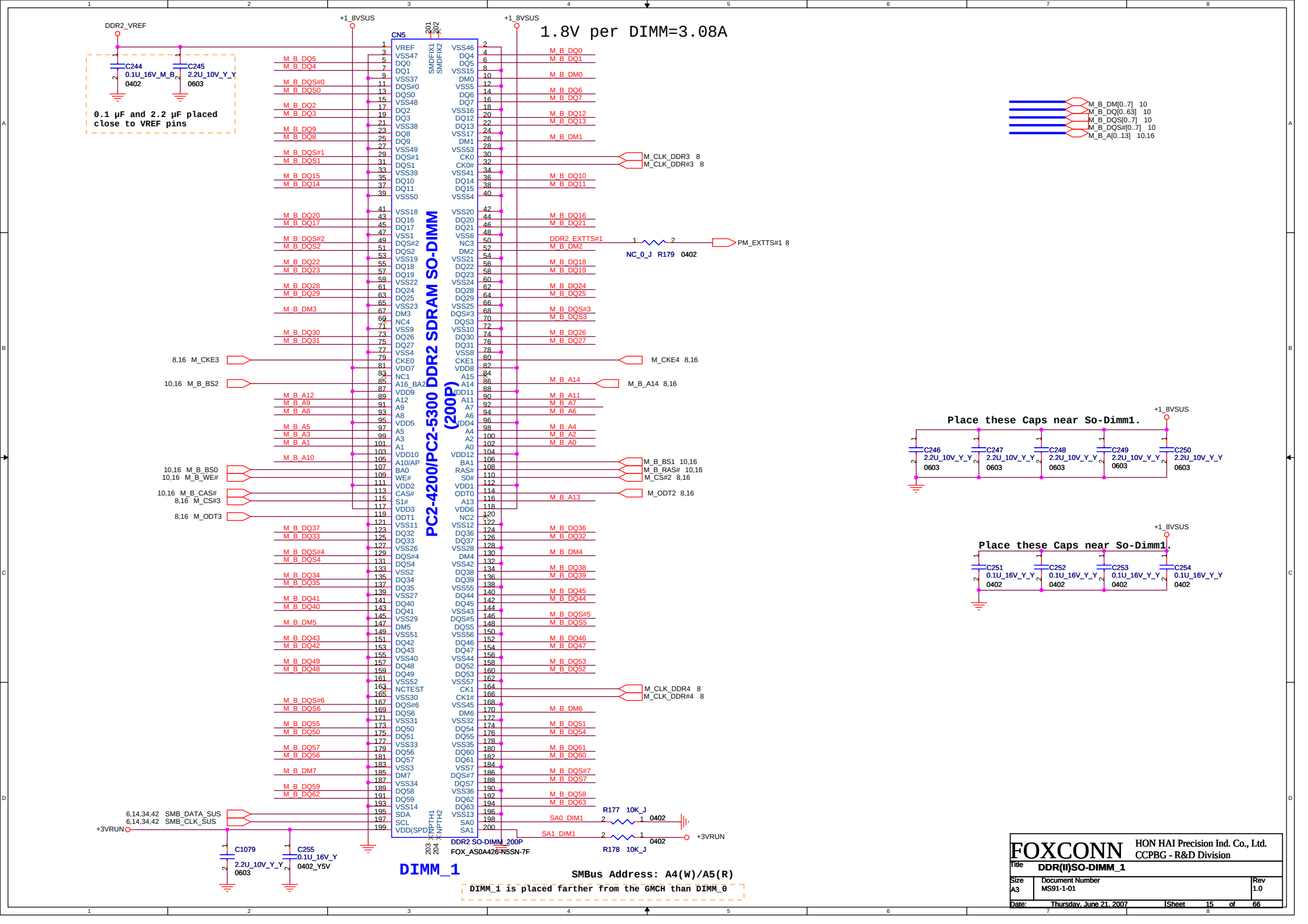

POWER
U112H
Crestline MCH-QP20
CRT
PLL
LVDS A
PEG A
SM A
CK A
TV A
TV/CRT D
LVDS D
VTT
AXD
AXF
SM CK
PEG HV
DMI
VTTLF
850mA
200mA
350mA
100mA
1260mA
260mA
50mA
80mA
5mA
10mA
400uA
640mA
35mA
40mA
60mA
250mA
150mA
NOTE: CAPs used in +3.3VS_TVDAC should be within 250 mils of edge of MCH.
NOTE: +V1.25S and +V1.25M should be +V1.5 for Fountaingrove (Calero Interposer).
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Crestline (POWER,VCC) 5/7
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
Sheet 11 of 66

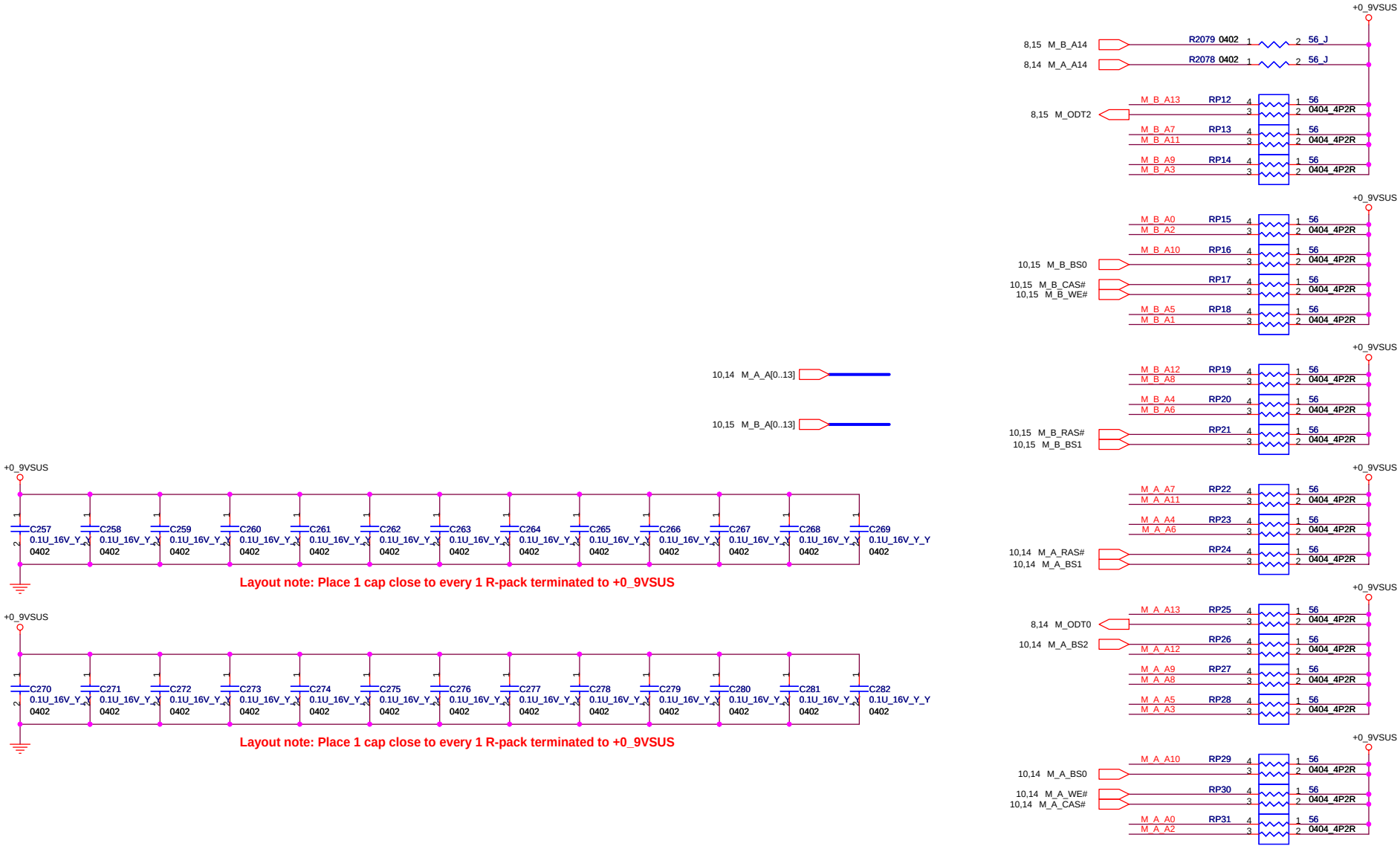

U112G
1.573A
VCC CORE
VCC SM
VCC GFX NCTF
VCC GFX
VCC SM LF
3.3A
POWER
Note: All VCCSM pins shorted internally.
Crestline MCH-QP20
U112F
VCC NCTF
VSS NCTF
VSS SCB
VCC AXM
VCC AXM NCTF
7.7A
450mA
Cavity Capacitors
308 mils from the Edge.
370 mils from the Edge.
Place on the Edge.
Place C837 where LVDS and DDR2 taps.
OPEN2B
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Crestline (VCC CORE) 6/7
Document Number MS91-1-01
Rev 1.0
Thursday, June 21, 2007
Sheet 12 of 66



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Crestline (VSS) 7/7	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 13 of 66	

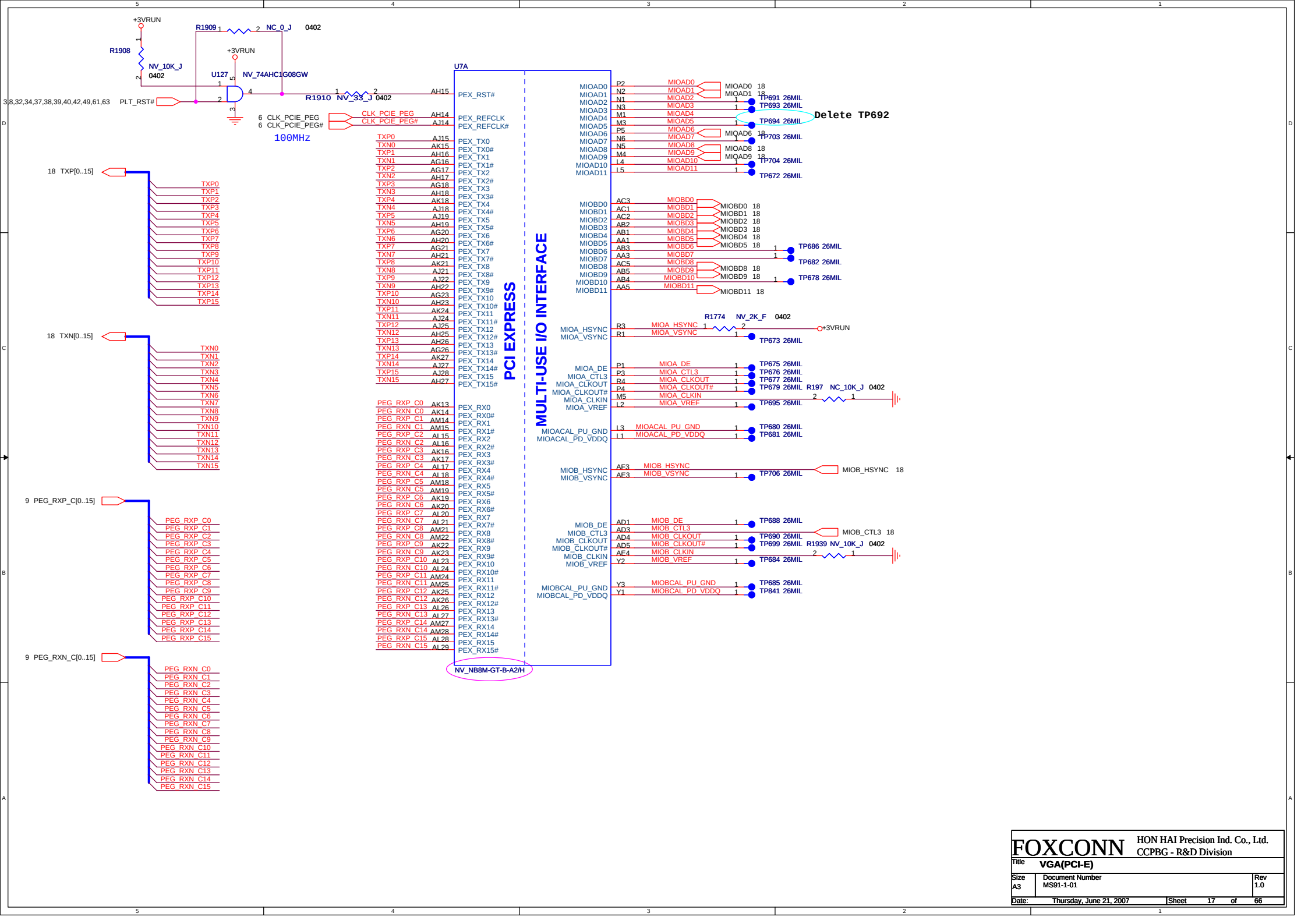

1.8V per DIMM=3.08A
+1_8VSUS
CN1
PC2-4200/PC2-5300 DDR2 SDRAM SO-DIMM (200P)
DDR2 SO-DIMM_200P
FOX_AS0A426-N5RN-7F
DIMM_0
SMBus Address: A0(W)/A1(R)
Place DIMM_0 near GMCH
C231 0.1U_16V_M_B 0402
C232 2.2U_10V_Y_Y 0603
0.1 µF and 2.2 µF placed close to VREF pins
"Intel check list suggest a 330uF"
C1078 2.2U_10V_Y_Y 0603
C243 0.1U_16V_Y 0402_Y5V
R168 NC_0_J 0402
R174 10K_J 0402
R175 10K_J 0402
M_A_DM[0..7] 10
M_A_DQ[0..63] 10
M_A_DQS[0..7] 10
M_A_DQS#[0..7] 10
M_A_A[0..13] 10,16
DDRDIMM_VREF
R166 0_J 0402
C233 0.1U_16V_M_B 0402
(20 mil)
Place these Caps near So-Dimm0.
C234 2.2U_10V_Y_Y 0603
C235 2.2U_10V_Y_Y 0603
C236 2.2U_10V_Y_Y 0603
C237 2.2U_10V_Y_Y 0603
C238 2.2U_10V_Y_Y 0603
Place these Caps near So-Dimm0.
C239 0.1U_16V_Y_Y 0402
C240 0.1U_16V_Y_Y 0402
C241 0.1U_16V_Y_Y 0402
C242 0.1U_16V_Y_Y 0402
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title DDR(II)SO-DIMM_0
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
Sheet 14 of 66


1.8V per DIMM=3.08A
DDR2_VREF
+1_8VSUS
C244 0.1U_16V_M_B 0402
C245 2.2U_10V_Y_Y 0603
0.1 µF and 2.2 µF placed close to VREF pins
CN5
DDR2 SDRAM SO-DIMM (200P)
PC2-4200/PC2-5300
DDR2 SO-DIMM_200P
FOX_AS0A426-N5SN-7F
DIMM_1
SMBus Address: A4(W)/A5(R)
DIMM_1 is placed farther from the GMCH than DIMM_0
M_B_DM[0..7] 10
M_B_DQ[0..63] 10
M_B_DQS[0..7] 10
M_B_DQS#[0..7] 10
M_B_A[0..13] 10,16
M_CLK_DDR3 8
M_CLK_DDR#3 8
M_CLK_DDR4 8
M_CLK_DDR#4 8
DDR2_EXTTS#1
NC_0_J R179 0402
PM_EXTTS#1 8
M_CKE4 8,16
M_B_A14 8,16
M_B_BS1 10,16
M_B_RAS# 10,16
M_CS#2 8,16
M_ODT2 8,16
R177 10K_J 0402
R178 10K_J 0402
+3VRUN
6,14,34,42 SMB_DATA_SUS
6,14,34,42 SMB_CLK_SUS
C1079 2.2U_10V_Y_Y 0603
C255 0.1U_16V_Y 0402_Y5V
Place these Caps near So-Dimm1.
C246 2.2U_10V_Y_Y 0603
C247 2.2U_10V_Y_Y 0603
C248 2.2U_10V_Y_Y 0603
C249 2.2U_10V_Y_Y 0603
C250 2.2U_10V_Y_Y 0603
Place these Caps near So-Dimm1
C251 0.1U_16V_Y_Y 0402
C252 0.1U_16V_Y_Y 0402
C253 0.1U_16V_Y_Y 0402
C254 0.1U_16V_Y_Y 0402
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title DDR(II)SO-DIMM_1
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
Sheet 15 of 66



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

Title	DDR(II)Termination	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 16 of 66	



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title	VGA(PCI-E)
Size A3	Document Number MS91-1-01
Rev	1.0
Date:	Thursday, June 21, 2007
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SKU	HH			H			M	
Vender	Hynix	Qimonda	Samsung	Qimonda	Samsung	Hynix	Samsung	Hynix
Vendor PN	HY5RS123235BFP-14	HYB18H512321BF-14	K4J52324QE-BC14	HYB18H512321BF-14	K4J52324QE-BC14	HY5RS123235BFP-14	K4J55323QI-BC14	HY5RS573225BFP-14
H.H PN	13-HY5RS12-3001	13-HYB18H5-3003	13-K4J5232-3001	13-HYB18H5-3003	13-K4J5232-3001	13-HY5RS12-3001	13-K4J5532-3003	13-HY5RS57-3003
Configuration	NB8X with 4pcs (16Mx32) GDDR3			NB8M-GT with 2pcs (16Mx32) GDDR3			NB8M-GT with 2pcs (8Mx32) GDDR3	
lOCATION	Stuff U11,U12,U13,U14			Stuff U11,U12; No stuff U13,U14			Stuff U11,U12; No stuff U13,U14	

FAE: TV Mode Strap no use, remove.
(MIOAD7, MIOAD10, MIOBD6)

9 PEG_RXP[0..15]

PEG_RXP0	C285	NV_0.1U_16V_M_B	0402	TXP0
PEG_RXP1	C287	NV_0.1U_16V_M_B	0402	TXP1
PEG_RXP2	C289	NV_0.1U_16V_M_B	0402	TXP2
PEG_RXP3	C291	NV_0.1U_16V_M_B	0402	TXP3
PEG_RXP4	C293	NV_0.1U_16V_M_B	0402	TXP4
PEG_RXP5	C295	NV_0.1U_16V_M_B	0402	TXP5
PEG_RXP6	C297	NV_0.1U_16V_M_B	0402	TXP6
PEG_RXP7	C299	NV_0.1U_16V_M_B	0402	TXP7
PEG_RXP8	C301	NV_0.1U_16V_M_B	0402	TXP8
PEG_RXP9	C303	NV_0.1U_16V_M_B	0402	TXP9
PEG_RXP10	C305	NV_0.1U_16V_M_B	0402	TXP10
PEG_RXP11	C307	NV_0.1U_16V_M_B	0402	TXP11
PEG_RXP12	C309	NV_0.1U_16V_M_B	0402	TXP12
PEG_RXP13	C311	NV_0.1U_16V_M_B	0402	TXP13
PEG_RXP14	C313	NV_0.1U_16V_M_B	0402	TXP14
PEG_RXP15	C315	NV_0.1U_16V_M_B	0402	TXP15

TXP[0..15] 17

9 PEG_RXN[0..15]

PEG_RXN0	C286	NV_0.1U_16V_M_B	0402	TXN0
PEG_RXN1	C288	NV_0.1U_16V_M_B	0402	TXN1
PEG_RXN2	C290	NV_0.1U_16V_M_B	0402	TXN2
PEG_RXN3	C292	NV_0.1U_16V_M_B	0402	TXN3
PEG_RXN4	C294	NV_0.1U_16V_M_B	0402	TXN4
PEG_RXN5	C296	NV_0.1U_16V_M_B	0402	TXN5
PEG_RXN6	C298	NV_0.1U_16V_M_B	0402	TXN6
PEG_RXN7	C300	NV_0.1U_16V_M_B	0402	TXN7
PEG_RXN8	C302	NV_0.1U_16V_M_B	0402	TXN8
PEG_RXN9	C304	NV_0.1U_16V_M_B	0402	TXN9
PEG_RXN10	C306	NV_0.1U_16V_M_B	0402	TXN10
PEG_RXN11	C308	NV_0.1U_16V_M_B	0402	TXN11
PEG_RXN12	C310	NV_0.1U_16V_M_B	0402	TXN12
PEG_RXN13	C312	NV_0.1U_16V_M_B	0402	TXN13
PEG_RXN14	C314	NV_0.1U_16V_M_B	0402	TXN14
PEG_RXN15	C316	NV_0.1U_16V_M_B	0402	TXN15

TXN[0..15] 17

Strap for GDDR3-136ball

0001	16Mx32 (128-bit)	Qimonda
0011	16Mx32 (128-bit)	Samsung_E-die
0010	16Mx32 (128-bit)	Hynix
1001	16Mx32 (64-bits)	Qimonda
1011	16Mx32 (64-bits)	Samsung_E-die
1010	16Mx32 (64-bits)	Hynix
1110	8Mx32 (64-bits)	Hynix
1111	8Mx32 (64-bits)	Samsung_I-die

SUBVENDOR
0 (USE SYSTEM BIOS)
1 (USE EXTERNAL ROM)

MIOAD0 is used to set the PCI Express PLL termination enable.
DEFAULT "0"

3GIO_PADCFG[3:0]
-> 0001 for Mobile

NB8M-GT
PCI_DEVID[4:0]= "00110" -> 6
NB8P-SE
PCI_DEVID[4:0]= "00101" -> 5

+3VRUN

RAM_CFG0	R203	NVH_2K_J	MIOBD0	R204	NVQ/S_2K_J
RAM_CFG1	R205	NVQ_2K_J	MIOBD1	R206	NVH/S_2K_J
RAM_CFG2	R207	NV16M_2K_J	MIOBD8	R208	NV8M__2K_J
RAM_CFG3	R209	NV128bit_2K_J	MIOBD9	R210	NV64bit_2K_J
SUBVENDOR	R211	NV_2K_J	MIOAD1		MIOAD1 17
PEX_PLL_EN_TERM	R223	NV_2K_J	MIOAD0		MIOAD0 17
3GIO_PADCFG0	R225	NC_2K_J	MIOAD6	R226	NV_2K_J
3GIO_PADCFG1	R227	NV_2K_J	MIOAD8	R228	NC_2K_J
3GIO_PADCFG2	R229	NV_2K_J	MIOAD9	R230	NC_2K_J
3GIO_PADCFG3	R239	NV_2K_J	MIOB_HSYNC	R240	NC_2K_J
PCI_DEVID_0	R231	NVNB8M_2K_J	MIOBD4	R232	NVNB8P_2K_J
PCI_DEVID_1	R233	NVNB8P_2K_J	MIOBD5	R234	NVNB8M_2K_J
PCI_DEVID_2	R235	NC_2K_J	MIOBD3	R236	NV_2K_J
PCI_DEVID_3	R237	NV_2K_J	MIOBD11	R238	NC_2K_J
PCI_DEVID_4	R242	NV_2K_J	MIOB_CTL3	R243	NC_2K_J
CRYSTAL	R241	NV_2K_J	MIOBD2		MIOBD2 17

MIOBD2	Crystal
0	27MHz (Default)
1	Reserved

MIOAD6
MIOAD8
MIOAD9

MIOBD0
MIOBD1
MIOBD3
MIOBD4
MIOBD5
MIOBD8
MIOBD9
MIOBD11

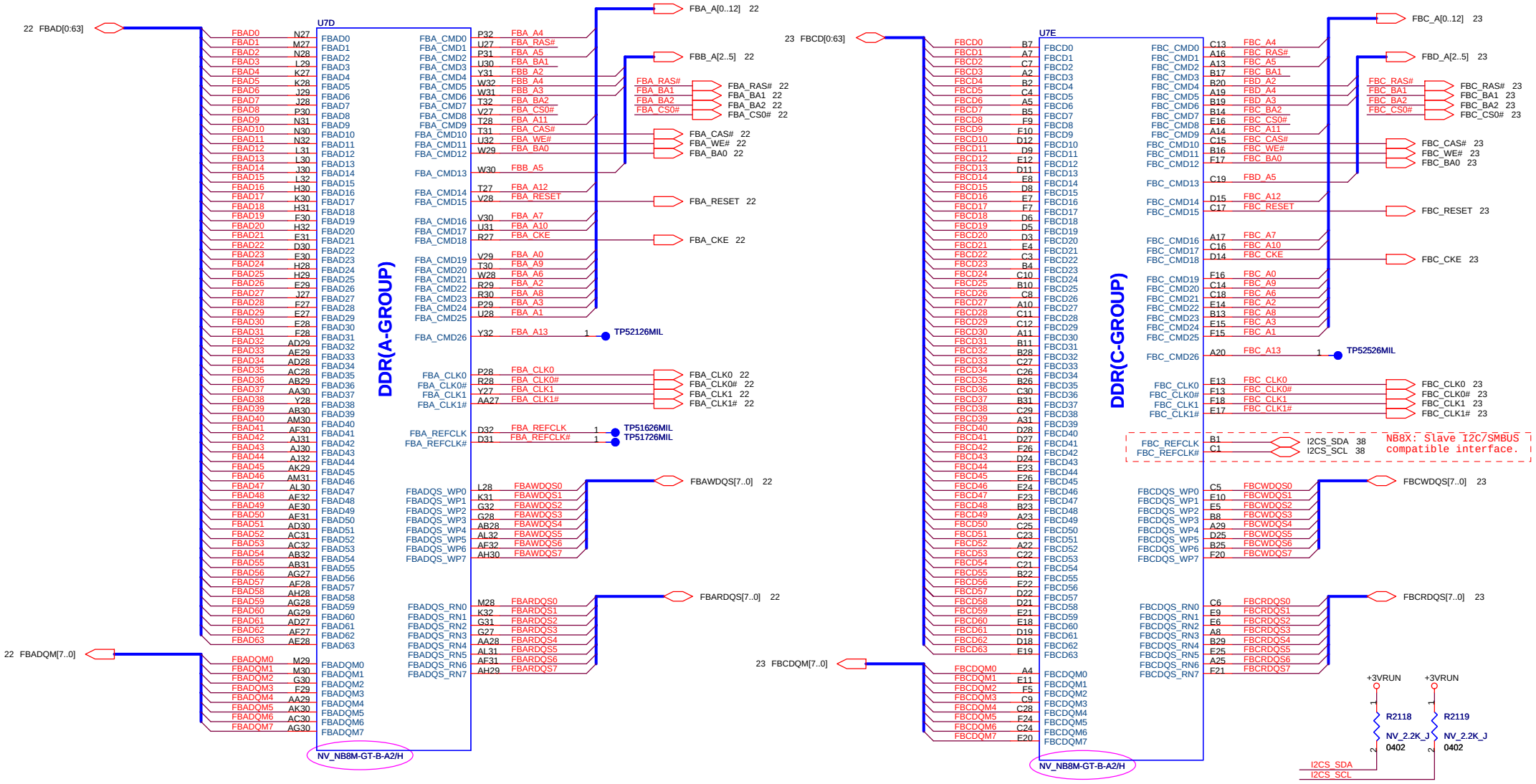
MIOB_CTL3
MIOB_HSYNC

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

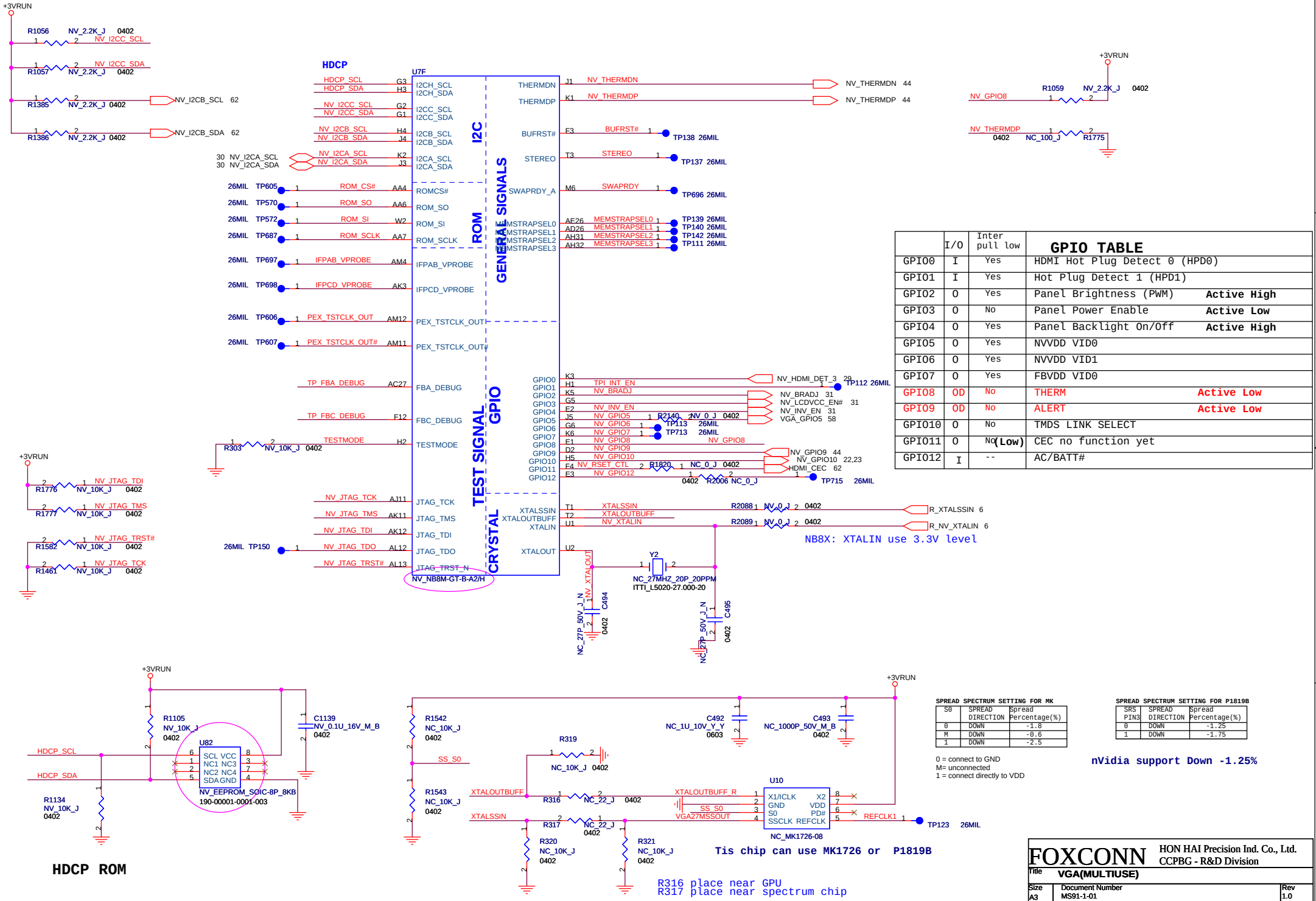
Title: VGA(STRAP)

Size: A3 | Document Number: MS91-1-01 | Rev: 1.0

Date: Thursday, June 21, 2007 | Sheet 18 of 66



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	VGA(GDDR)#	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 19 of 66	



	I/O	Inter pull low	GPIO TABLE	
GPIO0	I	Yes	HDMI Hot Plug Detect 0 (HPD0)	
GPIO1	I	Yes	Hot Plug Detect 1 (HPD1)	
GPIO2	O	Yes	Panel Brightness (PWM)	**Active High**
GPIO3	O	No	Panel Power Enable	**Active Low**
GPIO4	O	Yes	Panel Backlight On/Off	**Active High**
GPIO5	O	Yes	NVVDD VID0	
GPIO6	O	Yes	NVVDD VID1	
GPIO7	O	Yes	FBVDD VID0	
GPIO8	OD	No	THERM	**Active Low**
GPIO9	OD	No	ALERT	**Active Low**
GPIO10	O	No	TMDS LINK SELECT	
GPIO11	O	No(Low)	CEC no function yet	
GPIO12	I	--	AC/BATT#	

HDCP ROM

Tis chip can use MK1726 or P1819B

R316 place near GPU
R317 place near spectrum chip

SPREAD SPECTRUM SETTING FOR MK

S0	SPREAD DIRECTION	Spread Percentage(%)
0	DOWN	-1.8
M	DOWN	-0.6
1	DOWN	-2.5

0 = connect to GND
M= unconnected
1 = connect directly to VDD

SPREAD SPECTRUM SETTING FOR P1819B

SRS PIN3	SPREAD DIRECTION	Spread Percentage(%)
0	DOWN	-1.25
1	DOWN	-1.75

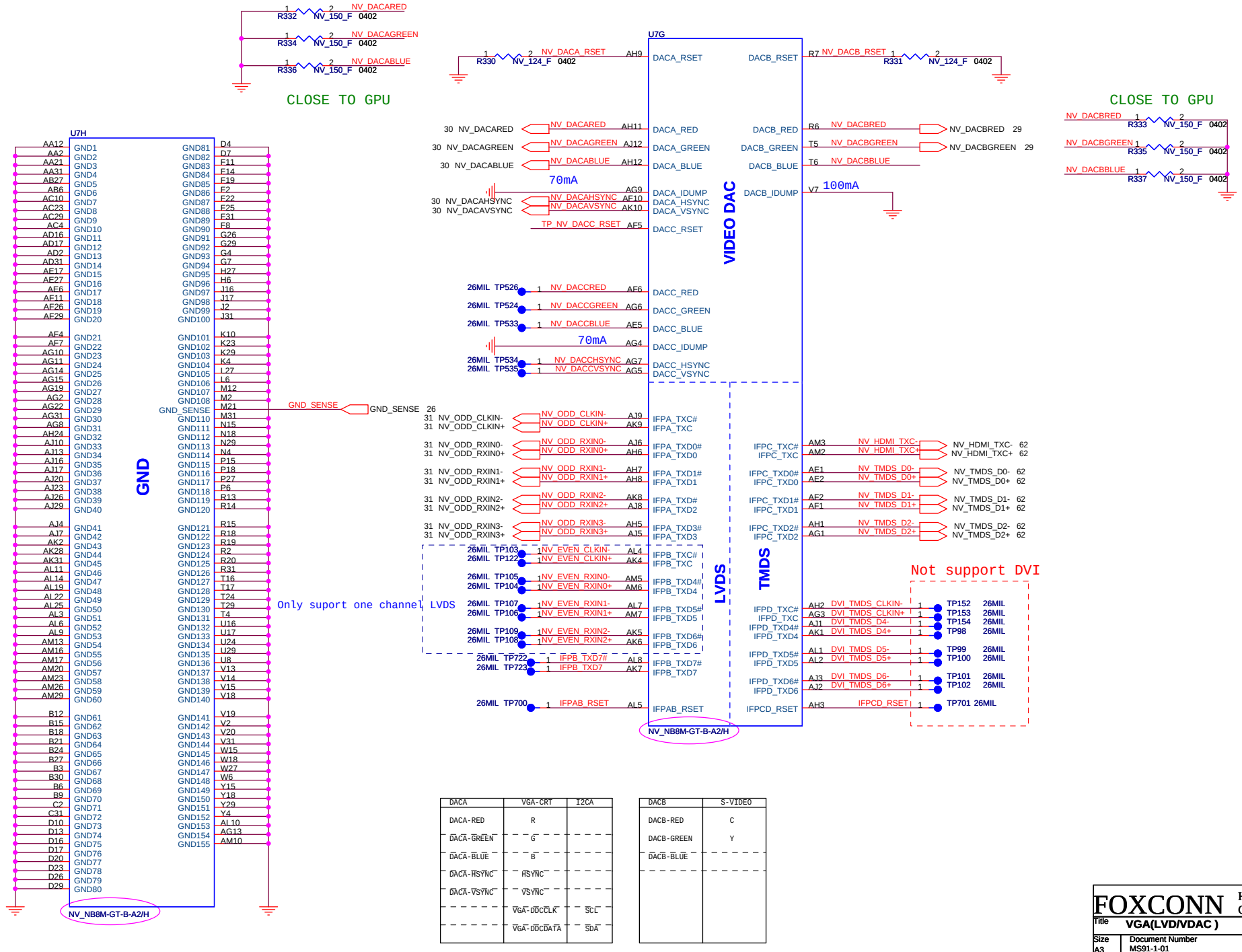
nVidia support Down -1.25%

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

Title: VGA(MULTIUSE)

Size: A3 | Document Number: MS91-1-01 | Rev: 1.0

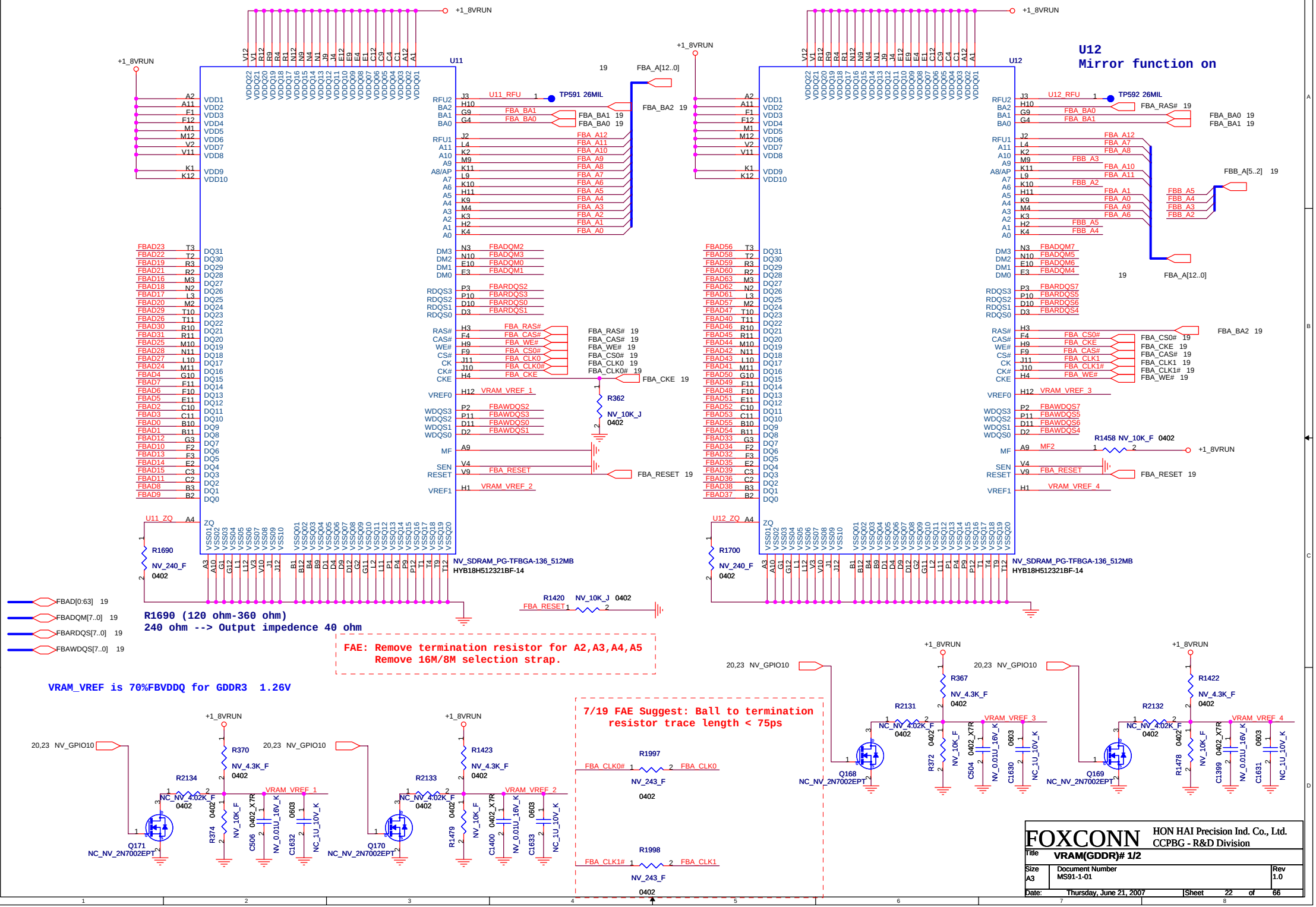
Date: Thursday, June 21, 2007 | Sheet 20 of 66



DACA	VGA-CRT	I2CA
DACA-RED	R	
DACA-GREEN	G	
DACA-BLUE	B	
DACA-HSYNC	HSYNC	
DACA-VSYNC	VSYNC	
	VGA-DDCCLK	SCL
	VGA-DDCDATA	SDA

DACB	S-VIDEO
DACB-RED	C
DACB-GREEN	Y
DACB-BLUE	

FOXCONN	HON HAI Precision Ind. Co., Ltd.	
	CCPBG - R&D Division	
Title	VGA(LVD/VDAC)	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 21 of 66	


U11
U12
U12
Mirror function on
+1_8VRUN
NV_SDRAM_PG-TFBGA-136_512MB
HYB18H512321BF-14
R1690 (120 ohm-360 ohm)
240 ohm --> Output impedence 40 ohm
FAE: Remove termination resistor for A2,A3,A4,A5
Remove 16M/8M selection strap.
VRAM_VREF is 70%FBVDDQ for GDDR3 1.26V
7/19 FAE Suggest: Ball to termination
resistor trace length < 75ps
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
VRAM(GDDR)# 1/2
Document Number
MS91-1-01
Rev
1.0
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U14
Mirror function on

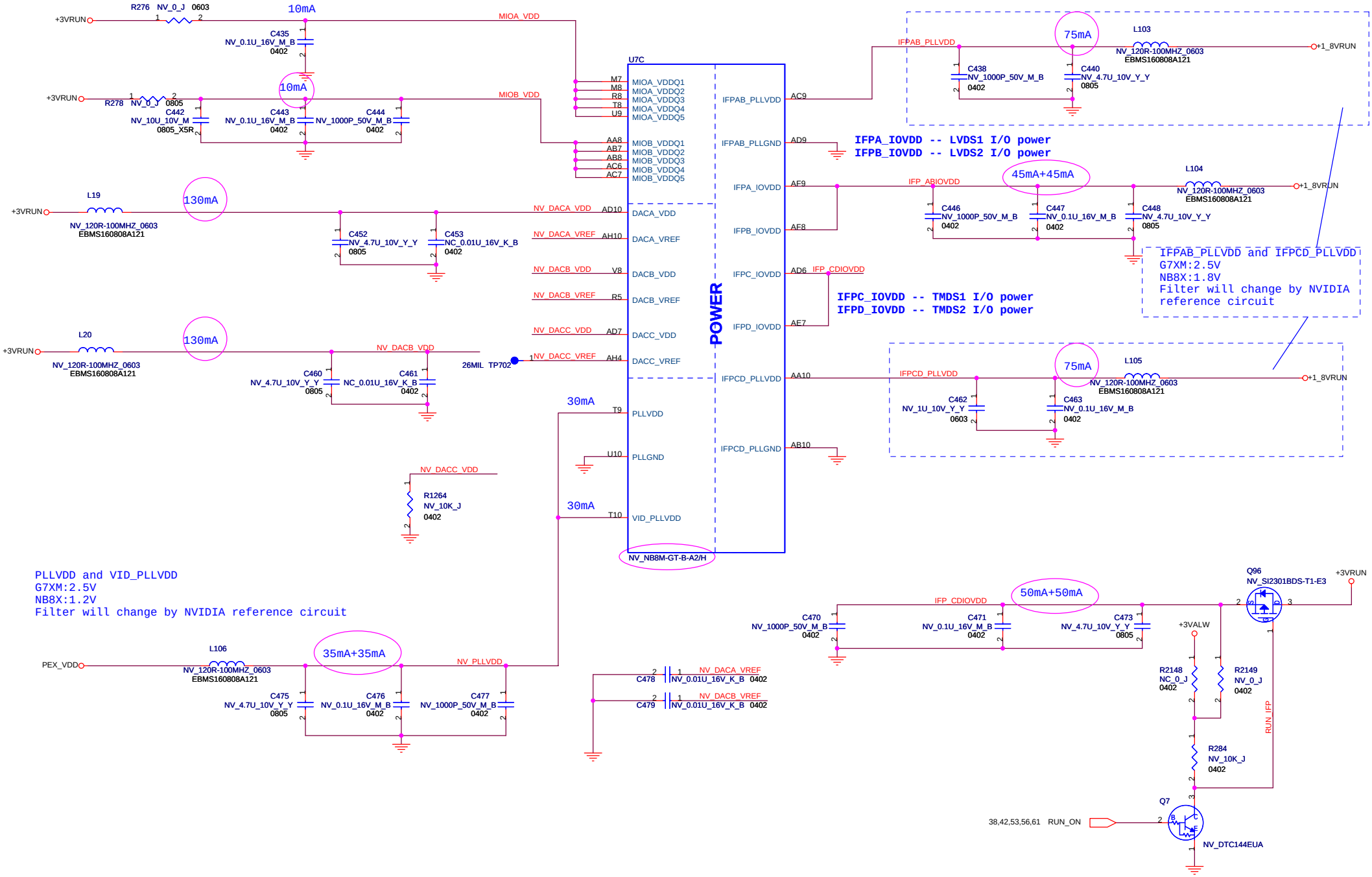
R1411(120 ohm-360 ohm)
240 ohm --> Output impedence 40 ohm

FAE: Remove termination resistor for A2,A3,A4,A5
Remove 16M/8M selection strap.

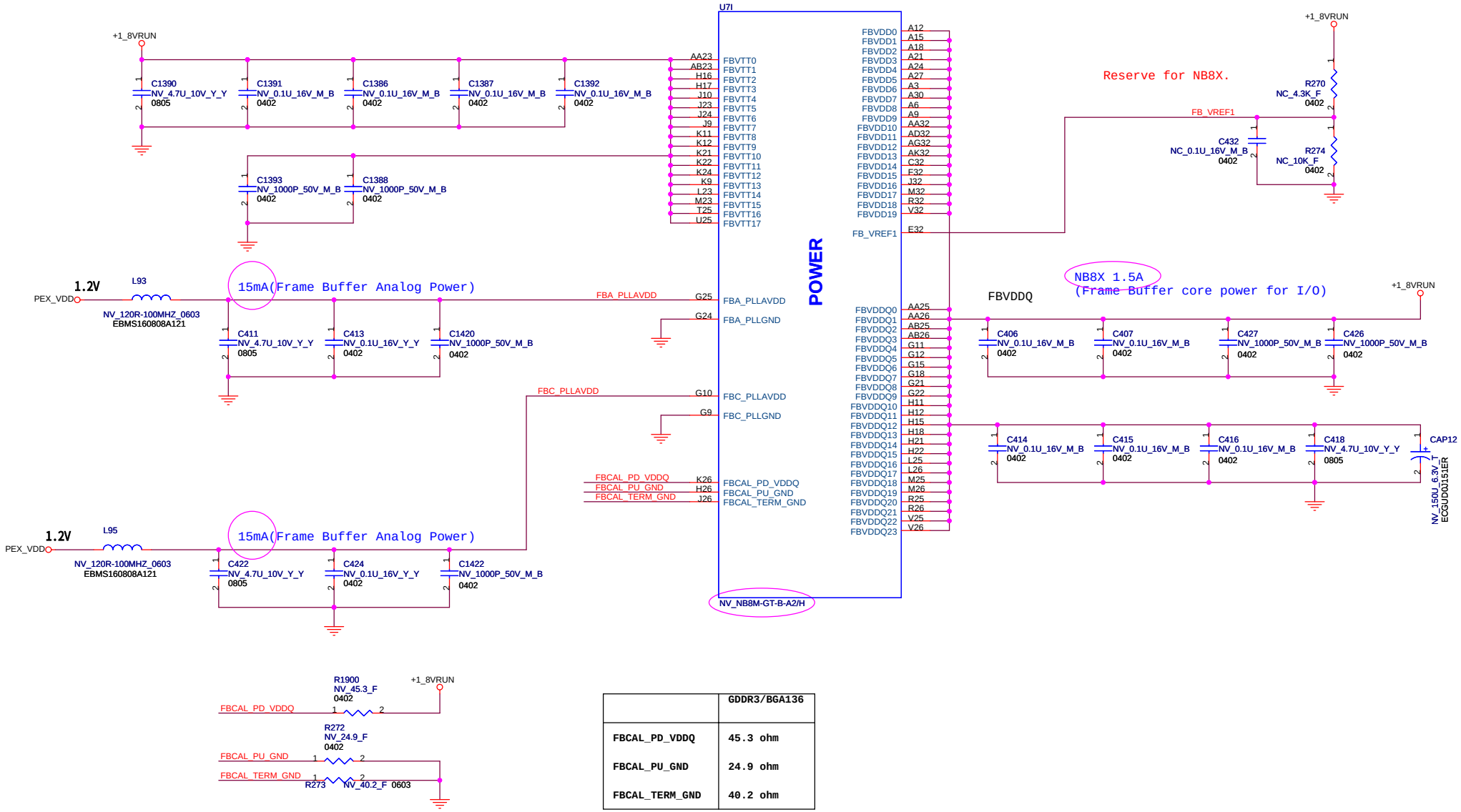
VRAM_VREF is 70%FBVDDQ for GDDR3 1.26V

7/19 FAE Suggest: Ball to termination
resistor trace length < 75ps

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division
Title	VRAM(GDDR)# 2/2
Size A3	Document Number MS91-1-01 Rev 1.0
Date: Thursday, June 21, 2007	Sheet 23 of 66



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	VGA(POWER) 1/3	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 24 of 66	



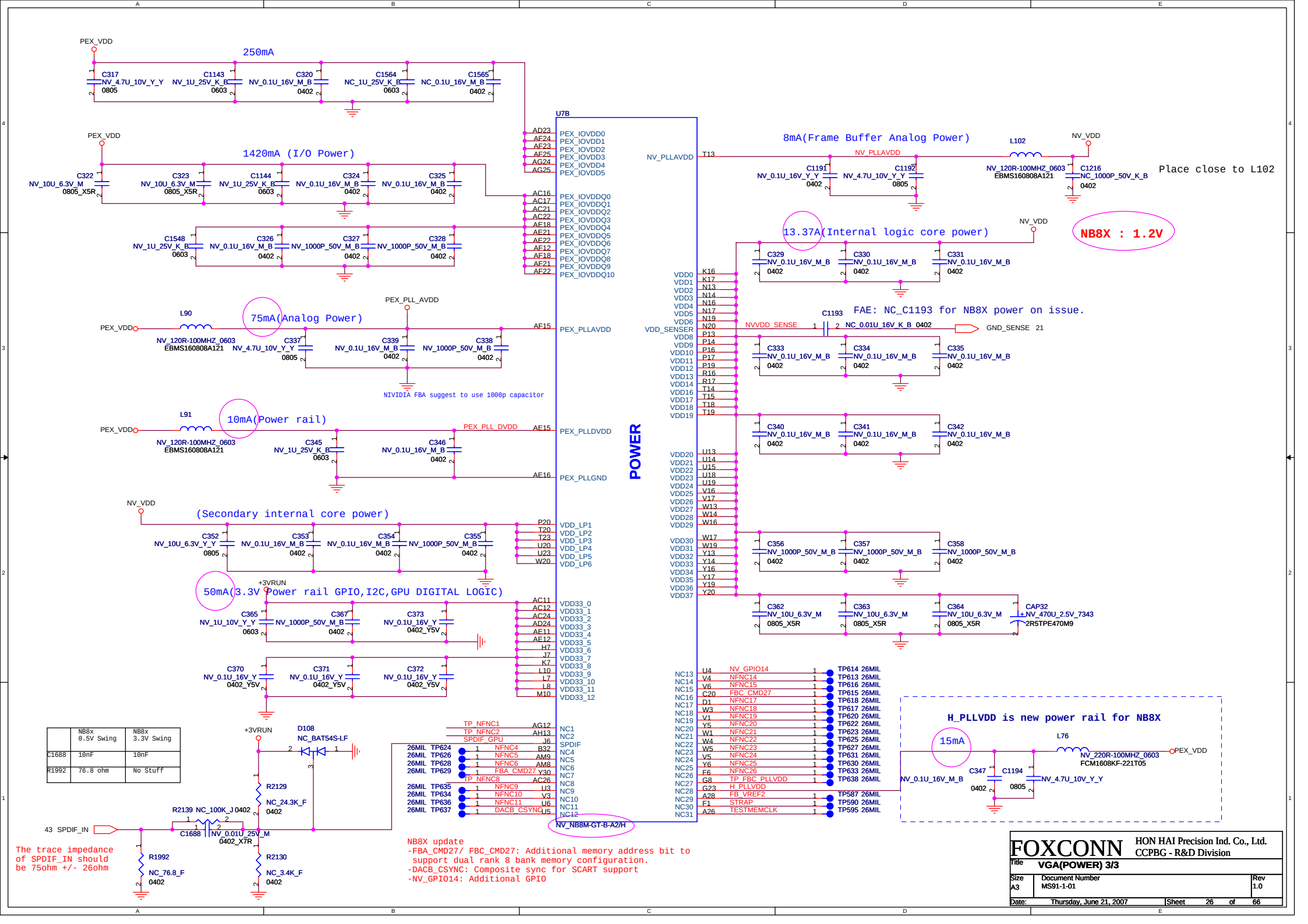
	GDDR3/BGA136
FBCAL_PD_VDDQ	45.3 ohm
FBCAL_PU_GND	24.9 ohm
FBCAL_TERM_GND	40.2 ohm

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

Title: VGA(POWER) 2/3

Size: A3 | Document Number: MS91-1-01 | Rev: 1.0

Date: Thursday, June 21, 2007 | Sheet 25 of 66


250mA
1420mA (I/O Power)
75mA(Analog Power)
10mA(Power rail)
(Secondary internal core power)
50mA(3.3V Power rail GPIO,I2C,GPU DIGITAL LOGIC)
8mA(Frame Buffer Analog Power)
13.37A(Internal logic core power)
NB8X : 1.2V
FAE: NC_C1193 for NB8X power on issue.
Place close to L102
NIVIDIA FBA suggest to use 1000p capacitor
H_PLLVDD is new power rail for NB8X
15mA
POWER
U7B
NB8X 0.5V Swing
NB8X 3.3V Swing
C1688 10nF 10nF
R1992 76.8 ohm No Stuff
The trace impedance of SPDIF_IN should be 75ohm +/- 26ohm
NB8X update
-FBA_CMD27/ FBC_CMD27: Additional memory address bit to support dual rank 8 bank memory configuration.
-DACB_CSYNC: Composite sync for SCART support
-NV_GPIO14: Additional GPIO
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title VGA(POWER) 3/3
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
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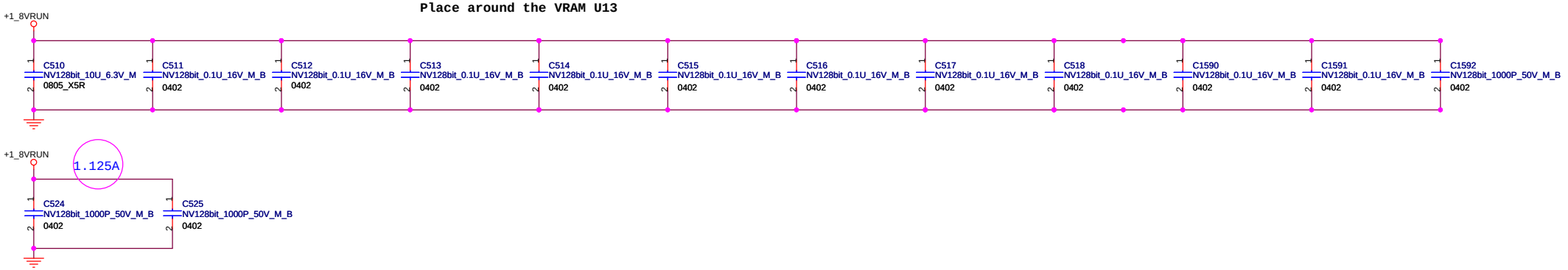
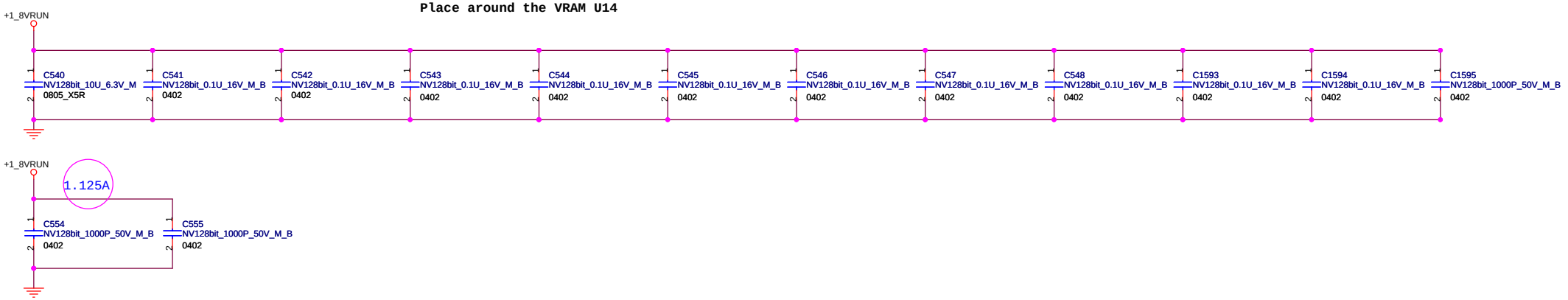
Place around the VRAM U13



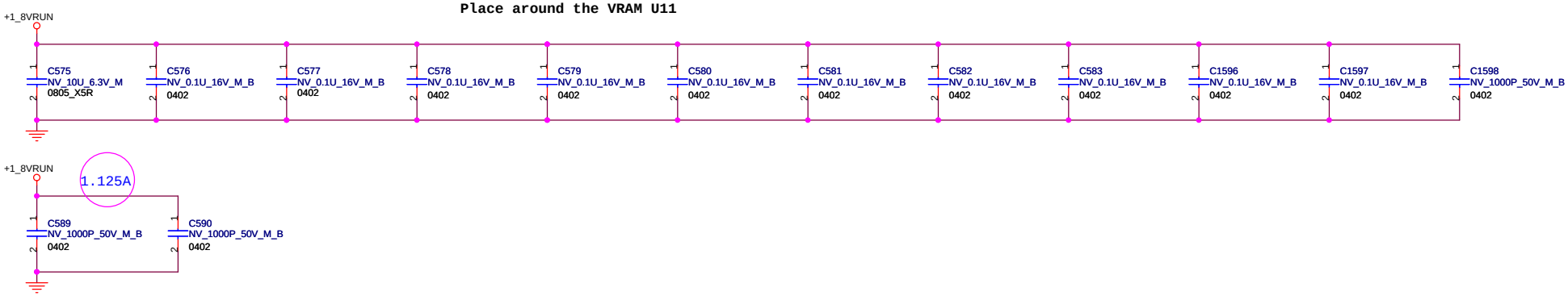
Place around the VRAM U14



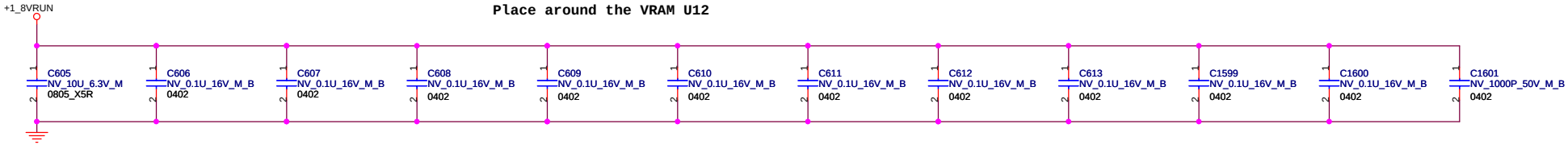
FOXCONN HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

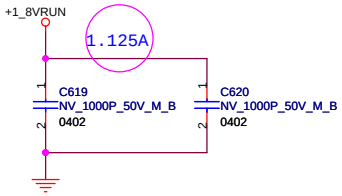
Title: VRAM(BYPASS) 1/2		
Size: A3	Document Number: MS91-1-01	Rev: 1.0
Date: Thursday, June 21, 2007	Sheet 27 of 66	

Place around the VRAM U11



Place around the VRAM U12

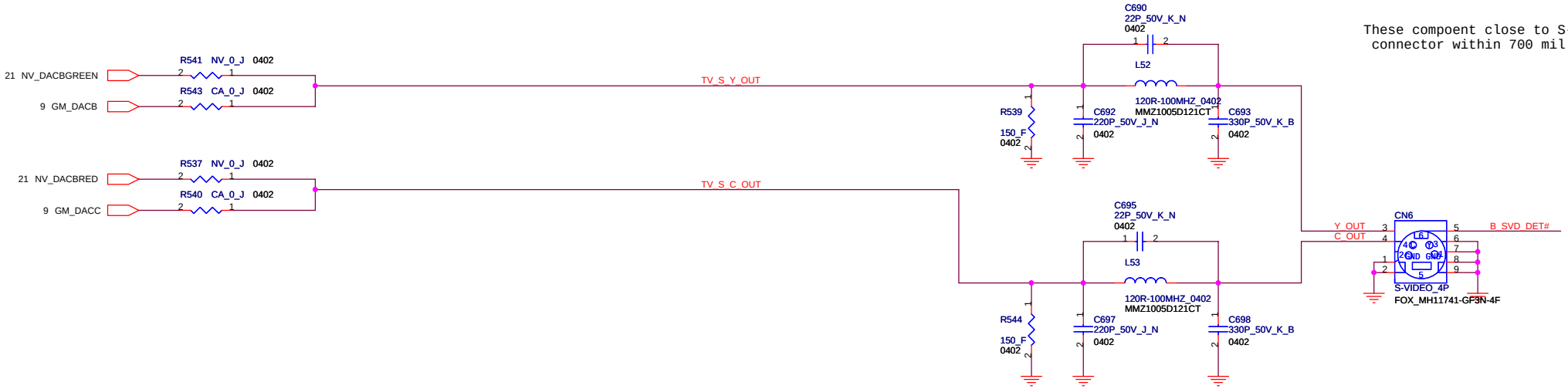


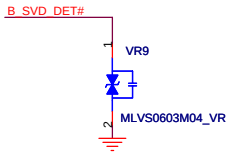


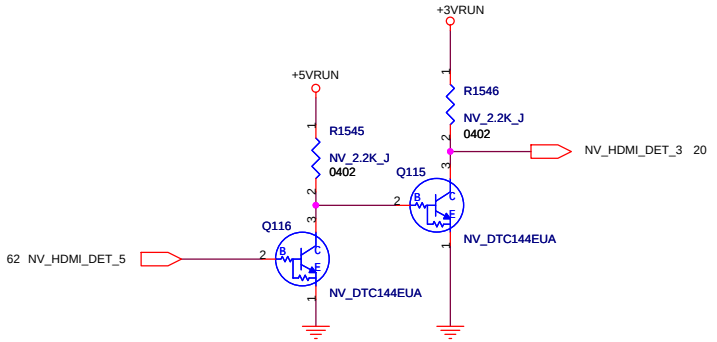
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	VRAM(BYPASS) 2/2	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 28 of 66	

S-VIDEO

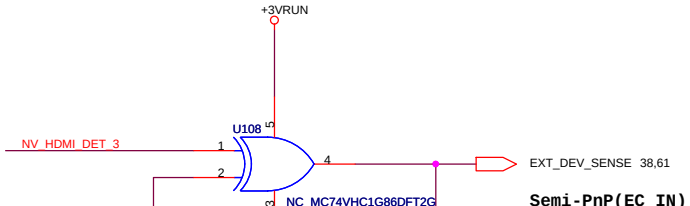
These compoent close to S-Video connector within 700 mil

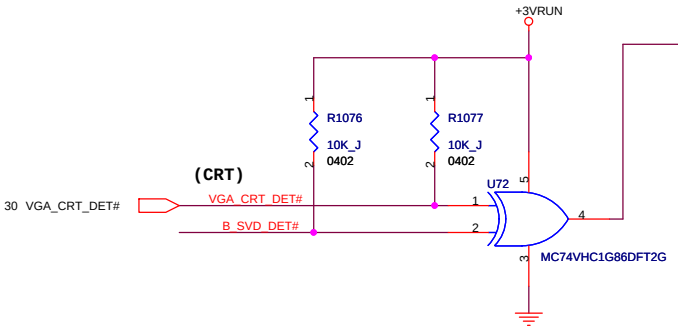






Semi-PnP





FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	TVIN and OUT/Semi-PnP#	
Size A3	Document Number MS91-1-01	Rev 1.0
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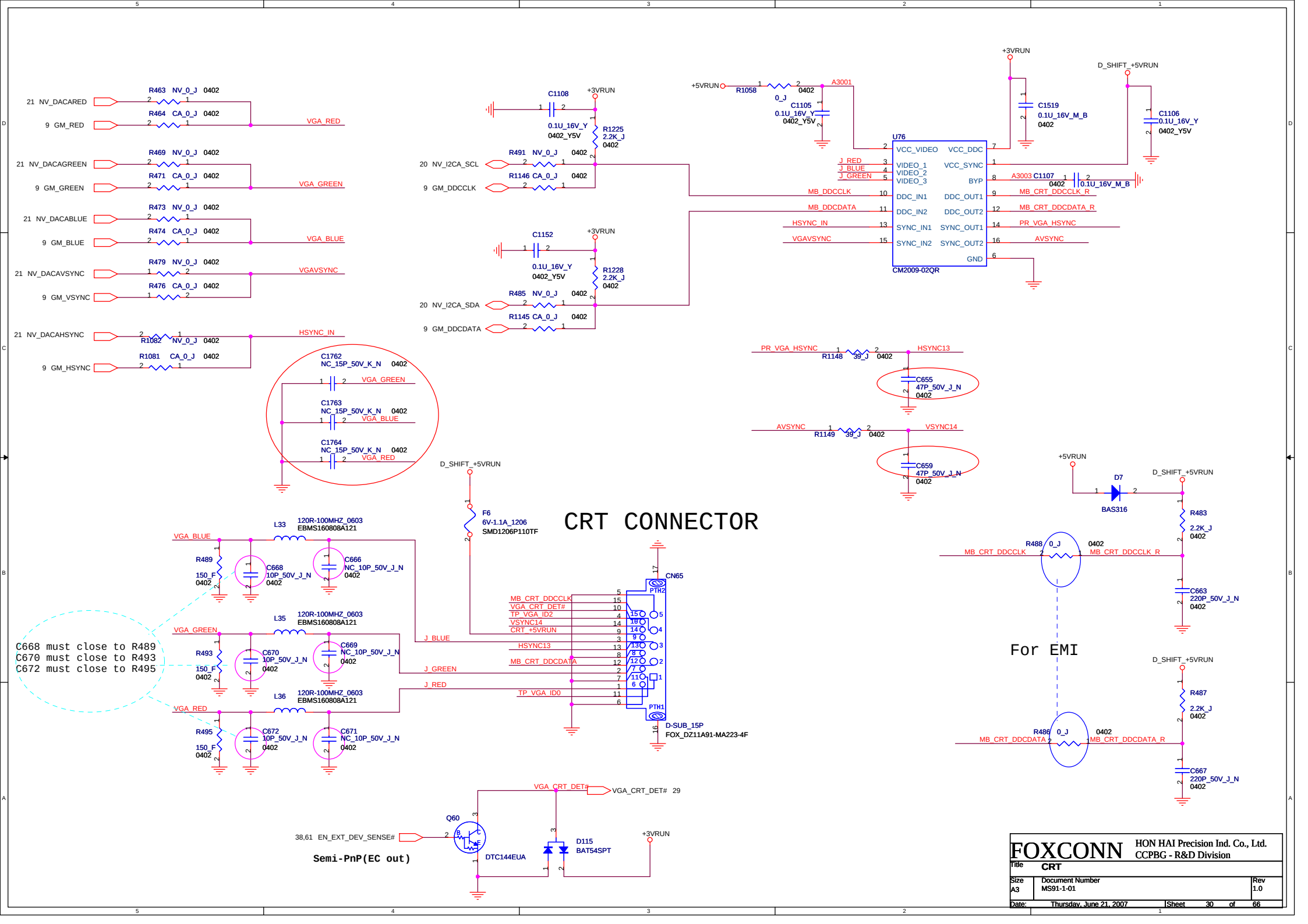
CRT CONNECTOR
21 NV_DACARED
9 GM_RED
R463 NV_0_J 0402
R464 CA_0_J 0402
VGA_RED
21 NV_DACAGREEN
9 GM_GREEN
R469 NV_0_J 0402
R471 CA_0_J 0402
VGA_GREEN
21 NV_DACABLUE
9 GM_BLUE
R473 NV_0_J 0402
R474 CA_0_J 0402
VGA_BLUE
21 NV_DACAVSYNC
9 GM_VSYNC
R479 NV_0_J 0402
R476 CA_0_J 0402
VGAVSYNC
21 NV_DACAHSYNC
9 GM_HSYNC
R1082 NV_0_J 0402
R1081 CA_0_J 0402
HSYNC_IN
C1762 NC_15P_50V_K_N 0402
C1763 NC_15P_50V_K_N 0402
C1764 NC_15P_50V_K_N 0402
C1108
0.1U_16V_Y 0402_Y5V
R1225 2.2K_J 0402
20 NV_I2CA_SCL
R491 NV_0_J 0402
9 GM_DDCCLK
R1146 CA_0_J 0402
C1152
0.1U_16V_Y 0402_Y5V
R1228 2.2K_J 0402
20 NV_I2CA_SDA
R485 NV_0_J 0402
9 GM_DDCDATA
R1145 CA_0_J 0402
+5VRUN
R1058 0_J 0402
C1105 0.1U_16V_Y 0402_Y5V
A3001
U76
VCC_VIDEO
VCC_DDC
J_RED
J_BLUE
J_GREEN
VIDEO_1
VIDEO_2
VIDEO_3
VCC_SYNC
BYP
MB_DDCCLK
MB_DDCDATA
HSYNC_IN
VGAVSYNC
DDC_IN1
DDC_IN2
SYNC_IN1
SYNC_IN2
DDC_OUT1
DDC_OUT2
SYNC_OUT1
SYNC_OUT2
GND
CM2009-02QR
+3VRUN
C1519 0.1U_16V_M_B 0402
D_SHIFT_+5VRUN
C1106 0.1U_16V_Y 0402_Y5V
A3003 C1107 0.1U_16V_M_B 0402
MB_CRT_DDCCLK_R
MB_CRT_DDCDATA_R
PR_VGA_HSYNC
AVSYNC
PR_VGA_HSYNC
R1148 39_J 0402
HSYNC13
C655 47P_50V_J_N 0402
AVSYNC
R1149 39_J 0402
VSYNC14
C659 47P_50V_J_N 0402
D_SHIFT_+5VRUN
F6 6V-1.1A_1206 SMD1206P110TF
VGA_BLUE
L33 120R-100MHZ_0603 EBMS160808A121
R489 150_F 0402
C668 10P_50V_J_N 0402
C666 NC_10P_50V_J_N 0402
VGA_GREEN
L35 120R-100MHZ_0603 EBMS160808A121
R493 150_F 0402
C670 10P_50V_J_N 0402
C669 NC_10P_50V_J_N 0402
VGA_RED
L36 120R-100MHZ_0603 EBMS160808A121
R495 150_F 0402
C672 10P_50V_J_N 0402
C671 NC_10P_50V_J_N 0402
C668 must close to R489
C670 must close to R493
C672 must close to R495
J_BLUE
J_GREEN
J_RED
HSYNC13
MB_CRT_DDCDATA
MB_CRT_DDCCLK
VGA_CRT_DET#
TP_VGA_ID2
VSYNC14
CRT_+5VRUN
TP_VGA_ID0
CN65
PTH2
PTH1
D-SUB_15P
FOX_DZ11A91-MA223-4F
+5VRUN
D7
BAS316
D_SHIFT_+5VRUN
R483 2.2K_J 0402
R488 0_J 0402
MB_CRT_DDCCLK
MB_CRT_DDCCLK_R
C663 220P_50V_J_N 0402
For EMI
D_SHIFT_+5VRUN
R487 2.2K_J 0402
R486 0_J 0402
MB_CRT_DDCDATA
MB_CRT_DDCDATA_R
C667 220P_50V_J_N 0402
VGA_CRT_DET#
VGA_CRT_DET# 29
Q60
38,61 EN_EXT_DEV_SENSE#
DTC144EUA
Semi-PnP(EC out)
D115 BAT54SPT
+3VRUN
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title CRT
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
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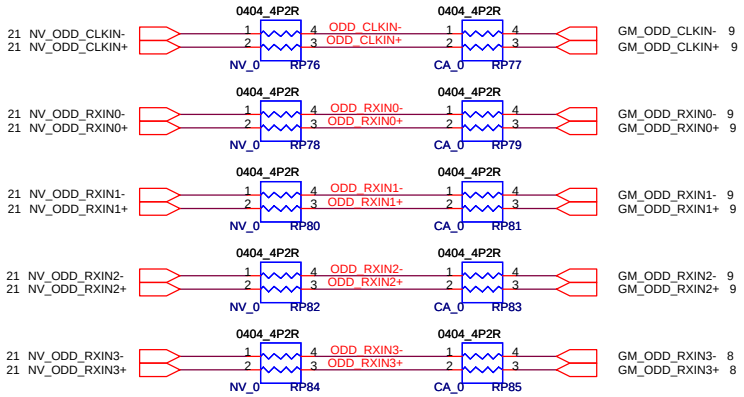
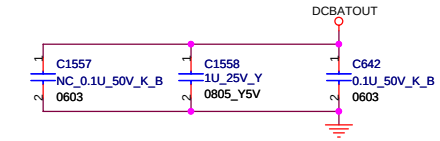
LVDS

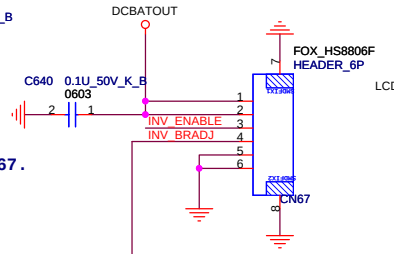
Group1,Group2 should be close

Group1 Group2

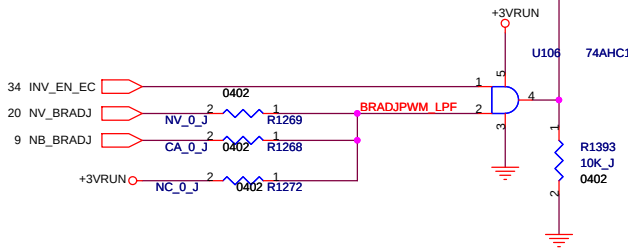


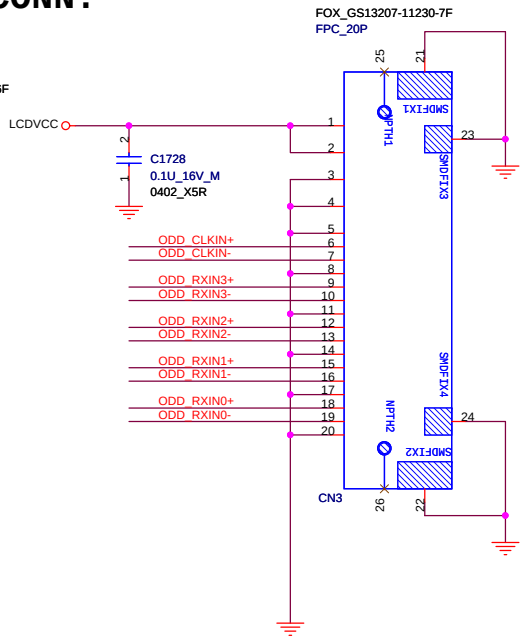
INVERTER CONN.

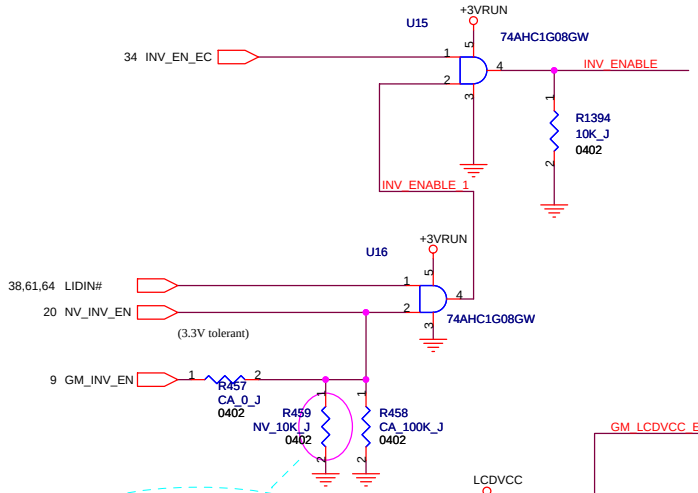




Place C640 and C1558 close to CN67.



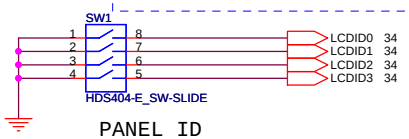




R459 close to R458.

LVDS CONNECTOR

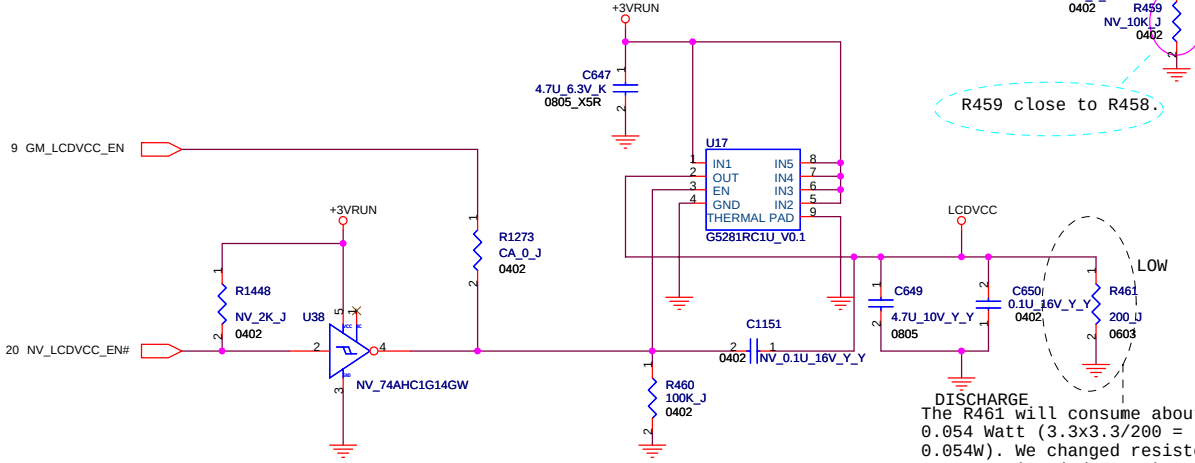
EVT use 30pin
DVT modify to 20pin



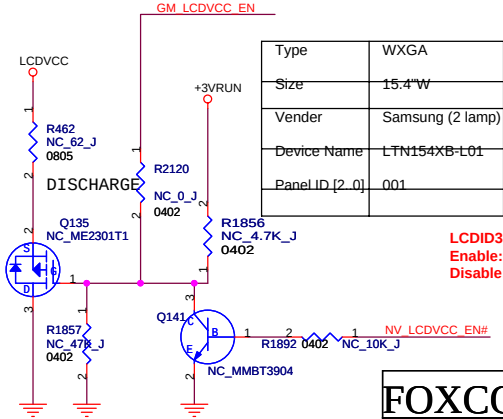
PANEL ID

Type	WXGA	WXGA	WXGA	WXGA
Size	15.4"W	15.4"W	15.4"W	15.4"W
Vender	Samsung (2 lamp)	CPT (1 lamp)	AUO (2 lamp)	AUO (1 lamp)
Device Name	LTN154XB-L01	CLAA154WA05AN	B154EW07	QD15TL07
Panel ID [2..0]	001	101	010	100

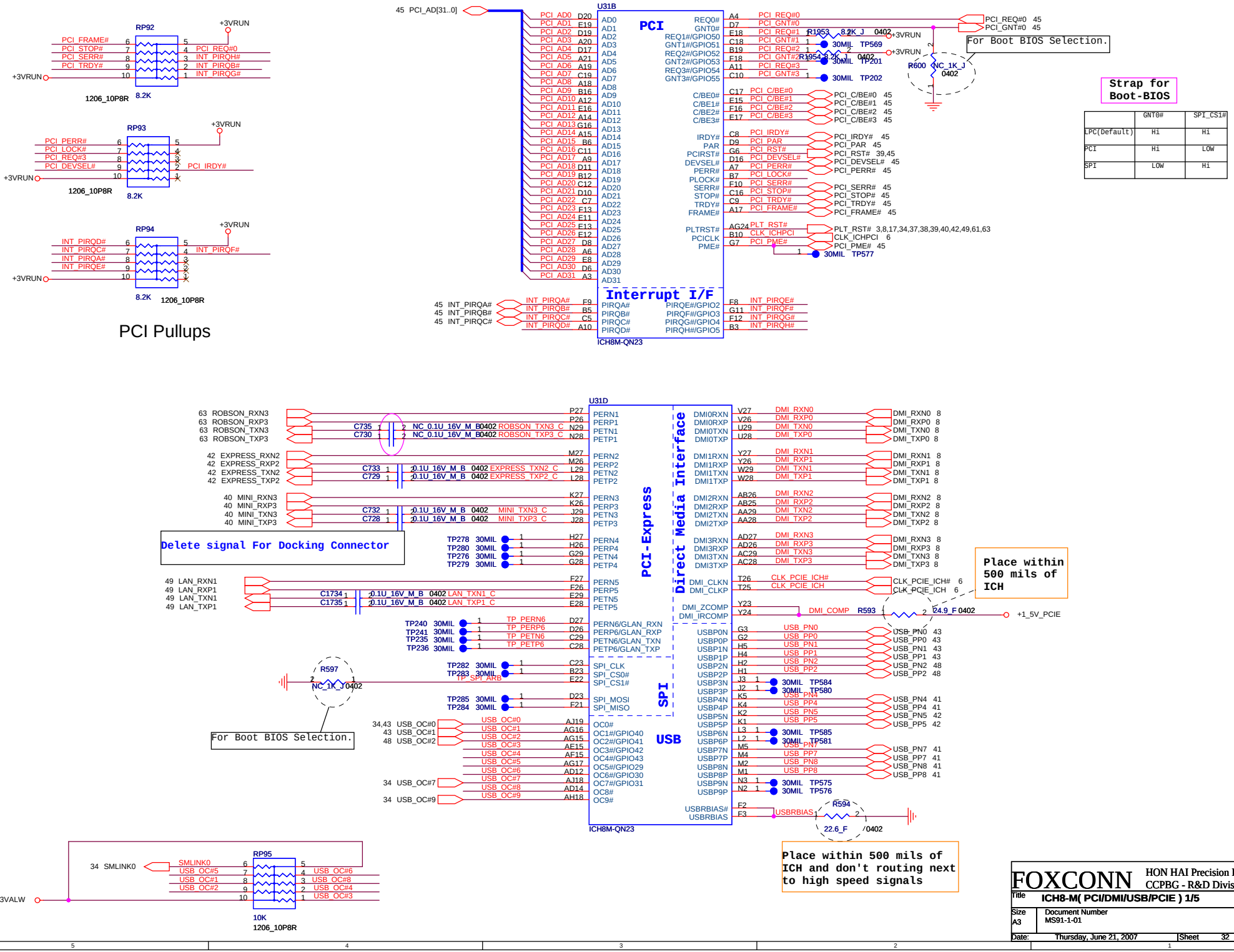
LCDID3 is for InstantOn switch
Enable: 0
Disable: 1



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 MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 31 of 66	



	GNT0#	SPI_CS1#
LPC(Default)	Hi	Hi
PCI	Hi	LOW
SPI	LOW	Hi

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	ICH8-M(PCI/DMI/USB/PCIE) 1/5	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 32 of 66	

RTCRST#

VccRTC

Min : 18ms

The traces inside this block should be wider.

No digital signals routed under XTAL

ICH8-M Internal VR Enable Strap (Internal VR for VccSus1_05, VccSus1_5, VccCL1_5)	
INTVRMEN	Low= Internal VR Disabled High= Internal VR Enabled(Default)

VCCRTC R705 332K_F 0402 — INTVRMEN — R702 NC_0_J 0402

ICH8-M LAN100_SLP Strap (Internal VR for VccLAN1_05 and VccCL1_05)	
LAN100_SLP	Low= Internal VR Disabled High= Internal VR Enabled(Default)

VCCRTC R602 332K_F 0402 — LAN100_SLP — R697 NC_0_J 0402

+ECVCC — D22 SCS500V-40-LF — VCCRTC — C737 1U_6.3V_Y 0402_Y5V

32.768KHZ_12.5P_10PPM Q13MC3061001800 Y8

C734 15P_50V_K_N 0402 — CLK_32KX1

C736 15P_50V_K_N 0402 — CLK_32KX2

6 mils

R589 10M_J 0402

R598 20K_J 0402 — R595 0_J 0402 — RTCRST#

C743 1U_6.3V_M_B 0402

J2 OPEN_JUMP_OPEN2

SM_INTRUDER#

INTVRMEN

LAN100_SLP

TP287 30MIL

Check resistor value

R603 510_F 0402

R599 1M_J 0402

R1353 510_F 0402

CN10 HEADER_2P FOX_HS8202E — A3504

+1_5V_PCIE — R701 24.9_F 0402

Within 500 mils of the ICH8M,and avoid routing next to clock pins.

GLAN_COMP

U31A

RTCX1	AG25		
RTCX2	AE24		
RTCRST#	AE23		
INTRUDER#	AD22		
INTVRMEN	AE25	RTC	LPC
LAN100_SLP	AD21		
GLAN_CLK	B24		
LAN_RSTSYNC	D22		
LAN_RXD0	C21		
LAN_RXD1	B21	LAN / GLAN	
LAN_RXD2	C22		
LAN_TXD0	D21		
LAN_TXD1	E20		
LAN_TXD2	C20		
GLAN_DOCK#/GPIO13	AH21		
GLAN_COMPI	D25		
GLAN_COMPO	C25		
HDA_BIT_CLK	AJ16		
HDA_SYNC	AJ15		
HDA_RST#	AE14		
HDA_SDIN0	AJ17		
HDA_SDIN1	AH17		
HDA_SDIN2	AH15	LAN / GLAN	CPU
HDA_SDIN3	AD13		
HDA_SDOUT	AE13		
HDA_DOCK_EN#/GPIO33	AE10		
HDA_DOCK_RST#/GPIO34	AG14		
SATALED#	AE10		
SATA0RXN	AF6		
SATA0RXP	AF5		
SATA0TXN	AH5		
SATA0TXP	AH6		
SATA1RXN	AG3		
SATA1RXP	AG4		
SATA1TXN	AJ4	IHDA	
SATA1TXP	AJ3		
SATA2RXN	AF2		
SATA2RXP	AF1		
SATA2TXN	AE4		
SATA2TXP	AE3		
SATA_CLKN	AB7		
SATA_CLKP	AC6		
SATARBIAS#	AG1		
SATARBIAS	AG2		
FWH0/LAD0	E5	LPC_AD0	
FWH1/LAD1	F5	LPC_AD1	
FWH2/LAD2	G8	LPC_AD2	
FWH3/LAD3	F6	LPC_AD3	
FWH4/LFRAME#	C4	LPC_FRAME#	
LDRQ0#	G9	LPC_DRQ#0	
LDRQ1#/GPIO23	E6	30MIL TP281	
A20GATE	AF13	H_A20GATE	
A20M#	AG26	H_A20M#	
DPRSTP#	AF26		
DPSLP#	AE26		
FERR#	AD24		
CPUPWRGD/GPIO49	AG29	H_PWRGD	
IGNNE#	AF27	H_IGNNE#	
INIT#	AE24	H_INIT#	
INTR	AC20	H_INTR	
RCIN#	AH14	H_RCIN#	
NMI	AD23	H_NMI	
SMI#	AG28	H_SMI#	
STPCLK#	AA24	H_STPCLK#	
THRMTRIP#	AE27	PM_THRMTRIP_R	
TP8	AA23	30MIL TP273	
DD0	V1	IDE_PDD0	
DD1	U2	IDE_PDD1	
DD2	V3	IDE_PDD2	
DD3	T1	IDE_PDD3	
DD4	V4	IDE_PDD4	
DD5	T5	IDE_PDD5	
DD6	AB2	IDE_PDD6	
DD7	T6	IDE_PDD7	
DD8	T3	IDE_PDD8	
DD9	R2	IDE_PDD9	
DD10	T4	IDE_PDD10	
DD11	V6	IDE_PDD11	
DD12	V5	IDE_PDD12	
DD13	U1	IDE_PDD13	
DD14	V2	IDE_PDD14	
DD15	U6	IDE_PDD15	
DA0	AA4	IDE_PDA0	
DA1	AA1	IDE_PDA1	
DA2	AB3	IDE_PDA2	
DCS1#	Y6	IDE_PDCS1#	
DCS3#	Y5	IDE_PDCS3#	
DIOR#	W4		
DIOW#	W3		
DDACK#	Y2		
IDEIRQ	Y3		
IORDY	Y1		
DDREQ	W5		

ICH8M-QN23

+1_05VRUN — R601 NC_56_J 0402 — R617 NC_56_J 0402

R618 56_J 0402 — +1_05VRUN

+1_05VRUN — R621 56_J 0402

+3VRUN — R631 10K_J 0402 — R629 10K_J 0402

+3VRUN — R1305 10K_J 0402

64 SATA_LED#

37 SATA_RXN0 — C739 3900P_25V_K_B 0603 — SATA_RXN0_C

37 SATA_RXP0 — C741 3900P_25V_K_B 0603 — SATA_RXP0_C

37 SATA_TXN0 — C740 3900P_25V_K_B 0603 — SATA_TXN0_C

37 SATA_TXP0 — C738 3900P_25V_K_B 0603 — SATA_TXP0_C

TP598 30MIL — TP597 30MIL

TP599 30MIL — TP600 30MIL

6 CLK_PCIE_SATA# — 6 CLK_PCIE_SATA

R610 24.9_F 0402

Within 500 mils of the ICH8M,and avoid routing next to clock pins.

43 HDA_CODEC_SDATAIN0 — HDA_CODEC_SDATAIN0

43 HDA_MDC_SDATAIN1 — HDA_MDC_SDATAIN1

TP249 30MIL — TP_HDA_SDIN2

TP250 30MIL — TP_HDA_SDIN3

IHDA_BITCLK — R611 33_J 0402 — HDA_MDC_BITCLK 43

R606 33_J 0402 — HDA_CODEC_BITCLK 43

IHDA_SDATAO — R613 33_J 0402 — HDA_MDC_SDATAOUT 43

R614 33_J 0402 — HDA_CODEC_SDATAO 43

39 EC_OUT1 — EC_OUT1 — R1789 10K_J 0402

IHDA_RESET# — R608 33_J 0402 — HDA_MDC_RST# 43

R615 33_J 0402 — HDA_CODEC_RESET# 43

43 HDA_MDC_SYNC — R609 33_J 0402

43 HDA_CODEC_SYNC — R612 33_J 0402

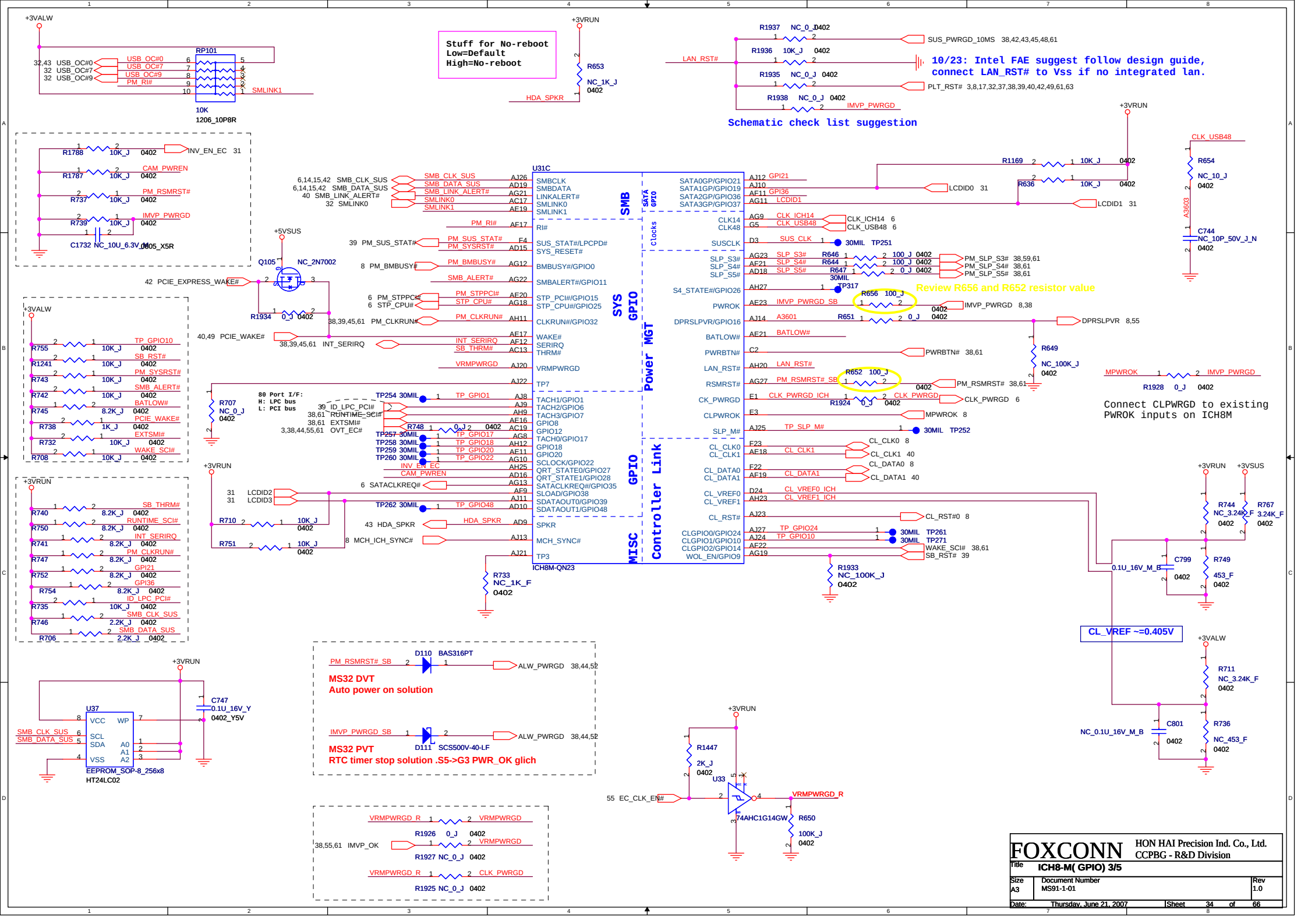
+3VRUN — R607 NC_1K_J 0402 — IHDA_SYNC

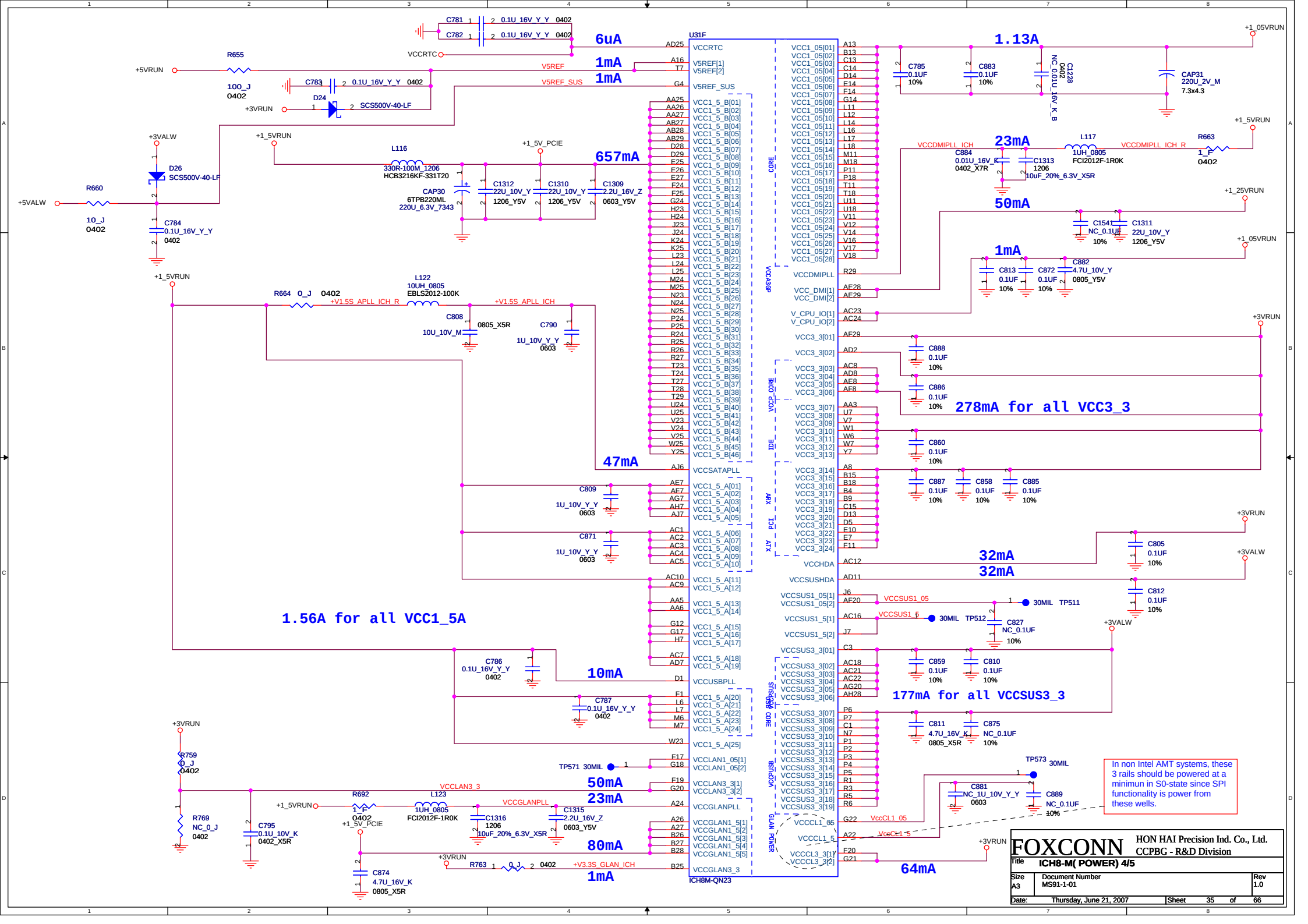
IDE_PDD[0..15] — IDE_PDD[0..15] 37

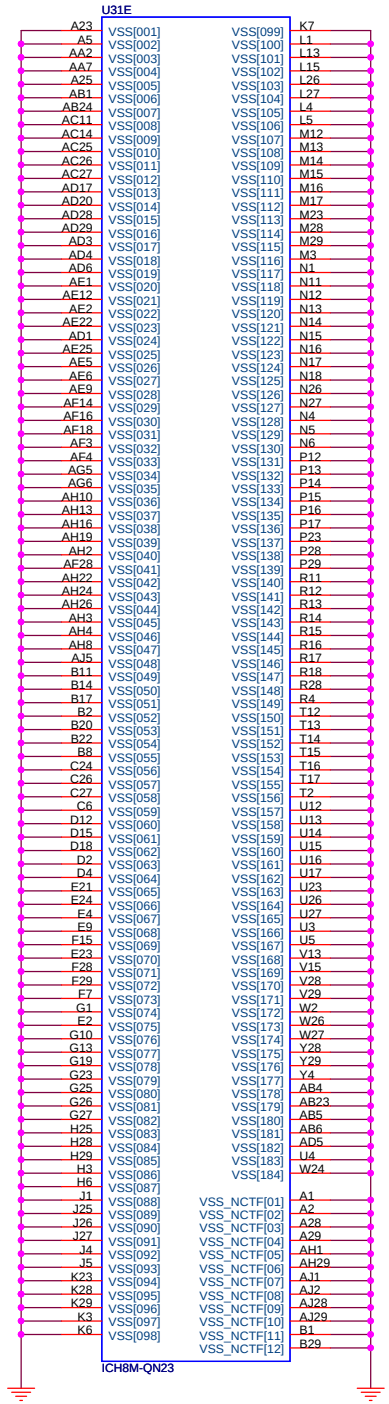
+5VRUN — Q108 2N7002 — H_RCIN# — EC_RCIN# 38,61 — R1454 NC_0_J 0402

+5VRUN — Q106 2N7002 — H_A20GATE — EC_A20GATE 38,61 — R1452 NC_0_J 0402

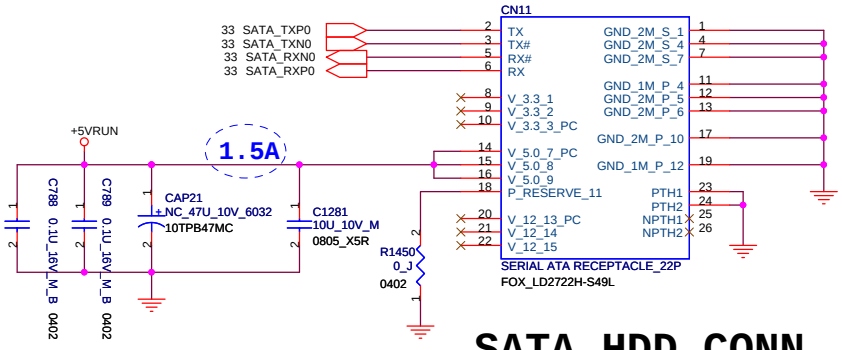
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division		
Title	ICH8-M(LPC,IDE,SATA) 2/5		
Size A3	Document Number MS91-1-01		Rev 1.0
Date: Thursday, June 21, 2007		Sheet 33 of 66	


Stuff for No-reboot
Low=Default
High=No-reboot
10/23: Intel FAE suggest follow design guide, connect LAN_RST# to Vss if no integrated lan.
Schematic check list suggestion
U31C
ICH8M-QN23
SMB
GPIO
Power MGT
Controller Link
MISC
Review R656 and R652 resistor value
Connect CLPWRGD to existing PWROK inputs on ICH8M
CL_VREF ~=0.405V
MS32 DVT
Auto power on solution
MS32 PVT
RTC timer stop solution .S5->G3 PWR_OK glich
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title ICH8-M(GPIO) 3/5
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
Sheet 34 of 66

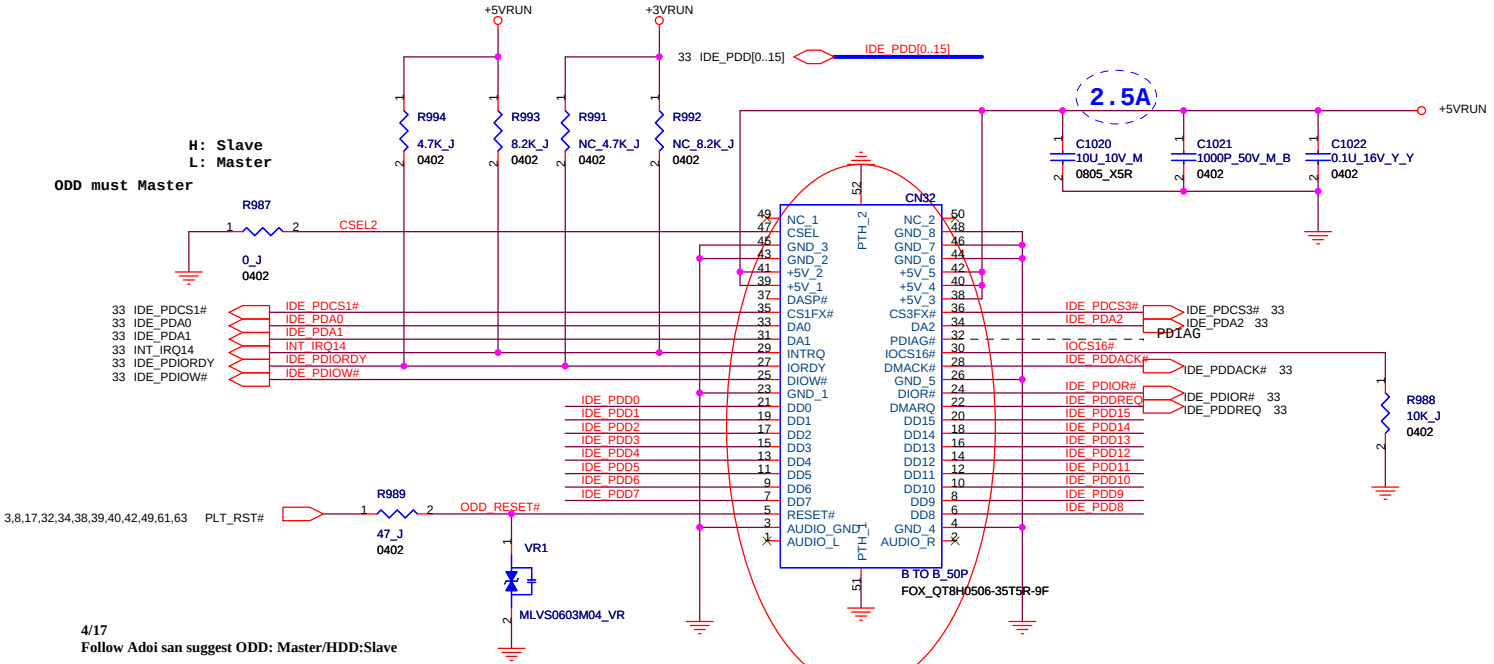

1.56A for all VCC1_5A
278mA for all VCC3_3
177mA for all VCCSUS3_3
1.13A
6uA
1mA
1mA
657mA
47mA
10mA
50mA
23mA
80mA
1mA
23mA
50mA
1mA
32mA
32mA
64mA
U31F
ICH8M-QN23
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title ICH8-M(POWER) 4/5
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
Sheet 35 of 66
In non Intel AMT systems, these 3 rails should be powered at a minimun in S0-state since SPI functionality is power from these wells.



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	ICH8-M(GND) 5/5	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 36 of 66	

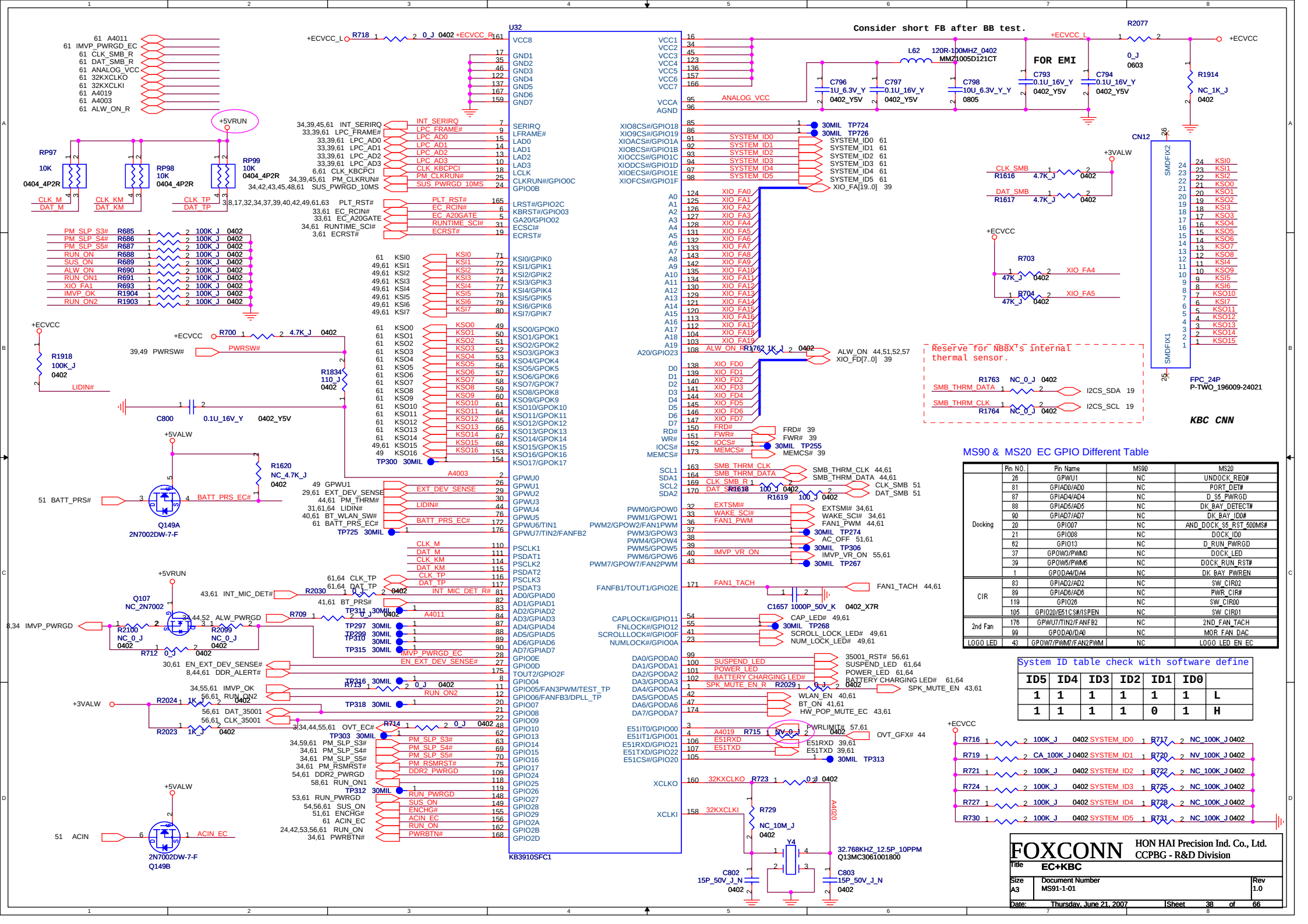


SATA HDD CONN



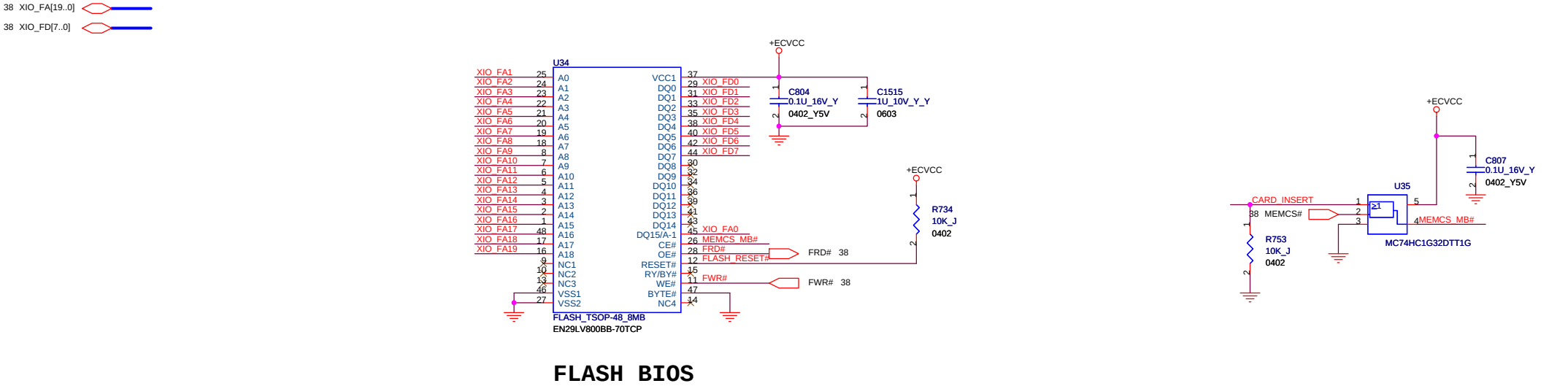
CD-ROM CONN

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	SATA HDD/CD-ROM	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 37 of 66	

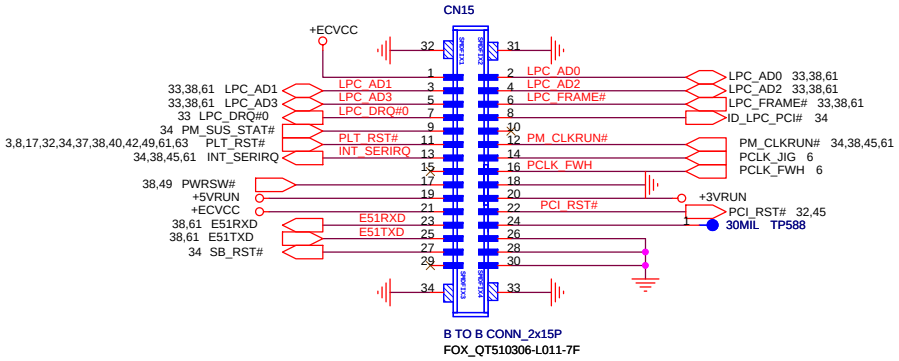


	Pin NO.	Pin Name	MS90	MS20
Docking	26	GPIWU1	NC	UNDOCK_REQ#
	81	GPIAD0/AD0	NC	PORT_DET#
	87	GPIAD4/AD4	NC	D_S5_PWRGD
	88	GPIAD5/AD5	NC	DK_BAY_DETECT#
	90	GPIAD7/AD7	NC	DK_BAY_ID0#
	20	GPIO07	NC	AND_DOCK_S5_RST_50DMS#
	21	GPIO08	NC	DOCK_ID0
	62	GPIO13	NC	D_RUN_PWRGD
	37	GPOW3/PWM3	NC	DOCK_LED
	39	GPOW5/PWM5	NC	DOCK_RUN_RST#
	1	GPODA4/DA4	NC	DK_BAY_PWREN
CIR	83	GPIAD2/AD2	NC	SW_CIR02
	89	GPIAD6/AD6	NC	PWR_CIR#
	119	GPIO26	NC	SW_CIR00
	105	GPIO20/E51CS#/ISPEN	NC	SW_CIR01
2nd Fan	176	GPWU7/TIN2/FANFB2	NC	2ND_FAN_TACH
	99	GPODA0/DA0	NC	MOR_FAN_DAC
LOGO LED	43	GPOW7/PWM7/FAN2PWM	NC	LOGO_LED_EN_EC

ID5	ID4	ID3	ID2	ID1	ID0	
1	1	1	1	1	1	L
1	1	1	1	0	1	H

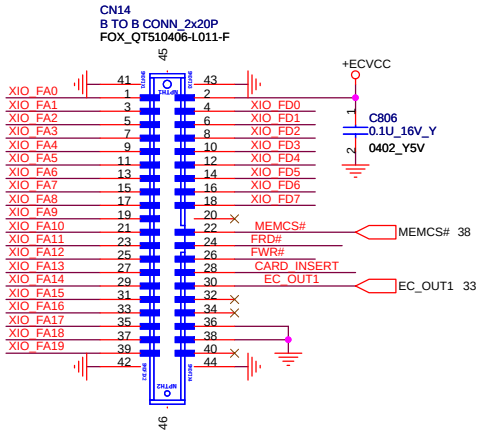


FLASH BIOS



JIG-120

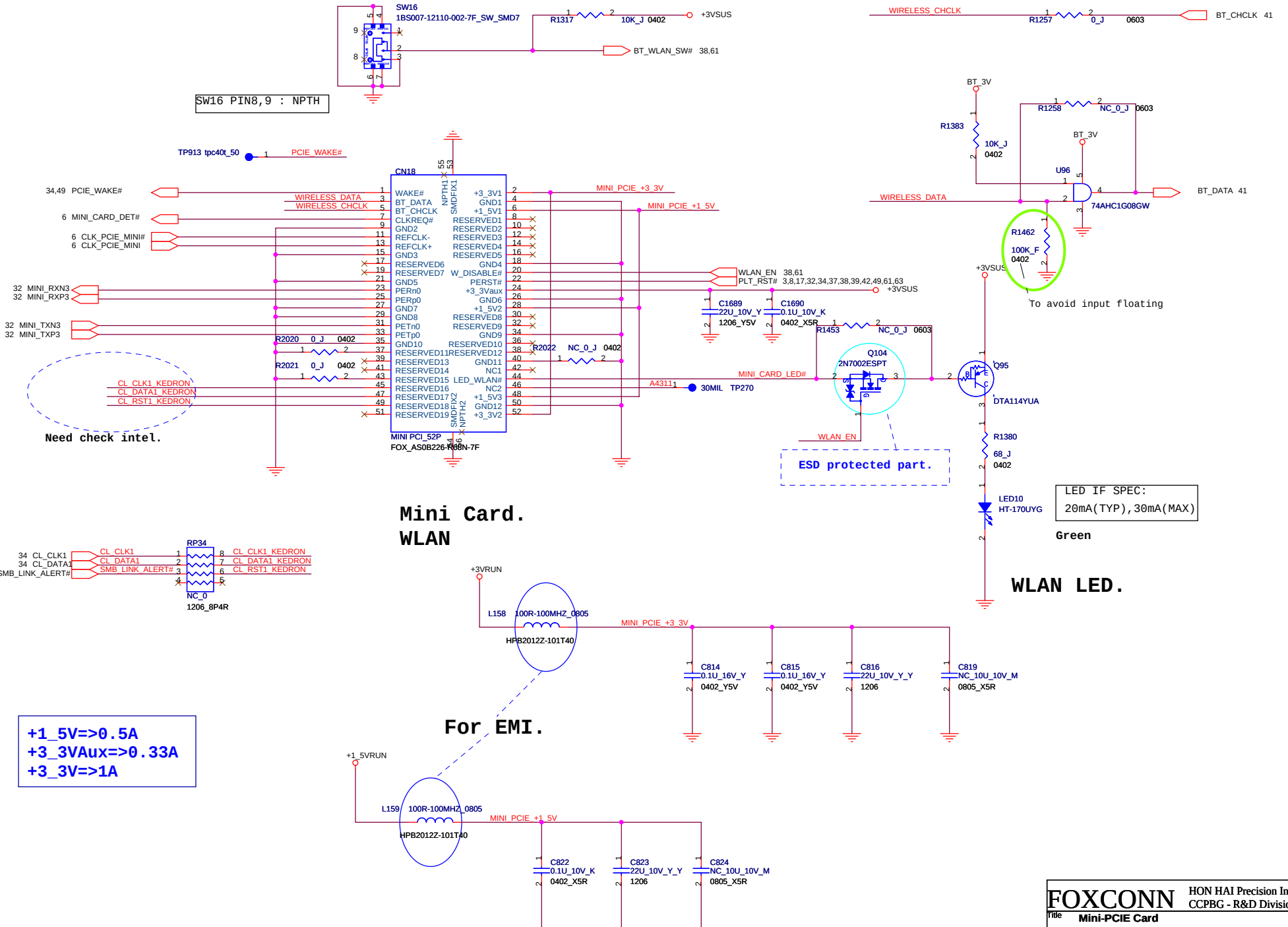
Pin 18 of JIG-120 is useless in debug board, so we let pin 18 NC.



X-BUS

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Flash ROM/X-Bus CONN	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 39 of 66	

WLAN Switch

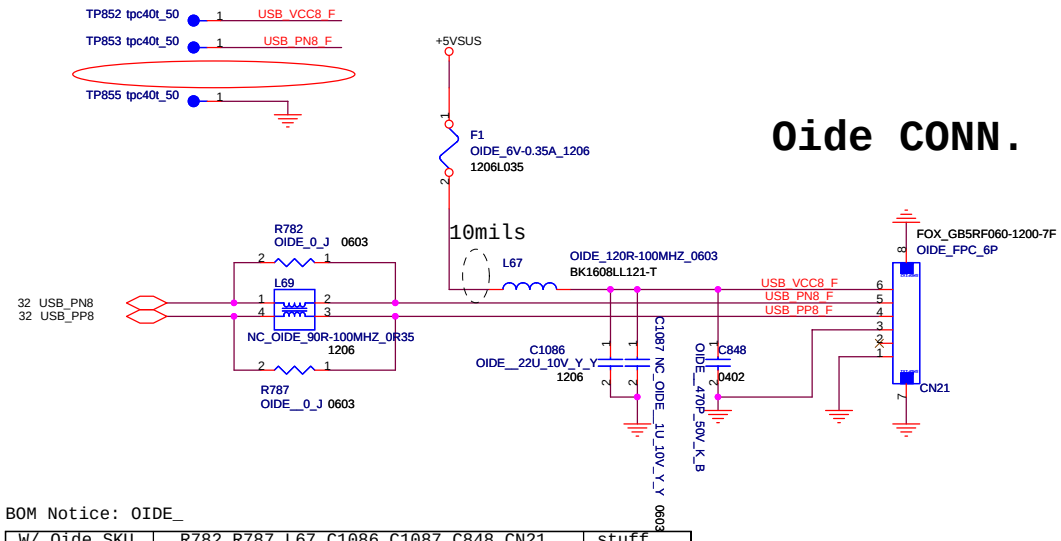


Mini Card.
WLAN

WLAN LED.

+1_5V=>0.5A
+3_3VAux=>0.33A
+3_3V=>1A

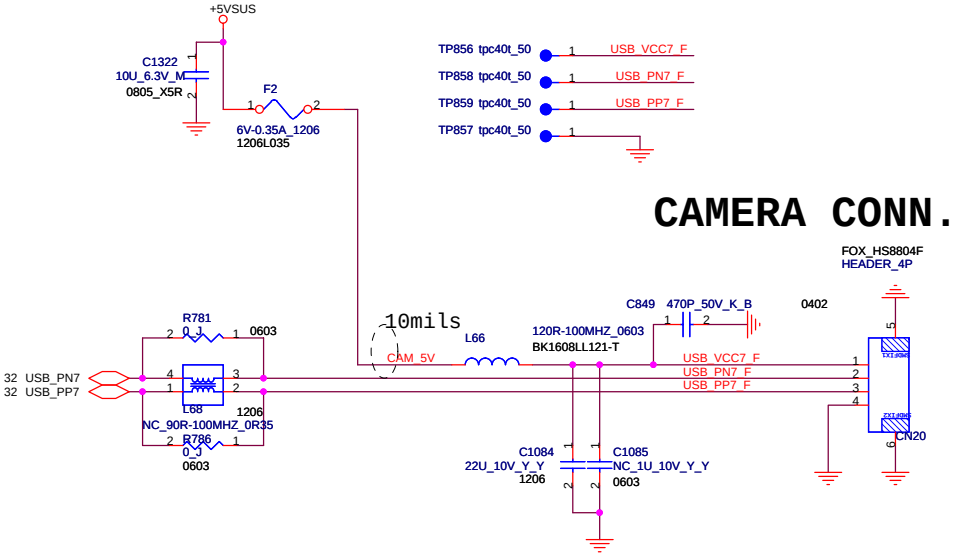
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	Mini-PCIE Card	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 40 of 66	



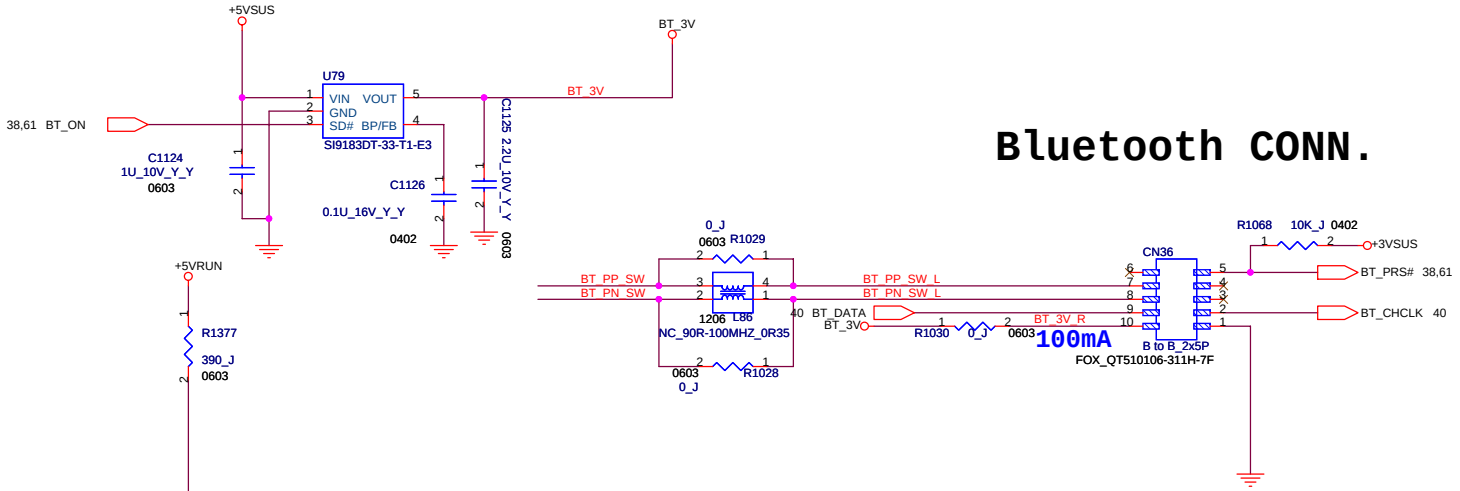
Oide CONN.

BOM Notice: OIDE_

W/ Oide SKU	R782,R787,L67,C1086,C1087,C848,CN21	stuff
W/O Oide SKU	R782,R787,L67,C1086,C1087,C848,CN21	no stuff

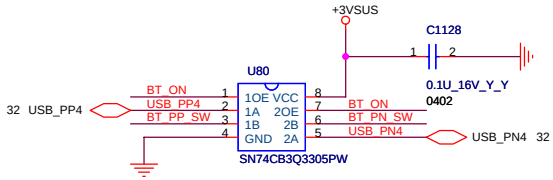


CAMERA CONN.



Bluetooth CONN.

Bluetooth LED.



BOM Notice: BT_

W/ BT SKU	Q93,LEDE9,R1377,U79,C1124,C1125,C1126, C1128,U80,R1068,R1028,R1029,R1030,CN36	stuff
W/O BT SKU	Q93,LEDE9,R1377,U79,C1124,C1125,C1126, C1128,U80,R1068,R1028,R1029,R1030,CN36	no stuff

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

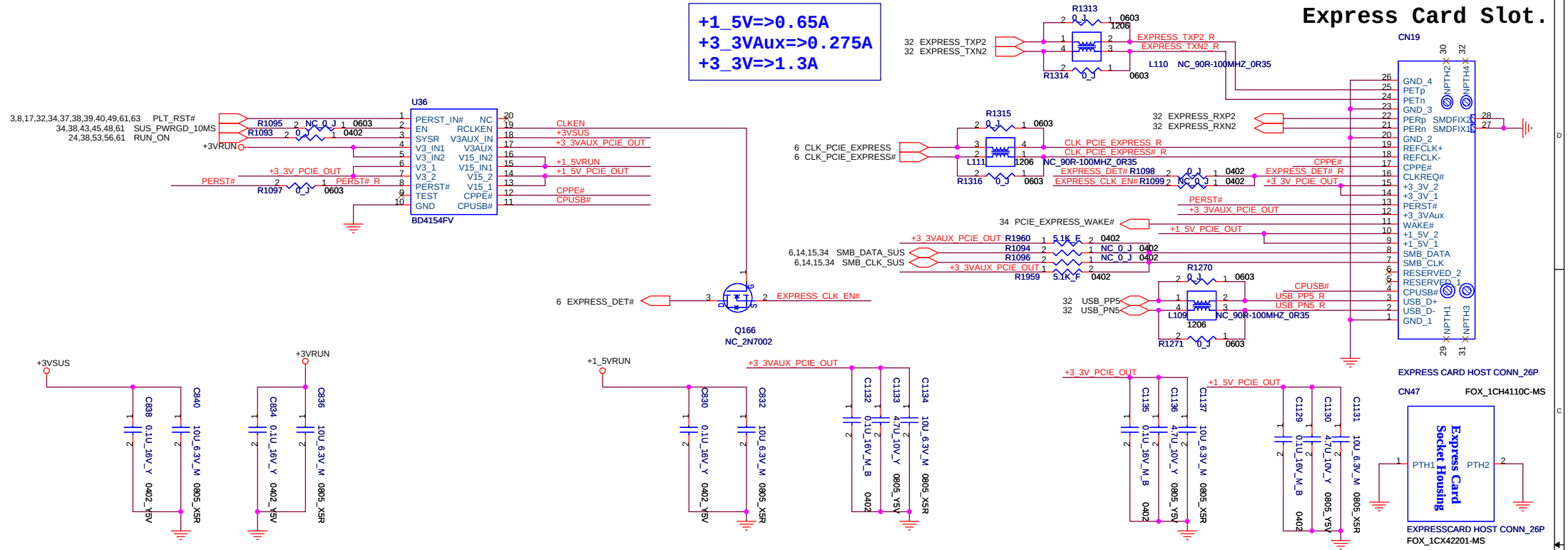
Title: Bluetooth/CAM/OIDE

Size	Document Number	Rev
A3	MS91-1-01	1.0

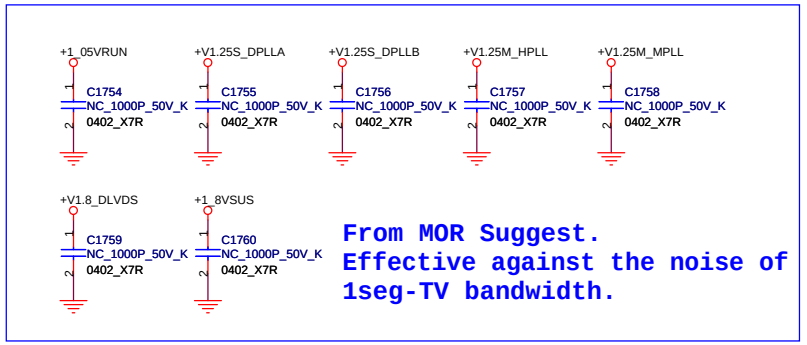
Date: Thursday, June 21, 2007 Sheet 41 of 66

Express Card Slot.

+1_5V=>0.65A
+3_3VAux=>0.275A
+3_3V=>1.3A



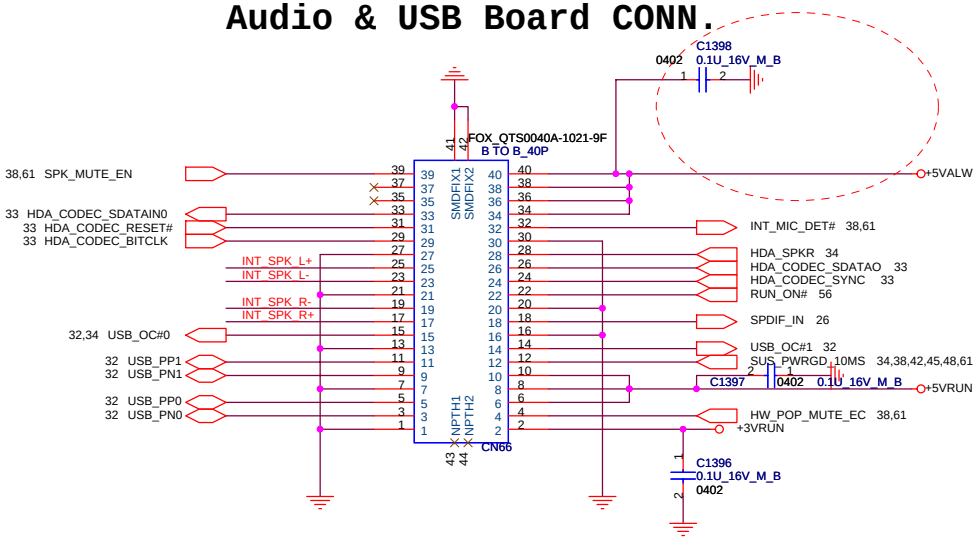
Express Card Housing.



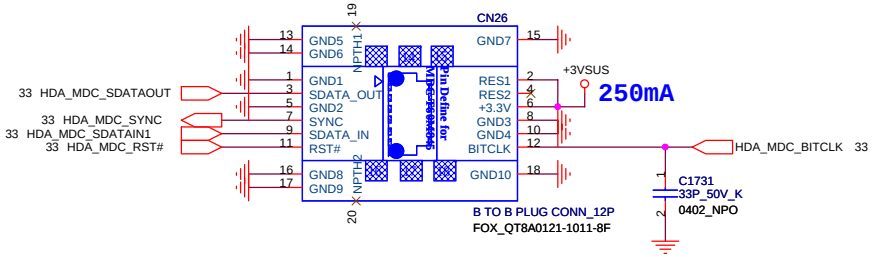
From MOR Suggest.
Effective against the noise of 1seg-TV bandwidth.

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title: EXPRESS		
Size: A3	Document Number: MS91-1-01	Rev: 1.0
Date: Thursday, June 21, 2007	Sheet 42 of 66	

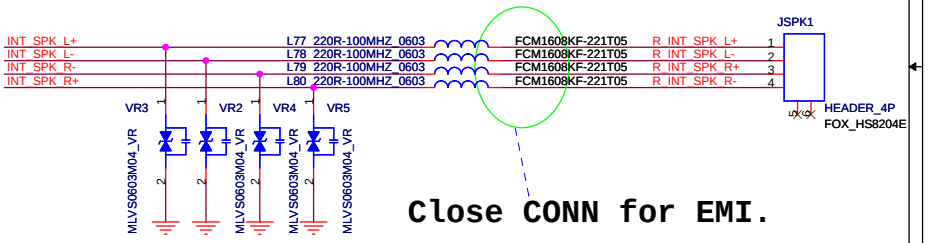
Audio & USB Board CONN.



MDC CONN.



INTERNAL SPEAKER



Close CONN for EMI.

TP863 tpc40t_50 R_INT_SPK_L+
TP864 tpc40t_50 R_INT_SPK_L-
TP866 tpc40t_50 R_INT_SPK_R+
TP865 tpc40t_50 R_INT_SPK_R-

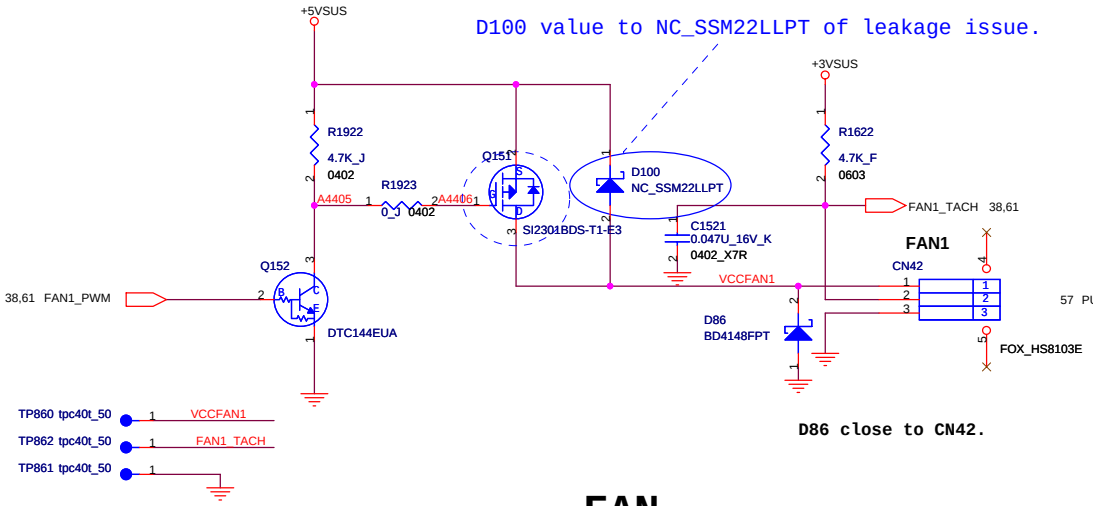
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

Title	BTB to Audio/MDC	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 43 of 66	

0331: Add diode for inverse current and change pull-high resistor from 10K to 4.7K.

0331: Change C1521 from Y5V to X7R.

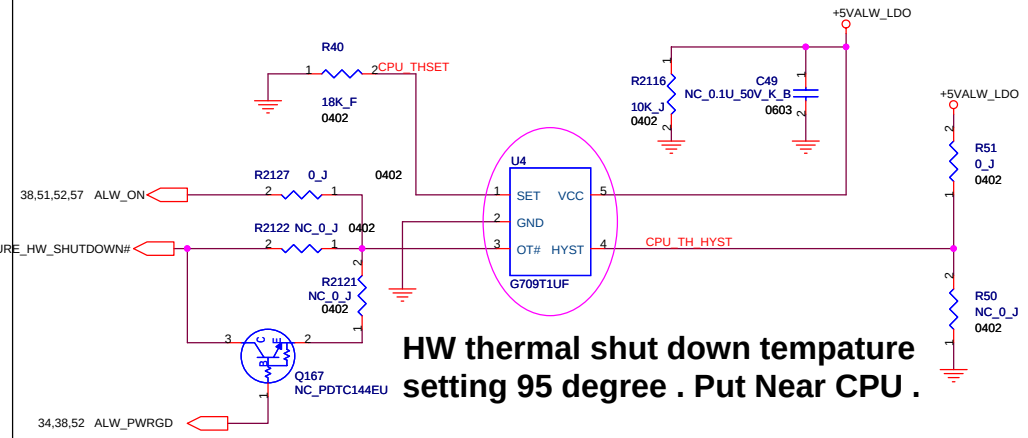
D100 value to NC_SSM22LLPT of leakage issue.



D86 close to CN42.

FAN

HW THERMAL PROTECTION

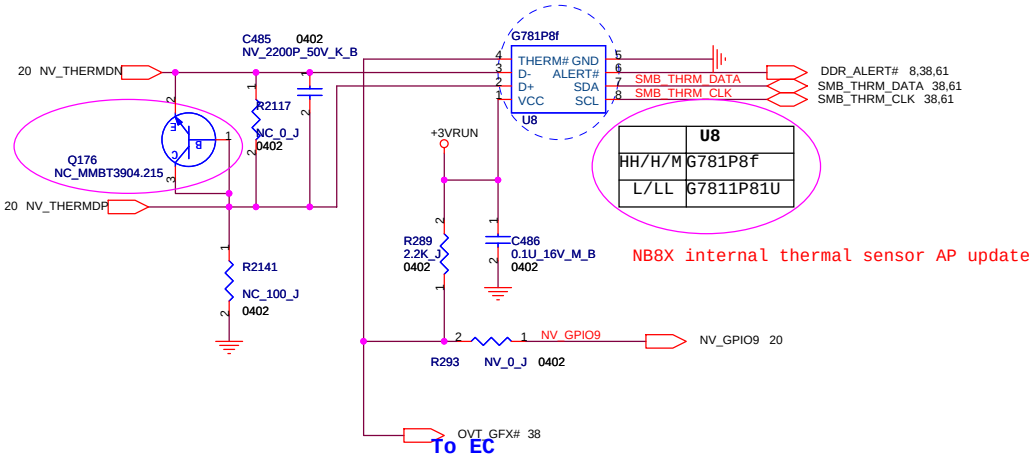


HW thermal shut down tempature setting 95 degree . Put Near CPU .

Delete VGA Thermal-Sensor

Delete local DDR2 themarl sensor.

SM bus Address :
1001100(EC)
For G781P8f



	U8
HH/H/M	G781P8f
L/LL	G7811P81U

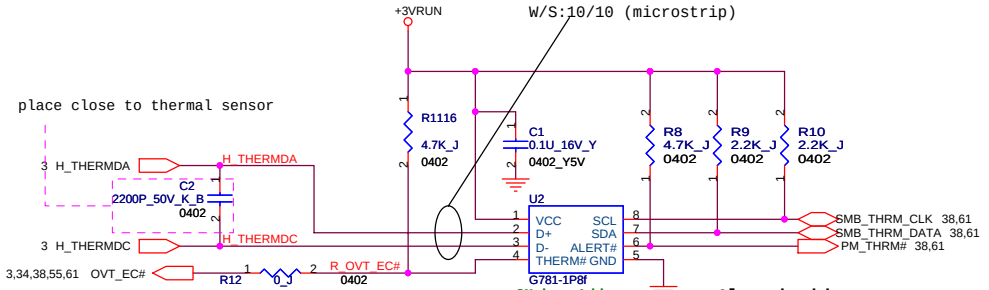
NB8X internal thermal sensor AP update

To EC

Close to U7

TP914 tpc40t_50 H_THERMDA
TP915 tpc40t_50 H_THERMDC

CPU Thermal-Sensor

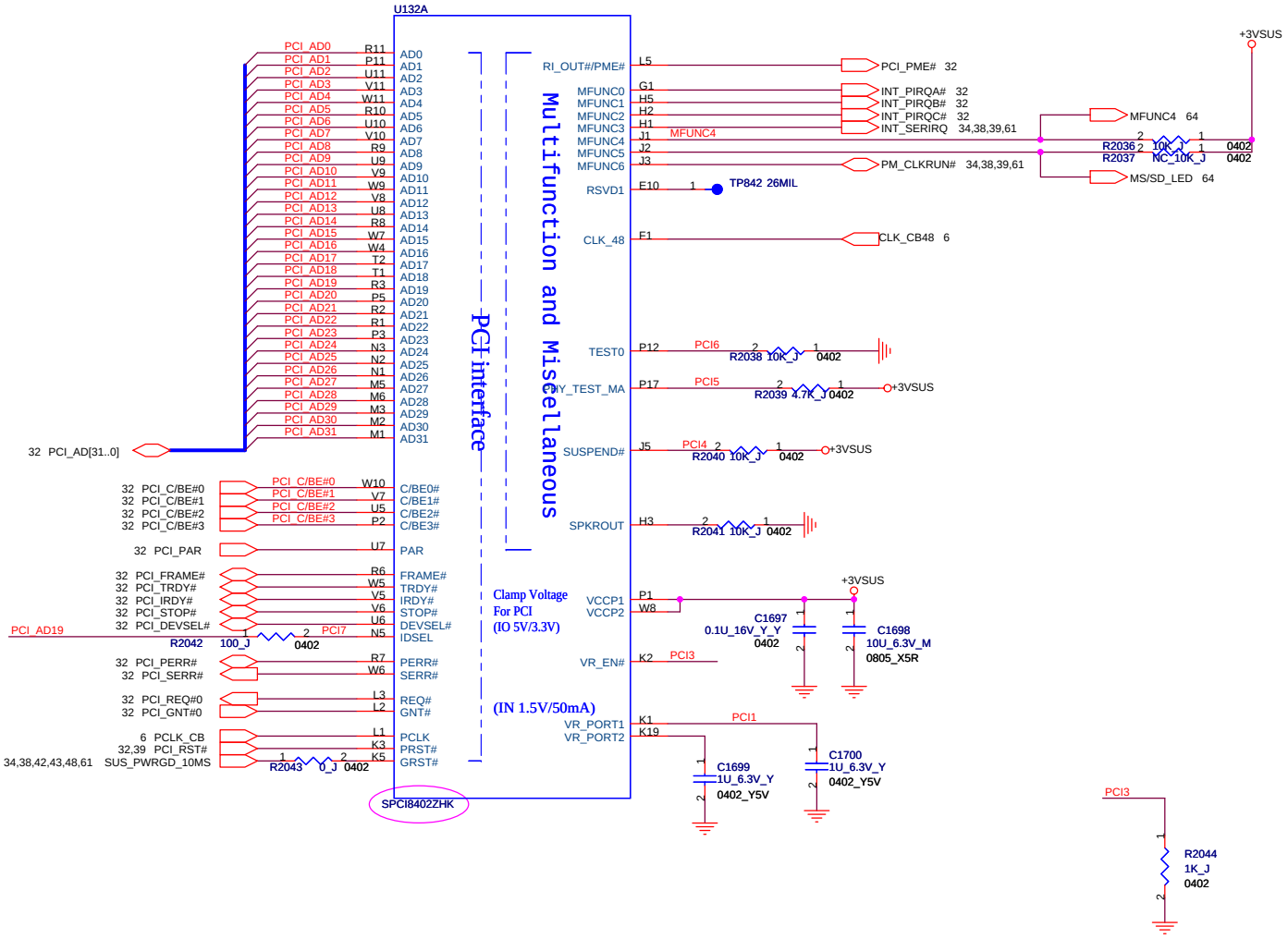


Place Thermal-Sensor near CPU & GMCH.

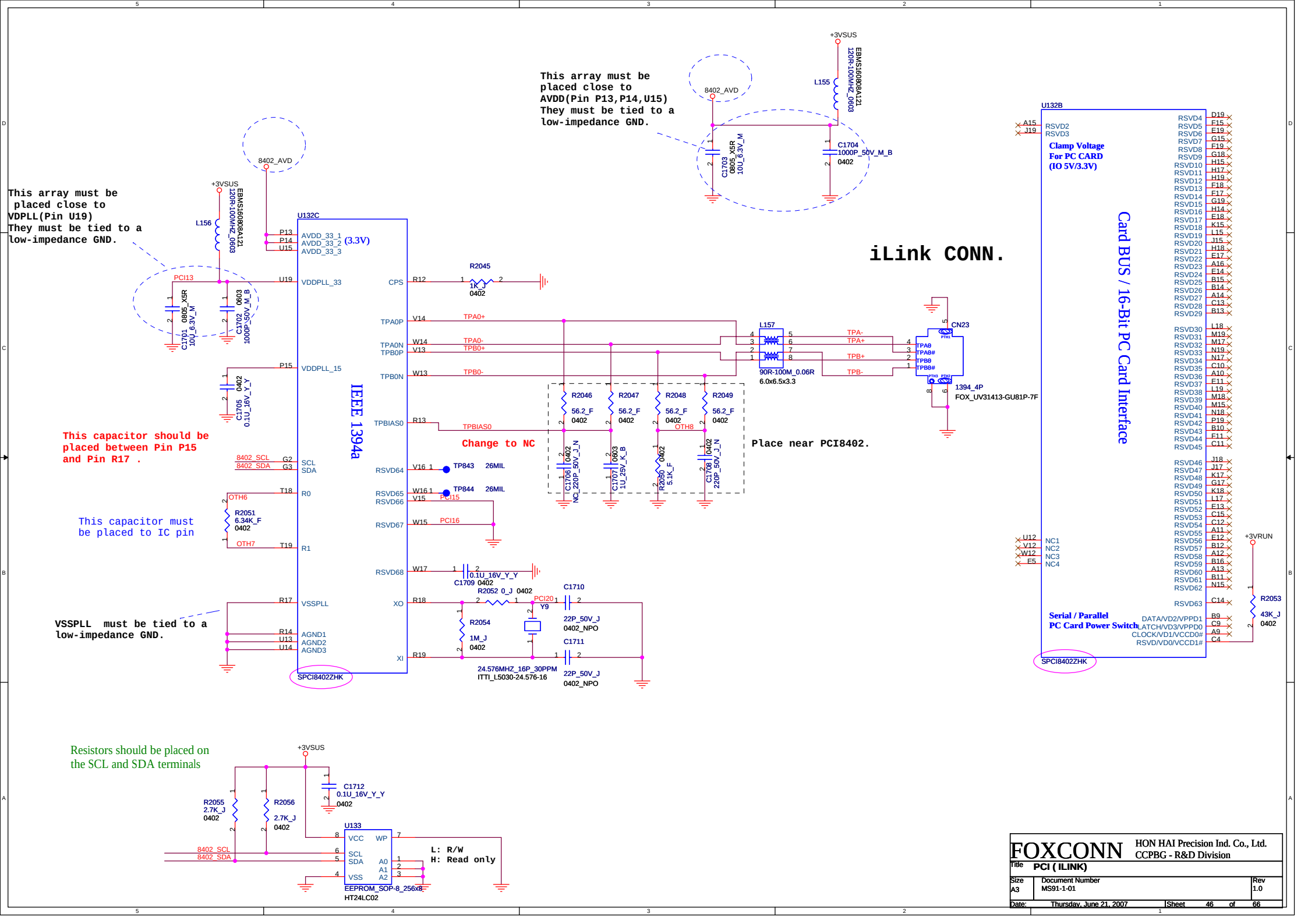
Close to U109

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

Title	FAN/Thermal-Sensor	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 44 of 66	



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	PCI (PCI BUS)	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 45 of 66	


This array must be placed close to AVDD(Pin P13,P14,U15) They must be tied to a low-impedance GND.
8402_AVD
+3VSUS
L155
EBMS160808A121 120R-100MHZ_0603
C1703 0805_X5R 10U_6.3V_M
C1704 1000P_50V_M_B 0402
This array must be placed close to VDPLL(Pin U19) They must be tied to a low-impedance GND.
L156
U132C
P13 AVDD_33_1
P14 AVDD_33_2 (3.3V)
U15 AVDD_33_3
PCI13
U19 VDDPLL_33
C1701 0805_X5R 10U_6.3V_M
C1702 0603 1000P_50V_M_B
P15 VDDPLL_15
C1705 0402 0.1U_16V_Y_Y
IEEE 1394a
CPS R12
R2045 1K_J 0402
TPA0P V14 TPA0+
TPA0N W14 TPA0-
TPB0P V13 TPB0+
TPB0N W13 TPB0-
TPBIAS0 R13 TPBIAS0
Change to NC
R2046 56.2_F 0402
R2047 56.2_F 0402
R2048 56.2_F 0402
R2049 56.2_F 0402
C1706 0402 NC_220P_50V_J_N
C1707 0603 1U_25V_K_B
R2050 0402 5.1K_F
C1708 0402 220P_50V_J_N
OTH8
Place near PCI8402.
L157
90R-100M_0.06R
6.0x6.5x3.3
CN23
1394_4P
FOX_UV31413-GU81P-7F
iLink CONN.
This capacitor should be placed between Pin P15 and Pin R17 .
8402_SCL G2 SCL
8402_SDA G3 SDA
T18 R0
OTH6
R2051 6.34K_F 0402
OTH7 T19 R1
This capacitor must be placed to IC pin
RSVD64 V16 TP843 26MIL
RSVD65 W16 TP844 26MIL
RSVD66 V15 PCI15
RSVD67 W15 PCI16
RSVD68 W17
C1709 0.1U_16V_Y_Y 0402
R2052 0_J 0402
C1710 22P_50V_J 0402_NPO
XO R18
PCI20
Y9
R2054 1M_J 0402
XI R19
C1711 22P_50V_J 0402_NPO
24.576MHZ_16P_30PPM ITTI_L5030-24.576-16
R17 VSSPLL
VSSPLL must be tied to a low-impedance GND.
R14 AGND1
U13 AGND2
U14 AGND3
SPCI8402ZHK
U132B
A15 RSVD2
J19 RSVD3
Clamp Voltage For PC CARD (IO 5V/3.3V)
Card BUS / 16-Bit PC Card Interface
RSVD4 D19
RSVD5 F15
RSVD6 E19
RSVD7 G15
RSVD8 F19
RSVD9 G18
RSVD10 H15
RSVD11 H17
RSVD12 H19
RSVD13 F18
RSVD14 F17
RSVD15 G19
RSVD16 H14
RSVD17 E18
RSVD18 K15
RSVD19 L15
RSVD20 J15
RSVD21 H18
RSVD22 E17
RSVD23 A16
RSVD24 E14
RSVD25 B15
RSVD26 B14
RSVD27 A14
RSVD28 C13
RSVD29 B13
RSVD30 L18
RSVD31 M19
RSVD32 M17
RSVD33 N19
RSVD34 N17
RSVD35 C10
RSVD36 A10
RSVD37 E11
RSVD38 L19
RSVD39 M18
RSVD40 M15
RSVD41 N18
RSVD42 P19
RSVD43 B10
RSVD44 F11
RSVD45 C11
RSVD46 J18
RSVD47 J17
RSVD48 K17
RSVD49 G17
RSVD50 K18
RSVD51 L17
RSVD52 E13
RSVD53 C15
RSVD54 C12
RSVD55 A11
RSVD56 E12
RSVD57 B12
RSVD58 A12
RSVD59 B16
RSVD60 A13
RSVD61 B11
RSVD62 N15
RSVD63 C14
U12 NC1
V12 NC2
W12 NC3
E5 NC4
+3VRUN
R2053 43K_J 0402
Serial / Parallel PC Card Power Switch
DATA/VD2/VPPD1 B9
LATCH/VD3/VPPD0 C9
CLOCK/VD1/VCCD0# A9
RSVD/VD0/VCCD1# C4
SPCI8402ZHK
Resistors should be placed on the SCL and SDA terminals
+3VSUS
R2055 2.7K_J 0402
R2056 2.7K_J 0402
C1712 0.1U_16V_Y_Y 0402
U133
VCC WP
SCL
SDA A0
A1
A2
VSS
8402_SCL
8402_SDA
L: R/W
H: Read only
EEPROM_SOP-8_256x8
HT24LC02
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title PCI (ILINK)
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
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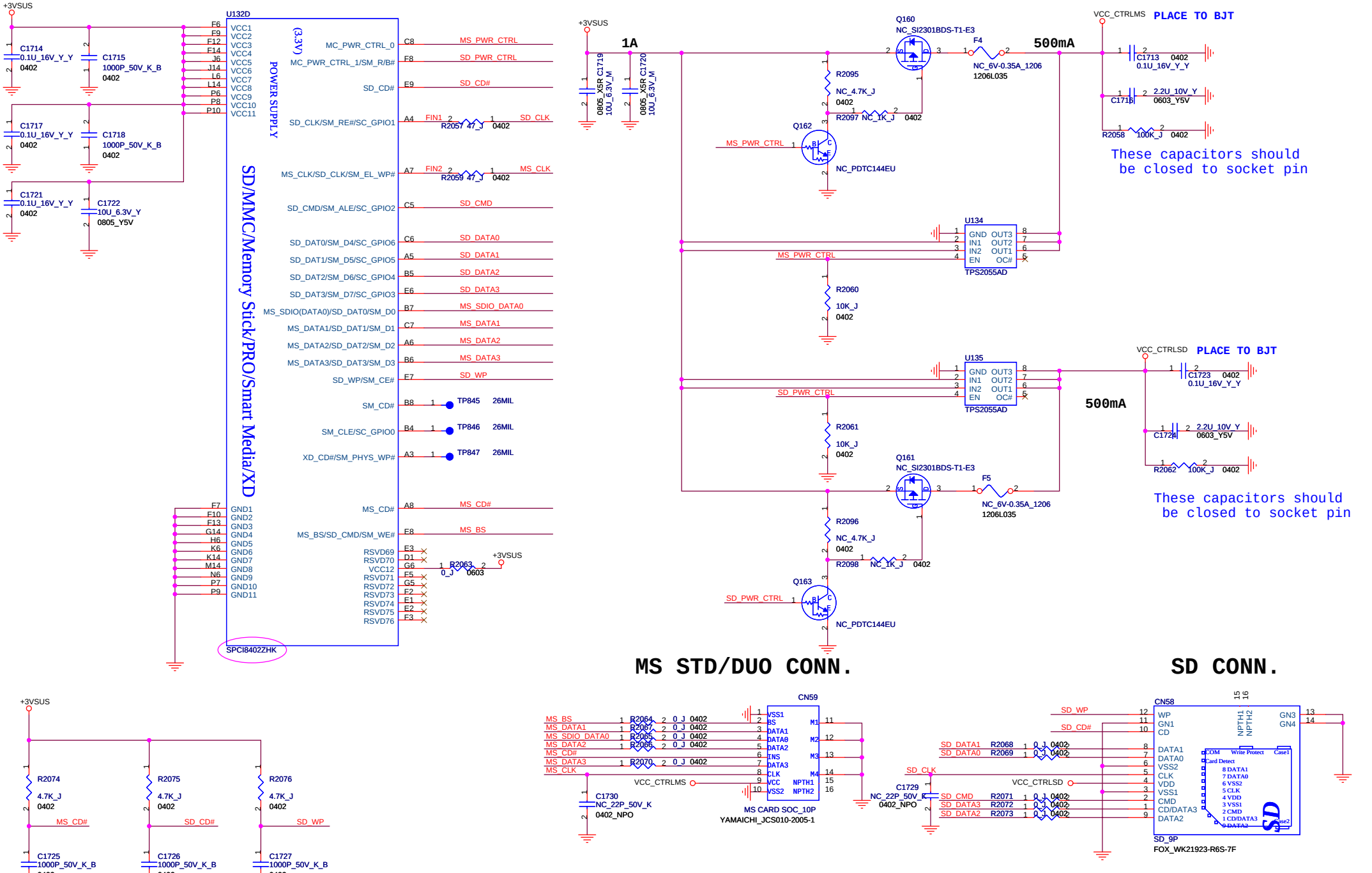
U132D
SPCI8402ZHK
SD/MMC/Memory Stick/PRO/Smart Media/XD
POWER SUPPLY
(3.3V)
+3VSUS
C1714 0.1U_16V_Y_Y 0402
C1715 1000P_50V_K_B 0402
C1717 0.1U_16V_Y_Y 0402
C1718 1000P_50V_K_B 0402
C1721 0.1U_16V_Y_Y 0402
C1722 10U_6.3V_Y 0805_Y5V
MC_PWR_CTRL_0
MC_PWR_CTRL_1/SM_R/B#
SD_CD#
SD_CLK/SM_RE#/SC_GPIO1
MS_CLK/SD_CLK/SM_EL_WP#
SD_CMD/SM_ALE/SC_GPIO2
SD_DAT0/SM_D4/SC_GPIO6
SD_DAT1/SM_D5/SC_GPIO5
SD_DAT2/SM_D6/SC_GPIO4
SD_DAT3/SM_D7/SC_GPIO3
MS_SDIO(DATA0)/SD_DAT0/SM_D0
MS_DATA1/SD_DAT1/SM_D1
MS_DATA2/SD_DAT2/SM_D2
MS_DATA3/SD_DAT3/SM_D3
SD_WP/SM_CE#
SM_CD#
SM_CLE/SC_GPIO0
XD_CD#/SM_PHYS_WP#
MS_CD#
MS_BS/SD_CMD/SM_WE#
MS_PWR_CTRL
SD_PWR_CTRL
SD_CLK
SD_CMD
SD_DATA0
SD_DATA1
SD_DATA2
SD_DATA3
MS_SDIO_DATA0
MS_DATA1
MS_DATA2
MS_DATA3
MS_BS
TP845 26MIL
TP846 26MIL
TP847 26MIL
R2057 47_J 0402
R2059 47_J 0402
R2063 0_J 0603
Q160 NC_SI2301BDS-T1-E3
Q161 NC_SI2301BDS-T1-E3
Q162 NC_PDTC144EU
Q163 NC_PDTC144EU
R2095 NC_4.7K_J 0402
R2096 NC_4.7K_J 0402
R2097 NC_1K_J 0402
R2098 NC_1K_J 0402
R2060 10K_J 0402
R2061 10K_J 0402
F4 NC_6V-0.35A_1206 1206L035
F5 NC_6V-0.35A_1206 1206L035
1A
500mA
500mA
U134 TPS2055AD
U135 TPS2055AD
VCC_CTRLMS
VCC_CTRLSD
PLACE TO BJT
C1713 0.1U_16V_Y_Y
C1715 2.2U_10V_Y 0603_Y5V
R2058 100K_J 0402
C1723 0.1U_16V_Y_Y
C1724 2.2U_10V_Y 0603_Y5V
R2062 100K_J 0402
These capacitors should be closed to socket pin
These capacitors should be closed to socket pin
MS STD/DUO CONN.
SD CONN.
CN59
MS CARD SOC_10P
YAMAICHI_JCS010-2005-1
C1730 NC_22P_50V_K 0402_NPO
C1729 NC_22P_50V_K 0402_NPO
CN58
SD_9P
FOX_WK21923-R6S-7F
R2074 4.7K_J 0402
R2075 4.7K_J 0402
R2076 4.7K_J 0402
C1725 1000P_50V_K_B 0402
C1726 1000P_50V_K_B 0402
C1727 1000P_50V_K_B 0402
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title PCI (SD/MS-DUO/MDC)
Size A3
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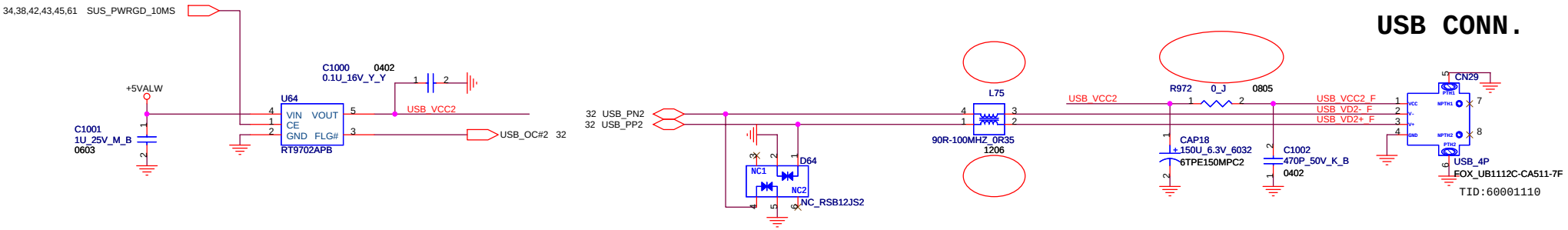
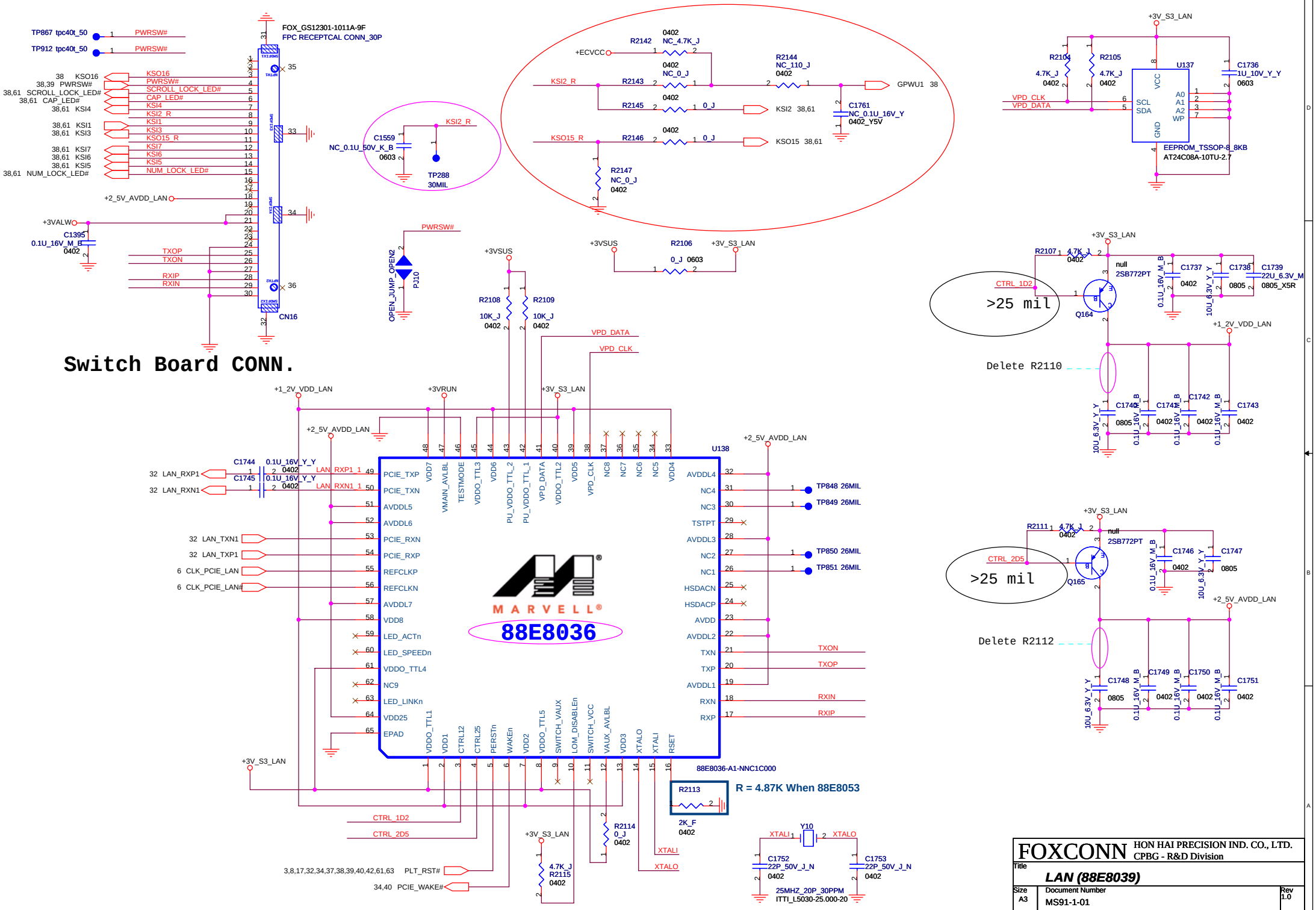
USB CONN.

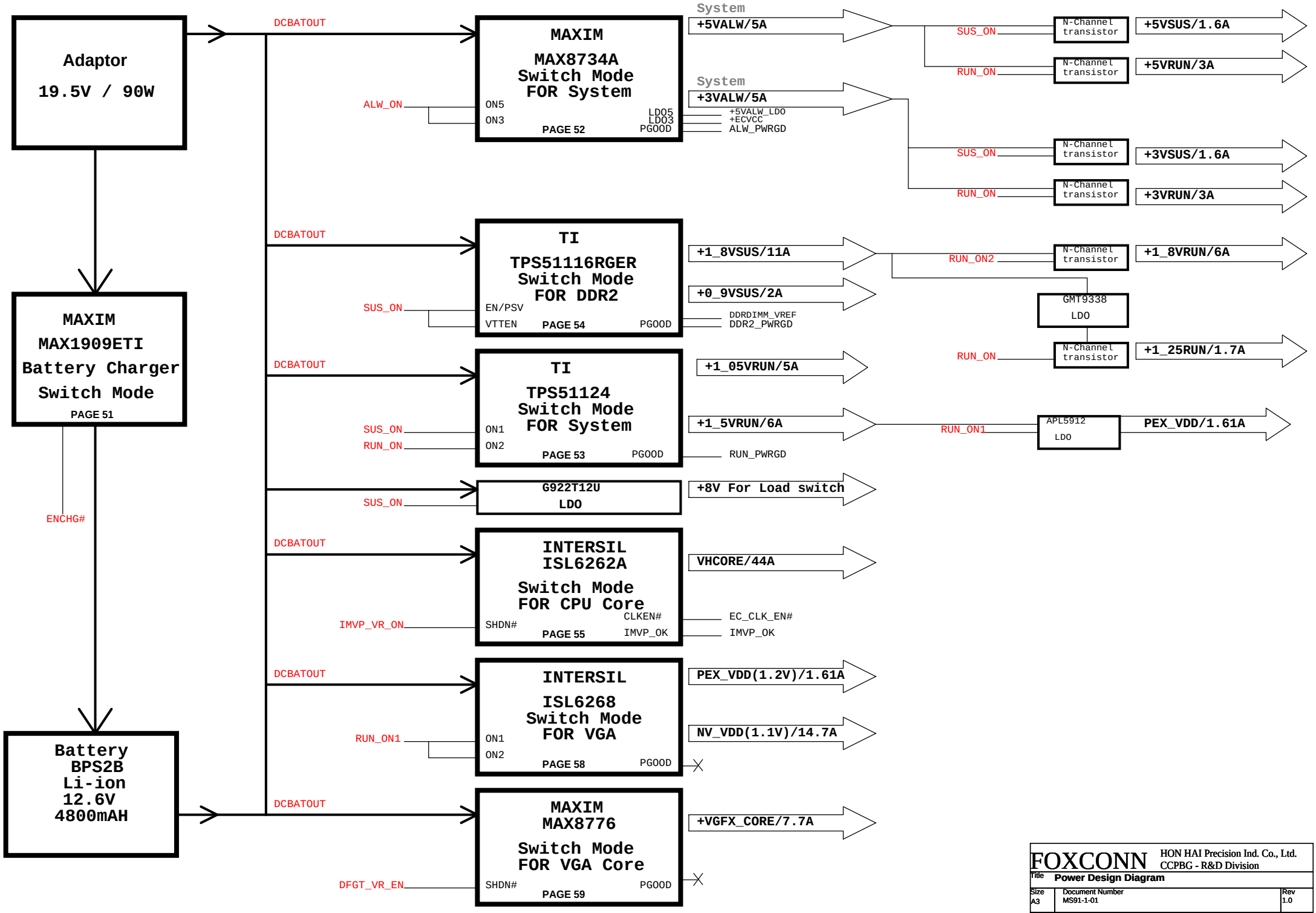


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	USB2.0	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 48 of 66	

Switch Board CONN.

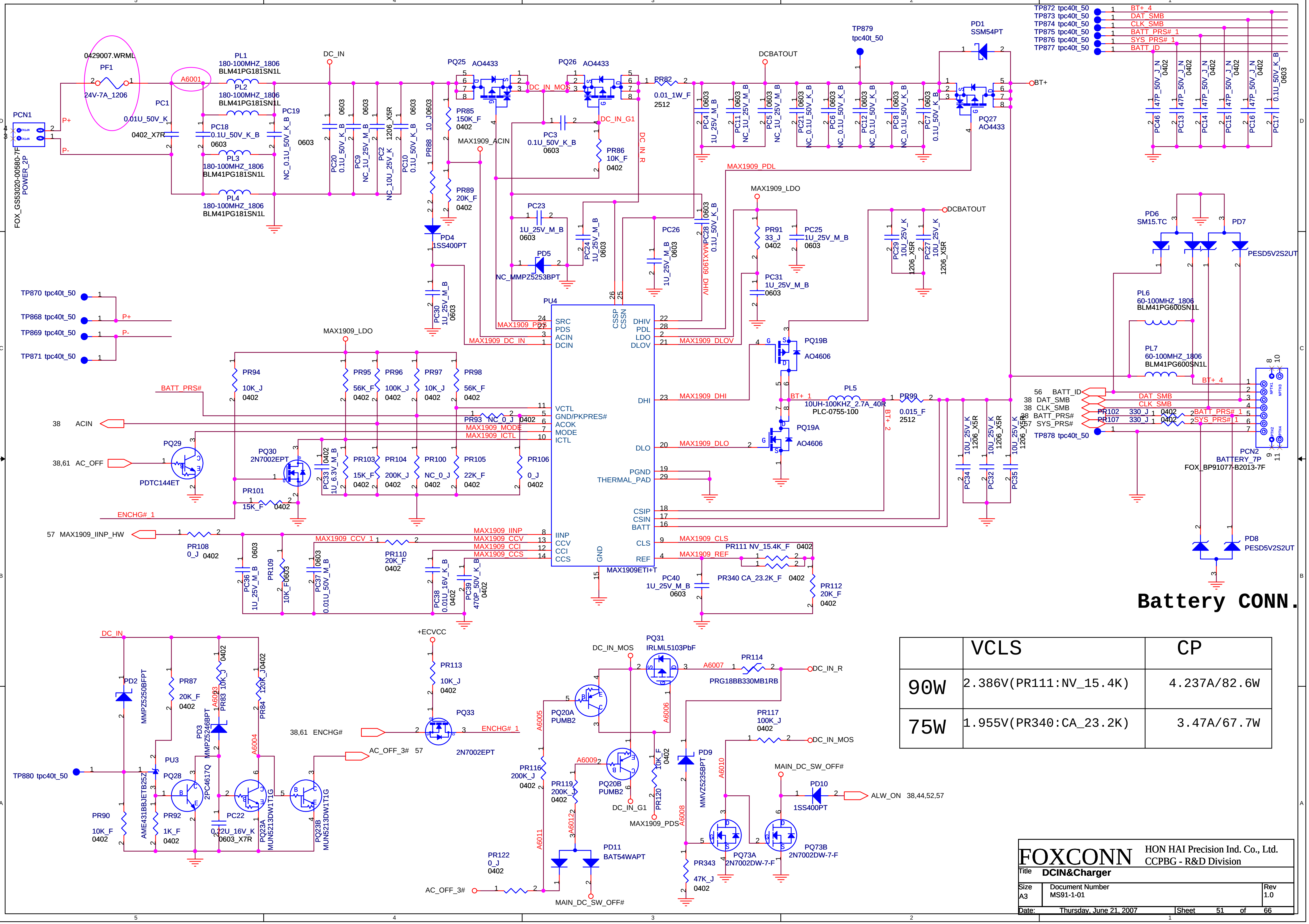


FOXCONN	HON HAI PRECISION IND. CO., LTD. CPBG - R&D Division		
Title	LAN (88E8039)		
Size A3	Document Number MS91-1-01		Rev 1.0
Date: Thursday, June 21, 2007	Sheet 49 of 66		



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

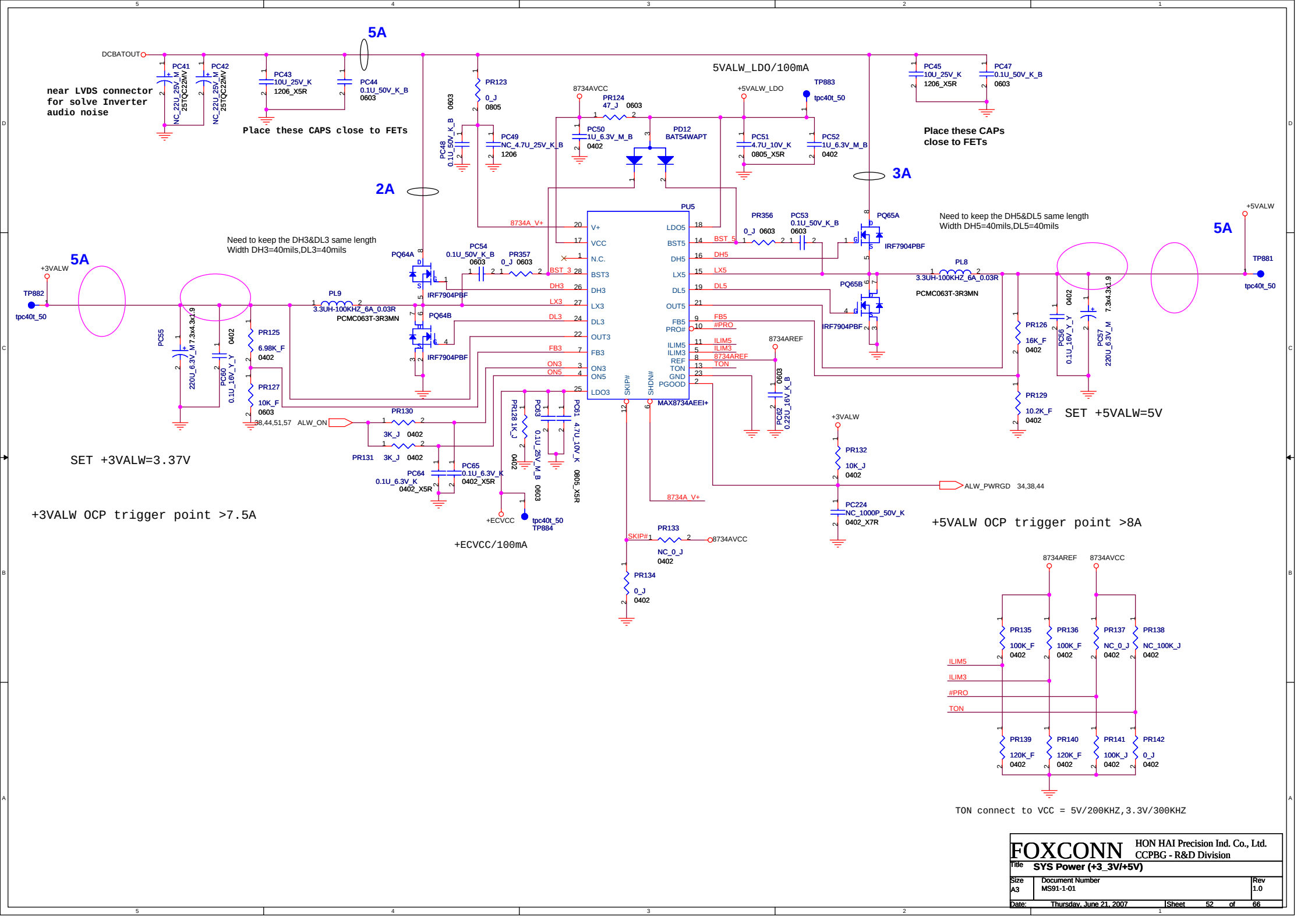
Title	Power Design Diagram	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 50 of 66	



	VCLS	CP
90W	2.386V(PR111:NV_15.4K)	4.237A/82.6W
75W	1.955V(PR340:CA_23.2K)	3.47A/67.7W

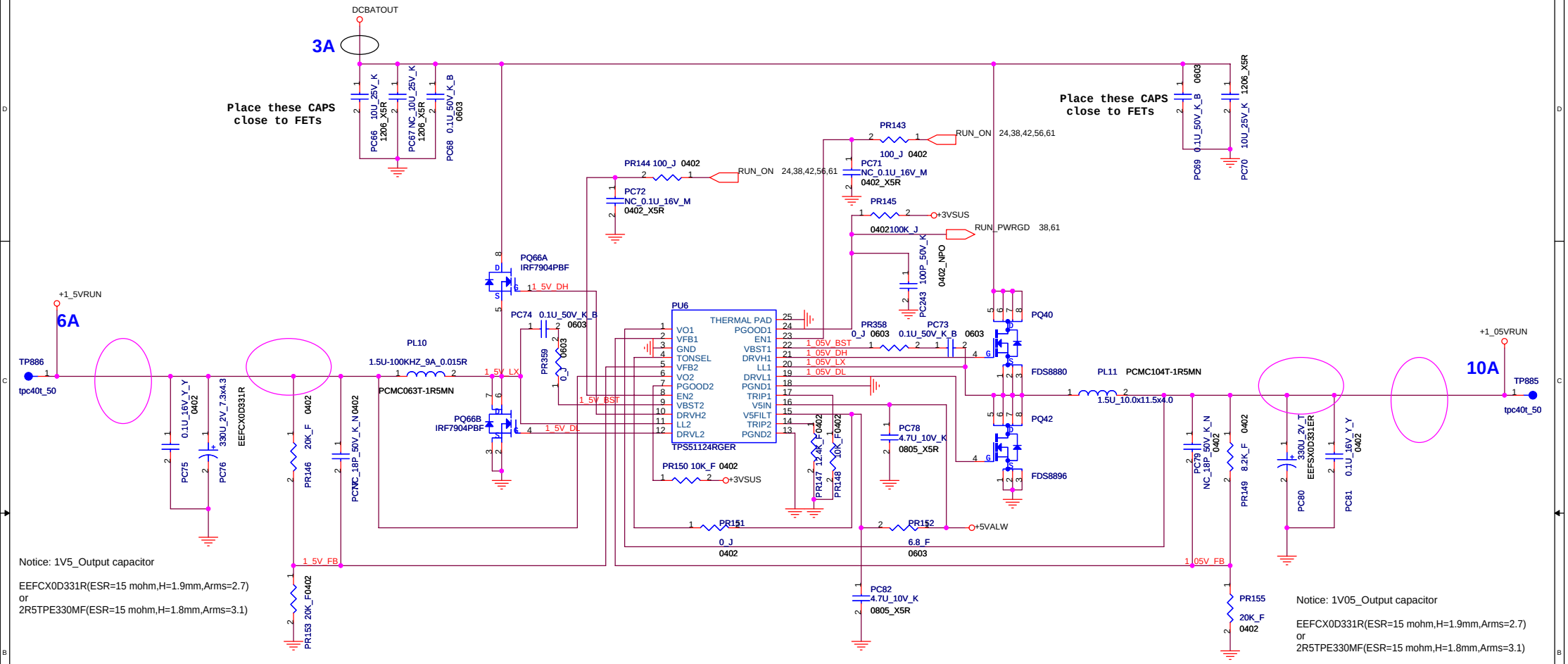
FOXCONN HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

Title	DCIN&Charger	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 51 of 66	



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

Title	SYS Power (+3_3V/+5V)	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 52 of 66	

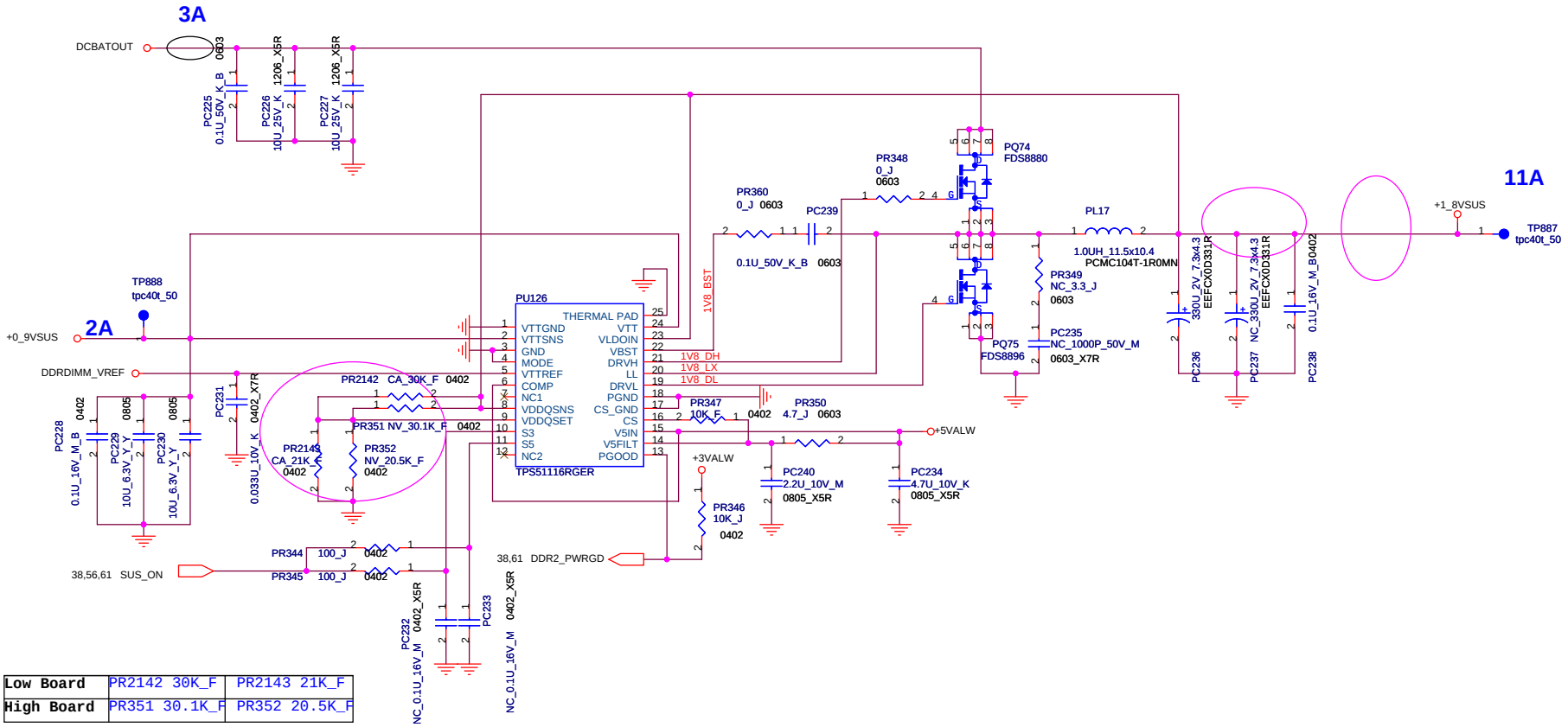


Setting +1_5VRUN OCP trigger point to 10.6A

Setting +1_05VRUN OCP trigger point to 14.2A

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

Title	SYS Power(+1_5V/+1_05V)	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 53 of 66	

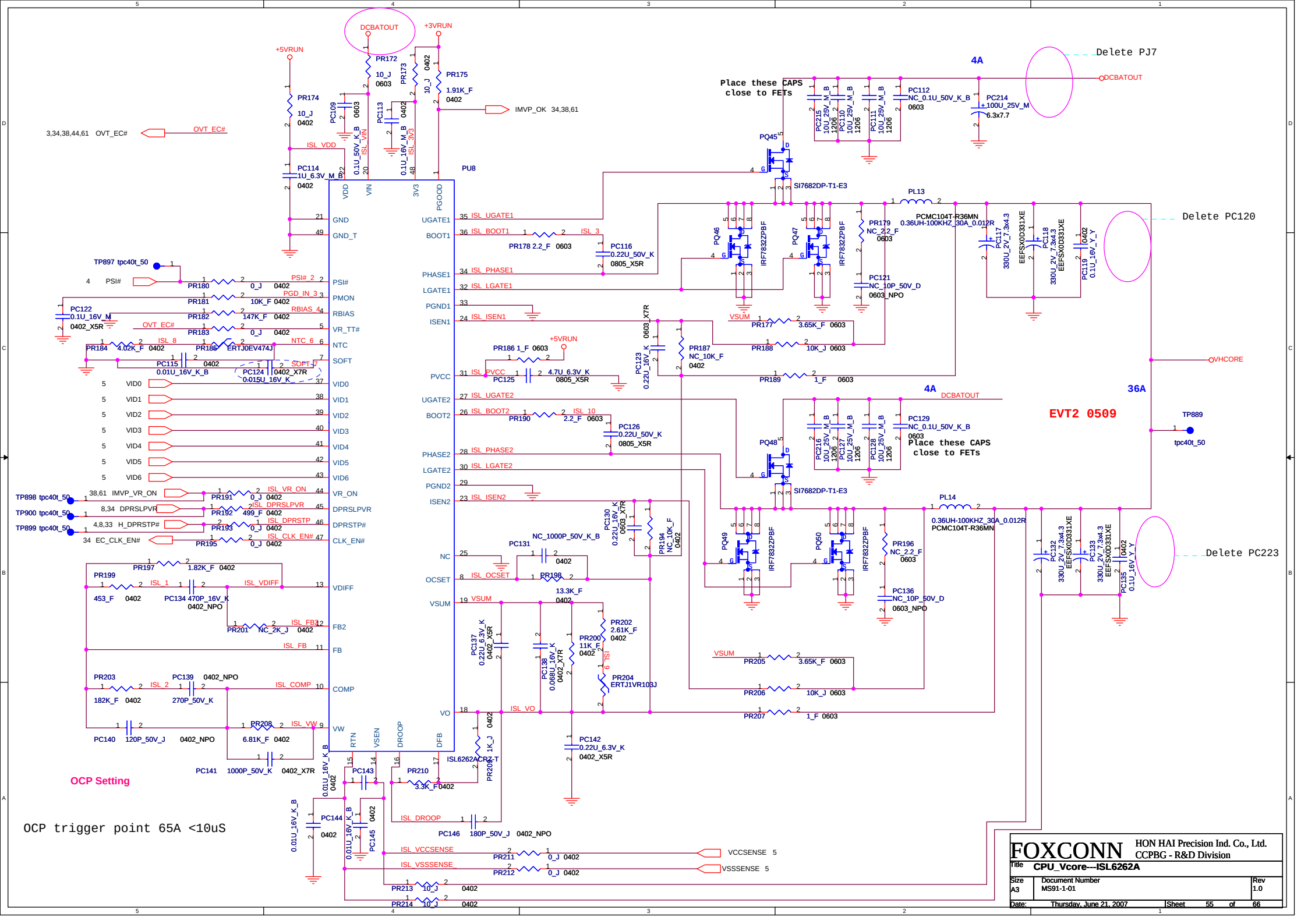


Low Board	PR2142 30K_F	PR2143 21K_F
High Board	PR351 30.1K_F	PR352 20.5K_F

Setting +1_8VSUS OCP trigger point to 16A

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

Title	DDR2 Power(+1_8V/+0_9V)	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 54 of 66	


DCBATOUT
+3VRUN
+5VRUN
PR172
10_J 0603
PR173 10_J 0402
PR175 1.91K_F 0402
IMVP_OK 34,38,61
PR174 10_J 0402
PC109 0603
PC113 0402
3,34,38,44,61 OVT_EC#
OVT_EC#
ISL_VDD
PC114 1U_6.3V_M_B 0402
0.1U_50V_K_B
0.1U_16V_M_B
ISL_VIN
ISL_3V3
PU8
VDD
VIN
3V3
PGOOD
GND
GND_T
UGATE1
BOOT1
PHASE1
LGATE1
PGND1
ISEN1
PVCC
UGATE2
BOOT2
PHASE2
LGATE2
PGND2
ISEN2
NC
OCSET
VSUM
VO
PSI#
PMON
RBIAS
VR_TT#
NTC
SOFT
VID0
VID1
VID2
VID3
VID4
VID5
VID6
VR_ON
DPRSLPVR
DPRSTP#
CLK_EN#
VDIFF
FB2
FB
COMP
VW
RTN
VSEN
DROOP
DFB
TP897 tpc40t_50
PR180 0_J 0402
PR181 10K_F 0402
PR182 147K_F 0402
PR183 0_J 0402
PC122 0.1U_16V_M 0402_X5R
PR184 4.02K_F 0402
PR185 ERTJ0EV474J
PC115 0.01U_16V_K_B 0402
PC124 0402_X7R 0.015U_16V_K
TP898 tpc40t_50
TP900 tpc40t_50
TP899 tpc40t_50
PR191 0_J 0402
PR192 499_F 0402
PR193 0_J 0402
PR195 0_J 0402
PR197 1.82K_F 0402
PR199 453_F 0402
PC134 470P_16V_K 0402_NPO
PR201 NC_2K_J 0402
PR203 182K_F 0402
PC139 0402_NPO 270P_50V_K
PC140 120P_50V_J 0402_NPO
PR208 6.81K_F 0402
PC141 1000P_50V_K 0402_X7R
OCP Setting
OCP trigger point 65A <10uS
PR178 2.2_F 0603
PC116 0.22U_50V_K 0805_X5R
PR186 1_F 0603
PC125 4.7U_6.3V_K 0805_X5R
PR190 2.2_F 0603
PC126 0.22U_50V_K 0805_X5R
PC131 NC_1000P_50V_K_B 0402
PR198 13.3K_F 0402
PC137 0.22U_6.3V_K 0402_X5R
PC138 0.068U_16V_K 0402_X7R
PR202 2.61K_F 0402
PR200 11K_F 0402
PR204 ERTJ1VR103J
PR209 1K_J 0402
ISL6262ACRZ-T
PC142 0.22U_6.3V_K 0402_X5R
PC143 0.01U_16V_K_B 0402
PR210 3.3K_F 0402
PC144 0.01U_16V_K_B 0402
PC145 0.01U_16V_K_B 0402
PC146 180P_50V_J 0402_NPO
PR211 0_J 0402
PR212 0_J 0402
PR213 10_J 0402
PR214 10_J 0402
VCCSENSE 5
VSSSENSE 5
Place these CAPS close to FETs
PC215 10U_25V_M_B 1206
PC110 10U_25V_M_B 1206
PC111 10U_25V_M_B 1206
PC112 NC_0.1U_50V_K_B 0603
PC214 100U_25V_M 6.3x7.7
4A
Delete PJ7
PQ45
SI7682DP-T1-E3
PL13
PCMC104T-R36MN 0.36UH-100KHZ_30A_0.012R
PQ46
PQ47
IRF7832ZPBF
PR179 NC_2.2_F 0603
PC121 NC_10P_50V_D 0603_NPO
PC117 330U_2V_7.3x4.3 EEFSX0D331XE
PC118 330U_2V_7.3x4.3 EEFSX0D331XE
PC119 0402 0.1U_16V_Y_Y
Delete PC120
VHCORE
PR177 3.65K_F 0603
PR188 10K_J 0603
PR187 NC_10K_F 0402
PC123 0.22U_16V_K 0603_X7R
PR189 1_F 0603
VSUM
4A
DCBATOUT
36A
EVT2 0509
TP889 tpc40t_50
PC216 10U_25V_M_B 1206
PC127 10U_25V_M_B 1206
PC128 10U_25V_M_B 1206
PC129 NC_0.1U_50V_K_B 0603
Place these CAPS close to FETs
PQ48
PQ49
PQ50
PL14
0.36UH-100KHZ_30A_0.012R PCMC104T-R36MN
PR196 NC_2.2_F 0603
PC136 NC_10P_50V_D 0603_NPO
PC132 330U_2V_7.3x4.3 EEFSX0D331XE
PC133 330U_2V_7.3x4.3 EEFSX0D331XE
PC135 0402 0.1U_16V_Y_Y
Delete PC223
PR205 3.65K_F 0603
PR206 10K_J 0603
PR207 1_F 0603
PC130 0.22U_16V_K 0603_X7R
PR194 NC_10K_F 0402
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title CPU_Vcore---ISL6262A
Size A3
Document Number MS91-1-01
Rev 1.0
Date: Thursday, June 21, 2007
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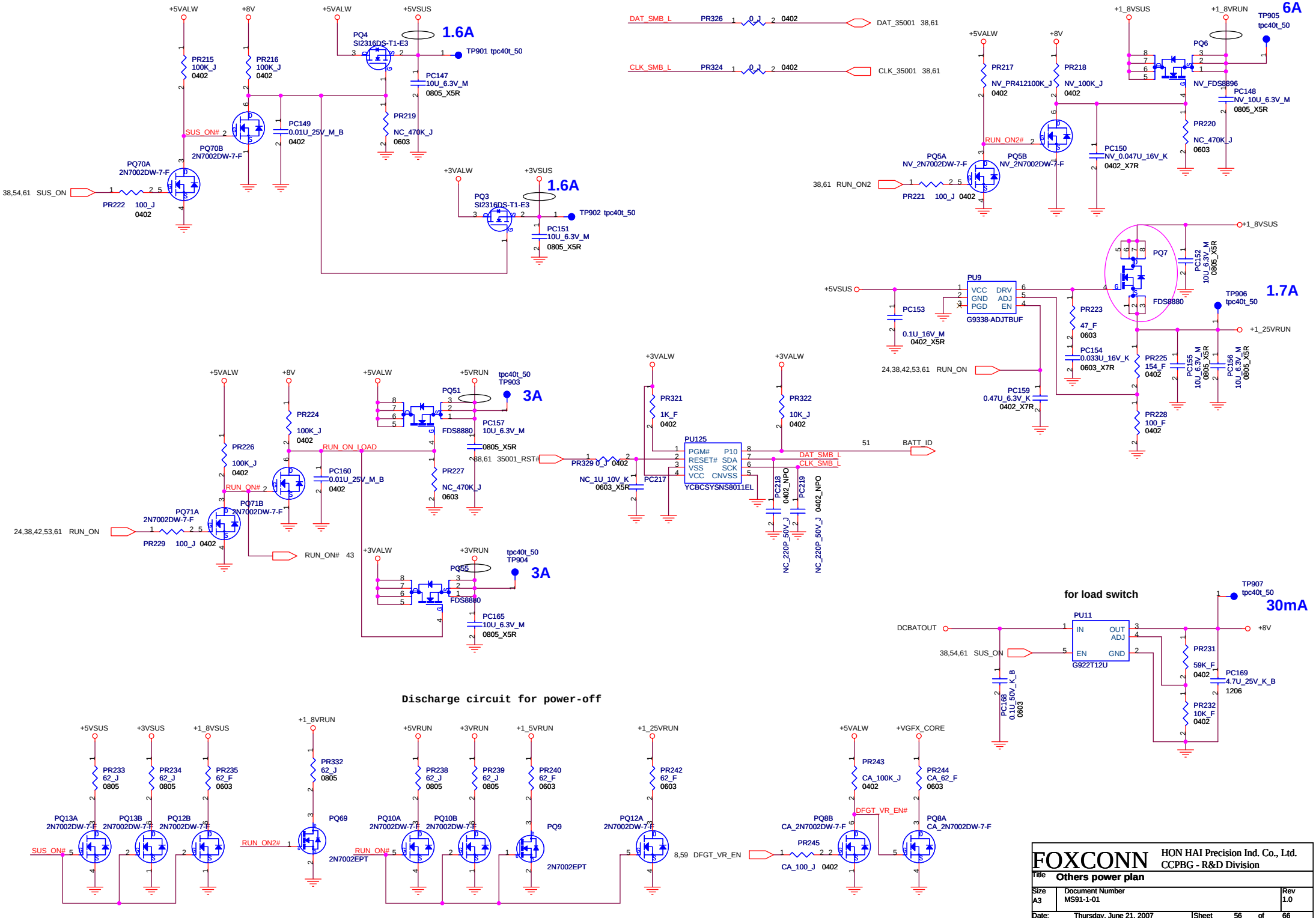
1.6A
1.6A
6A
1.7A
3A
3A
30mA
for load switch
Discharge circuit for power-off
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title
Others power plan
Size
A3
Document Number
MS91-1-01
Rev
1.0
Date:
Thursday, June 21, 2007
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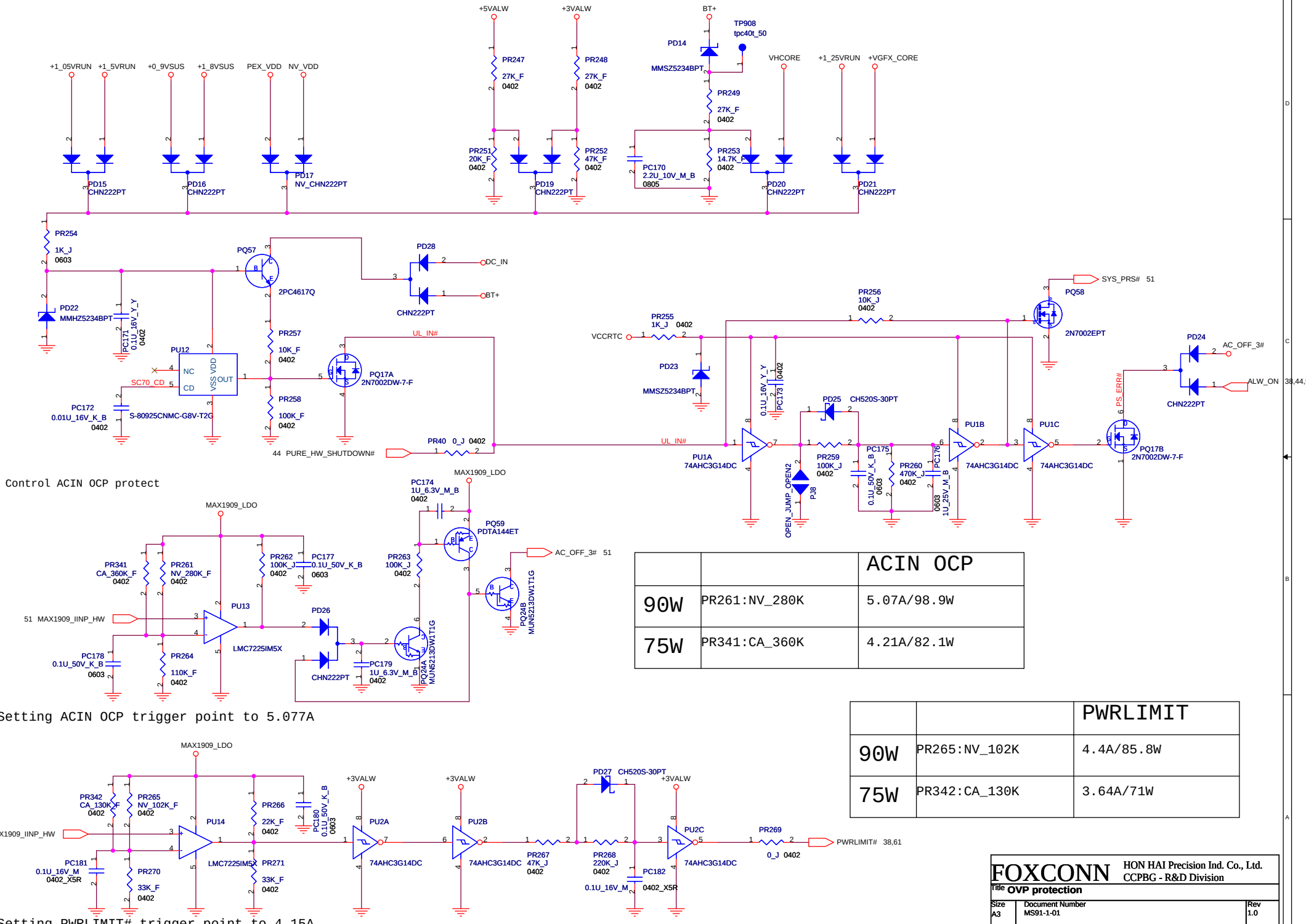
56
of
66



Control ACIN OCP protect

		ACIN OCP
90W	PR261:NV_280K	5.07A/98.9W
75W	PR341:CA_360K	4.21A/82.1W

Setting ACIN OCP trigger point to 5.077A

		PWRLIMIT
90W	PR265:NV_102K	4.4A/85.8W
75W	PR342:CA_130K	3.64A/71W

Setting PWRLIMIT# trigger point to 4.15A

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

Title: OVP protection

Size	Document Number	Rev
A3	MS91-1-01	1.0

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+VGA_CORE Ilimit =22.8A~27.38A

3A

Place these CAPS close to FETs

VGA_GPIO5	I/O		GPIO TABLE
High	0	PR283:2.32K,PR361:23.7K PR284:2.49K	GPU voltage H ;NVDD;1.2V
LOW	0	PR283:2.32K,PR361:23.7K PR284:2.49K	GPU voltage L ;NVDD;1.15V

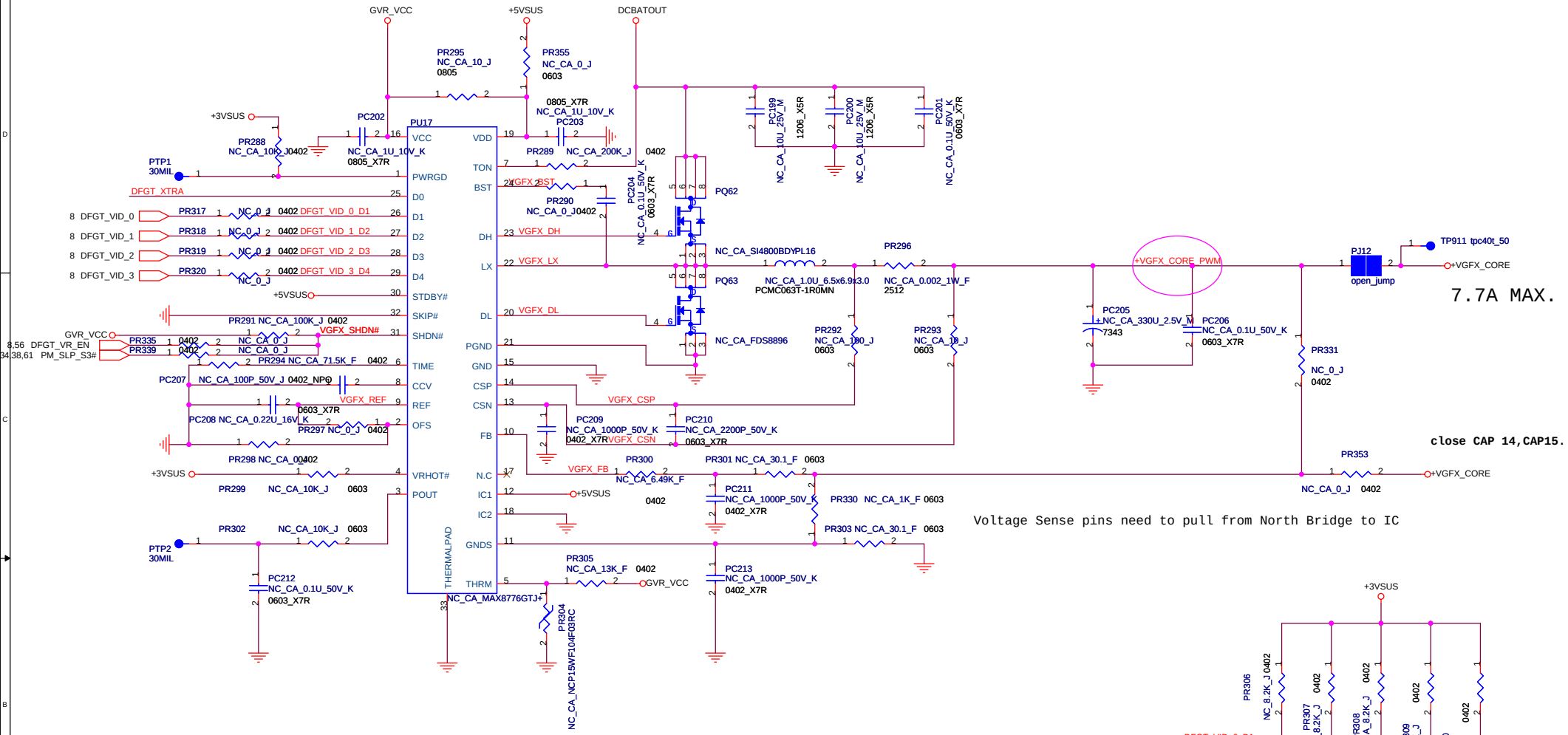
+1.2V 14.7A

1.61A

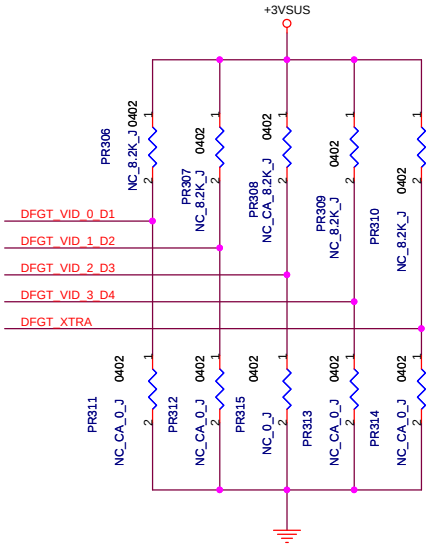
1.61A

close C362.C363,C364

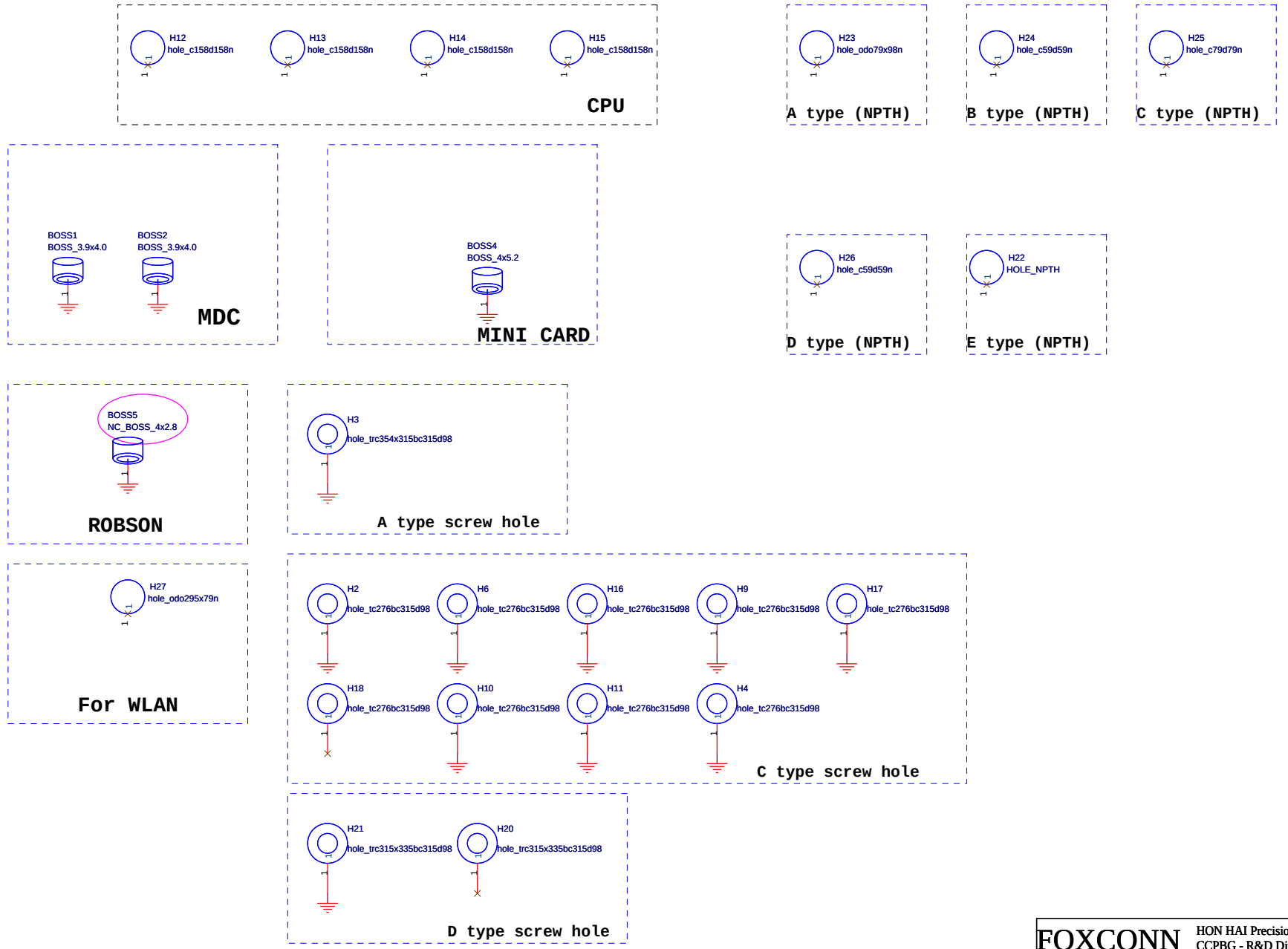
FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division		
Title	VGA_Power(+1.1V/+1_2V)		
Size A3	Document Number MS91-1-01		Rev 1.0
Date:	Thursday, June 21, 2007	Sheet 58 of 66	



GMCH W/O		GMCH W			
PR355	no stuff	PR355	stuff	PR311	no stuff
PR291	no stuff	PR335	stuff	PR312	no stuff
PJ12	no stuff	PJ12	stuff	PR308	no stuff
				PR313	no stuff

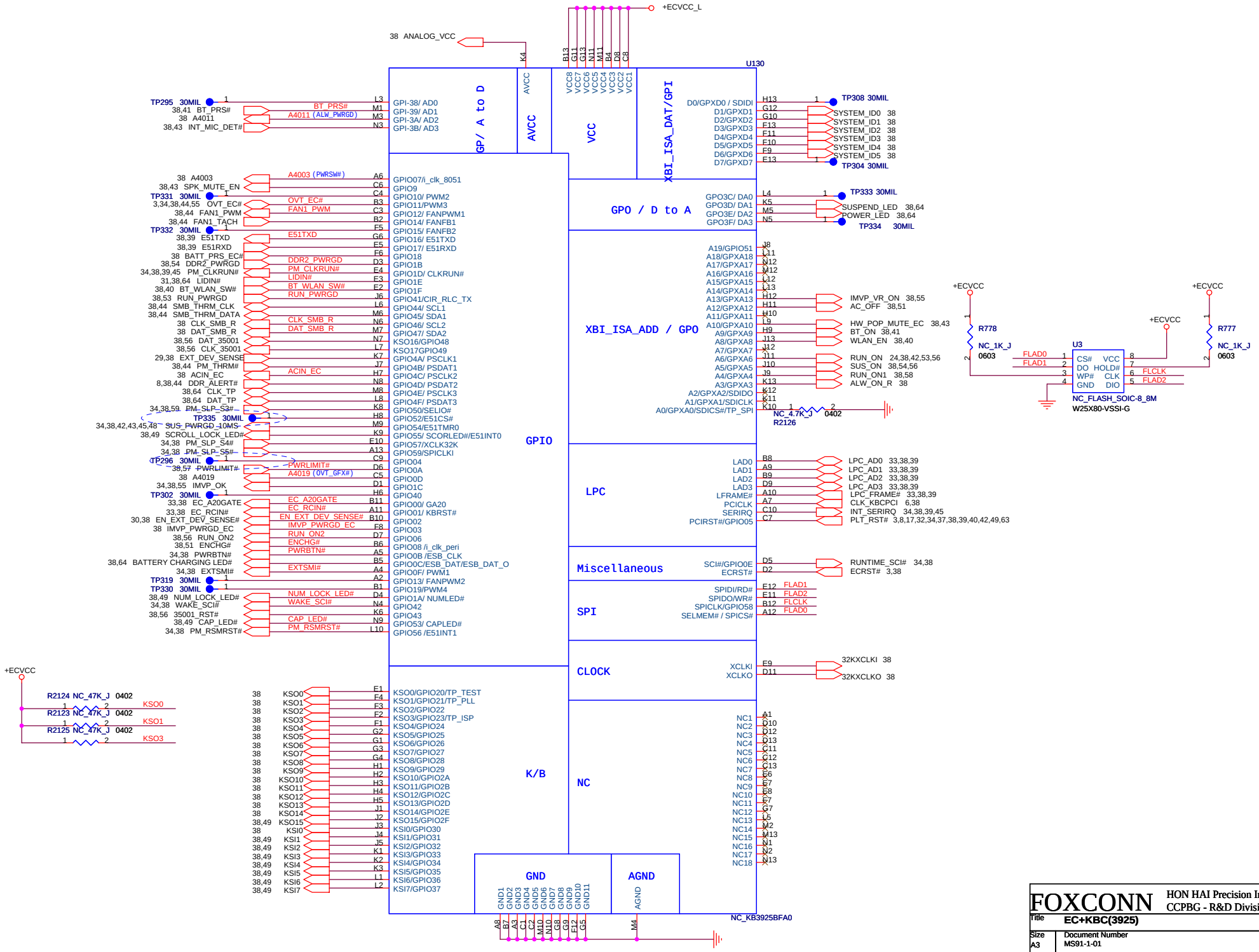


FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division		
Title	GMCH Power		
Size A3	Document Number MS91-1-01		Rev 1.0
Date: Thursday, June 21, 2007	Sheet 59 of 66		

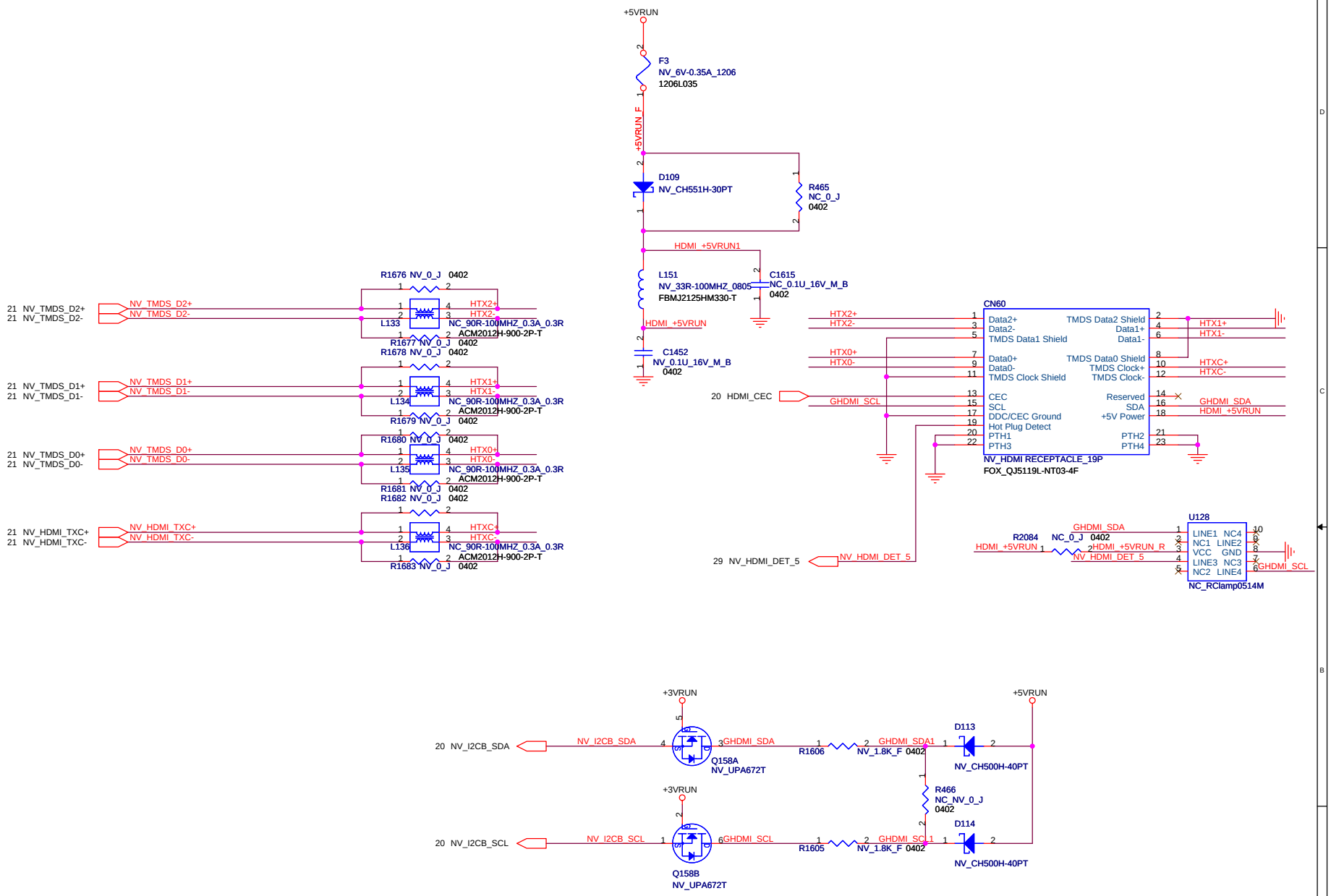


FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division

Title: HOLE		
Size: A3	Document Number: MS91-1-01	Rev: 1.0
Date: Thursday, June 21, 2007	Sheet 60 of 66	



FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	EC+KBC(3925)	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 61 of 66	



FOXCONN

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

Title	HDMI	
Size A3	Document Number MS91-1-01	Rev 1.0
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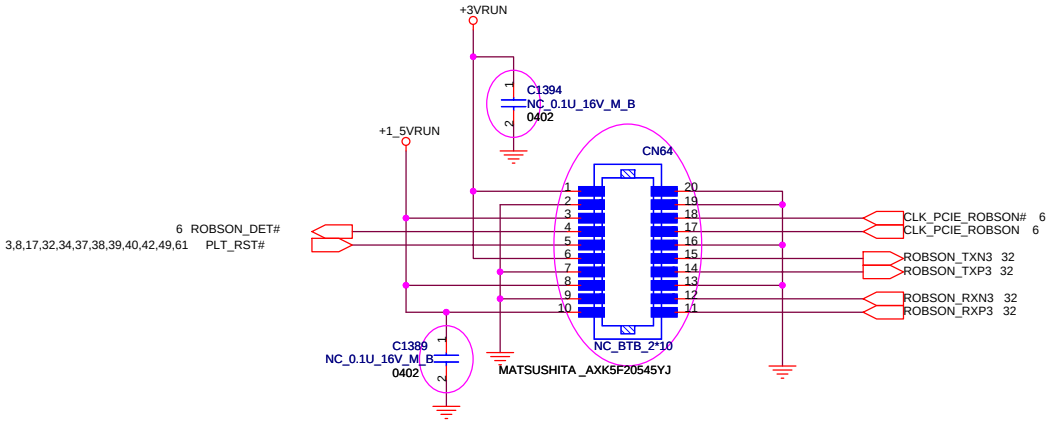
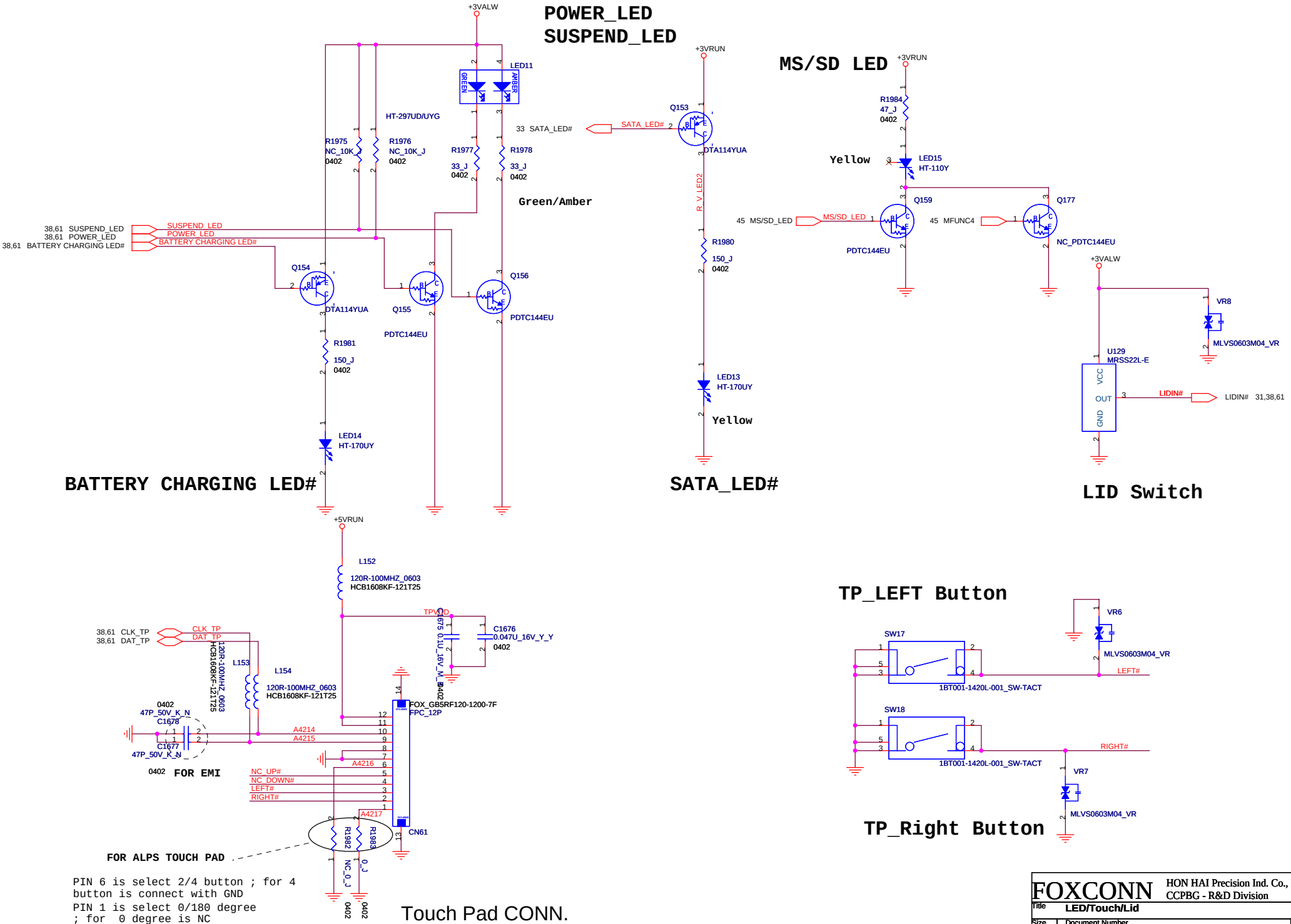
ROBSON Board CONN



C1389,C1394 close to CN64.

FOXCONN	HON HAI Precision Ind. Co., Ltd. CCPBG - R&D Division	
Title	ROBSON B to B Connector	
Size A3	Document Number MS91-1-01	Rev 1.0
Date: Thursday, June 21, 2007	Sheet 63 of 66	


POWER_LED
SUSPEND_LED
+3VALW
LED11
GREEN
AMBER
HT-297UD/UYG
R1975
NC_10K_J
0402
R1976
NC_10K_J
0402
R1977
33_J
0402
R1978
33_J
0402
Green/Amber
38,61 SUSPEND_LED
38,61 POWER_LED
38,61 BATTERY CHARGING LED#
SUSPEND_LED
POWER_LED
BATTERY CHARGING LED#
Q154
DTA114YUA
Q155
PDTC144EU
Q156
PDTC144EU
R1981
150_J
0402
LED14
HT-170UY
BATTERY CHARGING LED#
+3VRUN
33 SATA_LED#
SATA_LED#
Q153
DTA114YUA
R_V_LED2
R1980
150_J
0402
LED13
HT-170UY
Yellow
SATA_LED#
MS/SD LED
+3VRUN
R1984
47_J
0402
Yellow
LED15
HT-110Y
45 MS/SD_LED
MS/SD_LED
Q159
PDTC144EU
45 MFUNC4
Q177
NC_PDTC144EU
+3VALW
VR8
MLVS0603M04_VR
U129
MRSS22L-E
VCC
OUT
GND
LIDIN#
LIDIN# 31,38,61
LID Switch
+5VRUN
L152
120R-100MHZ_0603
HCB1608KF-121T25
TPVDD
C1675
0.01U_16V_N_Y
0402
C1676
0.047U_16V_Y_Y
0402
38,61 CLK_TP
38,61 DAT_TP
CLK_TP
DAT_TP
L153
120R-100MHZ_0603
HCB1608KF-121T25
L154
120R-100MHZ_0603
HCB1608KF-121T25
0402
47P_50V_K_N
C1678
C1677
47P_50V_K_N
0402 FOR EMI
A4214
A4215
A4216
A4217
FOX_GB5RF120-1200-7F
FPC_12P
NC_UP#
NC_DOWN#
LEFT#
RIGHT#
CN61
R1982
R1983
NC_0_J
0_J
0402
0402
FOR ALPS TOUCH PAD
PIN 6 is select 2/4 button ; for 4 button is connect with GND
PIN 1 is select 0/180 degree ; for 0 degree is NC
Touch Pad CONN.
TP_LEFT Button
VR6
MLVS0603M04_VR
SW17
1BT001-1420L-001_SW-TACT
LEFT#
SW18
1BT001-1420L-001_SW-TACT
RIGHT#
VR7
MLVS0603M04_VR
TP_Right Button
FOXCONN
HON HAI Precision Ind. Co., Ltd.
CCPBG - R&D Division
Title
LED/Touch/Lid
Size
A3
Document Number
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MS91 DVT

(2007/04/04)

P.51 Move PF1 close to the PCN1 for MS1X burn out issue.

P.52,53,54,55,58 Add PJ1,PJ2,PJ3,PJ4,PJ5,PJ9,PJ11 for DVT debug.

P.54 Add PR2142, PR2143, change PR352 value 20.5K_F to NV_20.5K_F, PR351 value 30.1K_F to NV_30.1K_F.Because H version and L version need different voltage level.

P.6,32,63 Change RP11 value NC_33 to 33,
C1394 value NC_0.1U_16V_M_B to 0.1U_16V_M_B,
C1389 value NC_0.1U_16V_M_B to 0.1U_16V_M_B,
C735 value NC_0.1U_16V_M_B to 0.1U_16V_M_B,
C730 value NC_0.1U_16V_M_B to 0.1U_16V_M_B,
CN64 value NC_BTB_2*10 to BTB_2*10,
for robson function need.

(2007/04/06)

p.2 Block diagram update for MS91 feature spec.

P.49 Change U138 from MARVELL 88E8036 to MARVELL 88E8039 for MS91 feature spec.

P.18 Add two Hynix type: 16Mx32 (128-bit) and 16Mx32 (64-bit) for backup solution.

P.18 Change PCI device ID: Change
R231 value NV_2K_J to NVNB8M_2K_J,
R232 value NC_2K_J to NVNB8P_2K_J,
R233 value NC_2K_J to NVNB8P_2K_J,
R234 value NV_2K_J to NVNB8M_2K_J.

(2007/04/09)

p.51 Move the net A6001 close to PF1 for moved PF1.

p.30 Change C666 10P_50V_J_N to NC_10P_50V_J_N,
C669 10P_50V_J_N to NC_10P_50V_J_N,
C671 10P_50V_J_N to NC_10P_50V_J_N for EMI request.

p.30 Add C668,C670,C672 for EMI request.

p.31 Add R459 for nVidia suggest.

(2007/04/11)

p.49 Delete R2110,R2112 for Marvell suggest.

p.38 Change touch pad power from +5VSUS to +5VRUN for design mistake.

p.55 Delete PC120 PC223 for save layout space.

(2007/04/12)

P.1 Add MS91 BOM configuration.

P.60 Change BOSS5 value NC_BOSS_4x2.8 to BOSS_4x2.8 for lock robson.

(2007/04/13)

P.52 Add net name +3VALW_PWM and +5VALW_PWM becuase add PJ2 and PJ1.

P.53 Add net name +1_5VRUN_PWM and +1_05VRUN_PWM becuase add PJ4 and PJ3.

P.54 Add net name +1_8VSUS_PWM becuase add PJ5.

P.55 Delete PJ7 and change DCBATOUT+ to DCBATOUT for save layout space.

P.58 Add net name NV_VDD_PWM and PEX_VDD+ becuase add PJ9 and PJ11.

P.59 Add net name +VGFX_CORE_PWM becuase add PJ12.

(2007/04/16)

P.1 Dropped the NB8P-SE/128MB and NB8P-SE/64M for MOR request.

P.18 Delete two Hynix type: 16Mx32 (128-bit) and 16Mx32 (64-bit) for needless to backup solution.

(2007/04/17)

P.44 Add U8 solution for H/L has differente thermal sensor.
Change Q176 value from CA_MMBT3904.215 to NC_MMBT3904.215 for new solution.

P.44 Delete C62,U139,R2031,R2032,R73 for delete VGA thermal sensor.

P.24 Change MIOB_VDD current from 900mA to 10mA.
NV_DACA_VDD from 135mA to 130mA.
NV_DACB_VDD from 200mA to 130mA.
NV_PLLVDD from 60mA to 35mA+35mA.
IFP_CDIOVDD from 150mA+150mA to 50mA+50mA.
IFPCD_PLLVDD from 35mA to 75mA.
IFP_ABIOVDD from 130mA+130mA to 45mA+45mA.
IFPAB_PLLVDD from 35mA to 75mA for power budget spec.

P.25 P.26 Change FBA_PLLAVDD from 30mA to 15mA.
FBC_PLLAVDD from 30mA to 15mA.
Change NB8M-GT xx mA to NB8X 1.5A.
PEX_PLL_AVDD from 100mA to 75mA.
PEX_PLL_DVDD from 20mA to 10mA.
VDD33 from 110mA to 50mA.
NV_VDD from 16.25A to 13.37A.
change NB8M-GT : 1.1V(TBD) to NB8X : 1.2V for power budget spec.
Add H_PLLVDD power budget spec 15mA.

P.27,P.28 Add +1_8VRUN power budget spec 1.125A.
change +1_8VRUN from 1.2A to 1.125A for power budget spec.

P.1 Update the PCB P/N.

(2007/04/17)

P.17,P.19,P.20,P.21,P.22,P.23,P.24,P.25,P.26 Change U7A,U7D,U7E,U7F,U7H,U7G,U7C,U7I value from NB8M-GT-B-A2/H to NV_NB8M-GT-B-A2/H.

P.20 Change U82 to NV_ for low board needless it.

(2007/04/23)

P.56 PQ7 Change from SI4800BDY to FDS8880 because the +1_25VRUN load increase.

P.33 Add TP287 for test the RTCRST#.

P.49 Add C1559,TP288 for stable AV mode start.

(2007/04/24)

P.38 Change R715 to NV_ for low board needless it.

(2007/04/24)

P.44 Change U4 from MAX6509HAUK-T+ to G709T1UF for PUR request.

(2007/04/27)

P.44,45,46 Change U132 from 12-PC18402-0000 to 12-SPC1840-0000 for PUR suggest.

(2007/05/07)

P.11 Change D6,R4 from CA_ to stuff all the SKU for Intel suggest.

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MS91 PVT

(2007/05/30)

P.43 Add Polyswitch (F7) and resistor (R2142)_NC co-layout on USB power input of M/B for TUV

P.48 Add Polyswitch (F8) and change resistor R972 from stuff to NC co-layout on USB power input of M/B for TUV

(2007/06/01)

P.6,32,60,63 Change RP11 value 33 to NC_33,
C1394 value 0.1U_16V_M_B to NC_0.1U_16V_M_B,
C1389 value 0.1U_16V_M_B to NC_0.1U_16V_M_B,
C735 value 0.1U_16V_M_B to NC_0.1U_16V_M_B,
C730 value 0.1U_16V_M_B to NC_0.1U_16V_M_B,
CN64 value BTB_2*10 to NC_BTB_2*10,
Change BOSS5 value BOSS_4x2.8 to NC_BOSS_4x2.8 for lock robson.
for robson function Disable.

(2007/06/05)

P.52,53,54,55,58 Del PJ1,PJ2,PJ3,PJ4,PJ5,PJ9,PJ11 for PVT stage.

P.52 Del net name +3VALW_PWM and +5VALW_PWM becuase del PJ2 and PJ1.

P.53 Del net name +1_5VRUN_PWM and +1_05VRUN_PWM becuase del PJ4 and PJ3.

P.54 Del net name +1_8VSUS_PWM becuase del PJ5.

P.58 Del net name NV_VDD_PWM and PEX_VDD+ becuase del PJ9 and PJ11.

P.43 Change C1398 Pin 1 net name from +5VALW to +5V_USB0_1.

P.48 Del co-layout resistor R971,R973 for level 6 suggest.

P.41 Del TP854 for level 6 suggest.

(2007/06/07)

P.43 Del Polyswitch (F7) and resistor (R2142)_NC on USB power input of M/B for MOR suggest.

P.48 Del Polyswitch (F8) and change resistor R972 from NC to stuff on USB power input of M/B for MOR suggest.

(2007/06/08)

P.1,18 Add three BOM on BOM configuration for Hynix VRAM.

P.38,49 Add option circuit for keyboard auto power on issue.
1> Del TP294
2> Add R2142(NC),R2143(NC),R2144(NC),R2145,R2146,R2147(NC).

P.37 CN32 change from 2N-0050004-FKG0 to 2N-0050006-FKG0 for level 6 suggest.

(2007/06/12)

P.24 Add R2148,R2149 for HDMI leakage issue.

P.30 R/G/B add C1762(NC),C1763(NC),C1764(NC) for EMI suggest.

(2007/06/20)

P.49 LAN controller U138 change from 88E8039 to 88E8036 for EMI fail issue.