PROJECT : CHICAGO (For Intel Huron River Platform)

P. Leader	Check by	Design by

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Title: **Index Page**

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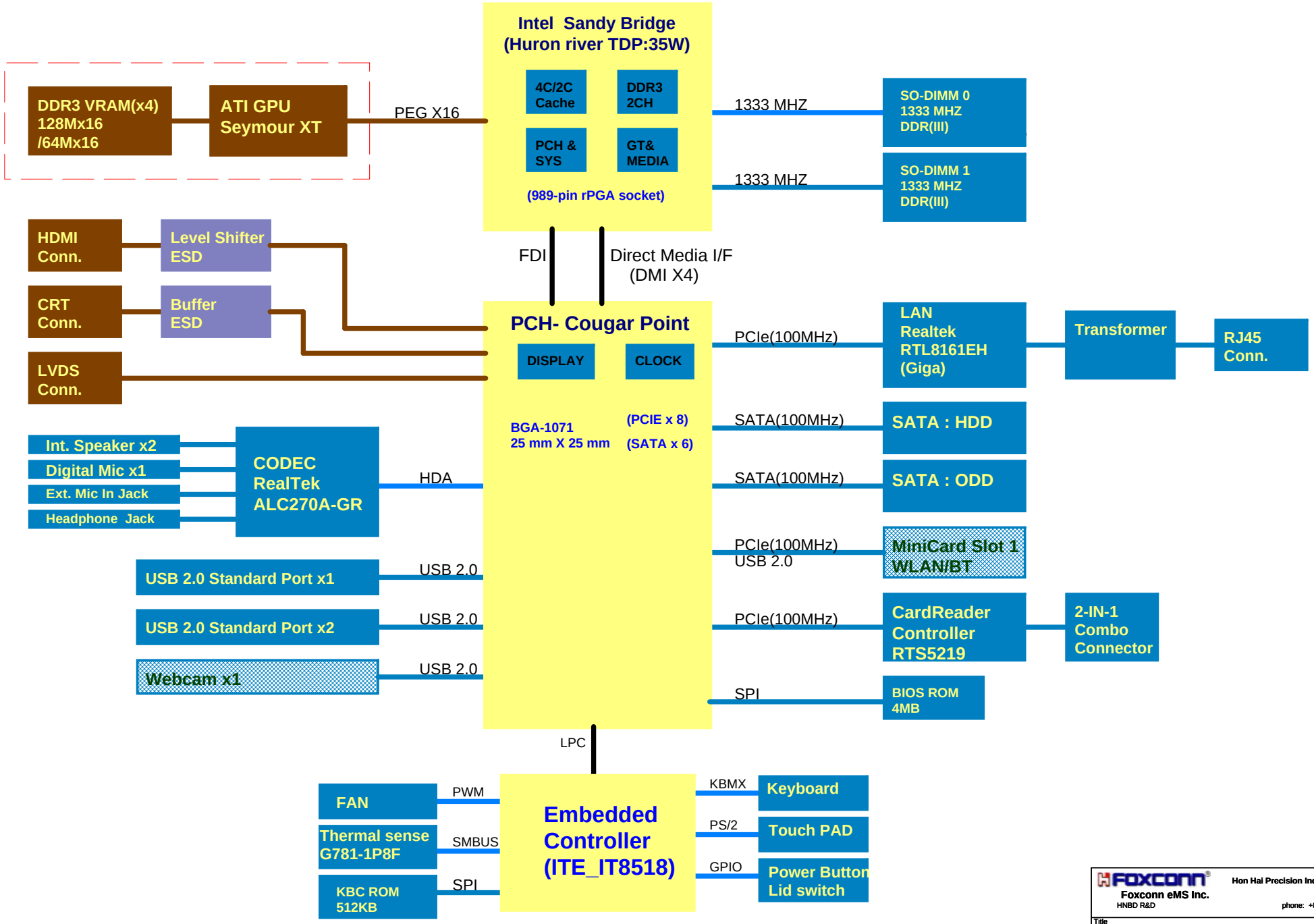

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Title: SYSTEM BLOCK DIAGRAM

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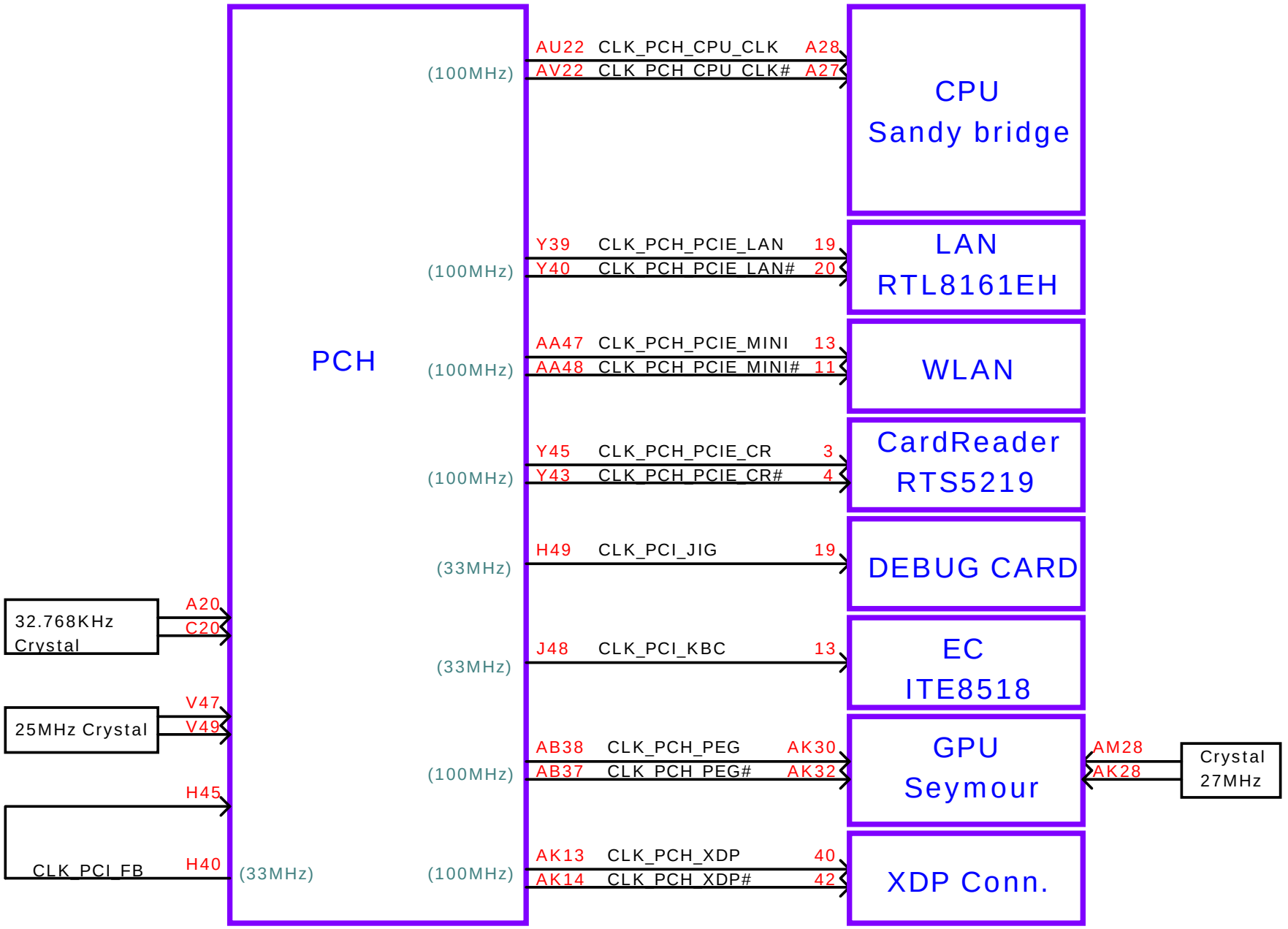

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Title	CLOCK MAP
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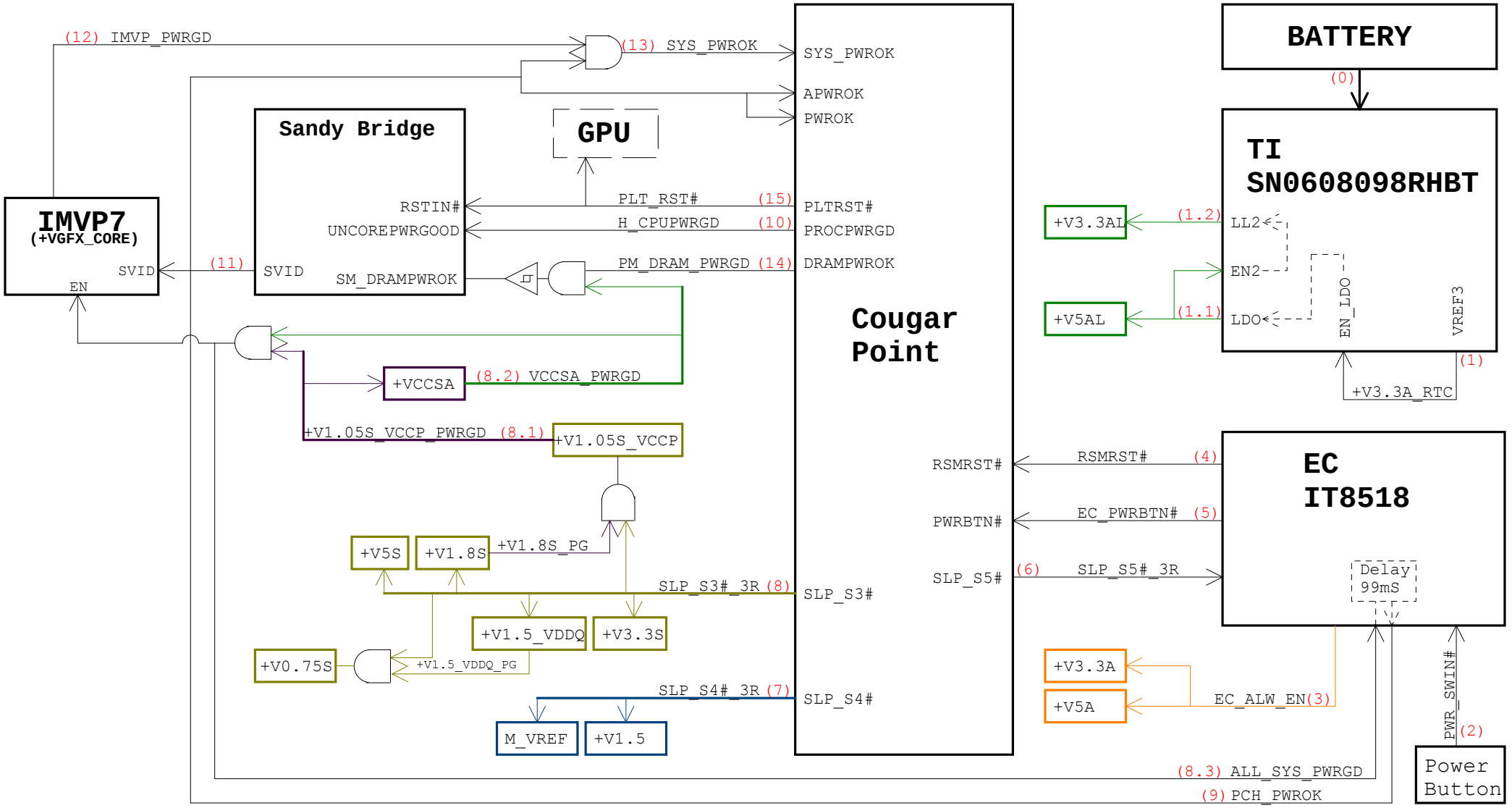

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Title: POWER SEQUENCY DIAGRAM			
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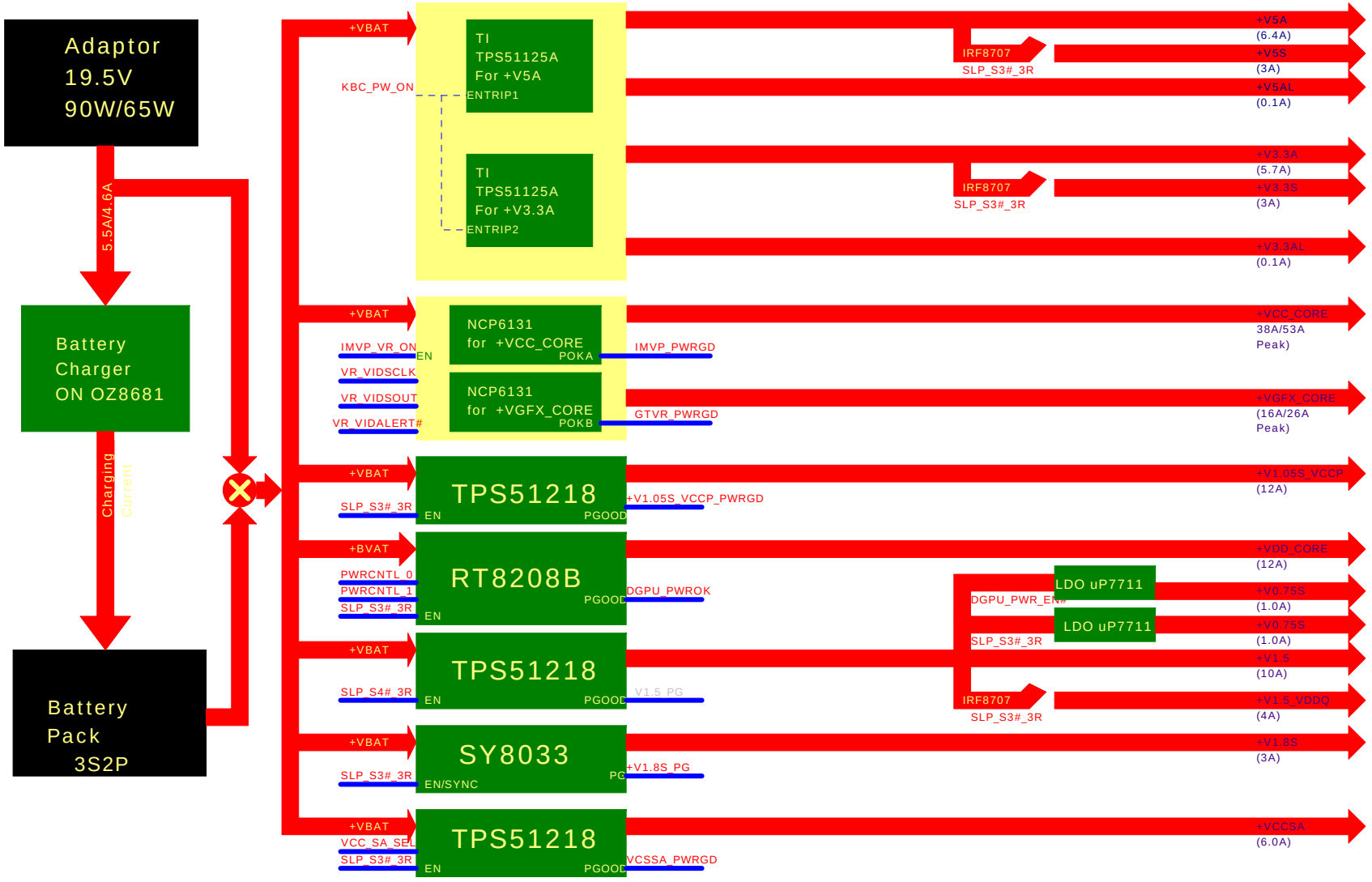
POWER MAP



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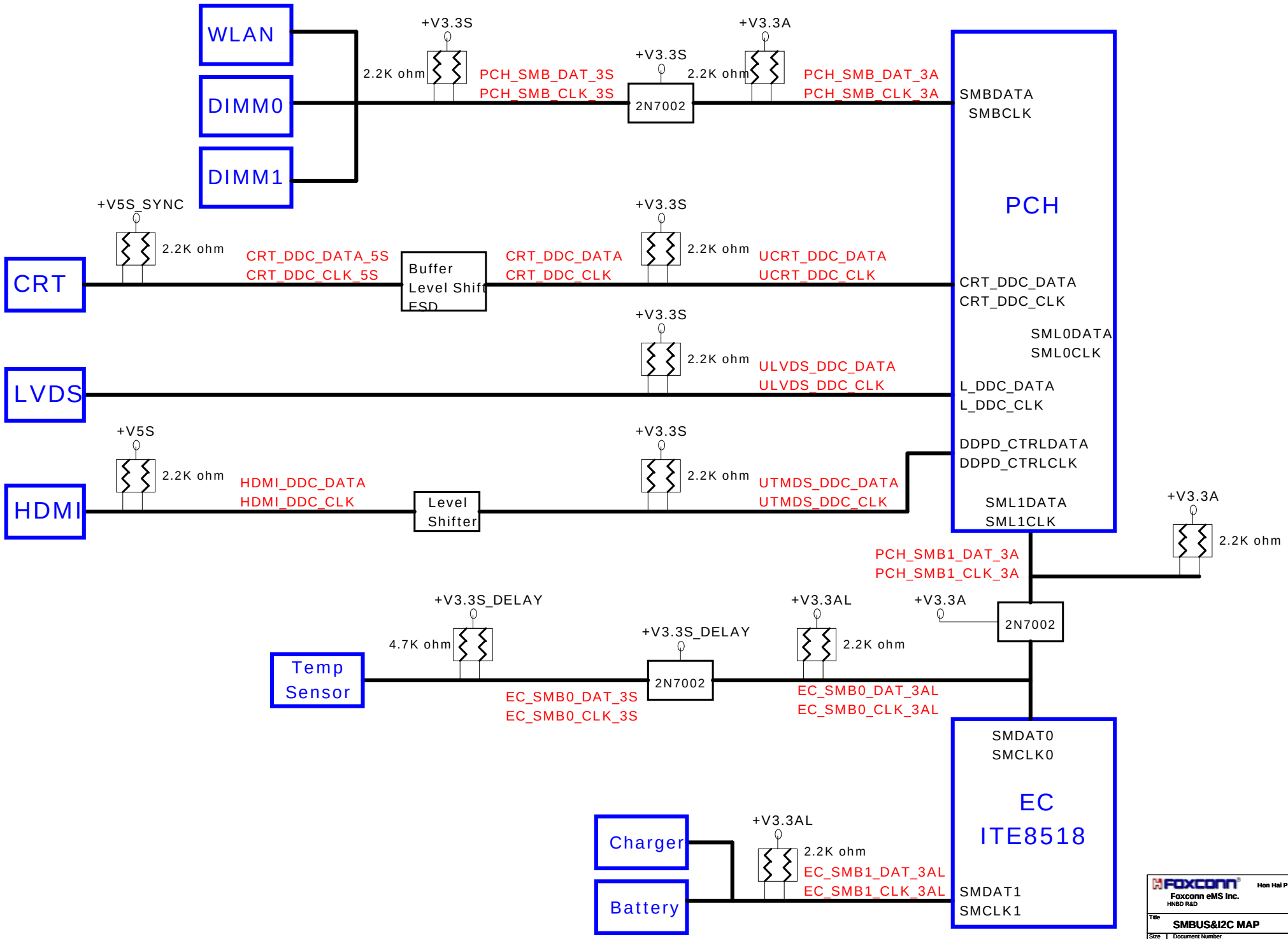

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Title: SMBUS&I2C MAP

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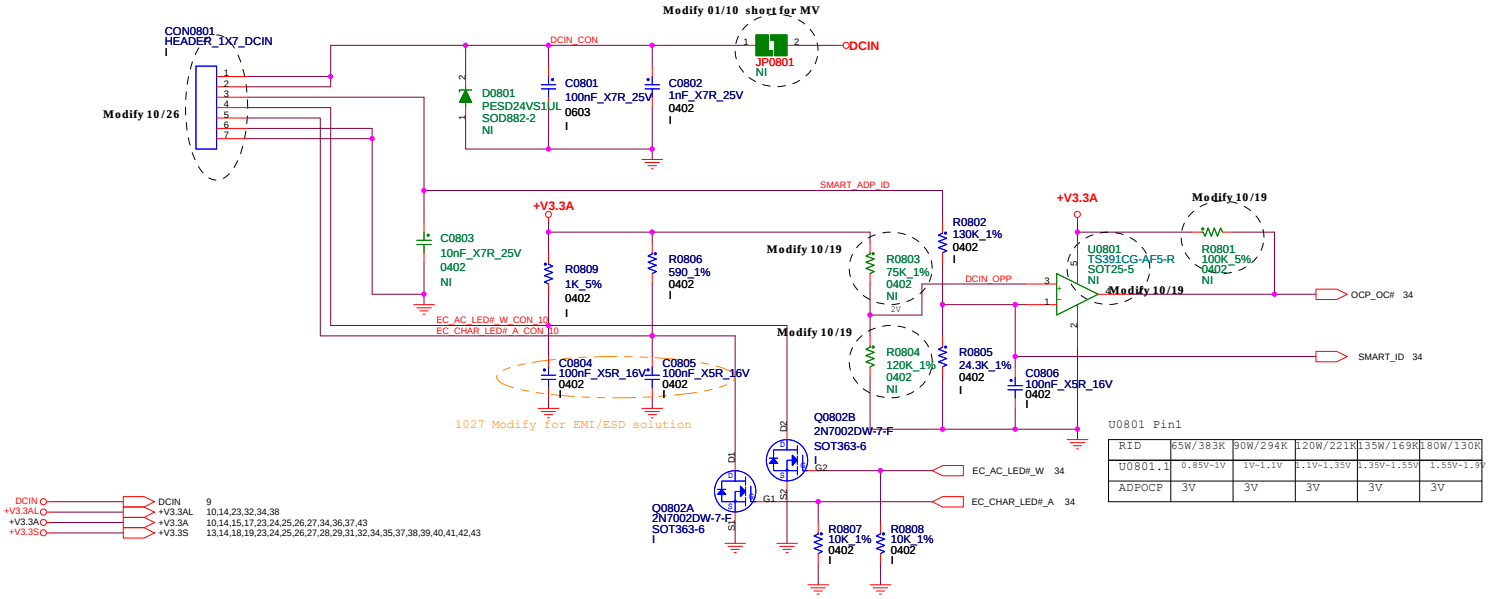
DC_JACK WIRE to BOARD CONNECTOR

2010.1203.0

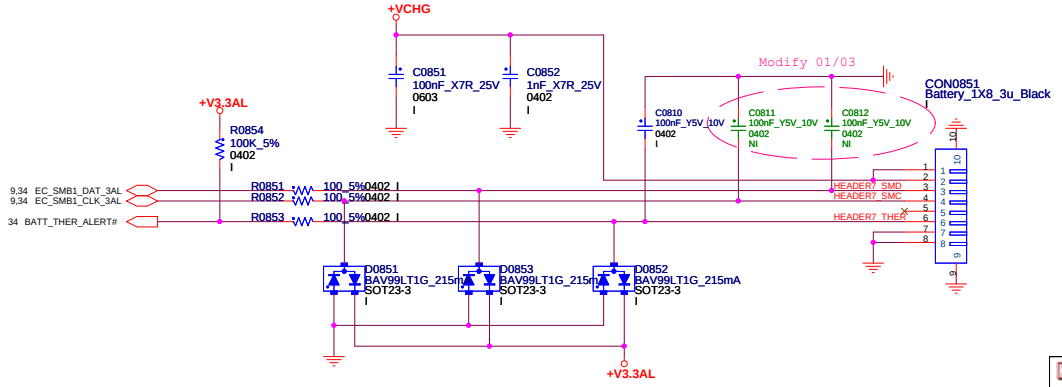


U0801 Pin1

RID	65W/383K	90W/294K	120W/221K	135W/169K	180W/130K
U0801.1	0.85V~1V	1V~1.1V	1.1V~1.35V	1.35V~1.55V	1.55V~1.9V
ADPOCP	3V	3V	3V	3V	3V

BATTERY CONNECTOR

2010.0914.0



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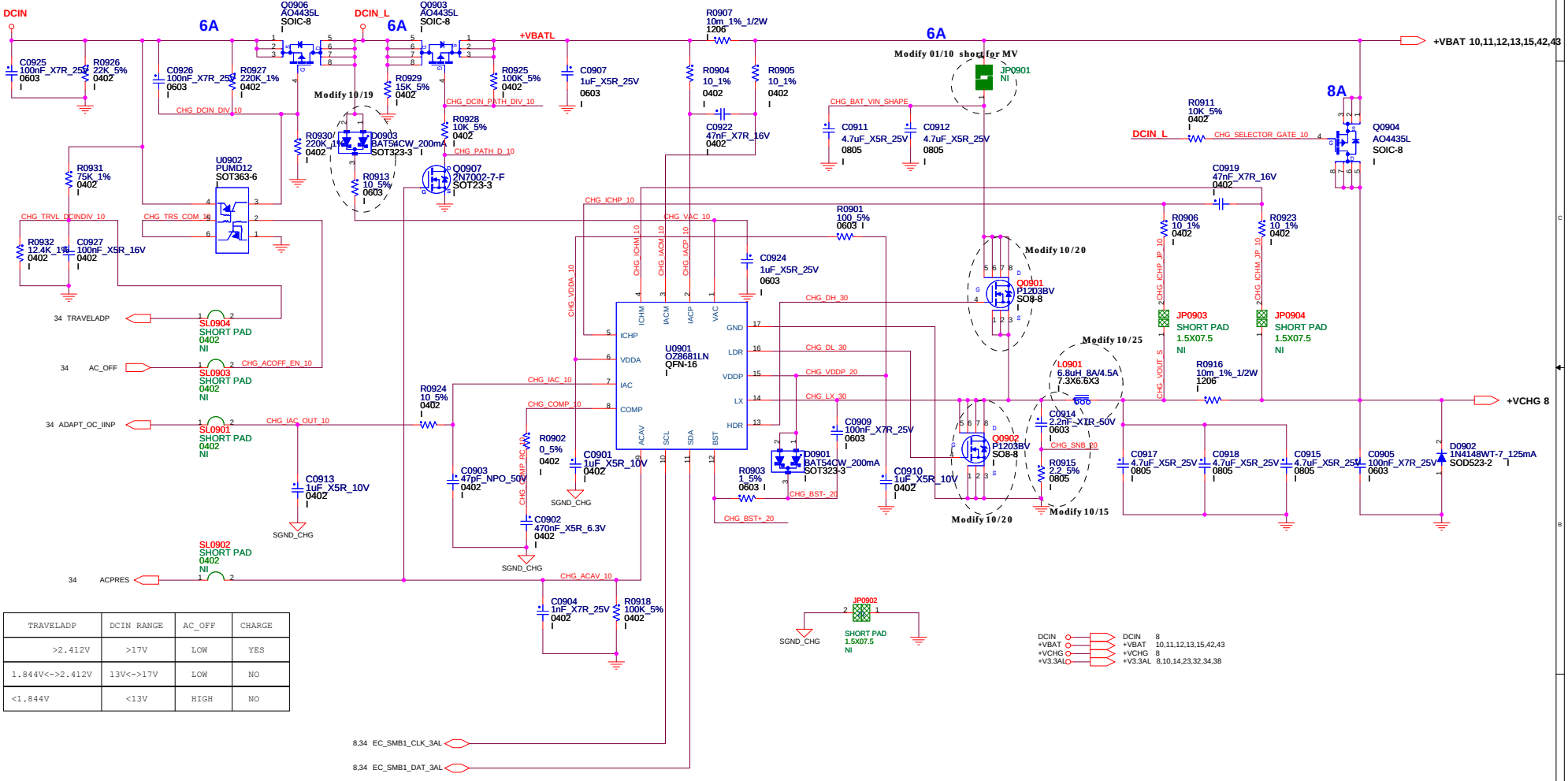
BATTERY CHARGER



TRAVELADP	DCIN RANGE	AC_OFF	CHARGE
>2.412V	>17V	LOW	YES
1.844V<->2.412V	13V<->17V	LOW	NO
<1.844V	<13V	HIGH	NO

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+V5A / +V3.3A POWER SUPPLY

2010.1103.0

+V5A:

1. I/P Current:
   Iin=Vo*Io/(0.75*Vin)=3.7A
2. Ripple Current:
   Irip=3.72A
3. Ripple Voltage:
   ESR/1=15mohm
   Vrip=55.8mV
4. Inductor Spec:
   Isat=13.5A
   Idc=6A
   DCR=30mohm
5. MOSFET Spec:
   H-side MOSFET: IRF8707PBF
   Rds(ON)=17.5mohm (Vgs=4.5 V)
   I cont = 11A (T =25 ℃)
   I peak = 88A (Pause =10 us)
6. Frequency:
   F=300KHz
7. OCP:
   Set = R1002 to 100K
   Vtrip= (R1002*10uA/9)-24mV=0.0655V
   Iocp=Vtrip/Rdson + Iripple/2 = 6.4A

+V3.3A:

1. I/P Current:
   Iin=Vo*Io/(0.75*Vin)=2.2A
2. Ripple Current:
   Irip=2.21A
3. Ripple Voltage:
   ESR/1=15mohm
   Vrip=33.15mV
4. Inductor Spec:
   Isat=13.5A
   Idc=6A
   DCR=30mohm
5. MOSFET Spec:
   L-side MOSFET: IRF8707PBF
   Rds(ON)=17.5mohm (Vgs=4.5 V)
   I cont = 11A (T =25 ℃)
   I peak = 88A (Pause =10 us)
6. Frequency:
   F=375KHz
7. OCP:
   Set = R1003 to 100K
   Vtrip= (R1003*10uA/9)-24mV=0.0655V
   Iocp=Vtrip/Rdson + Iripple/2 = 5.7A

Imax=4.5A
OCP=5.7A

Imax=5A
OCP=6.4A

Vref=2.0V

U1001 TPS51123RGER QFN-24

1027 Modify for EMI/ESD solution
Size change from 0402 to 0603

DCIN	8,9
+V12A	14
+VBAT	9,11,12,13,15,42,43
+V3.3AL	8,14,23,32,34,38
+V5AL	14,32
+V3.3S	13,14,18,19,23,24,25,26,27,28,29,31,32,34,35,37,38,39,40,41,42,43
+V5S	12,14,23,27,32,35,36,38,39,41,42,43

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+VTT POWER SUPPLY

2010.1103.0

+V1.05S_VCCP:

1. I/P Current:

Iin=Vo*Io/(0.75*Vin)=1.24A

2. Ripple Current:

Irip=3.42A

3. Ripple Voltage:

ESR/1=9mohm
Vrip=30.78mV

4. Inductor Spec:

Isat=36A
Idc=18A
DCR=3.3mohm

5.MOSFET Spec:

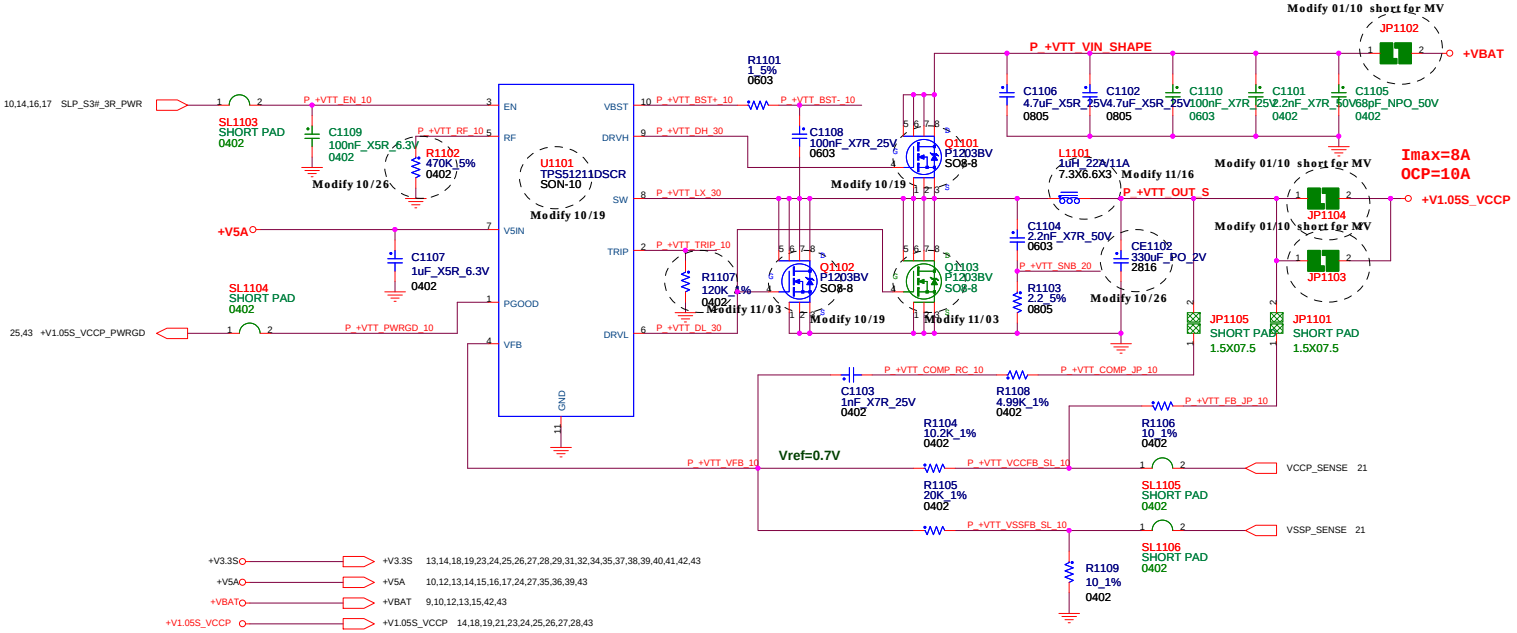
H-side MOSFET: IRF8707PBF		L-side MOSFET: IRF8707PBF	
Rds(ON)=17.5mohm	(Vgs=4.5 V)	Rds(ON)=17.5mohm	(Vgs=4.5 V)
I cont = 11A	(T =25 ℃)	I cont = 11A	(T =25 ℃)
I peak = 88A	(Pause =10 us)	I peak = 88A	(Pause =10 us)

6. Frequency:

F=290KHz (R1102=0ohm)

7. OCP:

Set = R1107 to 120K
Vtrip= R1107*10uA=1.2V
Iocp=(Vtrip/8*Rdson) + Iripple/2 = 10A



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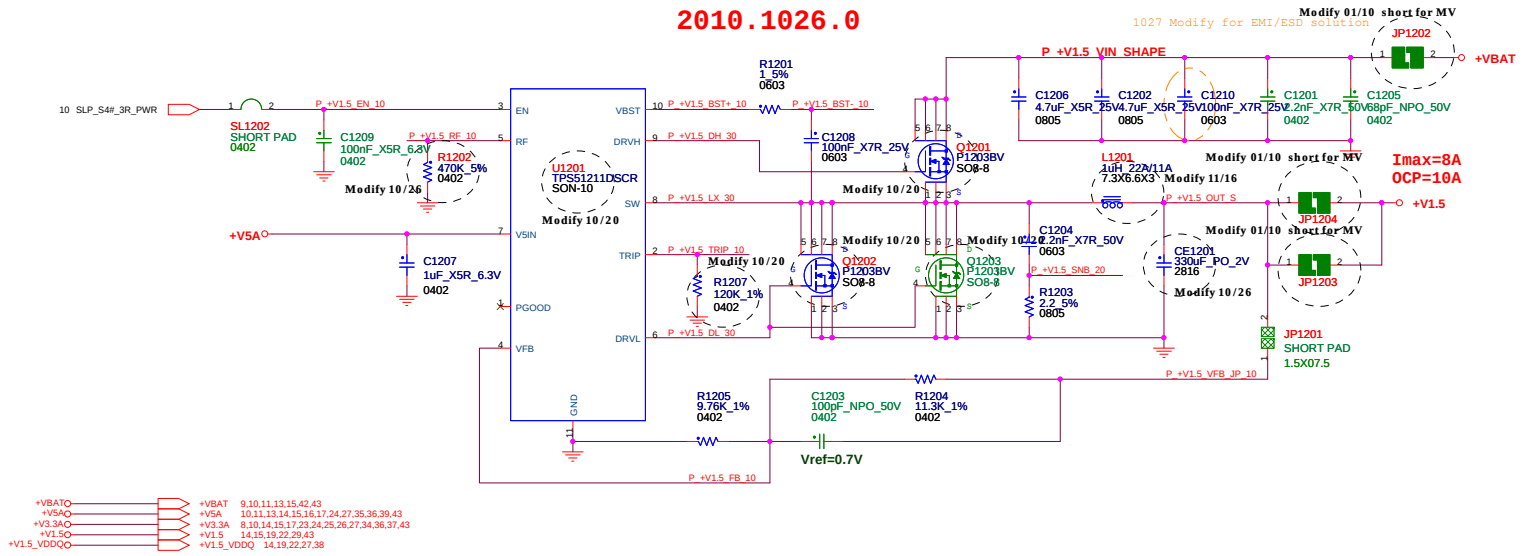
+V1.5 POWER SUPPLY

2010.1026.0



+V1.5:

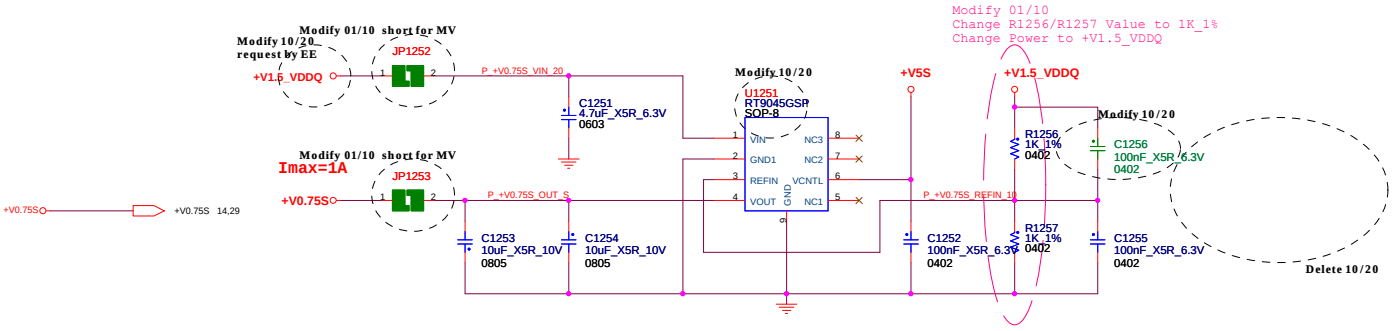
1. I/P Current:
   Iin=Vo*Io/(0.75*Vin)=1.78A
2. Ripple Current:
   Irip=3.34A
3. Ripple Voltage:
   ESR/1=9mohm
   Vrip=30.6mV
4. Inductor Spec:
   Isat=36A
   Idc=18A
   DCR=3.3mohm
5. MOSFET Spec:

H-side MOSFET: IRF8707PBF	L-side MOSFET: IRF8707PBF
Rds(ON)=17.5mohm (Vgs=4.5 V)	Rds(ON)=17.5mohm (Vgs=4.5 V)
I cont = 11A (T =25 ℃)	I cont = 11A (T =25 ℃)
I peak = 88A (Pause =10 us)	I peak = 88A (Pause =10 us)

6. Frequency:
   F=290KHz (R0902=0ohm)
7. OCP:
   Set = R1207 to 120K
   Vtrip= R1207*10uA=1.2V
   Iocp=(Vtrip/8*Rdson) + Iripple/2 = 10A

+V0.75S POWER SUPPLY

2010.1026.0



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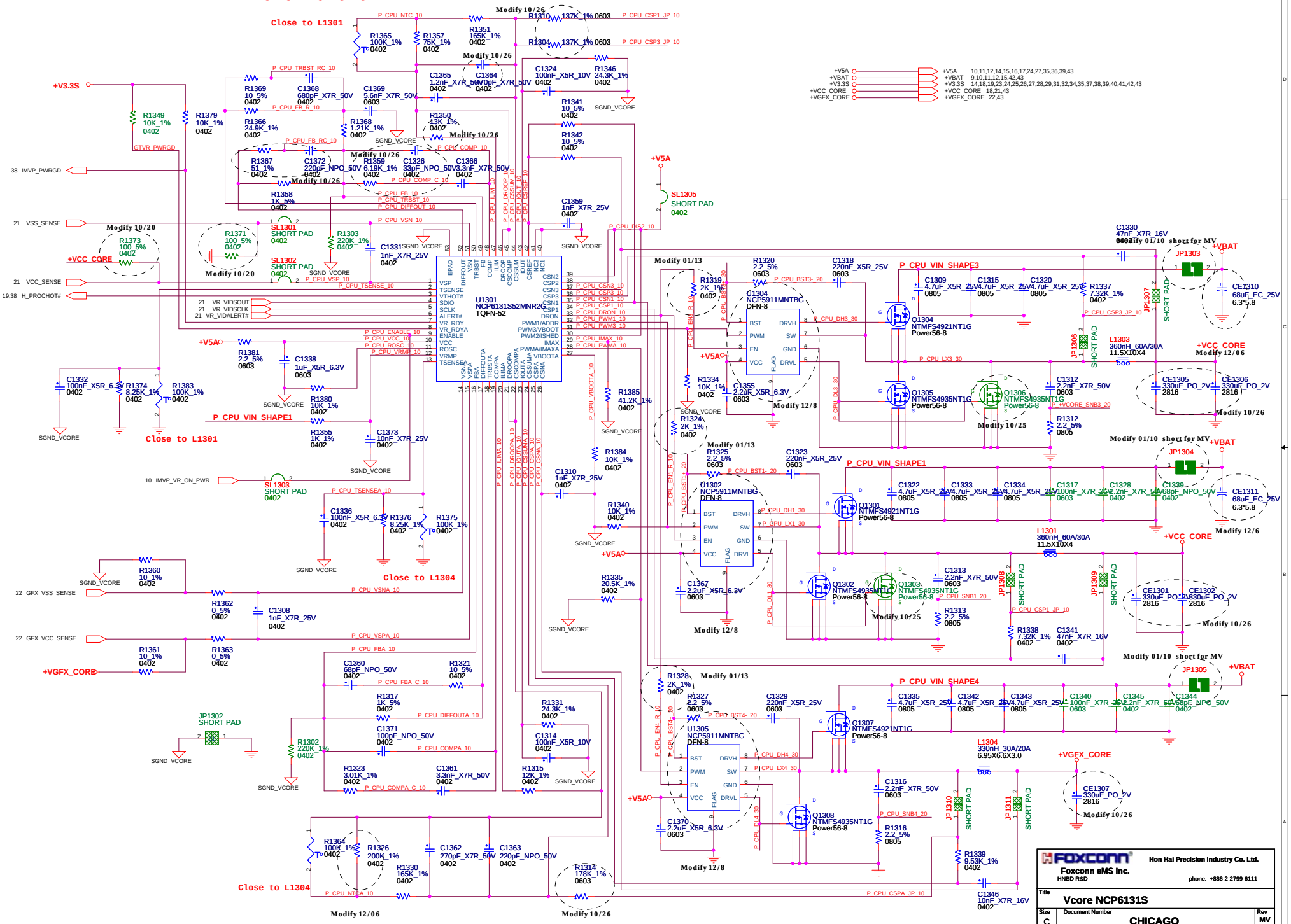
IMVP7 CPU VCORE POWER SUPPLY

2010.1026.0



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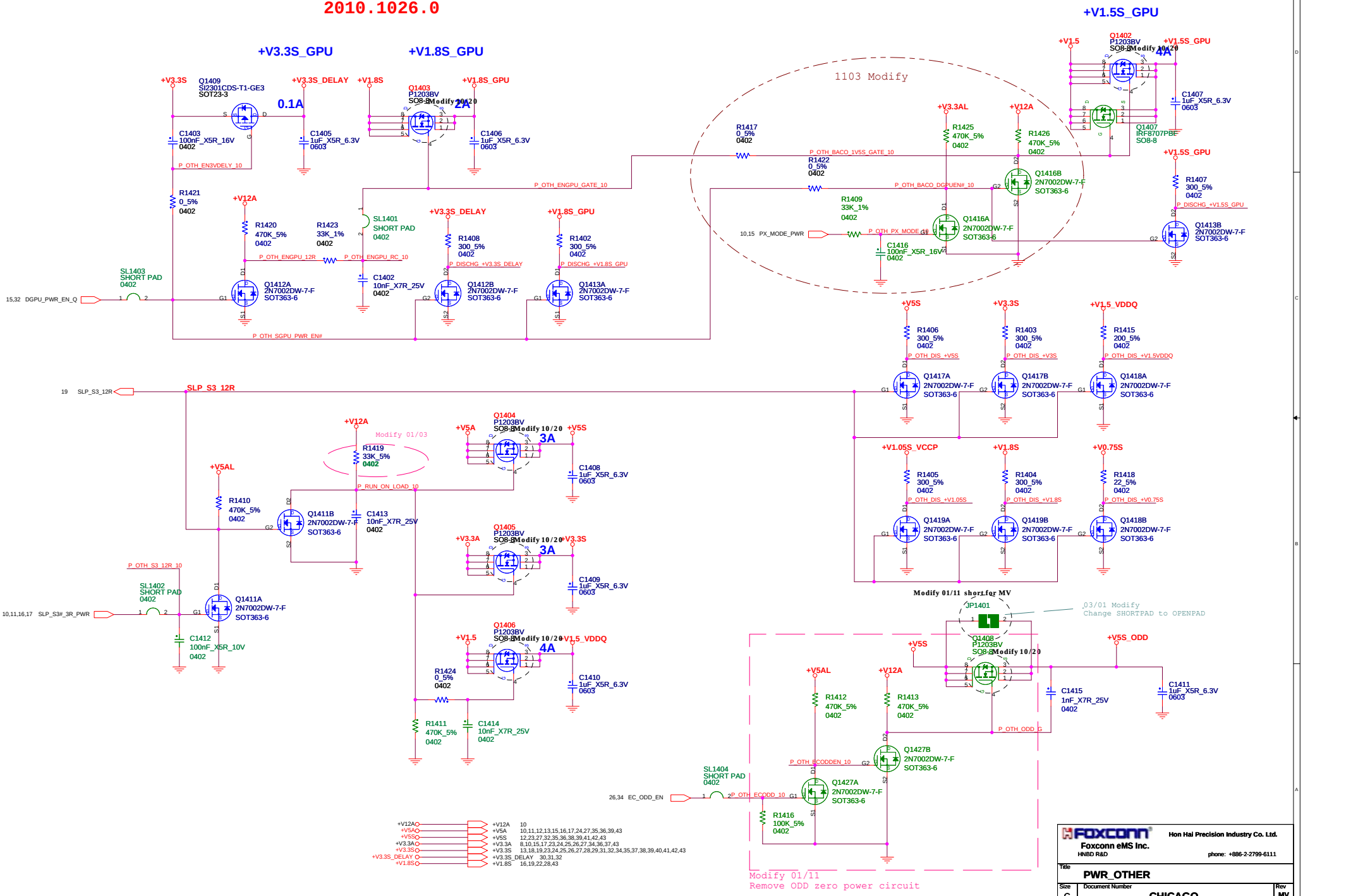
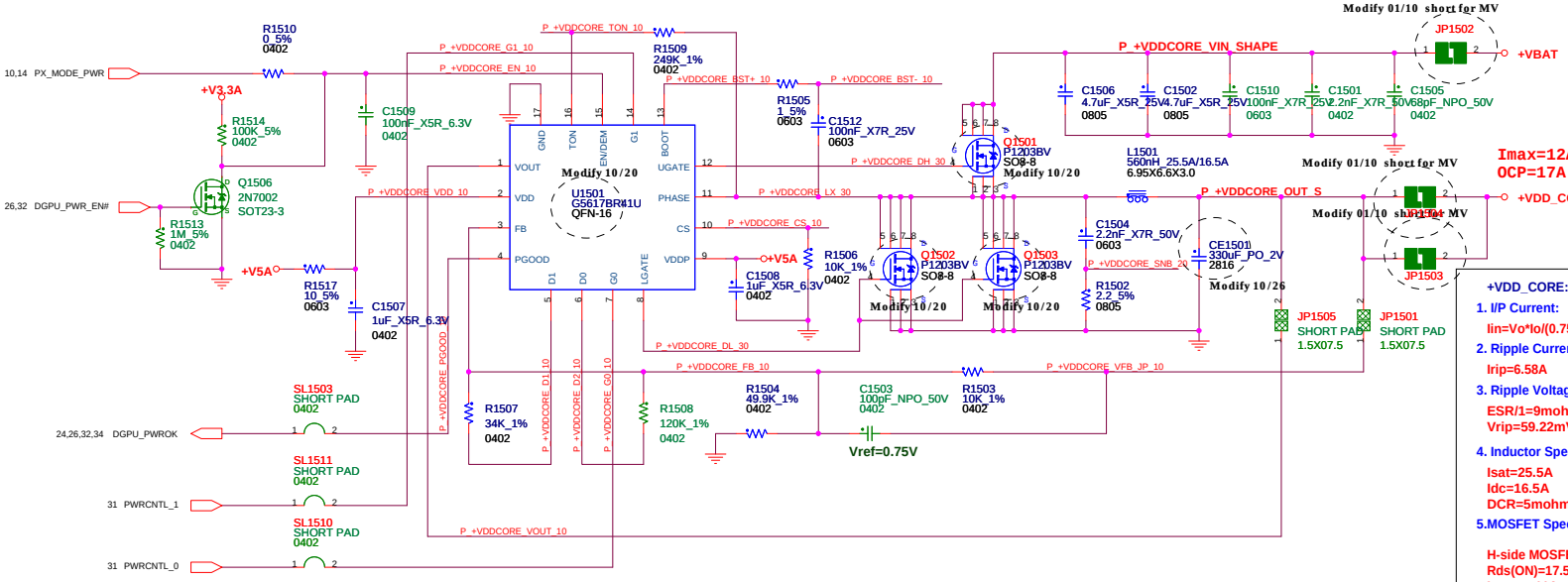
OTHER POWER / DISCHARGE CIRCUITS

2010.1026.0



+VDD_CORE POWER SUPPLY

2010.1026.0



PWRCNTL_1	PWRCNTL_0	VDD_CORE
0	---	1.121V
---	---	---
1	---	0.9V
---	---	---

+VDD_CORE:

1. I/P Current:

Iin=Vo*Io/(0.75*Vin)=1.48A

2. Ripple Current:

Irip=6.58A

3. Ripple Voltage:

ESR/1=9mohm
Vrip=59.22mV

4. Inductor Spec:

Isat=25.5A
Idc=16.5A
DCR=5mohm

5.MOSFET Spec:

H-side MOSFET: IRF8707PBF		L-side MOSFET: IRF8707PBF	
Rds(ON)=17.5mohm (Vgs=4.5 V)		Rds(ON)=17.5mohm (Vgs=4.5 V)	
I cont = 11A	(T =25 ℃)	I cont = 11A	(T =25 ℃)
I peak = 88A	(Pause =10 us)	I peak = 88A	(Pause =10 us)

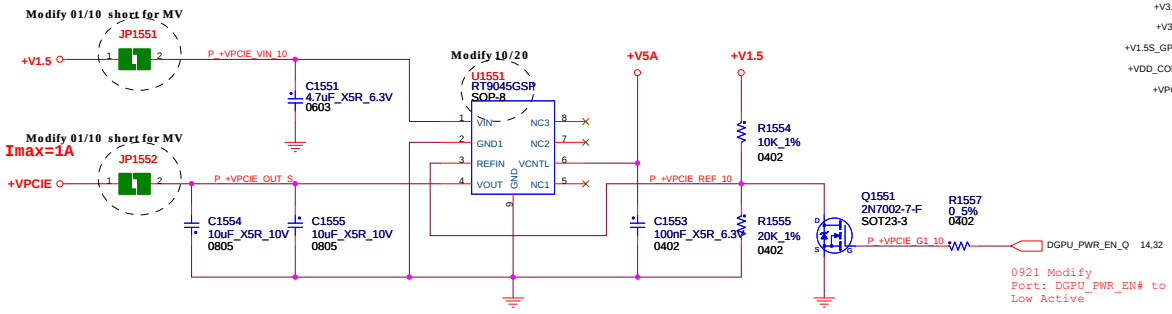
6. Frequency:

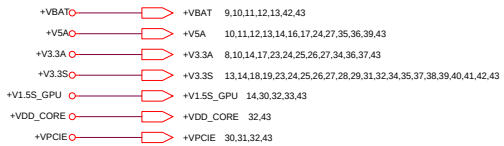
TON=9.6P*R1509*(VOUT+0.1) / (VIN-0.3)+50ns=206ns
F=VOUT/(VIN*TON)=286KHz

7. OCP:

Set = R1506 to 10K
Vtrip= R1206*10uA=0.1V
Iocp=(Vtrip/Rdson) + Iripple/2 = 17A

2010.1020.0 +VPCIE POWER SUPPLY





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+V1.8S POWER SUPPLY

2010.1025.0

+V1.8S:

1. I/P Current:

Iin=Vo*Io/(0.75*Vin)=1.44A

2. Ripple Current:

Irip=0.53A

3. Ripple Voltage:

ESR/3=3.3mohm
Vrip=1.75mV

4. Inductor Spec:

Isat=14A
Idc=8A
DCR=20mohm

5.MOSFET Spec:

H-side P-MOSFET: Rds(ON)=110mohm (Vgs=4.5 V)

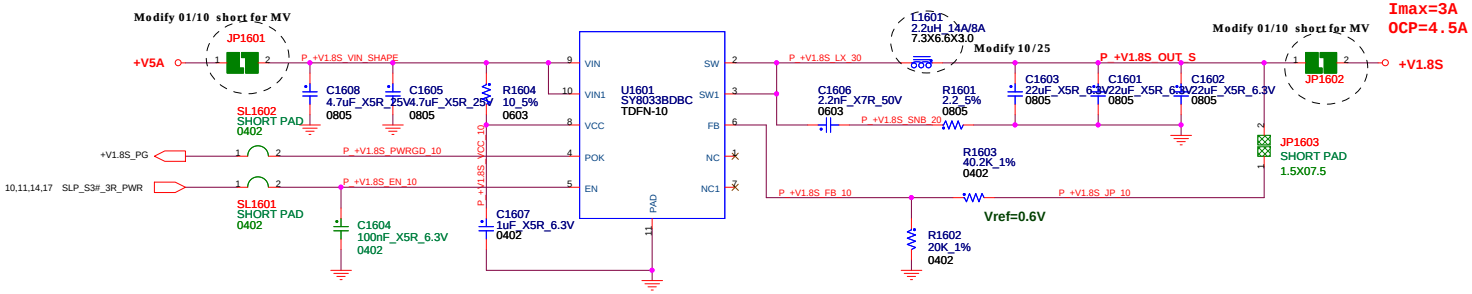
L-side N-MOSFET: Rds(ON)=75mohm (Vgs=4.5 V)

6. Frequency:

F=1MHz (min=800KHz, max=1.2MHz)

7. OCP:

Iocp=4A(min)/4.5A(typ)/5A(max)



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+VCCSA POWER SUPPLY

2010.1026.0

+VCCSA:

1. I/P Current:
Iin=Vo*Io/(0.75*Vin)=2.18A

2. Ripple Current:
Irip=1.39A

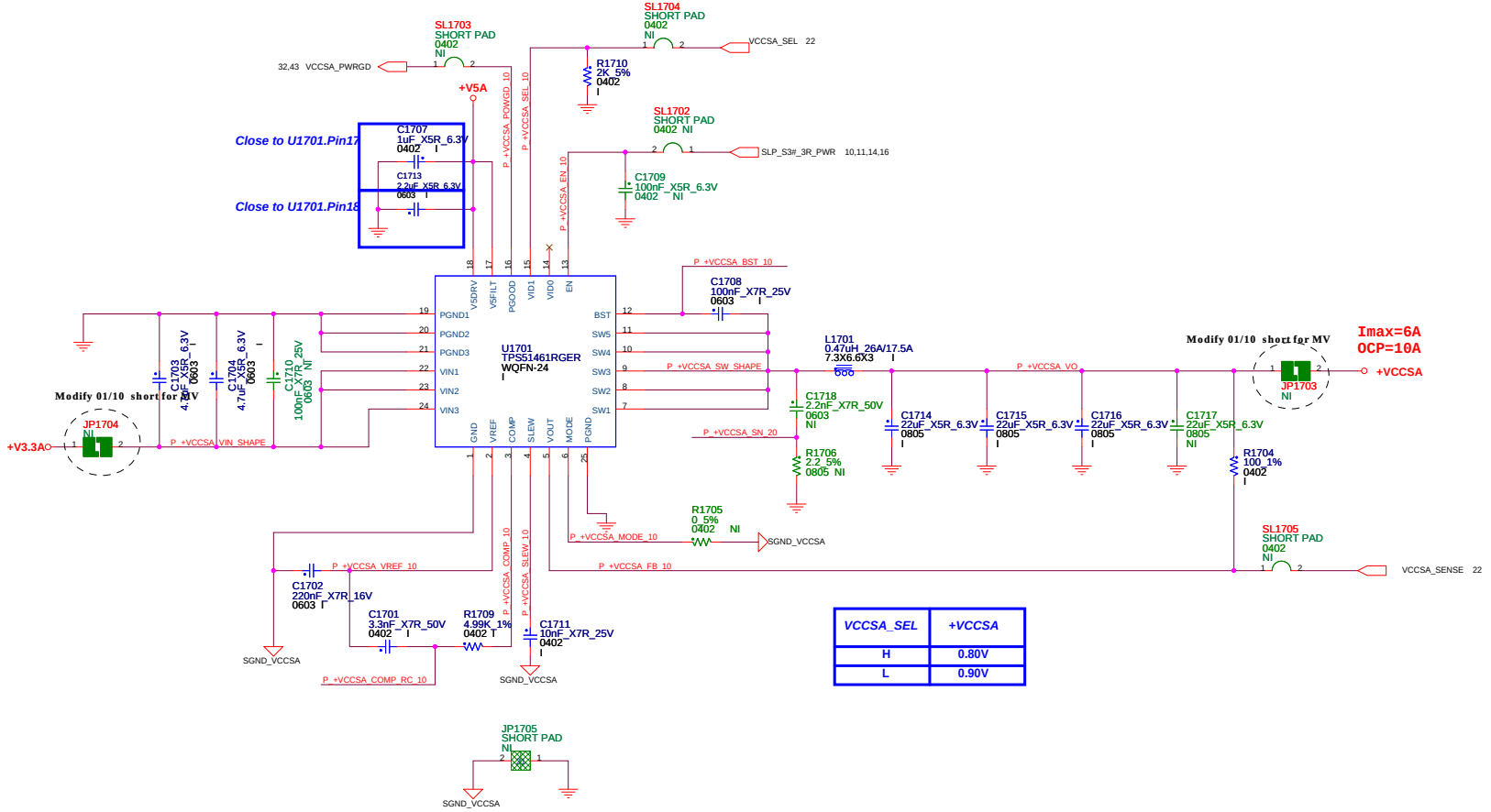
3. Ripple Voltage:
ESR/4=1mohm
Vrip=1.39mV

4. Inductor Spec:
Isat=26A
Idc=17.5A
DCR=4.2mohm

5.MOSFET Spec:

6. Frequency:
F=1MHz (R1705=Open)

7. OCP:
Min : 6A / Typ : 7.5A



VCCSA_SEL	+VCCSA
H	0.80V
L	0.90V

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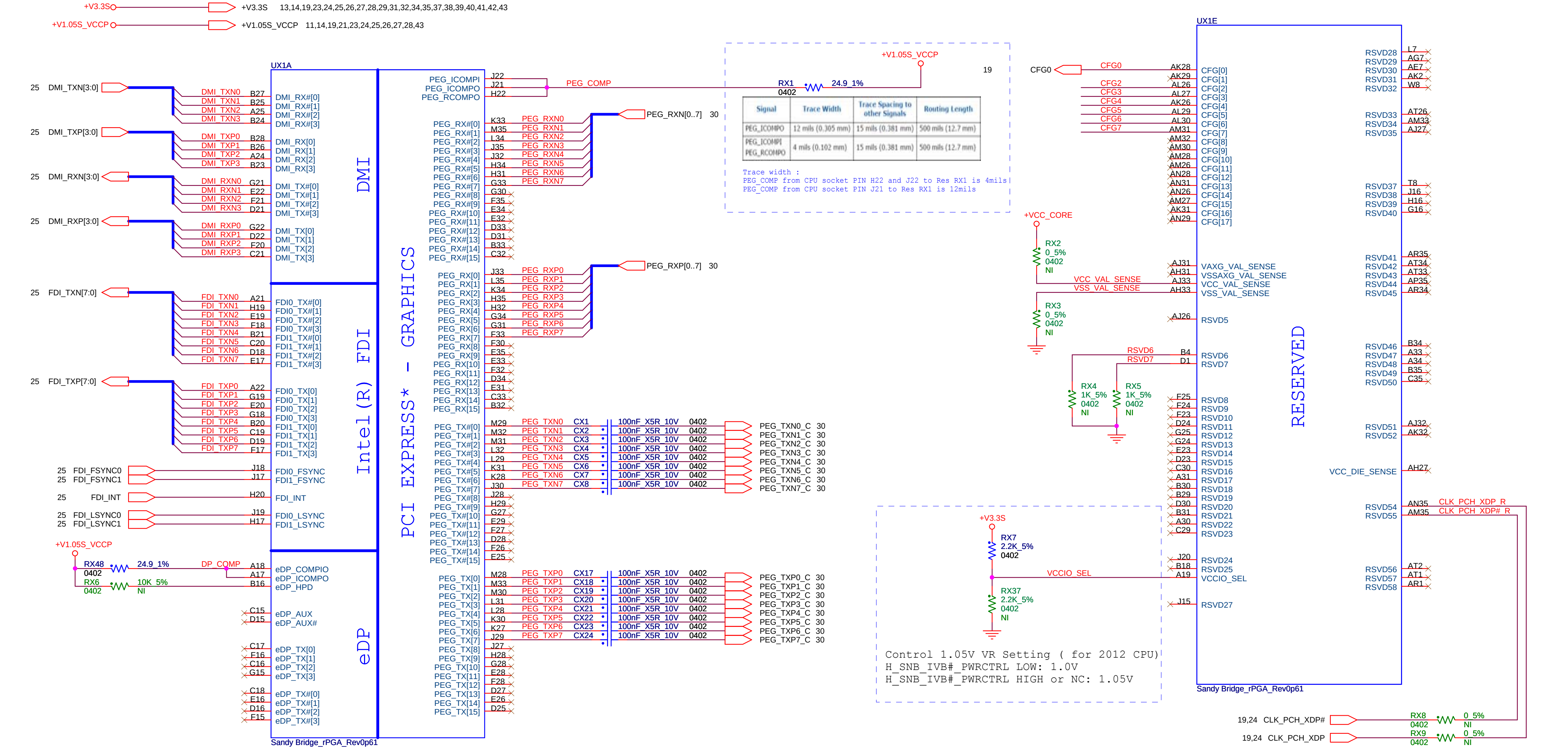
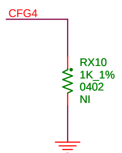


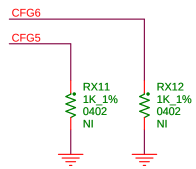
Signal	Trace Width	Trace Spacing to other Signals	Routing Length
PEG_ICOMPO	12 mils (0.305 mm)	15 mils (0.381 mm)	500 mils (12.7 mm)
PEG_ICOMPI PEG_RCOMPO	4 mils (0.102 mm)	15 mils (0.381 mm)	500 mils (12.7 mm)



Display Port Presence Strap

CFG4 1:(Default) Disabled;No Physical Display Port attached to Embedded Display Port

0:Enabled;An external Display Port is connect to Embedded Display Port



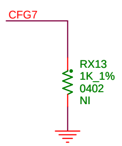
PCIE Port Bifurcation Straps

CFG[6:5] 11:(Default) x16 - Device 1 functions & 2 disabled

10:x8,x8 - Device 1 function 1 enabled ; function 2 disabled

01:Reserved - (Device 1 function 1 disabled ; function 2 enabled

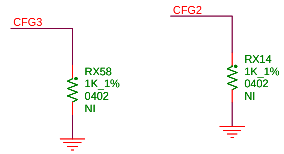
00:x8,x4,x4 - (Device 1 functions 1 & 2 enabled



PEG DEFER TRAINING

CFG7 1:(Default) PEG Train immediately following xxRESETB de assertion

0:PEG Wait for BIOS for training



PEG Static Lane Reversal - CFG2 is for the 16x

CFG2 1:(Default) Normal Operation;Lane # definition matches socket pin map definition

0:Lane Reversed

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+V3.3S +V3.3S 13,14,18,23,24,25,26,27,28,29,31,32,34,35,37,38,39,40,41,42,43
+V1.05S_VCCP +V1.05S_VCCP 11,14,18,21,23,24,25,26,27,28,43
+V1.5_VDDQ +V1.5_VDDQ 12,14,22,27,38
+V1.8S +V1.8S 14,16,22,28,43
+V1.5 +V1.5 12,14,15,22,29,43

UX1B

MISC
26 H_SNB_IVB# — RX15 2.2K_5% 0402 — +V1.8S
C26 PROC_SELECT#
AN34 SKTOCC#

THERMAL
+V1.05S_VCCP — RX18 62_5% 0402
TP_P30 TP1 — 1 H_CATERR# — AL33 CATERR#
26,34 H_PECI — AN33 PECI
13,38 H_PROCHOT# — H_PROCHOT# — RX20 0402 56_5% — H_PROCHOT# R — AL32 PROCHOT#
CX33 43pF_X7R_50V 0402 — Close to VR
26 H_THRMTRIP# — AN32 THERMTRIP#

PWR MANAGEMENT
25 H_PM_SYNC — AM34 PM_SYNC
26 H_CPUPWRGD — H_CPUPWRGD — AP33 UNCOREPWRGOOD
CX125 100nF_X5R_10V 0402 — RX27 10K_5% 0402
SM_DRAMPWROK — V8 SM_DRAMPWROK
BUF_PLT_RST# R — AR33 RESET#

CLOCKS
BCLK A28 — CLK_PCH_CPU_CLK 24
BCLK# A27 — CLK_PCH_CPU_CLK# 24 (100MHz)
DPLL_REF_CLK A16 — 0402 RX71 1K_5% — 0402 RX72 1K_5% — +V1.05S_VCCP
DPLL_REF_CLK# A15

DDR3 MISC
SM_DRAMRST# R8 — SM_DRAMRST#
SM_RCOMP[0] AK1 — SM_RCOMP0 RX22 140_1% 0402
SM_RCOMP[1] A5 — SM_RCOMP1 RX23 25.5_1% 0402
SM_RCOMP[2] A4 — SM_RCOMP2 RX24 200_1% 0402

JTAG & BPM
PRDY# AP29 — XDP_PRDY#
PREQ# AP27 — XDP_PREQ#
TCK AR26 — XDP_TCK
TMS AR27 — XDP_TMS
TRST# AP30 — XDP_TRST#
TDI AR28 — XDP_TDI
TDO AP26 — XDP_TDO
DBR# AL35 — XDP_DBR# — RX26 0402 1K_5% NI — +V3.3S — RX69 0402 0_5% NI — SB_RST# 25
BPM#[0] AT28 — XDP_OBS0
BPM#[1] AR29 — XDP_OBS1
BPM#[2] AR30 — XDP_OBS2
BPM#[3] AT30 — XDP_OBS3
BPM#[4] AP32 — XDP_OBS4
BPM#[5] AR31 — XDP_OBS5
BPM#[6] AT31 — XDP_OBS6
BPM#[7] AR32 — XDP_OBS7

Sandy Bridge_rPGA_Rev0p61

SM_DRAMRST# — RX16 0402 0_5% NI — SM_DRAMRST# Q — QX1 2N7002-7-F SOT23-3
+V1.5 — RX17 1K_5% 0402 — RX19 0402 1K_5% — DDR3_DRAMRST# 29
RX21 4.99K_1% 0402 — CX34 47nF_X7R_16V 0402
RX25 0402 0_5% — DRAMRST_CNTRL 22,24

PU/PD for JTAG signals
+V1.05S_VCCP
XDP_TDO — RX28 0402 51_5%
XDP_TMS — RX29 0402 51_5%
XDP_TDI — RX30 0402 51_5%
XDP_PREQ# — RX32 0402 51_5% NI
XDP_TCK — RX33 0402 51_5%
XDP_TRST# — RX35 0402 51_5%

+V3.3S — RX36 200_1% 0402
RX31 0402 0_5% NI — SM_DRAMPWROK_R
+V3.3S — CX126 100nF_Y5V_10V 0402
+V1.5_VDDQ — CX129 1uF_Y5V_6.3V 0402 — RX34 200_1% 0402
25 PM_DRAM_PWRGD
34,43 ALL_SYS_PWRGD
UX4 74LVC2G07GW.125 (1A 1Y 6, GND 3, VCC 5, 2A 2Y 4)
RX38 0402 130_1% SM_DRAMPWROK
RX75 39_5% 0603 NI
QX4 2N7002-7-F SOT23-3 NI — SLP_S3_12R 14

HEADER1
XDP_PREQ# XDP_PRDY# XDP_OBS0 XDP_OBS1 XDP_OBS2 XDP_OBS3 XDP_OBS4 XDP_OBS5 XDP_OBS6 XDP_OBS7
H_CPUPWRGD — RX39 0402 1K_5% NI — XDP_H_CPUPWRGD
25,34 EC_PWRBTN#
+V1.05S_VCCP — RX40 0402 1K_5% NI — XDP_HOOK2
18 CFG0
25,43 SYS_PWROK
CX37 100nF_X5R_6.3V 0402 NI — XDP_TCK
BSH-030-01-L-D-A-TR NI
CLK_PCH_XDP 18,24
CLK_PCH_XDP# 18,24
XDP_RST# — RX41 0402 1K_5% NI — +V1.05S_VCCP — BUF_PLT_RST# 26,34,37,38,40
XDP_DBR#
XDP_TDO XDP_TRST# XDP_TDI XDP_TMS

RX70 0402 1.5K_1%
+V3.3S — CX36 0402 100nF_Y5V_10V NI
+V1.05S_VCCP — RX42 0402 75_1% NI
26,34,37,38,40 BUF_PLT_RST#
UX3 74LVC1G07GW.125 SOT353-5 NI
BUFO_CPU_RST# — RX43 0402 43_1% NI — BUF_PLT_RST# R
RX44 0402 750_1%

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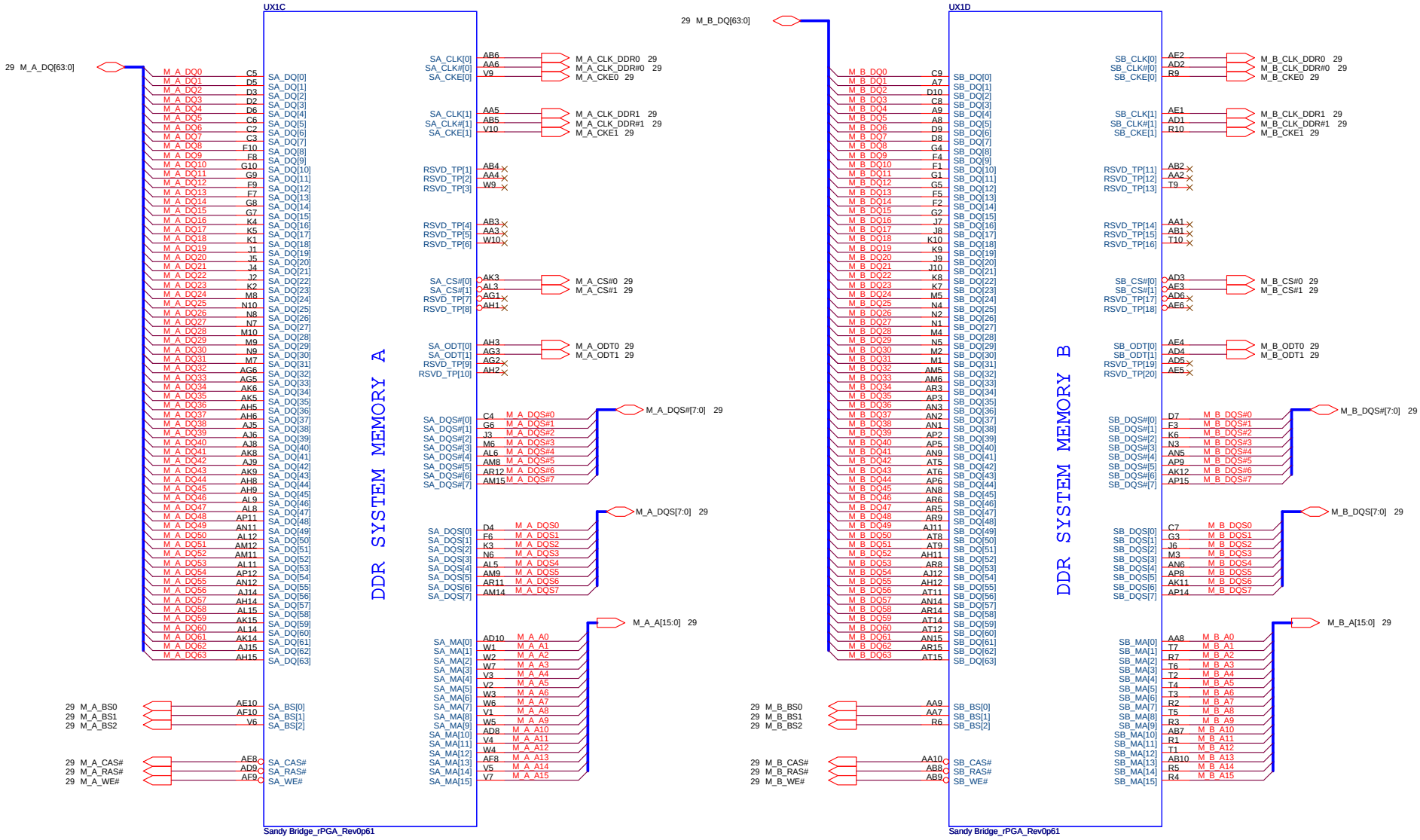

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+V1.05S_VCCP +V1.05S_VCCP 11,14,18,19,23,24,25,26,27,28,43

+VCC_CORE +VCC_CORE 13,18,43

POWER

FOR VCC:
4x 330 µF Bottom Edge,
10x 0603 10 µF Bottom Cavity,
8x 0805 22 µF Top Cavity,
8x 0805 22 µF Top Edge,

FOR VCCIO:
2x 330 µF,
5x 0805 22 µF Bottom Cavity,
7x 0805 22 µF Top Cavity,

RF solution

53A />2120mils

8.5A />340mils

UX1F

PEG AND DDR

CORE SUPPLY

SVID

SENSE LINES

UX1H

VSS

Close to VR

Close to CPU

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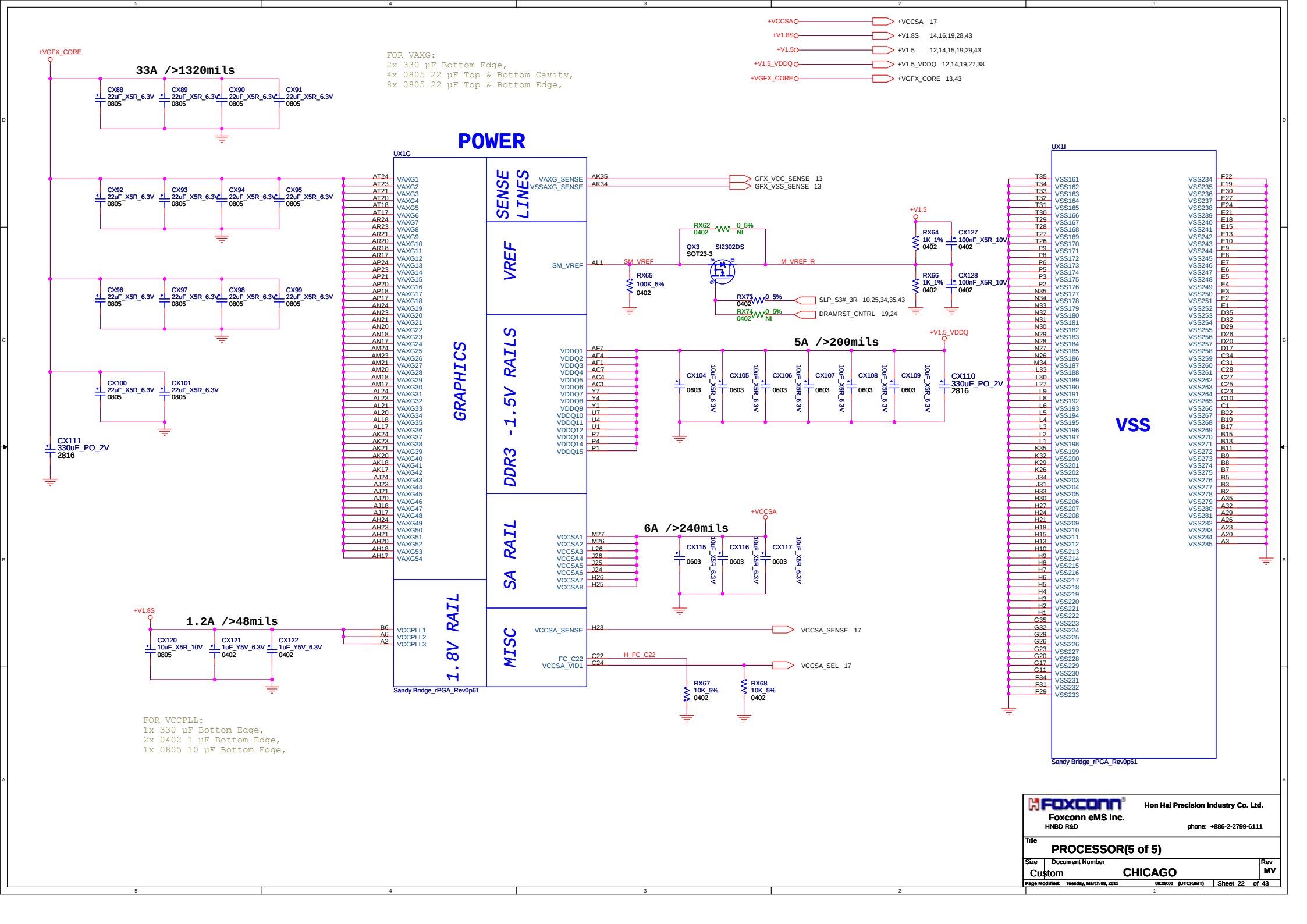
+VCCSA 17
+V1.8S 14,16,19,28,43
+V1.5 12,14,15,19,29,43
+V1.5_VDDQ 12,14,19,27,38
+VGFX_CORE 13,43
+VGFX_CORE
33A />1320mils
CX88 22uF_X5R_6.3V 0805
CX89 22uF_X5R_6.3V 0805
CX90 22uF_X5R_6.3V 0805
CX91 22uF_X5R_6.3V 0805
CX92 22uF_X5R_6.3V 0805
CX93 22uF_X5R_6.3V 0805
CX94 22uF_X5R_6.3V 0805
CX95 22uF_X5R_6.3V 0805
CX96 22uF_X5R_6.3V 0805
CX97 22uF_X5R_6.3V 0805
CX98 22uF_X5R_6.3V 0805
CX99 22uF_X5R_6.3V 0805
CX100 22uF_X5R_6.3V 0805
CX101 22uF_X5R_6.3V 0805
CX111 330uF_PO_2V 2816
FOR VAXG:
2x 330 µF Bottom Edge,
4x 0805 22 µF Top & Bottom Cavity,
8x 0805 22 µF Top & Bottom Edge,
POWER
UX1G
SENSE LINES
VAXG_SENSE
VSSAXG_SENSE
AK35
AK34
GFX_VCC_SENSE 13
GFX_VSS_SENSE 13
VREF
SM_VREF
AL1
RX62 0_5% 0402 NI
QX3 SI2302DS SOT23-3
RX65 100K_5% 0402
RX73 0_5% 0402
RX74 0_5% 0402 NI
SLP_S3#_3R 10,25,34,35,43
DRAMRST_CNTRL 19,24
+V1.5
RX64 1K_1% 0402
RX66 1K_1% 0402
CX127 100nF_X5R_10V 0402
CX128 100nF_X5R_10V 0402
GRAPHICS
DDR3 -1.5V RAILS
5A />200mils
+V1.5_VDDQ
VDDQ1 VDDQ2 VDDQ3 VDDQ4 VDDQ5 VDDQ6 VDDQ7 VDDQ8 VDDQ9 VDDQ10 VDDQ11 VDDQ12 VDDQ13 VDDQ14 VDDQ15
AF7 AF4 AF1 AC7 AC4 AC1 Y7 Y4 Y1 U7 U4 U1 P7 P4 P1
CX104 CX105 CX106 CX107 CX108 CX109 10uF_X5R_6.3V 0603
CX110 330uF_PO_2V 2816
SA RAIL
6A />240mils
+VCCSA
VCCSA1 VCCSA2 VCCSA3 VCCSA4 VCCSA5 VCCSA6 VCCSA7 VCCSA8
M27 M26 L26 J26 J25 J24 H26 H25
CX115 CX116 CX117 10uF_X5R_6.3V 0603
MISC
VCCSA_SENSE
H23
VCCSA_SENSE 17
FC_C22
VCCSA_VID1
C22 C24
H_FC_C22
VCCSA_SEL 17
RX67 10K_5% 0402
RX68 10K_5% 0402
1.8V RAIL
+V1.8S
1.2A />48mils
CX120 10uF_X5R_10V 0805
CX121 1uF_Y5V_6.3V 0402
CX122 1uF_Y5V_6.3V 0402
VCCPLL1 VCCPLL2 VCCPLL3
B6 A6 A2
Sandy Bridge_rPGA_Rev0p61
FOR VCCPLL:
1x 330 µF Bottom Edge,
2x 0402 1 µF Bottom Edge,
1x 0805 10 µF Bottom Edge,
UX1I
VSS
VSS161 VSS162 VSS163 VSS164 VSS165 VSS166 VSS167 VSS168 VSS169 VSS170 VSS171 VSS172 VSS173 VSS174 VSS175 VSS176 VSS177 VSS178 VSS179 VSS180 VSS181 VSS182 VSS183 VSS184 VSS185 VSS186 VSS187 VSS188 VSS189 VSS190 VSS191 VSS192 VSS193 VSS194 VSS195 VSS196 VSS197 VSS198 VSS199 VSS200 VSS201 VSS202 VSS203 VSS204 VSS205 VSS206 VSS207 VSS208 VSS209 VSS210 VSS211 VSS212 VSS213 VSS214 VSS215 VSS216 VSS217 VSS218 VSS219 VSS220 VSS221 VSS222 VSS223 VSS224 VSS225 VSS226 VSS227 VSS228 VSS229 VSS230 VSS231 VSS232 VSS233
VSS234 VSS235 VSS236 VSS237 VSS238 VSS239 VSS240 VSS241 VSS242 VSS243 VSS244 VSS245 VSS246 VSS247 VSS248 VSS249 VSS250 VSS251 VSS252 VSS253 VSS254 VSS255 VSS256 VSS257 VSS258 VSS259 VSS260 VSS261 VSS262 VSS263 VSS264 VSS265 VSS266 VSS267 VSS268 VSS269 VSS270 VSS271 VSS272 VSS273 VSS274 VSS275 VSS276 VSS277 VSS278 VSS279 VSS280 VSS281 VSS282 VSS283 VSS284 VSS285
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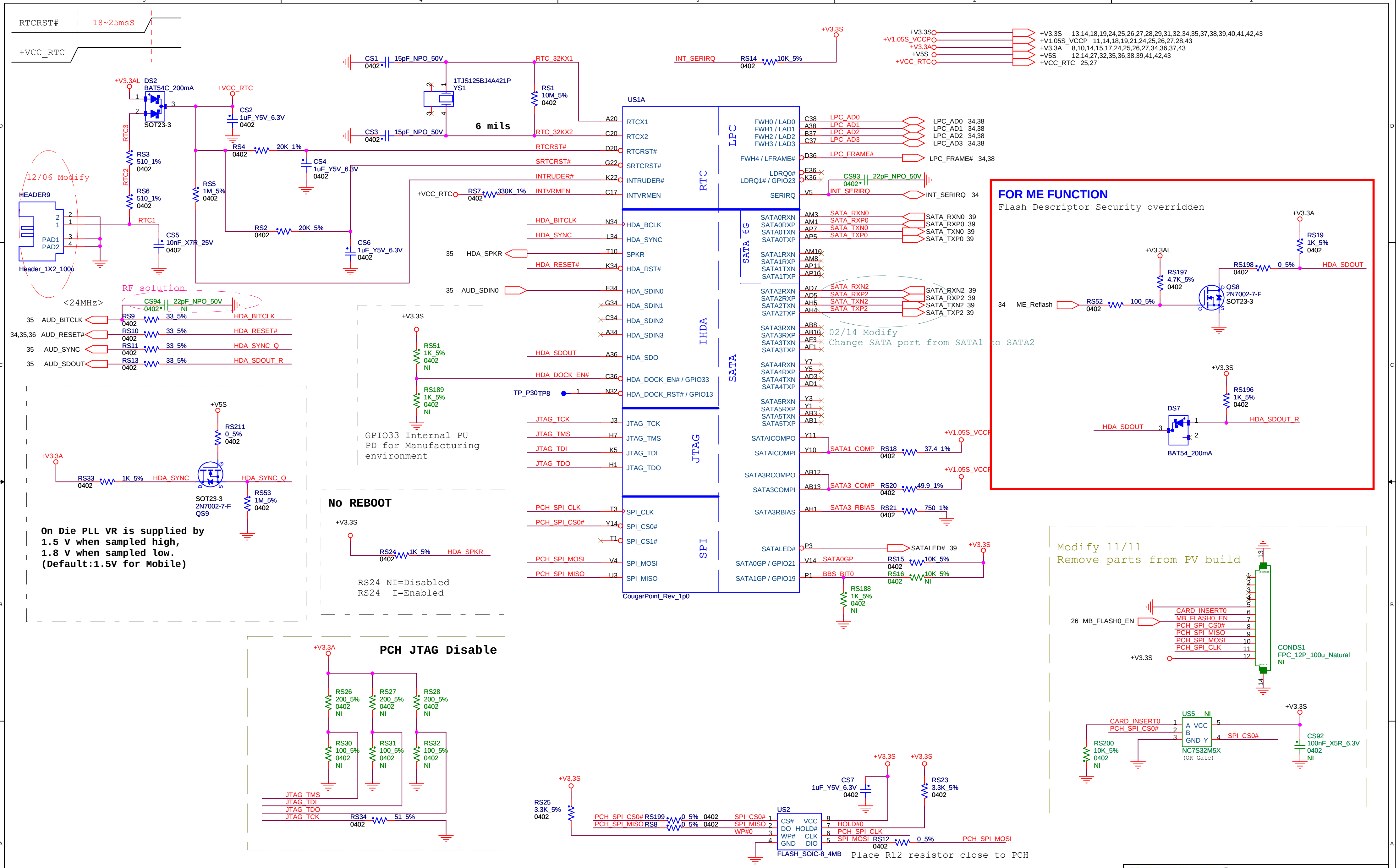
RTCRST#
18~25msS
+VCC_RTC
12/06 Modify
RF solution
6 mils
US1A
CougarPoint_Rev_1p0
RTC
LPC
SATA 6G
IHDA
SATA
JTAG
SPI
FOR ME FUNCTION
Flash Descriptor Security overridden
02/14 Modify
Change SATA port from SATA1 to SATA2
GPIO33 Internal PU
PD for Manufacturing
environment
No REBOOT
RS24 NI=Disabled
RS24 I=Enabled
On Die PLL VR is supplied by
1.5 V when sampled high,
1.8 V when sampled low.
(Default:1.5V for Mobile)
PCH JTAG Disable
Modify 11/11
Remove parts from PV build
Place R12 resistor close to PCH
FLASH_SOIC-8_4MB
CONDS1
FPC_12P_100u_Natural
NC7S32M5X
(OR Gate)

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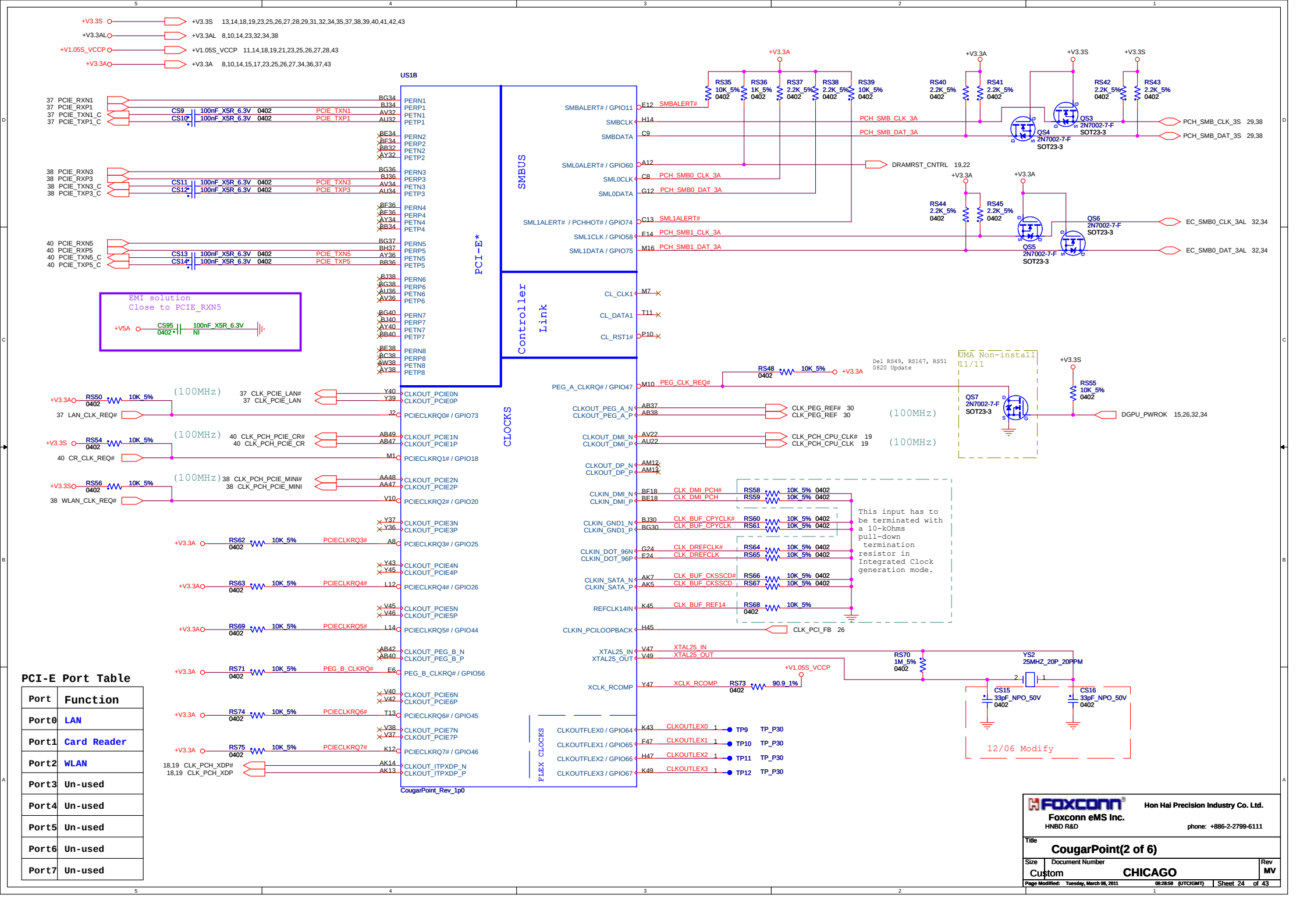

PCI-E Port Table

Port	Function
Port0	LAN
Port1	Card Reader
Port2	WLAN
Port3	Un-used
Port4	Un-used
Port5	Un-used
Port6	Un-used
Port7	Un-used

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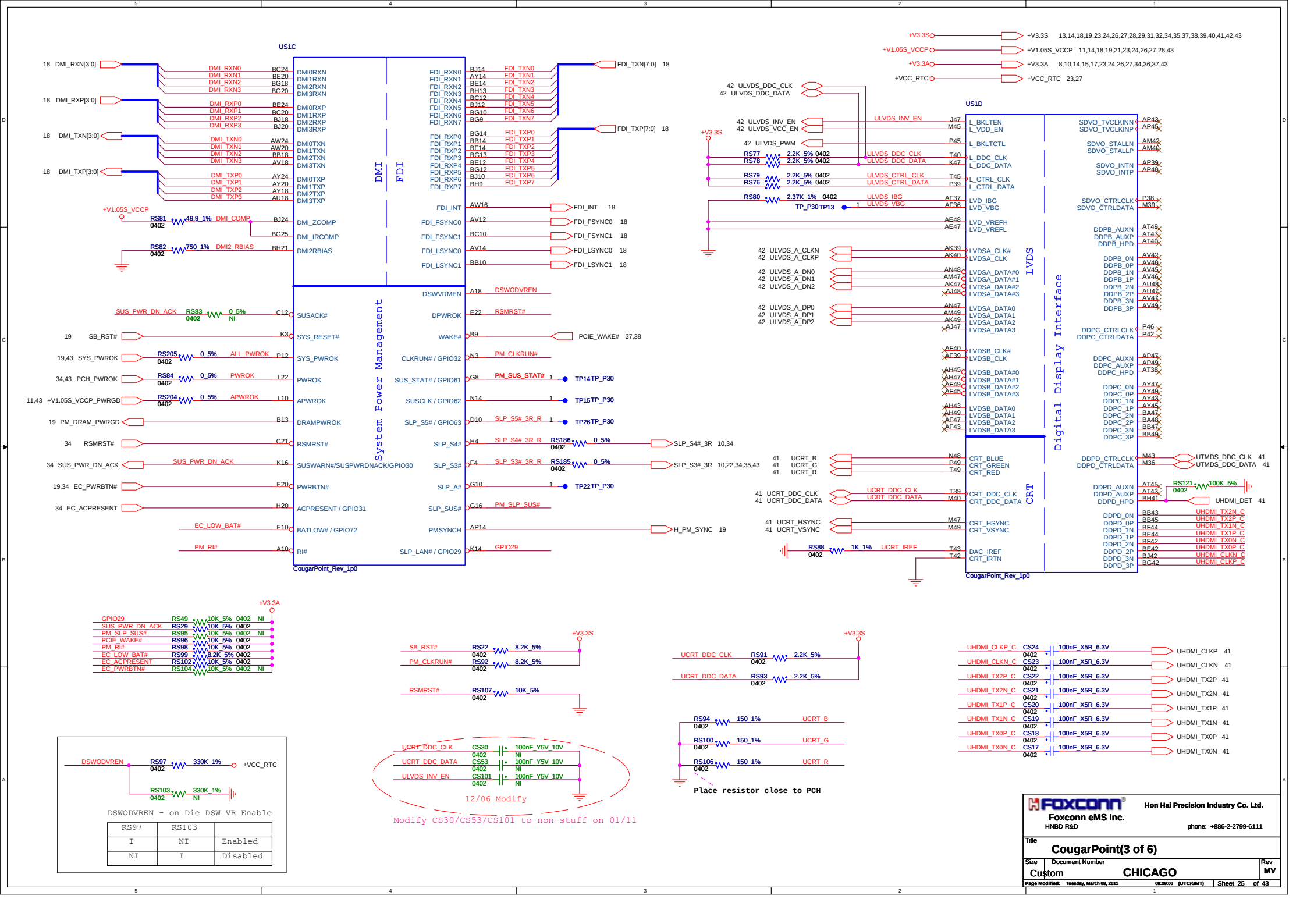
US1C
DMI
FDI
System Power Management
CougarPoint_Rev_1p0
US1D
LVDS
Digital Display Interface
CRT
CougarPoint_Rev_1p0
12/06 Modify
Modify CS30/CS53/CS101 to non-stuff on 01/11
Place resistor close to PCH
DSWODVREN - on Die DSW VR Enable
RS97 | RS103 |
I | NI | Enabled
NI | I | Disabled
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Boot BIOS Strap		
BBS_BIT1	BBS_BIT0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

PLL ON DIE VR ENABLE		
GP28	0	disable
	1	Enable(Default)

USB PORT	Function	OC#
PORT-0	USB Port	OC0#
PORT-1	USB Port	
PORT-2	USB Port	OC1#
PORT-3	NC	
PORT-4	NC	
PORT-5	NC	
PORT-6	NC	
PORT-7	NC	
PORT-8	NC	
PORT-9	NC	
PORT-10	Camera	
PORT-11	WLAN/BT	
PORT-12	NC	
PORT-13	NC	

Del RS121 8.2Kohm to +V3.3S
0820 Update

12/06 Modify

Modify CS102/CS103 to non-stuff on 01/11

02/24 Modify
same as the PV build

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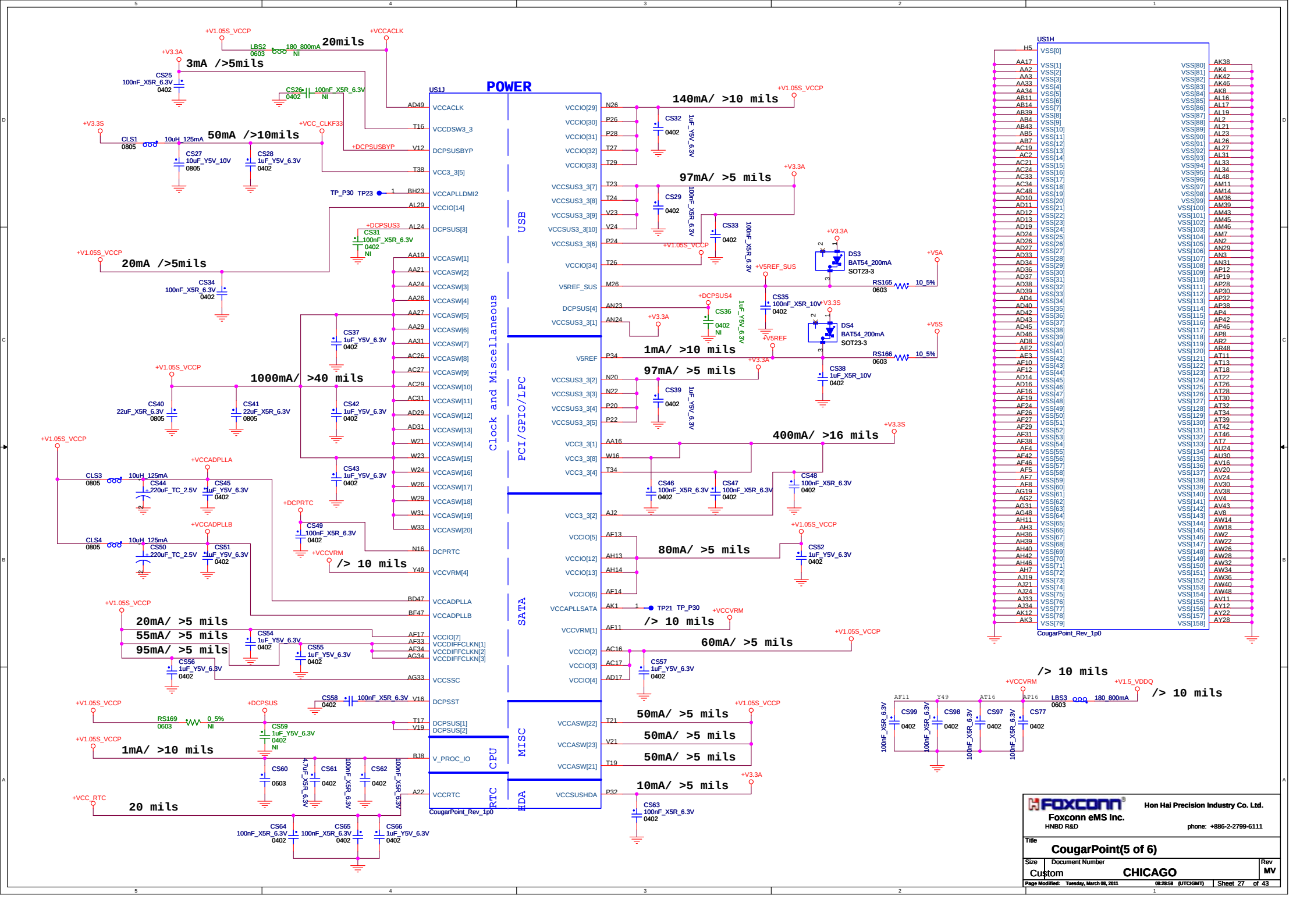
POWER
US1J
CougarPoint_Rev_1p0
Clock and Miscellaneous
USB
PCI/GPIO/LPC
SATA
MISC
CPU
RTC
HDA
20mils
3mA />5mils
50mA />10mils
20mA />5mils
1000mA/ >40 mils
1mA/ >10 mils
20mA/ >5 mils
55mA/ >5 mils
95mA/ >5 mils
20 mils
140mA/ >10 mils
97mA/ >5 mils
1mA/ >10 mils
97mA/ >5 mils
400mA/ >16 mils
80mA/ >5 mils
/> 10 mils
60mA/ >5 mils
50mA/ >5 mils
50mA/ >5 mils
50mA/ >5 mils
10mA/ >5 mils
/> 10 mils
/> 10 mils
US1H
CougarPoint_Rev_1p0
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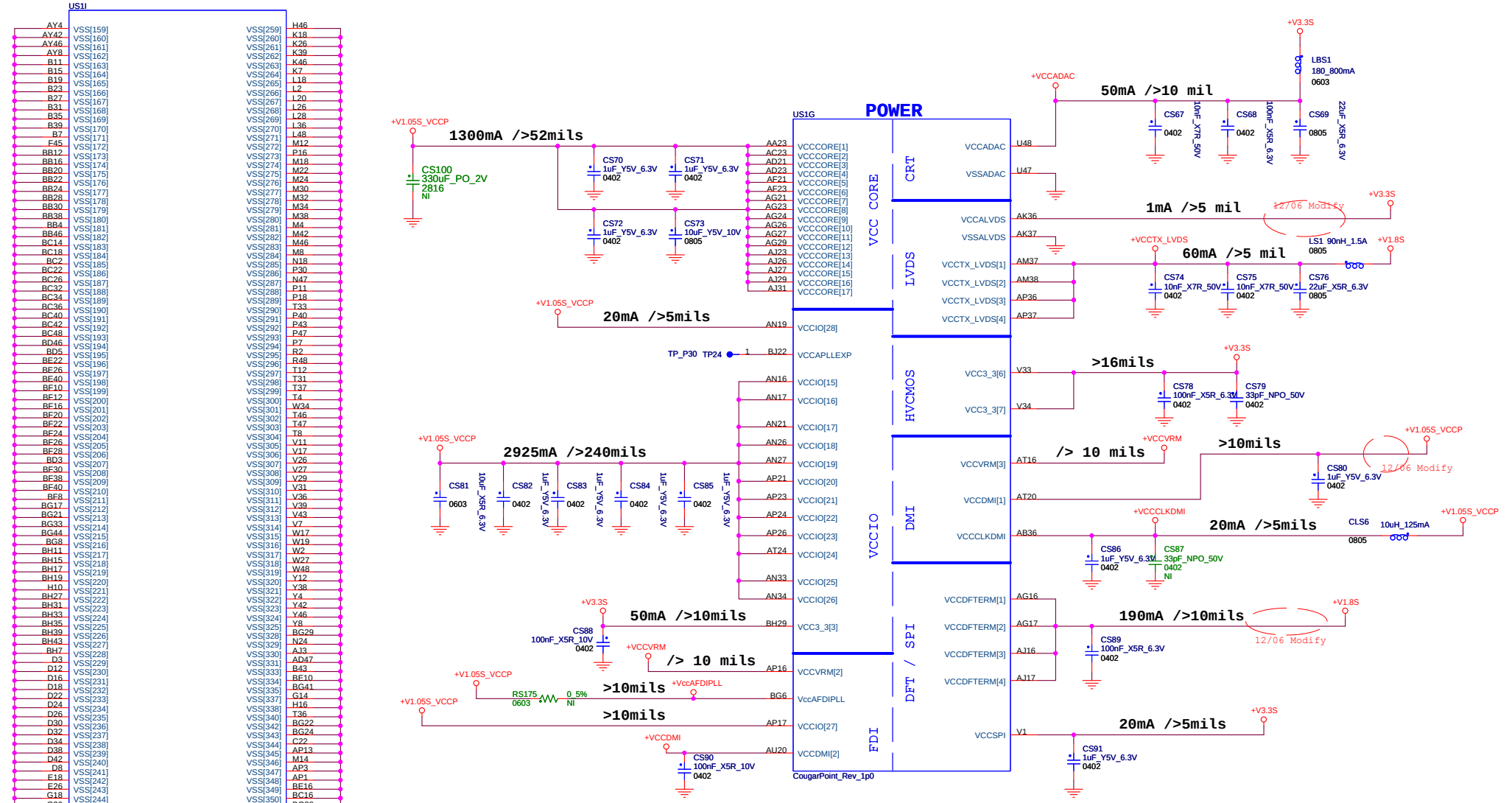

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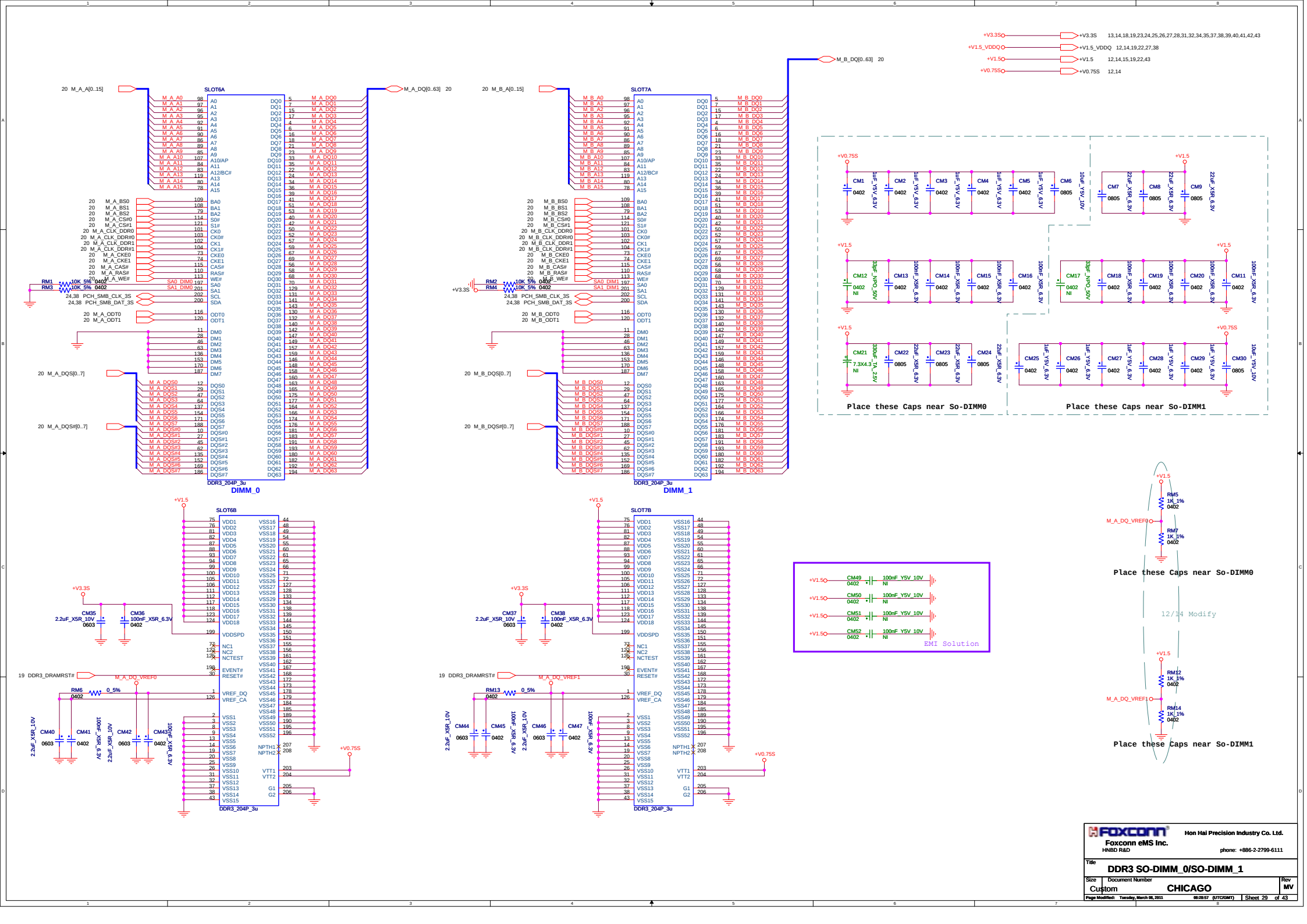
+V3.3S +V3.3S 13,14,18,19,23,24,25,26,27,28,31,32,34,35,37,38,39,40,41,42,43
+V1.5_VDDQ +V1.5_VDDQ 12,14,19,22,27,38
+V1.5 +V1.5 12,14,15,19,22,43
+V0.75S +V0.75S 12,14
M_B_DQ[0..63] 20
SLOT6A
SLOT7A
DDR3_204P_3u
DIMM_0
DIMM_1
M_A_DQ[0..63] 20
M_B_DQ[0..63] 20
Place these Caps near So-DIMM0
Place these Caps near So-DIMM1
SLOT6B
SLOT7B
EMI Solution
RM5 1K_1% 0402
RM7 1K_1% 0402
RM12 1K_1% 0402
RM14 1K_1% 0402
12/14 Modify
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DDR3 SO-DIMM_0/SO-DIMM_1
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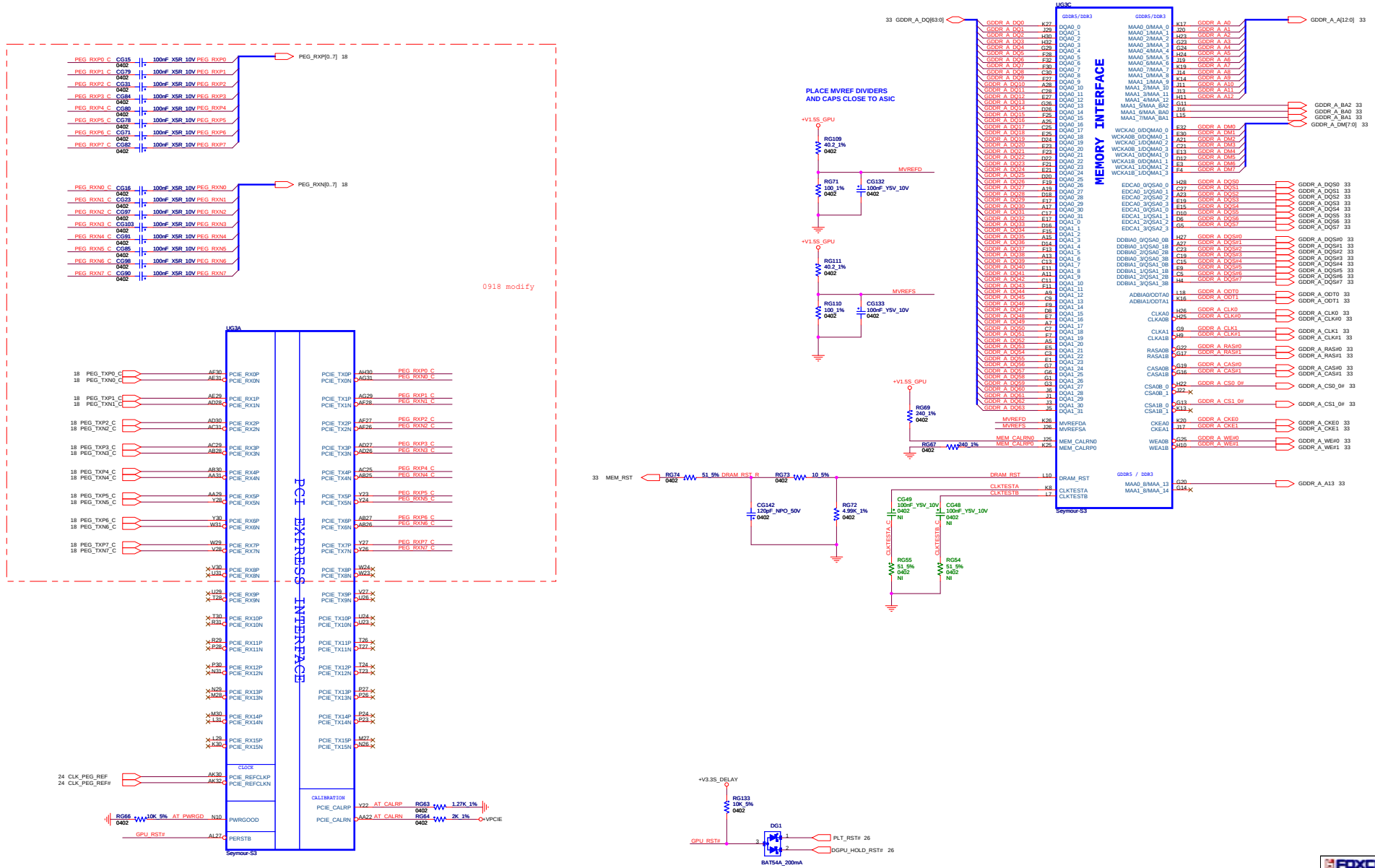

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Title: VGA_S3 (PCI-E) 1/3		
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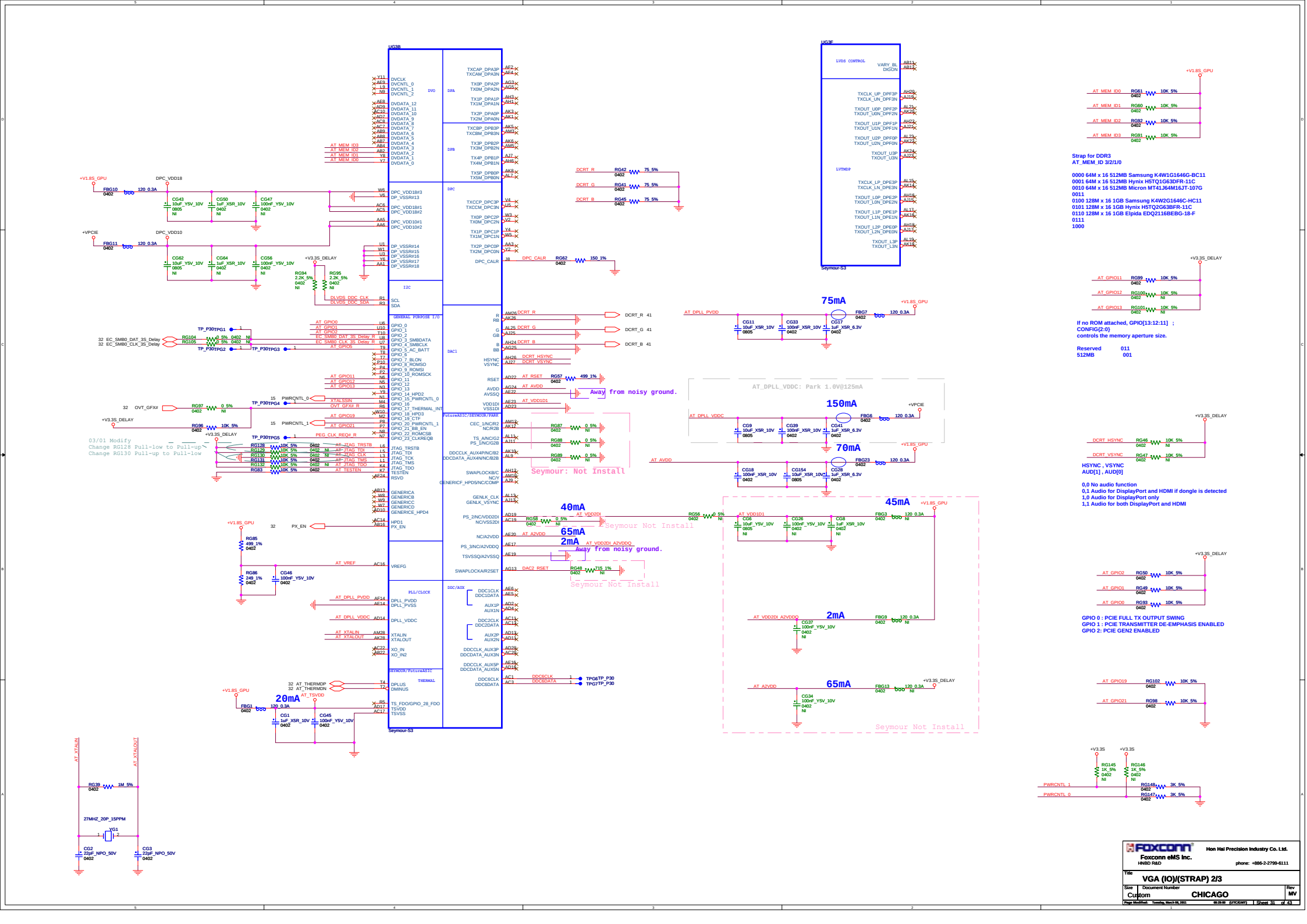
UG3B
Seymour-S3
UG3F
Seymour-S3
Strap for DDR3
AT_MEM_ID 3/2/1/0
0000 64M x 16 512MB Samsung K4W1G1646G-BC11
0001 64M x 16 512MB Hynix H5TQ1G63DFR-11C
0010 64M x 16 512MB Micron MT41J64M16JT-107G
0011
0100 128M x 16 1GB Samsung K4W2G1646C-HC11
0101 128M x 16 1GB Hynix H5TQ2G63BFR-11C
0110 128M x 16 1GB Elpida EDQ2116BEBG-18-F
0111
1000
If no ROM attached, GPIO[13:12:11] ;
CONFIG{2:0}
controls the memory aperture size.
Reserved 011
512MB 001
HSYNC , VSYNC
AUD[1] , AUD[0]
0,0 No audio function
0,1 Audio for DisplayPort and HDMI if dongle is detected
1,0 Audio for DisplayPort only
1,1 Audio for both DisplayPort and HDMI
GPIO 0 : PCIE FULL TX OUTPUT SWING
GPIO 1 : PCIE TRANSMITTER DE-EMPHASIS ENABLED
GPIO 2: PCIE GEN2 ENABLED
03/01 Modify
Change RG128 Pull-low to Pull-up
Change RG130 Pull-up to Pull-low
Away from noisy ground.
Seymour: Not Install
Seymour Not Install
AT_DPLL_VDDC: Park 1.0V@125mA
75mA
150mA
70mA
45mA
40mA
65mA
2mA
20mA
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VGA (IO)/(STRAP) 2/3
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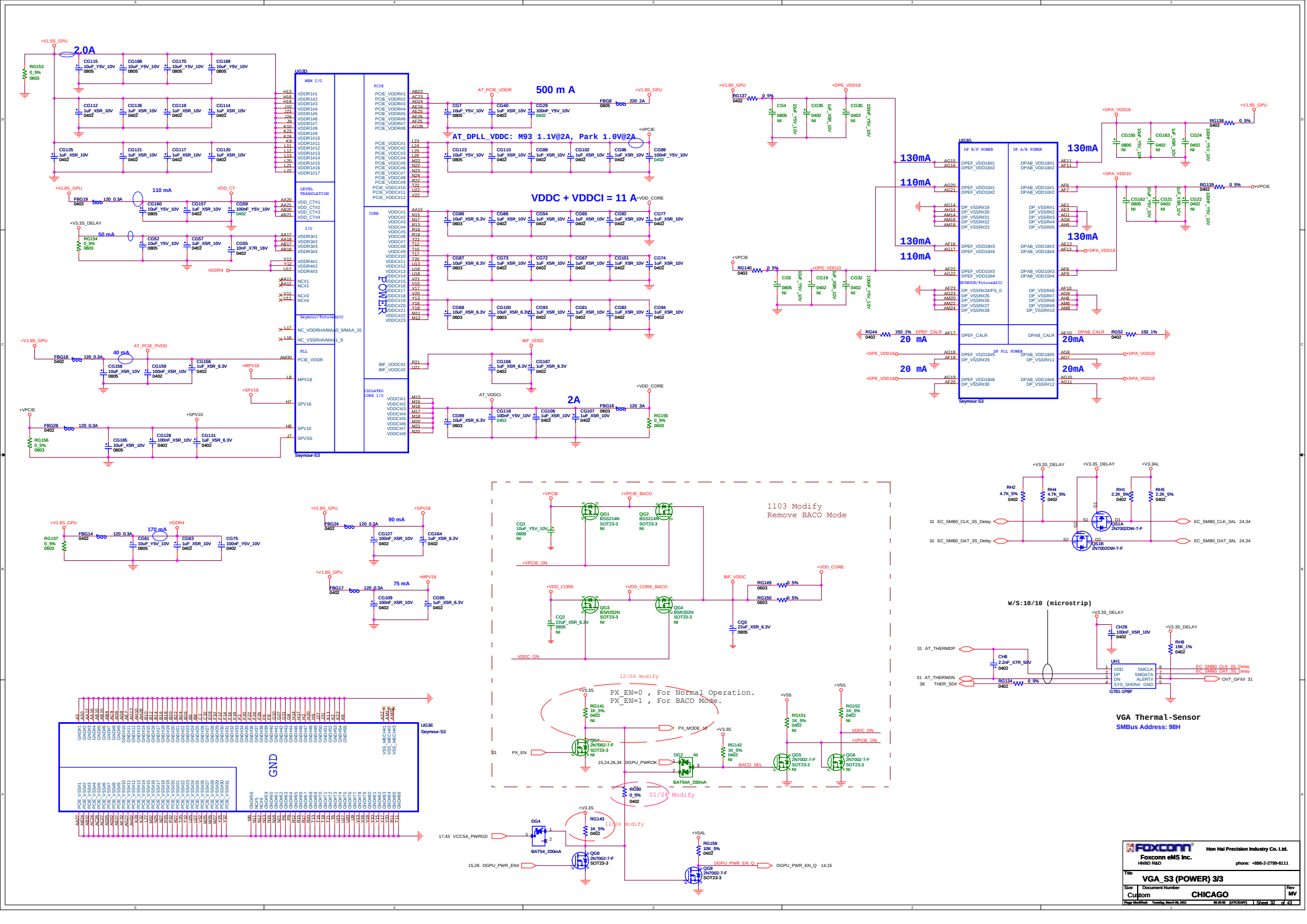

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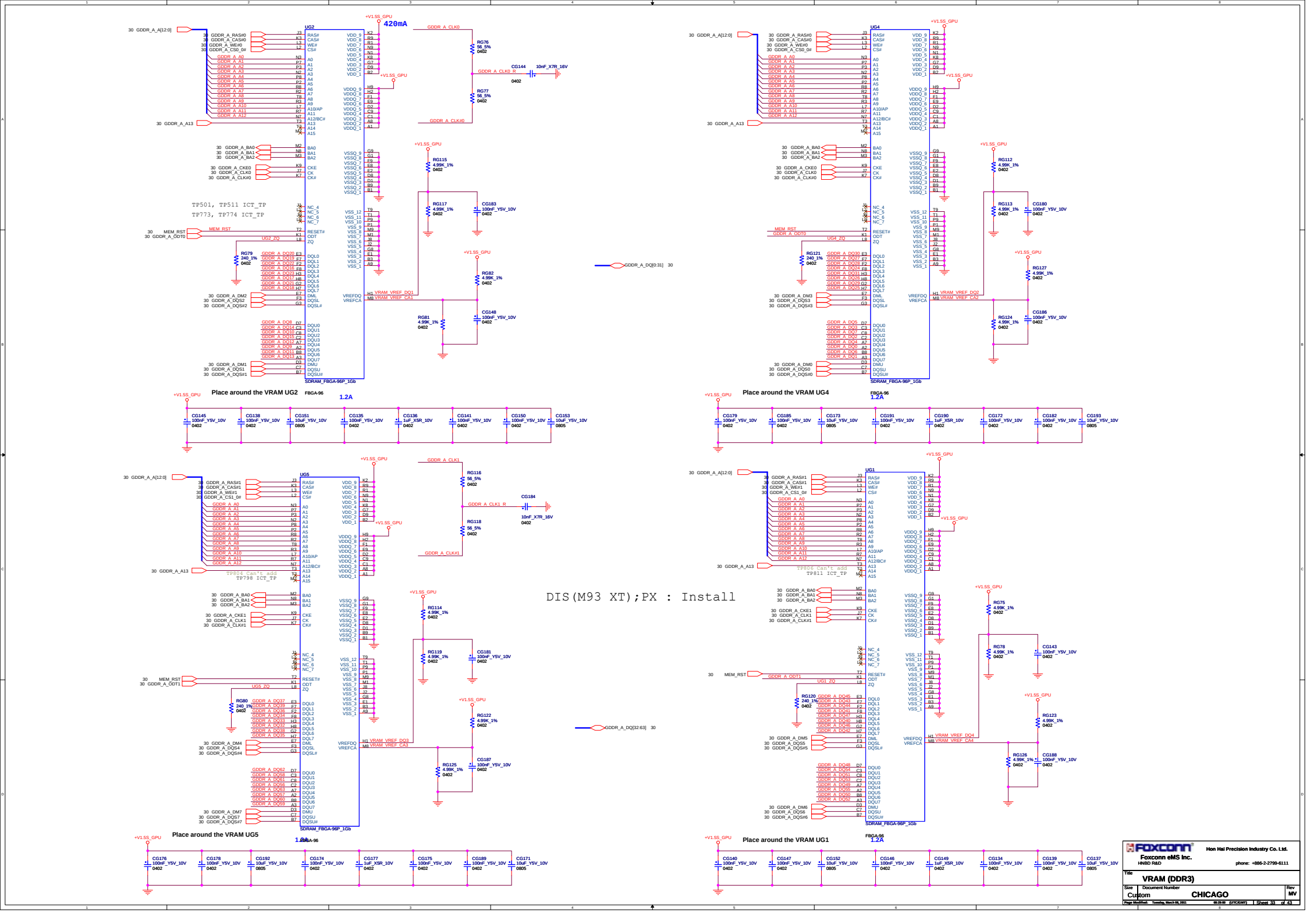
420mA
UG2
SDRAM_FBGA-96P_1Gb
Place around the VRAM UG2
FBGA-96
1.2A
UG4
Place around the VRAM UG4
UG5
Place around the VRAM UG5
UG1
Place around the VRAM UG1
TP501, TP511 ICT_TP
TP773, TP774 ICT_TP
DIS(M93 XT);PX : Install
GDDR_A_DQ[0:31]
GDDR_A_DQ[32:63]
+V1.5S_GPU
Foxconn
Foxconn eMS Inc.
HNBD R&D
Hon Hai Precision Industry Co. Ltd.
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VRAM (DDR3)
Custom
CHICAGO
Rev MV
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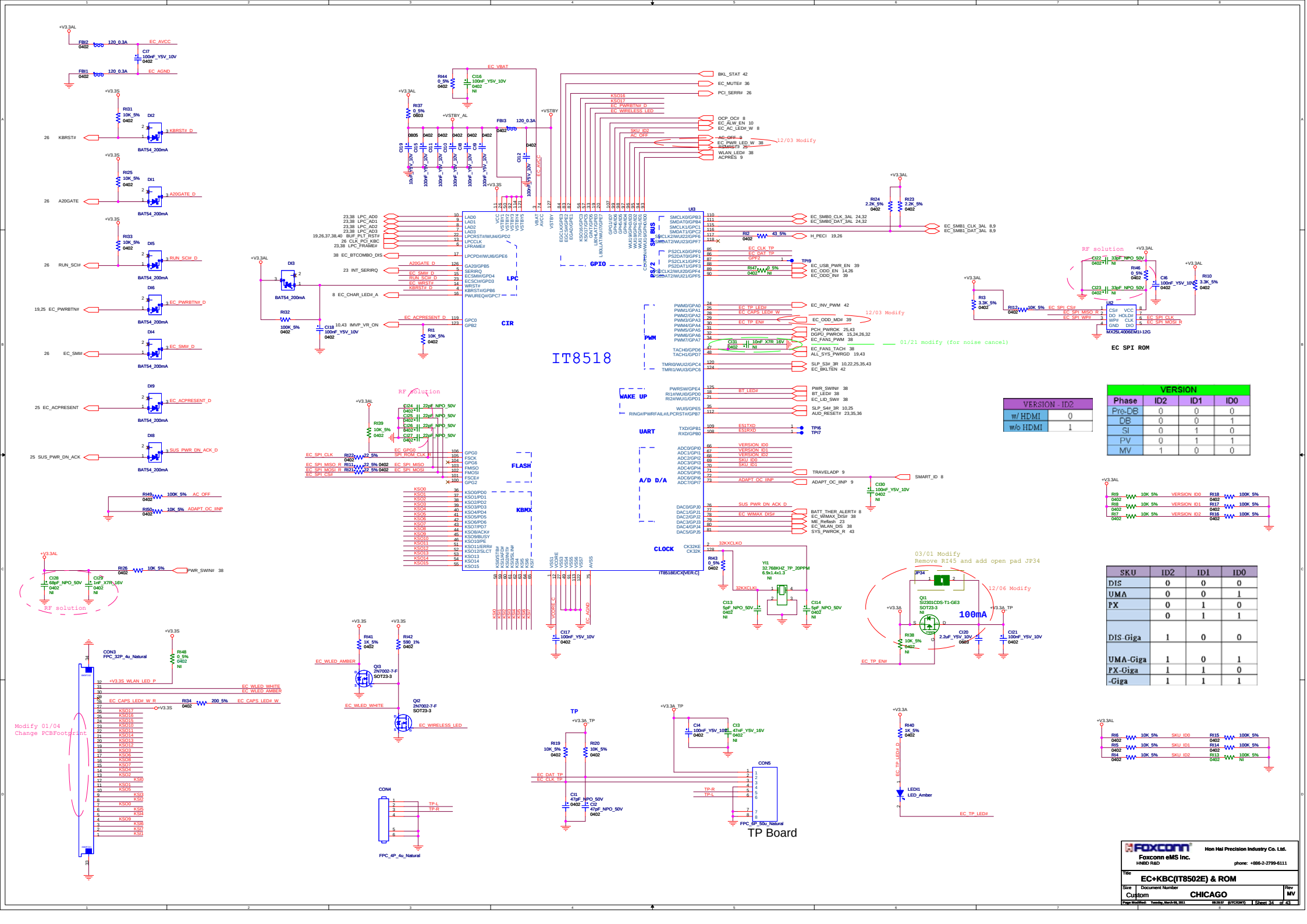

VERSION - ID2	
w/ HDMI	0
w/o HDMI	1

VERSION			
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Pre-DB	0	0	0
DB	0	0	1
SI	0	1	0
PV	0	1	1
MV	1	0	0

SKU	ID2	ID1	ID0
DIS	0	0	0
UMA	0	0	1
PX	0	1	0
	0	1	1
DIS-Giga	1	0	0
UMA-Giga	1	0	1
PX-Giga	1	1	0
-Giga	1	1	1

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Title	EC+KBC(IT8502E) & ROM
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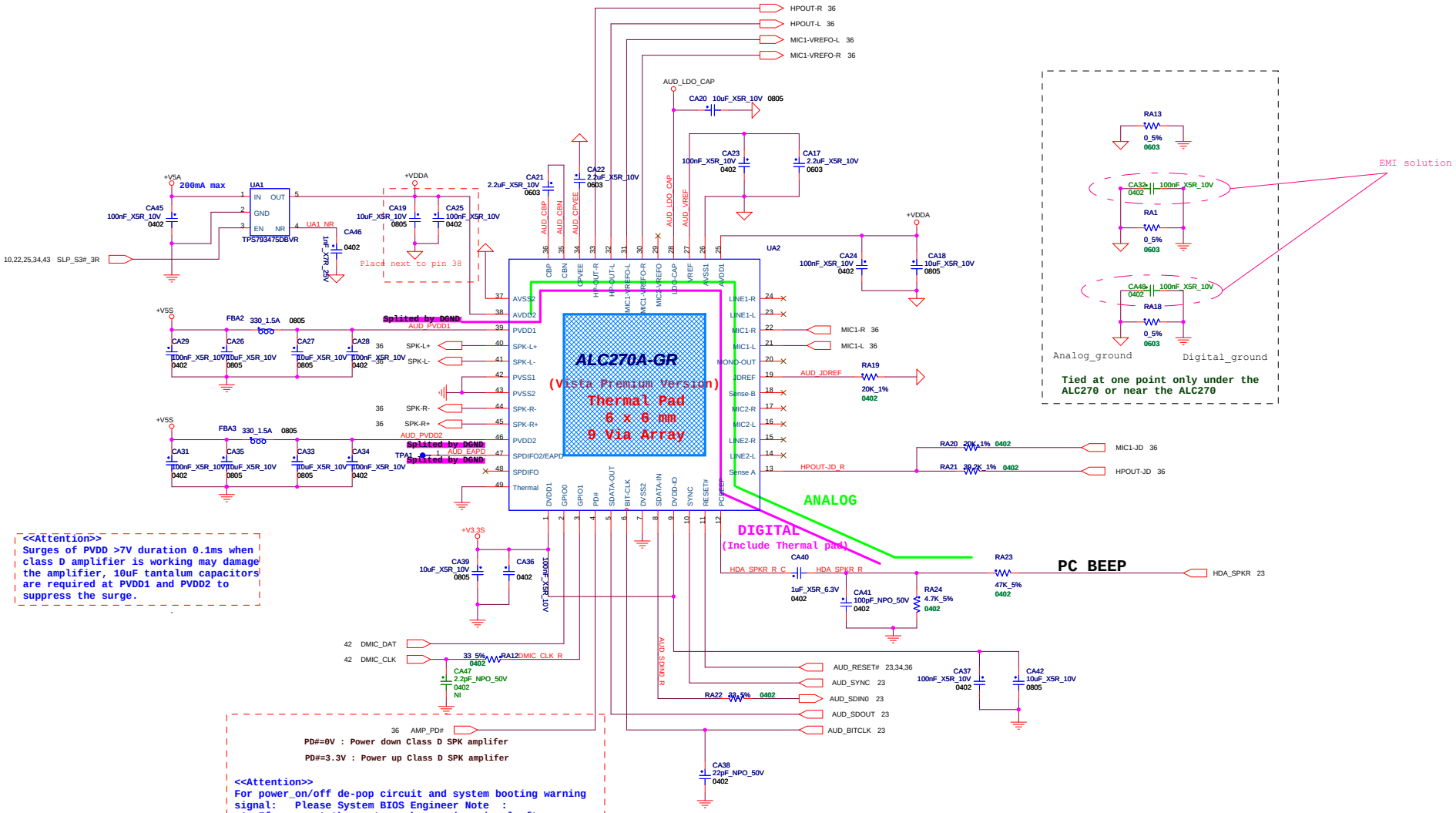

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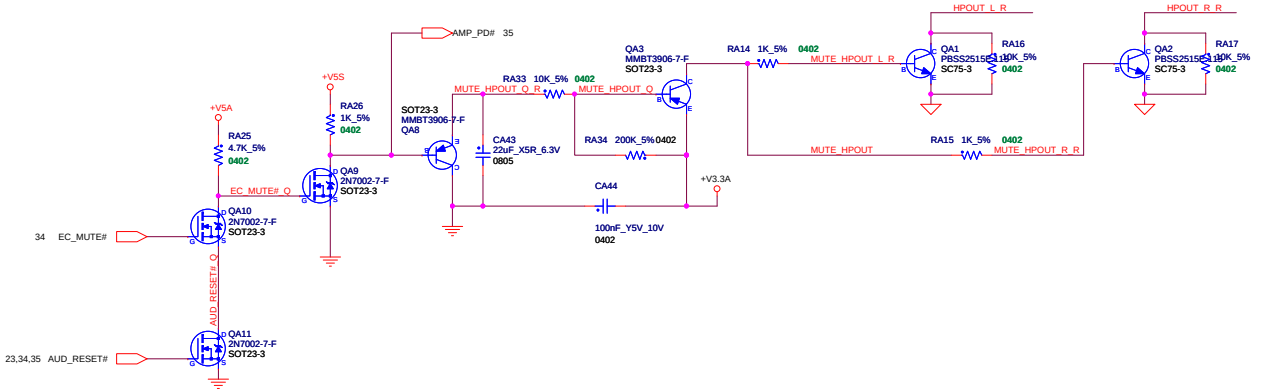
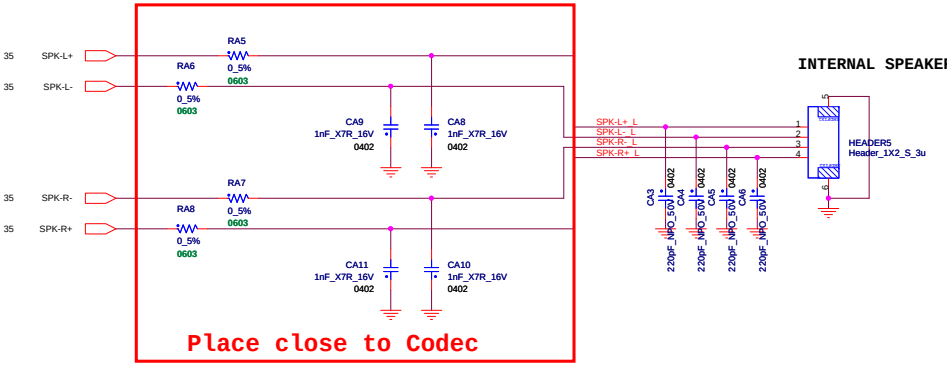
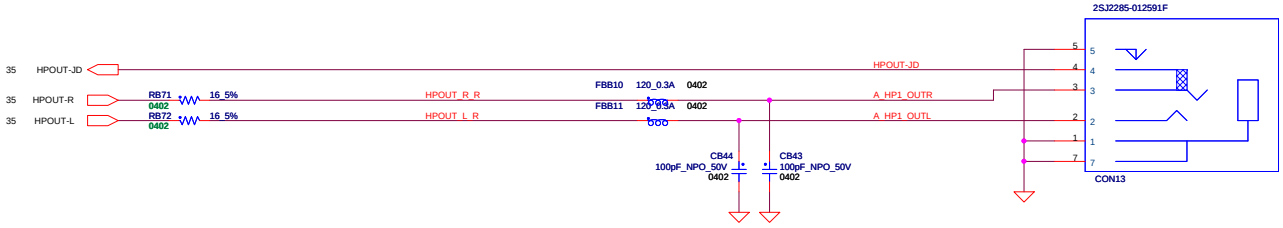
Mute



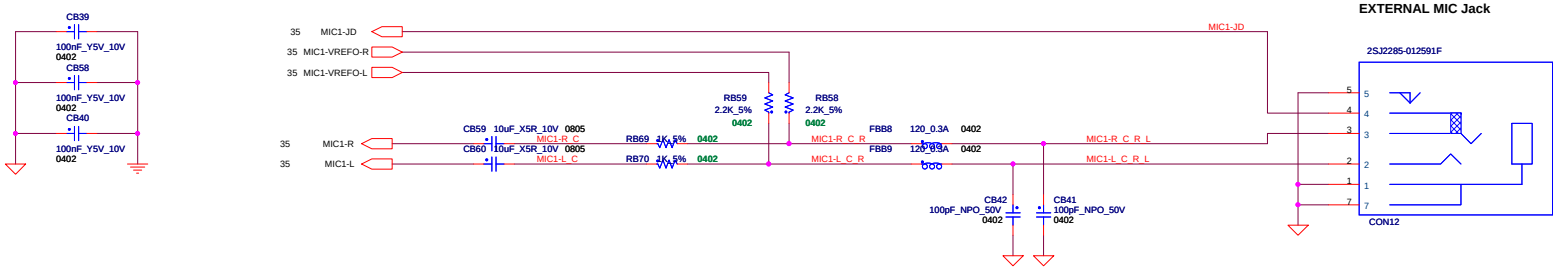
INTERNAL SPEAKER



HEADPHONE Jack



EXTERNAL MIC Jack



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Title: Audio (JACK+AMP+SPK+Mute)

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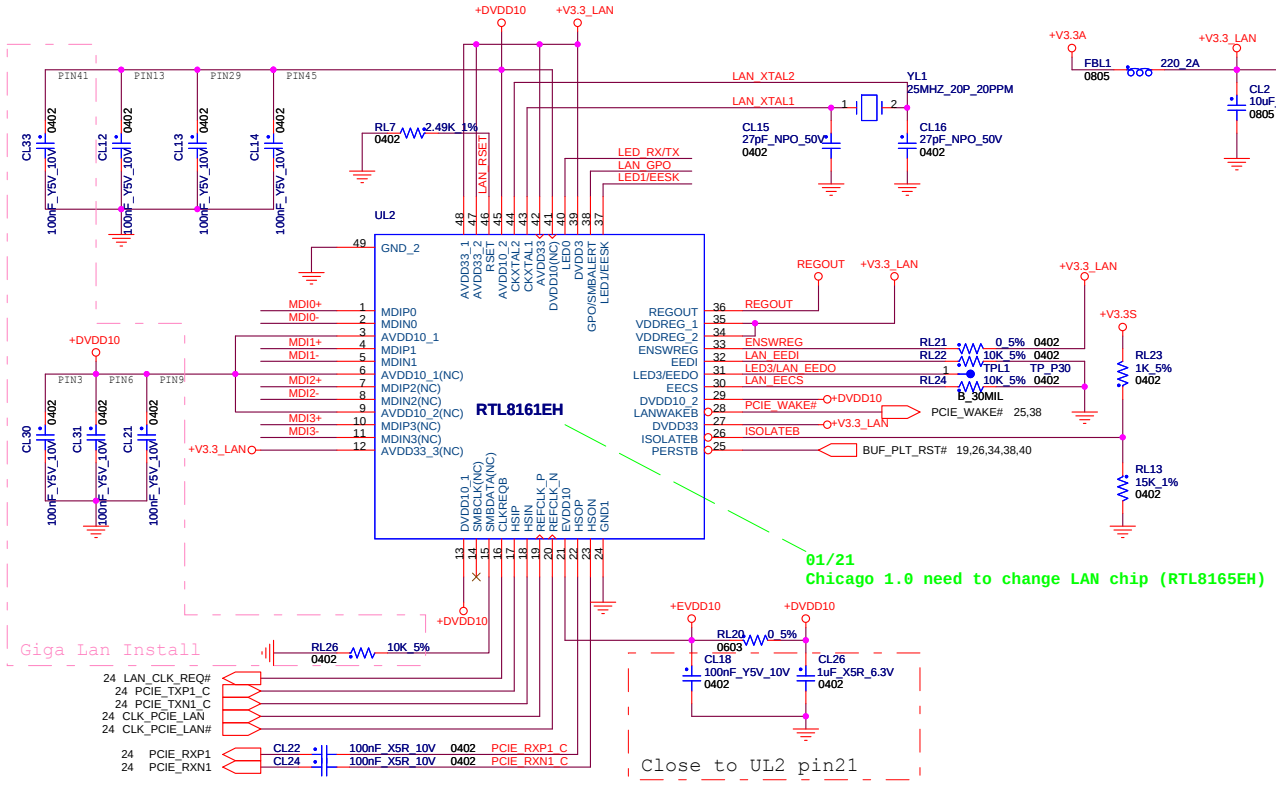
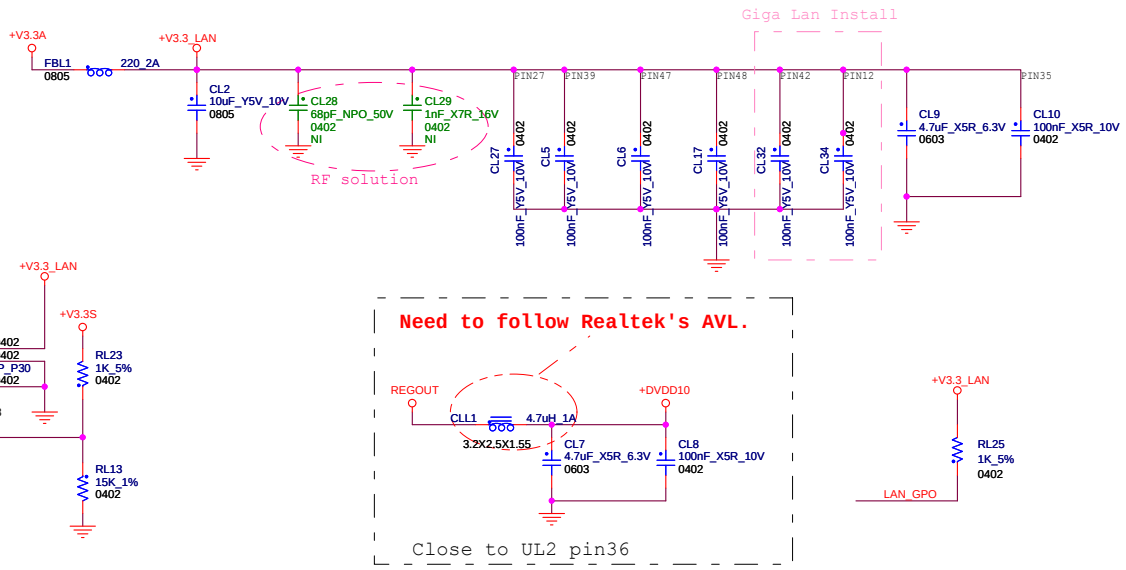
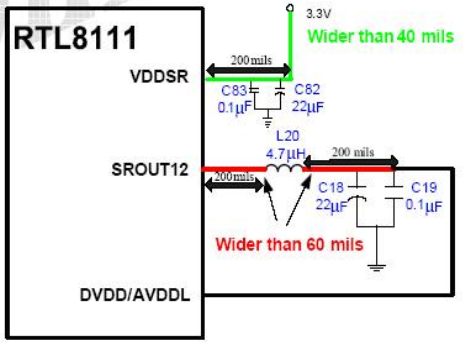


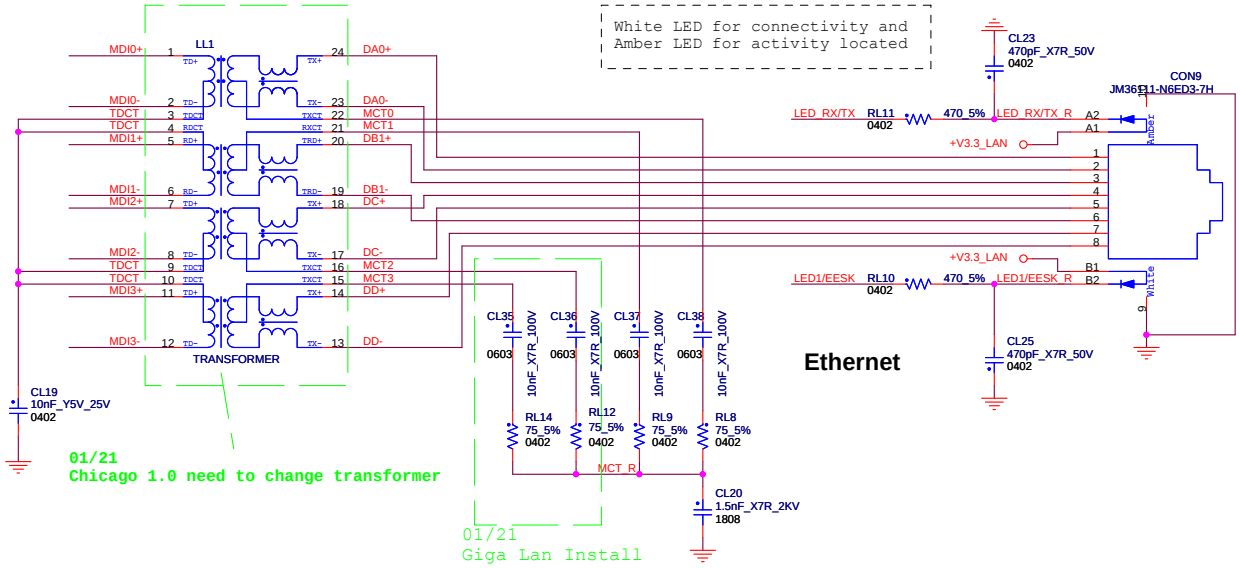


7.1. PCB Layout

- The input 3.3V power trace connected to the VDDSR pin should be wider than 40mils.
- The bulk de-coupling capacitors (C82 and C83) should be placed within 200mils (0.5cm) of the VDDSR pin to prevent input voltage overshoot.
- The output power trace out of the SROUT12 pin should be wider than 60mils.
- Keep L20 within 200mils (0.5cm) of the SROUT12 pin.
- Keep C18 and C19 within 200mils (0.5cm) of L20 to ensure stable output power and better power efficiency.
- Both C18 and C82 are strongly recommended to be ceramic capacitors.

Note: Violation of the above rules will damage the IC.





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Title	LAN (RTL8165EH)
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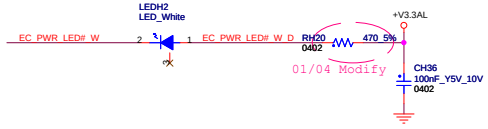
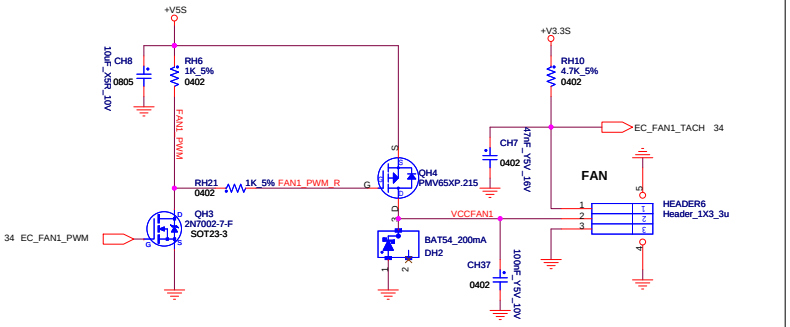
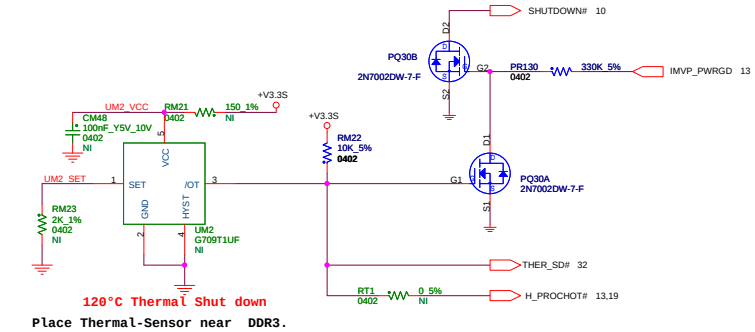
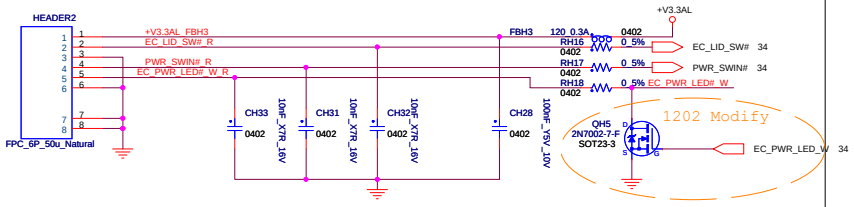
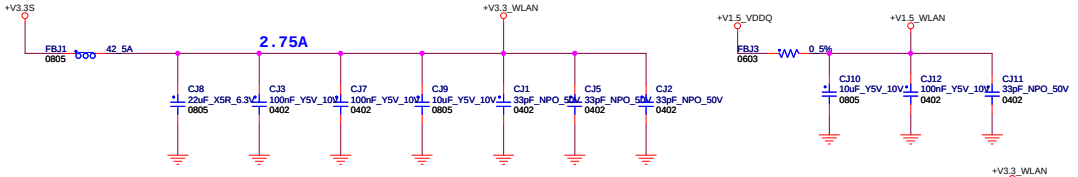


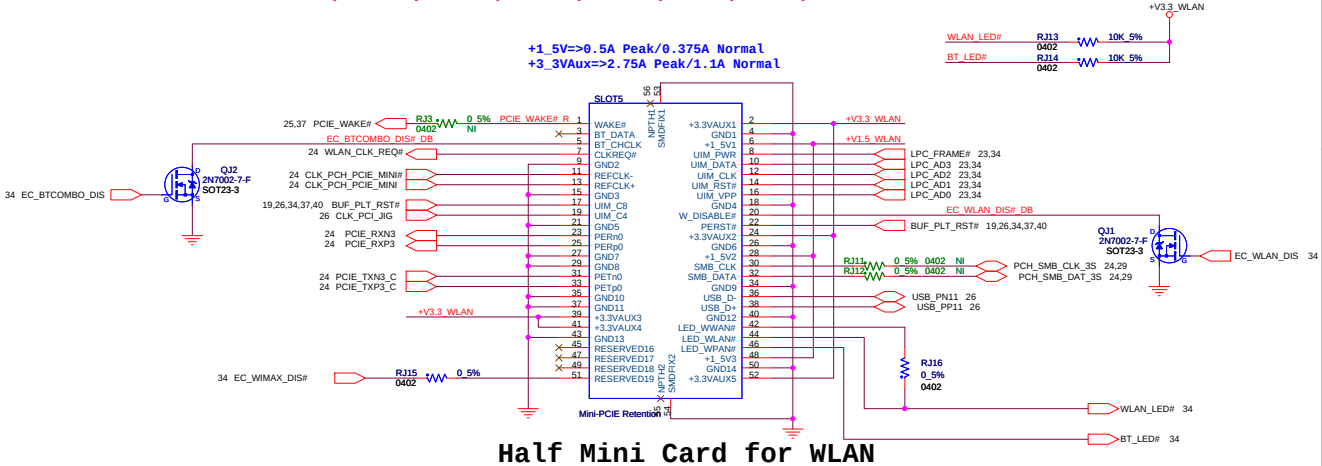




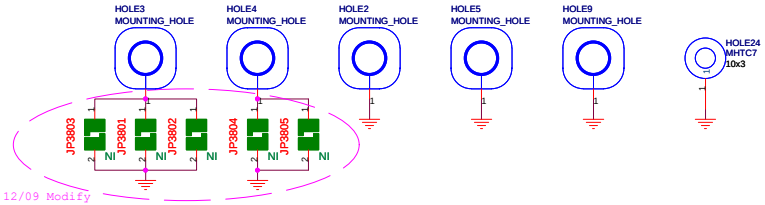
PWR Board CONN.

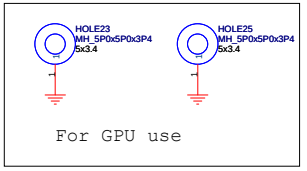


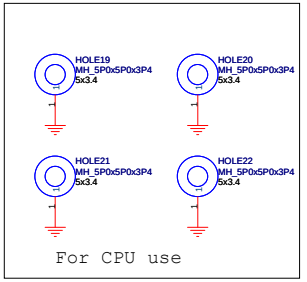




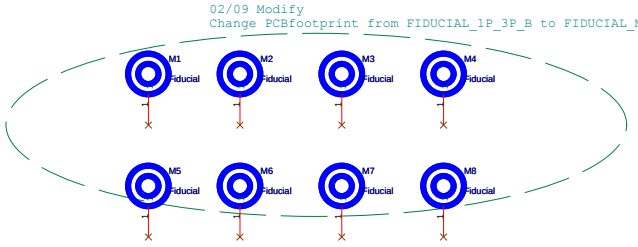
Half Mini Card for WLAN







Mounting HOLE



Fiducial Mark

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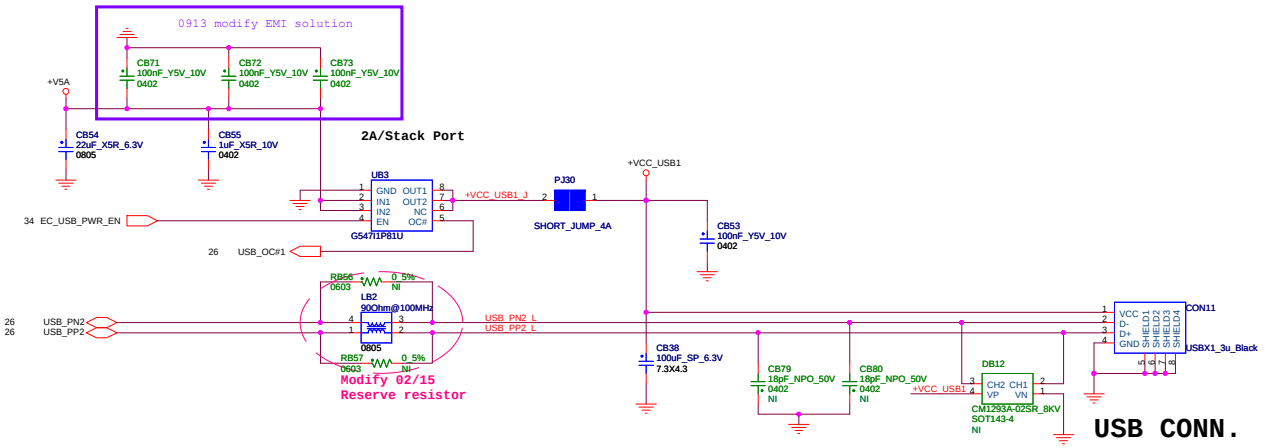
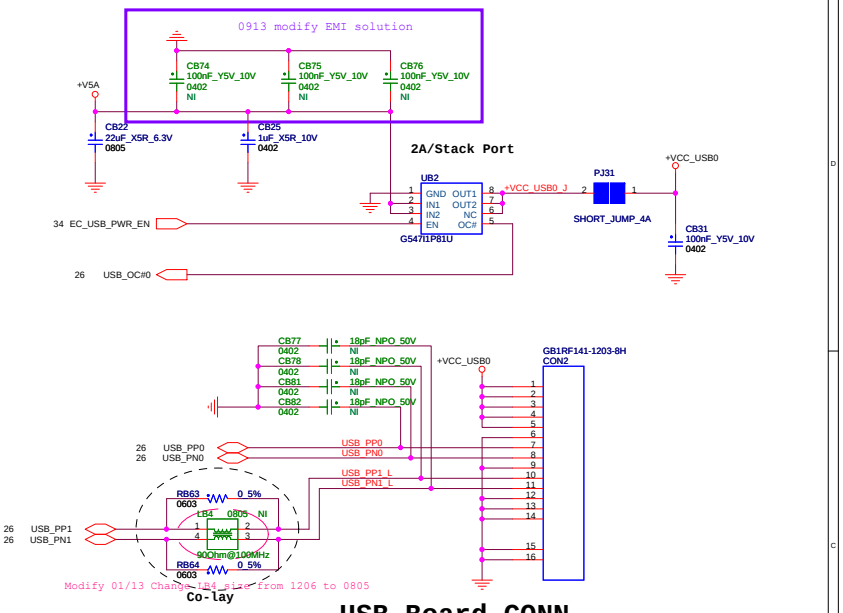
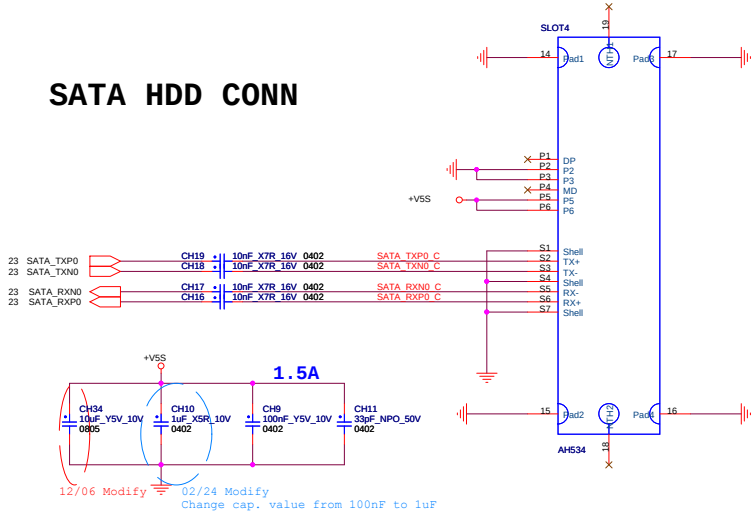


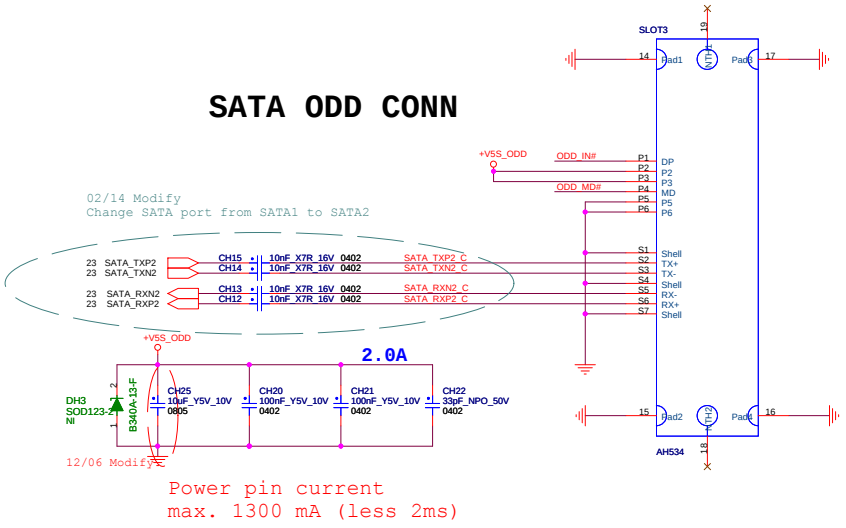


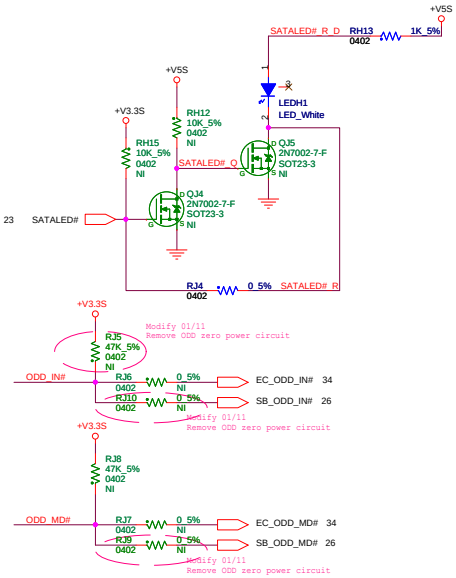
HDD/ODD Status LED

SATA HDD CONN



SATA ODD CONN





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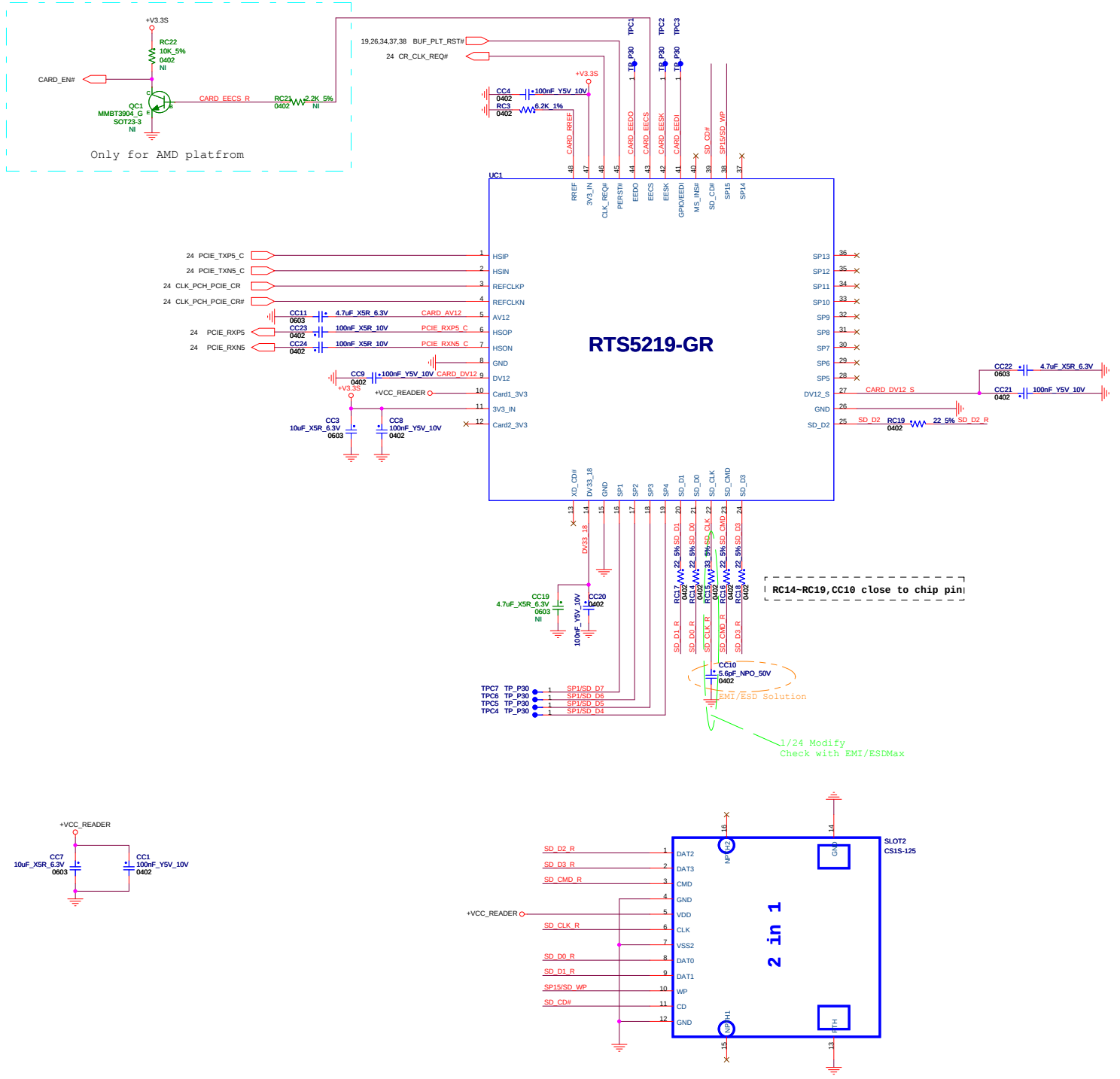

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Title	Card Reader
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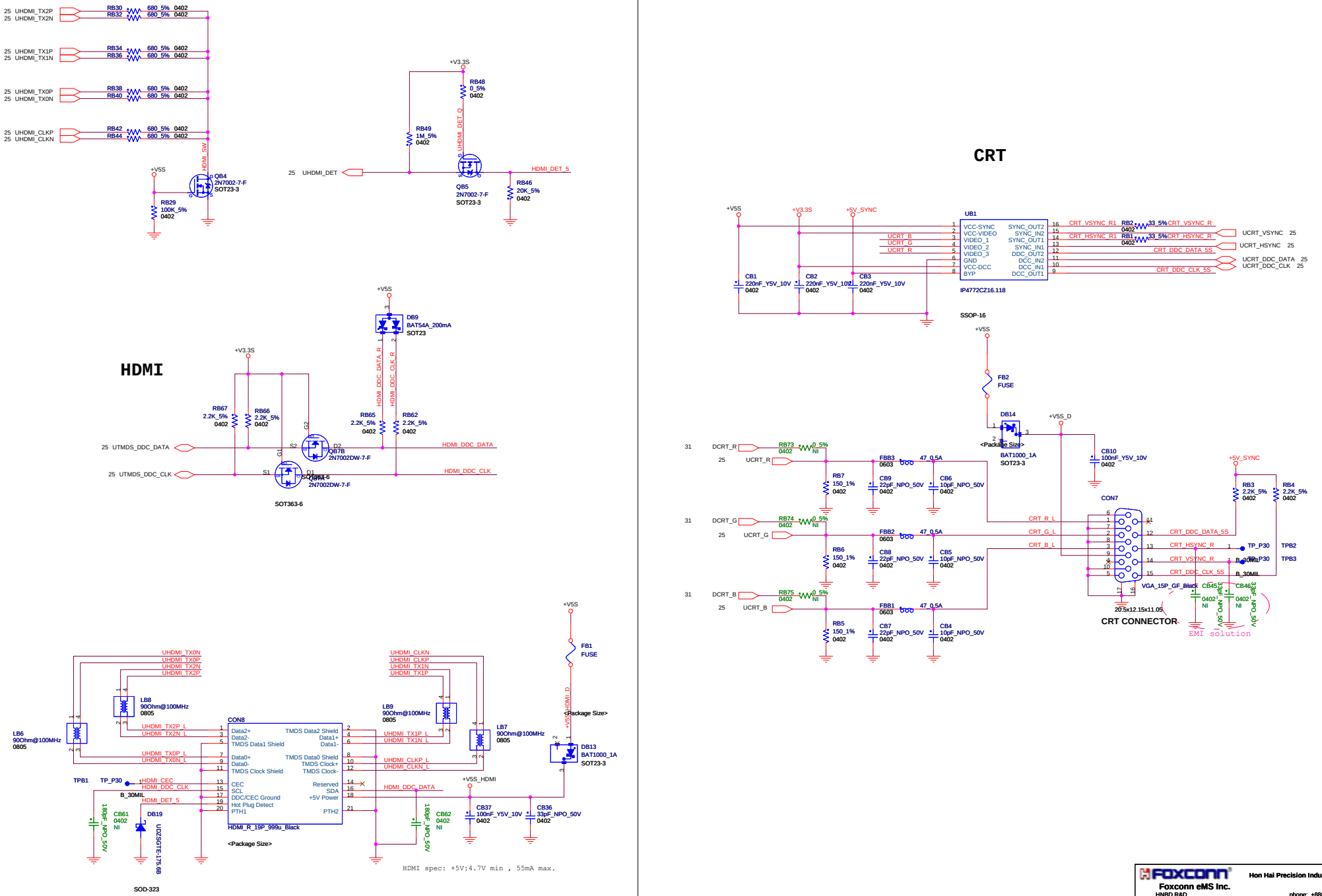
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CRT
RB30 680_5% 0402
RB32 680_5% 0402
RB34 680_5% 0402
RB36 680_5% 0402
RB38 680_5% 0402
RB40 680_5% 0402
RB42 680_5% 0402
RB44 680_5% 0402
HDMI_SW
QB4 2N7002-7-F SOT23-3
RB29 100K_5% 0402
+V3.3S
RB48 0_5% 0402
RB49 1M_5% 0402
UHDMI_DET
QB5 2N7002-7-F SOT23-3
RB46 20K_5% 0402
HDMI_DET_5
DB9 BAT54A_200mA SOT23
HDMI_DDC_DATA_R
HDMI_DDC_CLK_R
RB67 2.2K_5% 0402
RB66 2.2K_5% 0402
RB65 2.2K_5% 0402
RB62 2.2K_5% 0402
QB7B 2N7002DW-7-F
QB7A 2N7002DW-7-F
SOT363-6
HDMI_DDC_DATA
HDMI_DDC_CLK
LB8 90Ohm@100MHz 0805
LB9 90Ohm@100MHz 0805
LB6 90Ohm@100MHz 0805
LB7 90Ohm@100MHz 0805
CON8
HDMI_R_19P_999u_Black
<Package Size>
TPB1
TP_P30
B_30MIL
CB61 100pF_NPO_50V 0402 NI
DB19 UDZS3TE-175.6B
SOD-323
FB1 FUSE
DB13 BAT1000_1A SOT23-3
CB37 100nF_Y5V_10V 0402
CB36 33pF_NPO_50V 0402
CB62 100pF_NPO_50V 0402 NI
HDMI spec: +5V:4.7V min , 55mA max.
UB1
IP4772CZ16.118
SSOP-16
CB1 220nF_Y5V_10V 0402
CB2 220nF_Y5V_10V 0402
CB3 220nF_Y5V_10V 0402
RB2 33_5% 0402
RB1 33_5% 0402
FB2 FUSE
DB14 BAT1000_1A SOT23-3
CB10 100nF_Y5V_10V 0402
RB73 0_5% 0402 NI
RB74 0_5% 0402 NI
RB75 0_5% 0402 NI
RB7 150_1% 0402
RB6 150_1% 0402
RB5 150_1% 0402
FBB3 0603 47_0.5A
FBB2 0603 47_0.5A
FBB1 0603 47_0.5A
CB9 22pF_NPO_50V 0402
CB8 22pF_NPO_50V 0402
CB7 22pF_NPO_50V 0402
CB6 10pF_NPO_50V 0402
CB5 10pF_NPO_50V 0402
CB4 10pF_NPO_50V 0402
CON7
VGA_15P_GF_Black
20.5x12.15x11.05
CRT CONNECTOR
RB3 2.2K_5% 0402
RB4 2.2K_5% 0402
CB45 33pF_NPO_50V 0402 NI
CB46 33pF_NPO_50V 0402 NI
EMI solution
TP_P30
TPB2
TPB3
UCRT_VSYNC 25
UCRT_HSYNC 25
UCRT_DDC_DATA 25
UCRT_DDC_CLK 25
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HDMI & CRT
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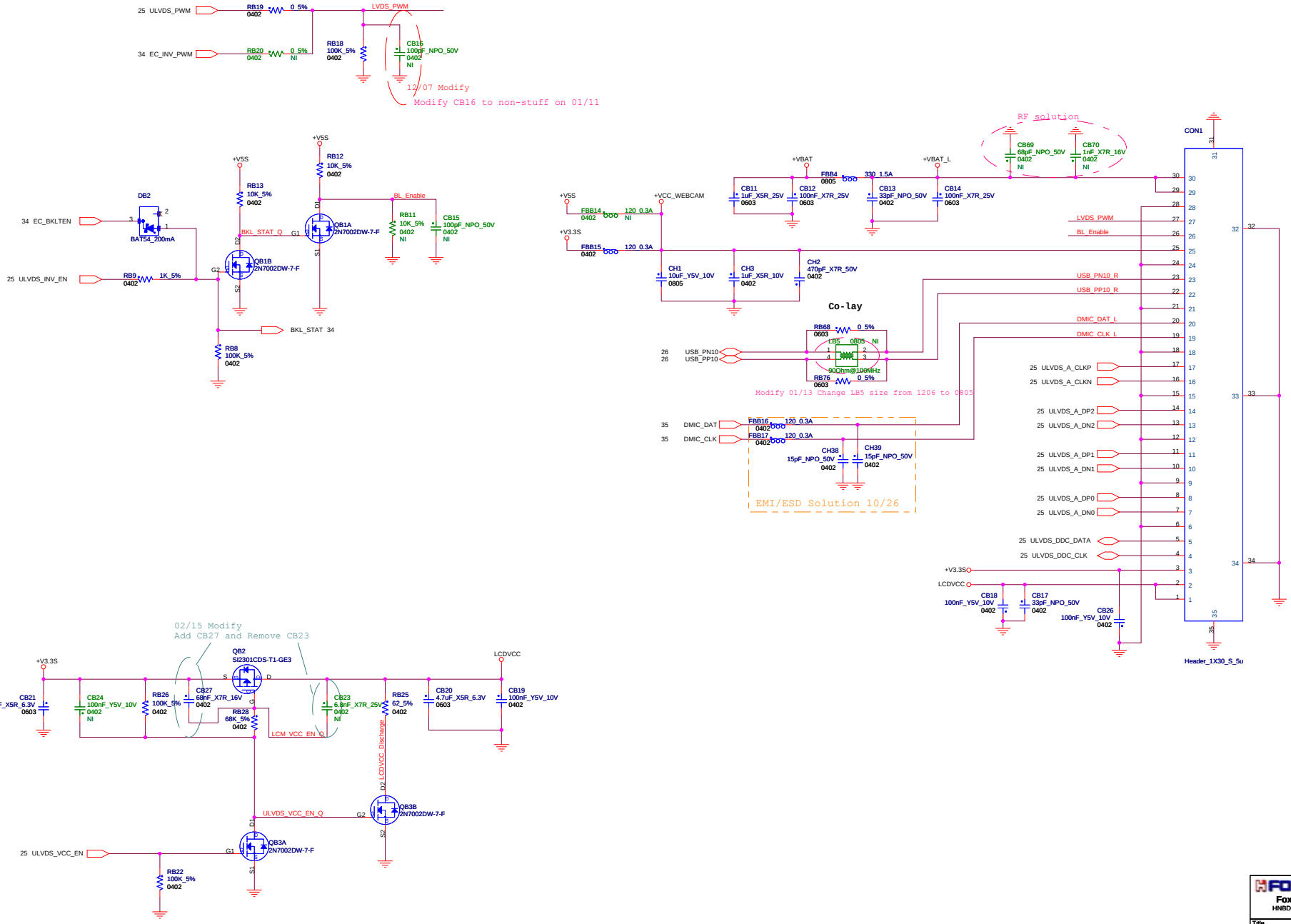

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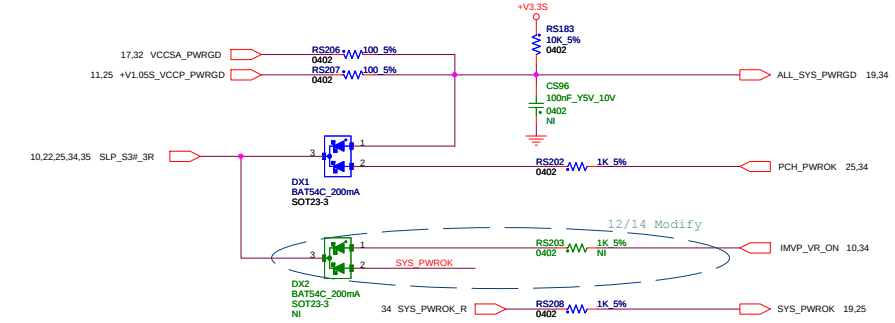
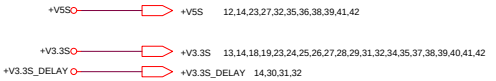
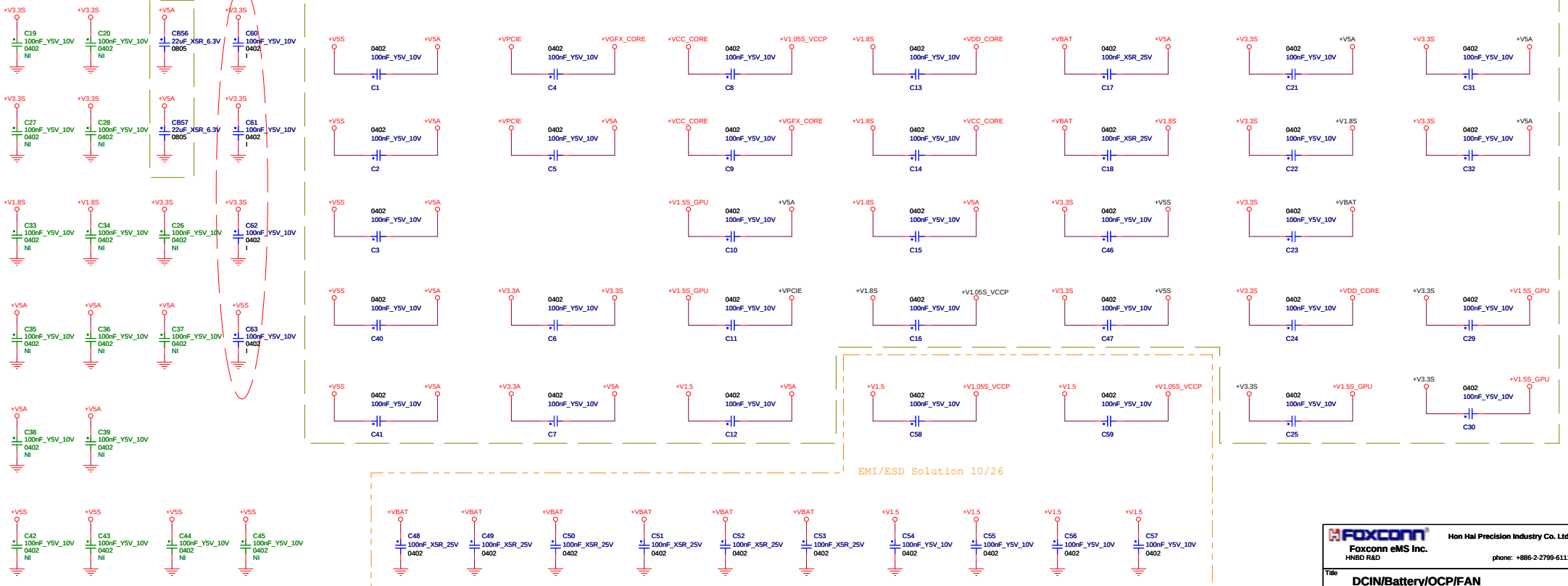




12/07 Modify

1117 Modify

Modify 11/11



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Size: Custom	Document Number: CHICAGO	Rev: MV
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