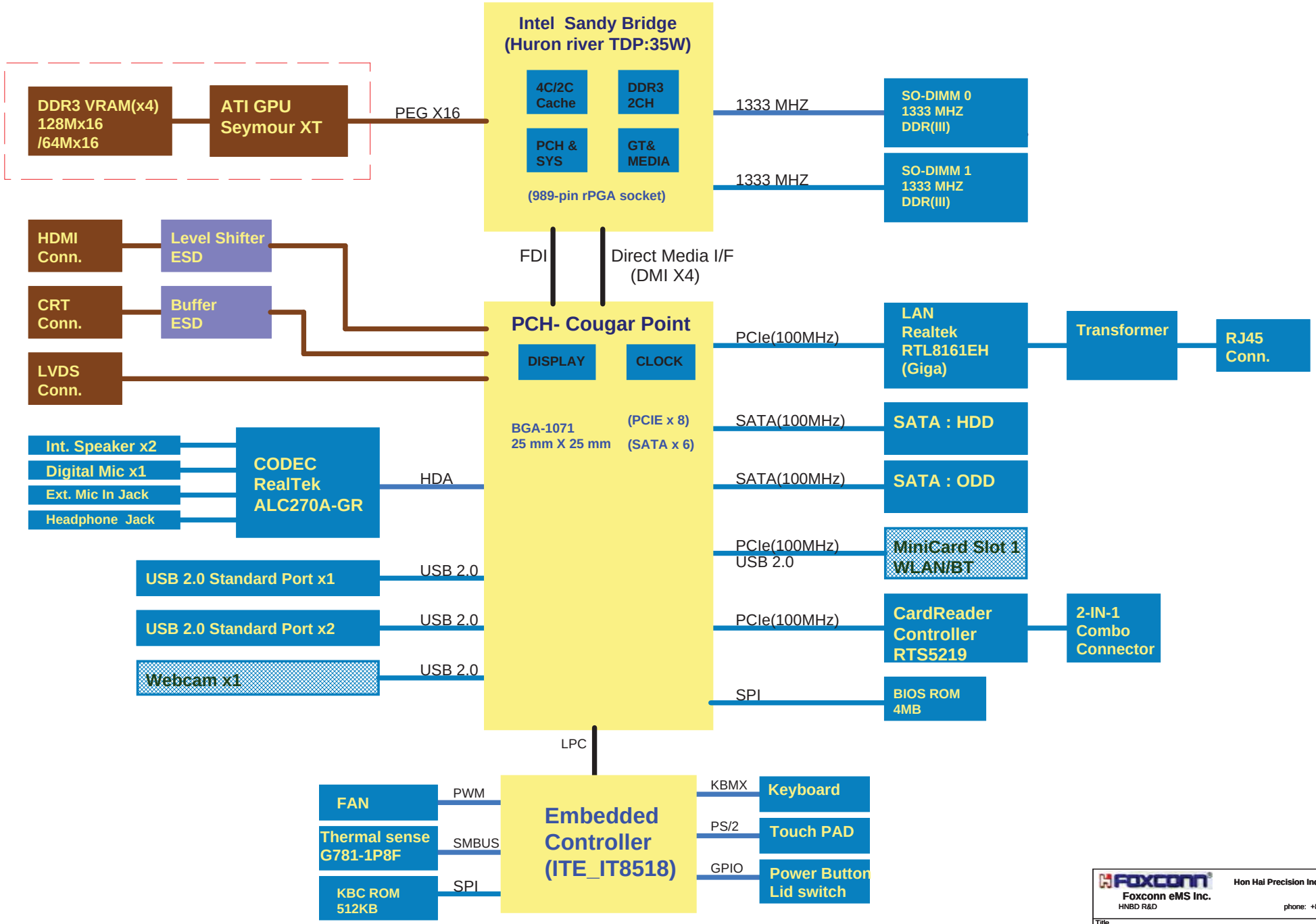

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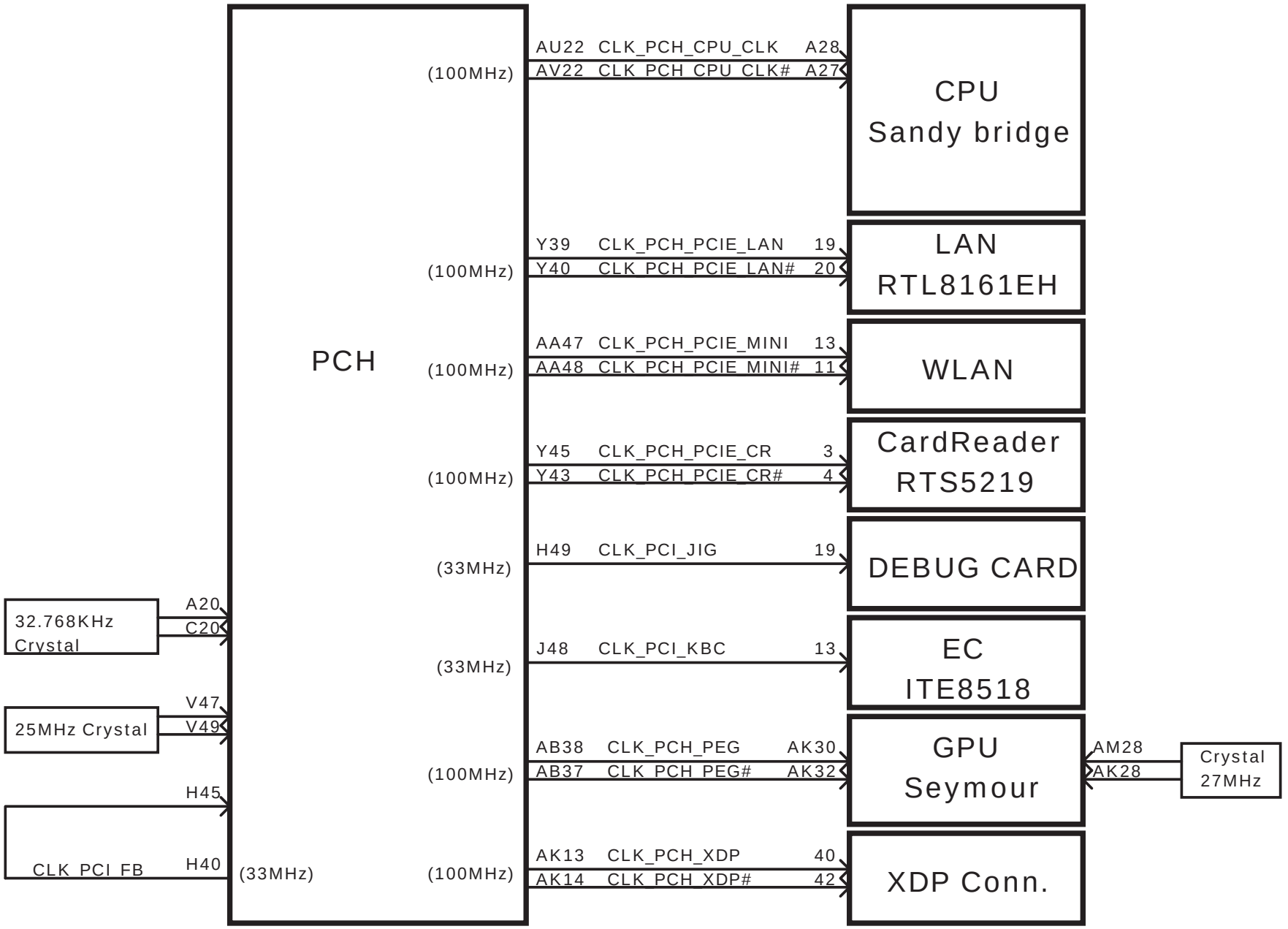
Title: SYSTEM BLOCK DIAGRAM

Size: Custom | Document Number: CHICAGO | Rev:

Page Modified: Tuesday, March 08, 2011 08:29:00 (UTC/GMT) | Sheet 2 of 43



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Title	CLOCK MAP
Size: Custom	Document Number: CHICAGO
Rev	MV
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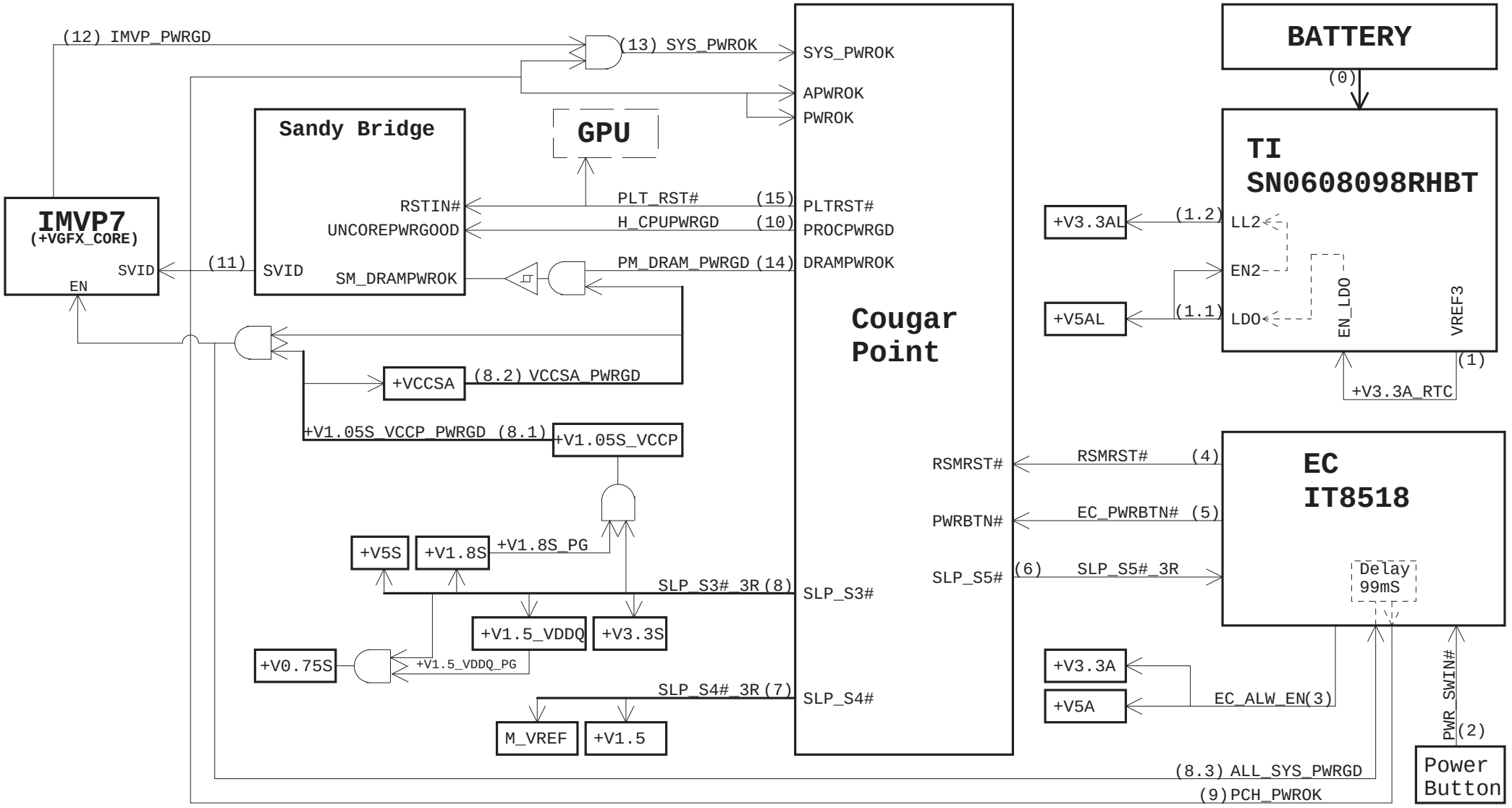

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Title: POWER SEQUENCY DIAGRAM		
Size: Custom	Document Number: CHICAGO	Rev: MV
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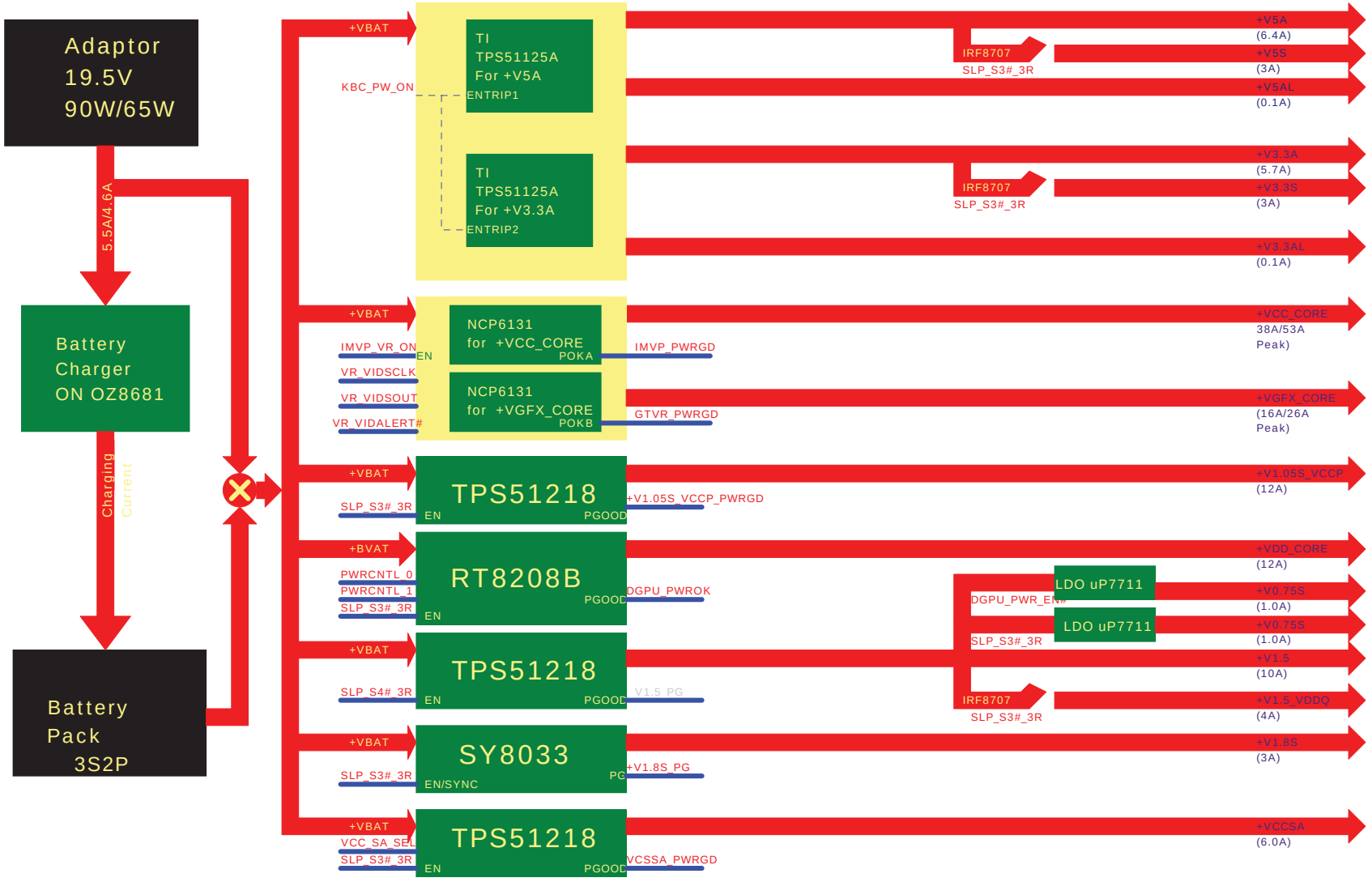
POWER MAP



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Title: POWER MAP		
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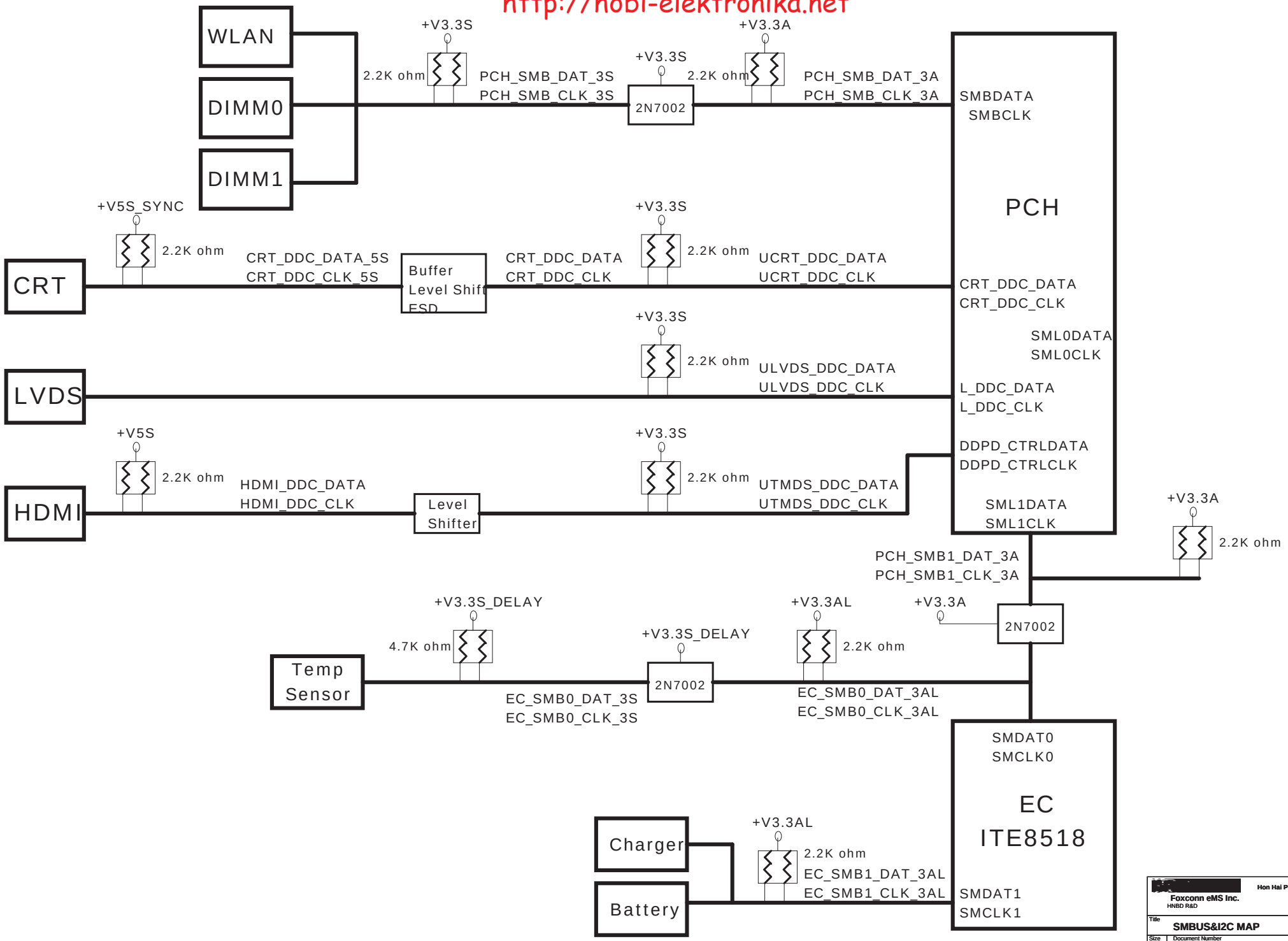
Page Modified: Tuesday, March 08, 2011 08:28:57 (UTC/GMT)	Sheet 5 of 43	



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Title: SMBUS&I2C MAP

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Title
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Size	Document Number	Rev
A	**CHICAGO**	**MV**

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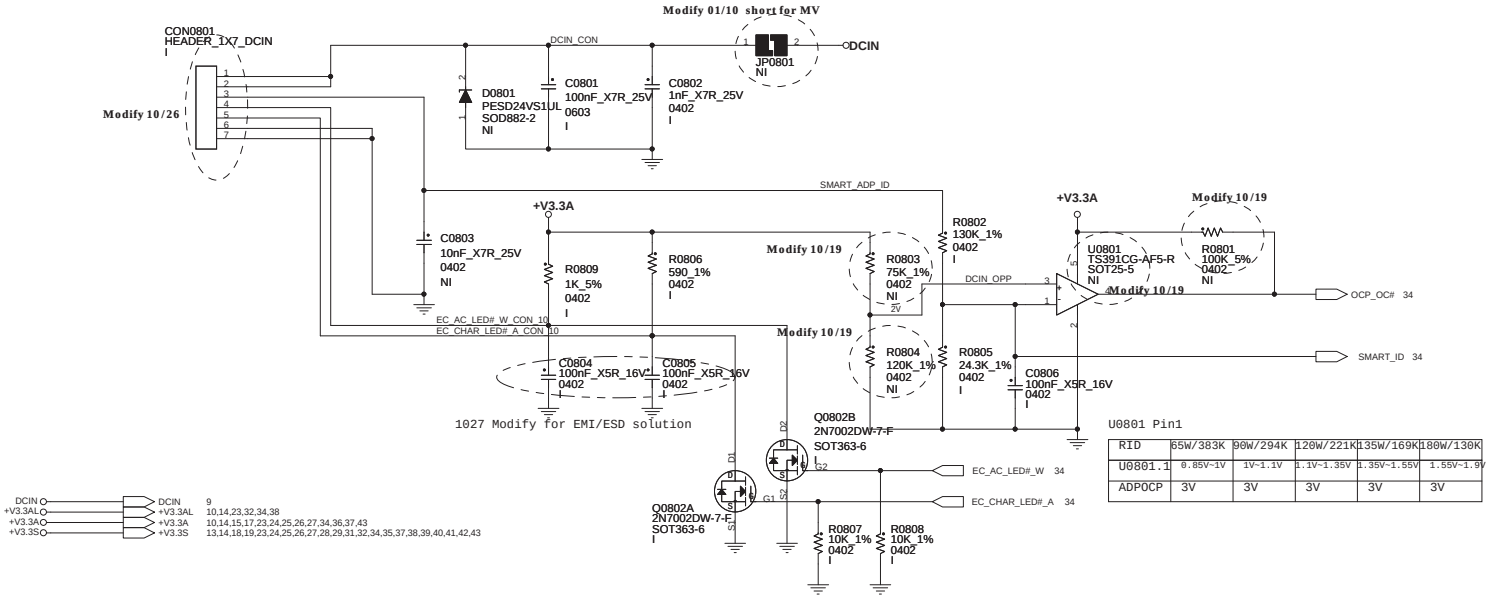
DC_JACK WIRE to BOARD CONNECTOR

2010.1203.0

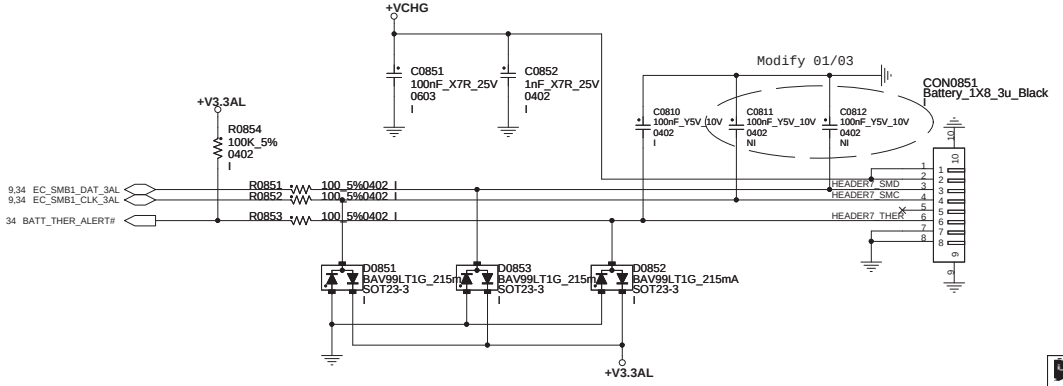


U0801 Pin1

RID	65W/383K	90W/294K	120W/221K	135W/169K	180W/130K
U0801.1	0.85~1V	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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Title: DCIN/BATTERY		
Size	Document Number: CHICAGO	Rev: MV
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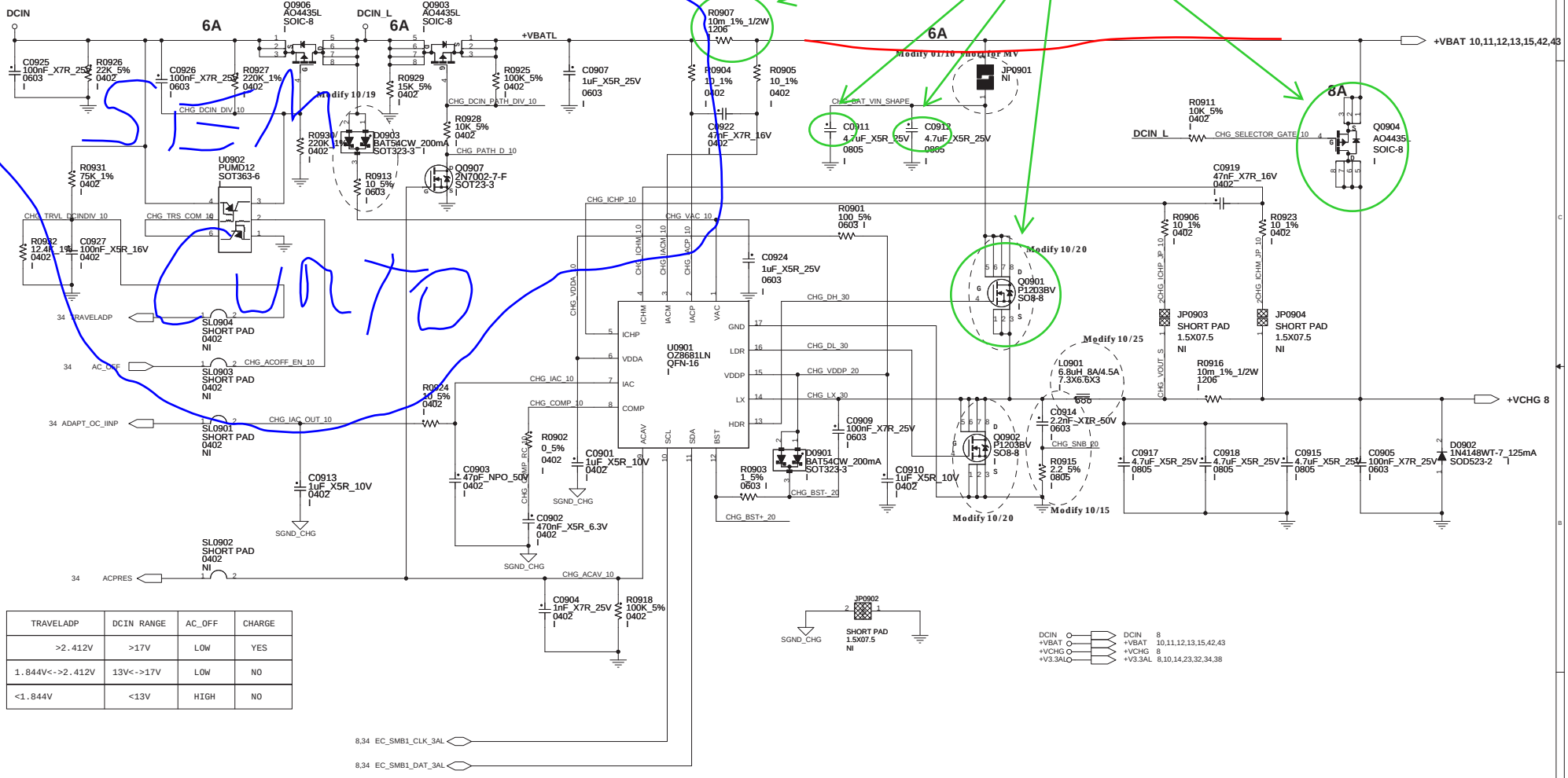
BATTERY CHARGER

Retirei da placa!



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

DCIN, +VBAT, +VCHG, +V3.3AL → DCIN 8; +VBAT 10,11,12,13,15,42,43; +VCHG 8; +V3.3AL 8,10,14,23,32,34,38

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Title: PWR_Charger	
Size: Custom	Document Number: CHICAGO
Rev: MV	
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+V5A / +V3.3A POWER SUPPLY

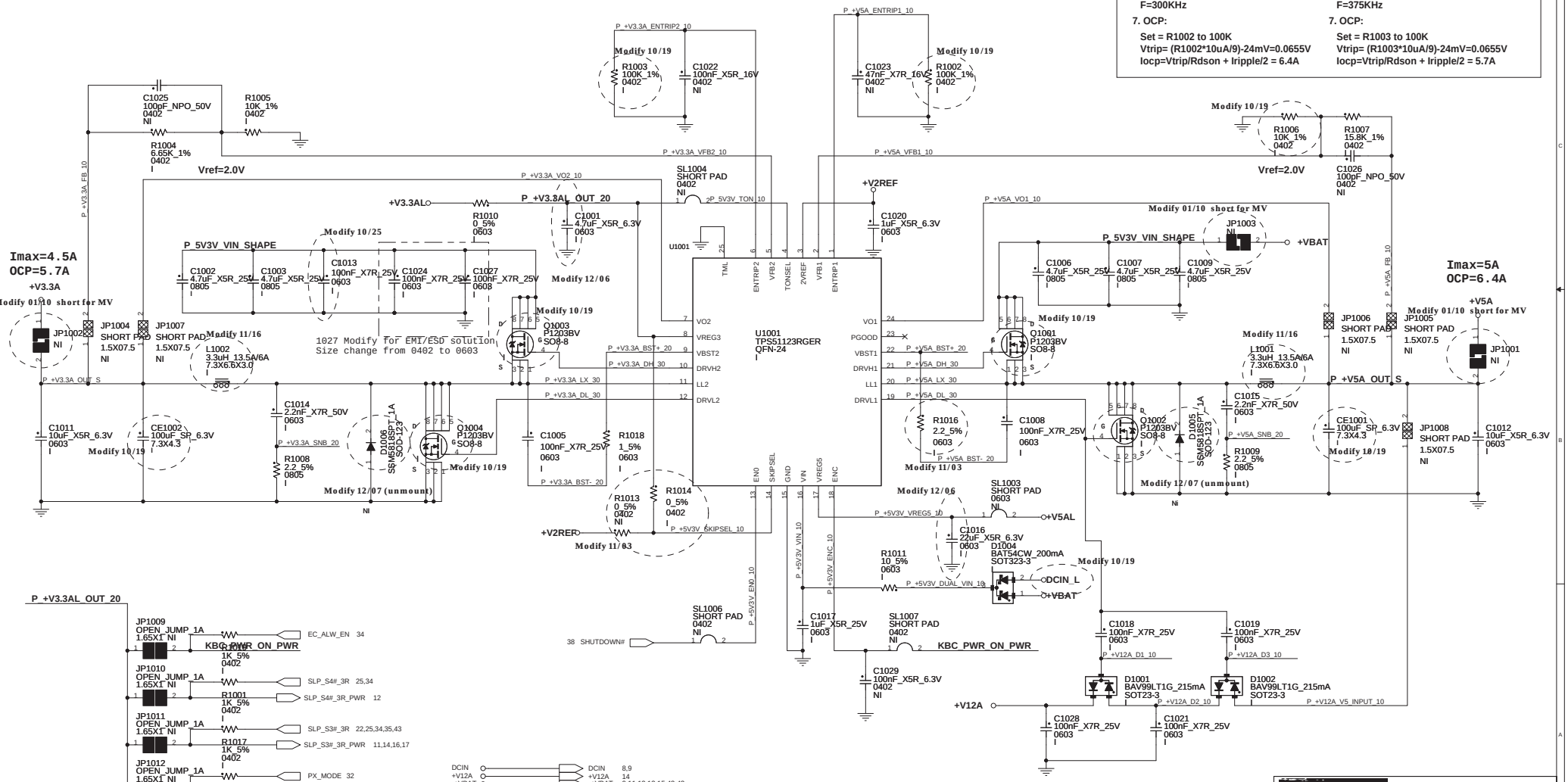
2010.1103.0

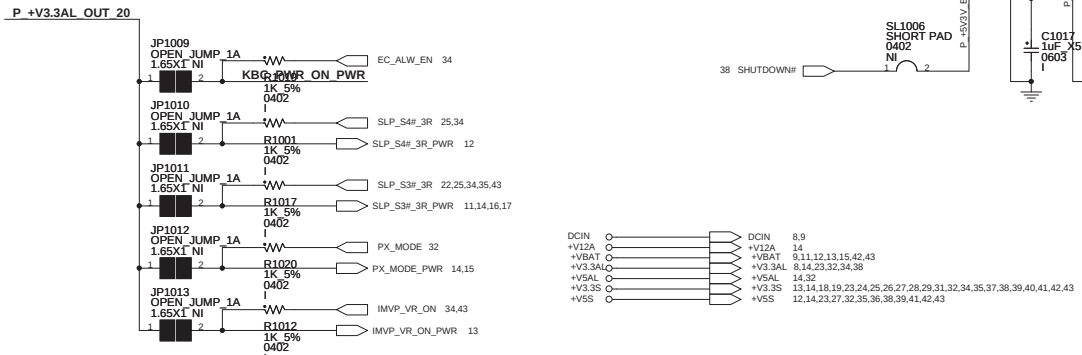
+V5A:

1. I/P Current:
   lin=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:
   lin=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





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Title: 5V/3.3V			
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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:

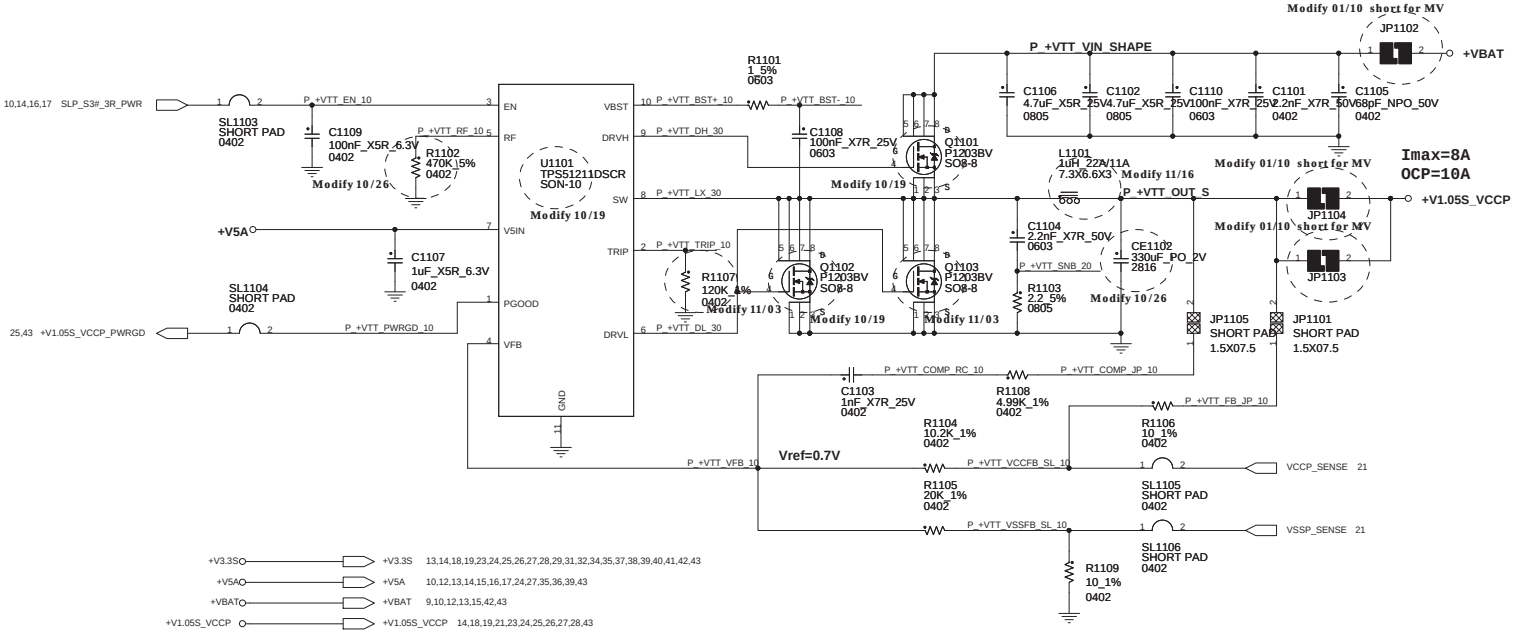
H-side MOSFET: IRF8707PBF		L-side MOSFET: IRF8707PBF	
Rds(ON)=17.5mohm	(Vgs=4.5 V)	Rds(ON)=17.5mohm	(Vgs=4.5 V)
I cont = 11A	(T =25 ℃)	I cont = 11A	(T =25 ℃)
I peak = 88A	(Pause =10 us)	I peak = 88A	(Pause =10 us)

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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Title: +VTT		
Size: C	Document Number: CHICAGO	Rev: MV
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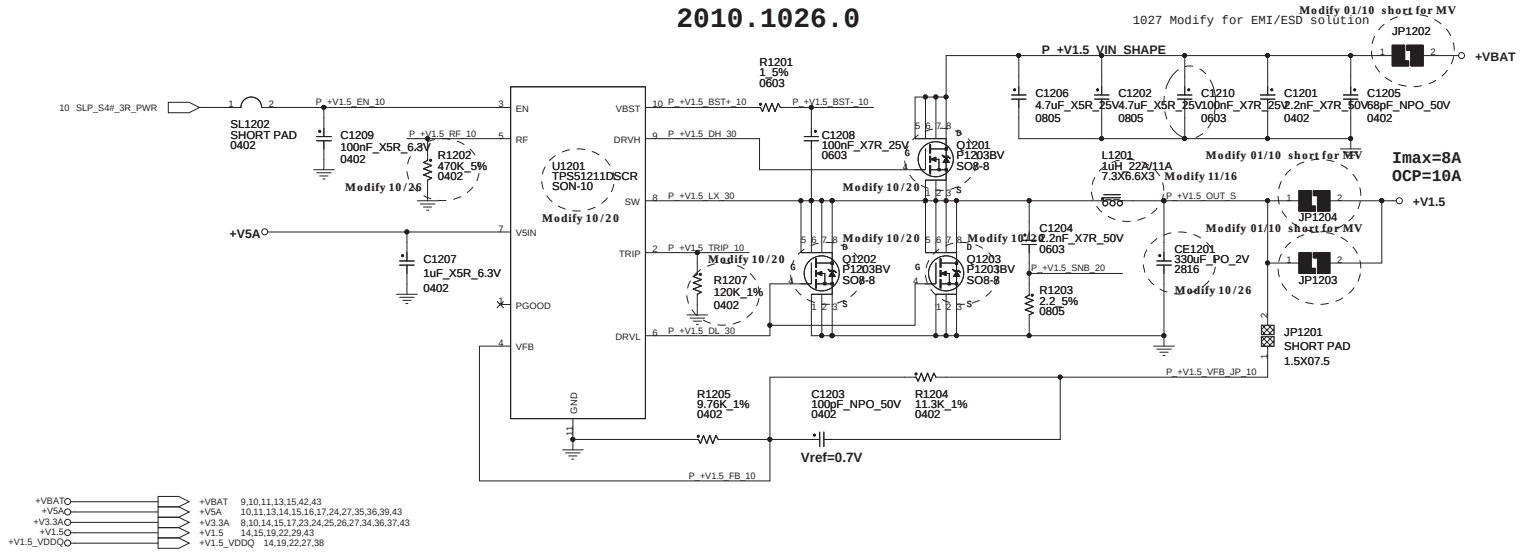
+V1.5 POWER SUPPLY

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:

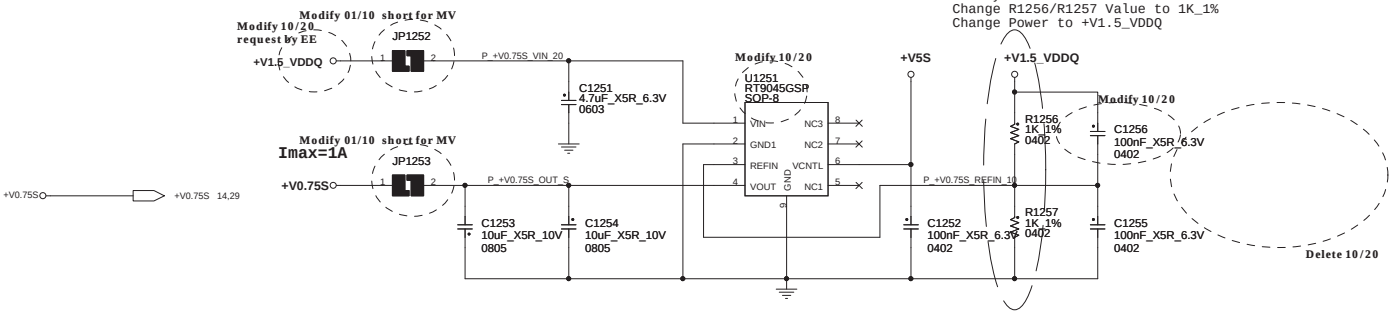
H-side MOSFET: IRF8707PBF		L-side MOSFET: IRF8707PBF	
Rds(ON)=17.5mohm	(Vgs=4.5 V)	Rds(ON)=17.5mohm	(Vgs=4.5 V)
I cont = 11A	(T =25 ℃)	I cont = 11A	(T =25 ℃)
I peak = 88A	(Pause =10 us)	I peak = 88A	(Pause =10 us)

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

+VBAT 9,10,11,13,15,42,43
+V5A 10,11,13,14,15,16,17,24,27,35,36,39,43
+V3.3A 8,10,14,15,17,23,24,25,26,27,34,36,37,43
+V1.5 14,15,19,22,29,43
+V1.5_VDDQ 14,19,22,27,38

+V0.75S POWER SUPPLY

2010.1026.0



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Title: 1.5VDDR3/0.75V			
Size: C	Document Number: CHICAGO		Rev: MV
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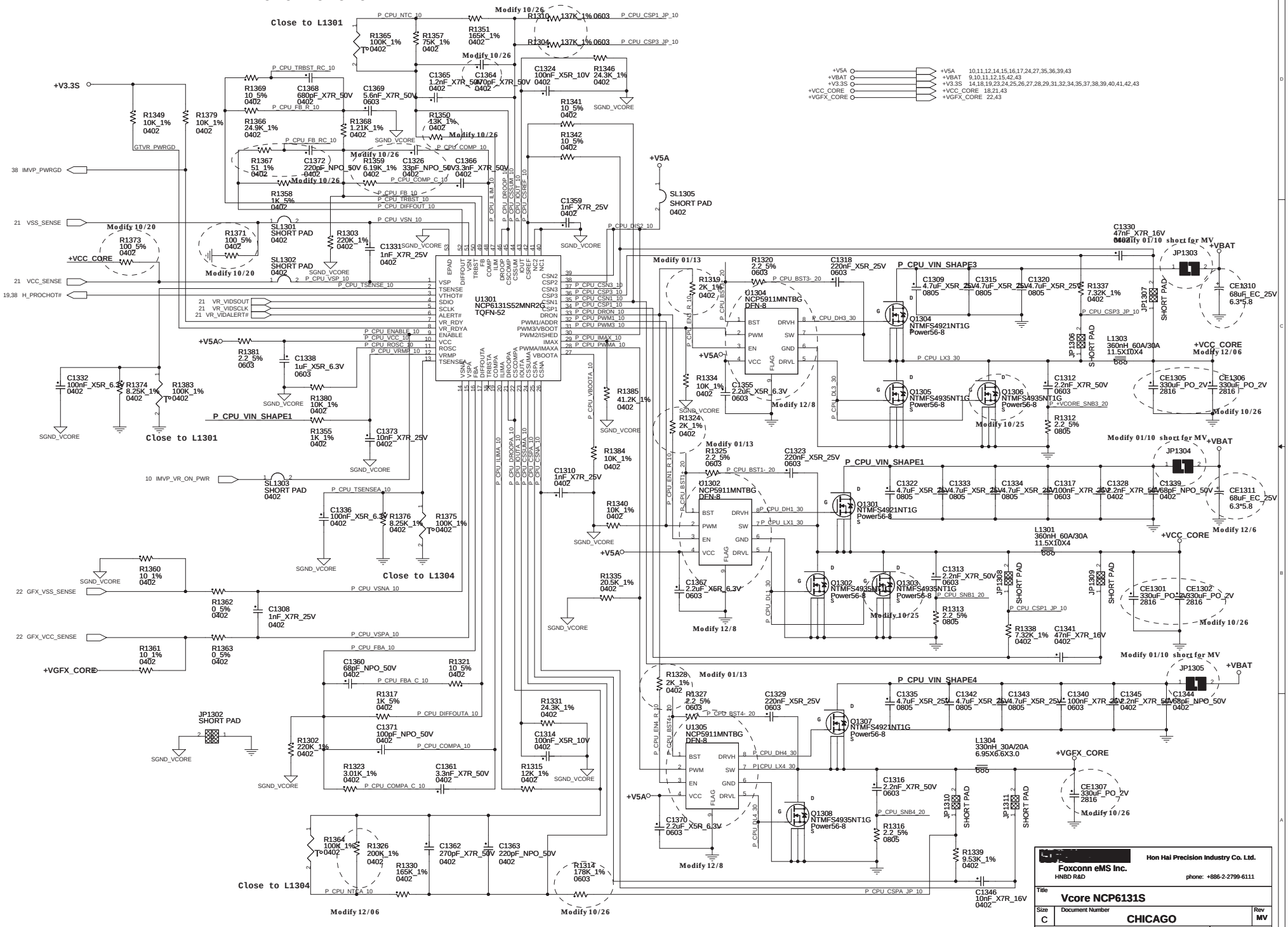
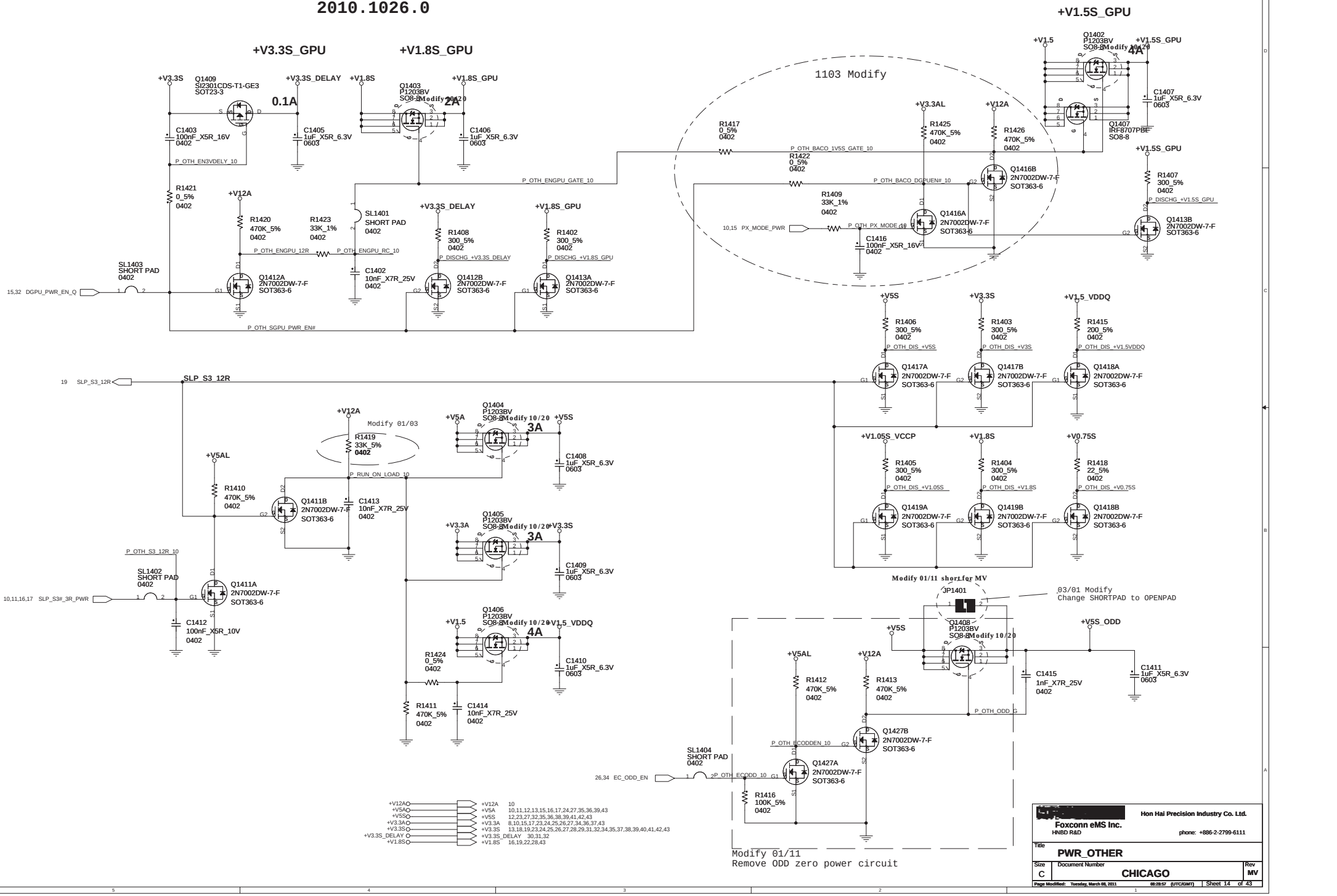
2010.1026.0 IMVP7 CPU VCORE POWER SUPPLY



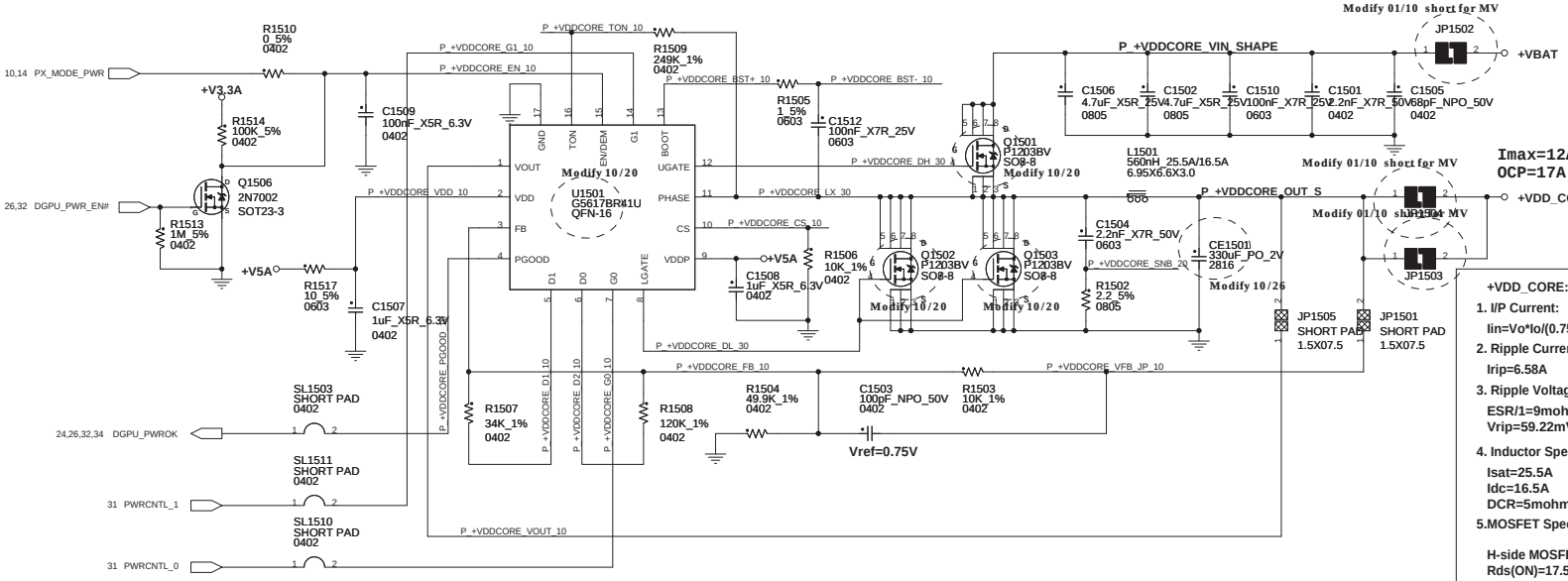
OTHER POWER / DISCHARGE CIRCUITS

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)

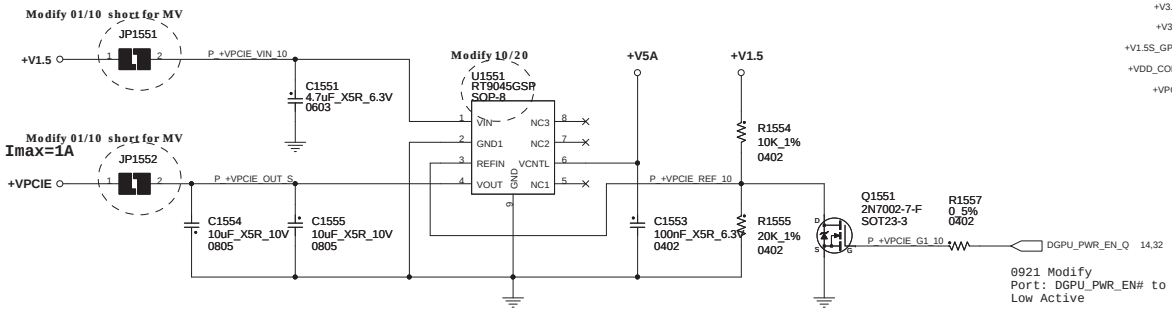
6. Frequency:

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

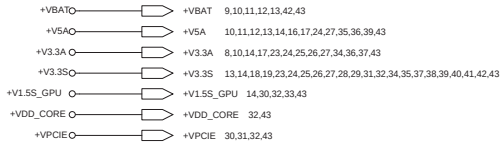
7. OCP:

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

2010.1020.0 +VPCIE POWER SUPPLY



0921 Modify
Port: DGPU_PWR_EN# to DGPU_PWR_EN_Q
Low Active



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Title: VATVDD/+VPCIE			
Size: C	Document Number: CHICAGO		Rev: MV
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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)

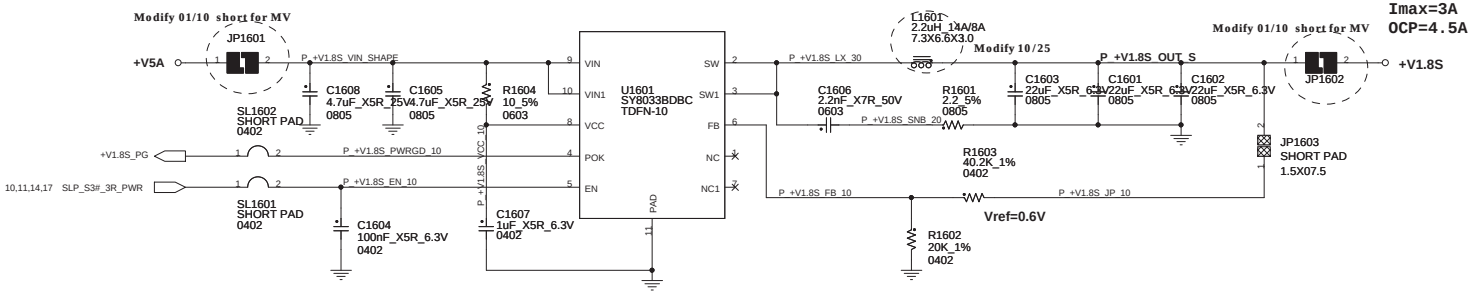
L-side N-MOSFET: Rds(ON)=75mohm (Vgs=4.5 V)

6. Frequency:

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

7. OCP:

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



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Title		
+1.8VS		
Size: C	Document Number: CHICAGO	Rev: MV
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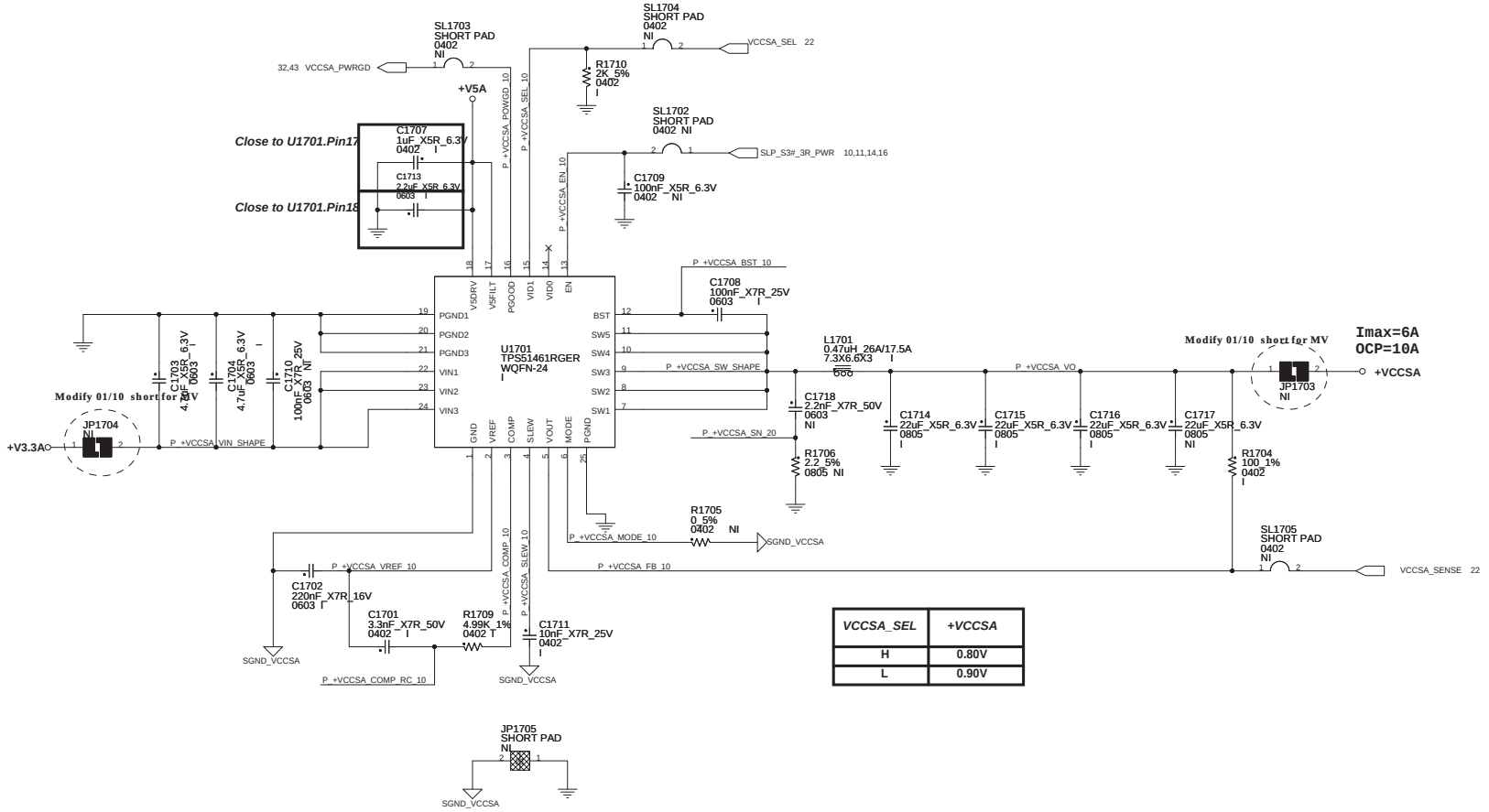
+VCCSA POWER SUPPLY

2010.1026.0

+VCCSA:
1. I/P Current:
lin=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

[redacted]
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Title: VCCSA
Size: C | Document Number: CHICAGO | Rev: MV
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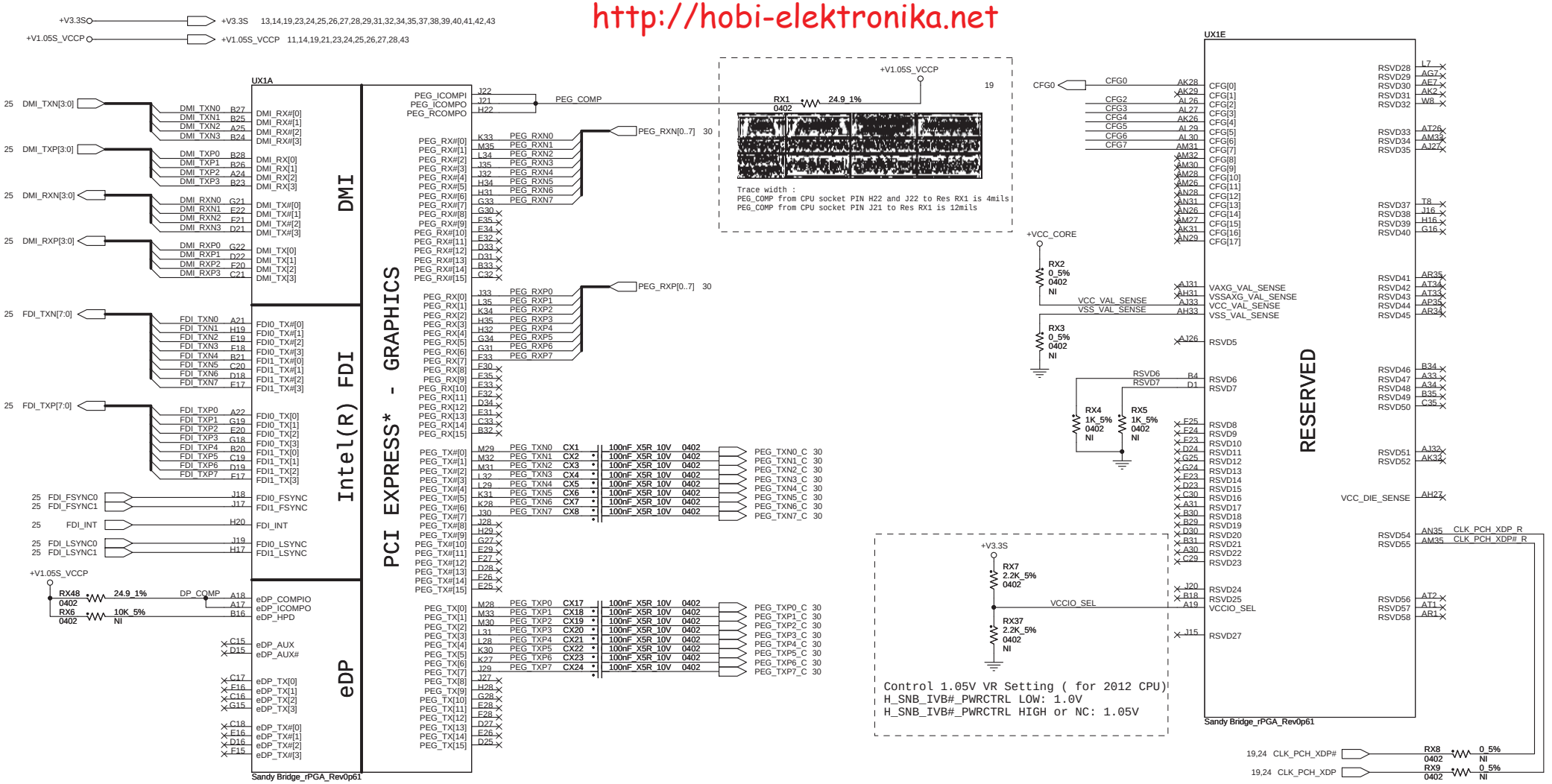

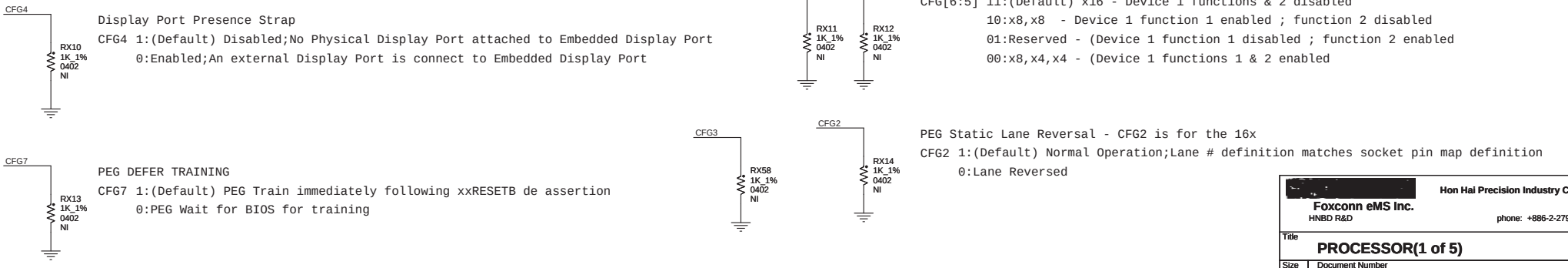

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Title: PROCESSOR(1 of 5)

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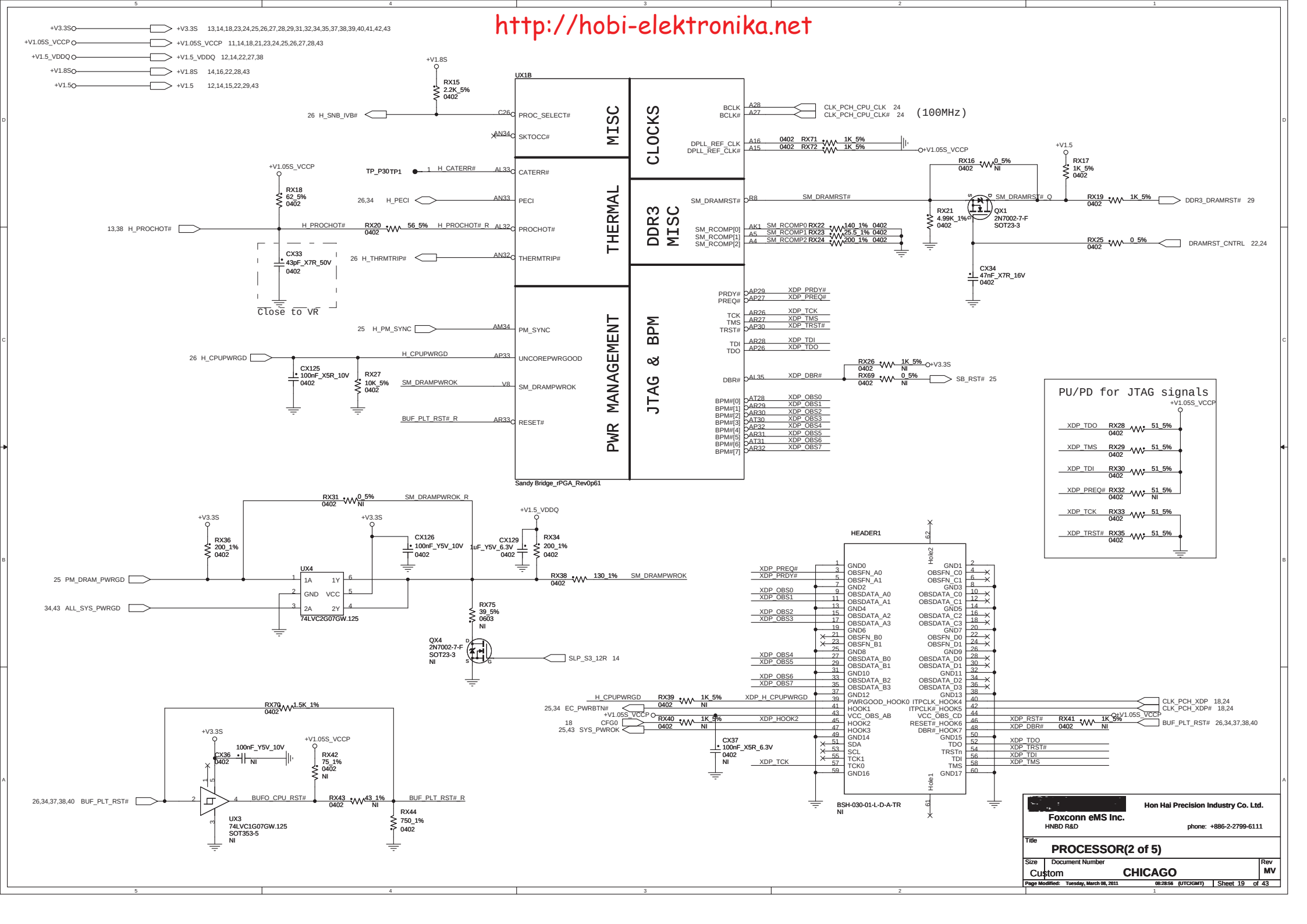

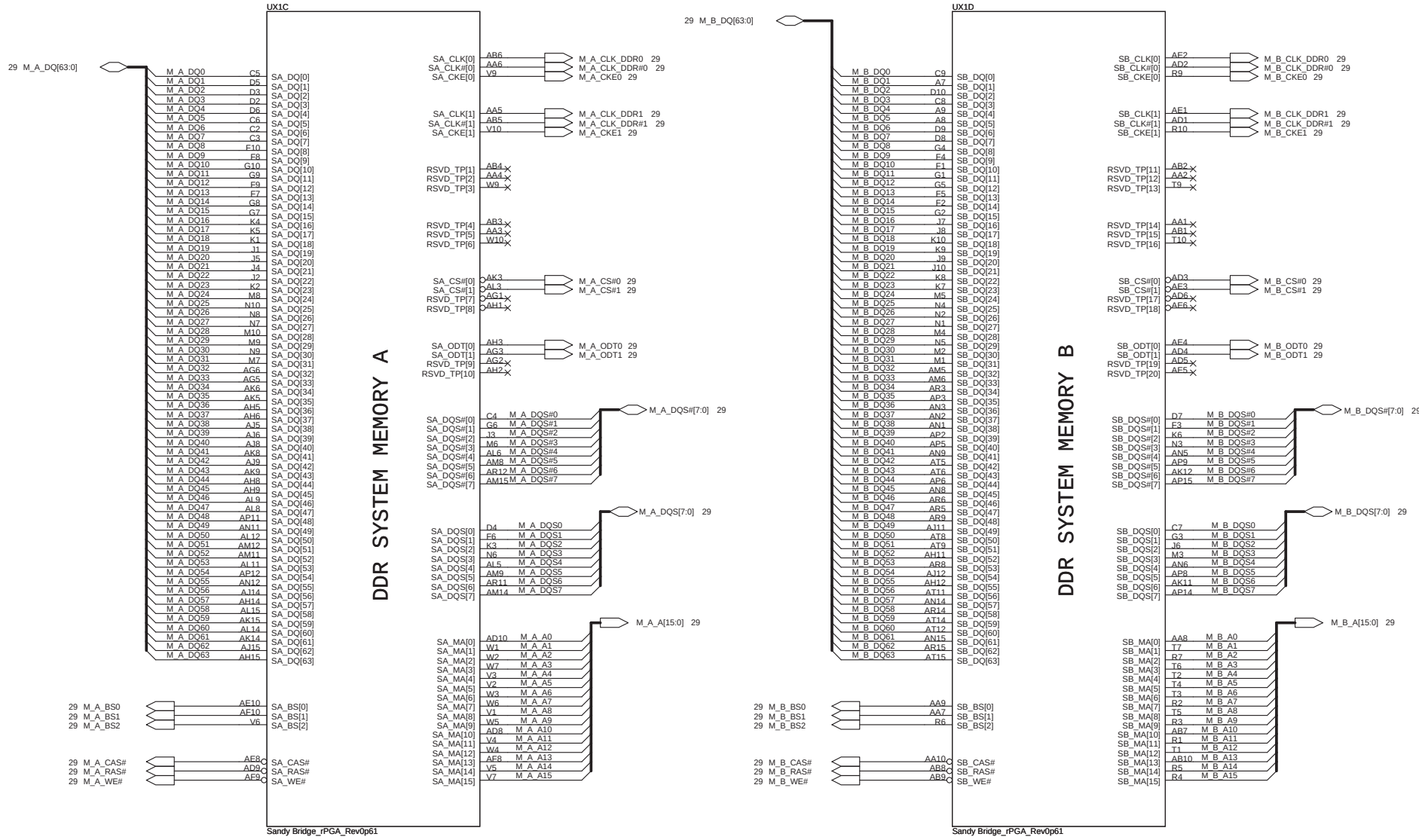

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Title: PROCESSOR(3 of 5)

Size	Document Number	Rev
Custom	CHICAGO	MV

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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,

+VCC_CORE

53A />2120mils

CX41 22uF_X5R_6.3V 0805
CX42 22uF_X5R_6.3V 0805
CX43 22uF_X5R_6.3V 0805
CX44 22uF_X5R_6.3V 0805
CX50 22uF_X5R_6.3V 0805

CX59 22uF_X5R_6.3V 0805
CX60 22uF_X5R_6.3V 0805
CX61 22uF_X5R_6.3V 0805
CX62 22uF_X5R_6.3V 0805
CX63 22uF_X5R_6.3V 0805

RX45 22uF_X5R_6.3V 0805
CX72 22uF_X5R_6.3V 0805
RX46 22uF_X5R_6.3V 0805
CX73 22uF_X5R_6.3V 0805
CX74 22uF_X5R_6.3V 0805

CX75 22uF_X5R_6.3V 0805

CX79 10uF_X5R_6.3V 0603
CX80 10uF_X5R_6.3V 0603
CX81 10uF_X5R_6.3V 0603
RX51 10uF_X5R_6.3V 0603
CX82 10uF_X5R_6.3V 0603

RX54 10uF_X5R_6.3V 0603
CX83 10uF_X5R_6.3V 0603
RX55 10uF_X5R_6.3V 0603
CX84 10uF_X5R_6.3V 0603
CX85 10uF_X5R_6.3V 0603

RX59 33pF_NPO_50V 0402
CX87 33pF_NPO_50V 0402

UX1F

+VCC_CORE

AG35 AG34 AG33 AG32 AG31 AG30 AG29 AG28 AG27 AG26 AE35 AE34 AE33 AE32 AE31 AE30 AD29 AD28 AD27 AD26 AC35 AC34 AC33 AC32 AC31 AC30 AC29 AC28 AC27 AC26 AA35 AA34 AA33 AA32 AA31 AA30 AA29 AA28 AA27 AA26 Y35 Y34 Y33 Y32 Y31 Y30 Y29 Y28 Y27 Y26 V35 V34 V33 V32 V31 V30 V29 V28 V27 V26 U35 U34 U33 U32 U31 U30 U29 U28 U27 U26 R35 R34 R33 R32 R31 R30 R29 R28 R27 R26 P35 P34 P33 P32 P31 P30 P29 P28 P27 P26

VCC1 VCC2 VCC3 VCC4 VCC5 VCC6 VCC7 VCC8 VCC9 VCC10 VCC11 VCC12 VCC13 VCC14 VCC15 VCC16 VCC17 VCC18 VCC19 VCC20 VCC21 VCC22 VCC23 VCC24 VCC25 VCC26 VCC27 VCC28 VCC29 VCC30 VCC31 VCC32 VCC33 VCC34 VCC35 VCC36 VCC37 VCC38 VCC39 VCC40 VCC41 VCC42 VCC43 VCC44 VCC45 VCC46 VCC47 VCC48 VCC49 VCC50 VCC51 VCC52 VCC53 VCC54 VCC55 VCC56 VCC57 VCC58 VCC59 VCC60 VCC61 VCC62 VCC63 VCC64 VCC65 VCC66 VCC67 VCC68 VCC69 VCC70 VCC71 VCC72 VCC73 VCC74 VCC75 VCC76 VCC77 VCC78 VCC79 VCC80 VCC81 VCC82 VCC83 VCC84 VCC85 VCC86 VCC87 VCC88 VCC89 VCC90 VCC91 VCC92 VCC93 VCC94 VCC95 VCC96 VCC97 VCC98 VCC99 VCC100

CORE SUPPLY

PEG AND DDR

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

RF solution

0402 68pF_NPO_50V CX113 NI
0402 1nF_X7R_16V CX112 NI

+V1.05S_VCCP

8.5A />340mils

CX65 CX66 CX47 CX38 CX48 CX39 CX40 — 0805 22uF_X5R_6.3V

CX70 330uF_PO_2V 2816
CX54 CX55 CX56 CX57 CX58 — 0805 22uF_X5R_6.3V

VCCIO1 AH13
VCCIO2 AH10
VCCIO3 AG10
VCCIO4 AC10
VCCIO5 Y10
VCCIO6 U10
VCCIO7 P10
VCCIO8 L10
VCCIO9 J14
VCCIO10 J13
VCCIO11 J12
VCCIO12 J11
VCCIO13 H14
VCCIO14 H12
VCCIO15 H11
VCCIO16 G14
VCCIO17 G13
VCCIO18 G12
VCCIO19 F14
VCCIO20 F13
VCCIO21 F12
VCCIO22 F11
VCCIO23 E14
VCCIO24 E12
VCCIO25 E11
VCCIO26 D14
VCCIO27 D13
VCCIO28 D12
VCCIO29 D11
VCCIO30 C14
VCCIO31 C13
VCCIO32 C12
VCCIO33 C11
VCCIO34 B14
VCCIO35 B12
VCCIO36 A14
VCCIO37 A13
VCCIO38 A12
VCCIO39 A11
VCCIO40 J23

SVID

VIDALERT# AJ29 VR_SVID_ALERT#_R
VIDSCLK AJ30 VR_SVID_CLK_R
VIDSOUT AJ28 VR_SVID_DATA_R

Close to CPU

RX49 43_5% 0402

Close to VR

+V1.05S_VCCP
RX47 75_5% 0402
CX123 100nF_X5R_10V 0402 NI
VR_VIDALERT# 13

Close to VR

+V1.05S_VCCP
RX50 54.9_1% 0402
RX52 0_5% 0402
VR_VIDSCLK 13

Close to CPU

+V1.05S_VCCP
CX124 100nF_X5R_10V 0402 NI
RX53 130_5% 0402

Close to VR

+V1.05S_VCCP
RX56 130_5% 0402
RX57 0_5% 0402
VR_VIDSOUT 13

SENSE LINES

+VCC_CORE
RX76 100_5% 0402
RX77 100_5% 0402

VCC_SENSE AJ35 → VCC_SENSE 13
VSS_SENSE AJ34 → VSS_SENSE 13

VCCIO_SENSE B10 → VCCP_SENSE 11
VSSIO_SENSE A10 → VSSP_SENSE 11

Sandy Bridge_rPGA_Rev0p61

UX1H

AT35 AT32 AT29 AT27 AT25 AT22 AT19 AT16 AT13 AT10 AT7 AT4 AT3 AR25 AR22 AR19 AR16 AR13 AR10 AR7 AR4 AR2 AP34 AP31 AP28 AP25 AP22 AP19 AP16 AP13 AP10 AP7 AP4 AP1 AN30 AN27 AN25 AN22 AN19 AN16 AN13 AN10 AN7 AN4 AM29 AM25 AM22 AM19 AM16 AM13 AM10 AM7 AM4 AM3 AM2 AM1 AL34 AL31 AL28 AL25 AL22 AL19 AL16 AL13 AL10 AL7 AL4 AL2 AK33 AK30 AK27 AK25 AK22 AK19 AK16 AK13 AK10 AK7 AK4 AJ25

VSS1 VSS2 VSS3 VSS4 VSS5 VSS6 VSS7 VSS8 VSS9 VSS10 VSS11 VSS12 VSS13 VSS14 VSS15 VSS16 VSS17 VSS18 VSS19 VSS20 VSS21 VSS22 VSS23 VSS24 VSS25 VSS26 VSS27 VSS28 VSS29 VSS30 VSS31 VSS32 VSS33 VSS34 VSS35 VSS36 VSS37 VSS38 VSS39 VSS40 VSS41 VSS42 VSS43 VSS44 VSS45 VSS46 VSS47 VSS48 VSS49 VSS50 VSS51 VSS52 VSS53 VSS54 VSS55 VSS56 VSS57 VSS58 VSS59 VSS60 VSS61 VSS62 VSS63 VSS64 VSS65 VSS66 VSS67 VSS68 VSS69 VSS70 VSS71 VSS72 VSS73 VSS74 VSS75 VSS76 VSS77 VSS78 VSS79 VSS80

VSS81 VSS82 VSS83 VSS84 VSS85 VSS86 VSS87 VSS88 VSS89 VSS90 VSS91 VSS92 VSS93 VSS94 VSS95 VSS96 VSS97 VSS98 VSS99 VSS100 VSS101 VSS102 VSS103 VSS104 VSS105 VSS106 VSS107 VSS108 VSS109 VSS110 VSS111 VSS112 VSS113 VSS114 VSS115 VSS116 VSS117 VSS118 VSS119 VSS120 VSS121 VSS122 VSS123 VSS124 VSS125 VSS126 VSS127 VSS128 VSS129 VSS130 VSS131 VSS132 VSS133 VSS134 VSS135 VSS136 VSS137 VSS138 VSS139 VSS140 VSS141 VSS142 VSS143 VSS144 VSS145 VSS146 VSS147 VSS148 VSS149 VSS150 VSS151 VSS152 VSS153 VSS154 VSS155 VSS156 VSS157 VSS158 VSS159 VSS160

AJ22 AJ19 AJ16 AJ13 AJ10 AJ7 AJ35 AJ34 AJ32 AJ29 AJ26 AJ25 AJ22 AJ19 AJ16 AJ13 AJ10 AJ7 AH4 AH32 AH30 AH29 AH28 AH26 AH25 AH22 AH19 AH16 AH7 AH4 AG9 AG8 AG4 AF6 AF5 AF3 AF2 AF35 AE34 AE33 AE32 AE31 AE30 AE29 AE28 AE27 AE26 AE9 AD7 AC9 AC8 AC6 AC5 AC3 AC2 AB35 AB34 AB33 AB32 AB31 AB30 AB29 AB28 AB27 AB26 Y9 Y8 Y6 Y5 Y3 Y2 W35 W34 W33 W32 W31 W30 W29 W28 W27 W26 U9 U8 U6 U5 U3 U2

VSS

Sandy Bridge_rPGA_Rev0p61

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POWER

FOR VAXG:
2x 330 µF Bottom Edge,
4x 0805 22 µF Top & Bottom Cavity,
8x 0805 22 µF Top & Bottom Edge,

+VCCSA → +VCCSA 17
+V1.8S → +V1.8S 14,16,19,28,43
+V1.5 → +V1.5 12,14,15,19,29,43
+V1.5_VDDQ → +V1.5_VDDQ 12,14,19,27,38
+VGFX_CORE → +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

UX1G

GRAPHICS

VAXG1 AT24
VAXG2 AT23
VAXG3 AT21
VAXG4 AT20
VAXG5 AT18
VAXG6 AT17
VAXG7 AR24
VAXG8 AR23
VAXG9 AR21
VAXG10 AR20
VAXG11 AR18
VAXG12 AR17
VAXG13 AP24
VAXG14 AP23
VAXG15 AP21
VAXG16 AP20
VAXG17 AP18
VAXG18 AP17
VAXG19 AN24
VAXG20 AN23
VAXG21 AN21
VAXG22 AN20
VAXG23 AN18
VAXG24 AN17
VAXG25 AM24
VAXG26 AM23
VAXG27 AM21
VAXG28 AM20
VAXG29 AM18
VAXG30 AM17
VAXG31 AL24
VAXG32 AL23
VAXG33 AL21
VAXG34 AL20
VAXG35 AL18
VAXG36 AL17
VAXG37 AK24
VAXG38 AK23
VAXG39 AK21
VAXG40 AK20
VAXG41 AK18
VAXG42 AK17
VAXG43 AJ24
VAXG44 AJ23
VAXG45 AJ21
VAXG46 AJ20
VAXG47 AJ18
VAXG48 AJ17
VAXG49 AH24
VAXG50 AH23
VAXG51 AH21
VAXG52 AH20
VAXG53 AH18
VAXG54 AH17

SENSE LINES

VAXG_SENSE AK35 → GFX_VCC_SENSE 13
VSSAXG_SENSE AK34 → GFX_VSS_SENSE 13

VREF

SM_VREF AL1
SM_VREF
RX65 100K_5% 0402
RX62 0402 0_5% NI
QX3 SOT23-3 SI2302DS
M_VREF_R
RX73 0402 0_5% → SLP_S3#_3R 10,25,34,35,43
RX74 0402 0_5% NI → DRAMRST_CNTRL 19,24
+V1.5
RX64 1K_1% 0402
RX66 1K_1% 0402
CX127 100nF_X5R_10V 0402
CX128 100nF_X5R_10V 0402

DDR3 -1.5V RAILS

5A />200mils

+V1.5_VDDQ
VDDQ1 AF7
VDDQ2 AF4
VDDQ3 AF1
VDDQ4 AC7
VDDQ5 AC4
VDDQ6 AC1
VDDQ7 V7
VDDQ8 Y4
VDDQ9 Y1
VDDQ10 U7
VDDQ11 U4
VDDQ12 U1
VDDQ13 P7
VDDQ14 P4
VDDQ15 P1
CX104 0603 10uF_X5R_6.3V
CX105 0603 10uF_X5R_6.3V
CX106 0603 10uF_X5R_6.3V
CX107 0603 10uF_X5R_6.3V
CX108 0603 10uF_X5R_6.3V
CX109 0603 10uF_X5R_6.3V
CX110 330uF_PO_2V 2816

SA RAIL

6A />240mils

+VCCSA
VCCSA1 M27
VCCSA2 M26
VCCSA3 L26
VCCSA4 J26
VCCSA5 J25
VCCSA6 J24
VCCSA7 H26
VCCSA8 H25
CX115 0603 10uF_X5R_6.3V
CX116 0603 10uF_X5R_6.3V
CX117 0603 10uF_X5R_6.3V

MISC

VCCSA_SENSE H23 → VCCSA_SENSE 17
FC_C22 C22
VCCSA_VID1 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 B6
VCCPLL2 A6
VCCPLL3 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 T35
VSS162 T34
VSS163 T33
VSS164 T32
VSS165 T31
VSS166 T30
VSS167 T29
VSS168 T28
VSS169 T27
VSS170 T26
VSS171 P9
VSS172 P8
VSS173 P6
VSS174 P5
VSS175 P3
VSS176 P2
VSS177 N35
VSS178 N34
VSS179 N33
VSS180 N32
VSS181 N31
VSS182 N30
VSS183 N29
VSS184 N28
VSS185 N27
VSS186 N26
VSS187 M34
VSS188 L33
VSS189 L30
VSS190 L27
VSS191 L9
VSS192 L8
VSS193 L6
VSS194 L5
VSS195 L4
VSS196 L3
VSS197 L2
VSS198 L1
VSS199 K35
VSS200 K32
VSS201 K29
VSS202 K26
VSS203 J34
VSS204 J31
VSS205 H33
VSS206 H30
VSS207 H27
VSS208 H24
VSS209 H21
VSS210 H18
VSS211 H15
VSS212 H13
VSS213 H10
VSS214 H9
VSS215 H8
VSS216 H7
VSS217 H6
VSS218 H5
VSS219 H4
VSS220 H3
VSS221 H2
VSS222 H1
VSS223 G35
VSS224 G32
VSS225 G29
VSS226 G26
VSS227 G23
VSS228 G20
VSS229 G17
VSS230 G11
VSS231 F34
VSS232 F31
VSS233 F29
VSS234 F22
VSS235 E19
VSS236 E30
VSS237 E27
VSS238 E24
VSS239 E21
VSS240 E18
VSS241 E15
VSS242 E13
VSS243 E10
VSS244 E9
VSS245 E8
VSS246 E7
VSS247 E6
VSS248 E5
VSS249 E4
VSS250 E3
VSS251 E2
VSS252 E1
VSS253 D35
VSS254 D32
VSS255 D29
VSS256 D26
VSS257 D20
VSS258 D17
VSS259 C34
VSS260 C31
VSS261 C28
VSS262 C27
VSS263 C25
VSS264 C23
VSS265 C10
VSS266 C1
VSS267 B22
VSS268 B19
VSS269 B17
VSS270 B15
VSS271 B13
VSS272 B11
VSS273 B9
VSS274 B8
VSS275 B7
VSS276 B5
VSS277 B3
VSS278 B2
VSS279 A35
VSS280 A32
VSS281 A29
VSS282 A26
VSS283 A23
VSS284 A20
VSS285 A3

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RTCRST# 18~25msS

+VCC_RTC

+V3.3S
+V1.05S_VCCP
+V3.3A
+V5S
+VCC_RTC

+V3.3S 13,14,18,19,24,25,26,27,28,29,31,32,34,35,37,38,39,40,41,42,43
+V1.05S_VCCP 11,14,18,19,21,24,25,26,27,28,43
+V3.3A 8,10,14,15,17,24,25,26,27,34,36,37,43
+V5S 12,14,27,32,35,36,38,39,41,42,43
+VCC_RTC 25,27

INT_SERIRQ RS14 0402 10K_5%

CS1 0402 15pF_NPO_50V
CS3 0402 15pF_NPO_50V
1TJS125BJ4A421P YS1
6 mils
RS1 10M_5% 0402
RTC_32KX1
RTC_32KX2

+V3.3AL DS2 BAT54C_200mA SOT23-3
+VCC_RTC
CS2 1uF_Y5V_6.3V 0402

RTC3 RS3 510_1% 0402
RTC2 RS6 510_1% 0402
RS4 0402 20K_1%
RS5 1M_5% 0402
CS4 1uF_Y5V_6.3V 0402
RS2 0402 20K_5%
CS6 1uF_Y5V_6.3V 0402
CS5 10nF_X7R_25V 0402
RTC1

12/06 Modify
HEADER9
PAD1
PAD2
Header_1X2_100u

+VCC_RTC RS7 0402 330K_1%

US1A

RTCX1	A20	RTC_32KX1	
RTCX2	C20	RTC_32KX2	
RTCRST#	D20	RTCRST#	
SRTCRST#	G22	SRTCRST#	
INTRUDER#	K22	INTRUDER#	
INTVRMEN	C17	INTVRMEN	
HDA_BCLK	N34	HDA_BITCLK	
HDA_SYNC	L34	HDA_SYNC	
SPKR	T10	HDA_SPKR	35
HDA_RST#	K34	HDA_RESET#	
HDA_SDIN0	F34	AUD_SDIN0	35
HDA_SDIN1	G34		
HDA_SDIN2	C34		
HDA_SDIN3	A34		
HDA_SDO	A36	HDA_SDOUT	
HDA_DOCK_EN# / GPIO33	C36	HDA_DOCK_EN#	
HDA_DOCK_RST# / GPIO13	N32	TP_P30TP8	
JTAG_TCK	J3	JTAG_TCK	
JTAG_TMS	H7	JTAG_TMS	
JTAG_TDI	K5	JTAG_TDI	
JTAG_TDO	H1	JTAG_TDO	
SPI_CLK	T3	PCH_SPI_CLK	
SPI_CS0#	Y14	PCH_SPI_CS0#	
SPI_CS1#	T1		
SPI_MOSI	V4	PCH_SPI_MOSI	
SPI_MISO	U3	PCH_SPI_MISO	

RTC

LPC

FWH0 / LAD0	C38	LPC_AD0	LPC_AD0 34,38
FWH1 / LAD1	A38	LPC_AD1	LPC_AD1 34,38
FWH2 / LAD2	B37	LPC_AD2	LPC_AD2 34,38
FWH3 / LAD3	C37	LPC_AD3	LPC_AD3 34,38
FWH4 / LFRAME#	D36	LPC_FRAME#	LPC_FRAME# 34,38
LDRQ0#	E36		
LDRQ1# / GPIO23	K36		
SERIRQ	V5	INT_SERIRQ	INT_SERIRQ 34

CS93 0402 22pF_NPO_50V

SATA 6G

SATA0RXN	AM3	SATA_RXN0	SATA_RXN0 39
SATA0RXP	AM1	SATA_RXP0	SATA_RXP0 39
SATA0TXN	AP7	SATA_TXN0	SATA_TXN0 39
SATA0TXP	AP5	SATA_TXP0	SATA_TXP0 39
SATA1RXN	AM10		
SATA1RXP	AM8		
SATA1TXN	AP11		
SATA1TXP	AP10		
SATA2RXN	AD7	SATA_RXN2	SATA_RXN2 39
SATA2RXP	AD5	SATA_RXP2	SATA_RXP2 39
SATA2TXN	AH5	SATA_TXN2	SATA_TXN2 39
SATA2TXP	AH4	SATA_TXP2	SATA_TXP2 39

02/14 Modify
Change SATA port from SATA1 to SATA2

SATA3RXN	AB8		
SATA3RXP	AB10		
SATA3TXN	AF3		
SATA3TXP	AF1		
SATA4RXN	Y7		
SATA4RXP	Y5		
SATA4TXN	AD3		
SATA4TXP	AD1		
SATA5RXN	Y3		
SATA5RXP	Y1		
SATA5TXN	AB3		
SATA5TXP	AB1		
SATAICOMPO	Y11		
SATAICOMPI	Y10	SATA1_COMP	RS18 0402 37.4_1%
SATA3RCOMPO	AB12		
SATA3COMPI	AB13	SATA3_COMP	RS20 0402 49.9_1%
SATA3RBIAS	AH1	SATA3_RBIAS	RS21 0402 750_1%
SATALED#	P3	SATALED#	SATALED# 39
SATA0GP / GPIO21	V14	SATA0GP	RS15 0402 10K_5%
SATA1GP / GPIO19	P1	BBS_BIT0	RS16 0402 10K_5% NI

RS188 1K_5% 0402 NI

+V1.05S_VCCP

IHDA

SATA

JTAG

SPI

CougarPoint_Rev_1p0

FOR ME FUNCTION

Flash Descriptor Security overridden

+V3.3A
RS19 1K_5% 0402
+V3.3AL
RS197 4.7K_5% 0402
RS198 0402 0_5% HDA_SDOUT
34 ME_Reflash
RS52 0402 100_5%
QS8 2N7002-7-F SOT23-3
+V3.3S
RS196 1K_5% 0402
DS7
HDA_SDOUT
HDA_SDOUT_R
BAT54_200mA

RF solution

<24MHz>

CS94 0402 22pF_NPO_50V NI

35 AUD_BITCLK	RS9 0402	33_5%	HDA_BITCLK
34,35,36 AUD_RESET#	RS10 0402	33_5%	HDA_RESET#
35 AUD_SYNC	RS11 0402	33_5%	HDA_SYNC_Q
35 AUD_SDOUT	RS13 0402	33_5%	HDA_SDOUT_R

+V3.3S
RS51 1K_5% 0402 NI
RS189 1K_5% 0402 NI

GPIO33 Internal PU
PD for Manufacturing
environment

+V5S
RS211 0_5% 0402
+V3.3A
RS33 0402 1K_5% HDA_SYNC
SOT23-3 2N7002-7-F QS9
HDA_SYNC_Q
RS53 1M_5% 0402

On Die PLL VR is supplied by
1.5 V when sampled high,
1.8 V when sampled low.
(Default:1.5V for Mobile)

No REBOOT

+V3.3S
RS24 0402 1K_5% HDA_SPKR

RS24 NI=Disabled
RS24 I=Enabled

PCH JTAG Disable

+V3.3A
RS26 200_5% 0402 NI
RS27 200_5% 0402 NI
RS28 200_5% 0402 NI
RS30 100_5% 0402 NI
RS31 100_5% 0402 NI
RS32 100_5% 0402 NI
JTAG_TMS
JTAG_TDI
JTAG_TDO
JTAG_TCK
RS34 0402 51_5%

Modify 11/11
Remove parts from PV build

26 MB_FLASH0_EN
CARD_INSERT0
MB_FLASH0_EN
PCH_SPI_CS0#
PCH_SPI_MISO
PCH_SPI_MOSI
PCH_SPI_CLK
+V3.3S
CONDS1 FPC_12P_100u_Natural NI

CARD_INSERT0
PCH_SPI_CS0#
US5 NI
A VCC
B
GND Y
NC7S32M5X (OR Gate)
SPI_CS0#
RS200 10K_5% 0402 NI
CS92 100nF_X5R_6.3V 0402 NI

+V3.3S
RS25 3.3K_5% 0402
PCH_SPI_CS0# RS199 0_5% 0402
PCH_SPI_MISO RS8 0_5% 0402
SPI_CS0# 1
SPI_MISO 2
WP#0 3
US2
CS# VCC 8
DO HOLD# 7
WP# CLK 6
GND DIO 5
HOLD#0
PCH_SPI_CLK
SPI_MOSI RS12 0402 0_5% PCH_SPI_MOSI
FLASH_SOIC-8_4MB
CS7 1uF_Y5V_6.3V 0402
RS23 3.3K_5% 0402

Place R12 resistor close to PCH

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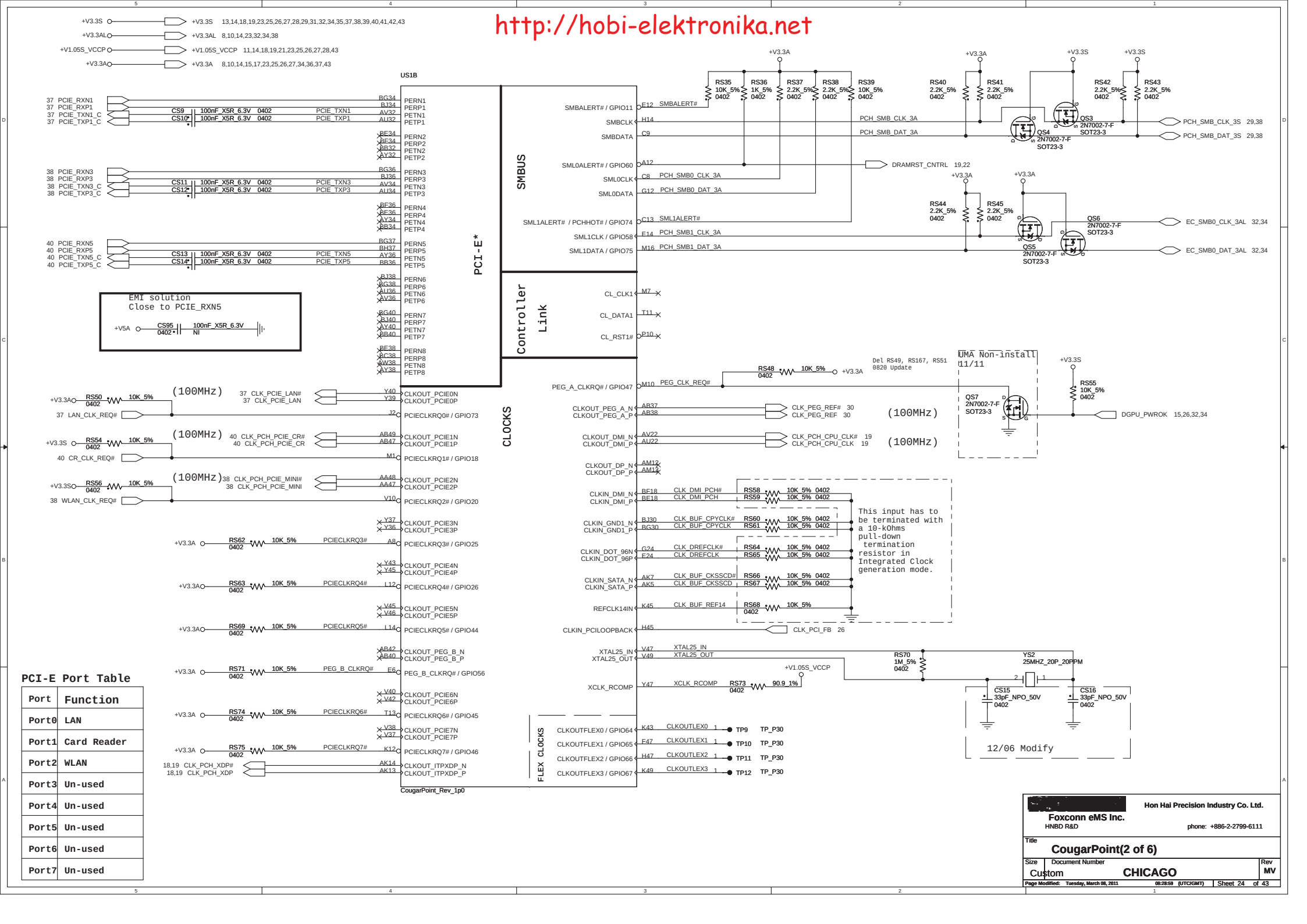

PCI-E Port Table

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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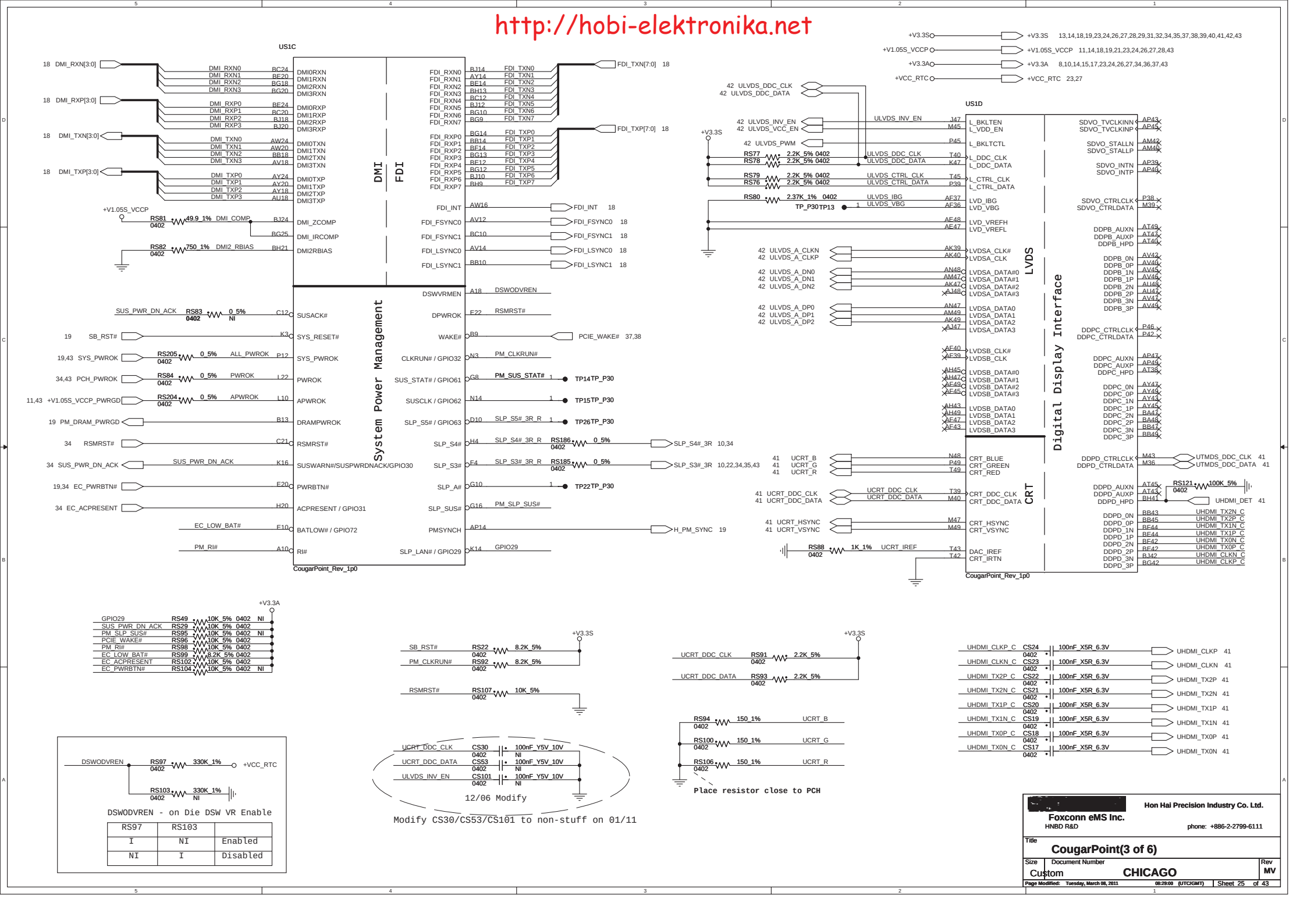
Title: CougarPoint(2 of 6)

Size: Custom | Document Number: CHICAGO | Rev: MV

Page Modified: Tuesday, March 08, 2011 08:28:59 (UTC/GMT) | Sheet 24 of 43



Boot BIOS Strap		
BBS_BIT1	BBS_BIT0	Boot BIOS Location
0	0	LPC
0	1	Reserved (NAND)
1	0	PCI
1	1	SPI

RS108 0402 1K_5% NI — BBS_BIT1

+V3.3S

RS111 0402 8.2K_5% — INT_PIRQA#
RS113 0402 8.2K_5% — INT_PIRQB#
RS115 0402 8.2K_5% — INT_PIRQC#
RS117 0402 8.2K_5% — INT_PIRQD#
RS118 0402 8.2K_5% — DGPU_HOLD_RST#
RS119 0402 NI 8.2K_5% — DGPU_DDC_SELECT#
RS120 0402 8.2K_5% — DGPU_PWR_EN#
RS122 0402 8.2K_5% — SB_ODD_MD#
RS123 0402 8.2K_5% — SATA_ODD_DA#
RS124 0402 8.2K_5% — INT_PIRQG#
RS125 0402 8.2K_5% — INT_PIRQH#

RS126 0402 100K_5% NI — PLT_RST#

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

US1E

RSVD: RSVD1–RSVD29 (AY7, AV7, AU3, BG4, AT10, BC8, AU2, AT4, AT3, AT1, AY3, AT5, AV3, AV1, BB1, BA3, BB5, BB3, BB7, BF8, BD4, BF6, AV5, AV10, AT8, AY5, BA2, AT12, BF3)

TP1–TP40: BG26, BJ26, BH25, BJ16, BG16, AH38, AH37, AK43, AK45, C18, N30, H3, AH12, AM4, AM5, Y13, K24, L24, AB46, AB45, B21, M20, AY16, BG46, BF28, BC30, BE32, BJ32, BC28, BE30, BF32, BG32, AV26, BB26, AU28, AY30, AU26, AY26, AV28, AW30

PCI: PIRQA# K40, PIRQB# K38, PIRQC# H38, PIRQD# G38, REQ1# / GPIO50 C46, REQ2# / GPIO52 C44, REQ3# / GPIO54 E40, GNT1# / GPIO51 D47, GNT2# / GPIO53 F42, GNT3# / GPIO55 F46, PIRQE# / GPIO2 G42, PIRQF# / GPIO3 G40, PIRQG# / GPIO4 C42, PIRQH# / GPIO5 D44, PME# K10, PLTRST# C6, CLKOUT_PCI0 H49, CLKOUT_PCI1 H43, CLKOUT_PCI2 J48, CLKOUT_PCI3 K42, CLKOUT_PCI4 H40

USB: USBP0N C24, USBP0P A24, USBP1N C25, USBP1P B25, USBP2N C26, USBP2P A26, USBP3N K28, USBP3P H28, USBP4N E28, USBP4P D28, USBP5N C28, USBP5P A28, USBP6N C29, USBP6P B29, USBP7N N28, USBP7P M28, USBP8N L30, USBP8P K30, USBP9N G30, USBP9P E30, USBP10N C30, USBP10P A30, USBP11N L32, USBP11P K32, USBP12N G32, USBP12P E32, USBP13N C32, USBP13P A32

USB_PN0 39, USB_PP0 39, USB_PN1 39, USB_PP1 39, USB_PN2 39, USB_PP2 39, USB_PN10 42, USB_PP10 42, USB_PN11 38, USB_PP11 38

USBRBIAS# C33 — RS131 0402 22.6_1%
USBRBIAS B33

OC0# / GPIO59 A14, OC1# / GPIO40 K20, OC2# / GPIO41 B17, OC3# / GPIO42 C16, OC4# / GPIO43 L16, OC5# / GPIO9 A16, OC6# / GPIO10 D14, OC7# / GPIO14 C14

USB_OC#0 39, USB_OC#1 39

CougarPoint_Rev_1p0

30 DGPU_HOLD_RST# — RS46 0402 0_5% — C46, C44 — DGPU_PWR_EN# E40 — 15,32 DGPU_PWR_EN#
12/06 Modify

BBS_BIT1 — TP_P30 TP17 — DGPU_PWM_SELECT# — DGPU_DDC_SELECT#

39 SB_ODD_MD# — SB_ODD_MD# G42, SATA_ODD_DA# G40, INT_PIRQG# C42, INT_PIRQH# D44

TP_P30 TP18 — PCI_PME#

30 PLT_RST# — PLT_RST#

38 CLK_PCI_JIG — RS134 0402 22_5% — TP_P30 TP19 — CLK_PCI_JIG_R
34 CLK_PCI_KBC — RS135 0402 22_5% — TP_P30 TP20 — CLK_PCI_KBC_R
24 CLK_PCI_FB — RS136 0402 22_5% — CLK_PCI_FB_R

+V3.3S

US4 74LVC1G17GW.125

19,34,37,38,40 BUF_PLT_RST# — RS152 100K_5% 0402 — PLT_RST#

+V3.3S

QS10 2N7002-7-F SOT23-3 NI

RS164 220K_5% 0402

39 SB_ODD_IN# — SB_ODD_IN# Q

PLT_RST#

02/24 Modify
same as the PV build

+V3.3A

USB_OC#0 — 0402 10K_5% — RS144
USB_OC#1 — 0402 10K_5% — RS145
USB_OC#2 — 0402 10K_5% — RS147

12/06 Modify

DGPU_HOLD_RST# — CS102 0402 100nF_Y5V_10V NI
SB_ODD_MD# — CS103 0402 100nF_Y5V_10V NI

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

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	

+V3.3S — +V3.3S 13,14,18,19,23,24,25,27,28,29,31,32,34,35,37,38,39,40,41,42,43
+V3.3A — +V3.3A 8,10,14,15,17,23,24,25,27,34,36,37,43

US1F

34 PCI_SERR# — RS17 0402 0_5% — GPIO0 T7
34 EC_SMI# — A42
DGPU_HPD_INTR# H36
34 RUN_SCI# — E38
TP_P30 TP25 — C10
GPIO12 C4
23 MB_FLASH0_EN — G2
GPIO16 U2
15,24,32,34 DGPU_PWROK — D40
GPIO22 T5
TP_P30 TP16 — GPIO24 E8
GPIO27 E16
GPIO28 P8
GPIO34 K1
GPIO35 K4
SB_ODD_IN# Q V8
GPIO37 M5
MFG_MODE N2
GFX_DET M3
GPIO48 V13
GPIO49 V3
GPIO57 D6

RS127 10K_5% 0402

GPIO: BMBUSY# / GPIO0, TACH1 / GPIO1, TACH2 / GPIO6, TACH3 / GPIO7, GPIO8, LAN_PHY_PWR_CTRL / GPIO12, GPIO15, SATA4GP / GPIO16, TACH0 / GPIO17, SCLOCK / GPIO22, GPIO24 / MEM_LED, GPIO27, GPIO28, STP_PCI# / GPIO34, GPIO35, SATA2GP / GPIO36, SATA3GP / GPIO37, SLOAD / GPIO38, SDATAOUT0 / GPIO39, SDATAOUT1 / GPIO48, SATA5GP / GPIO49, GPIO57

CPU/MISC: TACH4 / GPIO68, TACH5 / GPIO69, TACH6 / GPIO70, TACH7 / GPIO71, A20GATE, PECI, RCIN#, PROCPWRGD, THRMTRIP#, INIT3_3V#, DF_TVS, TS_VSS1–4, NC_1

C40 — RS201 0402 0_5% — EC_ODD_EN 14,34
B41 GPIO69
C41 GPIO70
A40 GPIO71
RS109 10K_5% 0402

P4 — A20GATE 34
AU16 H_PECI_R — RS110 0402 0_5% NI — H_PECI 19,34
P5 — KBRST# 34
AY11 — H_CPUPWRGD 19
AY10 H_THRMTRIP# R — RS112 0402 390_1% — H_THRMTRIP# 19
T14 — RS114 0402 56_5% NI — +V1.05S_VCCP
AY1 H_SNB_IVB# R — RS116 0402 1K_5% — H_SNB_IVB# 19

AH8, AK11, AH10, AK10

P37

NCTF: VSS_NCTF_1–32

CougarPoint_Rev_1p0

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

+V3.3A

RS132 0402 10K_5% GPIO28 — RS130 0402 1K_5% NI

+V3.3A

RS195 0402 10K_5% GPIO24
RS137 0402 10K_5% GPIO12
RS138 0402 1K_5% MB_FLASH0_EN

+V3.3S

RS139 0402 10K_5% GPIO70
RS140 0402 10K_5% GPIO71
RS141 0402 10K_5% GPIO0
RS142 0402 10K_5% EC_SMI#
RS146 0402 10K_5% DGPU_HPD_INTR#
RS154 0402 10K_5% MFG_MODE
RS158 0402 10K_5% GFX_DET
RS159 0402 10K_5% GPIO16
RS160 0402 10K_5% GPIO49
RS161 0402 10K_5% GPIO22
RS162 0402 10K_5% GPIO34
RS163 0402 10K_5% GPIO48
RS133 0402 220K_5% GPIO37

GPIO27 — RS143 0402 10K_5%
GPIO35 — RS148 0402 1K_5% NI
DGPU_PWROK — RS155 0402 100K_5% NI

[redacted]
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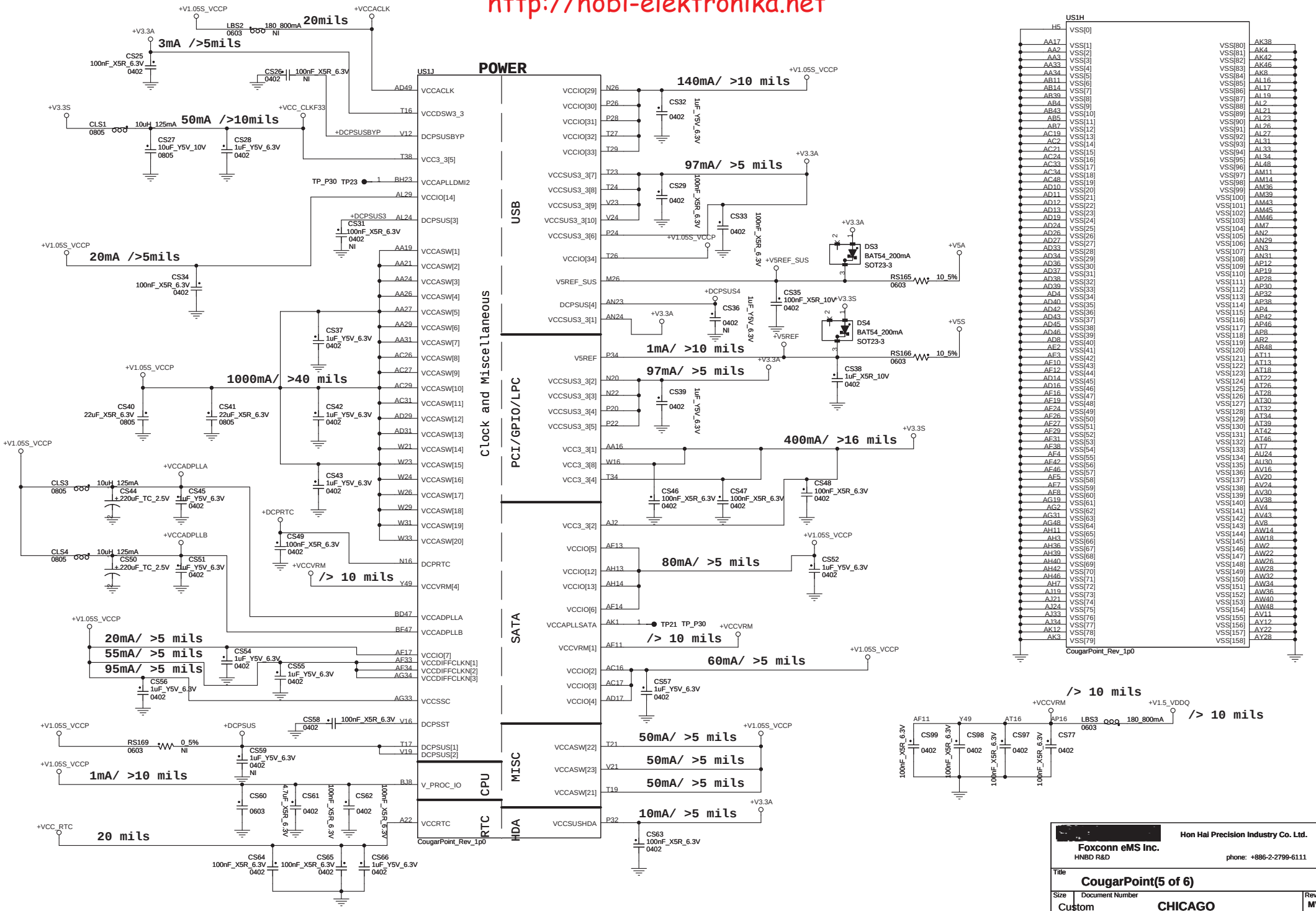

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Title: **CougarPoint(5 of 6)**

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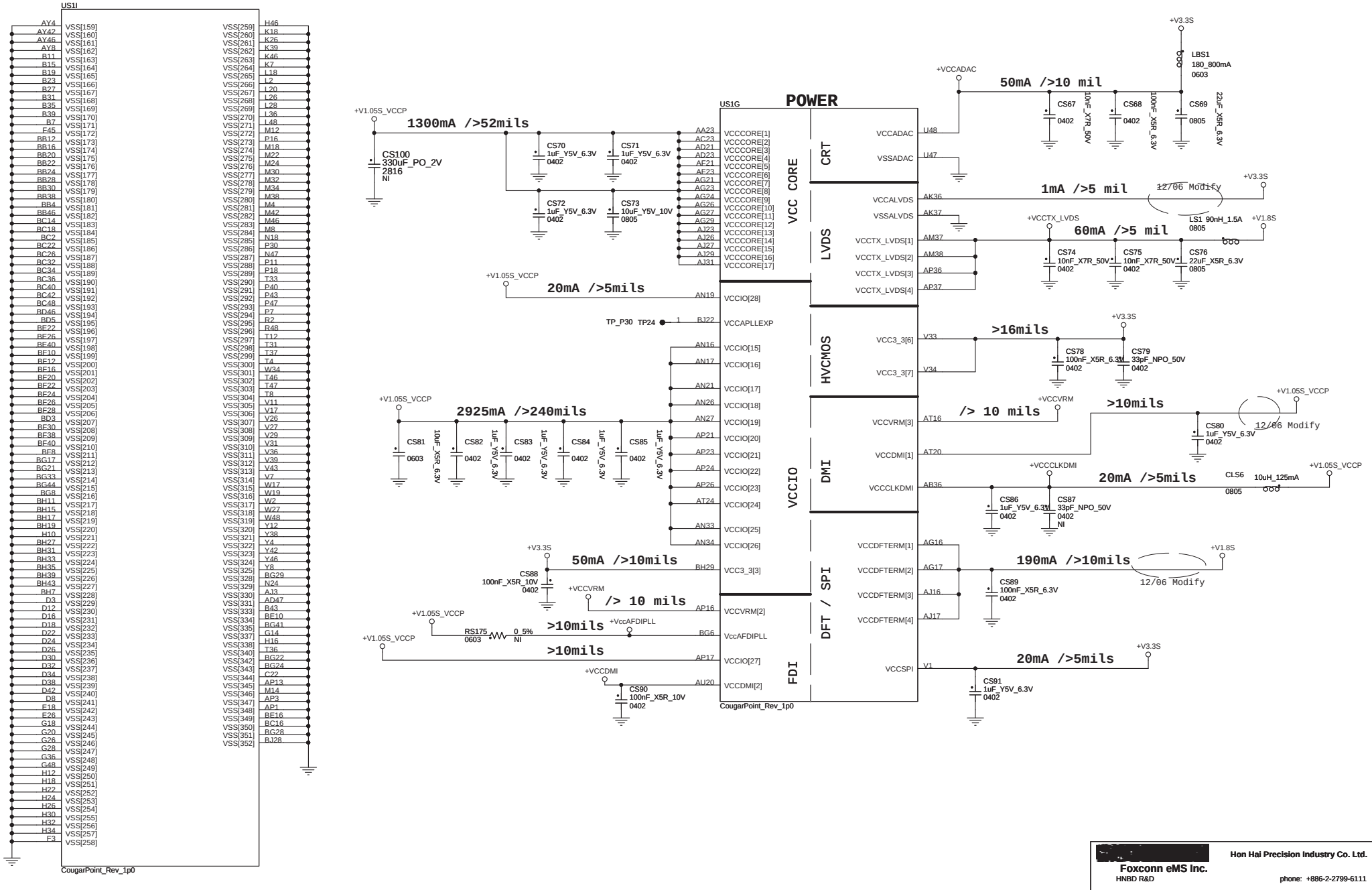

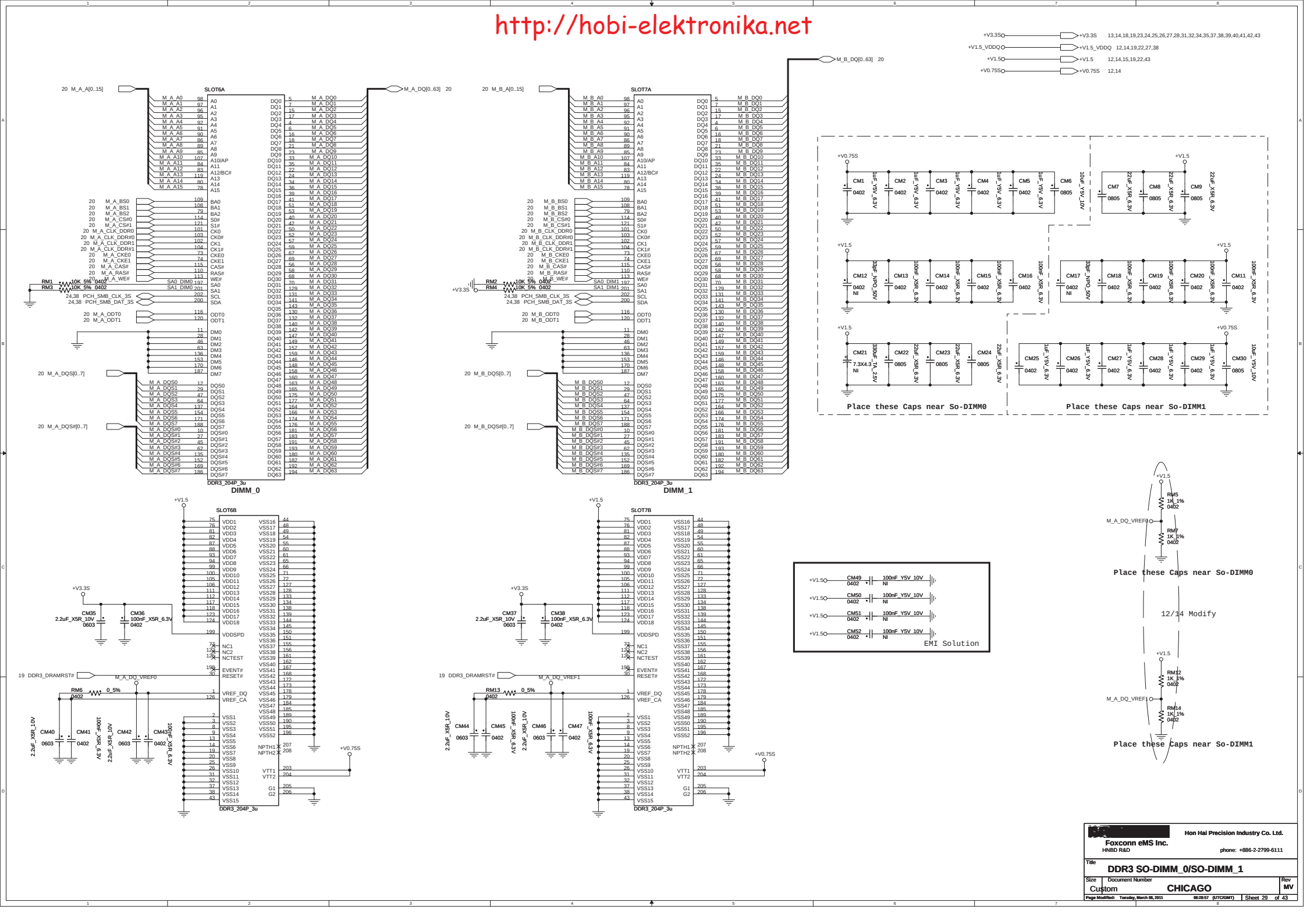

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Title		
DDR3 SO-DIMM_0/SO-DIMM_1		
Size: Custom	Document Number: CHICAGO	Rev: MV
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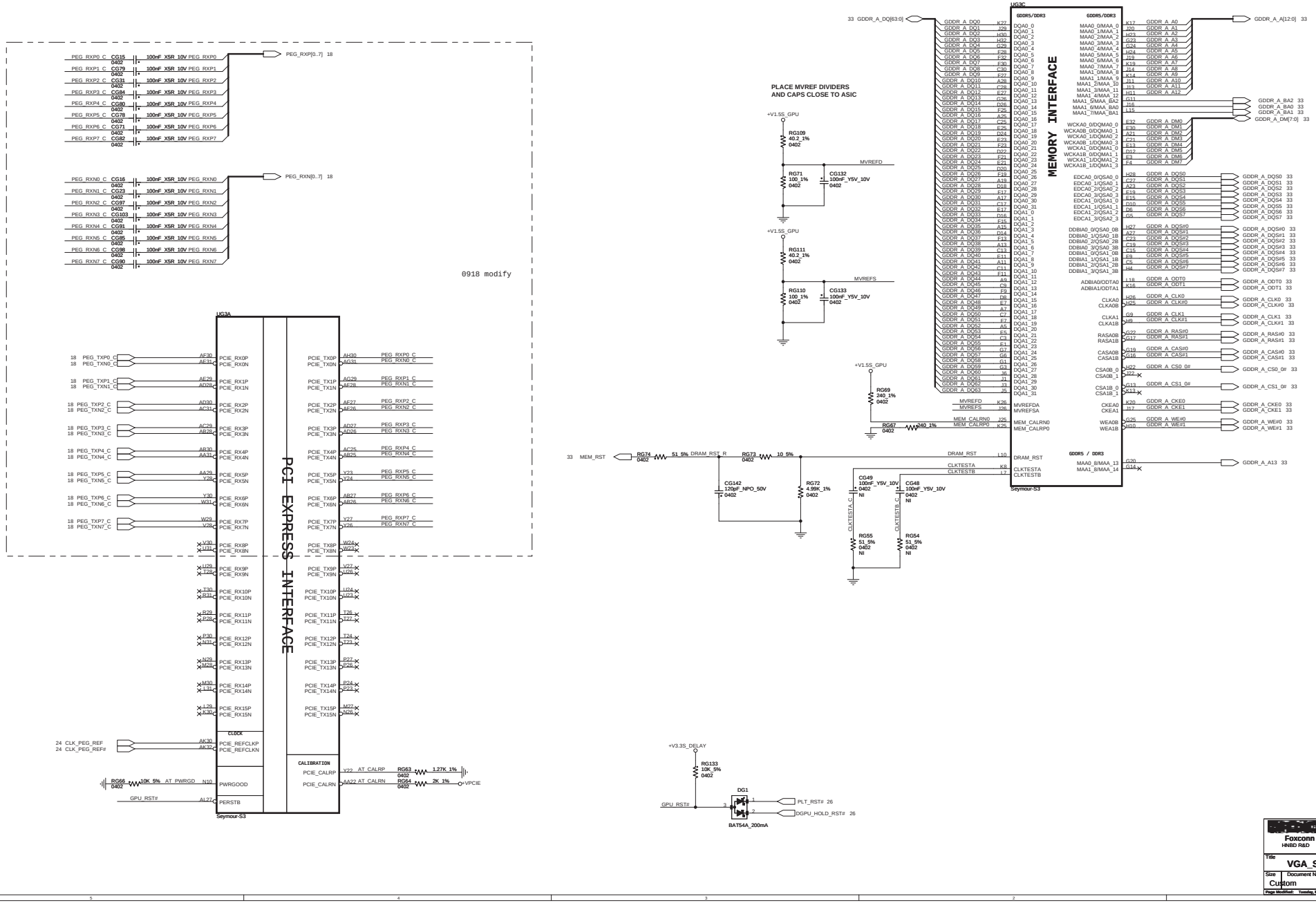

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Title: VGA_S3 (PCI-E) 1/3

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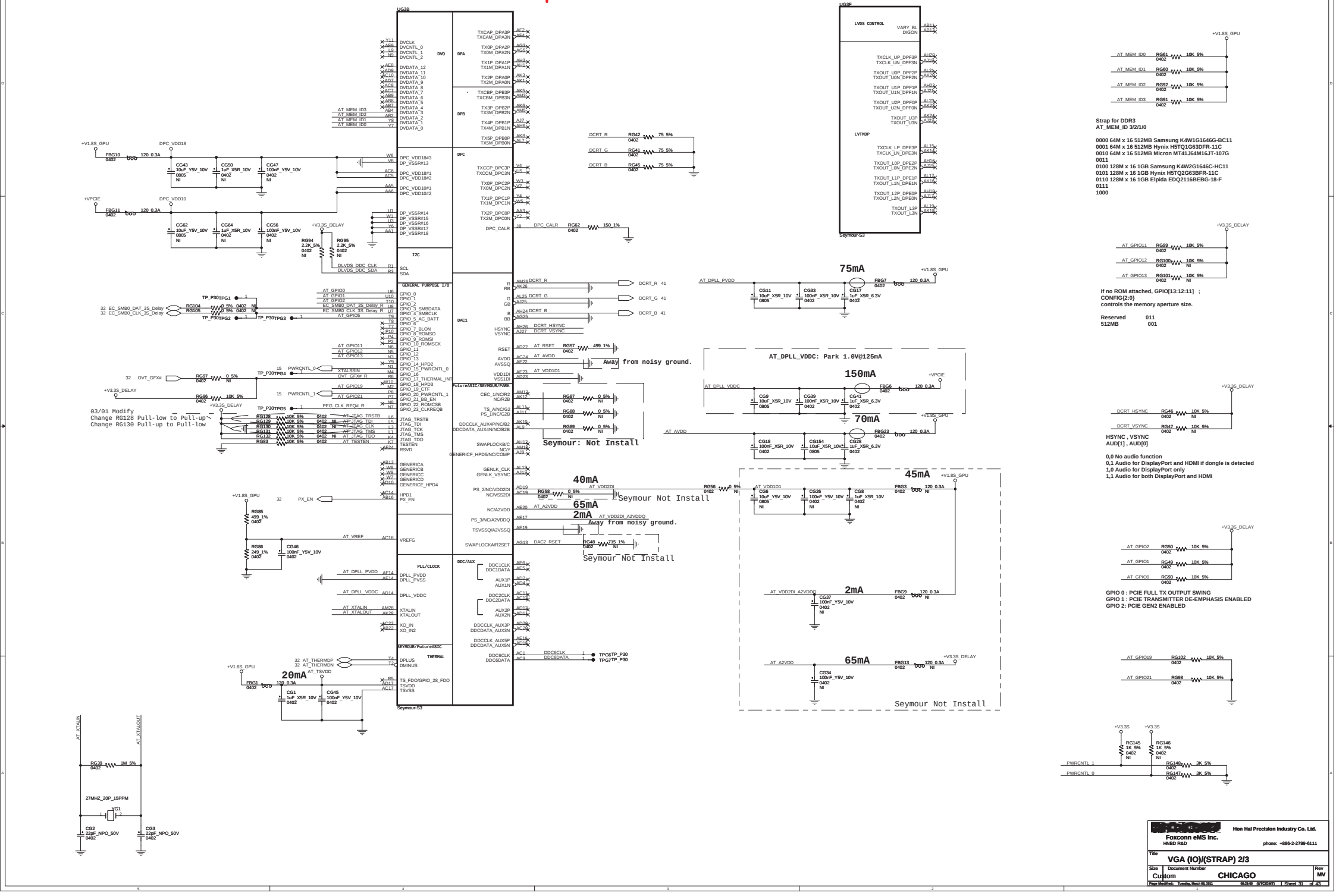

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Title: VGA (IO)/(STRAP) 2/3

Size	Document Number	Rev
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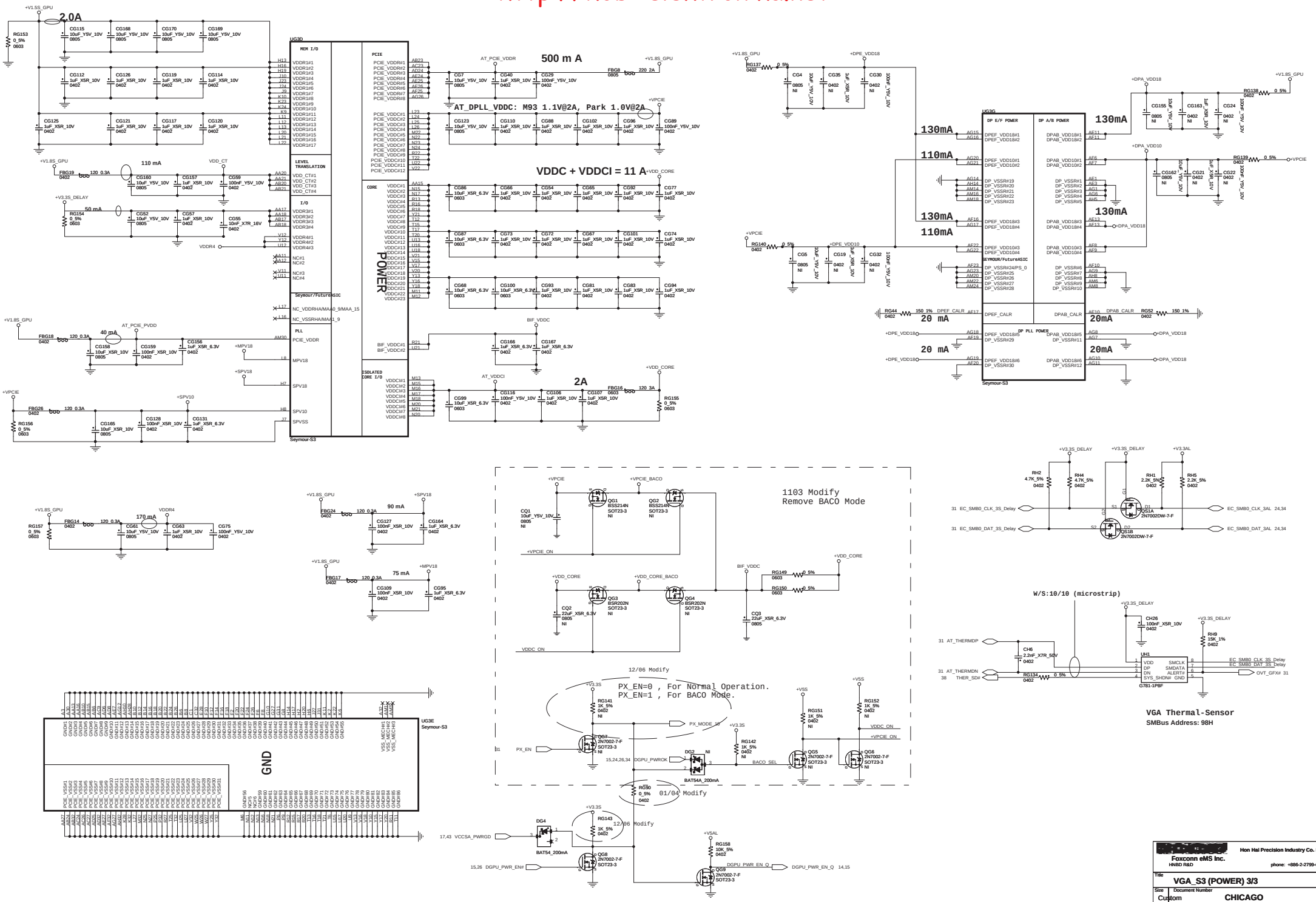

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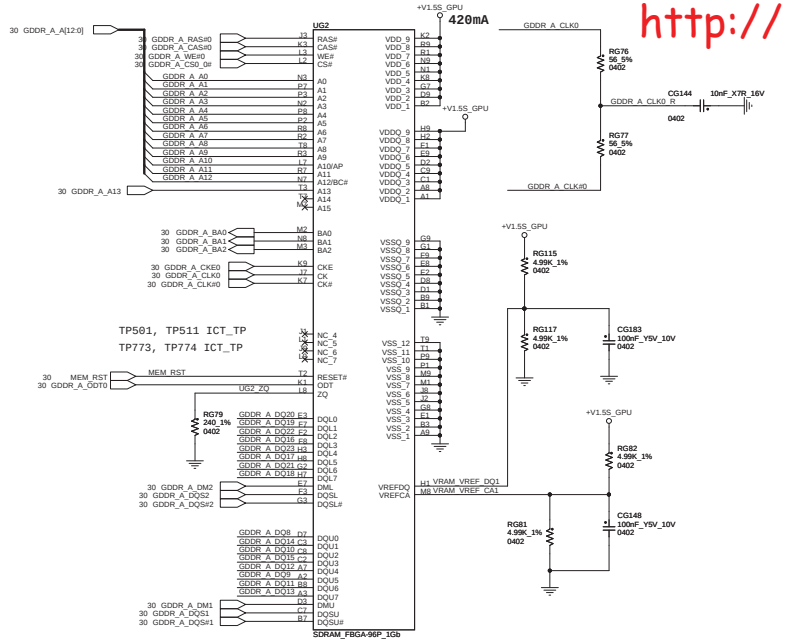
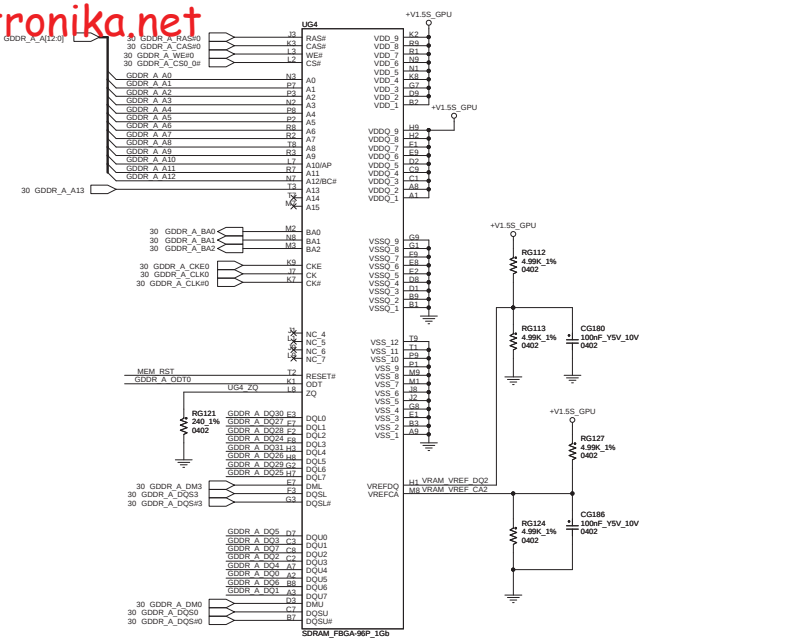
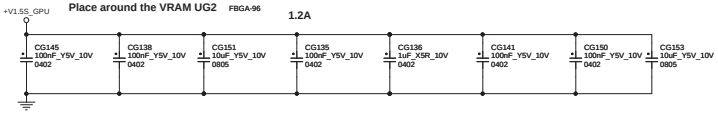
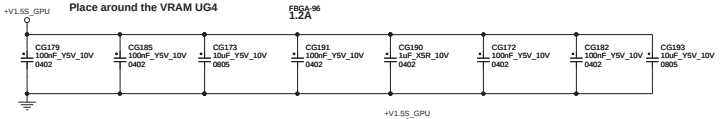
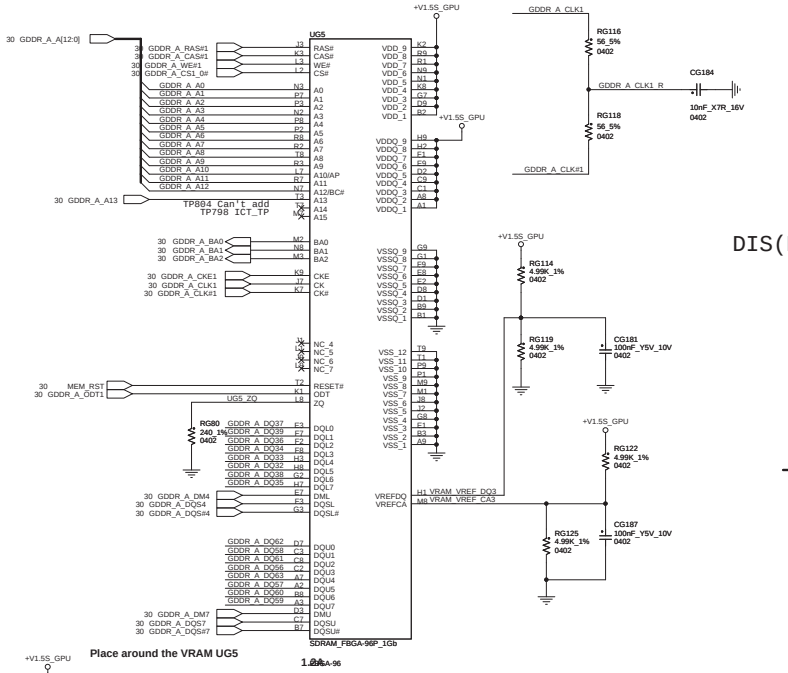




GDDR_A_DQ[0:31] 30

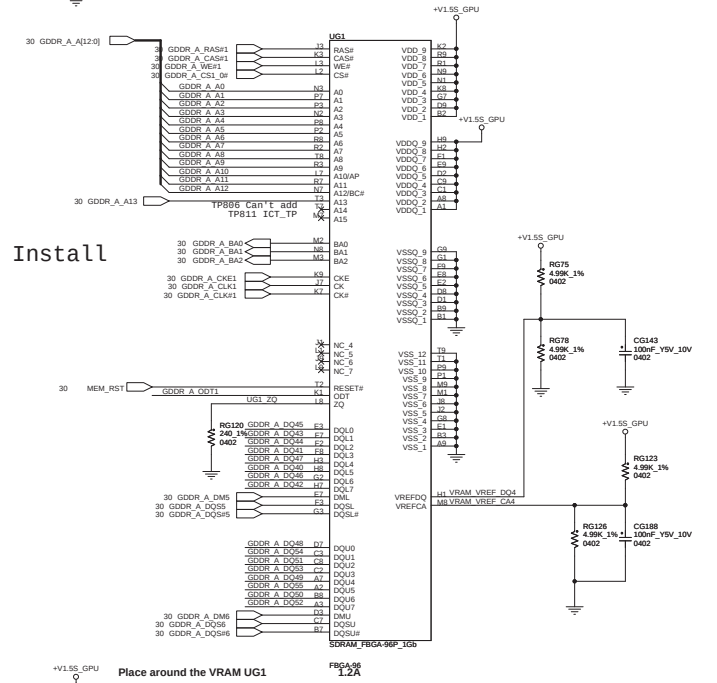


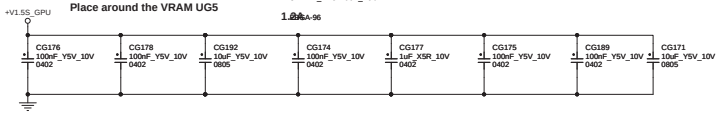


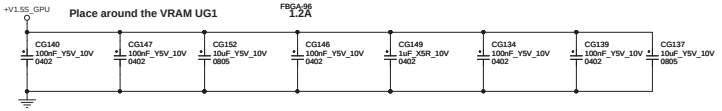


DIS(M93 XT);PX : Install

GDDR_A_DQ[32:63] 30







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Title: VRAM (DDR3)

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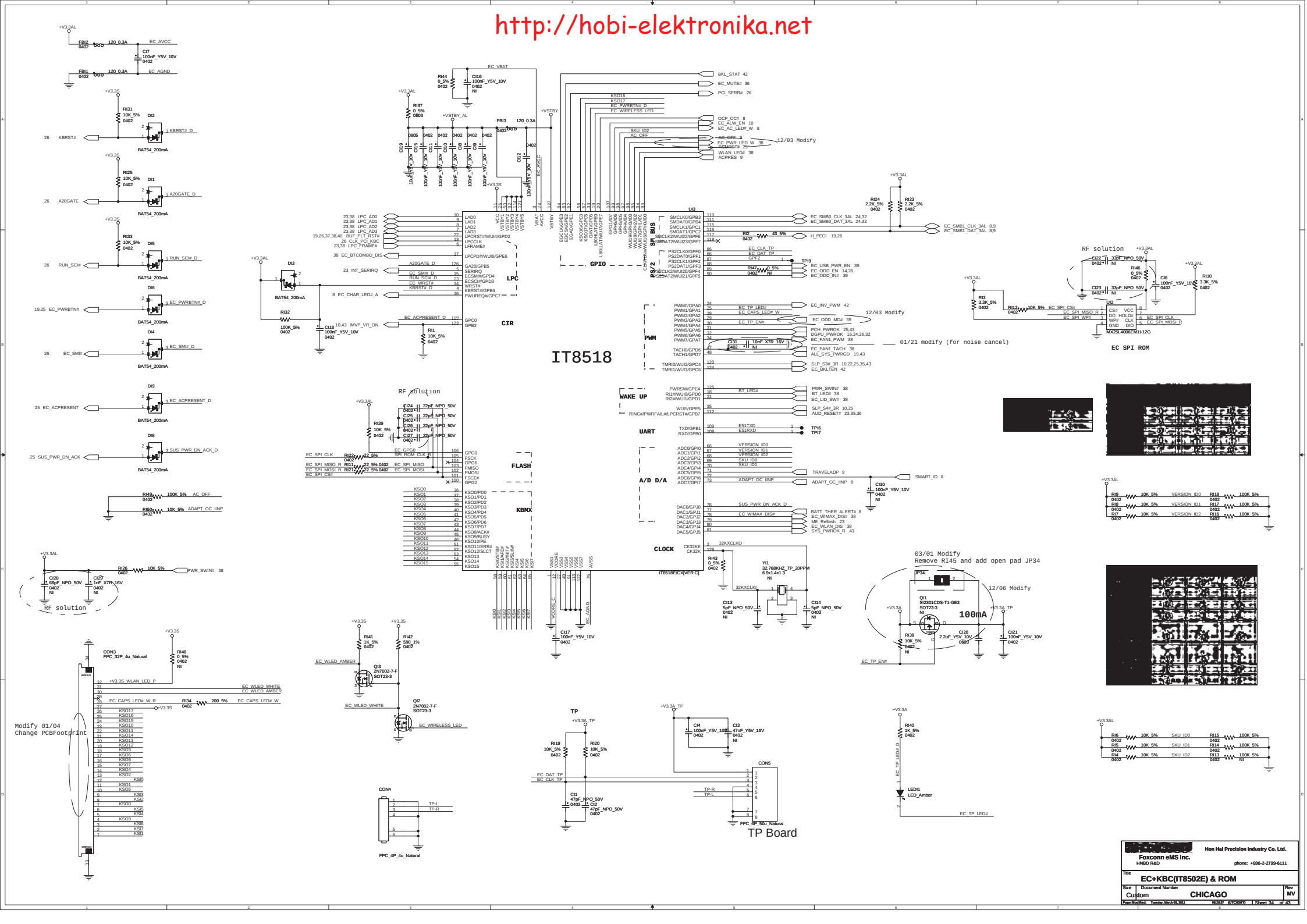

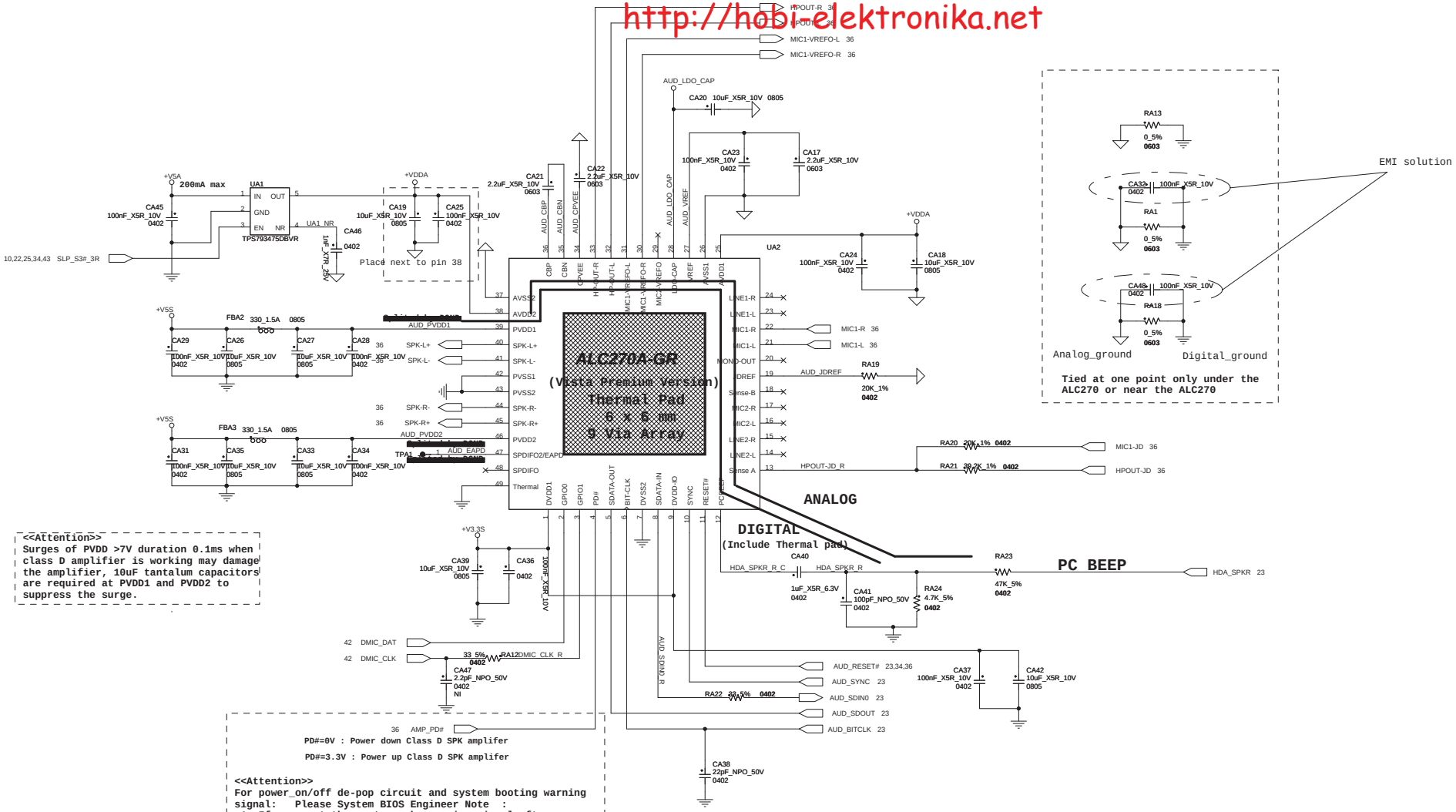

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Title: Audio (CODEC_ALC270A)		
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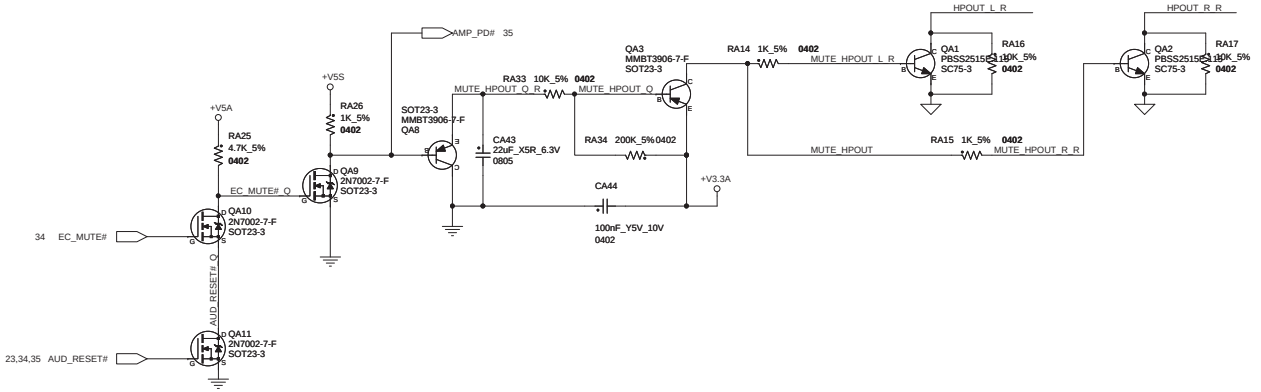
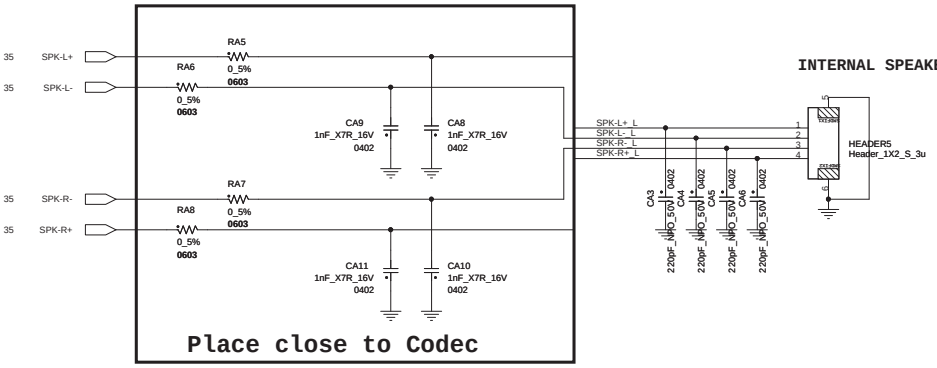
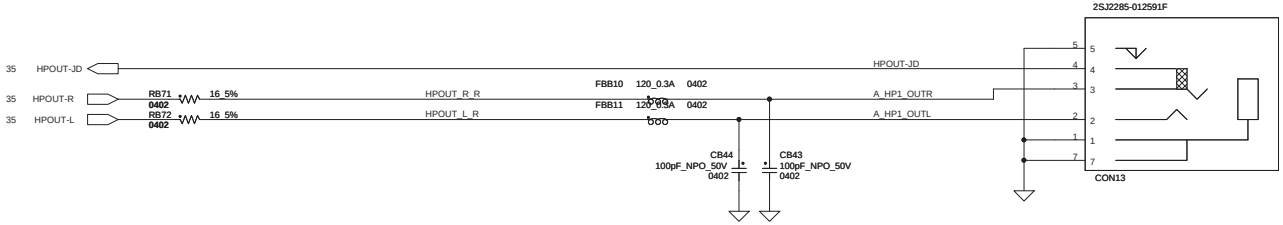
Mute



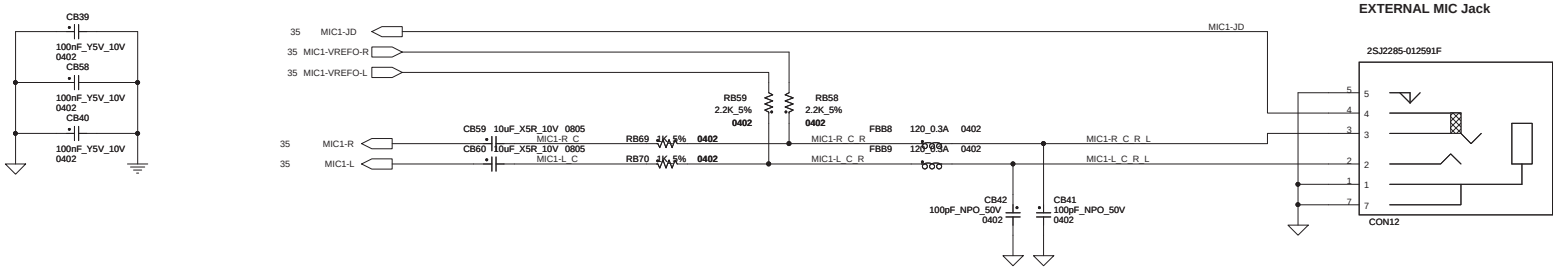
INTERNAL SPEAKER



HEADPHONE Jack



EXTERNAL MIC Jack



[redacted]
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Title: **Audio (JACK+AMP+SPK+Mute)**

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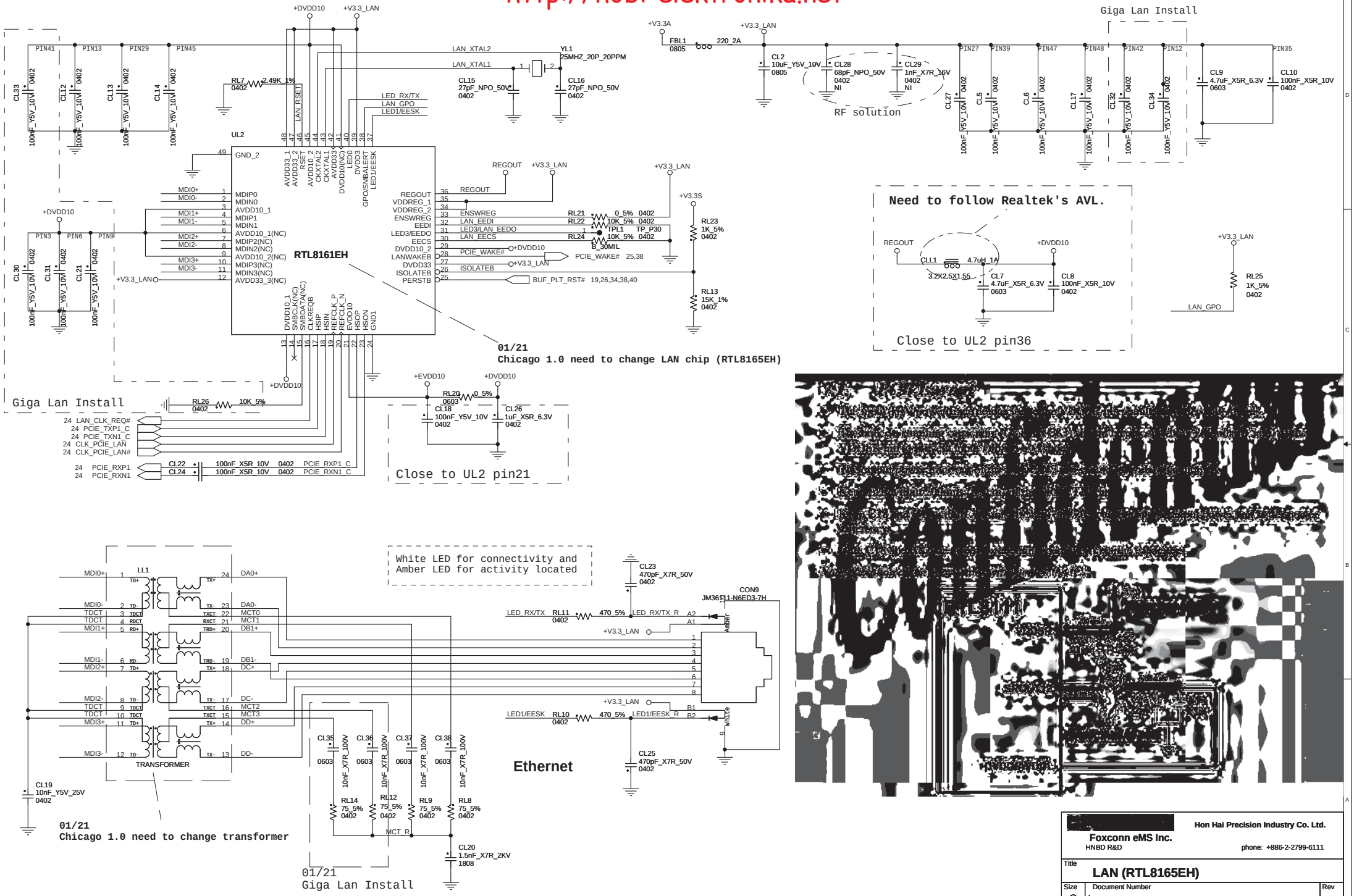
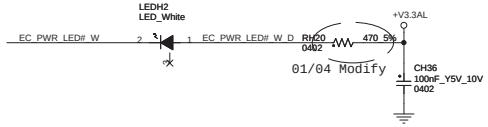
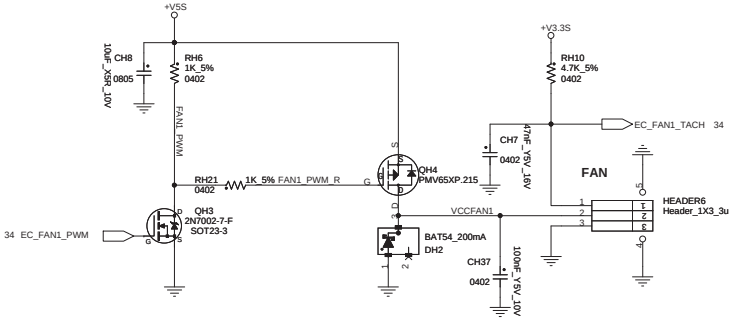
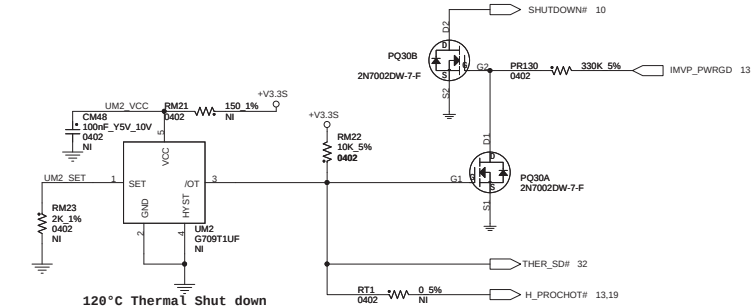
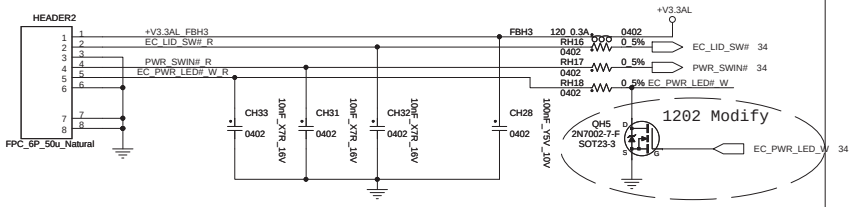


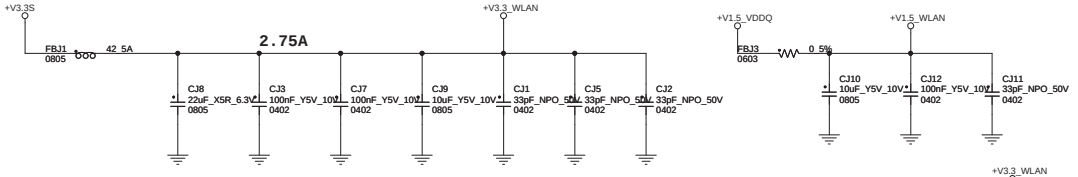


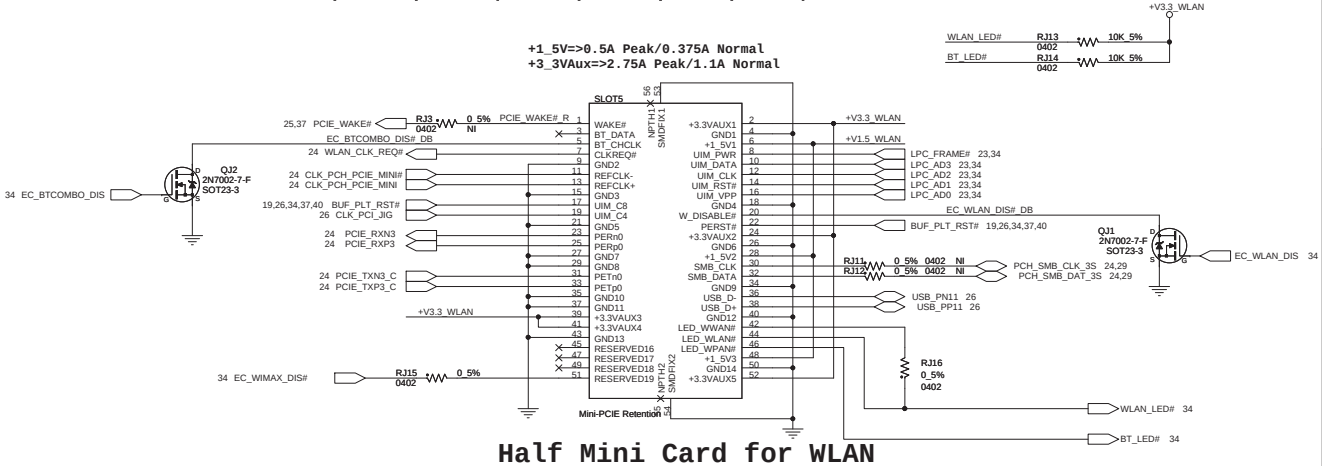




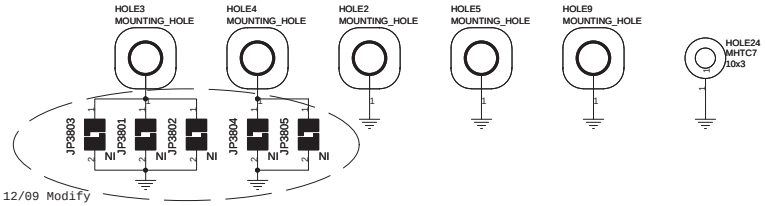
PWR Board CONN.

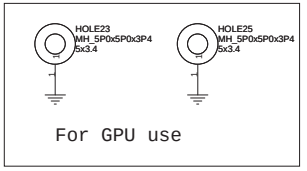


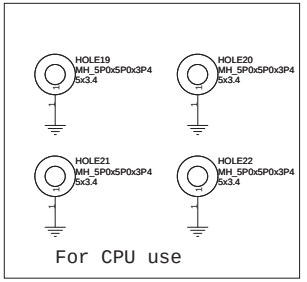




Half Mini Card for WLAN

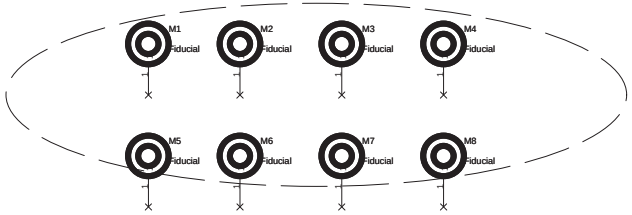






Mounting HOLE

02/09 Modify
Change PCBfootprint from FIDUCIAL_1P_3P_B to FIDUCIAL_MARK



Fiducial Mark

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Title: Mini PCIe & RJ11 & BT

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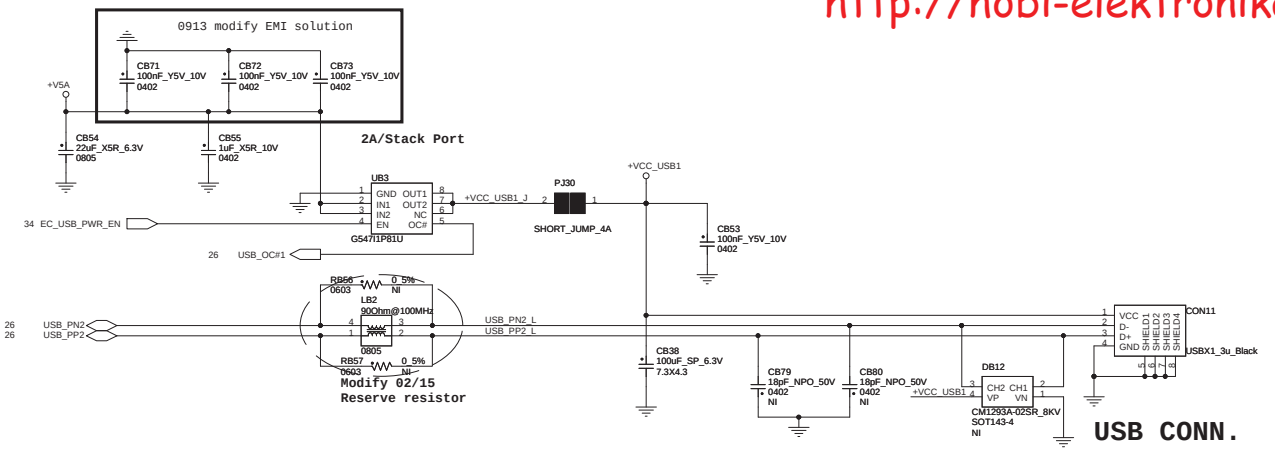
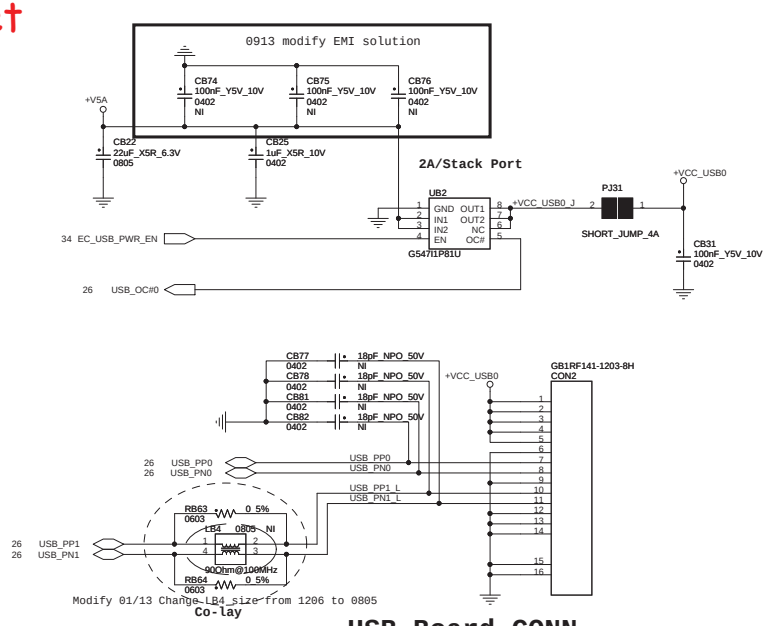
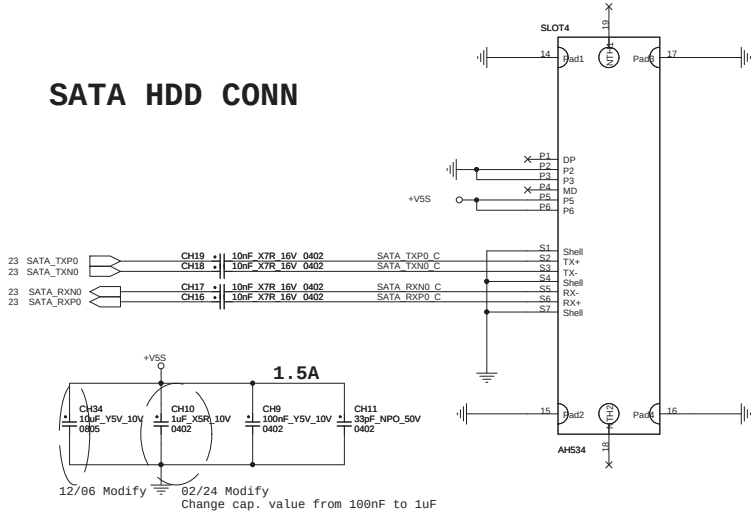


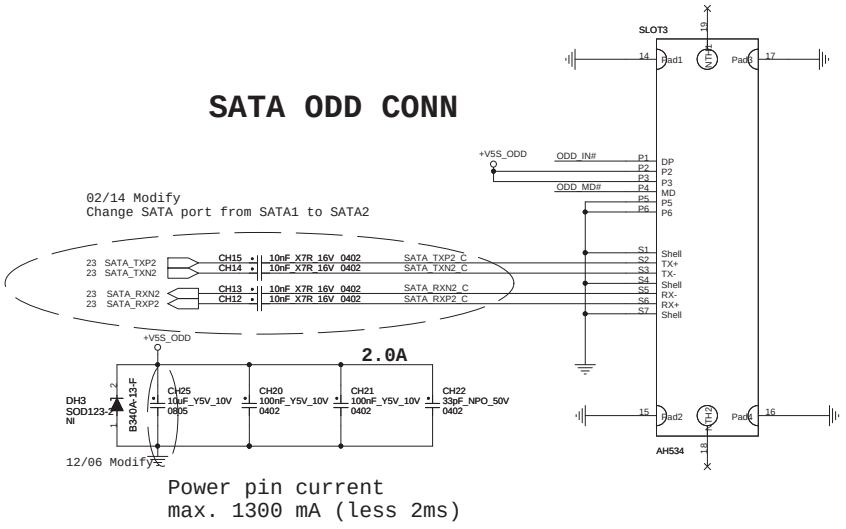


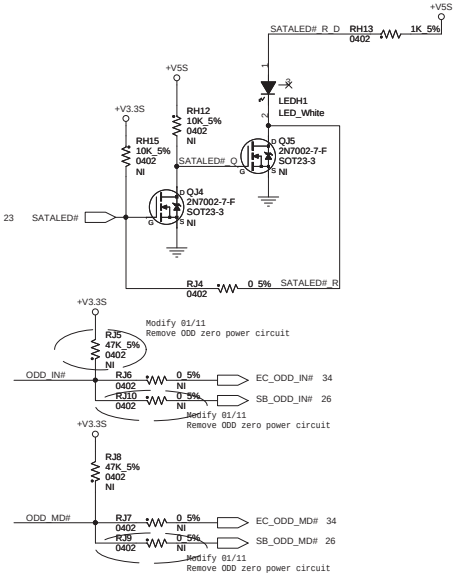
HDD/ODD Status LED

SATA HDD CONN



SATA ODD CONN





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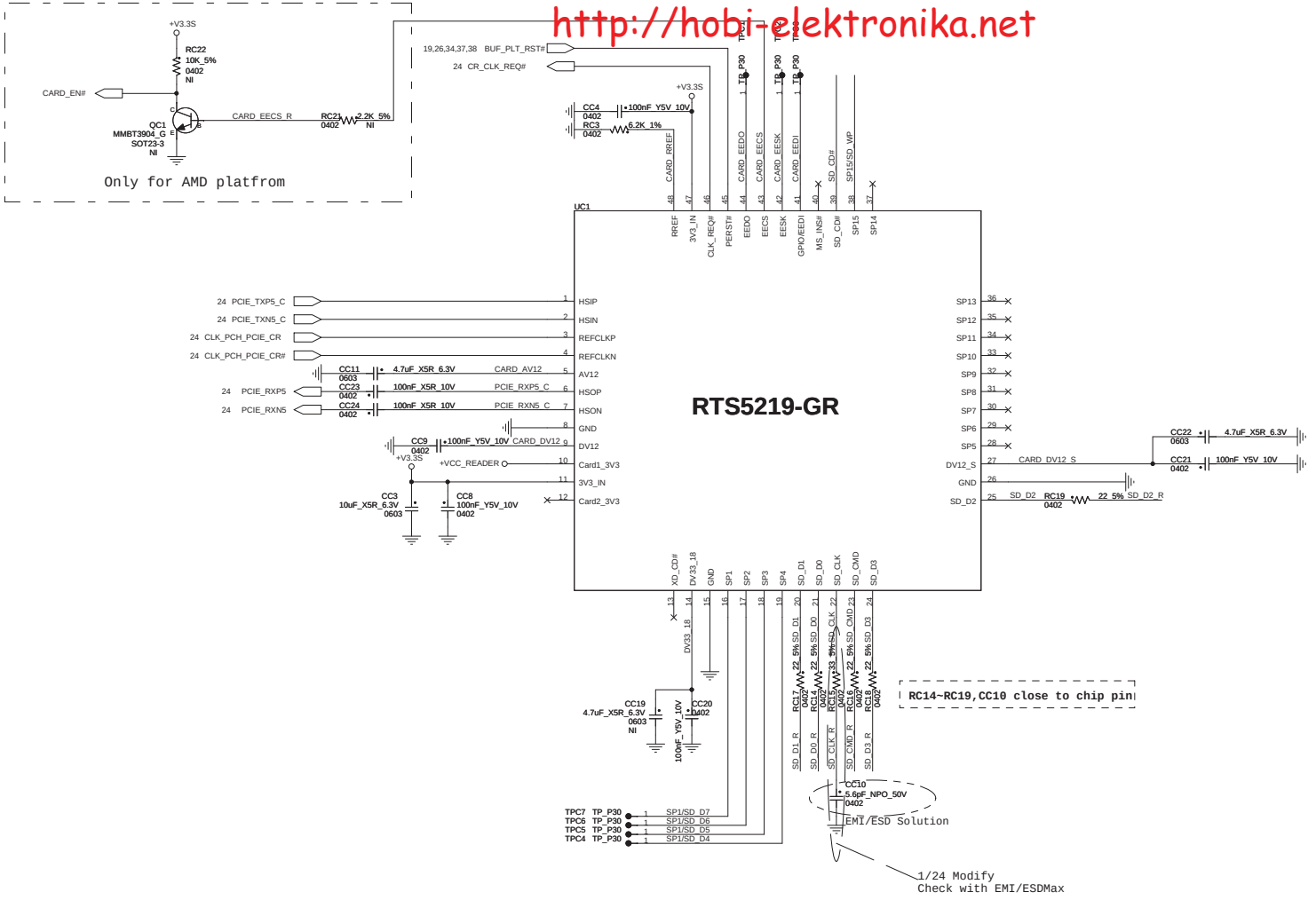

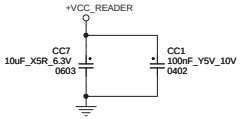

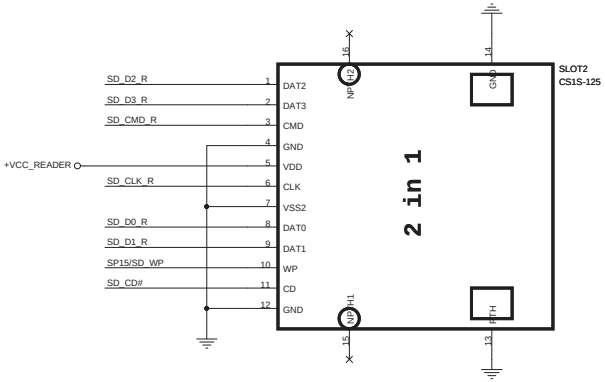

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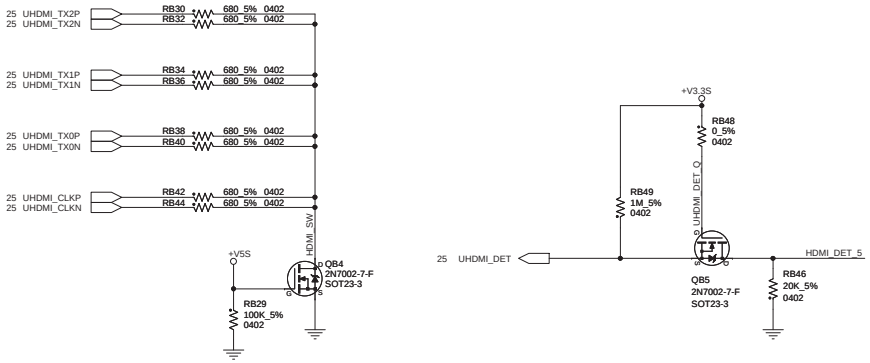
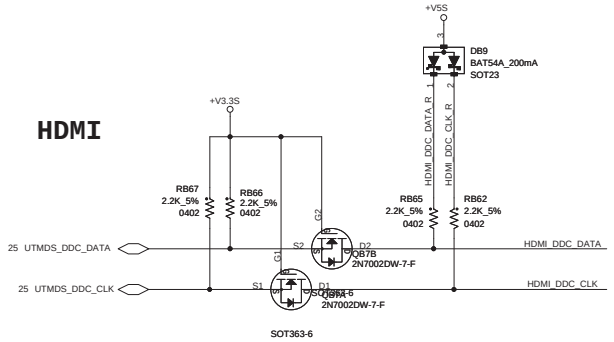
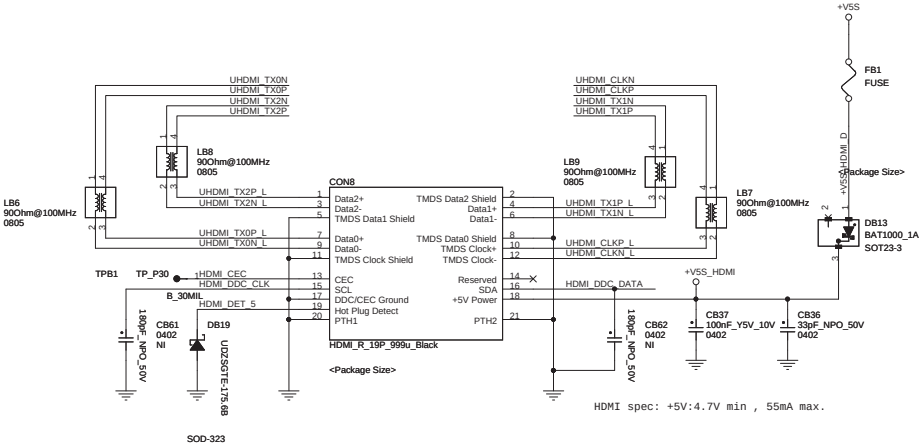


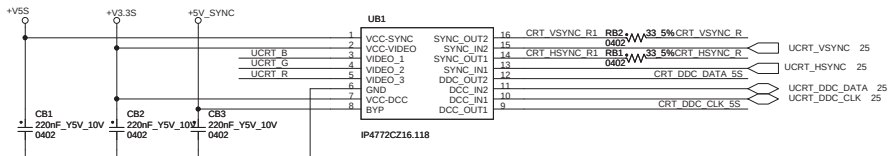
HDMI

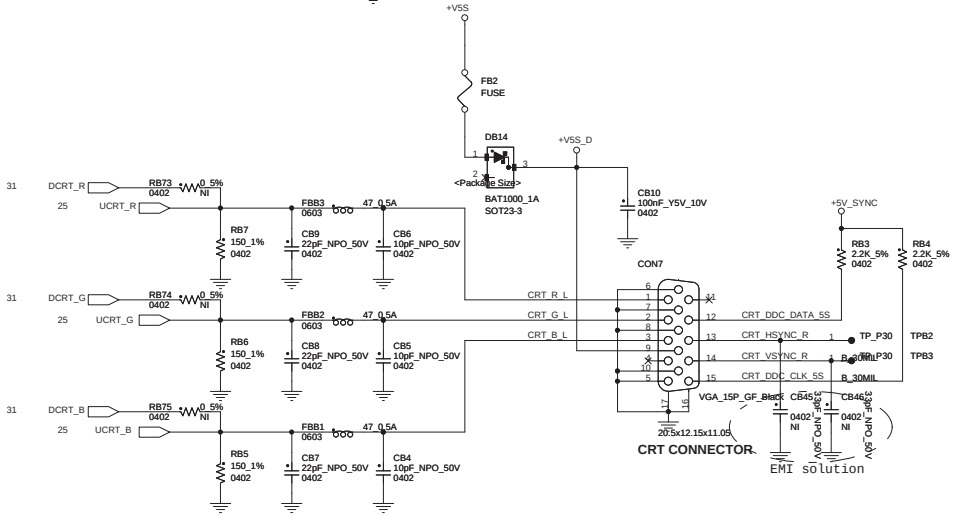




HDMI spec: +5V:4.7V min , 55mA max.

CRT





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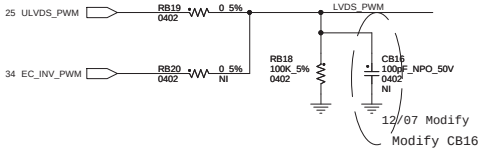
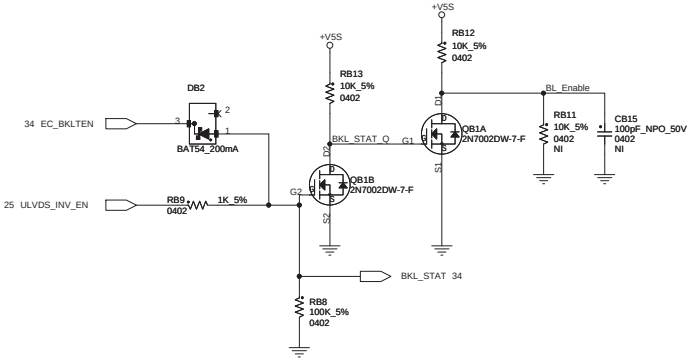
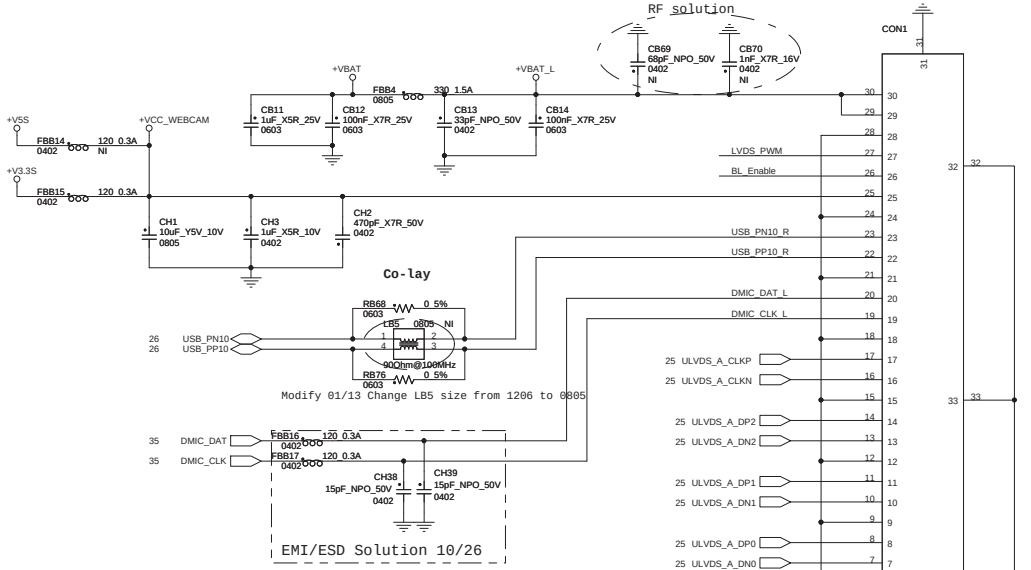


12/07 Modify

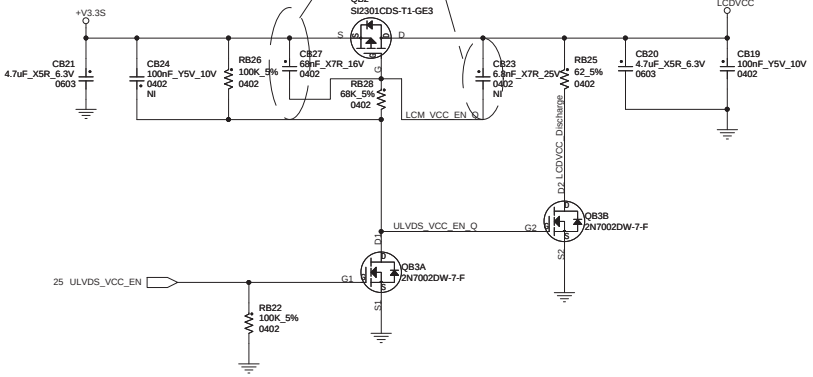
Modify CB16 to non-stuff on 01/11





02/15 Modify

Add CB27 and Remove CB23



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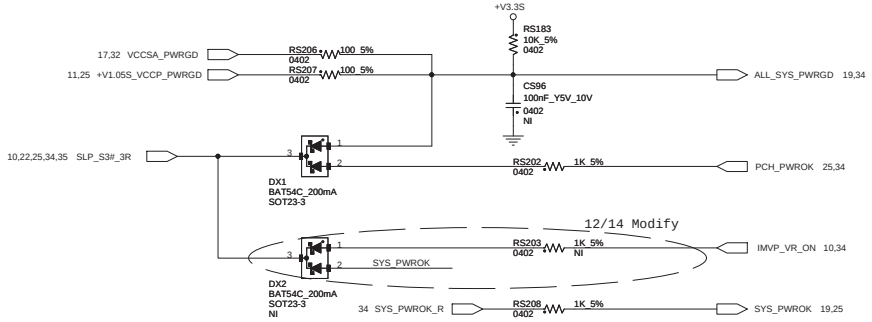
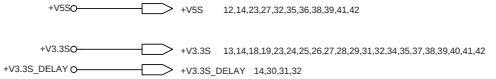
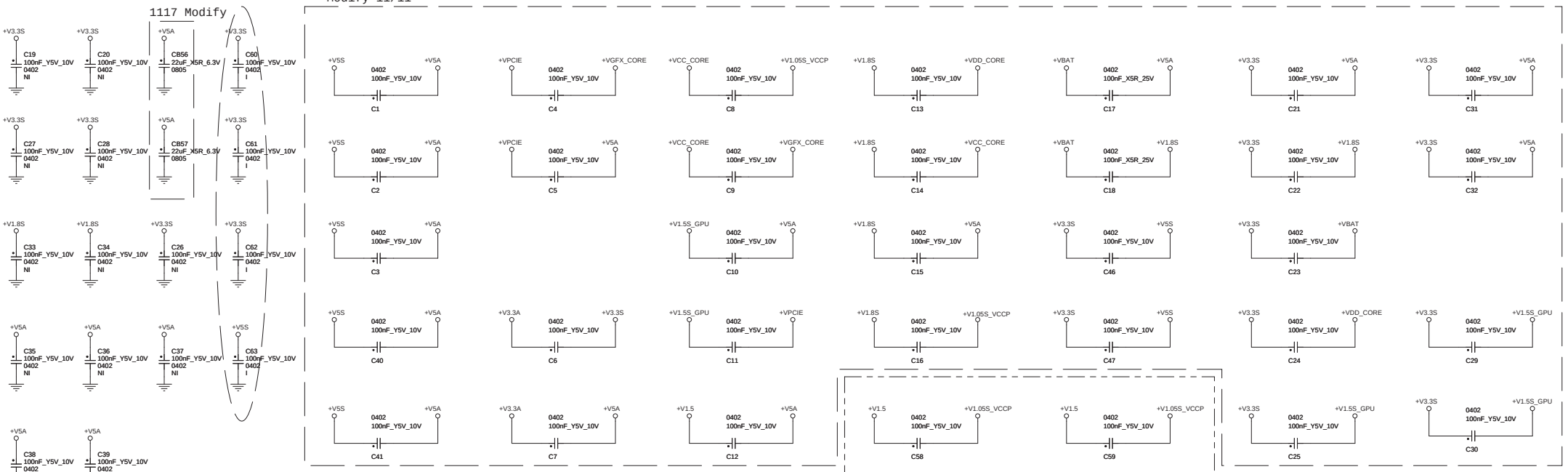




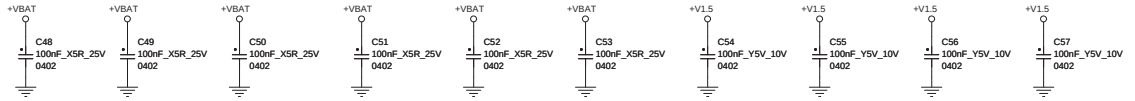
12/07 Modify

1117 Modify

Modify 11/11



EMI/ESD Solution 10/26



[redacted]
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