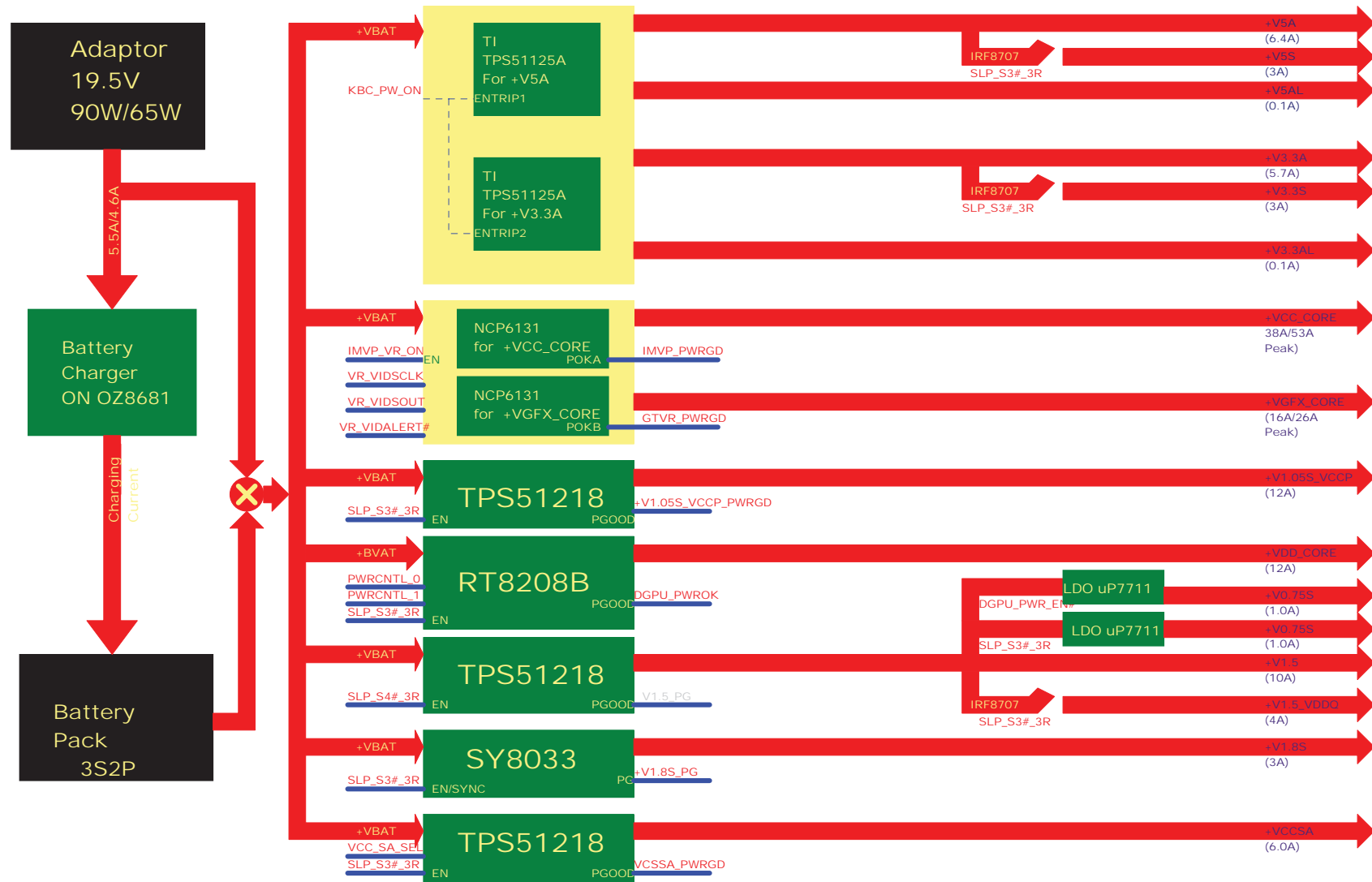
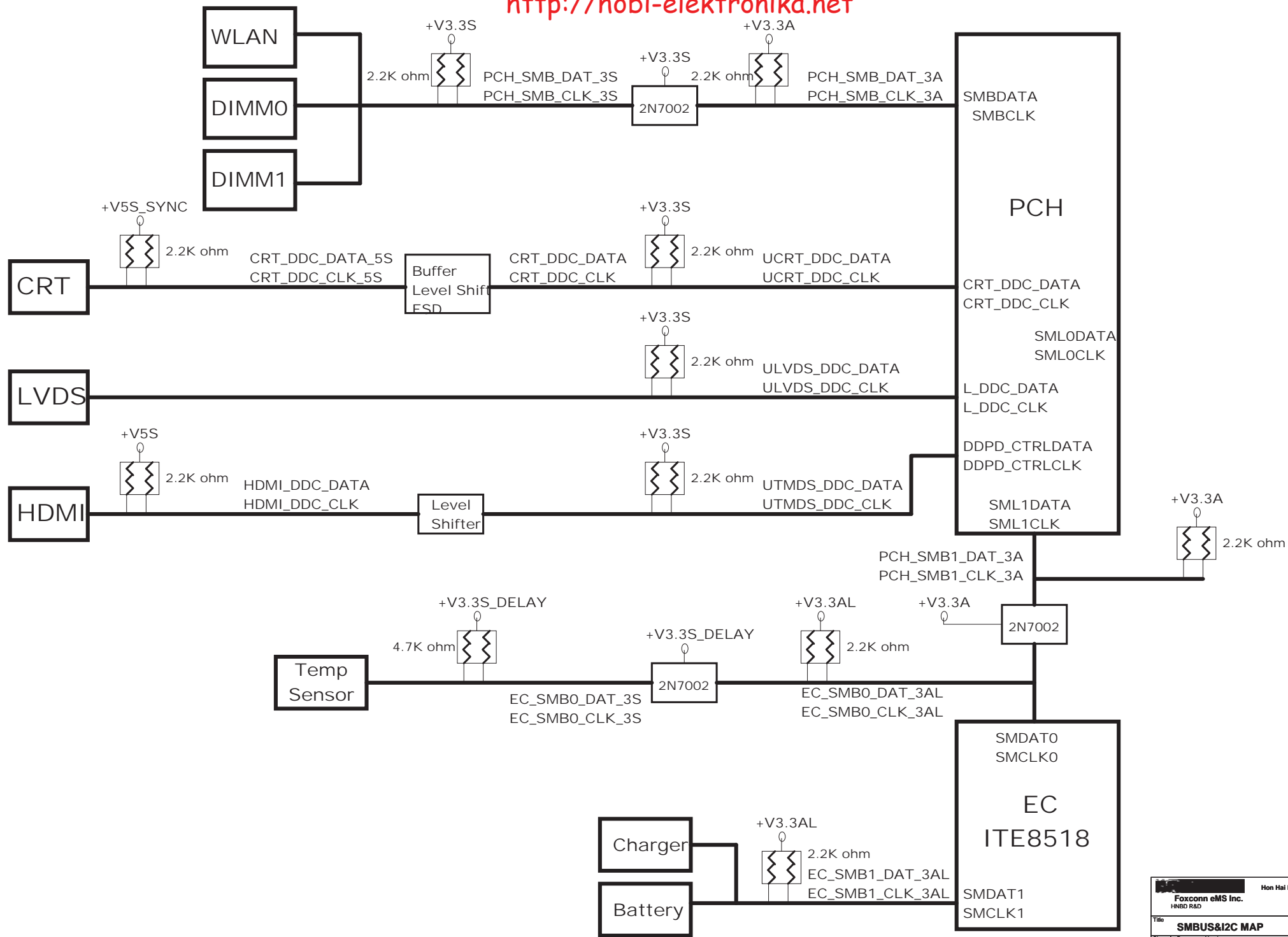




POWER MAP

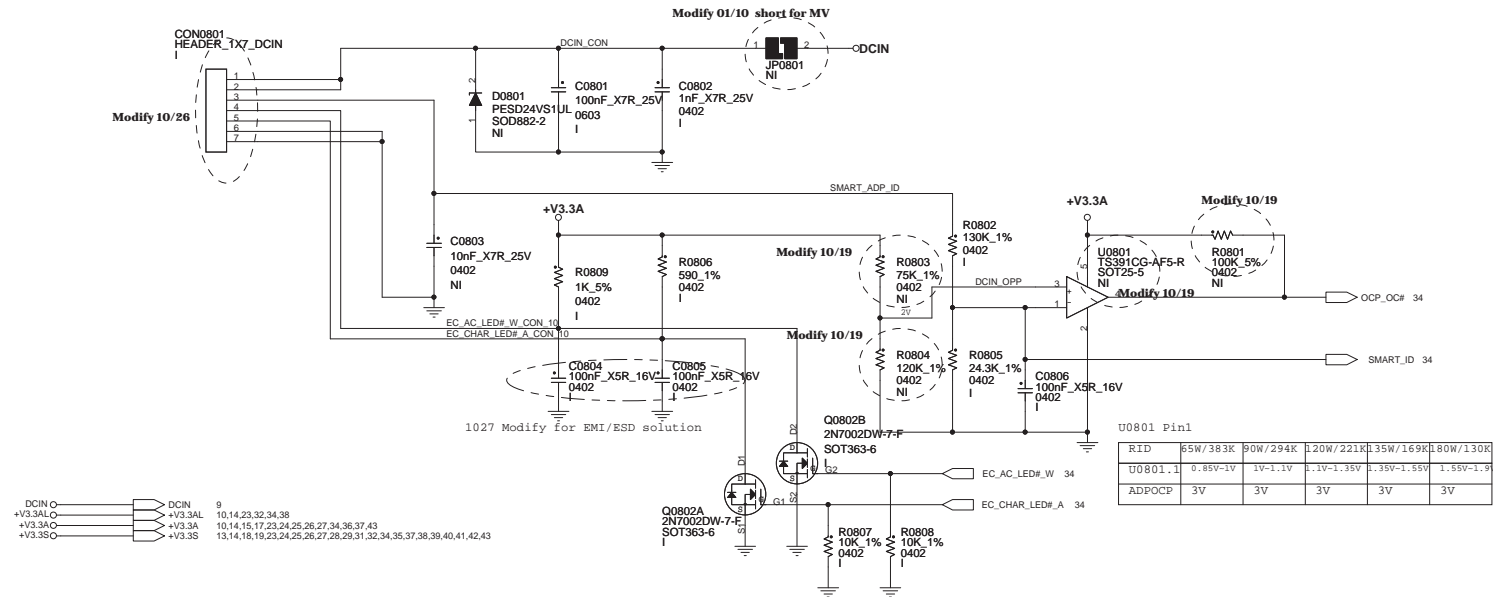




| | | | |
|---|-----------------|--|---------------|
|  | | Hon Hai Precision Industry Co. Ltd. | |
| Foxconn eMS Inc. | | | |
| HNBD R&D | | phone: +886-2-2799-6111 | |
| Title | | | |
| BLANK | | | |
| Size | Document Number | | Rev |
| A | CHICAGO | | MV |
| Page Modified: Tuesday, March 08, 2011 | | 08:28:58 (UTC/GMT) | Sheet 7 of 43 |

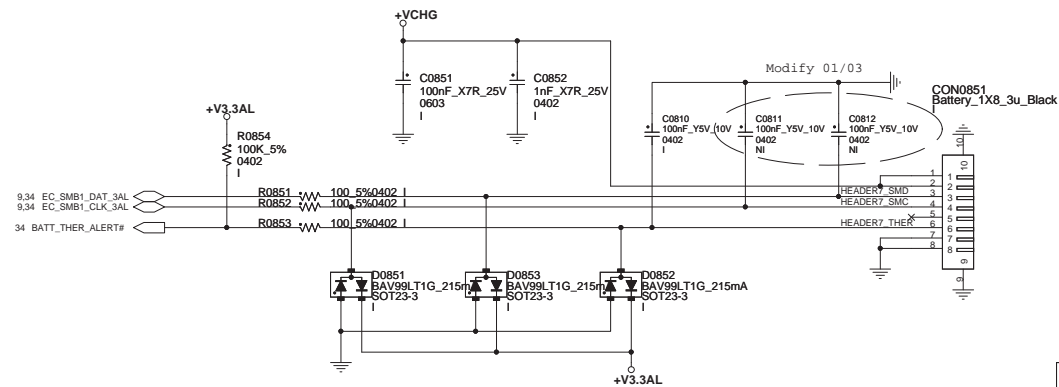
DC_JACK WIRE to BOARD CONNECTOR

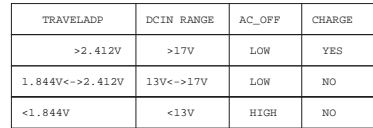
2010.1203.0



BATTERY CONNECTOR

2010.0914.0

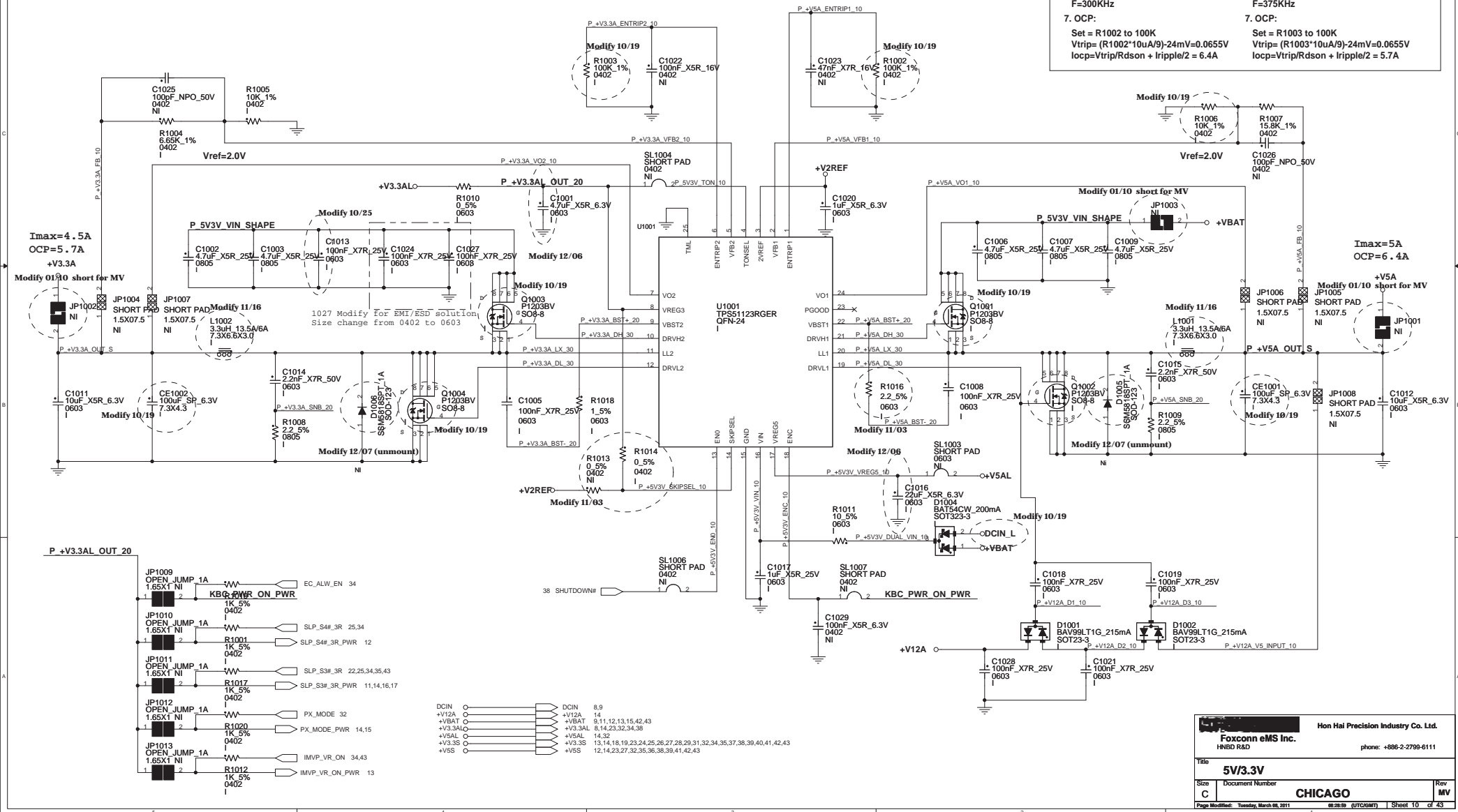




+V5A / +V3.3A POWER SUPPLY

2010.1103.0

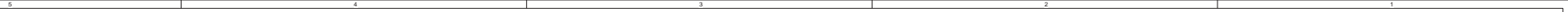
| | |
|--|---|
| <p>+V5A:</p> <p>1. I/P Current: $I_{in} = V_o \cdot I_o / (0.75 \cdot V_{in}) = 3.7A$</p> <p>2. Ripple Current: $I_{rip} = 3.72A$</p> <p>3. Ripple Voltage: $ESR/1 = 15mohm$ $V_{rip} = 55.8mV$</p> <p>4. Inductor Spec: $I_{sat} = 13.5A$ $I_{dc} = 6A$ $DCR = 30mohm$</p> <p>5. MOSFET Spec: H-side MOSFET: IRF8707PBF $R_{ds(ON)} = 17.5mohm$ ($V_{gs} = 4.5V$) $I_{cont} = 11A$ ($T = 25^\circ C$) $I_{peak} = 88A$ (Pause = 10 us)</p> <p>6. Frequency: $F = 300KHz$</p> <p>7. OCP: Set = R1002 to 100K $V_{trip} = (R1002 \cdot 10uA/9) - 24mV = 0.0655V$ $I_{ocp} = V_{trip} / R_{dson} + I_{ripple} / 2 = 6.4A$</p> | <p>+V3.3A:</p> <p>1. I/P Current: $I_{in} = V_o \cdot I_o / (0.75 \cdot V_{in}) = 2.2A$</p> <p>2. Ripple Current: $I_{rip} = 2.21A$</p> <p>3. Ripple Voltage: $ESR/1 = 15mohm$ $V_{rip} = 33.15mV$</p> <p>4. Inductor Spec: $I_{sat} = 13.5A$ $I_{dc} = 6A$ $DCR = 30mohm$</p> <p>5. MOSFET Spec: L-side MOSFET: IRF8707PBF $R_{ds(ON)} = 17.5mohm$ ($V_{gs} = 4.5V$) $I_{cont} = 11A$ ($T = 25^\circ C$) $I_{peak} = 88A$ (Pause = 10 us)</p> <p>6. Frequency: $F = 375KHz$</p> <p>7. OCP: Set = R1003 to 100K $V_{trip} = (R1003 \cdot 10uA/9) - 24mV = 0.0655V$ $I_{ocp} = V_{trip} / R_{dson} + I_{ripple} / 2 = 5.7A$</p> |
|--|---|



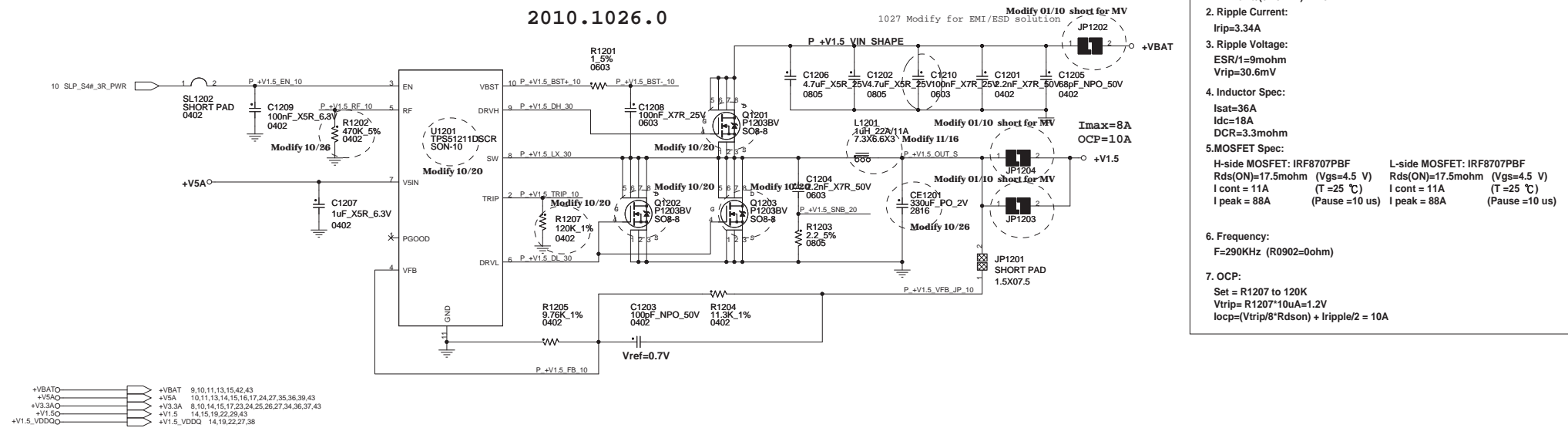
+V1.05S_VCCP:

1. I/P Current:
 $I_{in} = V_o \cdot I_o / (0.75 \cdot V_{in}) = 1.24A$
2. Ripple Current:
 $I_{rip} = 3.42A$
3. Ripple Voltage:
 $ESR/1 = 9m\Omega$
 $V_{rip} = 30.78mV$
4. Inductor Spec:
 $I_{sat} = 36A$
 $I_{dc} = 18A$
 $DCR = 3.3m\Omega$
5. MOSFET Spec:

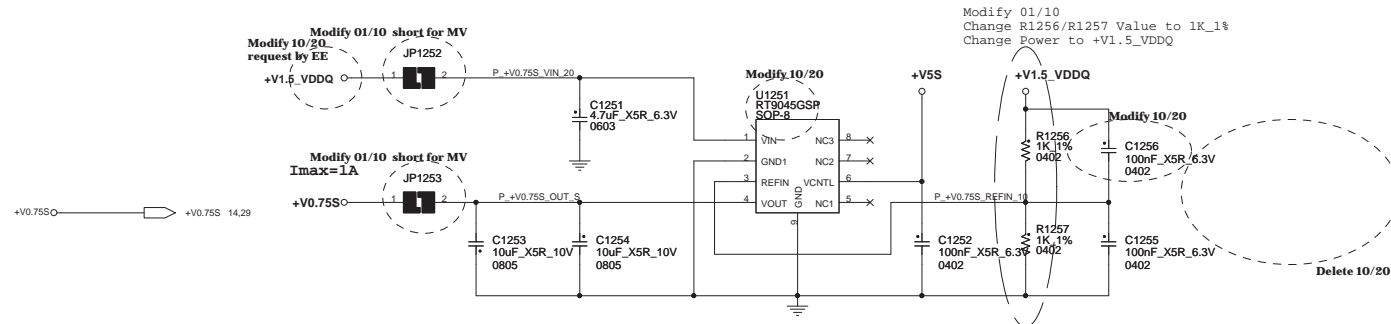
| | |
|----------------------------|----------------------------|
| H-side MOSFET: IRF8707PBF | L-side MOSFET: IRF8707PBF |
| $R_{ds}(ON) = 17.5m\Omega$ | $R_{ds}(ON) = 17.5m\Omega$ |
| $I_{cont} = 11A$ | $I_{cont} = 11A$ |
| $I_{peak} = 88A$ | $I_{peak} = 88A$ |
| $(T = 25^\circ C)$ | $(T = 25^\circ C)$ |
| $(Pause = 10 us)$ | $(Pause = 10 us)$ |
6. Frequency:
 $F = 290KHz$ ($R_{1102} = 0\Omega$)
7. OCP:
 $Set = R_{1107} \text{ to } 120K$
 $V_{trip} = R_{1107} \cdot 10\mu A = 1.2V$
 $I_{ocp} = (V_{trip} / 8 \cdot R_{ds}) + I_{ripple} / 2 = 10A$

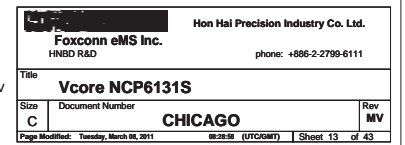


2010.1026.0



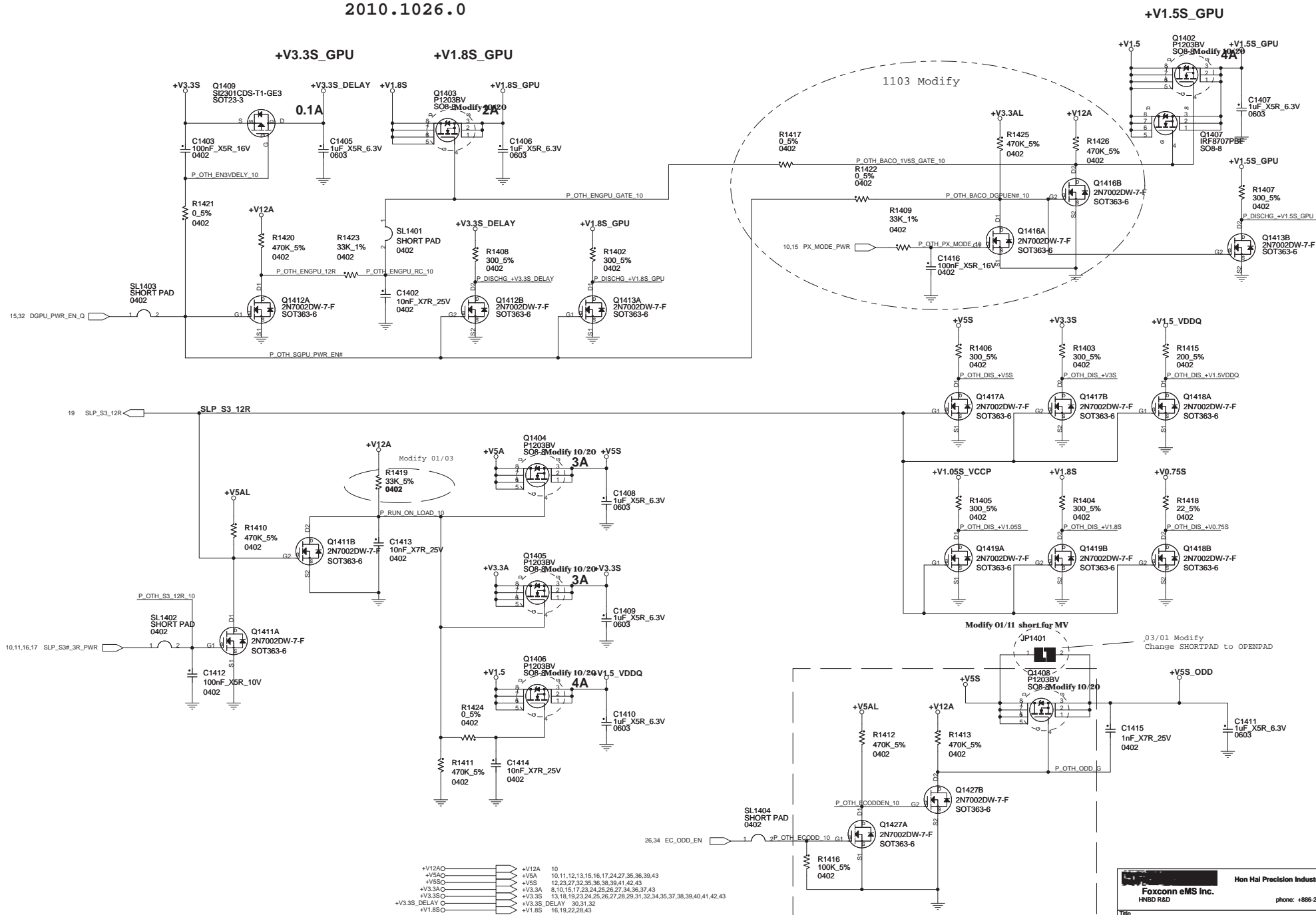
+V0.75S POWER SUPPLY



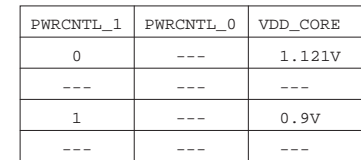


OTHER POWER / DISCHARGE CIRCUITS

2010.1026.0



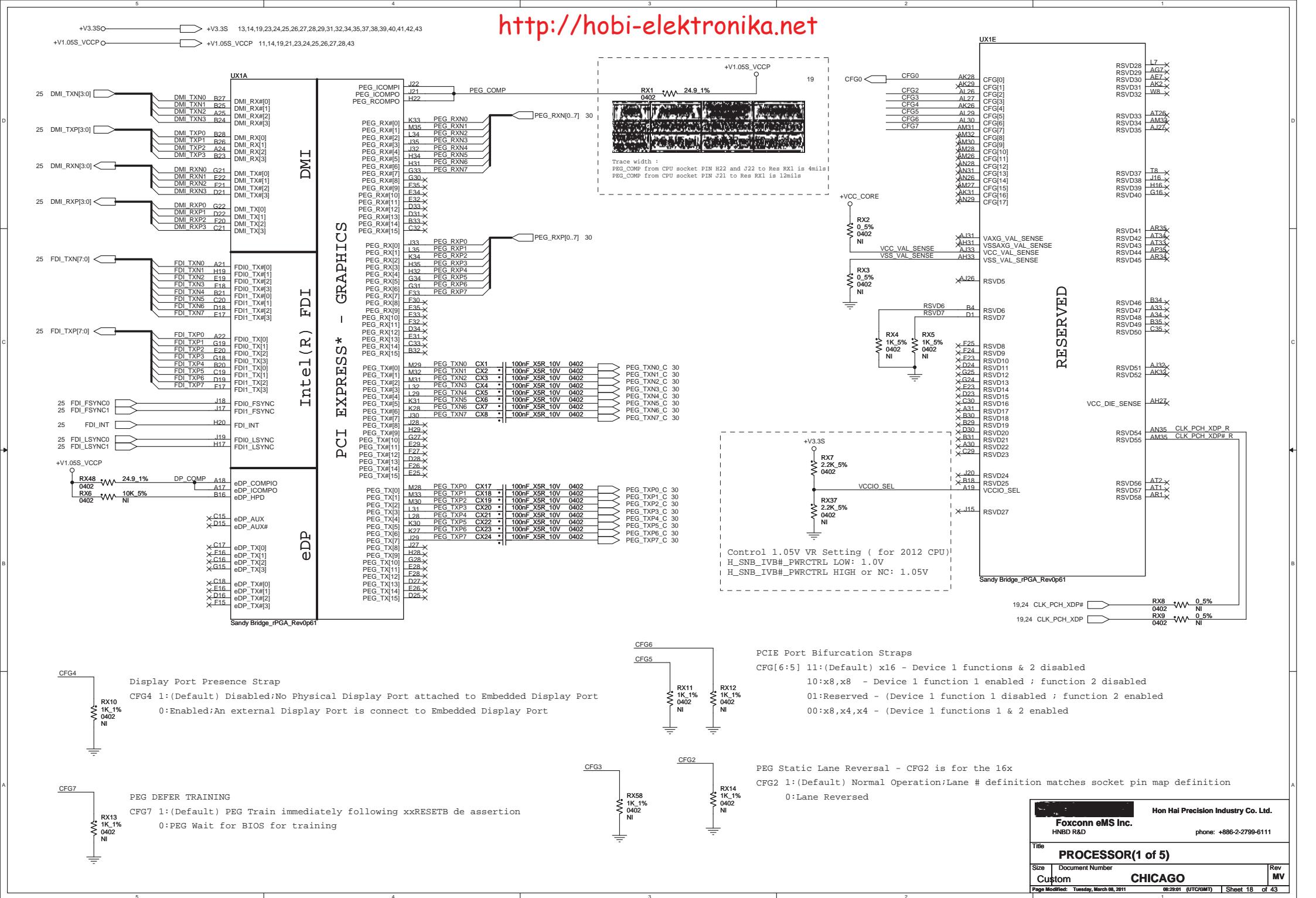
Modify 01/11
Remove ODD zero power circuit

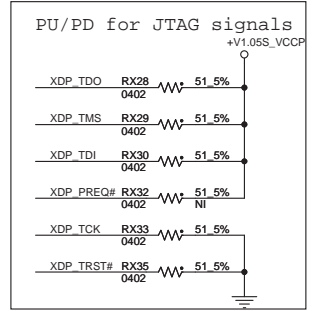
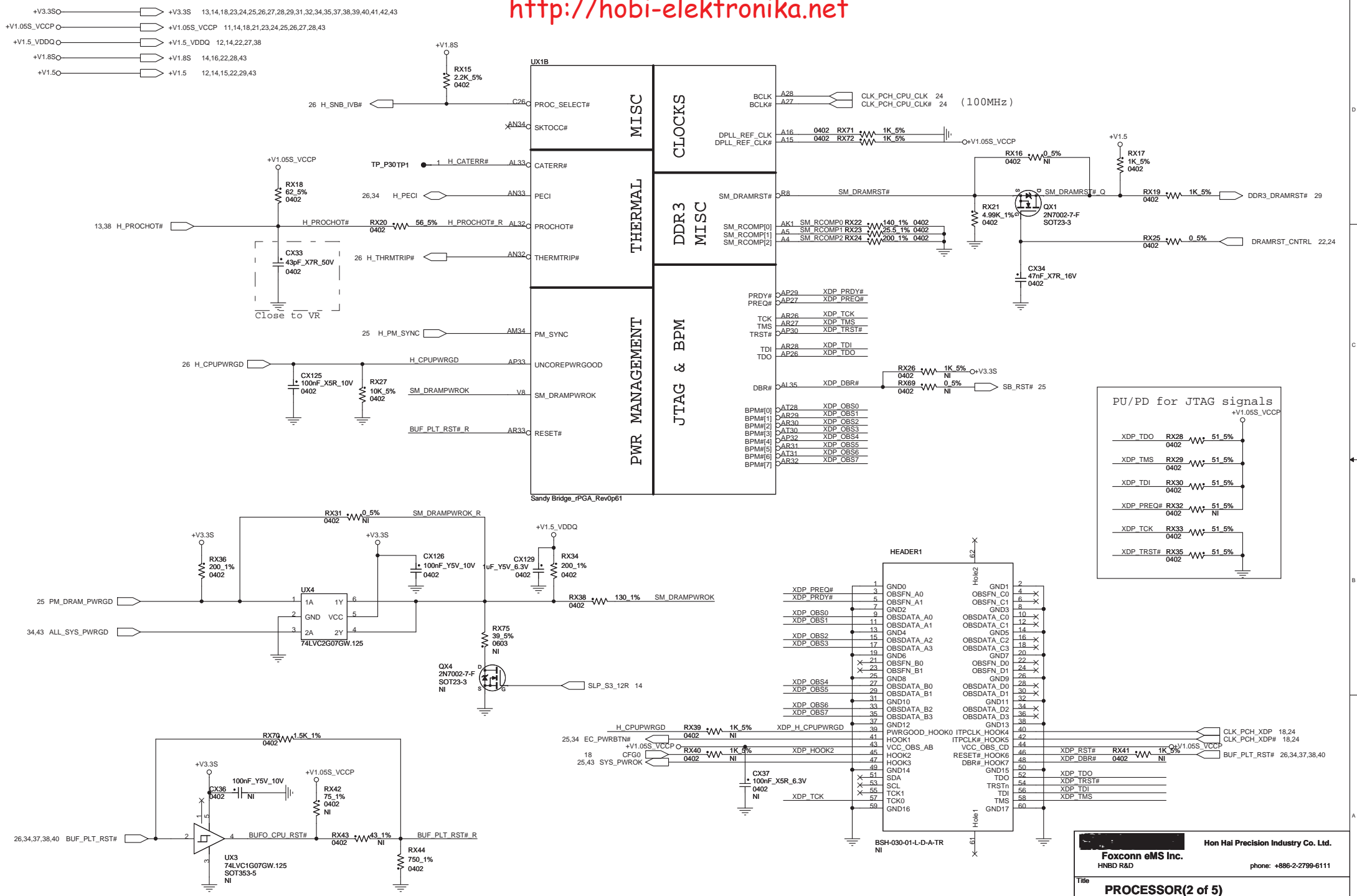


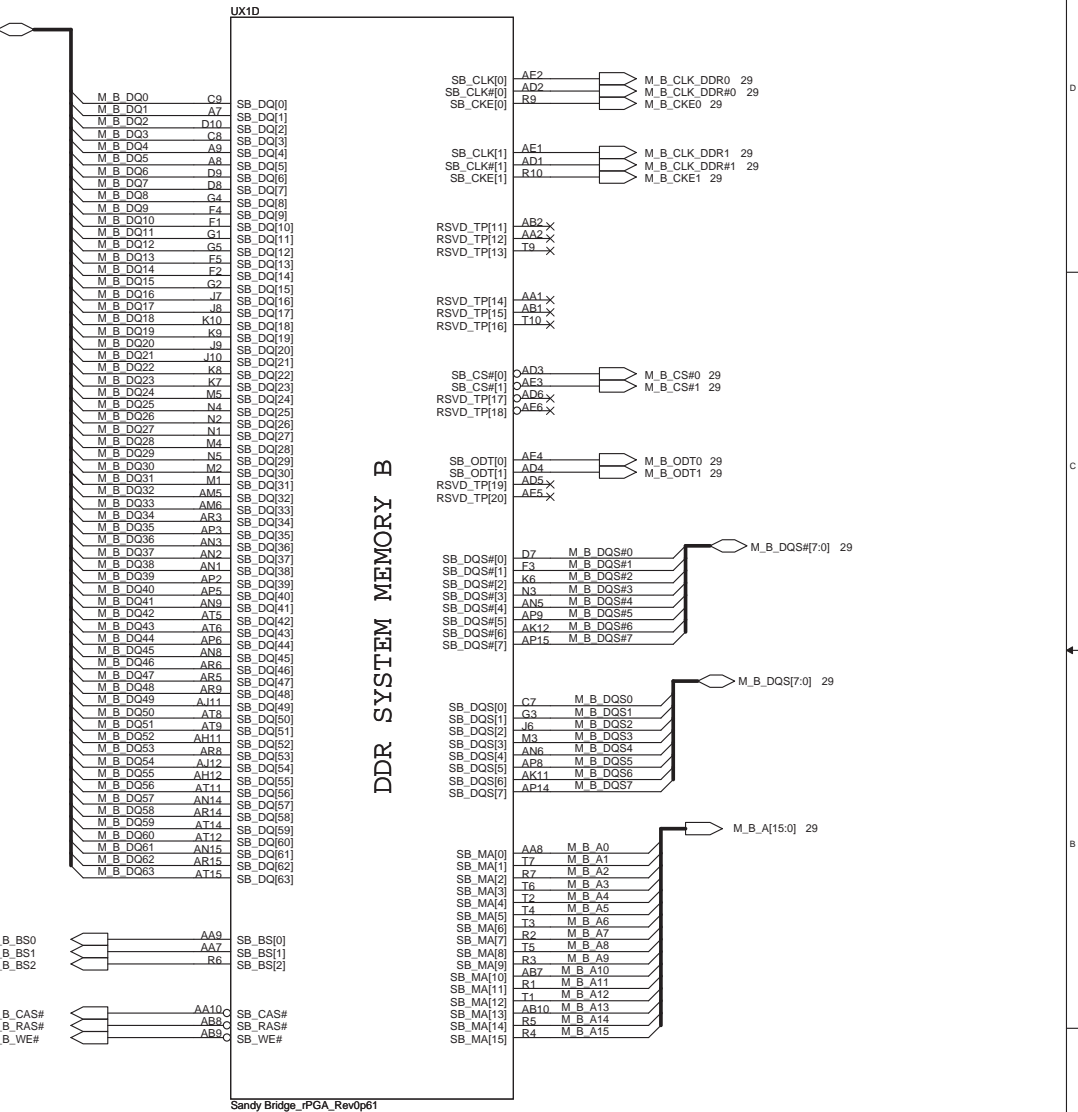
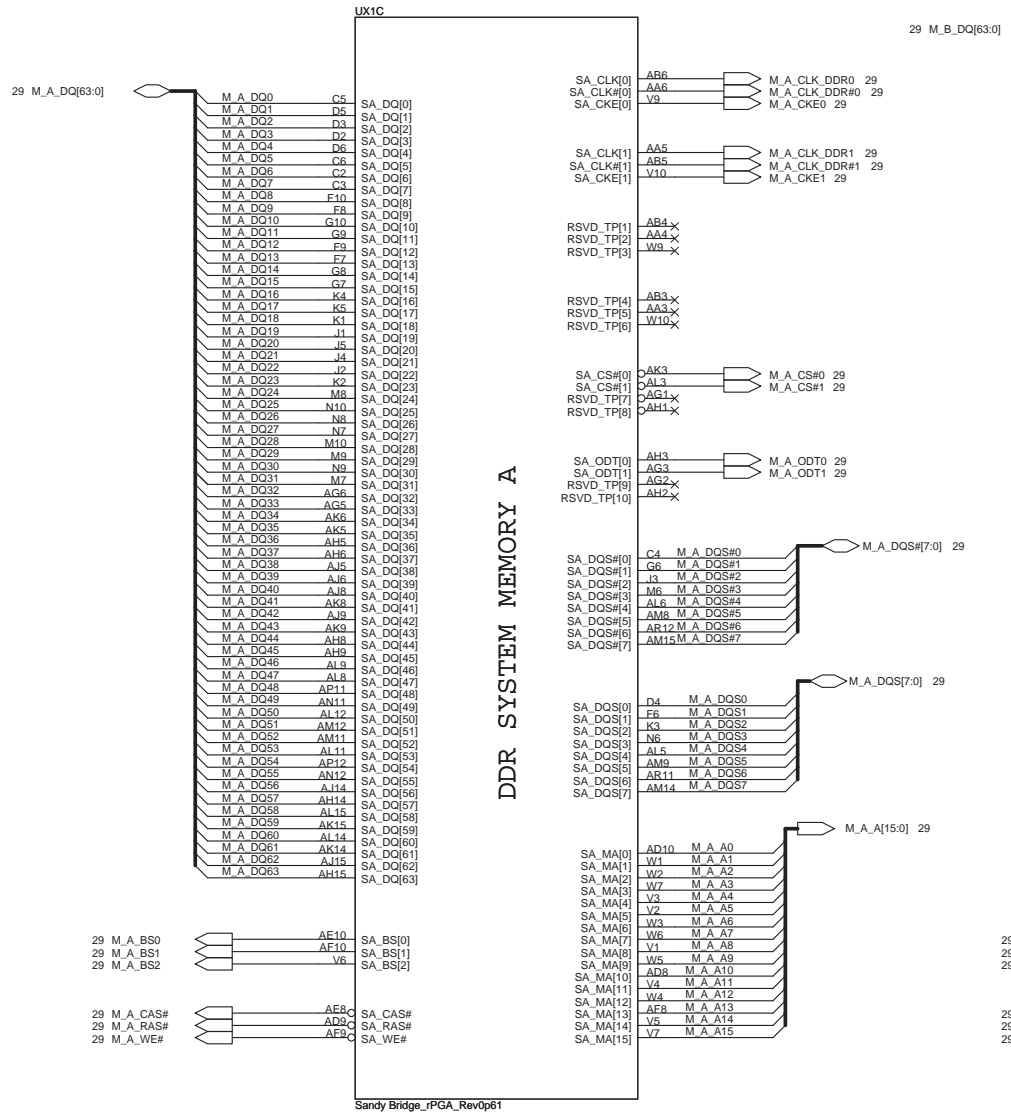
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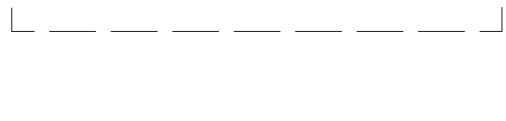
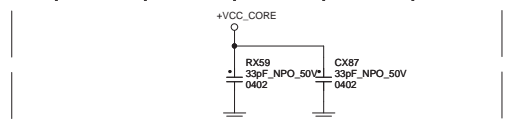
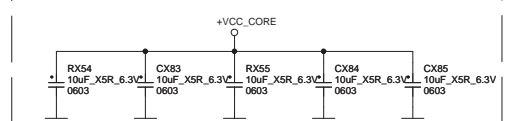
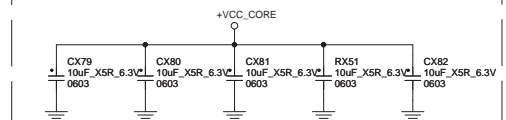
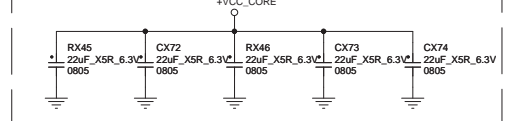
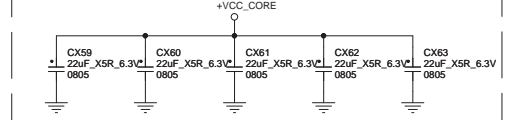
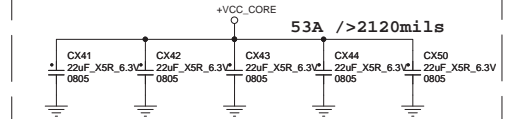
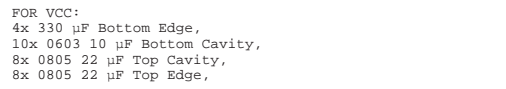
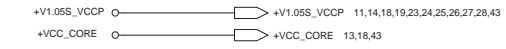
| | | | |
|-------------|--|-------------|---|
| +VBAT | | +VBAT | 9,10,11,12,13,42,43 |
| +V5A | | +V5A | 10,11,12,13,14,16,17,24,27,35,36,39,43 |
| +V3.3A | | +V3.3A | 10,14,17,23,24,25,26,27,34,36,37,43 |
| +V3.3B | | +V3.3S | 13,14,18,19,23,24,25,26,27,28,29,31,32,34,35,37,38,39,40,41,42,43 |
| +V1.5S_GPIU | | +V1.5S_GPIU | 14,30,32,43 |
| +VDD_CORE | | +VDD_CORE | 32,43 |
| +VPCIE | | +VPCIE | 30,31,32,43 |

```
0921 Modify
Port: DGPU_PWR_EN# to DGPU_PWR_EN_Q
Low Active
```







- AG35 VCC1
AG34 VCC2
AG33 VCC3
AG32 VCC4
AG31 VCC5
AG30 VCC6
AG29 VCC7
AG28 VCC8
AG27 VCC9
AG26 VCC10
AF35 VCC11
AF34 VCC12
AF33 VCC13
AF32 VCC14
AF31 VCC15
AF30 VCC16
AF29 VCC17
AF28 VCC18
AF27 VCC19
AF26 VCC20
AD35 VCC21
AD34 VCC22
AD33 VCC23
AD32 VCC24
AD31 VCC25
AD30 VCC26
AD29 VCC27
AD28 VCC28
AD27 VCC29
AD26 VCC30
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AC34 VCC32
AC33 VCC33
AC32 VCC34
AC31 VCC35
AC30 VCC36
AC29 VCC37
AC28 VCC38
AC27 VCC39
AC26 VCC40
AA35 VCC41
AA34 VCC42
AA33 VCC43
AA32 VCC44
AA31 VCC45
AA30 VCC46
AA29 VCC47
AA28 VCC48
AA27 VCC49
AA26 VCC50
Y35 VCC51
Y34 VCC52
Y33 VCC53
Y32 VCC54
Y31 VCC55
Y30 VCC56
Y29 VCC57
Y28 VCC58
Y27 VCC59
Y26 VCC60
V35 VCC61
V34 VCC62
V33 VCC63
V32 VCC64
V31 VCC65
V30 VCC66
V29 VCC67
V28 VCC68
V27 VCC69
V26 VCC70
U35 VCC71
U34 VCC72
U33 VCC73
U32 VCC74
U31 VCC75
U30 VCC76
U29 VCC77
U28 VCC78
U27 VCC79
U26 VCC80
R35 VCC81
R34 VCC82
R33 VCC83
R32 VCC84
R31 VCC85
R30 VCC86
R29 VCC87
R28 VCC88
R27 VCC89
R26 VCC90
P35 VCC91
P34 VCC92
P33 VCC93
P32 VCC94
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P30 VCC96
P29 VCC97
P28 VCC98
P27 VCC99
P26 VCC100

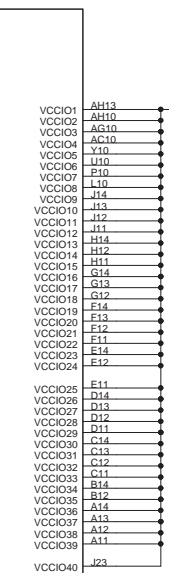
POWER

PEG AND DDR

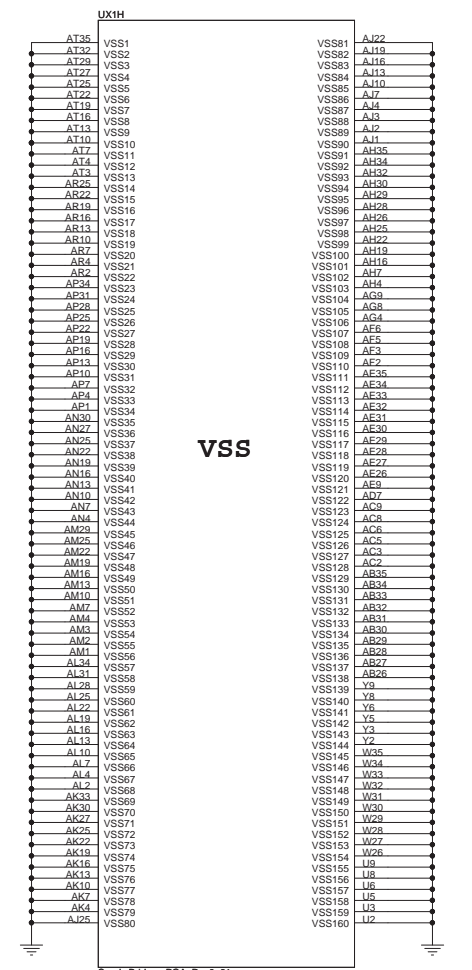
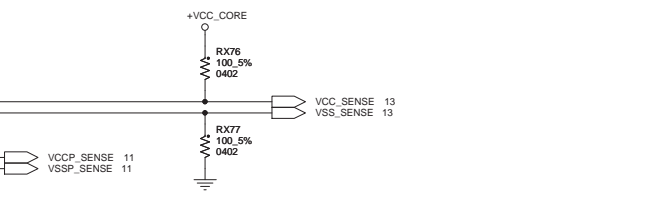
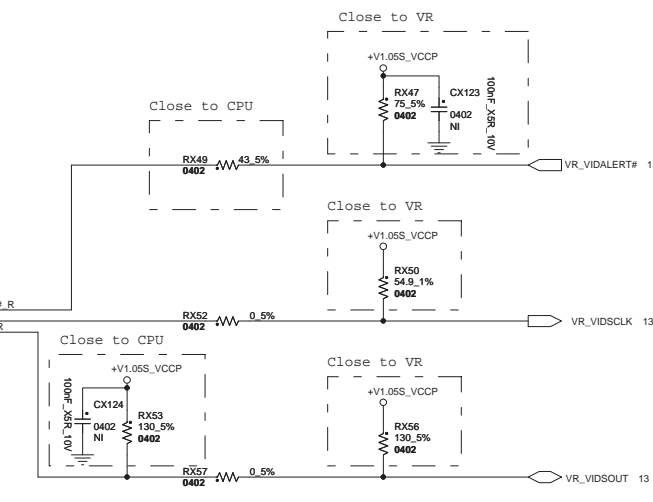
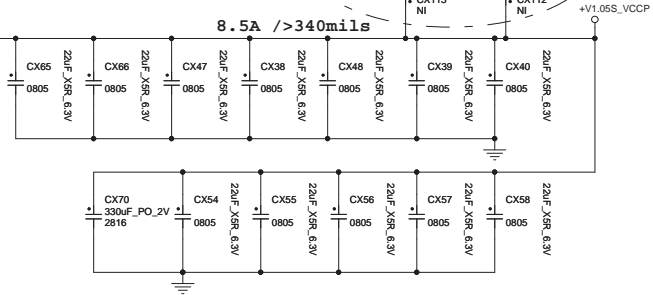
CORE SUPPLY

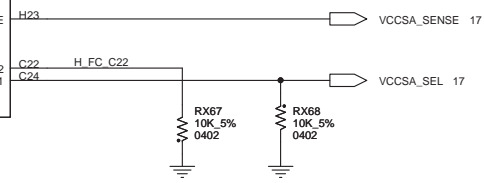
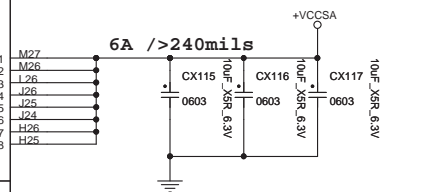
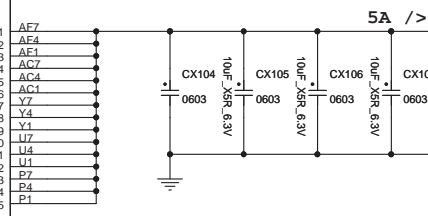
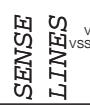
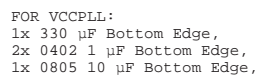
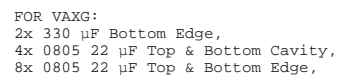
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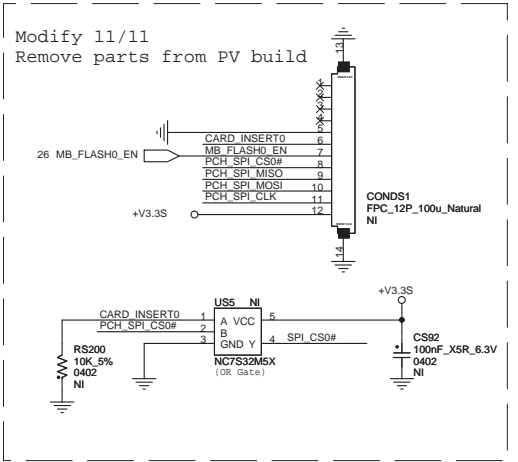
SENSE LINES

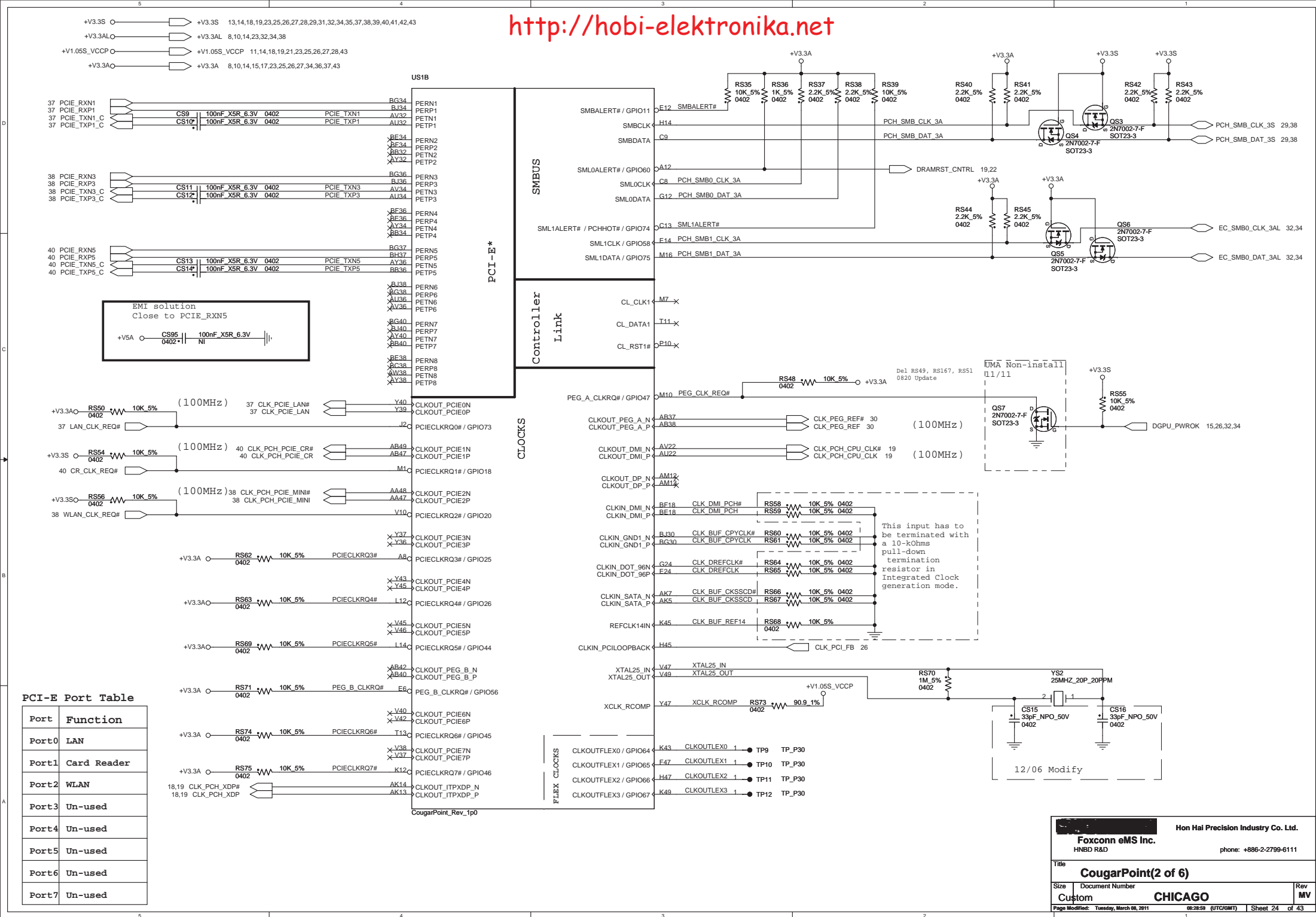


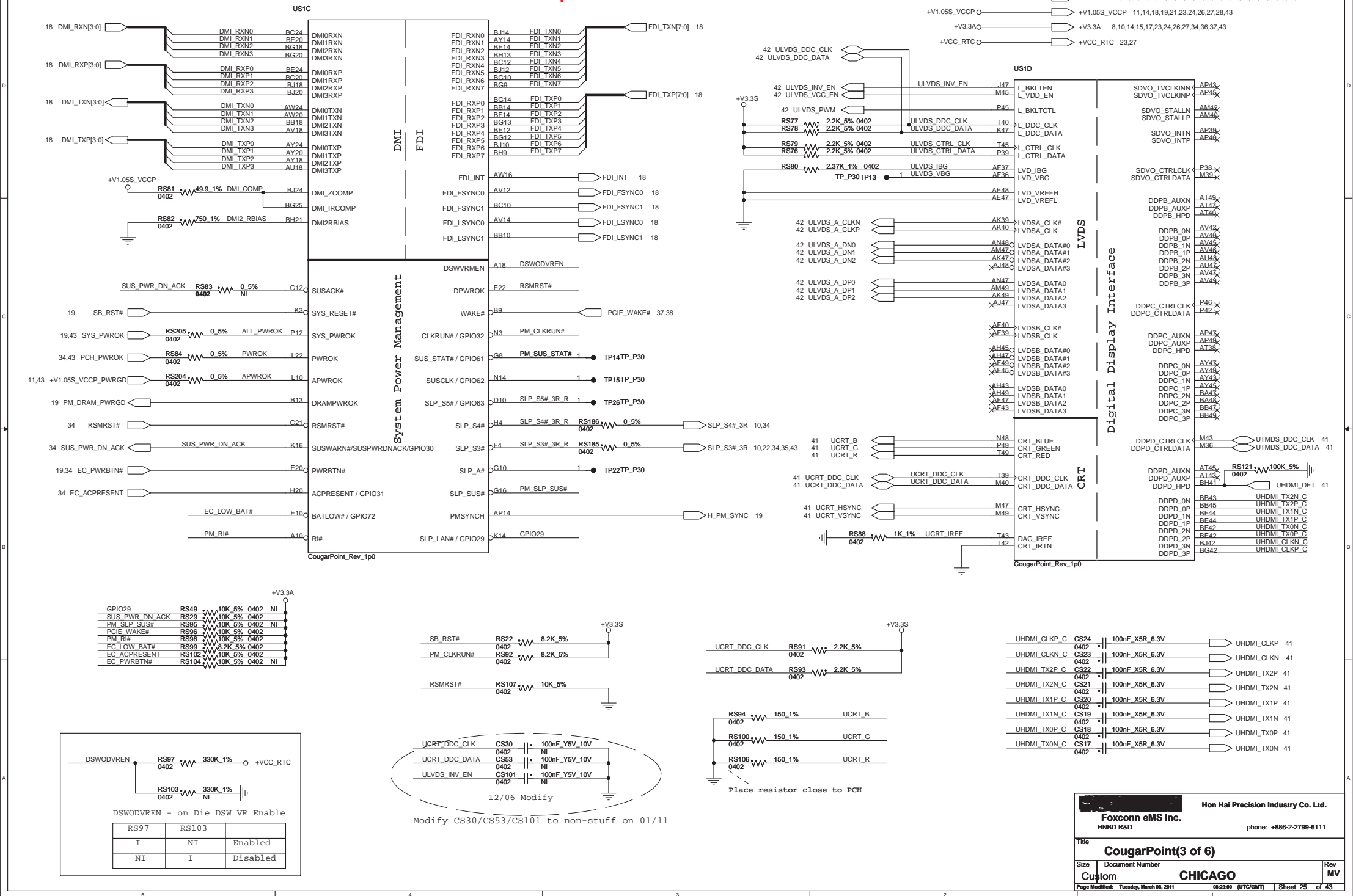
FOR VCCIO:
2x 330 μ F,
5x 0805 22 μ F Bottom Cavity,
7x 0805 22 μ F Top Cavity,

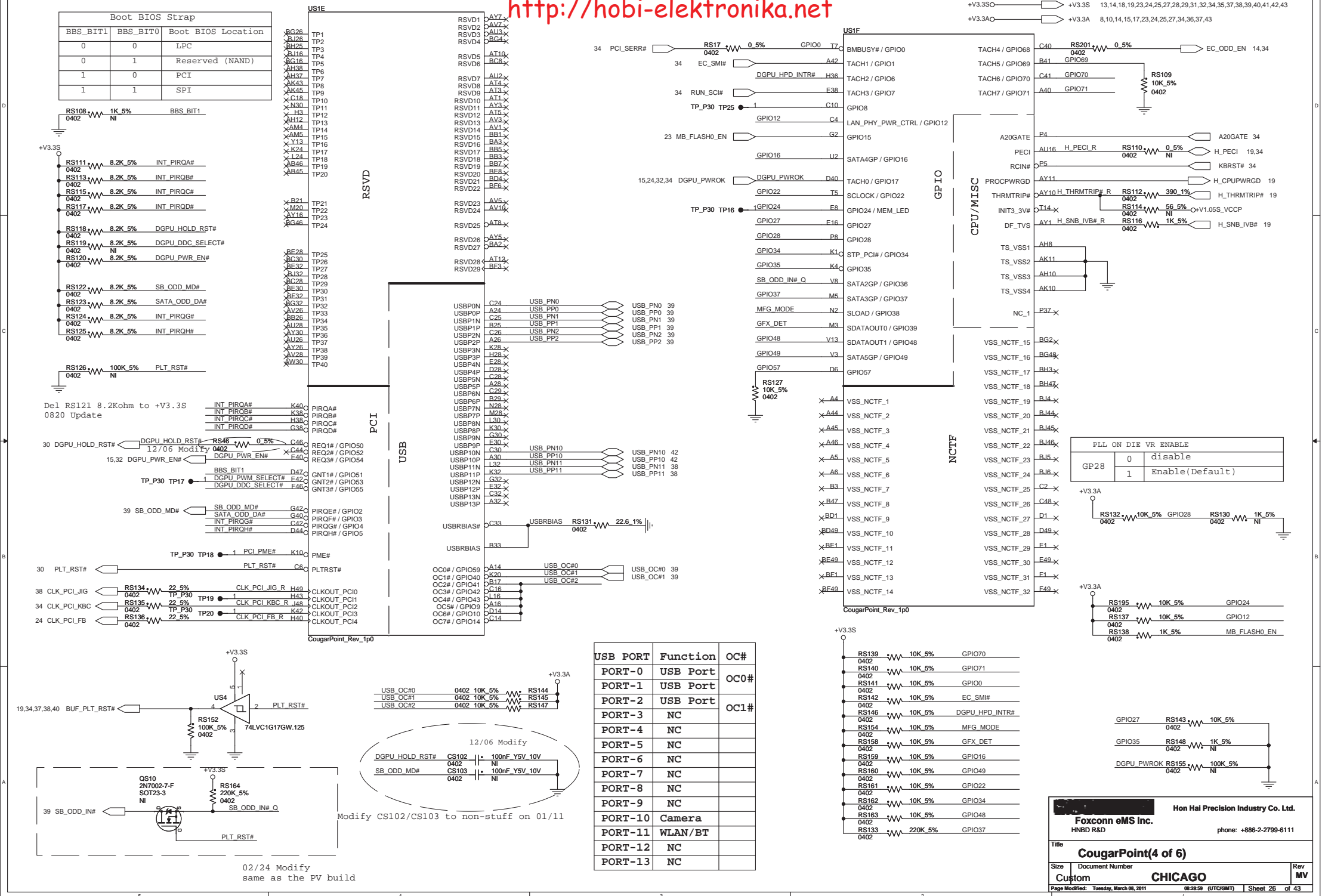


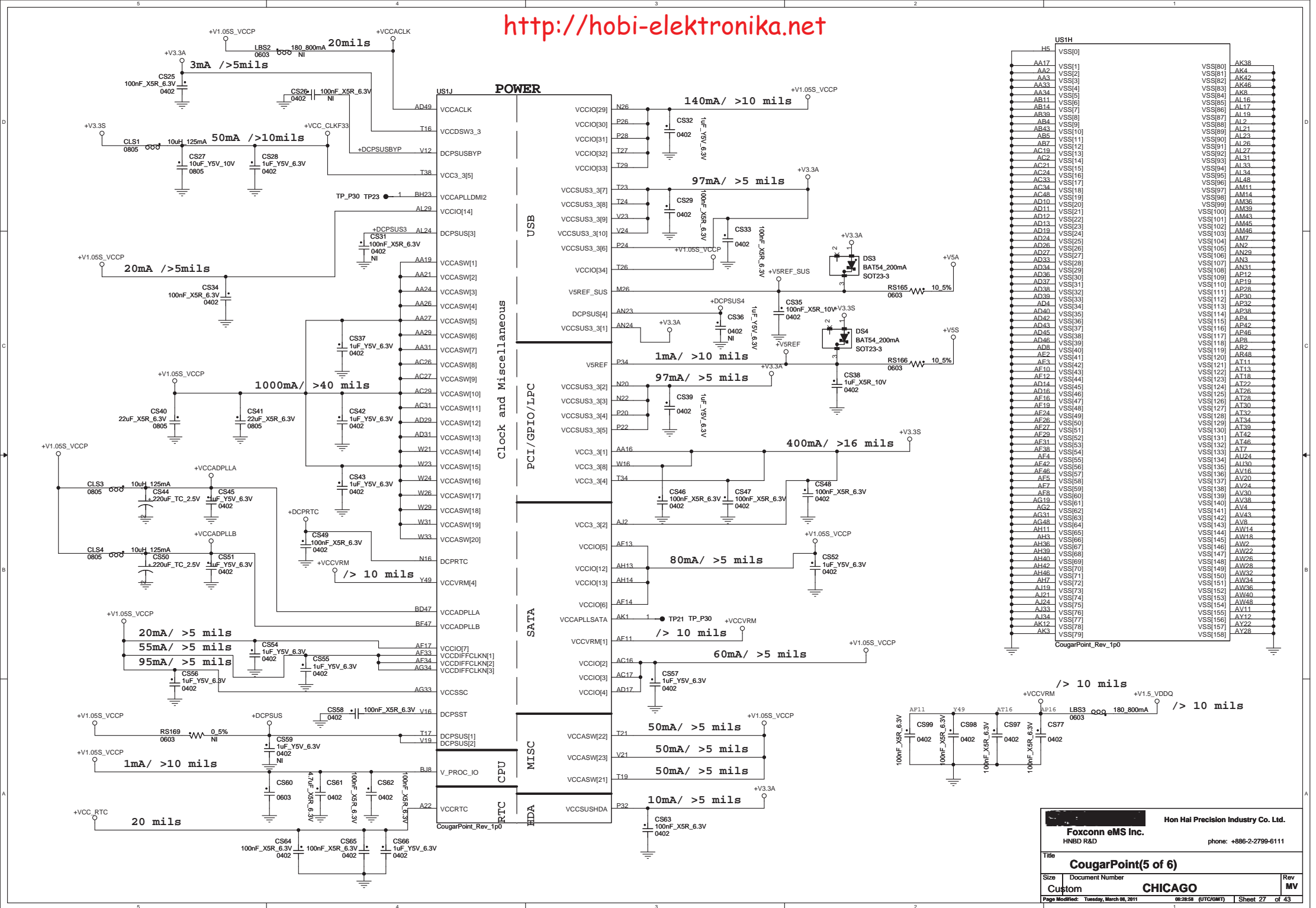















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Title

Size

Document Number

Rev

Custom

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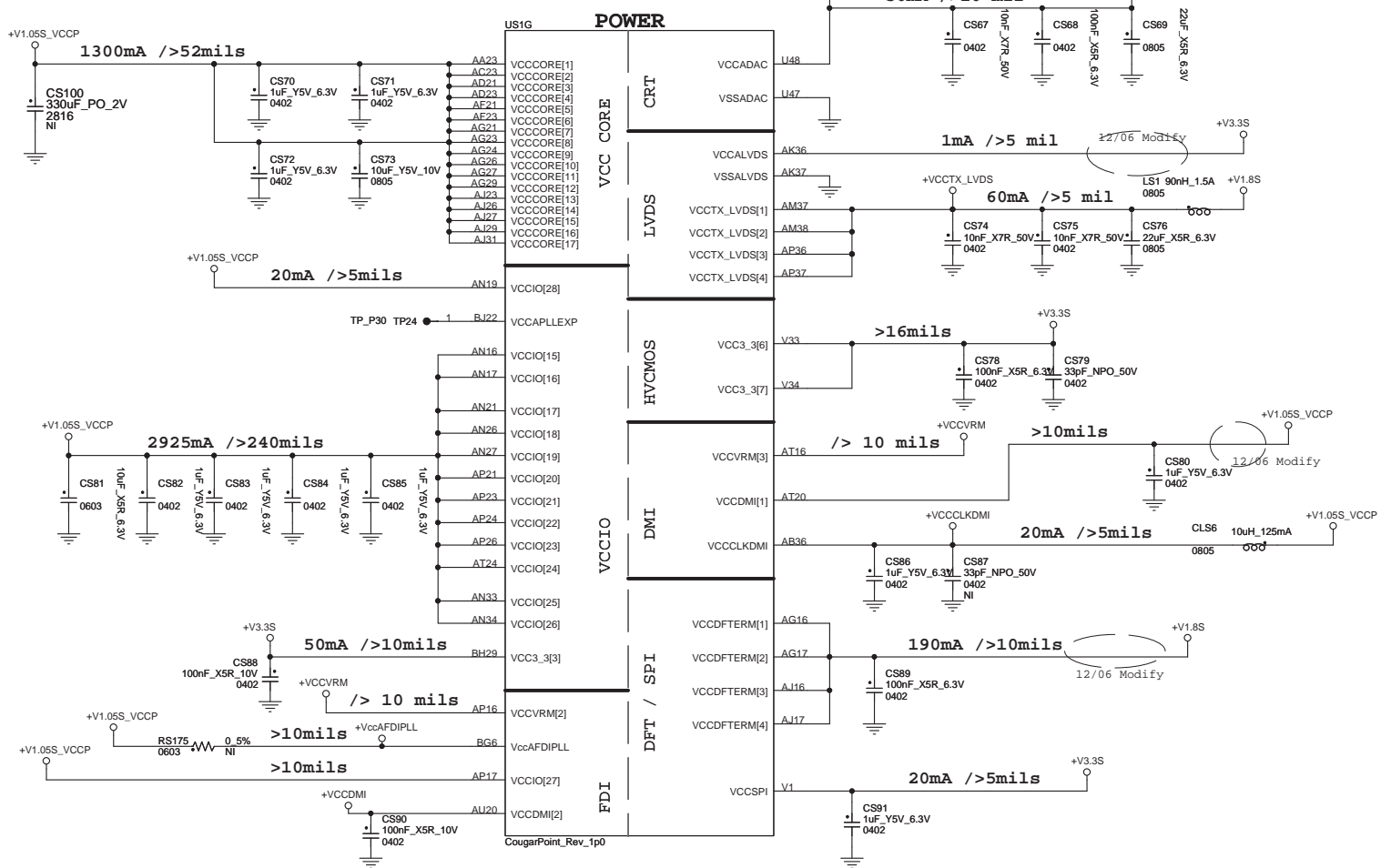
MV

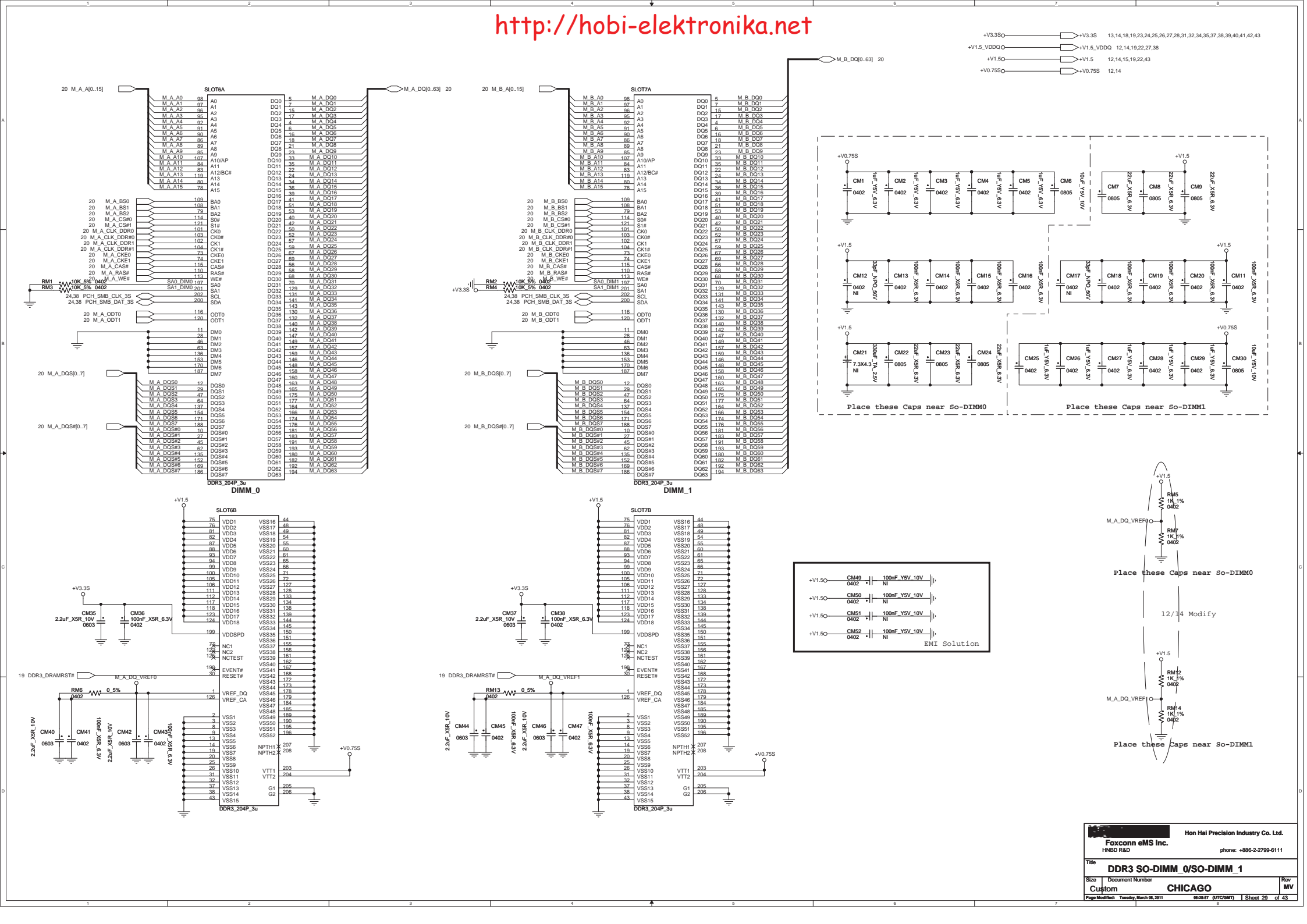
Page Modified: Tuesday, March 08, 2011

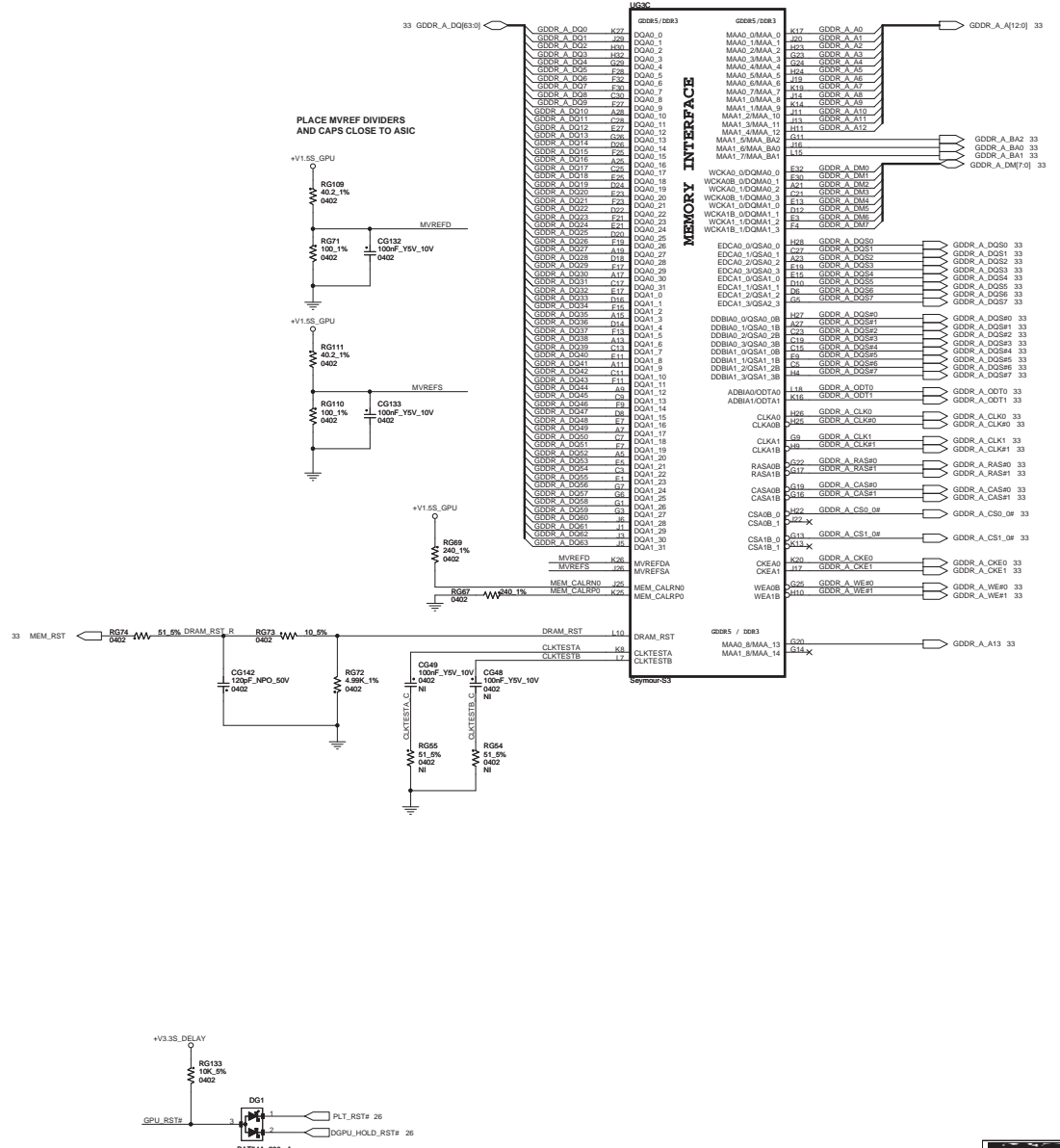
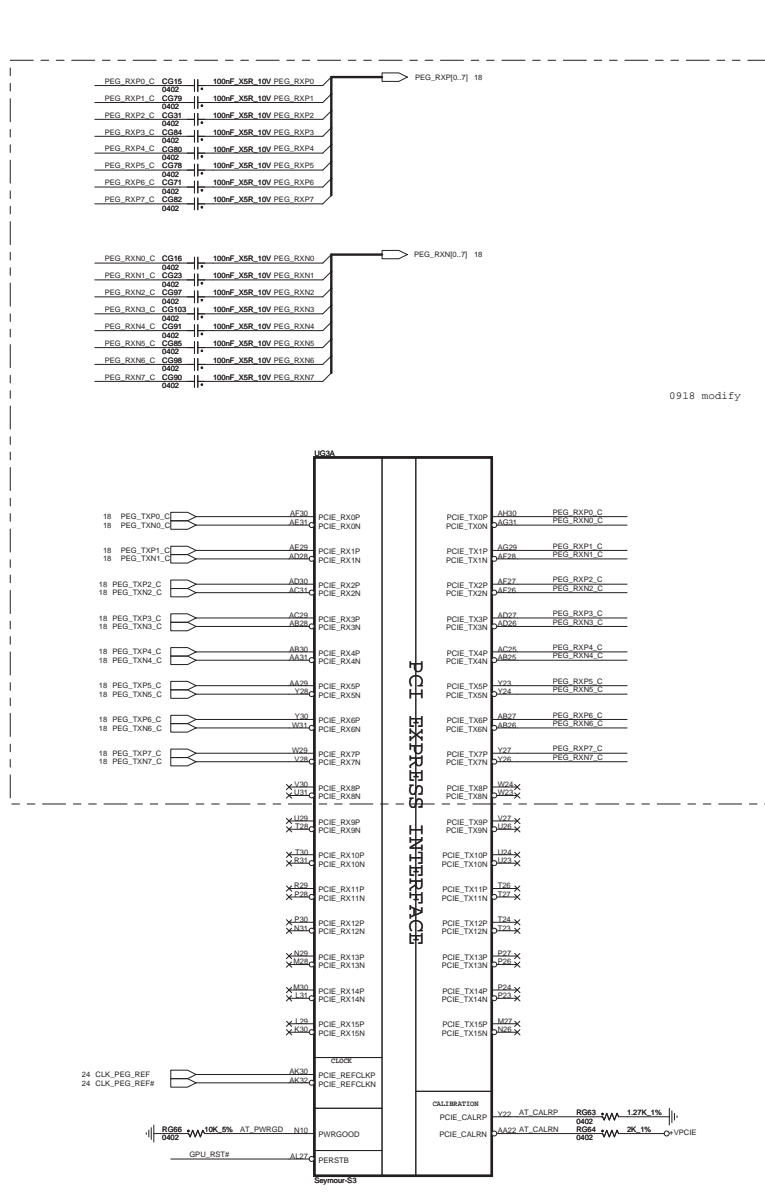
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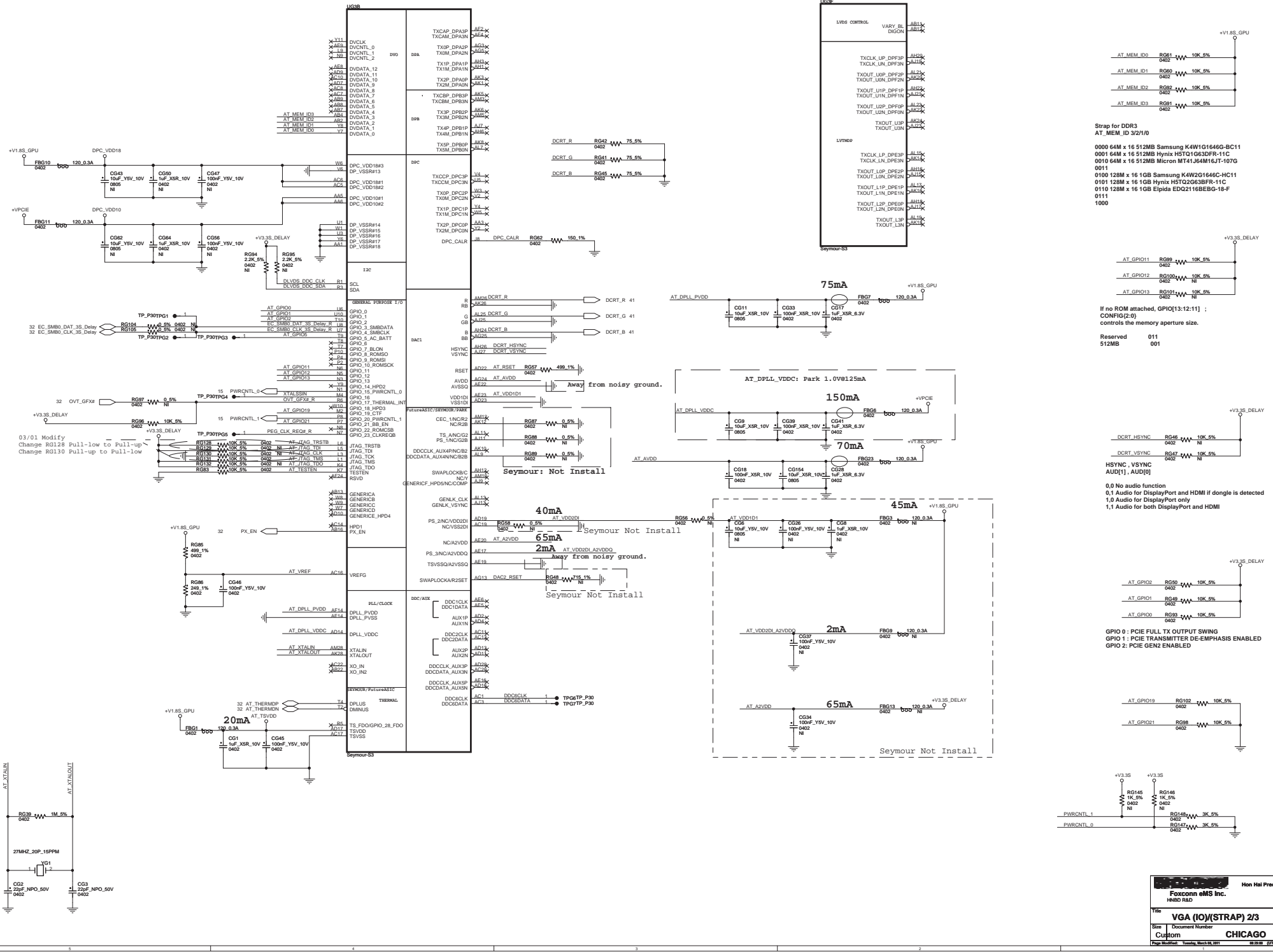
Sheet 27 of 43

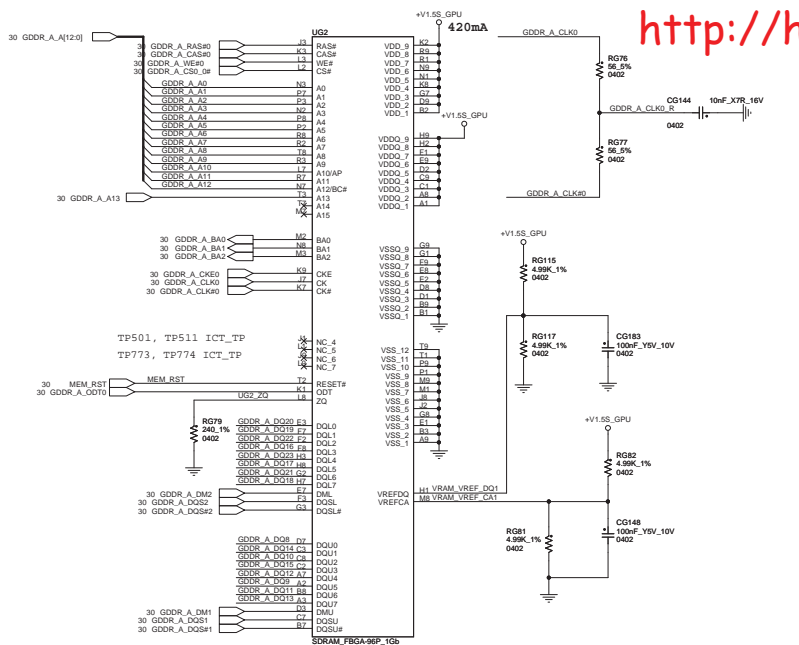
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| AY42 | VSS[160] | VSS[260] |
| AY46 | VSS[161] | VSS[261] |
| AY8 | VSS[162] | VSS[262] |
| B11 | VSS[163] | VSS[263] |
| B15 | VSS[164] | VSS[264] |
| B19 | VSS[165] | VSS[265] |
| B23 | VSS[166] | VSS[266] |
| B27 | VSS[167] | VSS[267] |
| B31 | VSS[168] | VSS[268] |
| B35 | VSS[169] | VSS[269] |
| B39 | VSS[170] | VSS[270] |
| B7 | VSS[171] | VSS[271] |
| F45 | VSS[172] | VSS[272] |
| BB12 | VSS[173] | VSS[273] |
| BB16 | VSS[174] | VSS[274] |
| BB20 | VSS[175] | VSS[275] |
| BB22 | VSS[176] | VSS[276] |
| BB24 | VSS[177] | VSS[277] |
| BB28 | VSS[178] | VSS[278] |
| BB30 | VSS[179] | VSS[279] |
| BB38 | VSS[180] | VSS[280] |
| BB4 | VSS[181] | VSS[281] |
| BB46 | VSS[182] | VSS[282] |
| BC14 | VSS[183] | VSS[283] |
| BC18 | VSS[184] | VSS[284] |
| BC22 | VSS[185] | VSS[285] |
| BC26 | VSS[186] | VSS[286] |
| BC32 | VSS[187] | VSS[287] |
| BC34 | VSS[188] | VSS[288] |
| BC36 | VSS[189] | VSS[289] |
| BC40 | VSS[190] | VSS[290] |
| BC42 | VSS[191] | VSS[291] |
| BC48 | VSS[192] | VSS[292] |
| BD46 | VSS[193] | VSS[293] |
| BE2 | VSS[194] | VSS[294] |
| BE22 | VSS[195] | VSS[295] |
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| BE12 | VSS[199] | VSS[299] |
| BE16 | VSS[200] | VSS[300] |
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| BE28 | VSS[205] | VSS[305] |
| BD3 | VSS[206] | VSS[306] |
| BE30 | VSS[207] | VSS[307] |
| BE38 | VSS[208] | VSS[308] |
| BE40 | VSS[209] | VSS[309] |
| BE42 | VSS[210] | VSS[310] |
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| BE64 | VSS[221] | VSS[321] |
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| BE100 | VSS[239] | VSS[339] |
| BE102 | VSS[240] | VSS[340] |
| BE104 | VSS[241] | VSS[341] |
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| BE108 | VSS[243] | VSS[343] |
| BE110 | VSS[244] | VSS[344] |
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| BE114 | VSS[246] | VSS[346] |
| BE116 | VSS[247] | VSS[347] |
| BE118 | VSS[248] | VSS[348] |
| BE120 | VSS[249] | VSS[349] |
| BE122 | VSS[250] | VSS[350] |
| BE124 | VSS[251] | VSS[351] |
| BE126 | VSS[252] | VSS[352] |
| BE128 | VSS[253] | |
| BE130 | VSS[254] | |
| BE132 | VSS[255] | |
| BE134 | VSS[256] | |
| BE136 | VSS[257] | |
| BE138 | VSS[258] | |



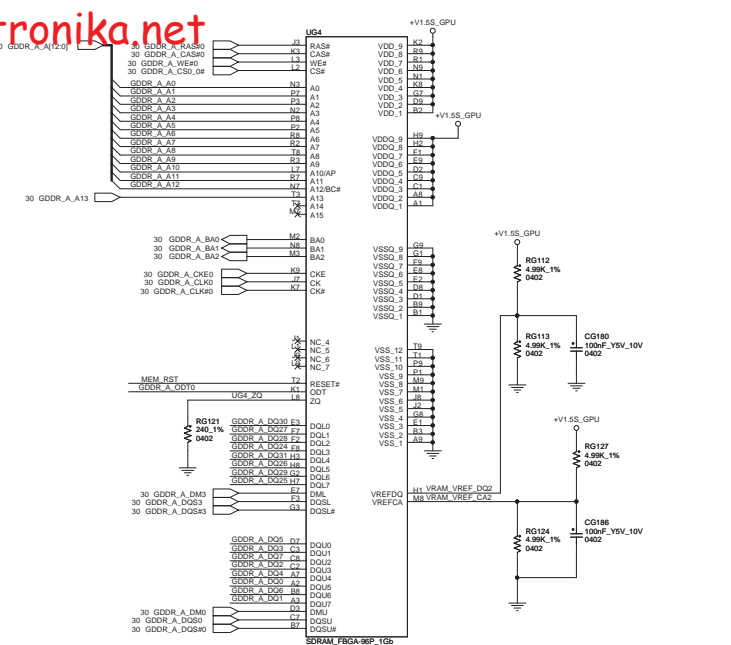
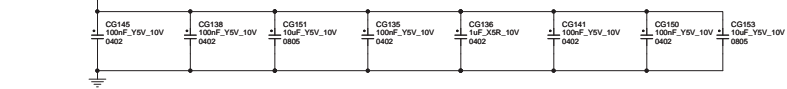




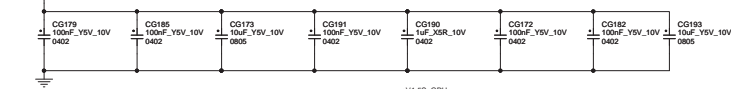




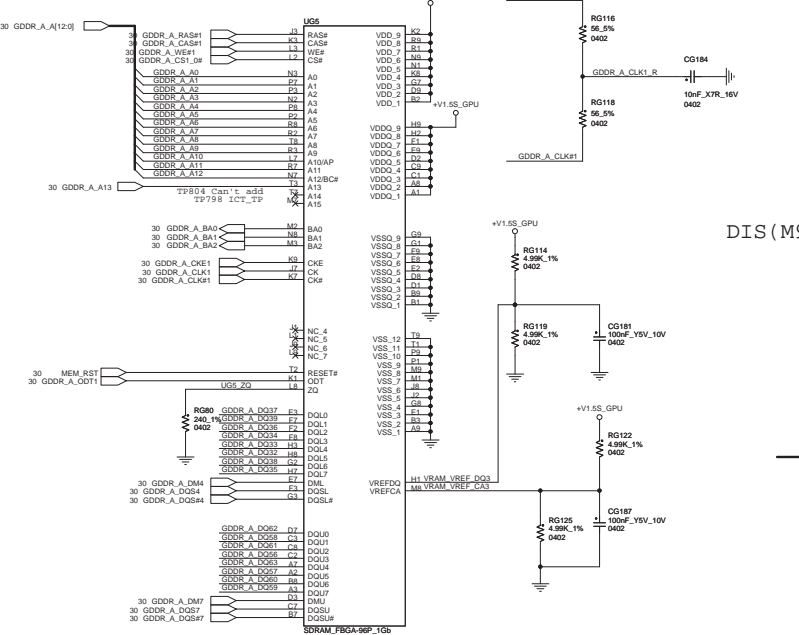
Place around the VRAM UG2 FBGA-96 1.2A



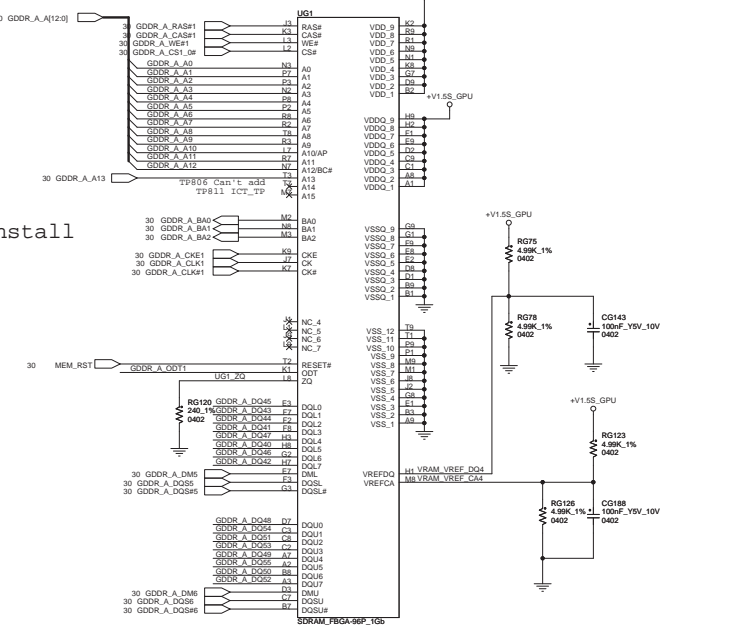
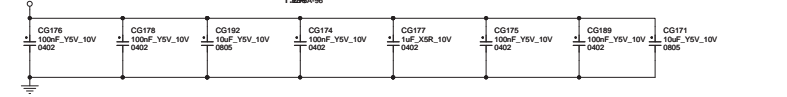
Place around the VRAM UG4 FBGA 1.2A



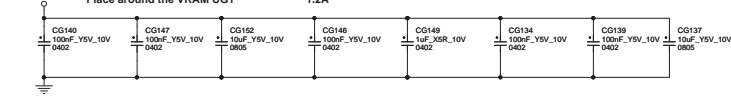
DIS(M93 XT);PX : Install

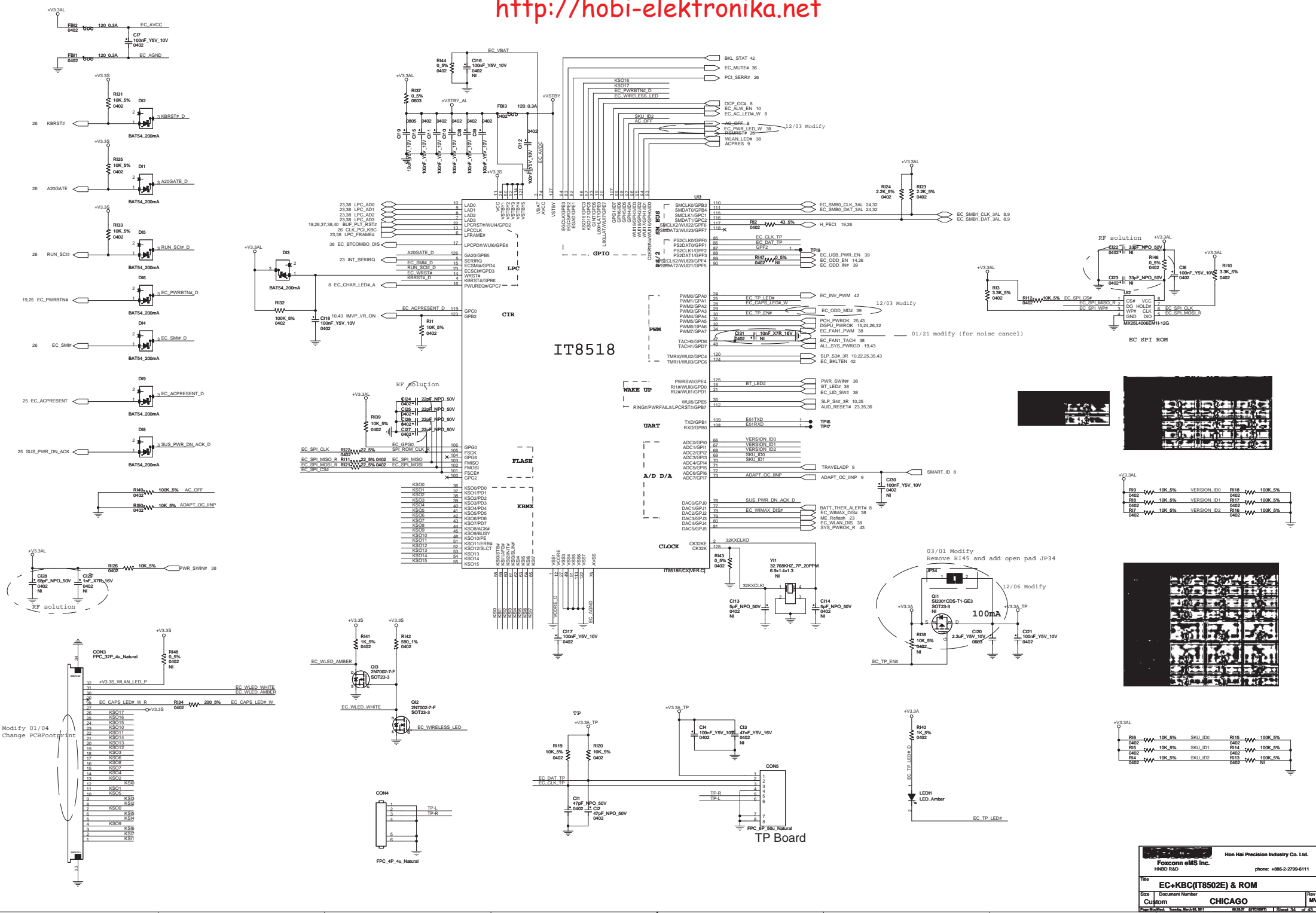


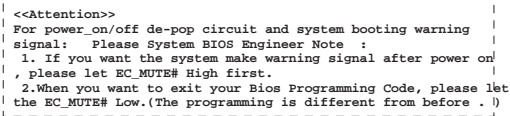
Place around the VRAM UG5

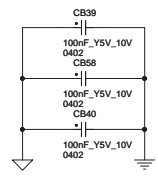
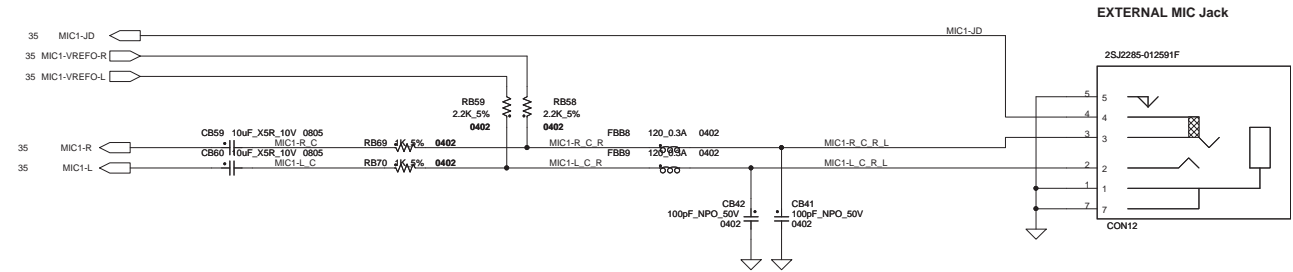
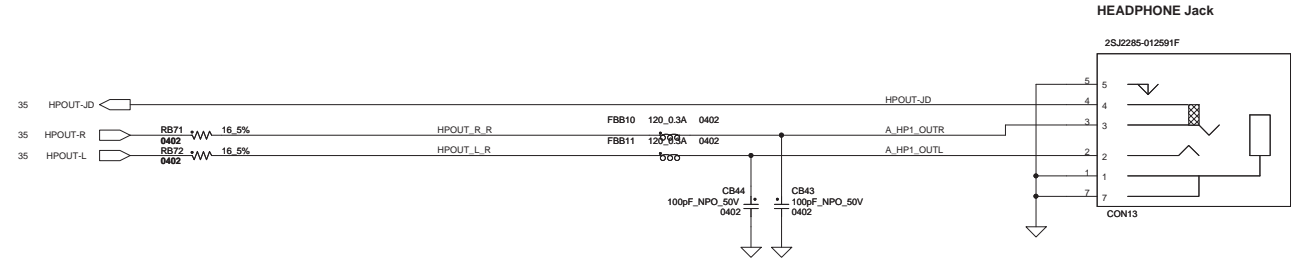
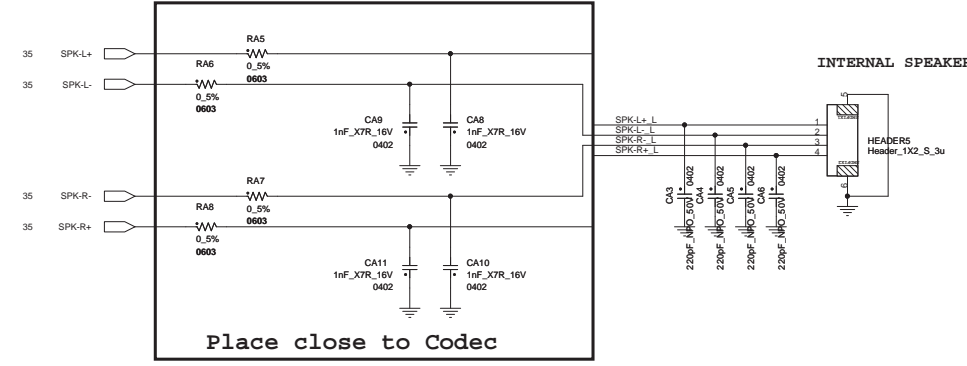
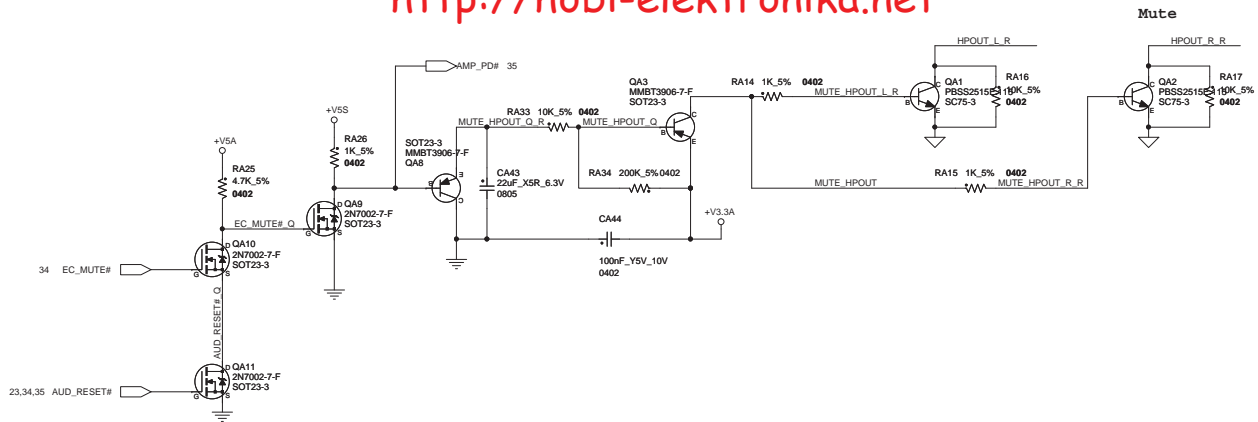


Place around the VRAM UG1









Need to follow Realtek's AVL.

Close to UL2 pin36

01/21
Chicago 1.0 need to change LAN chip (RTL8165EH)


Close to UL2 pin21

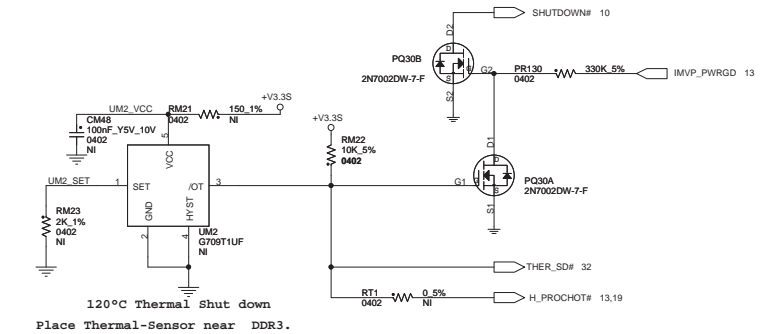
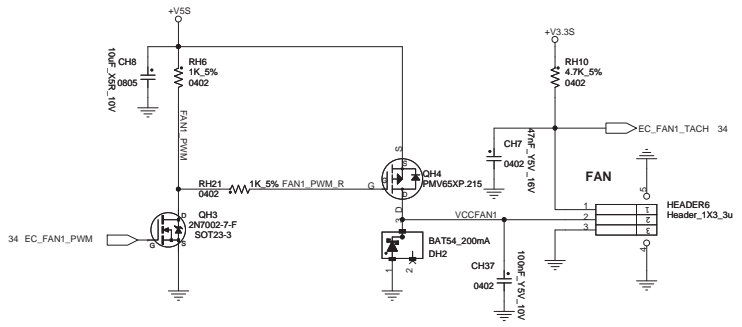
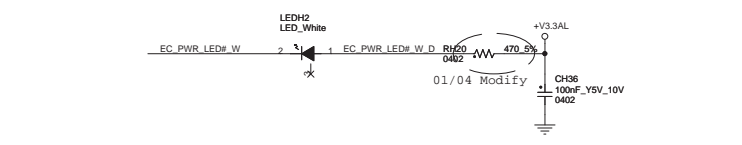
```
White LED for connectivity and
Amber LED for activity located
```

Ethernet

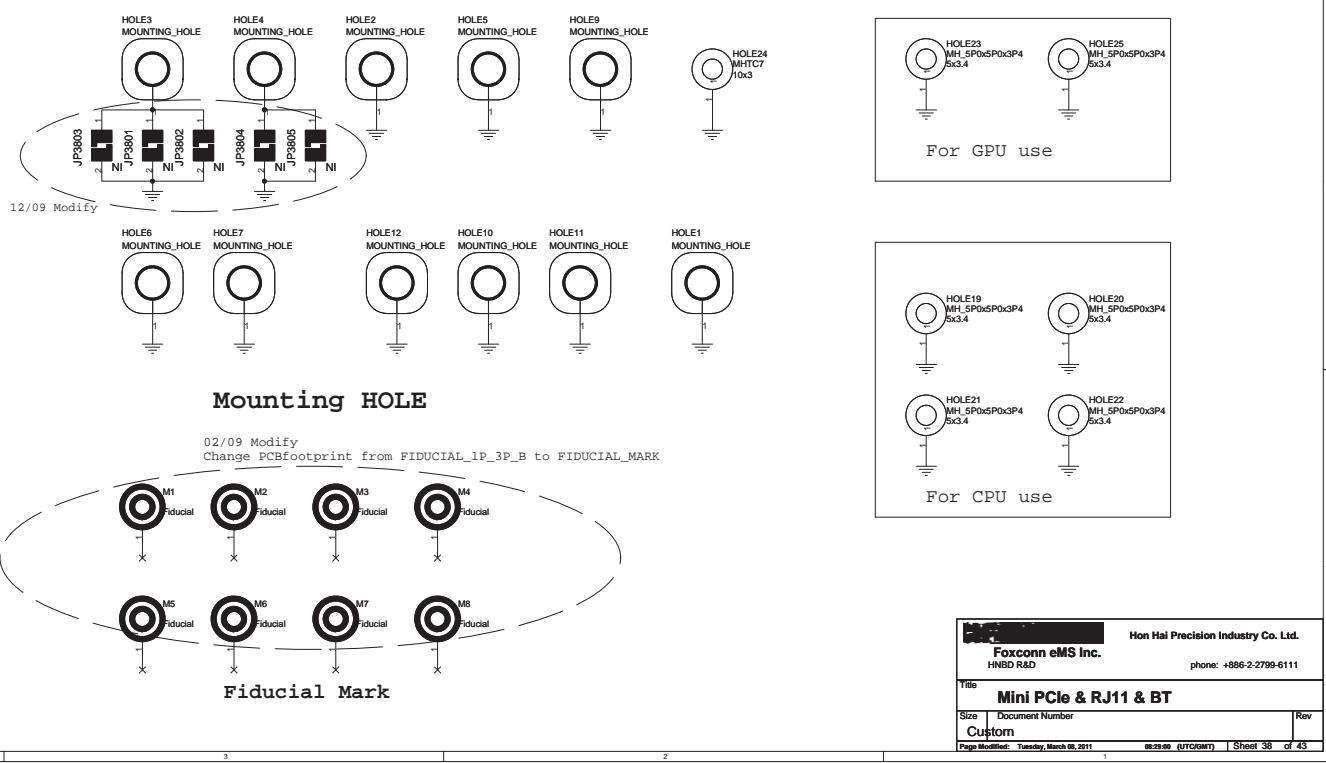
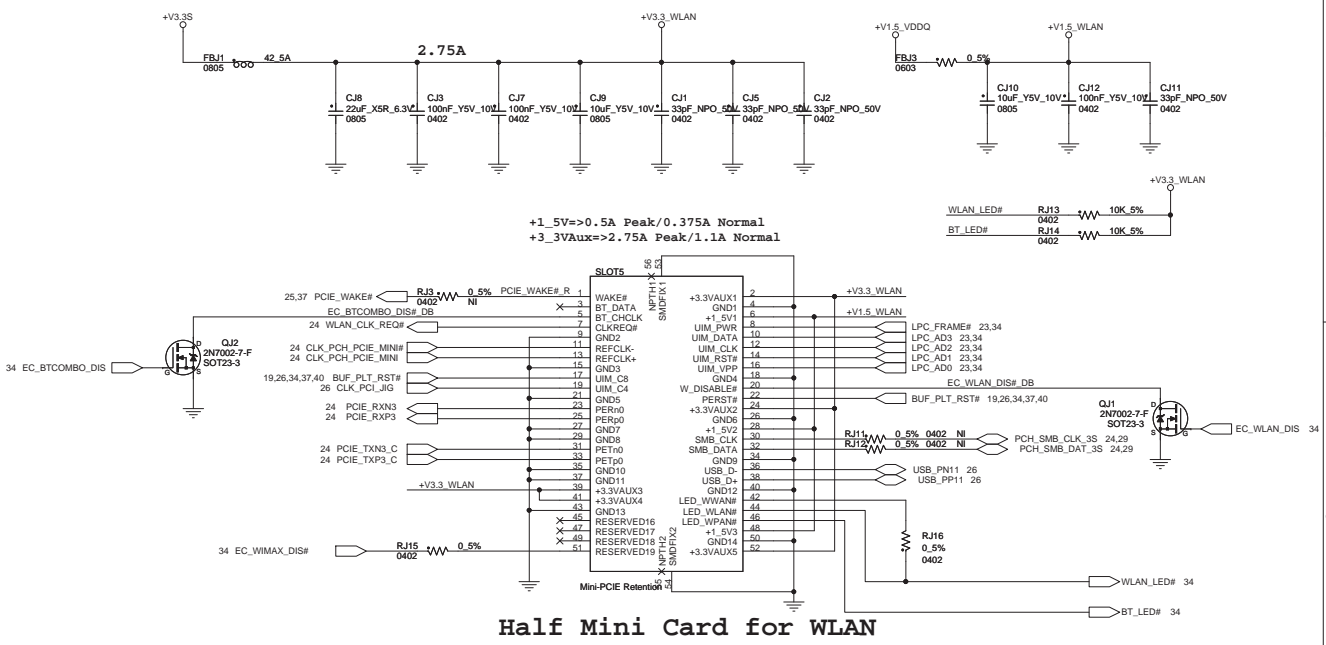
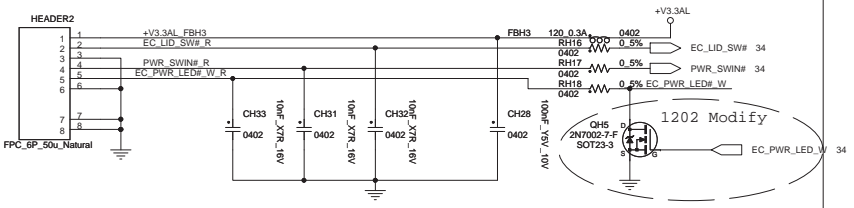
01/21
Chicago 1.0 need to change transformer

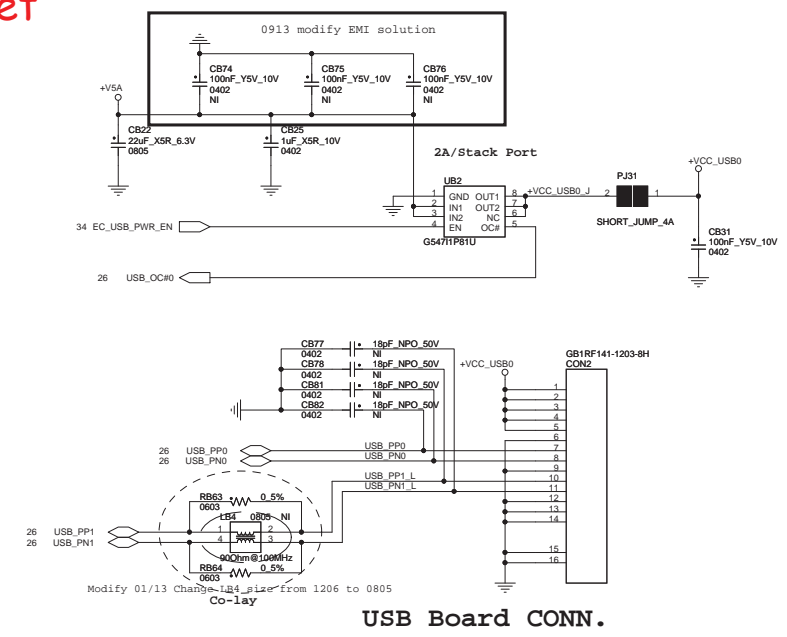
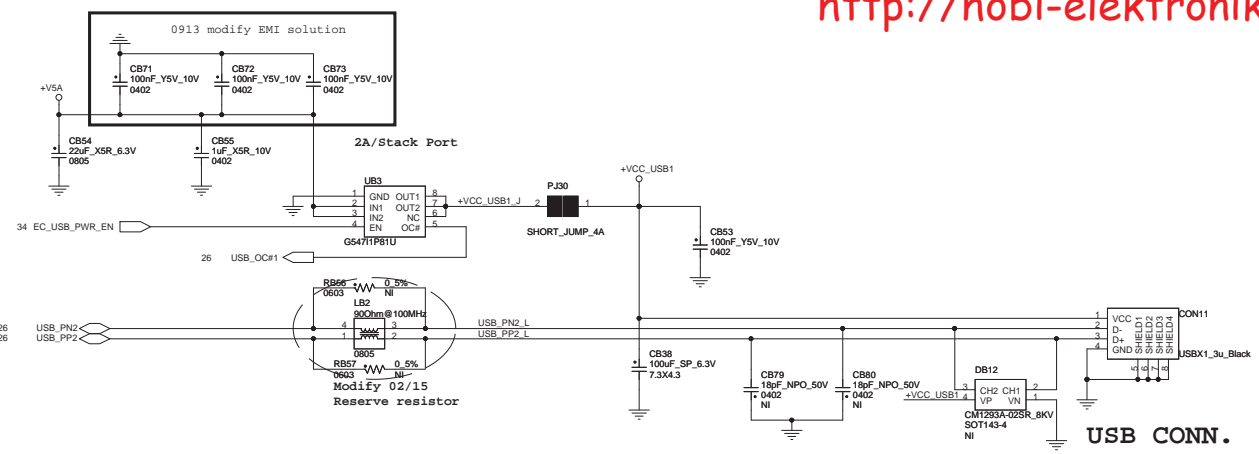
01/21
Giga Lan Install

| | | | |
|---|------------------------|---|----------------------|
|  Foxconn eMS Inc. HNBD R&D | | Hon Hai Precision Industry Co. Ltd. phone: +886-2-2799-6111 | |
| Title <div style="border: 1px solid black; padding: 5px; text-align: center;"> LAN (RTL8165EH) </div> | | | |
| Size Custom | Document Number | | R |
| Page Modified: Tuesday, March 06, 2011 | | 00:20:59 (UTC/GMT) | Sheet 37 of 4 |

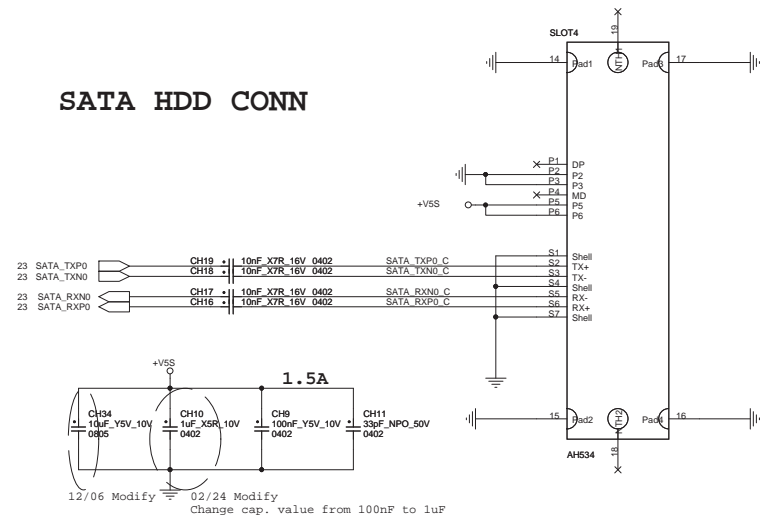


PWR Board CONN.

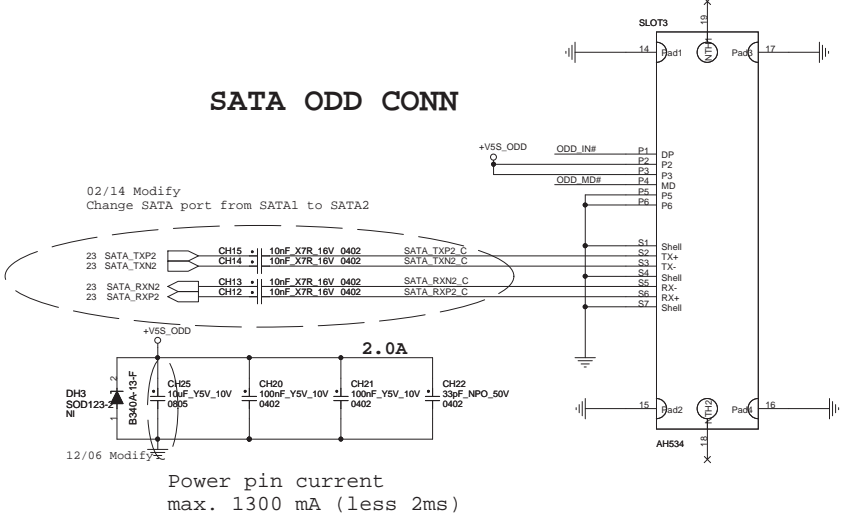




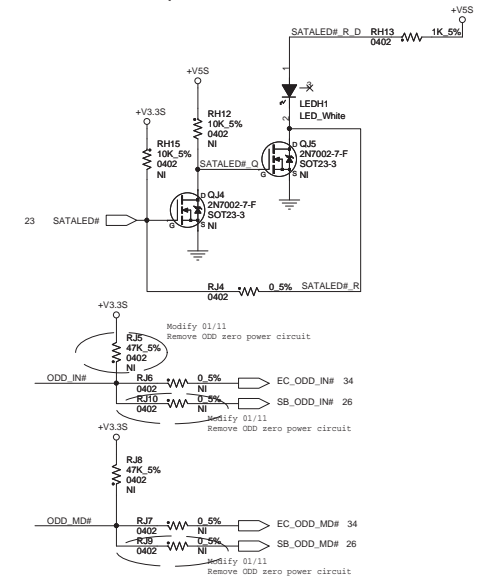
SATA HDD CONN

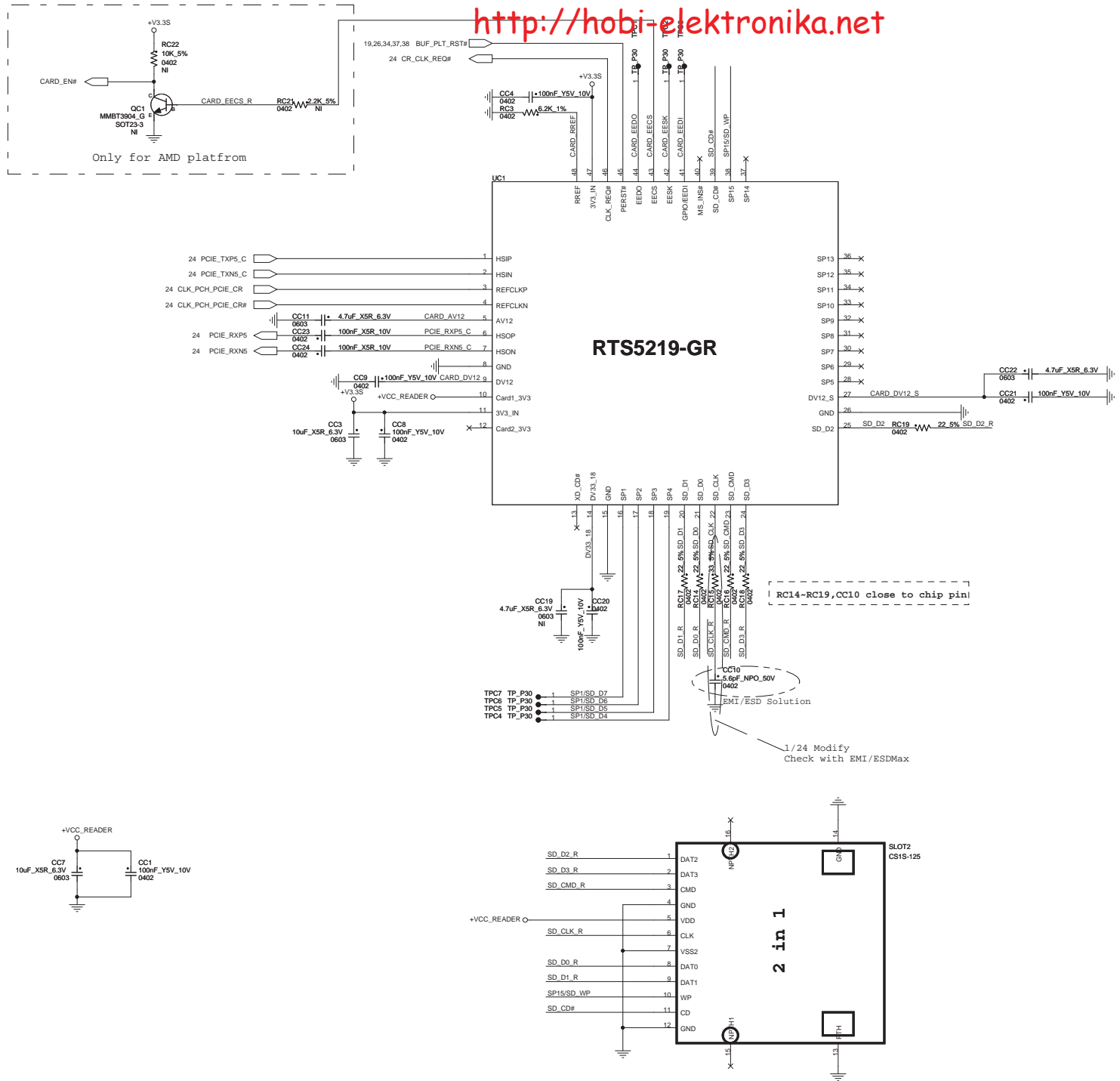


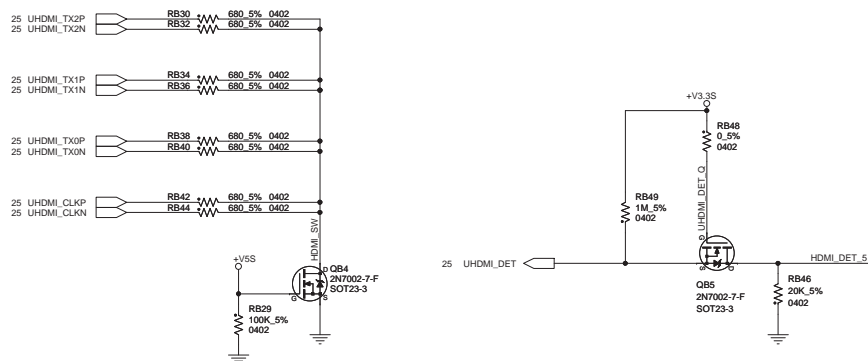
SATA ODD CONN



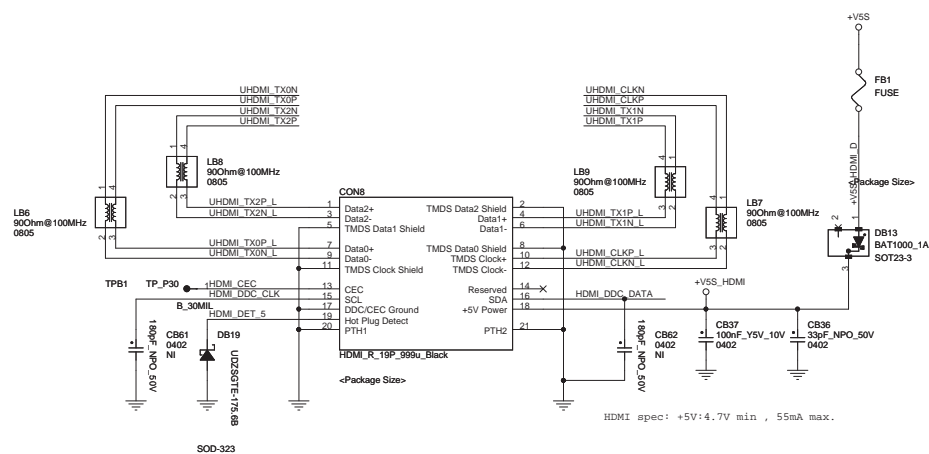
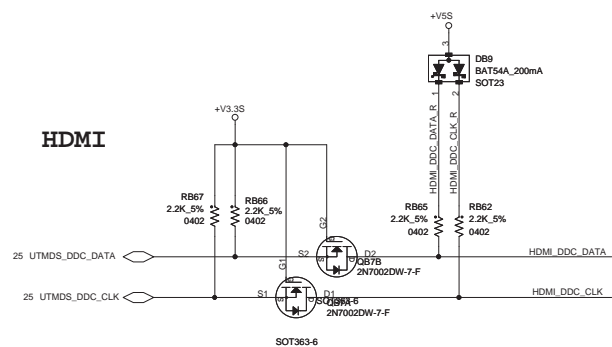
HDD/ODD Status LED





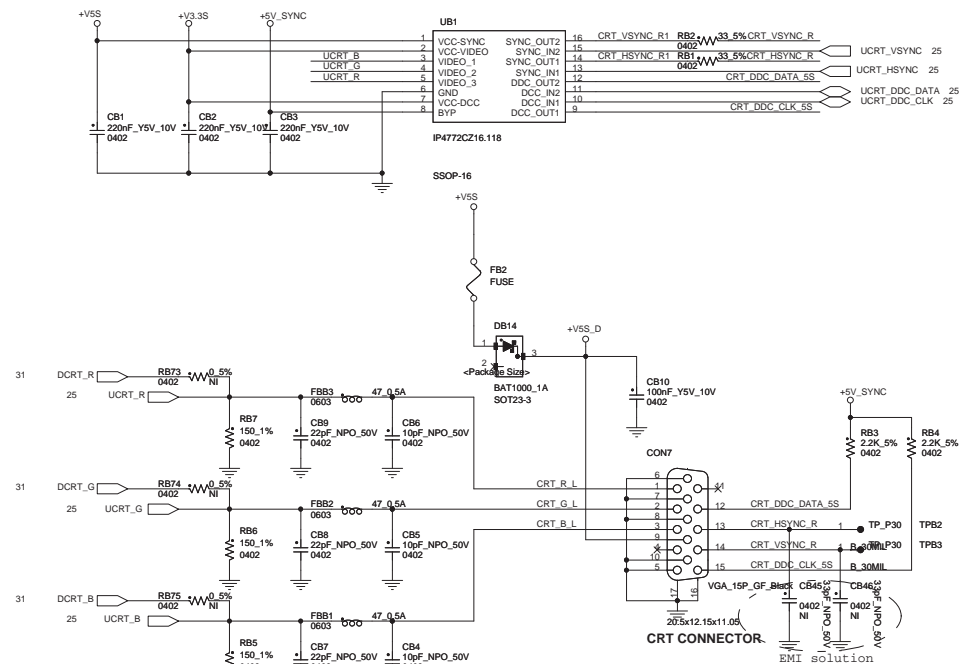


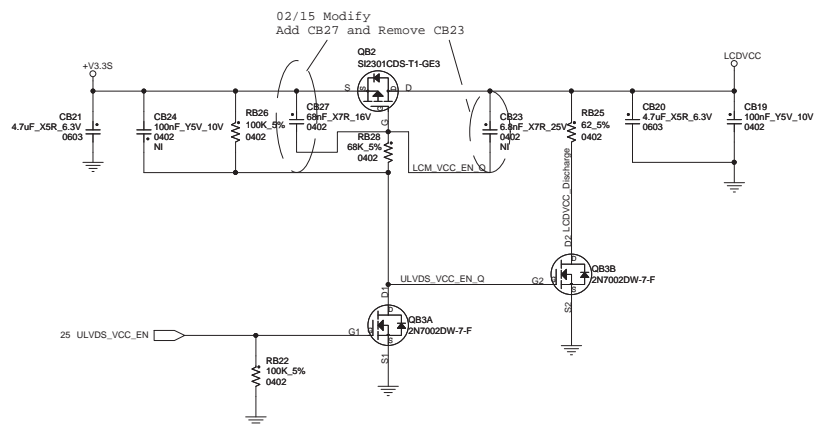
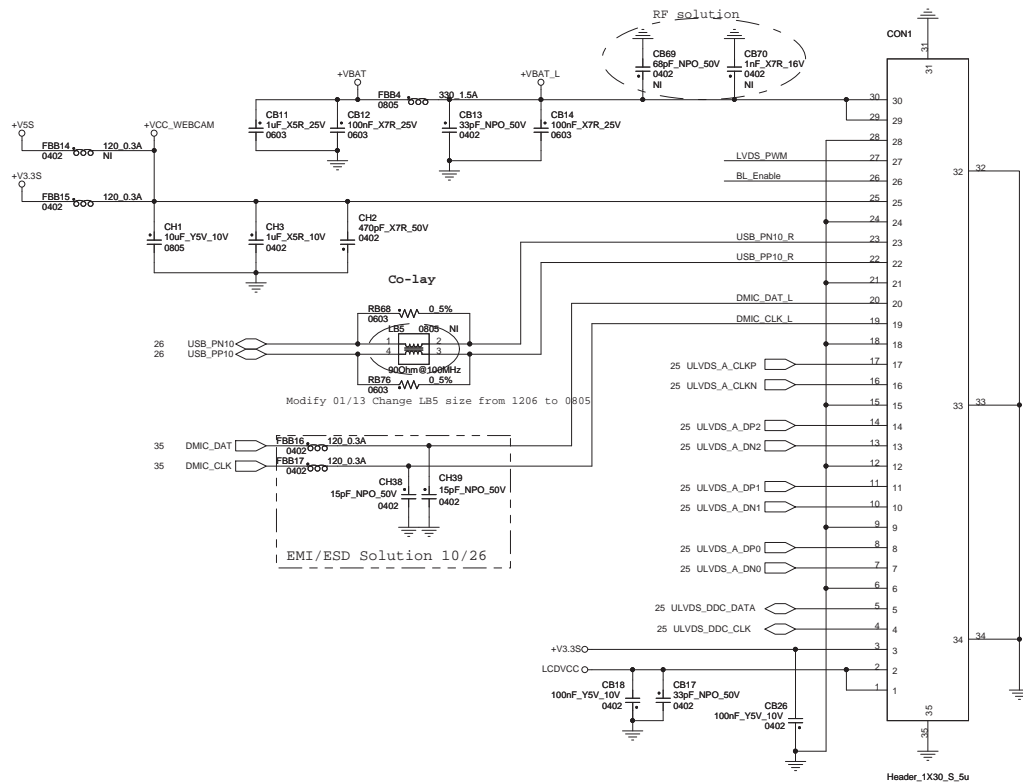
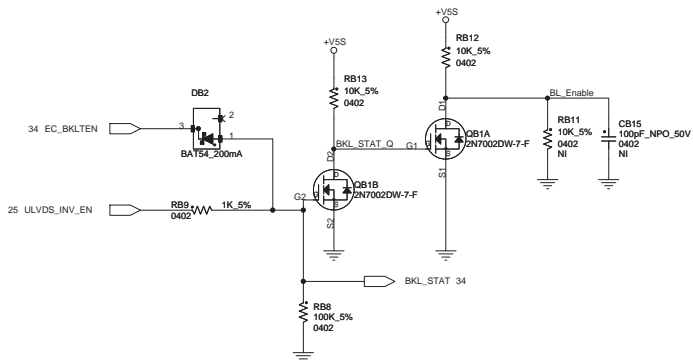
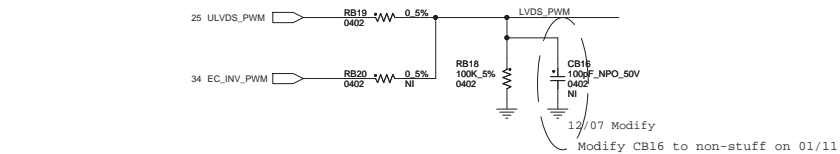
HDMI

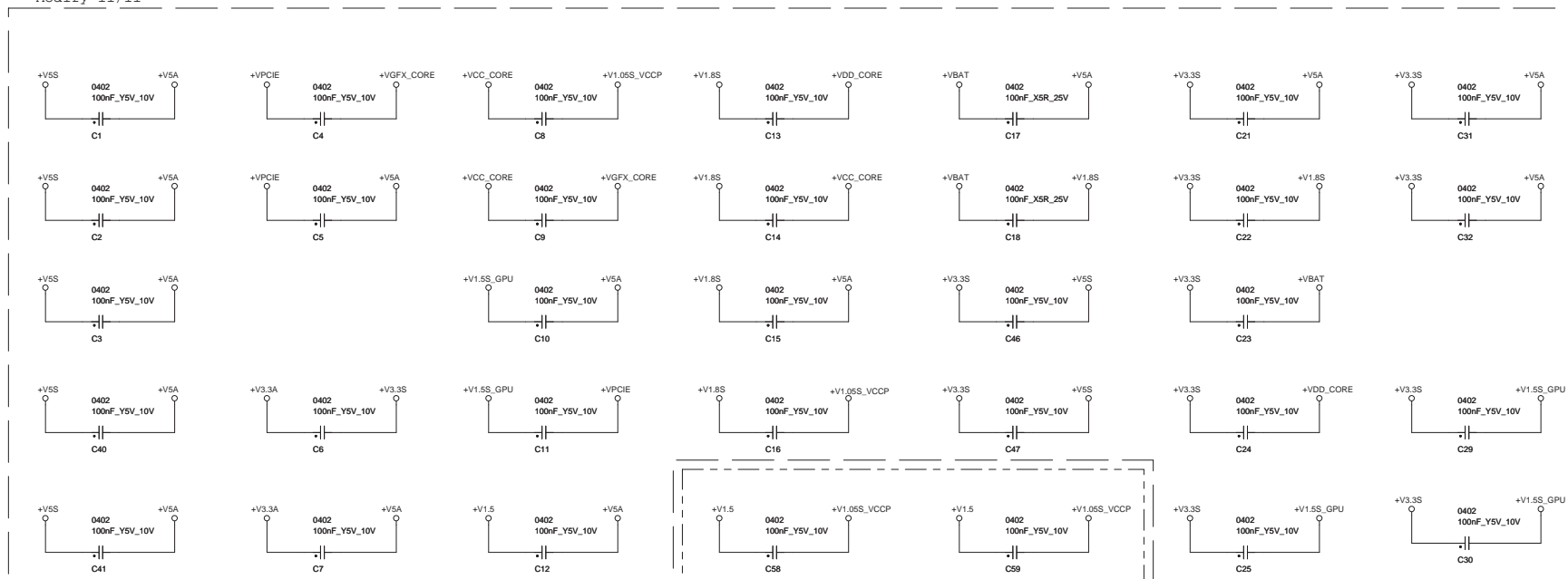
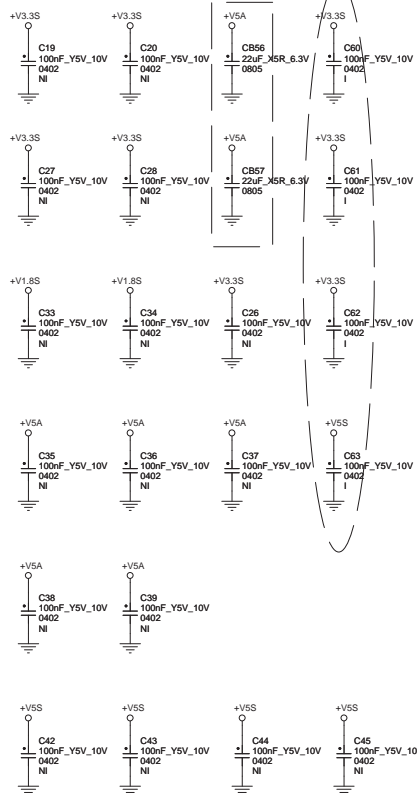
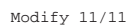
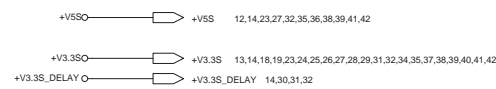


HDMI spec: +5V:4.7V min , 55mA max.

CRT







EMI/ESD Solution 10/26

