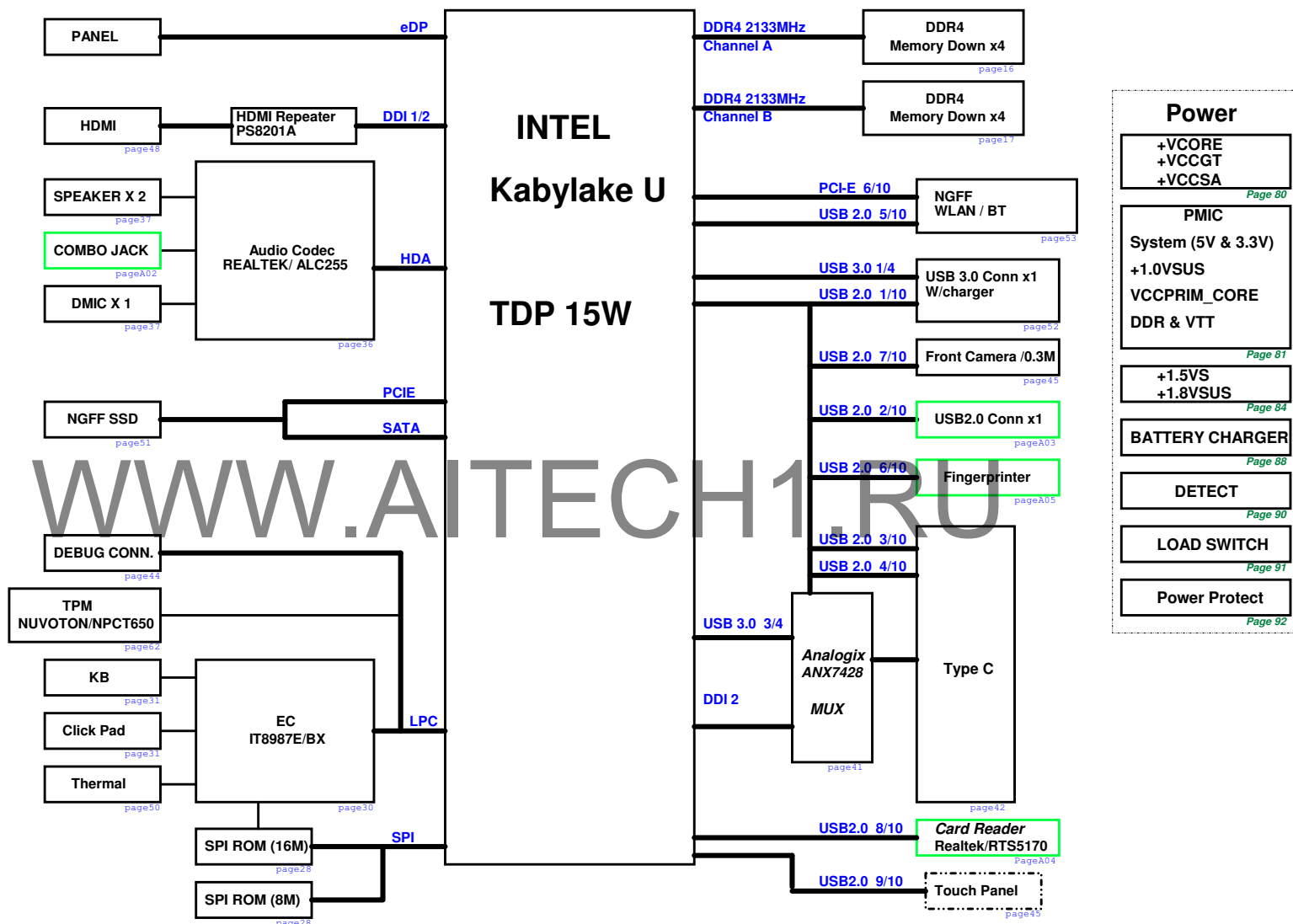


01. Block Diagram  
02. GPIO Setting  
03. CPU(1)\_DDI/eDP  
04. CPU(2)\_DDR4  
05. CPU(3)\_+VCCCORE  
06. CPU(4)\_+VCCGT  
07. CPU(5)\_+VDDQ/IO/SA  
08. CPU(6)\_CPU GND  
09. CPU(7)\_CFG/RSVD  
15. DDR4(0)\_Termination  
16. DDR4(1)\_CH0  
17. DDR4(2)\_CH1  
19. DDR4(4)\_CA/DQ Voltage  
20. PCH(1)\_SPI/LPC  
21. PCH(2)\_ISH  
22. PCH(3)\_HDA/SDIO  
23. PCH(4)\_USB/PCIE/SATA  
24. PCH(5)\_CLK/RTC  
25. PCH(6)\_POWER MANAGEMENT  
26. PCH(7)\_POWER  
28. PCH(9)\_SPI/SMB  
30. EC\_IT8587/FX  
31. EC\_IT8587/FX\_KB/TP/KBBL  
32. RST\_Reset Circuit  
36. AUD\_ALC255  
37. AUD(2)\_SPK/DMIC  
41. USB\_Type-C ANX7428  
42. USB Type-C Receptacle  
43. USB Type-C Dead Battery  
44. Debug CONN  
45. CRT(1)\_eDP,CAMERA,TSN  
47. HDMI Repeater PS8201A  
48. HDMI OUT  
50. THERMAL / FAN  
51. NGFF PCIE\*4/SATA SSD  
52. USB 3.0/Sleep Charge IC  
53. NGFF PCIE WLAN/BT  
56. LED  
57. Discharge  
60. DC\_DC/BAT CONN  
62. TPM NPCT650  
64. IO Board  
65. ME\_CONN / Skew Hole  
68. BYPASS EC SEQUENCE  
80. POWER\_VCORE for U22  
81. POWER\_SYSTEM  
82. POWER\_+1.0VSUS  
83. POWER\_DDR & VTT\_UMA  
84. POWER\_1.8VSUS  
85. POWER\_1.5VS  
86. POWER\_XXX  
87. POWER\_XXX  
88. POWER\_CHARGER  
89. POWER\_AC\_PD\_WC Input  
90. POWER\_DETECT  
91. POWER\_LOAD SWITCH  
92. POWER\_PROTECT  
93. POWER\_SIGNAL  
94. POWER\_FLOWCHART  
A02. AUD(2)\_JACK  
A03. USB20  
A04. CB\_RTSS170\_GR

## 14" CARDB(X3) & M3RDA(M3) for Kabylake U Platform Block Diagram



Discharge Circuit

Page 57

DC &amp; BATT. Conn.

Page 60

Reset Circuit

Page 32

Skew Holes

Page 65

&lt;Variant Name&gt;

PEGATRON Title : Block Diagram

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BG14W3

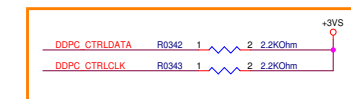
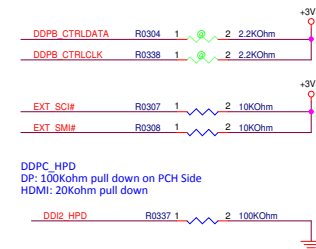
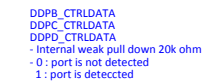
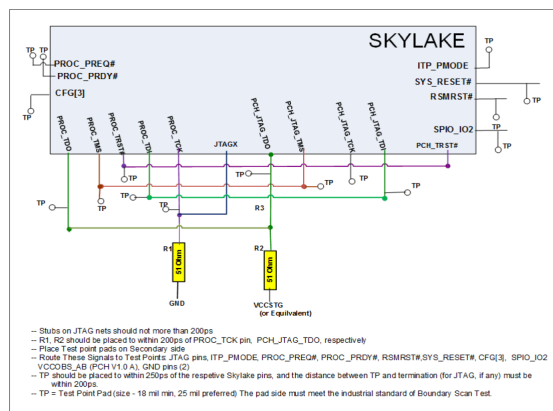
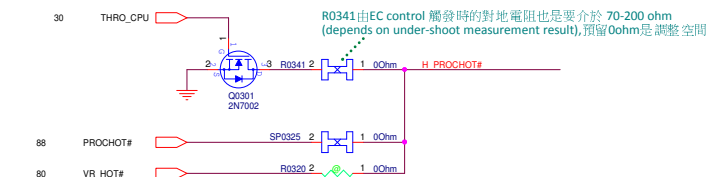
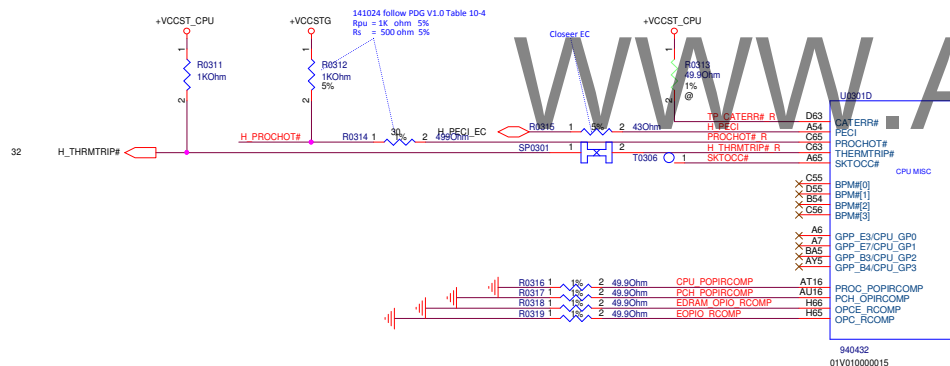
Engineer: Andy Kao

|                                |               |     |
|--------------------------------|---------------|-----|
| Size                           | Project Name  | Rev |
| Custom                         | X3            | 1.0 |
| Date: Friday, October 21, 2016 | Sheet 1 of 97 |     |



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<Variant Name>

**PEGATRON** Title : CPU(1)\_DDI/eDR  
PEGATRON PROPRIETARY AND CONFIDENTIAL

|   |                           |                           |         |
|---|---------------------------|---------------------------|---------|
| REGISTRATION PROPRIETARY AND CONFIDENTIAL |                           |                           |         |
| BG1/HW3                                   |                           | Engineer: <i>Andy Kao</i> |         |
| Size<br>C                                 | Project Name<br><b>X3</b> |                           | R<br>1. |
| Date: <i>Wednesday, August 31, 2016</i>   |                           | Sheet                     | 3 of 97 |

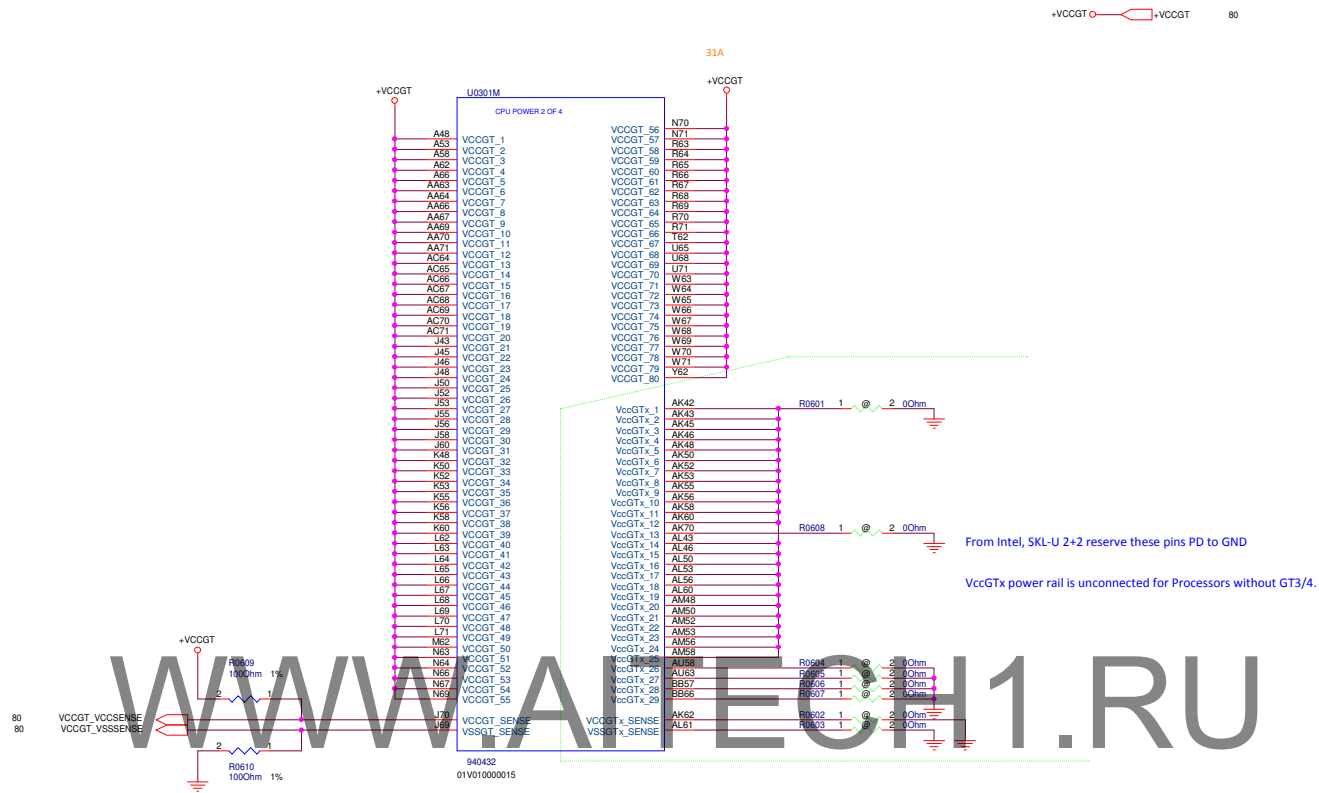




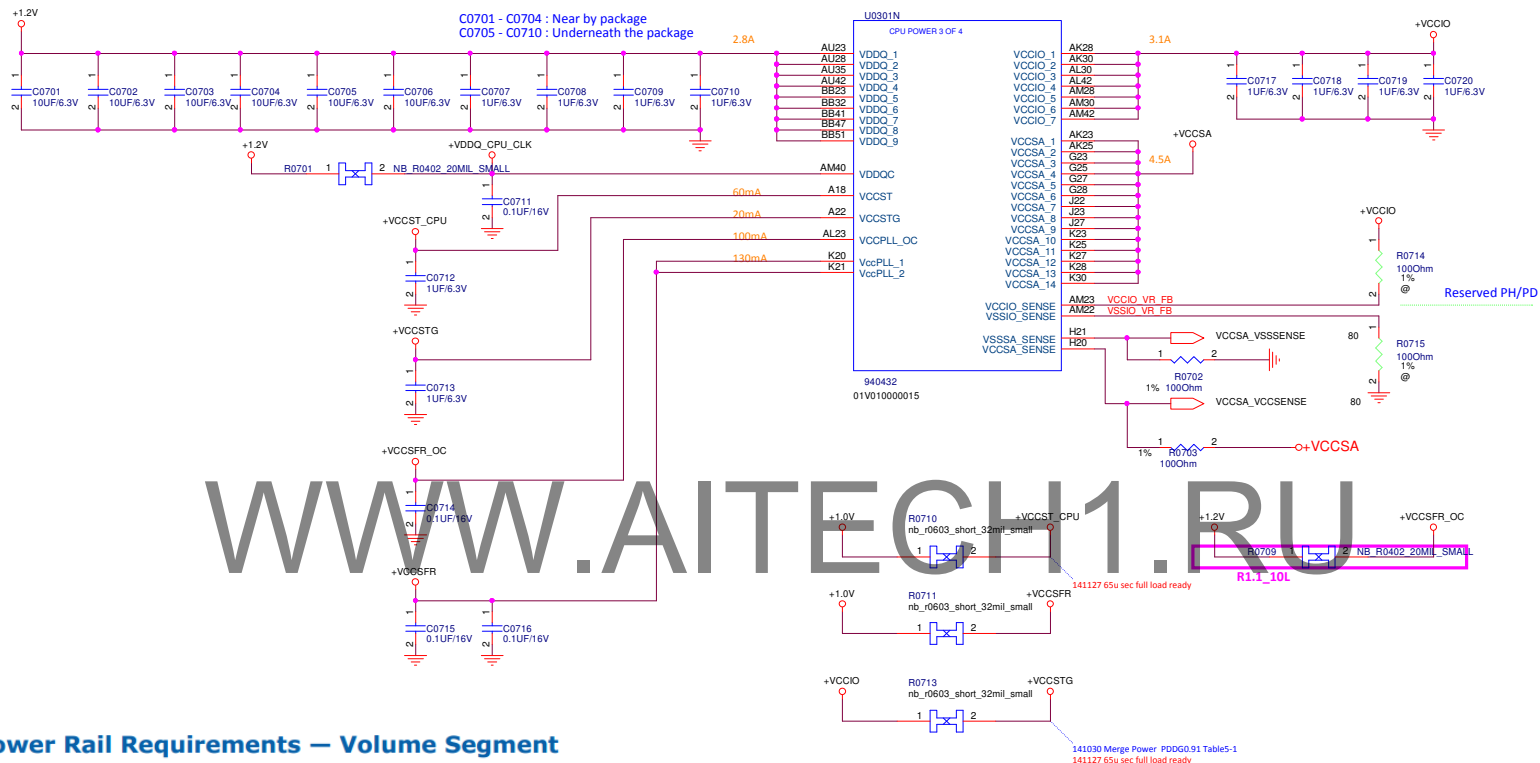






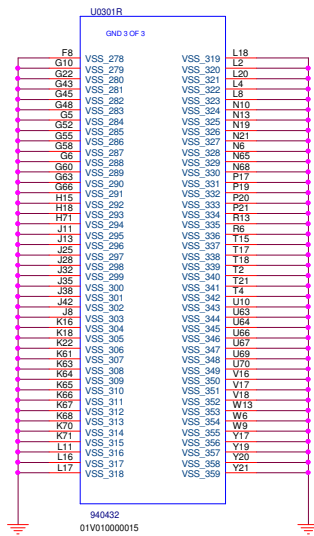
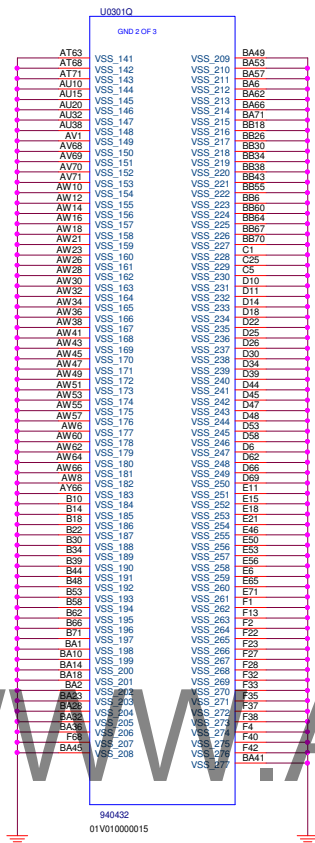
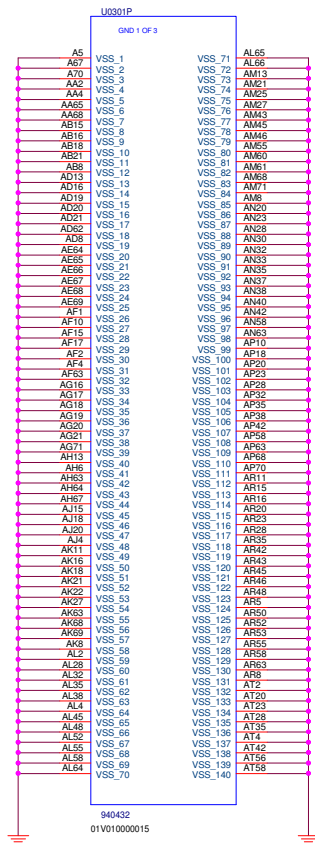






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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>10</i> of <i>97</i> |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>11</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>12</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>13</i> of <i>97</i>     |                   |





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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>14</i> of <i>97</i>     |                   |

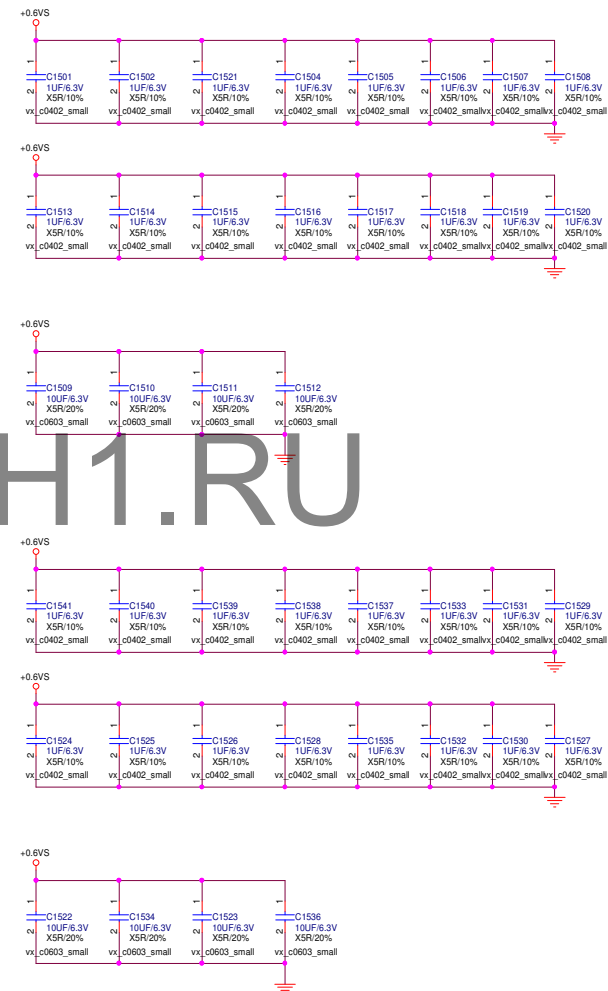


## DDR4(0)\_Termination

+0.6VS  +0.6VS 57,83  
+1.2V\_DDR4  +1.2V\_DDR4 4,7,16,17,19,57,83



Average placed close to +VDDQ\_VTT power plane

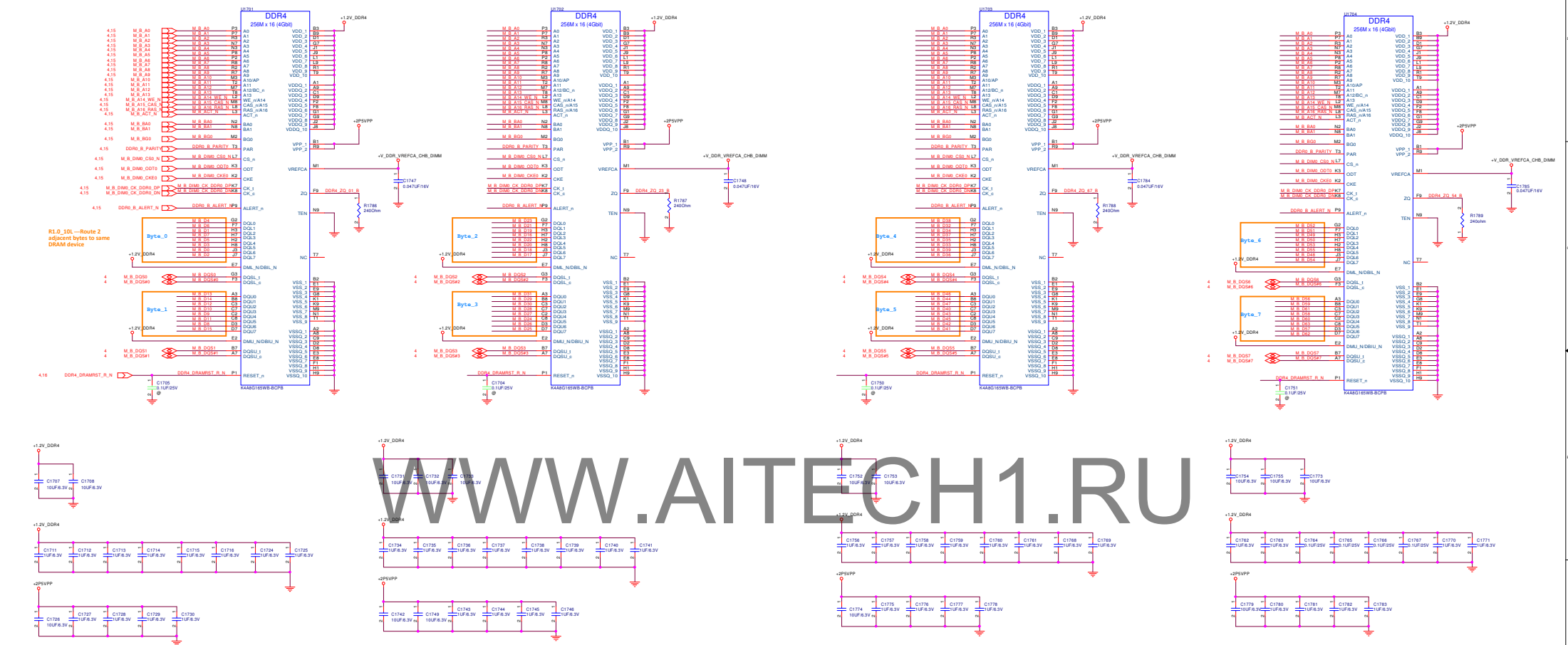








DDR4(2)\_CH1



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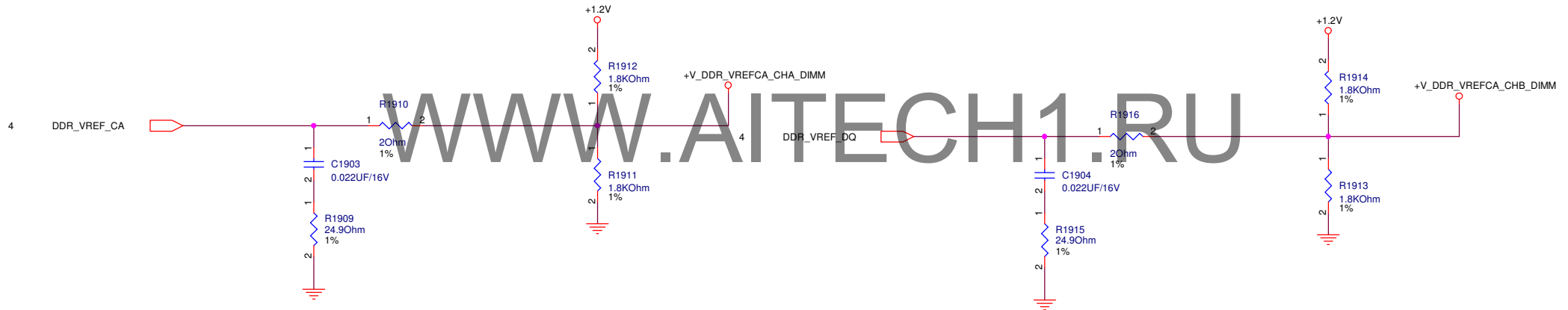
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|---|---------------------------|---------------------------|------------|
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| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                           |            |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i> |            |
| Size<br>A                               | Project Name<br><b>X3</b> |                           | Rev<br>1.0 |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet                     | 18 of 97   |



## DDR4(3)\_CA/DQ Voltage

+1.2V 4,7,15,16,17,57,83  
+V\_DDR\_VREFCA\_CHB\_DIMM  
+V\_DDR\_VREFCA\_CHA\_DIMM

## DDR4 Vref (Intel Schematic Review)



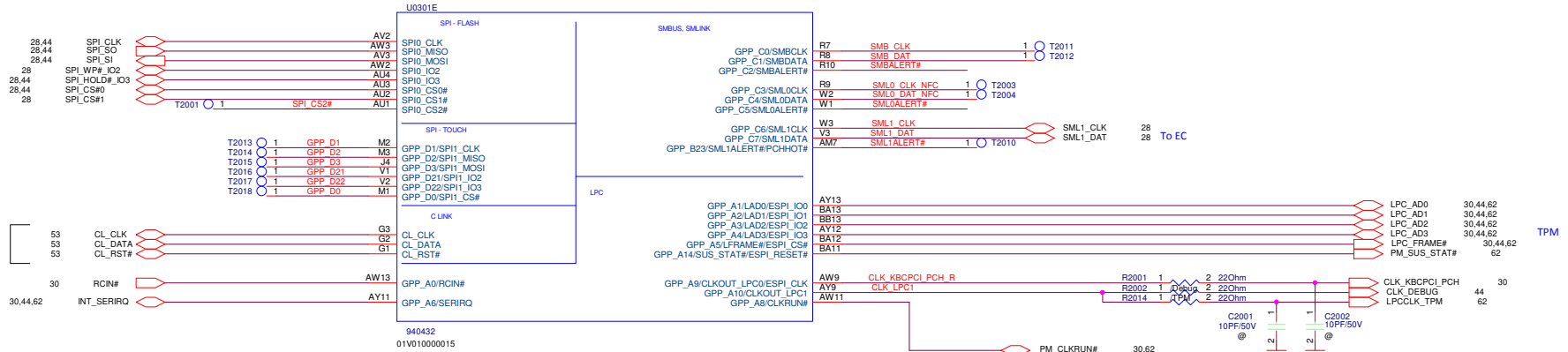
&lt;Variant Name&gt;

|                                  |                    |                               |            |
|----------------------------------|--------------------|-------------------------------|------------|
| PEGATRON                         |                    | Title : DDR3(3)_CA/DQ Voltage |            |
| BG1/HW3                          |                    | Engineer: Andy Kao            |            |
| Size<br>B                        | Project Name<br>X3 |                               | Rev<br>1.0 |
| Date: Wednesday, August 31, 2016 |                    | Sheet                         | 19 of 97   |



ME  
BIOS+EC\_PBA

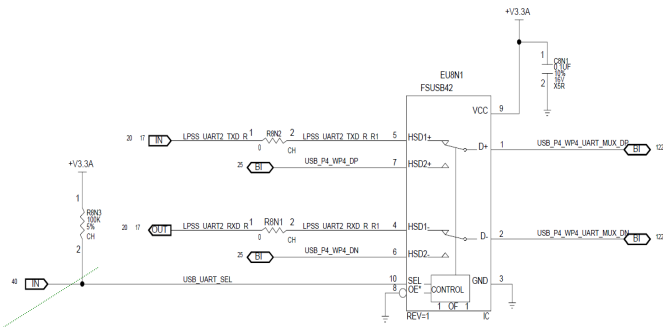
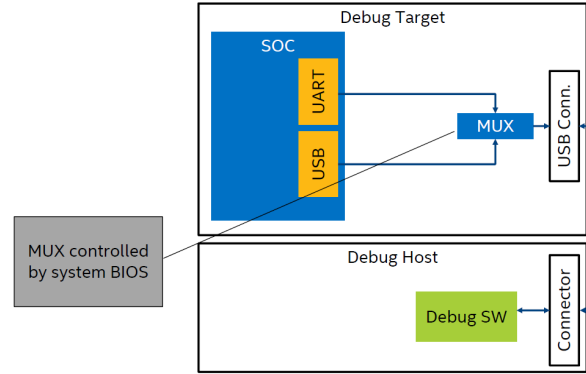
WLAN/BT



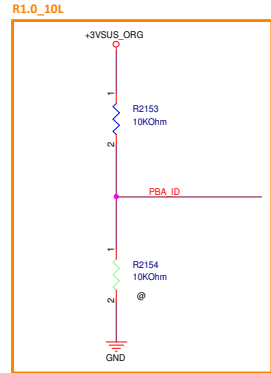


Microsoft\* Windows\* 7 System WHCK Requirement – OEM platforms are required to include a supported OS debug interface, accessible by an enduser. This allows developers to help in driver debug. The supported Windows 7 debug interfaces are EHCI, 1394 port and COM port.

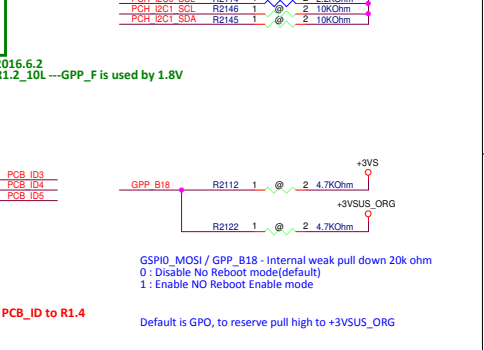
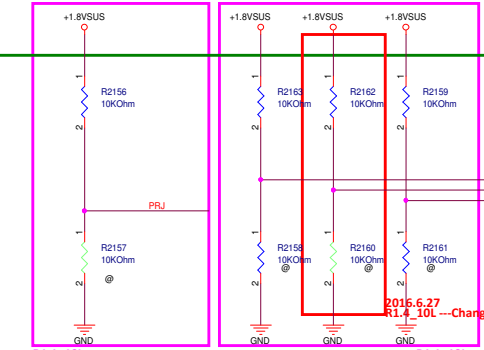
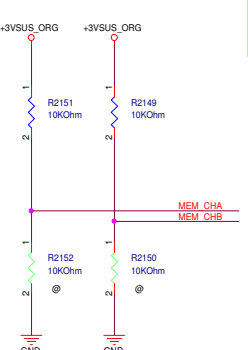
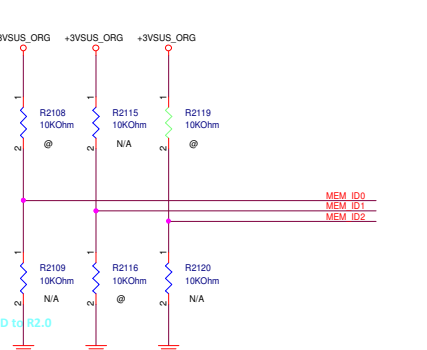
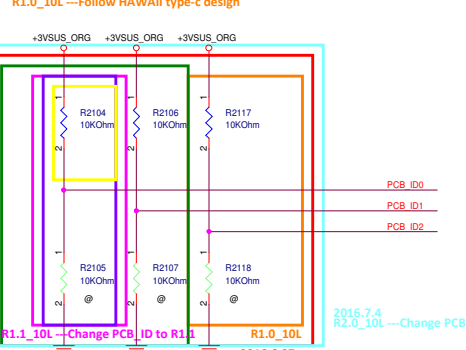
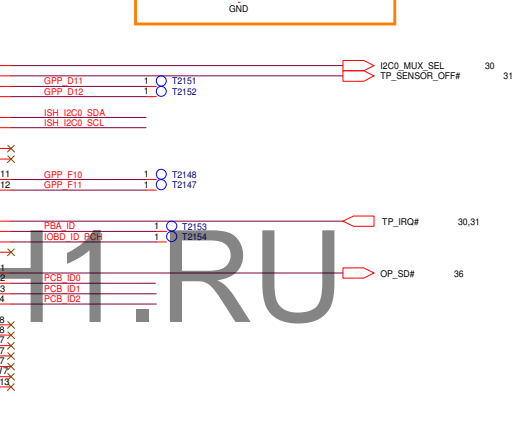
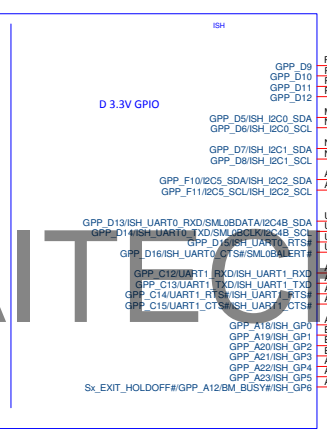
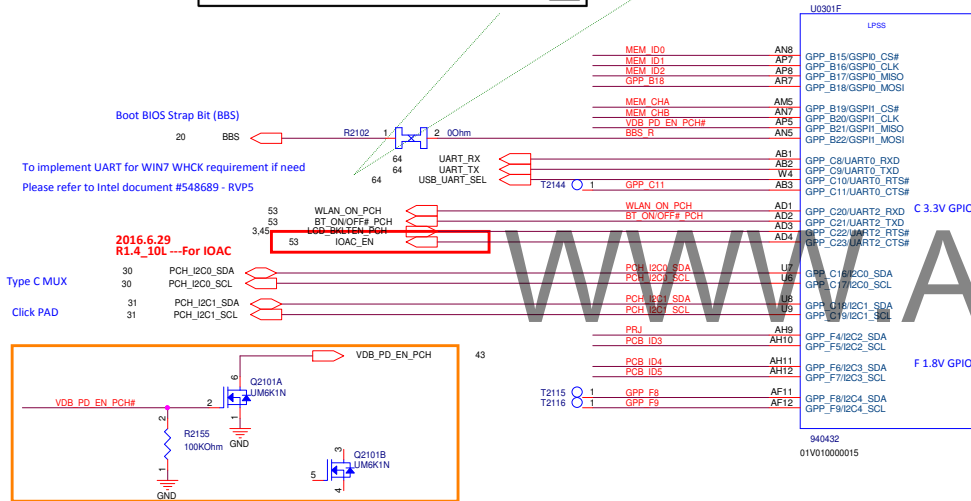
With skylake EHCI Removal, Potential Gap with Windows\* 7 Kernel Debug and OS Installation – Mitigation Required



+3VSO +3VS 3,4,22,23,24,30,31,32,36,37,44,45,47,50,51,53,57,62,64,91,92



|         |        |         |
|---------|--------|---------|
| GPP_D14 | 1      | 0       |
| PBA_ID  | Enable | Disable |



2016.6.2 R1.2\_10L ---Change PCB\_ID to R1.2  
2016.6.14 R1.3\_10L ---Change PCB\_ID to R1.3  
2016.6.27 R1.4\_10L ---Change PCB\_ID to R1.4  
2016.6.14 R2.2\_10L ---Change PCB\_ID to R2.2

| MB Version ID    |                   |                   |  |
|------------------|-------------------|-------------------|--|
| PCB_ID4 (GPP_F6) | PCB_ID1 (GPP_C14) | PCB_ID0 (GPP_C13) |  |
| R1.0             | 0                 | 0                 |  |
| R1.1             | 0                 | 1                 |  |
| R1.2             | 0                 | 1                 |  |
| R1.3             | 0                 | 1                 |  |
| R1.4             | 1                 | 0                 |  |
| R2.0             | 1                 | 0                 |  |
| R2.1             | 1                 | 1                 |  |
| R2.2             | 1                 | 1                 |  |

2016.7.4 R2.0\_10L ---Change PCB\_ID to R2.0

| Memory ID         |                   |                             |  |
|-------------------|-------------------|-----------------------------|--|
| PCB_ID2 (GPP_C15) | MEM_ID1 (GPP_B16) | MEM_ID0 (GPP_B17) (GPP_B15) |  |
| 8L                | 0                 | 0                           |  |
| 10L               | 1                 | 0                           |  |
|                   | 4Gb               | 1                           |  |
|                   | 8Gb               | 0                           |  |
|                   |                   | 1                           |  |
|                   |                   | 0                           |  |
|                   |                   | 1                           |  |
|                   |                   | 1                           |  |

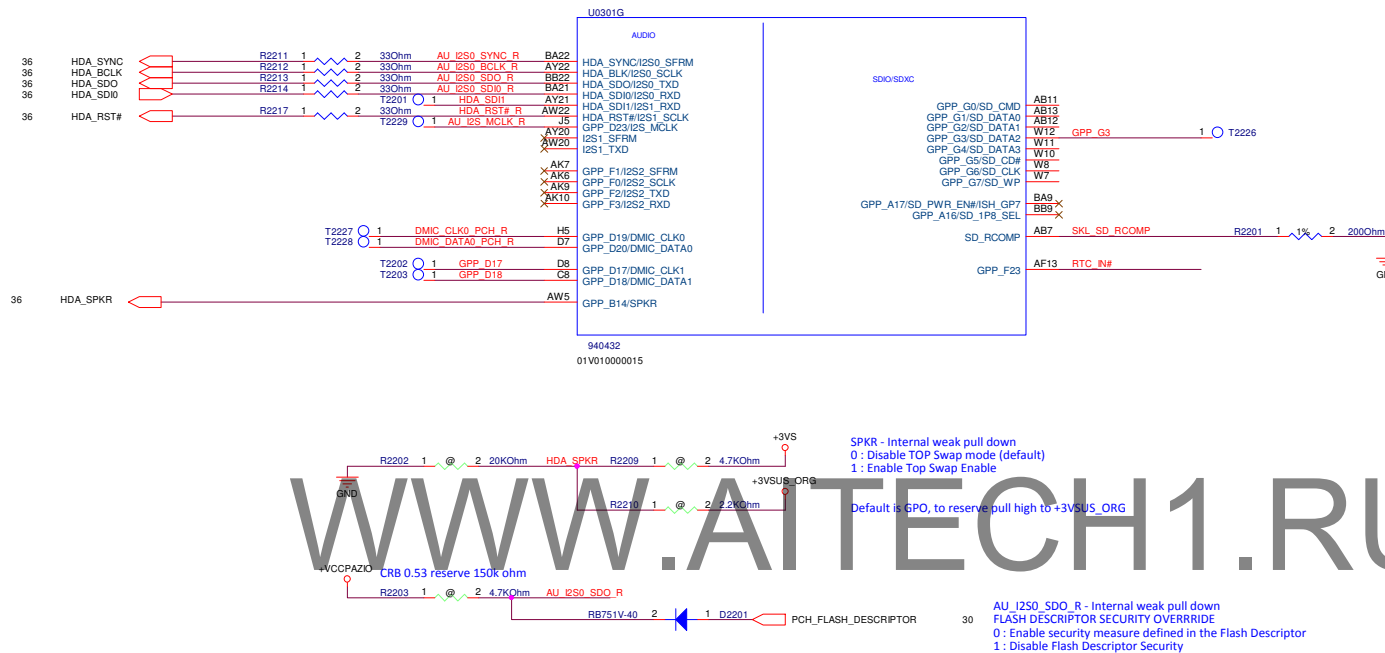
|             | CHA     | CHB     |
|-------------|---------|---------|
| GPP_B19 (0) | Disable |         |
| GPP_B19 (1) | Enable  |         |
| GPP_B20 (0) |         | Disable |
| GPP_B20 (1) |         | Enable  |

|            | PRJ |
|------------|-----|
| GPP_F4 (0) | M3  |
| GPP_F4 (1) | X3  |

|            | PCB_ID3 |
|------------|---------|
| GPP_F5 (0) | SKL     |
| GPP_F5 (1) | KBL     |

|            | PCB_ID5 |
|------------|---------|
| GPP_F7 (0) | 2133    |
| GPP_F7 (1) | 2400    |

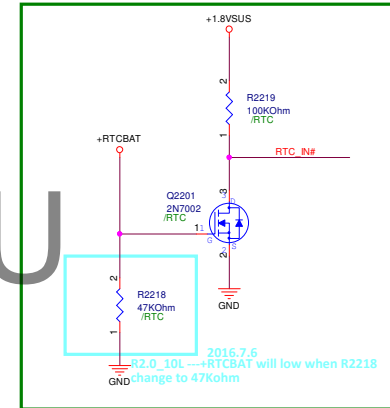




+VCCPAZIO +VCCPAZIO 26

+3VS +3VS 3,4,21,23,24,30,31,32,36,37,44,45,47,50,51,53,57,62,64,91,92

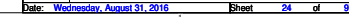
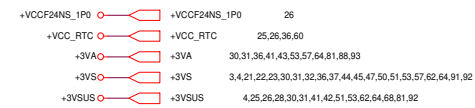
+3VSUS\_ORG +3VSUS\_ORG 20,21,23,25,26



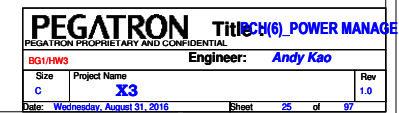














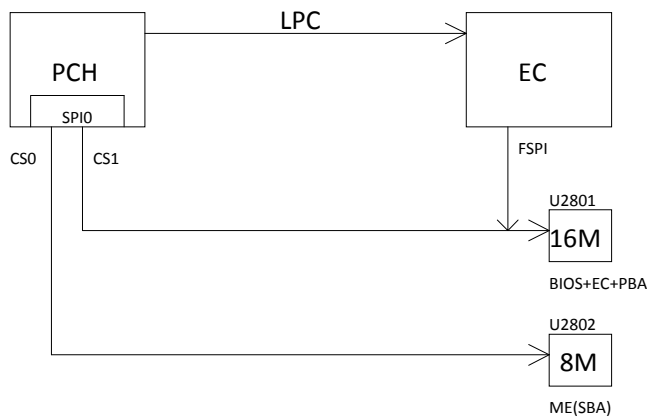
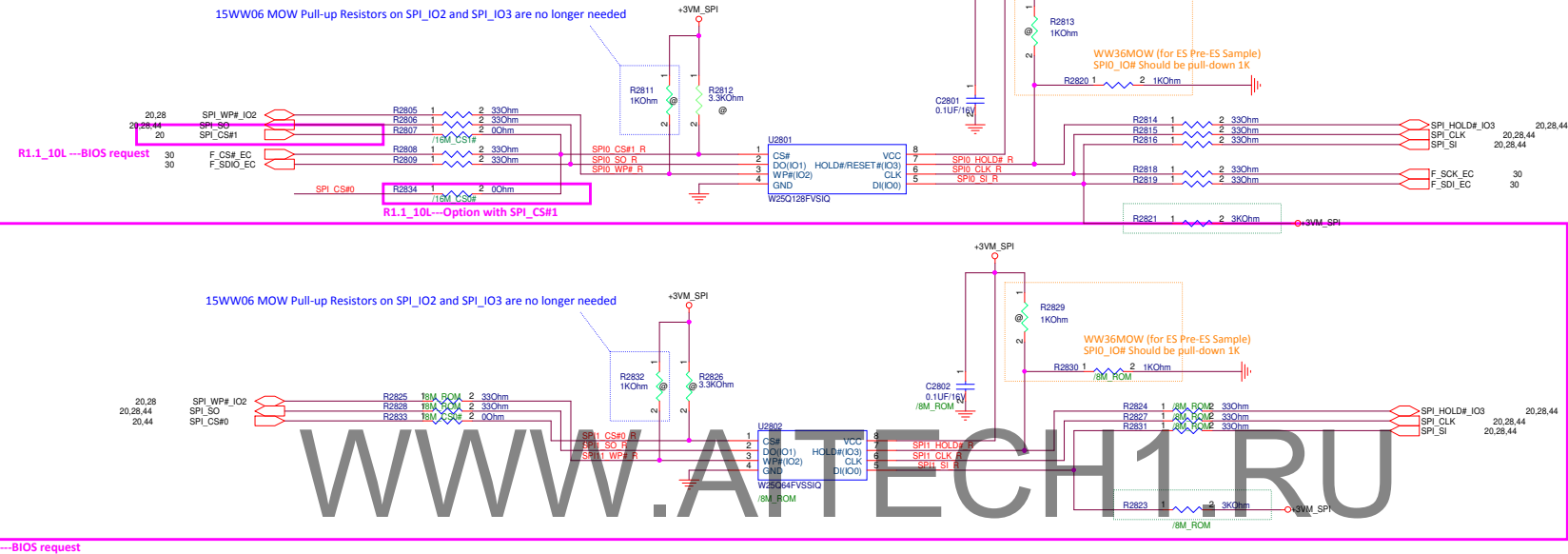




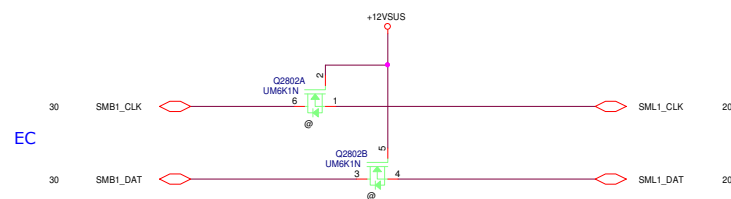
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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>27</i> of <i>97</i> |                   |





PCH SMBus

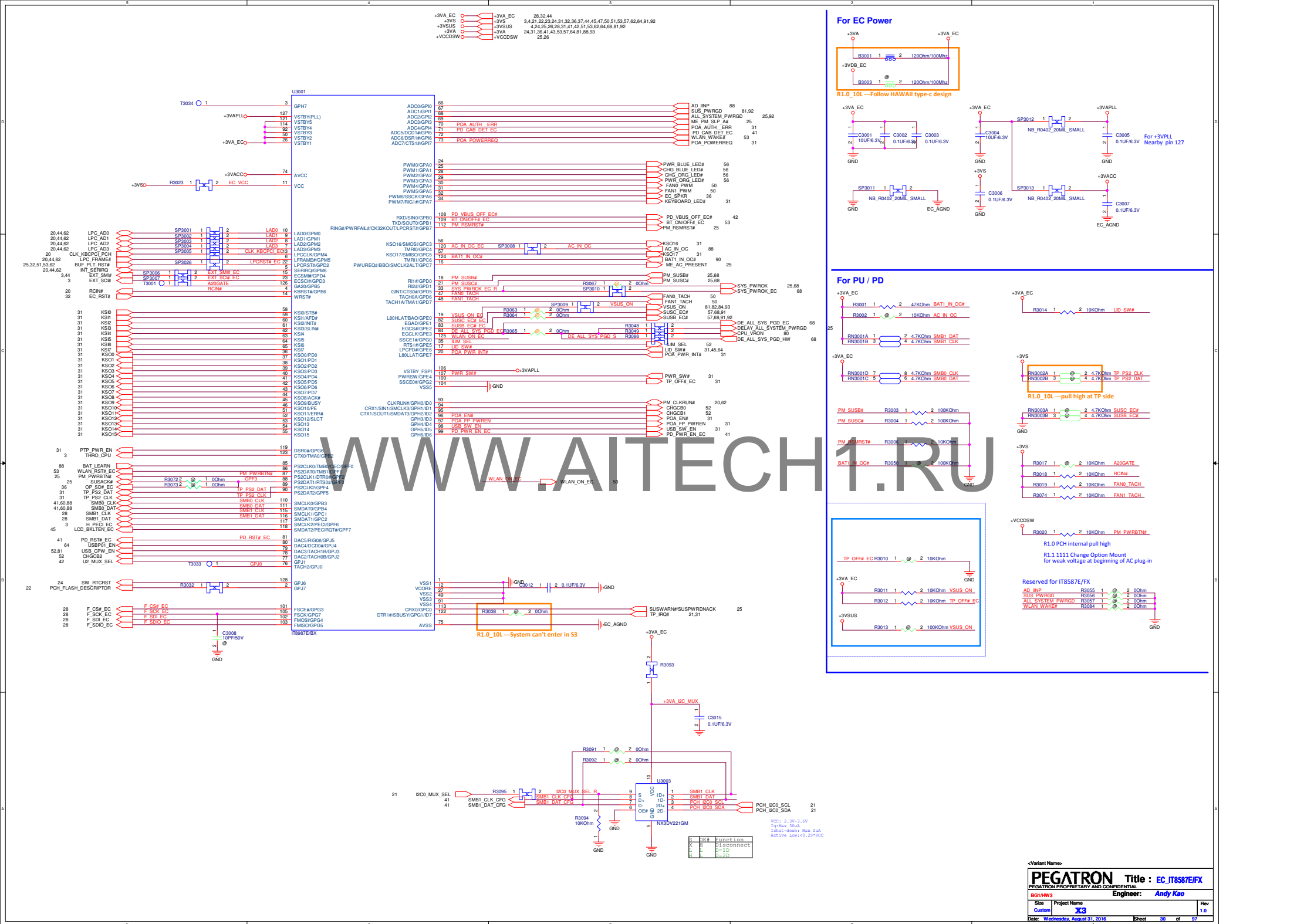




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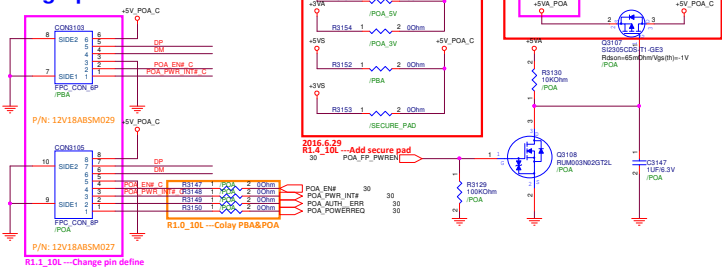
|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>29</i> of <i>97</i>     |                   |



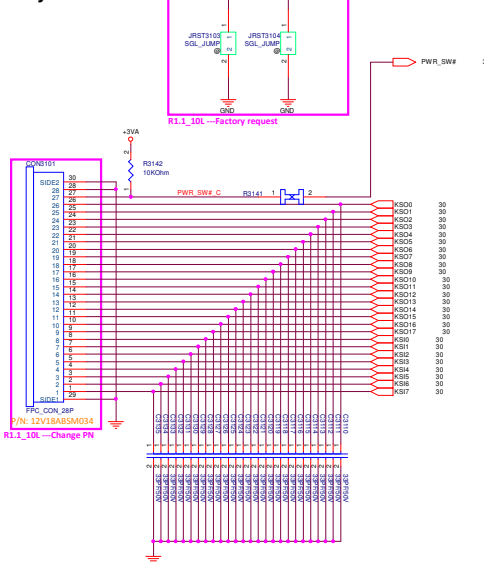




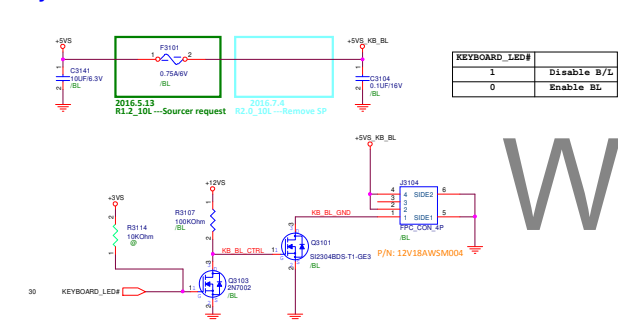
## Fingerprinter



## Keyboard

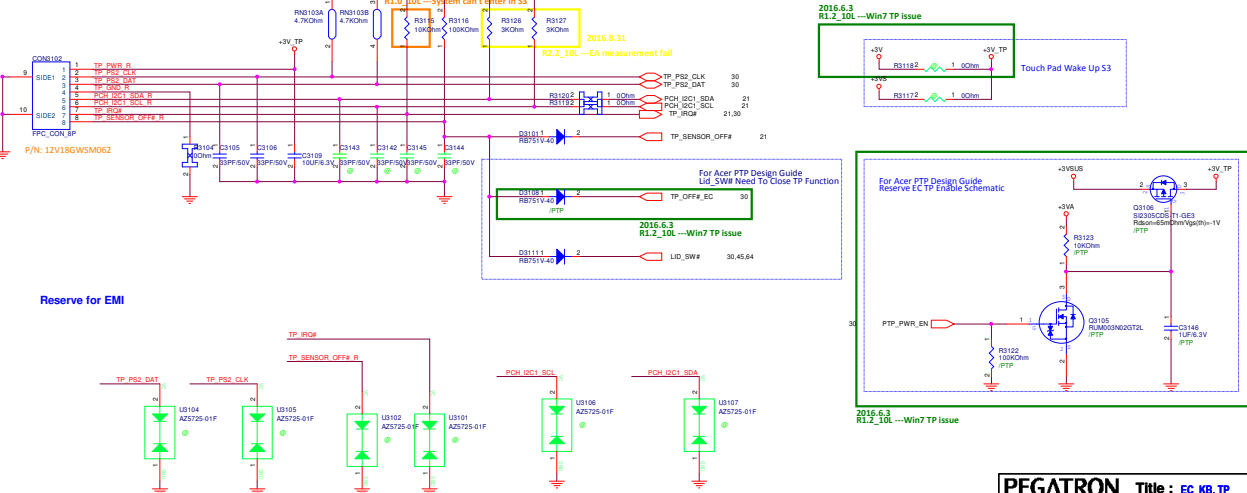


## Keyboard LED

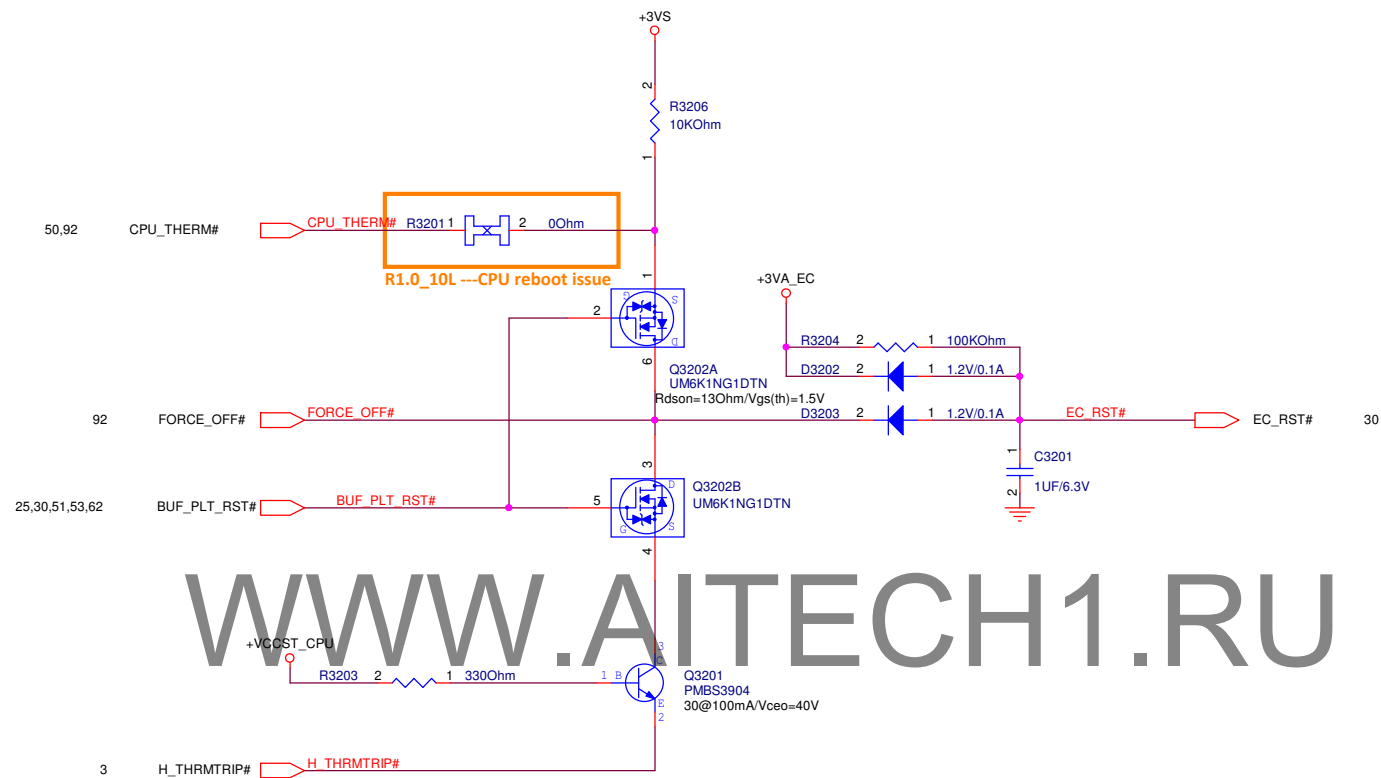


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## Click Pad







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|                                       |                           |                                  |            |
|---------------------------------------|---------------------------|----------------------------------|------------|
| <b>PEGATRON</b>                       |                           | <b>Title :</b> RST_Reset Circuit |            |
| PEGATRON PROPRIETARY AND CONFIDENTIAL |                           |                                  |            |
| BG1/HW3                               |                           | <b>Engineer:</b> Andy Kao        |            |
| Size<br>B                             | Project Name<br><b>X3</b> |                                  | Rev<br>1.0 |
| Date: Wednesday, August 31, 2016      |                           | Sheet                            | 32 of 97   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>33</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>34</i> of <i>97</i>     |                   |

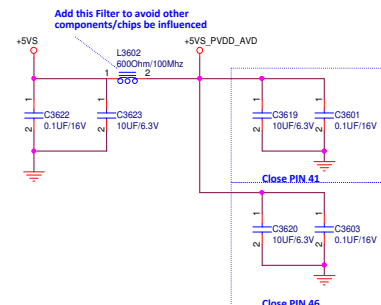
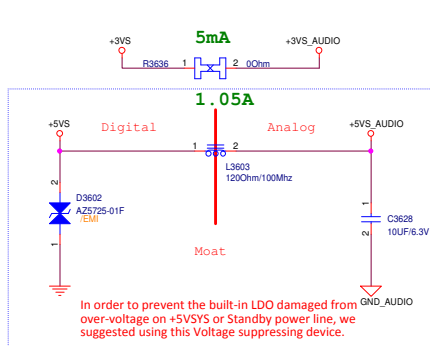
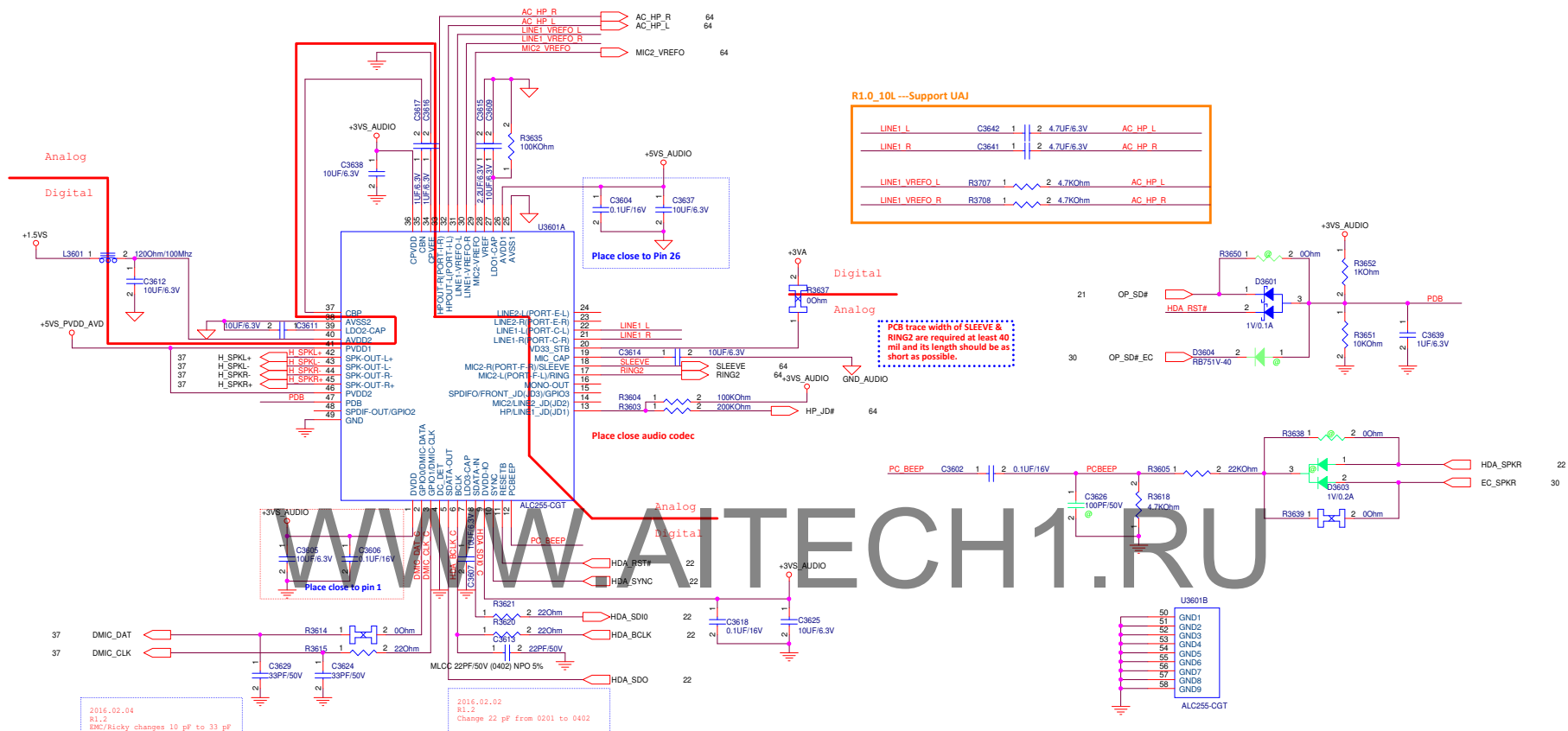


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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>35</i> of <i>97</i> |                   |

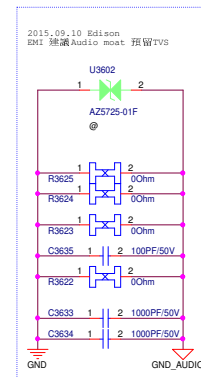
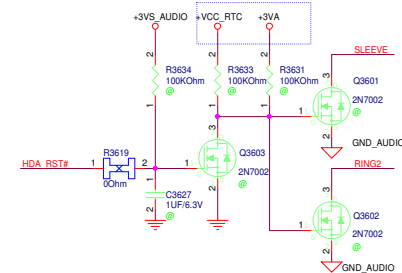


+1.5VS +1.5VS 47.57.85  
 +3VS +3VS 3.4,21,22,23,24,30,31,32,37,44,45,47,50,51,53,57,62,64,91,92  
 +5VS +5VS 31,45,48,50,51,57,80,91



<<Attention>>  
 For power\_on/off de-pop circuit and system booting warning signal: Please System BIOS Engineer Note :  
 1. If you want the system make warning signal after power on, please let EC\_MUTE# High.  
 2. If your design want to system make warning signal, for example No CPU or Memory installation or Bad BIOS, please change to OR Gate or contact our local FAEs for more details about the control circuit

#### Grounding circuit for combo jack SLEEVE pin

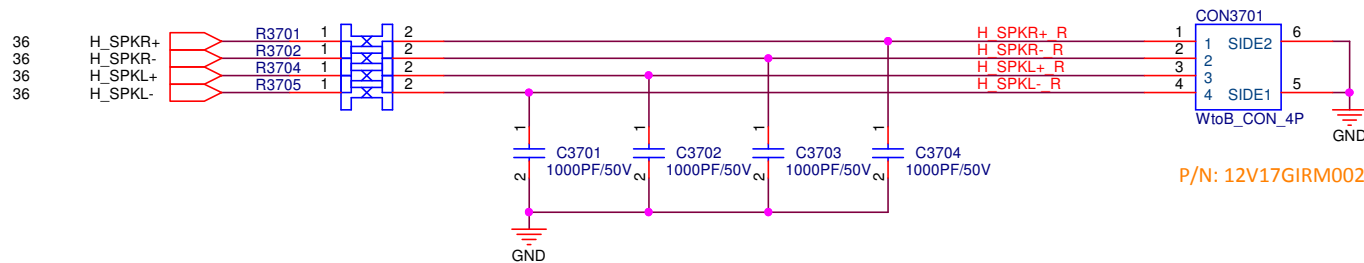


**PEGATRON** Title : AUD\_ALC255  
 Engineer: Andy Kao

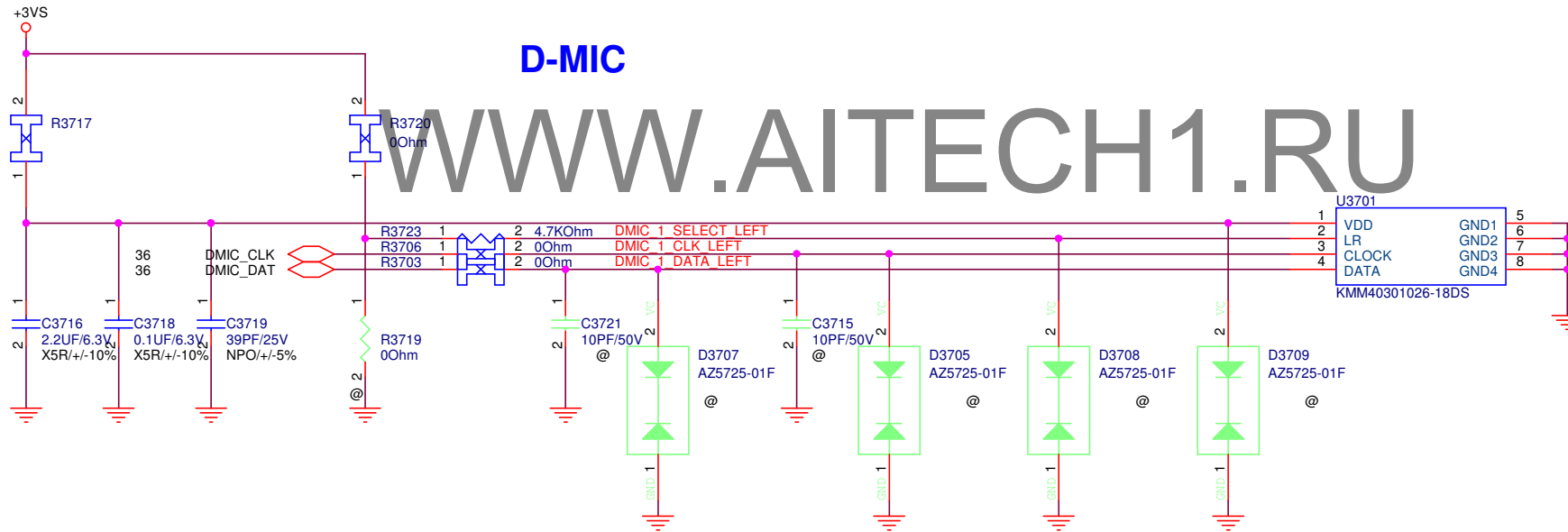
Size C Project Name **X3** Rev 1.0  
 Date: Wednesday, August 31, 2016 Sheet 36 of 97



## Speaker



## D-MIC





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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>38</i> of <i>97</i>     |                   |



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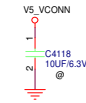
|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>39</i> of <i>97</i>     |                   |



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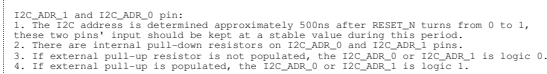
|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>40</i> of <i>97</i> |                   |





Requirement of Q3:

- 1)  $I_d \geq 500\text{mA}$  ( $V_{gs} = -4.5\text{V}$ ).
- 2)  $R_{on} < 120\text{ m}\Omega$  ( $V_{gs} = -4.5\text{V}$ ).



|  |                                       |  |                               |
|--|---------------------------------------|--|-------------------------------|
| <div> <div> <div>&lt;Variant Name&gt;</div> <div> <div>PEGATRON</div> <div> <div>Title</div> <div>POWER_FLOWCHART</div> </div> </div> <div>PEGATRON PROPRIETARY AND CONFIDENTIAL</div> </div> </div> |                                       |  |                               |
| <div> <div>Engineer:</div> <div>Andy Kao</div> </div>  |                                       |  |                               |
| <div>Size</div> <div>C</div>   | <div>Project Name</div> <div>X3</div> |  | <div>Rev</div> <div>1.0</div> |
| <div> <div>Date:</div> <div>Wednesday, August 31, 2016</div> <div>Sheet</div> <div>41</div> <div>of</div> <div>97</div> </div>   |                                       |  |                               |



VBUS\_USB\_TYPE\_C  
+VBUS\_PD\_IN  
+VBUS\_PD  
+5V\_PD  
+5V\_PD

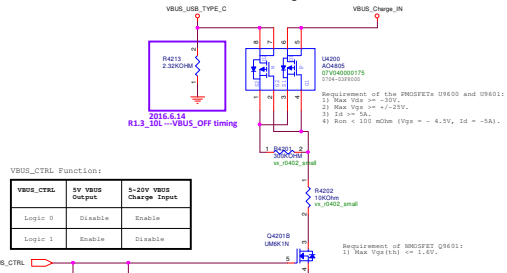
VBUS\_USB\_TYPE\_C  
+VBUS\_PD\_IN  
+VBUS\_PD  
+5V\_PD  
+5V\_PD

41 43  
43 43  
43 43  
43 43  
43 43

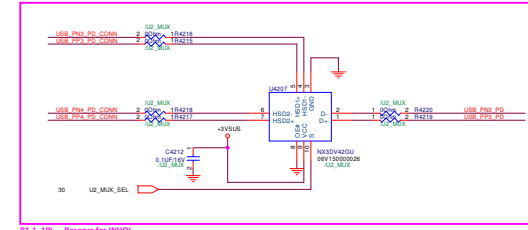
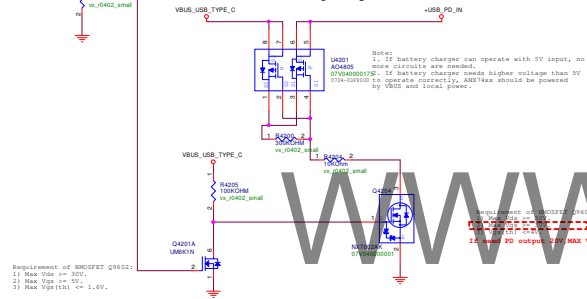
## VBUS Control

Optional:  
If PMIC can detect VBUS presence and disable/enable VBUS,  
the VBUS control circuit can be removed.

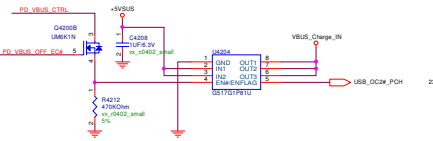
### 5V VBUS Output Control



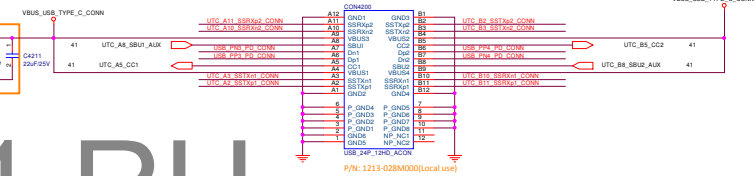
### 5-20V VBUS Charge Input Control



R1.1\_10L - Reserve for WHQL

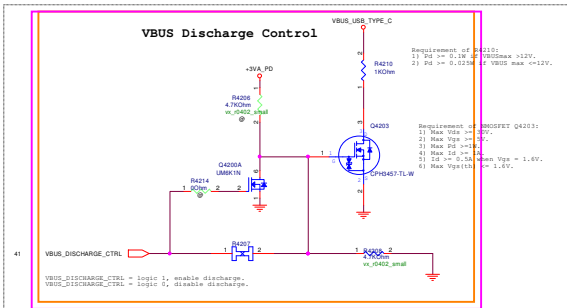


R1.1\_10L - Follow ACER design guide



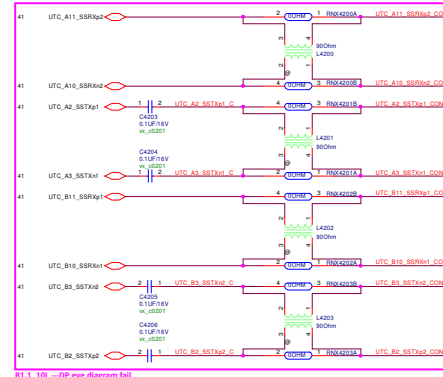
## USB Type C Connector

| A1  | A2   | A3   | A4   | A5  | A6 | A7 | A8   | A9   | A10  | A11  | A12 |
|-----|------|------|------|-----|----|----|------|------|------|------|-----|
| GND | TX1+ | TX1- | Vbus | CC1 | D+ | D- | SBU1 | Vbus | RX2+ | RX2- | GND |
| B12 | B11  | B10  | B9   | B8  | B7 | B6 | B5   | B4   | B3   | B2   | B1  |

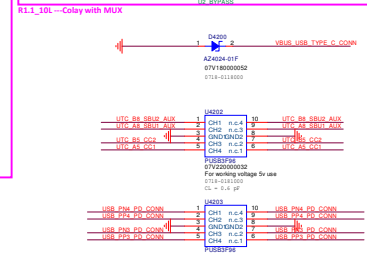
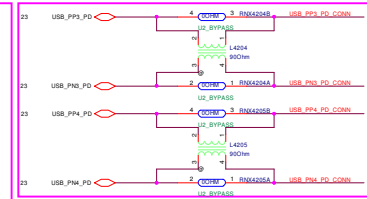


R1.1\_10L - Unmount discharge circuit

R1.1\_10L - PD test fail



R1.1\_10L - GP eye diagram fail



U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF

U4200  
AD4858 07Y040000175 07A-020000  
For working voltage 5v use  
CL = 0.1 uF



## Hardware Solution For Dead Battery

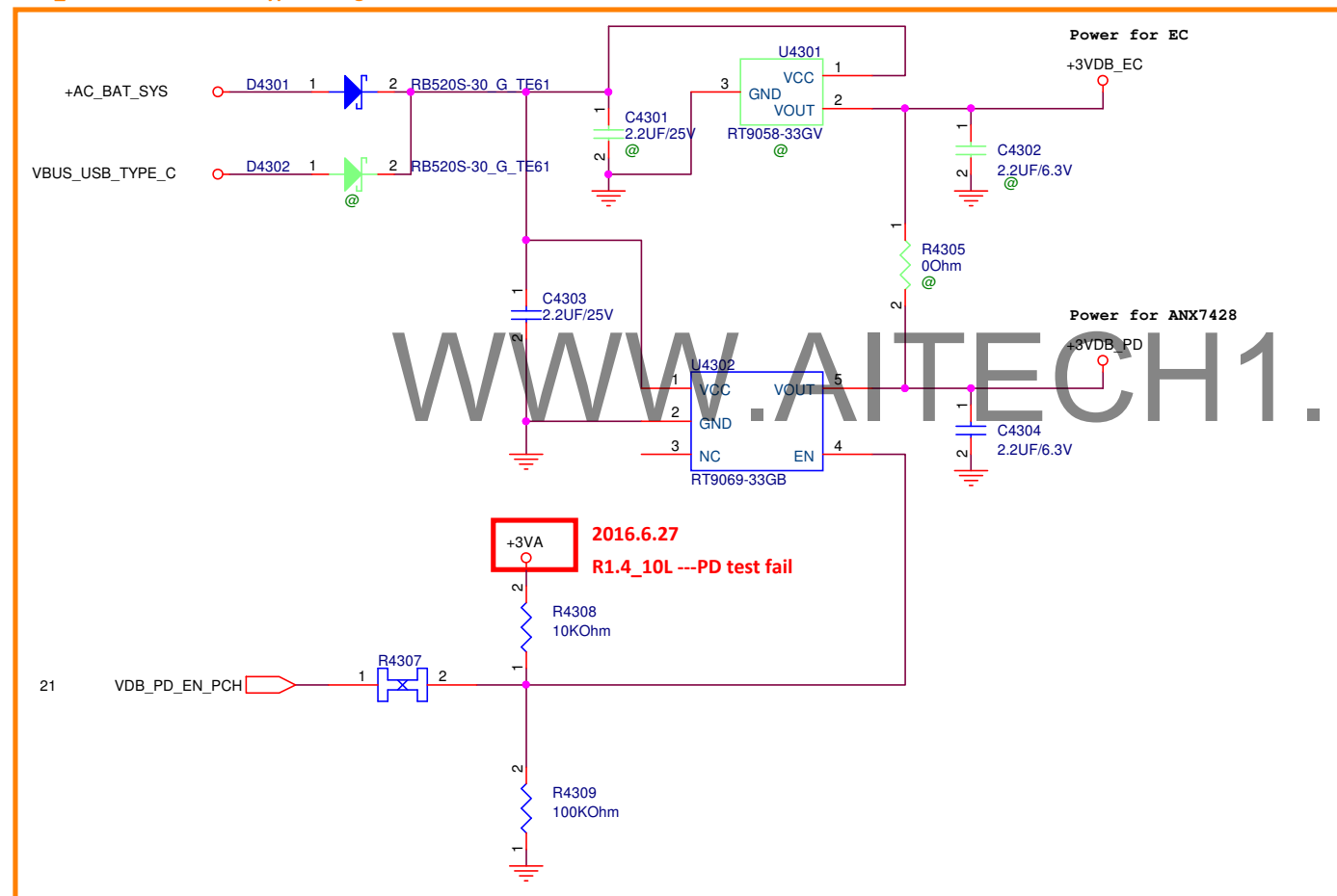
For notebook applications, if the battery charger needs higher voltage than 5V to operate correctly, execute the steps below in the order they are listed:

|                 |  |                 |                   |
|-----------------|--|-----------------|-------------------|
| VBUS_USB_TYPE_C |  | VBUS_USB_TYPE_C | 41,42             |
| +AC_BAT_SYS     |  | +AC_BAT_SYS     | 45,80,81,82,83,88 |
| +3VDB_EC        |  | +3VDB_EC        | 30                |
| +3VDB_PD        |  | +3VDB_PD        | 41                |

Requirement of U1:

- 1) Vin range: 4V-30V.
- 2) Vout: EC's operating voltage + Vf of D1
- 3) Output current >= EC's operating current.

### R1.0\_10L ---Follow HAWAll type-c design



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**+3VA**  
**2016.6.27**  
**R1.4\_10L ---PD test fail**

<Variant Name>

**PEGATRON** Title : **Dead Battery**  
PEGATRON PROPRIETARY AND CONFIDENTIAL

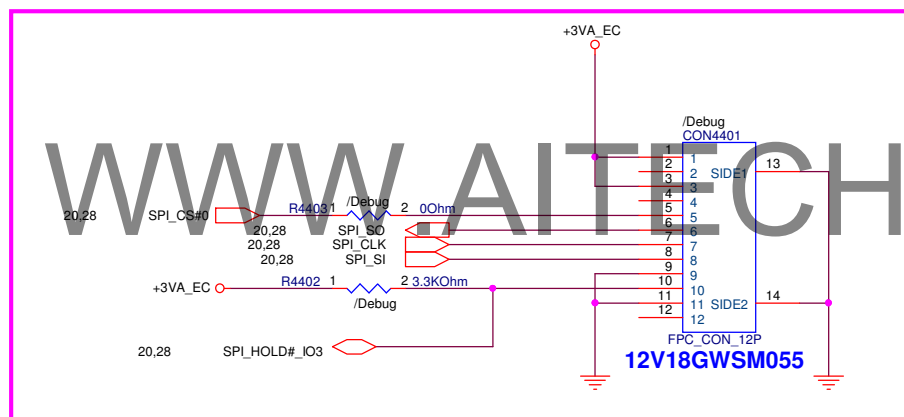
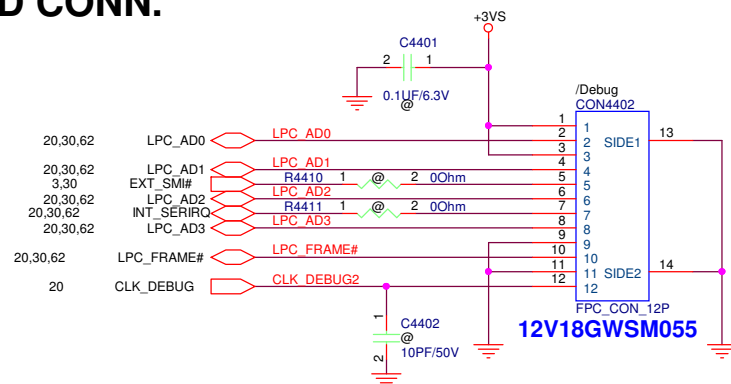
Engineer: **Andy Kao**

|                |                           |            |
|----------------|---------------------------|------------|
| Size<br>Custom | Project Name<br><b>X3</b> | Rev<br>1.0 |
|----------------|---------------------------|------------|

Date: **Wednesday, August 31, 2016** Sheet **43** of **97**



# DEBUG CARD CONN.



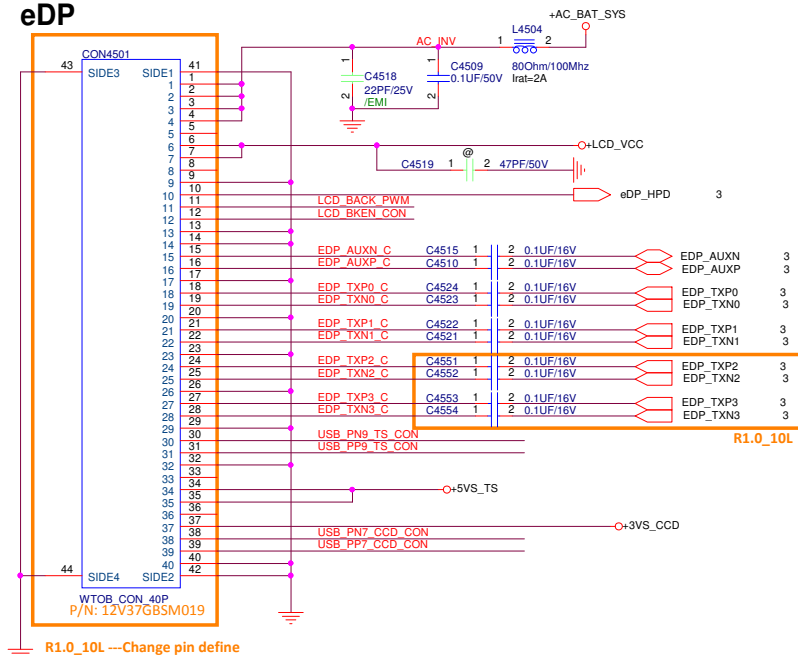
R1.1\_10L ---BIOS request

<Variant Name>

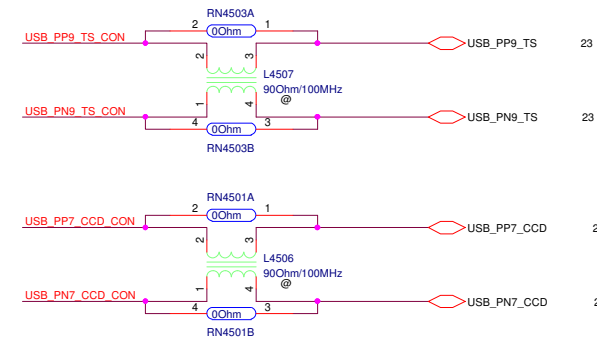
|   |                           |                                   |                   |
|---|---------------------------|-----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <b>DEBUG CONN.</b> |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                   |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <b>Andy Kao</b>  |                   |
| Size<br><b>B</b>                        | Project Name<br><b>X3</b> |                                   | Rev<br><b>1.0</b> |
| Date: <b>Wednesday, August 31, 2016</b> |                           | Sheet <b>44</b>                   | of <b>97</b>      |



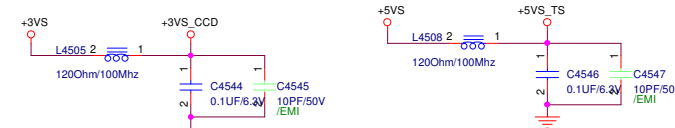
# eDP



|             |             |  |
|-------------|-------------|--|
| +3VS        | +3VS        | 3,4,21,22,23,24,30,31,32,36,37,44,47,50,51,53,57,62,64,91,92 |
| +5VS        | +5VS        | 31,36,48,50,51,57,80,91                                      |
| +AC_BAT_SYS | +AC_BAT_SYS | 43,80,81,82,83,88  |

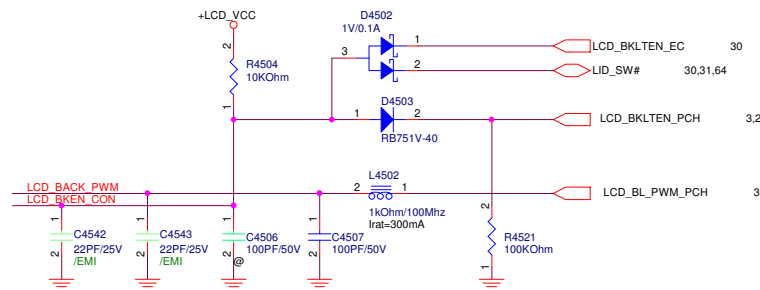
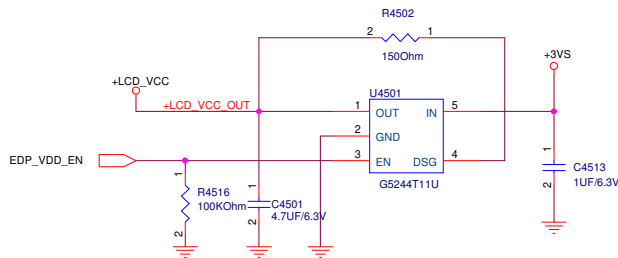


## Camera



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## LCD VDDEN / +LED\_VCC



<Variant Name>

|                                  |                |                         |                 |
|----------------------------------|----------------|-------------------------|-----------------|
| <b>PEGATRON</b>                  |                | Title : <b>eDP CONN</b> |                 |
| Size                             | Project Name   | Engineer:               | <b>Andy Kao</b> |
| Custom                           | <b>X3</b>      |                         |                 |
| Date: Wednesday, August 31, 2016 | Sheet 45 of 97 | Rev                     | 1.0             |



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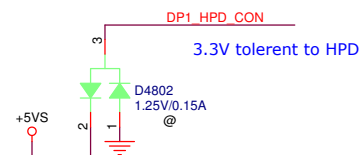
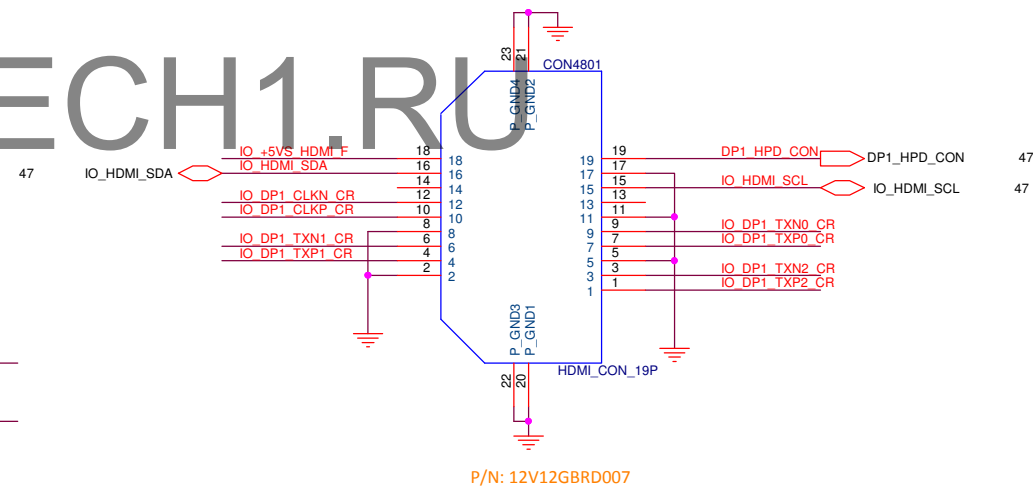
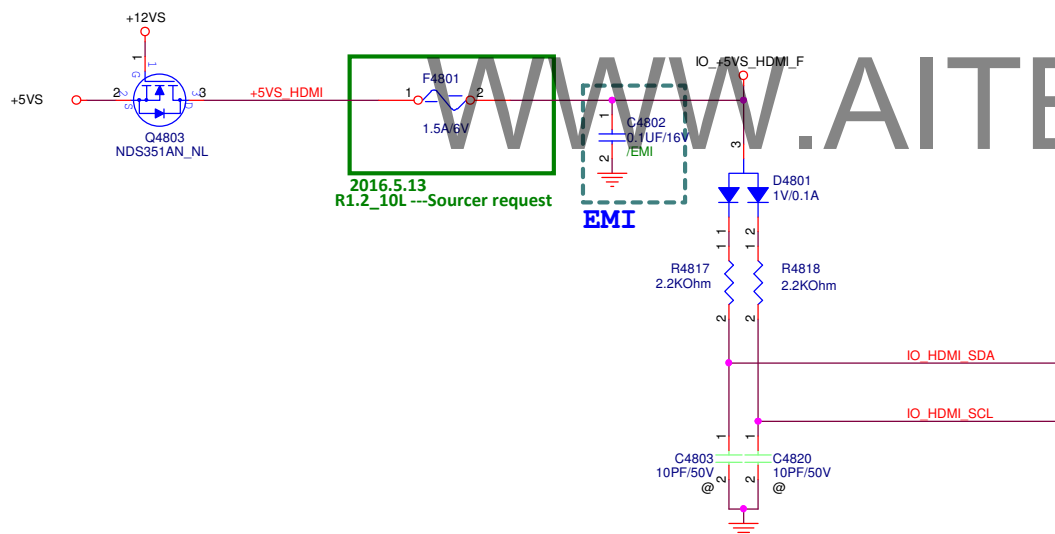
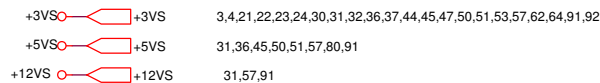
|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>46</i> of <i>97</i> |                   |







## HDMI



|  |                                   |                                     |  |
|--|-----------------------------------|-------------------------------------|--|
| <h1>PEGATRON</h1> <p>PEGATRON PROPRIETARY AND CONFIDENTIAL</p> |                                   | <p>Title : <b>HDMI-4K2K</b></p>     |  |
| <p>BG1/HW3</p>   |                                   | <p>Engineer: <b>Andy Kao</b></p>    |  |
| <p>Size<br/>B</p>  | <p>Project Name<br/><b>X3</b></p> | <p>Rev<br/><b>1.0</b></p>           |  |
| <p>Date: <b>Wednesday, August 31, 2016</b></p>                 |                                   | <p>Sheet <b>48</b> of <b>97</b></p> |  |



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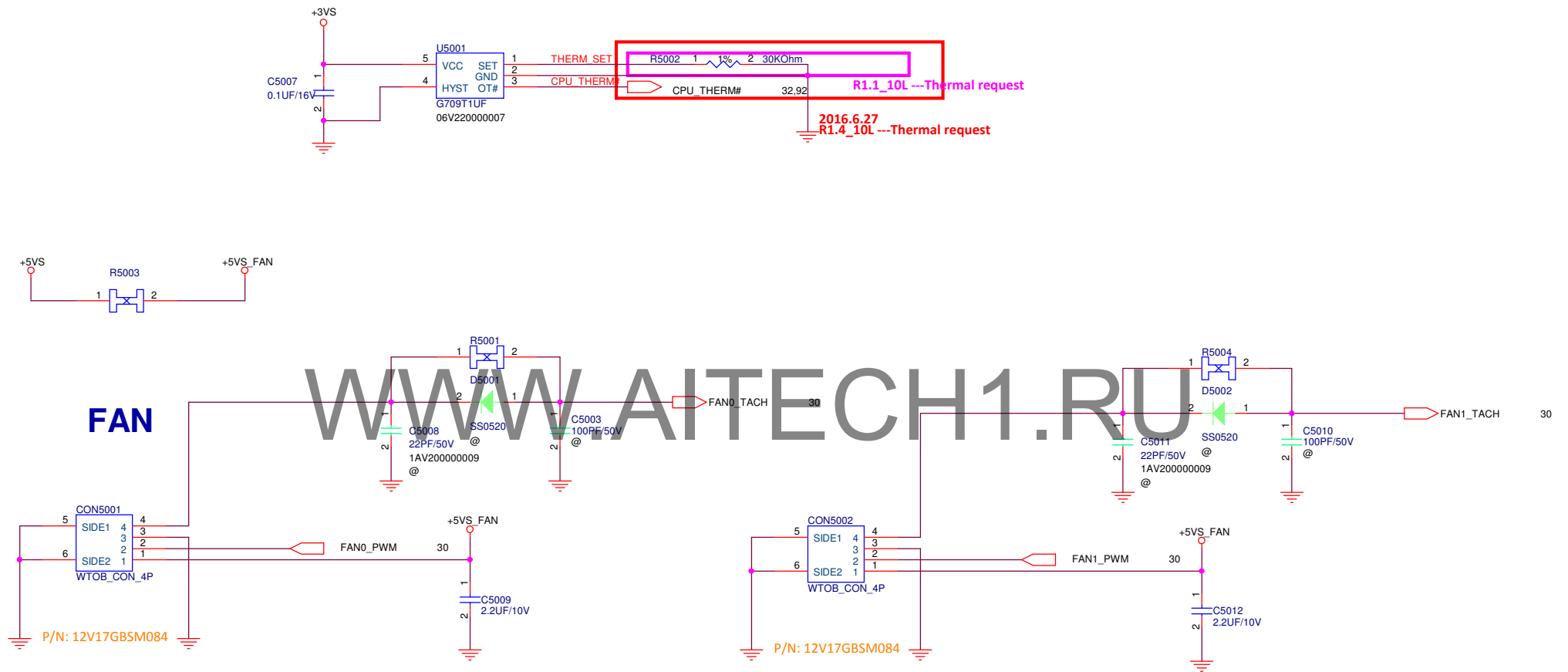
|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>49</i> of <i>97</i>     |                   |



## Thermal Sensor

```
temp setting : 80 degree
```

$$R_{SET}(k\Omega) = 0.0012T^2 - 0.9308T + 96.147$$



**<Variant Name>**

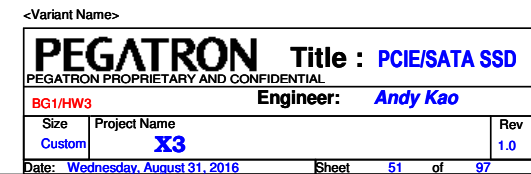
**PEGATRON** Title : Thermal/Fan

BG1/HW3      Engineer: *Andy Kao*

|                  |                           |                   |
|------------------|---------------------------|-------------------|
| Size<br><b>B</b> | Project Name<br><b>X3</b> | Rev<br><b>1.0</b> |
|------------------|---------------------------|-------------------|

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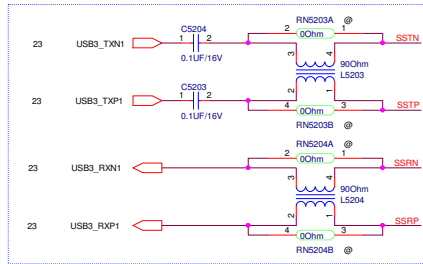




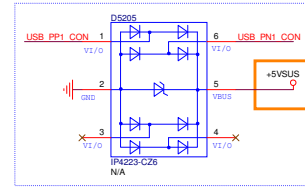


## USB 3.0

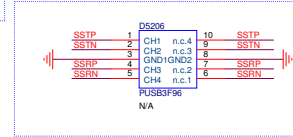
### USB3.0 Choke



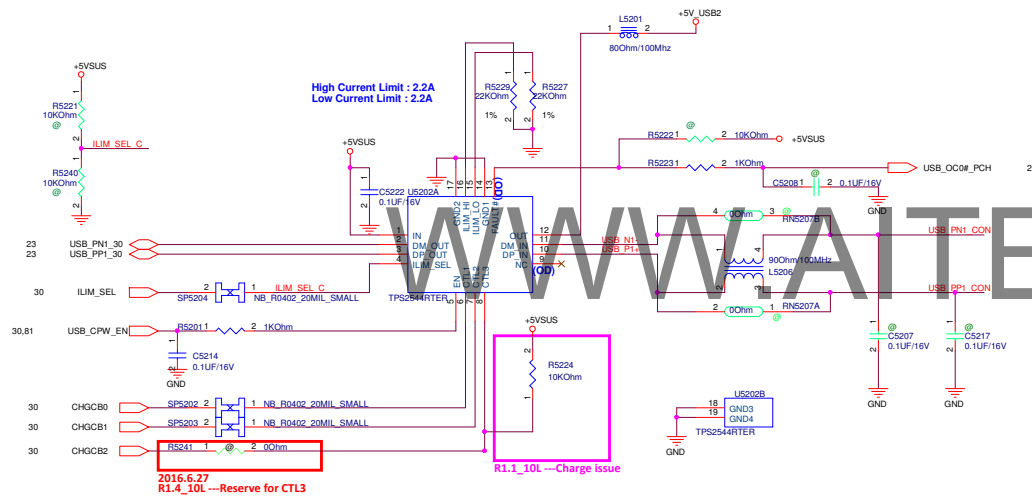
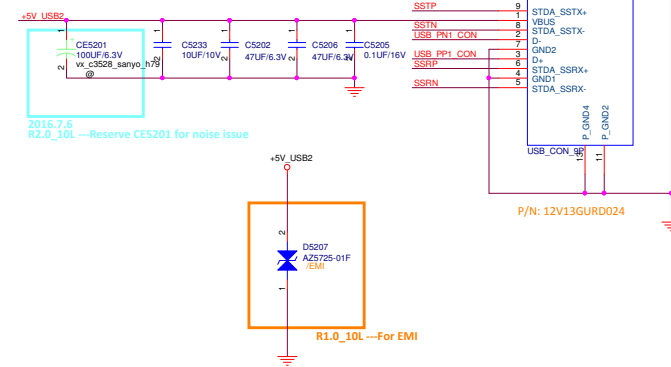
### USB2.0 ESD



### USB3.0 ESD

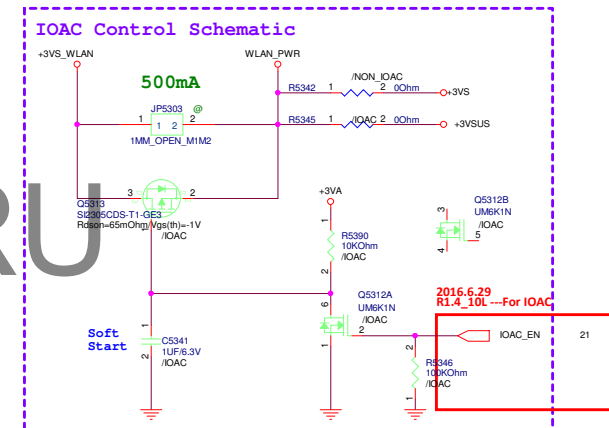
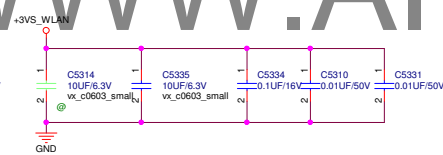
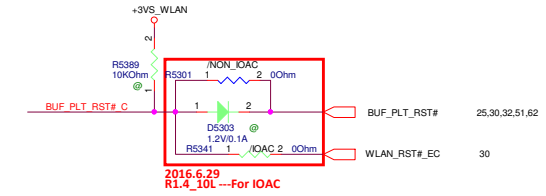


## USB 3.0 - Type A





+3VS  +3VS      3,4,21,22,23,24,30,31,32,36,37,44,45,47,50,51,57,62,64,91,92





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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title : USB HUB</b>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <OrgName>                               |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><b>X3</b> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>54</i> of <i>97</i>     |                   |



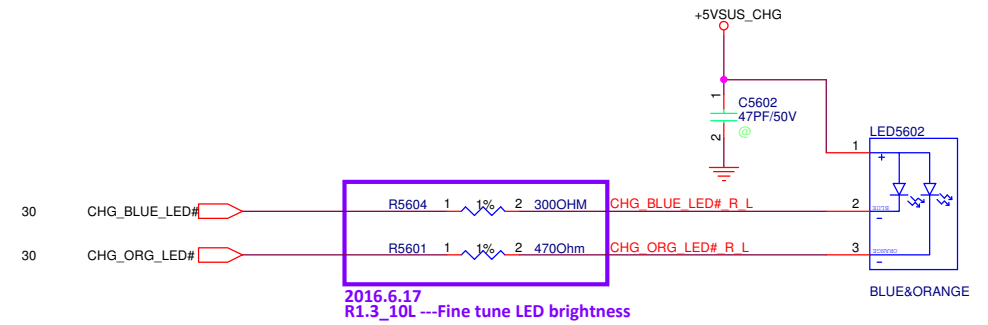
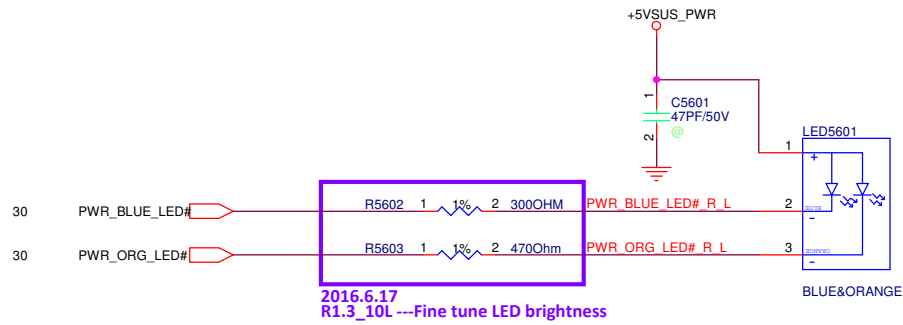
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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>55</i> of <i>97</i> |                   |



## POWER LED

## Charger LED



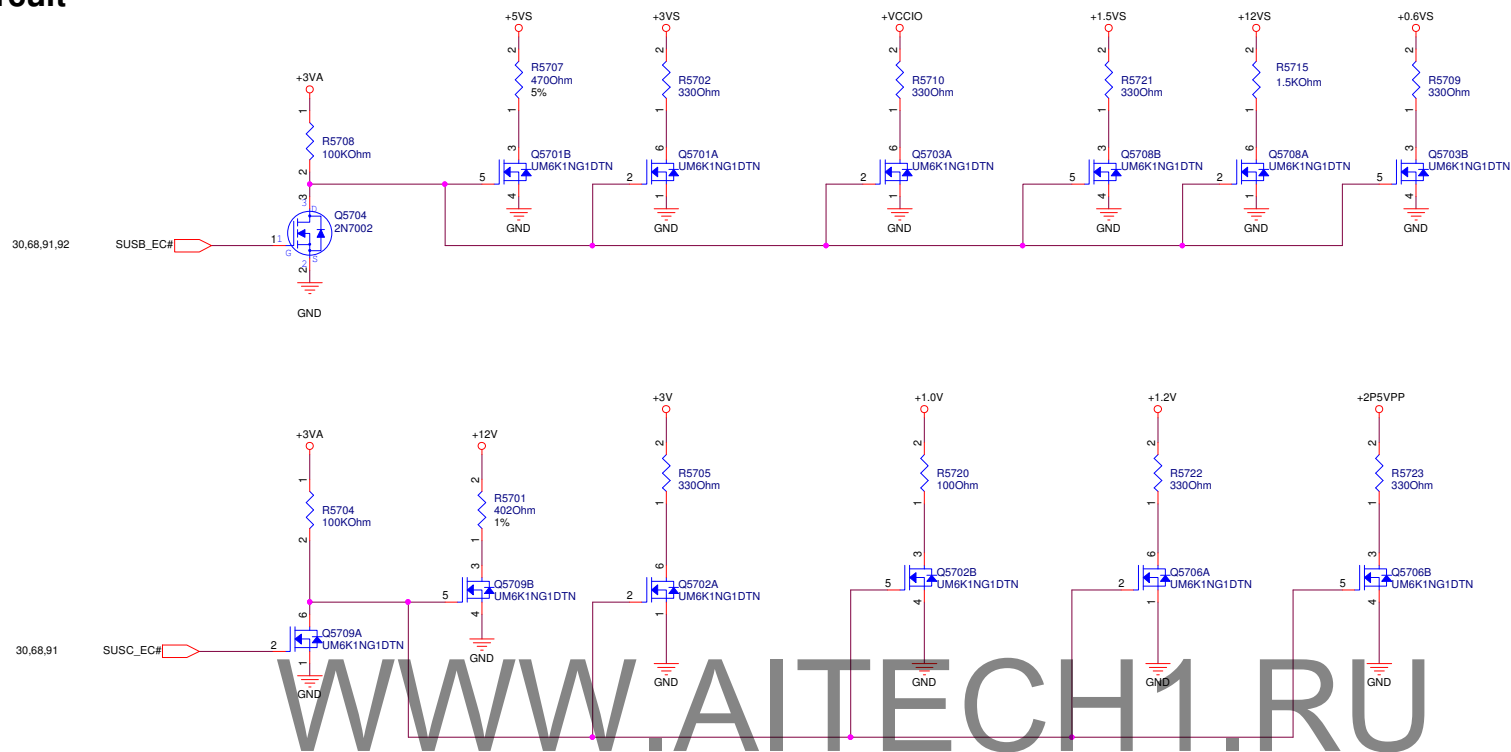
WWW.AITECH1.RU

<Variant Name>

|   |                           |                              |                        |
|---|---------------------------|------------------------------|------------------------|
| <b>PEGATRON</b>                         |                           | <b>Title : LED_Indicator</b> |                        |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                        |
| <b>BG1/HW3</b>                          |                           | <b>Engineer: Andy Kao</b>    |                        |
| Size<br><b>B</b>                        | Project Name<br><b>X3</b> |                              | Rev<br><b>1.0</b>      |
| Date: <b>Wednesday, August 31, 2016</b> |                           | Sheet                        | <b>56</b> of <b>97</b> |



Discharge Circuit





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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>58</i> of <i>97</i> |                   |

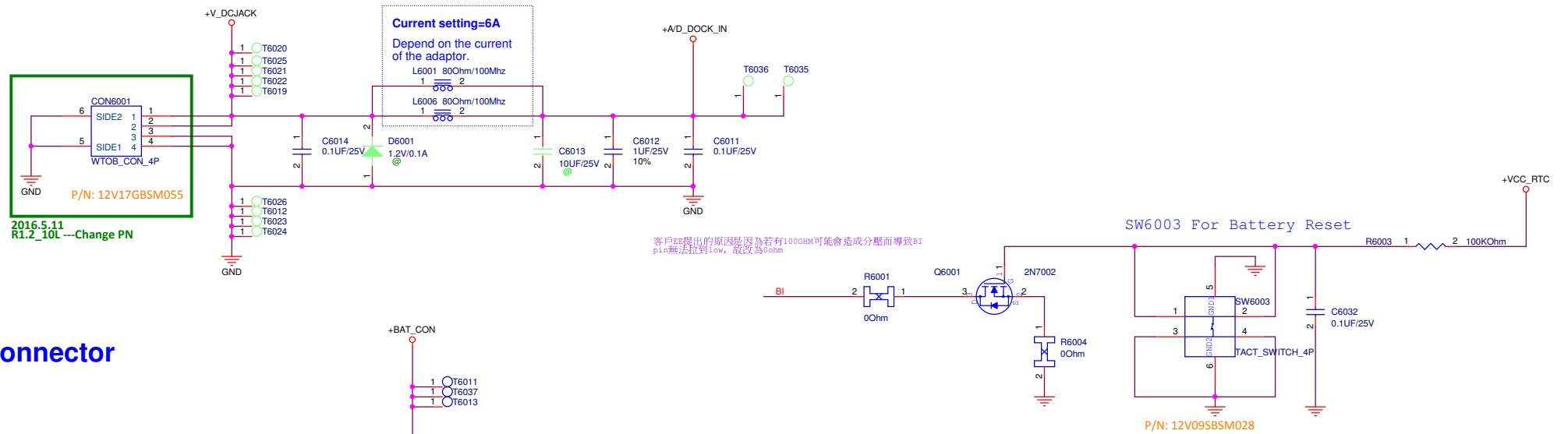


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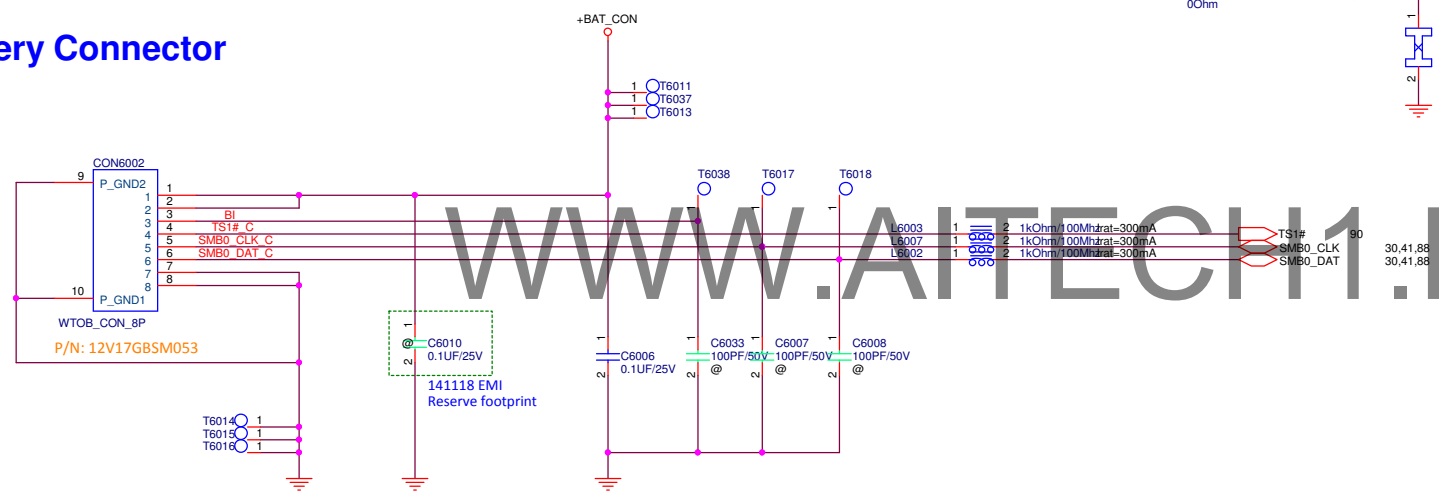
|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>59</i> of <i>97</i>     |                   |



DC Jack WtoB CONN



Battery Connector





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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>61</i> of <i>97</i>     |                   |



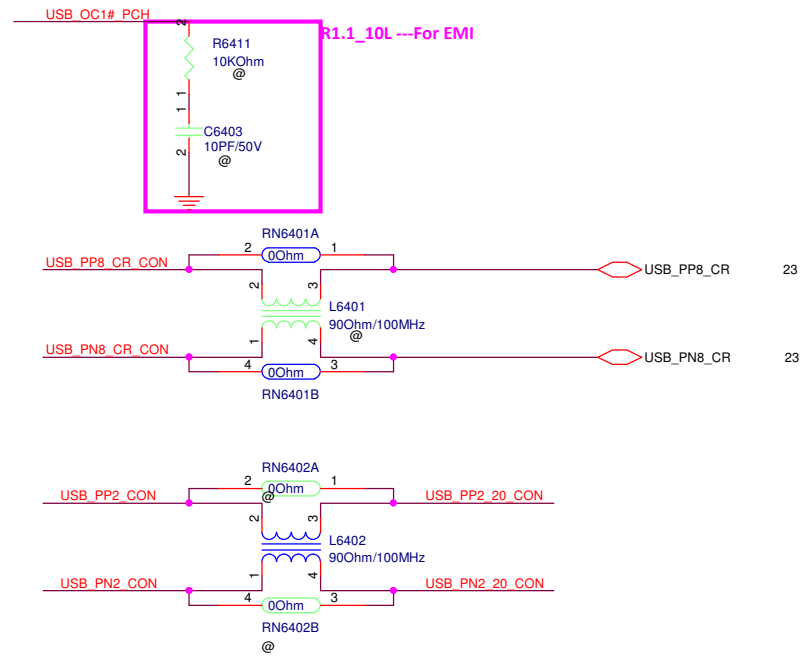
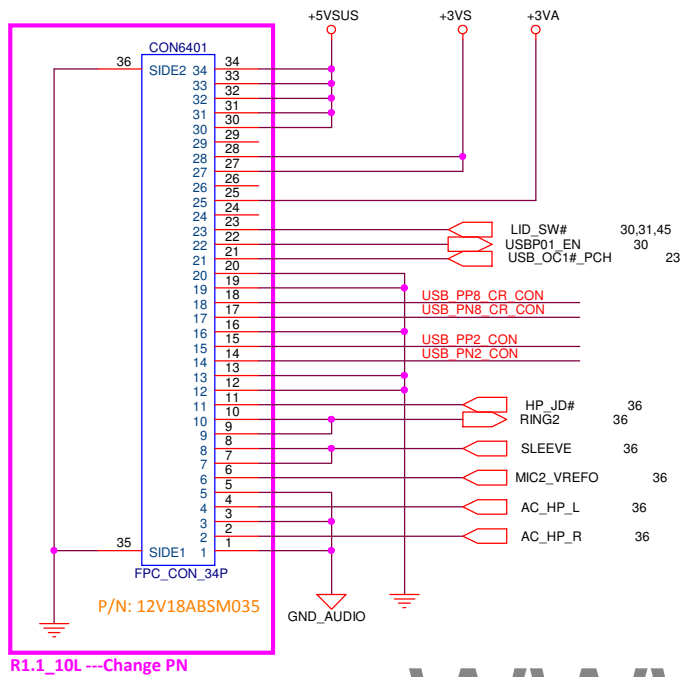




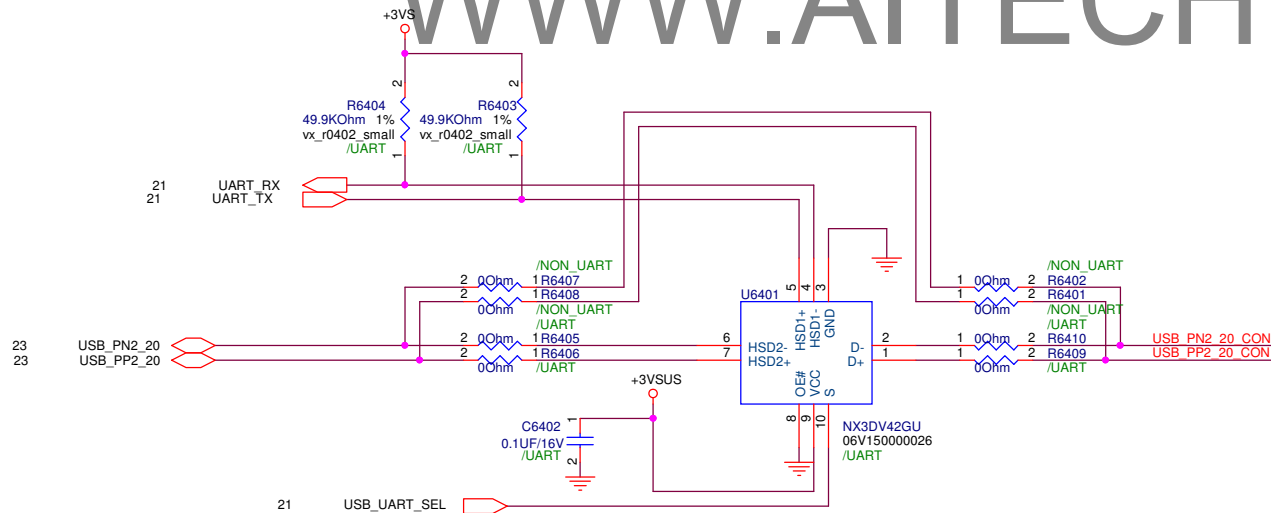
WWW.AITECH1.RU

|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>63</i> of <i>97</i> |                   |





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<Variant Name>

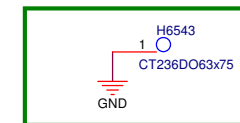
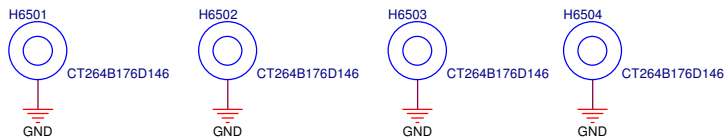
|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title : IO CON.</b>       |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer: Andy Kao</b>    |                   |
| Size<br><b>B</b>                        | Project Name<br><b>X3</b> |                              | Rev<br><b>1.0</b> |
| Date: <b>Wednesday, August 31, 2016</b> |                           | Sheet <b>64</b> of <b>97</b> |                   |



# CPU NUT

6\*2.5mm\*1

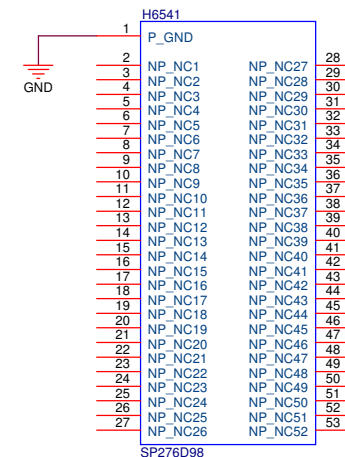
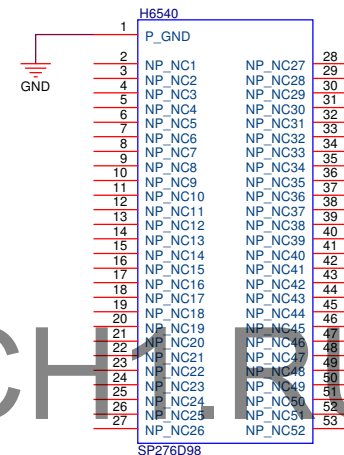
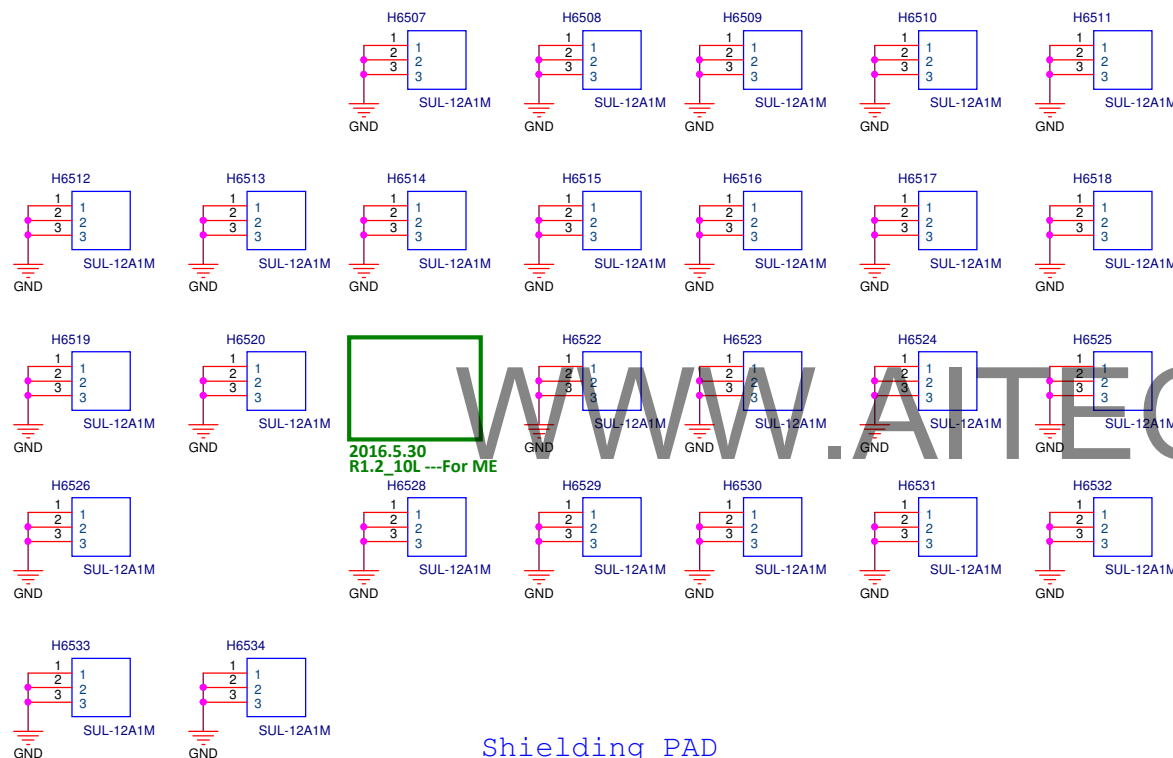
6\*3.1mm\*1



2016.6.6 R1.2\_10L ---For ME

# CLIP

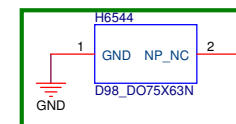
Thermal screw\*2



2016.5.30  
R1.2\_10L ---For ME

WWW.AITECH

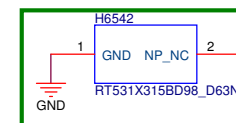
14\*8mm\*1



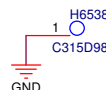
2016.6.6 R1.2\_10L ---For ME

Shielding PAD

13.5\*8mm\*1



2016.6.6 R1.2\_10L ---For ME



|                                       |                    |                        |            |
|---------------------------------------|--------------------|------------------------|------------|
| <b>PEGATRON</b>                       |                    | Title : NUT,Screw Hole |            |
| PEGATRON PROPRIETARY AND CONFIDENTIAL |                    |                        |            |
| BG1/HW3                               |                    | Engineer: Andy Kao     |            |
| Size<br>B                             | Project Name<br>X3 |                        | Rev<br>1.0 |
| Date: Wednesday, August 31, 2016      |                    | Sheet 65 of 97         |            |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>66</i> of <i>97</i>     |                   |



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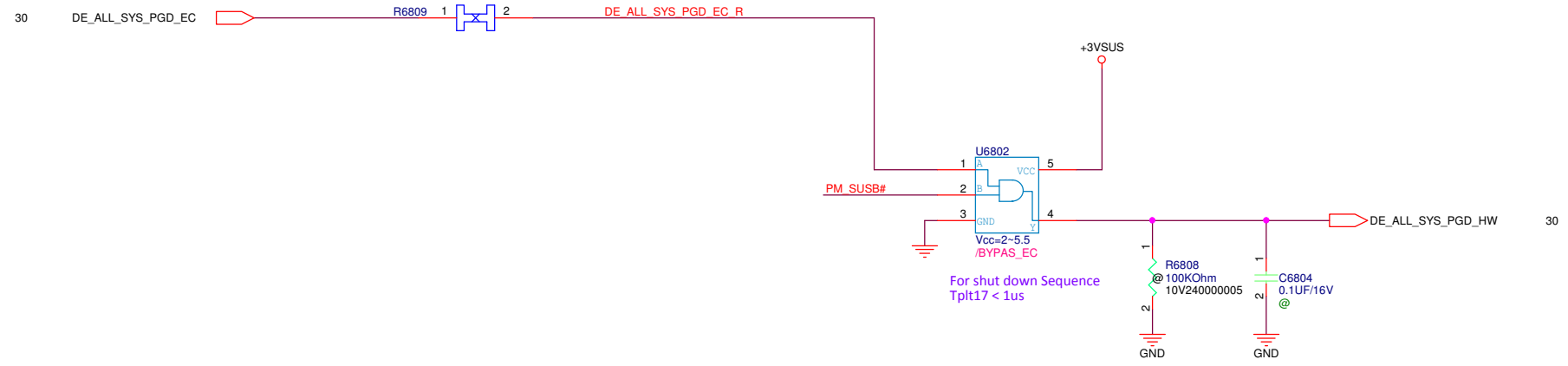
|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>67</i> of <i>97</i>     |                   |





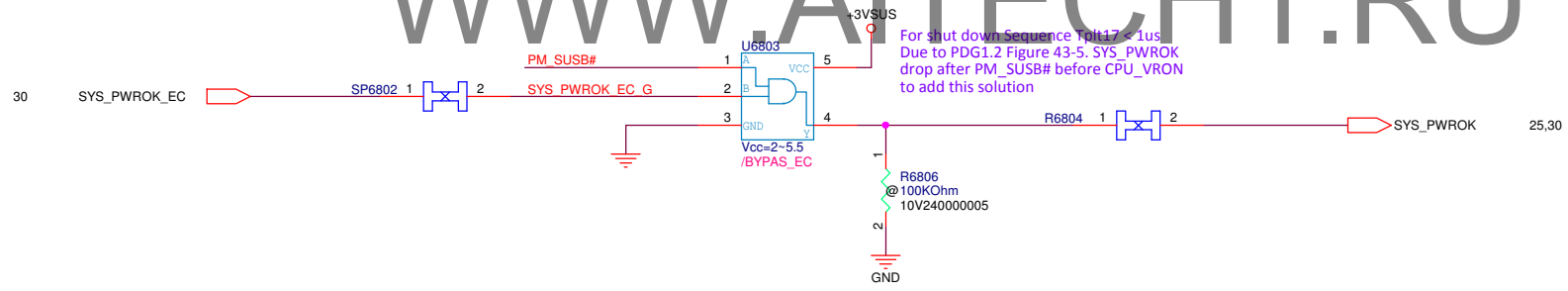
For Intel power sequence requestment  
ALL\_SYS\_PWRGD to Delay\_ALL\_SYS\_PGD >2ms

Delay By EC(2ms+ EC processing time (3ms~33ms))



For shut down Sequence  
Tplt17 < 1us

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For shut down Sequence Tplt17 < 1us  
Due to PDG1.2 Figure 43-5. SYS\_PWROK  
drop after PM\_SUSB# before CPU\_VRON  
to add this solution

|   |                           |                               |                   |
|---|---------------------------|-------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <b>POWER Sequence</b> |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                               |                   |
| <b>BG1/HW3</b>                          |                           | Engineer: <b>Andy Kao</b>     |                   |
| Size<br><b>B</b>                        | Project Name<br><b>X3</b> |                               | Rev<br><b>1.0</b> |
| Date: <b>Wednesday, August 31, 2016</b> |                           | Sheet <b>68</b>               | of <b>97</b>      |



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<Variant Name>

|                                       |                    |                               |            |
|---------------------------------------|--------------------|-------------------------------|------------|
| <b>PEGATRON</b>                       |                    | <b>Title :</b> Power SW Board |            |
| PEGATRON PROPRIETARY AND CONFIDENTIAL |                    |                               |            |
| BG1/HW3                               |                    | <b>Engineer:</b> Andy Kao     |            |
| Size<br>B                             | Project Name<br>X3 |                               | Rev<br>1.0 |
| Date: Wednesday, August 31, 2016      |                    | Sheet                         | 69 of 97   |



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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>70</i> of <i>97</i> |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>71</i> of <i>97</i>     |                   |



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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>72</i> of <i>97</i> |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>73</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>74</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>75</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>76</i> of <i>97</i>     |                   |



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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>77</i> of <i>97</i>     |                   |



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|   |                           |                              |                   |
|---|---------------------------|------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | Title : <Title>              |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |                   |
| BG1/HW3                                 |                           | Engineer: <i>Andy Kao</i>    |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                              | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>78</i> of <i>97</i> |                   |

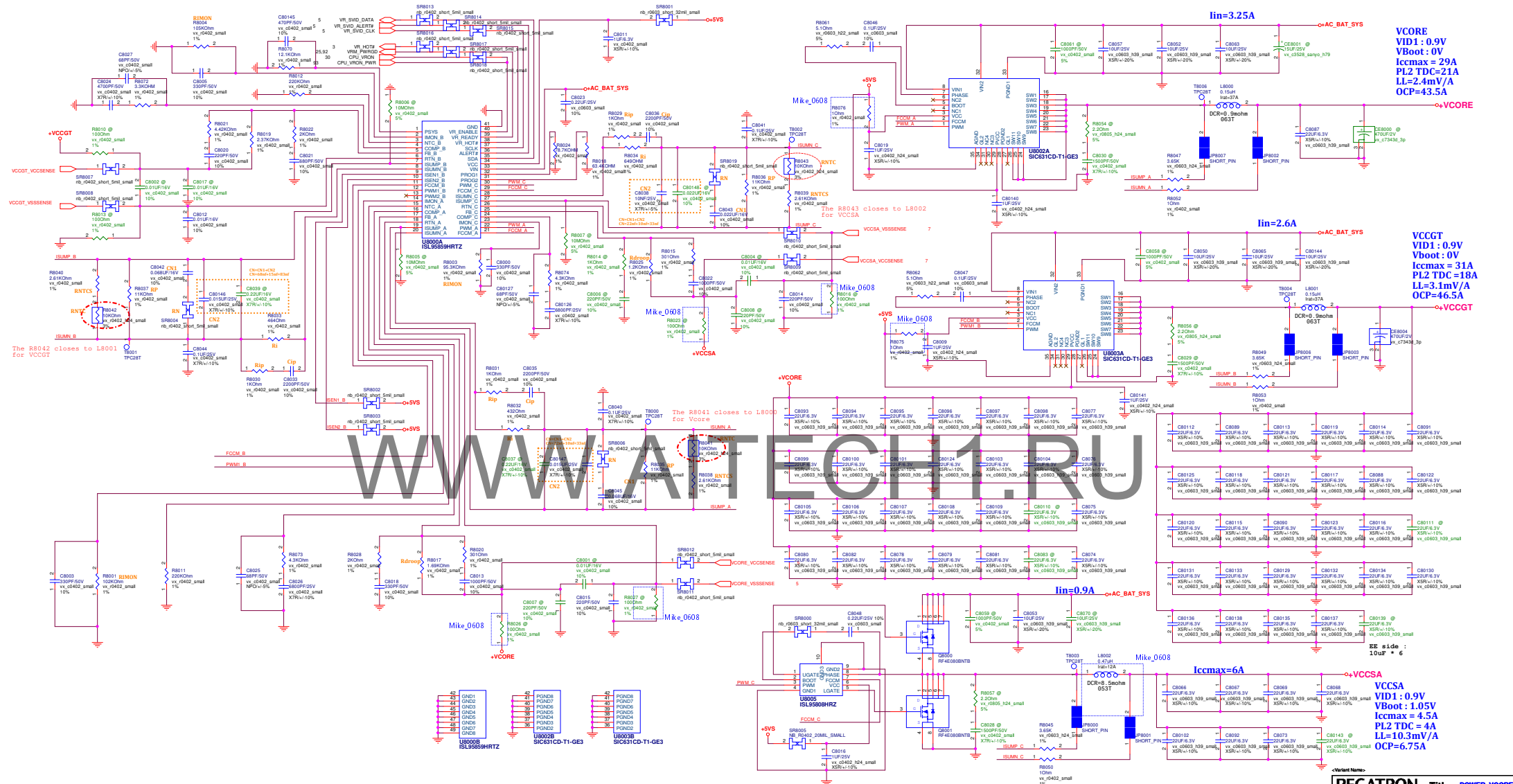


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|   |                           |                                  |                   |
|---|---------------------------|----------------------------------|-------------------|
| <b>PEGATRON</b>                         |                           | <b>Title :</b> <Title>           |                   |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                                  |                   |
| <b>BG1/HW3</b>                          |                           | <b>Engineer:</b> <i>Andy Kao</i> |                   |
| Size<br><i>A</i>                        | Project Name<br><i>X3</i> |                                  | Rev<br><i>1.0</i> |
| Date: <i>Wednesday, August 31, 2016</i> |                           | Sheet <i>79</i> of <i>97</i>     |                   |



# VCORE & VCCGT & VCCSA POWER SUPPLY



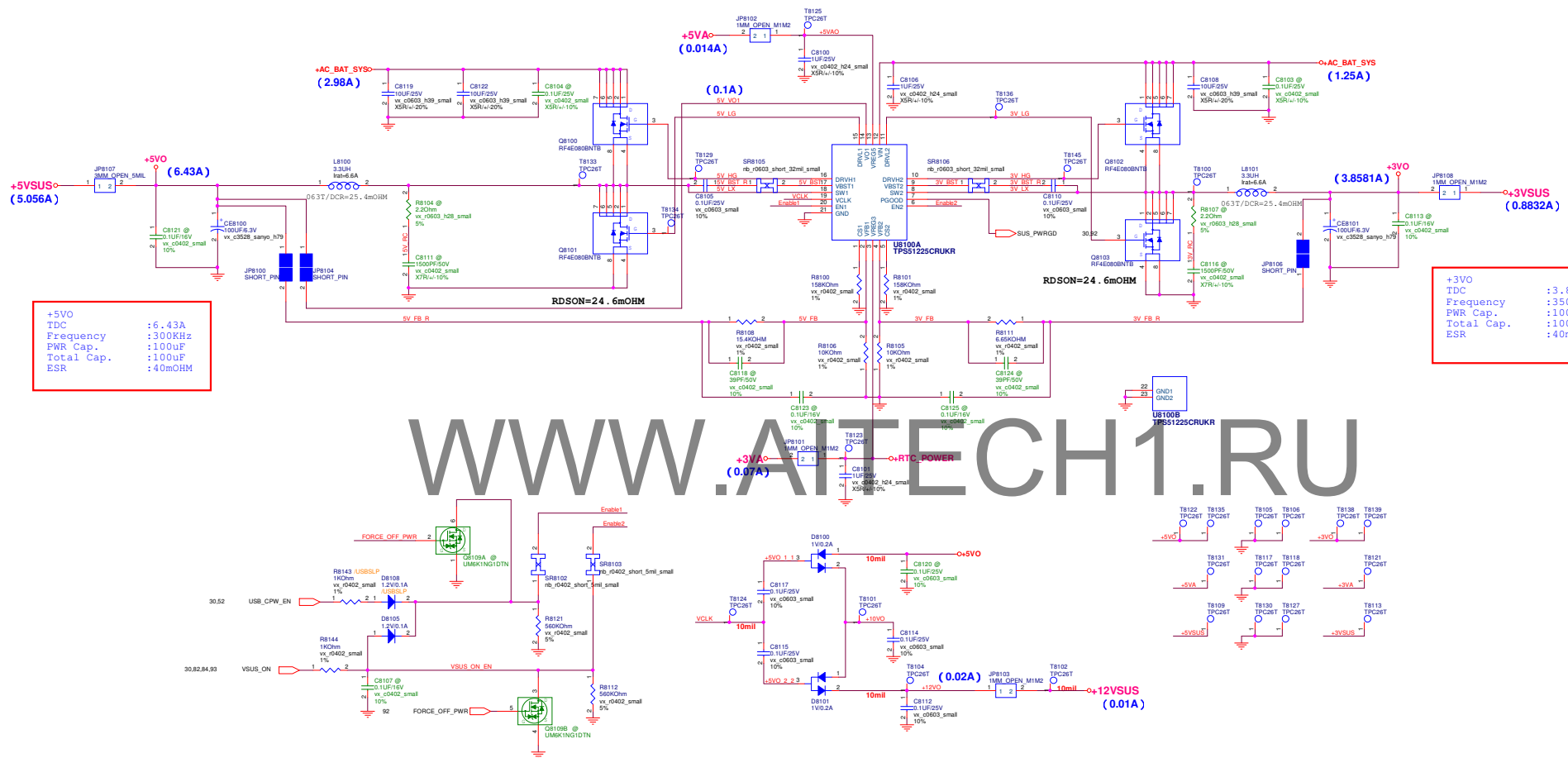
VCORE  
VID1 : 0.9V  
Vboot : 0V  
Iccmax = 29A  
PL2 TDC=21A  
IL=2.4mV/A  
OCP=43.5A

VCCGT  
VID1 : 0.9V  
Vboot : 0V  
Iccmax = 31A  
PL2 TDC = 18A  
IL=3.1mV/A  
OCP=46.5A

VCCSA  
VID1 : 0.9V  
Vboot : 1.05V  
Iccmax = 4.5A  
PL2 TDC = 4A  
IL=10.3mV/A  
OCP=6.75A

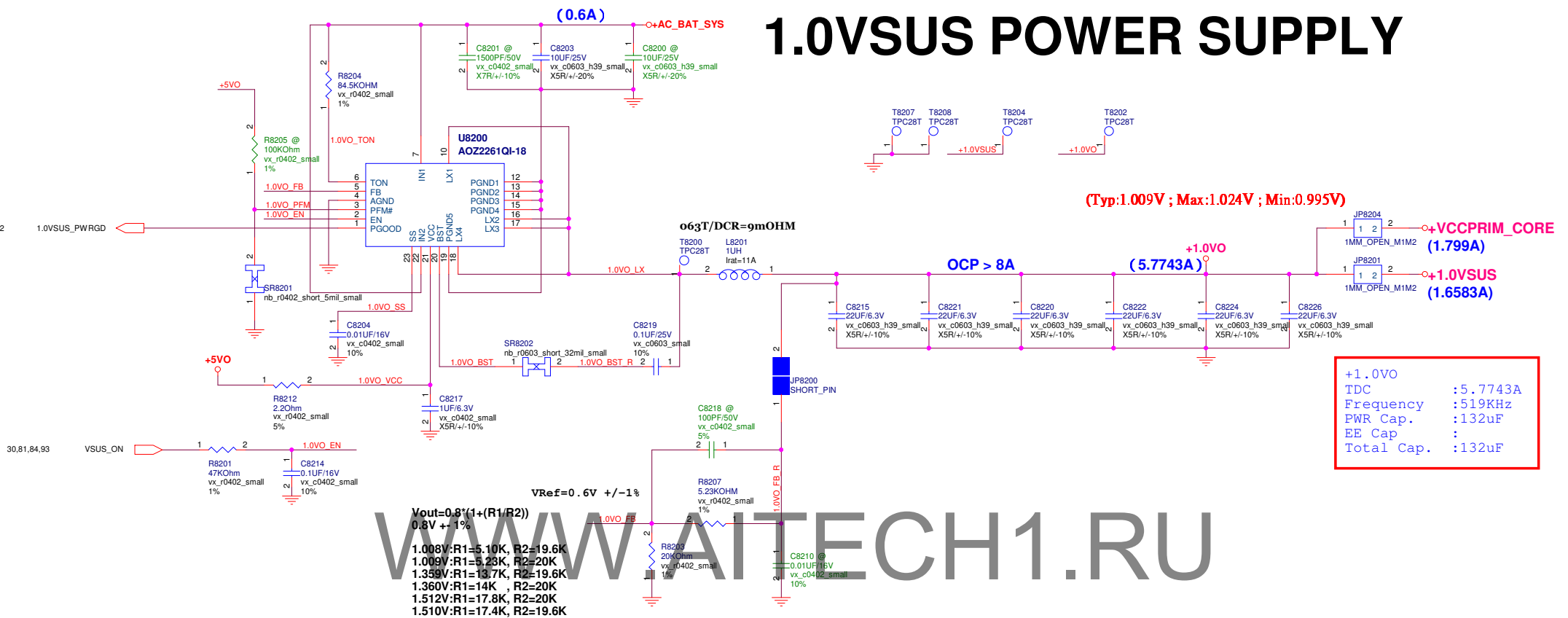


## 5V0 & 3V0 POWER SUPPLY

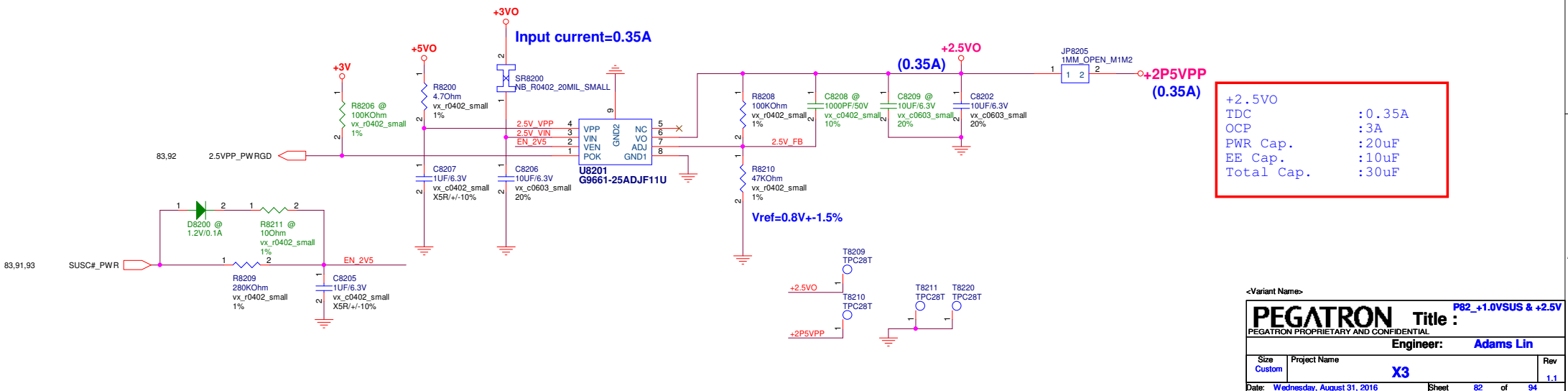




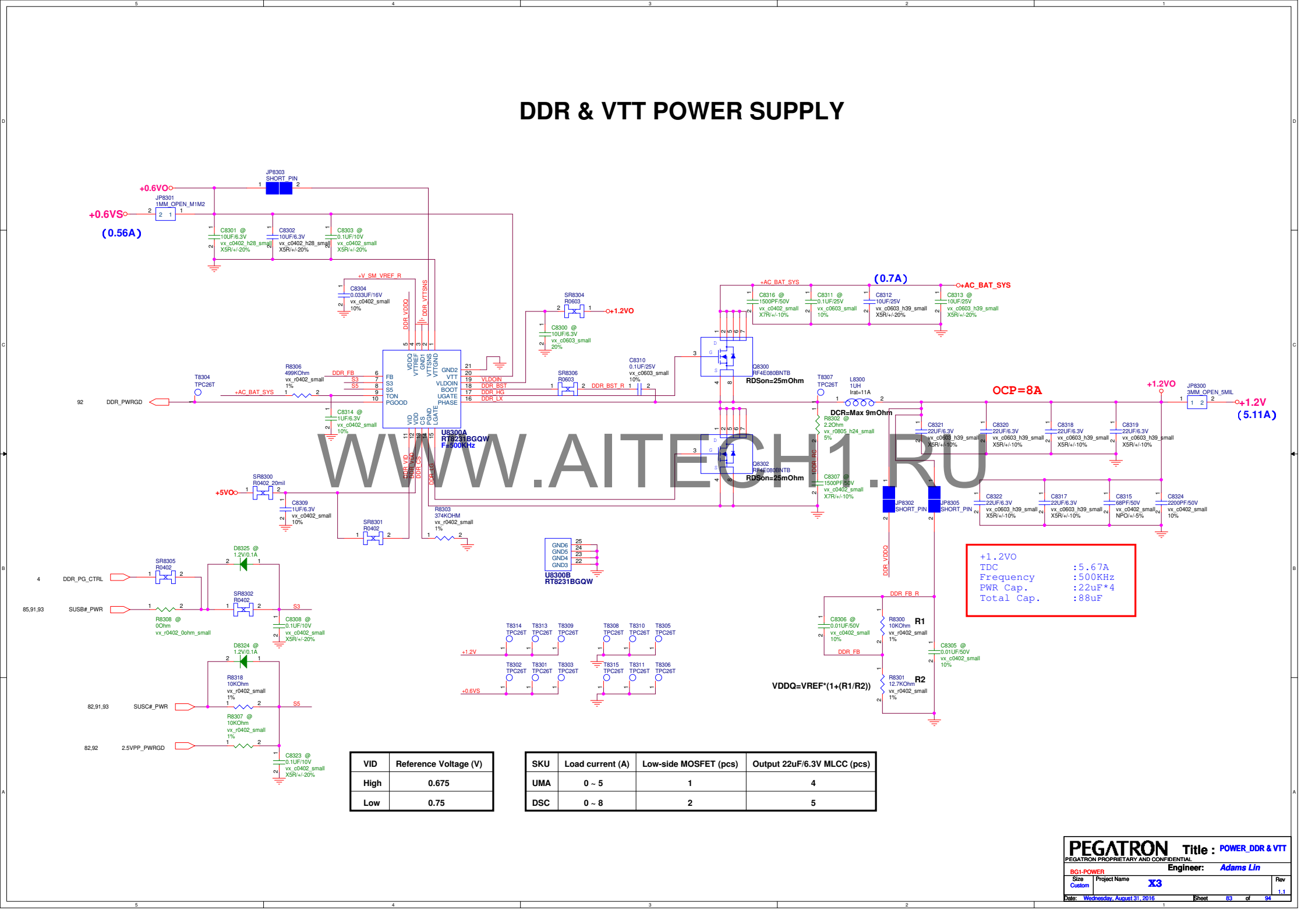
## 1.0VSUS POWER SUPPLY



## 2.5V POWER SUPPLY





[illegible][illegible]

# DDR & VTT POWER SUPPLY

The schematic diagram illustrates the power supply for DDR and VTT. It features several input sources: +0.6V<sub>VS</sub> (0.56A), +AC\_BAT\_SYS (0.7A), +5V<sub>VS</sub>, and +1.2V. The circuit includes multiple MOSFETs (SR8301, SR8302, SR8303, SR8304, SR8305, SR8306, SR8307, SR8308, SR8309, SR8310, SR8311, SR8312, SR8313, SR8314, SR8315, SR8316, SR8317, SR8318, SR8319, SR8320, SR8321, SR8322, SR8323, SR8324, SR8325, SR8326, SR8327, SR8328, SR8329, SR8330, SR8331, SR8332, SR8333, SR8334, SR8335, SR8336, SR8337, SR8338, SR8339, SR8340, SR8341, SR8342, SR8343, SR8344, SR8345, SR8346, SR8347, SR8348, SR8349, SR8350, SR8351, SR8352, SR8353, SR8354, SR8355, SR8356, SR8357, SR8358, SR8359, SR8360, SR8361, SR8362, SR8363, SR8364, SR8365, SR8366, SR8367, SR8368, SR8369, SR8370, SR8371, SR8372, SR8373, SR8374, SR8375, SR8376, SR8377, SR8378, SR8379, SR8380, SR8381, SR8382, SR8383, SR8384, SR8385, SR8386, SR8387, SR8388, SR8389, SR8390, SR8391, SR8392, SR8393, SR8394, SR8395, SR8396, SR8397, SR8398, SR8399, SR8400) and resistors (R8301, R8302, R8303, R8304, R8305, R8306, R8307, R8308, R8309, R8310, R8311, R8312, R8313, R8314, R8315, R8316, R8317, R8318, R8319, R8320, R8321, R8322, R8323, R8324, R8325, R8326, R8327, R8328, R8329, R8330, R8331, R8332, R8333, R8334, R8335, R8336, R8337, R8338, R8339, R8340, R8341, R8342, R8343, R8344, R8345, R8346, R8347, R8348, R8349, R8350, R8351, R8352, R8353, R8354, R8355, R8356, R8357, R8358, R8359, R8360, R8361, R8362, R8363, R8364, R8365, R8366, R8367, R8368, R8369, R8370, R8371, R8372, R8373, R8374, R8375, R8376, R8377, R8378, R8379, R8380, R8381, R8382, R8383, R8384, R8385, R8386, R8387, R8388, R8389, R8390, R8391, R8392, R8393, R8394, R8395, R8396, R8397, R8398, R8399, R8400). The output is +1.2V (5.11A). A box specifies: +1.2VO TDC : 5.67A Frequency : 500KHz PWR Cap. : 22uF\*4 Total Cap. : 88uF. A formula is given: VDDQ = VREF \* (1 + (R1/R2)).

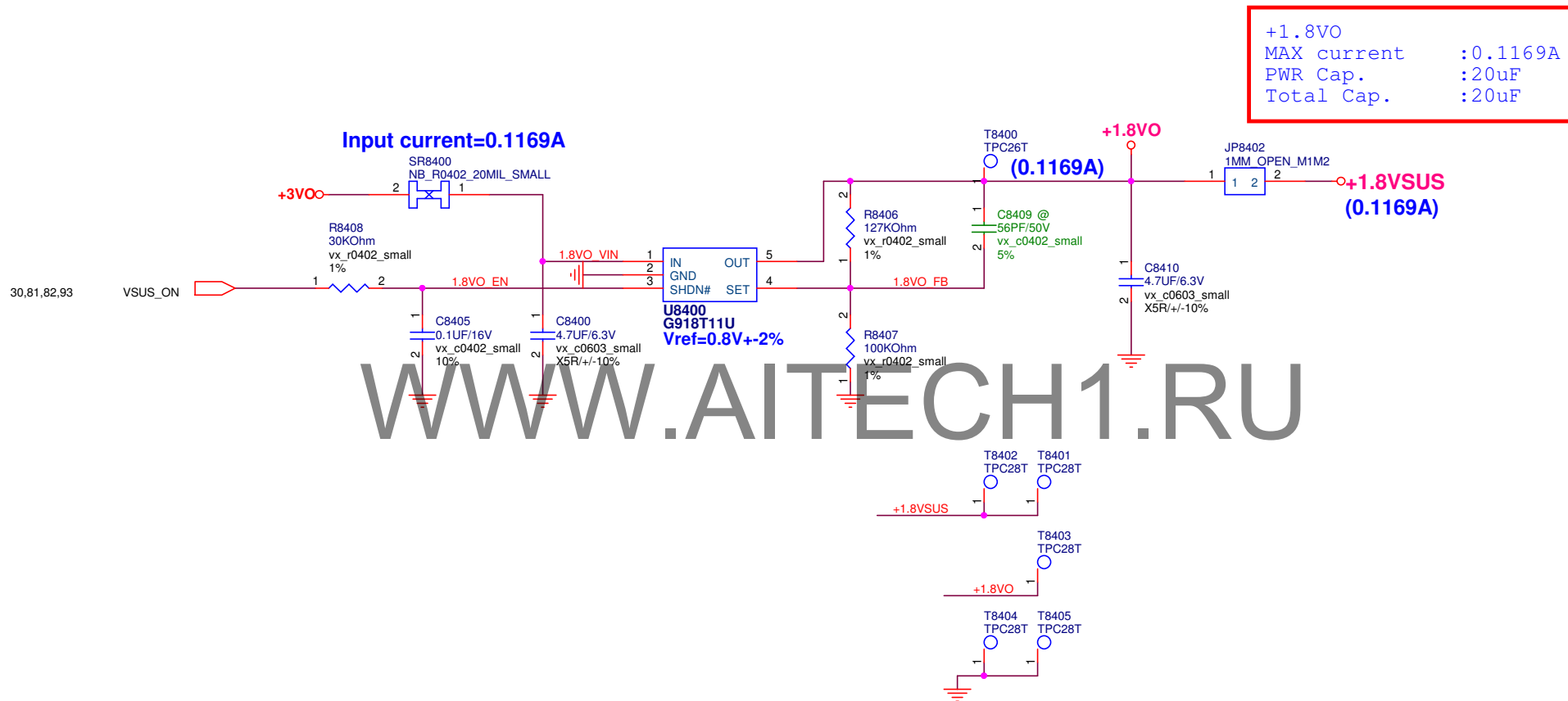
| VID  | Reference Voltage (V) |
|------|-----------------------|
| High | 0.675                 |
| Low  | 0.75                  |

| SKU | Load current (A) | Low-side MOSFET (pcs) | Output 22uF/6.3V MLCC (pcs) |
|-----|------------------|-----------------------|-----------------------------|
| UMA | 0 ~ 5            | 1                     | 4                           |
| DSC | 0 ~ 8            | 2                     | 5                           |

**PEGATRON** Title : POWER\_DDR & VTT  
PEGATRON PROPRIETARY AND CONFIDENTIAL  
BG1-POWER Engineer: Adams Lin  
Size Project Name X3 Rev 1.1  
Date: Wednesday, August 31, 2016 Sheet 83 of 94



# 1.8VSUS POWER SUPPLY

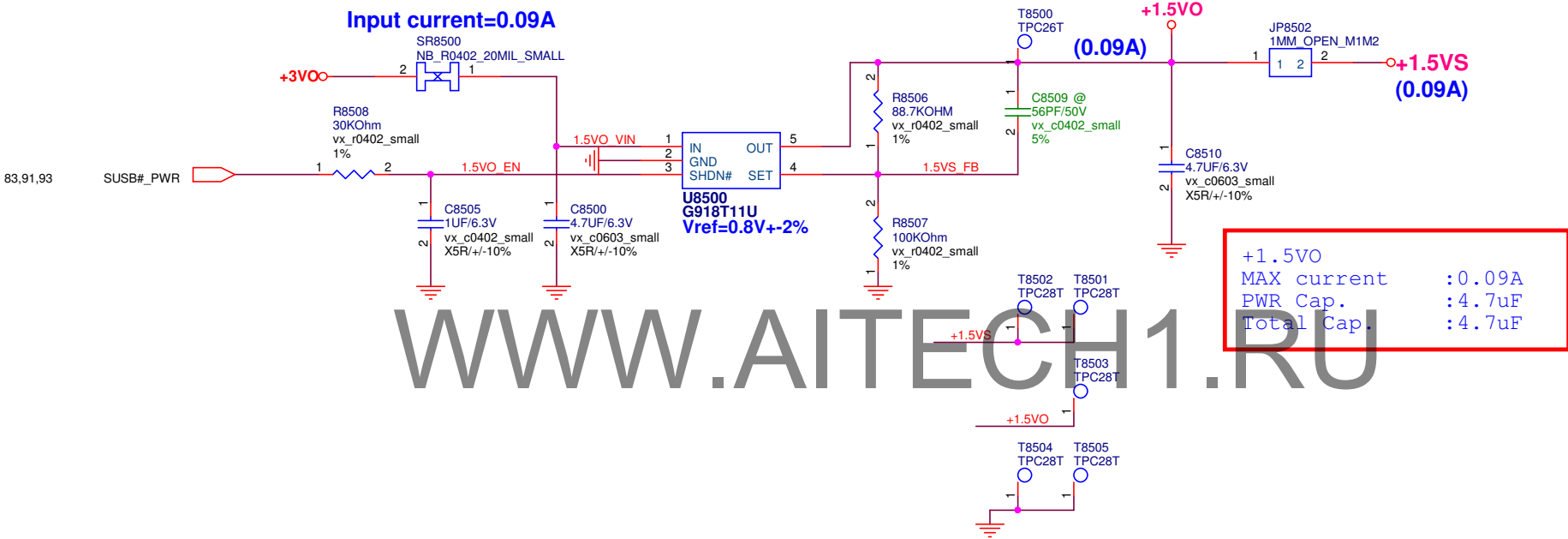


<Variant Name>

|                                       |                    |                        |
|---------------------------------------|--------------------|------------------------|
| PEGATRON                              |                    | Title : POWER_+1.8VSUS |
| PEGATRON PROPRIETARY AND CONFIDENTIAL |                    |                        |
| Engineer:                             |                    | Adams Lin              |
| Size<br>Custom                        | Project Name<br>X3 | Rev<br>1.1             |
| Date: Wednesday, August 31, 2016      |                    | Sheet 84 of 94         |

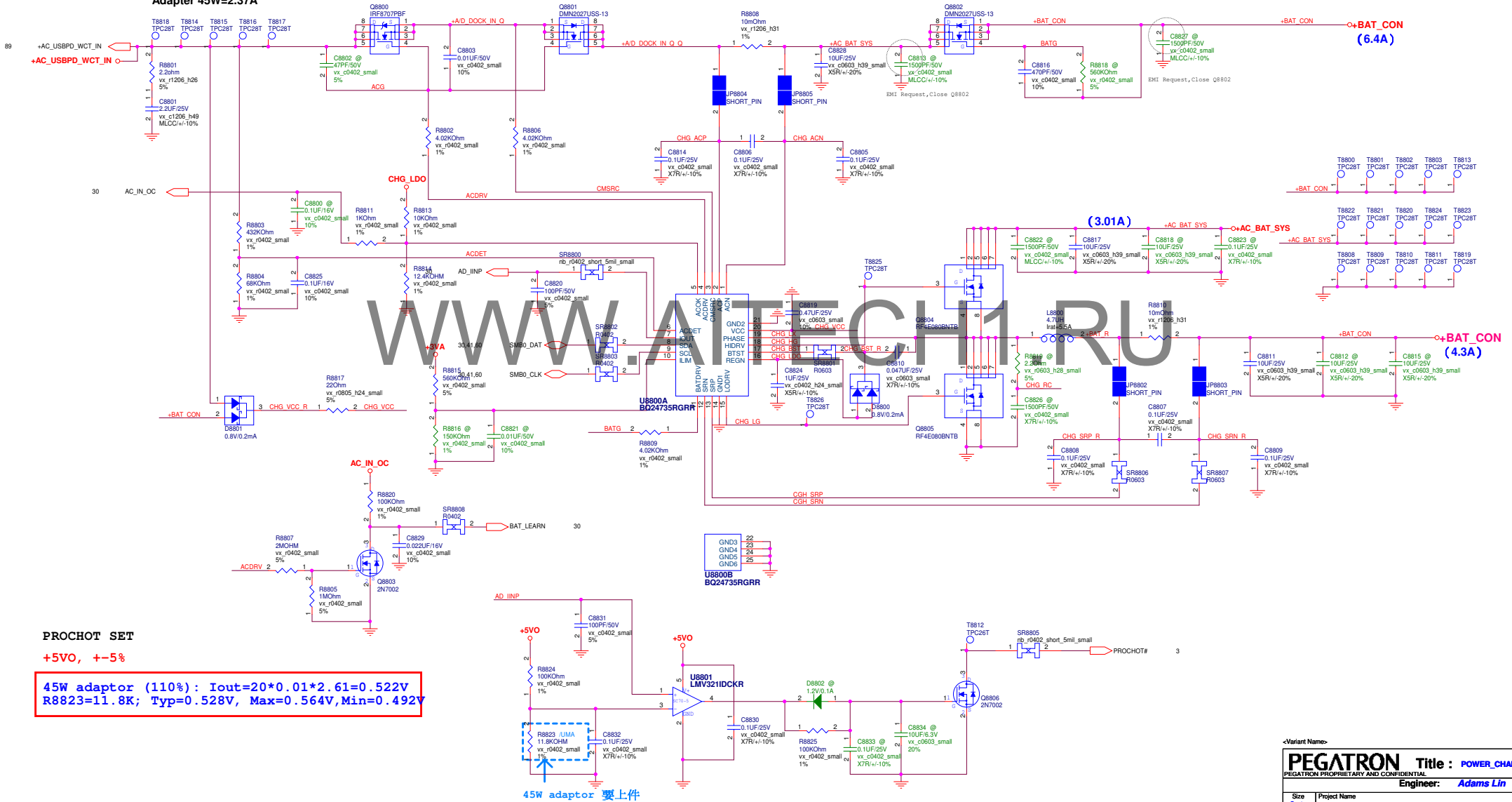
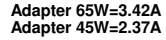


1.5VS POWER SUPPLY





# BATTERY CHARGER



PROCHOT SET

+5V0, +−5%

45W adaptor (110%):  $I_{out}=20 \times 0.01 \times 2.61=0.522V$   
R8823=11.8K;  $Typ=0.528V$ ,  $Max=0.564V$ ,  $Min=0.492V$

45W adaptor 要上件



**USB\_PD\_IN**  
**2nd Input (USB PD 20V)**

R8978 2.2ohm vx\_r1206\_h26 5%

C8930 0.1uF/25V vx\_c0402\_small X5R/±10%

C8945 2.2uF/25V vx\_c0805\_h53\_small X7R/±10%

Q8914 SI7121DN-T1-GE3

C8901 0.01uF/50V vx\_c0402\_small 10%

R8910 300KOhm vx\_r0402\_small 1%

**Typ: (5.646V)**  
**Max: (6.014V)**  
**Min: (5.287V)**

R8906 100KOhm vx\_r0402\_small 1%

R8907 100KOhm vx\_r0402\_small 1%

**Typ: (10V)**  
**Max: (10.605V)**  
**Min: (9.405V)**

Q8907 SI7121DN-T1-GE3

C8902 0.1uF/25V vx\_c0402\_small X5R/±10%

R8911 118KOhm vx\_r0402\_small 1%

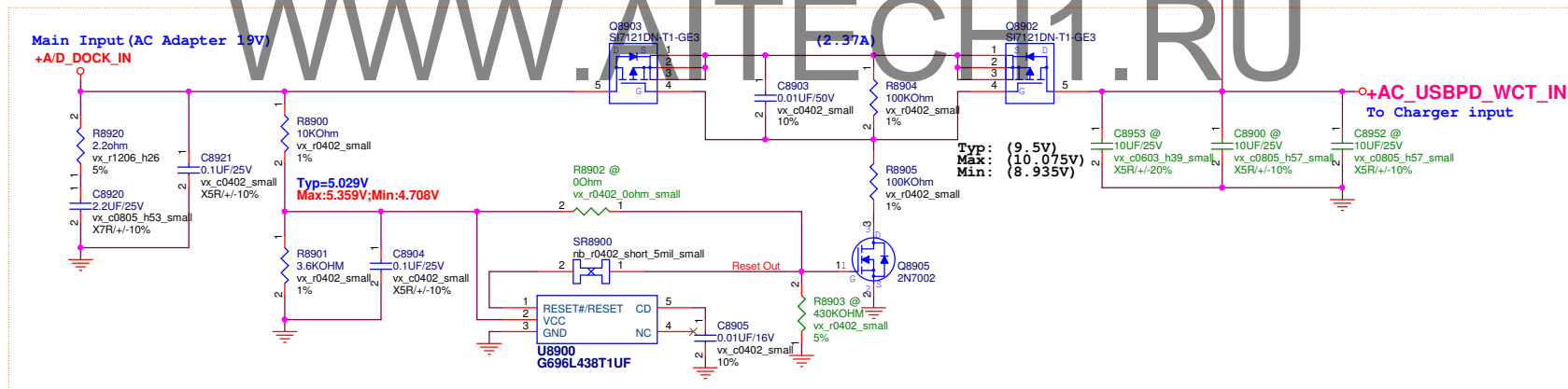
Q8904 2N7002

Q8901 2N7002

**Reset Out 1**

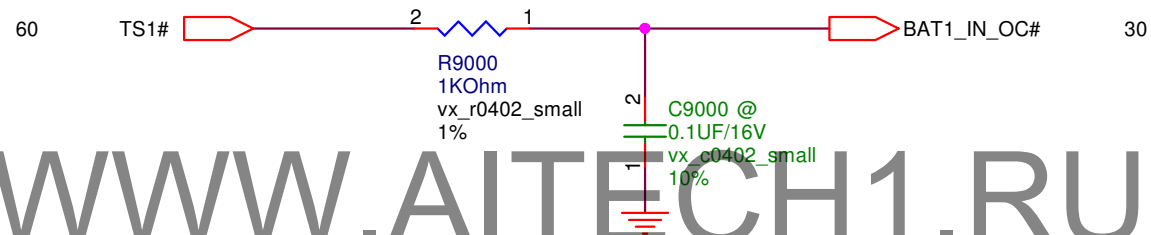
Q8900 RB520S-30\_G\_Te61

**+A/D\_DOCK\_IN**





## BATTERY IN DETECT



<Variant Name>

**PEGATRON** Title : **POWER\_DETECT**  
PEGATRON PROPRIETARY AND CONFIDENTIAL

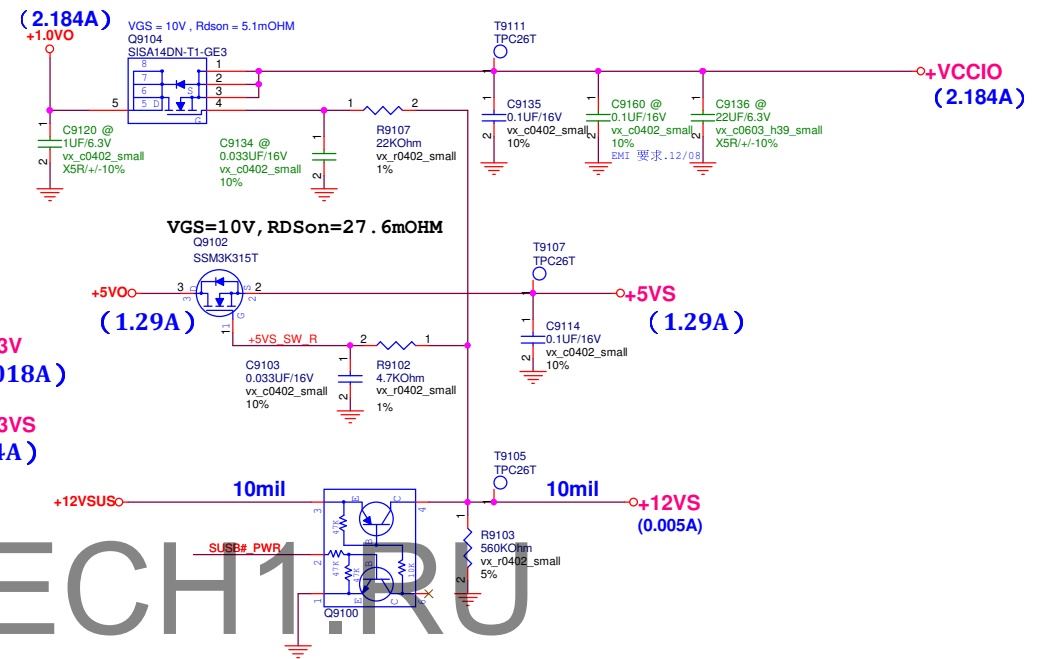
Engineer: **Adams Lin**

|                |                           |            |
|----------------|---------------------------|------------|
| Size<br>Custom | Project Name<br><b>X3</b> | Rev<br>1.1 |
|----------------|---------------------------|------------|

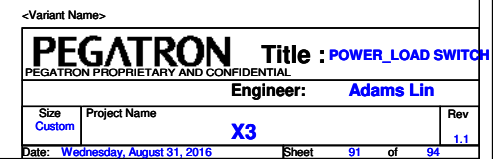
Date: **Wednesday, August 31, 2016** Sheet **90** of **94**



**SUSB#\_PWR POWER**

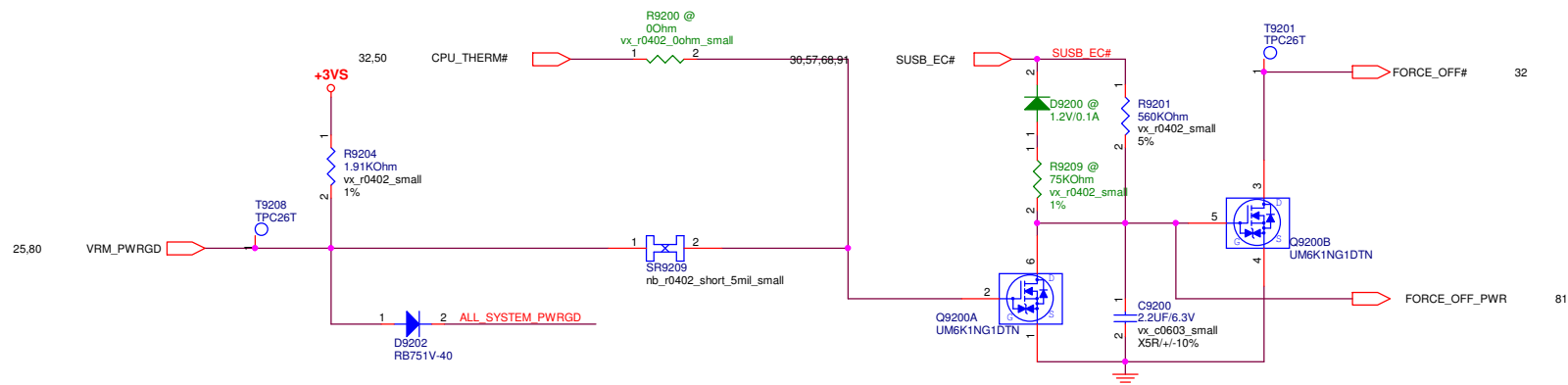
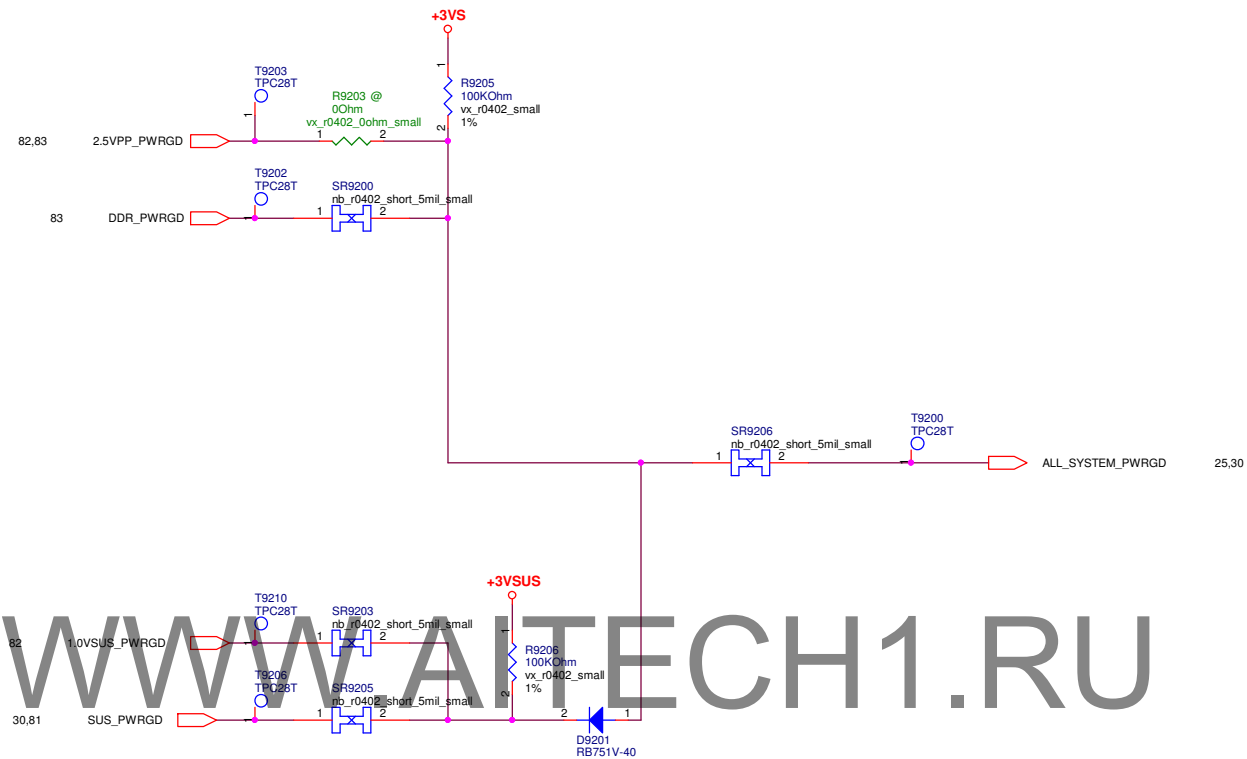


SUSB#\_PWR POWER Control





# POWER GOOD DETECTOR



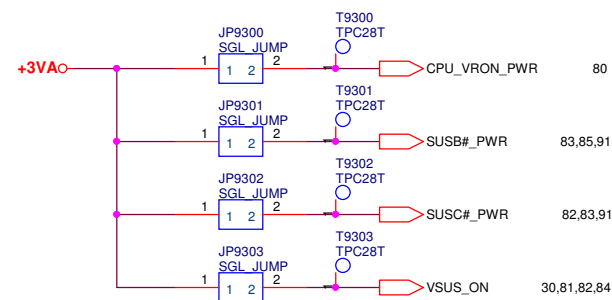
<Variant Name>

|                                       |                                   |                              |                        |
|---------------------------------------|-----------------------------------|------------------------------|------------------------|
| <b>PEGATRON</b>                       |                                   | Title : <b>POWER_PROTECT</b> |                        |
| PEGATRON PROPRIETARY AND CONFIDENTIAL |                                   |                              |                        |
|                                       |                                   | Engineer: <b>Adams Lin</b>   |                        |
| Size<br>Custom                        | Project Name<br><br><b>X3</b>     | Rev<br>1.1                   |                        |
| Date:                                 | <b>Wednesday, August 31, 2016</b> | Sheet                        | <b>92</b> of <b>94</b> |



|                   |   |                   |   |
|-------------------|---|-------------------|---|
| +USB_PD_IN        | → | +USB_PD_IN        | 42,89   |
| +A/D_DOCK_IN      | → | +A/D_DOCK_IN      | 60,89   |
| +AC_USBDPD_WCT_IN | → | +AC_USBDPD_WCT_IN | 88,89   |
| +AC_BAT_SYS       | → | +AC_BAT_SYS       | 43,45,80,81,82,83,88  |
| +BAT_CON          | → | +BAT_CON          | 60,88   |
| +RTC_POWER        | → | +RTC_POWER        | 81  |
|                   |   |                   |   |
| +5VA              | → | +5VA              | 31,56,81  |
| +3VA              | → | +3VA              | 24,30,31,36,41,43,53,57,64,81,88                                |
| +5VO              | → | +5VO              | 26,81,82,83,88,91   |
| +3VO              | → | +3VO              | 81,82,84,85,91  |
| +2.5VO            | → | +2.5VO            | 82  |
| +1.8VO            | → | +1.8VO            | 84  |
| +1.2VO            | → | +1.2VO            | 83  |
| +1.0VO            | → | +1.0VO            | 82,91   |
| +0.6VO            | → | +0.6VO            | 83  |
|                   |   |                   |   |
| +12VSUS           | → | +12VSUS           | 28,81,91  |
| +5VSUS            | → | +5VSUS            | 41,42,52,56,64,81   |
| +3VSUS            | → | +3VSUS            | 4,24,25,26,28,30,31,41,42,51,53,62,64,68,81,92                  |
| +1.8VSUS          | → | +1.8VSUS          | 9,21,22,26,84   |
| +1.0VSUS          | → | +1.0VSUS          | 26,82   |
| +12V              | → | +12V              | 57,91   |
| +2P5VPP           | → | +2P5VPP           | 16,17,57,82   |
| +1.2V             | → | +1.2V             | 4,7,15,16,17,19,57,83   |
| +1.0V             | → | +1.0V             | 7,57,91   |
| +12VS             | → | +12VS             | 31,48,57,91   |
| +5VS              | → | +5VS              | 31,36,45,48,50,51,57,80,91                                      |
| +3VS              | → | +3VS              | 3,4,21,22,23,24,30,31,32,36,37,44,45,47,50,51,53,57,62,64,91,92 |
| +0.6VS            | → | +0.6VS            | 15,57,83  |
| +VCORE            | → | +VCORE            | 5,80  |
| +VCCGT            | → | +VCCGT            | 6,80  |
| +VCCSA            | → | +VCCSA            | 7,80  |
| +VCCIO            | → | +VCCIO            | 3,7,9,57,91   |
| +VCCPRIM_CORE     | → | +VCCPRIM_CORE     | 26,82   |

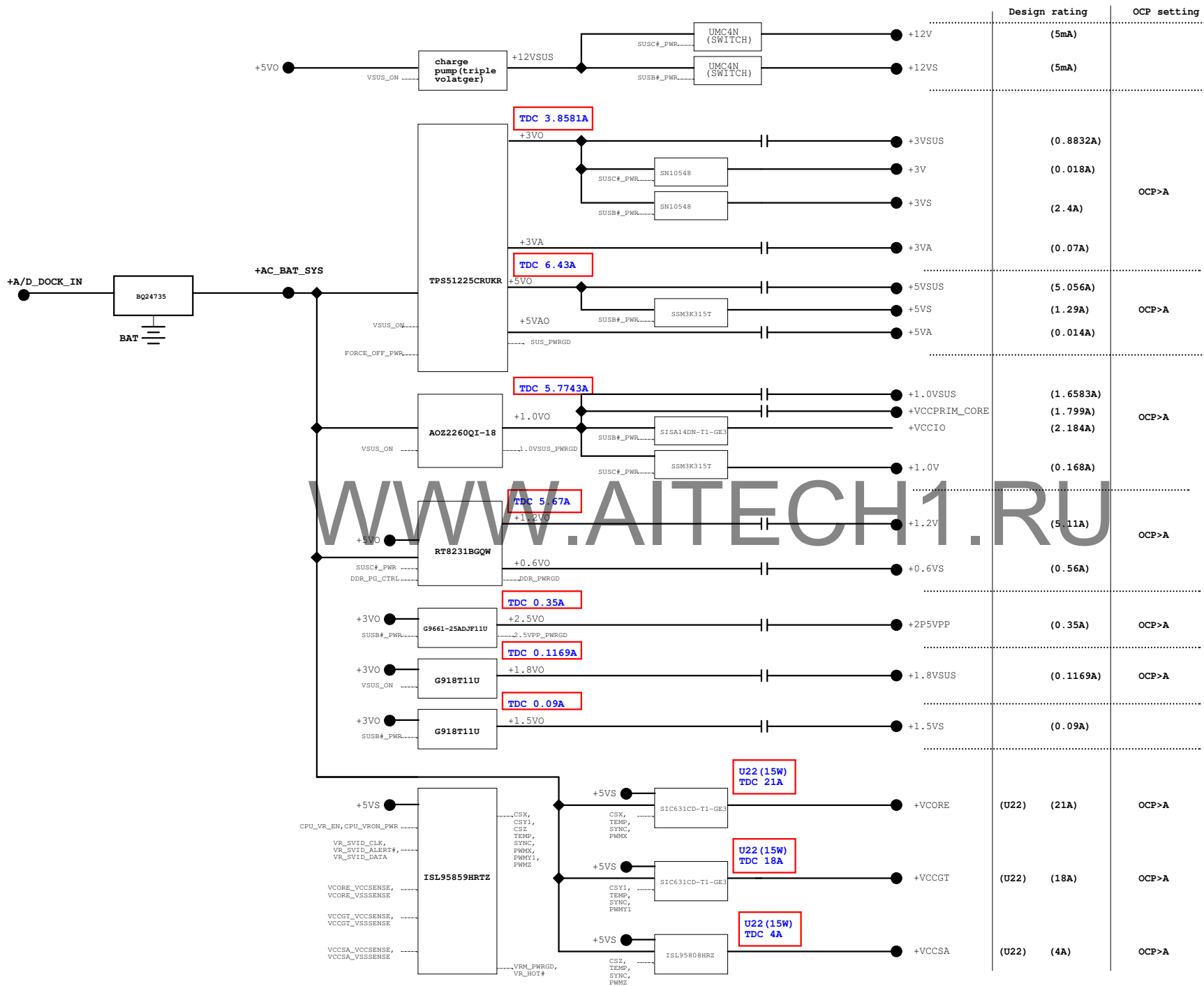
# FOR POWER TEST



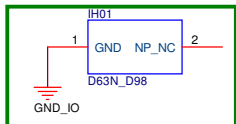
WWW.ATECH1.RU

|   |                           |                              |  |
|---|---------------------------|------------------------------|--|
| <b>PEGATRON</b>                         |                           | <b>Title : POWER_SIGNAL</b>  |  |
| PEGATRON PROPRIETARY AND CONFIDENTIAL   |                           |                              |  |
| <b>BG1-POWER</b>                        |                           | <b>Engineer: Adams Lin</b>   |  |
| Size<br><b>B</b>                        | Project Name<br><b>X3</b> | Rev<br><b>1.1</b>            |  |
| Date: <b>Wednesday, August 31, 2016</b> |                           | Sheet <b>93</b> of <b>94</b> |  |

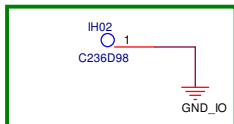




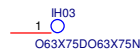




2016.6.6 R1.2\_10L ---For ME

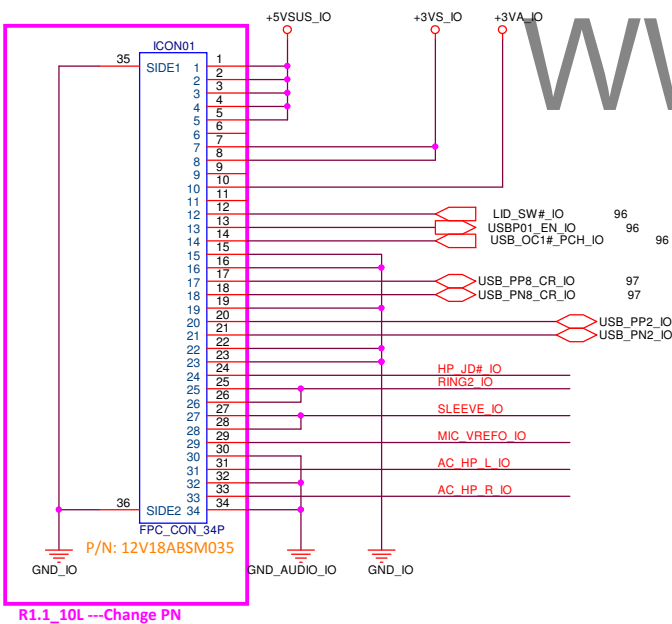
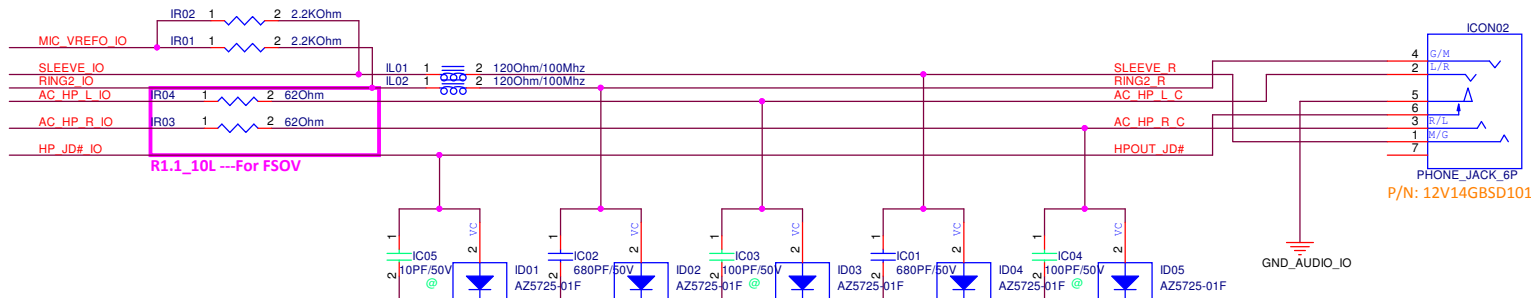


2016.6.6 R1.2\_10L ---For ME

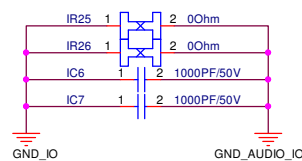


2016.7.14 R1.2\_10L ---For ME

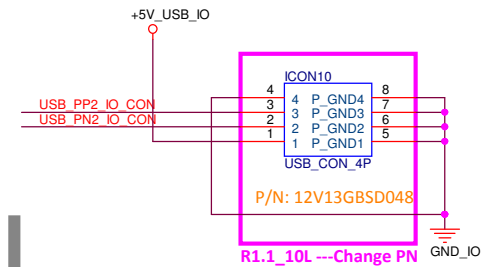
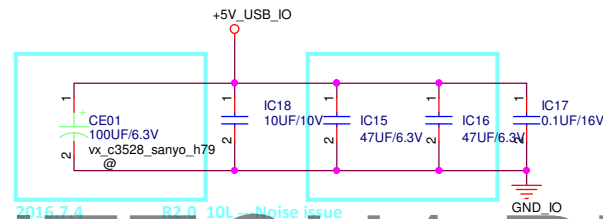
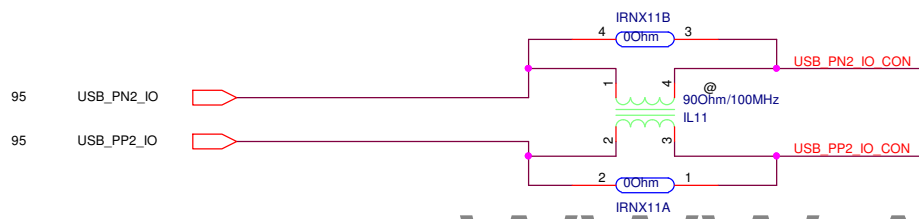
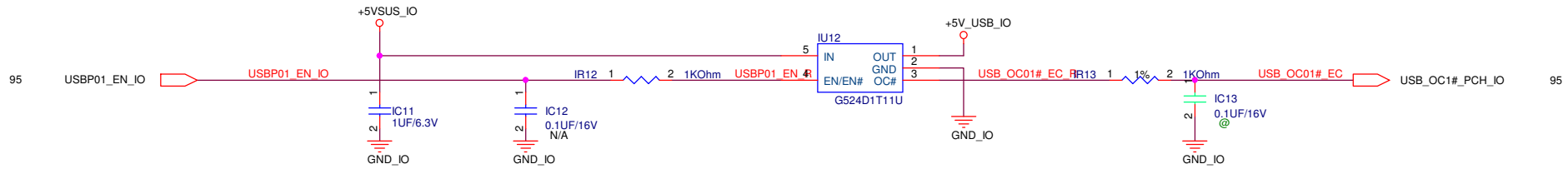
## AUDIO JACK



R1.1\_10L ---Change PN

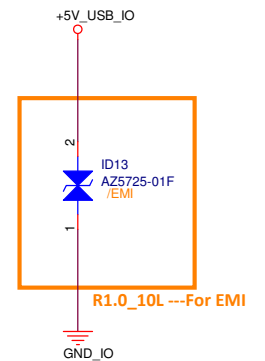
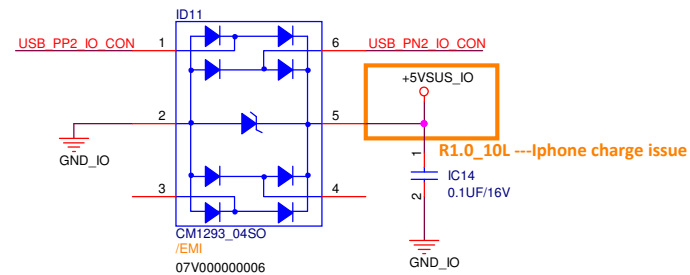
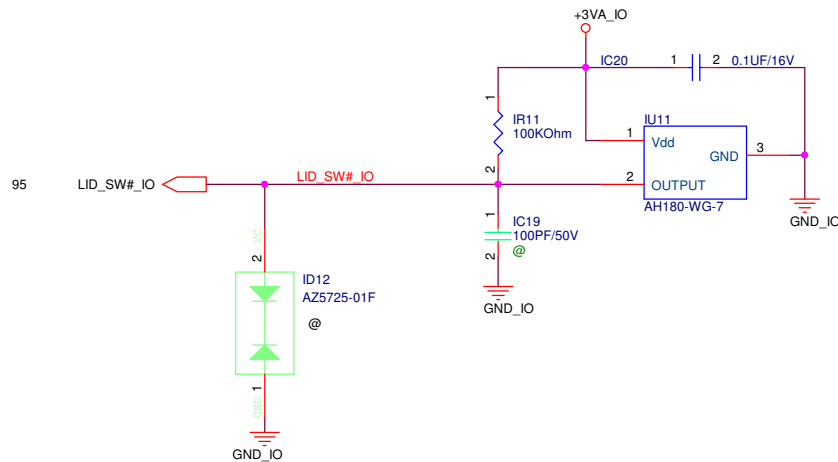






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PLACE ESD Diodes near USB Connector





Cardreader

