

REVISION HISTORY

The differences in the design data for the Apalis Evaluation Board between "V1.0 UNVALIDATED" and "V1.0" are as follows:

0. Hardware_Architecture schematic page:
 - The Hardware_Architecture has been modified accordingly to the following points.
1. Power_Supply schematic page:
 - Cosmetic changes: the PMIC schematic and the 3.3V_SW CTRL block have been moved in the "Power_Switch" Schematic sheet.
 - Cosmetic changes: the mechanical components have been moved in the "Mechanical" sheet.
 - Cosmetic changes: the Power IN, Power OUT and the EMI filter stages have been reorganized.
2. Power_Switch schematic page:
 - Cosmetic changes: the PMIC schematic and the 3.3V_SW CTRL block have been moved from the "Power_Supply" Schematic sheet.
 - The NOTE 1 has been added to the schematic page: it is recommended to add a 100K pull up resistor to the signal WAKE1_MICO# .
 - The NOTE 2 has been added to the schematic page: it is recommended to c to the signal POWER_ENABLE_MOC1.
3. USB_Hub schematic page:
 - Minor cosmetic changes.
4. USB_Connectors schematic page:
 - The NOTE 6 has been added to the schematic page: it is recommended to connect also the signal USB01_VBUS to the ESD protection diode and to add 100K pull down resistor.
5. Audio_Codec schematic page:
 - Cosmetic changes: the IC28 has been divided in two subparts to improve the schematic readability; the input subpart has been left in the "Audio_Codec" schematic page, the output subpart has been moved in the "HDA_Connectors" schematic page.
 - Cosmetic changes: the S/PDIF output has been moved in the "HDA_Connectors" schematic page.
 - The IC28 has component has been updated: the new Design Item ID is: IC-Realtek-ALC898
 - The NOTE 7 has been added to the schematic page: a rewiring trough the jumper area is needed for the HDA interface.

To connect the signals correctly, the following connections are needed:
Remove the Jumpers X6 pins 5, 7, 8, 9.
Connect X5 pin 5 to X7 pin 9
Connect X5 pin 7 to X7 pin 8
Connect X5 pin 8 to X7 pin 5
Connect X5 pin 9 to X7 pin 7
6. HDA_Connectors schematic page:
 - Cosmetic changes: the IC28 has been divided in two subparts to improve the schematic readability; the input subpart has been left in the "Audio_Codec" schematic page, the output subpart has been moved in the "HDA_Connectors" schematic page.
 - Cosmetic changes: the S/PDIF output has been moved in the "HDA_Connectors" schematic page.
7. SPDIF schematic page:
 - Minor cosmetic changes.
8. Analogue_Audio schematic page:
 - Minor cosmetic changes.
9. Camera schematic page:
 - Minor cosmetic changes.
10. RGB_Breakout schematic page:
 - Minor cosmetic changes.
11. DDC schematic page:
 - Minor cosmetic changes.
12. DVI-I schematic page:
 - Minor cosmetic changes to highlight that the EDS protection diodes need to be placed close to the DVI-I connector.
 - The NOTE 5 has been added to the schematic page: it is recommended to connect also the signal HDMI1_HPD to the ESD protection diode.
13. LVDS schematic page:
 - Cosmetic changes: the bus LCD1[0..29] has been added to this schematic page because the signals PWM_BKL1 and BKL1_ON are not contained in the bus LVDS1[0..19].
14. Serial schematic page:
 - Minor cosmetic changes.
 - The resistor R303 has been marked as not assembled, the resistor R302 has been marked as assembled.
15. Sata schematic page:
 - Minor cosmetic changes.
16. PCI_Express_Switch schematic page:
 - The NOTE 3 has been added to the schematic page: the resistor R183 is not needed if the signal WAKE1_MICO# has already a pull up (see NOTE 1).
17. PCI_Express_Connectors schematic page:
 - The NOTE 4 has been added to the schematic page: the capacitors C277 and C278 must have a 16V voltage rating.
18. SPI schematic page:
 - Minor cosmetic changes.
19. Type_Specific schematic page:
 - Minor cosmetic changes.
20. Mechanical schematic page:
 - This schematic page has been added.
 - Cosmetic changes: the mechanical components which were in the "Power_Supply" schematic sheet have been moved in this schematic sheet.
 - The shunt jumpers JMP1 - JMP148 have been added to this schematic page.
 - The spacers MECH-HiTech-KFE-M3-8ET have been added to this schematic page.
 - The component CON-DECA-MC100-508-02-1x2-Mate has been added to this schematic page.
21. Schematic pages:
 - The Schematic pages have been renumbered.
22. Apalis Evaluation Board Schematic Library file:
 - This schematic page has been added.
 - The component IC-Realtek-ALC888-TEMP has been updated: the new Design Item ID is: IC-Realtek-ALC898.
 - The component Con-Tyco-3-641126-3 has been deleted from the library.
 - The component MECH-HiTech-KFE-M3-8ET has been added to the library.
 - The component MECH-Shunt-Jumper-Black-2.54mm has been added to the library.
 - The component CON-DECA-MC100-508-02-1x2-Mate has been added to the library.

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23. Audio_Codec schematic page:
 - The NOTE 8 has been added to the schematic page: The bead L33 needs to be assembled.

24. JTAG schematic page:

- The NOTE 9 has been added to the JTAG schematic page: the connector X59 has been installed rotated by 180 degrees on the PCB by mistake. Please consider this information while placing the same connector on your PCB design.
- Please contact the Toradex support if you need to test this interface on the Apalis Evaluation Board.

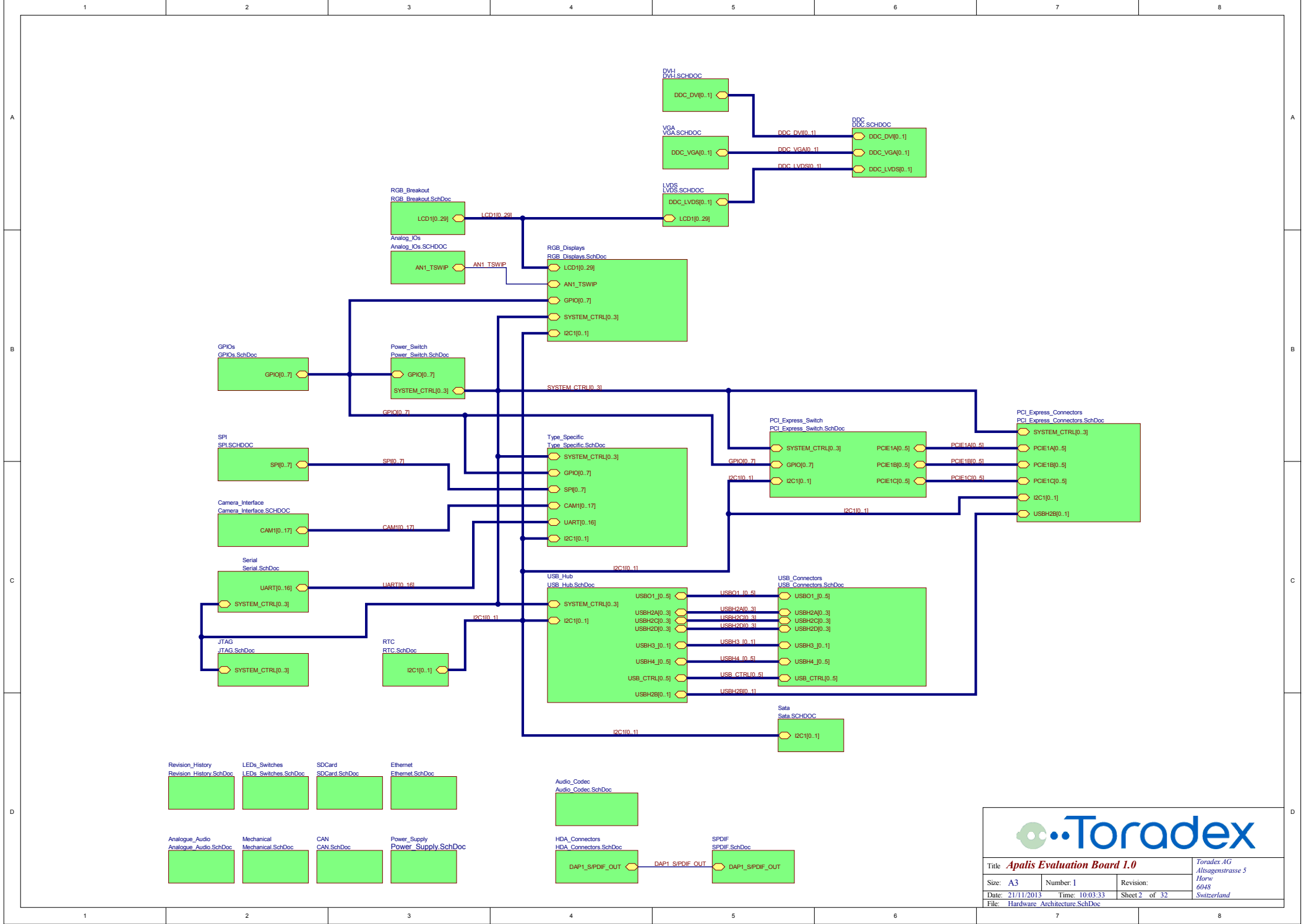
21 November 2013

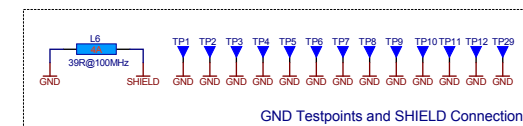
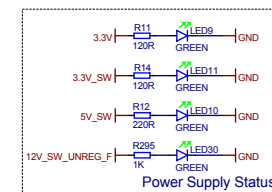
25. USB_Hub schematic page:
 - The NOTE 10 has been added to the schematic page: it is recommended to assemble 0R resistor instead of 22R for R289 and R290.

IF IN DOUBT ASK



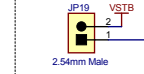
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Size: <i>A3</i>	Number: <i>2</i>	Revision:	
Date: <i>21/11/2013</i>	Time: <i>10:03:33</i>	Sheet <i>1</i> of <i>32</i>	
File: <i>Revision History SchDoc</i>			



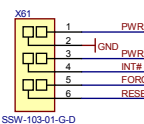
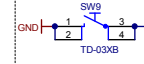


Push Button Controller

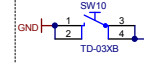
Always ON Jumper



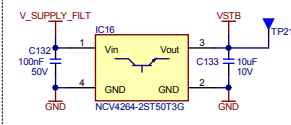
Power Button



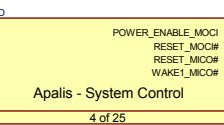
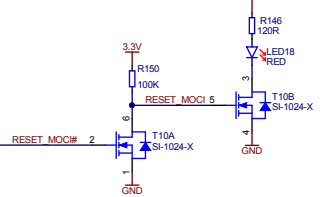
Reset Button



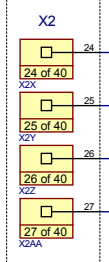
Standby Voltage LDO



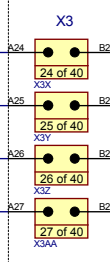
Reset LED



SYSTEM_CTRL MXXM0_31



SYSTEM_CTRL0_31



GPIO0_71



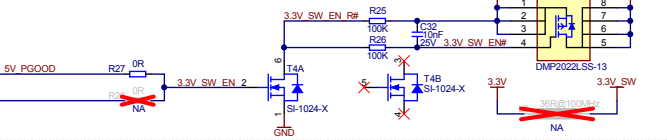
NOTE 1: it is recommended to add a 100K pull up resistor to the signal WAKE1_MIC0#.
NOTE 2: it is recommended to add a 100K pull down resistor to the signal POWER_ENABLE_MOC1.

Revision History Notes

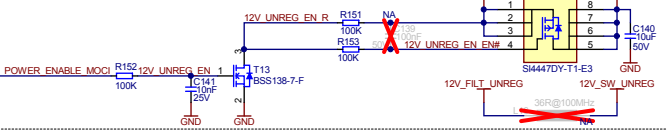
Power Supply Controller



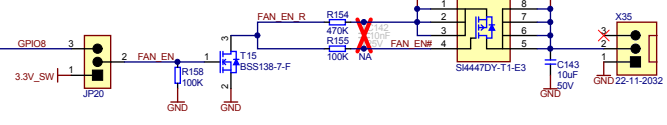
3.3V_SW CTRL



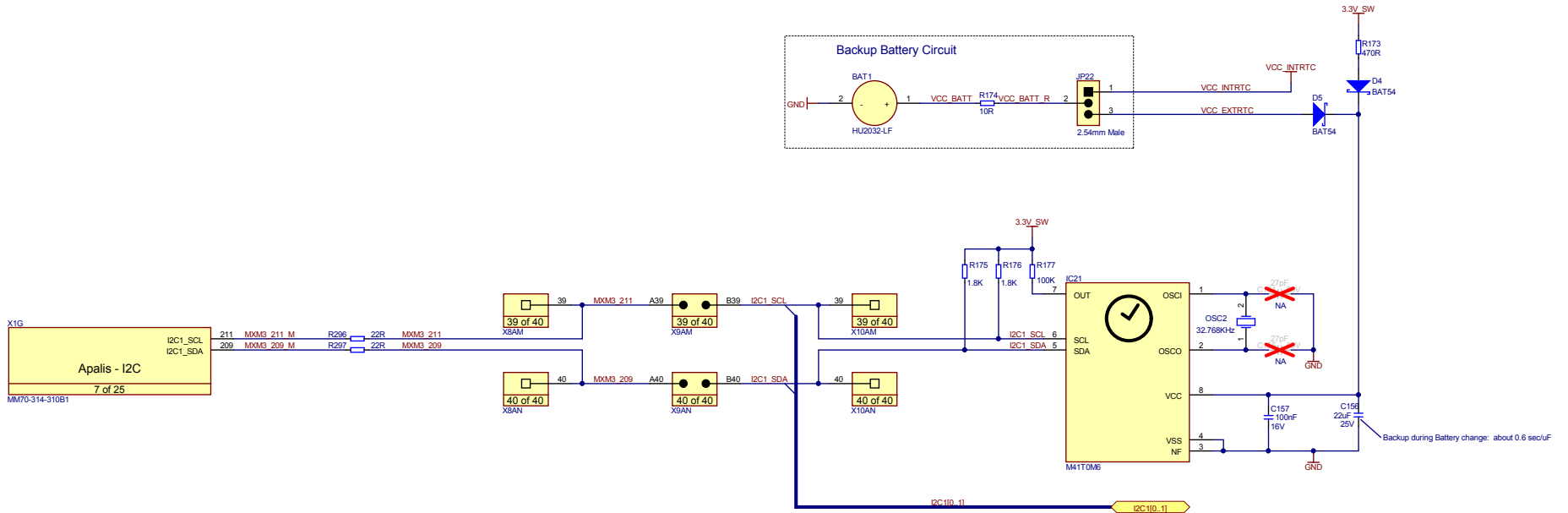
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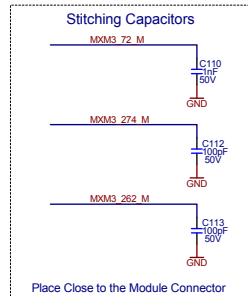
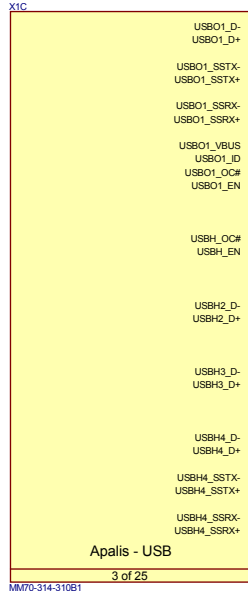
FAN CTRL



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Date: 21/11/2013	Time: 10:03:34	Sheet 4 of 32	
File: Power_Switch.SchDoc			

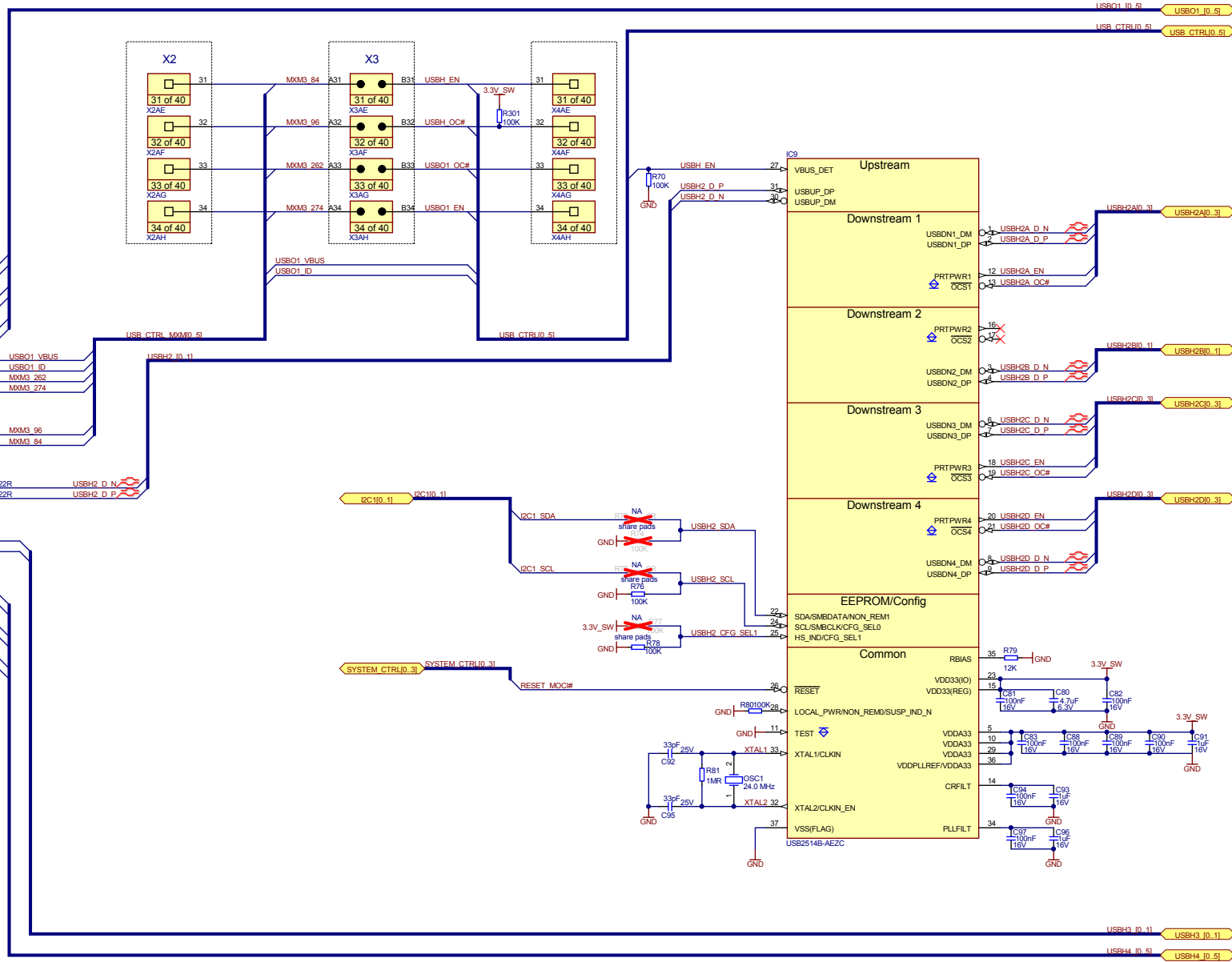


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File: RTC SchDoe			

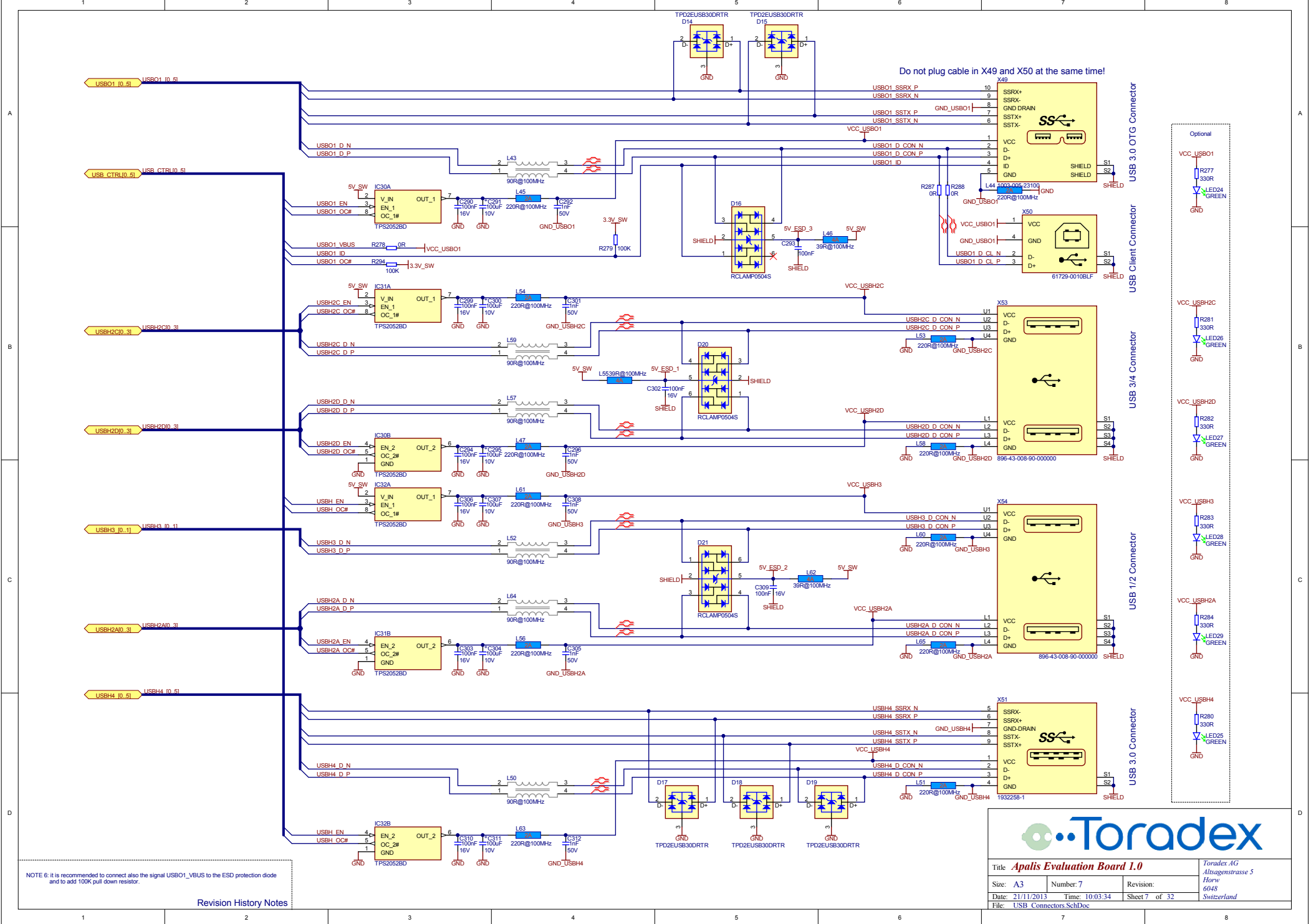


NOTE 10: it is recommended to assemble 0R resistor instead of 22R for R289 and R290

Revision History Notes



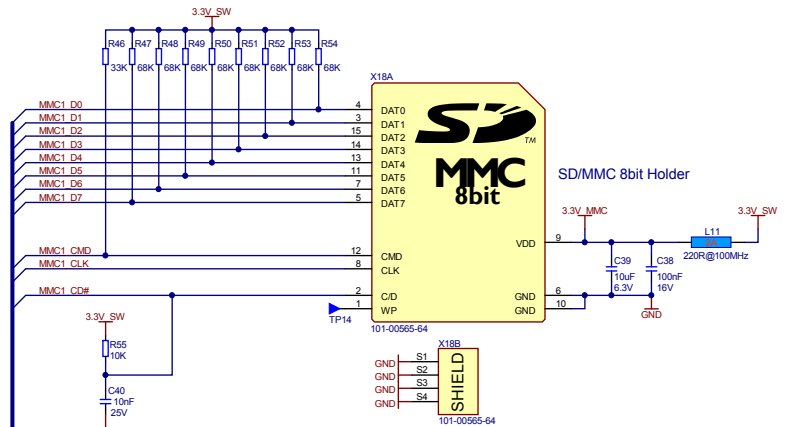
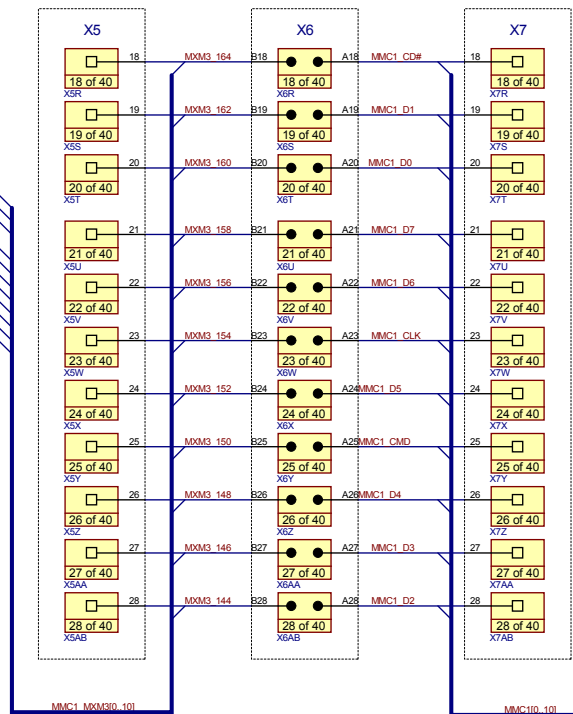
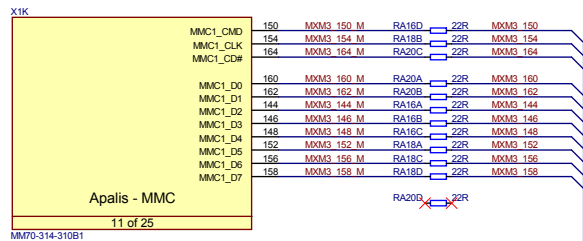
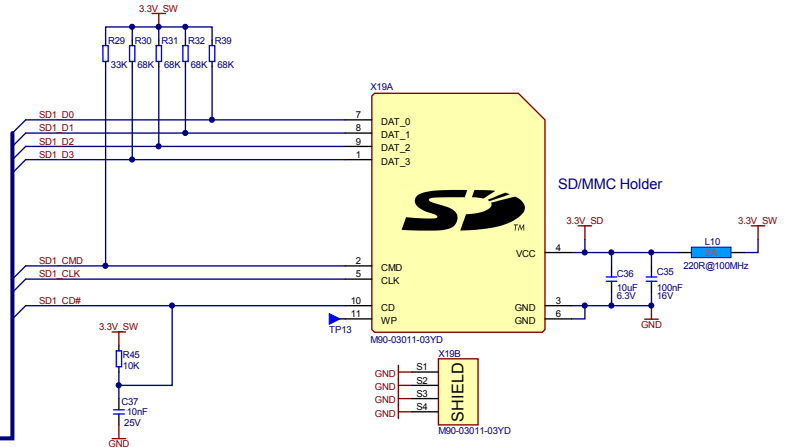
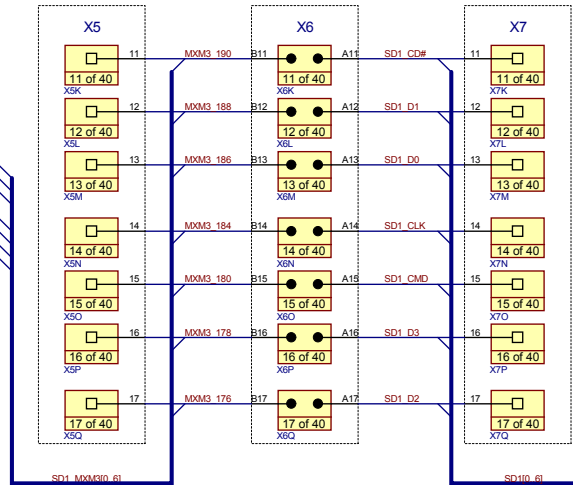
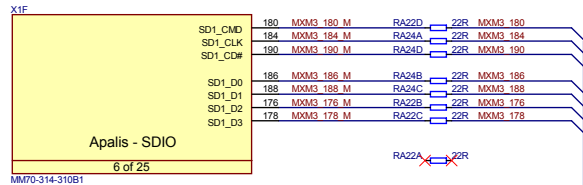
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Date: 21/11/2013	Time: 10:03:34	Sheet 6 of 32	
File: USB_Hub_SchDoc			

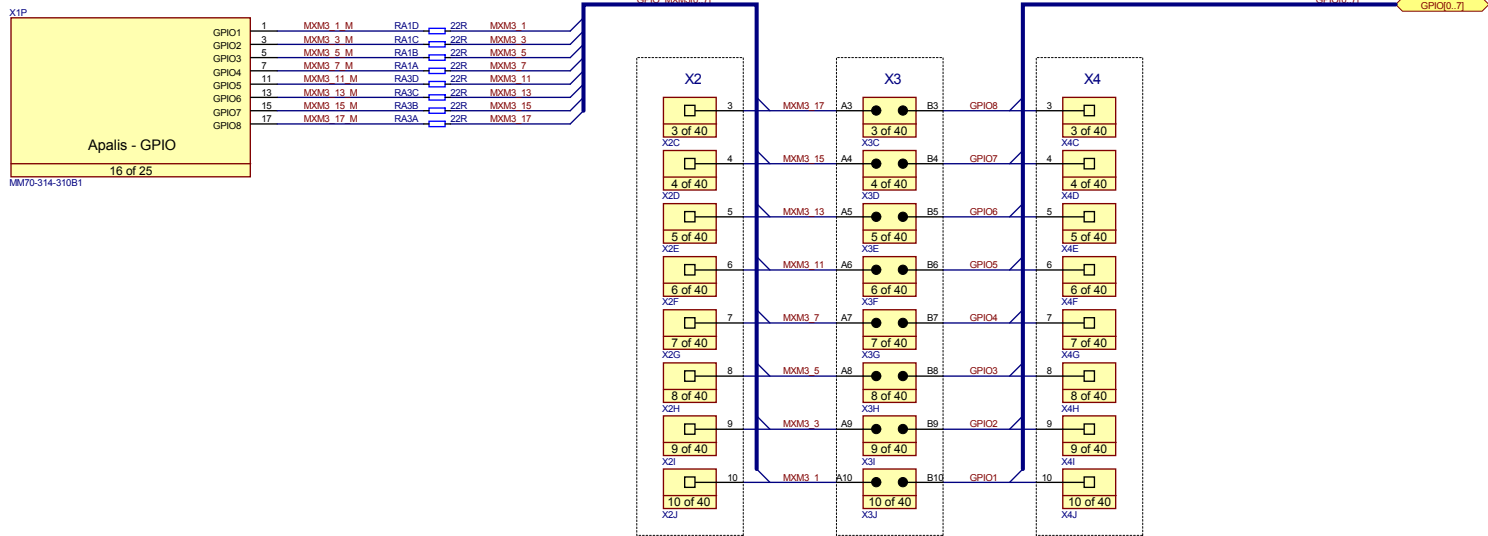


NOTE 6: it is recommended to connect also the signal USB01_VBUS to the ESD protection diode and to add 100K pull down resistor.

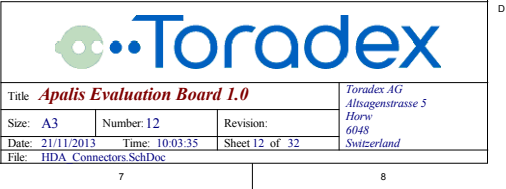
Revision History Notes

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Date: <i>21/11/2013</i>	Time: <i>10:03:34</i>	Sheet <i>7</i> of <i>32</i>	<i>Switzerland</i>
File: <i>USB_Connectors.SchDoc</i>			



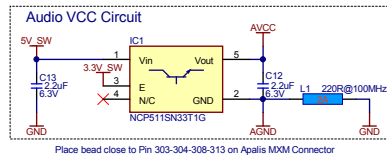
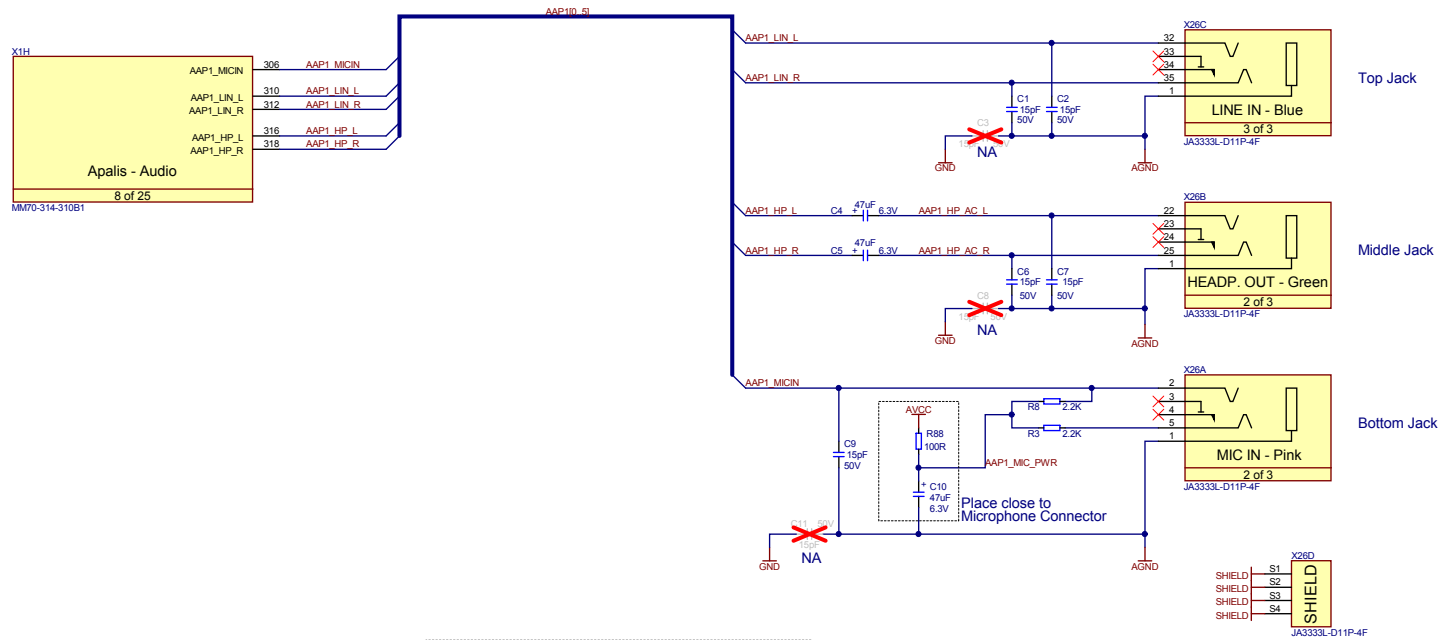








Title <i>Apalis Evaluation Board 1.0</i>			Toradex AG Altsagenstrasse 5
Size: A3	Number: 13	Revision:	Horw 6048
Date: 21/11/2013	Time: 10:03:35	Sheet 13 of 32	Switzerland
File: SPDIF SchDoc			



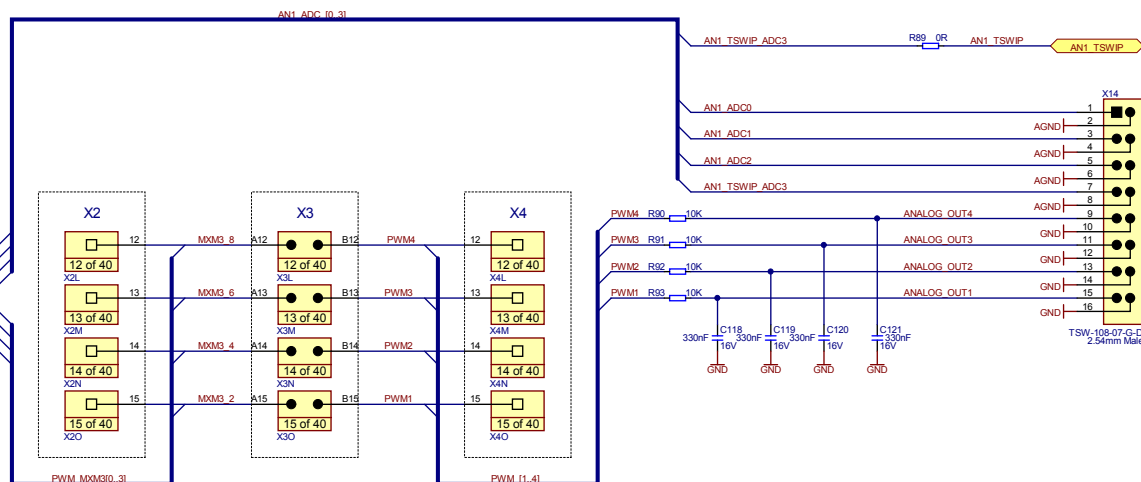
X1E

AN1_ADC0
AN1_ADC1
AN1_ADC2
AN1_TSWIP_ADC3
PWM1
PWM2
PWM3
PWM4

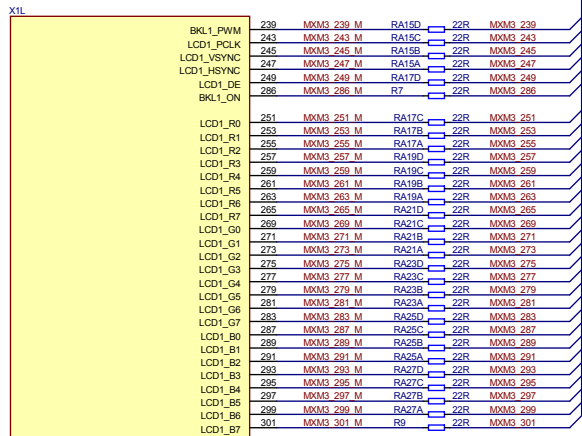
Apalis - PWM and Analog

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MM70-314-310B1



Title <i>Apalis Evaluation Board 1.0</i>			Toradex AG Altsagenstrasse 5 Horw 6048 <i>Switzerland</i>
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Date: 21/11/2013	Time: 10:03:35	Sheet 15 of 32	
File: Analog_IOs.SCHDOC			

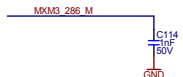


Apalis - Digital RGB

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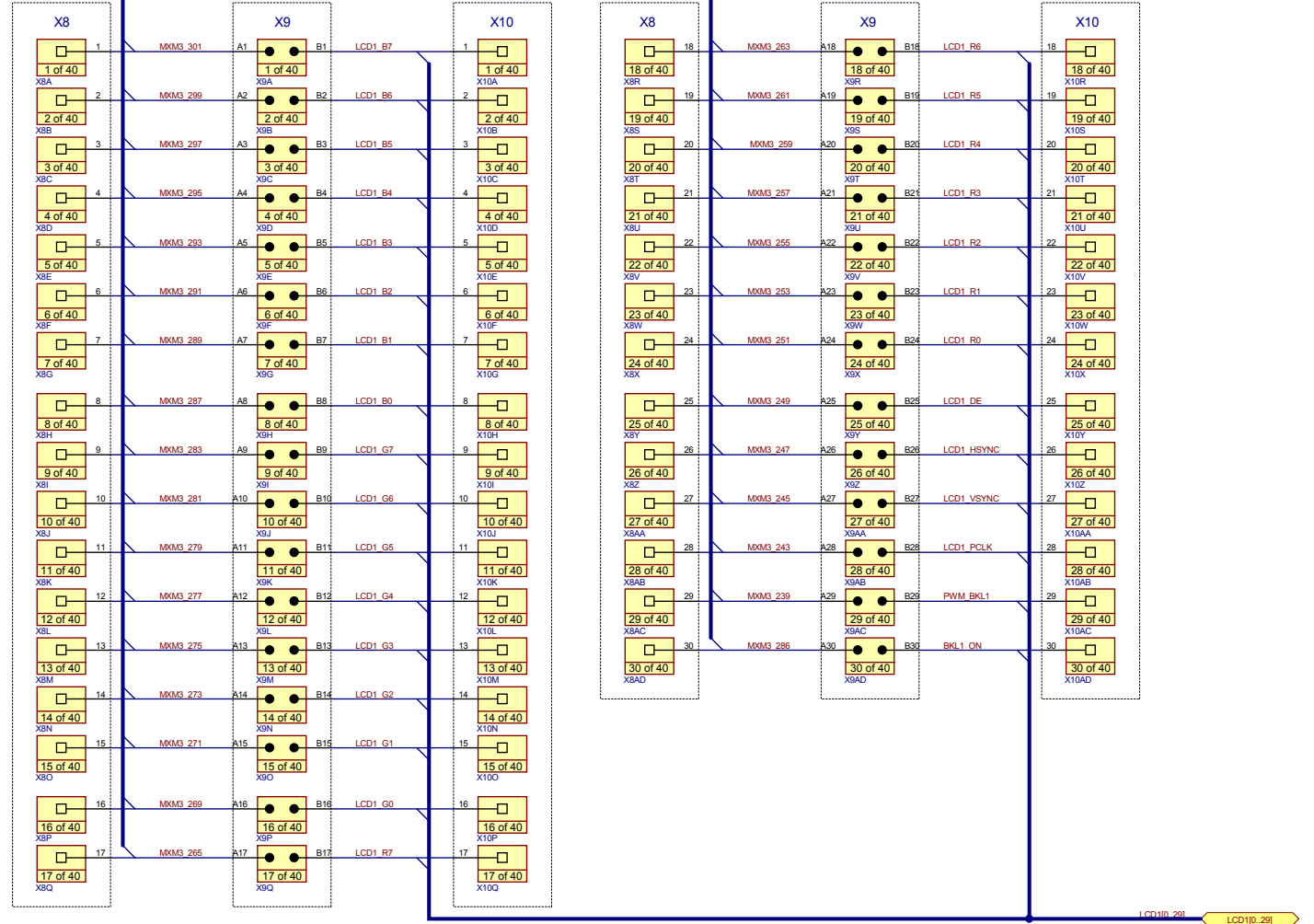
MM70-314-310B1

Stitching Capacitor

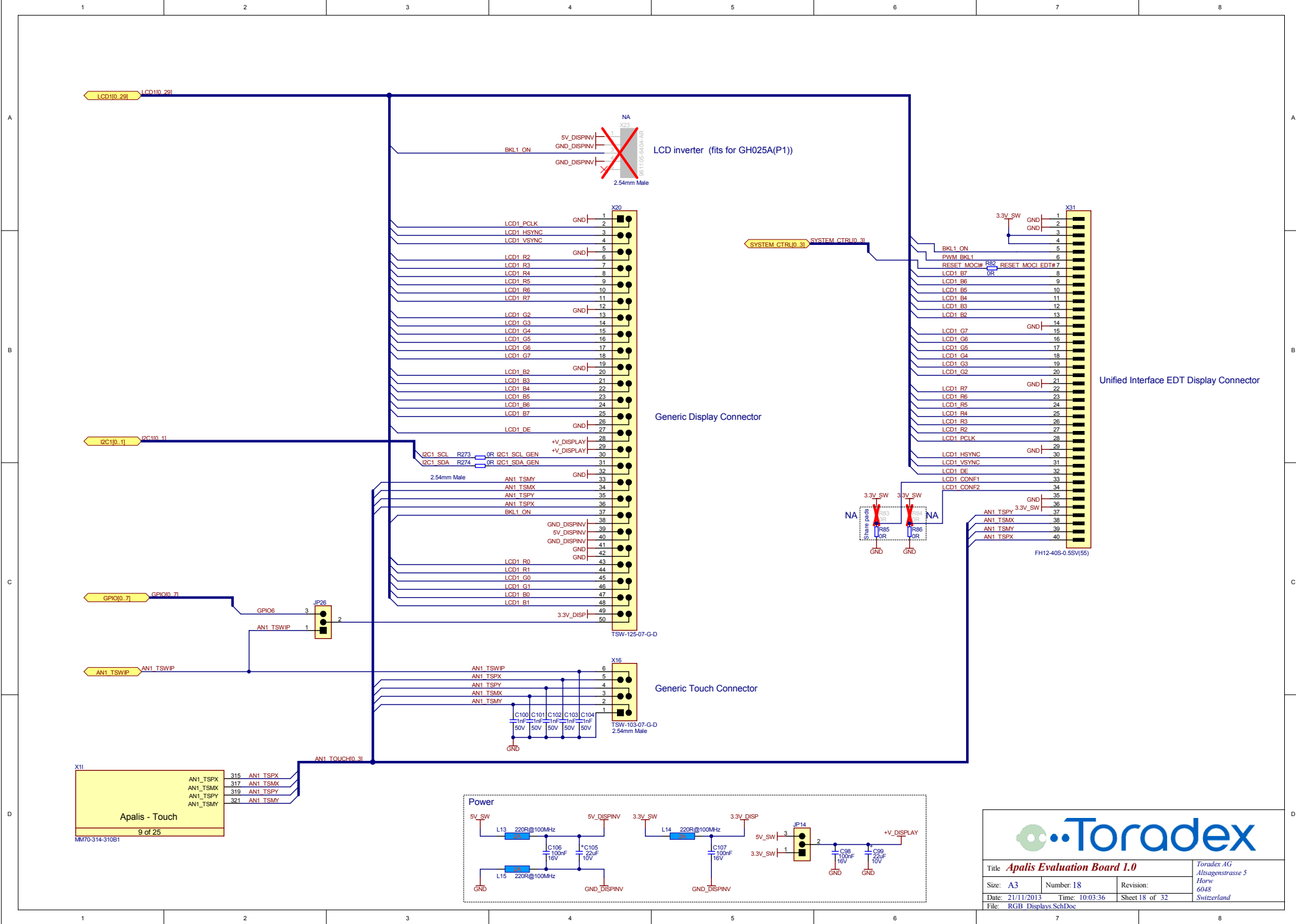


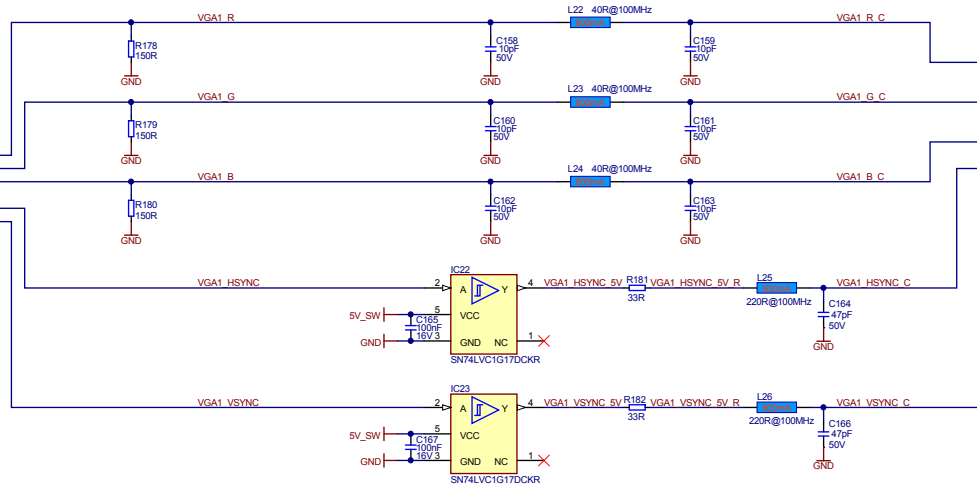
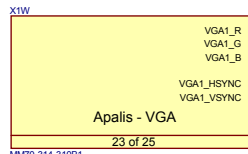
Place Close to the Module Connector

LCD1_MXM30_291

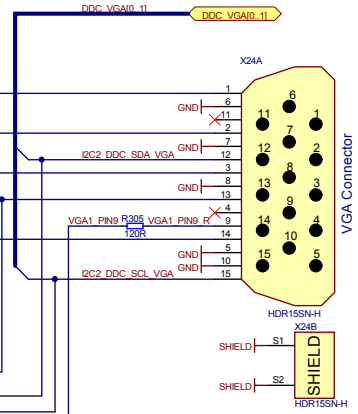
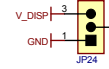
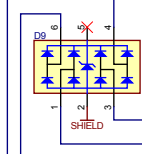
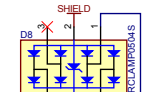


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Size: <i>A3</i>	Number: <i>17</i>	Revision:	Horv 6048
Date: <i>21/11/2013</i>	Time: <i>10:03:35</i>	Sheet <i>17</i> of <i>32</i>	<i>Switzerland</i>
File: <i>RGB Breakout SchDoc</i>			

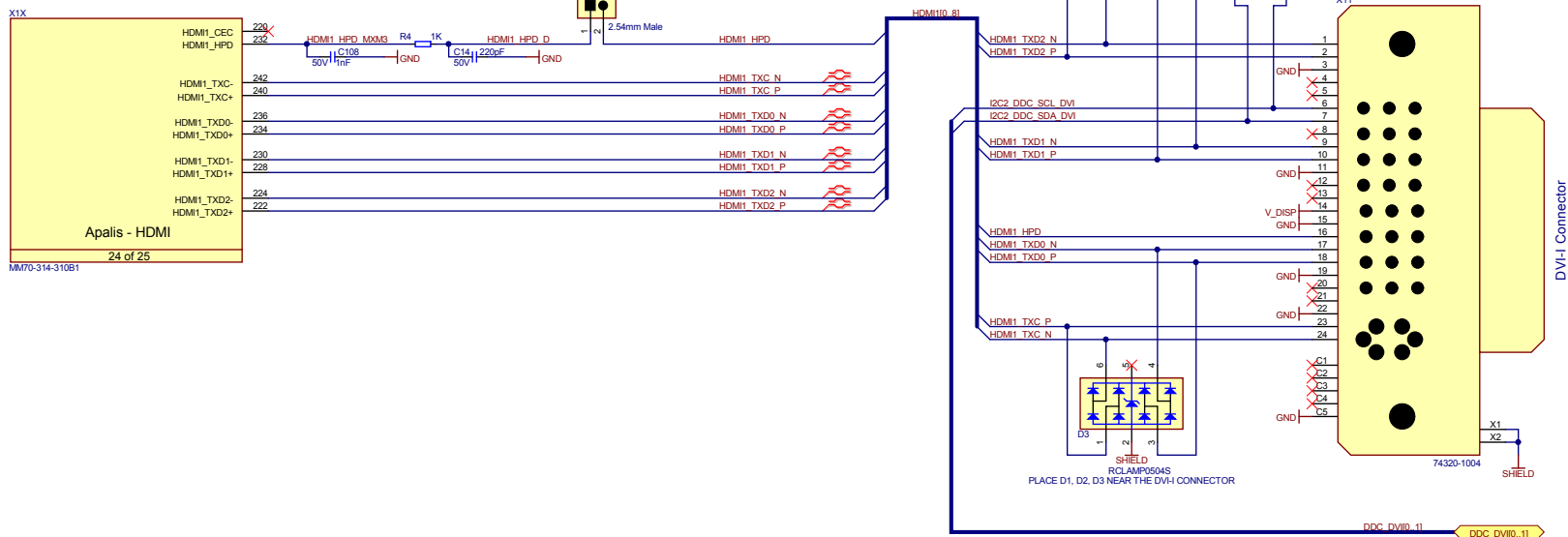




PLACE D8, D9 NEAR THE VGA CONNECTOR



Title: Apalis Evaluation Board 1.0			Toradex AG Altsagenstrasse 5 Horn 6048 Switzerland
Size: A3	Number: 20	Revision:	
Date: 21/11/2013	Time: 10:03:36	Sheet 20 of 32	
File: VGA.SchDoc			

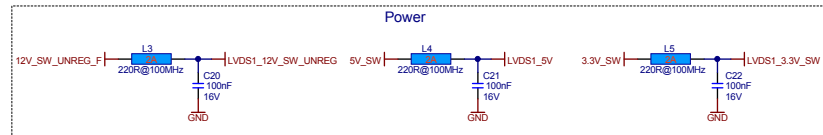
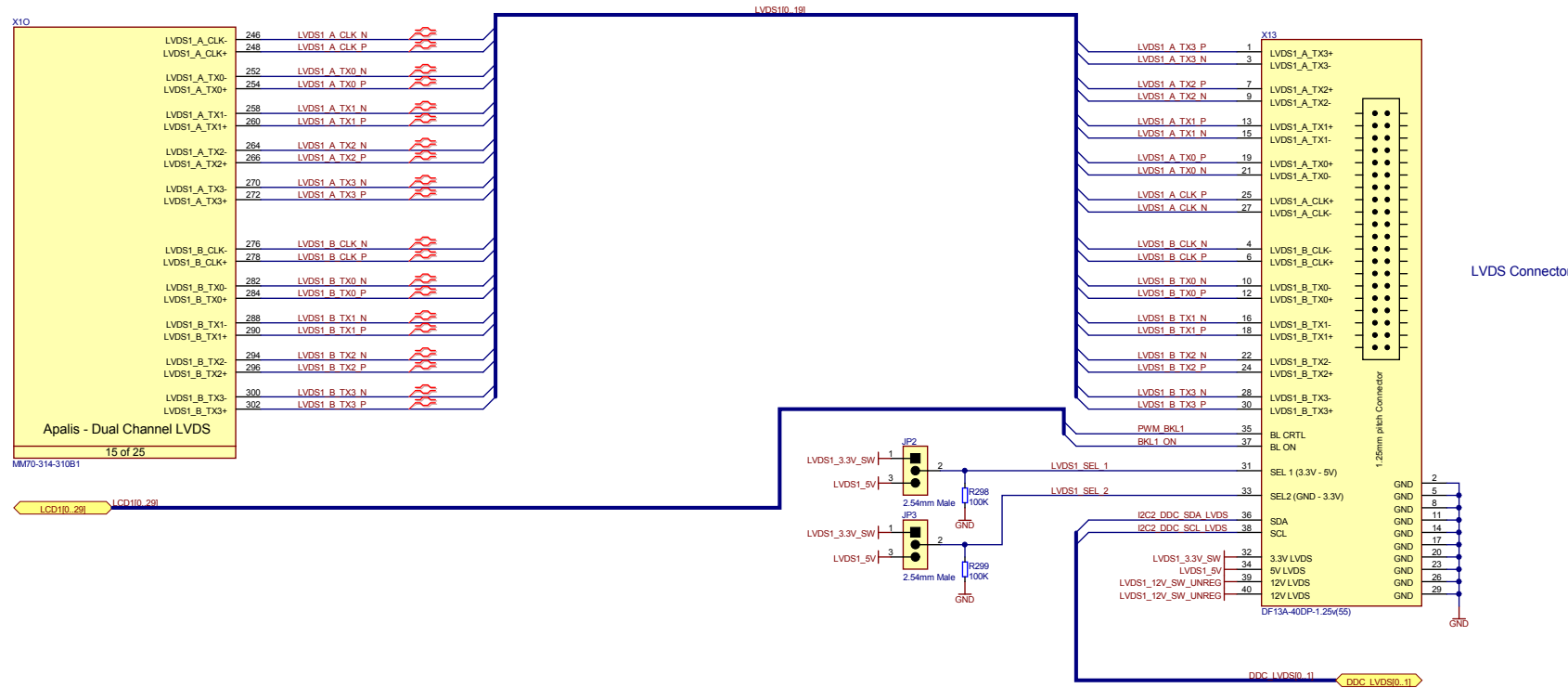


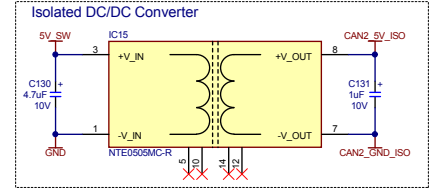
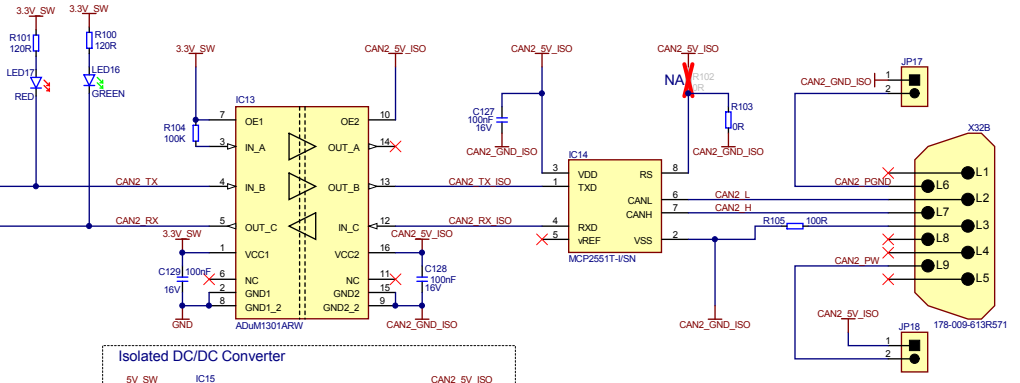
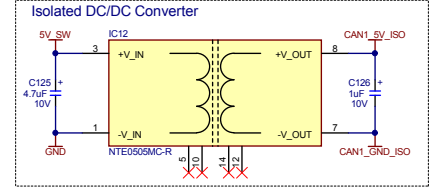
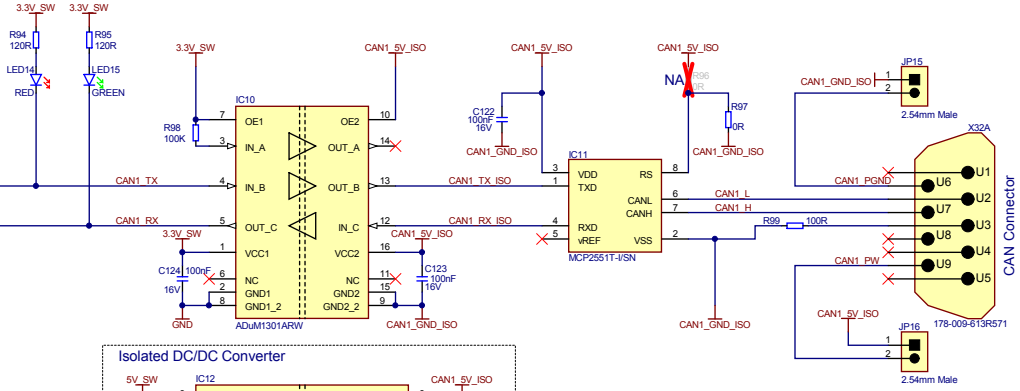
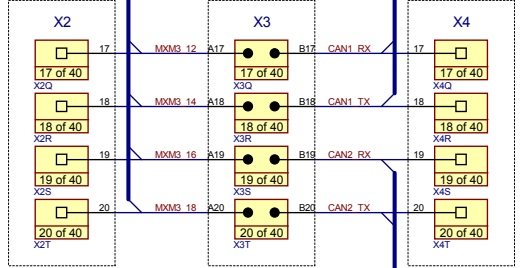
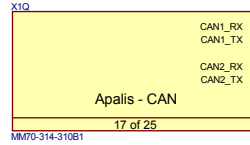
NOTE 5: it is recommended to connect also the signal HDMI1_HPD to the ESD protection diode.

Revision History Notes

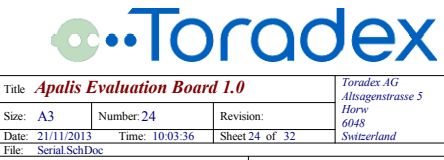


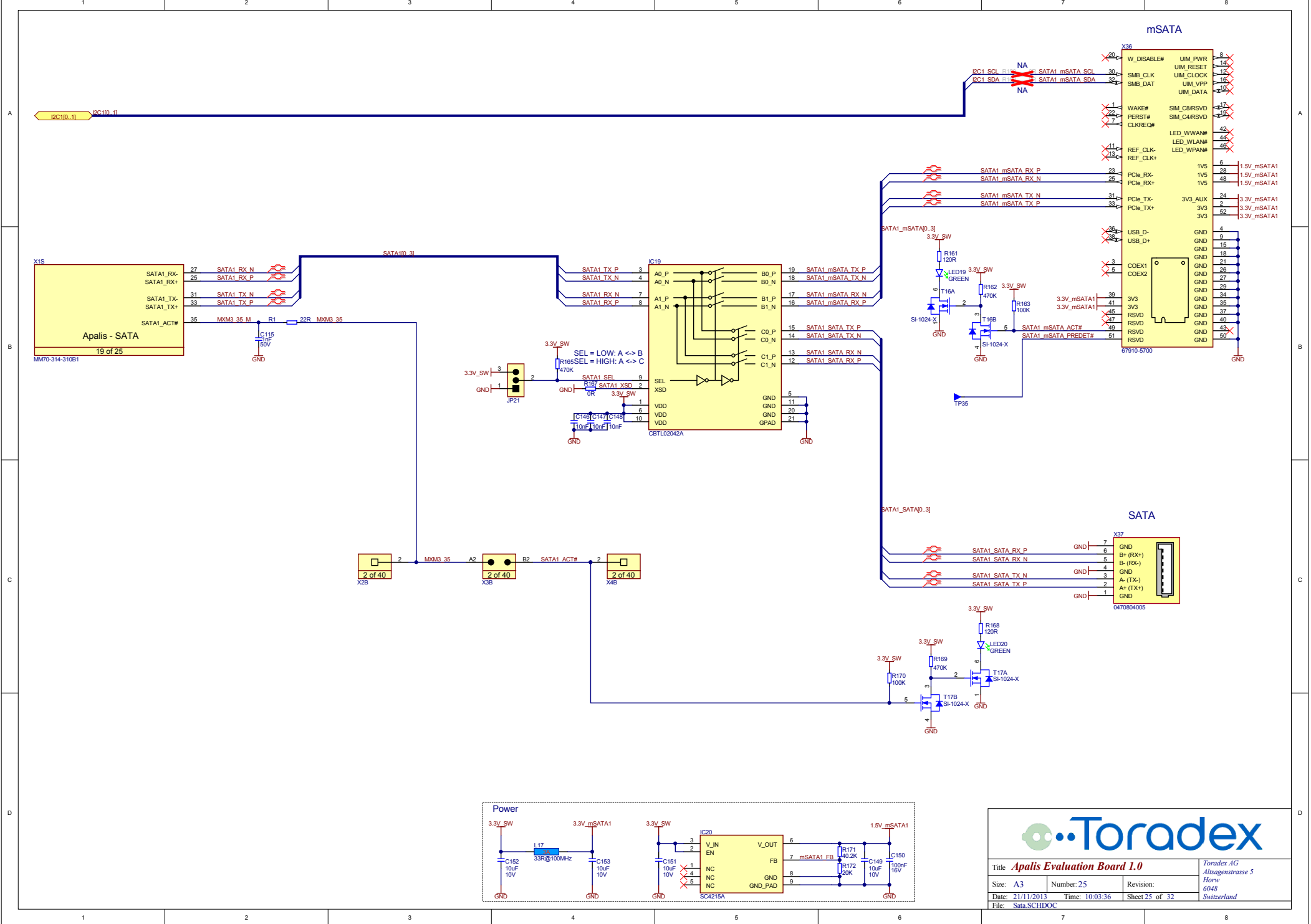
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Size: <i>A3</i>	Number: <i>21</i>	Revision:	
Date: <i>21/11/2013</i>	Time: <i>10:03:36</i>	Sheet <i>21</i> of <i>32</i>	
File: <i>DVI-I SchDoc</i>			

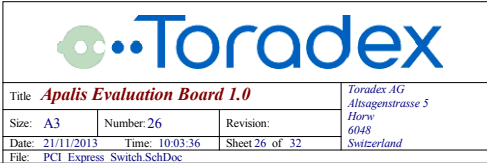




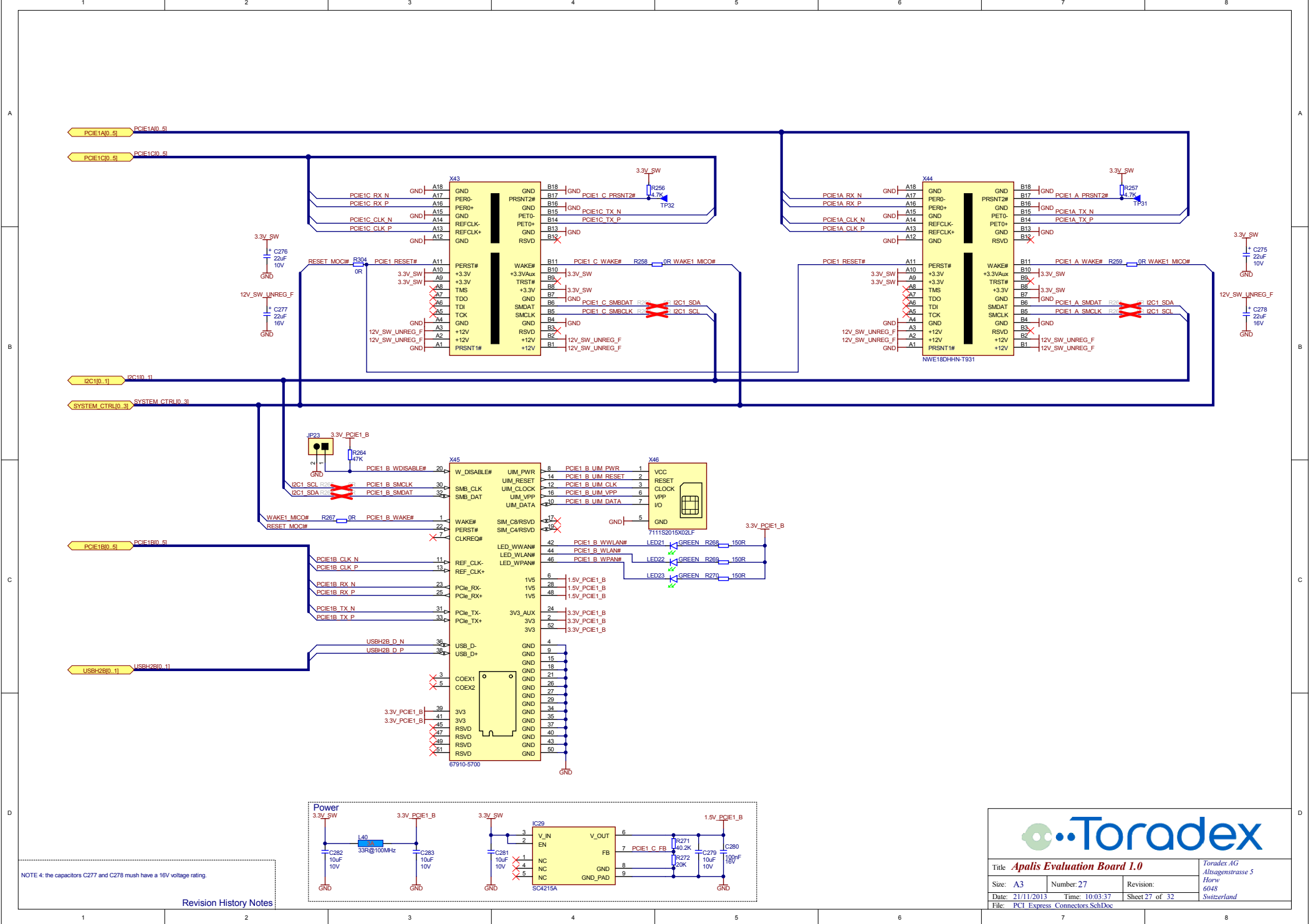
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Size: <i>A3</i>	Number: <i>23</i>	Revision:	
Date: <i>21/11/2013</i>	Time: <i>10:03:36</i>	Sheet 23 of 32	
File: <i>CAN_SchDoc</i>			








Revision History Notes

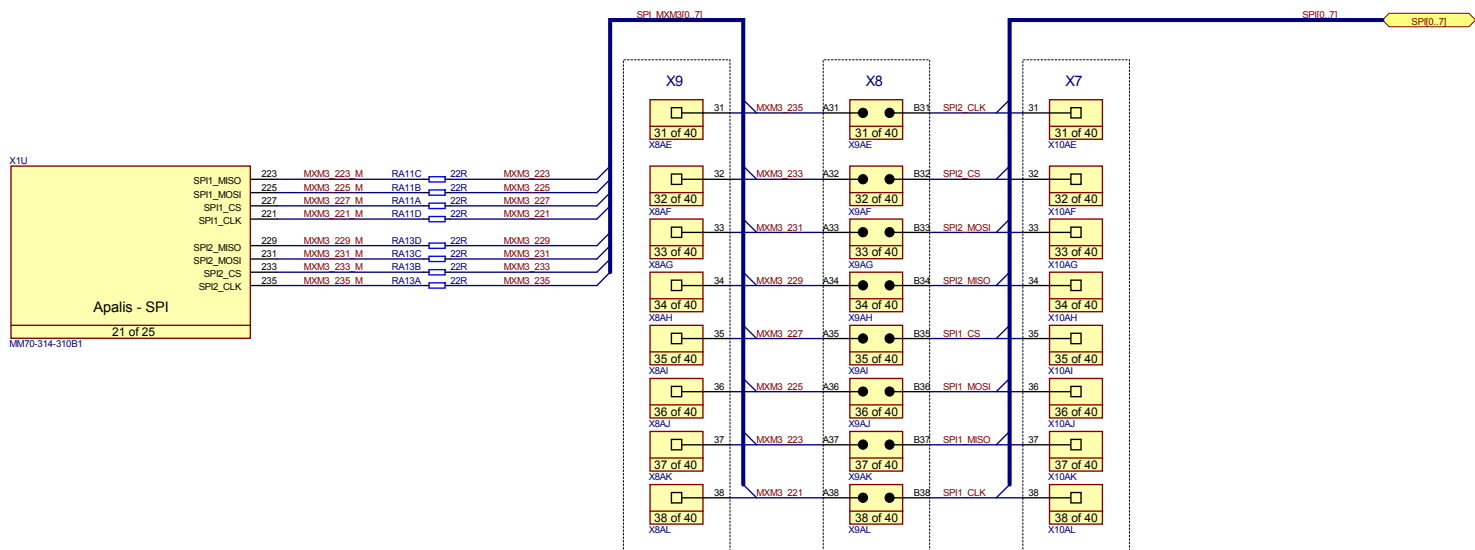


NOTE 4: the capacitors C277 and C278 must have a 16V voltage rating.

Revision History Notes

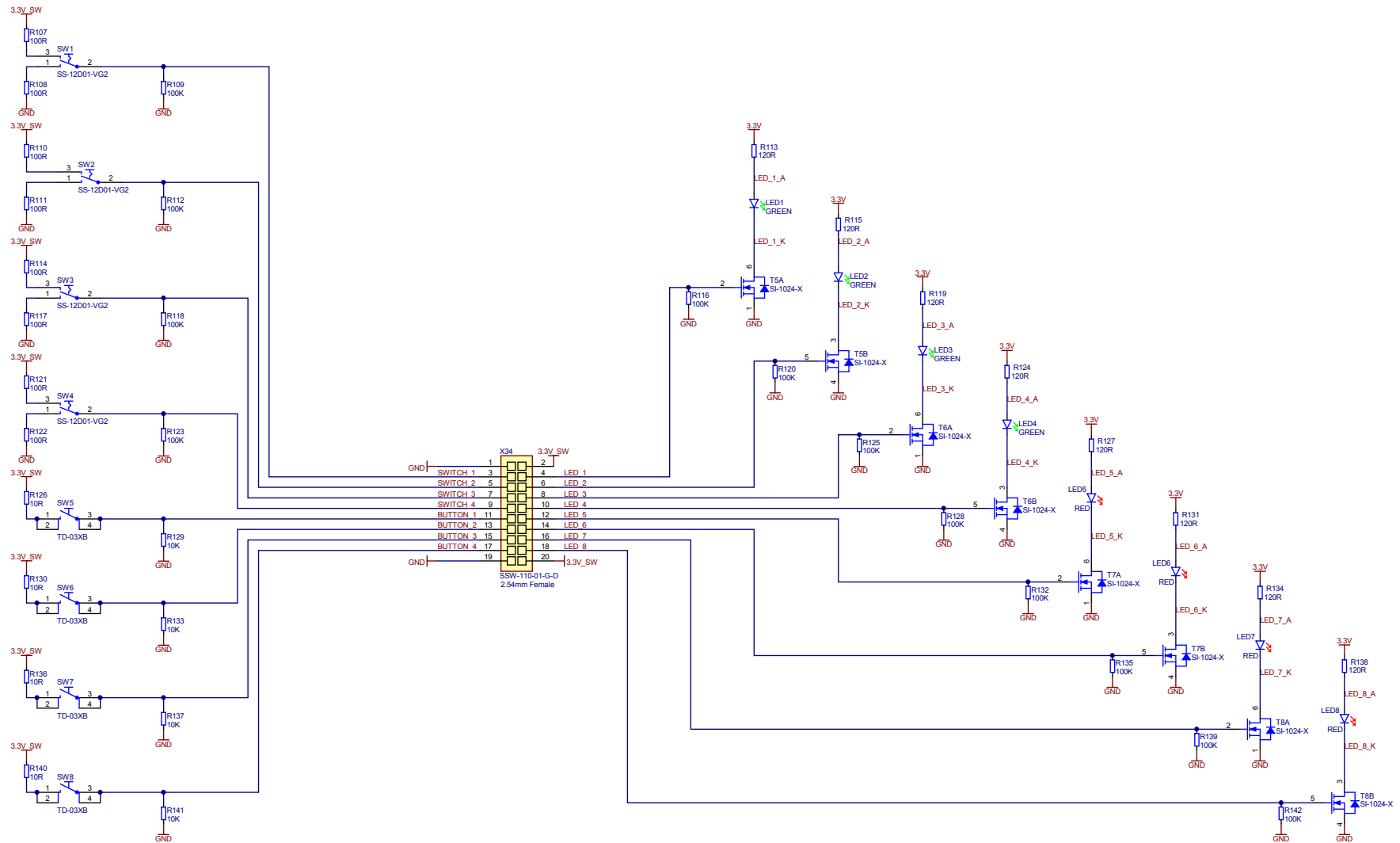


Title Apalis Evaluation Board 1.0			Toradex AG Alsogenstrasse 5 Horn 6048 Switzerland
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File: PCI Express Connectors.SchDoc			

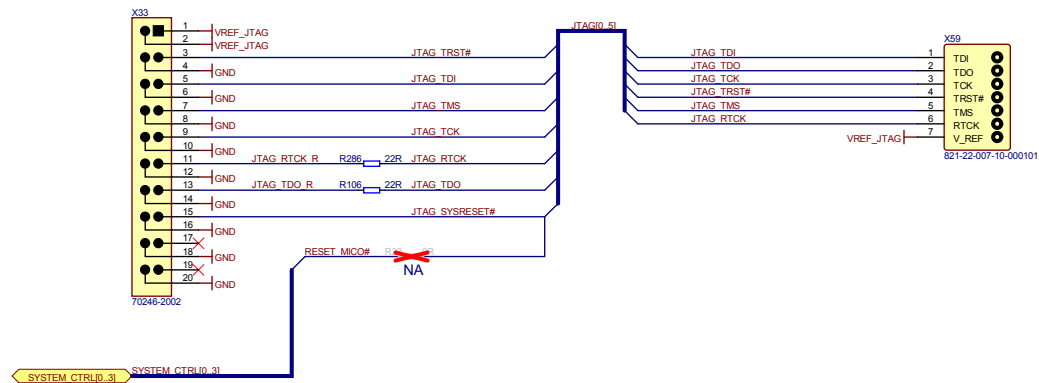




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Size: A3	Number: 29	Revision:	
Date: 21/11/2013	Time: 10:03:37	Sheet 29 of 32	
File: Type Specific SchDoc			



Title <i>Apalis Evaluation Board 1.0</i>			Toradex AG Altsagenstrasse 5 Horw 6048 Switzerland
Size: <i>A3</i>	Number: <i>30</i>	Revision:	
Date: <i>21/11/2013</i>	Time: <i>10:03:37</i>	Sheet <i>30</i> of <i>32</i>	
File: <i>LEDs_Switches.SchDoc</i>			



NOTE 9: the connector X59 has been installed rotated by 180 degrees on the PCB by mistake.
Please consider this information while placing the same connector on your PCB design.
Please contact the Toradex support if you need to test this interface on the Apalis Evaluation Board.

Revision History Notes



Title <i>Apalis Evaluation Board 1.0</i>			Toradex AG Altsagenstrasse 5 Horw 6048 Switzerland
Size: A3	Number: 31	Revision:	
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