


REVISION HISTORY

1. Design Revision V1.0 : Preliminary design.
Date: 29th Dec 2015
2. Design Revision V1.1 :
- PowerSupply.SchDoc: Improved Power Supply Architecture drawing and added comments in the schematic page.
- ViolaHeaders.SchDoc: Added resistor R55 to buzzer circuit. Changed IC4 part number to SST25VF080B-80-4I-SAE from SST26VF064B-104I/SM.
- ViolaHeaders.SchDoc, PowerSupply.SchDoc: Added test point (TP1, TP2, TP3, TP4, TP5, TP6) the power signals +3.3V, +5V, +5V_ISO, GNS_ISO.
- ViolaHeaders.SchDoc, Viola HMI Adapter.Schlib : Corrected IC4 (SST25VF080B-80-4I-SAE) schematic symbol (error: pin 7 and 8 were swapped in Viola HMI Adpater V1.0).
- GPIOs.SchDoc: Added comments in the schematic page.
- SerialCommunication-RS232_485.SchDoc: Changed resistors (R19, R21, R24, R26) value to 560 ohm.
- SerialCommunication-RS232_485.SchDoc: Resistor R24 is pulled up to +5V_ISO.
- Viola HMI Adapter.PcbDoc: Updated for schematic changes. Added comments on bottom side - silkscreen layer.
Date: 14th April 2016

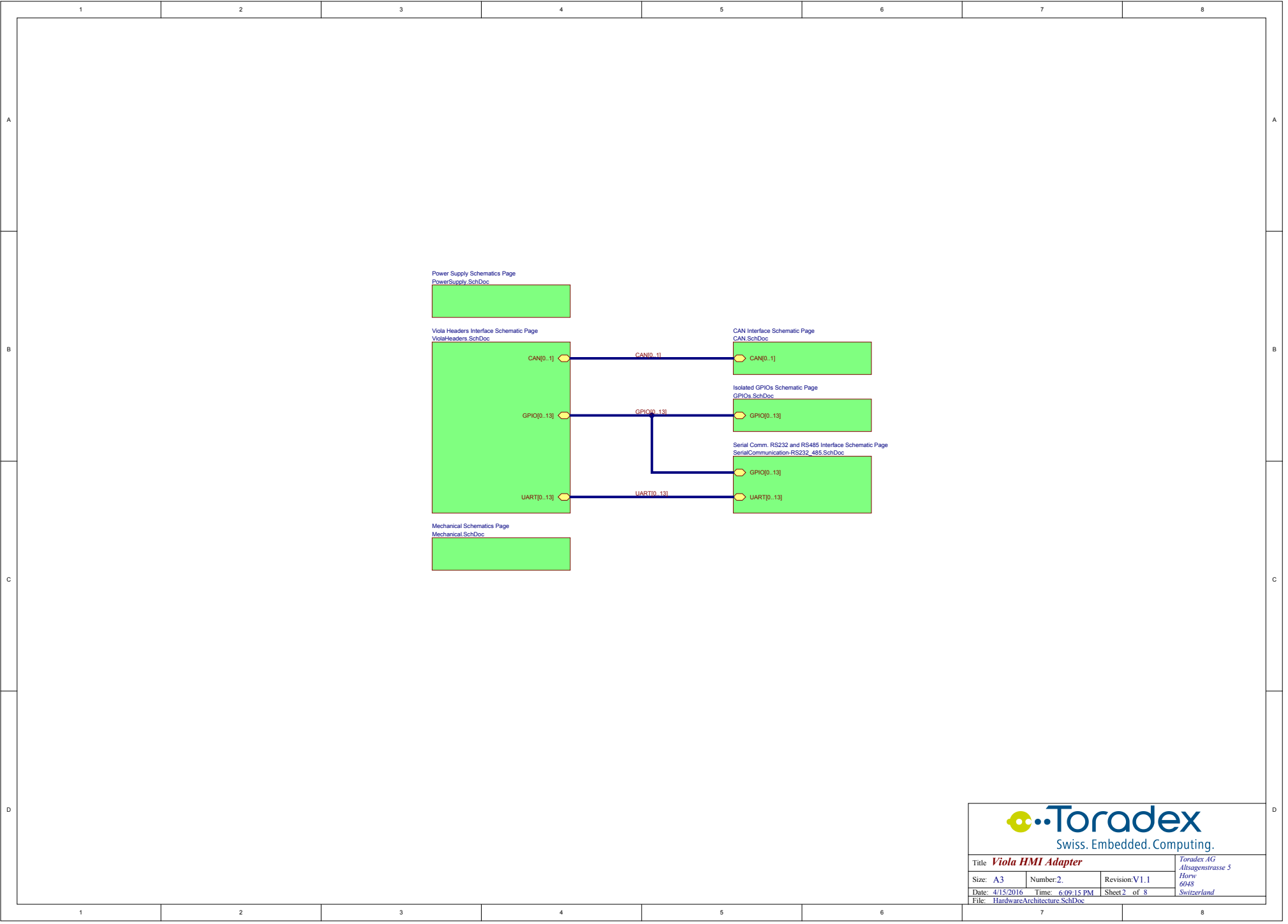
IF IN DOUBT ASK

Viola HMI Adapter Hardware Architecture
HardwareArchitecture_SchDoc

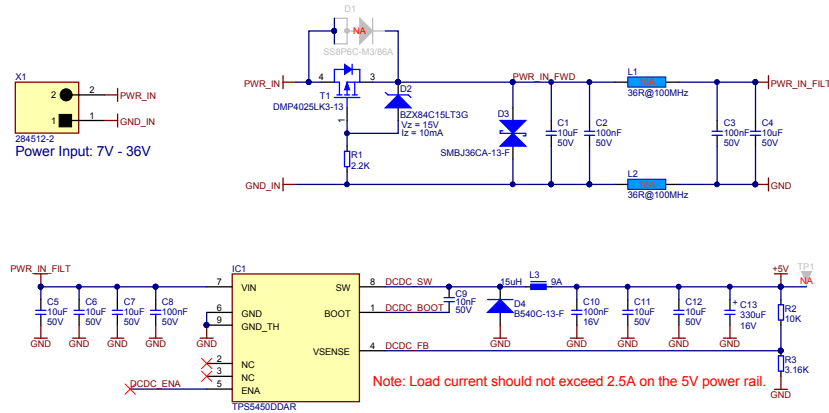


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Title Viola HMI Adapter			Toradex AG Altsägenstrasse 5 Horn 6048 Switzerland	
Size: A3	Number: 1.	Revision: V1.1		
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File: RevisionHistory.SchDoc				



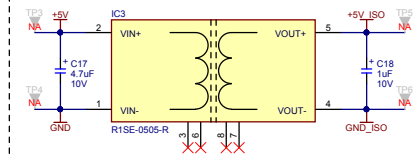
Power Supply : DC DC (Step Down) Converter



Power Indication



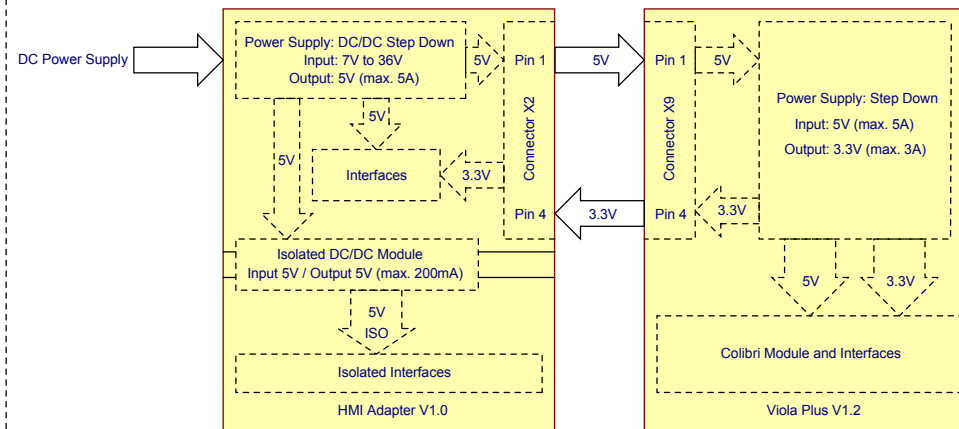
Power Supply : Isolated DC DC (5V-to-5V)



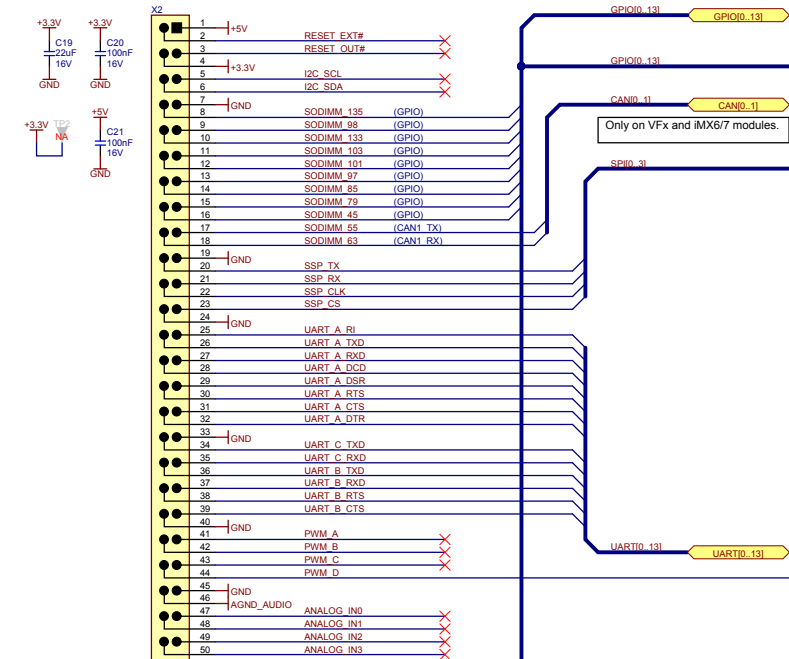
SHIELD (Isolated Side)



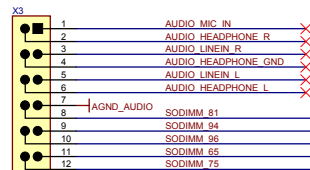
Power Supply Architecture



Socket Connector for Viola V1.2 Carrier Board

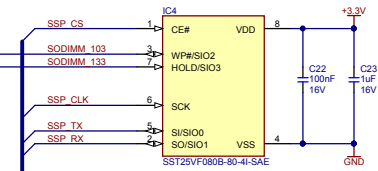


ESW-135-58-G-D
Connects to Viola Extension Connector X9



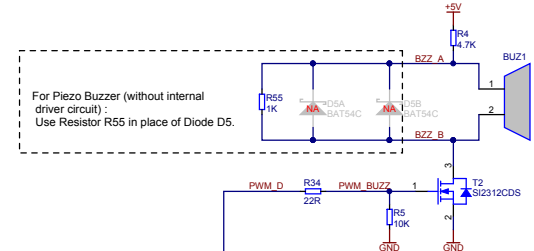
ESW-106-58-G-D
Connects to Viola Audio Connector X10

Flash Memory (SPI based)



Alternative Parts:
SST25xx512 (512 Kbit), SST25xx010 (1 Mbit),
SST25xx020 (2 Mbit), SST25xx040 (4 Mbit),
SST25xx080 (8 Mbit), SST25xx16 (16 Mbit),
SST25xx32 (32 Mbit), SST64xx010 (64 Mbit)

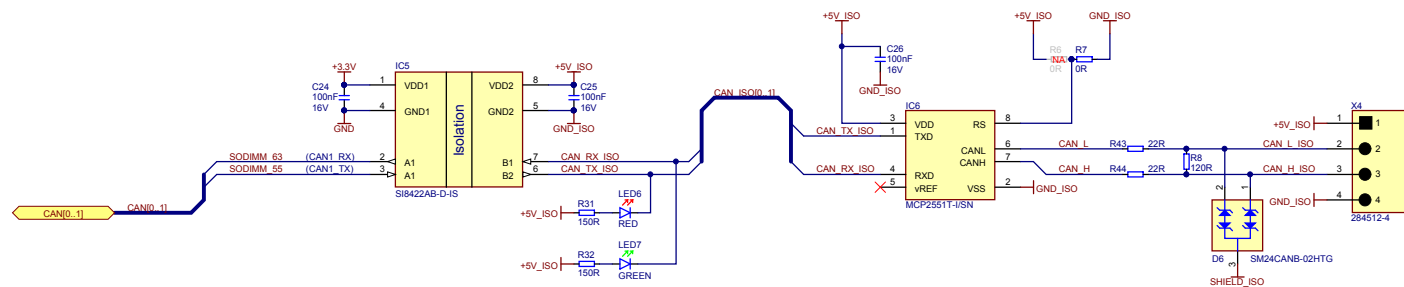
Buzzer



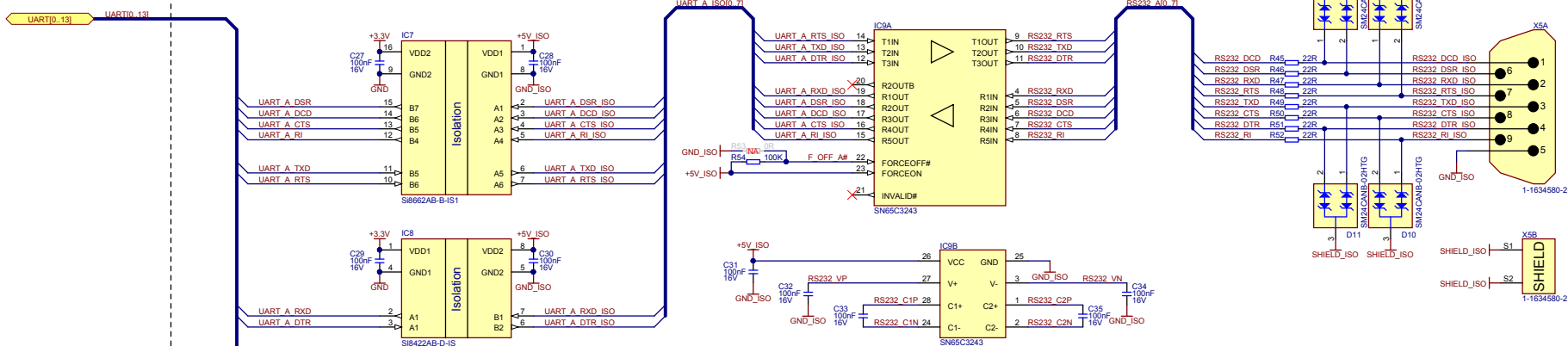
For Piezo Buzzer (without internal driver circuit) :
Use Resistor R5 in place of Diode D5.



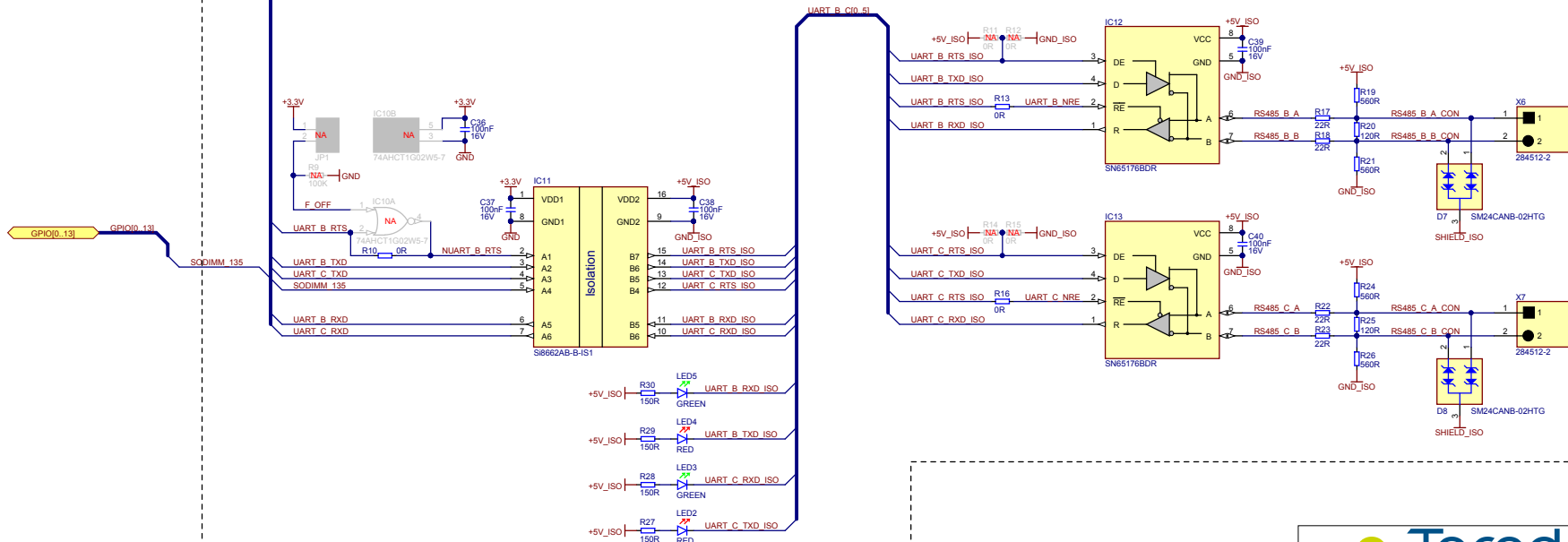
Title Viola HMI Adapter		Toradex AG Altschneidstrasse 5 Horn 6048 Switzerland	
Size: A3	Number: 4.	Revision: V1.1	
Date: 4/15/2016	Time: 6:09:16 PM	Sheet 4 of 8	
File: ViolaHMIHeaders.SchDoc			

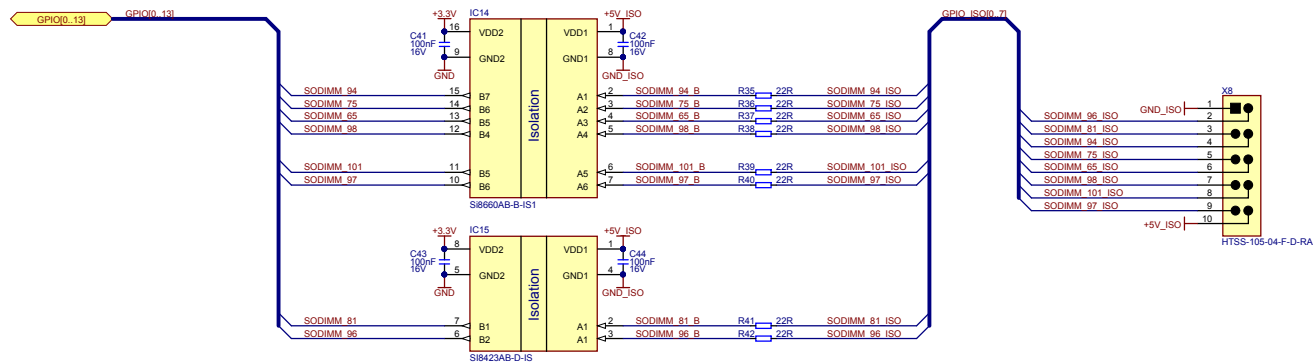


1x RS232 Interface



2x RS485 Interface (Half Duplex)



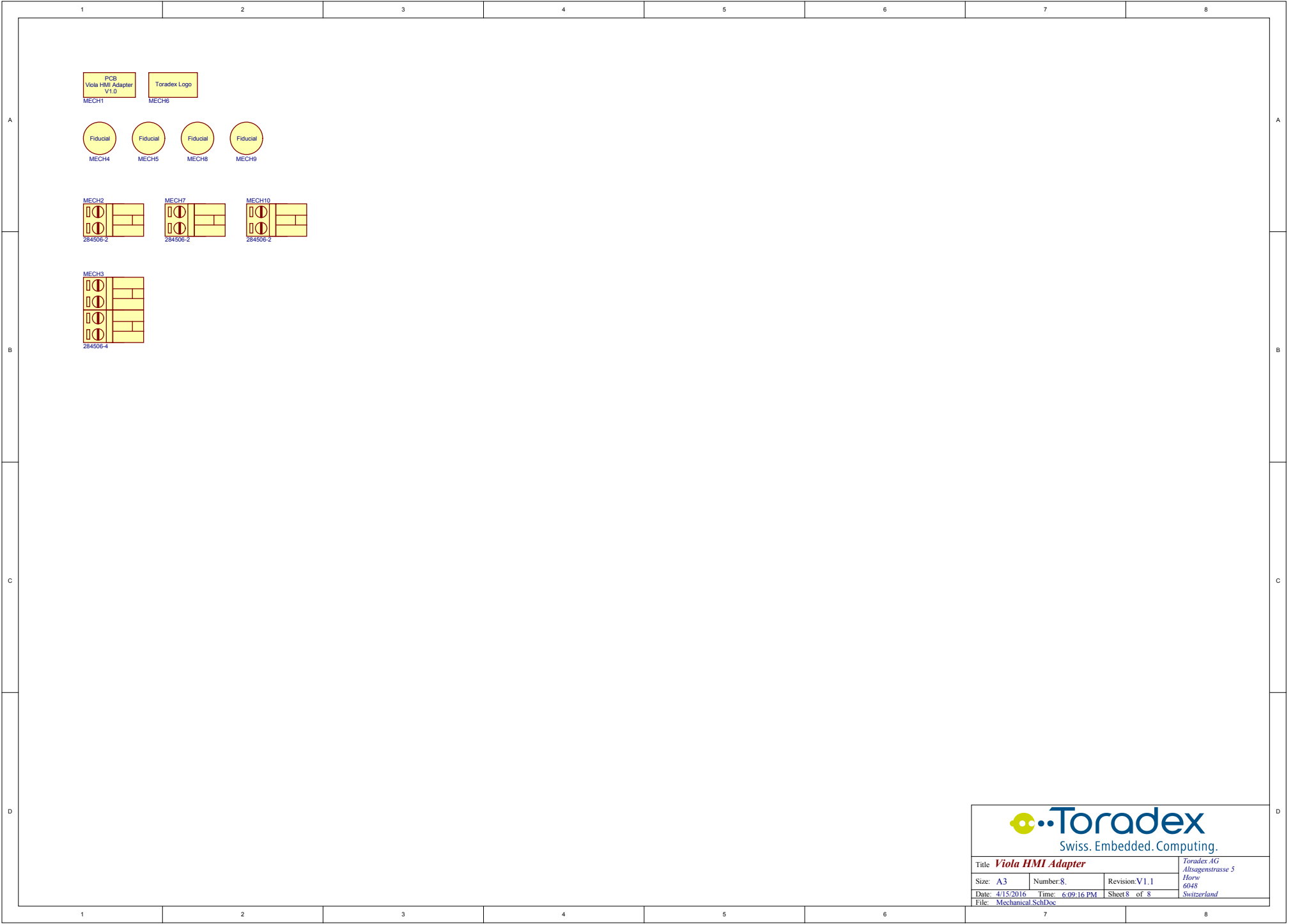


IC14 and IC15 are uni-directional digital isolators. In the above circuit diagram, all the pins available at connector X8 are configured as input.
By changing IC14 and IC15, with alternate parts, the direction of the digital I/O signal available at connector X8 can be changed.
Please find the details below:

- IC14 -> Si8660
X8, Pin 4, 5, 6, 7, 8, 9: Digital Input
- IC14 -> Si8661
X8, Pin 4, 5, 6, 7, 8: Digital Input and X8 Pin 9: Digital Output
- IC14 -> Si8662
X8, Pin 4, 5, 6, 7: Digital Input and X8 Pin 8, 9: Digital Output
- IC14 -> Si8663
X8, Pin 4, 5, 6: Digital Input and X8 Pin 7, 8, 9: Digital Output
- IC15 -> Si8422
X8, Pin 2: Digital Input and X8, Pin 3: Digital Output
- IC15 -> Si8423
X8, Pin 2 and 3: Digital Input



Title Viola HMI Adapter		Toradex AG Altsagenstrasse 5 Horn 6048	
Size: A3	Number: 7.	Revision: V1.1	Date: 4/15/2016
Date: 4/15/2016	Time: 6:09:16 PM	Sheet 7 of 8	Switzerland
File: GPIOs.SchDoc			



Title <i>Viola HMI Adapter</i>			Toradex AG Altsagenstrasse 5 Horw 6048 Switzerland
Size: A3	Number:8.	Revision:V1.1	
Date: 4/15/2016	Time: 6:09:16 PM	Sheet 8 of 8	
File: Mechanical.SchDoc			