

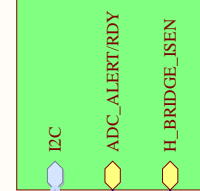
USB Serial and Programming
2_usb.SchDoc



I2C
10_i2c.schdoc



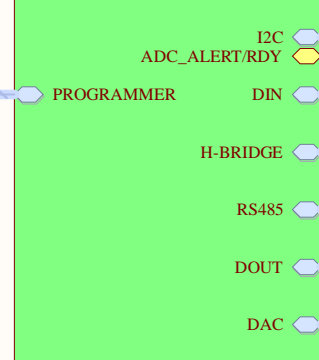
Analog Inputs
4_adc.SchDoc



Digital Inputs
6_din.SchDoc



Main CPU
3_cpu.SchDoc



DC Motor H-Bridge
8_h-bridge.SchDoc



Power
1_power.SchDoc



Analog Outputs
5_dac.SchDoc



Digital Outputs
7_dout.SchDoc



RS485
9_rs485.SchDoc

SmartyBlock Block Diagram

- It's the same order as the PCB
- Each page is connected via Harness
- Use Ctrl+DoubleLeftClick to navigate within blocks

Mounting Holes M3

MP1
M3X0.5

MP2
M3X0.5

MP3
M3X0.5

MP4
M3X0.5

Title **SmartyBoy Block Diagram**

Size: A4

Number: 1

Revision: v1.0.0

Date: 27-12-2021

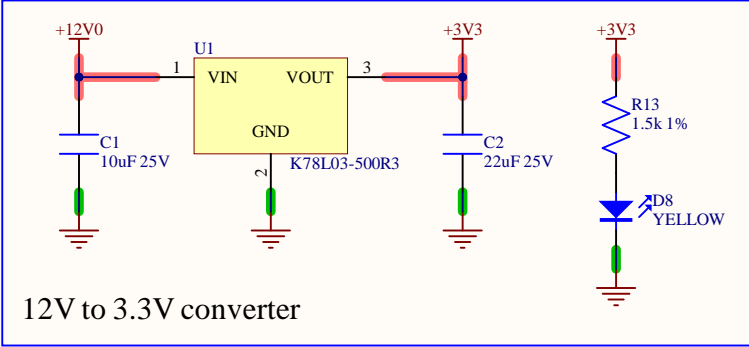
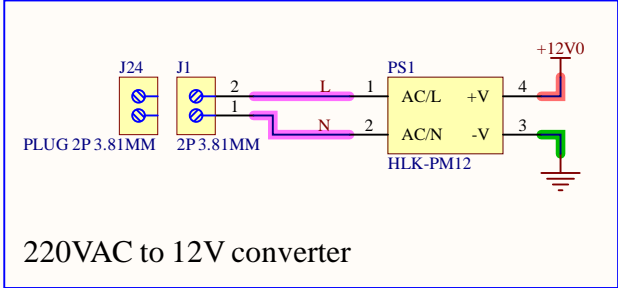
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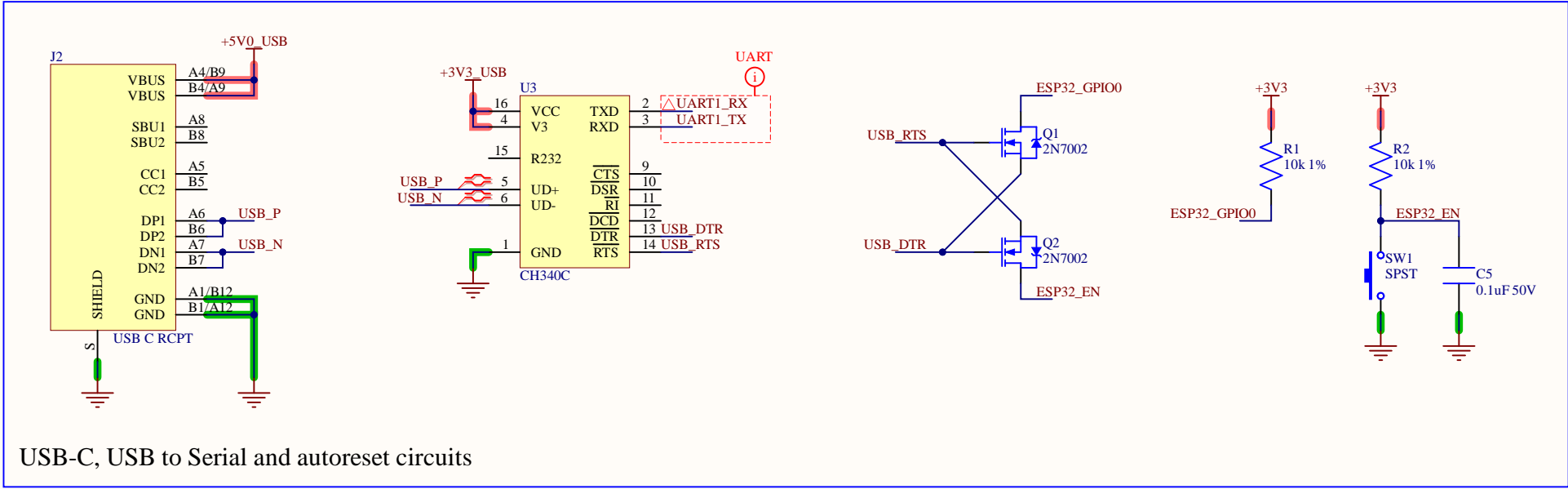
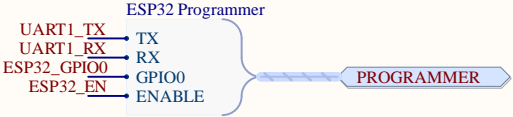
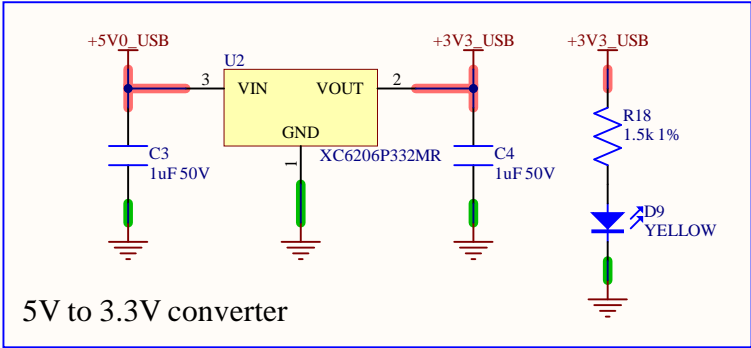
Sheet 1 of 11

Designer: alkonosst

SmartyBoy
alkonosst
github.com/alkonosst

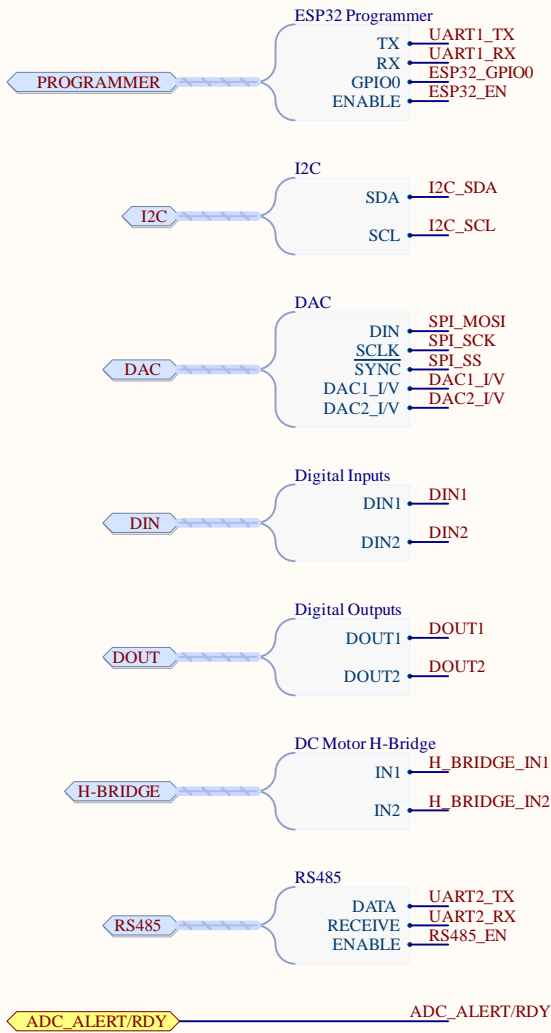
SMARTYBOY





A

A



Reserved GPIO'S

Some GPIO's cannot be used freely, as they are already assigned to module peripherals or have special functions during booting:

GPIO0 pin is used as a bootstrapping pin, and should be low to enter UART download mode. Make sure it is not pulled low by a peripheral device during boot or the firmware will not start!

GPIO2 pin is used as a bootstrapping pin, and should be low to enter UART download mode. Make sure it is not pulled high by a peripheral device during boot or you will not be able to flash a firmware to the module!

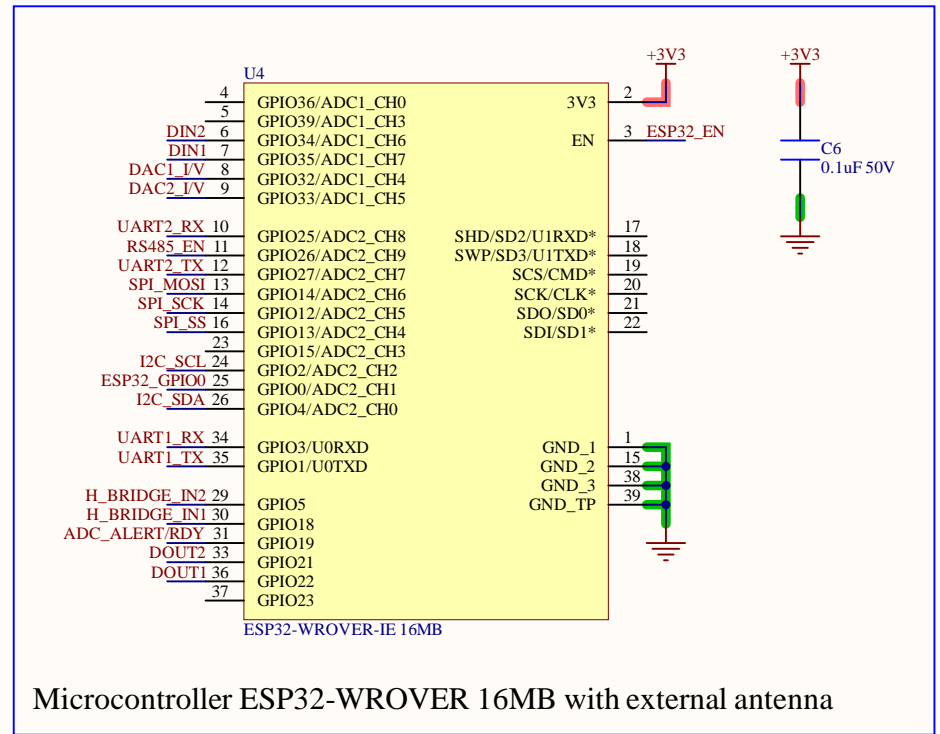
GPIO6 through **GPIO11** are reserved for the FLASH. You cannot use them at all!

GPIO12 is used as a bootstrapping pin to select output voltage of an internal regulator which powers the flash chip (VDD_SDIO). This pin has an internal pulldown so if left unconnected it will read low at reset (selecting default 3.3V operation). Make sure it is not pulled high by a peripheral device during boot or the module might not be able to start!


GPIO15 can be used to stop debug output on Serial during boot. If pulled low there will be no output on the Serial port during the boot process. This can be helpful in battery powered applications where you do not want to use the Serial port at all to reduce power consumption.

GPIO34-39 can only be set as input mode and do not have software pullup or pulldown functions

GPIO37 and **38** are not available on most modules

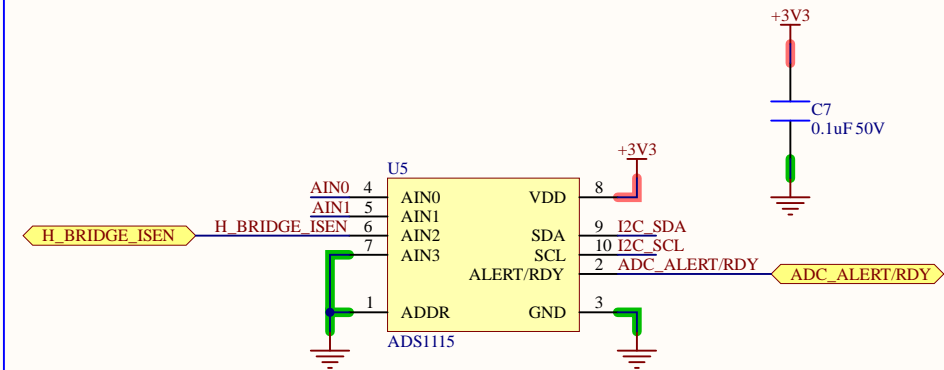


Microcontroller ESP32-WROVER 16MB with external antenna

Title <i>Microcontroller</i>			<i>SmartyBoy</i> <i>alkonosst</i> <i>github.com/alkonosst</i>	SMARTYBOY 
Size: <i>A4</i>	Number: <i>4</i>	Revision: <i>v1.0.0</i>		
Date: <i>27-12-2021</i>	Time: <i>8:54:21</i>	Sheet <i>4</i> of <i>11</i>		
Designer: <i>alkonosst</i>				

D


D

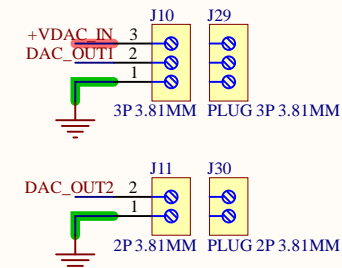
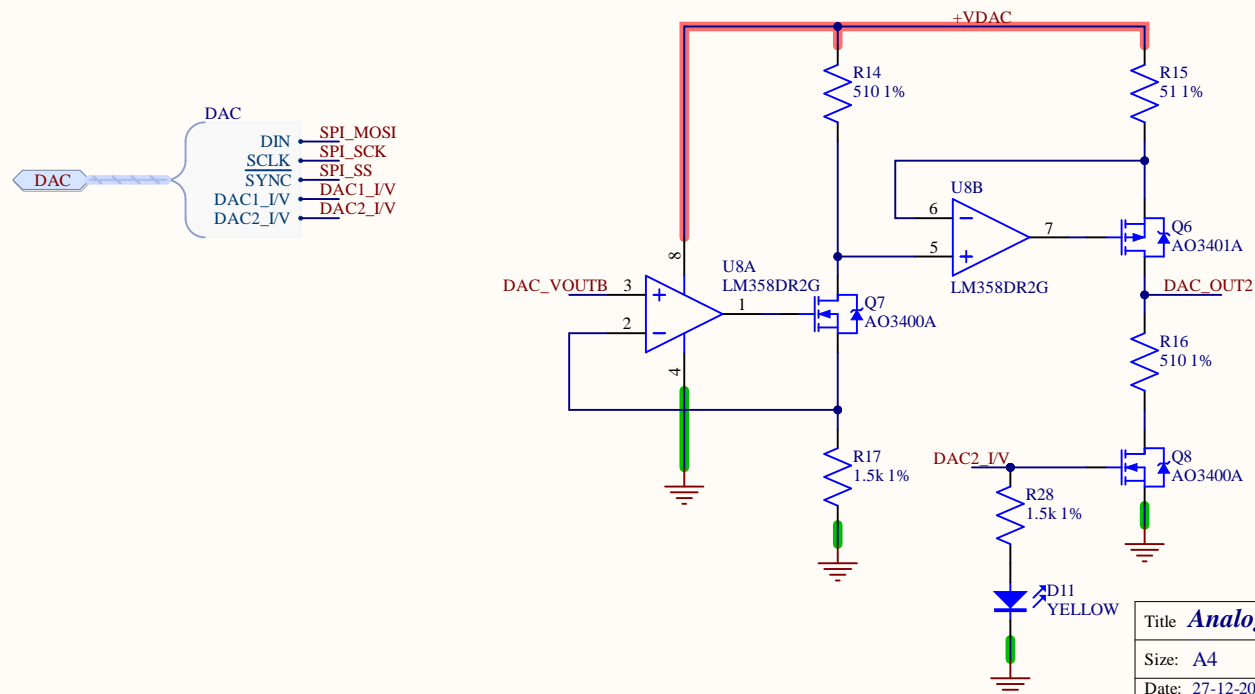
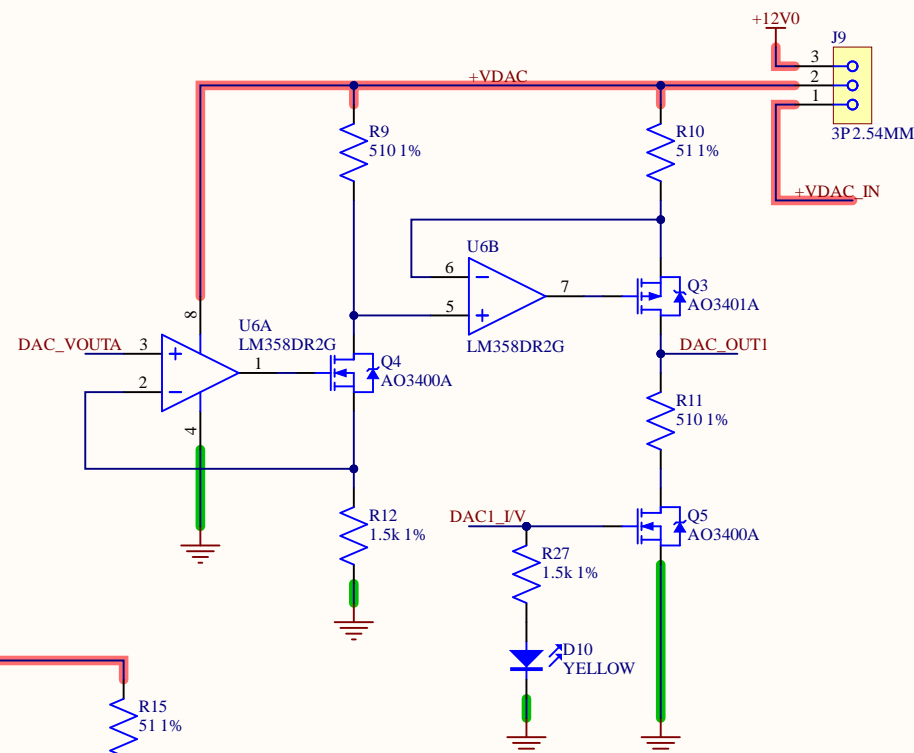
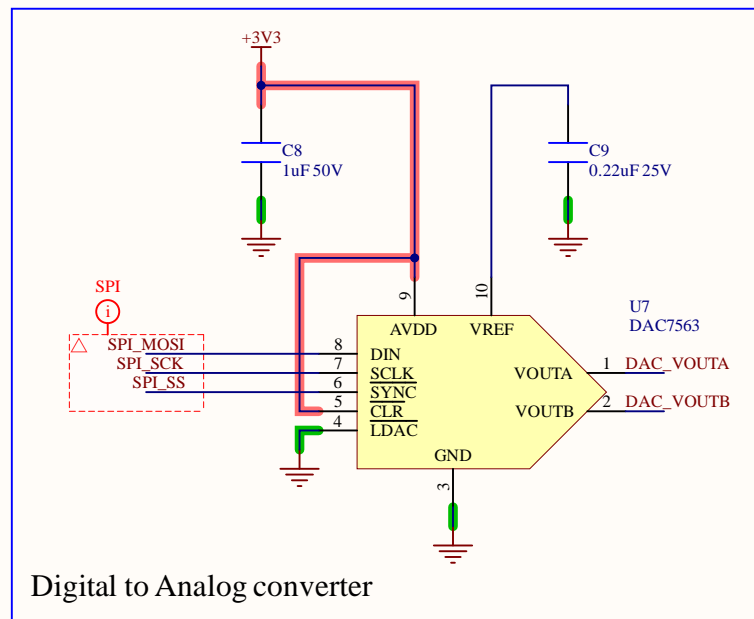



Analog to Digital converter

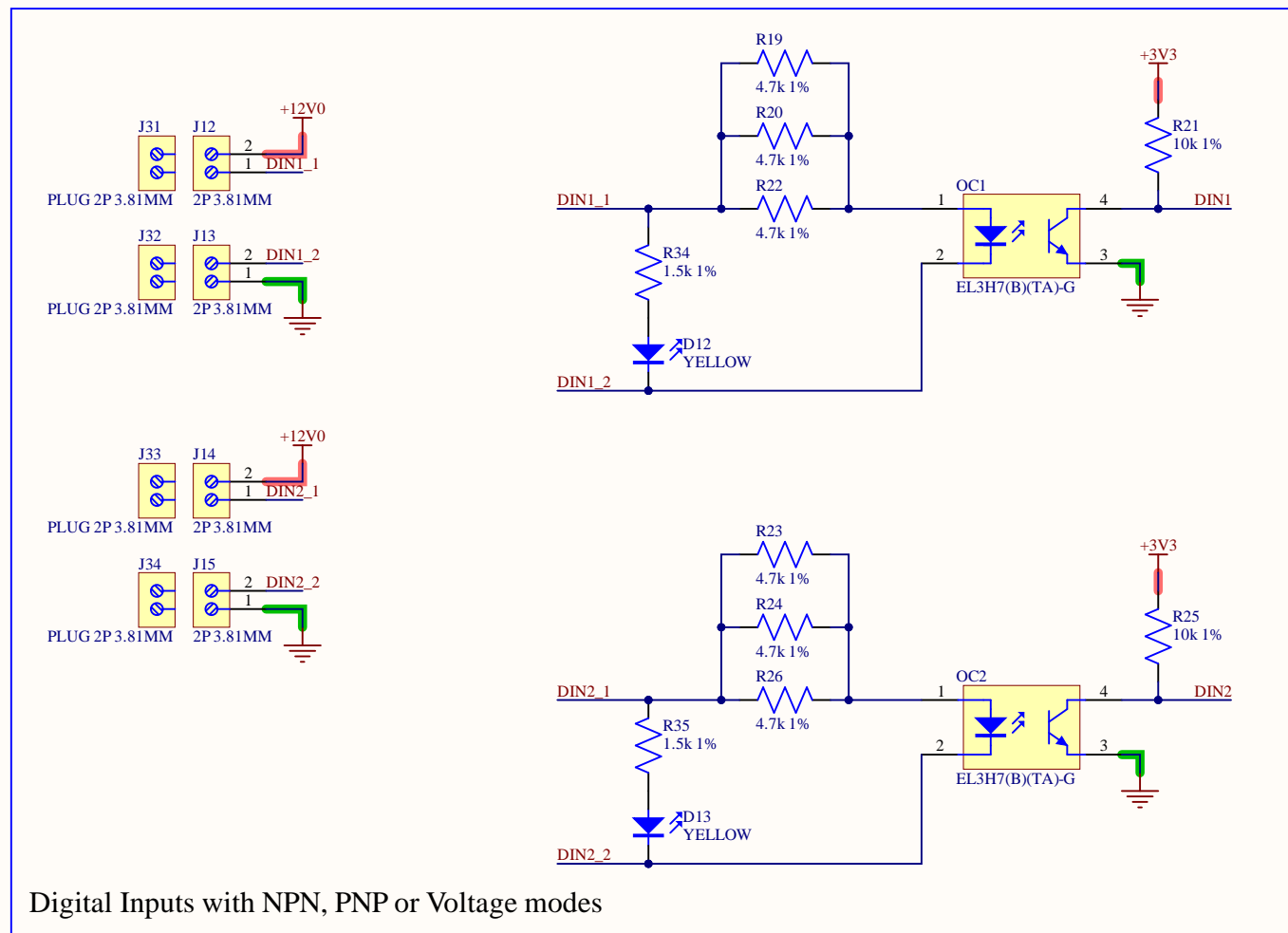



Analog Inputs with V/I selection

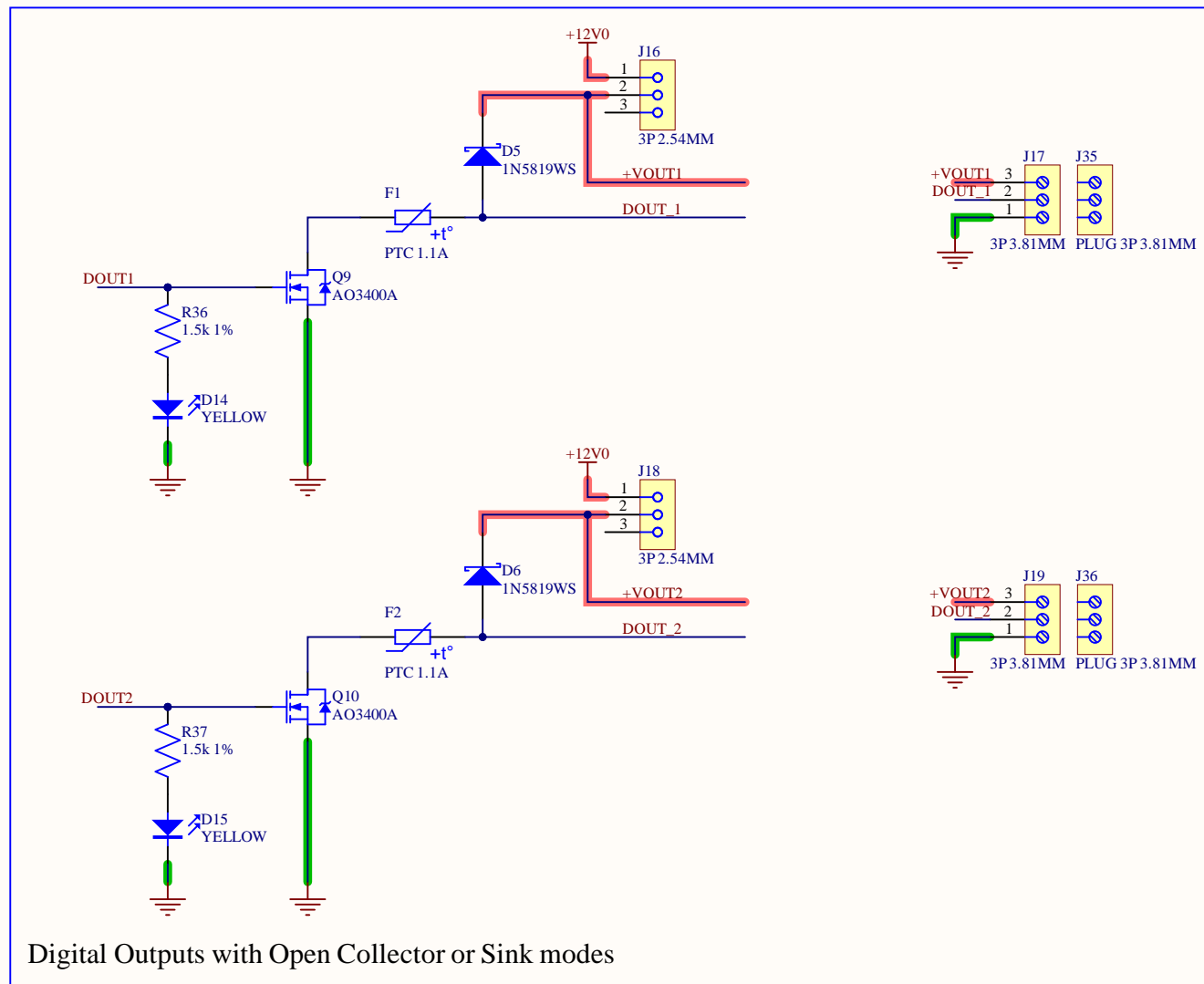
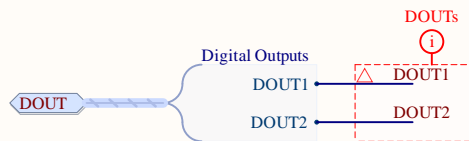
Title <i>Analog Inputs</i>			<i>SmartyBoy</i> <i>alkonosst</i> github.com/alkonosst	
Size: A4	Number: 5	Revision: v1.0.0		
Date: 27-12-2021	Time: 8:54:21	Sheet 5 of 11		
Designer: alkonosst				




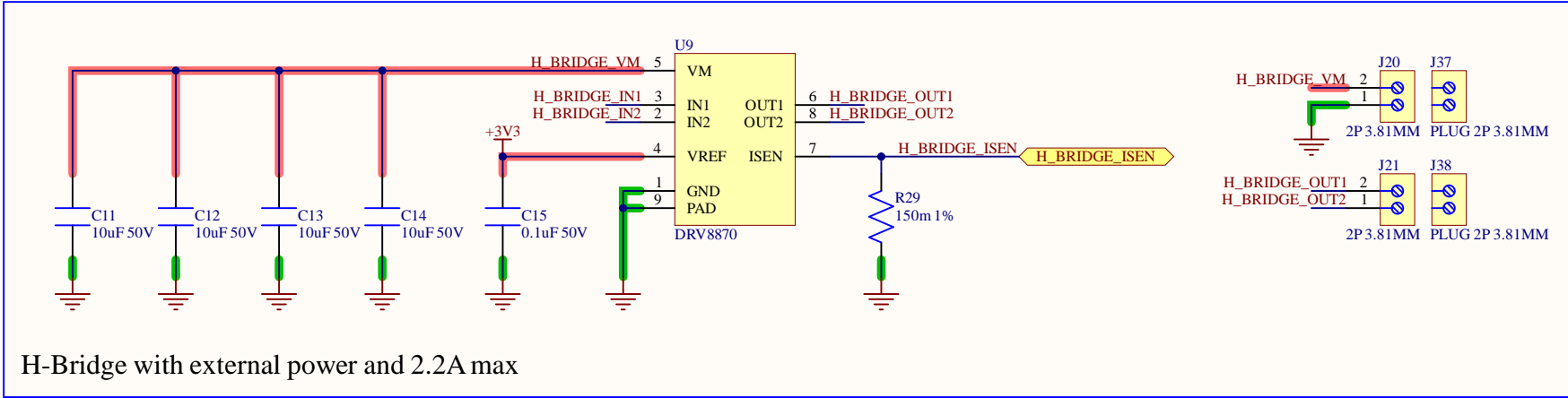
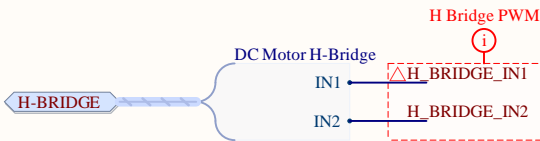
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Size: <i>A4</i>	Number: <i>6</i>	Revision: <i>v1.0.0</i>		
Date: <i>27-12-2021</i>	Time: <i>8:54:21</i>	Sheet <i>6</i> of <i>11</i>		
Designer: <i>alkonosst</i>				




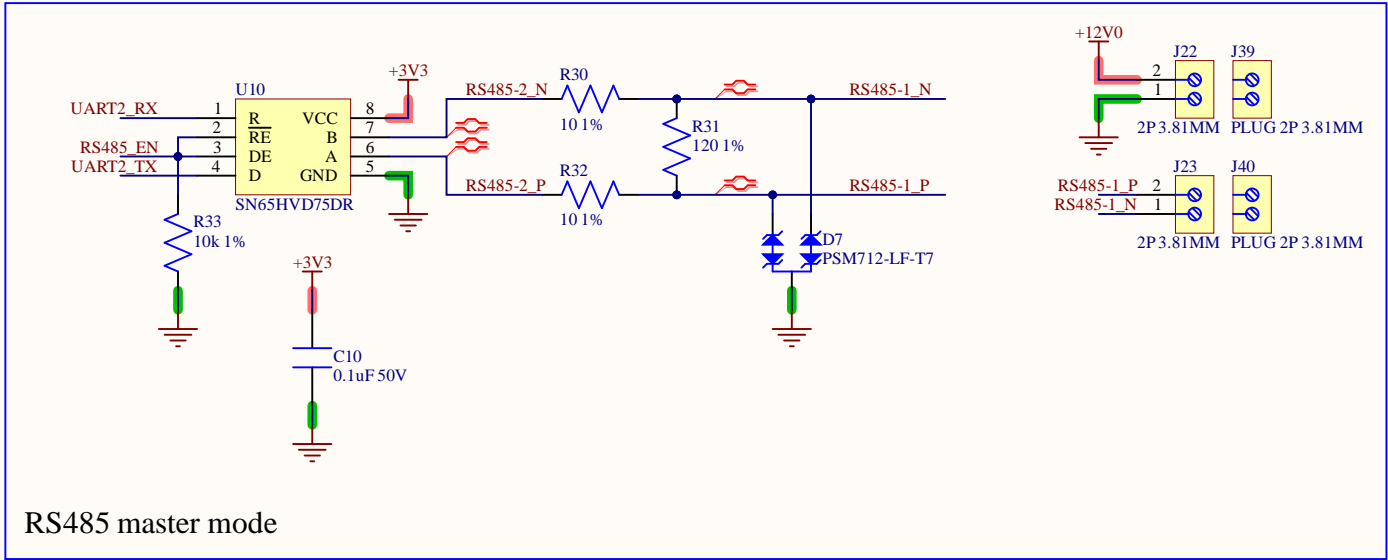
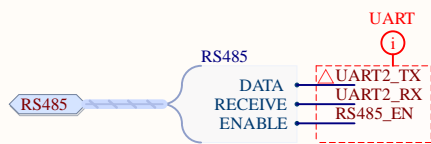
Title <i>Digital Inputs</i>			SmartyBoy alkonosst github.com/alkonosst	SMARTY  BOY
Size: A4	Number: 7	Revision: v1.0.0		
Date: 27-12-2021	Time: 8:54:21	Sheet 7 of 11		
Designer: alkonosst				



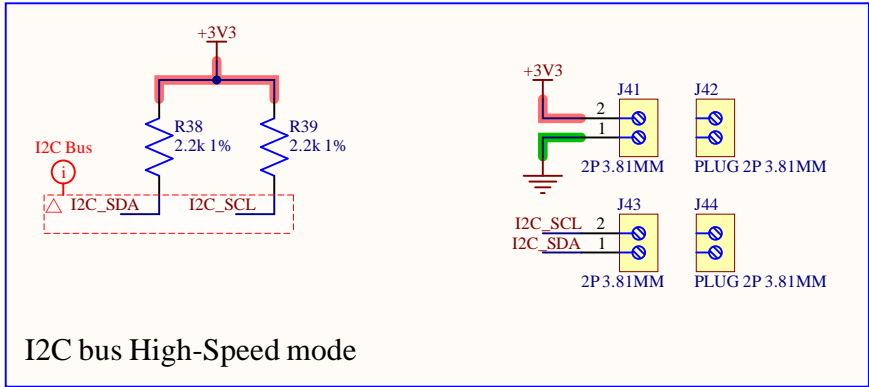
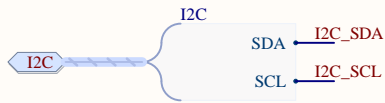
Title <i>Digital Outputs</i>			SmartyBoy alkonosst github.com/alkonosst	SMARTY  BOY
Size: A4	Number: 8	Revision: v1.0.0		
Date: 27-12-2021	Time: 8:54:21	Sheet 8 of 11		
Designer: alkonosst				




Title <i>H-Bridge DC Motor</i>			SmartyBoy alkonosst github.com/alkonosst	SMARTY  BOY
Size: A4	Number: 9	Revision: v1.0.0		
Date: 27-12-2021	Time: 8:54:21	Sheet9 of 11		
Designer: alkonosst				



RS485 master mode



Title: <i>I2C Bus</i>			SmartyBoy alkonosst github.com/alkonosst	SMARTY  BOY
Size: A4	Number: 11	Revision: v1.0.0		
Date: 27-12-2021	Time: 8:54:21	Sheet 11 of 11		
Designer: alkonosst				