

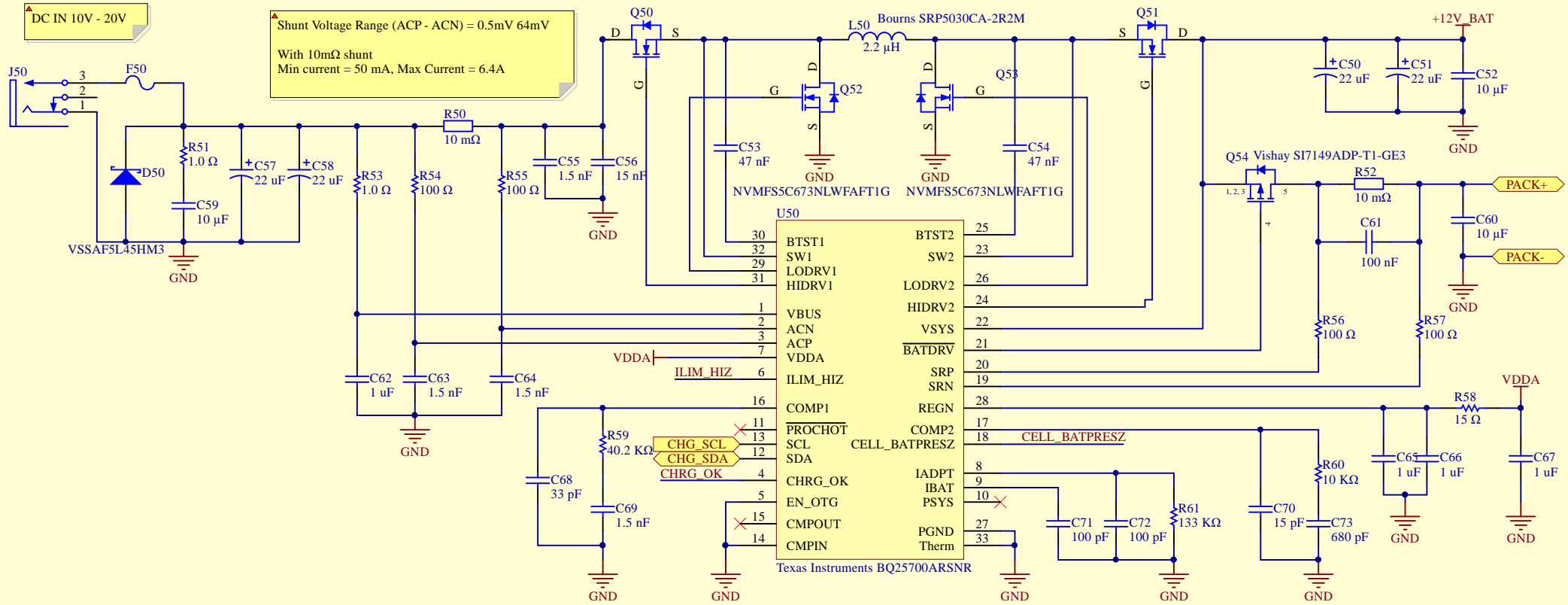
Size: A4	Number: 1	Revision: 1.1
Date: 27/06/2020	Time: 08:58:30	Sheet 1 of 1
File: BatteryProtection.SchDoc		



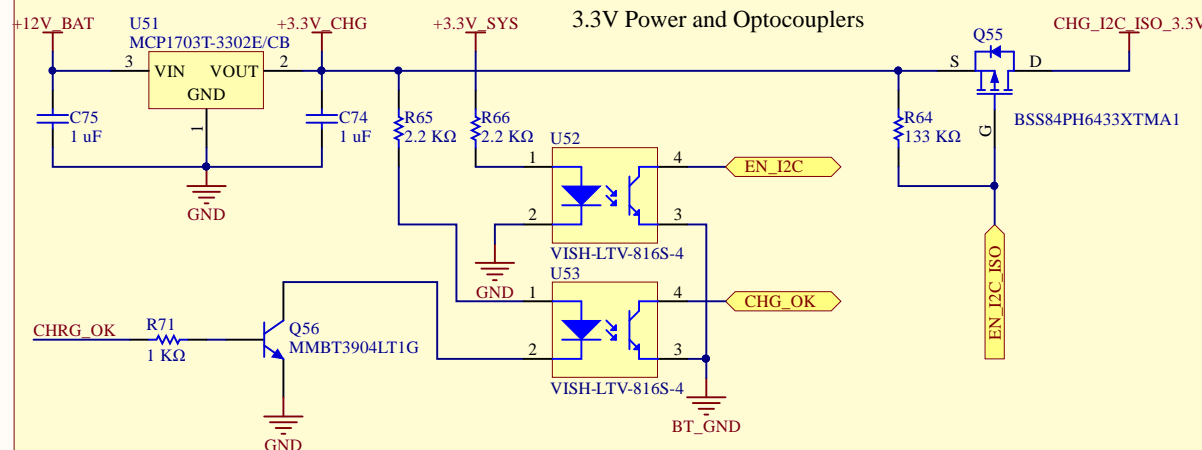
Battery Charger

NVMF55C673NLWFAFT1G

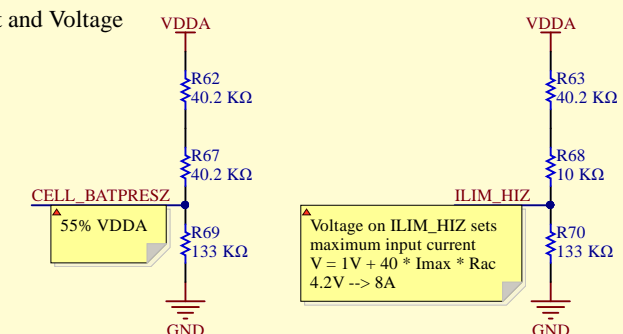
NVMF55C673NLWFAFT1G



3.3V Power and Optocouplers



Maximum Current and Voltage



Title **Battery Charger**

Size: A4

Number: 2

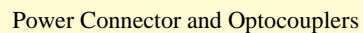
Revision: 1.1

Date: 27/06/2020 Time: 08:58:30

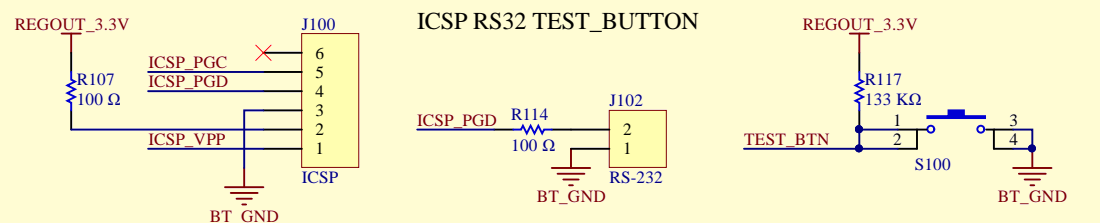
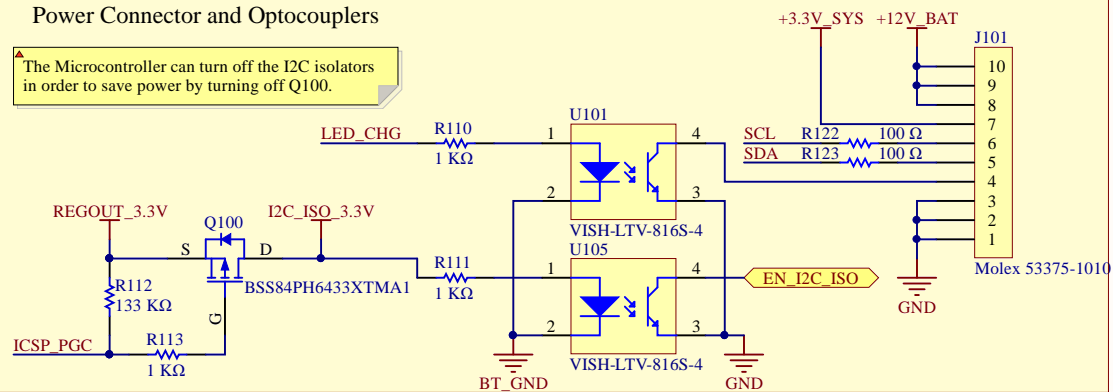
Sheet 2 of 14

File: BatteryCharger.SchDoc

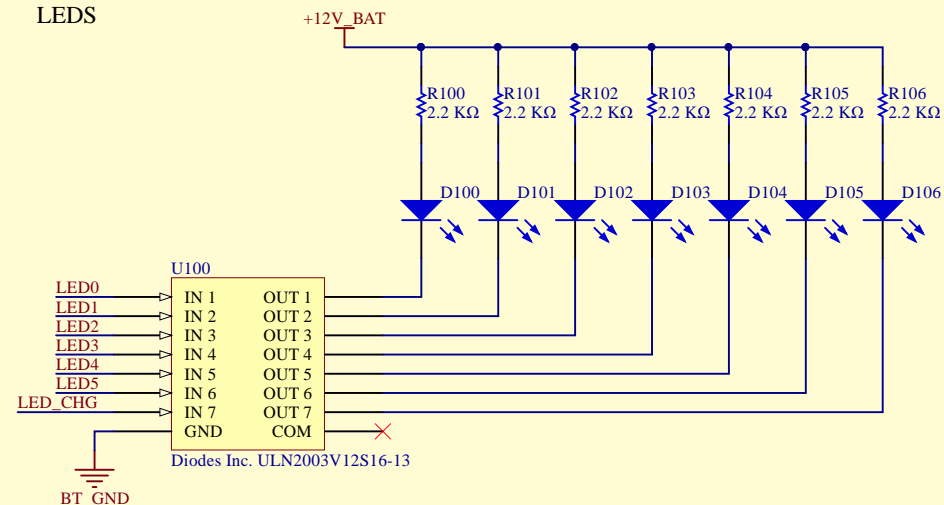




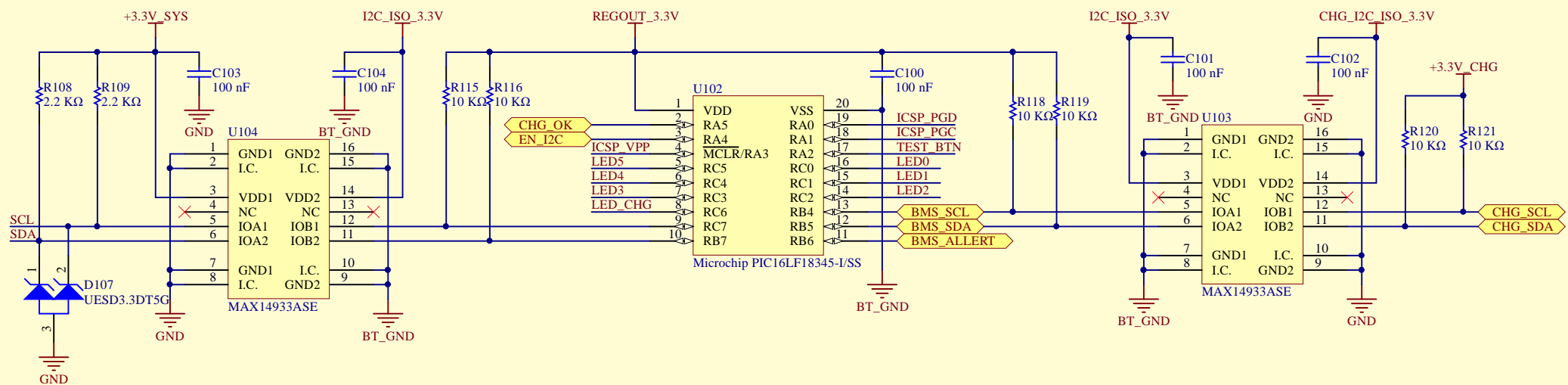
▲ The Microcontroller can turn off the I2C isolators in order to save power by turning off Q100.



LEDS



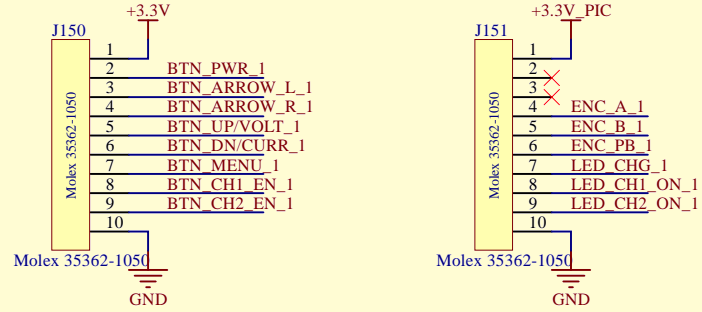
Microcontroller and I2C Isolators

Title *Battery Controller*

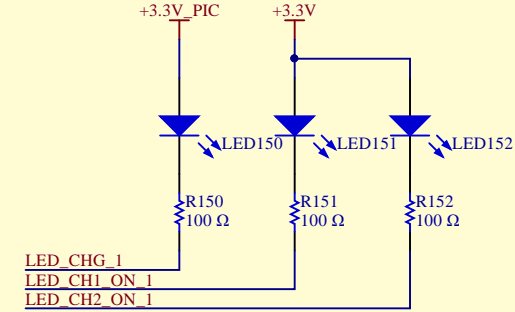
Size: A4	Number:3	Revision:1.1
Date: 27/06/2020	Time: 08:58:30	Sheet3 of
File: BatteryController.SchDoc		



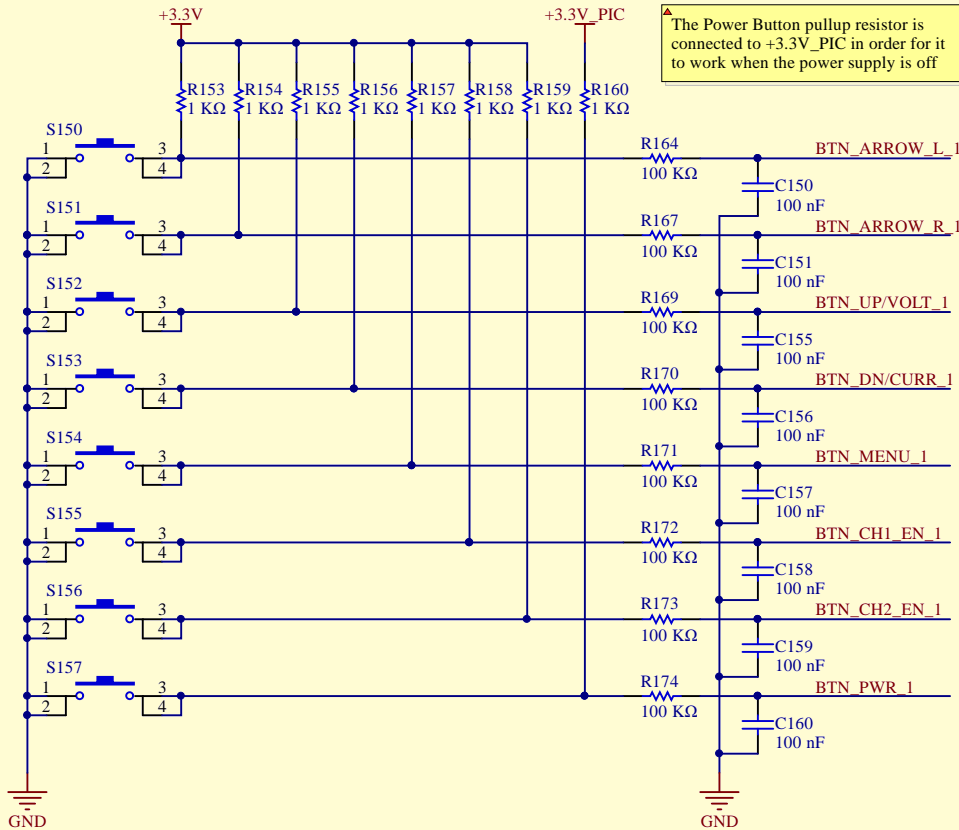
Connectors



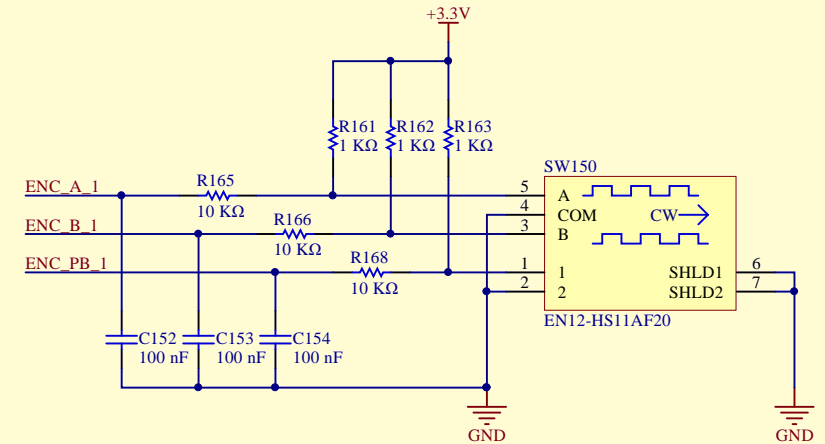
LEDS



Buttons and Debouncing



Encoder and Debouncing



Title **FrontPannel**

Size: A4

Number:4

Revision:1,1

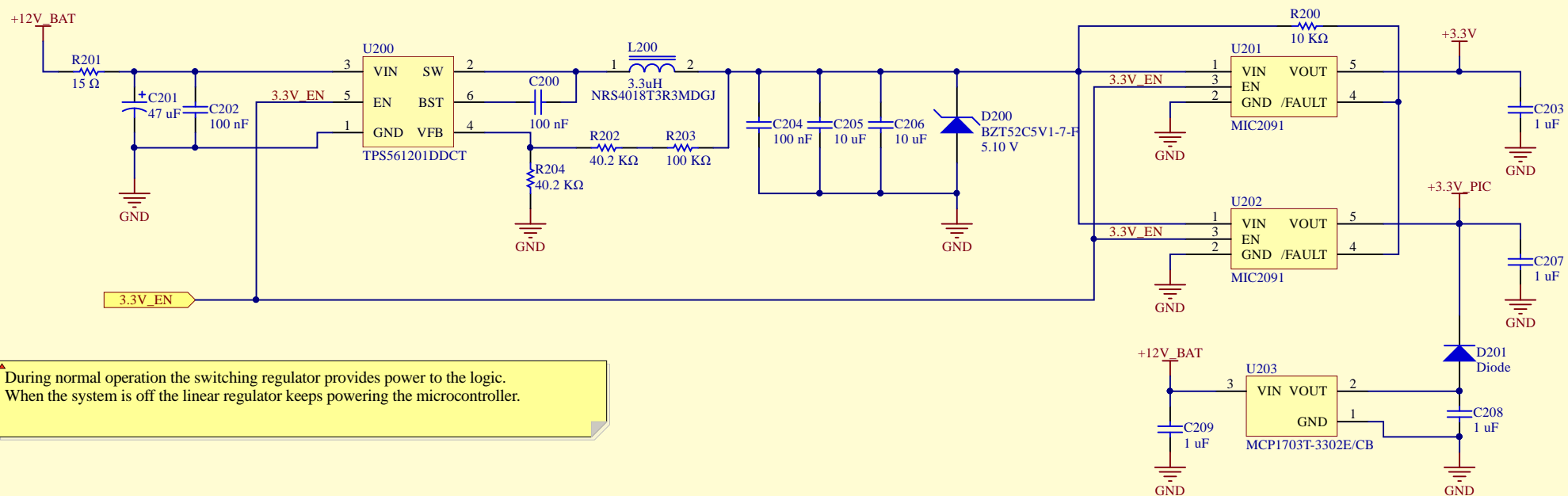
Date: 27/06/2020 Time: 08:58:31

Sheet4 of 14

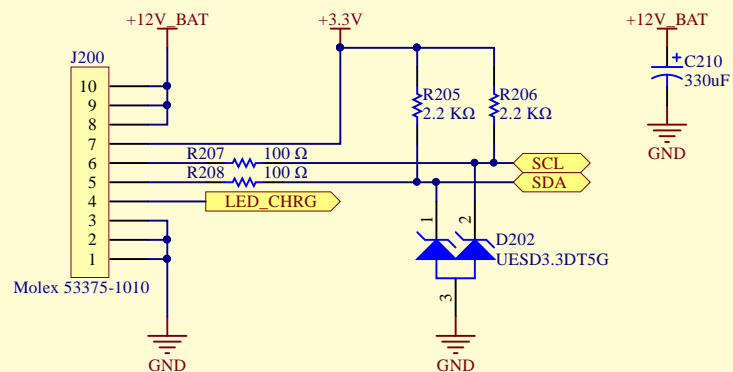
File: FrontPannel.SchDoc




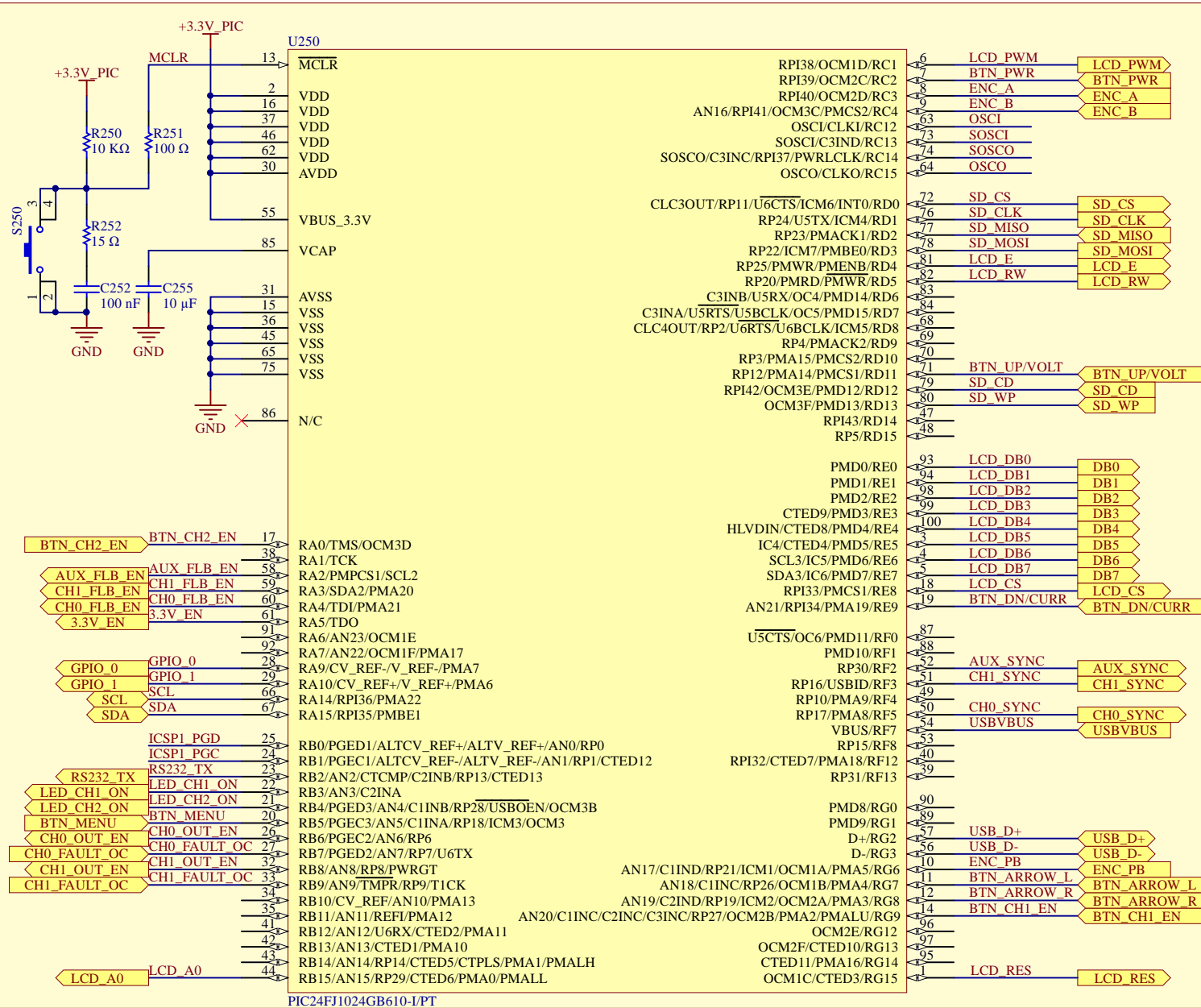
3.3V Switching Regulator and Standby Linear Regulator



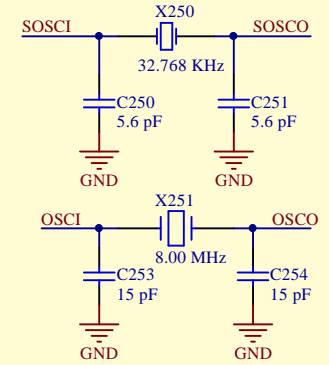
Power Connector and I2C ESD Protection



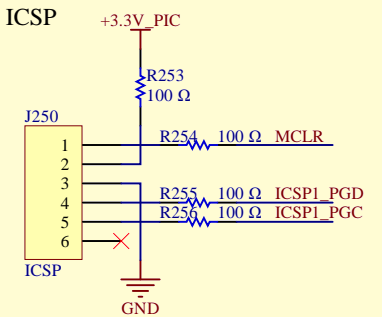
Title <i>PSU Power</i>			<div>CIRCUITSTUDIO</div>
Size: A4	Number: 5	Revision: 1.1	
Date: 27/06/2020	Time: 08:58:31	Sheet 5 of 14	
File: PSU_Power.SchDoc			



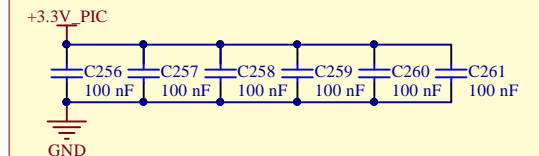
System Clock and RTC Crystals



ICSP



Decoupling Caps



Title **PSU Microcontroller**

Size: **A4**

Number: **6**


Revision: **1.1**

Date: **27/06/2020**

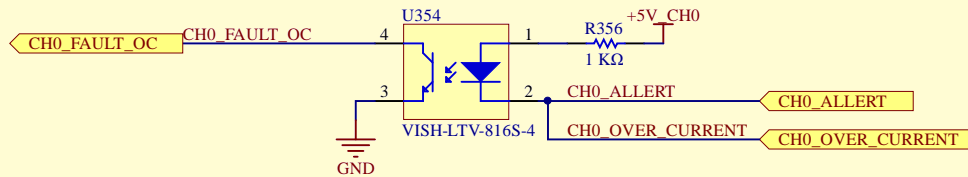
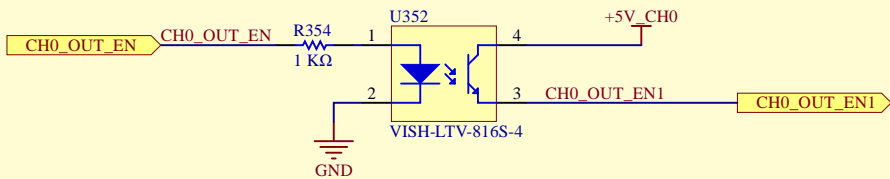
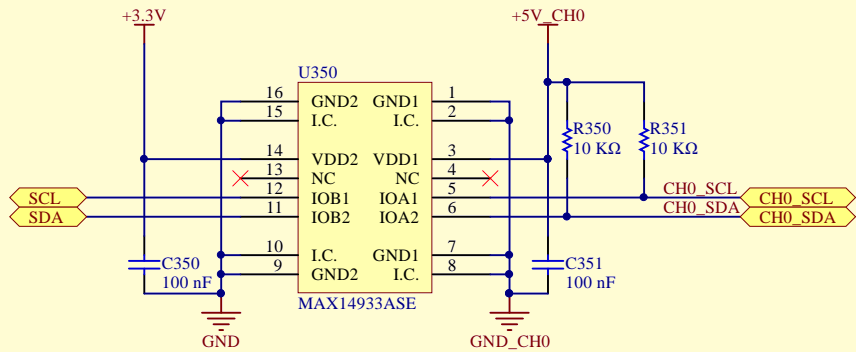
Time: **08:58:31**

Sheet **6** of **14**

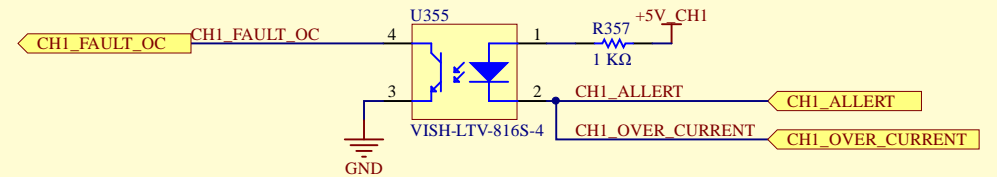
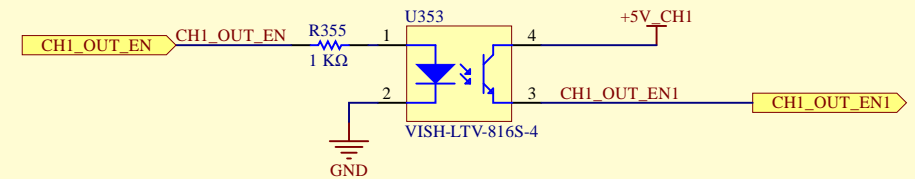
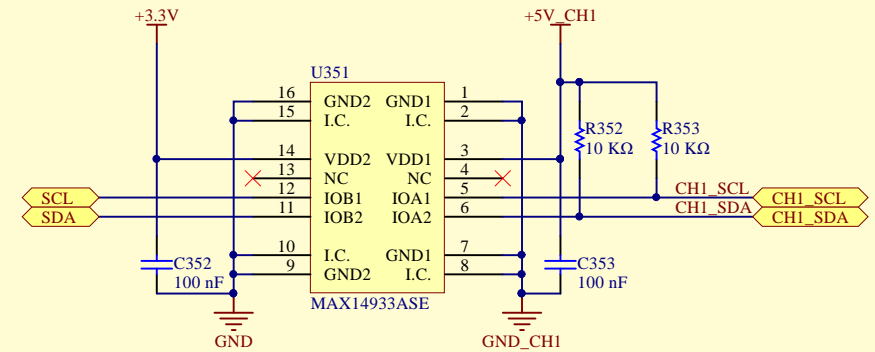
File: **PSU_Microcontroller.SchDoc**

Title <i>PSU Connectors</i>			
Size: A4	Number:	Revision: 1.1	
Date: 27/06/2020	Time: 08:58:31	Sheet 7 of 14	
File: PSU_Connectors.SchDoc			

CH0 I2C and Control Signals Isolation



CH1 I2C and Control Signals Isolation



Title **PSU Isolation**

Size: **A4**

Number: **8**

Revision: **1.1**

Date: **27/06/2020** Time: **08:58:31**

Sheet **8** of **14**

File: **PSU_Isolation.SchDoc**



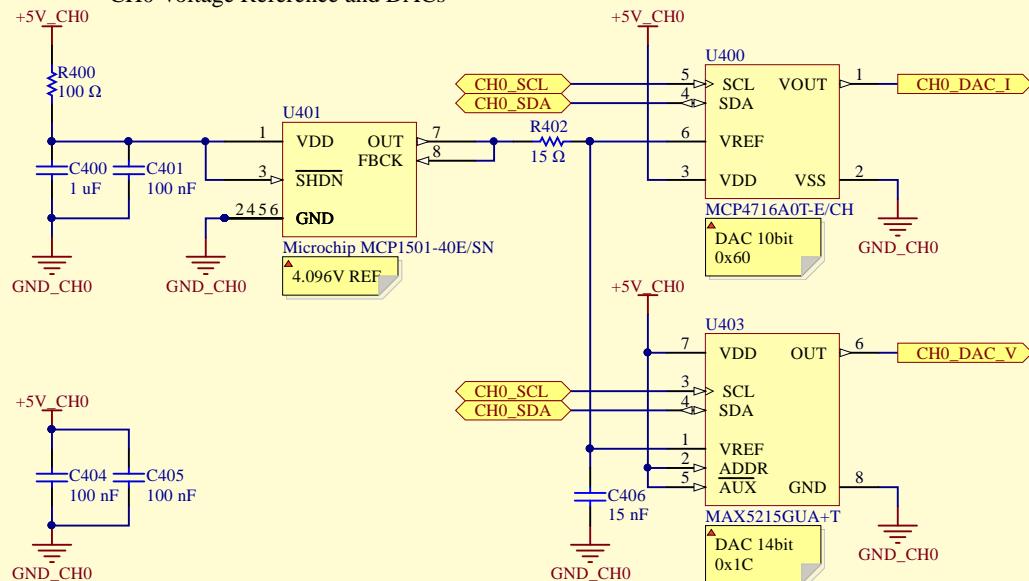
1

2

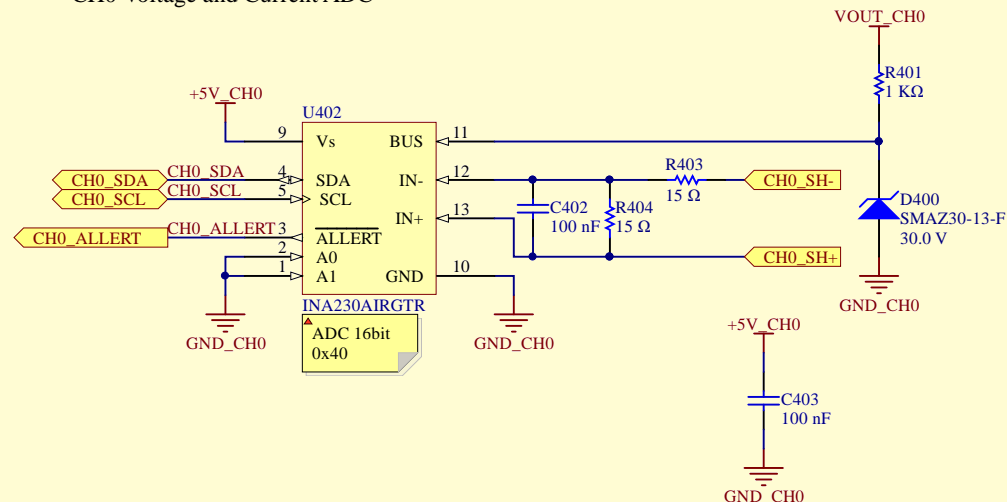
3

4

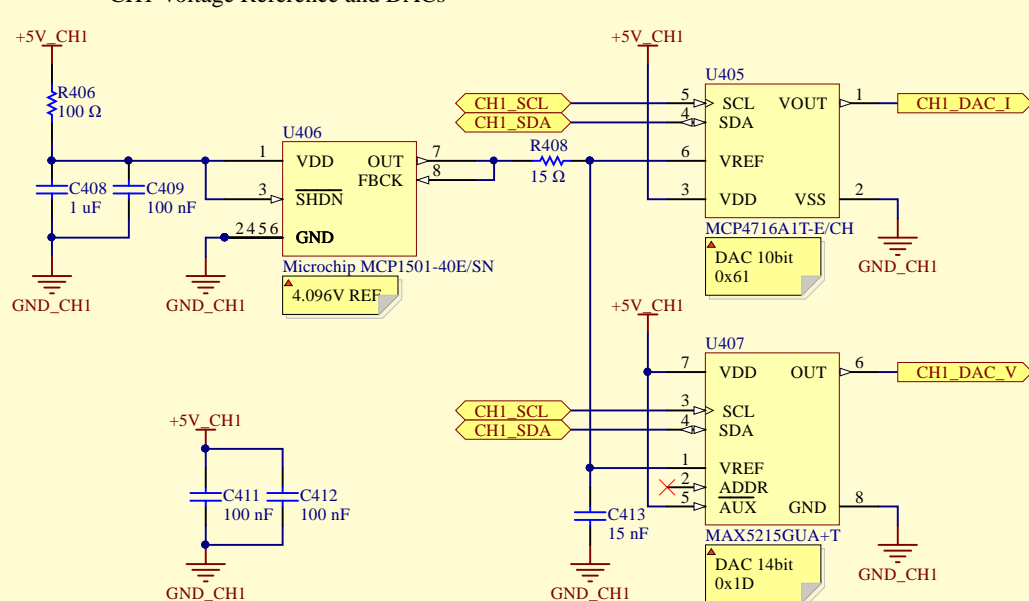
CH0 Voltage Reference and DACs



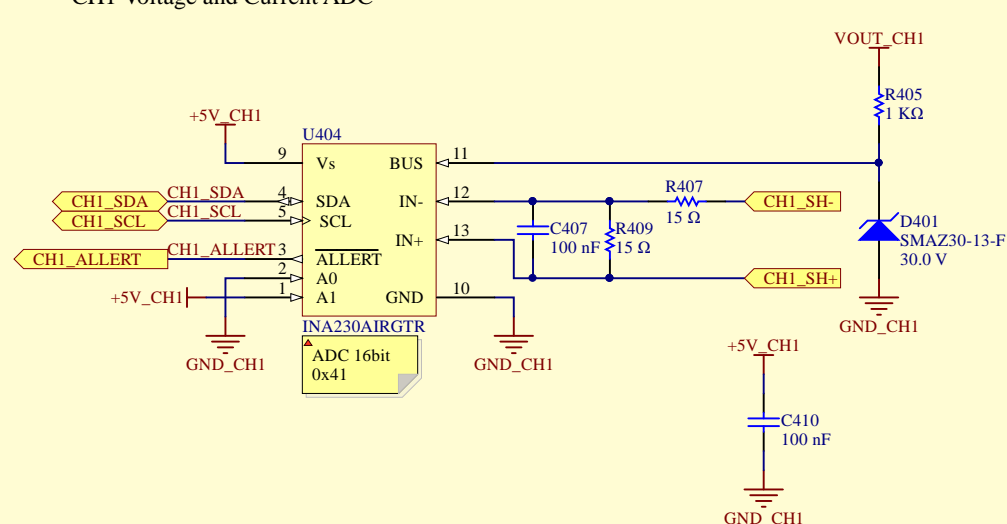
CH0 Voltage and Current ADC



CH1 Voltage Reference and DACs



CH1 Voltage and Current ADC

Title **PSU DACs ADC**Size: **A4**Number: **9**Revision: **1.1**Date: **27/06/2020**Time: **08:58:32**Sheet **9** of **14**File: **PSU_DACs_ADC.SchDoc**

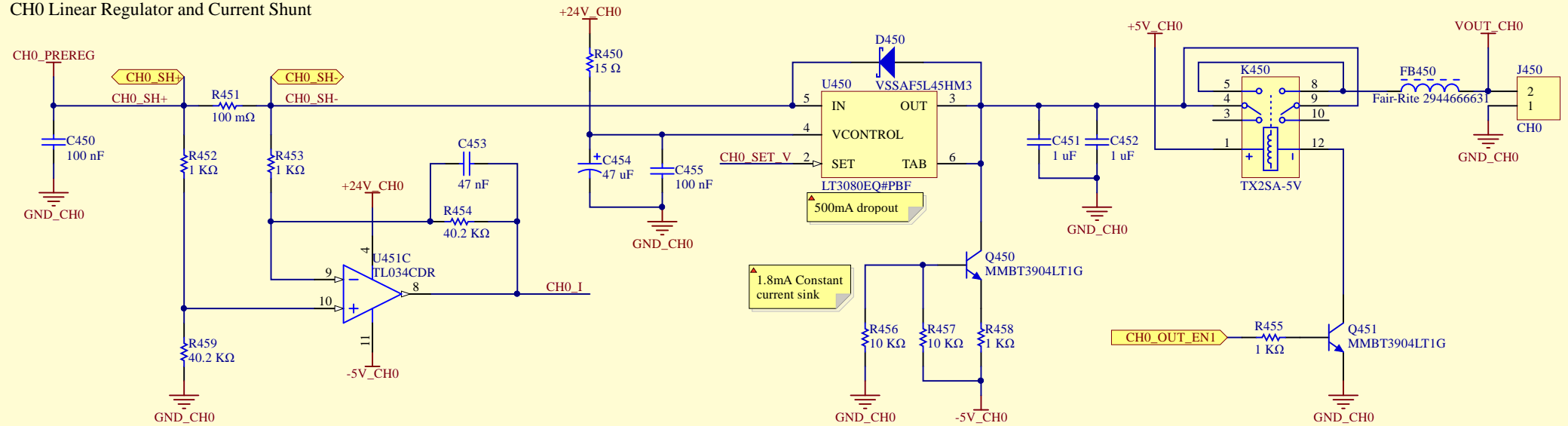
1

2

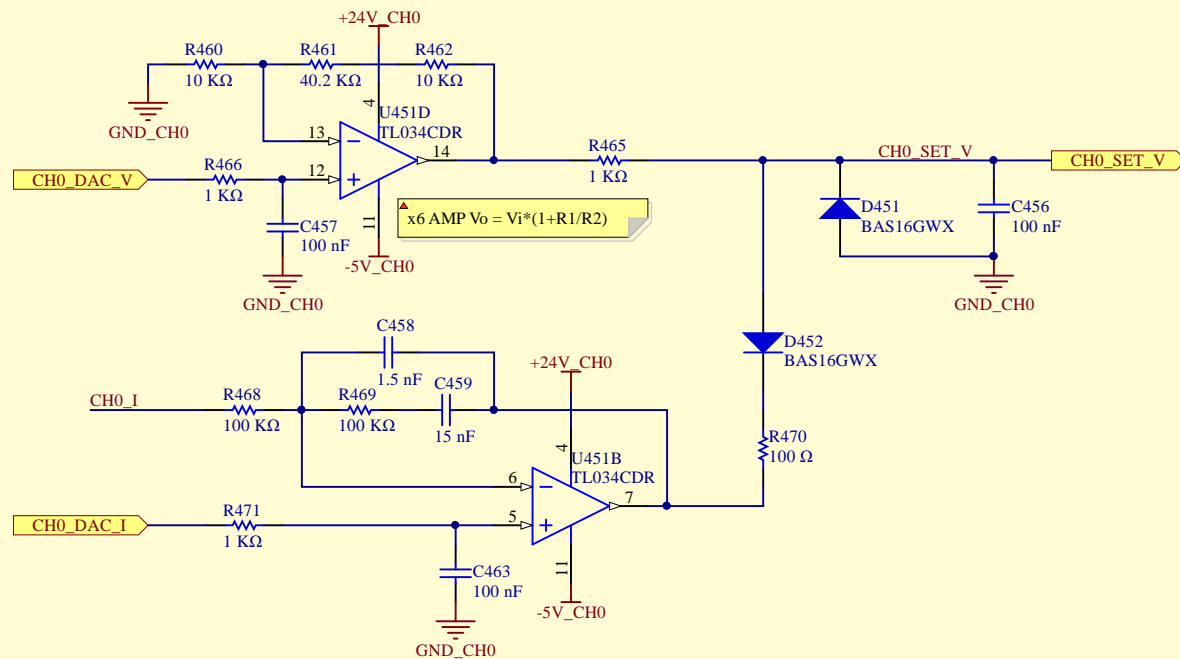
3

4

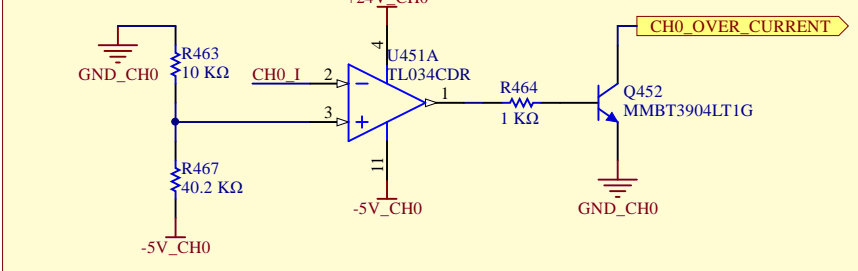
CH0 Linear Regulator and Current Shunt



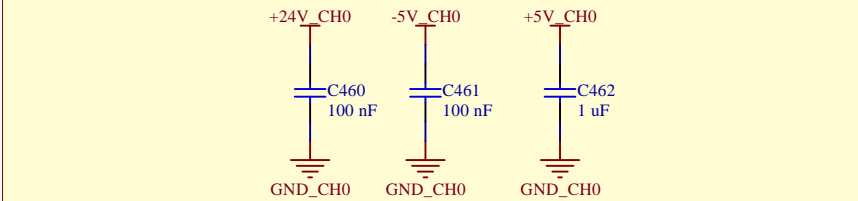
CH0 Voltage Amplifier and Current Error Amplifier



CH0 Overcurrent Comparator



Decoupling Caps



Title **PSU CH0 Analog**

Size: **A4**

Number: **11**

Revision: **1.1**

Date: **27/06/2020**

Time: **08:58:32**

Sheet **11** of **14**

File: **PSU_CH0_Analog.SchDoc**



CH0 Flyback

Condensatore 150uF
RR71C151MDN1

Condensatori 330uF
2X: EMZS350ARA331MHA0G

CH0 100uA Current Source

Numero Spire:
12-34 --> 8
56-78 --> 10

CH0 Flyback Controller

The 100uA current keeps
a 1V offset between
CH0_PREREG and CH0_SET_V

Title **PSU CH0 Flyback**

Size: A4

Number:12

Revision:1.1

Date: 27/06/2020

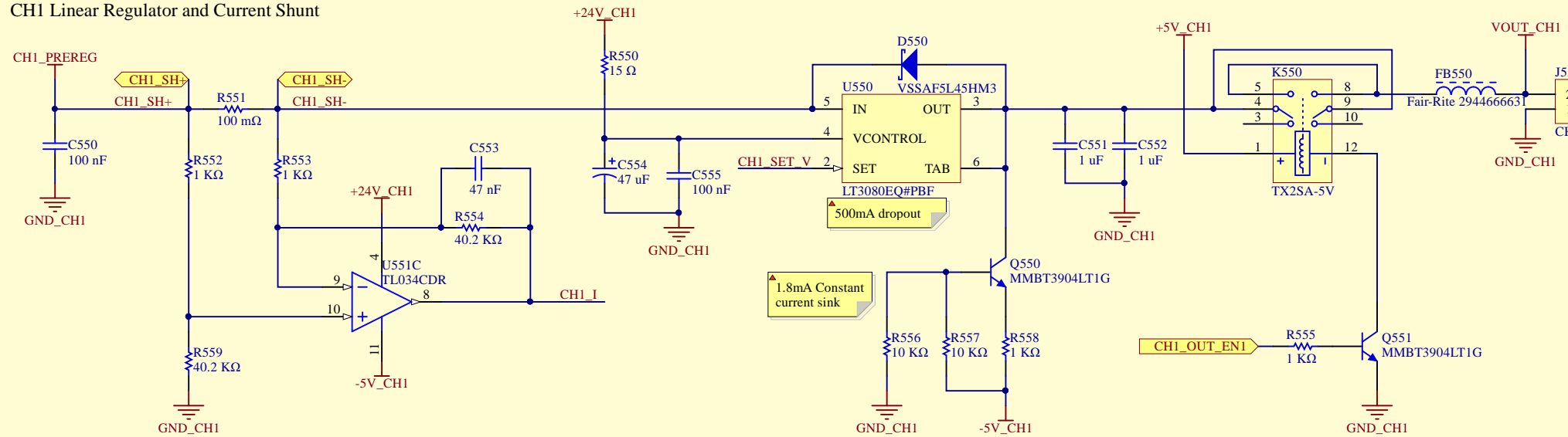
Time: 08:58:32

Sheet 12 of 14

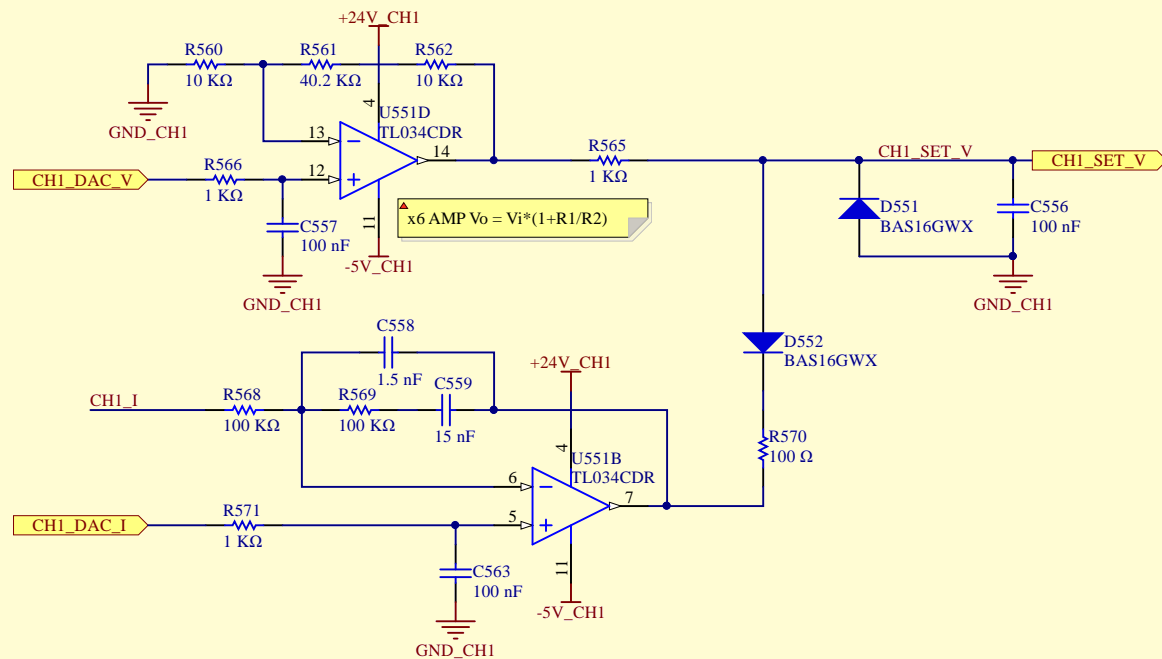
File: PSU_CH0_Flyback.SchDoc



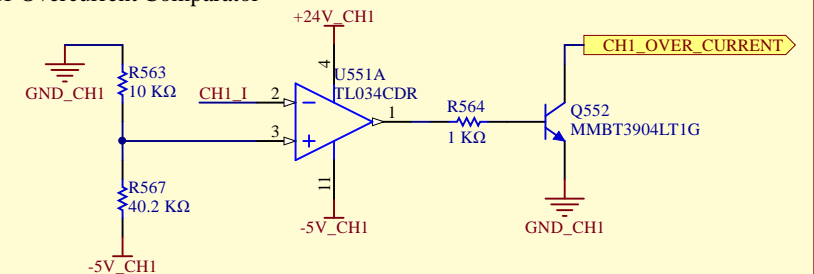
CH1 Linear Regulator and Current Shunt



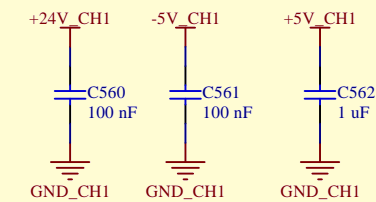
CH1 Voltage Amplifier and Current Error Amplifier



CH1 Overcurrent Comparator



Decoupling Caps



Title **PSU CH1 Analog**

Size: **A4**

Number: **13**

Revision: **1.1**

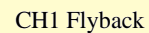
Date: **27/06/2020**

Time: **08:58:32**

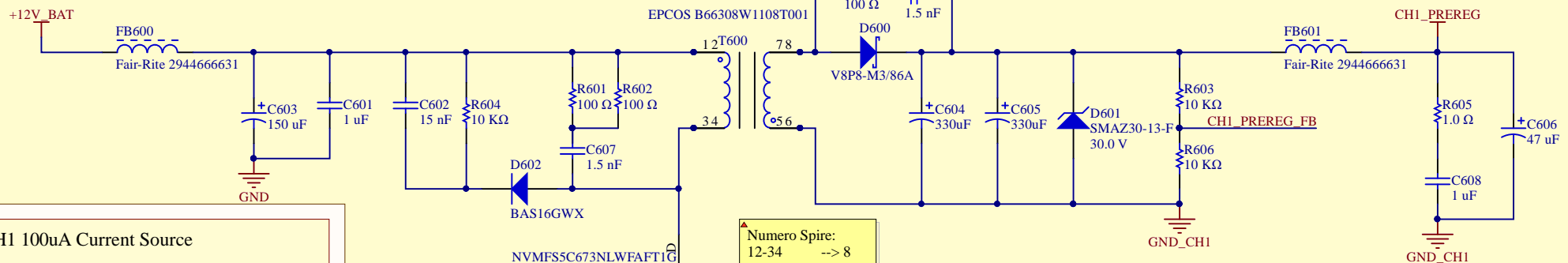
Sheet **13** of **14**

File: **PSU_CH1_Analog.SchDoc**





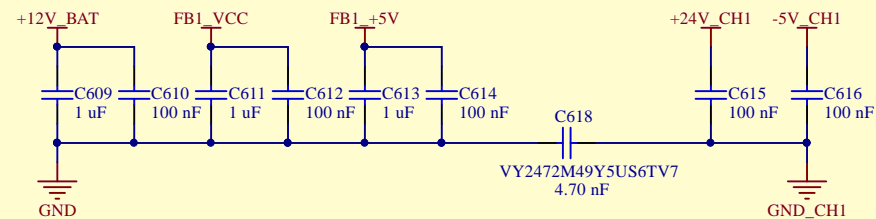
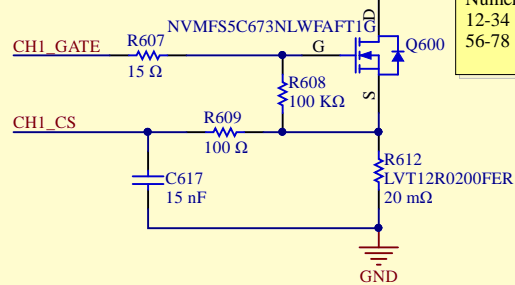
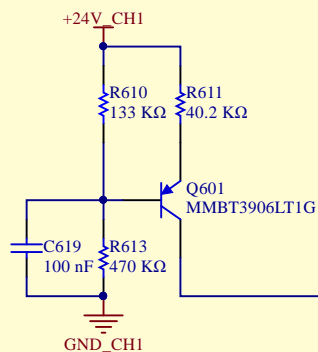
Condensatore 150uF
RR71C151MDN1



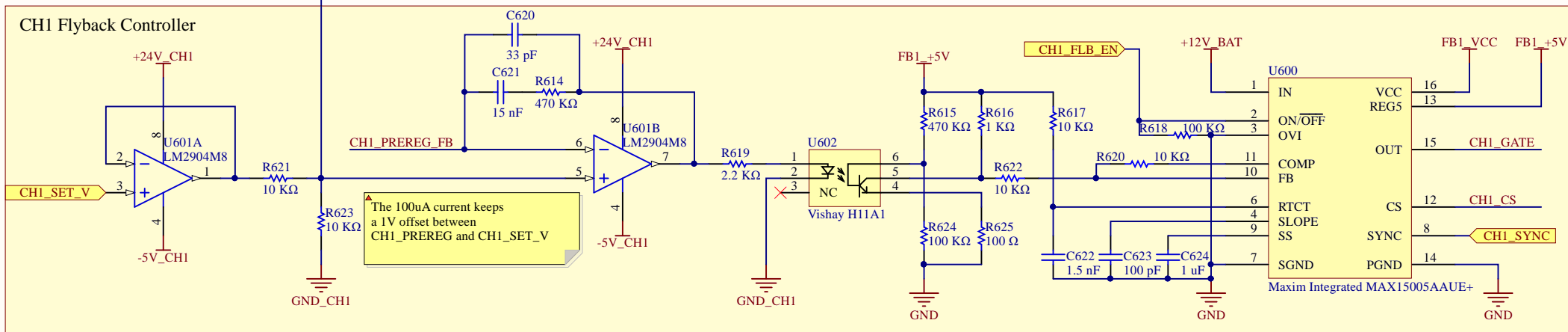
Condensatori 330uF
2X: EMZS350ARA331MHA0G

▲ **Numero Spire:**
12-34 --> 8
56-78 --> 10


CH1 100uA Current Source



CH1 Flyback Controller



▲ The 100uA current keeps a 1V offset between CH1_PREREG and CH1_SET_V

Title <i>PSU CHI Flyback</i>			
Size: A4	Number: 14	Revision: 1.1	
Date: 27/06/2020	Time: 08:58:33	Sheet 14 of 14	
File: PSU_CHI_Flyback.SchDoc			