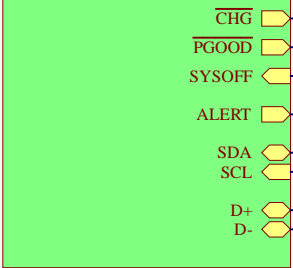


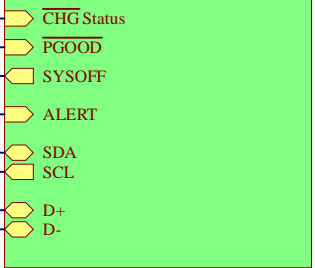
Bluetooth Spark Control			
Main			
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED
V1	First project version	13/12/2023	13/12/2023

U_USB_&_Power
USB_&_Power.SchDoc



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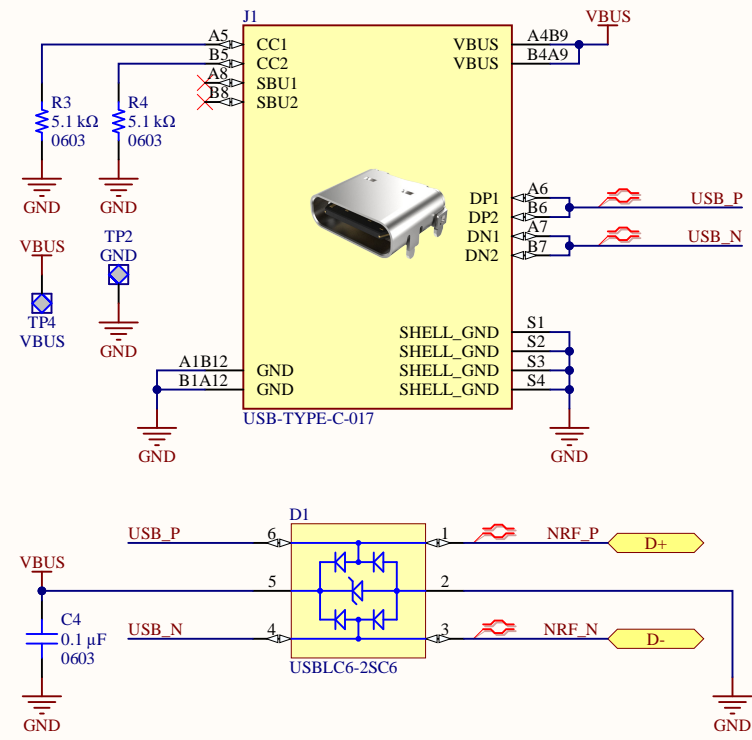
ESP32
ESP32.SchDoc



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Sheet title: Main		
Project title: Bluetooth Spark Control		
Designer: Pedro Javier Belmonte Miñano		
Supervisor: None		
Date: 13/12/2023	Revision: V1	Sheet 1 of 3

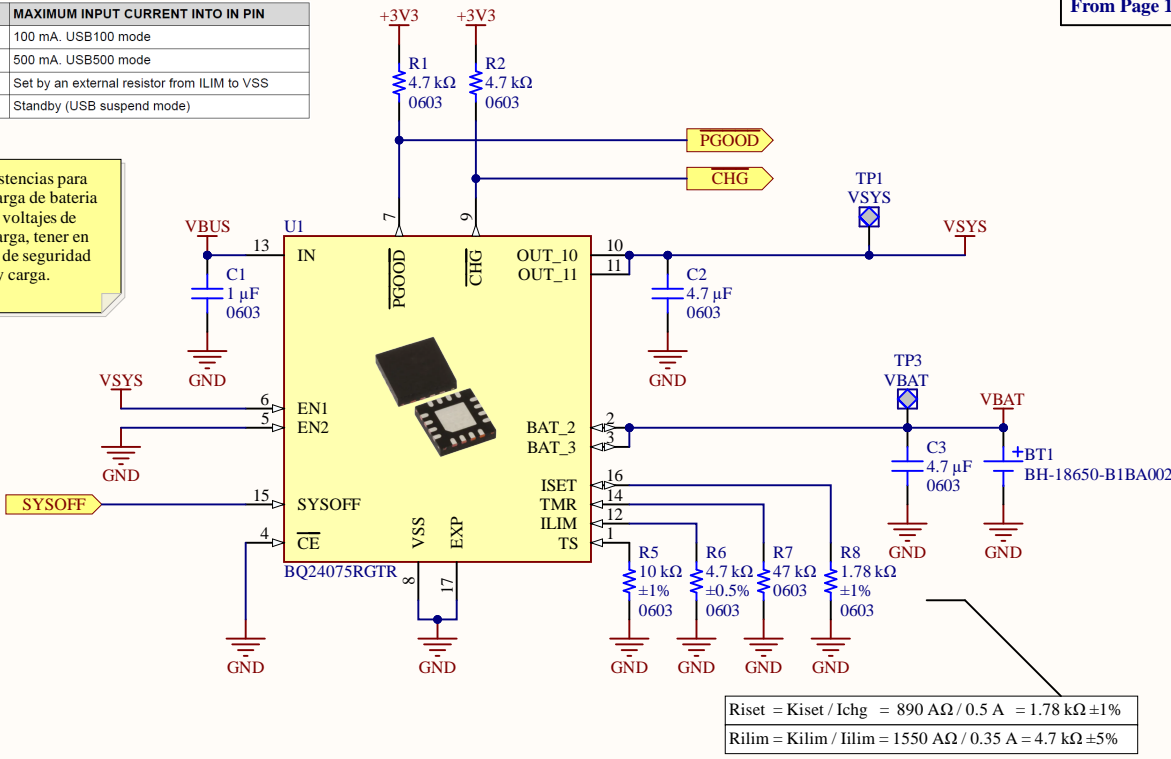
USB Connector and ESD Protection



Battery Charger

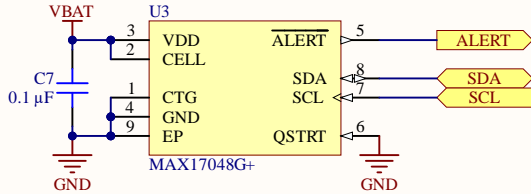
EN2	EN1	MAXIMUM INPUT CURRENT INTO IN PIN
0	0	100 mA. USB100 mode
0	1	500 mA. USB500 mode
1	0	Set by an external resistor from ILIM to VSS
1	1	Standby (USB suspend mode)

Calcular resistencias para carga y descarga de batería (intensidad), voltajes de carga y descarga, tener en cuenta rango de seguridad de descarga y carga.

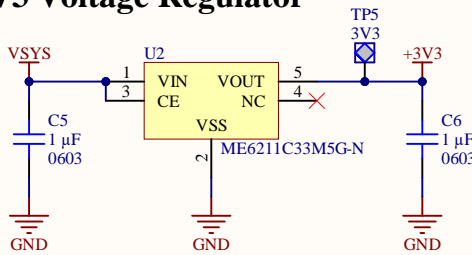


$R_{iset} = K_{iset} / I_{chg} = 890 \text{ A}\Omega / 0.5 \text{ A} = 1.78 \text{ k}\Omega \pm 1\%$
 $R_{ilim} = K_{ilim} / I_{lim} = 1550 \text{ A}\Omega / 0.35 \text{ A} = 4.7 \text{ k}\Omega \pm 5\%$

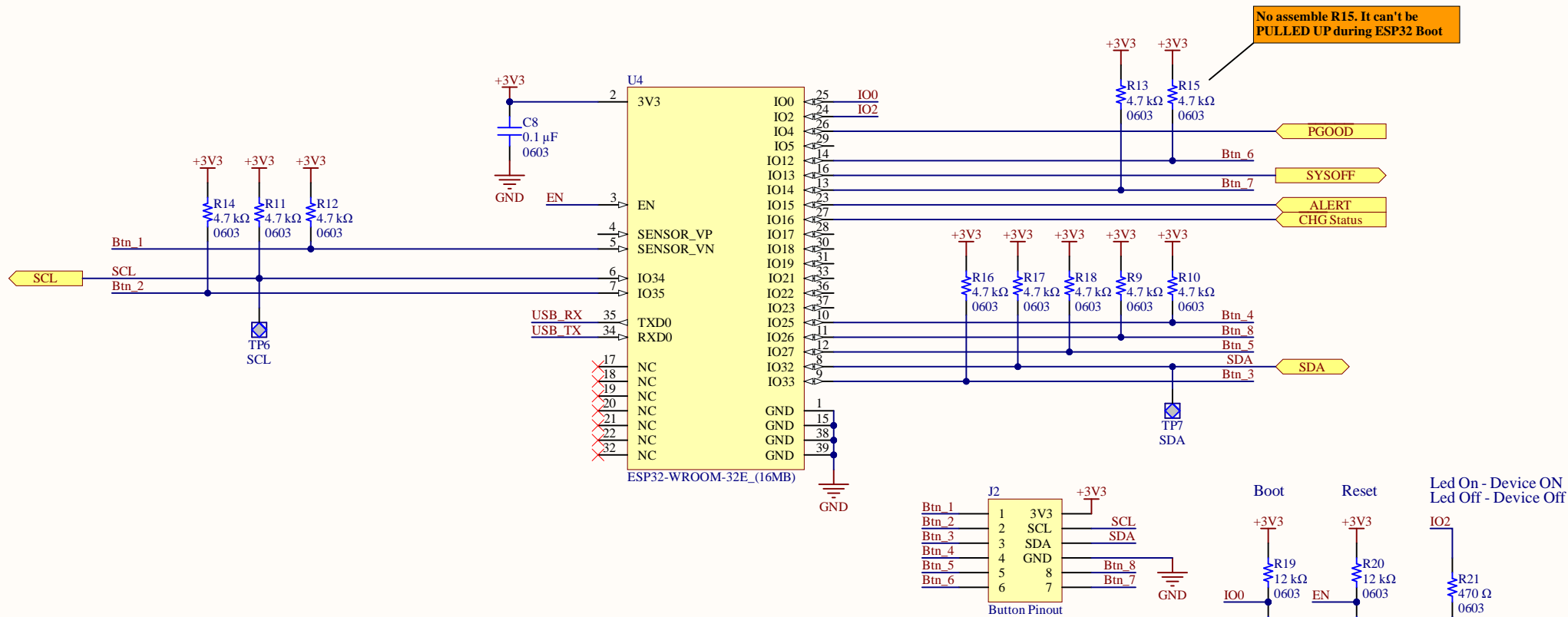
Fuel Gauge



3V3 Voltage Regulator

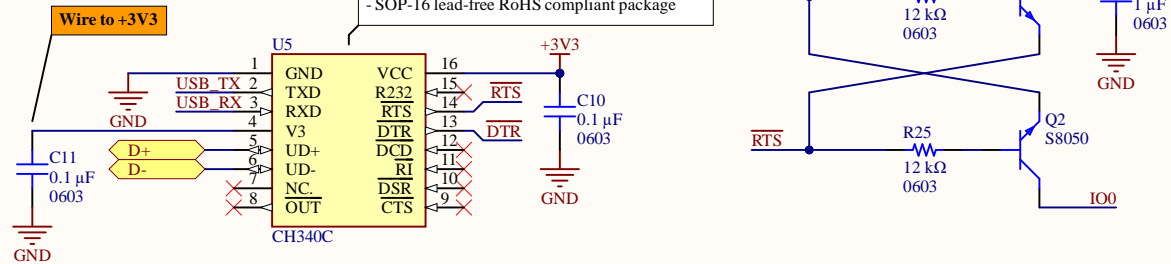


Sheet title:	USB & Power
Project title:	Bluetooth Spark Control
Designer:	Pedro Javier Belmonte Miñano
Supervisor:	None
Date:	13/12/2023
Revision:	V1
Sheet	2 of 3



USB to TTL

- Model: CH340C
- Compatible with USB V2.0
- Support 5V and 3.3V power supply even 3V
- CH340C, CH340G and CH340B have built-in crystal and are compatibles.
- SOP-16 lead-free RoHS compliant package



Auto Reset & Program Circuit				
DTR	RTS	EN	IO0	
1	1	1	1	← Normal Mode
0	0	1	1	← Normal Mode
1	0	0	1	← Reset
0	1	1	0	← Program Mode

EN - ESP32 Enable
1 - Device On
0 - Device Off

IO0 - ESP32 GPIO0
1 - SPI Mode
0 - Download Boot Mode

Sheet title: ESP32 & CH340C		
Project title: Bluetooth Spark Control		
Designer: Pedro Javier Belmonte Miñano		
Supervisor: None		
Date: 13/12/2023	Revision: V1	Sheet 3 of 3