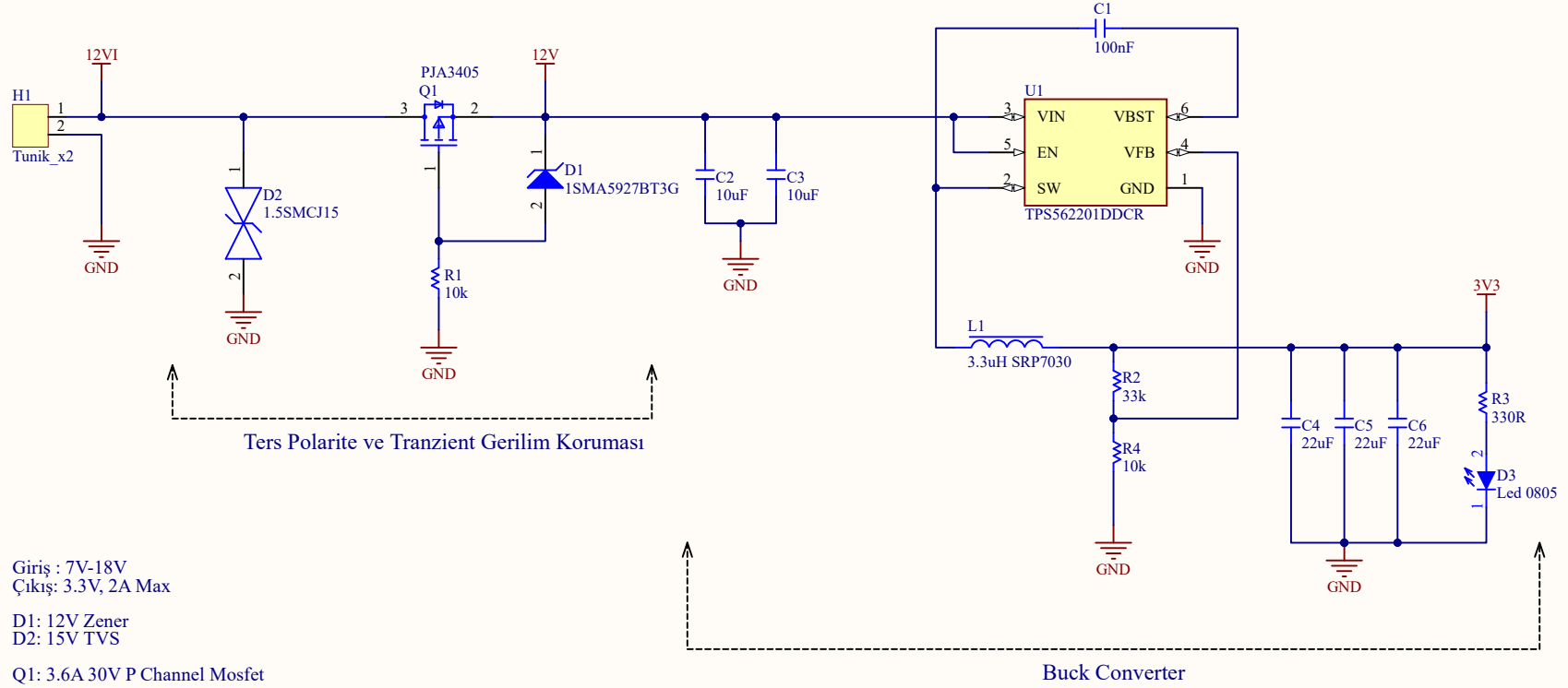


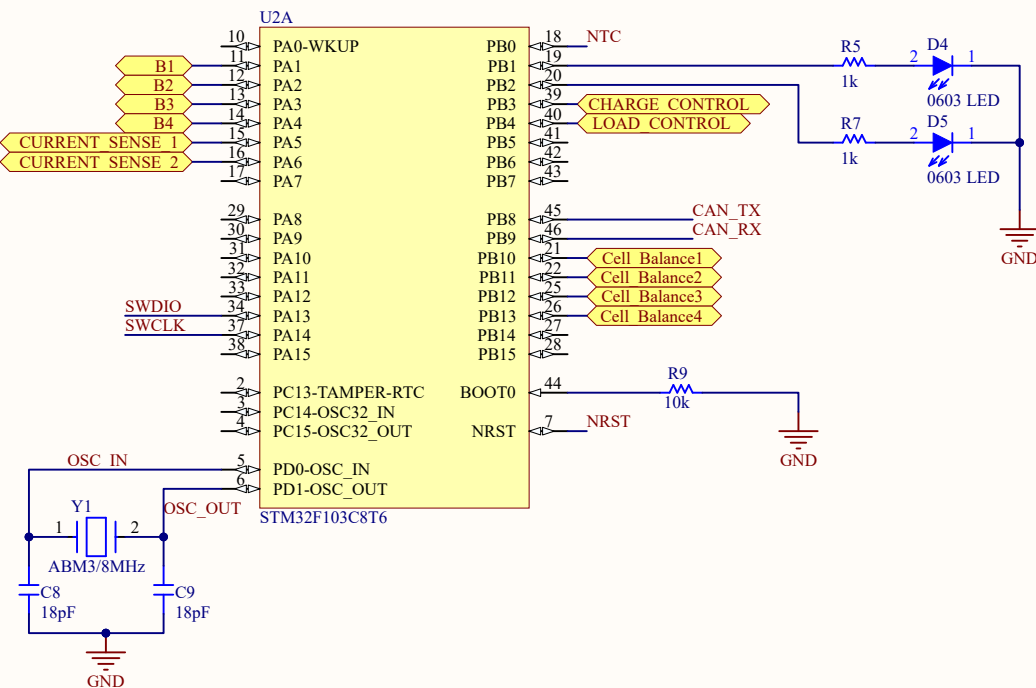
Buck Converter



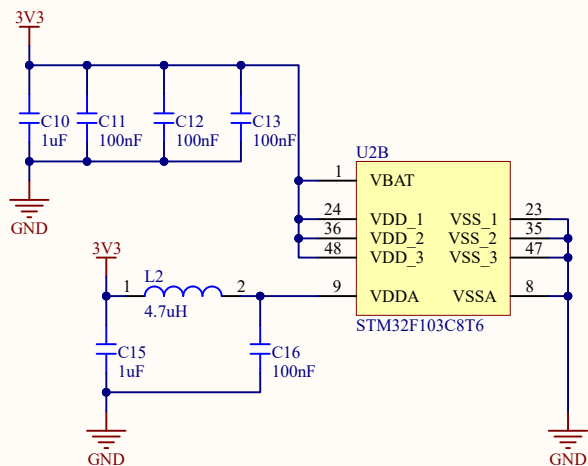
Pasif elemanların footprinti 0805 olarak seçilmiş olup Q1 Mosfeti SOT23, TVS diyot SMC, Zener ise SMA footprintlerinde seçilmiştir.

Title Battery Management System		
Size A4	Number 1	Revision 1
Date: 12.06.2022	Sheet of Power	
File: C:\Users\...\Power.SchDoc	Drawn By: Abdurahman Arvas	

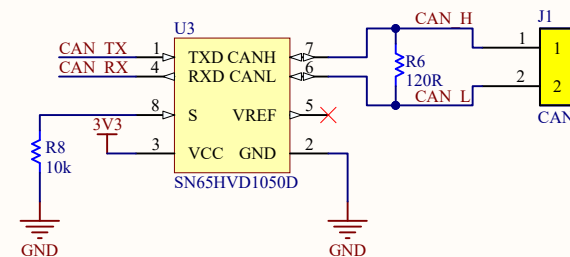
STM32F103C8T6 AND PERIPHERALS



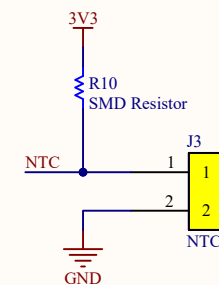
DECOUPLING CAPACITORS



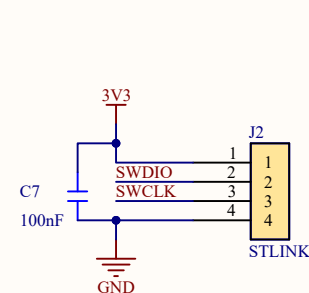
CAN COMMUNICATION



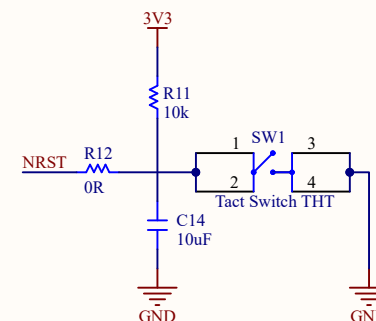
NTC



ST LINK CONNECTOR



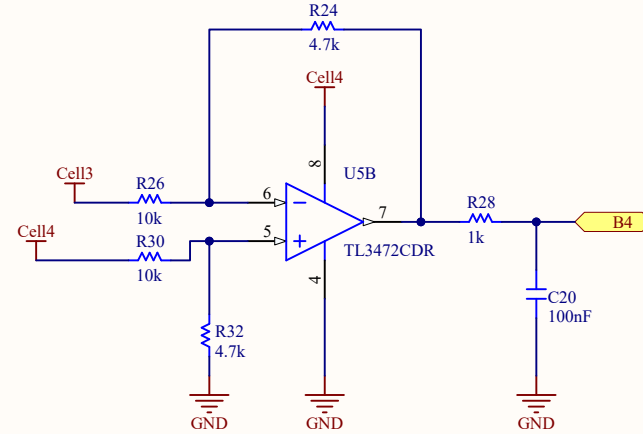
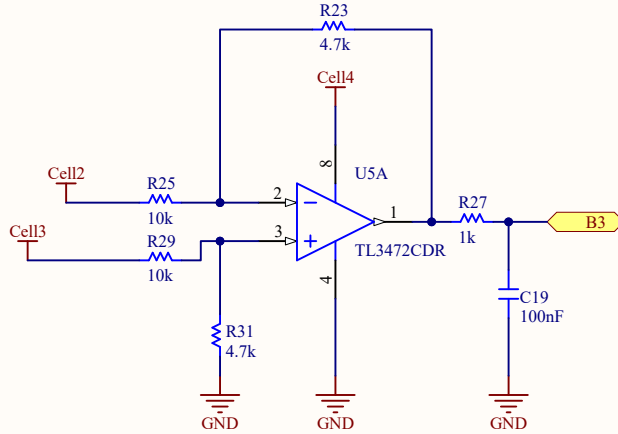
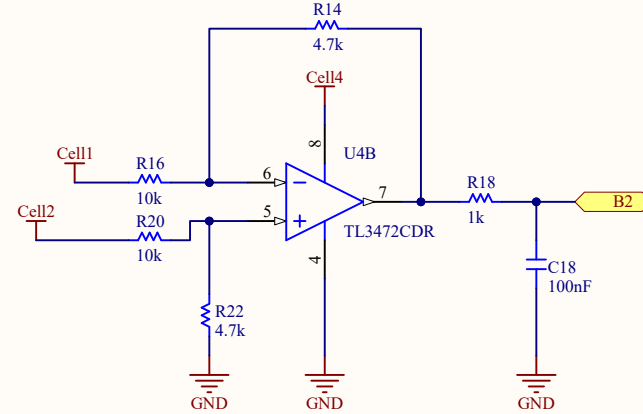
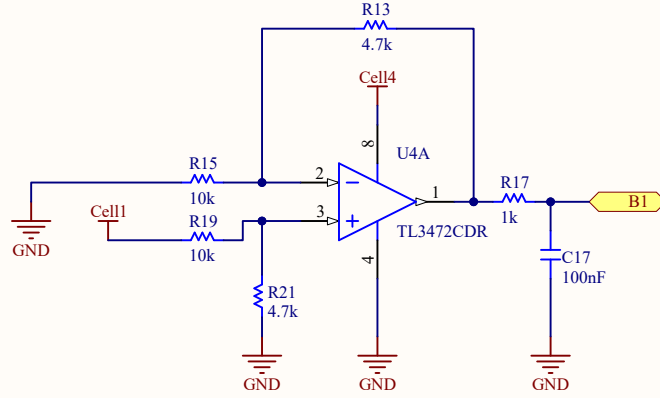
RESET



Title
Battery Management System

Size A4	Number 1	Revision 1
Date:	12.06.2022	Sheet of MCU
File:	C:\Users\...\MCU.SchDoc	Drawn By: Abdurahman Arvas

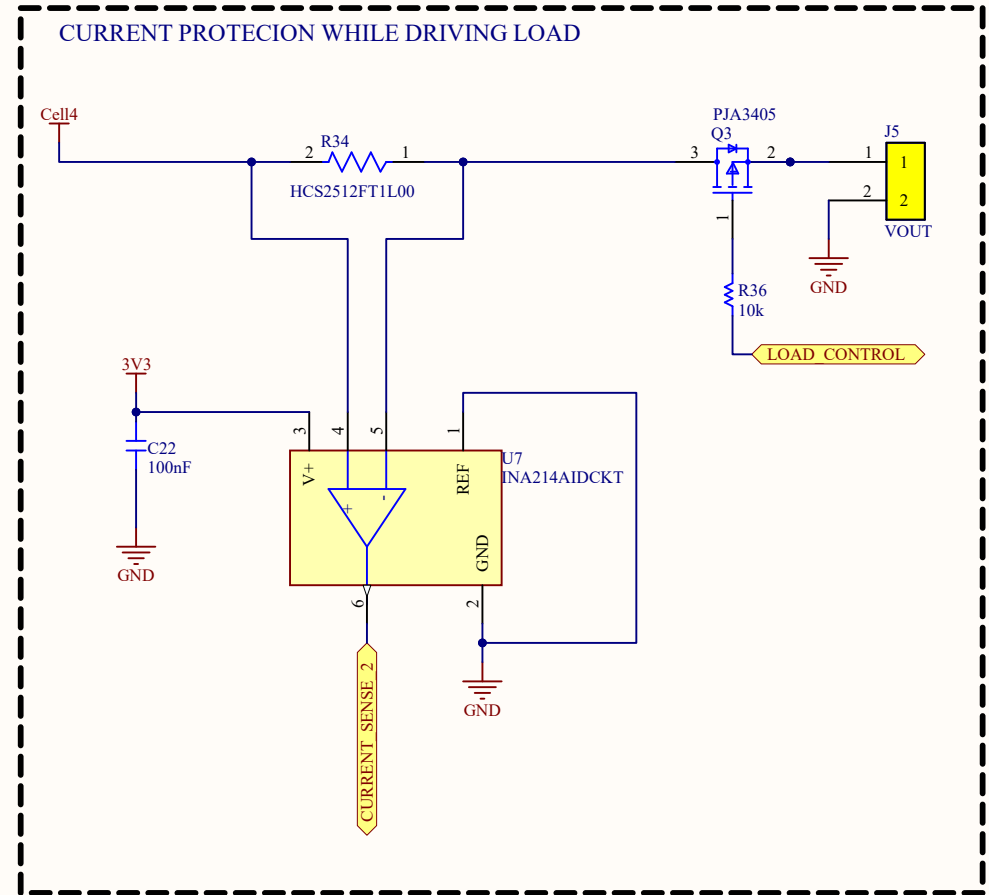
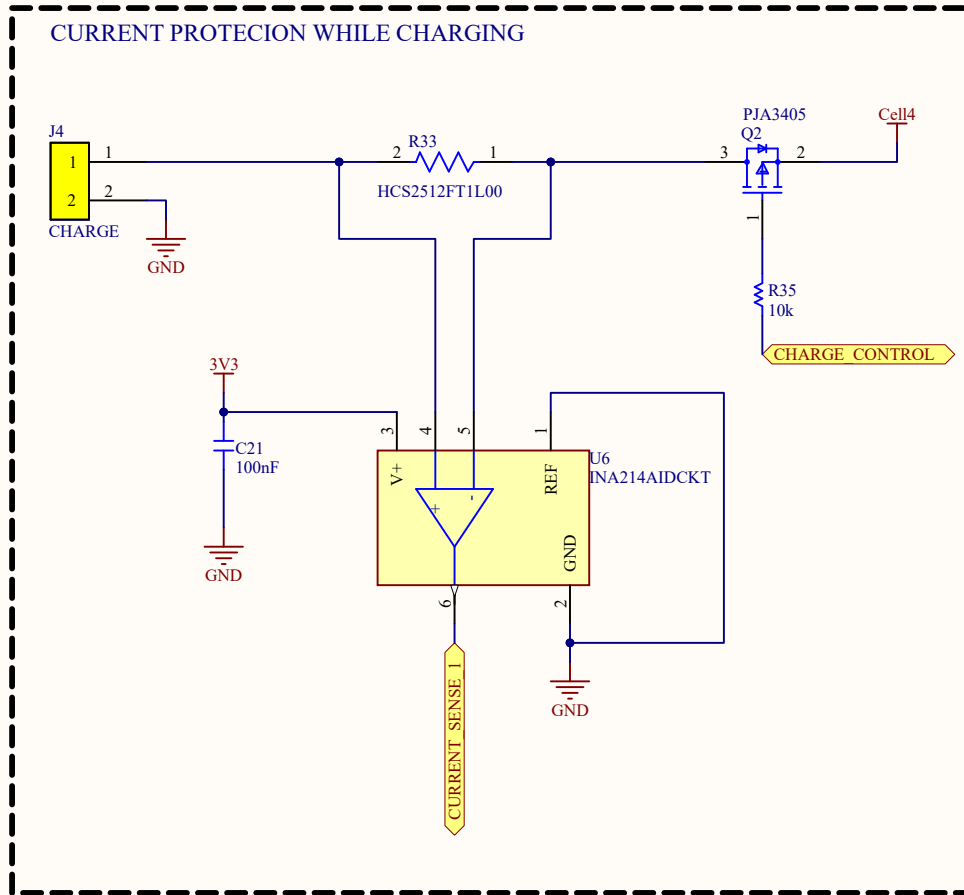
CELL VOLTAGE MEASUREMENT



Fark kuvvetlendirici yapısıyla her bir hücrenin gerilimi ölçülür. Ölçülen gerilim çıkışta 0.47 oranında düşürülür. Bu değer yazılımda kullanılacak katsayıdır.

Title Battery Management System		
Size A4	Number 1	Revision 1
Date:	12.06.2022	Sheet of Voltage Measurement
File:	C:\Users\...Voltage Measurement.SchDoc	Drawn By: Abdurahman Arvas

Q2 mosfeti aynı zamanda aşırı gerilim durumunda işlemci tarafından kapatılabilir.



Title Battery Management System		
Size A4	Number 1	Revision 1
Date: 12.06.2022	Sheet of Overcurrent Protection	Drawn By: Abdurahman Arvas
File: C:\Users\...\Overcurrent Protection.Sch		

CELL BALANCING

The figure displays four circuit diagrams for cell balancing, labeled Cell Balance1, Cell Balance2, Cell Balance3, and Cell Balance4. Each circuit is designed to balance a specific cell (Cell3, Cell2, Cell3, and Cell2 respectively) against a common ground (GND).

Cell Balance1: This circuit balances Cell3. It features a MOSFET (Q4, NTR4171PT1G) controlled by a 1k resistor (R37). The MOSFET's drain is connected to Cell3, and its source is connected to a 1k resistor (R41) which is then connected to the gate of the MOSFET. A 0603 LED (D6) is connected between the drain and the source. The MOSFET is controlled by a PJA3405 IC (Q6) which is connected to Cell3 and GND. The MOSFET's gate is connected to Cell3, and its source is connected to GND.

Cell Balance2: This circuit balances Cell2. It features a MOSFET (Q5, NTR4171PT1G) controlled by a 1k resistor (R39). The MOSFET's drain is connected to Cell2, and its source is connected to a 1k resistor (R42) which is then connected to the gate of the MOSFET. A 0603 LED (D7) is connected between the drain and the source. The MOSFET is controlled by a PJA3405 IC (Q7) which is connected to Cell2 and GND. The MOSFET's gate is connected to Cell2, and its source is connected to GND.

Cell Balance3: This circuit balances Cell3. It features a MOSFET (Q8, NTR4171PT1G) controlled by a 1k resistor (R43). The MOSFET's drain is connected to Cell3, and its source is connected to a 1k resistor (R47) which is then connected to the gate of the MOSFET. A 0603 LED (D8) is connected between the drain and the source. The MOSFET is controlled by a PJA3405 IC (Q10) which is connected to Cell3 and GND. The MOSFET's gate is connected to Cell3, and its source is connected to GND.

Cell Balance4: This circuit balances Cell2. It features a MOSFET (Q9, NTR4171PT1G) controlled by a 1k resistor (R45). The MOSFET's drain is connected to Cell2, and its source is connected to a 1k resistor (R48) which is then connected to the gate of the MOSFET. A 0603 LED (D9) is connected between the drain and the source. The MOSFET is controlled by a PJA3405 IC (Q11) which is connected to Cell2 and GND. The MOSFET's gate is connected to Cell2, and its source is connected to GND.

<div> <div>Title</div> <div>Battery Management System</div> </div>			
Size	Number	Revision	
A4	1	1	
Date:	12.06.2022	Sheet of	Cell Balancing
File:	C:\Users\...\Cell_Balancing.SchDoc	Drawn By:	Abdurahman Arvas