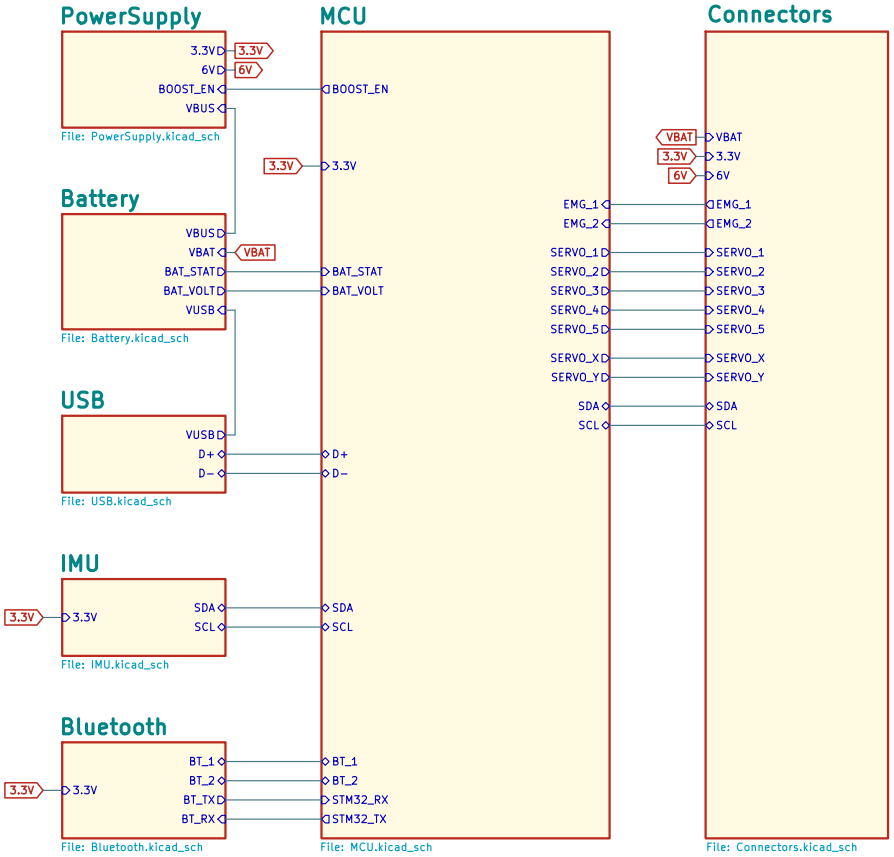

Mounting Holes

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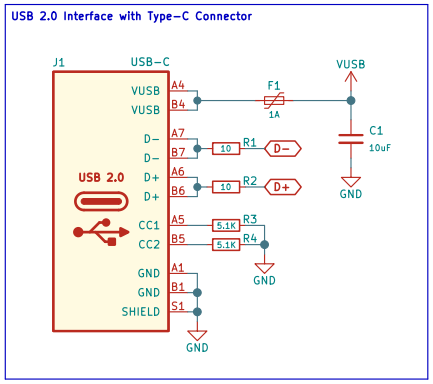
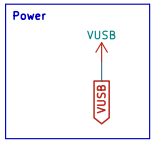
BioniX Controller

Drawn by: Hojadurdy Durdygylyjov			
Main Controller Board for BioniX Prosthetic Arm with Linear Actuators.			
Date: 2020-10-20	Rev: 1	File: BioniX.kicad_sch	KiCad E.D.A
Sheet: 1/8	License: CC Attribution-ShareAlike 4.0 International		





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USB 2.0 Type-C Interface

Drawn by: Hojadurdy Durdygylyjov			
USB 2.0 Interface with Type-C Connector			
Date: 2020-10-20	Rev: 1	File: USB.kicad_sch	KiCad E.D.A
Sheet: 2/8	License: CC Attribution-ShareAlike 4.0 International		

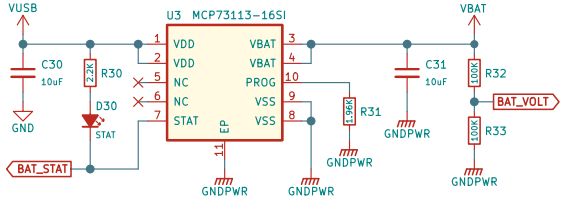
Battery Charge Voltage: 4.1V

Charge Current Selection:

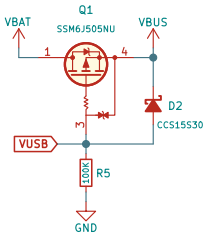
1000mA	-->	1.15K
900mA	-->	1.27K
800mA	-->	1.43K
700mA	-->	1.65K
600mA	-->	1.96K
500mA	-->	2.37K
400mA	-->	3.01K
300mA	-->	4.02K
200mA	-->	6.19K
100mA	-->	13K

*Change R32 to Corresponding Resistor Value

600mA Li-Ion Battery Charger



System Power Supply Selector Circuit

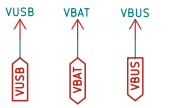


*When VUSB is present, battery is not conneced to the system. Battery gets charged via charging circuit when VUSB is suppied. VUSB also supplies power to the rest of the system but 6V boost converter is disabled by MCU to prevent excessive current draw from USB port.

*If VUSB is not present p-channel mosfet gets turned on and battery powers the entire system.

*P-Channel Mosfet also acts as a reverse voltage protection for the battery.

Power



Ground

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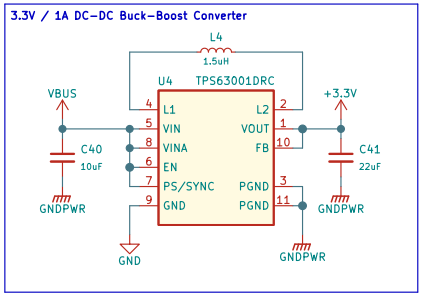
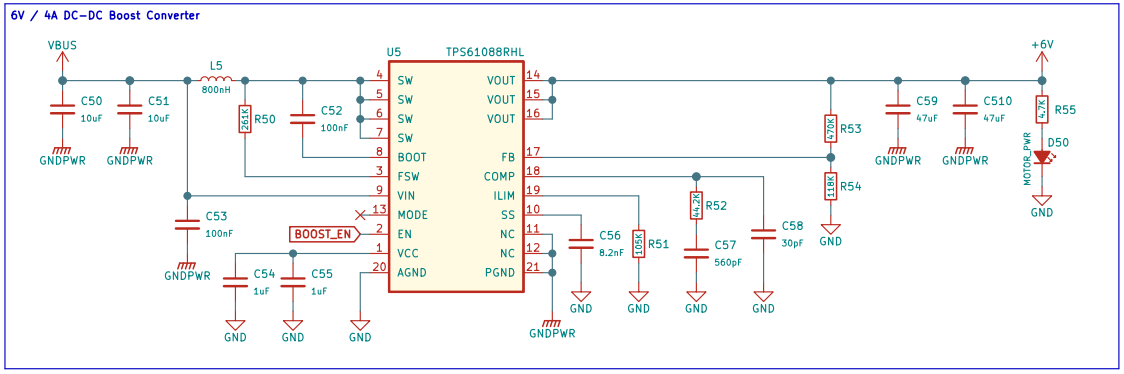
Battery Charging Circuit

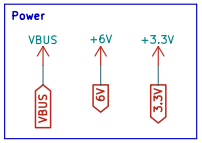
Drawn by: Hojadurdy Durdygylyjov

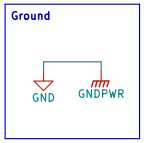
Battery charging circuit with reverse voltage protection.

Date: 2020-10-20	Rev: 1	File: Battery.kicad_sch	KiCad E.D.A
Sheet: 3/8	License: CC Attribution-ShareAlike 4.0 International		









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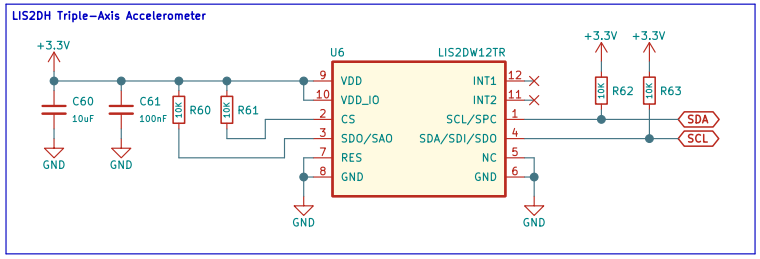
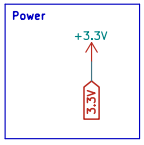
Power Supply

Drawn by: Hojadurdy Durdygylyjov

DC-DC Converters for 3.3V System and 6V Motor Power Supply.

Date: 2020-10-20	Rev: 1	File: PowerSupply.kicad_sch	KiCad E.D.A
Sheet: 4/8	License: CC Attribution-ShareAlike 4.0 International		





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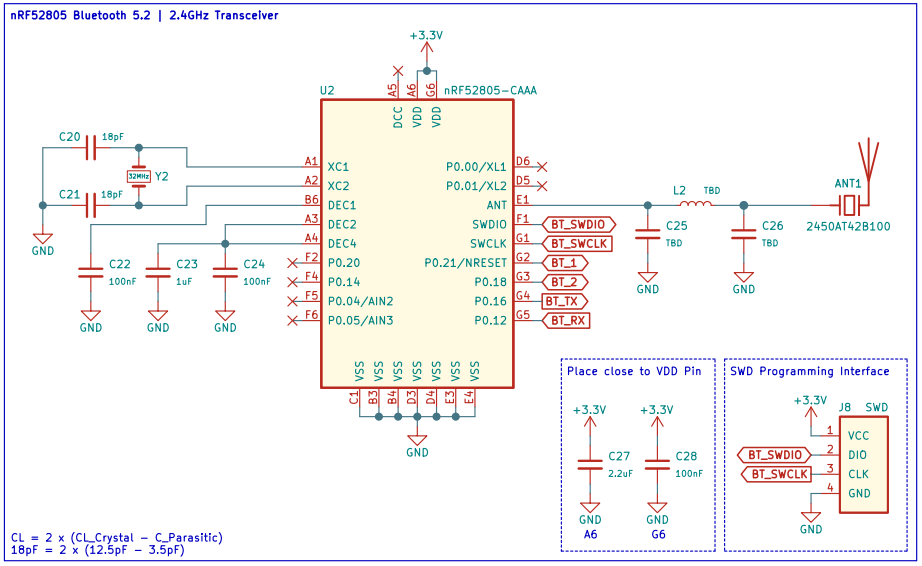
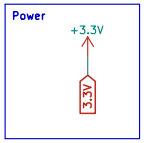
LIS2DH Triple-Axis Accelerometer

Drawn by: Hojadurdy Durdygylyjov

IMU for Orientation and Motion Detection.

Date: 2020-10-20	Rev: 1	File: IMU.kicad_sch	KiCad E.D.A
Sheet: 5/8	License: CC Attribution-ShareAlike 4.0 International		





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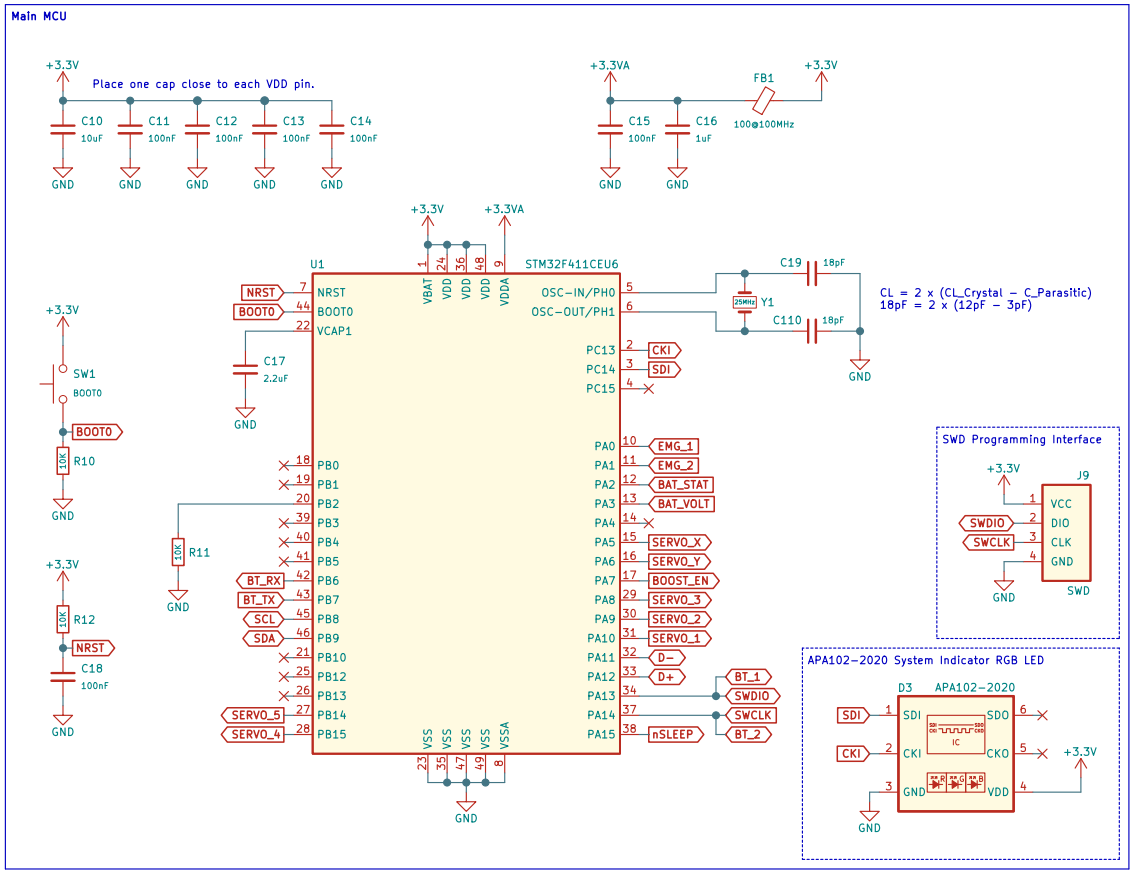
nRF52805 Bluetooth 5.2 SoC

Drawn by: Hojadurdy Durdygylyjov			
nRF52805 Bluetooth 5.2 | 2.4GHz Transceiver			
Date: 2020-10-20	Rev: 1	File: Bluetooth.kicad_sch	KiCad E.D.A
Sheet: 6/8	License: CC Attribution-ShareAlike 4.0 International		



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Main Controller MCU

Drawn by: Hojadurdy Durdygylyjov

STM32F411CE controls the entire system

Date: 2020-10-20	Rev: 1	File: MCU.kicad_sch	KiCad E.D.A
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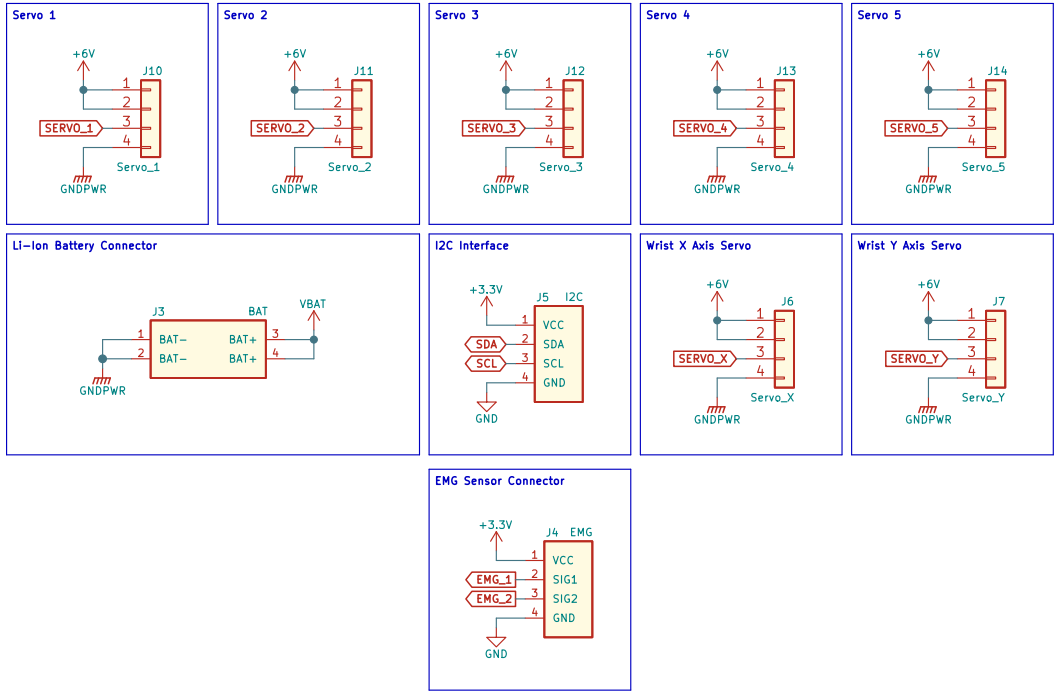

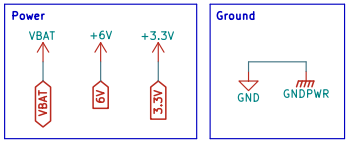

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Output Connectors

Drawn by: Hojadurdy Durdygylyjov

All peripheral input and output connectors.

Date: 2020-10-20	Rev: 1	File: Connectors.kicad_sch	KiCad E.D.A
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