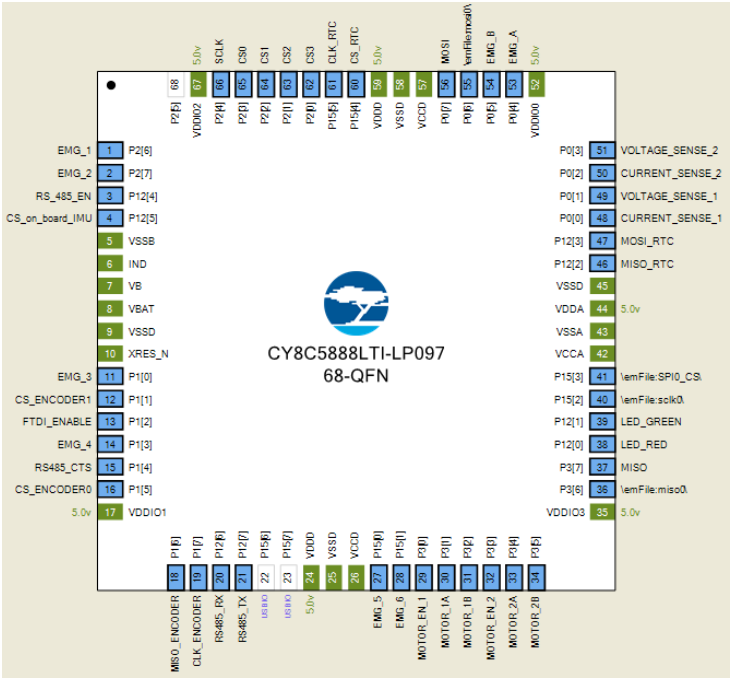
# Logic Board PSOC5

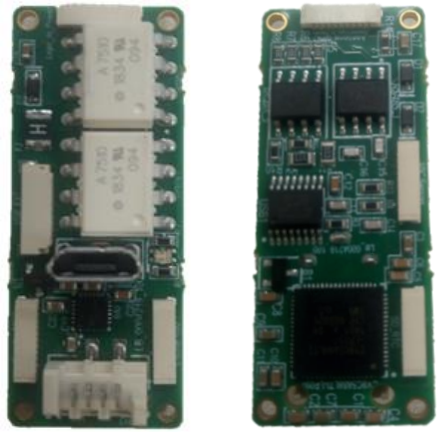



**PSOC 5**

FAMILY: PSOC5LP 68-pin
CPU Core: 32-bit Arm Cortex M3 (vs 8051 psoc3)
Max. operating frequency: 80 MHz
EEPROM size: 2 KB
FLASH size: 256 KB (vs 64 kb psoc3)
38 GPIOs (vs 25 GPIOs on psoc3)

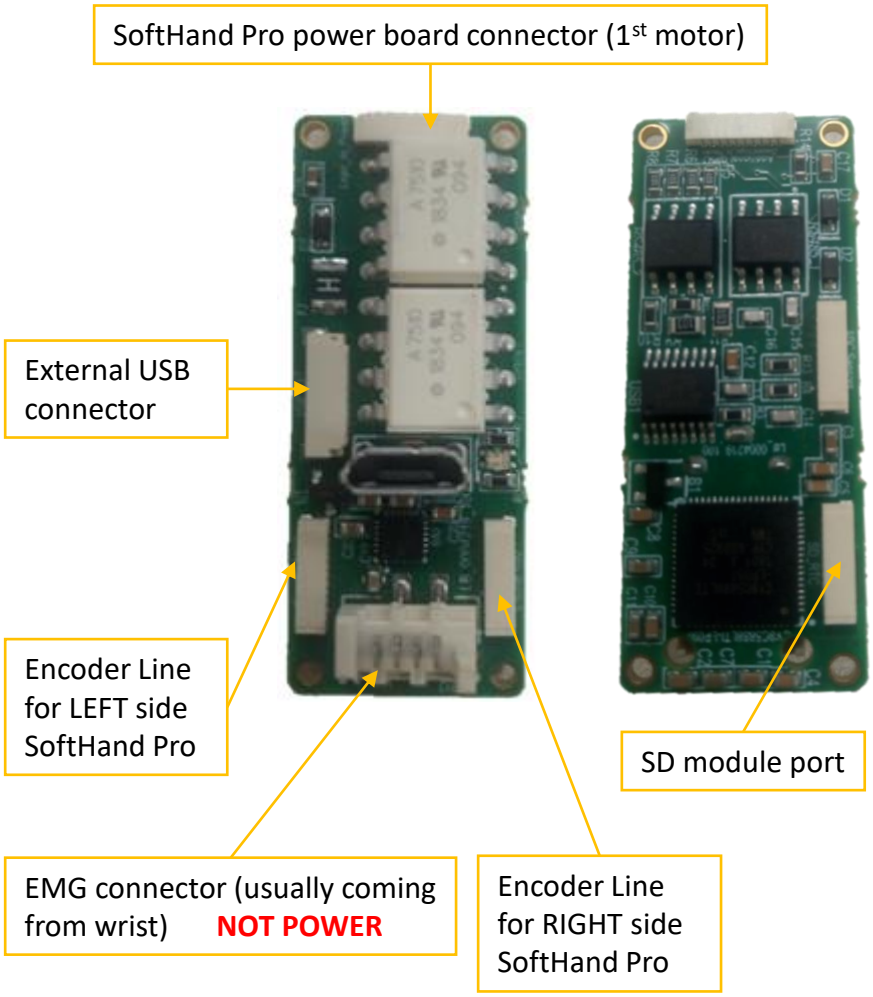
<u>Board connectors:</u>

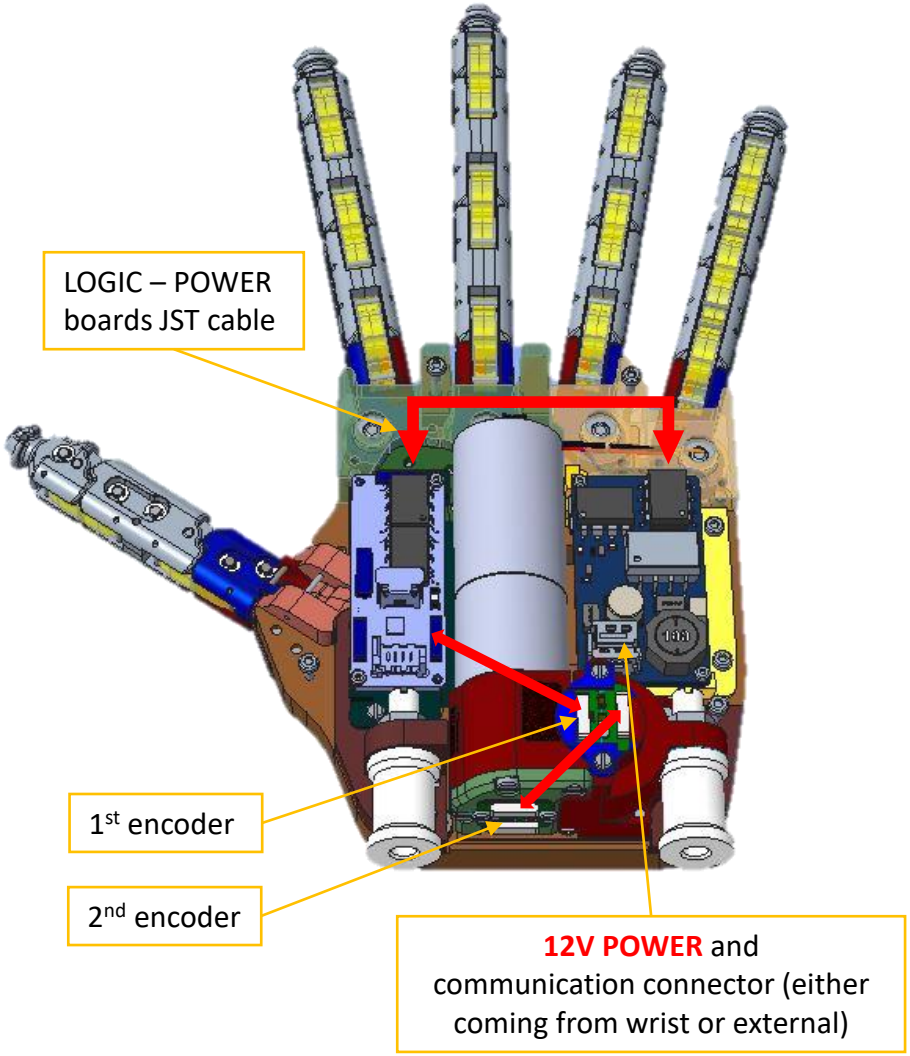
- Encoder-IMU 1 (Right Side)
- Encoder-IMU 2 (Left Side)
- SD-RTC module
- ADC port (for EMGs and analog sensors)
- Logic to Power (1st motor)
- Additional GPIO port (Logic to Power for 2nd motor)
- External USB support



# SoftHand Pro firmware

## Hardware configuration



# Generic firmware

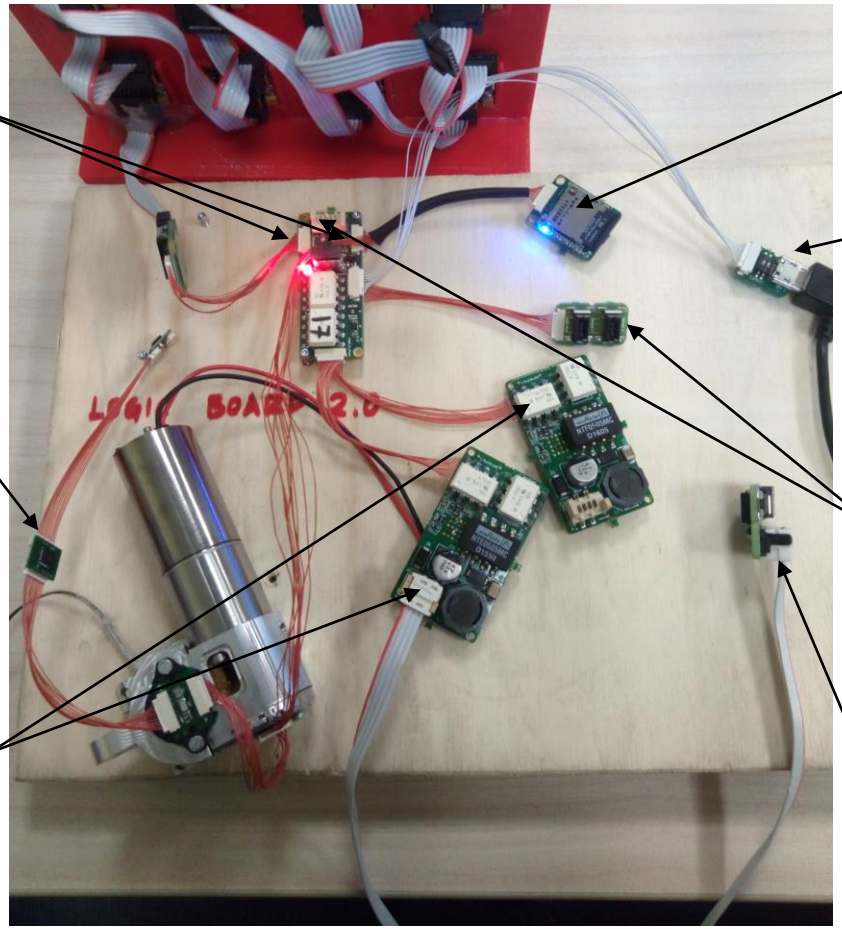
## Hardware configuration

Generic firmware is intended for all the uses different from SoftHand Pro (e.g. other devices, 2 motors generic, …). It can handle configurations up to this shown in the figure

2 encoder lines
(can read up to 5 encoders for each line – max. of 10 encoders in total)

2 IMUs cascade at the end of each encoder line
(+ 1 on board IMU – total of 5 IMUs)

2 power boards to control 2 motors with <u>independent</u> settings and powers (also 30A board with high power driver)



SD + Real time clock expansion functions

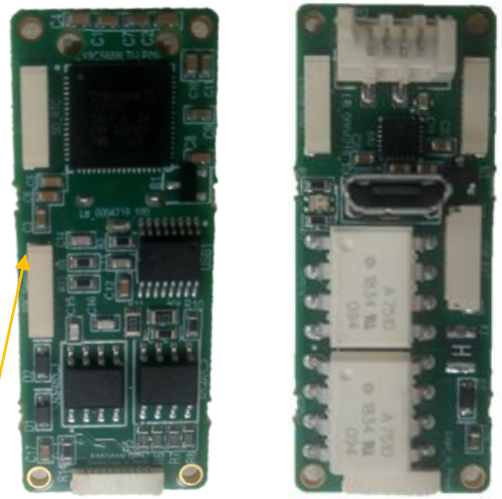
External USB port
(necessary to program PSoC)

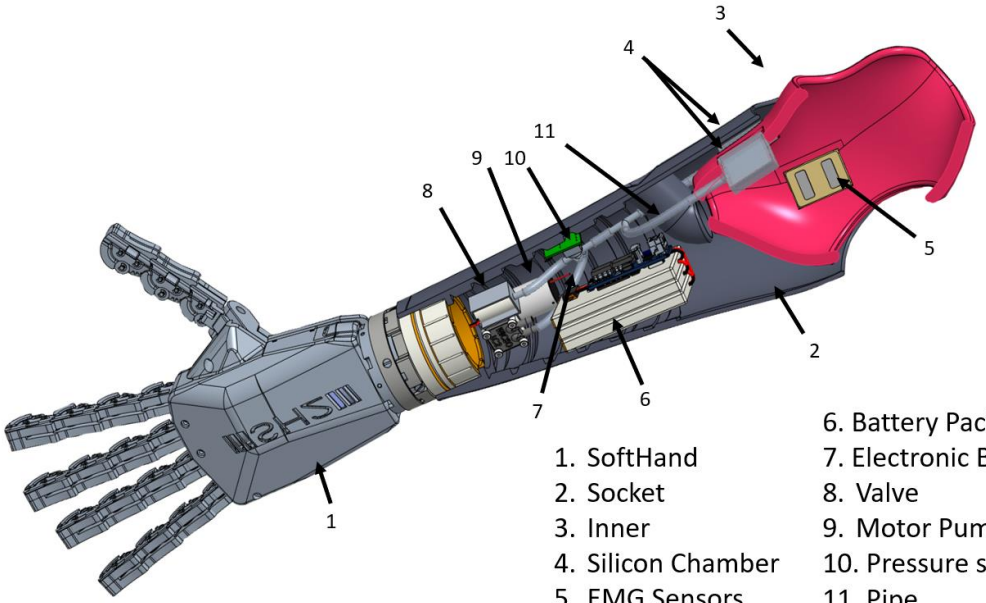
8 ADC channels for generic analog sensors (6 additionals channels + 2 standard EMG through MOLEX connector)

Molex2ERNI interface
(new Junction board with protection diode, used to interface with ERNI power connector)

# Air Chambers Haptic Fb firmware

## Hardware configuration

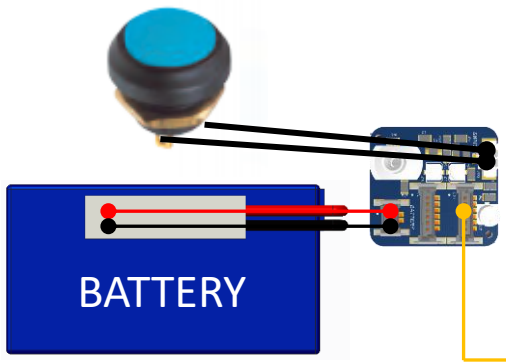


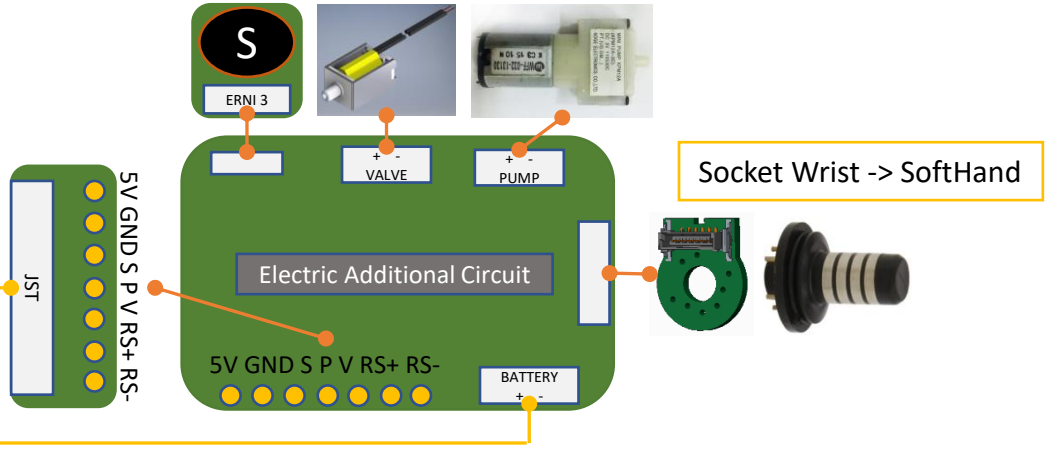



1. SoftHand
2. Socket
3. Inner
4. Silicon Chamber
5. EMG Sensors
6. Battery Pack
7. Electronic Board
8. Valve
9. Motor Pump
10. Pressure sensor
11. Pipe

EMG port

Electric additional circuit




Socket Wrist -> SoftHand