

API tools and features

shadmin tool

It works in the same way as qbadmin tool , but it has additional commands and extension for Bluetooth connection

Some additional commands:

`shadmin -r`: print information about cycles counters and usage of the SoftHand

`shadmin -S`: get the current two open files on the SD card (if configured and enabled) with the list of current parameters and recorded data

`shadmin -X`: store the filesystem of the SD card (if configured and enabled) in a local folder

`shadmin -e`: get battery voltage in mA

API tools and features

shparam tool

It works in the same way as qbparam tool, but it is organized in sections.
It is possible only to access specific sections without viewing all the parameters list.

Usage: *shparam.exe ID section_identifier*

| Parameters Section | Identifier |
|--------------------|----------------------|
| Device | 'dev' or 'device' |
| Motor | 'mot' or 'motor' |
| Encoder | 'enc' or 'encoder' |
| EMG | 'emg' |
| IMU | 'imu' |
| Expansion port | 'exp' or 'expansion' |
| User | 'usr' or 'user' |
| SoftHand | 'SH' or 'softhand' |
| All parameters | 'all' |

```

1) GENERAL DEVICE PARAMETERS
1 - Device ID: 1
2 - Date of maintenance [D/M/Y]: 24 5 19
3 - Hand side: Left
4 - Reset counters: NO
5 - User ID: GENERIC USER

2) MOTOR 1 PARAMETERS
1 - Position PID [P, I, D]: 0.016495 0.000000 0.006989
2 - Current PID [P, I, D]: 1.000000 0.000992 0.000000
3 - Startup Activation: YES
4 - Input mode: Usb
5 - Control mode: Position
6 - Pos. limit active: YES
7 - Pos. limits [inf, sup]: 0 16000
8 - Max steps [neg, pos]: 0 0
9 - Current limit: 1500
10 - PWM rescaling: NO
11 - Current lookup: 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000

3) ENCODER 1 (LEFT SIDE) PARAMETERS
1 - Resolutions: 3 3 3
2 - Measurement Offsets: 0 0 0
3 - Multipliers: 1.000000 1.000000 1.000000
4 - Absolute encoder position: YES
5 - Motor handle ratio: 22

4) EMG PARAMETERS
1 - EMG thresholds: 200 200
2 - EMG calibration on startup: NO
3 - EMG max values: 1024 1024
4 - EMG max speed: 100
5 - EMG inversion: NO

5) IMU PARAMETERS
1 - Read IMUs: OFF
2 - SPI read delay (IMU): None
3 - On board IMU conf. [a,g,m,q,t]: 1 1 0 0 0

6) EXPANSION PORT PARAMETERS
1 - Read Expansion port: None
2 - Last checked Time [D/M/Y H:M:S]: 1 2 3 4 5 6

7) USER 0 PARAMETERS
1 - User code: USR001

8) SOFTHAND SPECIFIC PARAMETERS
1 - Rest position: 7000
2 - Rest position time delay (ms): 10
3 - Rest vel closure (ticks/sec): 10000
4 - Rest position enabled: NO

```

shparam tool for SoftHand Pro device

New PSoC5 FW parameters:

Hand side: [Right / Left]

User ID: (when changed, retrieve previously stored EMG parameters and User code)

- Generic User
- Other known users



Read IMUs: enables on board IMU reading

Read Expansion port: enables SD card saving and/or Bluetooth Enable

Last checked Time: used to configure date of RTC

User code: 6 characters string to identify SD folder where to save user usage data

Note: some parameters change need a board reset (reported in related menu, it occurs automatically)