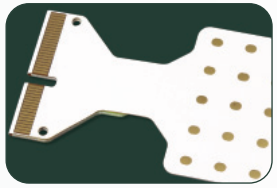
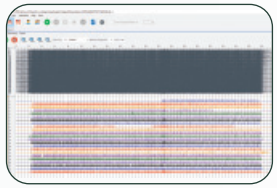
muovi+pro

dynamic high density EMG

HDsEMG matrices



MUs firing rate



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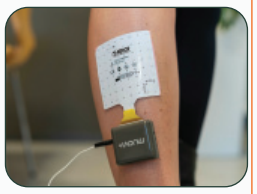
General description

The Muovi+Pro is a device composed by one to two wireless probes (Muovi+) and a charging and synchronization base (SyncStation+). The Muovi+ probes are 64 channel wireless bioelectrical amplifiers, they are wearable devices designed for dynamic applications. The Muovi+ probe is able to detect surface electromyographic signals (HDsEMG) and electroencephalographic signals (EEG) for brain computer interface (BCI). Furthermore, the Muovi+probes include an inertial sensor and provide the quaternion to obtain their rotation and orientation. The recording electrodes are directly connected to the Muovi+ probes, no cables are required. The recharging and synchronization base SyncStation+ allows the connection of up to two Muovi+ probes and other fourteen different probes (up to eight, in total, simultaneously). The SyncStation+ makes available three auxiliary inputs and 1 load cell input. The acquired data can be viewed in real time with OT BioLab+ software or with Matlab, Python and any other software capable of reading data from TCP socket.

Easy High Density EMG Detection



Application

The Muovi+Pro allows to:

- identify anatomical muscle features;
- decode the neural drive to the muscles (HDsEMG);
- quantify the HDsEMG spatial distribution of different anatomical districts thanks to the possibility of connecting and synchronizing multiple Muovi+ probes at the same time.

Features:

Each Muovi+ probe allows to acquire different types of signals:

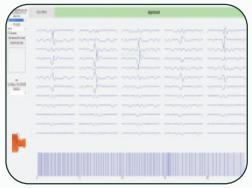
- 64 HDsEMG signals or 64 EEG signals;
- quaternions obtained by the fusion of inertial sensor data.

The Muovi+ probe can be directly interfaced to a PC with WiFi (one probe at a time) or to the SyncStation+.

Each SyncStation+ base allows to interface with WiFi:

- up to two Muovi+ probes with 64 channels or up to two 64 channel devices among Sessantaquattro/Sessantaquattro+
- up to four Muovi probes with 32 channels;
- up to eight Due+ probes with 2 bipolar channels;
- up to two Quattro+ probes with 4 bipolar channels.

Extract motor unit



Moreover the base makes available:

- 3 auxiliary inputs;
- 1 load cell input;
- 1 trigger output;
- ethernet connection toward a PC.

Technical data

Muovi+Pro	Class	I BF
	Total number of channels	132
	Max. number of probes	Up to 2 Muovi+, 4 Muovi, 8 Due+, 2 Quattro+
Muovi+probe	Functions	Acquisition of 64 EMG or EEG signals
	Bandwidth	10 – 500 Hz
	Sampling frequency	500 or 2000 Hz
	Noise	< 4 μV_{RMS}
	Power supply	Battery LiPo 3,7 V
	Battery life times	Power on: 6 hours Continuous transmission: 2.30 hours
	IMU	Integrated inertial sensor
	Resolution	16 or 24 bit
	Data transfer to PC	WiFi (single probe)
	Receiver	PC or SyncStation+
	Weight	42g
SyncStation+	Functions	Charge, Receiver, Auxiliary inputs
	Communication to PC	Ethernet
	Auxiliary channels	3 – input range ± 5 V
	Load cell input	1 – power supply 5 V
	Power Supply	12VDC power supply supplied with the system