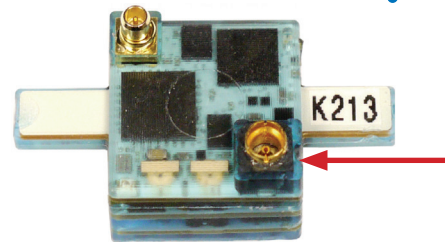


## W2100-HS16-ES2-EXT-2.0mA

### W2100 Headstage with two external Stimulation Sites for Electrical Stimulation

#### Advantages

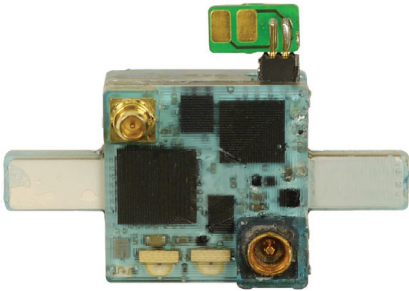
- The headstage is equipped with two external channels for electrical stimulation.
- The signal-to-noise ratio is excellent and most important, independent from the distance between sender and receiver.
- The headstage is additionally equipped with a triaxial gyroscope and a triaxial accelerometer by default.



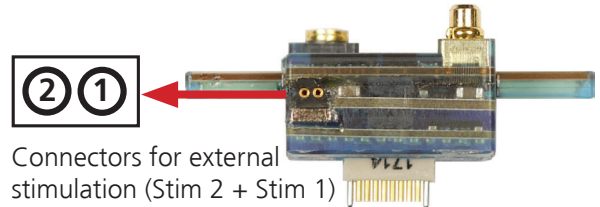
**W2100-HS16-ES2-EXT top side**  
Please use the connector for the storage battery in the lower right for orientation of the headstage.

#### Adapter for External Stimulation

The adapter for external stimulation has to be connected magnet to magnet to the headstage. Please solder a connection wire to the pads provided on the adapter.



#### External Connectors for Electrical Stimulation



Connectors for external stimulation (Stim 2 + Stim 1)  
Connector from Mill-Max 1 mm Pitch 861-13-050-10-002000 + Magnet cuboid Maqna QA-3x1x1-N45-N on the headstage mates with Mill-Max 860-10-050-10-002000 + Magnet cuboid Maqna QA-3x1x1-N45-N.

#### Gyroscope and Accelerometer

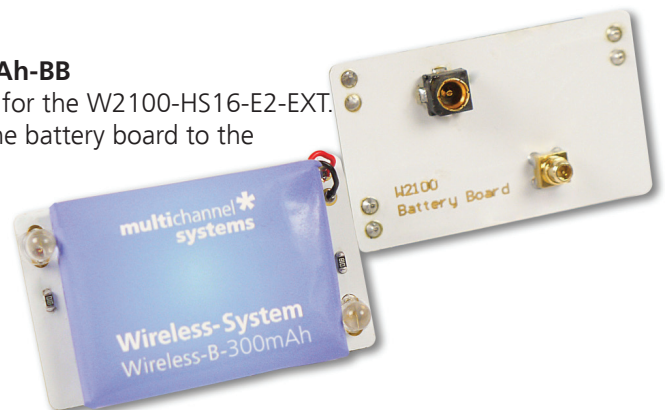
The W2100 headstage is equipped with triaxial gyroscope and accelerometer sensors, which allow synchronisation with electrophysiological data.

#### Applications

The W2100 headstage is the ideal solution for the measurement of spikes, LFP, EEG, ECG, EMG, and ECoG. Additional inputs to the interface board allow the synchronization of the data with external devices. Use the two external stimulation channels for recording and electrical stimulation simultaneously.

#### W2100-B-300mAh-BB

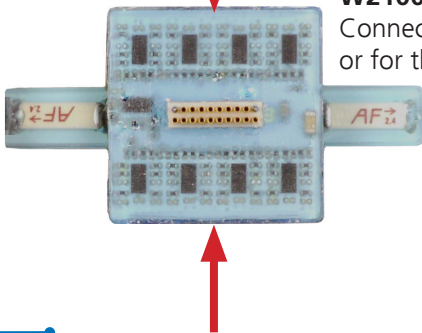
Standard battery for the W2100-HS16-E2-EXT. Please connect the battery board to the headstage.



## W2100-HS16-ES2-EXT-2.0mA

### Technical Specifications

**Important:** To handle the headstage, please touch the body, but not the antennae.



**W2100-HS16-ES2-EXT** with Omnetics connector bottom side:  
Connector for the electrode probe or for the ME/W-Signal Generator.

### Technical Specifications

Number of recording channels	16
Weight (without battery)	± 3.8 g
Dimensions (W x D x H) w/o antennae	15.5 mm x 15.5 mm x 7.5 mm
Distance for wireless link	5 m and more under normal conditions

### Amplifier

Bandwidth: To avoid aliasing effects, the low pass depends on the sampling frequency:

High pass	1 Hz (0.1 Hz on request)			
Low pass	400 Hz	800 Hz	1 kHz	5 kHz
@ Sampling rate	@ 1 kHz	@ 2 kHz	@ 5 kHz	@ 10 - 40 kHz

Gain	101
Input impedance	1 GΩ    10 pF
Resolution	16 bit
Input voltage range	± 12.4 mV
Input noise	< 1.9 μV <sub>RMS</sub>

### Sampling rate (max.) in kHz

	2	4	8	16
Number of channels simultaneously	2	4	8	16
Single Headstage Mode	40	40	25	25
Multi Headstage Mode	10	10	10	5

### Stimulation

Output current	- 2.0 mA to + 2.0 mA @ ± 10 V compliance voltage
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Rise time 10-66 %, current 0-100 μA 2.8 μs @ RL = 10 kΩ

### Inertial Measurement Unit

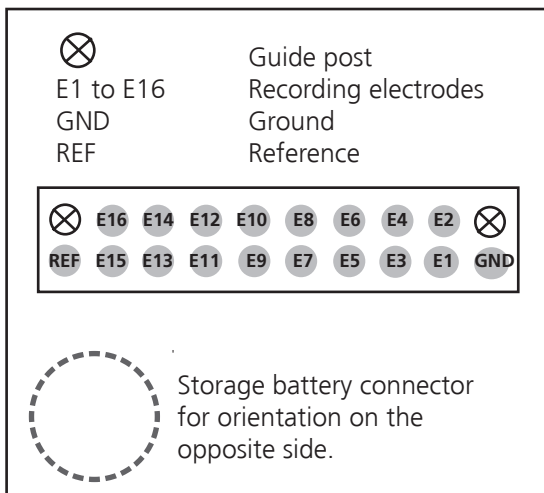
Gyroscope, triaxial	± 8 g @ 16 bit resolution
Accelerometer, triaxial	1000 %/s @ 16 bit resolution

### Software

Operating system	Windows @ 10, 8.1 (64 bit)
Data acquisition, analysis and export software	Multi Channel Suite Version 1.5.1 and higher

### W2100-HS16 Headstage with Omnetics Connector

Diagram of the bottom side with pin layout. Please orientate the headstage as shown in the diagram.



### Connector for this Headstage Omnetics Connector A79039-001

This Omnetics connector mates with Omnetics connector such as:  
Through-Hole:

A79038-001 (NPD-18-DD-GS)

Horizontal Surface Mount:

A79040-001 (NPD-18-AA-GS)

Vertical Surface Mount:

A79042-001 (NPD-18-VV-GS)

Cable:

A79044-001 (NPD-18-WD-18.0-C-GS)