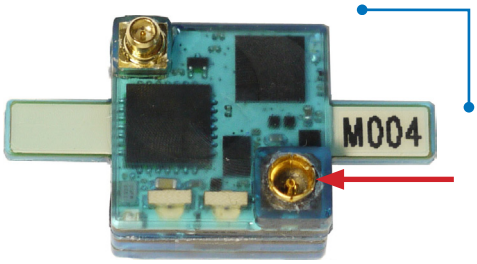
W2100-HS8-ES2-0.5mA

W2100 Headstage with two electrical Stimulation Channels for Use with the W2100-System

Advantages

- The headstage is equipped with two dedicated channels for electrical stimulation.
- Small-sized headstage with integrated A/D converter and LED lights for video tracking.
- The W2100-System converts the recorded signals into digital data already on the headstage.
- 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-HS8-ES2 top side
Please use the connector for the storage battery in the lower right for orientation of the headstage.

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-HS8-E2. Please connect the battery board to the headstage.

Gyroscope and Accelerometer

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

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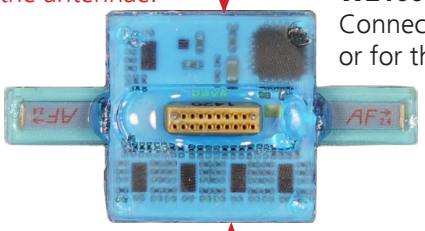
Technical Specifications

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



W2100-HS8-ES2 with Onmetics connector bottom side:
Connector for the electrode probe
or for the ME/W-Signal Generator.

W2100-HS8 Headstage with Omnetics Connector
Diagram of the bottom side with pin layout. Please orientate the headstage as shown in the diagram.

⊗	Guide post
NC	Not connected
S1 and S2	Stimulation electrodes
E1 to E8	Recording electrodes
GND	Ground

⊗	S2	NC	NC	NC	NC	NC	NC	S1	⊗
REF	E1	E2	E3	E4	E5	E6	E7	E8	GND

Storage battery connector for orientation on the oppposite side.

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)

Technical Specifications

Number of recording channels	8
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 @ Sampling rate	400 Hz @ 1 kHz	800 Hz @ 2 kHz	1 kHz @ 5 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_{RMS}

Sampling rate (max.) in kHz	Number of channels simultaneously		
	2	**4**	**8**
Single Headstage Mode	40	40	25
Multi Headstage Mode	10	10	10

Stimulation

Output current	- 0.5 mA to + 0.5 mA @ ± 10 V compliance voltage
Rise time 10-66 %, current 0-100 µA	1.5 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

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