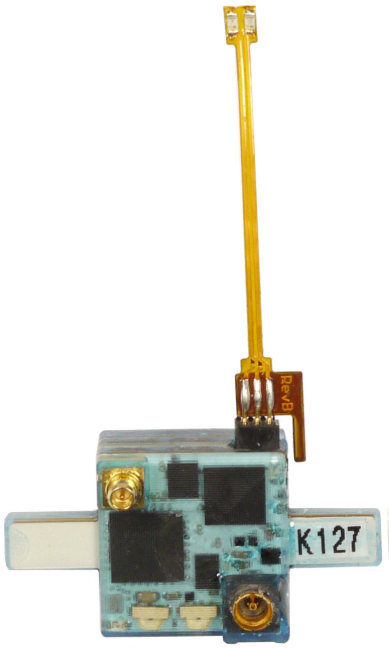
W2100-HS16-opto Headstage

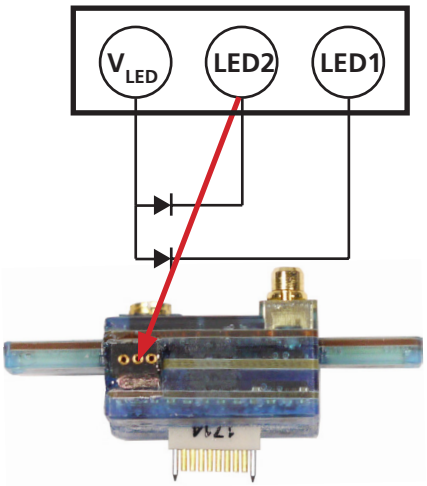
W2100 Headstage equipped with 2-Channel LED Output for Optical Stimulation

W2100-opto-Test
Equipped with two LEDs for testing the W2100-HS16-opto.
Important: Please use max. 20 mA!



Advantages

- The small-sized headstage provides an interface to connect two LEDs for optical stimulation.
- Small-sized headstage with integrated A/D converter and LEDs 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.



Connector for optical Stimulation
An additional connector with three pins is available for the optical stimulation via LED: 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 1 mm Pitch: 860-10-050-10-002000 + Magnet-cuboid Maqna QA-3x1x1-N45-N)

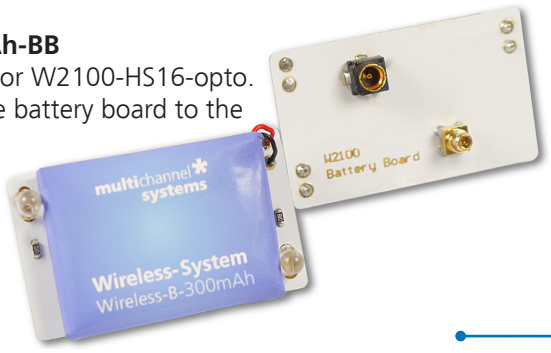
LED supply: V_{LED} and **LED 1** and **LED 2**.

Please see the scheme for the electrical circuit. Connect the W2100-opto-Test or the optrode from TBSI for example, in correct orientation as shown on the picture.

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. Equipped with an connector for a opto probe with two LEDs, the headstage supports optogenetic experiments. A programmable interface provides the synchronization of recording and light stimulation.

W2100-B-300mAh-BB
Standard battery for W2100-HS16-opto. Please connect the battery board to the headstage.



Multi Channel Systems
MCS GmbH
Aspenhaustrasse 21
72770 Reutlingen
Germany

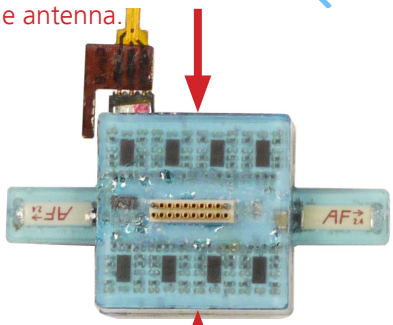
Phone +49-7121-909 25- 0
Fax +49-7121-9 09 25-11

sales@multichannelsystems.com
www.multichannelsystems.com

W2100-HS16-opto Headstage

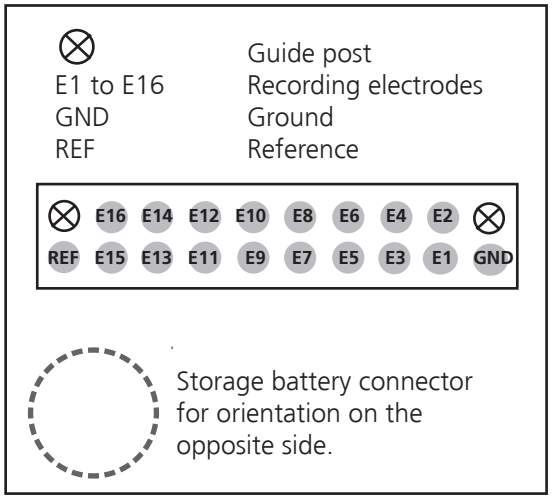
Technical Specifications

Important: To handle the head-stage, please touch the body, but not the antenna.



W2100-HS16-opto bottom side
Omnetics connector for the electrode probe or the ME/W-Signal generator.

W2100 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 socket A79039-001

This Omnetics connector mates with Omnetics connectors 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

Technical Specifications

Number of recording channels	16
Number of LED stimulation channels	2
Weight (without battery)	± 3.8 g
Dimensions (W x D x H) w/o antenae	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_{RMS}

Sampling rate (max.) in kHz	Number of channels simultaneously			
	2	**4**	**8**	**16**
Single Headstage Mode	40	40	25	20
Multi Headstage Mode	10	10	10	5

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

Multi Channel Systems
MCS GmbH
Aspenhaustrasse 21
72770 Reutlingen
Germany

Phone +49-7121-909 25- 0
Fax +49-7121-9 09 25-11

sales@multichannelsystems.com
www.multichannelsystems.com