

W2100-System Overview

Technical Specifications

General Characteristics		
Operating temperature	10 °C to 50 °C	
Storage temperature	0 °C to 70 °C	
Relative humidity	10 % to 85 %, non-condensing	
Headstage		
Dimensions (W x D x H) w/o antennae	W2100-HS4 W2100-HS8 W2100-HS16 W2100-HS32 W2100-HS8-ES2-0.5mA W2100-HS14-ES2-0.5mA W2100-HS4-opto	13 x 13 x 5.5 mm (+ antenna) 15.5 x 15.5 x 5 mm (+ antennae) 15.5 x 15.5 x 5 mm (+ antennae) 15.5 x 15.5 x 6.7 mm (+ antennae) 15.5 x 15.5 x 5 mm (+ antennae) 15.5 x 15.5 x 5 mm (+ antennae) 13 x 13 x 5.5 mm (+ antenna)
Weight	W2100-HS4 W2100-HS8 W2100-HS16 W2100-HS32 W2100-HS8-ES2-0.5mA W2100-HS14-ES2-0.5mA W2100-HS4-opto	approx. 1.9 g (+ battery) approx. 2.8 g with single row connector (+ battery) approx. 3.1 g with Omnetics connector (+ battery) approx. 2.9 g (+ battery) approx. 3.7 g (+ battery) approx. 3.7 g (+ battery) approx. 3.7 g (+ battery) approx. 1.9 g (+ battery)
Integrated Amplifier		
Gain	101	
Bandwidth	selectable via software: off, 0.1 Hz or 1 Hz	
Resolution	16 bit	
Input voltage range	± 12.4 mV	
Distance for wireless link	5 m guaranteed (under normal circumstances)	
Sampling rate in "Single Headstage Mode"	Sampling Rate in kHz/channel	Number of selected channels 2 4 8 16 32 W2100-HS4 40 25 W2100-HS8 40 40 25 W2100-HS16 40 40 25 25 W2100-HS32 40 40 25 25 20 W2100-HS8-ES2-0.5mA 40 40 25 W2100-HS14-ES2-0.5mA 40 40 25 25 W2100-HS4-opto 10 10
Sampling rate in "Multi Headstage Mode"	Sampling Rate in kHz/channel	Number of selected channels 2 4 8 16 32 W2100-HS4 10 10 W2100-HS8 10 10 10 W2100-HS16 10 10 10 5 W2100-HS32 10 10 10 5 2

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Electrical Stimulation	
Output current: W2100-HS8-ES2-0.5mA W2100-HS14-ES2-0.5mA	- 0.5 mA to + 0.5 mA @ ± 10 V compliance voltage
Rise time (10 - 66 %) current, 0 - 100 µA	1.5 µs @ RL = 10 kW
Optical Stimulation	
LED Stimulation channels 2	2
LED driving current output	max. 1A @ max. 3.7 V compliance voltage
Receiver	
Dimensions (W x D x H)	250 mm x 83 mm x 25 mm w/o antennae
Dimension of antenna	110 mm x 10 mm (length x diameter)
Frequency band	2.4 GHz frequency band
Impedance of antenna	50 Ohm
Analog Out only available in W2100-RE-AO	68-pin MCS standard connector
Power supply unit MPU 30, PWR DC 0.85 x 2.75 mm	
Input voltage	110 - 240 V
Output voltage	24 V
Max. power	35 W
Mark of conformity	CE, TÜV, cUL
European standard	EN60601
Interface Board „IFB-C Multiboot“ and Connectors	
Dimensions (W x D x H) 250 x 83 x 25 mm	
Weight 300 g	
Front Panel 2 Sync In and Sync Out	Connectors for IFB-C connection in a chain Lemo connector, EPL 00250 NTN
1 8-Channal Analog In connector	10-pin connector DIL10Header-100mil
2 Analog In connectors	Lemo connector, EPL 00250 NTN
2 LEDs	LEDs for link status 1 and 2
4 Digital inputs	Lemo connector, EPL 00250 NTN
4 Digital outputs	Lemo connector, EPL 00250 NTN
1 Ground	Common jack 4 mm, banana plug

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Electrical Stimulation	
Rear Panel I / O	On / Off switch
Power supply	MPU 30, PWR DC 0.85 x 2.75 mm
1 Ground	Common jack 4 mm, banana plug
1 16 Bit Digital In / Out	68-pin MCS standard connector, Honda-PCS-XE68LFD
2 Auxiliary channels	Lemo connector, EPL 00250 NTN
1 Audio output	Stereo jack 3.5 mm, PRA.00.250.CTAC29
Signal input range for analog channels	± 2500 mV
Gain for analog channels	2 *
1 Digital signal processor DSP port	14-pin connector DIL14Header-100mil-angeled
2 Connectors for interface board to receiver	External power over iX-industrial cable, type B
2 USB-C ports	USB-C A and USB-C B
Software	
Operating system	Microsoft Windows 10, 8.1, Microsoft Windows 7 (32 or 64 bit), English and German version supported
Data acquisition and analysis software	
Multi Channel Experimenter	Version 1.13.1 and higher
Multi Channel Analyzer	Version 1.13.1 and higher
MC_Rack	Version 4.6.1 and higher
Data export software	
Multi Channel DataManager	Version 1.6.1 and higher, HDF5 (Madlab, Python, NEX (NeuroExplorer), CED (Spike), ASCII
MC_DataTool	Version 2.6.3 and higher
	Axon binary file, ASCII, binary file

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Storage Battery					
Storage battery	Lithium polymer, rechargeable				
Recording time of batteries in hours at maximal sampling rate on all available channels	30 mAh battery	0.8	0.6	0.4	0.4
	100 mAh battery	2.5	2	1.3	1.2
	200 mAh battery	5	4	2.5	2.3
	300 mAh battery	7.5	6.1	3.8	3.5
Dimension of battery	30 mAh battery 100 mAh battery 200 mAh battery 300 mAh battery	17 x 11 x 3 mm 26 x 19.5 x 2.3 mm 26 x 20 x 4.5 mm 27.5 x 19.5 x 5 mm			
Weight of battery with cable: W2100-B-CA with battery board: W2100-B-BB		W2100-B-CA	W2100-B-BB		
	30 mAh battery	approx. 1.5 g	approx. 1.5 g		
	100 mAh battery	approx. 3.7 g	approx. 3.8 g		
	200 mAh battery	approx. 5.1 g	approx. 6.7 g		
300 mAh battery	approx. 8.1 g	approx. 8.7 g			
Recharging Device					
Dimensions (W x D x H)	55 mm x 20 mm x 10 mm				
Period of charging	1 hour				
Power	USB powered				