

## W2100-System

## 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	13 x 13 x 5.5 mm (+ antenna)
	W2100-HS8	15.5 x 15.5 x 5 mm (+ antennae)
Weight	W2100-HS16	15.5 x 15.5 x 5 mm (+ antennae)
	W2100-HS32	15.5 x 15.5 x 6.7 mm (+ antennae)
	W2100-HS8-ES2-0.5mA	15.5 x 15.5 x 5 mm (+ antennae)
	W2100-HS14-ES2-0.5mA	15.5 x 15.5 x 5 mm (+ antennae)
	W2100-HS4-opto	13 x 13 x 5.5 mm (+ antenna)
	W2100-HS4	approx. 1.9 g (+ battery)
	W2100-HS8	approx. 2.8 g with single row connector (+ battery) approx. 3.1 g with Omnetics connector (+ battery)
	W2100-HS16	approx. 2.9 g (+ battery)
	W2100-HS32	approx. 3.7 g (+ battery)
	W2100-HS8-ES2-0.5mA	approx. 3.7 g (+ battery)
W2100-HS14-ES2-0.5mA	approx. 3.7 g (+ battery)	
W2100-HS4-opto	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)

\* Important: In MC\_Rack software the scaling of the analog channels is not correct for a factor of 2, because the gain of the analog channels is not considered.

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Sampling rate in  
"Single Headstage Mode"

Sampling rate in  
"Multi 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 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

#### Electrical Stimulation

Output current  
W2100-HS8-ES2-0.5mA  
W2100-HS14-ES2-0.5mA

Rise time (10 - 66 %) current, 0 - 100  $\mu$ A

#### Optical Stimulation

LED Stimulation channels  
LED driving current output

#### Receiver

Dimensions (W x D x H)  
Dimension of antenna  
Frequency band  
Impedance of antenna  
Analog Out only available in **W2100-RE-AO**

#### Power supply unit

Input voltage  
Output voltage  
Max. power  
Mark of conformity  
European standard

- 0.5 mA to + 0.5 mA @  $\pm$  10 V compliance voltage

1.5  $\mu$ s @  $R_L = 10$  k $\Omega$

2  
max. 1A @ max. 3.7 V compliance voltage

250 mm x 83 mm x 25 mm w/o antennae  
110 mm x 10 mm (length x diameter)  
2.4 GHz frequency band  
50 Ohm  
68-pin MCS standard connector

MPU 30, PWR DC 0.85 x 2.75 mm  
110 - 240 V  
24 V  
35 W  
CE, TÜV, cUL  
EN60601

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## W2100-System

## Technical Specifications

### 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

#### 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 processot 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

Operatring 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  
Axion 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

	W2100-HS4	W2100-HS8	W2100-HS16	W2100-HS32
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	17 x 11 x 3 mm
100 mAh battery	26 x 19.5 x 2.3 mm
200 mAh battery	26 x 20 x 4.5 mm
300 mAh battery	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