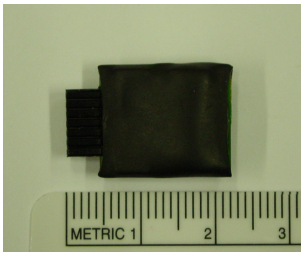
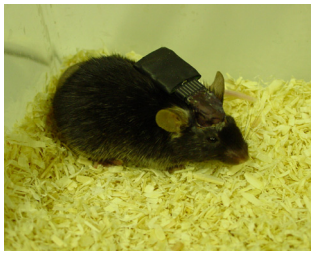
Neurologger 2A – wireless EEG and neuronal recording in freely moving animals

Neurologger 2A is the second modified version of the Neurologger – the device for acquiring and storing of electrical brain activity. The device allows recording up to **four channels** of electrophysiological data with a sampling rate up to **19.2 kHz** each into built-in **1 GB** memory. Its weight, size and power consumption are so small, that it is possible to place the datalogger directly at the head of an animal, even at such small like a mouse. Synchronization with external equipment + 3D acceleration logging is possible with the add-on microboard.



The minimal weight of the recording combination is **1.175 g** only! (It includes: 1GB neurologger board - 0.780 g, two ZA5 35 mAh batteries - 0.345 g, batteries connecting wires - 0.050 g. Not included: head connector, protective cover.)



Selected publications

Vyssotski A.L. et al. (2009) EEG responses to visual landmarks in flying pigeons. **Curr. Biol.** 19(14): 1159-1166.

Lesku J.A. et al. (2012) Adaptive sleep loss in polygynous pectoral sandpipers. **Science** 337(6102):1654-8.

Zhan Y. et al. (2014) Deficient neuron-microglia signaling results in impaired functional brain connectivity and social behavior. **Nat. Neurosci.** 17(3):400-6.

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Technical data of the Neurologger 2A

Number of channels:		4 with 2 ref. inputs (ch1 and ch2 to ref1; ch3 and ch4 to ref2)
ADC resolution:		10 bit
Input range:		+/- 500 µV
Neurologger mechanical dimensions (without batteries):		22x15x3 mm 3
Total mechanical dimensions (Neurologger, batteries):		22x15x5 mm 3
Weight of 1GB neurologger board:		0.780 g
Weight of two 80mAh Renata ZA10 batteries:		0.635 g
Weight of head connector:		0.255 g
Weight of protective cover:		0.170 g
Weight of battery connecting wires:		0.050 g
Total weight:		1.890 g
Battery life time:	EEG logger, 4 channels, 100, 200 or 400sps	1 day 9 h
	Single unit logger, 4ch x 9.6ksps or 19.2ksps	23 h
1GB memory data filling time:	4 channels, 100sps	20 days 16 h
	4 channels, 200sps	10 days 8 h
	4 channels, 400sps	5 day 4 h
	4 channels, 9.6ksps	5 h 10 min
	4 channels, 19.2ksps	2 h 35 min
1GB data downloading time:		27 min