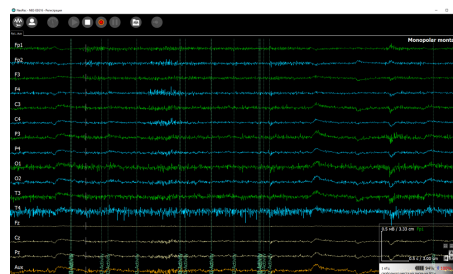
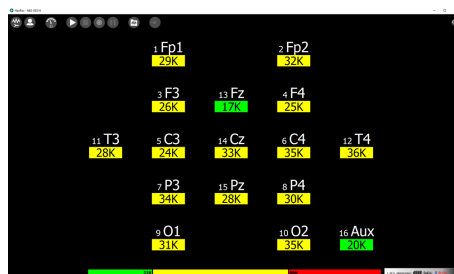
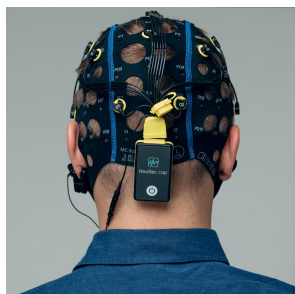


DATA SHEET

System NeoRec cap 16 BASE

16-channel wireless EEG amplifier with electrode cap with removable electrodes MCScap-E.

REF	Size	Head circumference
003-5-210	XL	60-66 cm
003-5-211	XL/L	57-63 cm
003-5-212	L	54-60 cm
003-5-213	L/M	51-57 cm
003-5-214	M	48-54 cm
003-5-215	M/S	45-51 cm
003-5-216	S	42-48 cm
003-5-217	S/XS	39-45 cm
003-5-218	XS	36-42 cm



INTENDED USE

EEG acquisition.

SET

- EEG amplifier NeoRec 16,
- Electrode cap NeoRec 16,
- USB charging cable NeoRec 16,
- User Manual,
- Plastic box.

Download and install the latest version of the NeoRec software from the manufacturer's website <https://mks.ru/en/support/neoreccap/>.

DESCRIPTION

System NeoRec cap 16 BASE is the 16-channel model of the NeoRec cap DC mobile EEG (hereinafter *NeoRec cap*), including an EEG amplifier NeoRec 16 and the NeoRec 16 electrode cap.

NeoRec cap DC mobile EEG – is a mobile electroencephalograph for non-invasive recording of electrical activity of the brain.

Not a medical device.

NeoRec cap intended for use both in a specially equipped room and outside, including on the street. But it is necessary to exclude the influence of strong electromagnetic interference on the device during operation.

NeoRec cap can be used for education, research and development in EEG, neuro-computer interfaces (brain-computer interface, direct neural interface, brain interface), bio-feedback (BCI), neuromarketing, neurogaming, brain fitness.

NeoRec cap intended to record EEG and 3D acceleration events to files of different formats (EDF+ 16 bit, BDF+ 24 bit, GDF 32 bit) or transmit it online via stream LSL (Lab Streaming Layer) for analyze by third-party software as MATLAB / EEGLAB, OpenViBE etc.

For developers of their own software, interaction via API is provided (<https://github.com/mcsLtd/NB2CppDemo>).

EEG amplifier NeoRec 16 is a 16-channel wireless EEG amplifier with a built-in accelerometer. NeoRec 16 is designed to record EEG and other bioelectrical signals with wireless real-time data transfer to a PC. The amplifier is powered by a built-in battery.

Electrode cap NeoRec 16 is the textile cap with with fixing rings and pre- installed Ag/AgCl sintered MCScap-E electrodes with common connector for NeoRec 16 amplifier. The ear electrode is connected to the common connector through the TouchProof 1.5 mm (DIN 42 802-BU) connector for the possibility of replacing it with another electrode or signal source. The electrode cap is designed for non-invasive registration EEG when used with the EEG amplifier. The electrode cap is a reusable device.



Answers to frequently asked questions about installing and using NeoRec cap, connecting via API are published on the website in the section [Questions and Answers - NeoRec cap](#).

SPECIFICATION

EEG channels monopolar according to GND	16
Electrode impedance measurement range	from 1 to 140 kOhm
Offline data recording	no
Wireless data interface	BLE 4.2
Recommended software	NeoRec
Work from full battery	≥ 15 hours
Power	Internal Li-ion battery (rechargeable)
Nominal battery voltage	3.7 V
Nominal battery capacity	0.9 Ah
Number of batteries in one unit of product packaging	1 pc.
Charging of internal battery	from +5V USB adapter, 500 mA
Full battery charge time	≤ 2.5 hours
Input dynamic range	±150 mV, ±300 mV
Accuracy of signal reproduction	1 %
Frequency range at -3 dB	0 to 430 Hz (at 1000 Hz sampling rate)



Sampling rate	125 Hz, 250 Hz, 500 Hz, 1000 Hz (set by applied software)
Analog-to-digital conversion bit size	24 bit
Nonlinearity of frequency response	from -10 % to +5 %
Noise (in operating range from 0.5 to 70 Hz)	< 2 μ V p-p
Input impedance	more 1 GOhm
Electrode impedance measurement range	from 1 to 140 kOhm (independently for each electrode relative to GND)
Electrode impedance control	during aquisition
Events from internal smart accelerometer	<ul style="list-style-type: none"> activity (4 steps of sensitivity); change orientation (turn by 60°); free fall.
Events from button	press
Operating conditions	from +10°C to +35°C
Ingress Protection	IP54 (depending on spatial position and accessories)
Useful life	2 year
Safety	IEC 60950-1
data format	proprietary, with the ability to save in EDF+, BDF+, GDF, EEG formats by software
Model of electrode cap	NeoRec 16

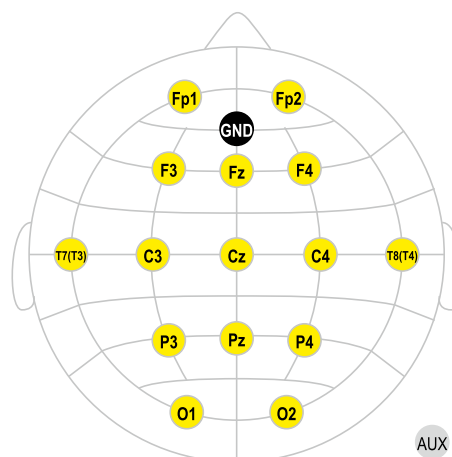
Electrode



MCScap-E

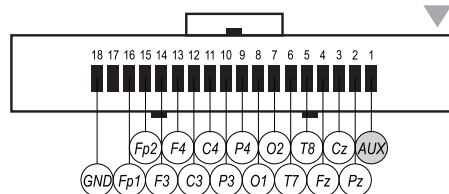
Model of textile cap	Textile cap with fixing rings MCScap 10-20
Cable length	5 cm
Location of the output of the electrode cable from the cap	back of the head
Marking of the textile cap	yes
Marking of the electrodes	yes
ear electrode with TouchProof 1.5 mm connector	MCScap-E - 1 pc.
Weight of EEG cap	< 400 g
Connector type	ST40X-18S
Number of EEG electrodes	16 + 1 removable ear electrode
Electrode positions	FP1, FP2, O1, O2, F3, F4, C3, C4, P3, P4, T7, T8, Fz, Cz, Pz, GND, AUX
Additional pins	AUX (1*) - built-in connector TouchProof 1.5 mm (DIN 42 802-BU) for connecting an ear or other additional electrode.

Scheme of electrode arrangement
Manufacturer's code



#76M17

Pin layouts of common connector
Manufacturer's code



#76-01M17