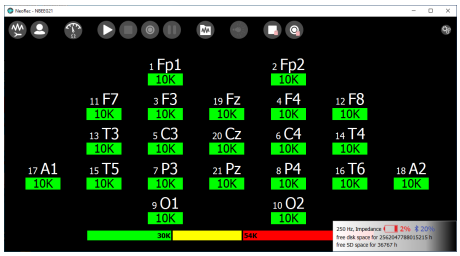
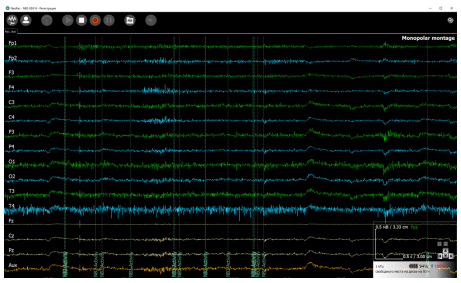
DATA SHEET

System NeoRec cap 21 PROFESSIONAL

21-channel wireless electroencephalograph with an electrode cap with removable EEG electrodes MCScap-NTC.

REF	Size	Head circumference
003-5-277	XL	60-66 cm
003-5-278	XL/L	57-63 cm
003-5-279	L	54-60 cm
003-5-280	L/M	51-57 cm
003-5-281	M	48-54 cm
003-5-282	M/S	45-51 cm
003-5-283	S	42-48 cm
003-5-284	S/XS	39-45 cm
003-5-285	XS	36-42 cm





INTENDED USE

EEG acquisition.

SET

- EEG amplifier NeoRec 21,
- Electrode cap PROFESSIONAL cap for NeoRec 21 ,
- Memory card,
- Memory card ejector
- USB-кабель для зарядки NeoRec 21,
- Пояс нагрудный NeoRec 21,
- 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 21 PROFESSIONAL is the 21-channel model of the NeoRec cap DC mobile EEG (hereinafter *NeoRec cap*), including an EEG amplifier NeoRec 21 and the PROFESSIONAL cap for NeoRec 21 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).

NeoRec 21 mini is a 21-channel wireless EEG amplifier with a built-in accelerometer with cap mount. The amplifier is designed for recording EEG with data transmission to a PC via Bluetooth in real time or recording data to a built-in SD-card in offline mode. The amplifier is powered by a built-in battery.

Electrode cap PROFESSIONAL cap for NeoRec 21 is the textile cap with pre- installed Ag/AgCl sintered MCScap-NTC electrodes (ear electrode MCScap-NT) with common connector for NeoRec 21 amplifier. The electrode cap is designed for non-invasive registration EEG when used with the EEG amplifier. The electrode cap is a reusable device.

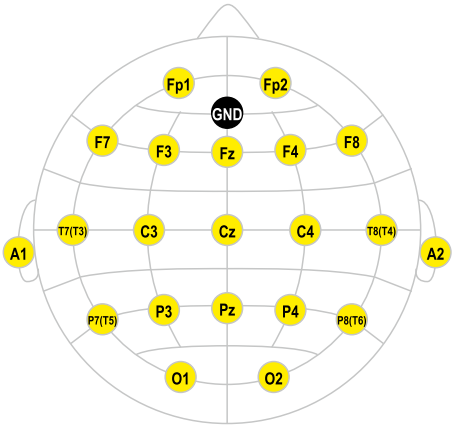
Answers to frequently asked questions about installing and using NeoRec cap, connecting via API are published on the website in the section Questions and Answers - NeoRec cap.

SPECIFICATION

EEG channels monopolar according to GND	21
Electrode impedance measurement range	from 1 to 3 MOhm (dry electrode check)
Electrode impedance control	during aquisition

Offline data recording	yes, microSD
Events from internal smart accelerometer	• activity (4 steps of sensitivity); • change orientation (turn by 60°); • free fall.
Events from button	press
Wireless data interface	BLE 5.2
Work from full battery	≥ 12 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 dinamic 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 µV p-p
Input impedance	more 1 GOhm
Recomended software	NeoRec, Neurovisor, NEUROvisor mobile
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	PROFESSIONAL cap for NeoRec 21
Electrode	 MCScap-NTC
Model of textile cap	Textile cap MCScap
Cable length	0.6 m
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
Weight of EEG cap	< 250 g
Connector type	ST40X-24S
Number of EEG electrodes	22
Electrode positions	FP1, FP2, O1, O2, F3, F4, C3, C4, P3, P4, F7, F8, T7, T8, P7, P8, FZ, CZ, PZ, A1, A2, GND

Scheme of electrode arrangement
Manufacturer's code



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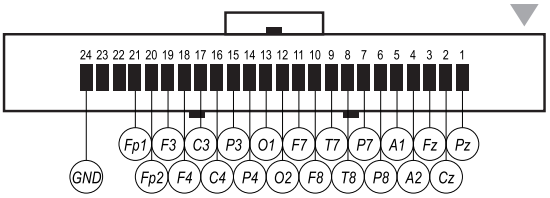
Pin layouts of common connector
Manufacturer's code



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