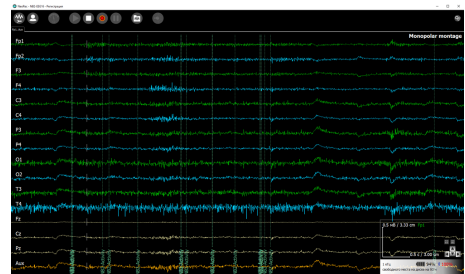
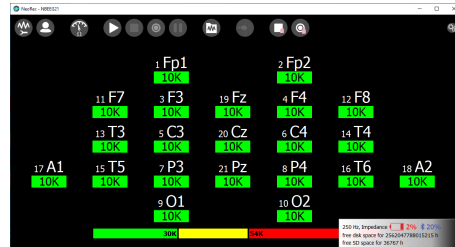


DATA SHEET

## System NeoRec cap 21 mini DRY

21-channel wireless EEG amplifier with electrode cap with dry electrodes MCScap-DrP1.

REF	Size	Head circumference
003-5-313	XL	60-66 cm
003-5-314	XL/L	57-63 cm
003-5-315	L	54-60 cm
003-5-316	L/M	51-57 cm
003-5-317	M	48-54 cm
003-5-318	M/S	45-51 cm
003-5-319	S	42-48 cm
003-5-320	S/XS	39-45 cm
003-5-321	XS	36-42 cm



### INTENDED USE

EEG acquisition.

### SET

- EEG amplifier NeoRec 21 mini,
- Electrode cap DRY cap for NeoRec 21 mini ,
- Memory card,
- Memory card ejector
- Charging station for NeoRec 21 mini with cable
- 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 mini DRY is the 21-channel model of the NeoRec cap DC mobile EEG (hereinafter *NeoRec cap*), including an EEG amplifier NeoRec 21 mini and the DRY cap for NeoRec 21 mini electrode cap.

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

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/mcs ltd/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 DRY cap for NeoRec 21 mini is the textile cap with pre-installed dry passive Ag/AgCl MCScap-DrP1 electrodes with common connector for NeoRec 21 mini 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](#).*

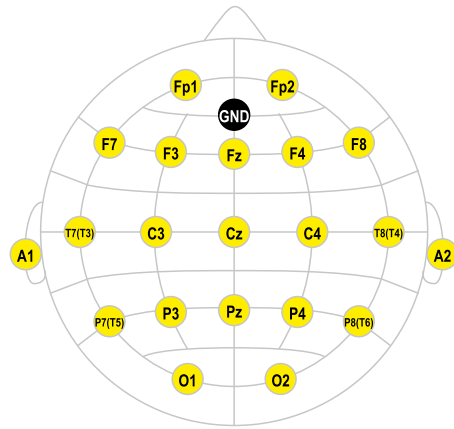
## SPECIFICATION

EEG amplifier	NeoRec 21 mini
EEG channels monopolar according to GND	21
Electrode impedance measurement range	from 1 to 4000 kOhm (dry electrode check)
Time of continuous work	≥ 2,5 hours
Offline data recording	yes, microSD
Wireless data interface	BLE 5.2
Connector for connecting a cap/charger;	Molex 55091-0374
Enclosure dimensions	33 x 23 x 19 mm
Weight of the amplifier	14 g
Recommended software	NeoRec, NEUROvisor
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



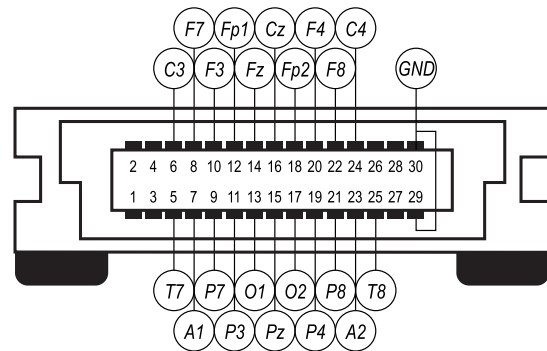
Data resolution	24 bit
Noise (in operating range from 0.5 to 70 Hz)	2 $\mu$ V p-p
Input impedance	more 1 GOhm
Events from internal smart accelerometer	<ul style="list-style-type: none"> <li>• activity (4 steps of sensitivity);</li> <li>• change orientation (turn by 60°);</li> <li>• free fall.</li> </ul>
Events from button	press
Check of battery status	yes, by charge/discharge counting
Charging of internal battery	from +5V USB adapter, 500 mA
Time to fully charge the built-in battery	$\leq$ 2.5 hours
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	DRY cap for NeoRec 21 mini
Compatibility with amplifiers	NeoRec 21 mini
Electrode	 MCScap-DrP1
Model of textile cap	MCScap textile cap
Cable length	Without a cable, installing the amplifier on a pad on a cap
Location of the output of the electrode cable from the cap	top of the head
Marking of the textile cap	yes
Marking of the electrodes	yes
Weight of EEG cap	< 350 g
Connector type	Molex 52885-0374
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



#10EM22

Pin layouts of common connector  
 Manufacturer's code



#10E-09M22