

SKYBOX

5-channel Digital
EMG, NCS and
EP System

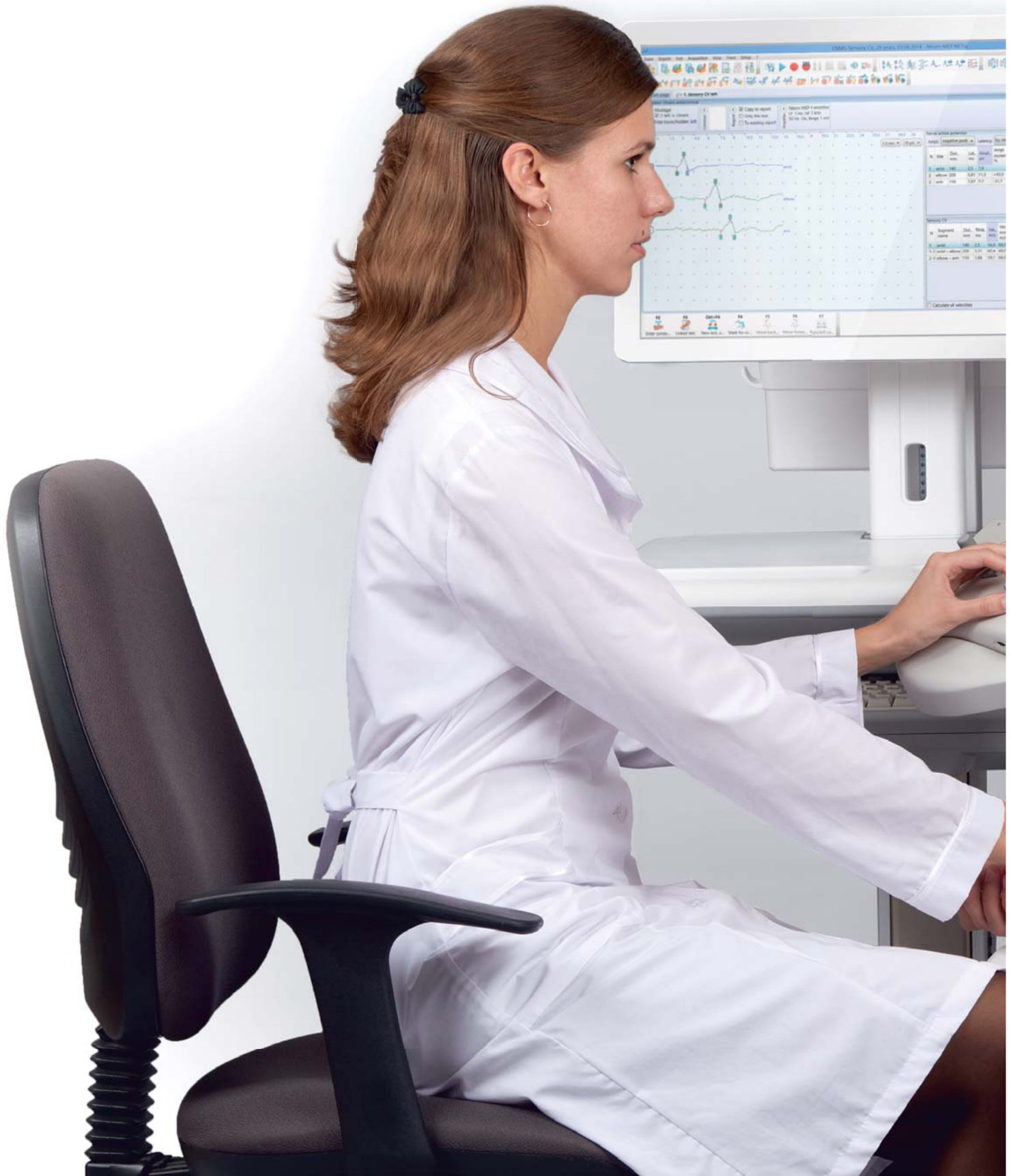


- COMPACT
- INSTANT EMG ACQUISITION
- ALL EP MODALITIES IN BASE DELIVERY SET
- EMG ACCORDING TO INTERNATIONAL STANDARDS
- PORTABLE, CAN BE POWERED BY NOTEBOOK



SKYBOX IS A NEW NEUROSOFT EMG MACHINE

Over 20 years we have been designing the neurophysiological equipment for you. Our digital EMG and EP systems are the most compact. However they are powerful enough to meet any demands of today and tomorrow.



20-YEAR EXPERIENCE IN DEVELOPMENT
OF NEUROPHYSIOLOGICAL EQUIPMENT

20



FULL-FEATURED AND COMPACT

Our new Skybox is a next generation of EMG devices. The book-sized unit contains amplifiers, stimulators and dedicated keyboard. The device is powered via USB. It means Skybox can be supplied both as EMG/EP workstation or portable laboratory placed in a small bag.



We targeted to create turn-key compact solution that meets the demands for clinical practice as well as research purposes including motor and sensory conduction study, MUP, jitter, auditory, visual, somatosensory and cognitive EP and several dozens of other tests.

Skybox with its ergonomic design sets new standards and brings neurophysiological laboratory at the cutting edge!

STATIONARY

Skybox can be fixed on a stand that is easily moved along the patient's couch during the exam while computer and accessories are placed at the medical trolley.



PORTABLE

Device can be used on-location. Book-sized device (212x180x57 mm) weighs just 880 g and fits in a small bag together with notebook. The device is powered via USB.



SKYBOX WEIGHS
LESS THAN 1 KG



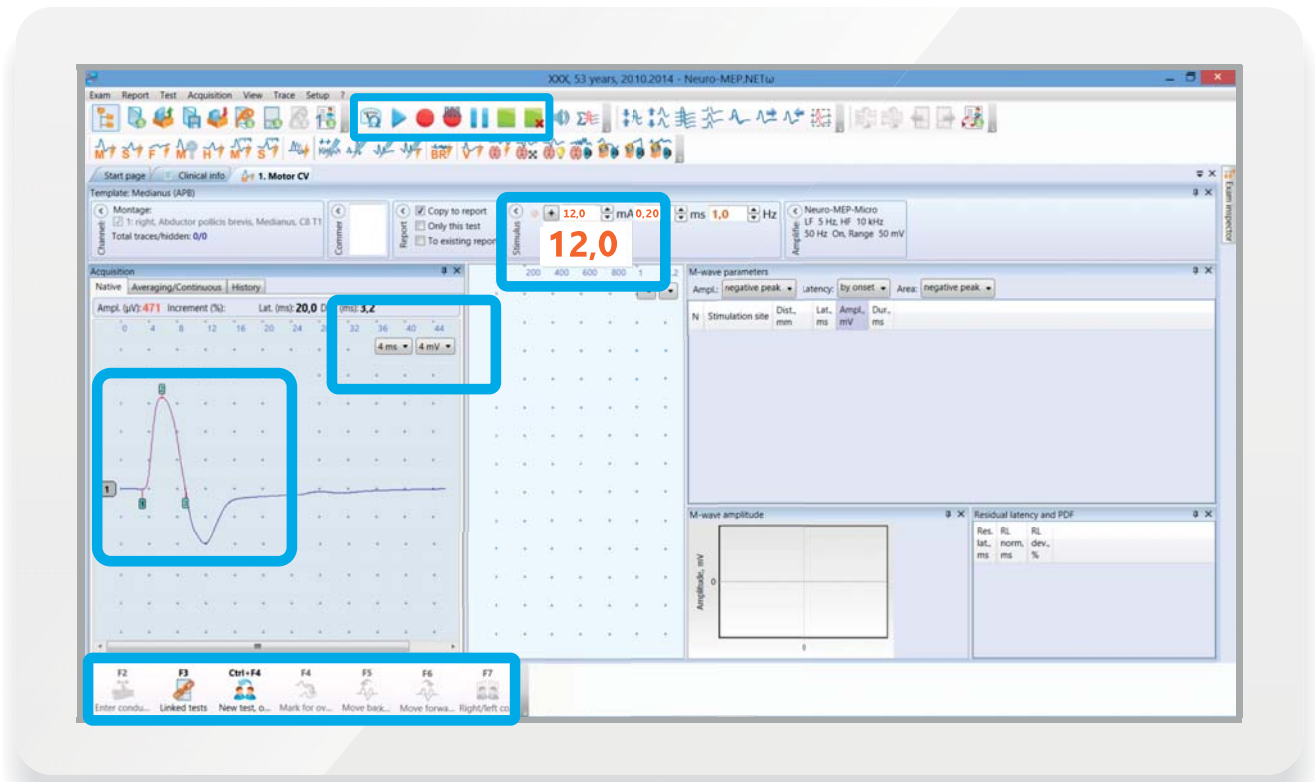
EASY-TO-USE INTERFACE

Multi-year observation of EMG acquisition workflow performed by our equipment users and analysis of every movement allowed us to design the most friendly interface targeted first of all on fast operation.



EVERYTHING REQUIRED IS ALWAYS AT YOUR FINGERTIPS

The dedicated keyboard is created to give an easy access to all main actions (to adjust stimulus, start stimulation, accept data to analysis, etc.) without changing hand position. All required controls are always at your fingertips.



ACQUISITION CONTROL



STIMULATION CONTROL

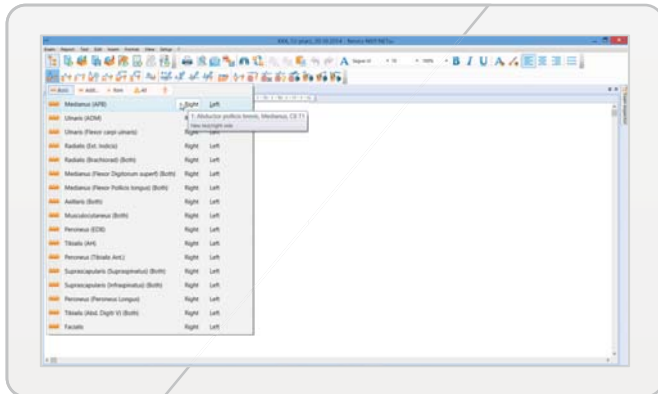


To free your hands and pay more attention to your patient, the device is supplied with the handy footswitch. Footswitch buttons are customizable. By default they start and stop stimulation.

Adjustable electro stimulating probe has built-in controls for stimulus on/off, repetitive stimulation and stimulus polarity toggle. Convenient rotation mechanism allows changing the angle of steel stimulation tips. It is also possible to change the distance between them.

INSTANT EMG ACQUISITION

Skybox makes EMG and EP acquisition an extraordinary quick and simple. The dedicated keyboard, the footswitch and full-featured Neuro-MEP.NET software allow to record EMC as fast as it was never done before.



0:05

Select exam template, side and nerve in Neuro-MEP.NET software with one mouse click!



0:25

Place the required electrodes.



2:55

Perform the same actions for the second and next stimulation points.



3:15

Mark the stimulation points.

4

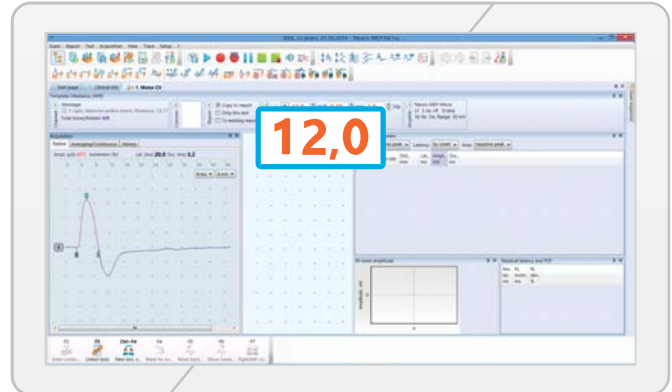


4 MINUTES
PER ONE NERVE



1:25

Adjust stimulation current by turning the handle. Position the stimulator over the nerve and deliver stimulus by pressing the button or footswitch pedal.



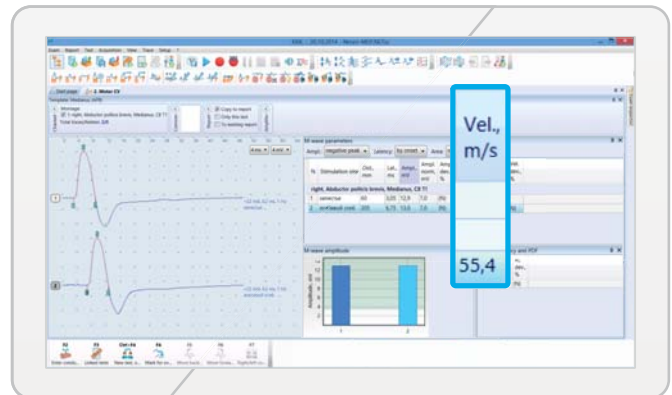
1:55

First response is displayed at the screen in less than two minutes! Increase the stimulation current up to supramaximal one (observe the amplitude increment after each stimulus). Save the response by pressing the button.



3:45

Measure and enter the distance (rotate the handle to enter the figure).

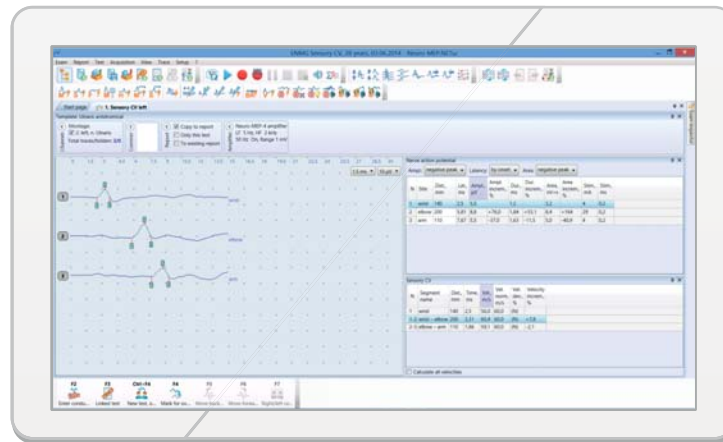


Ready 4:00

As far as the time and distance are known, the software calculates the velocity and compares it with the reference values. The nerve conduction study is over.

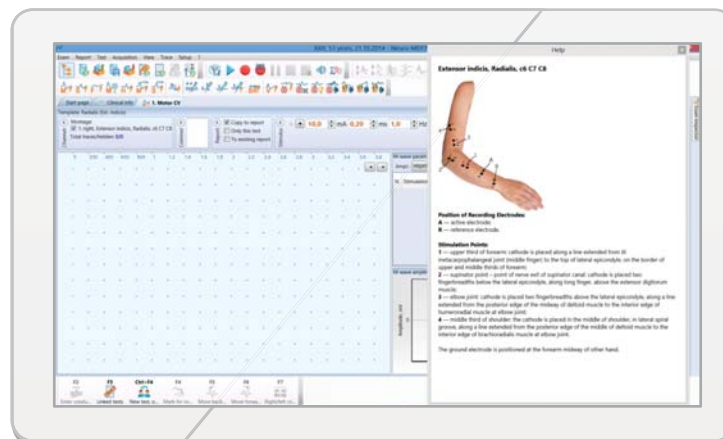
NEURO-MEP.NET ω FEATURES

All EMG and EP systems manufactured by Neurosoft are supplied with the state-of-art software for NCS, EMG and EP studies.



Motor and sensory conduction study

The software provides dozens of default templates to study motor and sensory conduction in most nerves accessible for stimulation. The simultaneous acquisition of motor and sensory responses is possible. Using hot key you can toggle quickly between motor response acquisition and F-wave recording mode.



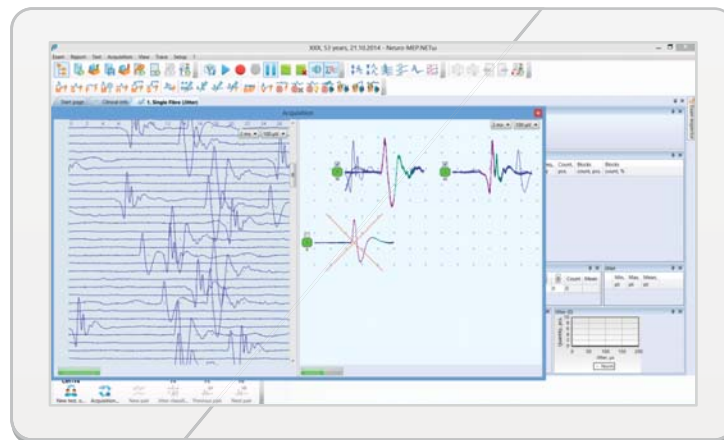
Help window

The “Help” function is very useful for EMG beginners. During any test, for example, when radial nerve conduction velocity is studied, you can press F1 key and the program will display a window with an upper limb image showing the correct placement of recording, ground and stimulating electrodes.



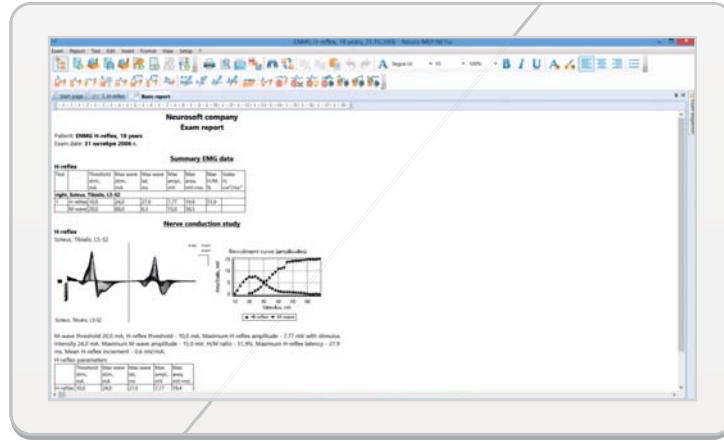
Quantitative EMG (QEMG)

It includes the acquisition and analysis of spontaneous EMG activity, interference pattern and MUP in one window. During spontaneous activity analysis you can apply algorithms of automatic classification of spontaneous activity phenomena such as fibrillations, fasciculations and positive sharp waves. When MUP is recorded, the software automatically detects MUPs and selects the ones that may be related to one and the same motor unit. If interference pattern is studied, the software creates the turn-amplitude cloud in real-time mode. It allows to adjust the required muscle contraction and perform this test correctly. On EMG study completion, all main analysis results are displayed in one window.



Jitter

The classic procedure of jitter acquisition is quite complex. It implies the simultaneous use of needle electrode, high interaction with a patient to achieve the required muscle contraction and active actions with software interface to set and move the trigger. Neuro-MEP.NET provides the breakthrough algorithm of automatic jitter detection. Now there is no need to think about a trigger. The program just detects the potentials itself and shows them on the screen. The same algorithm is applied to study macro EMG.



Report generation

On study completion, the program generates the report. It includes patient's data, tables, graphs and native traces obtained during the tests. The report can be edited easily and customized according to individual demands.



Neurosoft company
Exam report

Patient: *** B.A., 51 years
Exam date: 31 July 2014 r.
Diagnosis: Carpal tunnel
Doctor: Nikolaev S. G.

Conclusion:

Evident focal demyelinating neuropathy of lg (the middle of the tunnel, conduction block)
Moderate focal demyelinating motor neuropathy

This conclusion is not a diagnosis and requires interpretation
31.07.2014, 31

Doctor: **S.G.**

Motor CV

Test	Stimulation site	Lat. ms	Ampl. mV	Dur. ms	Area, mV*ms
right, Abductor pollicis brevis, Medianus, C8 T1					
	wrist	6.05	9.0	5.25	26.1
	bend of elbow	9.85	9.23	5.35	27.3
left, Abductor pollicis brevis, Medianus, C8 T1					
	wrist	4.3	11.1	4.95	30.8
	bend of elbow	7.75	10.8	5.0	30.8

Sensory CV

Test	Site	Lat. ms	Ampl. µV	Area, mV*ms	Sn
right, Medianus-Ulnaris					
	ulnaris 8 cm	1.95	12.6	0.9	6.1
	ulnaris 8 cm	1.95	12.6	0.9	6.1
left, Medianus-Ulnaris					
	ulnaris 8 cm	2.15	9.3	1.3	6.7
	ulnaris 8 cm	2.15	9.3	1.3	6.7
right, n. Medianus					
	wrist	6.05	2.7	2.55	17
left, n. Medianus					
	wrist	3.5	20.2	3.15	14.7

Motor CV
right, Abductor pollicis brevis, Medianus, C8 T1

M-wave parameters (amplitude: baseline-to-peak)

N	Stimulation site	Dist. mm	Lat. ms	Ampl. mV	Ampl. norm, mV	Ampl. dev, %	Dur. ms	Area, mV*ms
right, Abductor pollicis brevis, Medianus, C8 T1								
1	wrist	60	6.05	9.0	5.8	+56.5	5.25	26.1
2	bend of elbow	195	9.85	9.23	5.8	+60.6	5.15	27.3
left, Abductor pollicis brevis, Medianus, C8 T1								
1	wrist	60	4.3	11.1	5.8	+92.7	4.95	30.8
2	bend of elbow	190	7.75	10.8	5.8	+88.6	5.0	30.8

Sensory CV
right, Medianus-Ulnaris

Nerve action potential (amplitude: baseline-to-peak, latency: peak)

N	Site	Dist. mm	Lat. ms	Ampl. µV	Ampl. norm, µV	Ampl. dev, %
left, Medianus-Ulnaris						
1	medianus 8 cm	0	2.9	22.7		
2	ulnaris 8 cm	0	2.15	9.3		
Sensory CV						
N	Segment name	Dist. mm	Time, ms	Vel. m/s	Vel. norm, m/s	Vel. dev, %
2	ulnaris 8 cm	0	2.15			
1-2	medianus 8 cm - ulnaris 8 cm	0	0.75			

Sensory CV
Antidromic
right, n. Medianus

Nerve action potential (amplitude: baseline-to-peak)

N	Site	Dist. mm	Lat. ms	Ampl. µV	Ampl. norm, µV	Ampl. dev, %
right, n. Medianus						
1	wrist	140	6.05	12.7	15.0	-82.3
Sensory CV						
N	Segment name	Dist. mm	Time, ms	Vel. m/s	Vel. norm, m/s	Vel. dev, %
1	wrist	140	6.05	23.1	60.0	-61.4

Sensory CV
Antidromic
left, n. Medianus

Nerve action potential (amplitude: baseline-to-peak)

N	Site	Dist. mm	Lat. ms	Ampl. µV	Ampl. norm, µV	Ampl. dev, %
left, n. Medianus						
1	wrist	140	3.5	20.2	15.0	(N)
Sensory CV						
N	Segment name	Dist. mm	Time, ms	Vel. m/s	Vel. norm, m/s	Vel. dev, %
1	wrist	140	3.5	40.0	60.0	-33.3

Inching
Orthodromic inching
right, n. Medianus

Motor CV
right, Abductor pollicis brevis, Medianus, C8 T1

EMG ACCORDING TO INTERNATIONAL STANDARDS

Using Skybox you can perform almost all known EMG and EP techniques. In recent decades the technique standards have been accepted and established. These are special algorithms to study different pathologies, calculations intended for each test, reference values, etc. It is very important for a specialist to be equipped with all the techniques even if some of them are used not very often.

NCS (motor and sensory conduction velocity, F-wave, H-reflex (also including paired stimulation), motor and sensory inching, motor and sensory conduction collision)

EMG (spontaneous activity, interference curve, motor unit potentials (MUP), macro EMG)

Neuromuscular junction (repetitive stimulation, jitter (single fiber EMG))

Motor unit number estimation (MUNE)

Additional EMG techniques (blink reflex, sacral reflex, bulbocavernous reflex, tremor, T-reflex*, galvanic skin responses)

Somatosensory evoked potentials (SEP)

Visual evoked potentials (VEP)

Auditory evoked potentials (AEP)

Vestibular evoked myogenic potentials (VEMP)

Cognitive evoked potentials (P300, MMN, CNV, MRCP)

Transcranial magnetic stimulation**

Intraoperative neurophysiological monitoring (IONM)

Heart rate variability (HRV)***

Electroretinography (ERG)***

* if tendon hammer is available

** if magnetic stimulator is available

*** if corresponding equipment is available

A large, stylized orange number '55' is positioned on the right side of the page. The digits are thick and rounded, with a slight shadow effect.

55 DIFFERENT NCS, EMG, EP, ERG
TECHNIQUES CAN BE PERFORMED
USING NEURO-MEP.NET ω

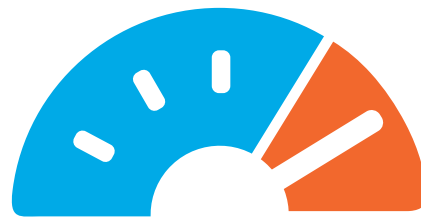
ALL EP MODALITIES IN BASE DELIVERY SET

Skybox has built-in auditory stimulator, pattern-stimulator, visual stimulator and two electrical stimulators. It ensures EP acquisition of all modalities using 5 channels.

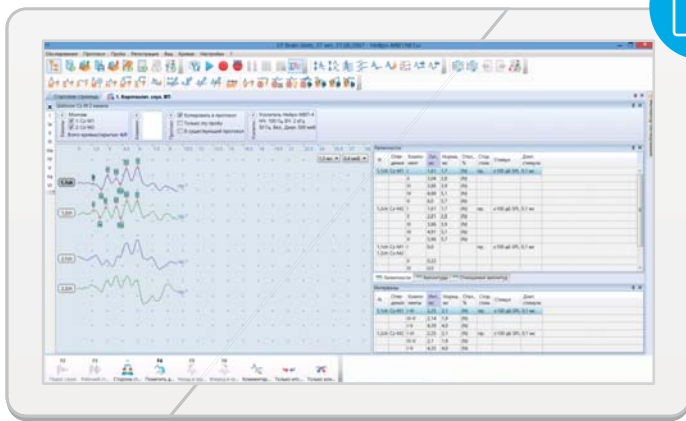
Wide range of algorithms for stimulation, filtration and averaging are targeted to record high-quality traces per extraordinary short time interval:

- Weighted averaging algorithm allows to decrease the number of averagings by 3-5 times to obtain reliable response.
- EP component markers can be placed during the acquisition.
- The automatic search of EP component algorithm can be run any time.
- Any obtained trace can be reviewed in normal or even/odd mode where even and odd components are averaged separately.
- The program is equipped with a native trace editor and option to reaverage traces after acquisition.

3-5



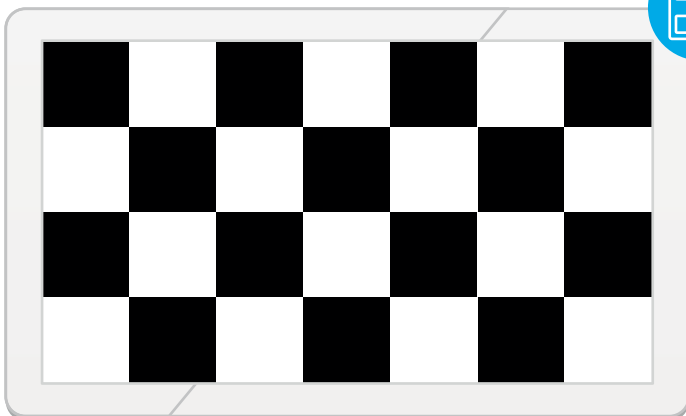
QUALITY TRACES 3-5 TIMES FASTER



EP analysis window



Long-, middle-latency and brainstem auditory EP



Pattern VEP



Flash VEP



Somatosensory EP when one, two or four extremities are stimulated simultaneously



Cognitive EP including P300, CNV, MMN, MRCP

SERVICE AND SUPPORT



All equipment manufactured in Neurosoft is under 24 month warranty.

The value-added distributors all over the world provide on-site installation, training and support. Ask us for information about your nearest distributor.

All software updates are free of charge.

Our own service team equipped with powerful tools for remote support is also at your disposal.



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