

Neuropack S1

MEB-9400

EMG/NCV/EP
Measuring System



The feature rich Nihon Kohden Neuropack MEB-9400 offers efficient EMG, NCV and EP exams with innovative time saving technology.

Available in a 2 or 4 channel amplifier, the Neuropack is offered in a desktop or laptop configuration for portability without compromise.

Our compact, low noise amplifier insures clean waveforms easily and quickly. Basic exam software including EMG, NCS, SEP, ABR and VEP is standard with the MEB-9400. Tailor the Quick menu to your examination workflow to reduce testing time. Quick EMG and NCS programs provide the fastest examination possible. The MEB-9400 value is further enhanced with our gold standard 32 channel EEG option for the most flexible multi-modality configuration on the market today.



Quick Examination

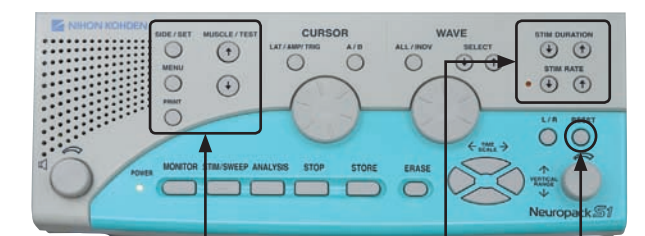
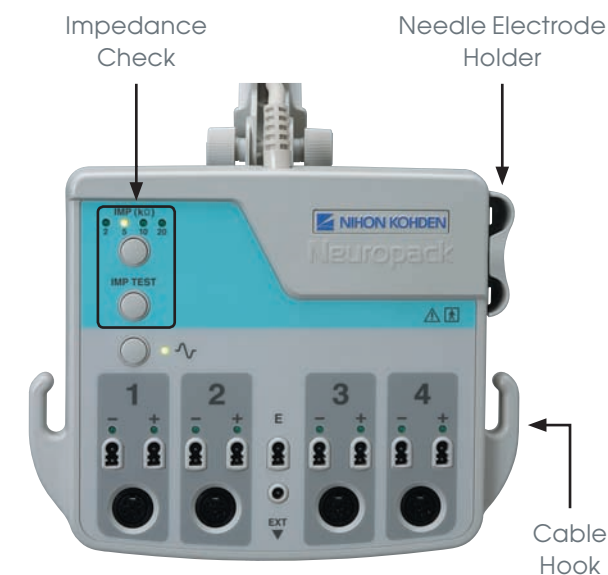
Innovative hardware and software shorten the examination time.

Low Noise, Compact Amplifier

The low noise amplifier speeds up the examination by giving you clean waveforms easily and quickly. Choose from our 2 or 4 channel amplifier (JB-942 or JB-944).

User-Friendly Control Panel

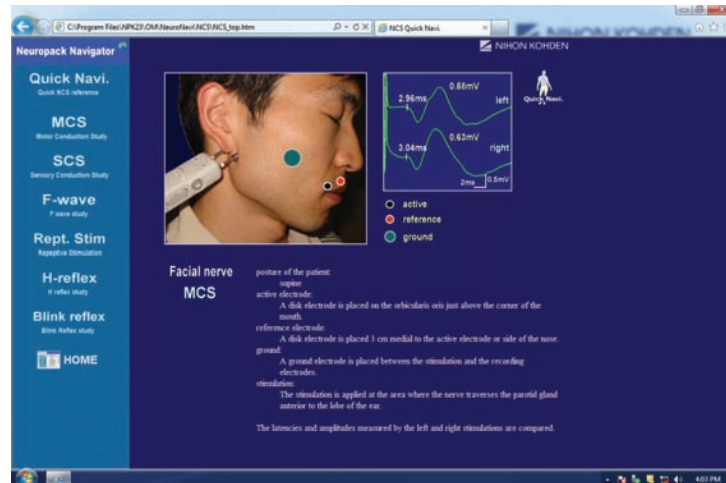
The easy-to-use control panel allows for smooth and efficient examinations. You can change the electric stimulation duration and rate with a simple one-touch operation. The side/set key and muscle/test keys allow quicker EMG and NCS examinations.



Select the measurement side in EMG and NCS program

Reset Key
Set the stimulation intensity to zero

Select the electric stimulation duration and rate



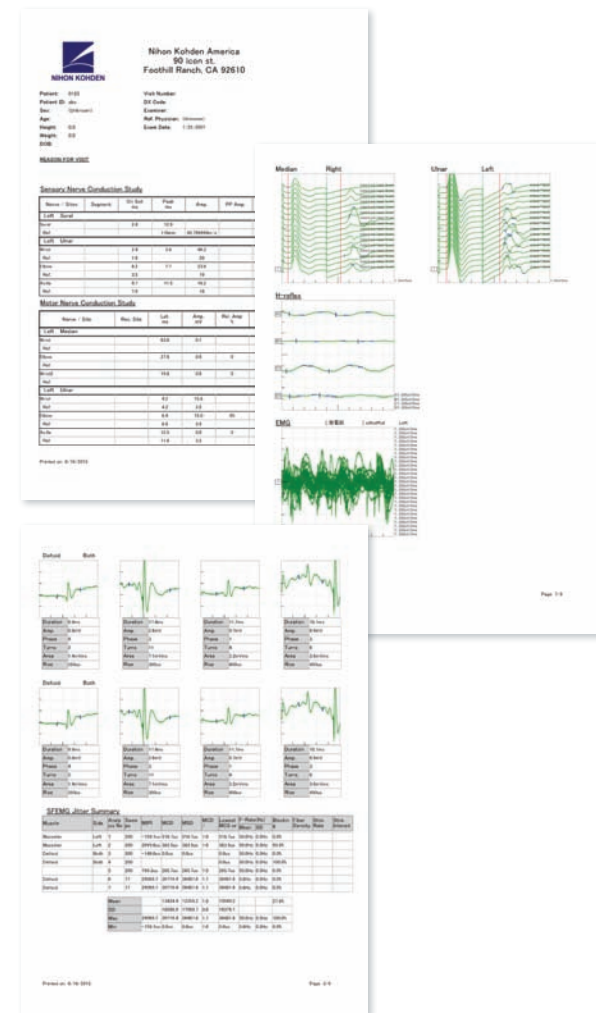
NeuroNavi

NeuroNavi® shows examination information and electrode and stimulation positions for NCS and other exams. This guide can be referenced on the screen at any time.

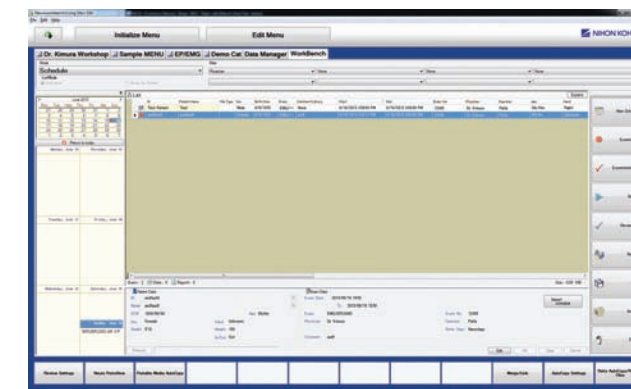
NeuroReport

A customized report can be generated with the click of a button using our proprietary NeuroReport™ software.

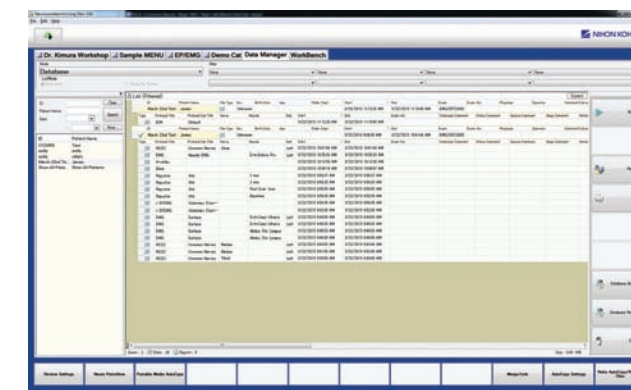
Included in NeuroReport are several selectable layouts which can display your facility's logo, test results with highlighted abnormal, waveforms and a powerful auto-text summary. Saved within the database, the report can automatically be signed electronically and converted to a PDF, protecting the electronic record while keeping it universally viewable.



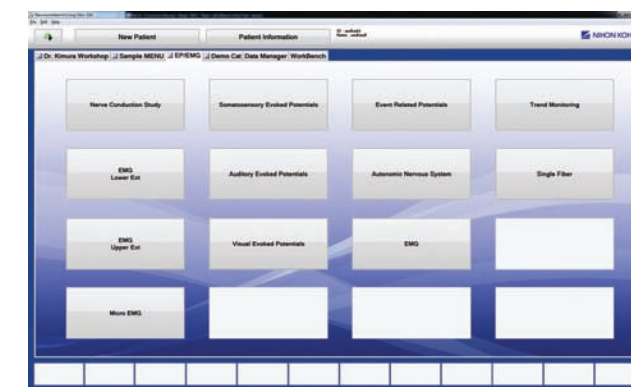
Flexible Software Innovation



NeuroWorkbench – Scheduler



NeuroWorkbench – Patient List



NeuroWorkbench – Protocol Tab

Workflow Solutions

NeuroWorkbench® is the core integrator of the Nihon Kohden neurology product portfolio. This common interface allows for examination scheduling, protocol administration and data management that improve workflow. NeuroWorkbench provides HIPAA Compliant access to clinical data and records with passwords and three levels of administrative rights, as well as audit trails. A flexible NeuroWorkbench option includes an HL7 interface. The NeuroWorkbench SQL Database integrates all of the Nihon Kohden neurology devices to provide a complete database across all neuro-diagnostic and -monitoring modalities.

Menu Window for an MEB Examination

Open an MEB examination screen using the examination protocol menu.

Menu Tabs

Up to eight category tabs with 10 programs per tab for a total of 80 preset examination programs.

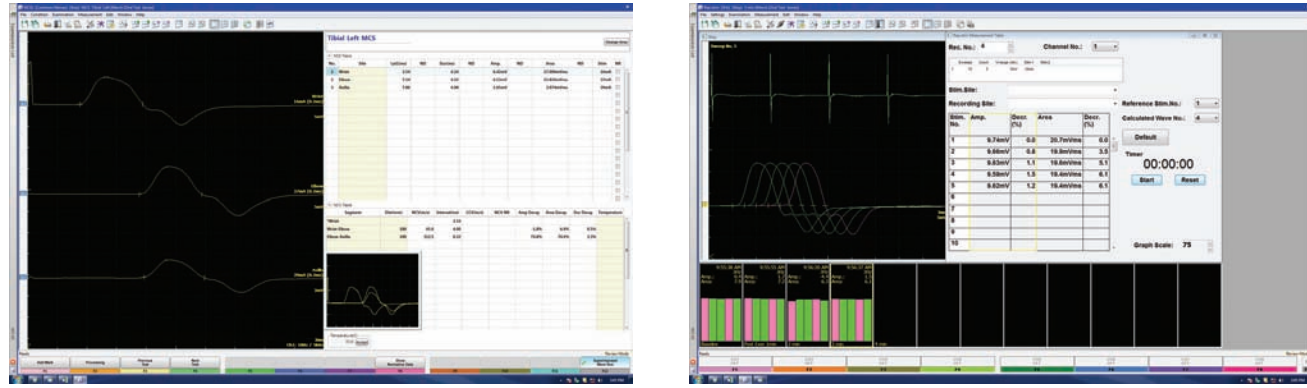
Data Manager Tab

- Database files
- Copy, move and delete file
- Patient database with search and query function

Workbench Tab

- Scheduler
- Remote access
- Review patient files

Nerve Conduction Study



The NCS program lets you perform MCS, SCS and F-Wave in one program. Any number and combination of examinations can be created in your own custom routine protocol by selecting nerve, side and exam. You can change the examination by just clicking the item in the list box, or by clicking a button on the dedicated operation panel of the Neuropack.

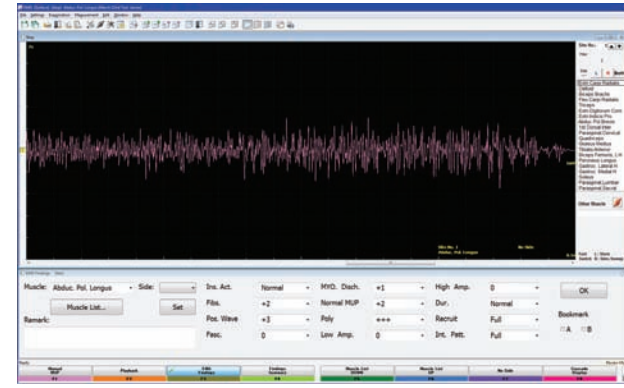
Motor NCS/Sensory

- When measuring with the MEB there is no need to manually pick the stimulation site before starting the recording. The software does this automatically for you and, if necessary, it can be easily changed.
- Side comparisons and combined motor and sensory tests can be shown in one waveform screen and also have their own dedicated evaluation tables.
- Normative data are shown on the same screen.
- The superimposed waveform in real time is shown at the same time, so you can easily compare the amplitudes of all stimulation sites and thus judge the quality of your stimulation.

Repetitive Stim

- The amplitude of each sequence is displayed as a bar graph on the same screen. You can see the summary of the repetitive stimulation study at a glance. The waveform of each sequence can be displayed by clicking the corresponding bar graph.
- Up to 12 sequences of stimulation patterns can be set for one automatic measurement (automatic sequence function).
- Stimulation can be done with either high or low frequency or combined in the same protocol.

Electromyography (EMG)



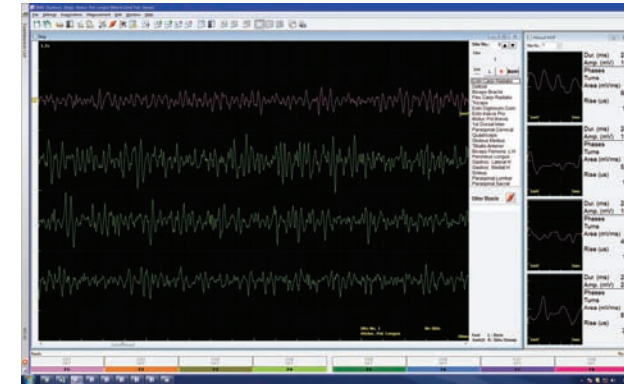
Routine EMG Program

The routine EMG program utilizes auto MUP detection and classification, and real time turns/amp analysis. A functional and sophisticated findings screen meets various needs in clinical use by easy and smooth operation.

Interference

Turns/amp measurement is automatically performed. The measurement result is displayed at every one second on the turns-interval histogram, turns/amp histogram and turns/amp graph.

The turns/amp normative data of several muscles are installed as default settings and its normative area is displayed in the turns/amp histogram. You can easily recognize whether or not the measuring waveforms are in the normative range.



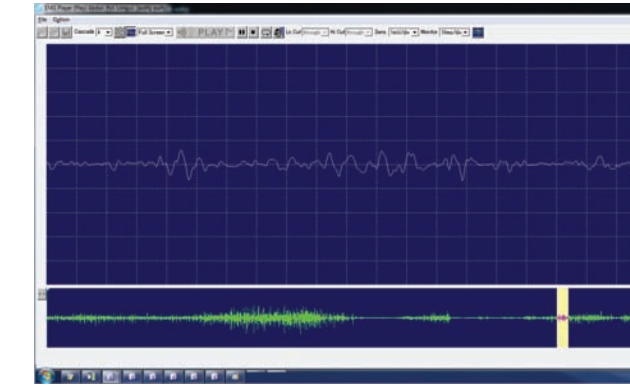
Quick Display

You can easily switch between four measurement modes that you can define freely—for example for insertion activity, motor unit detection or turn/amplitude analysis or interference—by pressing a button at the bottom of the screen or on the control panel.

MUP Analysis

MUP waveforms are automatically detected and classified into groups of similar shaped MUPs. MUP measurement result (duration, amplitude, phase, turns and firing rate) are shown next to the waveforms or in a dedicated summary screen.

The averaged MUP of the same MUP groups are calculated and displayed with the numeric data.



EMG Playback/EMG Player

You can also easily review any acquired waveform with sound after measurement by clicking the EMG player button. This tool lets you play back EMG files with sound on a review station for presentations and lectures.

- Display up to 600 sec of EMG with sound
- Sweep speed, sensitivity, and filter settings can be changed afterwards; a great function for teaching purposes
- Compressed/cascaded waveform display

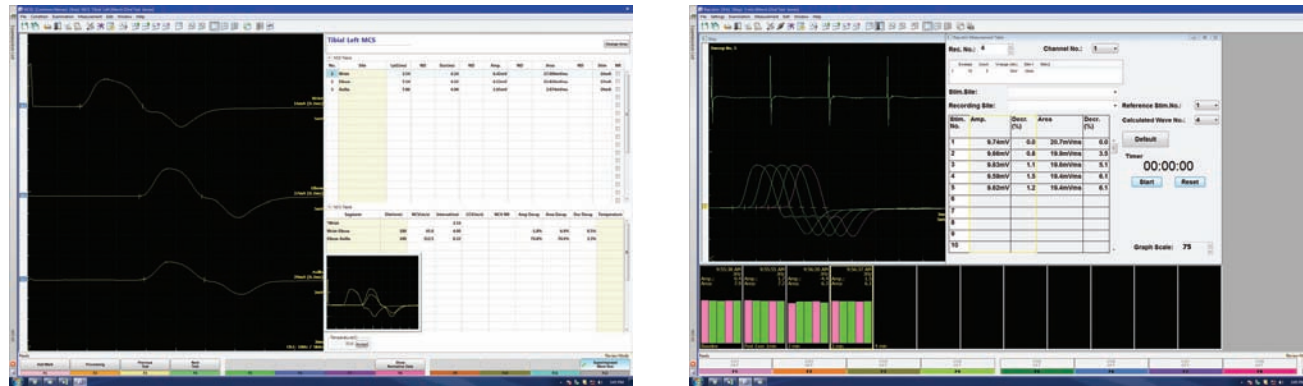
Hardware Options

- KD-019 or NIH-9000 Cart
- KH-001 Arm
- DR-531-14 Headphones
- LS-102 LED Goggles
- JE-921 EEG Amplifier
- LS-120 Photic Stimulator

Software Options

- QP-951 Quantitative EMG Software
- QP-952 Single Fiber and Macro EMG Software
- QP-954 Autonomic Nervous System Testing Software
- QP-930 EMG Playback
- QP-219 EMG Review Software
- NK-NWB NeuroWorkbench Server Software
- NK-NWB HL7 Interface Software
- NK-EEGAddOn

Nerve Conduction Study



The NCS program lets you perform MCS, SCS and F-Wave in one program. Any number and combination of examinations can be created in your own custom routine protocol by selecting nerve, side and exam. You can change the examination by just clicking the item in the list box, or by clicking a button on the dedicated operation panel of the Neuropack.

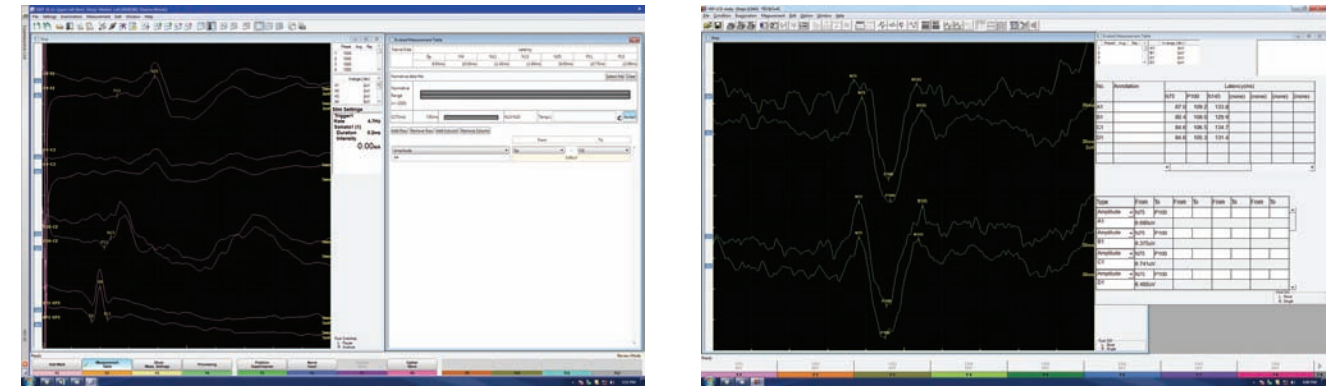
Motor NCS/Sensory

- When measuring with the MEB there is no need to manually pick the stimulation site before starting the recording. The software does this automatically for you and, if necessary, it can be easily changed.
- Side comparisons and combined motor and sensory tests can be shown in one waveform screen and also have their own dedicated evaluation tables.
- Normative data are shown on the same screen.
- The superimposed waveform in real time is shown at the same time, so you can easily compare the amplitudes of all stimulation sites and thus judge the quality of your stimulation.

Repetitive Stim

- The amplitude of each sequence is displayed as a bar graph on the same screen. You can see the summary of the repetitive stimulation study at a glance. The waveform of each sequence can be displayed by clicking the corresponding bar graph.
- Up to 12 sequences of stimulation patterns can be set for one automatic measurement (automatic sequence function).
- Stimulation can be done with either high or low frequency or combined in the same protocol.

Evoked Potentials



Standard SEP examination protocols are:

- SEP (somatosensory evoked potential)
- SSEP (short-latency SEP)
- ECG-SSEP (ECG-triggered SSEP)
- ESCP (evoked spinal cord potential)

Standard VEP examination protocols are:

- Pattern-VEP
- Goggle-VEP
- Flash-VEP
- ERG (electroretinogram)
- EOG (electrooculogram)

Flexible pattern stimulations

VEP protocol requires a VEP monitor. Pattern reversal stimulation can be selected from full, half, and quarter visual field. 4 to 128 horizontal divisions can be selected for patterns.

Standard AEP examination protocols are:

- ABR (auditory brainstem response)
- MLR (middle latency response)
- SVR (slow vertex response)
- EcochG (electrocochleogram)

Three types of auditory stimulation

Click, tone burst, and tone pip stimulation are available.

ABR auto marking

In the ABR protocol, automatic waveform marking allows time-saving measurement of latency, amplitude, and interval.

Side comparison

Split screen display allows for side comparisons at a glance.

Specifications

Amplifier

Number of channels:

JB-942: 2, JB-944: 4

Input impedance:

>200 M Ω (differential mode), \geq 1000 M Ω (common mode)

Noise:

<0.6 μ Vrms or less at 1 Hz to 10 kHz with input shorted

Sensitivity:

1, 2, 5, 10, 20, 50, 100, 200, 500 μ V/div,
1, 2, 5, 10 mV/div \pm 5%

High cut filter:

10, 20, 50, 100, 200, 500 Hz, 1, 1.5, 2, 3, 5,
10, 20 kHz at 12 dB/oct (\pm 20%)

AC interference notch filter:

50 or 60 Hz (rejection ratio: <1/2-0)

Amplitude calibration:

1, 10, 100 μ V, 1, 10mV (within \pm 5%)

Skin-electrode contact impedance check:

2, 5, 10, 20 k Ω indication (within \pm 20%)

Low cut filter:

0.01, 0.02, 0.05, 0.1, 0.2, 0.5, 1, 2, 5,
10, 20, 50, 100, 200, 500 Hz, 1, 2, 3 kHz
6 dB/oct (\pm 20%)

Dimensions and Weight

Main unit:

350 (W) x 62 (H) x 395 (D) mm, 3.0 kg
PC Unit depends on the model selected

JB-942 amplifier:

217 (W) x 174 (H) x 34 (D) mm, .71 kg

JB-944 amplifier:

217 (W) x 174 (H) x 34 (D) mm, .74 kg

Power Requirements

Line voltage:

100 to 240 V AC \pm 10% Line

Frequency:

50/60 Hz

Power input:

75 VA (DC-110B)

Environment

Operating temperature:

10 to 35°C (50 to 95°F)

Operating humidity:

30% to 80%

Operating atmospheric pressure:

70 to 106 kPa

Storage temperature:

-20 to +65°C (-4 to 149°F)

Storage humidity:

20 to 80%

Storage atmospheric pressure:

70 to 106 kPa



us.nihonkohden.com