

Neuro ICU Monitoring

Maximum Flexibility Without Compromise from Nihon Kohden

The use of continuous EEG (cEEG) can enhance the neurological assessment and care of critically ill patients through early detection of reversible neurological deterioration. Nihon Kohden's superior signal quality amplifiers ensure reliable cEEG trends. The QP-160 application is designed to fully integrate the EEG-1200 data with user selectable trends over time. Areas of clinical interest are easily recognized at the bedside and provide clinicians fast review capabilities of the associated EEG data over days, and even weeks, in a single display with synchronized audio and video data.

Superior Amplifier Solutions

Nihon Kohden amplifiers have long been regarded for delivering superior signal quality using the highest recording specifications available. Our flagship JE-921 provides flexibility and configurability that is exclusive in the industry. With a full 10-20 electrode array, 14 bipolar inputs, built in End Tidal CO₂ and SpO₂, this proven technology will increase ease of use and recording power for all types of EEG and polysomnographic recordings.

The AirEEG combines wireless technology with the ultimate in reliability and ease of use. AirEEG 32 and 64 channel multi-modality configurations allow you to get the most out of your wireless recordings with seamless integration to the EEG-1200 acquisition system. All formats are available with built-in SpO₂ and external DC inputs.

When reliable trend data is instrumental in detecting subtle changes over time, you can rely on the superior signal processing that has defined Nihon Kohden's amplifier engineering for decades, even in adverse recording environments.

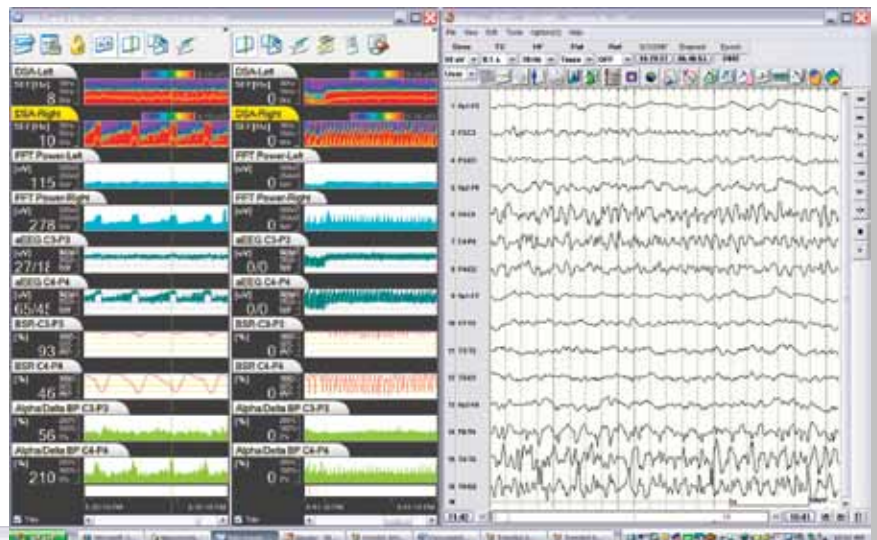
Data Capture and Analysis

The QP-160 application offers quantitative EEG and real time trend displays to quickly identify changes over time. Color coded annotations, as well as integrated event logs, facilitate the review process. View real time EEG and a variety of single or dual time base trend displays for short and long term trend comparison either at the bedside or remotely.

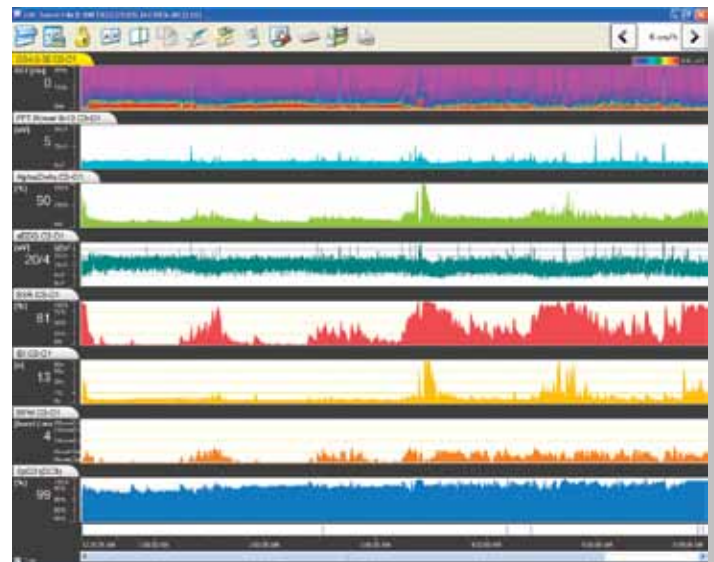
- In spectral analysis, the EEG signals acquired by the EEG-1200 are analyzed with FFT for display of DSA, spectral edge, power and power ratio measurements.
- Amplitude integrated EEG (aEEG) is displayed in a time compressed format and is inclusive within the QP-160 application.
- Burst suppression parameters include burst suppression ratio (BSR), inter burst interval (IBI), and bursts per minute (BPM).



- Trend relationships between EEG changes and physiological parameters such as SAO_2 and $ETCO_2$ along with other DC parameters.
- Real time numeric values are displayed with the trends.
- Optional comprehensive EEG monitoring pack (CPA) from Persyst includes Reveal™ Rosetta and Magic Marker™



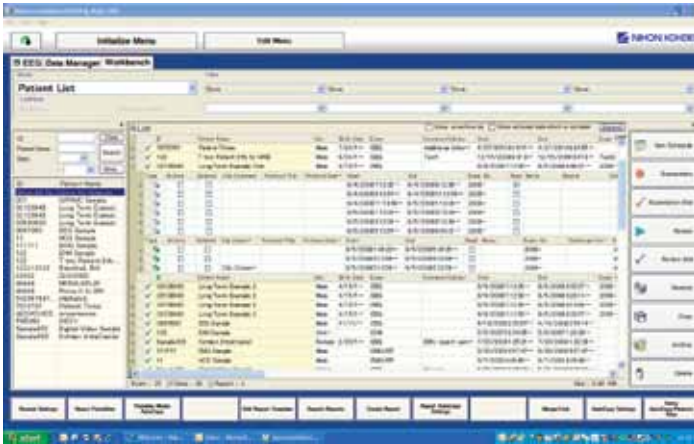
These user selectable trends allow review of data for a patient's entire recording of several days, even weeks in a single display. Use integrated annotation and editing tools to navigate through the record. Customize the layout of the EEG and trend display on acquisition and review for convenient navigation between trend and EEG data. Optional synchronized digital video enables confirmation of EEG traces vs. environmental artifacts. Our unique artifact detection algorithm marks the trends influenced by electrode artifact for more reliable interpretation.



Seamless Data Solutions

NeuroWorkbench® is the core integrator of Nihon Kohden's neurology product portfolio of IOM, EMG and EEG systems. This common database facilitates workflow and access to clinical data and records. Remote review of your ICU, EMU or EEG data, trends and video is a single click away across a wired or wireless network.

NeuroWorkbench (NWB) is designed to make your patient's data secure. An optional HL-7 program provides communication between NWB and other hospital information systems using HL-7 messages.



Configuration Flexibility

Sensitive to the space constraints in the busy ICU setting, Nihon Kohden offers a wide range of configuration options from portable flexibility to dedicated bedside monitoring.

- Fixed, fold-away wall-mount options
- Portable, compact cart-based systems for multi-room and multi-purpose use
- Wired or wireless amplifier options up to 64 channels
- Medical grade panel PC option with easy to use touch screen monitor interface and virtual keyboard or a washable keyboard and mouse with lock feature for unattended systems



Our Commitment to You

The QP-160 is flexible, yet comprehensive and integrates trends into the latest high quality neurological instrumentation, the EEG-1200. This application offers flexible monitoring solutions that are sensitive to the restrictions in the ICU environment and provides comprehensive data that assists with timely intervention for the neurologist and intensive care providers.

When commitment counts, you can rely on Nihon Kohden to make a difference.

Comprehensive Customer Care and Services Clinical and Technical Training

To maximize utilization and satisfaction with your new system, registered clinical support specialists are available for customized product training programs at your facility.

IT and biomedical technicians can take advantage of our EEG, EMG and PSG service seminars offered quarterly at our Foothill Ranch, California location.

Technical Support

With greater demand for product standardization, data integration and networking, Nihon Kohden employs highly qualified applications and IT specialists to work with you to design a customized solution and site plan around your workflow, data access and data management requirements. Our goal is that the information you rely upon for clinical assessment is available when and where you need it.

Nihon Kohden's direct field service support are backed by a team of certified technical and clinical support specialists available to assist around the clock with hardware and applications support and can securely connect into your system using remote diagnostics tools if additional help is needed.

Service Agreements

To assist you in delivering maximum system uptime, we offer flexible service agreement options and extended warranties available at the time of purchase or at any time during the warranty period.

Supplies and Accessories

To supplement the superior performance offered by the EEG-1200, we offer a full line of quality electrodes, needles and supplies.

SPECIFICATIONS

JE-921 Multimodality 10-20 System Amplifier

Number of Inputs:

- 32 Channels Total
- 10-20 Input Layout
- 3 Dedicated Bipolar Channels
- 4 Programmable Bipolar Channels
- 4 DC Channels

Optically Isolated

Input Impedance: 100 M Ω

CMRR : > 105 dB

Internal Noise Level:

<3 μ V p-p (0.53-120Hz)

High Cut Filter:

300 Hz (-18 dB/oct)

Low Cut Filter:

0.016-160 Hz

Sampling Frequency:

Up to 1000 Hz



Air EEG/PSG Wireless

Input impedance:

EEG input/extra input:
200 M Ω

DC input: 1.5 M Ω

Input circuit current: 10 nA or less

CMRR:

EEG input/extra input:
105 dB or greater (60 Hz)

Bipolar input:
100 dB or greater (60 Hz)

Internal noise level:

EEG input/extra input: 3 μ Vp-p or less

DC input: 10 mVp-p or less

High Cut filter:
60 Hz (-18 dB/oct)

Low Cut filter:
0.08 Hz ($\tau = 2$ s)

A/D conversion: 16 bits (97nV/LSB)

Sampling and hold:

All electrodes at the same time

Sampling frequency: 200 Hz

Impedance threshold:

2, 5, 10, 20 and 50 K Ω

Matrix Amplifier

Number of Inputs:

64, 128, 192 Selectable
Optically Isolated

Input Impedance: 200 M Ω

CMRR : > 110 dB

Internal Noise Level:

< 1.5 μ V p-p (0.53-120Hz)

High Cut Filter:

300, 600, 1200, 3000 Hz, Sampling Rate
Dependent

Low Cut Filter:

0.016 or 0.03 Hz

Sampling Frequency:

1000, 2000, 5000, 10,000 Selectable



*NeuroWorkbench is a registered trademark of Nihon Kohden Corporation.
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