

Nihon Kohden EEG-1200 Diagnostic and Monitoring Solutions

For more than 60 years, healthcare providers worldwide have relied on the quality and reliability of Nihon Kohden's comprehensive and innovative line of neuro-diagnostic and –monitoring instrumentation to aid in the diagnosis, information and treatment of their patients. Nihon Kohden's long legacy in EEG diagnostics and monitoring continues with the introduction of the EEG-1200 that combines EEG, long term epilepsy, cEEG ICU monitoring and sleep testing for the most flexible and comprehensive recording system available today.

Amplifier Solutions

Nihon Kohden amplifiers have long been regarded for delivering superior signal quality using the highest recording specifications available. Durability, innovation and superior signal processing have defined our amplifier engineering for decades. Our extensive library of amplifiers range from a 32-channel 10-20 system amplifier to the world's first series of 64- to 192-channel matrix amplifiers.

The flagship and newest addition to the Nihon Kohden amplifier family, the 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 new technology will increase ease of use and recording power for all types of EEG and polysomnographic recordings.

The well proven JE-912 provides 10 DC channels, 20 uni-polar and 14 bi-polar inputs. With built-in SpO₂, this amplifier combines economic sense with flexibility.



The AirEEG and AirPSG combine 802.11b 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 ambulatory recordings with additional monitoring power. AirPSG comes in a 24 channel dedicated sleep format designed specifically for use in the sleep lab. All formats are available with built-in SpO₂ and external DC inputs.

Smart Connectivity

The EEG-1200 system features a LAN connected, IP addressable input box converter for all amplifiers providing more configuration flexibility independent of the PC platform. LTM installations are simplified by a single LAN cable run to the patient room for EEG acquisition, photic and patient event marker, 4-16 channel DC input as well as SPO₂ and EtCO₂ monitoring with the JE-921 amplifier.



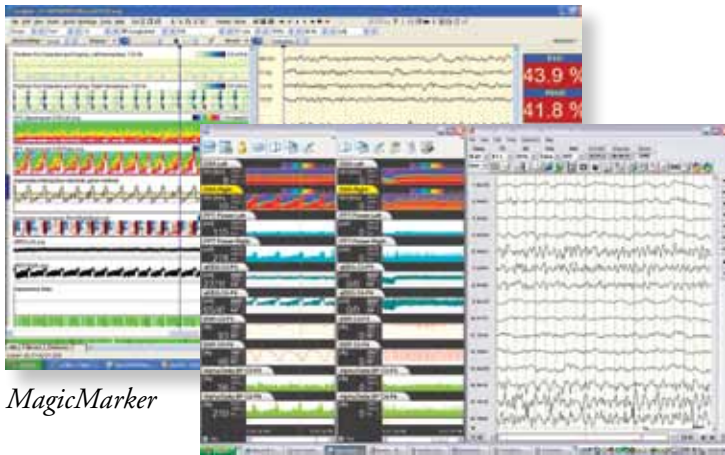
Long Term Monitoring for Epilepsy

Those laboratories currently conducting extended monitoring studies for epilepsy will be pleased with innovations exclusive to the EEG-1200. Simply select from NK's extensive library of amplifiers – 64-, 128-, and 192-channel configurations and customize the system to better suit your needs. The data is simultaneously sampled at rates up to 10,000 Hz for discrete localization purposes. The EEG-1200 MPEG4 digital video and audio software offers impressive time resolution playback of 1/30 second, full motion video. Most importantly, patient and data throughput is optimized by allowing editing of the EEG and video during recording over a network. Our post-acquisition PTZ video function allows up to four levels of zoom for enhanced review.



cEEG Monitoring in the ICU

The use of continuous EEG (cEEG) monitoring can enhance the neurologic assessment and care of critically ill patients through early detection of neurological deterioration at a reversible stage. The EEG-1200 offers flexible monitoring solutions that are sensitive to the restrictions in the ICU environment and provides comprehensive quantified data and trending that assists with timely intervention.

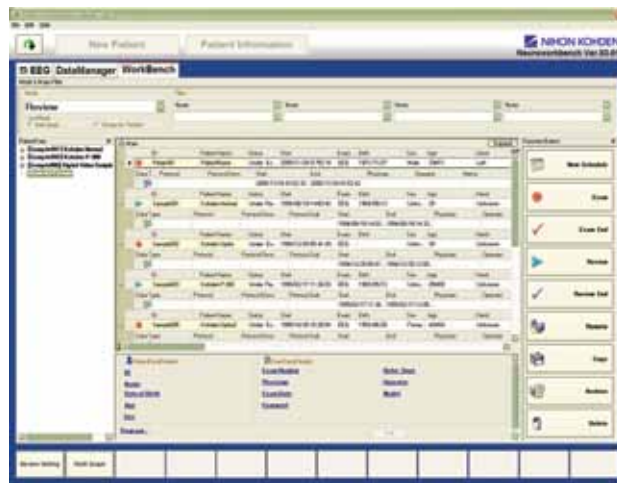
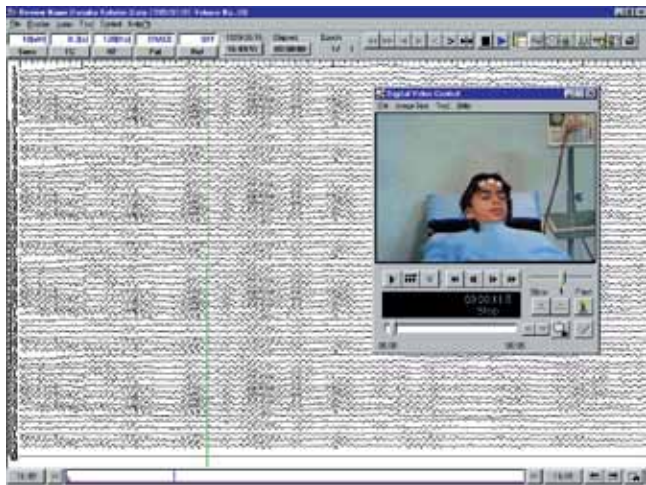


MagicMarker

QP-160A

Routine Testing

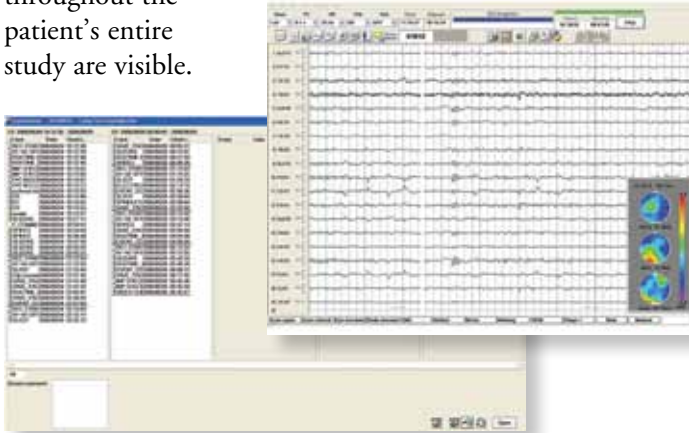
The EEG-1200 boasts superior flexibility, and is capable of growing with your laboratory as your testing requirements expand. For example, our 10-20 system amplifier allows you the ability to perform sleep studies, as well as EEG. Add our Polysmith® sleep analysis software and take advantage of the system's dedicated respiratory inputs and optional DC channels. Polysmith's on-line editing capabilities will save your laboratory time and money. With the ability to create customized reports and generate statistical differences between two or more scorers, Polysmith allows you to choose the exact format and product you desire. To enhance workflow, studies can be managed based on their status (scheduled, under examination, under review and completed). For portable EEGs, simply disconnect from the network to perform the study and our auto-copy function will transfer the studies to the database upon network reconnection.



Data Analysis and Review

Standard with the EEG-1200 review software is on-line FFT during acquisition as well as off-line Source localization, 3D voltage maps and FFT DSA traces.

Managing large amounts of data is easy and flexible with multiple filters. With the event viewer, all annotations throughout the patient's entire study are visible.



Filter the annotation list to view only what is important and easily jump to any day or time within the entire patient stay. All recordings are linked for fast comparison of activity over many days of data acquisition.

Automatic editing of data is easily done using annotations placed into the recording during the review process. The editing features are flexible and customizable.

Data Management and Report Generation

NeuroWorkbench® is the core integrator of Nihon Kohden's neurology product portfolio of IOM, EMG and EEG systems. This common interface allows for examination scheduling, protocol administration and data management improving workflow and access to clinical data and records.

The customized NeuroWorkbench SQL database program provides you with tools for easy creation of physician, technician and administrative NeuroReports™.

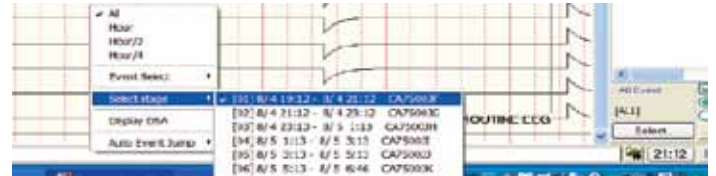
NeuroWorkbench is designed to make your patient's data secure. The HIPAA compliant features include an audit trail, individual logon and user rights, auto logoff and password protected functions such as archive and delete.



An optional HL-7 program provides communication between NeuroWorkbench (NWB) and other hospital information systems using HL-7 messages. These include:

- Patient Registration which registers patient information to NWB
- Reservation to schedule examination in the NWB program
- Reporting which sends out reports created by NeuroReport

Contributions to Teaching and Research



The EEG-1200 offers several features ideal for a teaching and research setting. Our new slide show toolbar allows easy access to our unique create and play feature. The slide show provides the ability to easily create a meaningful presentation of pertinent selections of long term monitoring data. The slide show tool allows presentation of annotated events in any order and with selectable montage and/or filter settings. Users can quickly and accurately move through important clinical findings while viewing EEG and synchronized video. Slideshows can be created using either raw long term recordings or edited files which also can be archived in the libraries registered to the SQL database.

Our Commitment to You

At Nihon Kohden, we understand that the ultimate test of a healthcare partner is their performance, not their promise. For more than 60 years, healthcare providers worldwide have relied on Nihon Kohden medical instruments, advanced technology, services and productivity.

When performance 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.

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
Internal noise level:
EEG input/extra input:
3 μ Vp-p or less
DC input: 10 mVp-p or less
CMRR:
EEG input/extra input:
105 dB or greater (60 Hz)
Bipolar input:
100 dB or greater (60 Hz)
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

JE-912 PSG Amplifier

Number of Inputs:
20 Unipolar
14 Bipolar
Optically Isolated
Input Impedance: 100 M Ω
Input Circuit Current: <5 nA
CMRR: > 105 dB or greater
at 60 Hz (Bipolar Input: 60 dB or greater)
Internal Noise Level: < 1.5 μ V p-p (0.53 to 60 Hz)
High Cut Filter:
120 Hz (-18 dB/oct)
Low Cut Filter:
0.08 Hz (TC = 2 s)
Offset Tolerance: \pm 600 mV
Sampling Frequency:
Up to 500 Hz
USB Interface
Cat 5
Connectivity



Polysmith is a registered trademark of Neurotronics, Inc., a wholly owned subsidiary of Nihon Kohden Corporation.
NeuroWorkbench is a registered trademark and NeuroReport is a trademark of Nihon Kohden Corporation.



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