

# AirEEG

## The next generation of EEG/PSG recording

### Patients are free from cables

- Up to 64 channels of wireless EEG or PSG recording
- Up to 24 hours of battery operation
- Seamless integration with all Nihon Kohden products

### EEG and PSG Capability

Select either the EEG or PSG junction box according to your requirements. SpO2 capability is available as an option, along with two DC inputs providing full PSG acquisition capability.

### Wireless LAN or Wired Communication Configurations

AirEEG can communicate with the Access points using the latest wireless LAN technology or by direct connection. The cable connection also serves as a power source, hence, preserving the battery.

### Seamless Integration with All Nihon Kohden Products

The AirEEG data reads directly into all Nihon Kohden software packages and directly into any of our acquisition products. The mini input box and cable is interchangeable with our hard-wired amplifiers making it an easy task to move patients from hard-wired amplifiers to wireless monitoring.



### Wireless Data Acquisition

Up to 64 channels of EEG/PSG data can be sent to the acquisition unit via wireless transmission. This enables physicians and technologists to monitor the data while the patient is unencumbered by connection cables.

### Seamless Recording

AirEEG is capable of up to 60 minutes of data backup when the patient is temporarily out of range. When the patient is back in the communication range, the backed up data is automatically appended to the EEG file!

### System Status Display

The AirEEG LCD displays operational status for battery, transmission, reception, and impedance check results. The same operational data is available remotely via the network viewing system.

### System Roaming

One AirEEG acquisition unit can roam among three different access points without any interruption or signal loss. By overlapping reception areas the range can be extended by 900 feet.

### Synchronous Digital Video

With the optional digital video module, the AirEEG can record and display video.

## SPECIFICATIONS

### Data Acquisition

- Input impedance:
  - EEG input/extra input: 200 M $\Omega$
  - DC input: 1.5 M $\Omega$
- Input circuit current: 10 nA or less
- Internal noise level:
  - EEG input/extra input: 3 $\mu$ 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)
- Low-cut filter: 0.08 Hz ( $\tau = 2$ s)
- High-cut filter: 60 Hz (-18 dB/oct)
- 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 $\Omega$

### Indications

Battery status, signal strength and skin-electrode impedance for each electrode is displayed on the LCD of the telemetry unit and on the screen of the connected PC.

### Input Specifications

- EEG JE-011A
  - 22 EEG input jacks
  - 9 Extra input jacks
  - 8 Bipolar input jacks
  - 2 DC input jacks
  - 1 SpO2 input
- PSG JE-012A
  - 7 EEG input jacks
  - 24 Extra input jacks
  - 8 Bipolar input jacks
  - 2 DC input jacks
  - 1 SpO2 input



### Power Requirements

- Telemetry unit WEE-1000AK battery:
  - Lithium-ion rechargeable: ~ 24 hours
  - 9V lithium battery: ~ 12 hours
  - 9V alkaline battery: ~ 5 hours
- Battery operation time depends on the transmission interval and quality of waveforms.
- When the telemetry unit is connected to the access point through the SC-101A Isolator, DC power is supplied from the access point.
- Access point: ZR-101AA
- Line voltage: AC117V
- Line frequency: 50/60 Hz
- Power consumption: 50 VA

### Transmission

Medical Reserved: 802.11b LAN  
Radio scheme: Spread spectrum  
Communication mode: Half duplex  
Carrier frequency: 2.412 to 2.462 MHz  
Number of channels: 11  
Transmission speed: 11 Mbps  
Output power: 5 mW/MHz  
Compliance WEE-1000A: FCC Part 15  
Antenna: Fixed type

### Electromagnetic Compatibility

IEC60601-1-2 (1993),  
CISPR11 (1990)  
Group 1 CLASS B

### Safety

Safety standard:

IEC60601-1 (1988), IEC60601-1 Amnd. 1 (1991), IEC60601-1 Amnd. 2 (1995), IEC60601-2-26 (1994)

Type of protection against electric shock: Internally powered equipment, Class 1 (when connected to the access point with the isolator)

Mode of operation: Continuous

### Dimensions and Weight

Telemetry unit:

147.5 W X 54 D X 114.5 H mm,  
475g without battery

Electrode junction box:

54.5 W X 25 D X 136 H mm, 120g

Access point:

240 W X 55 D X 200 H mm, 1.5kg

Isolator: 43 W X 34 D X 96 H mm, 150g

### Environment

Operating conditions:

Temperature: 10 to 40 °C

Humidity: 30 to 85% (non-condensing)

Atmospheric pressure: 70 to 106 kPa

### STANDARD ACCESSORIES

Wireless input unit, WEE-1000AK

Access point (ZR-101AA/AK)

Isolator (SC-101A)

Battery charger (YZ-0310/0311)

Pouch

Electrode junction box

(JE-011A for EEG, or JE-012A for PSG)



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