Good study results, better night's sleep

Alice PDx Diagnostic System

PHILIPS

RESPIRONICS

sense and simplicity

Convenient for patients

Portable testing made easy

The Alice PDx is a portable, diagnostic recording device for Obstructive Sleep Apnea (OSA) screening, follow-up and diagnostic assessment of cardio-respiratory sleep disorders. This flexible and portable sleep system incorporates the advanced features required to meet today's industry needs. It satisfies the portable testing requirements for levels II, III and IV and offers a variety of capabilities, from basic screening to advanced diagnostic evaluation. The Alice PDx enables you to test your patients outside of the lab without compromising study results, helping you to avoid the costs associated with re-testing.

Flexible

The Alice PDx can be used in a sleep lab, alternative care site or a patient's home. The device is convenient for patients who are uncomfortable with, or have limited access to, a lab facility. It also increases the flexibility that facilities need for in- or out-of-lab services. Rather than having patients in need of sleep testing go untested and lose revenue because of patients who cancel or never show, the Alice PDx provides you with an opportunity to retain patients who meet the criteria for portable testing.

The Alice PDx is field upgradeable, so as new features are added, firmware upgrades will be made available, without having to return your device for service. As updates become available, you will be able to access them via web downloading.
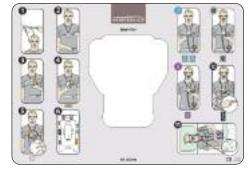
User friendly

The Alice PDx device interface is easy to use, easy to understand and informative. Color-coded labels, located around the perimeter of the device, indicate where to connect the various sensor leads. The display shows the patient only the sensors that need to be connected. The sensor information and indicators help your patients place the sensors correctly and reduce the need for re-testing due to application errors.

A helpful, color-coded, step-by-step diagram is included with the Alice PDx system to walk patients through the appropriate application process.

The Alice PDx is compact and can accommodate side sleepers. The wires have been specifically designed to minimize excess length to make it easier for patients to manage the wires.

Alice PDx on patient

Easy reference diagram

Accommodates side sleepers

Flexible for you
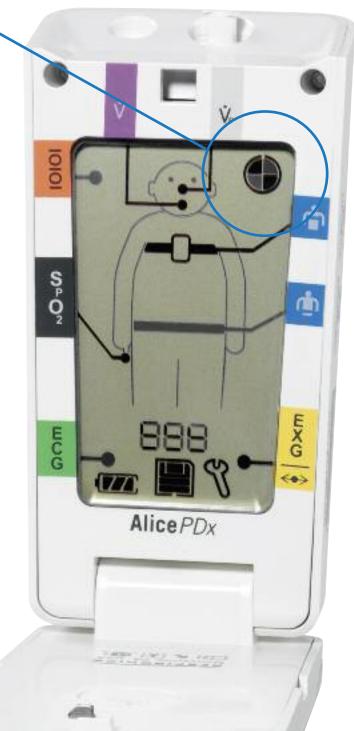
Good study indicator

Configurable for the number
of hours required for a valid study.

Minimize re-testing

The Alice PDx incorporates our unique Good Study Indicator (GSI).*
The GSI is predicated on airflow and oximeter signal quality and
displays the amount of "good quality data" needed for a study to be
complete and valid. The indicator measures patient airflow, gathered
by the nasal cannula and/or the oral thermistor, airflow from therapy
devices, and pulse oximetry, gathered by the SpO_2 sensor. Without
either of these signals, the sleep study would be declared diagnostically
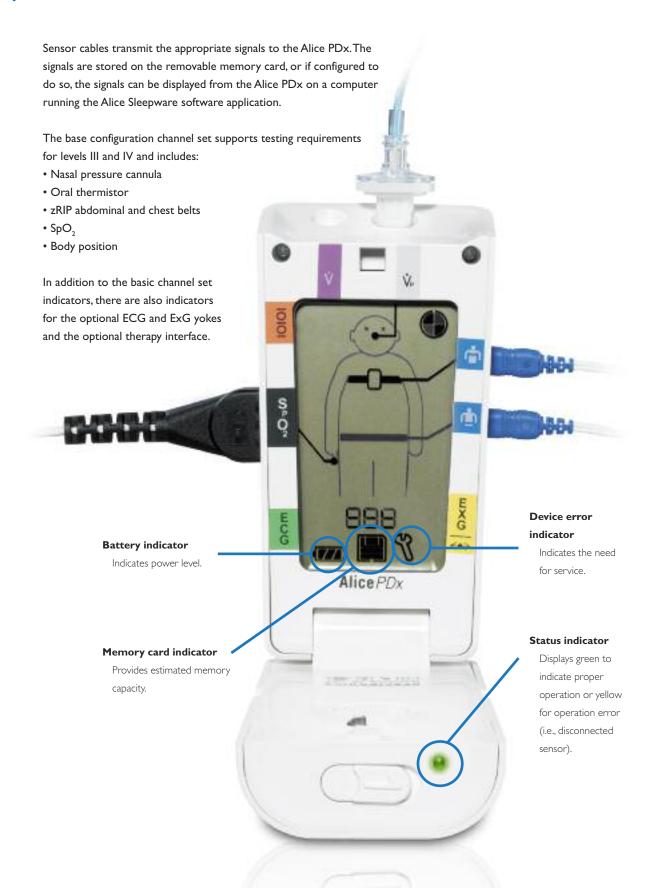invalid because of insufficient data.

Maximize study quality

The Good Study Indicator helps to eliminate the frustration of
receiving insufficient study data and the inconvenience and effort
involved in rescheduling patients for a repeat study. The GSI visually
displays the amount of good quality data in 25-percent increments
on the Alice PDx display screen. This information allows the clinician
to decide if the patient needs to repeat the study. If the study needs
to be repeated, the provider can educate the patient remotely on
how to apply the sensors better.

*Patent pending.

System overview

Sensor cables transmit the appropriate signals to the Alice PDx. The signals are stored on the removable memory card, or if configured to do so, the signals can be displayed from the Alice PDx on a computer running the Alice Sleepware software application.

The base configuration channel set supports testing requirements for levels III and IV and includes:
• Nasal pressure cannula
• Oral thermistor
• zRIP abdominal and chest belts
• SpO_2
• Body position

In addition to the basic channel set indicators, there are also indicators for the optional ECG and ExG yokes and the optional therapy interface.

Battery indicator
Indicates power level.

Memory card indicator
Provides estimated memory capacity.

Device error indicator
Indicates the need for service.

Status indicator
Displays green to indicate proper operation or yellow for operation error (i.e., disconnected sensor).
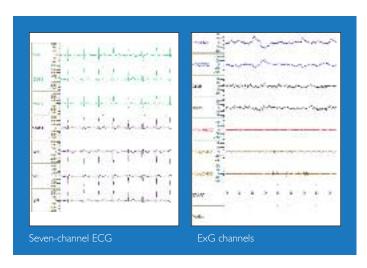
Connecting the Alice PDx to a therapy device

The Alice PDx interfaces with, and fully supports, certain therapy devices with serial or SmartCard connections. When using the Alice PDx, a provider can specify which treatment data to capture along with the appropriate diagnostic channel data. Depending on the Alice PDx configuration selected, it will record up to eight channels such as:

• Patient airflow
• Pressure
• Leak
• Tidal volume
• Event flags (from auto-titrating devices)

This data allows the provider to confirm the therapeutic benefit of the prescribed therapy device for the patient. Once connected to the therapy device, the Alice PDx will record data from the device during the sleep study. Using the pressure cannula port, the Alice PDx can be connected to other therapy devices, however more limited patient airflow and pressure data will be collected.

Connecting a memory card reader to a computer

After recording, the memory card is removed from the Alice PDx and placed into the provided "plug-and-play" SD card reader. The patient's data is then imported from the SD card to a computer for quick review and analysis.

Seven-channel ECG   ExG channels

Optional ECG and ExG yokes

When level II testing is needed, the Alice PDx can be interfaced to optional ECG and ExG sensor interface yokes. The ECG yoke consists of five electrode inputs, considered in cardiology to be a three-lead ECG. This provides three measured and four derived ECG channels to help assess sleep apnea in patients with possible cardiac comorbidities. The Alice PDx optional ECG yoke can provide one-, six- and seven-channel configurations.

The optional ExG yoke provides 13 inputs to provide four EEG/EOG channels and three EMG channels, including ground and references. This enables level II application for advanced sleep analysis.

Multi-night recordings

With the SD card memory and two- to three-night battery life, the Alice PDx can collect information from multi-night recordings when needed. The Alice PDx can be set to start and stop recording automatically to minimize the risk of the patient forgetting to set it.

Single software application

The Alice PDx system is provided with our proven Sleepware software, which has accommodated our Alice in-lab diagnostic systems for years. Sleepware can display live or pre-recorded data in a resolution consistent with your computer hardware specifications. As the need for your lab operation services changes or grows, Sleepware can accommodate your equipment software needs.
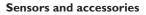
- Sleepware provides a single software application for lab and portable testing.
- A single software application helps to avoid confusion and additional training needed for adapting to multiple device-specific software.
- Sleepware allows you to manage your data across larger networks and remote locations, enabling you to perform remote scoring or data access.

- Sleepware software is a computerized process of analyzing polysomnographic data in order to aid a qualified healthcare provider in diagnosing sleep disorders.

Note: The Alice PDx device is not intended to replace a qualified healthcare provider or his/her interpretation of data.

Other diagnostic products and tools available

In-lab sleep systems

For in-lab systems to cover your needs from primary to full-featured PSG capabilities, we offer the Alice family of sleep systems. The Alice 5 full-featured PSG system records, displays and prints physiological information. It offers standard functions expected in today's high-end evaluation platforms, accommodates facility expansion and supports greater analysis. For an in-lab system that can satisfy professional sleep testing standards without sacrificing usability, there's the Alice LE. The system enables you to meet AASM standards while incorporating simplicity and affordability into your facility.

Sensors and accessories

We offer a complete line of sensors and accessories including Pro-Tech sensors, zRIP effort technology, PTAF Pressure Flow, electrodes, oximeter sensors and probes. Our sensors help you meet AASM standards.

Leading the way in sleep diagnostics

Well known for innovation in advanced sleep therapy systems and technologies, we also equip sleep technicians with a full range of products and support to handle their patient monitoring needs in or out of the lab. With in-home screening and portable and full-featured PSG diagnostic devices, a dedicated sales force and 24/7 technical specialists, we are committed to helping sleep professionals lead the way in facilitating an appropriate diagnosis and healthy night's sleep for patients.

Patient and clinician training tools
- A video (on DVD) that guides the patient through how to use the PDx and correctly apply the sensors.
- A CD-ROM that guides the clinician through how to configure the Alice PDx and score the data.

Part number information for these training tools is listed under the Ordering Information section of this brochure.

We are a past Frost & Sullivan award winner.

The base Alice PDx system includes

Alice PDx device

Alice PDx professional and user guides

Carrying case

Patient setup carrying case overlay

Serial USB Alice PDx to PC communication cable

USB SD card reader w/extension cable

1 GB SD card

Alice PDx holster (chest holder for device)

Neck lanyard for Alice PDx holster

2 ea. Pro-Tech zRIP effort belts with wireset

5-pack starter pack pressure cannulas

Oral thermal sensor

Nonin SpO$_2$ sensor extension cable

4 ea. AA batteries (packaged separately)

Choice of Nonin SpO$_2$ probe (packaged separately)

Ordering information

Item No.	Description
Item No. Description	
1043941	Alice PDx device kit, domestic/US
1043844	Alice PDx device kit, international
1047990	Alice PDx device kit, Japan
Optional components	
1040808	ExG yoke, Alice PDx, domestic
1048415	ExG yoke, Alice PDx, international
1040809	ECG yoke, Alice PDx, domestic
1040810	ECG yoke, Alice PDx, international
1048916	ECG yoke, Alice PDx, Japan
Accessories	
1040807	Alice PDx to MobileLink cable (PC cable)
1040806	Alice PDx to SleepLink cable
1040805	Alice PDx to RS-232 sleep therapy cable
1053280	Alice PDx holster
1053194	Alice PDx holster neck lanyard
P1328-60	Pro-Flow nasal cannula, adult qty. 60
P1343	Pro-Flow nasal-oral cannula, adult qty. 30
P1379	Oral thermistor, Alice PDx
P1388	Nasal-oral thermistor, Alice PDx
P1391	CPAP titration kit (for non-Respironics therapy devices)
P1837	zRIP adult sensor kit (belts and wiresets), Alice PDx
P1806	zRIP effort sensor, adult (24" to 75") / (61 cm to 190 cm)
P1170	zRIP wireset, Alice PDx
1053952	2-pack SD cards (secure digital card, 1GB ea.)
1053948	Alice PDx quick start guide (carry case overlay) 4-pack
936	SpO$_2$ reuseable sensor, adult finger clip
953	SpO$_2$ resueable flex sensor, adult
954A	Adult flex sensor wrap (25-pack)
Training tools	
1055905	Patient instructions video (DVD)
1055918	Clinician interactive tutorial (CD-ROM)

Basic PC recommendations:

- Windows®-compatible personal computer running Windows Vista Business, Windows XP Professional or 2000 with a CD-RW drive. A DVD drive is recommended if you will be saving audio/video files onto removable storage media.
- Intel® Pentium® 3 processor (500 MHz) or greater, 32-bit (x86) processor (1 GHz) required for Windows Vista computers
- 512 MB system memory, 1 GB or higher for Windows Vista computers

Specifications

Total channels:	Up to 21 with optional ECG and ExG yokes
Base channels:	10 channels: pressure-based flow (w/snore) and thermal airflow, zRIP effort (2), body position, SpO$_2$ (also pleth and pulse rate) and patient marker. Up to eight parameters from Respironics therapy devices may be acquired, including pressure, flow and leak.
Optional yokes/ channels:	ECG yoke; 7 channels: 3-lead ECG providing 3 measured and 4 derived channels
	ExG yoke; 7 channels: 4 neuro channels (EEG or EOG) and 3 differential EMG, plus references and ground
Input impedance:	ECG: 10MΩ per electrode 20MΩ differential EEG: 2MΩ per electrode 4MΩ differential EMG: 2MΩ per Electrode 4MΩ differential
Bandwidth:	ECG: 0.318Hz to 81Hz EEG: 0.318Hz to 35Hz EMG: 9.7Hz to 86Hz
Input signal range:	ECG: +/- 4mV EEG: +/- 500uV EMG: +/- 150uV
Digital resolution:	Up to 16 bits
Initial sample rate:	Up to 1,000 Hz
Max storage rate:	200 Hz for ECG/ExG, 100 Hz for effort and thermal flow, pressure flow 200 Hz, snore 500 Hz, body position 1 Hz
Communication interfaces:	Serial protocol USB PC cable, SleepLink and serial communication cables for Respironics therapy devices

System physical characteristics

Alice PDx unit:

Size:	5" L x 3" W x 2" H (12.7 cm x 7.62 cm x 5.08 cm)
Weight:	approximately 8 oz (230 grams), (weight does not include batteries)
System power requirements:	Three AA (1.5V) alkaline batteries, 0.43 watts (typical)

For more information about the Alice PDx, visit: www.philips.com/alicepdx

The Alice PDx and Sleepware are prescription devices that are restricted to sale by or on the order of a physician.

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