

NOAHlink Users Manual

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NOAHlink Users Manual



NOAHlink is manufactured for HIMSA by:

GN Otometrics A/S
Dybendalsvænget 2
DK-2630 Taastrup
Denmark

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1 First Time Installation

The following steps describe how to prepare for NOAHlink™ installation and how to install your unit:

1. Before installing NOAHlink, you must install a Bluetooth device in your PC. Check whether this device is installed by right-clicking **My Computer** on your desktop, then selecting **Properties** from the pull-down menu. This opens the **System Properties** window. Open the **Hardware** tab. Click on **Device Manager**. Double-click on **Ports** to discover whether **Bluetooth Communications Ports** are listed. If these are listed, move to Step 3.
2. Before choosing and installing a Bluetooth device, refer to the NOAHlink page on HIMSA's web site at www.himsa.com for a list of devices tested with NOAHlink.
3. Place either a rechargeable or an alkaline battery in your NOAHlink unit. (**NOTE:** You will first need to charge the rechargeable battery.) Refer to Sections 6.1.1 and 6.1.2 for further details.
4. Follow the NOAHlink installation instructions in Section 6.2.
5. Set up the Bluetooth connection to NOAHlink by referring to the NOAHlink page on HIMSA's web site at www.himsa.com.
6. Refer to Chapter 8 in order to configure your NOAHlink unit.
7. Refer to the NOAHlink page on HIMSA's web site at www.himsa.com for a list of fitting modules which support NOAHlink. These modules can use NOAHlink for programming hearing instruments.

2 Introduction

Your NOAHlink is a wireless Bluetooth communication device optimized for use with NOAH 3. NOAHlink allows you to program hearing instruments with ease, both in your office and on location. You can use rechargeable or alkaline batteries to power your unit.



Figure 1: NOAHlink, Neck String and Charger Cradle

2.1 About this Manual

This manual provides a detailed description of the following NOAHlink procedures:

- installation
- daily use
- charging/discharging
- configuration

In addition, the following relevant areas are addressed:

- safety
- maintenance
- technical specifications

3 Safety Issues





3.1 Manufacturer Responsibility



The manufacturer is to be considered responsible for effects on safety, reliability, and performance of the equipment **ONLY IF**:

- all assembly operations, extensions, re-adjustments, modifications or repairs are carried out by the equipment manufacturer or personnel authorized by the manufacturer
- the electrical installation to which the equipment is connected complies with EN/IEC requirements
- the programming cable and connection to the hearing instrument comply with the requirements in Section B.1.3 – Patient Safety
- the equipment is used in accordance with the instructions for use




3.2 Symbols

3.2.1 NOAHlink Symbols

SYMBOL	DESCRIPTION
	NOAHlink carries this symbol to indicate compliance with Type BF of EN 60601-1.
	NOAHlink carries this symbol when it is important that the user refer to associated warnings in this guide.
	NOAHlink and this manual are CE-marked according to the Medical Devices Directive 93/42/EEC.
	Classified with respect to electrical shock, fire, mechanical and other specified hazards in accordance with UL2601-1 and CAN/CSA-C22.2 NO 601.1-90.

SYMBOL	DESCRIPTION
	NOAHlink carries this symbol to identify the positioning of the battery inside the battery compartment.
	NOAHlink carries this symbol to indicate that, in France, it is only permitted to use the device indoors.
<p data-bbox="225 507 292 536">FCC</p>	<p data-bbox="353 384 975 448">This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:</p> <ol data-bbox="353 464 994 603" style="list-style-type: none"> <li data-bbox="353 464 964 496">1. This device may not cause harmful interference. <li data-bbox="353 504 994 603">2. This device must accept any interference received, including interference that may cause undesired operation. <p data-bbox="353 619 990 646">Refer to Notes 5 and 6, Section 3.3.1 for more details.</p>

3.2.2 Charger Unit Symbols


SYMBOL	DESCRIPTION
	The charger unit carries this symbol when it is important that the user refer to associated warnings in this guide.
	The charger unit is CE-marked according to the EMC Directive 89/336/EEC.
	The charger unit carries this symbol to indicate that it is suitable for direct current only.

3.3 Warning Notes

IMPORTANT: Keep your unit away from liquids.

Do not allow moisture inside your unit.

3.3.1 NOAHlink Warning Notes

SYMBOL	DESCRIPTION
	Place the battery as indicated in the battery compartment. Use only rechargeable batteries when NOAHlink is placed in the charger unit.

Note 1: There are no user-serviceable parts inside the NOAHlink cabinets. For the sake of safety, and in order not to void the warranty, the cabinets should only be opened and serviced by authorized service personnel. In case of defects, please make a detailed description of the defect(s) and contact your supplier. Do not use a defective instrument.

Note 2: Do not use the instrument in the presence of flammable anesthetics (gases).

Note 3: NOAHlink may be disposed of as normal electronic waste, according to local regulations. Please investigate local regulations concerning the disposal of rechargeable and alkaline batteries.

Note 4: Unwanted noise may occur if NOAHlink is exposed to a strong radio field. Such noise may interfere with the process of fitting a hearing instrument. Many types of electrical devices, e.g. mobile telephones, may generate radio fields. We recommend that the use of such devices in the vicinity of NOAHlink is restricted as much as possible.


Note 5: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Note 6: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause

harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3.3.2 Charger Unit Warning Notes

SYMBOL	DESCRIPTION
	Do not use NOAHlink with patients while it is placed in the charger unit.

Note 1: The charger unit should be kept away from the patient area.

Note 2: There are no user-serviceable parts inside the charger unit cabinets. For the sake of safety, and in order not to void the warranty, the cabinets should only be opened and serviced by authorized service personnel. In case of defects, please make a detailed description of the defect(s) and contact your supplier. Do not use a defective instrument.

Note 3: The charger unit may be disposed of as normal electronic waste, according to local regulations.

4 Description

Your complete NOAHlink system consists of both standard elements and optional accessories.

IMPORTANT: A Bluetooth device must be installed on your PC before your NOAHlink can work.



Figure 2: NOAHlink, Neck String and Cables

4.1 Standard Elements

The following standard elements comprise your NOAHlink system:

- NOAHlink unit
- Charger cradle
- Rechargeable battery
- Power adaptor
- Users manual
- Installation disk
- Name labels
- Neck string

4.2 Optional Accessories

You can obtain the following optional accessories from your distributor:

- Spare rechargeable batteries
- Spare neck strings
- Soft-sided case to hold NOAHlink, cables and spare batteries
- Service manual, including test software

4.3 Overview

The NOAHlink hardware serves as a standardized interface between a PC and programmable hearing instruments – or a remote control for programmable hearing instruments.

The top of the NOAHlink unit contains two connectors (6-pole mini-DIN) for the cables to the programmable hearing instruments (or remote control). This allows both a left and a right hearing instrument to be programmed simultaneously.

The PC sends information about the communication protocol (for example, communication type, voltage levels, clock frequency, etc.) to NOAHlink, and asks NOAHlink to read data from, or write data to, the programmable hearing instrument. The PC software for programming the hearing instrument is made by the hearing instrument manufacturer.

The cables for connecting hearing instruments to NOAHlink are supplied by the hearing instrument manufacturer.

5 Maintenance

5.1 Unpacking and Inspection

NOAHlink is shipped in its own custom-made carton.

We recommend that you keep this carton in case you need to return NOAHlink to your local distributor for service or repair.

You should notify your local distributor in the following circumstances:

- The packaging on your NOAHlink is damaged (contact your carrier also)
- Your NOAHlink is damaged
- Your NOAHlink package does not contain all the standard elements listed in Section 3.1
- Your power adaptor is not the correct country version
- Your NOAHlink fails to function

NOTE: If your NOAHlink needs to be repaired or replaced in a case in which the carrier is liable, the distributor will arrange for this without waiting for the claim against the carrier to be settled.

5.2 Storage and Shipment

Always pack your NOAHlink with great care when storing or shipping the instrument. Use the original carton if you need to return NOAHlink to your local distributor for repair.

Remove the battery when storing or shipping your NOAHlink.

Always store your NOAHlink in a clean, dry environment. Ensure the power has been turned off when the instrument is placed in an enclosed container.

Remember to ensure the following when shipping your NOAHlink:

- Seal the shipping container securely
- Mark the container Fragile to ensure careful handling
- In any correspondence, refer to your NOAHlink by model and serial number

5.3 Care and Maintenance

Your NOAHlink and charger unit should be kept clean and free from dust. Use a soft, slightly damp cloth with a small amount of detergent to clean the unit and the cradle.

IMPORTANT: Keep your unit away from liquids.

Do not allow moisture inside the unit.

5.4 Service and Repair

Service and repair of electro-medical equipment should only be carried out by the equipment manufacturer or by authorized representatives.

The manufacturer reserves the right to disclaim all responsibility for the operating safety, reliability and performance of equipment serviced or repaired by other parties. Following repair, the safety of all equipment should be verified by a qualified electronics engineer.

6 Installing NOAHlink

When installing your NOAHlink, you can use either rechargeable or alkaline batteries. This section describes:

- the procedure to use for each battery type

NOTE: It is recommended that you keep alkaline batteries available when using your NOAHlink in case you forget to recharge your rechargeable battery and it runs down during a patient session.

- the installation procedure

IMPORTANT: Your PC must have a Bluetooth device installed before you can begin installing NOAHlink. (You can check this by clicking **Start** on your desktop, then **Settings** and **Control Panel**. Double-click on **System** and locate your Bluetooth device.)

6.1 Battery Usage

NOAHlink is powered by battery – rechargeable or alkaline. The battery is placed in the compartment at the bottom of the unit, as illustrated below:



Figure 3: NOAHlink and Battery Lid

6.1.1 Alkaline Battery

Simply open the battery compartment of your NOAHlink unit and place one alkaline AA (R6) 1.5V battery inside in the correct position by matching the symbols on the battery to those on NOAHlink.

6.1.2 Rechargeable Battery

The rechargeable battery is a 1.2V 1800 mAh NiMH battery.

IMPORTANT: You will first need to charge the rechargeable battery (described below). This takes approximately 13 hours. Thus, you will need to charge the battery overnight before you can install NOAHlink.



Figure 4: NOAHlink, Charger Cradle and Power Adaptor

The following describes how to charge your rechargeable battery:

- Open the battery compartment of your NOAHlink unit. Place the rechargeable battery in your unit in the correct direction by matching the symbols on the battery to those on NOAHlink.
- Place your NOAHlink in its charger cradle, matching the front of the cradle to the front of your NOAHlink.
- Attach the charger cradle to the power adaptor and plug this into a socket. Your battery automatically begins to charge and a green light is displayed. This procedure takes approximately 13 hours.

6.2 Installation

Follow the procedure below to install your NOAHlink:

- Remove NOAHlink from its charger cradle (if you have placed it there while charging the rechargeable battery)
- Place your NOAHlink unit not more than five meters from your PC in order to ensure adequate wireless communication.
- Turn on your NOAHlink.
- Turn on your PC.
- An installation CD is provided with your NOAHlink. Put this into your disk drive. If the program does not begin running straightaway, locate the **Setup** program under the **File** menu and double-click on this option. The program will then install a NOAHlink driver which connects the fitting module running under NOAH to the Bluetooth device communicating with your NOAHlink.

NOTE: If you have more than one NOAHlink unit, it is recommended that you attach one of the name labels that are included in your NOAHlink package to the back of your NOAHlink and write a suitable name on this label, for example, the location of the NOAHlink or the name of its user. This allows you to differentiate between different NOAHlinks. Refer to Section 7.1.1 for details on naming your NOAHlink via your PC.

7 Using and Charging NOAHlink

7.1 Using NOAHlink

The following procedure describes how to use your NOAHlink to program a hearing instrument:

WARNING: Always remove NOAHlink from its charger cradle before you begin to program a hearing instrument, as the unit switches off automatically when placed in the charger.

Always keep the charger cradle away from the patient area.



Figure 5: Using NOAHlink to program Hearing Instruments

- Switch on your NOAHlink by pressing the button at the front of the unit. A self-test occurs every time you do this. The following table explains the different LED (light-emitting diode) displays that may occur during the self-test, depending on the power status of the battery:

POWER STATUS	LED DISPLAY
OK	Continuous green light for five seconds
Low (battery low)	Flashing yellow/orange light for five seconds
Error	Flashing red light for 30 seconds, then NOAHlink powers off

Once the self-test has been completed, your NOAHlink will display different LEDs depending on:

- the power status
- whether the unit is communicating with your PC

The following table outlines the different possibilities:

COMMUNICATING WITH PC	POWER STATUS	LED DISPLAY
Yes	OK	Quickly flashing green light
	Low (battery low)	Quickly flashing yellow/orange light
No	OK	Flashing green light every three seconds
	Low (battery low)	Flashing yellow/orange light every three seconds

- Attach the cable/s (recommended by the hearing instrument manufacturers) for the programmable hearing instrument/s to the connector/s at the top of the NOAHlink unit.
- Connect the ends of the neck string to the attachment points of your NOAHlink according to the color of their plastic connections (red and blue). Hang the NOAHlink from the neck of your patient with this string.

OR:

Attach one plastic attachment button of the neck string to your NOAHlink. Place the string around the neck of your patient and attach the remaining neck string to the empty attachment point on your NOAHlink.

- Adjust the length of the neck string if necessary to ensure a comfortable fit on the patient.
- Connect NOAHlink to the hearing instruments via the cables attached to the top of the unit.
- Ensure the patient is not more than five meters from your PC.
- Start the fitting module on your PC and refer to this program for details on programming the hearing instruments.
- When programming a hearing instrument the LED on your NOAHlink, nearest the ear containing the instrument, flashes with a green light. This indicates that NOAHlink is communicating with the cable attached to the hearing instrument and, therefore, programming the instrument as required.
- Switch off your NOAHlink when you have finished using the device by pressing the button at the front of the unit.
(**NOTE:** If your NOAHlink remains idle for more than 30 minutes, or if it is placed in the charger, it will automatically turn itself off.)

7.2 Discharging and Recharging NOAHlink

Your rechargeable battery – a 1.2V 1800 mAh NiMH battery – automatically charges whenever it is placed in the charger cradle. However, approximately once every three months, it is recommended that you completely discharge, and then recharge, your battery. This ensures that the rechargeable battery is always working to its fullest capacity, and also helps to extend its lifetime.

NOTE: The entire process will take approximately 15 hours.

You will be unable to turn on your NOAHlink while charging or discharging its battery.

IMPORTANT: If you are using alkaline batteries, do not attempt to charge your NOAHlink. If you press the discharging button on the charger cradle the alkaline batteries will be discharged.

The following describes the discharging and recharging procedure:

- Place your NOAHlink unit in its charger cradle, matching the front of the cradle to the front of your unit.
- Attach the charger cradle to the power adaptor and plug this into a socket.
- Press the discharging button on the charger cradle. A red light at the front of the unit remains lit while discharging takes place.
- As soon as discharging is complete, the charger cradle automatically begins to recharge your NOAHlink and a green light is displayed.





8 Configuring NOAHlink

This chapter describes how to configure your NOAHlink using the NOAHlink Properties window.

To start this window, choose one of the following options:

- Double-click the icon on your screen which appears when the driver is loaded (See Chapter 5 for details on loading the driver.)
- Right-click the icon in the system tray. (The system tray is



located on your toolbar and displays the time:    . The NOAHlink Properties icon is located on the right in the above picture.) Choose the **Properties** option.

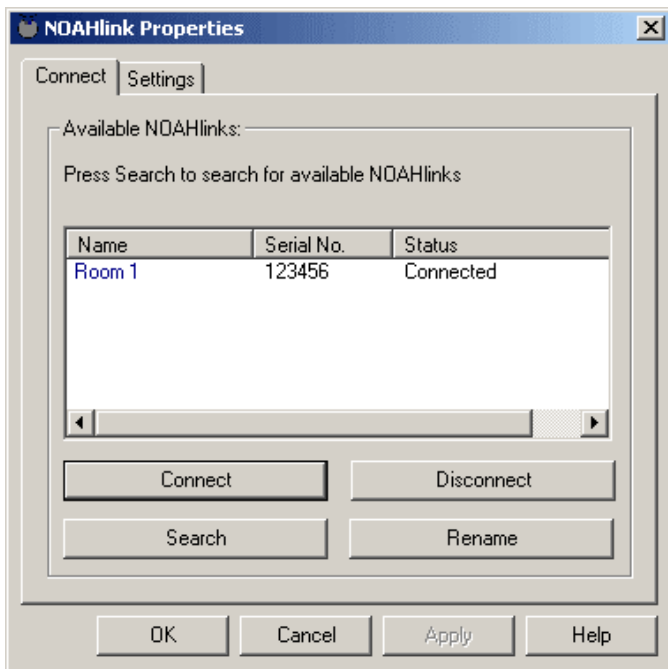


Figure 6: The NOAHlink Properties Window

The following table lists the tabs within the NOAHlink Properties window and the actions they allow you to perform:

TAB LEVEL	TAB	ACTION
General	Connect	<ul style="list-style-type: none"> • Connect to a different NOAHlink • Disconnect your NOAHlink • Search for all NOAHlinks • Rename your NOAHlink
	Settings	<ul style="list-style-type: none"> • Set the battery type • Set a low battery warning • Set your preferred language • Access the advanced tabs
Advanced	Diagnostics	<ul style="list-style-type: none"> • Display errors in NOAHlink and Bluetooth self-tests • Change the Bluetooth driver
	Performance	<ul style="list-style-type: none"> • Test the transfer rate of data from your PC to your NOAHlink
	Log	<ul style="list-style-type: none"> • Change the location of the log file • View entries in the log • Clear entries in the log • Set the level of information in the log

NOTE: Your NOAHlink must be connected before the Diagnostics, Performance and parts of the Settings tabs can be used.

The Advanced tabs can be accessed from the Settings tab. It is necessary for you to configure the General tabs, but you need only deal with the Advanced tabs if you wish to address more specialized issues.

8.1 General Applications

8.1.1 Connecting to NOAHlink

The Connect tab allows you to connect to, disconnect from, search for, or rename a NOAHlink.

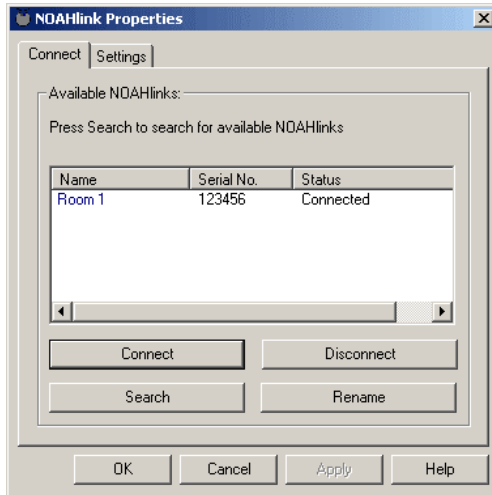


Figure 7: The Connect tab

Each NOAHlink is displayed together with its user-defined alias name, serial number and connection status. The last NOAHlink connected to your PC is highlighted.

The connection status of a NOAHlink can be one of the following:

- In range: Located but actual status unknown
- Available: Located but not connected to any user
- Connected: Located and connected to by the NOAHlink Properties program
- Connected by another program: Located and connected to by another program on this PC
- In use: Located and connected to by another PC
- Known: Not located, but the last NOAHlink connected to your PC

NOTE: When connecting to another NOAHlink, your current NOAHlink connection is automatically disconnected.

You may wish to disconnect your NOAHlink if you require your PC's full power, or your Bluetooth connection, for another task.

The following table describes how to use the Connect tab:

COMMAND	USE	PROCEDURE
Connect	Connect to NOAHlink	<ul style="list-style-type: none"> • Highlight a NOAHlink • Click Connect
Disconnect	Disconnect from NOAHlink	<ul style="list-style-type: none"> • Click Disconnect to disconnect your currently connected NOAHlink
Search	Search for other NOAHlinks	<ul style="list-style-type: none"> • Click Search to search for all NOAHlinks <p>Note: The Search option may take several seconds to complete</p>
Rename	Rename your NOAHlink	<ul style="list-style-type: none"> • Highlight a NOAHlink • Click Rename. This places the cursor at the name, allowing you to overwrite. • Press Return when you have written the new name <p>Tip: It is a good idea to name your NOAHlink after its location or user. Use one of the name labels in the NOAHlink package and attach it to the back of the device.</p>

8.1.2 Setting Power, Battery and Language Options

The Settings tab allows you to set battery options and to create a battery warning. In addition, you can select your preferred language from a list of available NOAH 3 languages.

The **Advanced** button on the Settings tab allows you to access the Diagnostics, Performance and Log tabs.

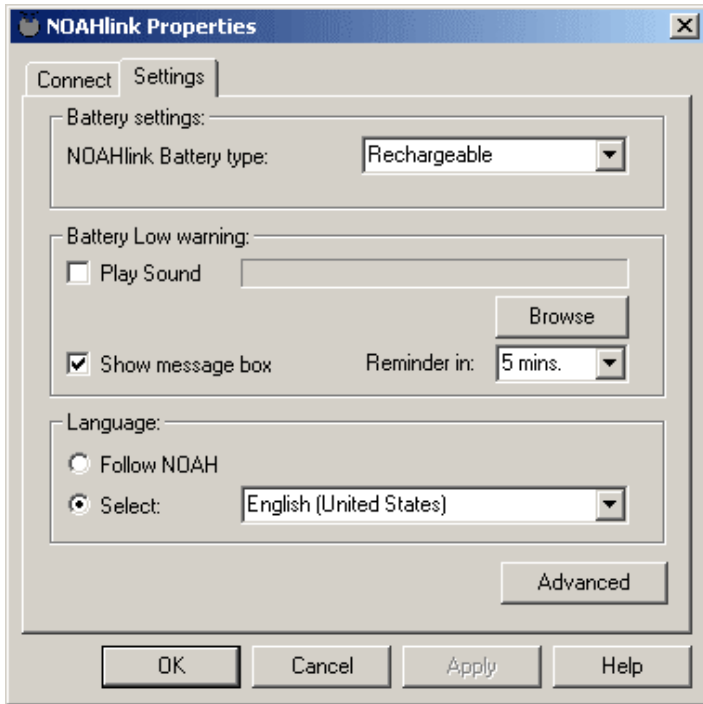


Figure 8: The Settings tab

IMPORTANT: If you do not set the correct battery type, the battery-warning settings will be incorrect. Thus, you may receive a warning even though the battery is working correctly, or you may receive no warning, even though the battery is low.

The following table describes how to use the Settings tab:

SETTING	OPTION	PROCEDURE
Battery	Set battery type	<ul style="list-style-type: none"> Click the pull-down menu at NOAHlink Battery type to list the battery as Alkaline or Rechargeable <p>Note: The default setting is Rechargeable</p>
	Set 'battery low' warning	<ul style="list-style-type: none"> Click Play Sound or Show message box (or both) to receive a 'low battery' warning Click Browse to choose a warning sound Click the pull-down menu at Reminder in to set the length of time before a reminder is activated (5, 10 or 15 minutes) <p>Note: The default setting shows the message box and plays Chord.wav</p>
Language	Set preferred language	<ul style="list-style-type: none"> Click Follow NOAH to use the current NOAH language <p>OR:</p> <ul style="list-style-type: none"> Click Select and choose your preferred language from the pull-down menu
	Access advanced tabs	<ul style="list-style-type: none"> Click the Advanced button to access the Diagnostics, Performance and Log tabs

8.2 Advanced Applications

8.2.1 Displaying Errors in NOAHlink and Bluetooth

The Diagnostics tab displays errors found in tests on Bluetooth and NOAHlink to check response and other capabilities. It also allows you to change your Bluetooth driver should a newer version become available.

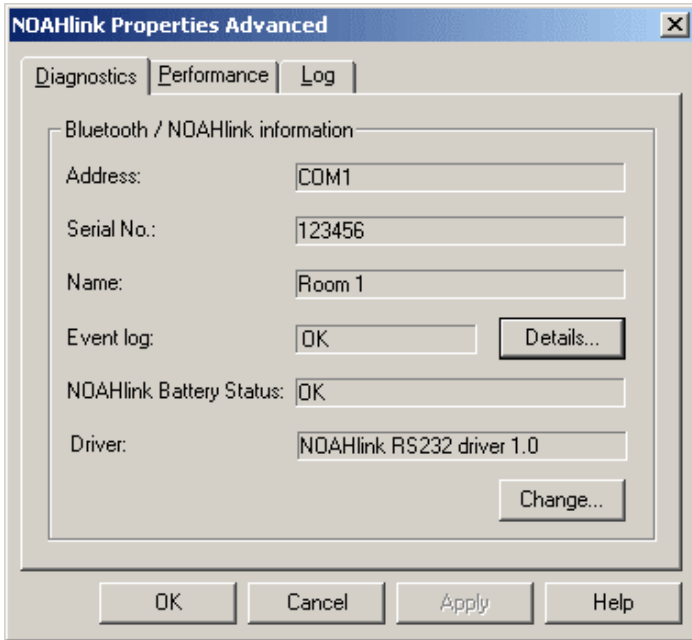


Figure 9: The Diagnostics tab

This tab displays the Bluetooth device address (or COM port), the NOAHlink serial number (printed at the back of the unit), the user-defined name of your NOAHlink and the currently selected NOAHlink channel driver.

The **Event log** is listed as ‘OK’ or ‘Error’.

The **NOAHlink Battery Status** is listed as ‘OK’ or ‘Low’.

NOTE: If any errors are listed, these may help your support representative to troubleshoot problems.

The following table describes how to use the Diagnostics tab:

COMMAND	USE	PROCEDURE
Details	List errors if Event log displays 'Error'	<ul style="list-style-type: none"> Click Details to list errors in NOAHlink and Bluetooth tests
Change	Change Bluetooth driver	<ul style="list-style-type: none"> Click Change to select a new Bluetooth driver. A File Menu appears. Select the driver after browsing for its location Click OK

8.2.2 Testing Data Transfer Rates

The Performance tab allows you to test the transfer rate of data from your PC to NOAHlink. You may wish to use this tab if your system is running slowly or unable to retain a connection to NOAHlink.

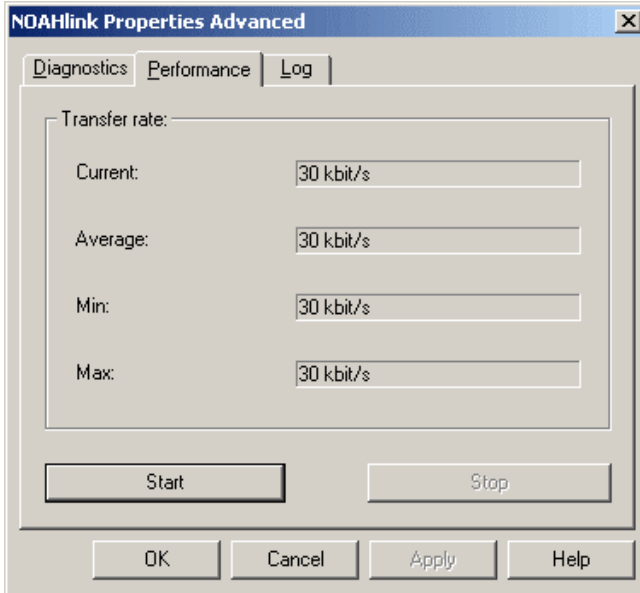


Figure 10: The Performance tab

The following describes how to run the speed test:

- Click **Start** to begin the speed test. (**Note:** Each time you press **Start** the window will be reset.)
- Click **Stop** when the **Min**, **Max** and **Average** fields remain unchanged. (**Note:** The speed test stops automatically if you leave the Performance tab.)

The **Current** figure lists the current transfer rate of data from your PC to NOAHlink; the **Average** figure lists its average transfer rate.

If the **Average** figure is low, causing your device to run very slowly, you may wish to try one of the following:

- move your NOAHlink closer to your PC
- end CPU-consuming programs on your PC which may be responsible for slowing the transfer rate of data
- remove other Bluetooth devices in the area

8.2.3 Viewing and Setting the Log

The Log tab allows you to view and set NOAHlink's log.

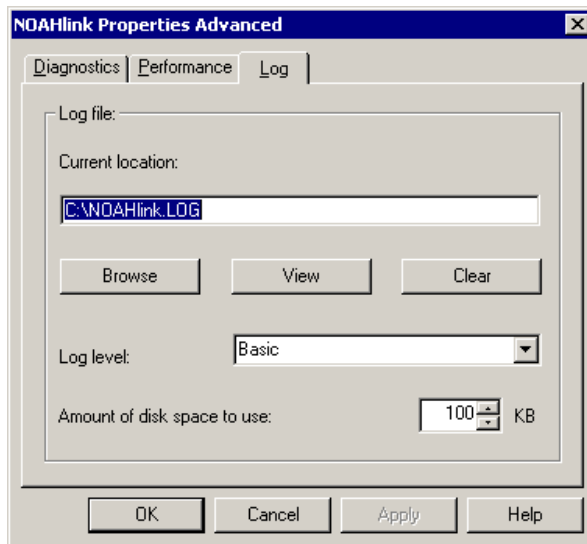


Figure 11: The Log tab

Entries are inserted automatically into the log by NOAHlink, containing the date and time of insertion.

The following table describes how to use the Log tab:

COMMAND	USE	PROCEDURE
Browse	Change current location of log file	<ul style="list-style-type: none"> Click Browse to locate a new file location OR: Type a new file location in the Current location window
View	View entries in log	<ul style="list-style-type: none"> Click View to see entries in log
Clear	Clear entries in log	<ul style="list-style-type: none"> Click Clear to delete all entries in log
	Set form of entries appearing in log	<ul style="list-style-type: none"> Click the pull-down menu at Log level and set to: <ul style="list-style-type: none"> - None to record no entries - Basic to record errors, load operations and login/logout procedures - Medium to record all Basic entries, methods called in the driver and some diagnostic information - Detailed to record all Medium entries and all other functions Note: The default setting is Basic
	Set amount of disk space for log	<ul style="list-style-type: none"> Click the pull-down menu at Amount of disk space to use and choose your preferred number of MBs Note: The default setting is 100KB The range is 100KB – 5MB

A NOAHlink Troubleshooting

The following table supplies solutions to possible issues you may experience with your NOAHlink:

PROBLEM	POSSIBLE CAUSE	SOLUTION
NOAHlink does not power on even though I press the power button.	<ol style="list-style-type: none"> 1. The battery is inserted incorrectly. 2. The battery needs charging or replacing. 	<ol style="list-style-type: none"> 1. Insert the battery correctly. 2. Charge the battery or fit NOAHlink with a new battery.
NOAHlink powers off and cannot power on even though I press the power button.	The battery needs charging or replacing.	Charge the battery or fit NOAHlink with a new battery.
The charging indicator does not light up when I place NOAHlink in the charger.	<ol style="list-style-type: none"> 1. The charger is not connected to the power adaptor, or the power adaptor is not connected to the mains supply. 2. There is no battery in the NOAHlink unit, or the battery is inserted incorrectly. 	<ol style="list-style-type: none"> 1. Connect the power adaptor to the charger and to the mains supply. 2. Place a battery in the battery compartment and make sure it is inserted correctly.
The discharging indicator does not light up when I press the discharging button.	<ol style="list-style-type: none"> 1. The battery is already fully discharged. 2. The battery is defective. 	<ol style="list-style-type: none"> 1. Charge the battery. 2. Fit NOAHlink with a new rechargeable battery.

B Technical Specifications

This section describes the specifications to which NOAHlink adheres.

B.1 NOAHlink Unit

B.1.1 Battery

Battery Types: Rechargeable (Ni-MH type) AA (R6) 1.2V

NOTE: Use only rechargeable batteries supplied by HIMSA.

Alkaline AA (R6) 1.5V

Low Battery

Indicator Level: When approximately 45 minutes of battery operating time remain

Estimated

Battery Life: Approximately 20 fittings (each of 45 minutes duration)

B.1.2 Dimensions and Weight

Size: 91mm x 100mm x 31mm (L x W x H)

Net Weight: 115g (excluding battery)

Approx. 141g including battery

B.1.3 Patient Safety

The NOAHlink unit complies with the following standards:

- EN 60601-1, Internal powered, Type BF, IPXO
- UL2601-1 and CAN/CSA-C22.2 NO 601.1-90

To comply with the above standards, the programming cable and the connector to the hearing instrument must adhere to the following:

- No conductive parts may be accessible when the programming cable is connected to NOAHlink
- The programming cable and the connector must provide double isolation and be able to withstand a dielectric strength test potential of 500 V.

B.2 Charger Unit

B.2.1 Power Supply

Input Voltage: 9V DC \pm 10% / 220 mA

B.2.2 Dimensions and Weight

Size: 125mm x 40mm x 45mm (L x W x H)

Net Weight: 150 g (excluding adaptor)

B.3 Power Adaptor

B.3.1 Power Supply

Input Voltage Range: 100 – 240 VAC, 50 – 60 Hz

B.4 Transport and Storage

Temperature: -25°C to +70°C (-13°F to +158°F)

Air Humidity: < 90%, non-condensing

Air Pressure: 500 hPa to 1060 hPa

B.5 Operating Environment

Mode of Operation: Continuous

Temperature: +5°C to +45°C (+41°F to +113°F)

Air Humidity: < 90%, non-condensing

Air Pressure: 700 hPa to 1060 hPa

IMPORTANT: Operation in temperatures below -20°C (-4°F) or above +60°C (+140°F) may cause permanent damage.

B.6 Standard and Optional Accessories

Please refer to Chapter 3 for a list of accessories.