ADAPTIVE

Adaptive Micro Systems Europe

Industrial Keypad

ALPHARhea

Introduction

Start up

Starting with an ALPHARhea system requires to process precisely to the following **eight (8)** steps:

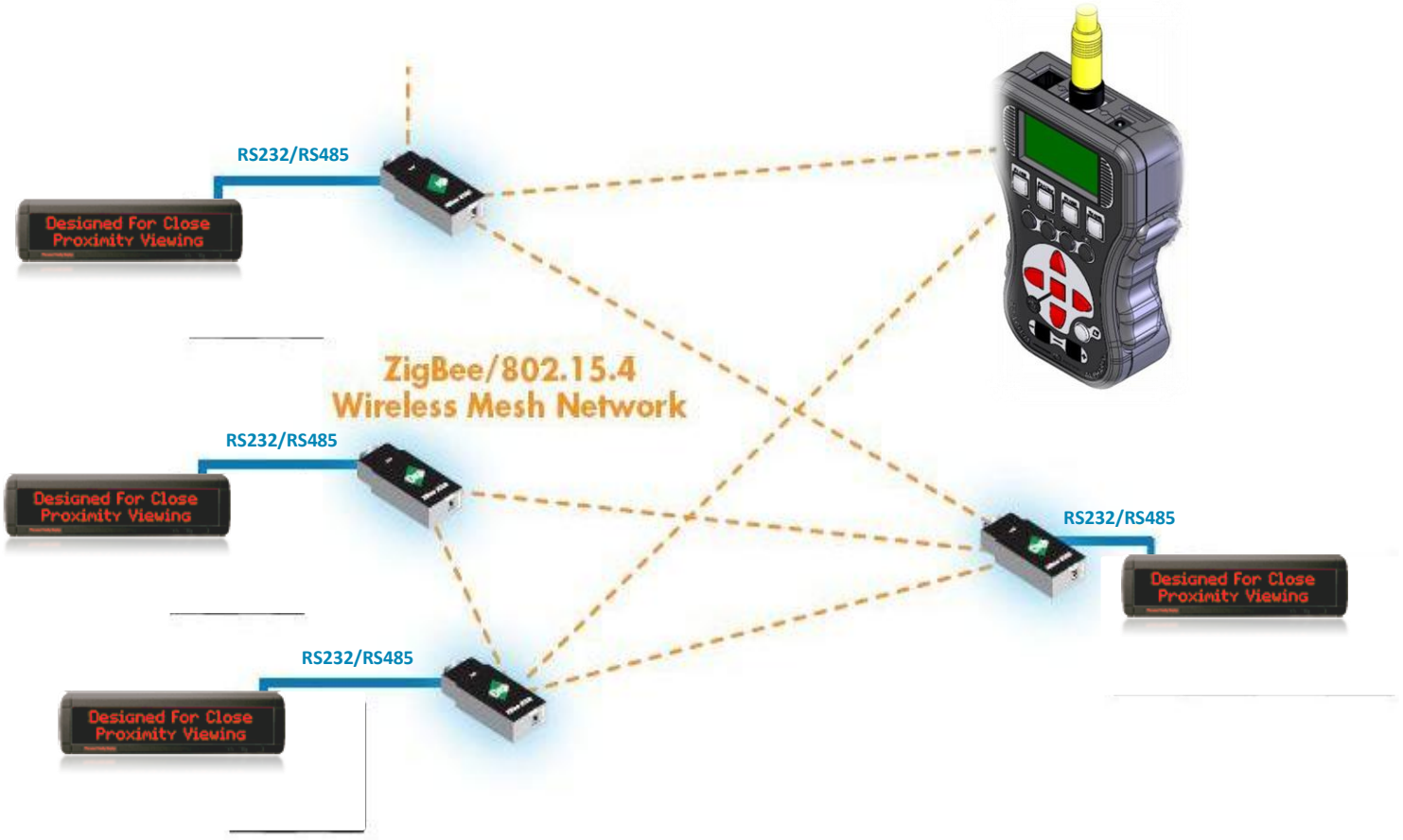
1. Make an inventory of the parts and read carefully the present document
2. Collect and prepare the information needed to configure the system
3. Install the message editing software (ALPHANet PRO, ooh!Media)
4. Install the ALPHARhéa Supervisor software
5. Install the X-CTU software and configuration of ZIGBEE (if necessary)
6. Connect to display (RS232, RS485 or ZIGBEE)
7. Create, edit and download messages & variables into the sign with the message editing software
8. Configure and download parameters to ALPHARhea with the ALPHARhea Supervisor software

Introduction

The **ALPHARhea** is an industrial keypad designed to drive all Adaptive's family signs (ALPHA®, StreetSmart®, Excite®, …) .

The ALPHARhea allows to trigger messages and update variables (except on the Excite®) on one or several signs connected on a network.

Several connectivities are available such as **RS232**, **RS485** (by default) and **ZIGBEE** or **802.15.4** (option) .

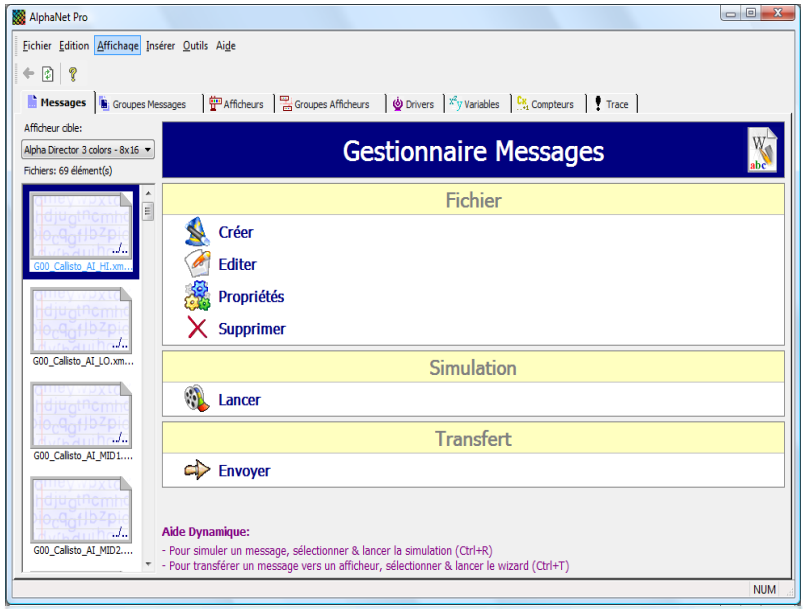


The system's configuration and settings are completely done with the **ALPHARhea Supervisor** software which owns a simple and a friendly user interface.

- Operating systems W2K, Windows XP or Vista
- Connection between the PC and keypad through USB
- Require the framework .Net 2.0 to be installed

Introduction

The creation, the editing and the download of Messages & Variables into the sign must be performed with the **ALPHANet PRO** or **ooh!Media** software.



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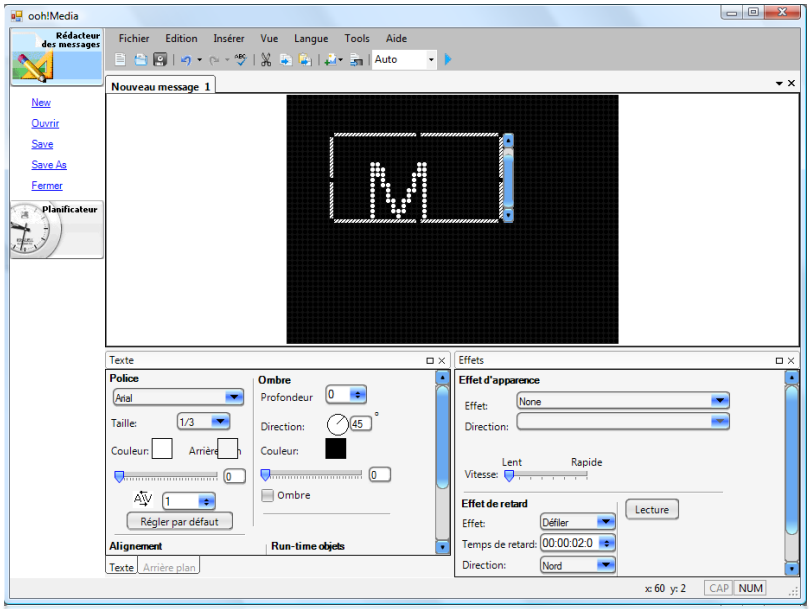
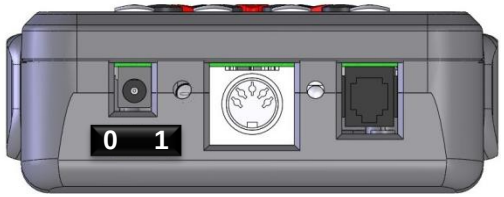


NOTE: Variables are not supported by **ooh!Media** and the Excite® sign family.

- Operating systems W2K, Windows XP or Vista
- Direct connection between the PC and the sign

The **ALPHARhea** has been designed for industrial applications. It is made in a robust ABS box.

Power supply 9VDC



RS232/RS485 connectors

- RJ12 compliant ALPHA®
- Lockable DIN

OLED display

- 128x64 pixels
- 16 gray levels

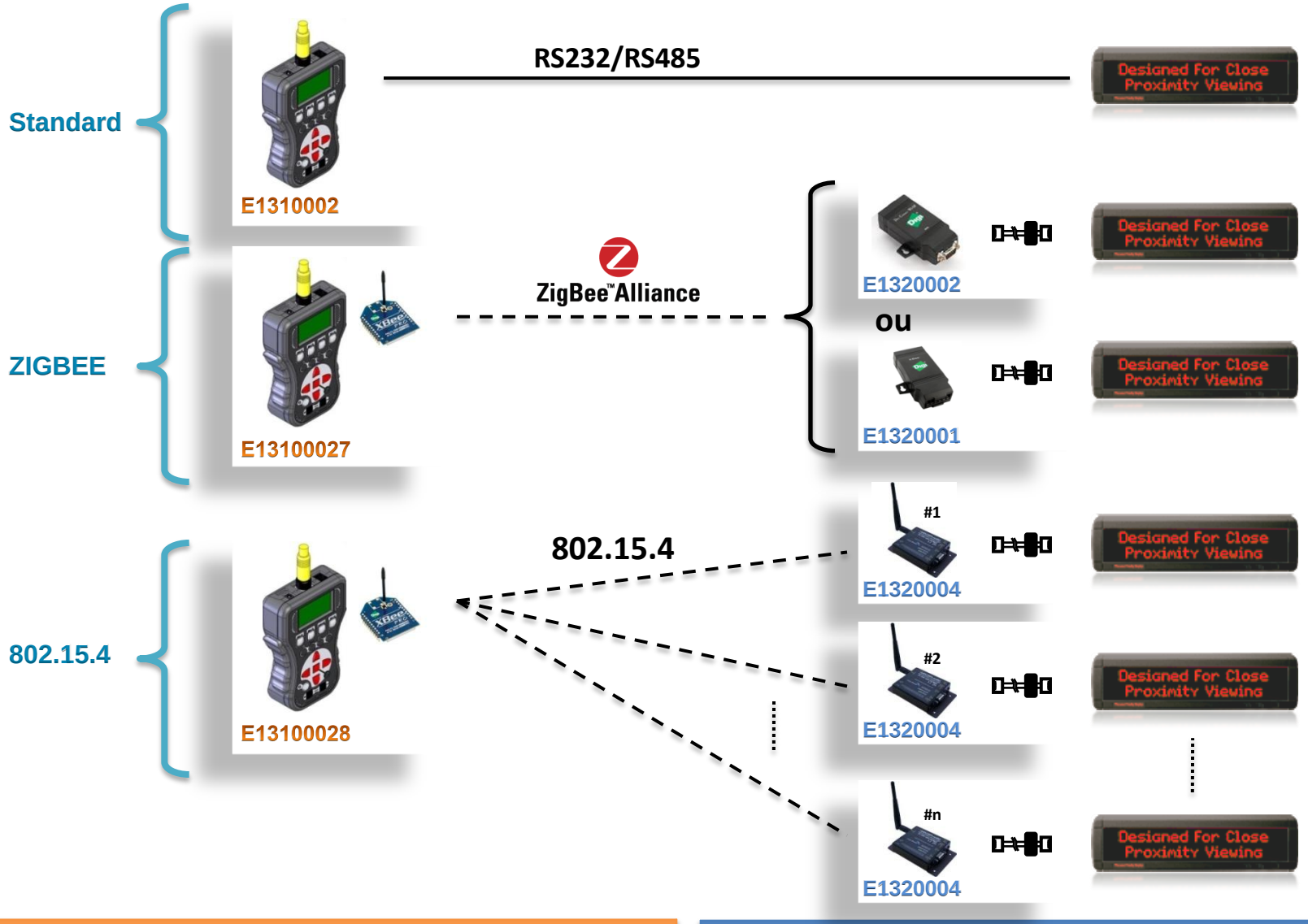
Function keys

Directional pad

- Navigation
- Send key

Inc / Dec Keys

Kits – Solutions of cabling



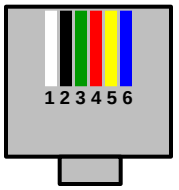
P N	K i t
E1310002	Kit ALPHARhea standard
E1310027	Kit ALPHARhea option ZIGBEE
E1310028	Kit ALPHARhea option 802.15.4

P N	K i t
E1320001	Kit **ZIGBEE** Adapter **RS485**
E1320002	Kit **ZIGBEE** Adapter **RS232**
E1320004	Kit **802.15.4** Adapter **RS232**

RS485/RS232 buses are located on both the RJ12 (compliant ALPHA®) and the lockable DIN connectors.

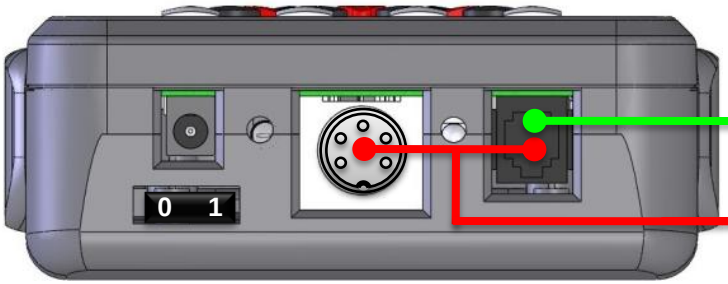
Top view of box

1. RESERVED
2. RESERVED
3. RS485 +
4. RS485 –
5. SHIELD



Top view of box

1. RESERVED
2. RS485 –
3. RS232 RX
4. RS232 TX
5. RS485 +
6. SHIELD

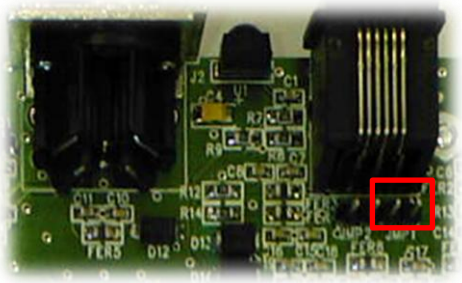


RS232

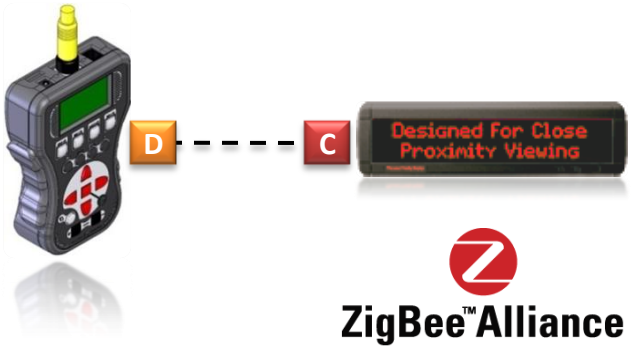
RS485

Signs

- Make sure to respect the RS485 polarity
- For long cables, use terminations on both the sign and the ALPHARhea **(JMP1)**



The **ZIGBEE** network (here used in point-to-point) or **802.15.4** (used in point-to-multipoint) are 2.4GHz networks offering a bandwidth up to **250Kbs.**
They can replace a cabled network such as RS485.



Network ZIGBEE (point to point):

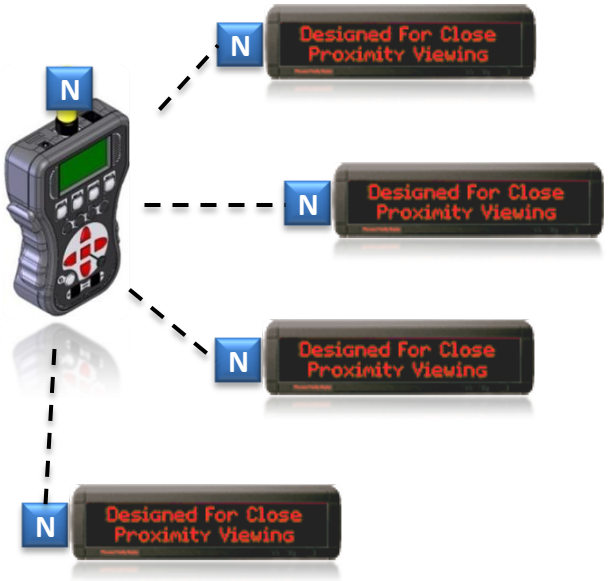
The **ZIGBEE** network is a mesh network that is only used in point to point mode in this product :

C **Coordinator**: It manages network and routing table. It is the only one in the network.

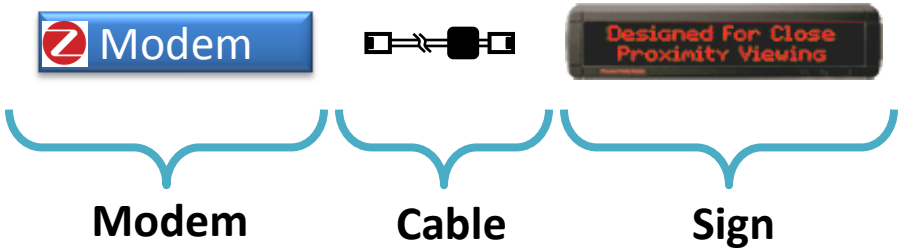
D **Device**: It can only send and receive data. It is a low power node.

Network 802.15.4 (point to multipoint):

- Each node is the same
- Each node receives and sends data to all of its own neighbor nodes
- No need to perform configuration



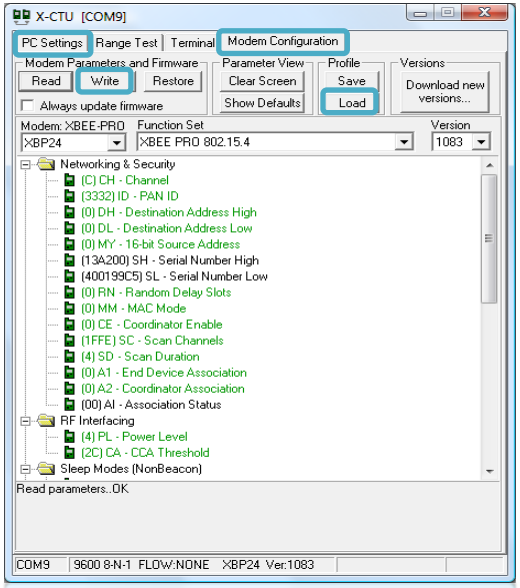
The **ZIGBEE** modems are available in **RS485**, **RS232** et **USB**, in standard version and pro version to extend the transmission range**.**
The bus's type and cabling have to conform to the sign used.



Their profiles have to be setup with the **X-CTU** software, according to the previous discussed recommendations.

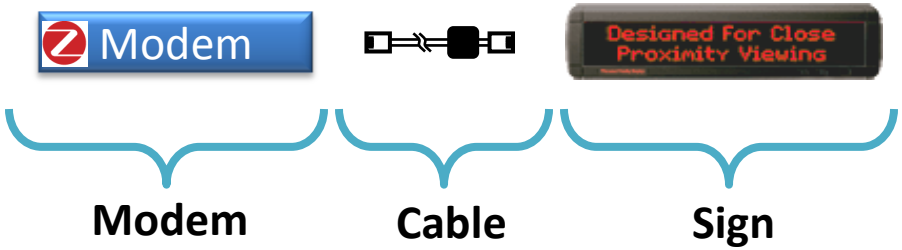
1. **In « *PC Settings* » select the COM port connected to modem**
2. **In « *Modem Configuration* » load the profile by clicking on « *Load* » (ex: …\ALPHARhéa\Workspace\Zigbeefile\Coordinator.pro)**
3. **Program the module by clicking on « *Write* »**

Software and documentation are available on the supplied CD.



The power supply adapter is supplied.

The **802.15.4** modems are available in **RS232** et **USB**, in standard version and pro version to extend the transmission range.
The bus's type and cabling have to conform to the sign used.

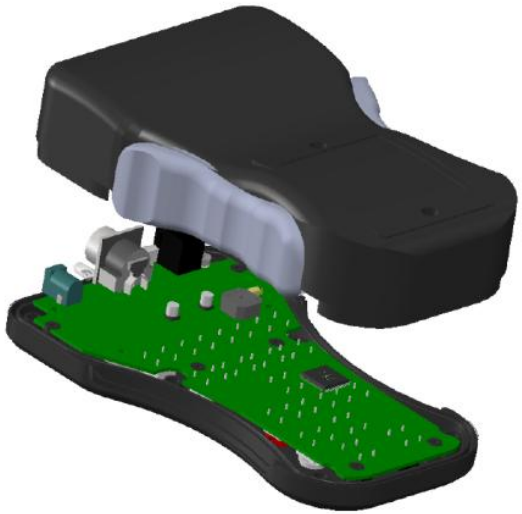


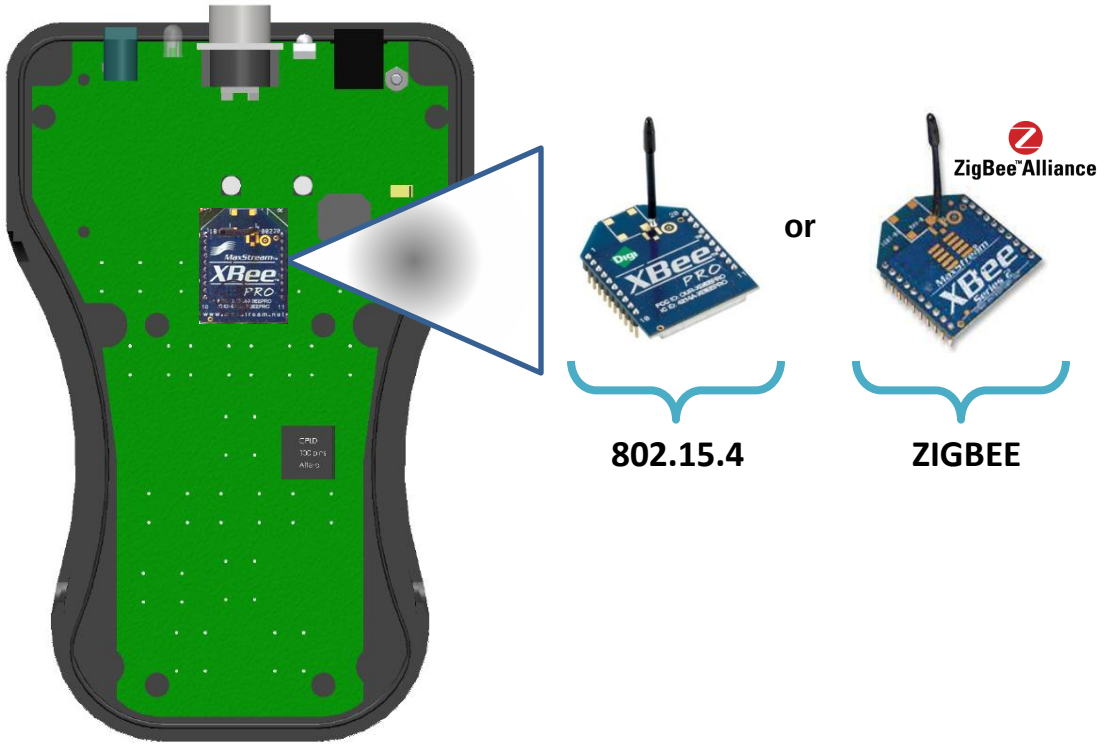
- All nodes are the same, modems don't need to be setup.
- The documentation is available on the supplied CD.

The power supply adapter is supplied.

The **ZIGBEE** and **802.15.4** connectivity on the **ALPHARhea** is achieved by the appropriated **XBEE®** module mounted on the motherboard.

In order to install the module on the ALPHARhea, open the box and connect it as describe.





Note: If you order the **ALPHARhea** with either the **ZIGBEE** or **802.15.4** option, the module will be pre-installed and the ALPHARhea will be ready to use.

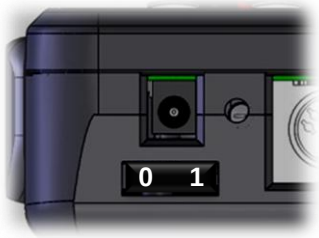
Batteries – Replacement & Use

Open the battery cover by removing the two screws.
Replace the batteries by respecting the polarity and the type.

Supplied Batteries	
ALPHARhea standard	4 Alcaline batteries – Format AA – 2000mAh
ALPHARhea ZIGBEE	4 NiMh batteries – Format AA – 2000mAh

The **ON/OFF** switch is the circuit breaker of the batteries:

- It must be set to **ON** to charge the batteries
- It must be set to **OFF** if the ALPHARhea has non-rechargeable batteries and when it is connected to the adapter.



- **Warning !!!! DO NOT use the ALPHARhea charger with other batteries than those recommended.**

Technical features

Module

	Typical	Max
Input voltage (VDC)	9 (+/- 10%)	
Input current (mA)	120	800 (Batteries in charge)
Power (W)	0,1	8 (Batteries in charge)
Fuse (polyswitch)	If the fuse is triggered, disconnect the module from the power supply then reconnect it again.	
Dimensions H x W x D (mm)	195 x 125 x 55	

Power supply Adapter

	Typical	Max
Input voltage (VAC)	90/264	
Input current (mA)	200	400
Output voltage (VDC)	9	
Output current (mA)	1100	
Power (W)	5	10
Frequency (Hz)	47/63	

General

	Typical
Storage temperature	-40°C ➔+85°C
Operating temperature	-20°C ➔+50°C
Relative humidity	10% ➔95% non condensing
CEM standards	EN 55022/A1/A2 (Ed. 1998/2000/2003), EN 61000-6-2 (Ed. 2001)
Electrical Safety standards	EN 60950-1 (Ed. 2001)
Cleaning	Use a piece of fabric slightly moistened with water to clean the module. Make sure to disconnect it from the power supply.
Battery for RTC saving	Lithium 3V – CR2032 – Respect the polarity

Warnings

- **Warning**, the power supply plug allows to power off the module. It must be located close to the equipment and easily accessible.

- **Warning**, do not install the equipment too close to a hot or a humid source.

- **Warning**, when the equipment is opened, do not perform any other operations than the ones mentioned in the present documentation.

- **Warning**, for your safety, you must disconnect the equipment from the power supply before you perform any kind of technical intervention on it.

- **Warning**, there is a risk of explosion if the battery is replaced by a battery which doesn’t have the right and the same type. Throw the old battery in a recycled garbage.