CUB USER GUIDE

References: CUB12 – CUB22

![Newsteo Wireless Monitoring logo]
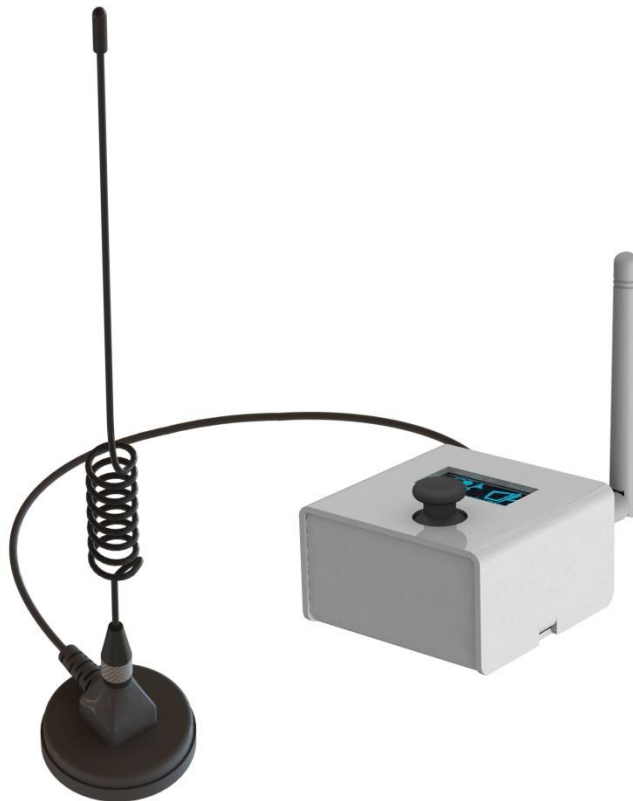
1 GENERAL PRESENTATION

The main function of the CUB device is to collect the measurements collected from the wireless data loggers and transmit them through an Ethernet / Wifi / cellular network.

The display of the CUB allows easy installation, maintenance and monitoring of the device itself and the data loggers. The CUB can display, monitor and warn when a logger's measurement exceeds the settable thresholds.

The user can connect to the Webmonitor application to access the data and to configure the data loggers and can also use RF Monitor software for the first installation.

Content of the kit PFKI-CUB12-004 or PFKI-CUB22-004

Radio Key	Magnet	USB Key with RF Monitor software

PFPN-CUB12-001 or PFPN-CUB22-001

1 RJ45 cable   1 CUB device   1 antenna   1 power supply

INSTALLATION - Several possible cases

1) No specific setting is required: please go to Chapter *5 Starting the CUB and the data loggers* directly

2) You want to connect directly to an Internet Box using WIFI with the WPS option: go directly to Chapter *3 DIRECT WIFI CONNECTION WITH THE WPS OPTION, WITHOUT THE RF MONITOR SOFTWARE*

3) You are using a specific database, you want to configure the CUB manually with your wifi key: Chapter *2 Pairing the CUB with RF Monitor*

4) You must modify the settings of CUB and / or of your data loggers: Chapter *2 Pairing the CUB with RF Monitor*

Note: if you change the connection mode: for example, you switch from Wifi to an Ethernet connection, it is better to delete the parameters entered for Wifi and then to enter the Ethernet configuration.

2 PAIRING THE CUB WITH RF MONITOR

For the first installation, it is easier to use RF Monitor to modify the settings of the CUB or the data loggers.

2.1 Launching RFMONITOR

1. Install or update RFMONITOR software with the latest version available from our website www.newsteo.com / Help center / Software
2. Launch RF Monitor
3. Insert the RF-to-USB key on your PC

4. The CUB, the data loggers and the RF-USB key must be on the same radio channel (the CUB, the USB key and the data loggers are factory set on radio channel 1 when delivered)
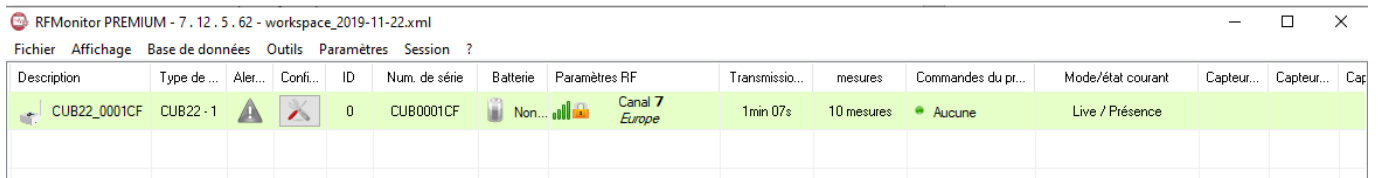
2.2 Starting the CUB

Plug the CUB power supply. The CUB and the RF Monitor software will communicate by radio; you don't need the Ethernet connection yet. Connect also the provided radio antenna.

When the CUB boots, you have to wait about 1 minute before it starts and the screen displays something. The LED colour, at the rear of the product (on the side where the cables and antennas are connected), will change:

- red: the CUB is powered but has not boot yet
- orange: the CUB is correctly powered and is operating

On RF Monitor, once the CUB communicates, it will automatically appear on the list of the measuring devices.
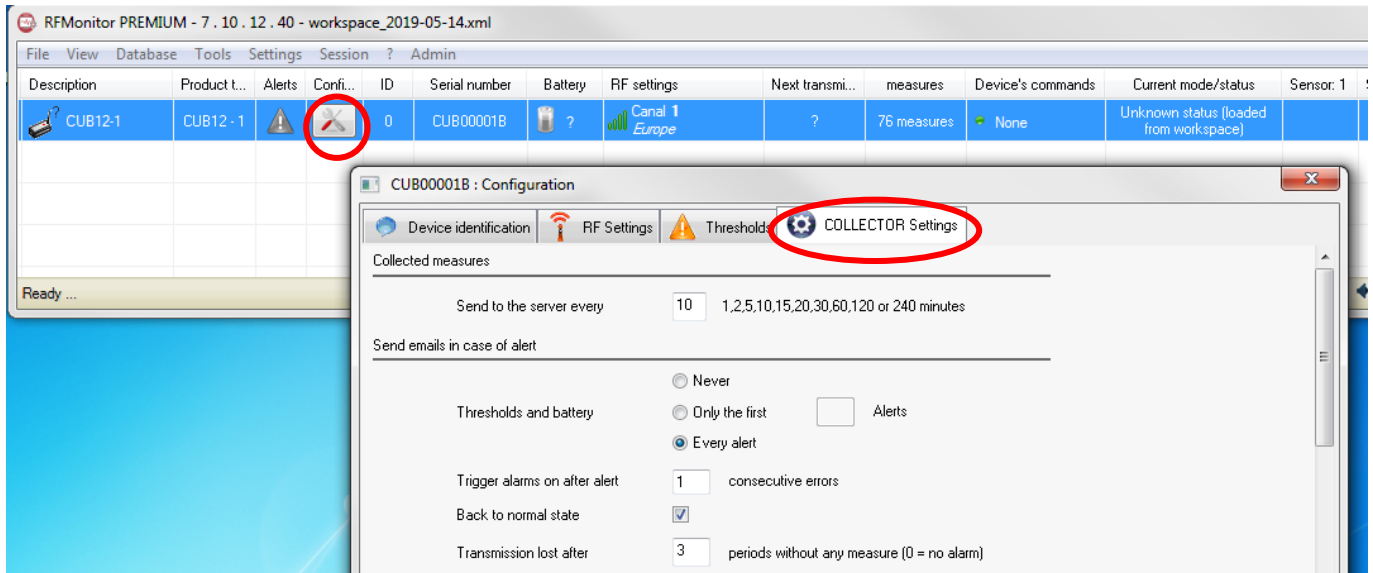

2.3 CUB settings

The database credentials are indicated on the technical sheet delivered with the CUB.

To modify the settings of the CUB:

On RF Monitor, click on the *Configuration button > Configuration > COLLECTOR Settings.*

### 2.3.1 First option: factory setting : Ethernet link, just 1 CUB

There is no particular setting, the CUB will send the data to its dedicated database. For example, the CUB000000 sends data on the database DBS000XXX. This setting is performed by Newsteo, in factory.

2.3.2 Second option: installation with several CUBs or on an existing database

If your are using several CUBs and you wish to use an existing database or a single database, you need to configurate the CUB so they are directed towards the same database.
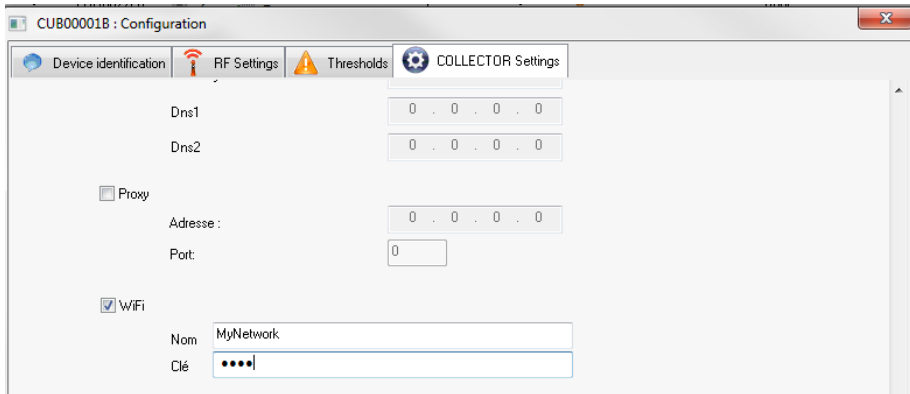
<u>Example:</u>

On the example below the CUB00001B is configured to be directed towards the database DBS000XXX.
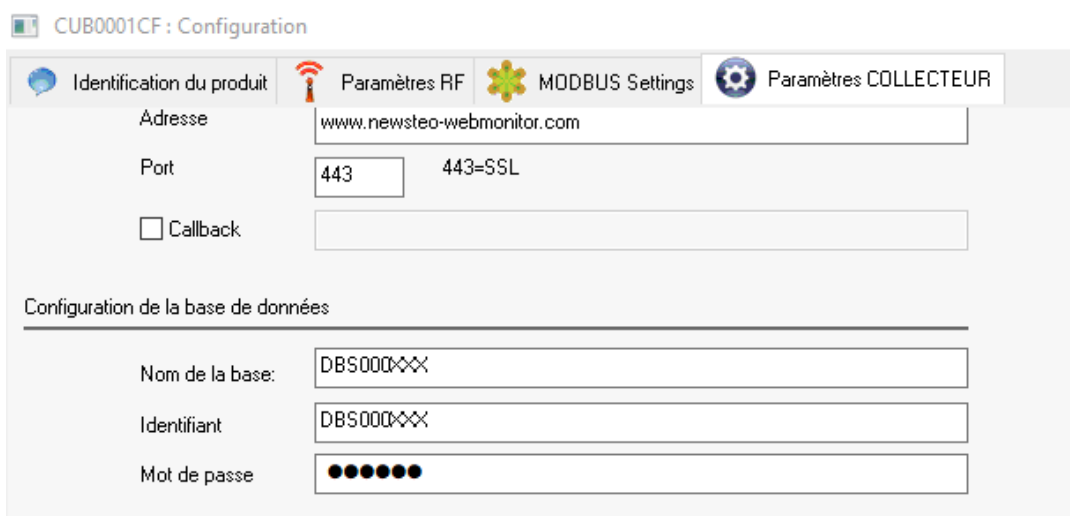
2.3.3 Third option: WiFi connection

On the same configuration tab, tick the Wifi option and enter your network name and password.

Restrictions regarding the network's name: the network's name should not include any space.

2.3.4 Other option: proxy / fixed IP address

On the same configuration tab, you can also enter a Proxy or modify the DHCP settings.

3 DIRECT WIFI CONNECTION WITH THE WPS OPTION, WITHOUT THE RF MONITOR SOFTWARE

Plug the CUB power supply. Connect also the provided radio antenna.

When the CUB boots, you have to wait about 1 minute before it starts and the screen displays something. The LED colour, at the rear of the product (on the side where the cables and antennas are connected), will change:

- red: the CUB is powered but has not boot yet
- orange: the CUB is correctly powered and is operating

You must now activate the search for the Internet box.

- Press the joystick, Up: the screen gives the details of the CUB configuration
- Then Right: allows access to Settings
- Go down until you reach the WIFI WPS menu and press the centre of the joystick to confirm.
- A message appears asking you to go to press the pairing button (WPS button) located on your Internet box. Perform the operation.

- The CUB remains waiting for pairing for 3 minutes. If the pairing is not done within this time, the CUB leaves the menu.
- After pairing, the CUB is connected to the network.

4 DIRECT CONNECTION IN 3G / 4G, WITHOUT THE RF MONITOR SOFTWARE

You can also transmit the measurements to your database on the Newsteo server through the cellular network (3G 4G). To do this, you must connect an external 3G or 4G modem to the CUB, either on the USB port of the CUB (3G 4G modem) or on the Ethernet port of the CUB or even through Wifi. The modem must have a SIM card to connect to the network. Newsteo can provide you with a 3G 4G USB modem and the associated SIM card, compatible with the CUB.
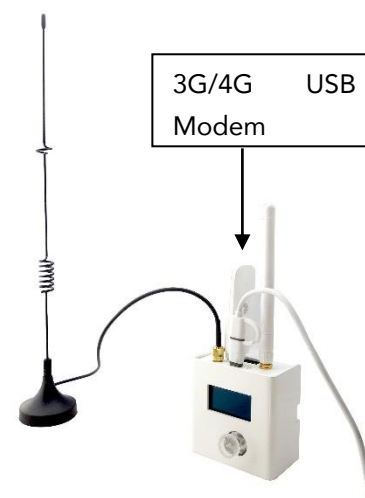
4.1 Configuration and modem connection

- When Newsteo provides the 3G 4G USB modem and the SIM card, there are no settings to make. Connect the 3G 4G modem to the USB port of the CUB.
- If it is a modem not supplied by Newsteo, the modem must be configured before connection to the CUB. Generally, you must insert the SIM card into the modem and then connect the modem to a PC. Via the software provided by the modem manufacturer, you must enter the network connection parameters: PIN code, APN, etc.

4.2 Starting up the CUB in 4G

4.2.1 3G 4G USB modem, connected to the USB port of the CUB

Plug the CUB power supply. Connect the provided radio antenna. Connect the 3G 4G modem to the USB port of the CUB.

When the CUB boots, you have to wait about 1 minute before it starts and the screen displays something. The LED colour, at the rear of the product (on the side where the cables and antennas are connected), will change:

- red: the CUB is powered but has not boot yet
- orange: the CUB is correctly powered and is operating

At the top left of the screen, the 4G icon will appear, signifying that you are connected to the cellular network.

4.2.2 External 3G 4G modem, connected to the Ethernet port

In this case, it is an Ethernet connection for the CUB. Go directly to chapter 5 Starting the CUB and the data loggers.

4.2.3 External 3G 4G modem, connected by Wifi

In this case, it is a Wi-Fi connection for the CUB. Perform the setting following the instructions in chapter *2 Pairing the CUB with RF Monitor*. If your modem has WPS, you can enjoy faster installation. Follow chapter *3 DIRECT WIFI CONNECTION WITH THE WPS OPTION, WITHOUT THE RF MONITOR SOFTWARE.*

5 STARTING THE CUB AND THE DATA LOGGERS

Note : For a first installation we recommend you keep your devices near the CUB when you start the loggers.

REMOVE THE RF-TO-USB KEY FROM YOUR PC AND CLOSE RF MONITOR

1. Your CUB is already powered. If not, plug the power supply
1.1 Check that the radio antenna of the CUB is connected (black antenna)
1.2 Plug the Ethernet cable (except if you have set a WiFi connection)

On the screen of the CUB, few icons are displayed
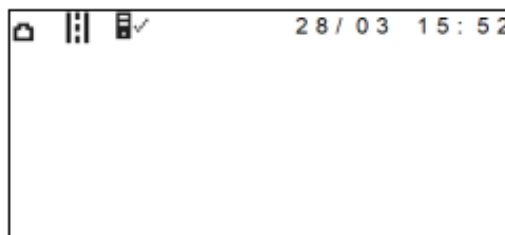
2. If the time and date appear, the CUB has successfully connected to the internet
3. Swipe the magnet on the data logger's magnet area
4. The data logger activates and transmits its information via radio signal to the CUB
   The data logger's description and data will be displayed on the screen

```
⌂📶📶  📄✓           28/03  15:54
Logger  1     22.3  °C  OK      0
```

5. Repeat the same operation with each data logger

```
⌂📶📶  📄✓           28/03  15:57
Logger  1     22.3  °C  OK      2
Logger  2     21.8  °C  OK      0
```

6. The CUB will connect to the Ethernet / WiFi network and will send the data logger's descriptor and measures to the server
7. After a few minutes the data logger and its measure will appear on Webmonitor application.
8. If the time does not appear at the top of the CUB, the CUB's internet connection has failed.

If you need to modify the settings of your data loggers (thresholds, measurement interval …), use the RF Monitor software.

6 CONNECTING TO WEBMONITOR

- Webmonitor application's link : www.newsteo-webmonitor.com
- Enter your credentials
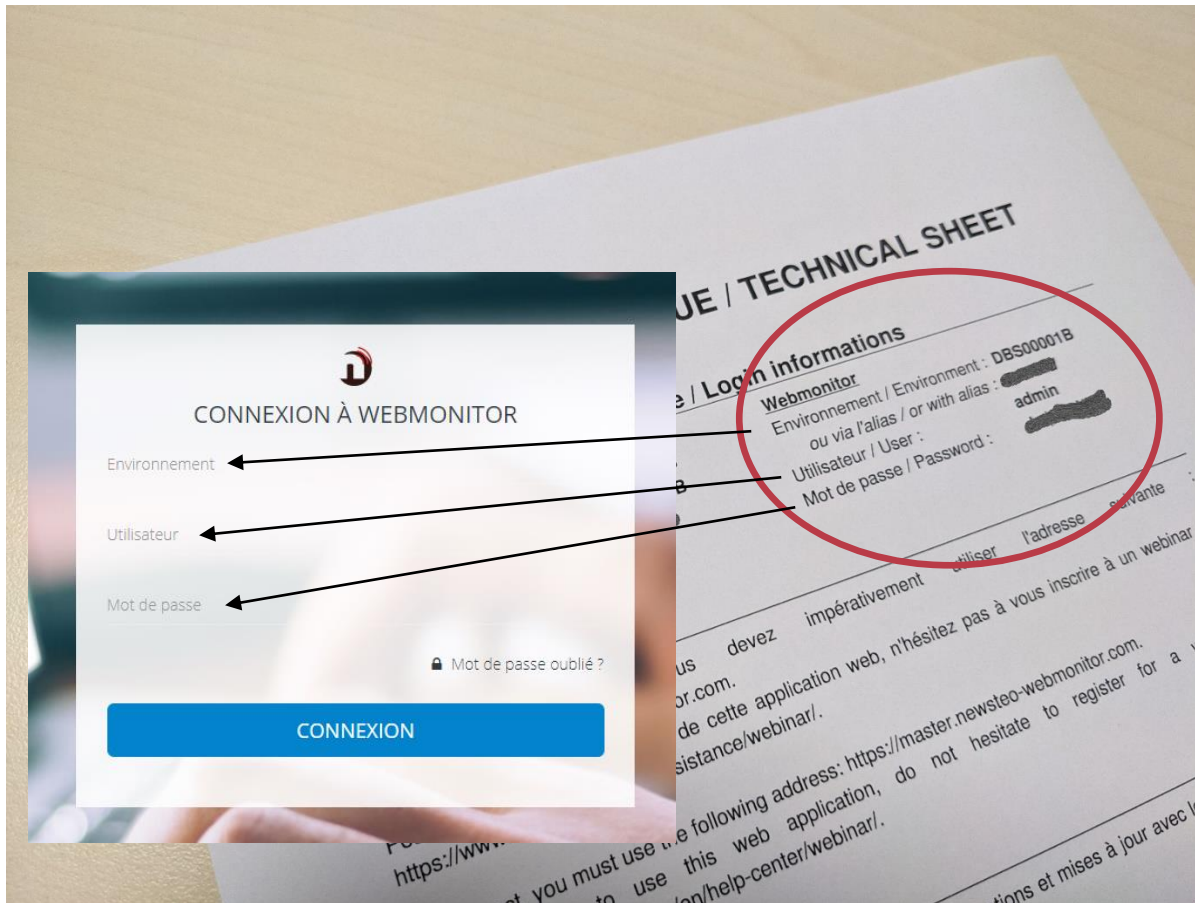
- After you have logged in, go to the *Devices* menu of Webmonitor. The CUB and the various data loggers are visible.
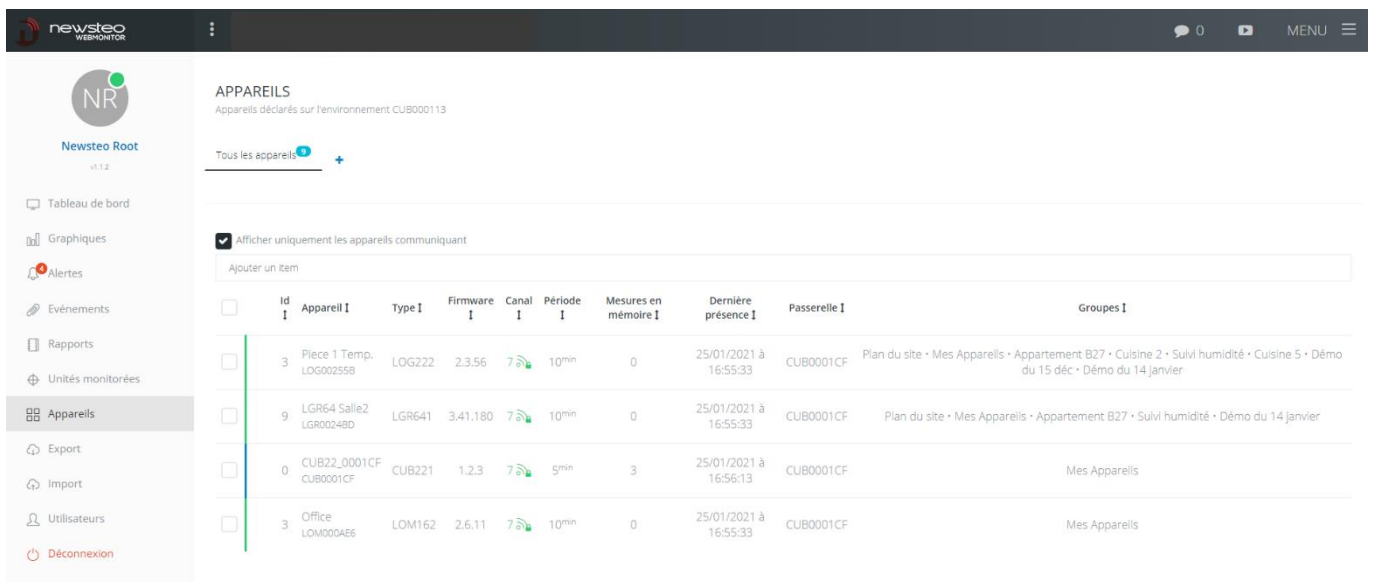
- If the CUB failed to connect to the server, the panel will remain empty.

To view the devices on the dashboard and make the Webmonitor interface your own, you can view a video tutorial by clicking on the video icon at the top right of the screen.

7 CUB'S DISPLAY

7.1 Icons of the top of the screen

On the top of the screen, icons help you to know the status of the device.

Ethernet / WiFi connection

    Ethernet cable connected – Connection to the server operating

    Wifi Quality level

4G   Cellular connection

    No Ethernet nor WiFi connection

Radio connection to a Data Logger

    Radio packet received

Radio connection to RF-to-USB Key (RF Monitor)

    USB Key detected – Setting through RF Monitor

    Attempt to detect a USB key - Period 10mn

Connection to server

    Server response OK

    Being processed

    Server response KO

The date and time are automatically updated when the CUB gets the network.

7.2 Logger's display

```
          28/03  15:57
Logger 1  22.3 °C  OK      2
Logger 2  21.8 °C  OK      0
    ❶         ❷      ❸    ❹
```
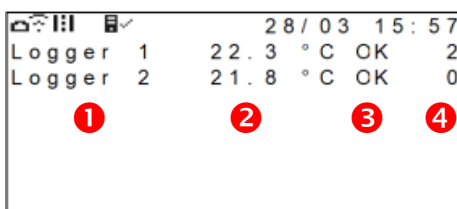
❶ Logger's name *(maximum of 10 characters)*

❷ Measurement of the first sensor

❸ Status of the Data Logger:

OK	Nominal operation
	Threshold Alert
	No communication for more than 4 hours
	Hibernate

❹ Number of minutes since the last measurement (i.e.: 7) or number of hours and minutes if the data logger has not been seen for more than 1 hour (i.e.: 1h07)

Restrictions regarding the display: on the first screen, only the first 7 data loggers are displayed. To see all the data loggers, use the joystick (press the right direction).
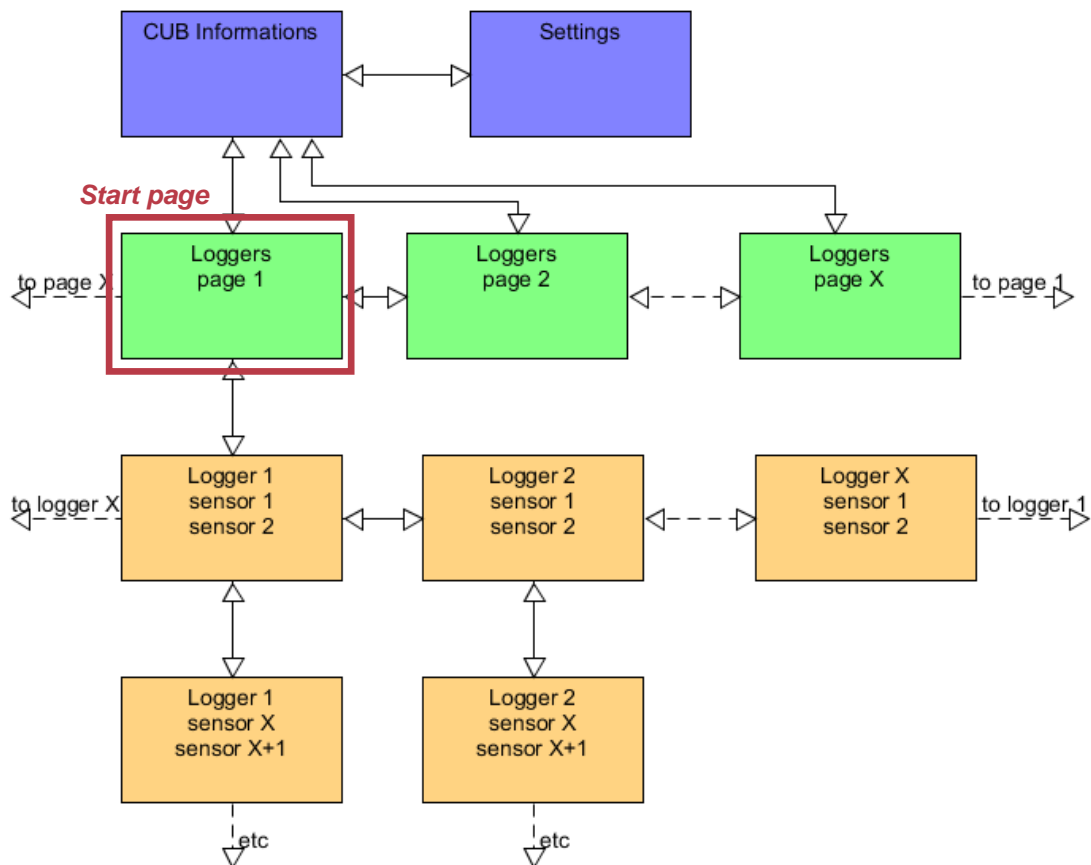
⚠️ **When a problem occurs with the network, the CUB won't upload any measure and won't receive any message from the server.**

8 JOYSTICK'S FUNCTIONS

- Short press on the joystick→ Allows to manually force the CUB to establish a connection with the server and to try to communicate by radio

8.1 Access to the menus

When you are on the Start Page:

- Up: gives details on the CUB setting
  - o   then Right: give access to the Settings
- Right: access to the second page of the data logger's list if there are more than 7 data loggers detected.
- Down: last measurement of each sensor and detailed information on the first data logger detected by the CUB
  - o   then Right / Left: access to the same data on the other detected data loggers

8.2   Colour of the joystick

The colour of the joystick light changes regarding the data loggers' status:

- Green: OK
- Blinking Red: a data logger is currently in threshold alert
- Orange: The power cable of the CUB has been unplugged. It will stop functioning soon
- Blue: a USB radio receiver has been detected. The CUB stops communicating with the data loggers to let the USB radio receiver exchange with the data loggers.

8.3   Settings

Go to the Settings menu:

- Up: gives the details of the CUB configuration
    - o   Then Right: allows access to Settings.

8.3.1   Contrast

Adjusts the contrast level of the screen.

8.3.2   CUB's buzzer

8.3.2.1   Activate / deactivate the buzzer

The CUB also integrates a buzzer. You can activate / deactivate it directly through the CUB's menu. Use the joystick: press Up and then Right access the menu allowing to activate or deactivate it. At the activation, the buzzer will buzz 2 times to acknowledge the activation.

8.3.2.2   Buzzer functioning

When the CUB's buzzer is activated, it will buzz when a data logger's measurement is outside the set thresholds.

To stop the buzzer, you need to acknowledge the alert by pressing the joystick.

8.3.3   LED alerts

Allows the joystick to be lit according to the alerts in progress.

8.3.4   Language

Allows you to change the menus' language.

8.3.5   Errors

Displays the technical errors that have appeared on the CUB: server errors (no internet access, improperly configured database …) or hardware errors.

8.3.6   WIFI WPS

Launches the Wi-Fi Protected Setup (WPS) pairing procedure.

8.3.7   MAC addresses

Displays the MAC addresses of the CUB.

9   SUPPORT

Please refer to our support dedicated website : www.newsteo.com, Help centre menu.

- For a remote support we use the application TEAMVIEWER

10 NEWSTEO ADDRESS

NEWSTEO S.A.S. - 93 avenue des Sorbiers – ZE Athelia 4- 13600 La Ciotat – France