XSENSE FACILITY MONITORING USER GUIDE

Version 1.1

Contents

1. Overview 3
1.1 Target Audience 3
1.2 Related Documentation 3
1.3 Definitions 3

2. Entering the System 4
2.1 Resetting Your Password 4
2.2 Updating Your Profile 4
2.3 Changing Your Password 5
2.4 Notification Policy 5

3. Preparing the System 5
3.1 Turning on CU 5
3.2 Preparing a Room 6
3.2.1 Adding Rooms 6
3.2.2 Changing Room Data 6
3.2.3 Adding Products 7
3.2.4 Setting Temperature and RH Thresholds 7
3.2.5 Viewing Room Status 7
3.2.6 Deactivating and Archiving Rooms 8
3.3 Configuring Rules for Alerts 8
3.3.1 Creating Rules 8
3.3.2 Sharing Rules 9
3.3.3 Viewing Alerts 10
3.3.4 Dismissing Alerts 10
3.3.5 Deactivating Rules 10
3.4 Preparing HiTags 10
3.4.1 Initializing HiTags 10
3.4.2 Entering HiTags into Xsense 11
3.4.3 Viewing Tag Status 11
3.4.4 Installing HiTags in Rooms 12
3.4.5 Renaming HiTags 12
3.4.6 Replacing HiTags 12

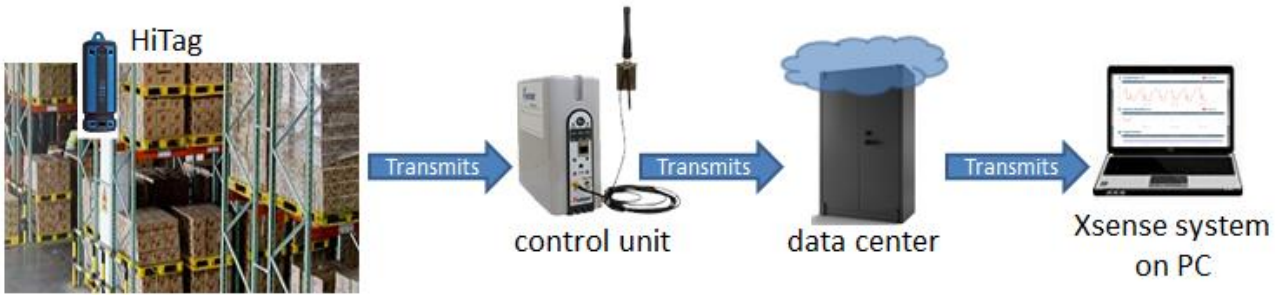
4. Monitoring a Room 12
4.1 Tracking Data 13
4.2 Viewing the Readings 14
4.2.1 Hiding and Showing Data 16
4.2.2 Creating Reports 16
4.2.3 Printing and Exporting the Data 17

5. Troubleshooting 18

Appendix A: Regulatory Information..... 19

1. Overview

HiTags® situated inside refrigerated rooms or storage spaces monitor temperature and relative humidity (when relevant). The tags transmit the data to control units, which sends the data to the Xsense browser-based system. You (the Xsense user) view the data as required, and get alerts according to the rules you define.



1.1 Target Audience

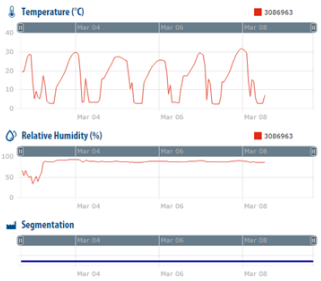
This user guide is intended for refrigeration storage management defined as Xsense regular users and local admins.

1.2 Related Documentation

These documents are available on the BT9 website (www.BT9-tech.com):

- Xsense Admin Guide
- Xsense Last Mile User Guide
- Xsense CU022 CELL Cellular Communications Unit Quick Setup Guide (PDF)
- Xsense CU2 LAN Local Area Network Communications Unit Quick Setup Guide (PDF)

1.3 Definitions

Term	Abbreviation	Explanation
Xsense system 	Xsense	A cloud-based management and reporting system. Accessible from a browser window, by users with authorization.

Term	Abbreviation	Explanation
control unit	CU	A small electronics box located at the storage site. The tags transmit their data (tag ID, and time-based temperature and RH readings) to the CU. The CU sends the data to the Xsense system, via a local area network (LAN or cellular network).
HiTags	Tag	Tags that use radio frequency (RF) to transmit data to the CU. Each tag is labelled with a seven-digit number.
relative humidity	RH	

2. Entering the System

To start Xsense:

1. Type your name and password using the information provided to you by BT9 support or your company admin.
2. Select your preferred language from the dropdown list.
3. Click **Sign In**.

You can see the name of your company on the left, as defined by BT9.

Once you have logged in, if you leave the system idle for longer than 30 minutes, you will be logged out.

2.1 Resetting Your Password

If you have forgotten your password or the password does not work:

1. You will see an error message. Click to request a new password.
2. Xsense sends a link to your email address. Click the link.
3. You will be prompted to type a password of your choice. It must be at least six characters long, and different from your current password.
4. Type it again to confirm.

2.2 Updating Your Profile

To change details, click the down arrow on the right of your user name (top right of the screen) and select **Update Profile**.

You can change these details:

- Your first and last names
- Your mobile phone number, format: +<country code> <area code>-<phone number >. Examples: +972 50-899-0274 or +1-408-422-5393. The number must start with a plus sign before the country code. The system ignores dashes and spaces.

- Temperature unit: Celsius or Fahrenheit
- Language for reports and notifications (select one from the list)
- Your time zone for reports and the notifications policy (select one from the list)
- Notification policy (explained below)

NOTE: You cannot change your email address.

2.3 Changing Your Password

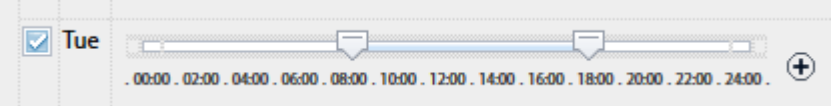
To change your password:

1. Click the down arrow on the right of your user name (top right of the screen) and select **Change password**.
2. Type a new password (and type it again to confirm your choice).

2.4 Notification Policy

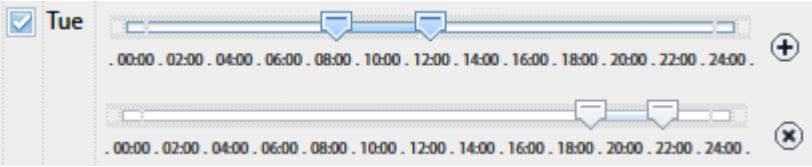
You can be notified when Xsense detects temperature/RH deviations. In this section you inform Xsense of how often you will be available to receive notifications. Your choices:

- Always send notifications
- Never send notifications
- Send notifications only at specific times and/or days. By default, the hours from 8:00 am through to 6:00 pm are indicated, as shown:

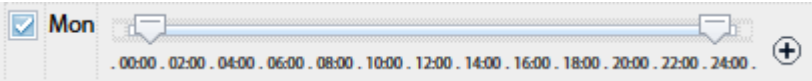


Examples:

- You are available to receive notifications twice a day on Tuesdays, so stretch the time indicators to cover the first zone, and then add another set of time indicators to cover the second zone by clicking the plus sign . This is the result:



- You want to receive alerts 24 hours a day on Mondays, so stretch the time indicators from the beginning to the end. This is the result:



3. Preparing the System

Set up the Xsense system for use by checking the control units, defining refrigerated spaces or rooms, and associating tags.

3.1 Turning on CU

Check that the CU is turned on by ensuring there is a green light on the operation panel.

Check that the CU is connected to the server by ensuring that the SRV LED is orange.

3.2 Preparing a Room

This subsection contains instructions on how to set up the Xsense software for a new room or storage area. Site locations and users will already have been defined for you by the company admin or BT9 personnel.

3.2.1 Adding Rooms

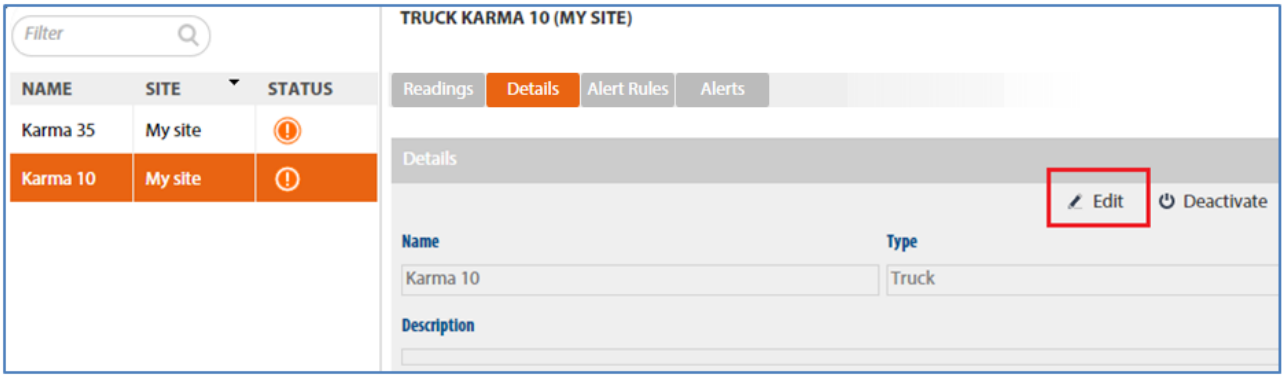
In the Xsense system, define new rooms:

1. Click the **Facility** button on the top of the screen and select **Monitoring**.
2. In the company tree on the left, navigate to the site where you want this room to be listed.
3. Click the **Create New** icon .
4. In the **Create Item** dialog, select the type of room (cooling tunnel, refrigerator, etc.) and give it a name. You cannot delete the rooms from the system afterwards; you can only deactivate or archive them. You can change these details later.
5. Optionally add a name.
6. Click **Save**. A new row is added to the list of rooms.

The room status is shown as an exclamation mark , indicating that there are no tags associated with it yet.

3.2.2 Changing Room Data

1. To change the room type and name or add a description:
2. Click the row containing the room.
3. In the panel on the right, click the **Details** tab.
4. Click the **Edit** icon and make your changes.
5. Click the **Save** icon .

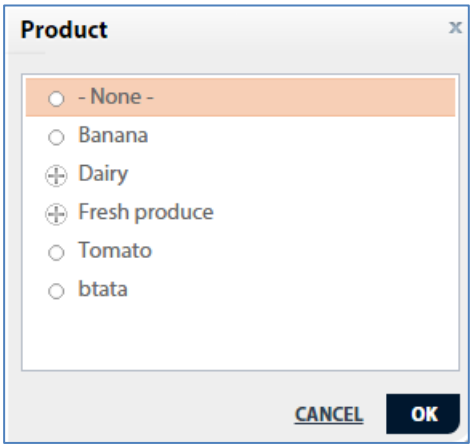


3.2.3 Adding Products

Select the product that the room will hold:

1. Click the **Details** tab.
2. In the **Product and Thresholds** area, click the **Edit** icon (on the right of the screen).
3. Under **Product**, click the down arrow:

4. You will see a list of products. For example:



5. If necessary, display more products by clicking the plus signs next to product group names. If the product you require is not listed, contact your company admin.
6. Click your product or product group, or select **None**.
7. Click the **Save** icon .

3.2.4 Setting Temperature and RH Thresholds

To define the allowed range of temperatures and relative humidity (RH) levels:

1. Click the **Details** tab.
2. In the **Product and Thresholds** area, click the **Edit** icon (on the right of the screen).
3. Under **Thresholds:**
   - Use the Xsense system default settings by checking **Use product default thresholds**. This checkbox is only active if there are default settings for this product.
   - Set custom values specifically for this room by typing the minimum and maximum values as required.
4. Click the **Save** icon .

3.2.5 Viewing Room Status

Possibilities for room status (in the **Status** column):

- <blank> = readings are received correctly
- No tags are associated with this room

- No readings in the last 90 minutes
- Warning of threshold breach
- **Not active** = this room is temporarily not in use (you can reactivate it in the **Details** tab, in the **Current Operational Status** section, by selecting **Active** from the drop down list)

The system tells you when the temperature in the room was last read. See the **Time** column.

3.2.6 Deactivating and Archiving Rooms

If a room is temporarily not in use and you do not wish to record data from its tags, you can make it inactive.

In the **Details** tab, in the **Current Operational Status** section, select **Inactive** from the drop down list. The status will change to **Not active**.

You can reactivate it later by selecting **Active**.

If a room is permanently removed from the possible storage spaces, the Xsense system still retains the data. On the right of the **Details** tab, click the **Archive** icon . **NOTE**: This action cannot be reversed. The room will disappear from the list. To view the archived data, at the bottom of the list of rooms on the left, check **Include archived**.

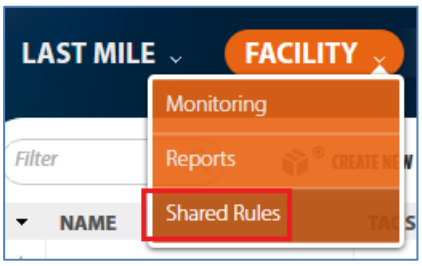
3.3 Configuring Rules for Alerts

You can define the rules that raise alerts in particular situations. When there is an alert, the Xsense system can send notifications by email or text message to specific users.

3.3.1 Creating Rules

To define rules:

1. Click the **Facility** button on the top of the screen and click **Shared Rules**:



2. In the tree on the left, choose the company node for which you want to create the report and click the **Add Rule** icon .
3. Select the type of alert to create:
   - **Threshold breach** – the temperature or RH reading is too low or too high. You must have thresholds defined for this alert to work.
   - **Low battery** – the signal sent from a tag is weak, indicating that the battery is low and the tag must be replaced.
   - **No readings from tag** – the CU is not receiving any signal from the tag or CU has issues with transmitting the data.
4. Click **OK**.
5. Define the parameters for the new rule:
   - **Name**: Optionally type a name for the rule.
   - **Notification subject**: Includes both an automatically generated message based on the options you chose and a customized message that you type here.
   - For the **Threshold Breach** alert type only:

- **Sensor types**: Temperature and RH readings: above the defined maximum, below minimum, or both.
- **Alert Delay**: When the specified time has elapsed since the threshold is breached, Xsense raises the alert. The measurements are in hours and minutes, and the options range from immediate notification/cancellation through to 24 hours.
- **Alert Cancel Delay**: When measurements return to normal for longer than the specified time, Xsense cancels the alert. The measurements are in hours and minutes, and the options range from immediate notification/cancellation through to 24 hours.

- For the **No Readings from Tag** alert type only: Select how much time has to elapse before an alert is sent.
- **Send notifications**:
  - Once only.
  - You determine how many times, at time intervals of up to six hours. The maximum is twelve emails and three text messages.
  - Until the event is resolved, at time intervals of up to six hours.
- **Send End-of-Alert Notification**: When the alert comes to an end and no more notifications will be sent, the system sends an end-of-alert notification.
- **Recipients**: Specify who is to receive the notifications. Click the **Add Recipients** icon to select users from the list of defined users. Indicate whether each recipient should receive the notification by email, text message (SMS), or both. You must specify at least one method of notification.

6. Click the **Save** icon .

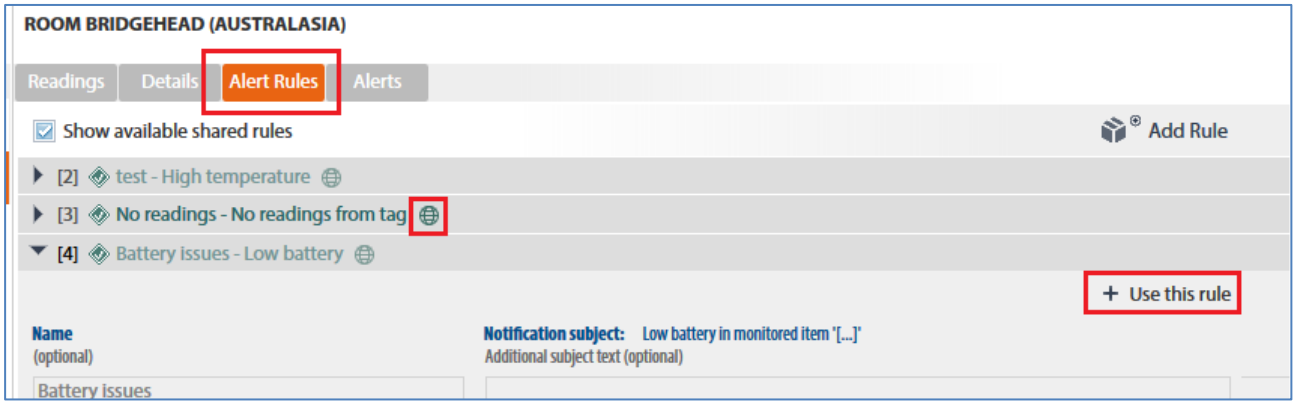
If you are unable to add at least one recipient, you can still save your rule and edit it later by clicking the **Edit** icon . The rule only becomes active when the required fields are filled in.

3.3.2 Sharing Rules

You can reuse rules so that the same alerts apply to different facilities.

To reuse a rule:

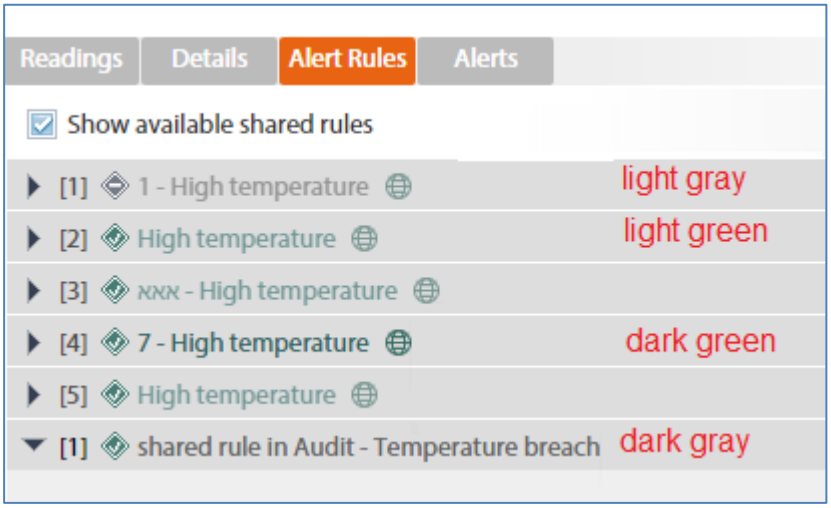
1. Click the **Facility** button on the top of the screen and click **Monitoring**.
2. Click the **Alert Rules** tab at the top of the window.
3. Check **Show available shared rules**. The system shows you all the shared rules.
4. To apply specific rules from the list, click the rule and click + Use this rule on the right of the window. A dark green symbol indicates that the rule is applied:



The text and symbol colors change according to the status of the rule. These are the possibilities:

- Light gray = inactive rule
- Light green = unused shared rule

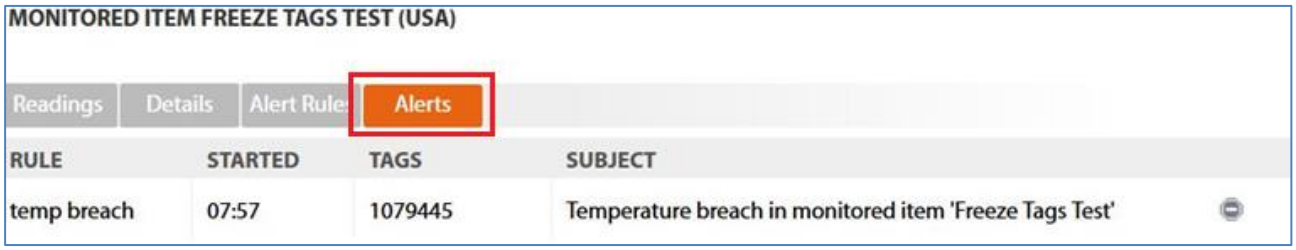
- **Dark green** = active shared rule
- Dark gray = private rule used by only one monitored room



3.3.3 Viewing Alerts

To view alerts, click the **Alerts** tab at the top of the screen.

You will see a list of alerts, such as in the example:



3.3.4 Dismissing Alerts

To dismiss an alert, click the **Dismiss** icon on the right of the alert.

3.3.5 Deactivating Rules

You can temporarily disable a rule by clicking the **Deactivate** icon .

Make the rule active again by clicking the **Activate** icon .

3.4 Preparing HiTags

This subsection includes instructions on starting to work with the tags.

3.4.1 Initializing HiTags

To activate new tags for first use:

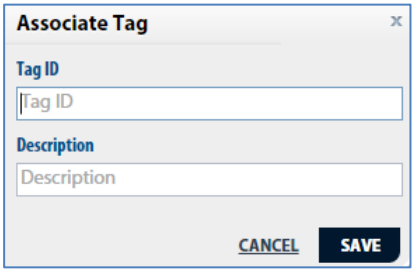
1. Press and hold the button for one second until the LED starts flashing.

2. Check that the indicator LED flashes slowly for 10 seconds. If not, the HiTag failed to activate.

3.4.2 Entering HiTags into Xsense

To add a new tag in Xsense:

1. Click a room entry (row) to open its details.
2. Click the **Readings** tab.
3. At the bottom of the screen on the right, click the **Associate Tag** icon . This dialog opens:



4. Type the seven-digit ID appearing on the HiTag.
5. Optionally type a description for easy identification; e.g., **Front** and **Back**, depending on the tag's location in the room. You can change this description later.
6. Click **Save**.

When you associate at least one tag with the room, the room status changes.

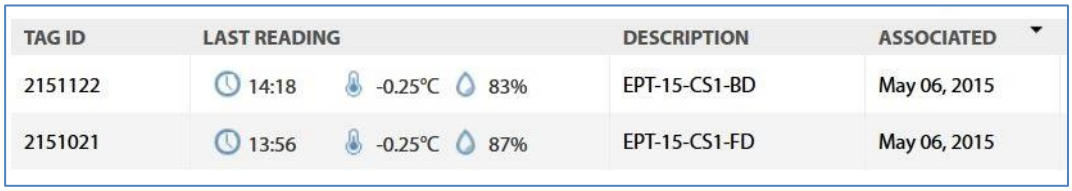
3.4.3 Viewing Tag Status

Possibilities for tag status:

- This tag has recently transmitted data; the icon changes to a red icon- when the tag does not transmit data for 90 minutes
- The most recent temperature reading
- The most recent RH reading
- A threshold has been breached

- The battery is low

For example, this is how a list of tags could look:



TAG ID	LAST READING	DESCRIPTION	ASSOCIATED
2151122	14:18 -0.25°C 83%	EPT-15-CS1-BD	May 06, 2015
2151021	13:56 -0.25°C 87%	EPT-15-CS1-FD	May 06, 2015

3.4.4 Installing HiTags in Rooms

If the room is not yet equipped with HiTags, take the tags to the room and attach them to the inside walls. Situate the tags according to their descriptions (e.g., the tag called “Front” is at the front of the room and the tag called “Back” is at the rear).

The tags transmit data to the CU at the frequency determined by the tag type. On your return to the office, verify that you see readings in Xsense. It might take up to 15 minutes for the tags to connect.

3.4.5 Renaming HiTags

To change the name for a tag:

1. In Xsense, click a room entry (row) to open its details.
2. Click the **Readings** tab.
3. At the bottom of the screen on the right, hover over the tag entry. When the Edit icon appears, click it.
4. Type the new description.
5. Click **Save**.

3.4.6 Replacing HiTags

To remove a tag associated with a room:

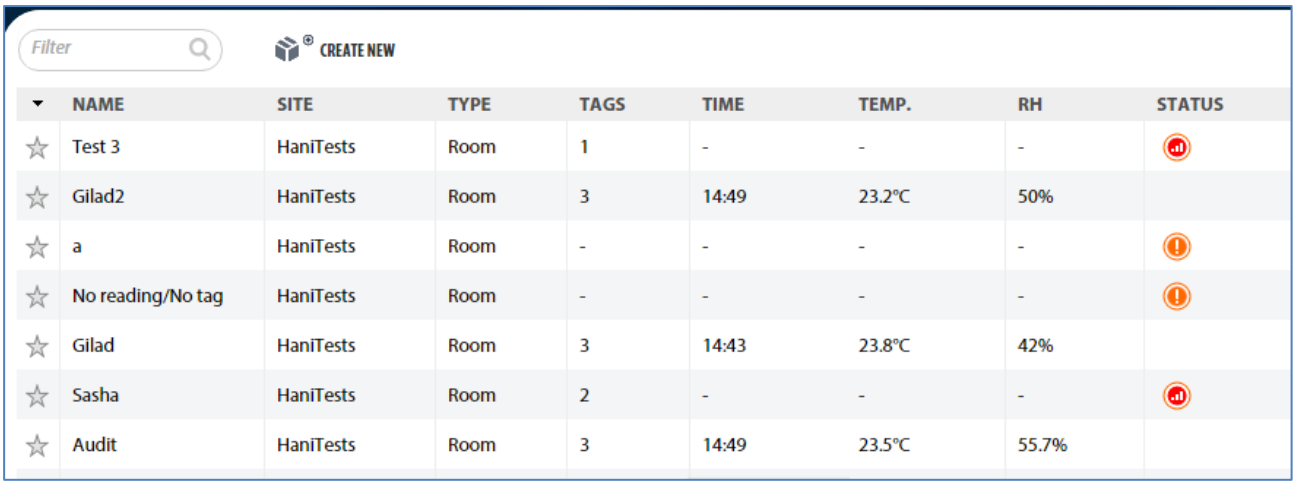
1. In Xsense, click a room entry (row) to open its details.
2. Click the **Readings** tab.
3. At the bottom of the screen on the right, hover over the tag entry. When the Delete icon appears, click it.
4. Confirm the removal by clicking **OK**.
5. Add a tag as explained above.

4. Monitoring a Room

To view the status of a particular room:

1. Click the **Facility** button on the top of the screen and select **Monitoring**.

You will see a list of rooms. For example, few rooms are listed here:

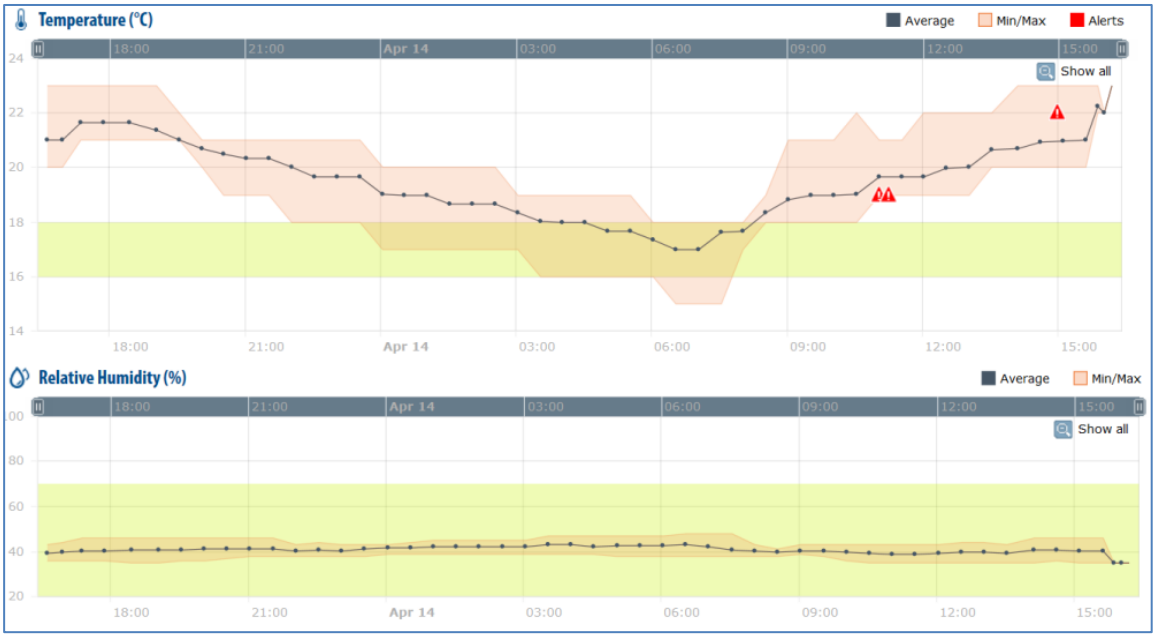


NAME	SITE	TYPE	TAGS	TIME	TEMP.	RH	STATUS
Test 3	HaniTests	Room	1	-	-	-	
Gilad2	HaniTests	Room	3	14:49	23.2°C	50%	
a	HaniTests	Room	-	-	-	-	
No reading/No tag	HaniTests	Room	-	-	-	-	
Gilad	HaniTests	Room	3	14:43	23.8°C	42%	
Sasha	HaniTests	Room	2	-	-	-	
Audit	HaniTests	Room	3	14:49	23.5°C	55.7%	

The **Status** column tells you the current status of the room.

The **Time** column indicates the last time the temperature was read in the room.

2. You can indicate your favorite rooms. Click the star ☆ at the left of any room names, and these entries will always appear at the top of the screen.
3. Click one of them. You will see the recent recordings for this room. For example, 24 hours of data is shown here, with indications of several alerts:



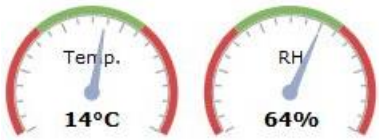
4.1 Tracking Data

The tags continuously record temperature and RH data, storing the data locally.

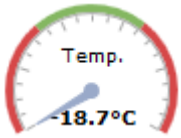
Threshold indicators on the top right of the screen show the current readings, averaged for all the tags for the selected room.

Examples:

No thresholds are defined



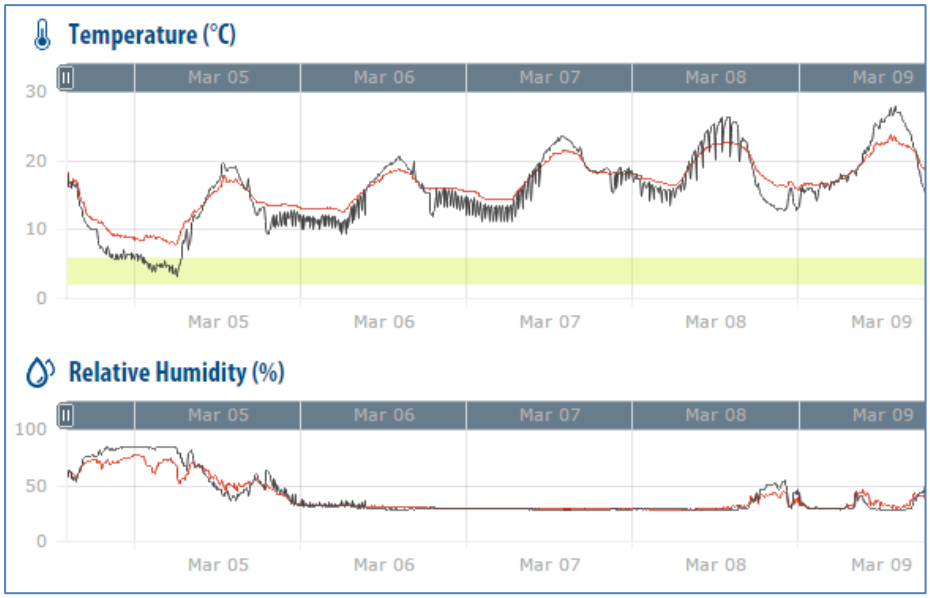
Both temperature and RH readings are currently within the defined allowable range.



The temperature reading is below the defined allowable range.

4.2 Viewing the Readings

View a graphical display of the temperature and RH readings recorded by the tags for this room:

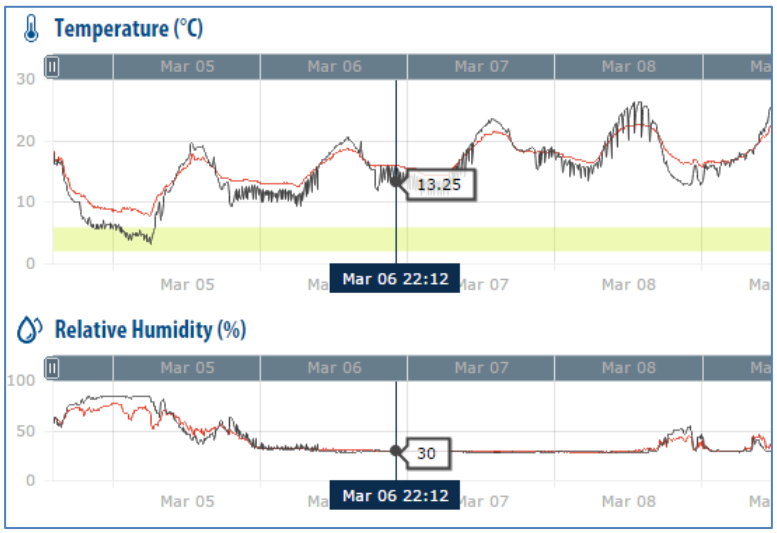


You can choose whether the charts display the readings for each tag individually (this is the default), or averages. To view averages, click the **Settings** icon above the charts, select **Show Averages** and click **Save**. The average readings from all the tags are indicated by a series of dark gray, linked dots.

Identify the data from each tag, compared to the ideal conditions determined for the room. The ideal temperature is indicated by a green band. Each tag is indicated by a color. For example,

means that tag #1092300 is shown on the graph in red and tag #1092302 is shown in gray.

To see precise measurements, move your mouse over the graphs. A vertical line appears, showing the data relating to the specific date and time. For example:

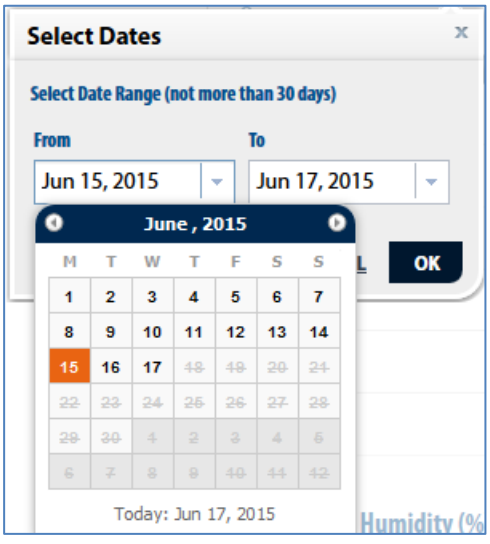


To see the graphics enlarged, click the zoom icon on the top right of the screen.

All the times and dates are marked on the segmentation graph:

- You can decide how much detail to display by clicking the time options (one day, two days, one week, two weeks, one month):

- To see data for a particular date or range of dates, click the **Custom Date Range** icon and select the **From** and **To** dates (Tip: To see dates from the previous month, click the left arrow.):

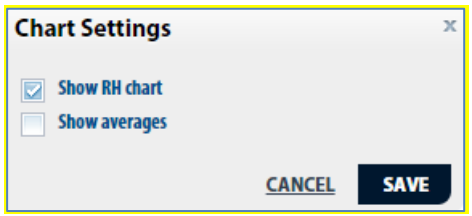


- To indicate a range of dates/times using your mouse, click the to/from range indicators on the timeline and drag them to the desired location, for example:

4.2.1 Hiding and Showing Data

To hide data from a specific tag on one of the charts, click the colored square preceding the tag ID. The tag ID will be grayed out, like this: 3422345(. Click it again to display the data.

To hide RH data, click the **Settings** icon on the top right of the screen. In the **Chart Settings** dialog, uncheck **Show RH chart** and click **Save**.



4.2.2 Creating Reports

You can create a regularly scheduled Periodic Facility Report or a Readings Log Report:

1. Click the **Facility** button on the top of the screen and click **Reports**.
2. In the tree on the left, choose the company node for which you want to create the report and click the **Create New** icon . The report will include all items under this node for which you have Read permission.
3. Select the report type (e.g., the **Periodic Facility Report**) and the **Schedule** frequency (monthly, weekly, daily, or never).
4. Type the name of the report and click **Save**.

Xsense creates the report; for example:

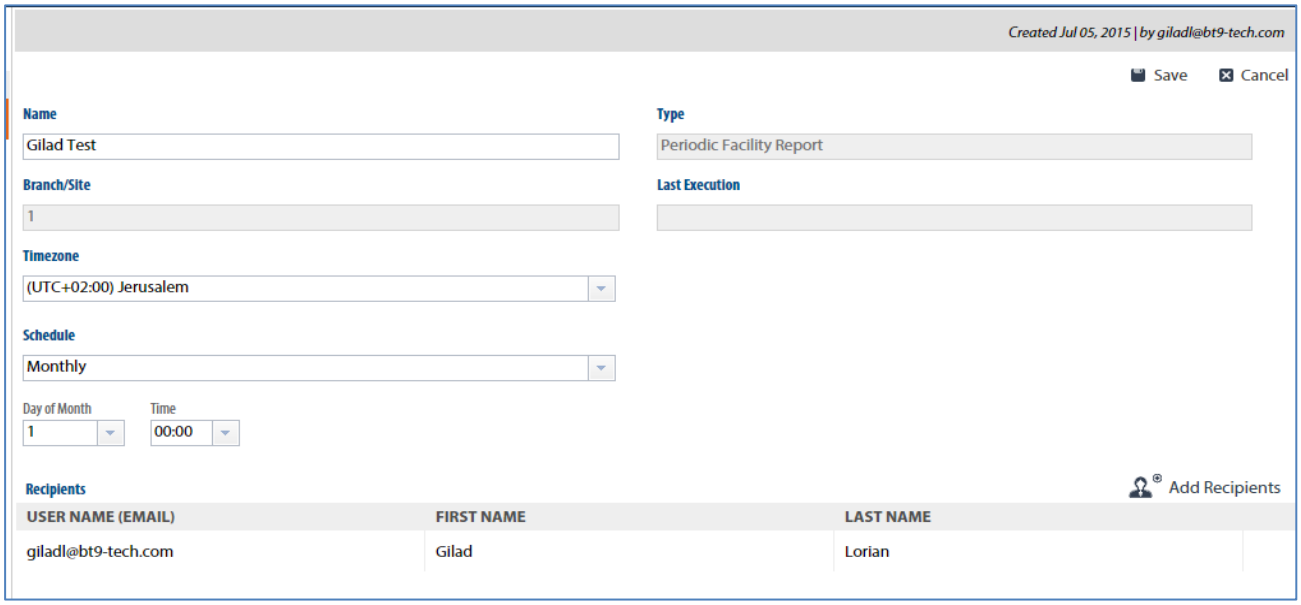
NAME	TYPE	BRANCH/SITE
Gilad Test	Periodic Facility Report	1

To change any of the details you already configured, define when the report will run, and specify users to receive the report:

1. Select the report.

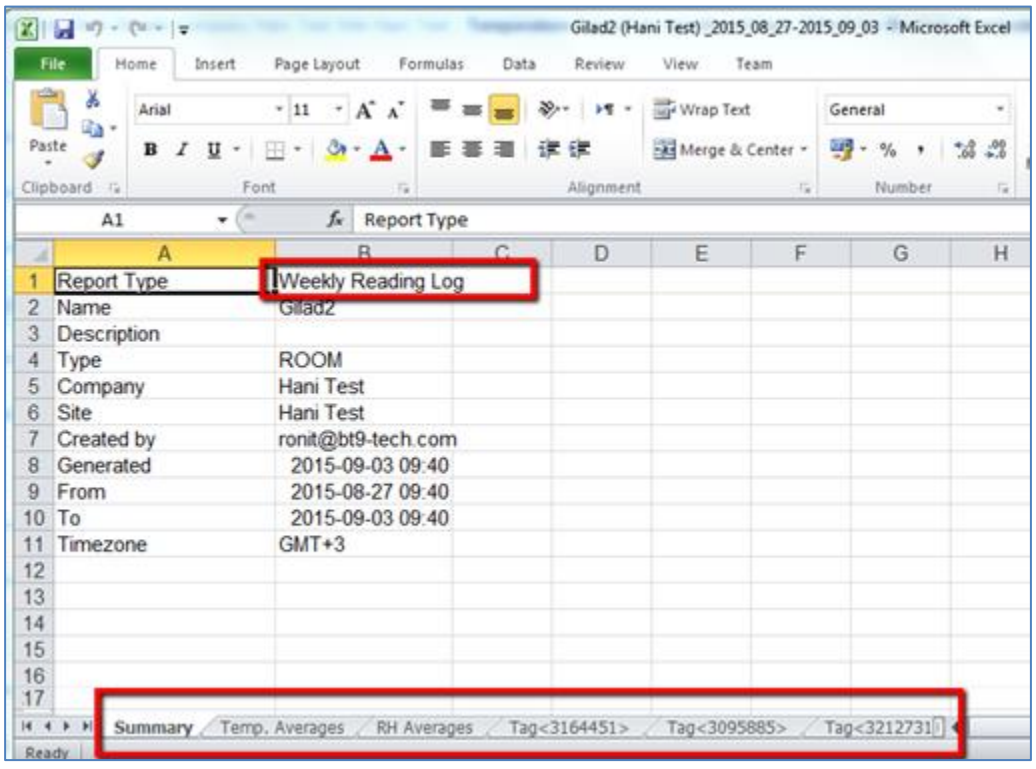
   The report shows for which site the reports are relevant, the type of report, and when it was last run. You cannot edit this information.

2. Click the **Edit** icon on the top right of the screen.
3. Optionally change the name of the report and how frequently to schedule reports generation.
4. Set the time zone.
5. Determine which day of the week or month to generate the report, and at what time.
6. Add the names of people to receive the report by clicking the **Add Recipients** icon and selecting users. The users must have permission for at least one site for which you have permission.
7. Click the **Save** icon .



When the scheduled time arrives, Xsense generates the report and sends it to the recipients' email.

The email message contains a file. For example, this is the **Readings Log Report**. Note the tabs at the bottom of the window:



4.2.3 Printing and Exporting the Data

To print out segments of particular interest, click the icon on the top right of the screen.

To export the data to PDF or Excel, click the or icons on the top right of the screen. Select the range of dates to export and click **OK**. You can get data retroactively dating back one year.

You can also export a list of monitored rooms to Excel by clicking the icon on the top right of the room list.

5. Troubleshooting

Problem: No new data is shown on Xsense.

Cause: The CU is not working properly or batteries in tags have run down.

Solutions: Regarding the CU, contact BT9 support personnel. Regarding the tags, if you need to replace a tag with a new one, activate the tag as explained in Initializing HiTags. In Xsense, find the room, delete the old tag, and type in the ID of the new tag.

Appendix A: Regulatory Information

This section contains information pertaining to the system hardware.

HiTag Regulations

The HiTag® device (FCC ID: QYGHITAG2) complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference and
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Warning: Modifications not expressly approved by the manufacturer could void the user authority to operate the equipment under FCC Rules.

NOTE: THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

CAUTION: BATTERY IS NOT REPLACEABLE.

Control Unit Regulations

See the documents listed in the Related Documentation section.