

EnOcean switch

Best practices for efficient setup

Application note

1 August 2023	SN-203 rev. 6.1
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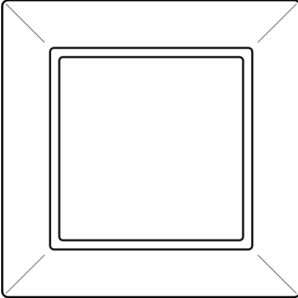
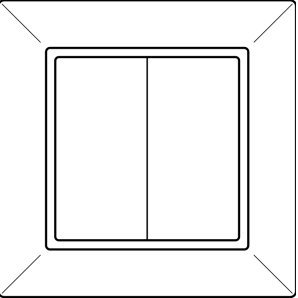
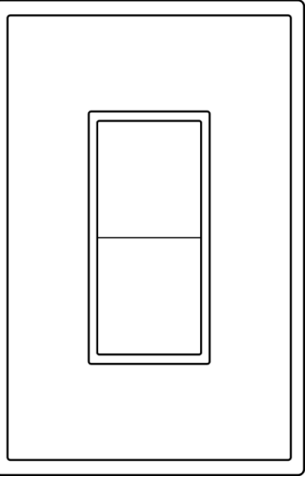
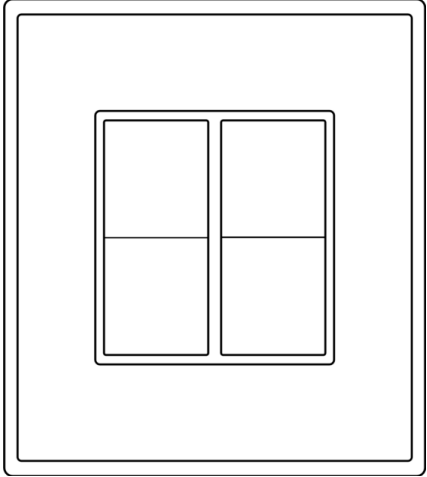

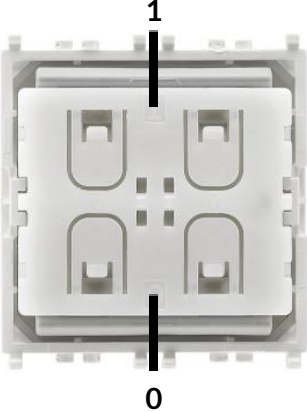
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1. Overview

A self-powered Bluetooth EnOcean switch is used for manual control in Silvair lighting control systems based on a Bluetooth mesh network. To use manual control, at least one device with Silvair firmware in the network must act as an EnOcean adapter for the switch. The device is configured as an adapter in the Silver mobile app.




1.1 EnOcean switch models

Easyfit Single (EWSSB)	Easyfit Double (EWSDB)	Easyfit Single (ESRPB)	Easyfit Double (EDRPB)
			
The Silvair lighting system supports mainly switches based on the EnOcean BLE Switch Module (PTM 216B and PTM 215B).			EnOcean BLE Switch Module (PTM 216B / PTM 215B)
 To make sure that switches operate as intended, install the EnOcean BLE Switch Module so that the '1' mark is above the '0' mark.			
To find more Silvair-enabled EnOcean switches, go to https://silvair.com/ecosystem/products/ .			

1.2 QR code

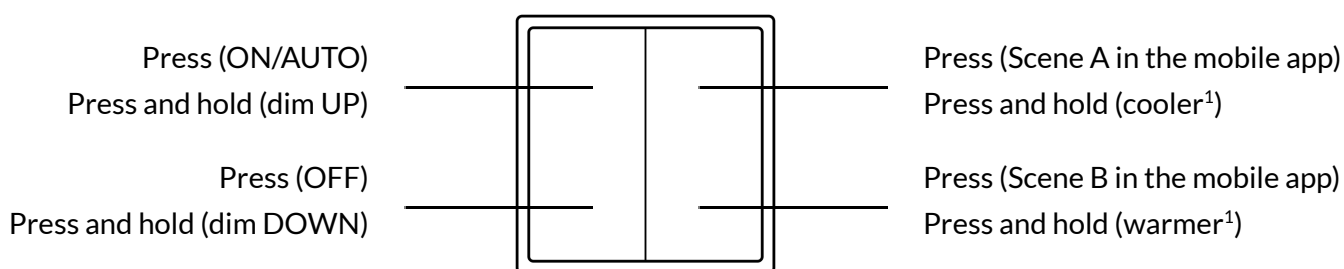
Each Silvair-enabled EnOcean switch has a QR code that is used to assign the switch to a device in the Bluetooth mesh network. After the device is assigned to the switch using the Silvair mobile app, it acts as an EnOcean adapter. The adapter receives data packets from the switch, changes them into mesh messages, and sends the messages further, which allows the switch to communicate with the network.

For more information about communication between the EnOcean switch and the EnOcean adapter, see [Selecting a device to act as an EnOcean adapter](#).


<p>Example of a working QR code</p>	<p>Example of a non-working Data Matrix code. Contact https://www.enocean.com/en/about-us/contact/ for workarounds.</p>
	
<p> Before buying the switch consult your supplier to make sure that the given model has a correct QR code.</p>	

1.3 Operation

The left button is used for manual control (ON/AUTO / OFF) and dimming (dim UP/DOWN). The right button (if available) is used to recall scenes (scene A, scene B; if configured in the mobile app) and control color temperature (cooler/warmer).



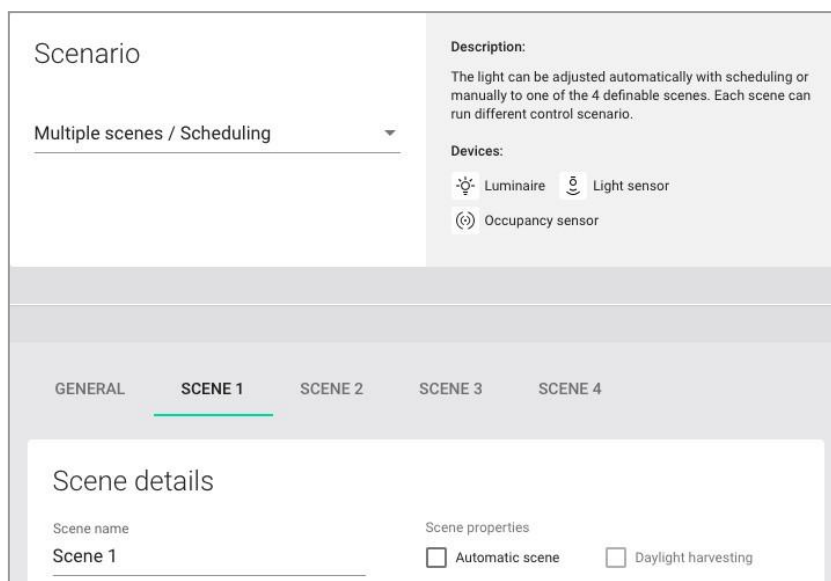
 After you set the color temperature, it will be used for all manual and automatic modes.

 If the *Multiple scenes* scenario is selected for the zone, the *press* action of the right button will be different. For more information, see [Operation with a multiple scenes scenario](#).

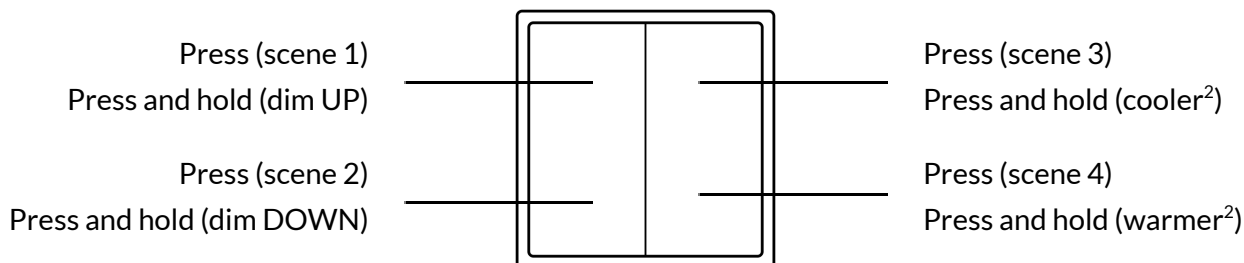
¹ Only for zones with compatible tunable white fixtures and Silvoir firmware version 2.15 or later. Otherwise, the *press and hold* action of the right button will not work.

1.4 Operation with a *Multiple scenes / Scheduling* scenario

EnOcean switch operates differently when used with a *Multiple scenes / Scheduling* scenario that is set in the Silvair web app. The scenario allows you to define up to four scenes to recall. Each scene can specify a different automatic behavior, for example with different light levels to maintain. The scenes can be recalled manually with the EnOcean switch or scheduling.



In the *Multiple scenes / Scheduling* scenario, the *press* action is used to recall scenes (scene 1 and scene 2, and if the right button is available: scene 3, scene 4). The *press and hold* action of the left button is used for dimming (dim UP/DOWN). The *press and hold* action of the right button (if available) is used to control color temperature (cooler/warmer).



² Only for zones with compatible tunable white fixtures and Silvair firmware version 2.15 or later. Otherwise, the *press and hold* action of the right button will not work.

1.5 Example behavior of an EnOcean switch in various scenarios

Scenario	EnOcean switch behavior
<p>Manual control</p> <p><i>All luminaires are switched on and off manually with a wall switch</i></p>	<ul style="list-style-type: none"> ● No automatic control. The light is adjusted only with the switch buttons. ● Manual ON/AUTO – sets the light to the <i>Default light level</i> specified in the profile settings. ● Manual OFF – sets the light level to 0%. ● After changing the light behavior (OFF, dim UP, dim DOWN, Scene A, or Scene B), the previous settings can be restored only manually. ● <i>Manual override timeout</i> is not available.
<p>Occupancy and Vacancy scenarios</p> <p><i>Occupancy: All luminaires are switched on when motion is detected and switched off when no motion is detected for a given time.</i></p> <p><i>Vacancy: All luminaires are switched on manually with a wall switch and switched off automatically when no motion is detected for a given time.</i></p>	<ul style="list-style-type: none"> ● Pressing ON/AUTO sets the light to the <i>Occupied</i> mode level, which is maintained for a defined <i>Timeout</i>. ● <i>Manual override timeout</i> is available. <ul style="list-style-type: none"> ○ Triggered after changing the light behavior (OFF, dim UP, dim DOWN, Scene A, or Scene B). ○ Timer is reset after detecting occupancy in the room. <p>Example: <i>Manual override timeout</i> is set to 10 minutes. User presses OFF and leaves the room.</p> <ul style="list-style-type: none"> ■ Case 1: Occupancy in the room is not detected for 10 minutes. The light goes back to the default settings. ■ Case 2: Occupancy in the room is detected after 3 minutes. The timer is reset and starts counting down again from 10 minutes.
<p>Multiple scenes / Scheduling</p> <p><i>The light can be adjusted automatically with scheduling or manually to one of the four definable scenes. Each scene can run a different control scenario.</i></p>	<ul style="list-style-type: none"> ● Four scenes recalled by pressing the switch buttons. ● Dimming available by pressing and holding the left switch button. ● <i>Manual override timeout</i> is not available.

Manual override timeout defines a time of vacancy after which the light goes back to its default settings.

For example, if any scene is recalled using the switch and the defined time of vacancy passes, the light goes back to its default settings.

For more information about scenarios, see [SN-200 Silvair Commissioning user manual](#).

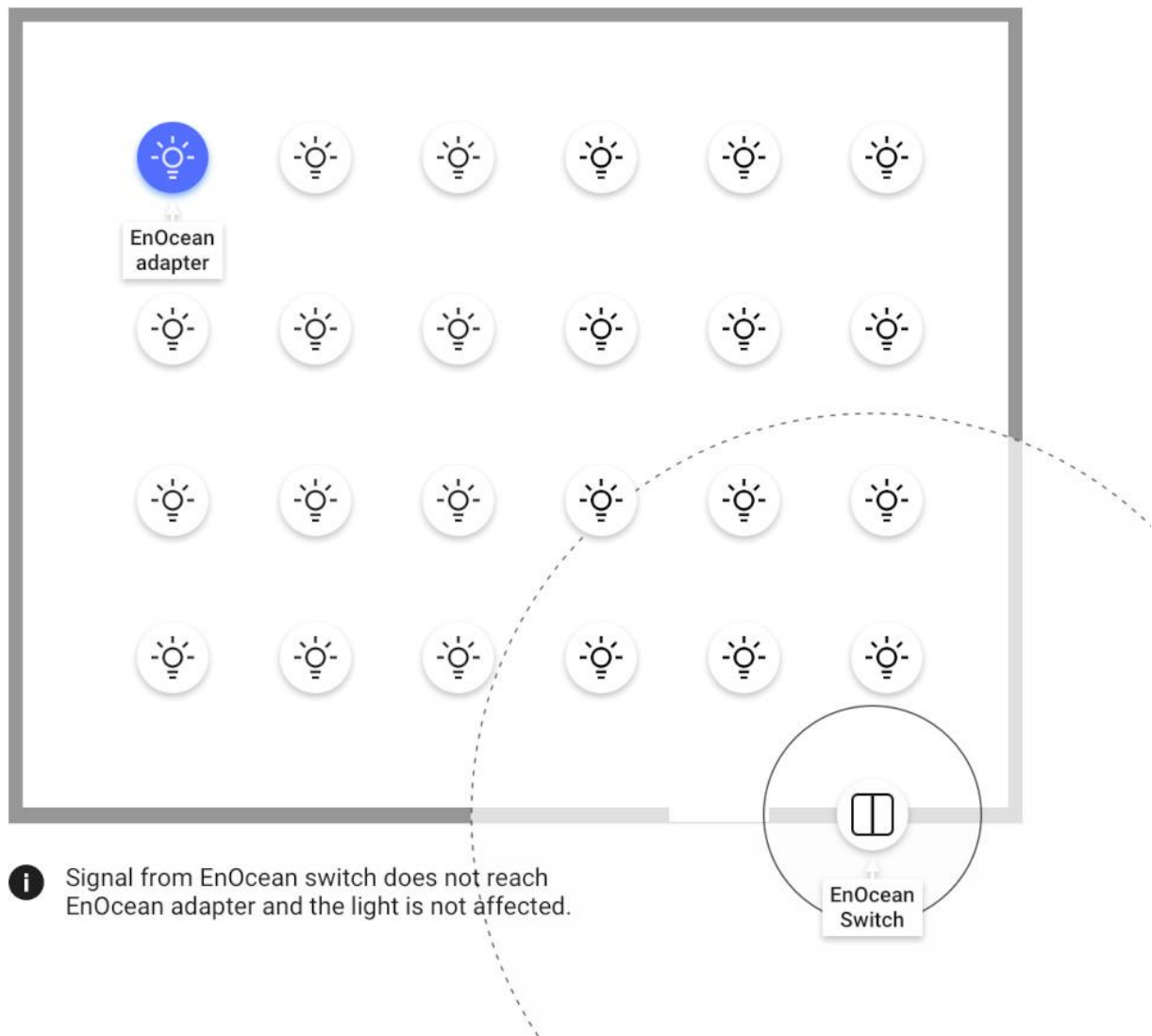
2. Assigning an EnOcean switch to a zone

2.1 Selecting a device to act as an EnOcean adapter

Select a device that is close enough to the switch. In such a case, the device that acts as an adapter can receive data packets, change them into mesh messages, and send the messages to the devices in the network. A short distance between the adapter and the switch will help guarantee better performance of the switch.





If the adapter is too far away from the switch, it cannot receive data packets, change them into mesh messages, and send the messages to the devices in the network.





2.2 Setting the device to act as an EnOcean adapter


Silvair mobile app

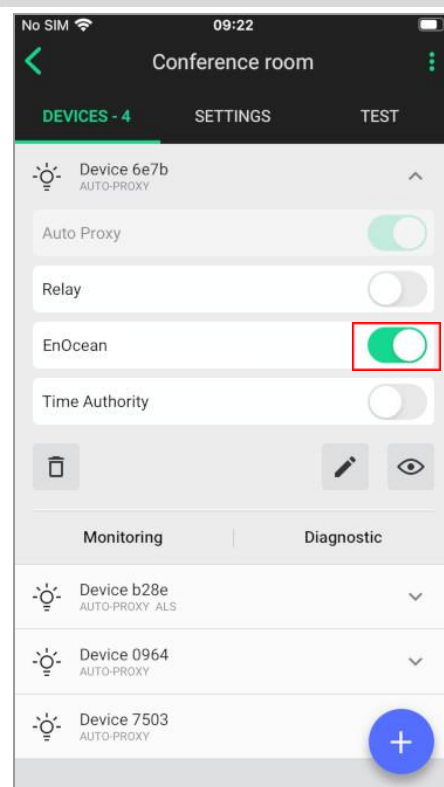
1. Open the Silvair mobile app and go to your project, area, and zone.
 2. On the **Devices** tab, tap the device you have selected.
-
3. Tap the **EnOcean** toggle bar to set this device as an EnOcean adapter.
 4. If the app asks for permission to access the camera, tap **OK**.
 5. Point the camera at the QR code on the back of the EnOcean switch or on its packaging. The app will read the code and configure the switch.
 6. Use the buttons of the EnOcean switch to make sure that the devices in the mesh network respond as intended.

 To find the particular device, tap  next to the device name to make sure that the device flashes.


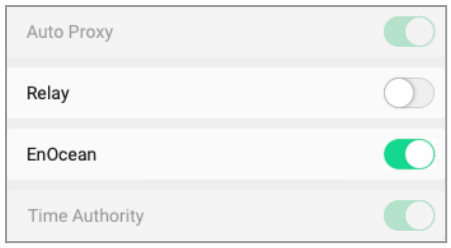

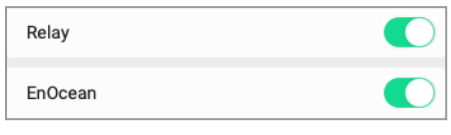


 If the EnOcean switch is too far from the device selected as the EnOcean adapter, the luminaires in the zone will not respond.

 We recommend setting two devices as an EnOcean adapter in the zone. Thus, if one device fails, the EnOcean switch will still communicate with the mesh network using the second device. But the more adapters you set, the more network traffic comes from the switch, which decreases the quality of the mesh network.

 If you move the EnOcean switch to a different zone, disable all EnOcean adapter functions in the previous zone.



2.3 Using an EnOcean adapter also as a proxy, relay, or time authority

<p>If your network supports an auto proxy function, you can use a device as an EnOcean adapter and as an auto proxy at a time. You can also combine EnOcean adapter, auto proxy, and time authority functions.</p>		
<p>Do not use a device as an EnOcean adapter and as a relay or static proxy at a time. If you combine these functions, there will be issues with the reception of packets from the EnOcean switch. Thus, the devices in the mesh network may not respond as intended when the switch is pressed.</p>		
		

2.4 Controlling multiple zones using one EnOcean switch

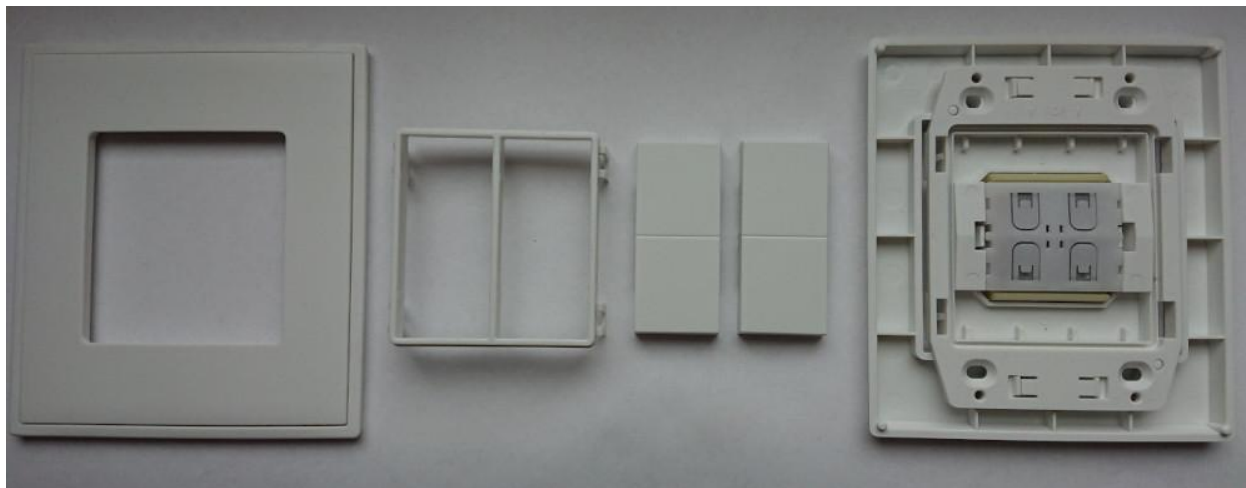
If you want to control multiple zones using one switch, we highly recommend using the zone linking feature available in the Silvair web app.

You can also assign a switch to more than one zone but it makes sense only when all the zones are close to the switch. If a zone is far away from the switch or on a different floor, signals from the switch will not reach the adapter in this zone.

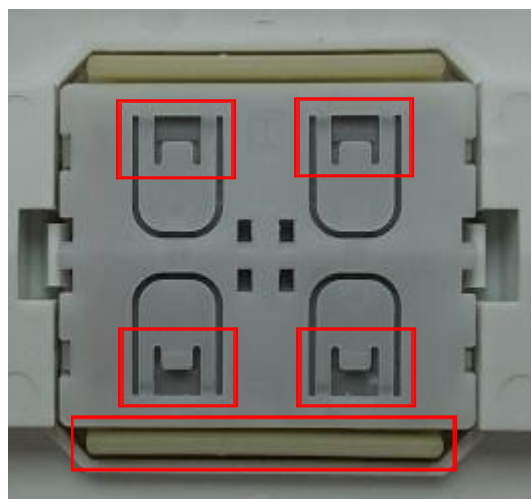
3. Resetting the switch

If an EnOcean switch has been reconfigured to use nonstandard channels, it may not work correctly with the Silvair firmware. To make the switch work with the Silvair firmware again, reset the switch to its factory settings as follows.

1. Disassemble the cover and the buttons.



2. At the same time press and hold four button contacts and the yellow tab. Make sure that you hear a click when you press the tab.
3. Wait at least 10 seconds and release the contacts and the tab.
4. Assign the switch to a zone by [setting a device as an EnOcean adapter](#).





4. Troubleshooting

4.1 Luminaires respond even though this EnOcean switch has been moved to a different zone

1. In the **Silvair mobile app**, go to the zone where the luminaires responded.
2. On the **Devices** tab, find all luminaires with an “EnOcean” label under the device name.
3. For each of such luminaires, tap the **EnOcean** toggle bar to disable the EnOcean adapter function.
4. In the [Silvair web app](#), make sure that this zone is not linked to the zone with this EnOcean switch.


4.2 All luminaires do not respond

1. Make sure that there is a device that acts as an EnOcean adapter in the zone.
 - a. Select a device to act as an EnOcean adapter. This device must be close enough to the EnOcean switch.
 - b. On the **Devices** tab, tap the device, and then tap the **EnOcean** toggle bar to set this device as an EnOcean adapter. Make sure that this device does not act also as a *static proxy* or a *relay*.
 - c. Tap  next to the device name to make sure that the device flashes.
2. Make sure that there is no warning on the **Devices** tab. If there is a warning, tap **Configure all** or **Repair**.
3. In the **Silvair mobile app**, go to the **Test** tab and tap  to make sure that all devices flash.

4.3 Sometimes all luminaires do not respond

1. In the **Silvair mobile app**, go to the **Devices** tab and make sure that the device that acts as an EnOcean adapter does not act also as a *static proxy* or a *relay*.
2. Set a different device to act as an EnOcean adapter. This device must be close enough to the EnOcean switch.
3. Use a different Bluetooth EnOcean switch.
4. Optimize the performance of your network (see [SN-202 Optimizing mesh network performance](#)).

4.4 Some luminaires do not respond

1. Make sure that the non-responding luminaires are connected to the power source and installed according to their installation guide.
2. Make sure that the non-responding luminaires are added to the zone.
 - a. In the **Silvair mobile app**, go to the **Devices** tab.
 - b. Tap + and add the luminaires to the zone.
3. On the **Test** tab, tap  next to the name of each non-responding luminaire to make sure that the luminaires flash.
4. Optimize the performance of your network (see [SN-202 Optimizing mesh network performance](#)).
5. If the non-responding luminaires are in a different zone, it can be a problem with zone linking. Refer to *Zone linking recommendations* section in the [SN-200 Silvair Commissioning user manual](#).

4.5 Sometimes some luminaires do not respond

1. Set a different device to act as an EnOcean adapter. This device must be close enough to the EnOcean switch.
2. Optimize the performance of your network (see [SN-202 Optimizing mesh network performance](#)).

5. Document revisions

Revision	Date	Editor	Changes
6.1	1 August 2023	GM	Added information about the support of the EnOcean PTM 216B module. Replaced two images of two switches with one image of switch buttons. Clarified how EnOcean adapter works.
6.0	29 September 2022	GM	The entire document has been redacted. Improved Troubleshooting section. Updated the screenshots. Corrected the terminology. Fixed links. Removed unnecessary content. Implemented template rev. 1.2.
5.5	29 October 2021	AS	Updated EnOcean switch support for Multiple Scenes scenario .
5.4	27 May 2021	LR, ZZ	Added the Document Revisions section, updated document references, and made corrections regarding mesh node functions (EnOcean adapter, proxy, relay).

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