

# XVTS-Configuration Software

## User Manual

EIO0000005730.01

09/2025



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# Safety Information

## Important Information

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.





The addition of this symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

 <b>DANGER</b>
<b>DANGER</b> indicates a hazardous situation which, if not avoided, <b>will result in</b> death or serious injury.

 <b>WARNING</b>
<b>WARNING</b> indicates a hazardous situation which, if not avoided, <b>could result in</b> death or serious injury.

 <b>CAUTION</b>
<b>CAUTION</b> indicates a hazardous situation which, if not avoided, <b>could result in</b> minor or moderate injury.

<b>NOTICE</b>
<b>NOTICE</b> is used to address practices not related to physical injury.

## Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

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# About the Document

## Document Scope

This documentation is a reference for the XVTS-Configuration Software used to configure USB XVTS tower lights.

## Validity Note

Original instructions and information given in the present document have been written in English (before optional translation).

This documentation is valid for version 1.0 of XVTS-Configuration Software.

## General Cybersecurity Information

In recent years, the growing number of networked machines and production plants has seen a corresponding increase in the potential for cyber threats, such as unauthorized access, data breaches, and operational disruptions. You must, therefore, consider all possible cybersecurity measures to help protect assets and systems against such threats.

To help keep your Schneider Electric products secure and protected, it is in your best interest to implement the cybersecurity best practices as described in the [Cybersecurity Best Practices](#) document.

Schneider Electric provides additional information and assistance:

- [Subscribe to the Schneider Electric security newsletter.](#)
- [Visit the Cybersecurity Support Portal web page to:](#)
  - [Find Security Notifications.](#)
  - [Report vulnerabilities and incidents.](#)
- [Visit the Schneider Electric Cybersecurity and Data Protection Posture web page to:](#)
  - [Access the cybersecurity posture.](#)
  - [Learn more about cybersecurity in the cybersecurity academy.](#)
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## Available Languages of the Document

The document is available in these languages:

- [English \(EIO0000005730\)](#)
- [German \(EIO0000005732\)](#)
- [French \(EIO0000005731\)](#)
- [Spanish \(EIO0000005734\)](#)
- [Italian \(EIO0000005733\)](#)
- [Chinese \(EIO0000005735\)](#)
- [Portuguese \(EIO0000005736\)](#)
- [Japanese \(EIO0000005901\)](#)

## Related Documents

Title of Documentation	Reference Number
XVTS Tower Light Instruction Sheet	JPS5080201

You can download these technical publications and other technical information from our website at [www.se.com/ww/en/download/](http://www.se.com/ww/en/download/).

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# Cybersecurity

## Defence in Depth Mechanisms

### Overview

Using a layered network approach with multiple security and defense controls in your IT and control system helps minimizing data protection gaps, reduce single points of failure and create a strong cybersecurity posture. The more layers of security in your network, the harder it is to breach defenses, take digital assets or cause disruption.

### Software Security Capabilities

Threats	Desired security property on components	XVTS-Configuration Software security features
Tampering	Device integrity	Software digital signature
	Data integrity	Configuration files integrity verification
		Input validation
Denial of Service	Availability	Regular software updates Error handling and event logging
Spoofing	Authentication	Software digital signature
Elevation of privilege	Authorization	Refer to <b>7. Require Strong Passwords and Add Password Security</b> part in <i>Cybersecurity Best Practices</i>

### Device and Data Integrity Protection

Digital signature of the software means integrity and authenticity of the software can be verified prior to installation to avoid spoofing of XVTS-Configuration Software and malware injection in the PC of the customer.

Configuration files integrity is verified by the software before loading and transferring to tower light.

### Availability

#### Regular Software Updates

Regular software update is essential for maintaining the security of the software. It means upgrading to a software containing the latest bug fixes, features enhancements, and vulnerabilities patches. It helps preventing exploits and failures, thus serving the availability property.

#### Error Handling and Event Logging

Adapted exception handling is implemented to catch exceptional events that occur in the program. However, in the case of unhandled exceptions and errors, XVTS-Configuration Software generates log files to record application events.

## Input Validation

To ensure integrity, input validation is applied at two levels. Firstly, to sanitize input received from user and secondly to the data flow between XVTS-Configuration Software and tower light over USB.

## Defence in Depth Measures

These measures are **expected to be provided by the external environment**, consisting of the application and maintenance of the defence in depth strategy of the product.

In order to increase the security of your processes and data, Schneider Electric strongly recommends the following actions:

- **Windows 10** or **Windows 11** operating system with latest updates,
- Latest **Microsoft .NET** version installed,
- **Windows Defender** (or other antivirus software) activated,
- **Schneider Electric Software Update (SESU)** installed to receive software update notifications,
- A role-based access with individual account management on PC (each individual must be logged in uniquely to be able to proceed to logging data analysis in case of incidents during forensics),
- Physical access control to PC,
- Cybersecurity Best Practices.

Ensure all other cyberdefences are up-to-date. If you are unclear, then seek for further information on Industrial Cybersecurity web page of Schneider Electric.

## Potential Risks and Compensating Controls

Although XVTS-Configuration Software offers some security capabilities, there are still residual risks of cyberattacks. These are identified and compensating measures recommended in the table below:

Potential risks	Compensating controls
Cyberattacks targeting Windows operating system and resulting in inability to use XVTS-Configuration Software.	Refer to Defence in Depth Measures, page 9.
<p><b>Zero-Day Exploits</b></p> <p>Attacks that take advantage of a newly discovered vulnerability in XVTS-Configuration Software for which no patch or fix is yet available.</p>	<p>Install a solution leveraging <b>Endpoint Detection and Response (EDR)</b> to detect suspicious behavior and immediately inform Schneider Electric through Vulnerability Reporting and Management, page 11.</p> <p>Install a next-gen antivirus to detect and block unknown threats.</p>

## Secure Installation and Security Hardening

This section guides you through the steps for hardening the product during the installation phase.

### Software Download from Schneider Electric Website

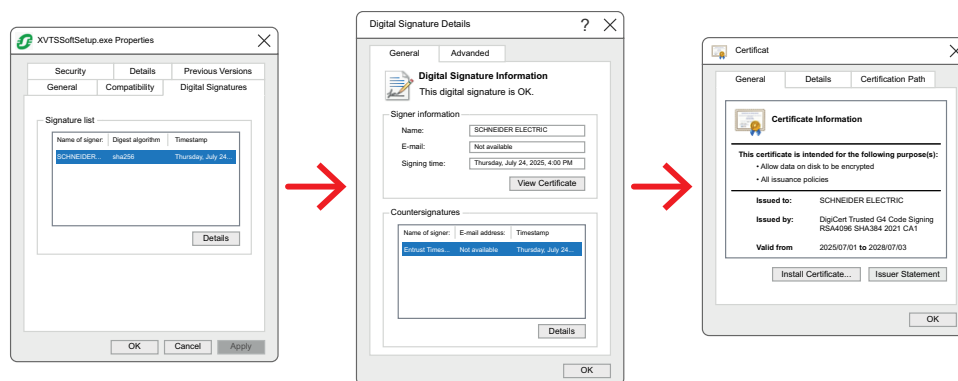
Prior to installation, update the operating system of the computer by using the **Windows Update** tool.

Then, download the XVTS-Configuration Software installer from the Schneider Electric website.

### Software Digital Signature Verification

Windows operating system checks automatically the XVTS-Configuration Software to verify the authenticity and integrity of the software.

You can also verify the validity of the software certificate with **Windows Explorer** by right-clicking the software executable file, selecting **Properties**, and then clicking the **Digital Signatures** tab:



Any other tool may help to verify that Schneider Electric XVTS-Configuration Software signature is valid and up-to-date.

## Secure Maintenance

### Software Updates

Over the lifetime of the product, it is recommended to update the software as soon as a new release is available.

Install the **Schneider Electric Software Update** (SESU) tool and enable update notifications to be informed of the latest software updates for installed Schneider Electric products.

### Log Files

If necessary, back up XVTS-Configuration Software log files on a regular basis and store them securely. The log files are stored in the Windows **ProgramData** folder. Detailed path is:

*C:\ProgramData\Schneider Electric\XVTS-Configuration Soft\Logs\XVTS-Configuration Soft\_YYYY-MM-DD\_HH-MM-SS.log*

## Secure Disposal

XVTS-Configuration Software can be uninstalled from the computer. After uninstallation, some data remains on the computer and must be manually removed, if necessary:

Data	Description and location
Configuration files	Signal files stored by XVTS-Configuration Software users during tower light configuration. Location of these files is not handled by the software.
Log files	Error and event log files generated automatically by XVTS-Configuration Software. Default path is: <i>C:\ProgramData\Schneider Electric\XVTS-Configuration Soft\Logs\</i>

## Vulnerability Reporting and Management

Cybersecurity incidents and potential vulnerabilities can be reported via the Schneider Electric website:









- Report an Incident
- Report a Vulnerability

# Introduction

This chapter presents the range of XVTS tower lights, their connectors, and their possible installations.

## Range Overview

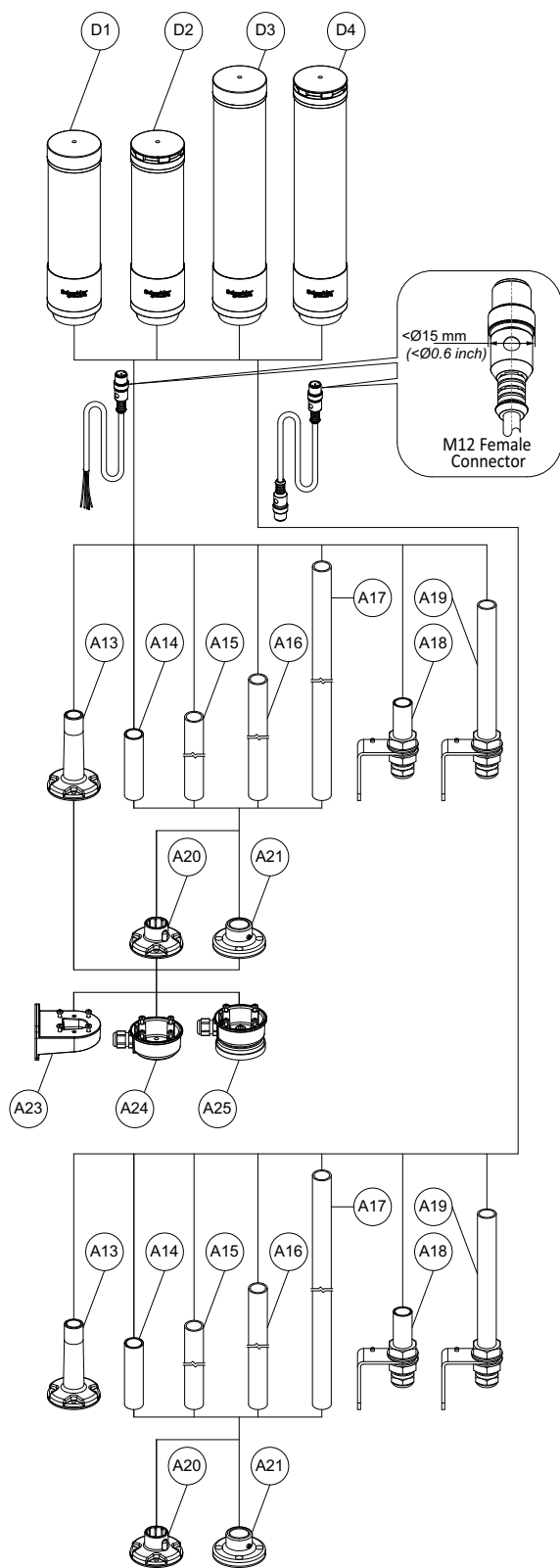
The XVTS-Configuration Software is used to configure the following XVTS tower lights:

XVTS1BG	XVTS1BW	XVTS1BSG	XVTS1BSW
			
No Buzzer		With Buzzer	
Ø 70 mm, 9 segments			
XVTS2BG	XVTS2BW	XVTS2BSG	XVTS2BSW
			
No Buzzer		With Buzzer	
Ø 70 mm, 15 segments			

# Installation

This chapter lists the different mounting accessories that can be used with XVTS tower lights.

Overview of mounting accessories and their compatibility:

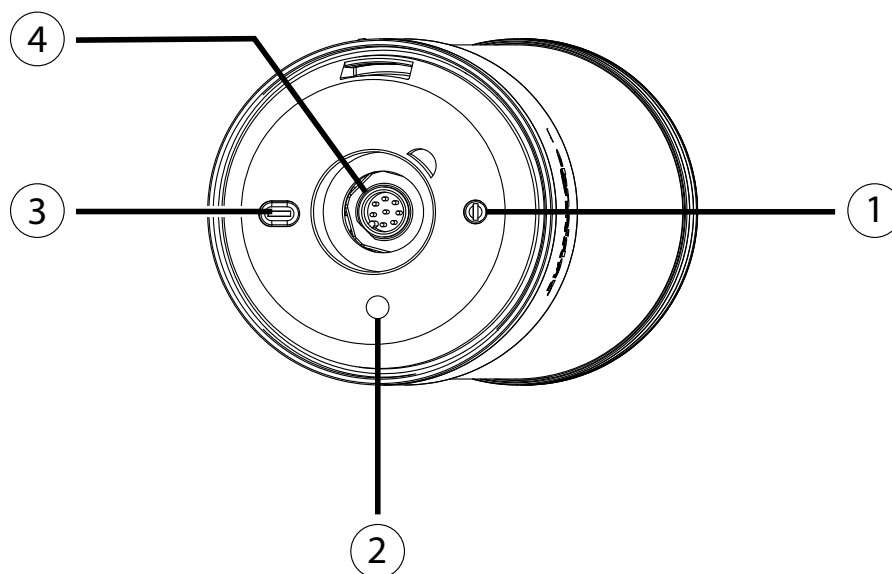


D1	<b>XVTS1BG</b> <b>XVTS1BW</b>	XVTS 9 segments standard IO no tone grey/white
D2	<b>XVTS1BSG</b> <b>XVTS1BSW</b>	XVTS 9 segments standard IO tone grey/white
D3	<b>XVTS2BG</b> <b>XVTS2BW</b>	XVTS 15 segments standard IO no tone grey/white
D4	<b>XVTS2BSG</b> <b>XVTS2BSW</b>	XVTS 15 segments standard IO tone grey/white
A13	<b>XVZ02</b>	Plastic fixing plate with pole
A14	<b>XVZ100</b>	Aluminium $\varnothing 25 \text{ mm}$ pole 100 mm length
A15	<b>XVZ250</b>	Aluminium $\varnothing 25 \text{ mm}$ pole 250 mm length
A16	<b>XVZ400</b>	Aluminium $\varnothing 25 \text{ mm}$ pole 400 mm length
A17	<b>XVZ800</b>	Aluminium $\varnothing 25 \text{ mm}$ pole 800 mm length
A18	<b>XVZ100T</b>	L bracket aluminium $\varnothing 25 \text{ mm}$ pole 100 mm
A19	<b>XVZ250T</b>	L bracket aluminium $\varnothing 25 \text{ mm}$ pole 250 mm
A20	<b>XVZ01•</b>	Plastic fixing plate
A21	<b>XVZ11</b>	Metal fixing plate
A23	<b>XVZ09</b>	Plastic wall mount bracket
A24	<b>XVZ07</b>	Side entry adapter
A25	<b>XVZ08</b>	Magnetic adapter

For detailed explanations on how to mount and install your tower lights according to your requirements, please refer to the instruction sheet, page 7.

## Tower Lights Underside

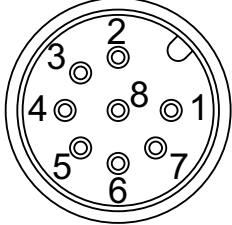
Overview of the tower lights underside:



Item	Description	Details
1	User button	Not used
2	Status LED	Refer to Status LED, page 38.
3	USB-C port	For direct connection of the tower light to the computer used to configure it. XVTS-Configuration Software automatically detects the XVTS device (if powered on) as soon as it is plugged in. In case of trouble, refer to Connect a Device, page 15.
4	8-pin M12 connector	For connection of the tower light to the control panel of your machine installation.

## Connector Description

The connection is made via a 8-pin M12 connector with the following pin assignment:

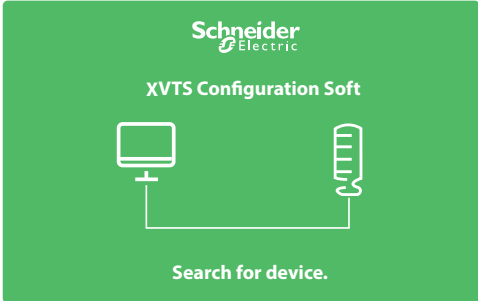
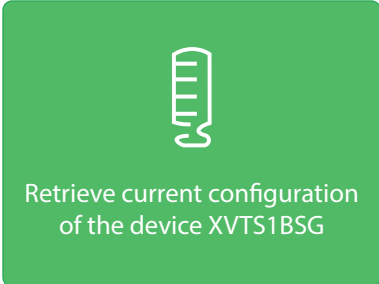
Pin	Wire colour	Function	Connector
1	White	Input 1	 <p> <math>I_{\text{input}} \geq 4 \text{ mA}</math>            Low Level &lt; 5 V            High Level &gt; 20 V         </p>
2	Brown	Input 2	
3	Green	Input 3	
4	Yellow	Input 4	
5	Grey	Input 5	
6	Pink	Input 6	
7	Blue	COM	
8	Red	+24 V	

# Device Connection and Disconnection

This section presents the specific layout of connecting and disconnecting devices to the XVTS-Configuration Software.

## Connect a Device

If XVTS-Configuration Software does not detect any connected device at startup, you have to search for a device manually:

Step	Action
1	Connect the turned on tower light to your PC using a USB cable.
2	<p>Click the <b>Search a device</b> button on XVTS-Configuration Software welcome page. A <b>Search for device</b> window is displayed:</p>  <p>You have 10 seconds to connect the device if it is not already done.</p>
3	<p>The XVTS-Configuration Software detects the connected XVTS. The <b>Retrieve current configuration of the device [XVTS REFERENCE]</b> window is displayed to confirm the connection between the device and the software:</p>  <p><b>NOTE:</b> If the XVTS-Configuration Software does not detect the connected XVTS, a window indicates that no device is connected. Contact Schneider Electric technical support, page 18 to identify the most appropriate solution.</p>

## Disconnect a Device

To disconnect a device, there is no need for a specific operation. You have to unplug the XVTS from your PC.

## Software Overview

This chapter presents XVTS-Configuration Software.

XVTS-Configuration Software allows you to configure your USB XVTS tower lights from one PC and to load your configuration to XVTS devices in your park.

The access rights to the host on which the software is installed are needed to perform this action.

## System Requirements

The following operating systems are supported by XVTS-Configuration Software:

- Microsoft Windows 10 32 bits,
- Microsoft Windows 10 64 bits,
- Microsoft Windows 11 64 bits.

Updates of XVTS-Configuration Software are automatically signalled as notifications by the **Schneider Electric Software Update** embedded tool. It provides the capability to download and install directly the notified update.

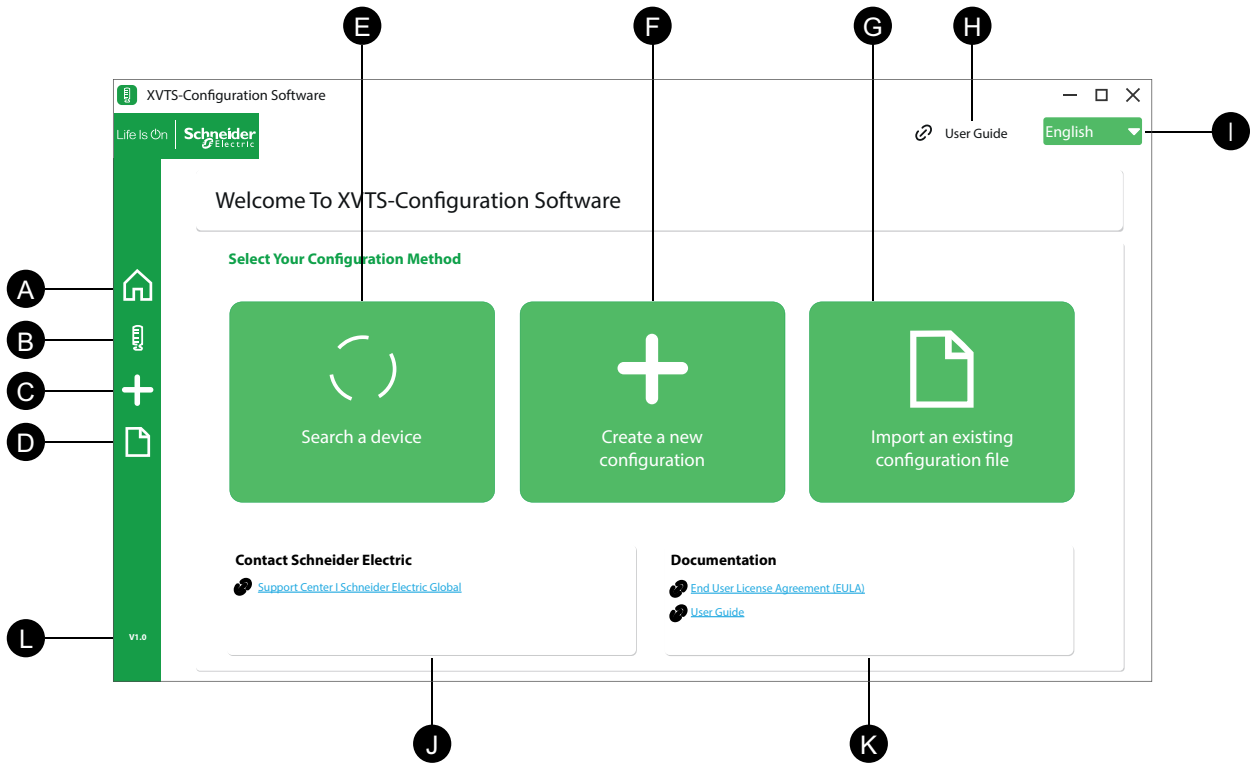
It is also possible to find the latest version of XVTS-Configuration Software by going to [www.se.com](http://www.se.com) and searching for "XVTS".

# Graphical User Interface

When you start the software, a **Search for device** window is displayed.

If the XVTS-Configuration Software detect a connected XVTS device, the window indicates “Device detected”. If not, “Device not detected” is displayed.

After launching the software, the welcome page is displayed:



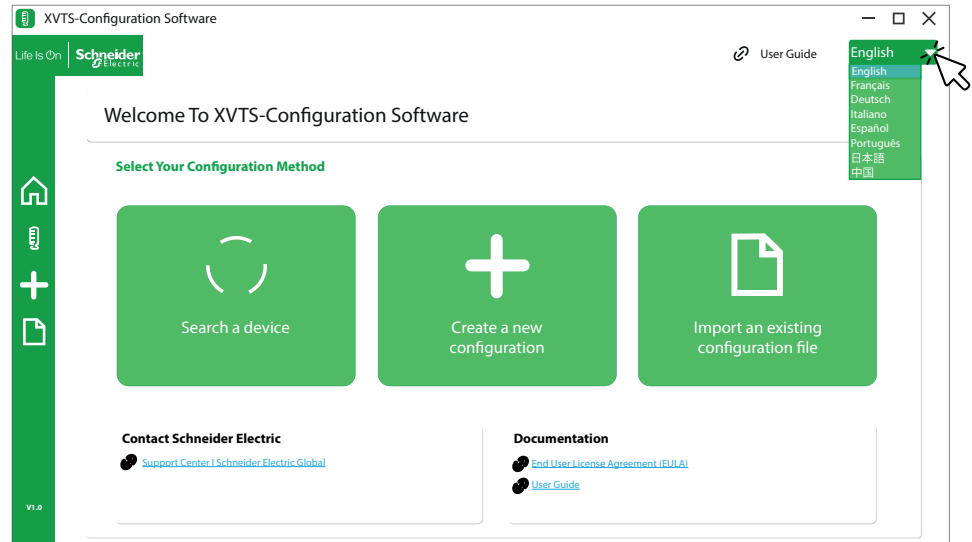
Item	Name	Description
A	Home button	Goes back to welcome page
B	Recover configuration button	Recover configuration from device (refer to From XVTS Device, page 24)
C	Create a new configuration button	Create a new configuration (refer to Create a Configuration, page 21)
D	Import an existing configuration button	Allows importing an existing configuration from a PC (refer to From PC, page 24)
E	Search for a device	Allows searching a device.
	Recover a configuration button	If a device is already connected, allows retrieving the configuration from the connected device (refer to Connect a Device, page 15)
F	Create a new configuration button	Create a new configuration (refer to Create a Configuration, page 21)
G	Imports an existing configuration button	Allows importing an existing configuration from a PC (refer to From PC, page 24)
H	User guide link	Displays this user guide
I	Language selection	Change language setting (refer to Support and Languages, page 18)
J	Contact Schneider Electric workspace	Contains Schneider Electric support team information (refer to Support and Languages, page 18)
K	Documentation workspace	Contains EULA and user guide links (refer to Support and Languages, page 18)
L	Software version	Software version

## Support and Languages

This section presents how to contact technical support and how to change the software language.

### Language Selection

Select the language you want to use in the selection menu at the right top of the window:



### Documentation

Two documents can be viewed from the **Documentation** workspace:

- The **End User License Agreement (EULA)**,
- The **User Guide**.

These documents are displayed in the selected language.

### Contact Schneider Electric

The **Contact Schneider Electric** workspace displays the contact information of the Schneider Electric support team.

# Tower Light Settings

## Configuration Process

Step	Action
1	Creation of a new configuration, page 21.
2	Edition of this newly created configuration, page 25.
3	Finalization of the configuration, page 36.

**NOTE:** The first chapter dedicated to the configuration creation describes the case where an existing configuration have to be modified.  
 For more information, refer to [Open an Existing Configuration](#), page 24.

## Operating Modes

XVTS tower lights can be operated in four different modes. These operating modes define the behavior of the segments that compose the tower lights.

The segments are the unitary physical elements of the devices, their role is to display coloured light signals.

When the segments are grouped together, they are referred to as a “tier” and use the same configuration.

The Programmer mode operates using “states”, which correspond to all device segments. These are complete signal effects in the form of the entire tower light.

The configuration of each segment, tier or state includes the following parameters:

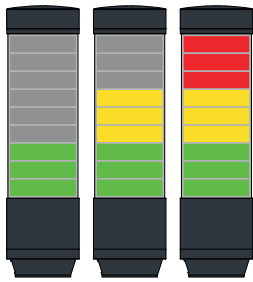
- Optical:
  - Colour,
  - Brightness,
  - Light effect.
- Audible:
  - Tone.

The operating mode you choose has an impact on the way you can configure your tower light. You have to understand the differences between each mode to choose the one that meets your requirements.

Overview of the operating modes:

	Tower Light	Full Spectrum	Levelling	Programmer
Display example				
Optical configuration by	Tiers	Tiers	Segments	States
Main feature	Classic signaling	Maximum visibility	Progress indication	Highly configurable

## Tower Light



Individual segments are combined into tiers.

Each tier has a fixed position and is ON if its optical signal is triggered. For this reason, it is possible to have non-illuminated tiers.

This mode can use a maximum of six tiers. Each of them has its own configuration.

## Full Spectrum



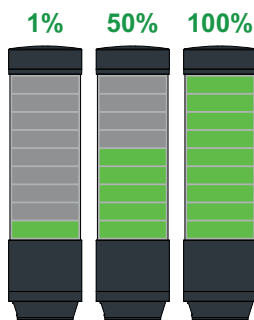
All segments are illuminated and automatically divided equally depending on the total number of segments available on the device:

- If only one tier is active, all segments are illuminated in a single colour,
- If several tiers are active, the segments are illuminated in equal parts in different colours.

If the tiers cannot be divided into an equal number of segments, the remaining segments are allocated to the first configured tiers.

This mode can use a maximum of six tiers. Each tier has its own configuration. The tower light activates the segments depending of the activated tiers.

## Levelling



Segments are used as a filling level indicator.

This mode enables signalization of job progress or material availability in machine processes by slowly illuminating the tower light from bottom to top or top to bottom.

All segments are used. Each of them can have its own configuration.

## Programmer



Segments have no predefined behavior. The tower light configuration is to be entirely programmed.

These extended configuration capabilities make it possible to meet more specific requirements that other modes cannot.

Each PIN or PIN combination activates a state.

The segments of these states can be configured. They also can be grouped together to share the same configuration (mimicking the behavior of tiers).

This mode operates using one to sixty-four states.

# Create a Configuration

This chapter presents the creation of a configuration with the XVTS-Configuration Software. This is the first step to configure your tower light.

## Create from Scratch

To create a new configuration, click the **Create a new configuration** button on XVTS-Configuration Software welcome page.

The **Create a new configuration 1/3** page appears.

## Select the XVTS Variant

The screenshot shows the 'XVTS-Configuration Software' window. The title bar includes 'XVTS-Configuration Software' and window control buttons. The top left corner has the Schneider Electric logo and 'Life Is On' slogan. The top right corner has 'User Guide' and a language dropdown set to 'English'. The main content area is titled 'Create a new configuration 1/3 (Select device)'. It contains two sections: 'Select the device reference' with four radio button options:   
-  XVTS1BG, 9 Segment, Dark Grey   
-  XVTS2BG, 15 Segment, Dark Grey   
-  XVTS1BW, 9 Segment, White   
-  XVTS2BW, 15 Segment White   
Below this is 'Does the device have a tone?' with two radio button options:   
-  Yes   
-  No   
A 3D model of a tower light is shown on the right. At the bottom, there are 'Cancel' and 'Next' buttons. The sidebar on the left has icons for Home, Settings, Add, and Documents. The version 'V1.0' is shown at the bottom left of the sidebar.

Give the two requested information to the software:

1. **Select the device reference:**





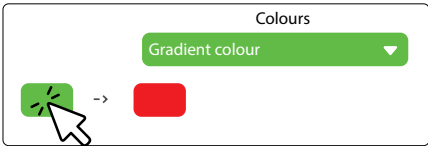
- XVTS1BG: Black 9 segments tower light,
- XVTS2BG: Black 15 segments tower light,
- XVTS1BW: White 9 segments tower light,
- XVTS2BW: White 15 segments tower light.

2. **Does the device have a tone?:**

Select if the device has a tone by answering **Yes** or **No**.

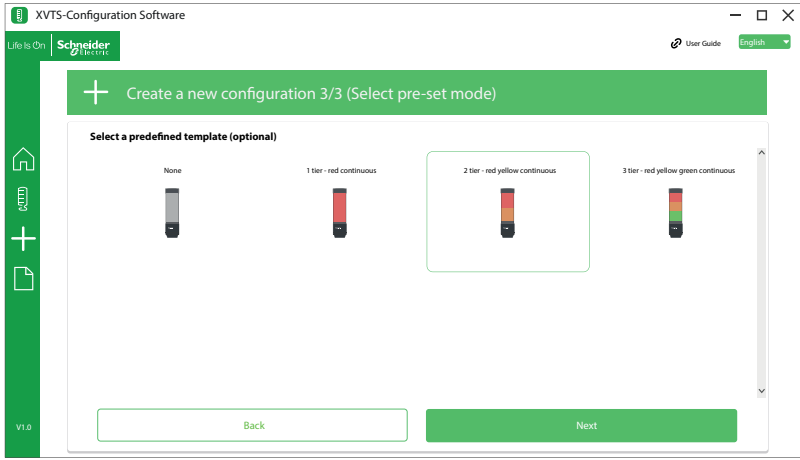
Then, click the **Next** button.

## Select an Operating Mode

Step	Action
1	The <b>Create a new configuration 2/3</b> page is displayed. Select the operating mode, page 19 you want to use.
2	Click the <b>Next</b> button. The <b>Create a new configuration 3/3</b> page is displayed.
3	Click the <b>None</b> button.
4	Click the <b>Next</b> button. The edit configuration page of the mode you have selected is displayed (not for <b>Levelling</b> mode).
5	<p>For <b>Levelling</b> mode only:</p> <ol style="list-style-type: none"> <li>In the <b>Segments assignment</b> window, under <b>Number of signal combination</b>, move the slider to set the number of segments to use for the filling level indicator.</li> <li>If not all segments are used for the filling level indicator, select one of these options: <ul style="list-style-type: none"> <li> <p><b>Top filled</b></p>  <p>Unassigned segments are assigned to the top and triggered with the top tier.</p> </li> <li> <p><b>Bottom filled</b></p>  <p>Unassigned segments are assigned to the bottom and triggered with the bottom tier.</p> </li> <li> <p><b>Top not active</b></p>  <p>Unassigned segments are assigned to the top and are always off.</p> </li> <li> <p><b>Bottom not active</b></p>  <p>Unassigned segments are assigned to the bottom and are always off.</p> </li> </ul> </li> <li>Select a colour: <ol style="list-style-type: none"> <li>Select <b>Single colour</b> or <b>Gradient colour</b> in the <b>Colours</b> list.</li> <li>Click the colour field to select the desired colour (refer to <i>Select a Colour</i>, page 27):</li> </ol>  </li> <li>Click the <b>Submit</b> button.</li> <li>The <b>Edit the configuration - Levelling</b> page is displayed.</li> </ol>
<p><b>NOTE:</b> To modify the configuration elements, refer to <i>Edit a Configuration</i>, page 25.</p>	

## Create from a Template

The XVTS-Configuration Software provides several predefined configurations that can be transferred directly to a connected XVTS device or used as a basis for your own configurations.

Step	Action
1	Click the <b>Create a new configuration</b> button on XVTS-Configuration Software welcome page.
2	Select a XVTS variant, page 21 and an operating mode, page 22.
3	In the <b>Edit the Configuration</b> page, click the template you want to use: 
4	Click the <b>Next</b> button.
5	Edit the configuration, page 25 of the XVTS tower light.
6	If a XVTS product is connected to the PC, it is possible to send the template directly to the product.
7	To finalize the configuration, click the <b>Send to [XVTS REFERENCE]</b> button.

## Open an Existing Configuration

This section presents how to use existing configurations from a PC or a connected device.


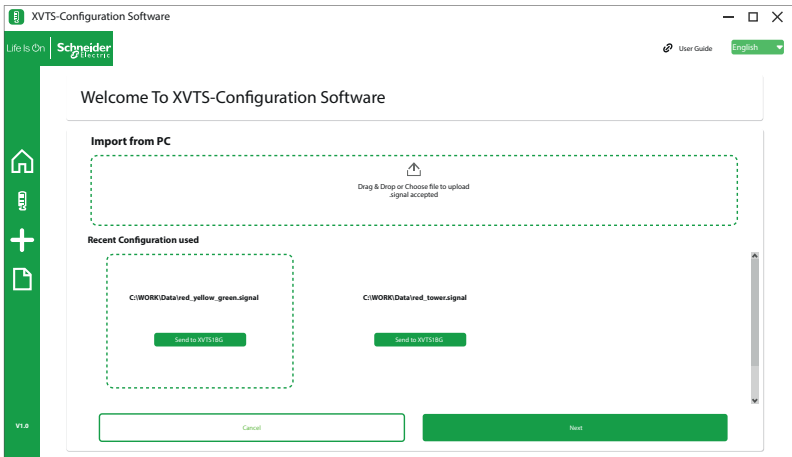
### From XVTS Device

If a XVTS is connected to the PC, the XVTS-Configuration Software allows you to open the current configuration (if available) for editing by clicking the **Retrieve configuration from [XVTS REFERENCE]** button. The **Configuration** window is displayed in set mode and is already filled with the current configuration.

If no XVTS is connected, this menu item is not available.

For more information on the configuration edition capabilities, refer to [Create a Configuration](#), page 21.

### From PC

Step	Action
1	Click the  <b>Importing Existing file</b> icon in the main workspace or this one in the vertical menu.
2	<p>In <b>Import from PC</b> workspace, select a configuration file to upload.</p> <p>You can also select a previous configuration if it is proposed in the <b>Last configuration used</b> workspace:</p>  <p><b>NOTE:</b> If a XVTS product is connected to the PC, it is possible to send the last used configuration directly to the product by clicking the <b>Send to [XVTS REFERENCE]</b> button.</p>
3	Select the desired configuration and click the <b>Next</b> button.

# Edit a Configuration

This chapter presents the editing of a configuration with the XVTS-Configuration Software. This second step of your tower light configuration follows the chapter dedicated to the creation of a configuration, page 21.




## Editing Features

This section presents the available actions in the **Edit the Configuration** window.

To fully understand the impact of the features described below, refer to *Operating Modes*, page 19.

### Add or Remove a Tier (or a State)

Tiers (or “states” in **Programmer** mode) can be added and deleted using the following icons:

Button	Action
	Add a tier or a state
	Duplicate a state
	Delete a tier or a state

**NOTE:** This feature is not available for **Levelling** mode.

## Move a Tier (or a Segment)

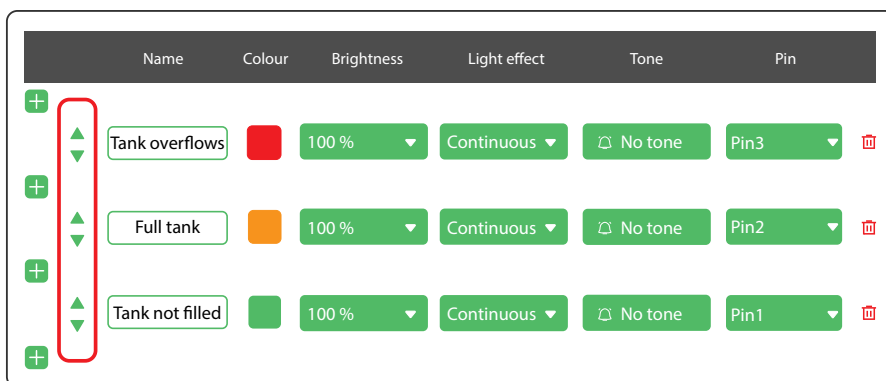
### Full Spectrum and Tower Light modes

The individual tiers can be moved up or down. The order of tiers in the table defines the position they take when displayed on the XVTS device.

For example: if the colour red is chosen for the first tier (the one uppermost in the table), the colour displayed at the top of the tower light is red (and conversely).

You can view the way configured tiers are displayed on the tower light in the simulator, page 33 on the left side of the **Edit the Configuration** window.

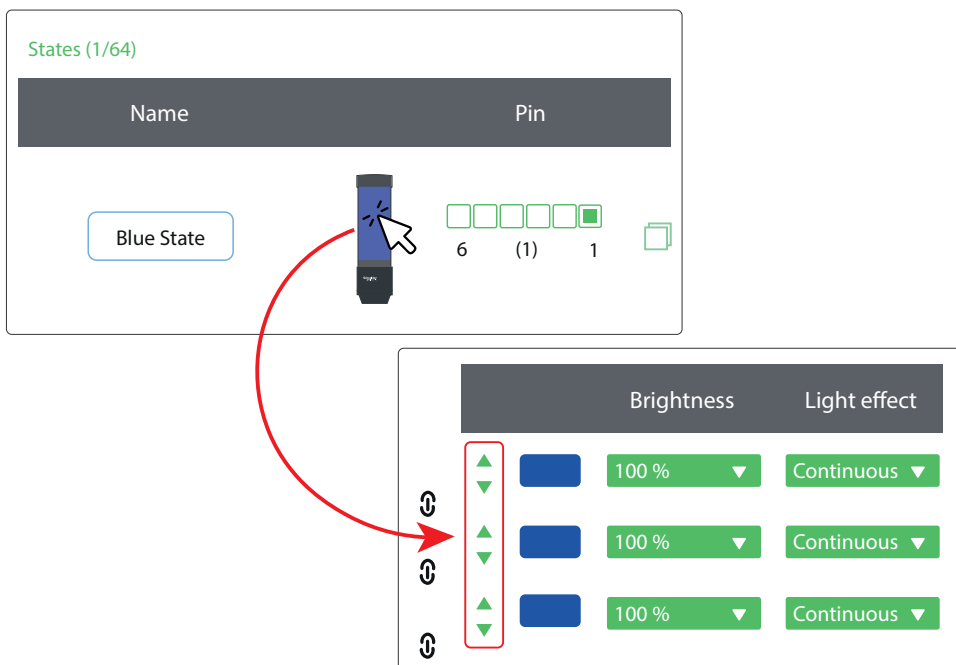
To move a tier, click the arrows associated to it:



### Programmer mode

It is not possible to move states in **Programmer** mode because there is no order among them, their activations depend only on the triggered pins.

However, you can move the order of segments of any state by clicking their corresponding tower light images:



### Levelling mode

This feature is not available for **Levelling** mode.

## Name a Tier (or a State)

A custom name can be assigned to each tier (or “state” in **Programmer mode**). It can be useful to clarify their meaning for example.

Step	Action
1	Click the tier name field in the <b>Name</b> column.
2	Replace the pre-filled text with the name of your choice: <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> </div>

**NOTE:** This feature is not available for **Levelling mode**.

## Select a Colour

A standard or individual colour can be assigned to every tier:

Step	Action
1	Click the colour field in the <b>Colour</b> column: <div style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> </div> <p>The <b>Select a colour</b> window is displayed.</p>
2	Select whether to use a standard or define a custom colour. <p><b>Standard colour</b></p> Eight standard colours are available for selection: <ul style="list-style-type: none"> <li>• Red,</li> <li>• Yellow,</li> <li>• Green,</li> <li>• White,</li> <li>• Blue,</li> <li>• Light yellow,</li> <li>• Violet,</li> <li>• Turquoise.</li> </ul> The last used colours are proposed. <p><b>Custom colour</b></p> Select the desired colour in the colour field.
3	Click the <b>Select colour</b> button.

## Select a Light Effect

Select the desired light effect in **Light effect** column:

	Name	Colour	Brightness	Light effect	Tone	Pin
+	Tank overflows	<span style="color: red;">■</span>	100 %	Rotating	No tone	Pin3
+	Full tank	<span style="color: orange;">■</span>	100 %	Blink 3Hz	No tone	Pin2
+	Tank not filled	<span style="color: green;">■</span>	100 %	Flash 2	No tone	Pin1

The light effects available for selection are:

- None,
- Continuous,
- Blink 1Hz,
- Blink 2Hz,
- Blink 3Hz,
- Flash 1,
- Flash 2,
- Flash 3,
- Rotating.

## Set a Brightness

Set the desired brightness of the tier from the four options in the **Brightness** column:

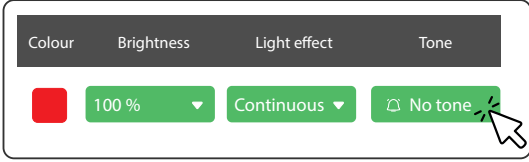






























	Name	Colour	Brightness	Light effect	Tone	Pin
+	Tank overflows	<span style="color: red;">■</span>	100 %	Continuous	No tone	Pin3
+	Full tank	<span style="color: orange;">■</span>	75%	Continuous	No tone	Pin2
+	Tank not filled	<span style="color: green;">■</span>	50 %	Continuous	No tone	Pin1

The brightness available for selection are:

- 25%,
- 50%,
- 75%,
- 100%.

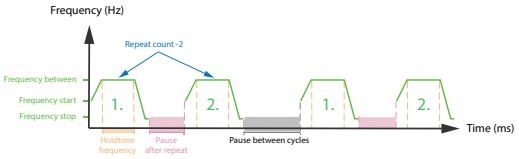
## Select a Tone

A specific tone can be configured for each segment (**Levelling mode**), each tier (**Full Spectrum** and **Tower Light** modes) or each state (**Programmer mode**):

Step	Action																														
1	<p>Click the <b>Tone</b> button in the <b>Tone</b> column:</p>  <p>The <b>Select a tone</b> page is displayed.</p>																														
2	<p>Select the desired <b>Tone</b>, <b>Volume</b>, and <b>Maximum duration</b>.</p> <p>Ten tones are available for selection:</p> <table border="0"> <tbody> <tr> <td>1.</td> <td></td> <td>2.7 kHz continuous tone</td> <td>6.</td> <td></td> <td>0.9 kHz pulse tone</td> </tr> <tr> <td>2.</td> <td></td> <td>0.9 kHz continuous tone</td> <td>7.</td> <td></td> <td>2.8 kHz pulse tone</td> </tr> <tr> <td>3.</td> <td></td> <td>2.8 kHz pulse tone</td> <td>8.</td> <td></td> <td>2.3 kHz to 3.6 kHz sweep tone</td> </tr> <tr> <td>4.</td> <td></td> <td>0.9 kHz pulse tone</td> <td>9.</td> <td></td> <td>2.6 Hz continuous tone</td> </tr> <tr> <td>5.</td> <td></td> <td>2.8 kHz pulse tone</td> <td>10.</td> <td></td> <td>1200 Hz and 800 Hz alternating tone</td> </tr> </tbody> </table>	1.		2.7 kHz continuous tone	6.		0.9 kHz pulse tone	2.		0.9 kHz continuous tone	7.		2.8 kHz pulse tone	3.		2.8 kHz pulse tone	8.		2.3 kHz to 3.6 kHz sweep tone	4.		0.9 kHz pulse tone	9.		2.6 Hz continuous tone	5.		2.8 kHz pulse tone	10.		1200 Hz and 800 Hz alternating tone
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4.		0.9 kHz pulse tone	9.		2.6 Hz continuous tone																										
5.		2.8 kHz pulse tone	10.		1200 Hz and 800 Hz alternating tone																										
3	<p>Play the selected sound on the PC by clicking the <b>Simulate the tone</b> button to confirm that it suits you.</p>																														
4	<p>Click the <b>Save</b> button.</p>																														
<p><b>NOTE:</b> When several segments each with a configured tone are triggered at the same time, only the tone of the highest segment is activated (the one uppermost in the <b>Edit the Configuration</b> window or on the tower light). This also applies to tiers and states.</p>																															

### For Programmer mode only

You can custom the tone with your specific tone which is generated from different parameters:

Step	Action
1	<p>Check <b>Custom tone</b> button.</p> <p>The custom tone window is displayed:</p> <div data-bbox="628 405 1171 1536" style="border: 1px solid black; padding: 10px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> <h4>Select a tone</h4> <span>✕</span> </div> <div style="margin-top: 10px;"> <input checked="" type="checkbox"/> Custom tone         </div> <div style="margin-top: 10px;">  </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p><b>Tone</b></p> <div style="border: 1px solid #ccc; padding: 2px; display: inline-block; background-color: #4CAF50; color: white; border-radius: 4px;">Alternate</div> </div> <div style="width: 45%;"> <p><b>Frequency start (Hz)</b></p> <input style="width: 100%;" type="text" value="1000"/> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p><b>Frequency between (Hz)</b></p> <input style="width: 100%;" type="text" value="0"/> </div> <div style="width: 45%;"> <p><b>Frequency stop (Hz)</b></p> <input style="width: 100%;" type="text" value="0"/> </div> </div> <div style="margin-top: 10px;"> <p><b>Volume</b></p> <div style="border-bottom: 1px solid #ccc; position: relative; height: 20px;"> <div style="position: absolute; left: 0; top: 50%; transform: translateY(-50%); width: 10px; height: 10px; border: 1px solid #ccc; border-radius: 50%;"></div> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p><b>Repeat count</b></p> <input style="width: 100%;" type="text" value="0"/> </div> <div style="width: 45%;"> <p><b>Holdtime Frequency (ms)</b></p> <input style="width: 100%;" type="text" value="0"/> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p><b>Pause between cycles (ms)</b></p> <input style="width: 100%;" type="text" value="0"/> </div> <div style="width: 45%;"> <p><b>Pause after repeat (ms)</b></p> <input style="width: 100%;" type="text" value="0"/> </div> </div> <div style="text-align: center; margin-top: 10px;"> <div style="border: 1px solid #ccc; padding: 5px; display: inline-block; background-color: #4CAF50; color: white; border-radius: 4px;">Save</div> </div> </div>

## Select a Pin

### Full Spectrum and Tower Light modes

In the **Pin** column, select the pin of the 8-pin connector on which the signal to trigger the tier is sent:

Name	Colour	Brightness	Light effect	Pin
Tier3		100 %	Continuous	Pin3
Tier2		100 %	Continuous	Pin3
Tier1		100 %	Continuous	Pin3

### Programmer and Levelling modes


In these modes, signal effects are triggered via bit coding.

The check boxes in the **Pin** column correspond to the 6 pins or signal inputs. Selecting one or more check boxes indicates that these pins or signal inputs have to be triggered to activate the corresponding signal effect to the segment or state:

Name	Pin
State 3	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> 6 (3) 1
State 2	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> 6 (2) 1
State 1	 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> 6 (1) 1

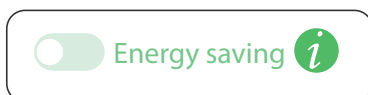
**NOTE:** Levelling pin selection is disabled.

## Undo/Redo an Action

Undo and redo actions can be done up to twenty actions by clicking the **Undo/Redo** buttons. 

## Save Energy

If necessary (for example, to take into account the power limits of control outputs), the power consumption of the XVTS can be reduced with the **Energy saving** switch:



In this case, the current power requirement of the tower is reduced to less than 500 mA. As a result, the brightness of the optical signals is reduced by about 40%.

## Back to Template Selection

You can return in template selection window from **Edit the Configuration** windows.

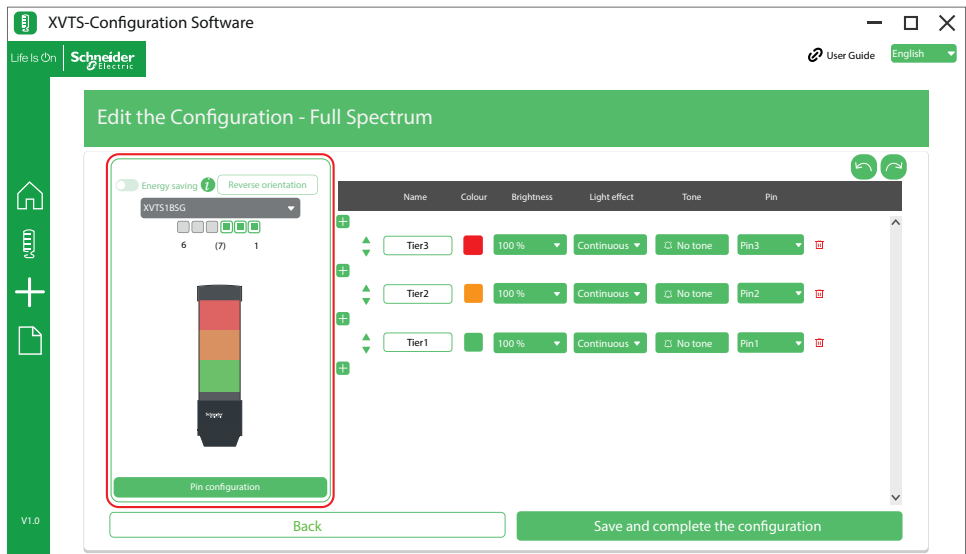
To go back to predefined template selection:

Step	Action
1	<p>Click the <b>Back</b> button.</p> <p>The <b>Go back?</b> window is displayed:</p> <div data-bbox="635 1137 1203 1491" style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p><b>Go back ?</b> <span style="float: right;">✕</span></p> <p><b>i Information</b></p> <p>If you go back to the configuration mode selection, you will lose the current configuration.</p> <p style="text-align: center;"> <span style="background-color: #4CAF50; color: white; padding: 5px 15px; border-radius: 5px;">Stay on the page</span>  <span style="border: 1px solid #4CAF50; padding: 5px 15px; border-radius: 5px; display: inline-block; margin-top: 10px;">Go back</span> </p> </div>
2	Click the <b>Go back</b> button.

# Simulate a Configuration

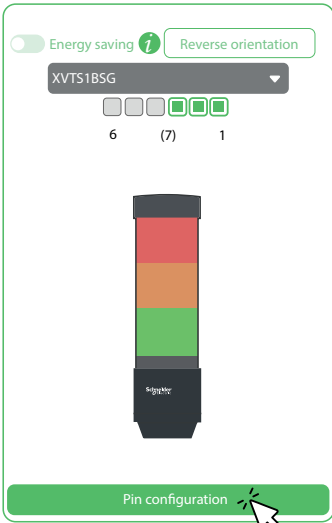
This section presents the features of the XVTs-Configuration Software simulator.

This tool is displayed on the left side of the **Edit the Configuration** window:



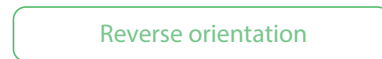
## Modify the Pin Configuration

If necessary, the assignment of the wire colour to the pin of the connected cable can be changed and a description of the signal added.

Step	Action																											
1	<p>Click the <b>Pin configuration</b> button:</p>  <p>The <b>Pin configuration</b> window is displayed:</p> <div data-bbox="662 965 1166 1491" style="border: 1px solid black; padding: 5px;"> <p><b>Pin configuration</b></p> <table border="1"> <thead> <tr> <th></th> <th>Wire colour</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Pin 1: Input 1</td> <td><input type="text" value="WH"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 2: Input 2</td> <td><input type="text" value="BN"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 3: Input 3</td> <td><input type="text" value="GN"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 4: Input 4</td> <td><input type="text" value="YE"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 5: Input 5</td> <td><input type="text" value="GY"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 6: Input 6</td> <td><input type="text" value="PK"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 7: Input COM</td> <td><input type="text" value="BU"/></td> <td><input type="text"/></td> </tr> <tr> <td>Pin 8: +24V</td> <td><input type="text" value="RD"/></td> <td><input type="text"/></td> </tr> </tbody> </table> <p style="text-align: center;"><input type="button" value="Save"/></p> </div>		Wire colour	Description	Pin 1: Input 1	<input type="text" value="WH"/>	<input type="text"/>	Pin 2: Input 2	<input type="text" value="BN"/>	<input type="text"/>	Pin 3: Input 3	<input type="text" value="GN"/>	<input type="text"/>	Pin 4: Input 4	<input type="text" value="YE"/>	<input type="text"/>	Pin 5: Input 5	<input type="text" value="GY"/>	<input type="text"/>	Pin 6: Input 6	<input type="text" value="PK"/>	<input type="text"/>	Pin 7: Input COM	<input type="text" value="BU"/>	<input type="text"/>	Pin 8: +24V	<input type="text" value="RD"/>	<input type="text"/>
	Wire colour	Description																										
Pin 1: Input 1	<input type="text" value="WH"/>	<input type="text"/>																										
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Pin 6: Input 6	<input type="text" value="PK"/>	<input type="text"/>																										
Pin 7: Input COM	<input type="text" value="BU"/>	<input type="text"/>																										
Pin 8: +24V	<input type="text" value="RD"/>	<input type="text"/>																										
2	<p>In the <b>Pin configuration</b> window, enter the desired wire colour in <b>Wire colour</b> column:</p> <ul style="list-style-type: none"> <li>• <b>WH</b>: White</li> <li>• <b>BN</b>: Brown</li> <li>• <b>GN</b>: Green</li> <li>• <b>YE</b>: Yellow</li> <li>• <b>GY</b>: Grey</li> <li>• <b>PK</b>: Pink</li> <li>• <b>BU</b>: Blue</li> <li>• <b>RD</b>: Red</li> </ul>																											
3	<p>Enter the description of the signal in the <b>Description</b> column.</p>																											
4	<p>Click the <b>Save</b> button.</p>																											

## Reverse Orientation

If necessary, the orientation of the displayed tower light can be rotated by 180° with the **Reverse orientation** button:

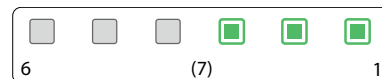


This feature flips the image of the tower light displayed by the software to check whether the device is physically mounted upside down or not.

## Simulate Signal Inputs

Once all settings have been made, the signal inputs can be simulated.

Click the pin that activates the desired segment, tier, or state in the pin overview:

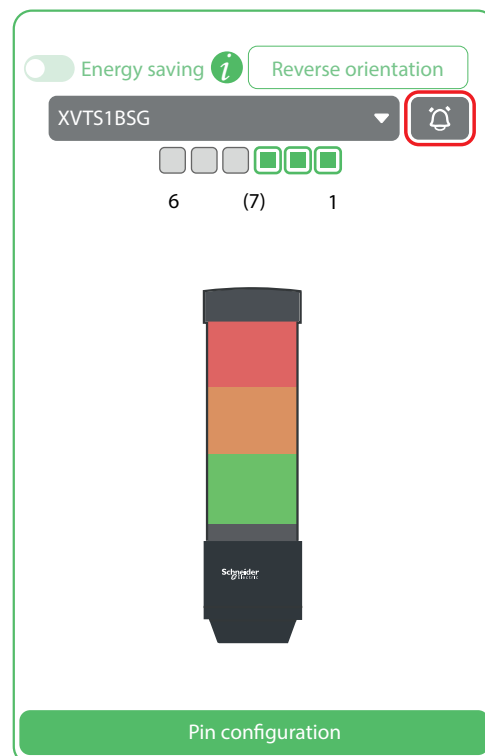




The tower light display of the simulator changes accordingly.

## Activate or Deactivate the Tone

During your simulation tests, you can enable or disable the tones so that XVTS-Configuration Software simulates or does not simulate their sounds.

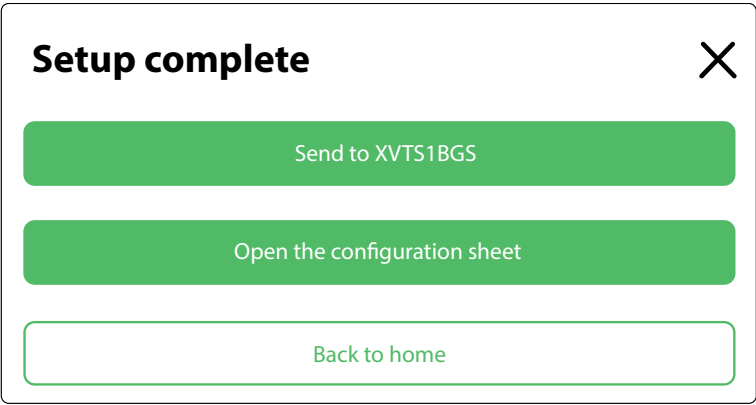
Click the tone icon in the simulator area:



- The  icon means that the tones will not be played,
- The  icon means that the tones will be played.

# Finalize a Configuration




This chapter explains how to finalize a configuration. This is the third and final step in the configuration of your tower light. It follows the chapter dedicated to the editing of a configuration, page 25, and precedes the commissioning of your device.

Step	Action
1	Once all signal effects are configured as desired, click the <b>Save and complete the configuration</b> button.
2	In the save file dialog, select the backup directory and the configuration name.
3	Click the <b>Save</b> button to save the configuration in a configuration file.
4	<p>The <b>Setup complete</b> window is displayed:</p>  <p>From this window, three possibilities are given to you. Select the one you want:</p> <ol style="list-style-type: none"> <li>1. <b>Send to [XVTS REFERENCE]:</b> Load the current configuration to the connected XVTS device,  <b>NOTE:</b> This action overwrites the existing configuration in the device.</li> <li>2. <b>Open the configuration sheet:</b> Display an overview of the current configuration and allows you to export it in PDF format,</li> <li>3. <b>Back to home:</b> Display the welcome page of XVTS-Configuration Software.</li> </ol>

# Diagnosis

## Error Messages

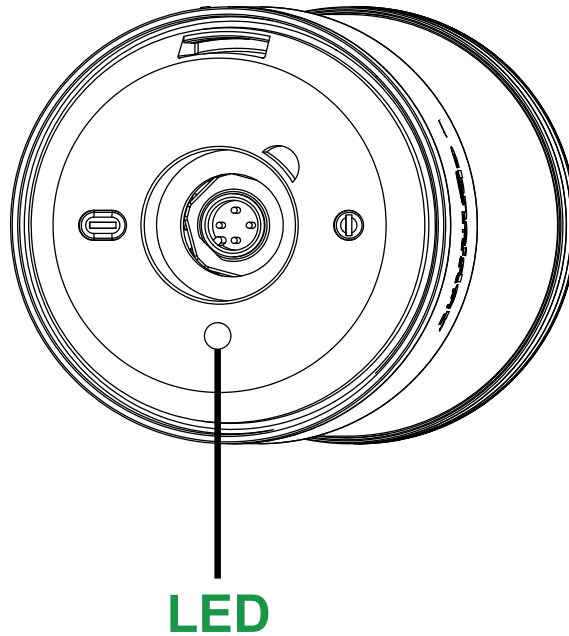
This chapter presents common technical errors displayed through error windows appearing when a configuration is finalized.

Problem	Solution
<p>At the finalizing configuration step, while sending the configuration, if the connected device reference does not match with the device reference in the configuration while trying to send the configuration:</p> <div data-bbox="529 577 1086 1010" style="border: 1px solid #ccc; padding: 10px;"> <p><b>Setup complete</b> <span style="float: right;">✕</span></p> <p style="text-align: center;"> <b>Error</b></p> <p>The device version of the configuration is not the same than the connected device version.</p> <p style="text-align: center;"> <span style="background-color: #4CAF50; color: white; padding: 5px 20px; border-radius: 5px; display: inline-block; margin-bottom: 5px;">Send to XVTS1BGS</span>  <span style="background-color: #4CAF50; color: white; padding: 5px 20px; border-radius: 5px; display: inline-block; margin-bottom: 5px;">Open the configuration sheet</span>  <span style="border: 1px solid #4CAF50; padding: 5px 20px; border-radius: 5px; display: inline-block;">Back to home</span> </p> </div>	<p>Connect a device with the same reference than the one in the configuration.</p>
<p>If the loaded configuration from the XVTS device or the PC is not conform, the following popup is displayed:</p> <div data-bbox="520 1120 1098 1480" style="border: 1px solid #ccc; padding: 10px;"> <p style="text-align: center;">Configuration recovery failed</p> <p style="text-align: center;"> Configuration corrupted</p> <p style="text-align: center;"> <span style="background-color: #4CAF50; color: white; padding: 5px 20px; border-radius: 5px; display: inline-block;">Close</span> </p> </div>	<p>Contact your administrator.</p>
<p>At the startup, if XVTS-Configuration Software cannot find the log directory, the following popup is displayed:</p> <div data-bbox="520 1574 1098 1935" style="border: 1px solid #ccc; padding: 10px;"> <p style="text-align: center;">Log Directory missing</p> <p style="text-align: center;"> Logs directory is missing.</p> <p style="text-align: center;"> <span style="background-color: #4CAF50; color: white; padding: 5px 20px; border-radius: 5px; display: inline-block;">Close</span> </p> </div>	<p>Contact your administrator.</p>

## Status LED

The functional status of the tower lights is displayed via one LED. The status LED is located in the base of the tower lights, behind the type label:

The LED colours convey the following information:



- **Yellow flashes:** normal operation,
- **Yellow pulses:** firmware update is running.

If no LED is active, check the power supply and the USB-C connection cable.

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# Glossary

## C

### **Configuration:**

Whole behaviour of a XVTS tower light. XVTS-Configuration Software can be used to create or modify configuration and transfer it to the XVTS device.

Configuration can be defined with or without connecting a XVTS product. If no XVTS device is connected, it can be saved as a file.

## S

### **Segment:**

Physical unitary element of the tower light.

### **Simulator:**

Preview of the XVTS product configuration before the transfer.

### **State:**

Complete set of segments in programmer mode.

## T

### **Template:**

Predefined configurations that can be transferred directly to a connected XVTS device or used as a basis for your own configurations.

### **Tier:**

A set of segments having same colour and tone parameters.

## X

### **XVTS device:**

Tower light composed of 9 or 15 segments. XVTS device can be fitted with a tone. XVTS-Configuration Software is used to configure XVTS device behaviour.

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

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