

# TellStick ZNet Lite - Technical manual

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TellStick ZNet Lite - A Security Enabled Z-Wave Plus Product

Quickguide

Power adapter

USB cable

Network cable

Antenna

## Connect TellStick ZNet Lite

Connect your TellStick ZNet Lite to your Internet router with the attached network cable.

TellStick ZNet Lite requires DHCP to be activated on your router. This is the standard setting on most consumer routers.

Mount the attached antenna on TellStick ZNet Lite. Make sure the antenna is in vertical position.

Plug the power adapter into a wall socket. Connect the attached USB-cable to the power adapter and to the USB connector on TellStick ZNet Lite.

Please note that the USB connector on TellStick ZNet Lite only can be used to power the device.

## Create account

Open a web browser on your computer and navigate to <http://live.telldus.com>

Click "Login to Telldus Live!"

Click "Create account"

Fill out the fields and click Register.

A password will now be sent to your email inbox.

*If you do not receive the email within a couple of minutes, please check if it got stuck in your spam folder.*

Click the "Login" button and enter your email adress and the password from the email and click Login.

*You can change the password to a password that you select by yourself later on.*

## Activate TellStick ZNet Lite on your account

When the power LED is steady green and the status led is flashing green, your TellStick ZNet Lite is ready to be activated.

In most cases, TellStick ZNet Lite will be auto detected by Telldus Live! If you see a message on the Telldus Live!, click on the activation link.

If Telldus Live! does not automatically detect TellStick ZNet Lite, please navigate to "My Locations" and click the plus icon.

Enter the activation code from the label on the bottom of TellStick ZNet Lite, click Activate.

Enter a name for your TellStick ZNet Lite. Click Accept.

Your TellStick ZNet Lite has now been activated on your account.

The status LED should now light up steady green.

## Mounting

TellStick ZNet Lite should be placed away from other electrical appliances

It can be placed on a flat surface or on a wall using screws.

Wall mount: Mount two screws with a distance of CC: 46mm and mount TellStick ZNet Lite. Recommended to use cone shaped screws with a head size of 5.5mm x 2.3mm. The length of the screws should be about 25mm. Choose a type of screw that fits for the surface.

## Terminology

Add                The process of including a node into the Z-Wave network.

Remove            The process of excluding a node from the Z-Wave network.

## Add new device

### Add a new 433 MHz device

Navigate to "My devices" and click the plus icon.

Click the button "433.92 MHz receivers"

Select the brand of your receiver.

Select the model of your receiver.

Enter a name for your new device and follow the guide to finalize the device.

### Add a Z-Wave device

Navigate to "My devices" and click the plus icon.

Click the "Z-Wave" button.

Set the device into inclusion mode.

(This is usually done by clicking one or three times on the button on the device. Please check the manual for the product how it's done for the specific product.)

The device is now being included to TellStick ZNet Lite.

Choose a name for your device.

Please note: If a device has been used in an other Z-Wave network before and has not been excluded properly, it will not be possible to add it as a new device until it's been excluded first.

## Edit a device

### Edit a 433 MHz device

Click on the device to expand it. Click "Edit device".

You can change name, device brand and model and device settings.

### Edit a Z-Wave device

Click on the device to expand it. Click "Edit device".

Please note that not all of the options below are shown on all devices, this depends on the specific device you are editing.

## General information

Changing name on the device

## Association

Associations can be used to make a device send it's status or send control commands to an other device.

Associations are set up on the devices that should send out the control signals. The control signals are send directly to the device, without the gateway involved. This means that the association will be sent even if the controller isn't present.

Sometimes It's not suitable to set up a association to solve a task, then consider if it's more suitable to make an event instead.

Example: Door/window sensor controls an on/off switch.

You can set the on/off switch in the association group that controls other devices and the switch will turn on/off when the sensor is opened / closed. But if you want to turn on the switch when the sensor is opened and then turn off after 5 minutes, but not when the switch is closed - you'll have to set up that using events instead.

## Protection

If a device supports protection, this can be set in the configuration tab.

## Configuration

Configurations can be used to make settings in devices with support. The available settings are decided by the manufacturer and are therefore different for different devices.

If the device is a known device, the configurations will be described in an easy to use way.

If the device is an unknown device, the configurations has to be typed in manually using the device manual. Type in the configuration parameter, the size of the configuration and the desired value.

## Telldus Info

If the device is of a known type, an information text about the device compatibility will be visible here.

## Remove a device

### 433 MHz device

Click on the device to expand it. Click "Delete this device" and then confirm that you want to delete it.

### Z-Wave

Click on the device to expand it. Click "Exclude device".

Enter exclusion mode in the device that you would like to remove.

Exclusion mode is usually activated by clicking one or three times on the button on the device. Please check the manual for the product how it's done for the specific product.

## Replace failed node

This function is used to replace a failed node in your Z-Wave network.

When you replace a failed node with a new node, the new node will get the node id of the replaced node. This also means that all the routing information of the replaced node will be assigned to the new node.

Click on the device you wish to replace. Click "Edit device".

Click "Advanced settings", Click "Mark node as failed" and click OK.

Wait five seconds. If the node does not respond, click "Replace (failed)".

Set the new device into inclusion mode.

## Remove failed node

This function will remove a failed node from the Z-Wave network. A failed node is a Z-Wave device that no longer responds to commands. Please note that you cannot remove a device that still responds to commands with this function.

Click on the device you wish to replace. Click "Edit device".

Click "Advanced settings", Click "Mark node as failed" and click OK.

Wait five seconds. If the node does not respond, click "Remove (dead device)".

## LED description

### Power LED

Booting or upgrading	Flashing green
Normal operation	Steady green

### Status LED

Connected to Telldus Live!	Steady green
Waiting to be activated	Flashing green
Not able to connect to Telldus Live!	Steady red
Waiting to connect to Telldus Live!	Flashing red

### Transmission LED

Data transmission 433 MHz	Flashing blue
Normal operation	Not lit

### Network LED

Link	Steady yellow
Data	Flashing green

## Troubleshooting

### **No email with password**

If you do not receive an email with password when you registrate a new account, please check your spam folder.

If it's not there, please contact support at: <http://www.telldus.se/support/index>

### **Forgot password**

If you do not remember your password, use the forgot-password-function on the login page: <http://live.telldus.com>

### **No green light**

If TellStick ZNet Lite is not able to connect to the Telldus Live! servers for some reason, the status LED will not turn green. Please check the connection to the router and check your internet connection

### **Server status**

If you are experiencing problems with the Telldus Live! service, please check our server status feed at: [twitter.com/telldus](https://twitter.com/telldus)

## Basic Commands

### What the device does if it receives a Basic Command

When TellStick Znet Lite receives a Basic Set from one of the devices in the network the status of the device will change in the user interface.

When TellStick Znet Lite receives a Basic Get from one of the devices in the network it will be ignored.

### Send out Basic Set

All devices can be controlled with the Basic Set command.

Click on the device, making it expand. Click Edit device. Click Basic commands.

### Send out a Node Information Frame

Navigate to <http://live.telldus.com/profile/index3>

Click on the gateway

Click Change settings

Click Z-Wave settings

Click Send NIF

### Z-Wave factory reset

Navigate to <http://live.telldus.com/profile/index3>

Click on the location

Click Change settings

Click Z-Wave settings

Click "Reset controller"

## Technical Support

If you need technical support, please submit a support ticket at:

<http://www.telldus.se/support/index>

## Guides

You can find guides that describes various functions in Telldus Live! at:

<http://live.telldus.com/help/guides>

## Specification

System	MIPS Atheros AR9331
Wireless	Z-Wave 868.42 MHz (EU), 433.92 MHz (ISM)
Operating system	Linux OpenWRT derived
Z-Wave	Security enabled Z-Wave Plus
Physical dimension	120x60x30mm (height is ~120mm with antenna)
Power	USB 5V, 1A, mini-USB
Power usage	~2 Watts
Operating Temperature	0 - 40°C

## Including TellStick ZNet Lite into another controller

This device can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

### Include the device into another existing network

1. Navigate to <http://live.telldus.com/profile/index3>
2. Click on the gateway
3. Click Change settings
4. Click Z-Wave settings
5. Set the primary controller into add mode.
6. Click "Start learn mode".

TellStick ZNet Lite will now be included into the other Z-Wave network.

When "Start learn mode" is pressed, the gateway will start in classic learn mode for 5 seconds and then change to "Network wide inclusion" mode for 5 seconds.

### Controller Shift

1. Navigate to <http://live.telldus.com/profile/index3>
2. Click on the gateway
3. Click Change settings
4. Click Z-Wave settings
5. Set the primary controller into learn mode.
6. Click "Controller shift"

### Copy network information from TellStick ZNet Lite to another controller

1. Navigate to <http://live.telldus.com/profile/index3>
2. Click on the gateway
3. Click Change settings
4. Click Z-Wave settings
5. Click "Request network update"

### Association

#### Association group 1 - Lifeline - Max 1 node

Lifeline is used to send information to the main controller in the Z-Wave network.

## Controlled Command Classes

### Association Command Class

The Association Command Class defines the commands necessary to create and maintain associations in a device. The associations are a list of devices the device wants to control on application level. Some devices may wish to have several groupings of associated nodes so each can be controlled by different events. The groupings are addressed by a Grouping Identifier with up to 255 different groupings of nodes associated to different events.

Read more in section 'Association'

### Association Group Information Command Class

The Association Group Information (AGI) Command Class allows a device to report the capabilities of each association group supported by a given application resource.

This command class is automatically handled by the interview process.

### Basic Command Class

The Basic Command Class allows a controlling device to operate the primary functionality of another device without any further knowledge. The Basic Command Class ensures a basic interoperability if no other command class is shared by two devices.

Read more in section 'Basic Commands'

### Battery Command Class

The Battery Command Class is used to request and report battery levels for a given device.

This command class is automatically handled.

### Binary Switch Command Class

The Binary Switch Command Class is used to control devices with On/Off or Enable/Disable capability.

This command class is used to control on/off devices.

### Configuration Command Class

The Configuration Command Class allows product specific configuration parameters to be changed. One example could be the default dimming rate of a light dimmer.

Read more in section 'Configuration'

### CRC-16 Encapsulation Command Class

The CRC-16 Encapsulation Command Class is used to encapsulate a command with an additional CRC-16 checksum to ensure integrity of the payload. The purpose for this command class is to ensure a higher integrity level of payloads carrying important data using 9.6/40kbps communication, in case the LRC checksum (8 bit) provided on protocol level is not sufficient to ensure integrity.

This command class is automatically handled.

### Manufacturer Specific Command Class

This Command Class is used to advertise manufacturer specific information.

This command class is automatically handled by the interview process.

### Meter Command Class

The Meter Command Class is intended for devices capable of reporting energy measurements in addition to any main functionality or features e.g. an appliance module reporting the current consumption of the connected load.

This command class is used in order to eg. show energy meter reports.

### Multi Channel Command Class

The Multi Channel command class is used to address one or more end points in a Multi Channel device.

This command class is automatically handled.

### Multi Channel Association Command Class

The Multi Channel Association Command Class is used to create application bindings to Multi Channel End Point resources as well as to Root Devices. The command class can handle nodes with and without Multi Channel End Points.

Read more in section 'Association'

### Multilevel Switch Command Class

The Multilevel Switch Command Class is used to control devices with multilevel capability.

This command class is used to control dimmer devices.

#### No Operation Command Class

The No Operation Command Class is used to check if a node is reachable by sending a Command class frame to the specified destination.

Read more in sections 'Replace failed node' and 'Remove failed node'

#### Protection Command Class

The Protection Command Class version 1 used to protect a device against unintentionally control by e.g. a child.

Read more in section 'Protection'

#### Security Command Class

The Security Command Class creates the foundation for secure application communication between nodes in a Z-Wave network. The security layer provides confidentiality, authentication and replay attack robustness through AES-128.

This command class is automatically handled, when a device is included secure.

#### Version Command Class

The Version Command Class may be used to obtain the Z-Wave library type, the Z-Wave protocol version used by the application, the individual command class versions used by the application and the vendor specific application version from a Z-Wave enabled device.

This command class is automatically handled.

#### Wake Up Command Class

The Wake Up Command Class allows a battery-powered device to notify another device (always listening), that it is awake and ready to receive any queued commands.

This command class is automatically handled.

#### Z-Wave Plus Info Command Class

The Z-Wave Plus Info Command Class is used to differentiate between Z-Wave Plus, Z-Wave for IP and Z-Wave devices.

Furthermore this command class provides additional information about the Z-Wave Plus device in question

This command class is automatically handled.