



# RTLSS – Installation Guide

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Version 01.01

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# 1 Audience

This document provides guidelines for system administrators to install and deploy the xMesh technology e running on Windows OS.

This guide is designed for two primary audiences:

People are new to installing server software. This guide is primarily for people who might not usually have the job of installing server software. This guide ensures that people with limited IT experience are comfortable installing and managing SmartX Hub® Integration with RTLS Location Engine. For example, we explain the concepts you need to understand as we go.

You are seasoned IT administrators or server administrators. If server installations are already your thing, we think you will find this helpful guide as an overview of the basic configuration settings available with the Server or setting up a trial or first deployment. We have also called out where your expertise will probably be needed if you support new admins who use this guide to install a departmental RTLS Location Engine or SmartX HUB Server. This guide gives you the background to answer their questions.

## 1.1 Basic System Requirement

This section details the minimum system for setting up Smartx RTLS Location Engine™:

CPU Core i3 processor  
1GB SSD  
4GB RAM  
Gigabit Network  
Windows 10 or higher

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## 2 Hardware

### 2.1 Gateway

	<p>Ethernet and Wi-Fi network.</p>	
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### 2.2 Anchors

	<p>2 x ER18505 8000 mAh battery</p>	
	<p>Accelerometer</p>	
	<p>Magnetic Switch</p>	
	<p>IP67 Waterproof standard</p>	

### 2.3 Asset Tags

	<p>1 x CR3032 500 mAh battery</p>	
	<p>Accelerometer</p>	
	<p>Button</p>	
	<p>IP65 Waterproof standard</p>	

	1 x CR2477 1000 mAh battery	
	Accelerometer	
	Magnetic Switch	
	IP67 Waterproof standard	

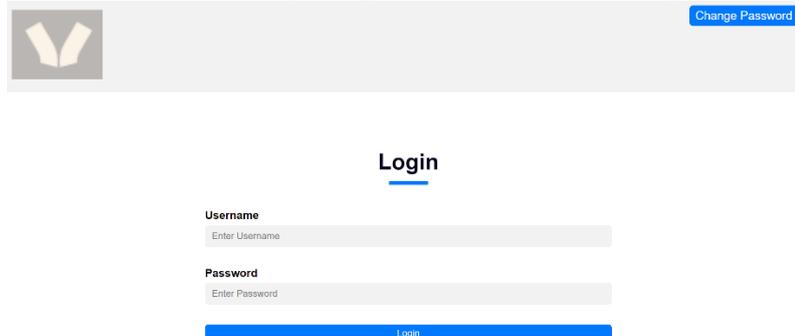
## 2.4 Temperature Tag

	2 x AAA 1200 mAh battery	
	Accelerometer/Temperature/Humidity	
	Push the Button to Trigger the information	
	IP54 Waterproof with external sensor	

### 3 Installing the Gateway

Connect your gateway to the same network where your computer is placed. The easiest way to connect is a direct connection with your network router.

1. **Connect the Gateway to the network using a LAN cable.**
2. **Power the Gateway using a USB cable.**
3. **Connect to the Gateway using the Web Browser at <http://aethermesh.local:8000/>**



The screenshot shows the gateway's web interface. At the top right, there is a "Change Password" button. Below it is a "Login" section with two input fields: "Username" (with the placeholder "Enter Username") and "Password" (with the placeholder "Enter Password"). A blue "Login" button is positioned below the password field.

In case you cannot connect, you can use the IP scanner to find the Gateway IP and then type the IP: xxx.xxx.xx.xx :8000/

You can also use a device to bridge the gateway and the wi-fi. The Picture below shows that connection.

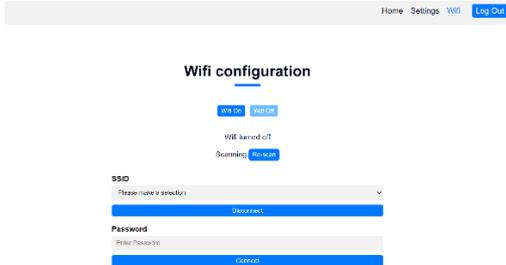


The next step is to login into the Gateway using the password below:

- a. **Username: admin**
- b. **Password: aethermesh**

### 3.1 Setup WiFi Connection at the Gateway

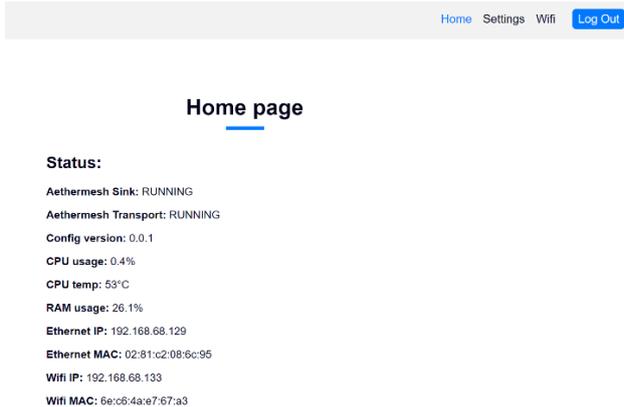
Click on Wifi on the Header Bar



1. Click on WiFi On Button to turn on the WiFi.
2. Click on Re-scan to Scan for WiFi Networks
3. Select SSID from the Dropdown List, Enter Password and Click Connect



4. Click on Home on Header Bar to show Network Connection.



### 3.2 Setup Gateway Network and Channel

- 1 Click on Settings on the Header Bar

Home Settings **WiFi** Log Out

### Gateway Settings

Sink ID:  
AetherMesh\_GW

Site name:  
aethermesh

AetherMesh Network:  
-8500

AetherMesh Channel:  
15

\* If you change the value, the gateway will reboot  
Saving will NOT apply the settings.  
You have to SAVE it, check if everything is correct and then APPLY the settings.

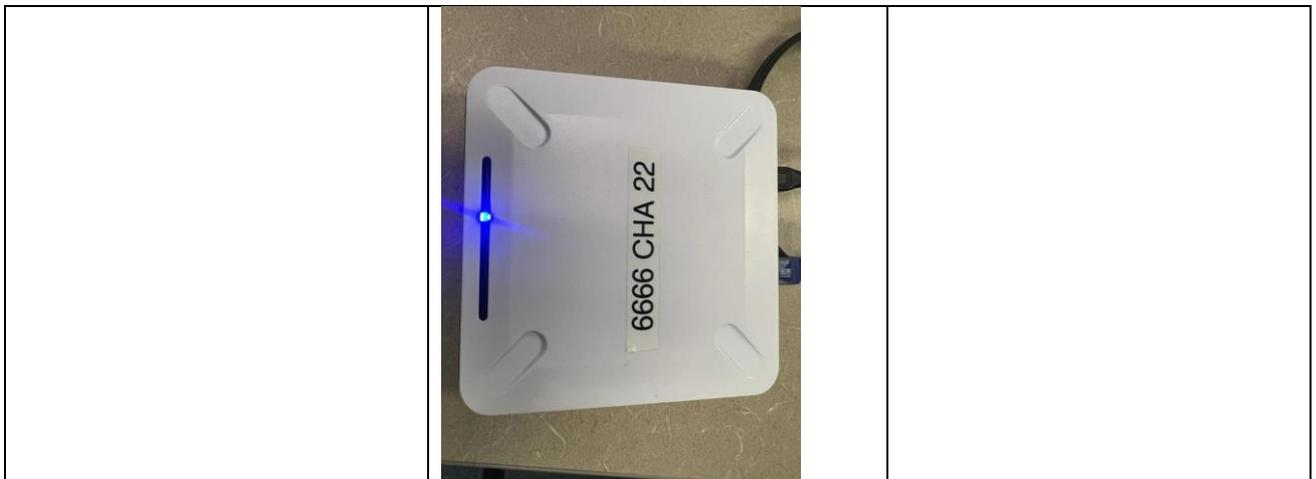
Save  
Apply Settings

- 2 Enter the Network, site name, and Channel informed by SmartX HUB Technical Support
- 3 Do not change the Sink ID.
- 4 Click Save Button to save the changes
- 5 Click Apply Setting, and the Gateway will reboot with the changes
- 6 Please note that changing the Site Name will modify the domain name of the gateway to <site name>. local

### 3.3 LED Indicators

Be aware of the led lights to ensure you have the correct information about the status of your equipment.

- **Blue LED: Gateway is working and connected to the platform**



- **Purple LED: Gateway is not working**

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## 4 Installing the Software for tag Configuration

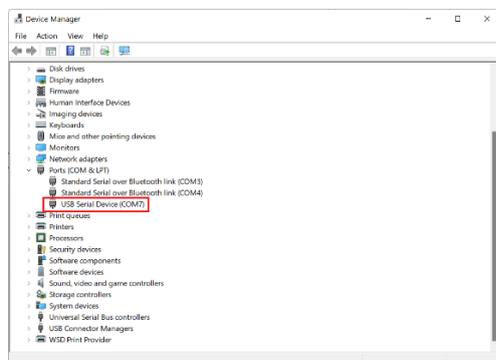
Every device connected to the network will be available at the SmartX Hub automatically. The gateway will only read and exchange information with the devices connected to the same gateway “network.”

You will need to connect the Pen-Drive with the scanner program to your computer and download the application according to Smartx HUB support team orientation.



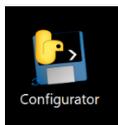
You must apply the correct parameters to the tags and anchors as follows:

- 1 **Insert the configurator dongle into the Windows PC/Laptop USB port .**
- 2 **Check the COM Port used by the Configurator Dongle in the Windows Device Manager.**



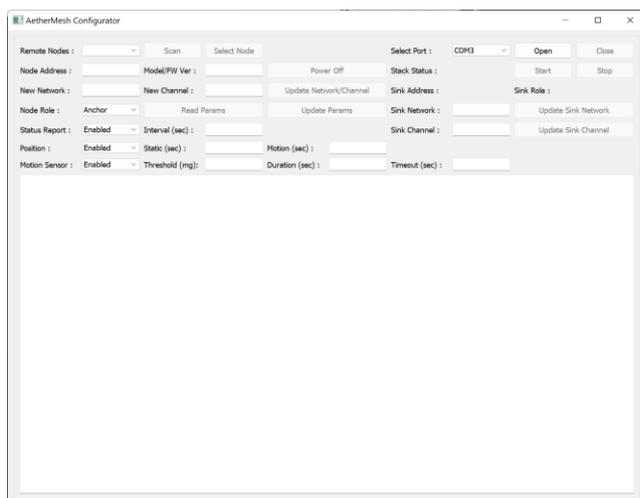
### 4.1 AetherMesh Configurator Software

- 1 **Locate the Configurator Software (configurator.exe) on the Computer and run the program.**

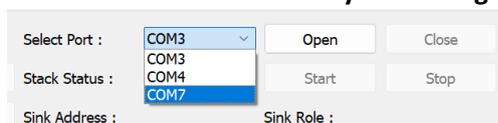


- 2 **You should see the following application screen when the program is running.**

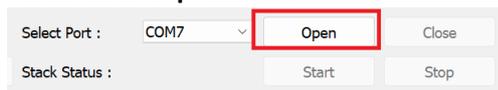
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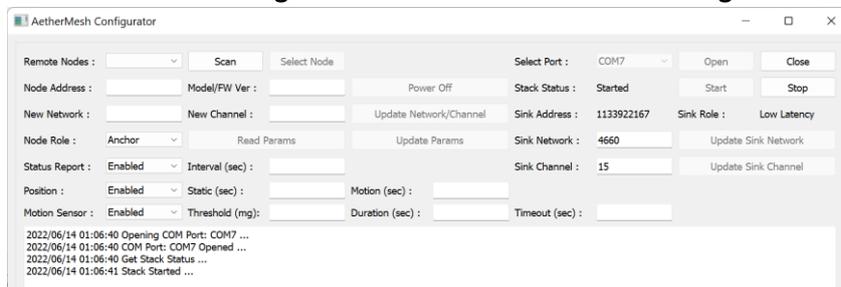
**3 Select the COM Port used by the Configurator Dongle from the Select Port Dropdown List.**



**4 Click on the Open Button.**



**5 You should see messages in the status box when the Configurator Dongle is connected.**



**6 When the Configurator Dongle is left too long in the Computer without running the Configurator Software, the buffer may become full causing the program to hang. You will notice many messages in the Windows Console. When this happens, remove the Configurator Dongle from the Computer, reinsert the Configurator Dongle into the Computer and restart the Configurator Software.**

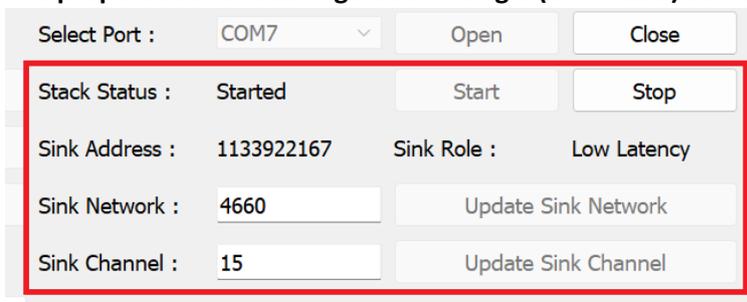
```

CA | \Configurator.exe
2022/06/14 01:06:40 Opening COM Port: COM7 ...
2022/06/14 01:06:40 COM Port: COM7 Opened ...
2022/06/14 01:06:40 Get Stack Status ...
2022/06/14 01:06:41 Stack Started ...
2022/06/14 01:06:41 Remote Node : 526804071 - Position Data Received ...
2022/06/14 01:06:41 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:06:41 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:06:41 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:06:41 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:07:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:07:06 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:07:36 Source Add/EP : 526804071/30, Dest Add/EP : 1133922167/30, Payload : 005200000100e0000000
2022/06/14 01:08:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:08:06 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:09:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:09:06 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:10:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:10:06 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:11:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:11:06 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:12:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:12:06 Remote Node : 1133922167 - Diagnostics Data Received ...
2022/06/14 01:12:36 Source Add/EP : 526804071/30, Dest Add/EP : 1133922167/30, Payload : 005300000100e0000000
2022/06/14 01:13:06 Remote Node : 526804071 - Diagnostics Data Received ...
2022/06/14 01:13:07 Remote Node : 1133922167 - Diagnostics Data Received ...

```

## 4.2 Configurator Dongle (Sink Node) Properties

1 The properties of the Configuration Dongle (Sink Node) can be seen below.



2 All Nodes must be on the same Network and Channel to communicate.

3 Network is a 24 bit number from 1 to 16777214 (0x000001 to 0xFFFFFE) except any bytes containing 0xAA or 0x55 inside the 24 bits.

4 Channel is a number from 1 to 40.

5 AetherMesh devices use Factory Default Network 4660 and Channel 15.

## 4.3 Update the tag and anchors Network and Channel

You must use the same network and Channel informed by Smartx Hub technical support.

1 Remote Node (Anchors, Tags, and Sensors) can communicate with the Configurator Dongle (Sink Node) if they are on the same Network and Channel.

**2 The Stack must be started for the Remote Nodes to communicate. If the Stack is Stopped, you will need to Start the Stack (see 2.4 Point 6).**

**3 To search for Remote Nodes on the network, click the Scan Button.**

Remote Nodes :

Node Address :  Model/FW Ver :

New Network :  New Channel :

**4 You will see the list of Nodes in the Remote Nodes Dropdown List.**

Remote Nodes :

Node Address :  Model/FW Ver :

New Network :  New Channel :

**5 Please note that a maximum of 8 remote nodes can be found anytime. If there are more than eight remote nodes nearby, you will need to power off the additional devices or move them away from the Computer.**

**6 To update the Remote Node, you will need to select the Node from the Remote Nodes Dropdown List and Click on the Select Node Button.**

Remote Nodes :

Node Address :  Model/FW Ver :

**7 The Remote Node Address, Model, and Firmware Version will be populated if the Sink can communicate with the Remote Node and is a supported model.**

Remote Nodes :

Node Address :  Model/FW Ver :

New Network :  New Channel :

**8 To update the Network and Channel for the Remote Node, Enter the New Values in the Edit Boxes and Click on Update Network /Channel Button.**

Remote Nodes :

Node Address :  Model/FW Ver :

New Network :  New Channel :

**9 Please note that you will need to enter the Network and Channel values.**

**10 The Remote Node will automatically reboot to the new Network and Channel after the update. You will not be able to communicate with the Remote Node unless the Network and Channel of the Configurator Dongle are updated to match the Remote Node.**

**11 If there is a Gateway with the matching Network and Channel, the Remote Node will join the Gateway Network.**

## 4.4 Update Remote Tag or Anchor Node Parameters

**1 To update the Remote Node Parameters, you will need to select the Node from the Remote Node Dropdown List and Click on the Select Node Button (see 2.6 Points 1 and 2).**

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**2 Click on the Read Params Button to read the current parameters on the Remote Node.**

Remote Nodes :	526804071	Scan	Select Node
Node Address :	526804071	Model/FW Ver :	M3 / 3.1.3.0
New Network :		New Channel :	
Node Role :	Anchor	<b>Read Params</b>	

**3 The current parameters for the Remote Node will get populated as shown.**

Remote Nodes :	526804071	Scan	Select Node	Select Port :	COM7	Open	Close	
Node Address :	526804071	Model/FW Ver :	M3 / 3.1.3.0	Power Off	Stack Status :	Started	Start	Stop
New Network :		New Channel :		Update Network/Channel	Sink Address :	1133922167	Sink Role :	Low Latency
Node Role :	Anchor	Read Params	Update Params	Sink Network :	4660	Update Sink Network		
Status Report :	Enabled	Interval (sec) :	300	Sink Channel :	15	Update Sink Channel		
Position :	Enabled	Static (sec) :	900	Motion (sec) :	30			
Motion Sensor :	Enabled	Threshold (mg) :	300	Duration (sec) :	0	Timeout (sec) :	60	

**4 To update the parameters, enter the new value in the respective Edit Boxes.**

**5 Click on the Update Param Button to make the changes.**

Remote Nodes :	526804071	Scan	Select Node	Select Port :	COM7	Open	Close	
Node Address :	526804071	Model/FW Ver :	M3 / 3.1.3.0	Power Off	Stack Status :	Started	Start	Stop
New Network :		New Channel :		Update Network/Channel	Sink Address :	1133922167	Sink Role :	Low Latency
Node Role :	Anchor	Read Params	<b>Update Params</b>	Sink Network :	4660	Update Sink Network		
Status Report :	Enabled	Interval (sec) :	300	Sink Channel :	15	Update Sink Channel		
Position :	Enabled	Static (sec) :	900	Motion (sec) :	30			
Motion Sensor :	Enabled	Threshold (mg) :	300	Duration (sec) :	0	Timeout (sec) :	60	

**6 The Remote Node will automatically reboot after the update.**

**7 If you plan to update the parameters and change the network/channel, you should always update constantly parameters before updating the network/channel.**

# 1. Application Platform

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