

AKCP SP-WTS Wireless Tunnel Server



AKCP SP-WTS Wireless Tunnel Server User Guide

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AKCP SP-WTS Wireless Tunnel Server



Specifications:

- Supports up to 30 AKCP Wireless Tunnel™ Sensors
- Accessible via Ethernet connectivity
- Supports access to sensor data via Web UI, SNMP, Modbus TCP/IP or MQTT
- Includes 3 wired sensor ports (RJ45)
- Does not support Wi-Fi and BEB expansion functionality

Product Usage Instructions

A) How to first power on the unit and get access to the WebUI

1. Connect the 5.5V Micro USB cable to power on the unit.
2. Connect the Ethernet cable to establish a network connection.
3. Configure your network card's IP with IPv4 address: 192.168.0.200.
4. Connect the SP-WTS directly to your PC or laptop's network card with a crossover cable.
5. Open a supported browser (Chrome or Firefox) and access the WebUI using the default IP: 192.168.0.100.

B) How to add a Wireless Sensor (SP-WT) to the SP-WTS

Wireless sensors communicate with the SP-WTS using radio frequency signals. Follow these steps to add a wireless sensor:

1. Pair the wireless sensor with the SP-WTS.
2. It is recommended to first connect the wired sensor to the SP-WT before adding it to the SP-WTS to avoid detection delays.

C) SP-WTS Network Settings

Configure the network settings of the SP-WTS according to your network requirements for seamless connectivity.

D) License Management

Manage licenses for the SP-WTS as needed for optimal functionality.

E) Replacing the Batteries

If applicable, follow the instructions provided in the user manual for replacing batteries in the device.

F) Cloud WebUI

If using cloud services, refer to the manual for information on configuring and utilizing the Cloud WebUI.

G) Features Overview: Virtual Sensors, Graphing

Explore and utilize features such as Virtual Sensors and Graphing capabilities for enhanced monitoring and data visualization.

H) SP-WT 4SP Information

Refer to specific details regarding SP-WT 4SP for comprehensive understanding and usage.

FAQ:

- **Q: How many wireless sensors can the SP-WTS support?**

A: The SP-WTS can support up to 30 AKCP Wireless Tunnel™ Sensors.

- **Q: Can I connect the SP-WTS to a Wi-Fi network?**

A: No, the SP-WTS does not support Wi-Fi connectivity.

SP-WTS QuickStart Guide

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AKCP sensorProbe – Wireless Tunnel™ Server (SP-WTS)

The SP-WTS is a new product based on sensorProbe+ series, and supports up to 30 AKCP Wireless Tunnel™ Sensors.

SP-WTS can collect, store and graph data from all AKCP wireless sensors. It is accessible via Ethernet connectivity to access sensor data via the built-in Web UI, over SNMP, Modbus TCP/IP or MQTT. AKCPro Server provides central monitoring of multiple gateways.

SP-WTS includes 3 wired sensor ports (RJ45).

Options available:

- 4G Cellular Modem and GPS
- Modbus RS485 port
- PoE (planned, not yet available)

Note: SP-WTS does not support Wi-Fi and BEB expansion functionality.



In this QuickStart Guide, we will cover the following:

- How to first power on the unit and get access to the WebUI
- How to add a Wireless Sensor (SP-WT) to the SP-WTS
- SP-WTS Network Settings
- License Management
- Replacing the batteries
- Cloud WebUI
- Features overview: Virtual Sensors, Graphing
- SP-WT 4SP information

A) How to first power on the unit and get access to the WebUI

To access and configure your SP-WTS unit:

- connect the 5.5VDC Micro USB power adapter
- connect a network (LAN) cable to the unit's Ethernet port
- power it on
- open a web browser and access the WebUI

Connecting the 5.5V Micro USB cable



Connecting the Ethernet cable



- Using a PC or laptop, configure your network card's IP with IPv4 address: 192.168.0.200
- Connect the SP-WTS directly to your PC or laptop's network card with a crossover cable.
- First time configuration
- After the SP-WTS has boot up, open the WebUI using the unit's default IP 192.168.0.100

- Open <http://192.168.0.100> with a supported browser (Chrome or Firefox).
- **Note:** the units ship with DHCP enabled. If you connect the unit to your local network instead of a direct crossover cable connection, you will need to find its IP address from your router's DHCP IP list.
- **Note2:** the units ship with CloudAPS connection enabled. If you want to use your unit with a local APS, you will have to disable this option first. Please refer to the Cloud APS manual for more information.

Welcome to SP-WTS Setup In the next few screens, we will help you set up your system information, date/time, network connections, and account security. This process will get your unit fully functional and ready to go.

The screenshot shows the first step of the setup wizard. At the top, there is a progress bar with three steps: 1. System Information (active), 2. Date / Time, and 3. Account Security. Below the progress bar, the title "Step 1: Give the unit a system name, system location, and system contact" is displayed. The form contains three input fields: "System Name", "System Location", and "System Contact". At the bottom, there are three buttons: "BACK", "NEXT" (highlighted in blue), and "SKIP SETUP".

The unit's setup wizard will load.

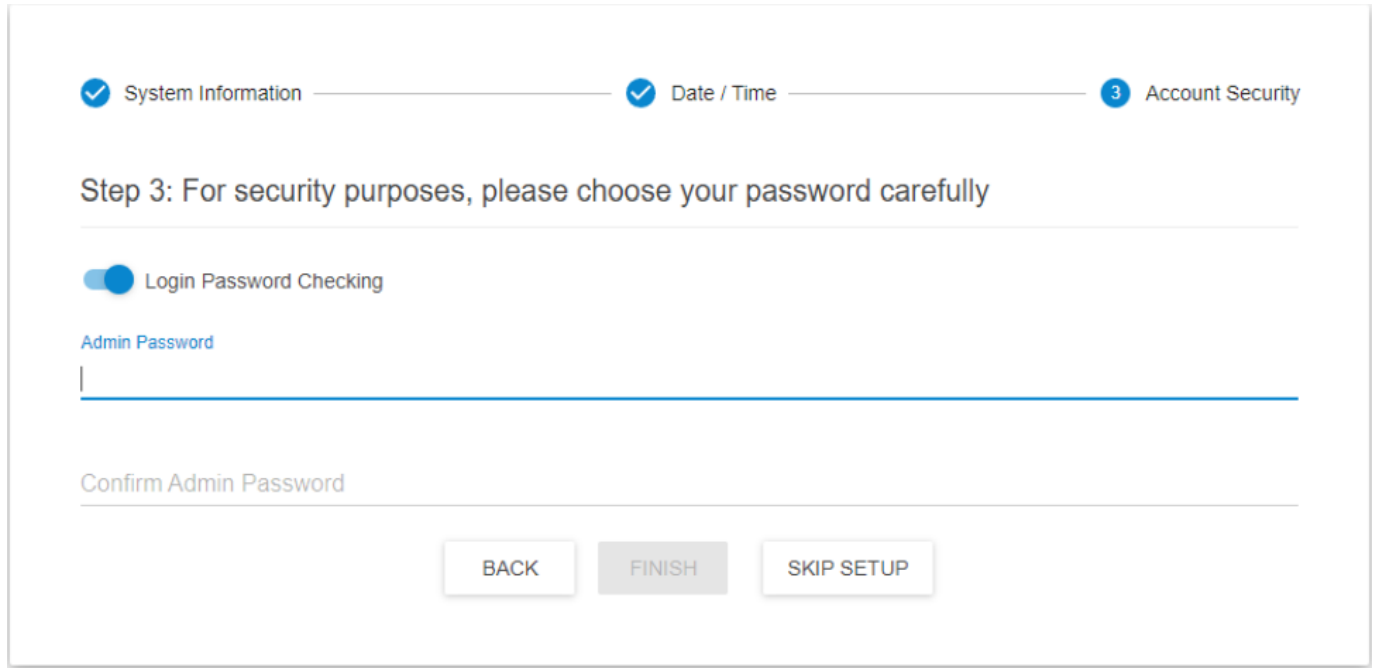
You can customize the unit's basic parameters now (system name, location, contact, date & time, password checking, etc.), or you can choose "Skip setup" and do it later.

Welcome to SP-WTS Setup In the next few screens, we will help you set up your system information, date/time, network connections, and account security. This process will get your unit fully functional and ready to go.

The screenshot shows the second step of the setup wizard. At the top, the progress bar shows: 1. System Information (completed with a checkmark), 2. Date / Time (active), and 3. Account Security. The title "Step 2: Choose the appropriate date/time and time zone" is displayed. On the left, there is a large clock icon. To the right of the icon, there are three input fields: "Date" (containing "Wednesday 11/10/2023"), "Time" (containing "7:53 am"), and "Timezone" (containing "(GMT, DST observed) Dublin, Edinburgh, Lisbon, London" with a dropdown arrow). At the bottom, there are three buttons: "BACK", "NEXT" (highlighted in blue), and "SKIP SETUP".

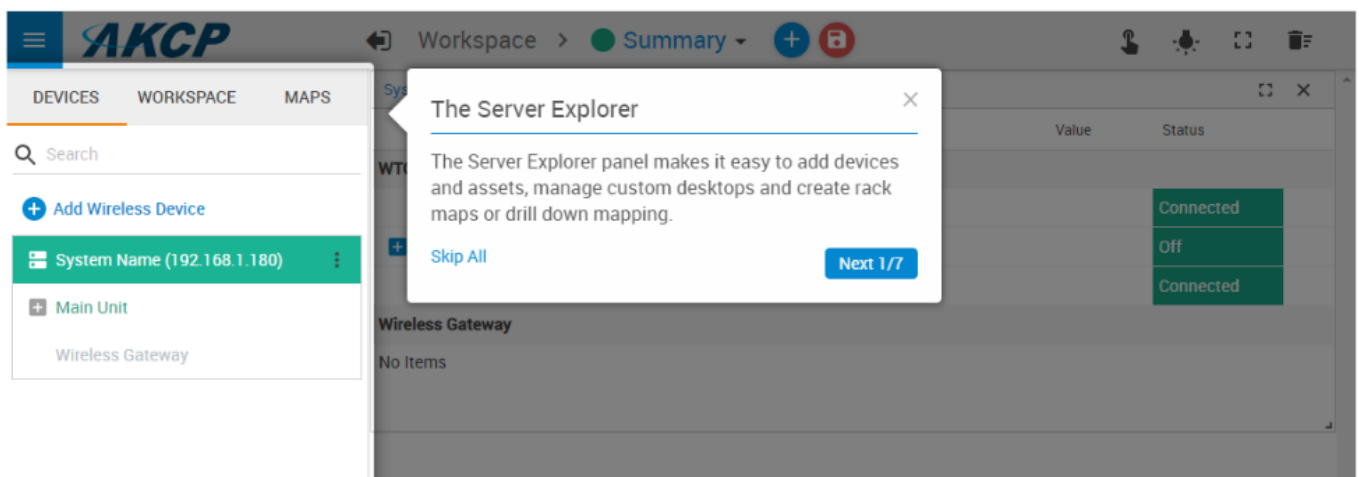
Choose your correct Timezone.

Welcome to SP-WTS Setup In the next few screens, we will help you set up your system information, date/time, network connections, and account security. This process will get your unit fully functional and ready to go.

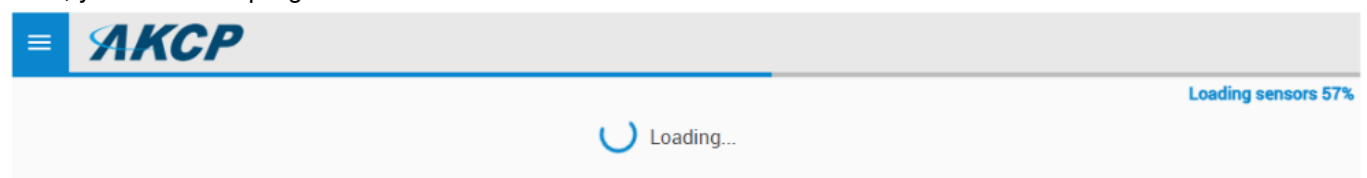


- It is recommended to enable WebUI password checking.
- Here you can set the built-in Admin user's password.
- For details about connecting to the cloud APS service, see below in this manual.

A WebUI tutorial will follow, where you can learn the basics of using the interface. You can skip the tutorial any time.



A new feature has been added in firmware 6028: if there are lots of sensors and the WebUI loading is slower than usual, you will see a progress indicator.



B) How to add a Wireless Sensor (SP-WT) to the SP-WTS

- Wireless sensors have the advantage of easy installation with no communication cables or power required. These sensors communicate with the SP-WTS using radio frequency signals, and you need to pair them with the SP-WTS to get their data.
- **Note:** SP-WTS still supports adding older wireless sensor types (BOS/WTS).
- It is recommended that you first connect the wired sensor to SP-WT prior to adding it to the SP-WTS, in order to avoid detection delays (as shown on the picture below).



Adding a wireless sensor

- First open the SP-WTS unit's WebUI. Click on the Add Wireless Device icon to begin.
- Then make sure that your wireless sensor is in RUN mode in order to complete the sensor pairing: press and hold the sensor's button for 3 seconds (for SP-WT; older sensors just need 1-2 seconds). The wireless sensor's LED will light up briefly.

The screenshot shows the AKCP WebUI interface. The left sidebar has a search bar and a list of devices. The 'Add Wireless Device' button is highlighted with a red box. The main panel shows a table of system components and their status.

Unit	Name	Value	Status
WTG			
Main board			Connected
Internal Sensors			Off
Virtual Sensors			Connected
Wireless Gateway			
No Items			

Add New Wireless Device

Device Network Address (Hex)

Network Session Key (Hex)

Application Session Key (Hex)

SEARCH

CANCEL

ADD

- You may either input the wireless key details manually, or use the automated method detailed below.

Search

- Instead of manually entering the HEX keys, you can use the wireless search method to automatically find a wireless sensor. The necessary network keys will be automatically detected.
- Click Add Wireless Device then click on the Search button on the lower left corner.
- Press and hold the button on the wireless sensor for 3 seconds until the LED begins to blink (SETUP mode).

Add New Wireless Device

Device Network Address (Hex)

Network Session Key (Hex)

Application Session Key (Hex)

STOP

CANCEL

ADD

Press 'Mode' button until 2 LED blinks (SETUP Mode) on your wireless sensor and release.

Add New Wireless Device

📶 LBTH with address 0x19510317 is detected from the USB port.

Device Network Address (Hex)

19510317

Network Session Key (Hex)

9AD5A30E94B70CE6DE64396E37472841

Application Session Key (Hex)

926334DC05CA9931FB120EE55AA82E82

SEARCH

CANCEL

ADD

- After it's detected, click on Add to add it to SP-WTS.
- After a new sensor has been added, you will notice a warning triangle next to it:

The screenshot shows the AKCP Workspace interface. On the left, a sidebar lists the system hierarchy: System Name (192.168.1.180), Main Unit, Wireless Gateway, and Wireless Device 19510317. The 'Wireless Device 19510317' is highlighted with a warning triangle icon. Below it, a list of sensors is shown: Battery, Humidity Port 2, RSSI Upstream, SNR Upstream, and Temperature Port 1. The main panel displays a table of system components and their status.

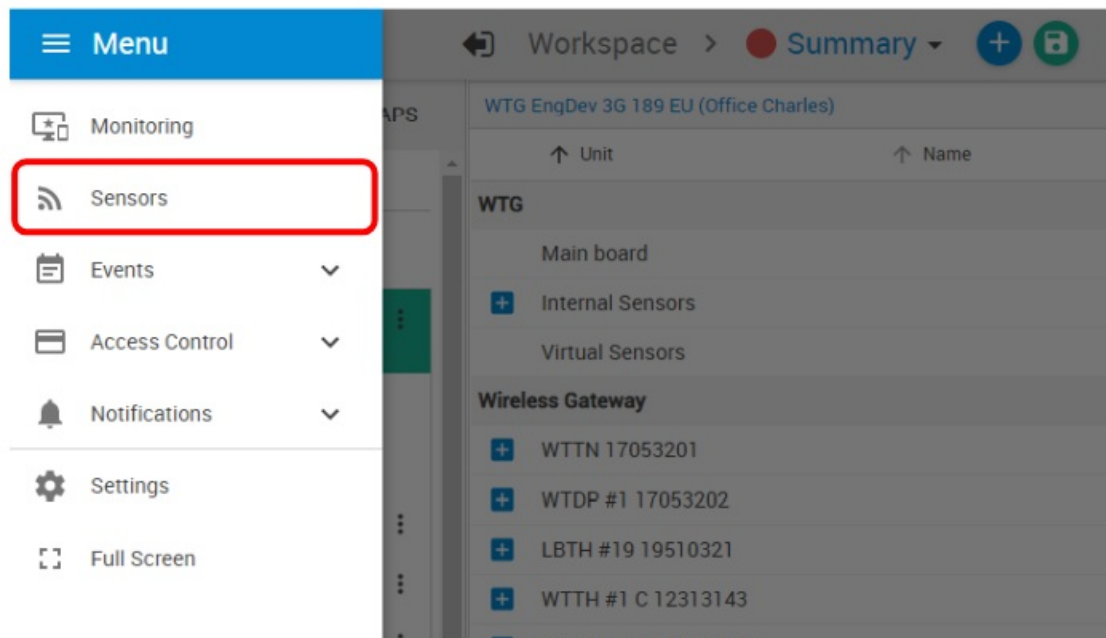
Unit	Name	Value	Status
WTG			
Main board			Connected
+	Internal Sensors		Off
	Virtual Sensors		Connected
Wireless Gateway			
+	Wireless Device 19510317		Not Connected

- This indicates that the sensor still requires sync (pairing) with the SP-WTS.
- Normally the sync will be done automatically, and after that the sensor readings should display correctly:

The screenshot shows the AKCP Workspace interface. On the left, there's a sidebar with a search bar and a list of devices under 'System Name (192.168.1.180)'. The main area displays a table of sensor data for a 'Wireless Gateway'.

System Name (System Location)				
Unit	Name	Value	Status	
WTG				
Main board			Connected	
Internal Sensors			Off	
Virtual Sensors			Connected	
Wireless Gateway				
Wireless Device 19510317	Battery	2.91 Volts	Normal	
Wireless Device 19510317	Humidity Port 2	54.94 %	Normal	
Wireless Device 19510317	RSSI Upstream	-30 dBm	Normal	
Wireless Device 19510317	SNR Upstream	5	Normal	
Wireless Device 19510317	Temperature Port 1	32.09 °C	High Warning	

Further sensor configuration



Access the menu on the top left corner and go to the Sensors page. The wireless sensors can be managed from this menu.

Monitoring

WTG

Wireless Gateway

Wireless Device 19510317

Overview

Device

Sensors

Network

Synchronization

System Name (192.168.1.180)

System Location

Device Type

LBTH v3.48

Status

Reachable

Signal to Noise Ratio (SNR)

5

Received Signal Strength Indicator (RSSI)

-30 dBm

Power Source

USB

Device Network Address (Hex)

19510317

Network Session Key (Hex)

9AD5A30E94B70CE6DE64396E37472841

Application Session Key (Hex)

926334DC05CA9931FB120EE55AA82E82

MCU Voltage

2.91 Volts

REQUEST SENSOR DATA

Temperature Port 1

75.0

42.5

10.0

-22.5

-55.0

75.0

42.5

10.0

-22.5

-55.0

32.09 °C

High Warning

Humidity Port 2

0.0

25.0

50.0

75.0

100.0

0.0

25.0

50.0

75.0

100.0

54.94 %

Normal

REQUEST SENSOR DATA

Note that the “Request Sensor Data” button is only available when the SP-WT is not powered by batteries (uses USB power).
On the Device tab you can rename the sensor for easier identification:

Monitoring

WTG

Main board

Internal Sensors

Virtual Sensors

Wireless Gateway

LBTH #19 19510321

Overview

Device

Settings / Device

Device

Device Type

LBTH v3.49

Status

Reachable

Signal to Noise Ratio (SNR)

5

Received Signal Strength Indicator (RSSI)

-65 dBm

Power Source

Battery

Device

Sensors

Network

Synchronization

WSSI [WTDP revB noCut] 17053331
WSSI [WTH revB cut] 17053321
WSSI [WTH revB noCut c23] 17053332
WSSI [WTL revB ufl] 17053335
WSSI [WTPR revB/A nC] 170533BA

Settings

System Name

LBTH #19 19510321

Device Network Address (Hex)

19510321

Network Session Key (Hex)

14E6E8E7EACC134F827B89E634467E24

Application Session Key (Hex)

EA496B2235DE69A51B809C1B84CCFA86

SAVE

CANCEL

Monday, 2 November 2020 12:42:37
Copyright 2020 | AKCP | All Rights Reserved
Version: 1.0.778

Adjust the sensor reading thresholds:

Monitoring

WTG

Main board
Internal Sensors
Virtual Sensors
Wireless Gateway

LBTH #19 19510321

Overview

Device

Sensors

Network

Synchronization

WSSI [WTDP revB noCut] 17053331
WSSI [WTH revB cut] 17053321
WSSI [WTH revB noCut c23] 17053332
WSSI [WTL revB ufl] 17053335
WSSI [WTPR revB/A nC] 170533BA

1

Dual Temperature

Normal

2

Dual Humidity

Normal

MCU Voltage

Low Critical

SNR

Normal

RSSI

Normal

Dual Temperature
Advanced
Status Text
Continuous Time

Sensor Name

Temp LBTH

Sensor Reading

28.17 °C

Sensor Status

Normal

Low Critical
Low Warning
Normal
High Warning
High Critical

-55 → 10 → 20 → 30 → 40 → 75

SAVE

CANCEL

Monday, 2 November 2020 12:43:03
Copyright 2020 | AKCP | All Rights Reserved
Version: 1.0.778

Access further fine-tuning of the readings:

Dual Temperature

Advanced

Status Text

Continuous Time

Unit

Celsius

Rearm

1

Graph Enable

Enable

Data Collection Type

Instantaneous

SAVE

CANCEL

Change the sensor reading status texts for each status:

Dual Temperature

Advanced

Status Text

Continuous Time

High Critical

High Critical

High Warning

High Warning

Normal

Normal

Low Warning

Low Warning

Low Critical

Low Critical

Sensor Error

Sensor Error

SAVE

CANCEL

Adjust continuous time for each sensor status:

Dual Temperature
Advanced
Status Text
Continuous Time

Continuous Time for a Sensor Status to be active before accepting as a new status

High Critical	0 minutes
High Warning	0 minutes
Normal	0 minutes
Low Warning	0 minutes
Low Critical	0 minutes
Sensor Error	0 minutes

SAVE
CANCEL

- For switch type sensor, it's working the same as the feature we have on the wired AKCP sensors.
- For analog sensor type, you can set the number of polling (we display in time, polling number * polling interval) before accepting the status.

Adjust wireless network settings per sensor (take note of the warnings regarding battery life):

Monitoring

WTG

Main board

Internal Sensors

Virtual Sensors

Wireless Gateway

LBTH #19 19510321

Overview

Device

Sensors

Network

Synchronization

Network

Settings / Network

Sensor value collection period (Period of how often sensor values are collected and checked against thresholds. Values are used for events and graphing)

1 Minute

Sensor data broadcast period (Transmit sensor values and counters)

1 Minute

Warning: when device is on battery, the minimum period is 1 minute.

Warning: selected interval of 1 Minute will have battery live estimation of 1 year.

Timeout, period of delay since last received packet from sensor before 'Unreachable' status is reported (Minutes)

35

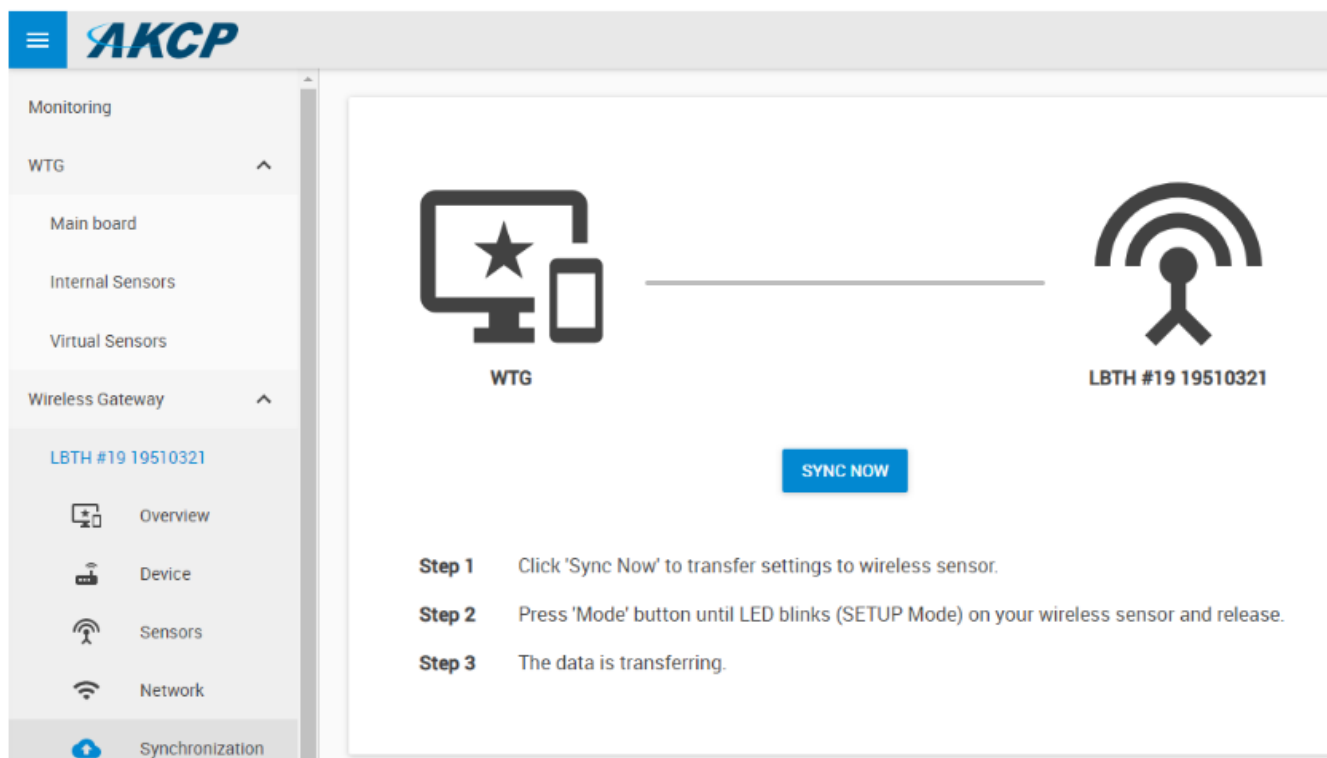
SAVE

CANCEL

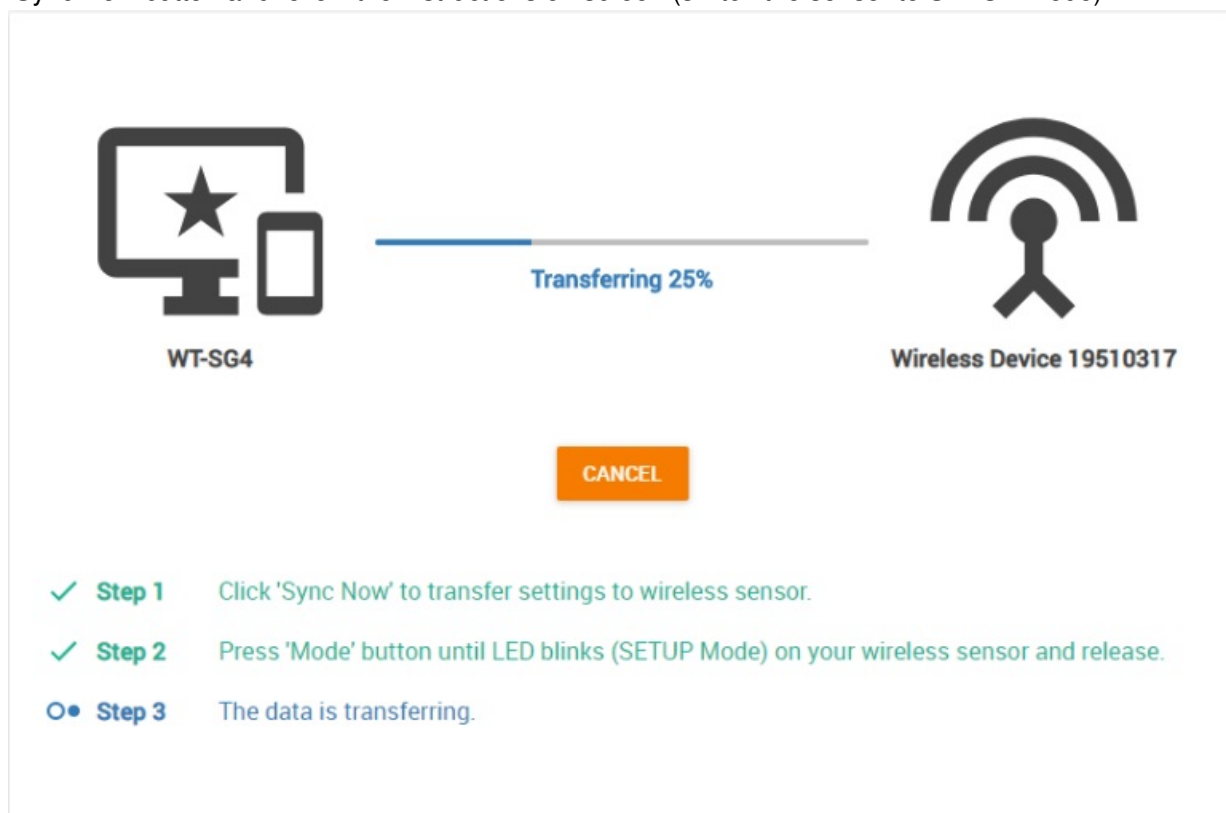
Important: the graph sampling period will use the “sensor value collection period” parameter. See details below in the Graphing feature overview.

- After making any changes, you would need to re-sync the sensor.

- This ensures that all configured settings will be sent to the sensor. Without sync, your new thresholds won't be applied.
- Note: the sensor settings can also be synced automatically the next time that the sensor broadcast a packet, but doing a manual sync is a faster way when the sensor is close at hands.



Click Sync Now button and follow the instructions on screen (switch the sensor to SETUP mode).



We recommend to change the used LoRa wireless channel, if you are in an environment with high radio traffic that affects sensor reading.

Go to Settings menu / Wireless / Wireless Settings:

AKCP

General

Language

Date / Time

Network

Wi-Fi

Wireless

Wireless Settings

Wireless Upgrade

Wireless Upgrade

USB Upgrade

Modem

VPN

Cloud Server

SMTP

SNMP

Server Integration

Services

Modbus

Password Checking

Wireless

System / Wireless

☒ Enable Wireless

RF Channel

Region: EU863-870MHz ISM Band

Channel to Use

Channel #5 (866.90 MHz DR13)

☐ Enable LBT

SAVE

CANCEL

Last received Wireless packets

Status: Stopped

START STOP

Search

Raw Packets

28.10.2020 19:45:04 Received data: length: 20, SNR: 5dB, RSSI: -18dBm.

28.10.2020 19:45:04 Data: 8001014915000000023BD3878ECC79948983B0A6.

28.10.2020 19:45:04 Payload: 0808D308B27715.

28.10.2020 19:45:04 Transmit data: length: 20.

28.10.2020 19:45:04 Data: 600101491520F3000EF4117F9C9A5DED2EA6B1D6.

28.10.2020 19:45:04 Payload: 0000151805EEFF.

28.10.2020 19:45:12 Received data: length: 19, SNR: 6dB, RSSI: -69dBm.

28.10.2020 19:45:12 Data: 8021035119000E00051F9AE1897BEDEC0A3132.

28.10.2020 19:45:12 Payload: 08A47742A11A.

28.10.2020 19:45:12 Transmit data: length: 13.

28.10.2020 19:45:12 Data: 602103511920F400FA0D61FE92.

28.10.2020 19:45:12 Empty payload.

Channel #3 (865.30 MHz DR13)

Channel #4 (866.10 MHz DR13)

Channel #5 (866.90 MHz DR13)

Channel #6 (867.70 MHz DR13)

- Choose a different channel which has less radio traffic.
- The available list of channels will depend on your country's radio frequency regulations.
- Important: after changing the channel, you will need to manually re-sync your wireless sensors!

The Wireless Settings page also provides a packet logger feature for troubleshooting:

AKCP

General

Language

Date / Time

Network

Wi-Fi

Wireless

Wireless Settings

Wireless Upgrade

USB Upgrade

Modem

VPN

Cloud Server

SMTP

SNMP

Server Integration

Services

Modbus

Password Checking

Last received Wireless packets

Status : **Stopped**

STARTSTOP

Search

Raw Packets

28.10.2020 19:45:04 Received data: length: 20, SNR: 5dB, RSSI: -18dBm.

28.10.2020 19:45:04 Data: 8001014915000000023BD3878ECC79948983B0A6.

28.10.2020 19:45:04 Payload: 0808D308B27715.

28.10.2020 19:45:04 Transmit data: length: 20.

28.10.2020 19:45:04 Data: 600101491520F3000EF4117F9C9A5DED2EA6B1D6.

28.10.2020 19:45:04 Payload: 0000151805EEFF.

28.10.2020 19:45:12 Received data: length: 19, SNR: 6dB, RSSI: -69dBm.

28.10.2020 19:45:12 Data: 8021035119000E00051F9AE1897BEDEC0A3132.

28.10.2020 19:45:12 Payload: 08A47742A11A.

28.10.2020 19:45:12 Transmit data: length: 13.

28.10.2020 19:45:12 Data: 602103511920F400FA0D61FR92.

28.10.2020 19:45:12 Empty payload.

28.10.2020 19:46:12 Received data: length: 19, SNR: 5dB, RSSI: -69dBm.

28.10.2020 19:46:12 Data: 8021035119000F0005FBC0FA61BD8F00A910D8.

28.10.2020 19:46:12 Payload: 08CC774AA11A.

28.10.2020 19:46:12 Transmit data: length: 13.

28.10.2020 19:46:12 Data: 602103511920F500FAB345C73A.

Pending Wireless TX Packets

Search

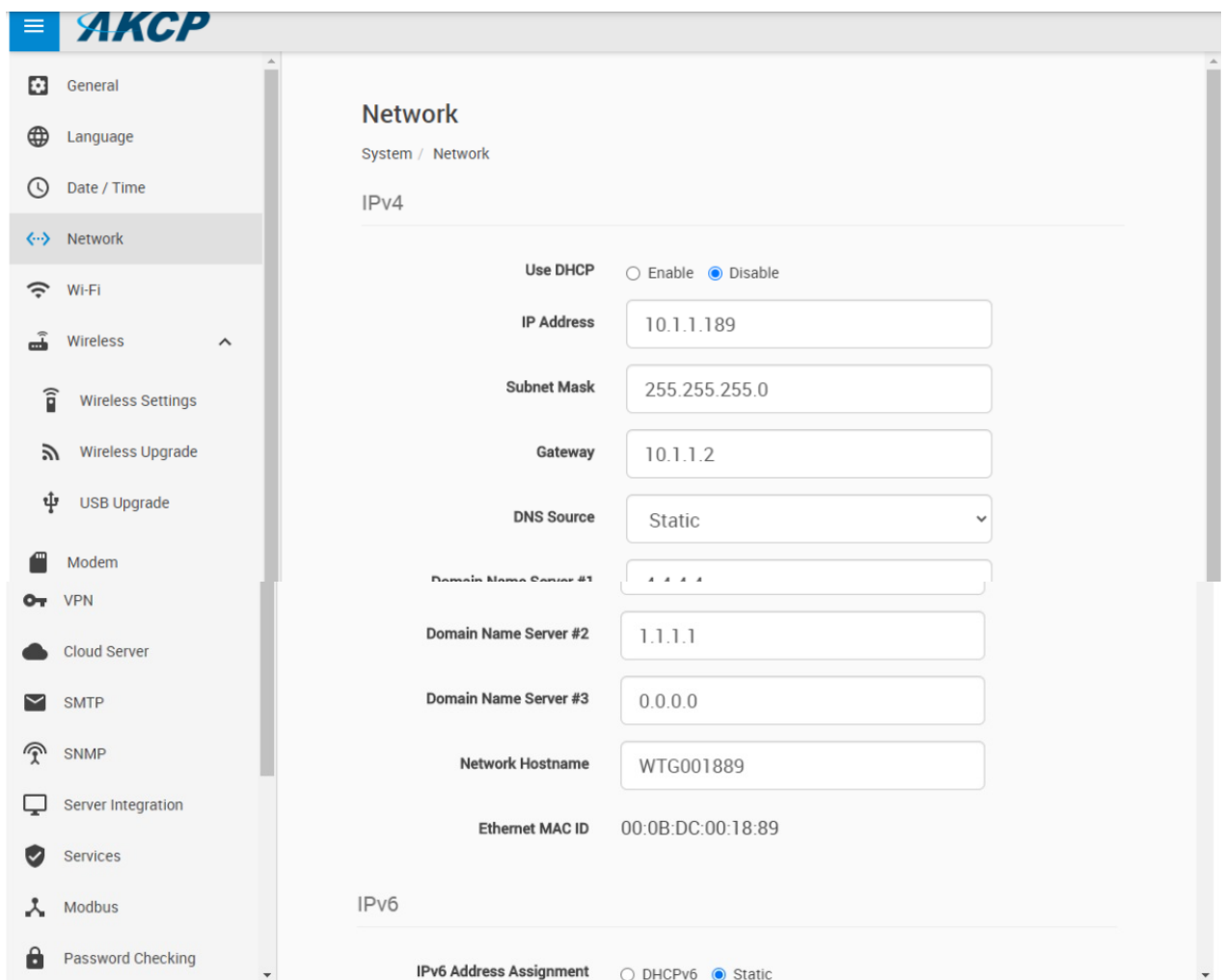
No Logs

Press Start to begin logging of the wireless packets; it will show the received and transmitted packets. The logging will stop automatically, or you can stop it manually.

C) SP-WTS Network Settings

- **Ethernet**

- You can change the SP-WTS unit's Ethernet network settings under Settings menu / Network:



Network
System / Network

IPv4

Use DHCP ☐ Enable ☒ Disable

IP Address

Subnet Mask

Gateway

DNS Source

Domain Name Server #1

Domain Name Server #2

Domain Name Server #3

Network Hostname

Ethernet MAC ID

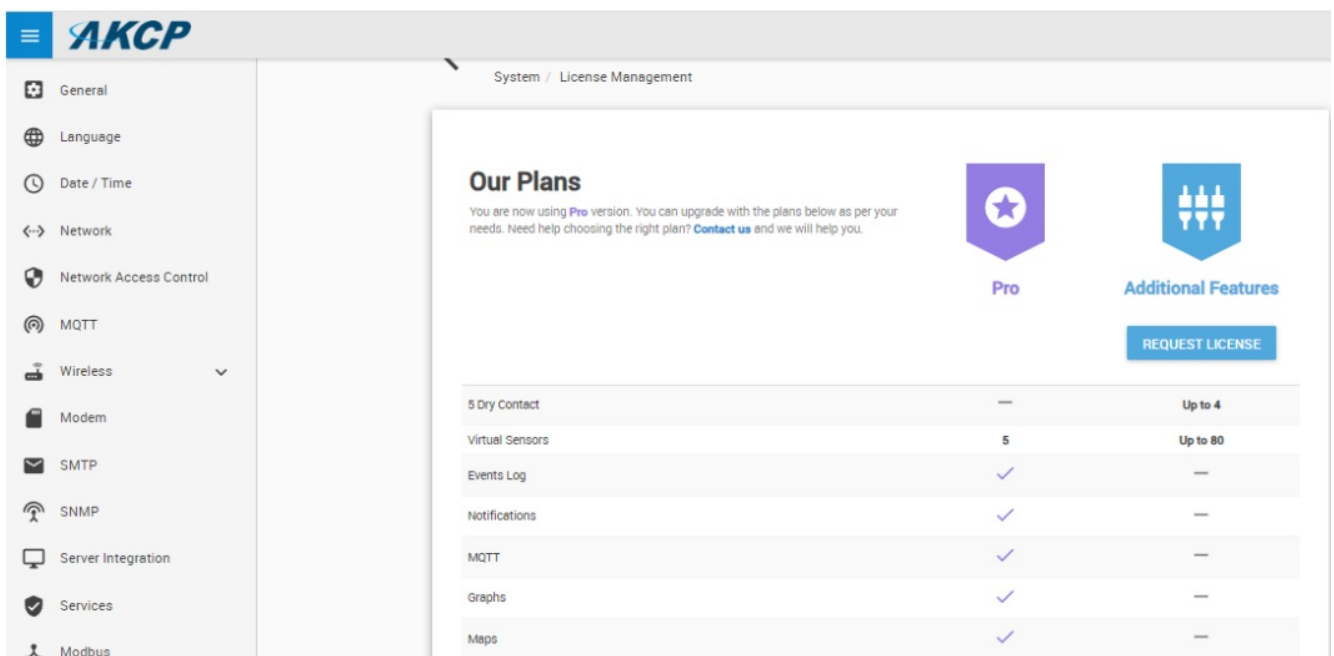
IPv6

IPv6 Address Assignment ☐ DHCPv6 ☒ Static

- These settings will affect the Ethernet interface only (wired connection). IPv6 is also supported on the SP-WTS.
- Press Save after making any changes.

D) License Management

You can review the current license under Settings menu / License Management:



System / License Management

Our Plans
You are now using **Pro** version. You can upgrade with the plans below as per your needs. Need help choosing the right plan? [Contact us](#) and we will help you.

	Pro	Additional Features
5 Dry Contact	—	Up to 4
Virtual Sensors	5	Up to 80
Events Log	✓	—
Notifications	✓	—
MQTT	✓	—
Graphs	✓	—
Maps	✓	—

[REQUEST LICENSE](#)

Password Checking		
RADIUS & TACACS		
Maintenance		
Heartbeat Messages		
License Management		
About		

IPv6	✓	—
SNMPv3	✓	—
VPN	✓	—
Access Control User	✓	—
RADIUS	—	✓
TACACS	—	✓
Heartbeats	✓	—
Modbus	✓	—
Cloud	✓	—
Authentication	✓	—

This page will show the current state of licensed features.

- Scroll down to view any License Keys that are installed for your SP-WTS.

All units are shipped with the default license. This has some restrictions on product usage – most features will be disabled, such as virtual sensors, graphing, notifications (see details below).

Search License Key

Q

+ Add


Refresh

License Key ▲	5 Dry Contact ▼	Access Control User ▼	Virtual Sensors ▼	3rd Party Modbus ▼	SNMPv3 ▼	VPN ▼	IPv6 ▼	RADIUS ▼	Notifications ▼	Heartbeats ▼	Maps ▼	Graphs ▼	Status ▲
Default License	0	1	5	0	×	×	×	×	×	×	×	×	Activated

When you attempt to use a feature that requires a license, you will see a notification:

[←](#)
Request License

License Management



License is required

Buy a license to unlock this feature. By buying a license, these features will unlock

- ✓ 5 Dry Contact
- ✓ SNMPv3
- ✓ VPN
- ✓ 3rd Party Modbus
- ✓ Virtual Sensors
- ✓ Access Control User
- ✓ Notifications
- ✓ Heartbeats
- ✓ Cloud
- ✓ Maps
- ✓ Graphs

[REQUEST LICENSE](#)
[VIEW LICENSE](#)

Contact Sales for a quotation for your required licensed features by clicking Request License. When you receive the license key, click on Add and copy-paste the key:

[illegible]

-
- The screenshot shows the AKCP web interface. The top navigation bar includes a hamburger menu, the AKCP logo, and a 'Workspace' dropdown menu. Below the navigation bar, there are three tabs: 'DEVICES', 'WORKSPACE', and 'MAPS'. The 'WORKSPACE' tab is active, displaying a table of devices. The table has columns for 'Unit', 'Name', 'Value', and 'Status'. The devices listed are 'SP2+LG (Gabor)', 'WT-SG', 'Main board', 'Internal Sensors', and 'Virtual Sensors'. The 'Main board' and 'Internal Sensors' have a status of 'Sensor Error', while 'WT-SG' has a status of 'Off'. A modal dialog box titled 'Certificate' is open, showing 'Certificate Information'. The information states that the certificate is intended for the following purpose(s): 'Proves your identity to a remote computer', 'Ensures the identity of a remote computer', and '2.23.140.1.2.1'. The certificate is issued to '*.cloud.akcp.com' and is valid from 7/20/2020 to 10/18/2020.
- | Unit | Name | Value | Status |
|------------------|------------------|-------|---------------|
| SP2+LG (Gabor) | | | |
| WT-SG | | | |
| + | Main board | | Sensor Error |
| + | Internal Sensors | | Off |
| + | Virtual Sensors | | Sensor Error |
| Wireless Gateway | | | |
| + | Wireless Sensors | | Not Connected |
| - | Wireless Sensors | | Unknown (1) |
| | Wireless Sensors | | Unknown (1) |
| | Wireless Sensors | | Unknown (1) |
| | Wireless Sensors | | Unknown (1) |
| | Wireless Sensors | | Unknown (1) |
| | Wireless Sensors | | Unknown (1) |
- Certificate**

General Details Certification Path

Certificate Information

This certificate is intended for the following purpose(s):

 - Proves your identity to a remote computer
 - Ensures the identity of a remote computer
 - 2.23.140.1.2.1
 - 1.3.6.1.4.1.44947.1.1.1

*Refer to the certification authority's statement for details.

Issued to: *.cloud.akcp.com

Issued by: Let's Encrypt Authority X3

Valid from: 7/20/2020 **to:** 10/18/2020

- Please follow this procedure to replace the batteries.
- When reassembling, make sure that the plastic cover is orientated correctly (note the TOP marking).



Cloud WebUI

- The AKCP Cloud service is used for WebUI forwarding of supported devices using VPN, and is a licensed feature. The forwarding will enable accessing the unit's WebUI from anywhere in the world by logging in to the AKCP
- Cloud dashboard with the unit's MAC ID.
- Because the Cloud service will enable world-wide access to the unit's WebUI by using the MAC ID, the unit's owner has to set up and enable the additional WebUI password protection to prevent unauthorized access.

Connecting your device to cloud.akcp.com

1. Copy the device MAC ID from the unit's About page, for example: 00:0B:DC:01:47:A4

AKCP

About
System / About

System Description
SP-WTS H7 1.0.6028 Sep 25 2023 12:29:00

Manufacturing Date
Tuesday, 7 March 2023

Manufacturer Name
AKCP

<ul style="list-style-type: none"> SNMP Server Integration Services Modbus Password Checking RADIUS & TACACS Maintenance Heartbeat Messages License Management About 	<p>Product Name SP-WTS</p> <p>Product Code -</p> <p>Ethernet MAC ID 00-0B-DC-00-01-05</p> <p>Modem IMEI Number -</p> <p>Modem Version -</p> <p>Total Number of Sensors 600</p>
--	--

- Send a request email to AKCP Sales sales@akcp.com to add your unit to AKCP Cloud
You will get a reply with the Cloud VPN password, which you will need to enter manually on your unit to connect.
- Check that your unit can resolve hostnames with DNS server correctly (contact your network administrator, if you are not sure)

- General
- Language
- Date / Time
- Network**
 - Wireless
 - VPN
 - Cloud Server
 - SMTP
 - SNMP
 - Server Integration
 - Services

Network

System / Network

IPv4

Use DHCP ☐ Enable ☒ Disable

IP Address

Subnet Mask

Gateway

DNS Source

Domain Name Server #1

- Go to Cloud Server page on the unit and fill out the password which was set up for your unit at the AKCP Cloud dashboard, click Enable and then Save.

AKCP

- General
- Language
- Date / Time
- Network
- Wireless
- VPN
- Cloud Server**
- SMTP
- SNMP
- Server Integration
- Services

Cloud Server

System / Cloud Server

Cloud Server ☒ Enable ☐ Disable

Status Not Connected

IP Address N/A

Cloud Server Password

Confirm Cloud Password

Save **Cancel**

Important: The unit will need to be rebooted after the changes.

Note: the VPN and Server Integration pages will be automatically hidden if the Cloud Server settings are set up. This is because Cloud server uses VPN, and Server Integration needs to be disabled when using Cloud service.

5. Reboot the unit and wait for the device to be connected.

AKCP

- General
- Language
- Date / Time
- Network
- Wireless
- Cloud Server**
- SMTP
- SNMP
- Services
- Modbus
- Password Checking

Cloud Server

System / Cloud Server

Cloud Server ☒ Enable ☐ Disable

Status Connected

IP Address 10.240.0.3

Cloud URL <https://00-0b-dc-46-43-06.cloud.akcp.com>

Cloud Server Password

Confirm Cloud Password

Save **Cancel**

The Cloud URL will also be displayed for quick access.

If there's any connection issues (password, cannot resolve name etc.), it will be logged in the Event Log:

- 6.

System

Events / System

Search

FILTER

EXPORT

↓ Date / Time	Message	↑ Level
05/08/2020 15:55:46	VPN link up (IP: 10.240.0.2)	Information
05/08/2020 15:53:33	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:53:30	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:52:08	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:52:05	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:50:53	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:49:49	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:48:32	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:48:28	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:46:27	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:46:19	System boot up (HTTP command)	Information
05/08/2020 13:16:39	System boot up (Power On)	Information
04/08/2020 13:54:36	Firmware upgrade was successfully completed	Notice
04/08/2020 13:52:56	Firmware uploaded successfully from IP: 192.168.1.200. Updating...	Notice
04/08/2020 13:45:00	System boot up (Power On)	Information
04/08/2020 13:42:56	Ethernet link restored	Information
04/08/2020 13:42:30	Ethernet link lost	Information
04/08/2020 13:39:50	System boot up (Power On)	Information
22/06/2020 22:48:51	Wireless device (19510317) power source change to USB	Warning
22/06/2020 16:33:49	Wireless device (19510317) rebooted	Warning

1 2 3 4 >|

Display 20

Go to <http://cloud.akcp.com>, and log in with the Device MAC ID, e.g. 00:0B:DC:01:47:A4

AKCPro Cloud

Device ID

00:0B:DC:01:47:A4

LOG IN

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- The WebUI of the connected device will load (first time loading could be slow), and the HTTPS certificate should show as valid from LetsEncrypt

The screenshot shows the AKCP Workspace interface. On the left is a sidebar with a search bar and a tree view of devices. The main area on the right displays a table of sensor data for a device named 'SP2+LG (Gabor)'. A 'Certificate' dialog box is open in the center, showing details about a certificate issued to the device.

Device Tree (Left Sidebar):

- SP2+LG (192.168.1.180)
 - Main Unit
 - Main board
 - Digital Voltmeter Port 1
 - Dry Contact Port 3
 - Dual Humidity Port 4
 - Dual Temperature Port 4
 - Relay Port 2
 - Internal Sensors
 - Buzzer
 - Virtual Sensors
 - Modbus
 - Ping2
 - PingVS
 - TrapRec
 - Wireless Gateway
 - Wireless Device 19510317

Sensor Data Table (Main Area):

Unit	Name	Value	Status
WT-SG			
Main board			Sensor Error
Internal Sensors		Off	
Virtual S			Sensor Error
Wireless Gateway			
Wireless			Not Connected
Wireless			Unknown (1)
Wireless			Unknown (1)
Wireless			Unknown (1)
Wireless			Unknown (1)
Wireless			Unknown (1)

Certificate Dialog Box:

Certificate Information

This certificate is intended for the following purpose(s):

- Proves your identity to a remote computer
- Ensures the identity of a remote computer
- 2.23.140.1.2.1
- 1.3.6.1.4.1.44947.1.1.1

*Refer to the certification authority's statement for details.

Issued to: *.cloud.akcp.com

Issued by: Let's Encrypt Authority X3

Valid from: 7/20/2020 to 10/18/2020

Buttons: Issuer Statement, OK

Cloud Troubleshooting

1. First check for common connection issues:
 1. Wrong password
 2. Unit cannot resolve DNS name or no Internet access
 3. Unit's cloud license expired
 4. Unit disabled in Cloud console

Check the unit's Event Log for problems:

AKCP

System

Events / System

Q Search

FILTEREXPORT

↓ Date / Time	Message	↑ Level
05/08/2020 15:55:46	VPN link up (IP: 10.240.0.2)	Information
05/08/2020 15:53:33	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:53:30	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:52:08	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:52:05	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:50:53	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:49:49	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:48:32	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:48:28	VPN connection to cloud.akcp.com:1194 failed (code -4, Failed to connect to host)	Error
05/08/2020 15:46:27	VPN connection to cloud.akcp.com:1194 failed (code -8, Invalid password)	Error
05/08/2020 15:46:19	System boot up (HTTP command)	Information
05/08/2020 13:16:39	System boot up (Power On)	Information
04/08/2020 13:54:36	Firmware upgrade was successfully completed	Notice
04/08/2020 13:52:56	Firmware uploaded successfully from IP: 192.168.1.200. Updating...	Notice
04/08/2020 13:45:00	System boot up (Power On)	Information
04/08/2020 13:42:56	Ethernet link restored	Information
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04/08/2020 13:39:50	System boot up (Power On)	Information
22/06/2020 22:48:51	Wireless device (19510317) power source change to USB	Warning
22/06/2020 16:33:49	Wireless device (19510317) rebooted	Warning

<

1

2

3

4

>

Display 20

Contact Support and ask for help resolving the issue: support@akcp.com

AKCP

Language

Date / Time

Network

Network Access Control

MQTT

Wireless

Modem

SMTP

About

System / About

AKCP

System Description

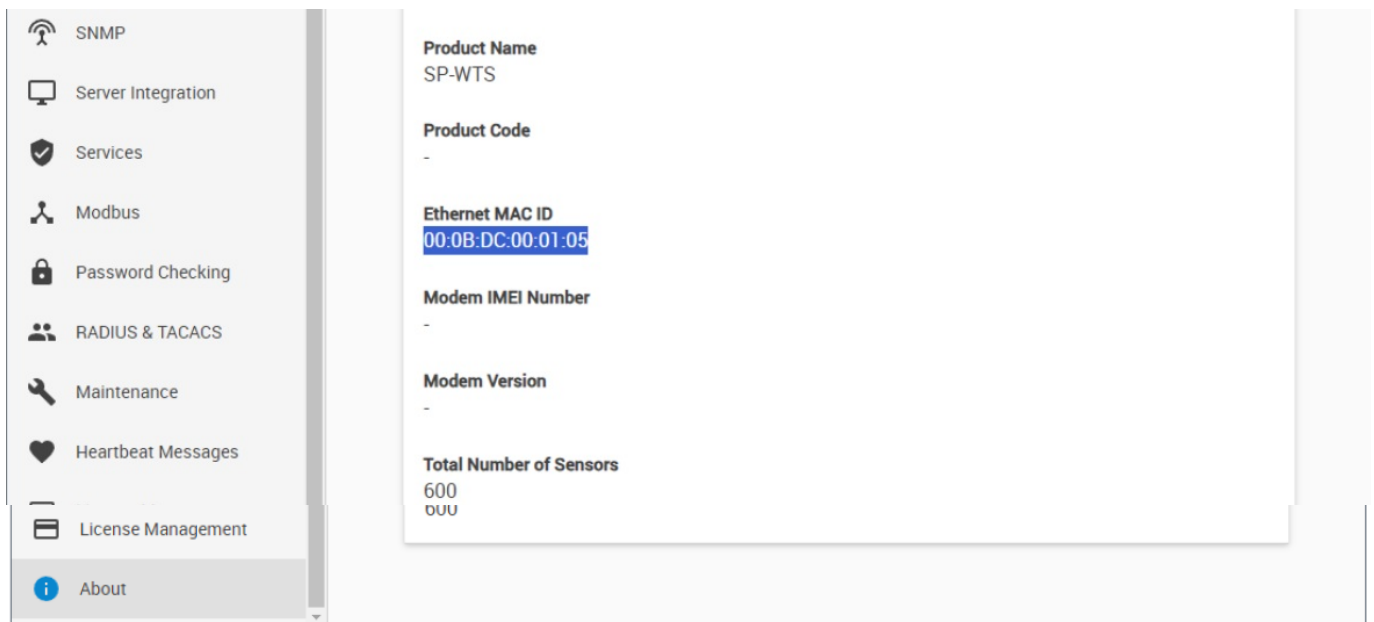
SP-WTS H7 1.0.6028 Sep 25 2023 12:29:00

Manufacturing Date

Tuesday, 7 March 2023

Manufacturer Name

AKCP

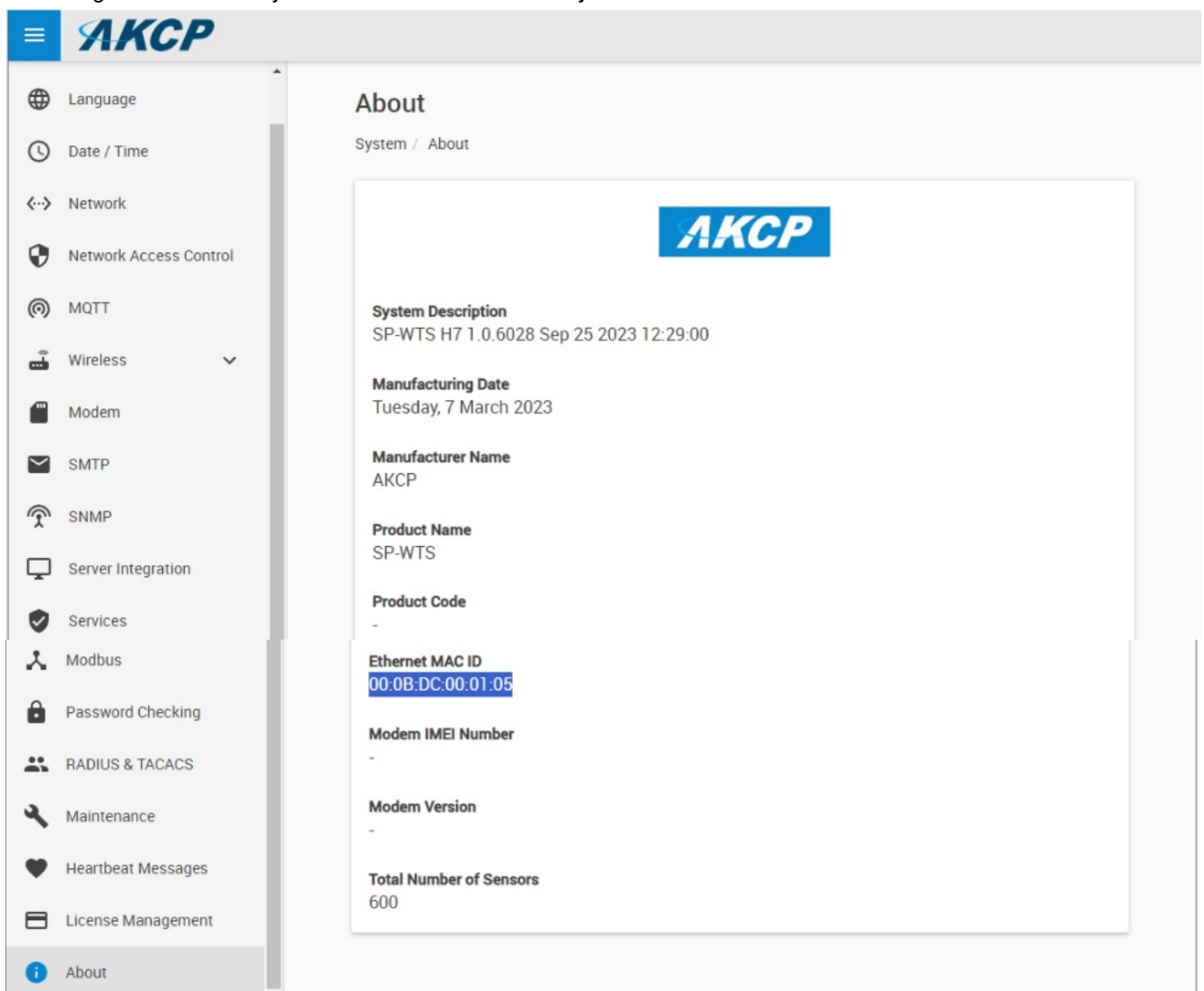


Note your device's MAC ID and System Description.

Features overview

About device

In Settings menu / About you can review the details of your device:



It contains important information such as the firmware version, product type, MAC ID and the total number of sensors.

It is a good practice to make a screenshot of this page when you contact Support.

Virtual Sensors

You can access the Virtual Sensor configuration under Sensors menu / Virtual Sensors:

Monitoring

WTG

Main board

Internal Sensors

Virtual Sensors

Wireless Gateway

LBTH #19 19510321

WSSI [WTDP revB noCut] 17053331

WSSI [WTH revB cut] 17053321

WSSI [WTH revB noCut c23] 17053332

WSSI [WTL revB ufl] 17053335

WTDP #1 17053202

WTTT #1 C 12313143

WTTT revA C 17053204

WTTT revB no cut 17053227

WTTT 17053201

Virtual Sensors

Sensors / Virtual Sensors

1	2	3	4	5	6	7	8
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
9	10	11	12	13	14	15	16
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
17	18	19	20	21	22	23	24
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
25	26	27	28	29	30	31	32
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
33	34	35	36	37	38	39	40
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
41	42	43	44	45	46	47	48
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C
49	50	51	52	53	54	55	56
N/C	N/C	N/C	N/C	N/C	N/C	N/C	N/C

Monday, 2 November 2020 12:15:57

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Version: 1.0.778

- The configuration and supported features are the same as on our sensorProbe+ family units. Contact Support for the sensorProbe+ manual that contains the Virtual Sensor configuration details.
- **Note:** you will need virtual sensor license to be able to use this feature.

Graphing

- You will need to manually enable graphing collection for any virtual sensors one by one.
- For wireless sensors, the graphing is automatically enabled – but to be able to see the collected graph data, you will need graph license.
- The supported graph features are the same as on our sensorProbe+ family units.
- The wireless sensor graph collection period settings are set on each sensor's settings page (sensor value collection period):

AKCP

Monitoring

WTG

Wireless Gateway

Wireless Device 19510317

Overview

Device

Sensors

Network

Synchronization

Network

Settings / Network

Sensor value collection period (Period of how often sensor values are collected and checked against thresholds. Values are used for events and graphing)

1 Minute

Sensor data broadcast period (Transmit sensor values and counters)

15 Minutes

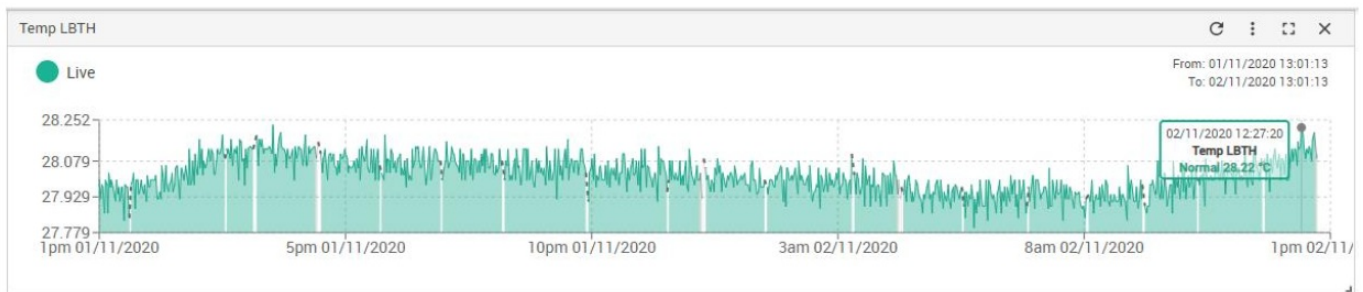
Timeout, period of delay since last received packet from sensor before 'Unreachable' status is reported (Minutes)

35

SAVE

CANCEL

Note: after making changes, you will need to re-sync the wireless sensor and any existing graph data will be deleted!



Important: SP-WTS supports up to 32 WTS sensors graph, including multi-sensor WTS. For example, on WTS-TH there are both Temperature & Humidity sensors.

The virtual sensor graph collection period is set on the General page under the Settings menu:

AKCP

General

Language

Date / Time

Network

Wireless

Modem

VPN

Cloud Server

SMTP

General

System / General

System Description

WT-SG4 F7 1.0.315 Oct 12 2020 07:06:30

System Name

System Name

System Location

System Location

System Contact

System Contact

System URL

http://www.example.com

GPS Longitude: 0.0

Sensor Notification On System Boot Up: ☒ On ☐ Off

Graph Data Collection Period: 300 5m 0s
Graph data can be stored for 106 days 15h 10m 0s.

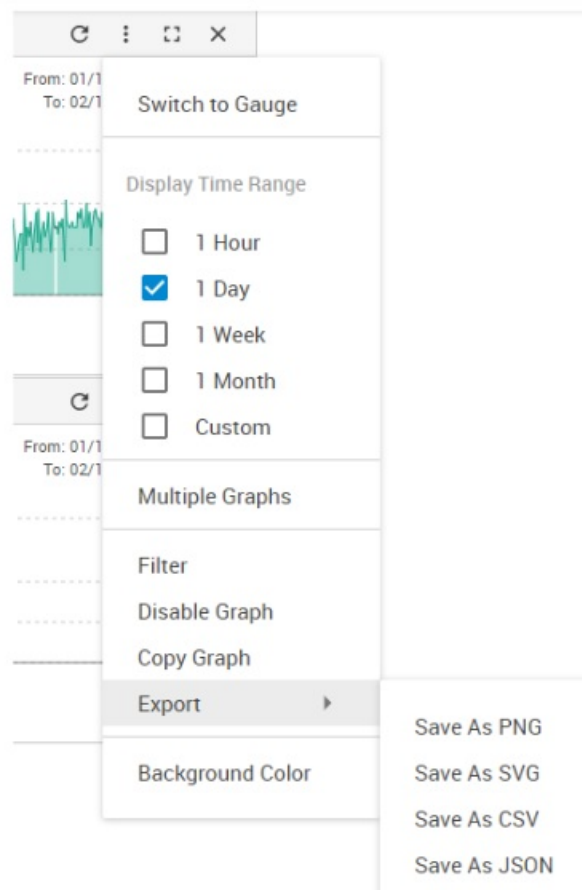
Language: English Manage

Save Cancel

- **Note:** after making changes, any existing graph data will be deleted!
- **Important:** SP-WTS supports up to 14 virtual and wired sensors graph.

You can set further graph options for a sensor after opening the graph gauge and clicking the 3-dot menu in the top right corner.

Remember to export your graph data as it is not included in the backup.



H) SP-WT 4SP information

- Please note the following important limitations for this wireless sensor type.
- The total sensors count is 32x on the SPWT-4SP.
- If you connect multiple sensors (such as CTHMSv2 Thermal Maps) to all 4x ports, you would see only 32x sensors in total.
- Also note that the 3 SP-WT-4SP battery sensors will also count towards the 32 sensors limit. Because of the

battery sensors, the actual useable sensors for the 4 sensors ports will be:

- $32 - 3 = 29$
- **Example:** if you attempt to connect 4 CTHMSv2 Thermal Maps (4x11 parameters), that will be
- $4 \times 11 = 44$ sensors.
- The SPWT-4SP's limit is 32, so only 2x CTHMS strings will show the complete list of its sensors. The 3rd one will be incomplete, and the 4th will not show at all.

There are 2 ways to circumvent this limitation:

1. You can split the Thermal Maps into another SP-WT-4SP (2x on each)
2. You can disconnect the rear Thermal Map string, keeping only the front (on the splitter box), which will effectively turn a CTHMS into THMS and free up the sensor count

See the image and step-by-step instructions below how to do the second method.



You can disconnect this Rear Thermal Map string on the Splitter Box

Example: if you only need the temp sensors on the Thermal Map strings, do the following:

1. Unplug all sensors from all ports on the SP-WT-4SP.
2. Disconnect the rear thermal map string, keeping only the front (turning the CTHMSv2 sensor into THMSv2).
3. Offline all current sensors on all ports, press the SP-WT-4SP button once each time after pressing offline on Web UI (to force sync the setting changes).
4. Plug in 1st Thermal Map to port 1 and press the SP-WT-4SP button once then wait for it to online all sensors. There should be only 4 sensors online (3 Temperatures, 1 Humidity, 7 Total).
5. Plug in 2nd Thermal Map to port 2 and press the SP-WT-4SP button once then wait for it to online all sensors

- (6 Temperatures, 2 Humidity, 11 Total).
6. Plug in 3rd Thermal Map to port 3 and press the SP-WT-4SP button once then wait for it to online all sensors (9 Temperatures, 3 Humidity, 15 Total).
7. Plug in 4nd Thermal Map to port 4 and press the SP-WT-4SP button once then wait for it to online all sensors (12 Temperatures, 4 Humidity, 19 Total).

Please contact support@akcp.com if you have any further technical questions or problems.
Thanks for Choosing AKCP!

Documents / Resources

 <p>AKCP Est. USA 1981</p> <p>SP-WTS QuickStart Guide</p>	<p>AKCP SP-WTS Wireless Tunnel Server [pdf] User Guide SP-WTS Wireless Tunnel Server, SP-WTS, Wireless Tunnel Server, Tunnel Server</p>
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References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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