



## Application note

### Phantom Gateway v2 fw50

### Subordinate/Repeater functionality.

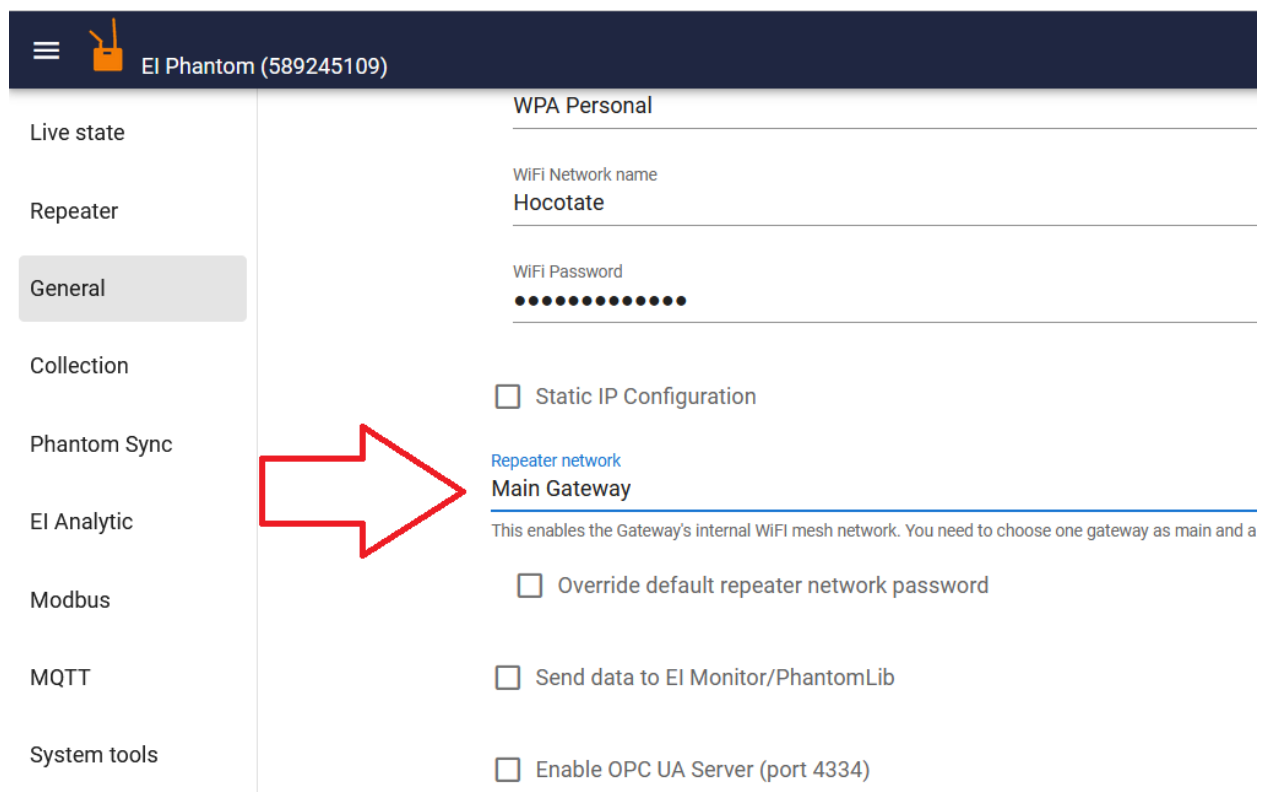
With the release of firmware version 50 of the Phantom Gateway v2 we have introduced a new functionality to simplify multi-gateway deployments.

There are two ways to use this new functionality. It can be used either using the gateway's Wi-Fi mesh network. It can also be used using the existing network (Wi-Fi or Ethernet).

# Subordinates using the gateway Wi-Fi mesh network

The first is using the gateway own Wi-Fi antennas to create a Wi-Fi mesh network. You will need to designate one gateway as your “main gateway”. This will be the root of your mesh network. This gateway needs to be connected to the network either using wired ethernet (recommended) or using Wi-Fi. All sensor configuration will be handled on this gateway.


You will need to configure this main gateway to send data to your preferred data storage, either EI Monitoring/EI analytic or using an industrial protocol such as Modbus, OPC or MQTT



The screenshot shows the configuration interface for an EI Phantom gateway (ID: 589245109). The left sidebar contains navigation options: Live state, Repeater, General (selected), Collection, Phantom Sync, EI Analytic, Modbus, MQTT, and System tools. The main content area is titled 'WPA Personal' and includes fields for 'WiFi Network name' (Hocotate) and 'WiFi Password' (masked with dots). Below these are several checkboxes: 'Static IP Configuration', 'Repeater network Main Gateway' (which is selected and highlighted with a red arrow), 'Override default repeater network password', 'Send data to EI Monitor/PhantomLib', and 'Enable OPC UA Server (port 4334)'. A descriptive text under 'Main Gateway' states: 'This enables the Gateway's internal WiFi mesh network. You need to choose one gateway as main and a'.

Once this gateway has been set up and connected to the network you can configure any number of additional gateways to act as subordinates on the mesh network.

You have to choose the subordinate gateway option in the -repeater network option. This is the only setting required for the gateway. You do **NOT** need to configure EI Analytic keys, configure the network or pair any sensors to this gateway. All of this will be handled by the main gateway.

☰  EI Phantom (589245109)

- Live state
- Repeater
- General**
- Collection
- Phantom Sync
- EI Analytic
- Modbus
- MQTT
- System tools

WPA Personal

WiFi Network name  
Hocotate

WiFi Password  
●●●●●●●●●●

Static IP Configuration

[Repeater network](#)  
**Subordinate Gateway**


This enables the Gateway's internal WiFi mesh network. You need to choose one gateway as main and all the others as subordinates

Override default repeater network password

Send data to EI Monitor/PhantomLib

Enable OPC UA Server (port 4334)

After you setup this and the gateway resets it will automatically join the mesh network created by the main gateway. You can verify that the subordinate gateway is connected by going to the Repeater tab that should appear in your main gateway.

☰  EI Phantom (589245109)

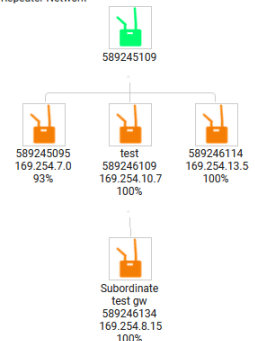
- Live state
- Repeater**
- General
- Collection
- Phantom Sync
- EI Analytic
- Modbus
- MQTT
- System tools
- Offline storage
- Security
- About

**589246114**  
Gateway Serial Number: 589246114  
Version: 50BT190S17  
Uptime: 13 hours 47 minutes  
Total memory: 498 Mb / Free: 383 Mb  
System Temperature: 41° C / BT: 43° C  
Storage total: 28190 Mb Free: 28190 Mb  
CPU Load: 7%  
Wifi Link Quality: 100%  
Internal network IP: 169.254.13.54  
[Admin interface](#)

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**Subordinate test gw**  
Gateway Serial Number: 589246134  
Version: 50BT190S17  
Uptime: 14 hours 2 minutes  
Total memory: 498 Mb / Free: 384 Mb  
System Temperature: 39° C / BT: 43° C  
Storage total: 28190 Mb Free: 28190 Mb  
CPU Load: 33%  
Wifi Link Quality: 100%  
Internal network IP: 169.254.8.158  
[Admin interface](#)

Repeater Network



```

graph TD
    A[589245109] --- B[589245095  
169.254.7.0  
93%]
    A --- C[test  
589246109  
169.254.10.7  
100%]
    A --- D[589246114  
169.254.13.5  
100%]
    A --- E[Subordinate test gw  
589246134  
169.254.8.15  
100%]
  
```

From this screen you can see your mesh network topology and the state of your subordinates.

You will need to pair your sensors only to the main gateway. The main gateway will decide which subordinate to use to collect data from the sensor (or other sensor actions such as updates) based on which gateway has better signal strength to any given sensor.

You can see which gateway is seeing which sensor by hover over the signal strength bars.

The screenshot shows the 'El Phantom (589245109)' interface. On the left is a sidebar with navigation options: Live state, Repeater, General, Collection, Phantom Sync, El Analytic, Modbus, MQTT, System tools, and Offline storage. The main area has a search bar and a 'sort by Serial Number' dropdown. Two sensor cards are visible. The first card, for sensor 189256454, shows details like 'Serial: 189256454 version: 108', 'Type: Infrared thermometer', and temperature readings (Sensor: 29.5 °C, Ambient: 28.17 °C, Object: 28.43 °C). A tooltip is overlaid on the signal strength bars of the first card, listing nearby sensors: 589245095 (-53 dBm), 589245109 (-64 dBm), 589246109 (-51 dBm), 589246114 (-54 dBm), and 589246134 (-68 dBm). The second card has a 'PAIR' button and icons for bookmark, settings, and a dropdown.

# Subordinates using the existing network

To use the repeater functionality using an existing network you will need to configure the network for each one of the gateway's (either Wi-Fi or Ethernet).

Once you have setup network on all gateway you will have to designate one as the main. You will setup EI Monitoring/EI Analytic/Modbus/OPC/MQTT only on this single gateway.

For all subordinate gateways you will setup the "Subordinate to another gateway" option and write the IP address (recommended it's a static ip address, either assigned directly or configured in your DHCP server).

After that you can see all your subordinate gateways in the Repeater tab of the main gateway. You will pair and setup all your sensors from this main gateway only.

WiFi Password

Live state

Repeater

General

Collection

Phantom Sync

EI Analytic

Modbus

MQTT

System tools

Offline storage

Security

About

Static IP Configuration

Repeater network  
Disabled

This enables the Gateway's internal WiFi mesh network. You need to choose one g

Send data to EI Monitor/PhantomLib

Enable OPC UA Server (port 4334)

Send data to custom Cloud

Store data offline until manually collected

Subordinate to another gateway

Main Gateway IP address/Hostname  
192.168.1.100

Main Gateway password (blank if none)