WiFi, Cellular, and other Networking

- TP-Link Access Point Setup (TL-WA801ND)
- Multitech Cell Modem Setup (MTE-LAT6-B07)
- TP-Link powered USB WiFi Bridge Setup (TL-WR802n)

TP-Link Access Point Setup (TL-WA801ND)

The TP-Link TL-WA801ND is a multi-function access point. This document is intended to assist with configuring the TL-WA801ND to allow the EG3000 to communicate on an existing WiFi network. This guide is designed only for use with a TP-WA801ND purchased through eGauge Systems

For full documentation and other support issues, please visit the TP-Link website at http://www.tp-link.com/. The full TP-Link manual as of the writing of this article is available here. Please visit TP-Links website for the most up to date information.

Configuration instructions

1. Attach the included two antennas to the back of the access point. Ensure the connections are not loose.

2. Power the TP-Link TL-WA801ND using the barrel jack or PoE (Power-over-Ethernet) injector, and connect a computer to the access point using an Ethernet cable (if using the PoE injector, connect the LAN port to your computer, and the POE port to the access point).

3. Ensure all wireless interfaces are disabled on the computer (such as WiFi and Bluetooth) and that DHCP is enabled on the Ethernet interface. Open a web browser and access the TL-801ND by visiting
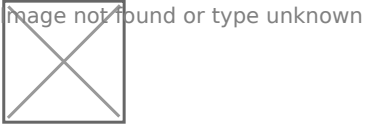
    http://tplinkap.net/

4. Log in using username **admin** and password **admin** and choose **Login**.
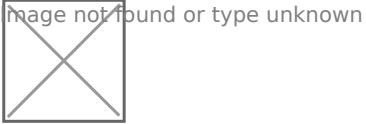

5. Click **Quick Setup** from the left side, then **Next**.
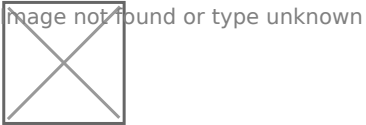

6. Change the admin password if desired and choose **Next**.
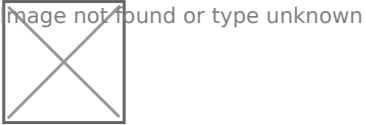
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7. Choose **Client** as the operation mode and press **Next**.

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8. Find your wireless network, and choose **Connect**.

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9. Enter the wireless network password and choose Next.

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10. If DHCP service is on the wireless network, leave the Type as **Smart IP (DHCP)** and choose **Next**.

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11. Verify the settings that are chosen, and choose Finish.

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The access point has been configured and the eGauge may be connected via Ethernet for network communication.

Troubleshooting

- I cannot reach the eGauge on the proxy server or locally.

Verify the TP-Link access point is powered up and configured. Connect a laptop to the Ethernet port on the TP-Link access point, disable WiFi, bluetooth and any other wireless network interfaces and try reaching the internet.

- I don't see my network listed in the quick setup network list, or the signal is weak or inconsistent.

Ensure the two antennas are secured on the back of the unit and that the wireless network is within range of the access point.

- I do not have network access through the TP-Link access point, or the network information has changed and I cannot access the configuration interface.

Perform a factory reset on the TP-Link access point by using a paperclip or pin and holding down the recessed reset button on the back of the unit, release the button when all the LEDs turn off or flash. Then, re-configure the unit using the steps in this article.

Multitech Cell Modem Setup (MTE-LAT6-B07)

> Starting May 2022, cellular plans using the **fast.t-mobile.com** APN must have a new SIM card and new APN configured for continued service. The new APN is **iot.tmowholesale** and requires a new SIM card to be installed. Please follow the **SIM card installation** and **Initial Configuration** instructions below.
>
> Old SIM cards will not function after May 2022 and can be identified by having a pink T-Mobile logo on it. The new/current SIM cards are white and do not have any branding on them.

eGauge offers limited support for the Multitech cellular modem. This hardware is typically used in locations where local Internet access is not available or secured. The Multitech can accept a variety of SIM cards from various providers. However, eGauge only offers support for T-Mobile data plans purchased through eGauge. If a third party data plan is used, it may be necessary to contact the cellular service provider to obtain the correct information for modem configuration.

This document is to be used with the Multitech MTE-LAT2-B07 and MTE-LAT6-B07.
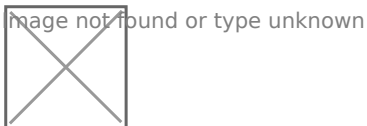
Model	Default username / password	Notes
MTE-LAT2-B07	admin / admin	
MTE-LAT6-B07 (newer, sold starting around May 2019)	admin / admin123	eGauge configures the password as admin123 before shipping. **Factory resetting will cause the default password to be** admin, and upon first setup a new password is required to be set.
MTE-LAT6-B07 (newer firmware, mid 2020)	admin / Admin123	Note password has Admin123 capitalized per password requirement from Multitech firmware. **Factory resetting will cause the default password to be** admin, and upon first setup a new password is required to be set.

SIM card installation:

To remove the SIM card, push in on the SIM card and it will spring it out from the locked position.

Ensure the SIM card notch lines up with the notch on the SIM card slot image (circled in green below). The modem uses a full sized SIM card, do not remove outer plastic holders of it. When correctly inserted, pushing the SIM card in (may need to use a fingernail) will lock it in place.
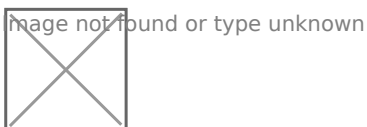
A rapid flashing SIM LED indicates there is a problem physically reading the SIM card.

Initial Configuration for T-Mobile data plans from eGauge Systems:

1. Connect a computer to the modem using an Ethernet cable. Disable any wireless adapters (WiFi, Bluetooth, etc). Open the web browser of your choice and navigate to 192.168.2.1 (assuming the modem still has the default configuration in place). The default username is "admin" and password is either "admin", "admin123", or "Admin123". If credentials have been changed, a factory reset may be performed to regain access with username "admin" and password "admin".

2. The Network Setup may load automatically. If it does not, select **Wizard** and then **Network Setup Wizard** from the menu on the left side of the screen.
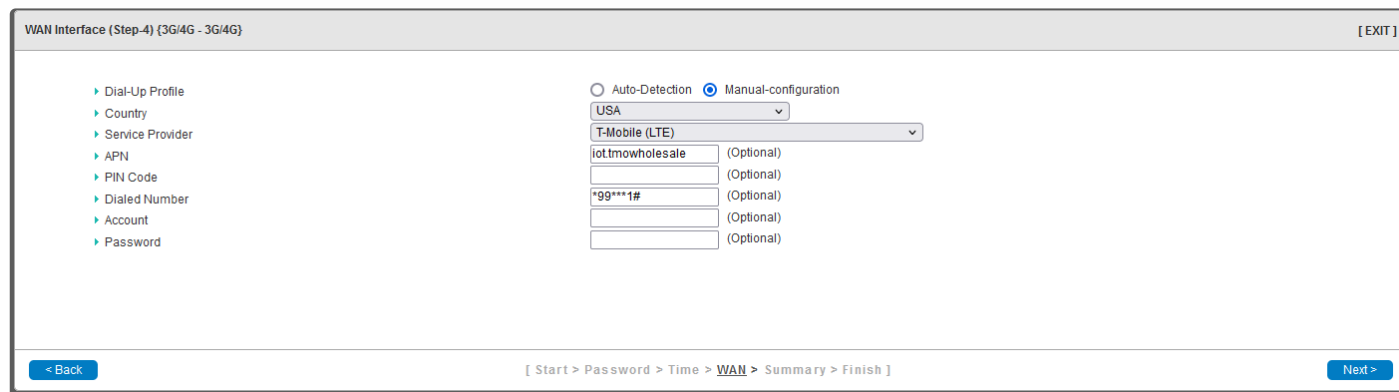

Network Setup Wizard - first page

3. Set your user credentials and time zone as desired. On the "WAN Interface" page (step 4), choose "Manual-configuration". Select "USA" as the Country, and "T-Mobile (LTE)". The following settings must be configured:

APN (this must be changed from default): `iot.tmowholesale`

Dialed Number (this should remain default): `*99***1#`

These values will not work with other cellular providers. If using a different cell plan, it will be necessary to contact the cellular service provider to get the information needed to properly configure this page. eGauge Systems cannot assist with this process, even if the Multitech cellular modem was purchased directly through eGauge.

WAN interface page - page 4

4. Apply the settings on the final page, after verifying that they are correct.

Verifying Connectivity

Once the modem is properly configured, it's time to verify that the installation location and antenna position are viable. The **Network Status** page is useful for this process. This page can be found by selecting **Status** and then **Network Status** from the menu on the left side. Cellular connectivity and signal strength can be verified under the "3G/4G Modem Status". Ensure that the Link Status is "Connected" and the Signal Strength is reasonable. Anything lower than about 50 percent may lead to communication issues.
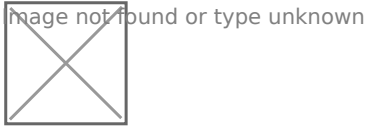

Network Status page

If working with an external antenna, it's possible to use this page to locate the best antenna positioning. To do this:

1. Move the antenna to the desired location

2. reload the **Network Status** page (F5 key in most browsers)

3. make a note of the Signal Strength

4. move the antenna to the next test location and repeat

Connecting Multiple eGauges

The Multitech is set up to handle one eGauge by default. However, it is possible to connect multiple eGauge meters to a single Multitech cell modem using a powered switch. Some additional configuration changes will need to be made. Navigate to **Basic Network** then **WAN**. Near the bottom of the page, make sure "NAT" is checked.
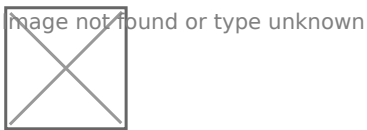

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NAT option (shown checked)

Once NAT has been enabled, you can check to see whether devices are obtaining DHCP leases by navigating to **Basic Network** and then **Client / Server**. Select "DHCP Server" from the list of options at the top. Next, select "DHCP Client List". A list of devices with active DHCP leases should be shown. Note that this assumes the computer is connected to the switch alongside the eGauges.

Changing the default credentials

It is highly recommended to change the default credentials on the Multitech hardware for security purposes. Navigate to **System** and then **System Related**. Select "Change Password" at the top of the page. Enter the old password (admin) and your new password twice.
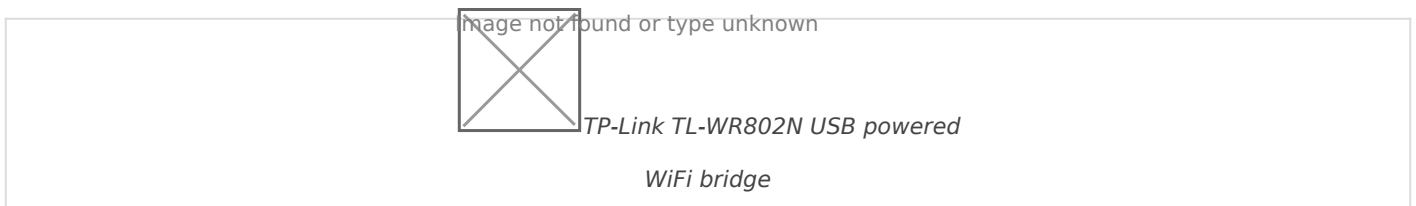

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Change Password page

Factory Reset

To perform a factory reset, power the modem on and allow it to fully boot (2-3 minutes). While the modem is powered up, using a paperclip or other object press and hold in the "Reset" button located on the side of the multitech next to the Ethernet port for 10 to 30 seconds. Release and the Power LED should rapidly blink indicating a factory reset is occurring.

TP-Link powered USB WiFi Bridge Setup (TL-WR802n)

The TP-Link TL-WR802N is a WiFi bridge that can be used to connect the eGauge to a wireless network. The bridge is powered by USB, so it may be powered directly from an EG41xx device's USB port for convenience. Ethernet is connected from the bridge to the eGauge to provide WiFi network access.

TP-Link TL-WR802N USB powered WiFi bridge

When the TP-Link TL-WR802N is configured in client mode as per instructions, any devices connected to the Ethernet port of the bridge will obtain their own unique IP address from the LAN. The TP-Link bridge itself will obtain a separate IP address from the LAN.

Tips for Troubleshooting:

- A factory reset may be performed by holding the recessed Reset pin in the bridge for 5-10 seconds while the bridge is powered on.
- A scheduled reboot may be configured by accessing the TP-Link admin interface and navigating to System Tools -> Reboot.
- to access the admin interface of a configured TP-Link bridge, disable all wireless adapters on a computer, connect directly to the TP-Link Ethernet port and access

  http://tplinkwifi.net/. Alternatively, enter the IP address of the TP-Link WiFi bridge from a computer connected to the same WiFi network the bridge is on. You may need to view the main router's DHCP table to find the IP address for this method.
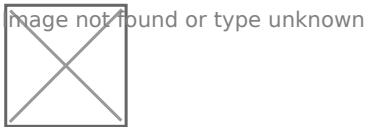
Setup instructions

> Do not connect Ethernet to the TP-Link bridge before the setup via WiFi is complete. If an eGauge meter or other device is connected via Ethernet to the TP-Link bridge, the initial setup will not work.
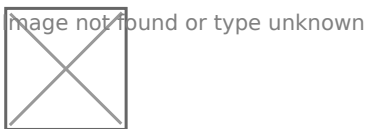
1) Power the TP-Link bridge via USB. The bridge should be within WiFi range of the network it will connect to. You may connect it via Ethernet and power it from an EG41xx device at this time.

2) Using a laptop with WiFi, connect to the wireless network broadcasted by the TP-Link bridge. The SSID and password are located on a card that comes with the wireless bridge. This information is also printed on the bottom of the bridge itself.
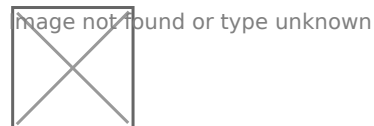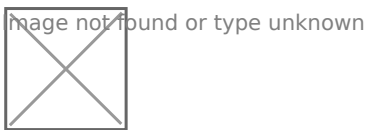
3) When connected to the wireless bridge's network, open a web browser to http://tplinkwifi.net/. Log in using the default login printed on the card that comes with the wireless bridge.

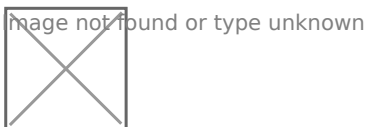---

4) Choose "Next" to begin the Quick Setup.

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5) You may choose to change the admin password in this step. Choose Next when done.
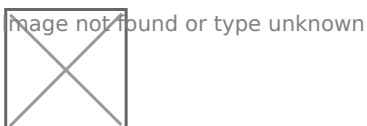

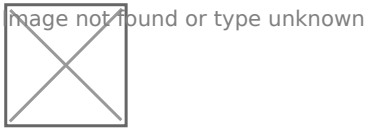6) Choose "Client" as the operation mode and press Next.

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7) A list of in-range WiFi networks are displayed. Choose "Connect" next to the network you will connect the eGauge to.
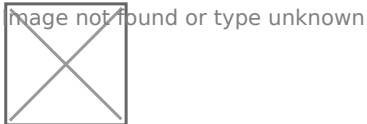

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8) Enter the password for the WiFi network and choose Next.

9) Choose "Smart IP" for the LAN type. This will automatically assign the admin interface an IP address from the main network, and any eGauges connected to the Ethernet port will obtain an IP address from the main network. Press Next to continue.

7) You can review the configuration and press Finish to save and reboot.

Below shows the setup of an eGauge connected to a TP-Link TL-WR802N bridge connected in client mode on a WiFi network. The network uses the 172.17.2.* network. The WiFi bridge was assigned 172.17.2.180 while the eGauge was assigned 172.17.2.182: