JVA IP Monitor ™ User Manual

Install an
IP MONITOR
with any energiser to…

Wi Fi RANGE

3G/4G SIGNAL

CELL PHONE TOWER

ANY ENERGISER

MM22000 MEGA POWER

FENCE

EARTH
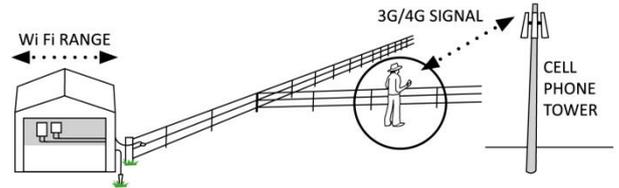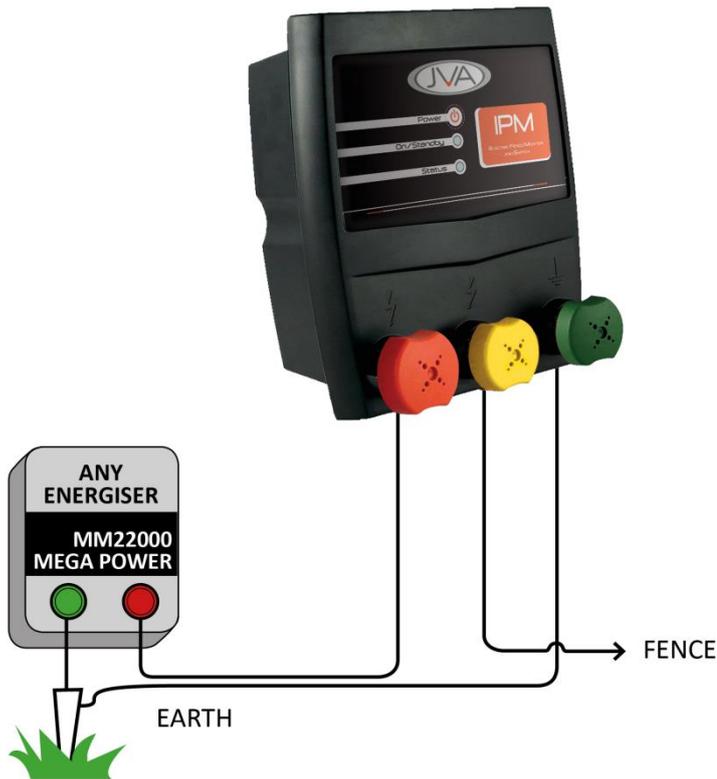
- Remotely monitor
  - See the voltage
  - See the current
  - Receive alarms
  - Turn fence off/on
  - Divide fence into zones

Introduction

The IP Monitor changes an ordinary electric fence into a Monitored Electric Fence. This allows you to see the voltage and power on your fence, be instantly alerted to breaks or shorts, and even switch it on or off remotely, all with your smart phone[1]. This will save you time and money and reduce the chance of stock damaging your fence or escaping.

The IP Monitor operates with your existing electric fence energizer. It sits between the energizer and the fence, controlling the flow of power and measuring the voltage and current. By measuring both voltage *and* current, it can detect shorts even on very long fences.

It is controlled using our free smart phone App for Android or iPhone. The system will give you peace of mind by allowing you, and anyone you choose, to check your fence voltage from anywhere in the world.

The IP Monitor also has a button on the front of the unit to enable someone to manually turn the fence on or off[1].

Also available is the PTE2606 IPM3 budget no-relay version that contains the same advanced voltage and current measurement circuitry, without the high voltage relay to turn the fence on and off.

Features

- Switches the fence live wires on or off remotely using a smart phone[1]
- Works with any energizer up to 36 Joules output
- Easy to install with large fence wiring terminals
- Powered from 12V DC (mains adapter included)
- Can also be battery or solar powered (not supplied)
- Can be used to monitor a whole fence or a smaller zone (paddock)
- Multiple IP Monitors can be used to monitor multiple zones
- Free to use, no on-going fees over your existing Internet charges

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Warning!

The IP Monitor needs to be installed within Wi-Fi range. Read the Energizer instruction manual and safety information first! Do not exceed the rated energizer power for your IP Monitor.

The switch function disconnects the fence using a relay[1]. All relays leak to a certain extent. On some energisers this may cause a small amount of voltage to remain on the fence. For added caution, short the fence to ground to remove this voltage while maintaining the fence.

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1. Relay function not available on IPM3 variant (PTE2606)

How to connect the IP Monitor to the Energizer and Fence

Option 1 – Monitor the start of the fence(s)

Start of Fence Monitoring

Start of Fence Monitoring is when you connect the Monitor at the start of the fence, in between the energizer and the fence (or part of the fence). In this mode the IP Monitor can measure the voltage and current used by the fence and sends an alarm when the current rises too high, indicating there is a fault. You can use more than one monitor at the start of the fence. Each monitor controls one "Zone" of the fence.

Benefits:

- Turn the electric fence on or off[1]
- Alarm when there is a short on the fence
- Split a large fence up into zones by using more than one IP Monitor
- Each Zone can then be turned on or off independent of other Zones, which can stay live[1]

Disadvantage:

- The monitor may not be able to detect a cut (open circuit) in the live wires. See Option 2.

Wiring Instructions

1. Turn off the energizer.
2. Using high voltage cable, wire the Energizer fence terminal (the one that normally goes to the fence) to the IP Monitor "Energizer" terminal. (note 1)
3. Wire the IP Monitor "Earth" terminal to the Fence Earth.
4. Wire the IP Monitor "Fence" terminal to the fence live wires (note 2).
5. Connect the power pack or a 12V battery to the IP Monitor (note 3).
6. Follow the Wi-Fi Setup procedure to connect the IP Monitor to Wi-Fi and your smart phone.
7. If you are using more than one IP Monitor repeat from step 2 to 5 with the second IP Monitor and so on.
8. Turn on the energizer.

Notes:

1. High voltage cable is required to make the live electric fence connections. This is also known as electric fence under gate cable or lead out cable. It should be rated to 25kV.
2. If you have a lightning diverter, wire it between the IP Monitor and the Fence.
3. If you are running the IP Monitor from a Solar panel and 12V battery you will need a 10W or higher solar panel and a 10Ah or larger battery.

1. Relay function not available on IPM3 variant (PTE2606)

How to connect the IP Monitor to the Energizer and Fence

Option 2 – Monitor the end of a fence
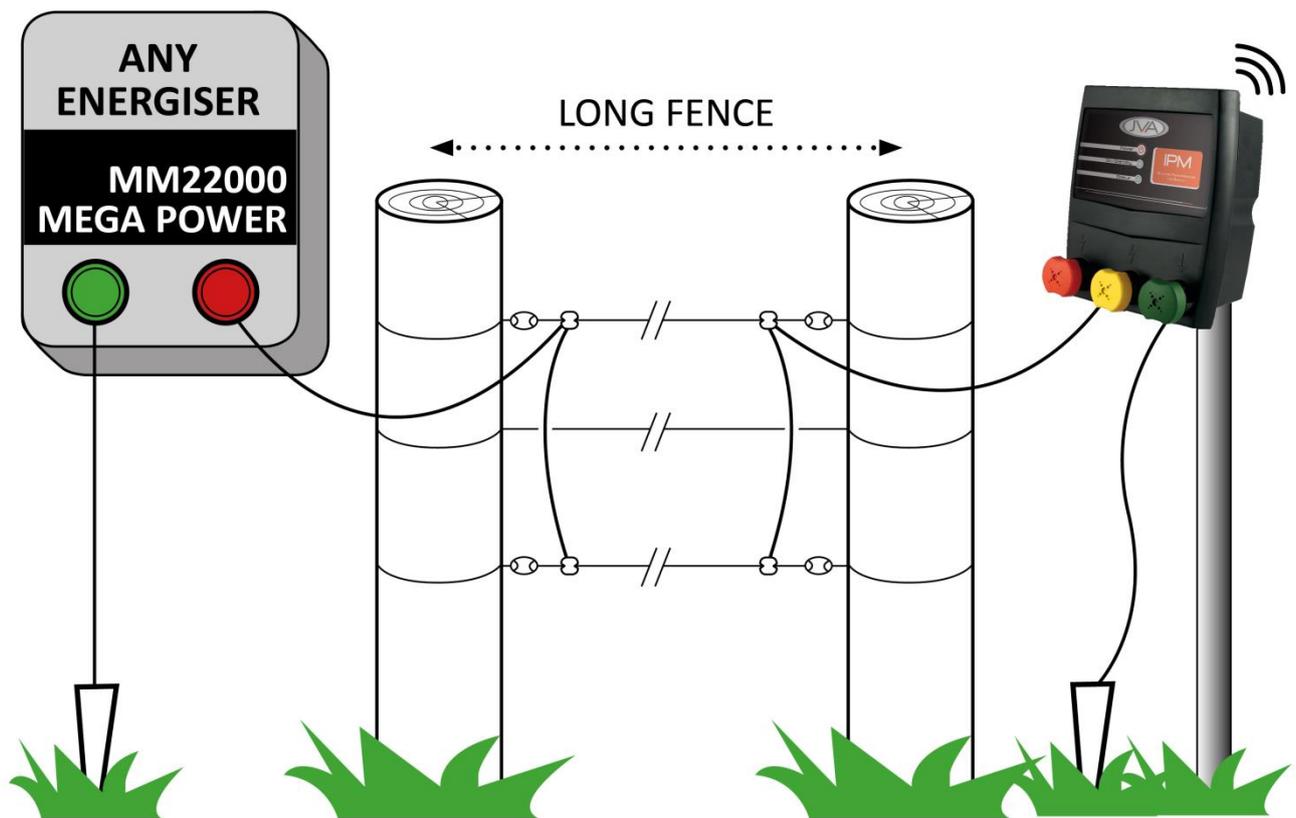
End of Fence Monitoring

End of Fence Monitoring is when you connect the Monitor at the electrical end of the fence. The electric fence can be wired in a large loop so that the live wires return to a point near to the energizer. This is best suited to a perimeter fence for farm and stock security.

Benefits:

- Can detect both a short or cut by measuring the return voltage.
- Can split a large fence up into zones using more than one IP Monitor.

Disadvantage:

- Cannot switch the fence on and off[1]. See Option 1.

Wiring Instructions

1. Turn off the energizer.
2. Using high voltage cable, wire the Monitor "Fence" terminal to the end of the electric fence. Do not connect the "Energizer" terminal to anything (note 1).
3. Wire the Monitor "Earth" terminal to a suitable Earth stake (note 2).
4. Connect the 12V power supply to the IP Monitor (note 3).
5. Follow the Wi-Fi Setup procedure to connect the IP Monitor to Wi-Fi and your smart phone.
6. Turn on the energizer.

Notes:

1. High voltage cable is required to make the live electric fence connections. This is also known as electric fence under gate cable or lead out cable. It should be rated to 25kV.
2. If you have a lightning diverter, wire it between the IP Monitor and the Fence.
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IP Monitor LED Display

On/Standby LED

Off

If both LEDs are off then power is disconnected from the IP Monitor.

If this LED is off, but the Status LED is on, then the IP Monitor is Disarmed, meaning the fence is Off[1]. Press the Power button to turn the fence On.

On

This shows the IP Monitor is Armed and the fence is On. If the energizer is turned on and connected to the IP Monitor, the fence will be live. Press the Power button to turn the fence Off[1].

Flash

The LED will flash off with each good pulse received from the Energizer. This shows that the fence is live.

Status LED

Off

The IP Monitor is powered down.

Green

Normal operation. This shows the IP Monitor is connected to Wi-Fi and ready to be controlled.

1 Red Flash

The IP Monitor is not connected to Wi-Fi and needs to be configured.

2 Red Flashes

The IP Monitor is trying to connect to Wi-Fi.

3 Red Flashes

The IP Monitor has just connected to Wi-Fi, it will change to green soon.

4 Red Flashes

Failed to connect to Wi-Fi. The unit will try again.

5 Red Flashes

The IP Monitor has an incorrect password. Default it and enter the password again.

Power Button

For models fitted with a high voltage relay, a short press of the power button engages or disengages the relay inside the IP Monitor – that is, it turns the fence on or off. For monitor-only variants such as IPM3, the fence will always be connected to the energizer, and the power button only used to clear Wi-Fi settings (see 'Defaulting you IP Monitor').

1. Relay function not available on IPM3 variant (PTE2606)

Wi-Fi Setup Procedure

What you need

1. A Wi-Fi network with working internet connection.
2. The name of your Wi-Fi network (also known as the SSID). On most Wi-Fi routers this is printed on the back, an example of which is shown below.

3. Your home Wi-Fi network password.
4. The IP Monitor placed within signal range of the Wi-Fi network.
5. Power for the IP Monitor via plug pack or 12V battery.
6. A smart phone (Android or iPhone) running the IP Energizer Controller App.

Setting up the IP Monitor

1. Plug the IP Monitor into the power supply and turn the power on. The Monitor does not need to be connected to the Energizer or fence for this setup. If it is, be aware that the fence may become live.

2. The IP Monitor status LED should be flashing briefly, once every 2 seconds. This means that the IP Monitor can now be configured to connect to your Wi-Fi network. If you see more than 1 flash you may need to default the monitor, see below.

3. Download the 'IP Energizer Controller' App from the [Google Play store](#) or the [ITunes Store](#) and install it on your Phone. The instructions below are for the Android version. iPhone instructions are available at www.ipenergizer.com
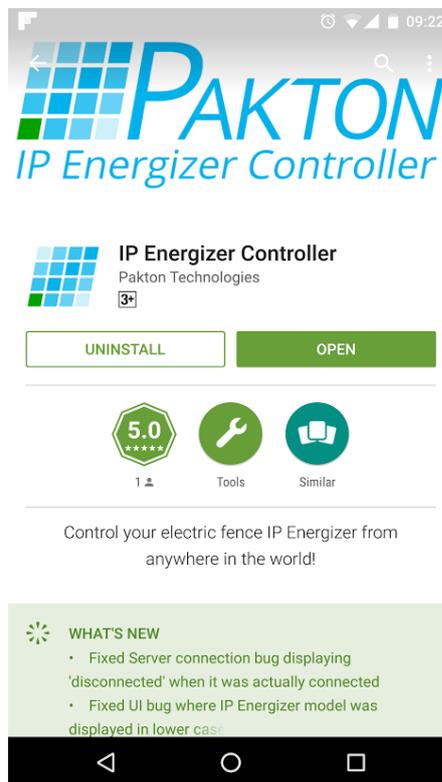
4. Open the navigation drawer and tap Settings. Press Configure IP Energizer.
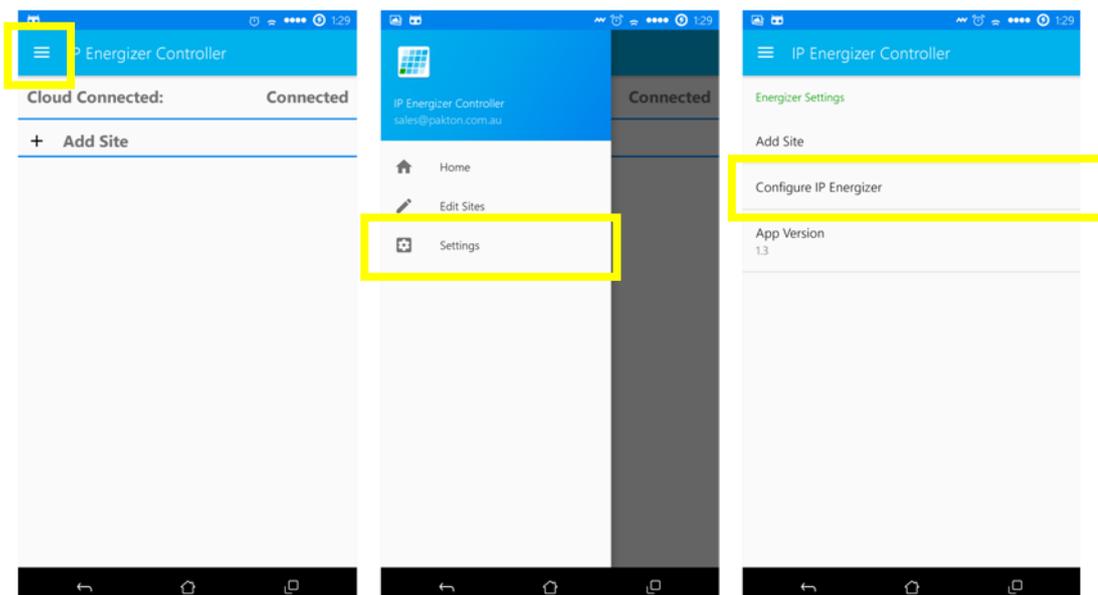
5. Choose from the drop down box the SSID of your home Wi-Fi network and enter in the password if it has one. Next enter the IP Monitor's serial number and finally choose a password. You will need this password again later when adding a site.
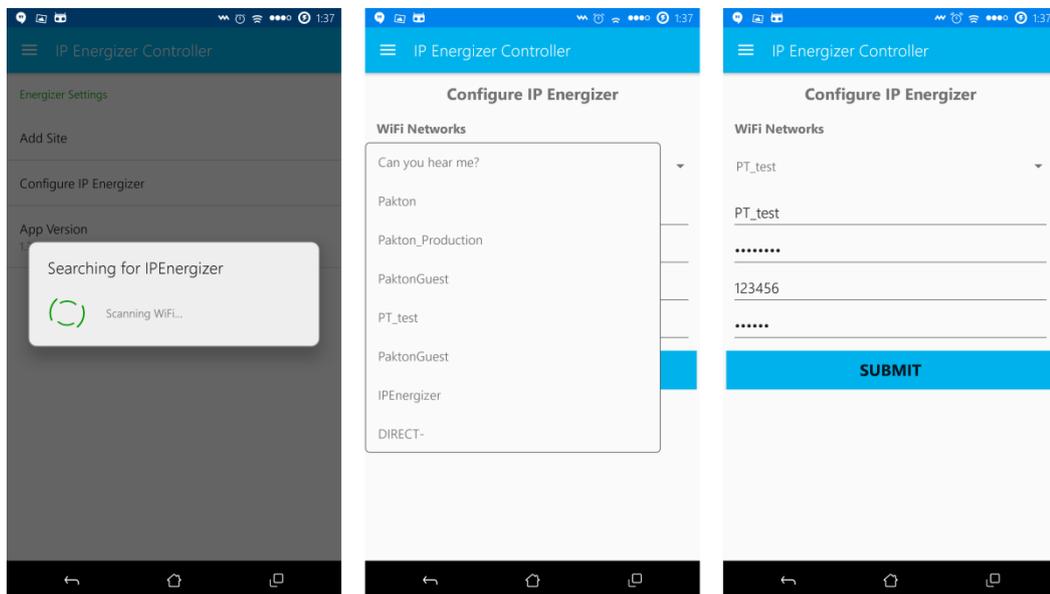
6. Press submit. You will see the following screens as it configures the Monitor with the details you have entered.
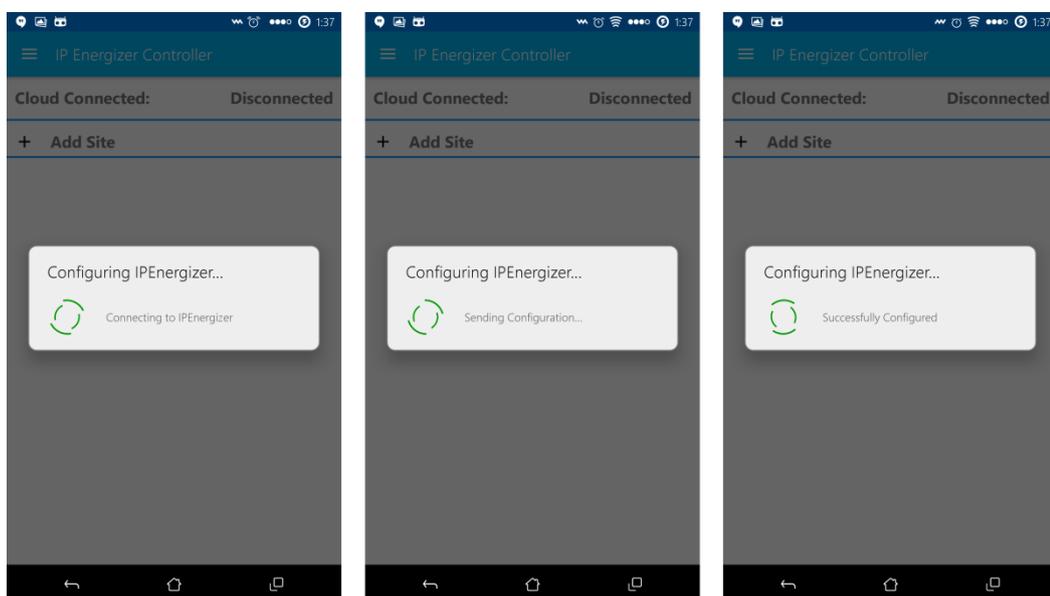
7. If you have entered the Wi-Fi details correctly it should connect to your home Wi-Fi network and the IP Monitor Status LED will be flashing slowly, like a electronic heartbeat.

    Congratulations – your IP Monitor is configured!

Controlling your IP Monitor

To control the Monitor from your iPhone or Android device you simply need to add a site. Go to the settings screen and press Add Site. Refer to step **Error! Reference source not found.** of the section 'Setting up the IP Monitor' **Error! Reference source not found.** if you need a reminder as to how to get to the settings.

Enter a site name – we have chosen 'Horse Paddock' – then enter the serial number of the IP Monitor, and the password you chose when you set it up.
Choose a voltage and/or current alarm threshold. You will get a notification on your phone if the fence voltage falls *below* the voltage threshold, or the fence current rises *above* the current threshold. If you don't want either feature, choose 'disabled'. Press OK.
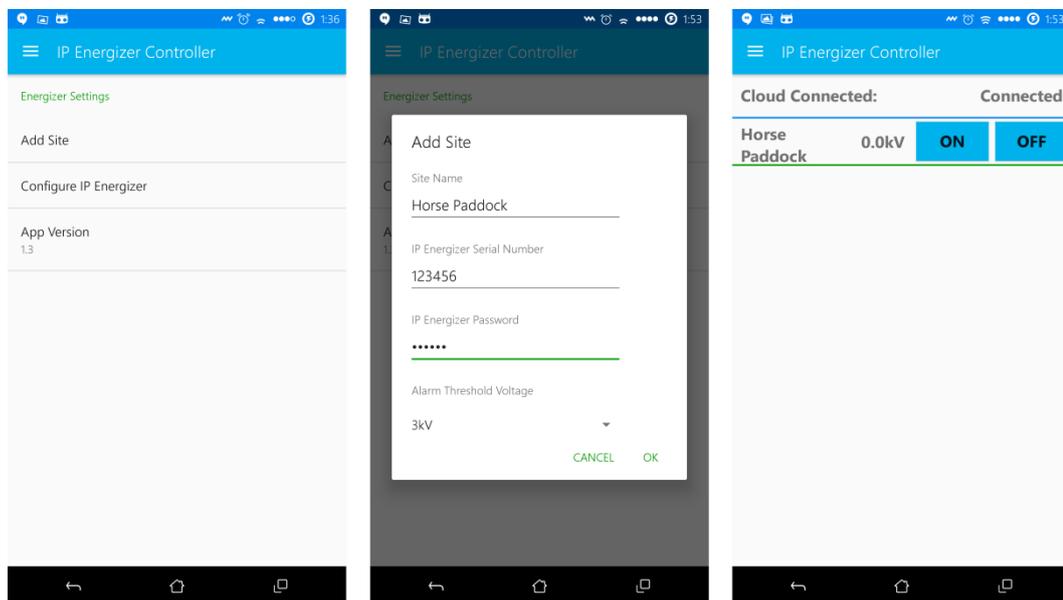
You can turn your IP Monitor on or off via the main screen, or you can select the site to view a more detailed screen and control it from there.
Note that "Cloud Connected" simply indicates whether or not your phone is connected to our messaging server.
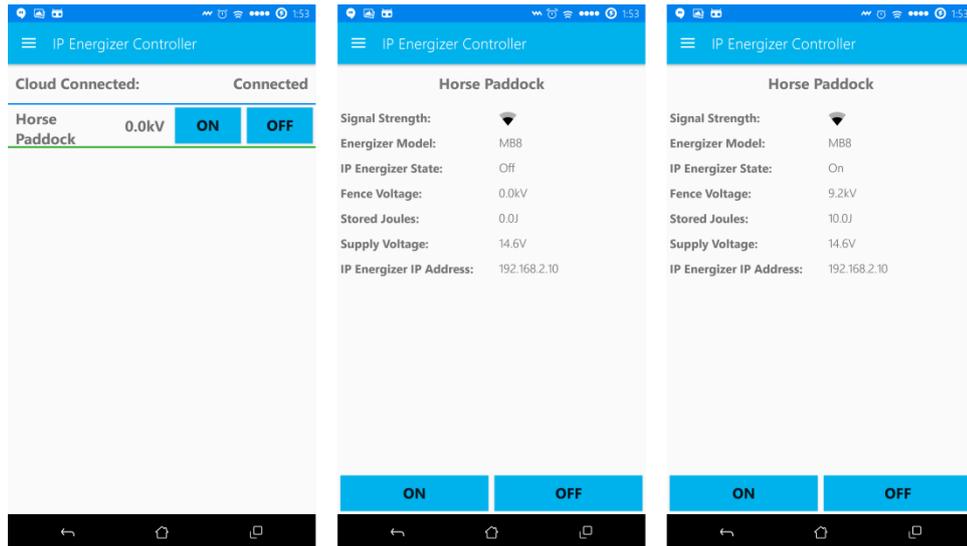
If you select the site – in our case 'Horse Paddock' – you will transition to a more detailed screen. From here the Site Name you entered will appear at the top of the screen, followed by the status information of your IP Monitor, which includes:

Signal Strength: This indicates the strength of the Wi-Fi signal available to your IP Monitor. It is not the signal strength of your mobile phone.

Energizer Model: This shows the model name of your IP Monitor.

IP Monitor State: This shows 'On' when the IP Monitor has switched power from the Energizer to the fence. It states 'Off' if the IP Monitor is in standby mode and the fence should not be live.

Fence Voltage: This shows the actual voltage on the Fence terminal. This will update in real time.

Real Fence Current: This shows the Real current flowing through the monitor from the Energizer to the Fence terminals. This will update in real time.

Total Fence Current: This shows the total (both Real and Reactive) current flowing through the monitor from the Energizer to the Fence terminals. This will update in real time.

Supply Voltage: This shows voltage of the power supply that is being used to power your IP Monitor, useful if operating from a battery.

IP Monitor IP Address: This is the IP address that has been allocated by your home Wi-Fi router to your IP Monitor.

Should you wish to add additional IP Monitors or IP Energizers to your App, simply navigate back to the settings and add another Site.

You can edit the Sites settings at any point via the Edit Sites button or stop monitoring a site by deleting it using the trash can.
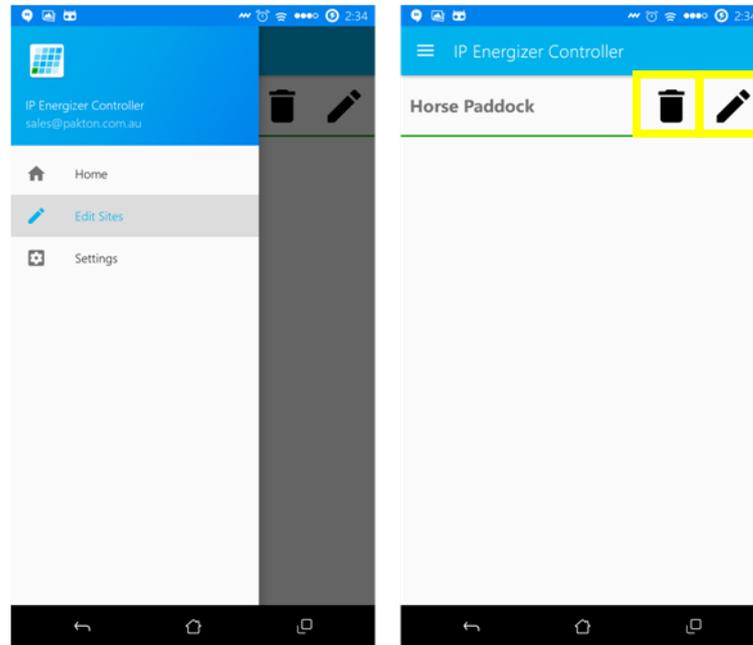
Congratulations, you can now monitor and control your IP Monitor from anywhere in the world!

If you have not already done so, you can now connect the Energizer to the fence (as per the installation instructions in the Energizer manual), making sure that the IP Monitor remains in range of your home Wi-Fi.

Disclaimer: If you give the IP Monitor password and serial number to anyone else, they will also be able to turn your Energizer on and off. You can change the password at any time by defaulting your IP Monitor and reconfiguring it by following the steps under 'Setting up the IP Monitor' above.

Defaulting your IP Monitor

If you want to change the password of your IP Monitor, or if you need to reconfigure it to connect to a different Wi-Fi network, you will need to reset the IP Monitor to its factory default.

1. Turn the IP Monitor Off (disarm).
2. If an energizer is connected, turn it off at its power connection.
3. Press and hold the power button on the front of the IP Monitor for 3 seconds, then release it.
4. The On/Off and Status LED will start to flash in a fast alternating pattern.
5. Press and hold the power button again for another 3 seconds.
6. The Status LED should change to 1 fast flash. This means it has been defaulted and it is ready to be configured.

Extending Your Wi-Fi Range

You may find that the IP Monitor cannot connect to your home Wi-Fi because it is not within signal range. This issue can be overcome installing a Wi-Fi extender. Setup is typically simple and we have included the necessary steps that we used to configure the TP-Link Nano router (TL-WR702N).

1. Plug your Wi-Fi extender into USB power and switch it on. Plug one end of the supplied Ethernet cable into the Wi-Fi extender, and the other into your computer.

2. Open a web browser on your computer and go to http://tplinklogin.net
   Enter User Name: **admin**
   Enter Password: **admin**
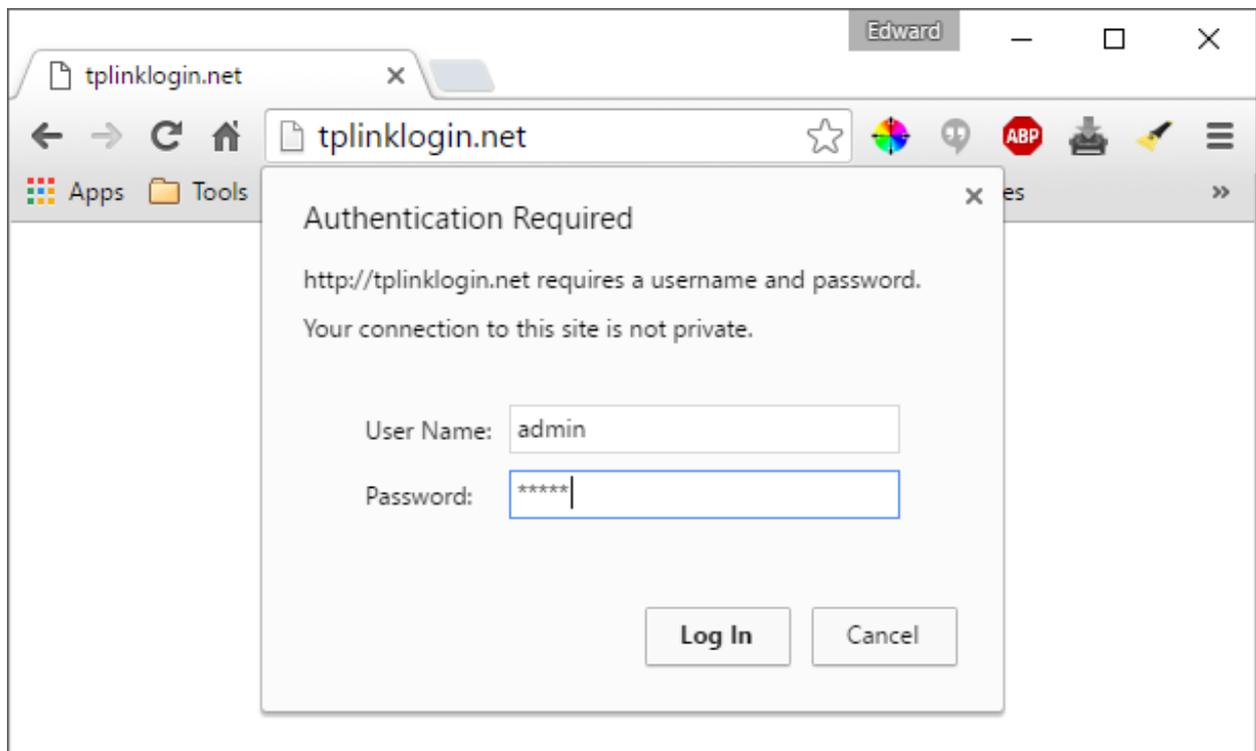
3. Click quick setup and then next, choose Repeater and then click next again
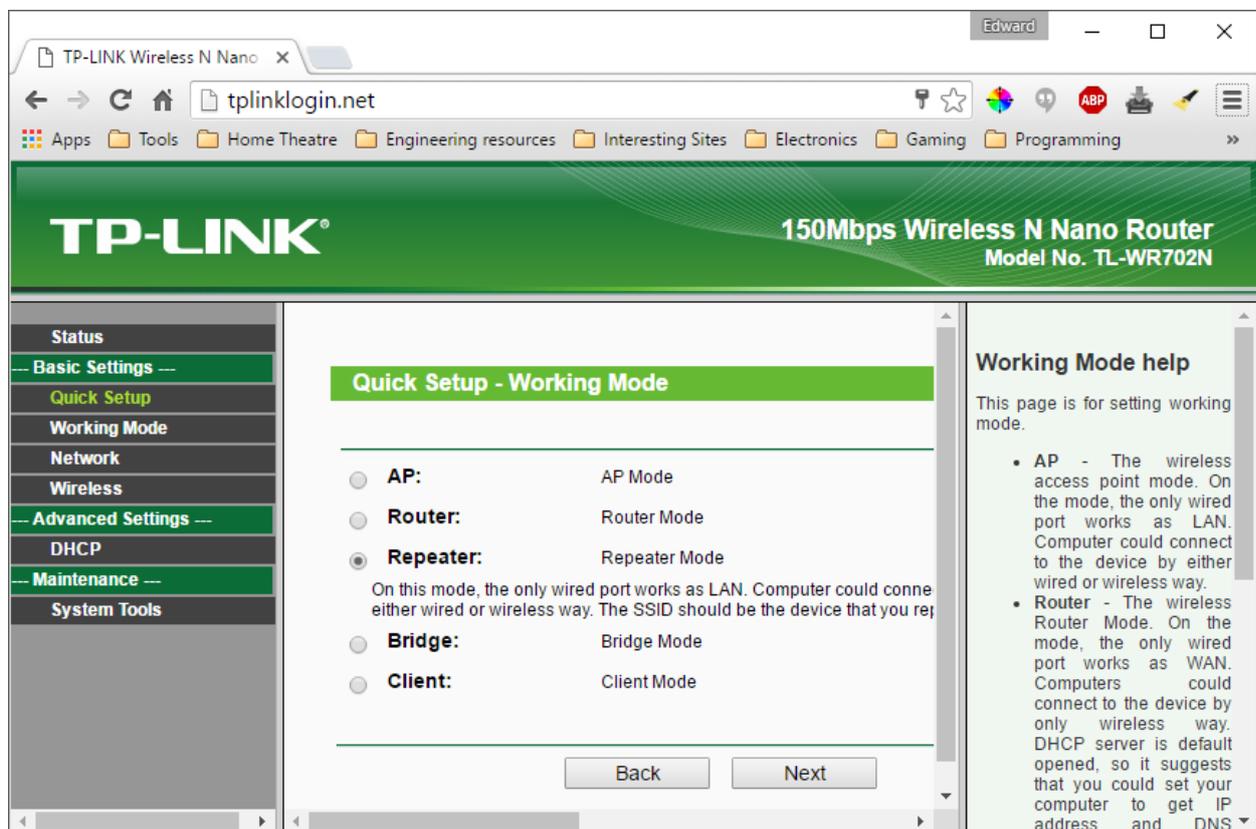
4. Select your country's region and press 'Survey'
5. This will list all Wi-Fi access points that the Wi-Fi repeater can see. Select your home Wi-Fi network and press Connect.
6. This will fill in all the necessary details required to connect to this network, except the password which you must fill in. This is the password that you use to connect to your current Wi-Fi network.
7. You will then be asked to reboot to save the settings. Press Reboot.
8. Find a suitable location for your Wi-Fi extender. This needs to be close enough to your IP Monitor such that it can provide Wi-Fi signal to it, but also within Wi-Fi range of your current Wi-Fi network.
9. Plug it in and switch it on. Your Wi-Fi signal range has now been extended.

Using a 3G/4G Portable Modem

If your IP Monitor is not within Wi-Fi range, you can use an off-the-shelf 3G or 4G portable modem such as the Huawei E5251. These are also known as a 'Pocket Wi-Fi'. They use a carrier like Telstra's mobile network to gain Internet access and then create a Wi-Fi hotspot. You can use a contract or a prepaid SIM card with the network of your choice, but it must have data available on the plan. Please ensure there is a 3G or 4G signal from the network of your choice where the IP Monitor is to be located before considering this option. The IP Monitor only uses a very small amount of data, approximately 1MB per day.

For Assistance

If you have any questions or need further assistance, please contact us at sales@jva-fence.com.au. For more information on our complete electric fencing products please see the JVA website at http://www.jva-fence.com.au/

Notes

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