TOSIBOX VPN – STARLINK INTEGRATION WHITE PAPER

IMPLEMENTING VPN TECHNOLOGY OVER WI-FI & WAN

STARLINK

TOSIBOX

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TOSIBOX OVER STARLINK CONSIDERATIONS

Many customers who have Starlink do not realise its limitations when trying to implement VPN technology. Starlink uses CGNAT (carrier grade network translation), - CGNAT does not support port forwarding to an internal service – such as a VPN, web servers etc… nor does it allocate a routable static IP address. Outbound sessions operate just like any other internet service, allowing traffic to flow back and forth over an established session state.

Tosibox architecture overcomes CGNAT limitations.
The Tosibox server (lock) is situated on the LAN side of the Starlink connection (the inside of the network), an outbound connection is established to a Tosibox connection broker; when a Tosibox client device (software key, hardware key) wants to connect to the server (lock), a connection is made from the Tosibox client to the connection broker, the broker then bridges the two connections, and a secure VPN tunnel is established.
The Tosibox platform is simple to implement with Starlink, however the devil is in the detail...

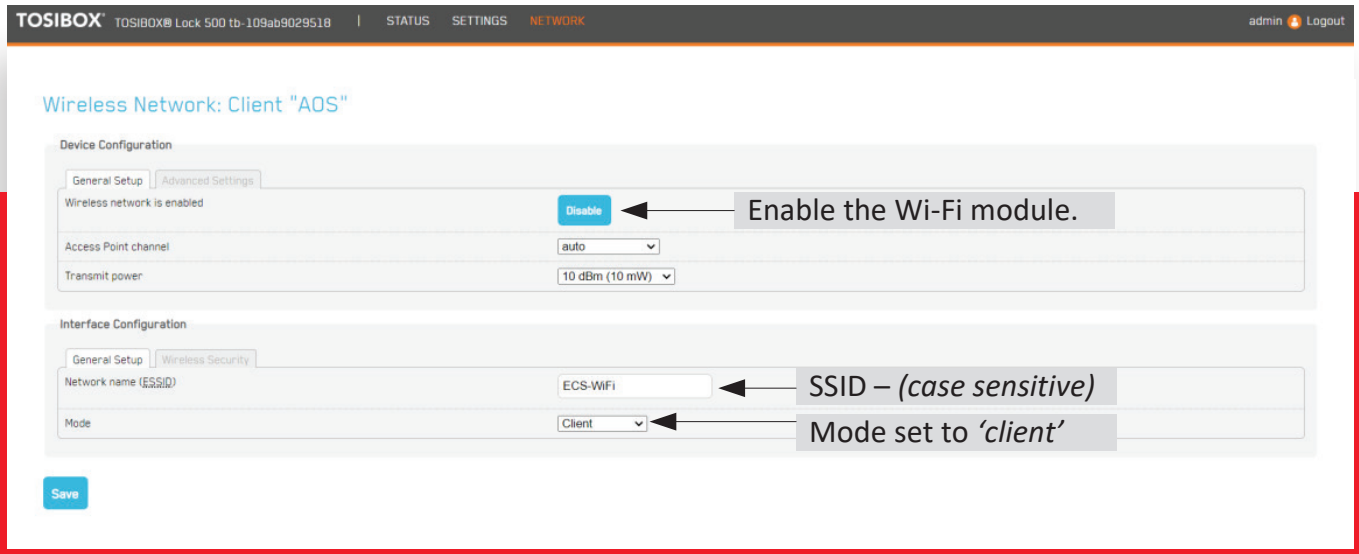
There are two connection methods, Wi-Fi & WAN.

WI-FI CLIENT METHOD

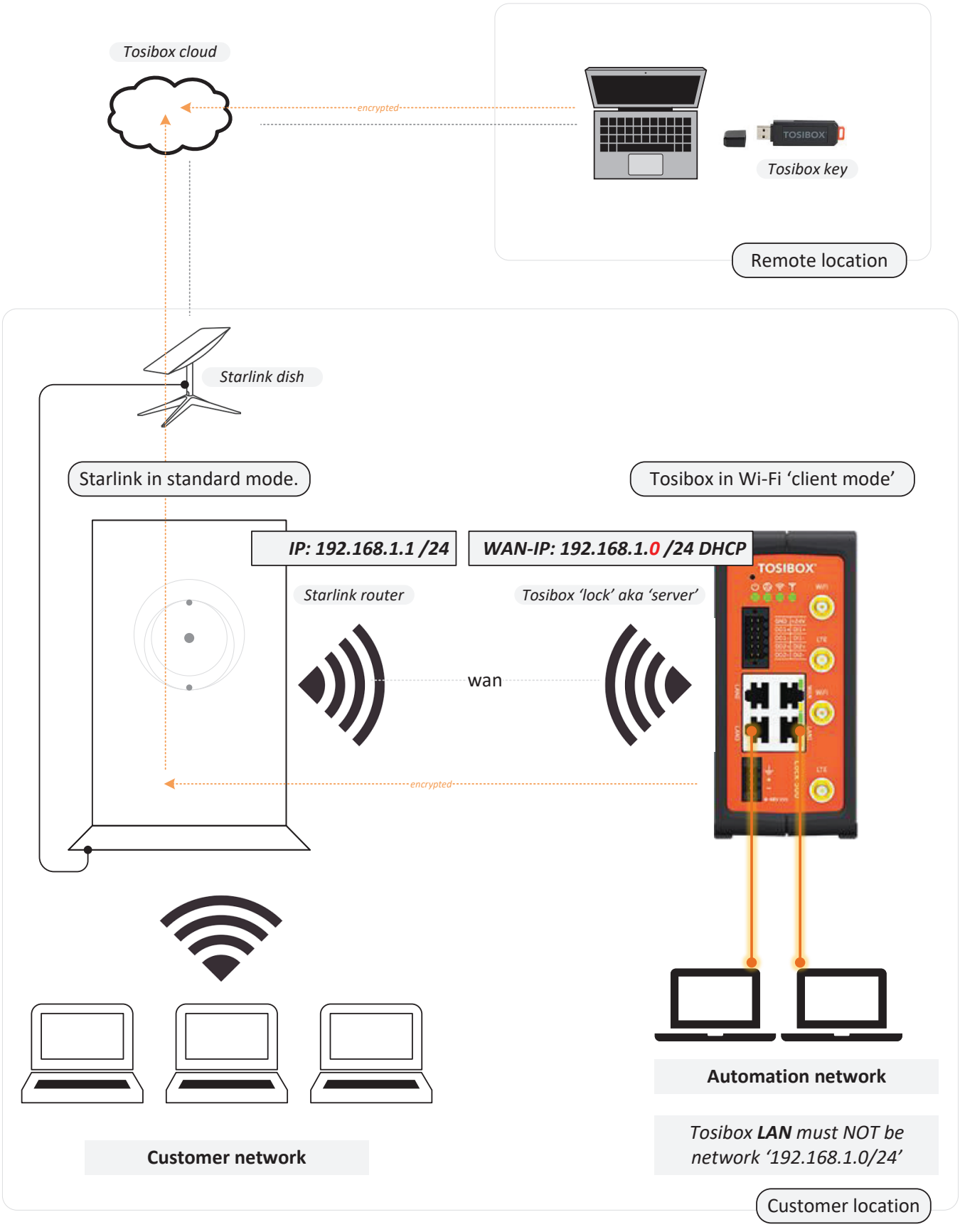
This connection is the easiest to implement and requires no alteration to the standard Starlink package. Additionally, this method is wireless and eliminates the need for cable runs. Keep in mind that distance and obstructions can lower Wi-Fi throughput, so be aware of where the Tosibox is. Any Tosibox lock that supports Wi-Fi client mode can connect to the Starlink Wi-Fi Router. Simply place the Tosibox into Client Mode, set the SSID and password fields to that of the Starlink router, set WPA2 for the authentication method.

DO NOT use 192.168.1.0/24 for the Tosibox LAN address, this will conflict with the Starlink router.

With this method you will have two networks; 192.168.1.0/24 – the Starlink Wi-Fi network, and the Tosibox LAN network – being anything other than 192.168.1.0/24



Tosibox Wi-Fi Client Method, Starlink Router Topology.

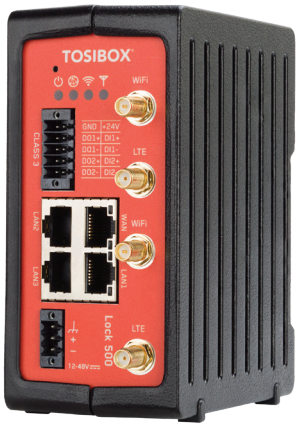


ETHERNET WAN METHOD WITH STARLINK BYPASS MODE

WAN PORT

This method is written for Gen2 Starlink routers and requires additional hardware:

- Router/firewall - to act is your main internet gateway
- Wireless Access Point – if Wi-Fi is required
- Network switch – if necessary
- Or, an all-in-one router, Wi-Fi, switch



WAN METHOD

1. Shut down Starlink and install the Ethernet dongle.
2. Power on, login, and place the Starlink into Bypass mode.
3. Starlink router will reboot.
4. Plug the Ethernet dongle into your routers WAN port.
5. A dynamic WAN IP address will be allocated to your router.
6. Configure LAN IP address and DHCP range
7. Starlink Ethernet Dongle – mandatory. WAN method
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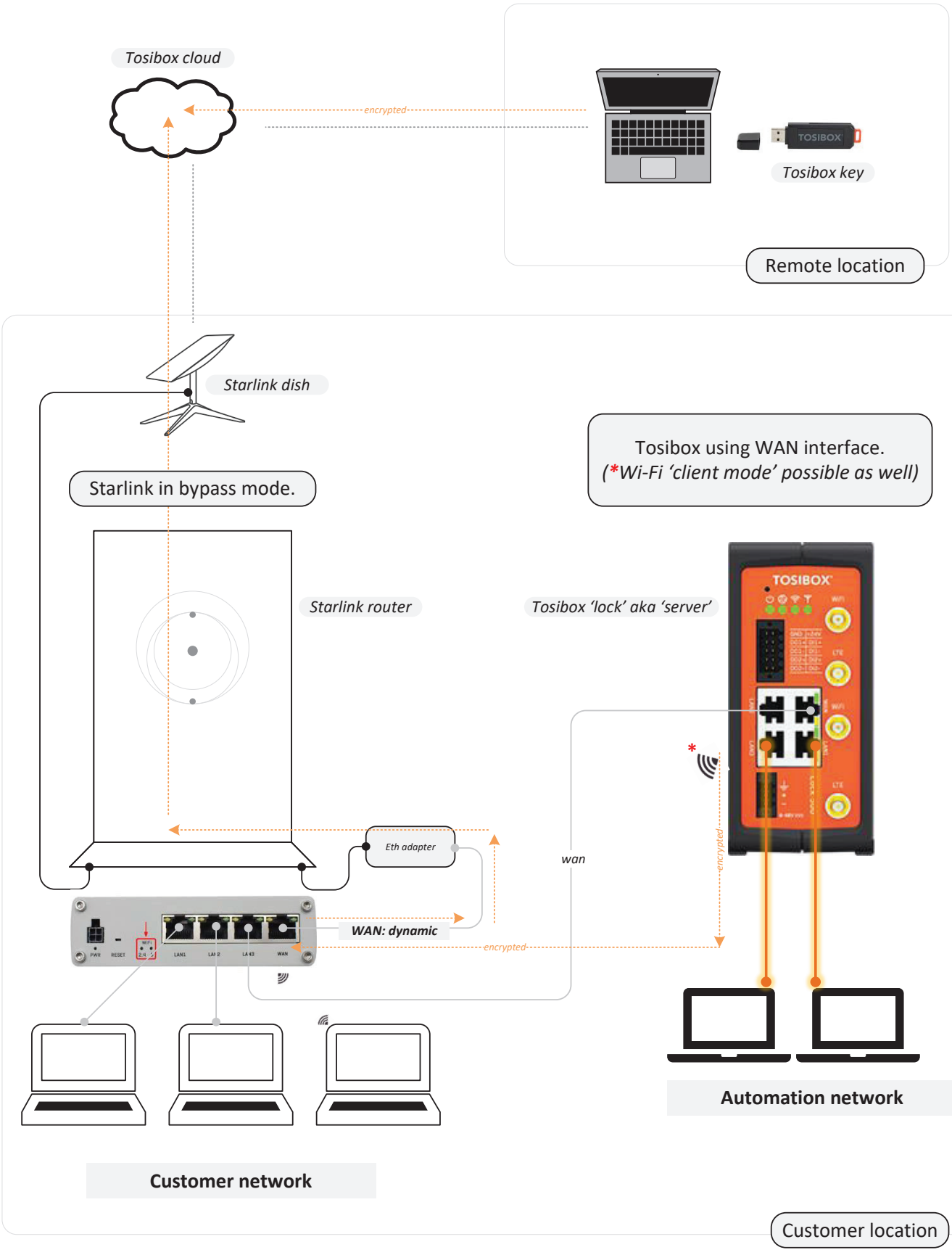
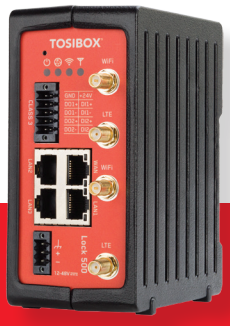
Tosibox WAN Method, Starlink Router Topology.



TOSIBOX



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Devices for all connectivity scenarios that meet the most demanding operating conditions, and can be used in power-hungry industrial applications where speed and robustness are at the heart of the solution.

TOSIBOX® 500 SERIES

A high-end connectivity device bringing unprecedented possibilities for customers to manage their operations and to build new IoT solutions, compatible with all existing TOSIBOX® products.

TOSIBOX® KEY

Intelligent cryptoprocessing device that enables a secure connection between your computer and one or more TOSIBOX® Nodes Encrypted VPN tunnel.

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STARLINK WI-FI ROUTER

Starlink Wi-Fi routers include GEN 1/2/3 models. Each generation offers improved performance and coverage, with the latest providing enhanced connectivity and seamless integration with Starlink satellites for optimal home internet experience.

STANDARD ACTUATED DISH

Starlink offers various satellite dishes, ranging from a portable mini, right up to a robust enterprise model. All provide high-speed internet with easy setup, designed to connect to the growing network of low Earth orbit satellites.

ecs FOR INDUSTRY

Founded in 1983 we are a New Zealand family owned business spanning two generations. We began by designing and manufacturing automated machinery for a range of industries including dairy production machinery and production machinery for the construction industry.

Our relationships with our suppliers such as LAPP in Germany was initiated through our own demand for high quality products for our production.

Over the last 30 years ECS has evolved from a manufacturing company to a market leading supplier of electrical and automation products. We are now the exclusive distributors in New Zealand for world leading manufacturers such as LAPP, Wieland Electric, MOXA Networking and ABB LV Switchgear.

At ECS we strive to offer the best customer service in the industry. When you phone us you will go straight through to our sales team who are made up of trained electricians and automation engineers. We are not just order takers; we are able to guide you through our products so you can select the right product to suit your requirements.

In 2012 we moved into a purpose built 2500m2 warehouse, specifically designed to suit our requirements. Located in Hamilton where we stock 5000 different parts and over 1 million metres of cable, in our 5000m2 warehouse, we are committed to holding the right products for you.

Over the course of 2015 we more than doubled the size of our warehouse giving us the ability to hold greater stock quantities and much larger cable sizes.

With our well established logistics network, we are able to deliver products to customers from Kaitaia to Invercargill in just one working day. Linking with our supplier's warehouses around the world, if customers are working overseas we are able to drop-ship directly to site anywhere in the world while handling all the paperwork back here in New Zealand.

ECS is an expanding and adapting company; we are consistently adding new products to our line-up based on customers' requirements. We strive to offer you a complete package for all your electrical and automation requirements.

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ECS is an ever expanding company; we are consistently adapting and adding new products to our line-up based on customer requirements.

We strive to offer all of our customers a complete package for all their electrical and automation requirements. We are distributors of world leading manufacturers such as LAPP, Wieland Electric, MOXA Networking, ABB and much more.

TOSIBOX OVER STARLINK CONSIDERATIONS

Many Starlink users face issues with VPNs due to CGNAT, which lacks port forwarding and static IPs. Tosibox solves this by establishing a secure VPN tunnel through its connection broker, allowing seamless integration with Starlink. The setup is simple, though details matter for smooth operation.

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