How to Remotely Access your Equipment through a 4G Router.

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Keywords & Definitions

- IP Address: An Internet Protocol address is a unique numerical identifier for every device or network that connects to the internet.

- MAC address: A Media Access Control address is a hardware identifier that uniquely identifies each device on a network

- Dynamic IP: is a temporary IP address for devices connected to a network that continually changes over time.

- Static IP: is an IP address that doesn't change over time.

- Bandwidth: the volume of information that can be sent over a connection in a measured amount of time – calculated in megabits per second (Mbps).

- 4G/LTE Wi-Fi Router: containing a built-in LTE broadband modem, uses a SIM card to share internet connections.

- VPN: A virtual private network, is an encrypted connection over the Internet from a device to a network.

- Cloud (computing): refers to servers that are accessed over the Internet, and the software and databases that run on those servers.

Introduction

Remote access is the ability of users to access a device or a network from any location.

Recent years, we have seen many changes in remote device monitoring due to the evolution of 4G technology.

Remote asset management on remote sites is becoming easier than ever thanks to the use of cellular networks.

Remote access is a cost-effective option for many industries for monitoring equipment in remote locations due to the low cost and high bandwidth available on cellular networks.

Image by media.istockphoto.com

The Challenge of the IP address

Remote access is a challenge because most people have a dynamic IP address, making it difficult to configure. A dynamic IP address is one that is not static and changes on a regular basis.

Completely the opposite to a dynamic IP address, a *Static or Fixed IP Address* is one that doesn't change.

Drawbacks:

- *Malicious actors or hackers find it easier to track and target static IP addresses because they do not change.*

- *More expensive and less flexible.*
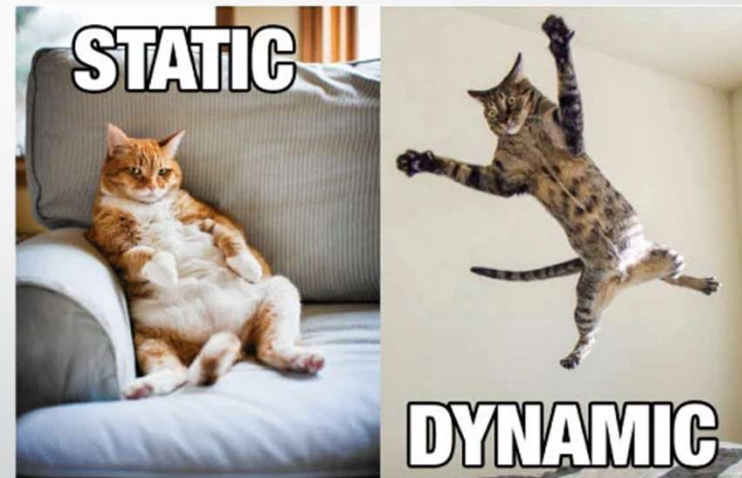
Solution: *Teltonika Networks* Remote Management System (RMS) + VPN server, is a service designed for remote efficient, low-cost management of large-scale networks without a public or fixed IP.

Remote Management System / Connect – VPN

Teltonika Networks Remote Management System (RMS) is designed to conveniently monitor and manage all your Teltonika Networks networking devices. The system allows to securely gather status information of your devices and to change their configuration even if the devices do not have public IP addresses.

Using the Remote Management Service (RMS) and VPN server. It offers the easiest way to configure these types of connections for your entire infrastructure.

Now you can easily and securely remotely access multiple endpoints at the same time without having to worry about configuration and special requirements.

- *Ease of use and flexibility*
- *Connectivity from any type of device.*
- *Cloud service without requiring dedicated public IP.*
- *Remote efficient, low-cost management of large-scale networks*
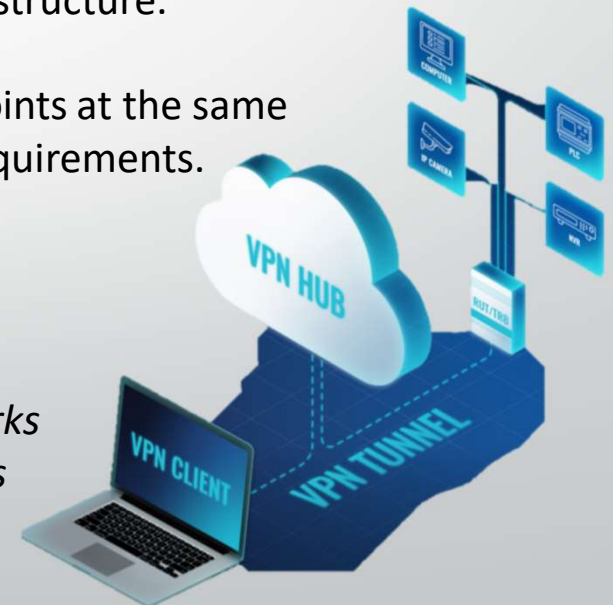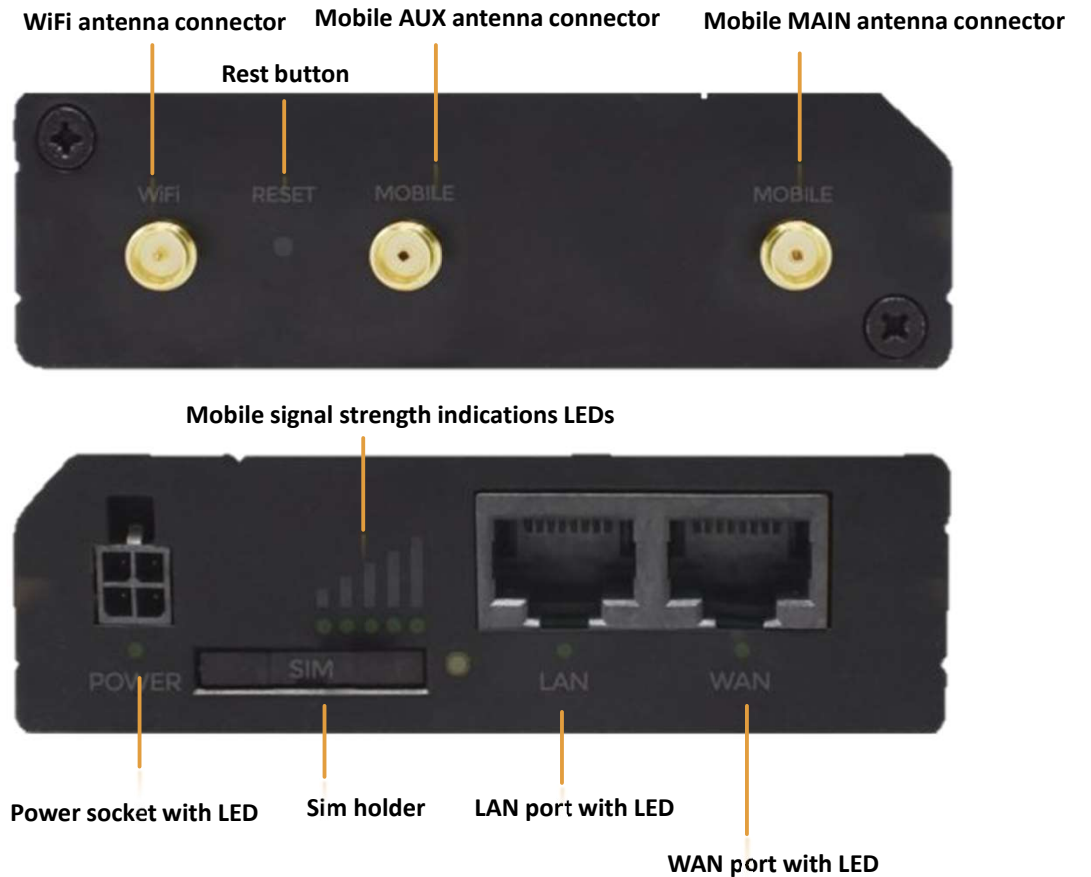- *Encrypted VPN tunnels for secure access of multiple endpoints*

Image: teltonika-networks.com

TELTONIKA RUT200 - 4G/LTE Wi-Fi Router

RUT200

Made in Lithuania
TELTONIKA NETWORKS UAB
K. Barsausko st. 66
LT-51436 Kaunas, Lithuania

(9-30V) + ■ ■ - (GND)
INPUT ■ ■ OUTPUT

Default IP: 192.168.1.1
User/Pass: admin/admin01

WiFi antenna connector

Rest button

Mobile AUX antenna connector

Mobile MAIN antenna connector

WiFi   RESET   MOBILE   MOBILE

Mobile signal strength indications LEDs

POWER   SIM   LAN   WAN

Power socket with LED   Sim holder   LAN port with LED

WAN port with LED

LEFT SIDEBAR PANEL

TOP CONTROL MENU

SETTINGS AND CREDITS PANEL

MAIN CONTENT WINDOW

RIGHT CUSTOMIZATION PANEL

TELTONIKA | Remote management system

NOTIFICATIONS   RMS@TELTONIKA.LT

DEVICE ˅   MONITORING ˅   ACTIONS ˅   CONFIGURATION ˅   ALERTS ˅   EXPORT ˅   TAGS ˅

Search table...

MANAGEMENT
Devices
Wi-Fi & Hotspots
Task manager
Reports

RMS CONNECT
Remote access
Remote mobile devices
Access history

RMS VPN
VPN hubs
VPN quick connect

ADMINISTRATION
Companies
Users
Tags
Files

STATUS
Online   5

DEVICE MODEL
RUT950   2
RUT955   1
RUTX11   1
RUT230   1

INFORMATIC
Less than 5 minute

TABLE FILTERS   CLEAR

**COMPANY**
Select Company   Q

TAG
Select Tag   Q

STATUS
Select status

PENDING TASK
Select Pending task

DEVICE MODEL
Select Device model   Q

MODEM MODEL
Select modem model   Q

MOBILE NETWORK STATE
Select Mobile network state

MOBILE CONNECTION TYPE
Select Mobile connection type

DEVICE FIRMWARE

DEVICE MAP

Denmark   Copenhagen   Klaipėda   Šiauliai   Daugavpils
            Malmö   Lithuania
Odense

	STATUS	ACTIONS	NAME ⌃	DESCRIPTION ⌃	MODEL ⌃	COMPANY NAME ⌃	TAGS
☐	●	ⓘ ⥮ >_ ⇄	☑ RUT2	☑ s/n 9000000017, adde...	RUT230	#7421 Demo_RMS	☑ Cam
☐	●	ⓘ ⥮ >_ ⇄	☑ RUTX11	☑ s/n 9000000021, adde...	RUTX11	#7421 Demo_RMS	☑ Kaun
☐	●	ⓘ ⥮ >_ ⇄	☑ Facelift RUT955	☑ s/n 9000000018, adde...	RUT955	#7421 Demo_RMS	☑ Kaun
☐	●	ⓘ ⥮ >_ ⇄	☑ RUT950	☑ s/n 9000000016, adde...	RUT950	#8979 The_Main_Co	☑ Kaun
☐	●	ⓘ ⥮ >_ ⇄	☑ Facelift RUT950	☑ s/n 9000000019, adde...	RUT950	#7421 Demo_RMS	☑ Vilniu

RMS - remote access and management of all connected Teltonika Networks and third-party devices even without a public IP.

Centralized server resource that is hosted and delivered over a network—typically the Internet
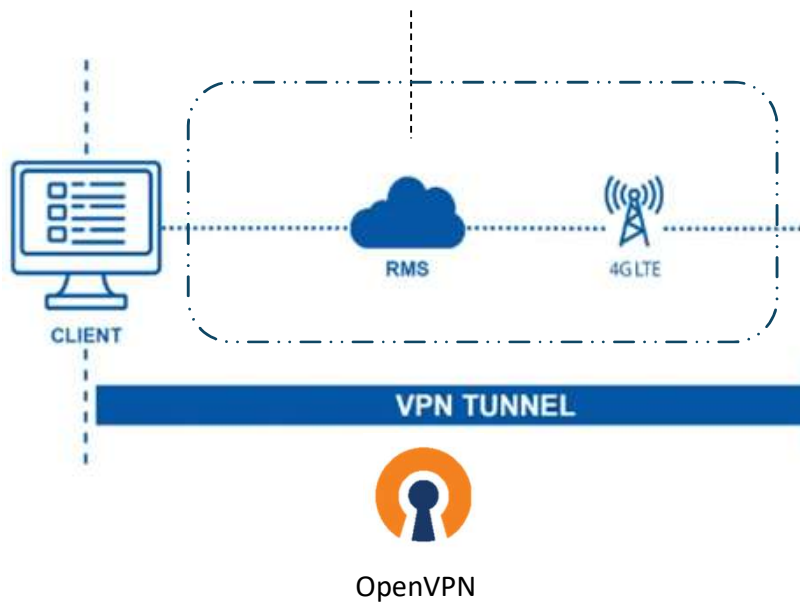
PQ5K
IP: 192.168.1.59   1.
MAC: 00-B0-D0-63-C2-26

Port: 80   2

RMS

4G LTE

CLIENT

DranXperT
IP: 192.168.1.22
MAC: 00-EF-B0-51-C5-33

Port: 80

RUT200
IP: 192.168.1.1

VPN TUNNEL

HDPQ
IP: 192.168.1.171
MAC: 00-RS-LM-37-A5-79

OpenVPN

Port: 80
Port: 5900

1. Static lease - lock devices IP, and the router will always hand that IP to that device and never to any other device.
2. Forward port - allows remote servers and devices on the internet to be able to access devices that are on a private network.
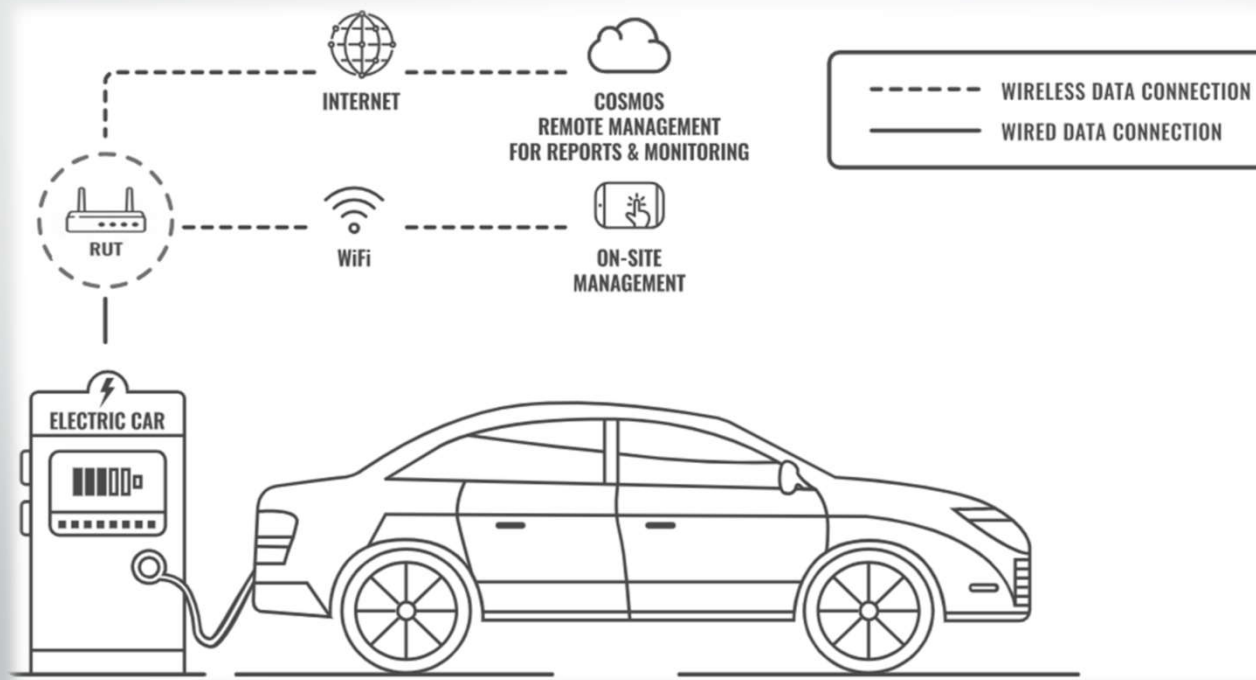
Application#1

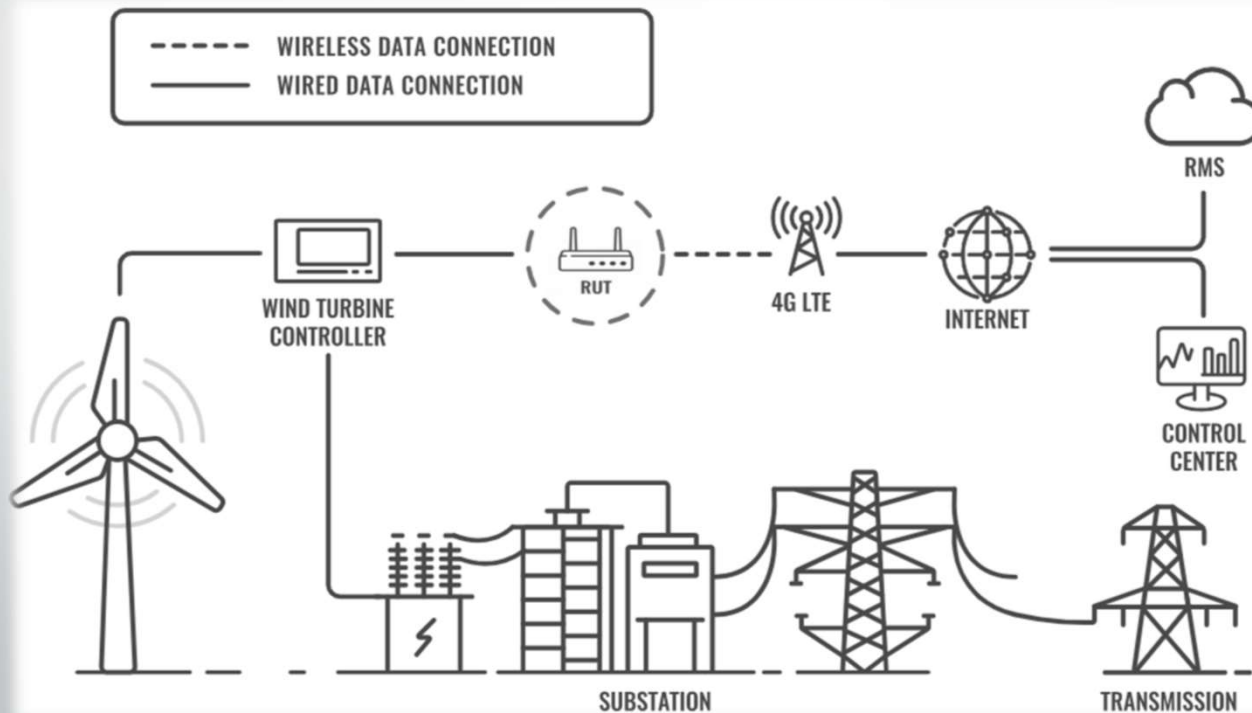- Connecting to the meters, equipment's and office network remotely from your home

Image: teltonika-networks.com
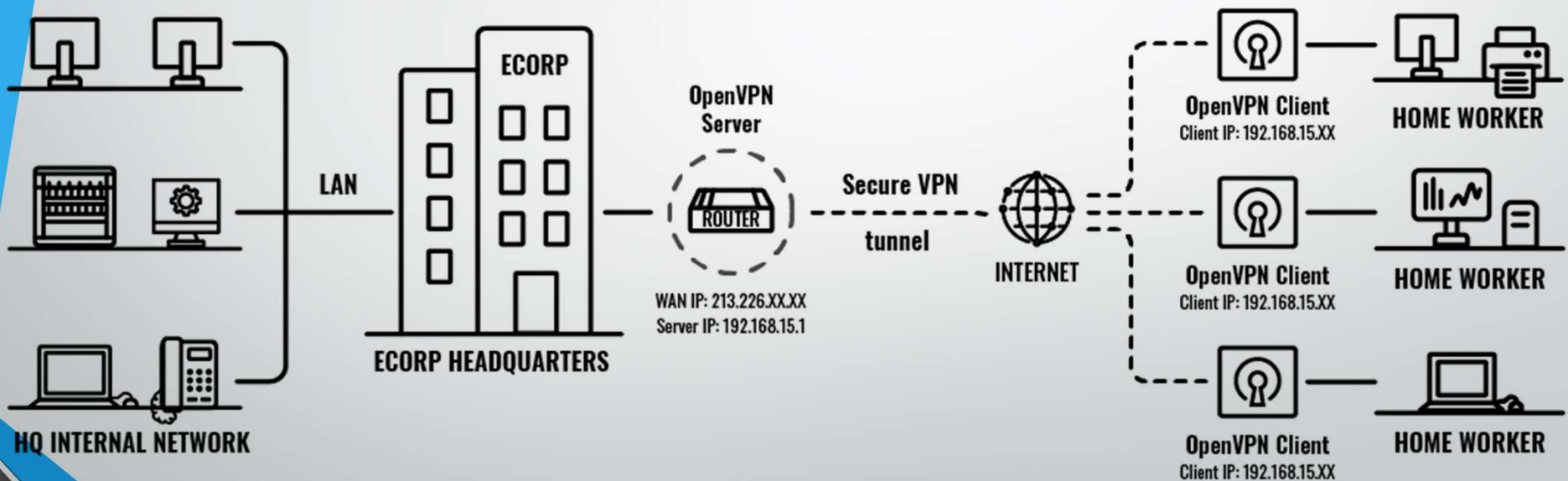
Application#2

- Control, and monitor the energy usage of an EV charging station

Image: teltonika-networks.com

Application#3

- Remote control and monitoring of wind turbines

Image: teltonika-networks.com

Conclusion

- 4G cellular router - With WiFi and LTE antennas and ethernet ports, 4G routers can easily share a 3G/4G connection with multiple wireless and wired devices.

- Remote access and robust connectivity have made it easy to complete tasks like preventive check-ups and inspections.

- RMS - You can easily manage the device and complete remote control over all connected 4G cellular router compatible devices even without a public IP.

- Unified access system (HTTP(S), VNC, SSH, RDP, RMD etc.) allowing to reach, and control connected smart devices remotely with RMS.

- VPN - Protects you while working remotely (encrypts your traffic), secures your data and is the safest way to reach multiple endpoints remotely.

Image: teltonika-networks.com

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