

# LORIX One

COMPACT AND ROBUST PROFESSIONAL GRADE  
LoRaWAN™ GATEWAY

## Application note

4G LTE access with Mikrotik wAP



### Versions:

Revision	Note	Date
0.1	Initial creation	30/10/2017
0.2	Added screenshots	30/11/2017
0.3	Language Correction	05/12/2017
0.4	Updated Wifx logo	17/01/2020



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## 2 INTRODUCTION

This document shows what materials you need and how to connect all elements together to use the LORIX One with with LTE. How to configure the wAP LTE from a web interface with the SIM Card and other parameters. To configure your LORIX One, please refer to document sent with your LORIX One product.

## 3 MATERIAL

To complete this application note, you will need the following material:

1. A [LORIX One](#) kit



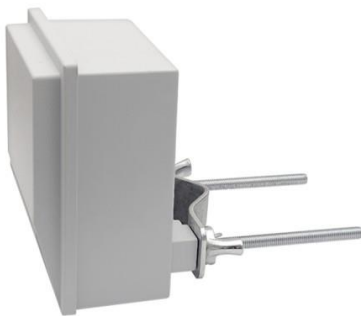
Wifx's online shop name: Lora Gateway LORIX One

2. A [wAP LTE kit \(RBwAPR-2nD&R11e-LTE\)](#)



Wifx's online shop reference: RBWAPR-2ND&R11E-LTE

3. An [Outdoor Poe Splitter \(POE-SPLITTER\)](#)



Wifx's online shop reference: DLB-POE-SPLITTER-03



## 4 SETUP

Please follow the next steps in order, it is very important for an optimal configuration

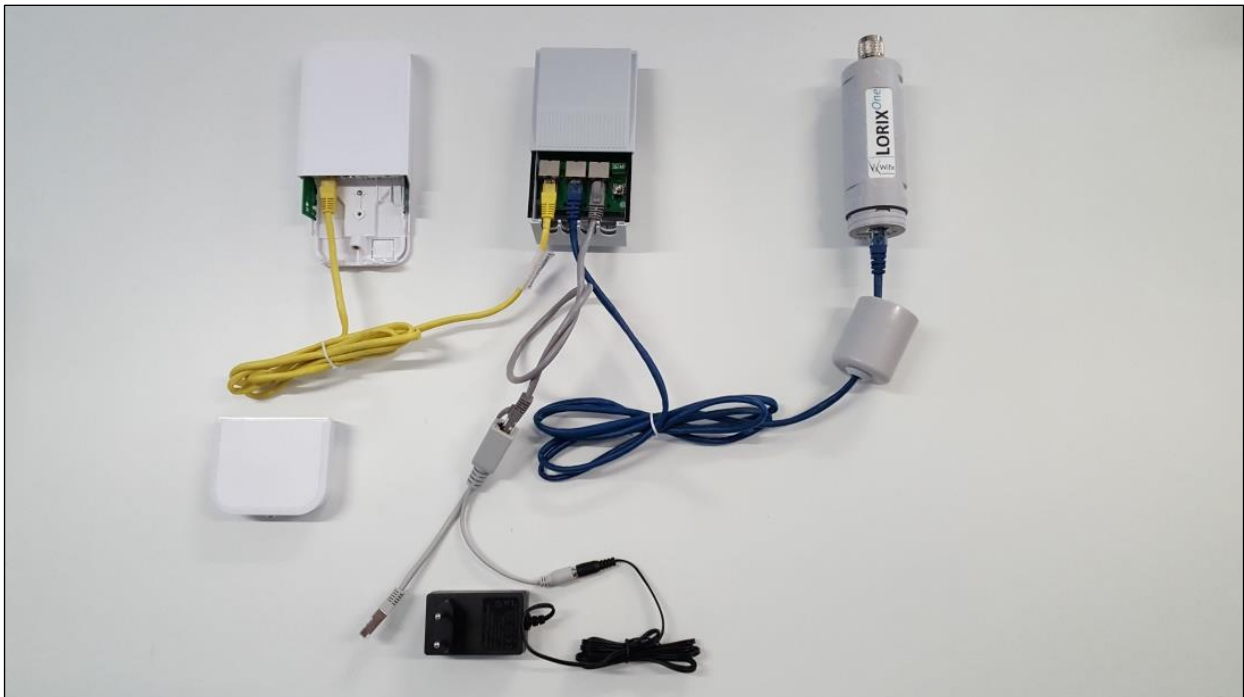
### Before moving forward

The SIM shall not be plugged before the section 4.2.2

### 4.1 HARDWARE

The yellow, blue and grey Ethernet patch cables in the following pictures are not included in the LORIX One's kit.

Connect the wAP to the left port (Port 1) of the splitter and the LORIX One Lora Gateway to the middle port (Port 2) of the splitter then connect the injector PoE in the last port (Port 3) of the splitter. (See below picture)



### 4.2 SOFTWARE

#### 4.2.1 CONFIGURE YOUR WAP LTE

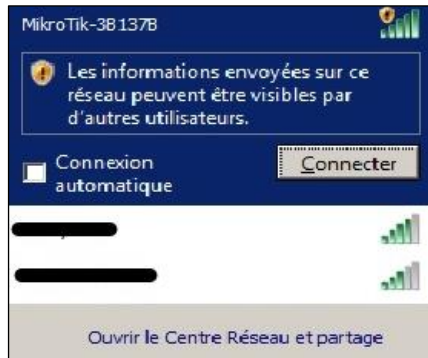
##### Network configuration of the configuration PC

The Wi-Fi network adapter must be configured in DHCP since the wAP embeds a DHCP server. Consult the documentation of your host PC OS to know how to configure your Wi-Fi adapter for DHCP client setup.

1. Disconnect Ethernet cable from your computer if any or disable any already connected network interface to avoid any network conflict.



2. Connect your computer to the Wi-Fi network Mikrotik-XXXXX, for example Mikrotik-3B137B:



**For the following steps please check the screenshot on the next page.**

3. Launch your preferred web browser and type in <http://192.168.88.1>  
Log in User: admin  
Password: (no password)  
After login go to the Quick Set option in the right top corner (picture on next page) and chose LTE AP.
4. Configure the following points as below for your wireless network
  - a. Change the Network Name to the desired one
  - b. Change the Frequency to 2437
  - c. Do not change the Band (2GHz-B/G/N)
  - d. Change the country to the one which applies
  - e. Set a new Wi-Fi Password to avoid any security issue
5. Configure settings for LTE
  - a. Enter PIN of your SIM CARD
  - b. Set the name of an operator (optional for some operators)
6. Set the Local Network
  - a. Chose the IP address for your wAP (192.168.1.1)
  - b. Define the subnet mask (255.255.255.0/24)
  - c. DHCP range for your network (192.168.1.100-192.168.1.250)
  - d. Check NAT rule for your network
7. Configure the wAP System
  - a. Define the router Identity name
  - b. Define your personal password for admin router login (for security reasons try to not use the same password that you already defined for the Wi-Fi)
8. Apply your new configuration



RouterOS v6.40.4 (stable) | LTE AP | Configuration mode of the wAP

active

### Wireless

Network Name: LORIXOne  
Frequency: 2437 MHz  
Band: 2GHz-B/G/N  
Country: switzerland  
MAC Address: E4:8D:8C:3B:13:7B  
Use Access List (ACL):   
WiFi Password: LORIX\_One  Hide  
WPS Accept

### Guest Wireless Network

Guest Network: ▾

### Wireless Clients

MAC Address	In ACL	Last IP	Uptime	Signal Strength
08:ED:B9:63:2D:F8	no	192.168.88.254	00:04:05	-49

Signal Strength cur: avg: max:

### LTE

PIN: \*\*\*\*  
APN: internet

### Internet

Current Operator: EARFCN  
IP Address: 0.0.0.0  
Firewall Router:

### Local Network

IP Address: 192.168.1.1  
Netmask: 255.255.255.0 (/24)  
DHCP Server:   
DHCP Server Range: 192.168.1.100-192.168.1.2  
NAT:   
UPnP:

### System

Router Identity: LORIXOne\_Router\_LTE  
Check For Updates   
Password:   
Confirm Password:



### 4.2.2 CHECK THE CONFIGURATION

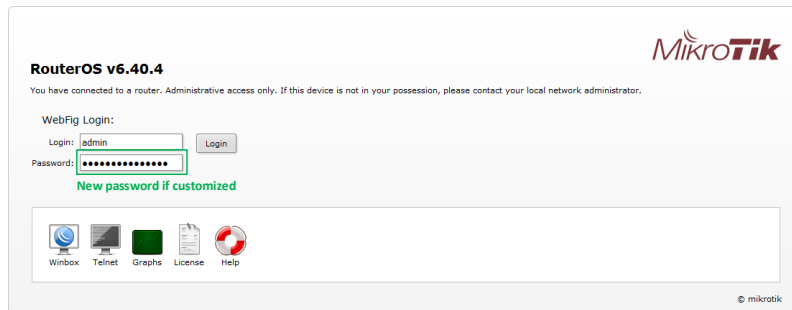
Once the configuration applied, the new parameters will be effective. If you choose to change the Wi-Fi network name and/or password, you will be disconnected and will need to login again.

It's now time to insert the SIM card into the wAP device:

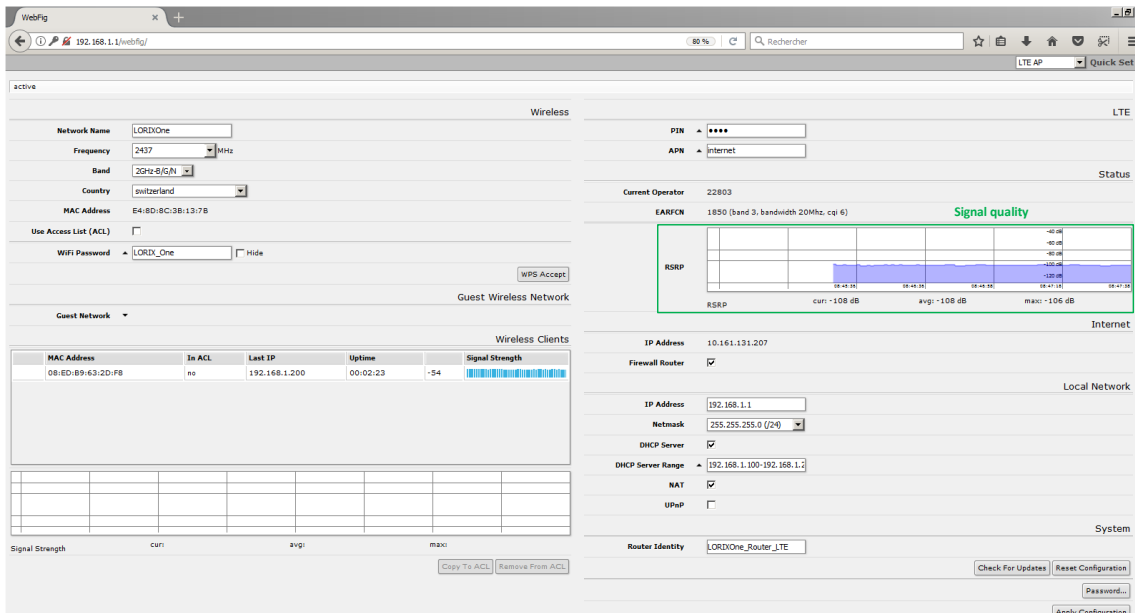
1. Unplug the cable from the wAP device
2. Insert the SIM card
3. Reconnect the patch cable in the wAP device

Once reconnected, the wAP will boot and start the Wi-Fi network with parameters as previously defined:

1. Connect to the wAP Wi-Fi Network with the new SSID and password
2. Launch a web Browser and type in <http://192.168.1.1> or customized IP address
3. Login in wAP Router with **User: admin Password:** (customized password)



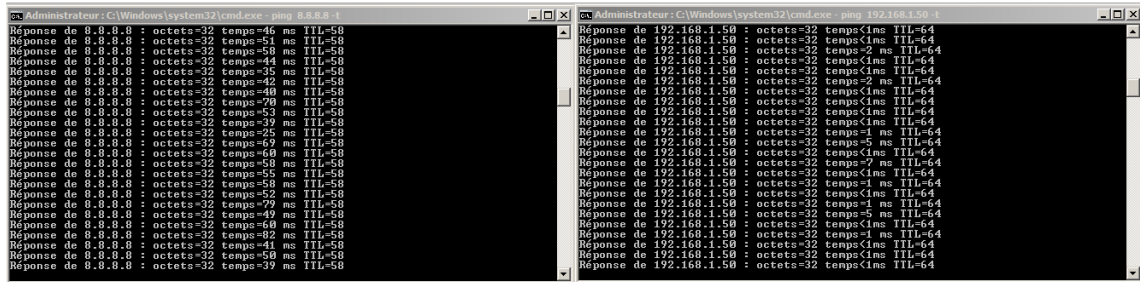
### 4. Check LTE signal of your wAP (LTE connexion can take until 15 minutes to connect)



## 4.3 TEST AND VALIDATION

To test the configuration you can try to contact a server through internet.

1. Ping<sup>1</sup> a site to verify that you are well connected to internet:



```
Administrateur : C:\Windows\system32\cmd.exe - ping 8.8.8.8 -t
Réponse de 8.8.8.8 : octets=32 temps=46 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=51 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=53 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=44 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=35 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=42 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=40 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=70 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=55 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=39 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=25 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=69 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=60 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=58 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=55 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=58 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=52 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=79 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=49 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=60 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=82 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=41 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=63 ms TTL=58
Réponse de 8.8.8.8 : octets=32 temps=39 ms TTL=58

Administrateur : C:\Windows\system32\cmd.exe - ping 192.168.1.50 -t
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps=2 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps=2 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps=5 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps=7 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps=5 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
Réponse de 192.168.1.50 : octets=32 temps<ins>=1 ms TTL=64
```

If the message “Reply from ...” appears multiple times, your wAP 4G/LTE is connected to internet.

If the message “Request timed out” appears, your wAP 4G/LTE doesn’t have internet connection, go 4.2.1 step 4 and check the parameters again.

General information e-mail: [info@lorixone.io](mailto:info@lorixone.io)

Support e-mail: [support@lorixone.io](mailto:support@lorixone.io)

And for more information, feel free to visit the LORIX One website at [www.lorixone.io](http://www.lorixone.io)

<sup>1</sup> To launch the ping command, open a terminal by typing “Win+R” then write “cmd” and press enter. In the terminal (black window), type “ping <domain>”, e.g. ping lorixone.io or any working IP address.

