Troubleshooting

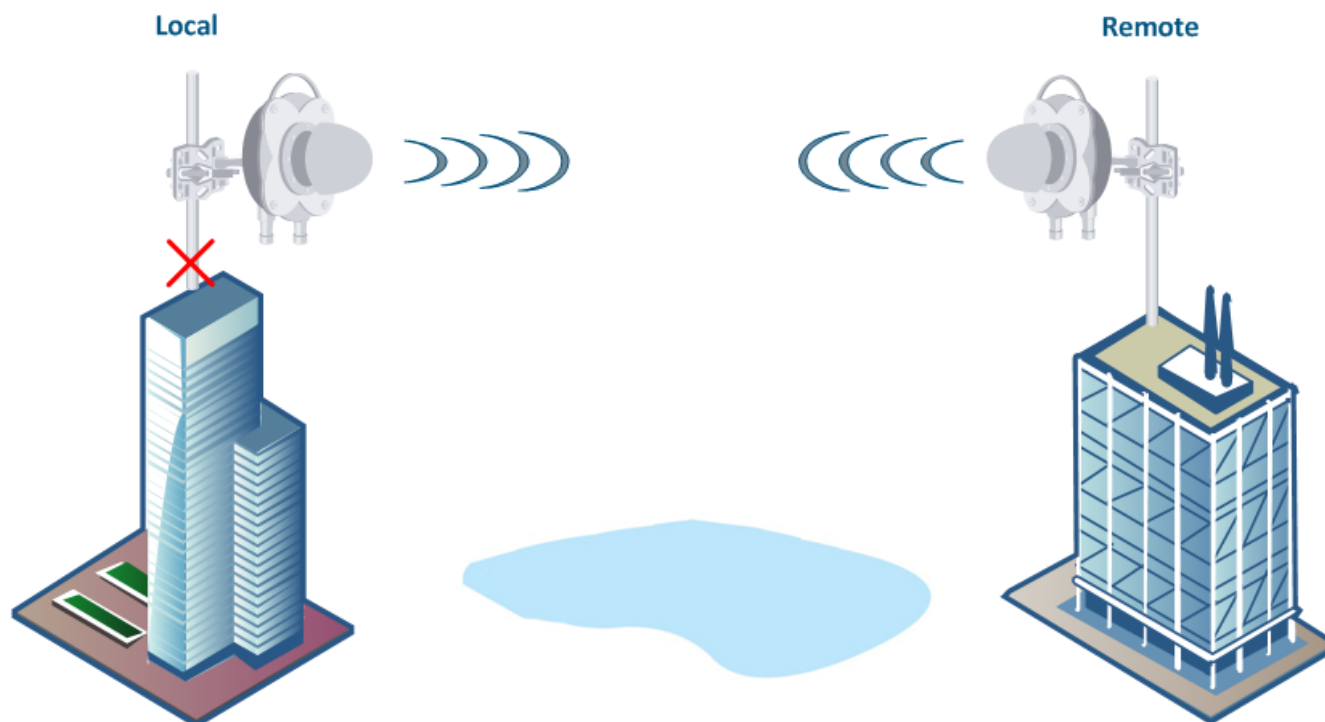> ✓ Successfully pass the free certification exam at IW Academy and become an Infinet Certified Engineer.
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This article describes basic troubleshooting actions to be taken in case a problem occurs to the wireless link.

List of possible problems:

1. No access to the local unit

Step 1: Local unit check

Check the network connectivity between the monitoring server and the local unit. If no connectivity appear, go on site to the local unit location. Check if it is powered on, power indicator has blue color, wired connection: red – 10 Mbps, yellow – 100 Mbps, green – 1000 Mbps. If there is no power please check the AC power supply, the Ethernet cables and connector. Check if the local connection works by using a laptop or ERConsole.

If the local connection is allowed, after the authentication step in web interface, check the operational status of the wired port. Enable the port if found disabled, check the connectivity matrix and VLAN settings if used. Reboot the unit at the "Maintenance" section.

Step 2: Report the problem to the Infinet Wireless support team

If you are unable to identify the cause of the problem, please contact the Infinet Wireless support team. It is necessary to provide diagnostic card, antenna alignment test results screenshots, the installation points photos, the installation points coordinates.

2. No access to the remote unit

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The section describes how to test the link when there are no radio communication and no access to the remote unit, but there is access to the local unit.
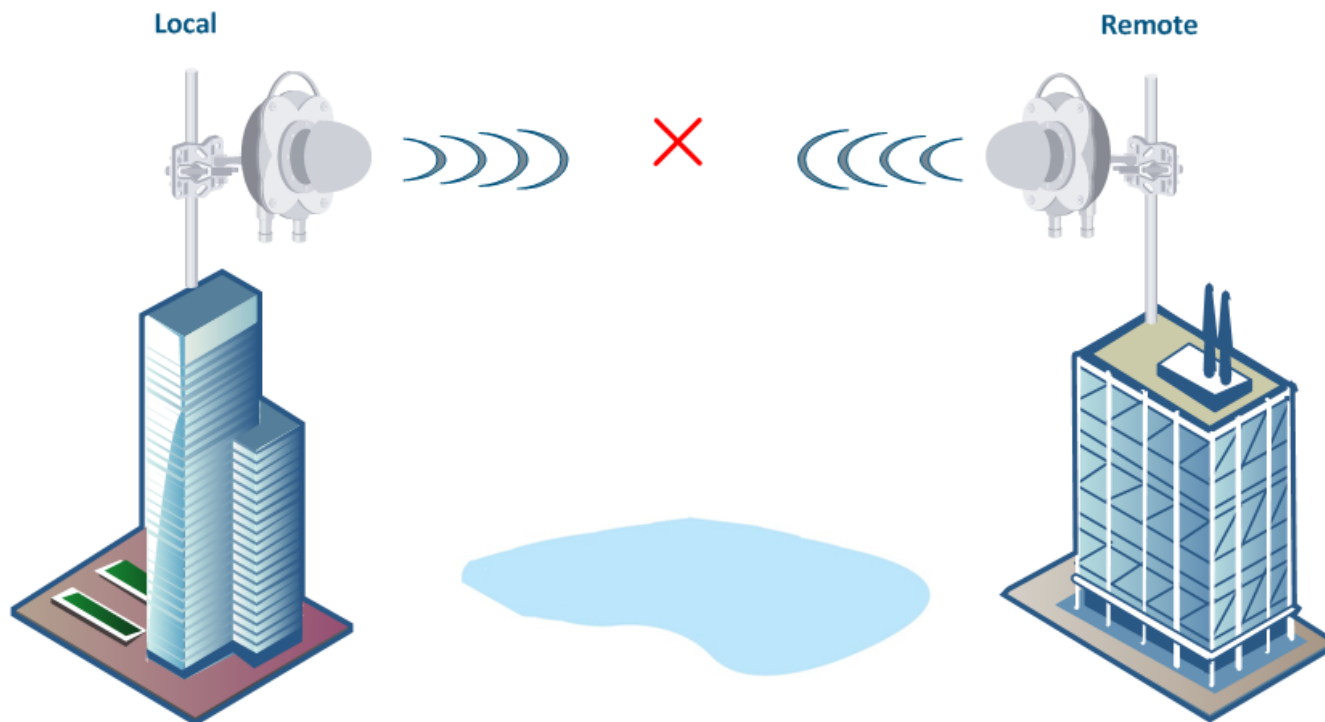
Step 1: Check the weather conditions

The 70.5-76 GHz frequency range is sensible to the weather condition changes, rain, snow and fog can significantly affect the wireless connection quality.

Step 2: Local unit check

Check if the radio parameters values of the local unit correspond to the settings from the radio planning stage:

- Unit role.
- Center frequency.
- Maximum transmit power.
- Frame length.
- Access key.

If some parameters have different values, perform the modifications and check the wireless link establishment after unit reboot. In case the wireless link is still down, go on site to the location of the local unit and check the cables and connectors.

Step 3: Remote unit check

In case the wireless link is down even if the parameters were set according with the radio planning results, go on site to the location of the remote unit. Check if it is powered on, power indicator has blue color, wired connection: red – 10 Mbps, yellow – 100 Mbps, green – 1000 Mbps. If there is no power please check the AC power supply, the Ethernet cables and connector. Check if the local connection works by using a laptop or ERConsole.

If the local connection is allowed, after the authentication step in web interface, check all radio parameters by connecting to it using a laptop. The values for the following radio parameters must be the same on both units:

- Center frequency.
- Frame length.
- Access key.

Step 4: Path profile check

If the wireless link is down after previous steps, check the antennas alliagnment with two teams working simultaneously, one at the remote side and the other one at the local side. Also, redo the radio planning to avoid the situation when coordinates at the initial radio planning stage is different from the current location: huge interferences on the working set of frequencies, Fresnel zone obstruction are possible reasons why the wireless link cannot be established, etc.

Step 5: Report the problem to the Infinet Wireless support team

If you are unable to identify the cause of the problem, please contact the Infinet Wireless support team. It is necessary to provide diagnostic card, antenna alignment test results screenshots, the installation points photos, the installation points coordinates.

3. Expected throughput is not met

The wireless link is established but the capacity is less than expected.
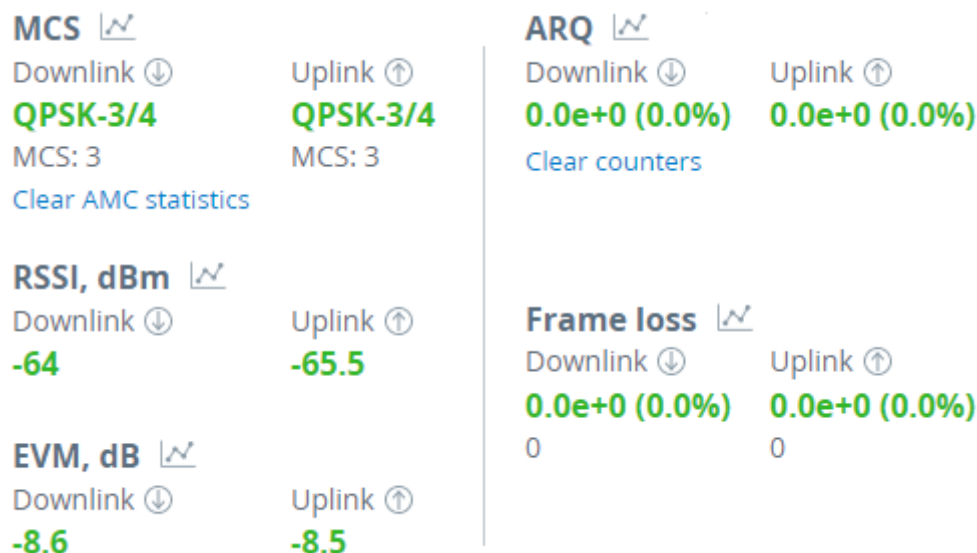
Step 1: Check the weather conditions

The 70.5-76 GHz frequency range is sensible to the weather condition changes, rain, snow and fog can significantly affect the wireless connection quality.

Step 2: Local and remote units settings check

Login to both units via web interface, check the availability of the new firmware version. If a newer firmware version is available, proceed with the firmware upgrade in order to benefit of the latest radio features and improvements.

In the "Dashboard" section check the EVM and RSSI parameters values:

- EVM values are significantly differed from the initial, and RSSI values - are not. It may indicate the noise appearance. It is recommended to scan the spectrum to determine the noise level on the current channel and to select a new frequency channel.
- EVM and RSSI values are significantly differed from the initial. It is required to check the antennas alignment, cables condition and obstructions in the first Fresnel zone.

Proceed to the "Radio" section and check the frame length value, if it is too small, try to increase it. Perform the antenna alignment with built-in tool especially in case of low RSSI and EVM values.

To view parameter values changes over time, use the "Graphs" tool by clicking the diagram icon next to the selected parameter, or by going to the "Graphs" section.

Step 3: Check at the units location site

Further actions should be done on the site of units location. Check the Ethernet connection, as well as the cables integrity. Tighten the connector and check the antennas, as well. Perform proper antenna alignment on site. If after the alignment the EVM level is still low, it indicates the presence of external interference. Try to use another frequency if available or perform a spectrum scanning.

Step 4: Report the problem to the Infinet Wireless support team

If you are unable to identify the cause of the problem, please contact the Infinet Wireless support team. It is necessary to provide diagnostic card, antenna alignment test results screenshots, the installation points photos, the installation points coordinates.

4. No data is being transferred

The wireless link is established but no data is being transffered.

Title

Step 1: Local and remote units settings check

Connect to the unit web interface and check the matrix connectivity in the "Switch" section, ge0 port must be connected with the radio port.

Connectivity matrix

mgmt

ge0   radio
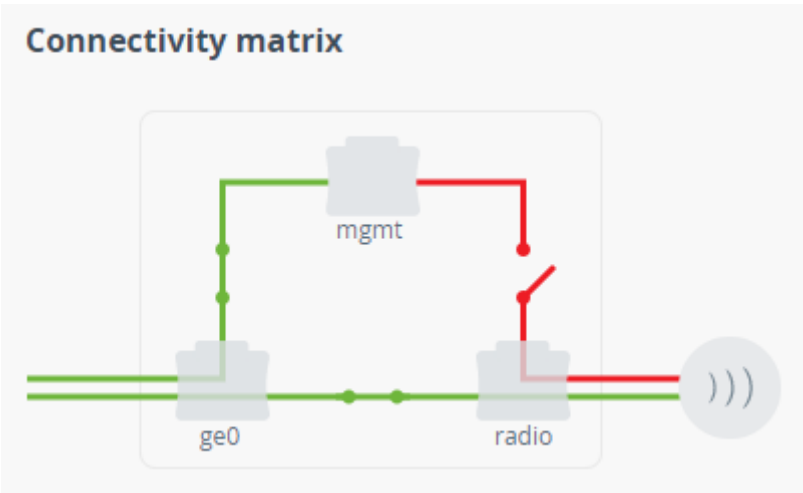
Check the operation status of the ge0 port. Enable the port if it was disabled. In case of using VLANs, proceed to the "Switch" section and make sure that the VLAN configuration is correct, the specific traffic VLAN ID is allowed to pass through the port.

Network ports

Port	Status	Duplex	Description	
ge0	Enabled	auto		✎

VLAN based switching   Add VLAN

Enabled: ⬤

VLAN ID	Description	Priority	ge0	radio	mgmt		
100			tagged	tagged	tagged	✎	🗑
200			tagged	tagged	off	✎	🗑

If the port status is "Up" but no packets are received, check the configuration of the equipment which is directly connected.

Wired interface ge0

Status	• **Up**	TX **37** kbps	RX **15** kbps	Runt packets	**0**
Name	**ge0**			Oversize packets	**0**
Mode	**1000BaseTX**			FCS errors	**0**
Media	**copper**			Port overflow errors	**0**

Clear counters

Step 2: Check at the units location site

Further actions should be done on the site of the units location. Check the wired connector, as well as the integrity of the cables.

Step 3: Report the problem to the Infinet Wireless support team

If you are unable to identify the cause of the problem, please contact the Infinet Wireless support team. It is necessary to provide diagnostic card, antenna alignment test results screenshots, the installation points photos, the installation points coordinates.

5. Unit mangement is lost

If the management of the unit is completely lost (of the local and/or the remote one), the ERConsole recovery procedure should be used. ERConsole is a software application created to recover or add a new IP address to the Infinet Wireless units. Additionally, the ERConsole can be used to reset the Infinet Wireless units to the factory default configuration.

Software requirements::

- ERConsole: https://ftp.infinet.ru/pub/Utils/EmergenceRepairConsole/ERConsole.zip.
- Java Runtime Environment: http://www.java.com/en/download/.

It is recommended to turn off any anti-virus or firewall running on your computer and to turn off all the network interfaces, except the Ethernet interface connected to the same broadcast subnet as the Infinet Wireless unit. If no device can be discovered by ERConsole, turn on the firewall, and add an UDP connection port 10009 as an exception.

We also recommend to use a simple unmanaged switch as intermediary unit between your PC and the Infinet Wireless unit. It is essential to reboot the Infinet Wireless unit each time in order to activate the Emergency Repair Protocol on the unit, therefore the switch would prevent your PC Ethernet interface from flapping up and down. Using Cisco Catalyst switches for unit recoverty is not recommended due to a known issue port mode negotiation delay.

IP address should be configured on the PC for the ERConsole utility work.

Ethernet

L3 traffic
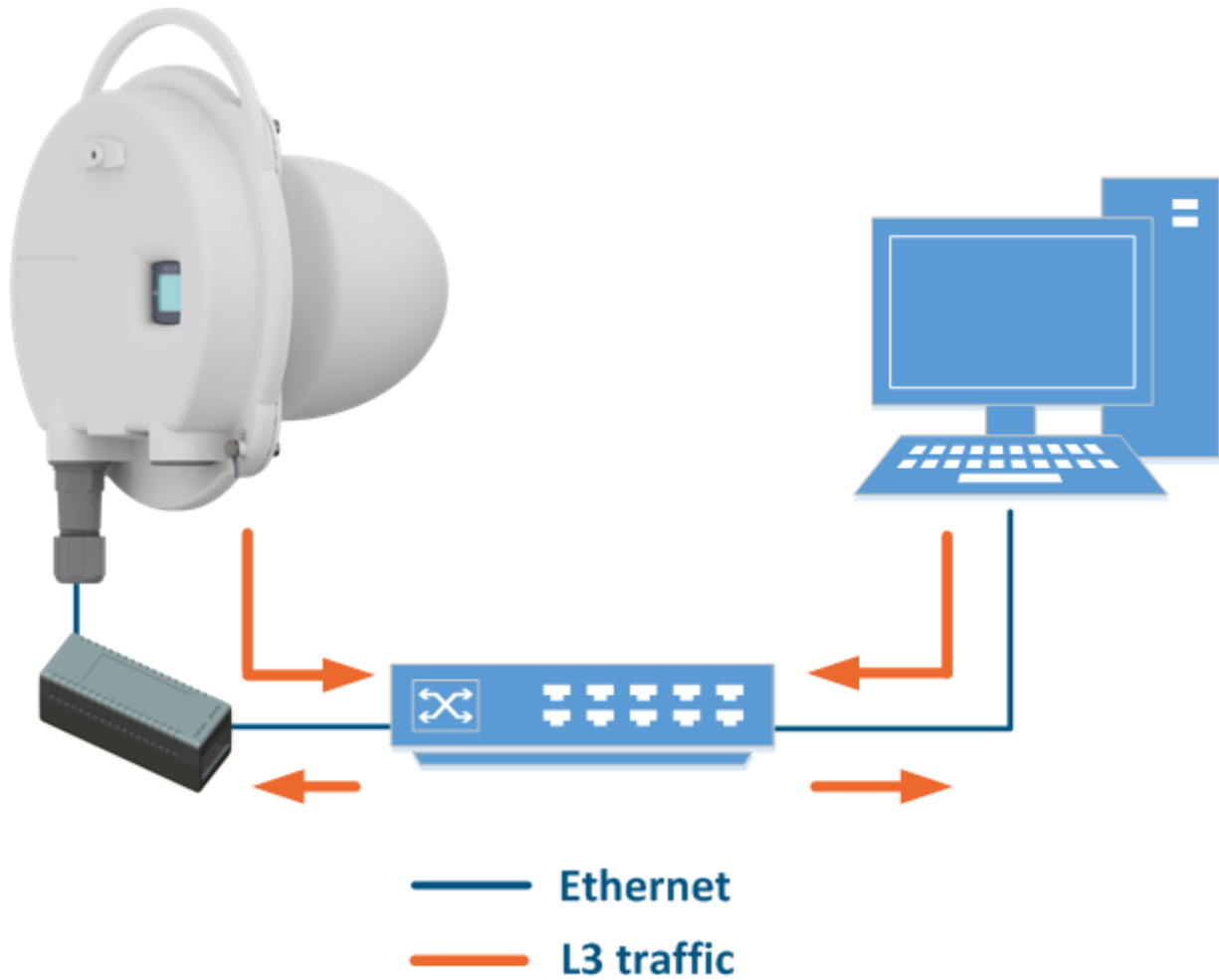
⚠️ **NOTE**

ERConsole and Infinet Wireless units exchange information only during the bootup process, therefore each time you need to read the units IP address, to add a new IP or to restore to the default configuration, the Infinet Wireless unit should be rebooted.

5.1. Access to the unit recovery

If you have lost management to your unit, proceed as follows:

- Run the ERConsole.
- Turn off the unit and then turn it on in a few seconds.
- Wait for 30 seconds and the ERConsole screen should receive update from the unit. The serial number, number of unit reset cycles ("Sequence" field), IP address, network mask and MAC adress will be displayed on the screen.

Further recovery depends on whether the IP-address is assigned or not to the unit.

IP address and net mask are assigned

Configure on your PC an IP belonging to the same network and connect to the unit in order to perform the modifications and checking required. If there is no IP, displayed (0.0.0.0), proceed with the next step.

IP address and net mask are not assigned

- Click the "+" button in the ERConsole application and a new window will appear.
- In the "New task" window, set the additional IP address and network mask, then click "OK".

- Turn off and on the unit. Wait for 30 seconds until the IP is assigned.
- Add an IP address from the same network subnet to your PC and access the unit. ERConsole will not show newly assigned IP address.
- Login to the unit using the new IP. Do not reboot the unit until the new configuration has been saved because the additional IP address is temporary.

5.2. Restore to the factory default settings

In case you need to restore your unit to the factory default settings, proceed as follows.

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> ⚠️ **NOTE**
>
> If the management of the unit is lost due to unknown user name or password it can be restored using factory password. Enter the device serial number to the "Login" field and factory password - to the "Password" field.

- Obtain the factory password. In order to do this, please contact the distributor through whom the unit was purchased, or in case purchasing the unit directly in Infinet Wireless, send a request to the Infinet Wireless support team. The request must include the unit serial number and the value of "Sequence" field (if it's non-zero).
- Obtain the unit IP address using the ERConsole as described in the section above.
- Click on the "+" button in the ERConsole application and a new window will appear.
- Select "Reset configuration" option and enter the factory password to the "Factory password" field, then click "OK". The password must be entered at the same format as it has been got from the distributor or IW support team (with the gaps).

- Turn off and on the unit and then wait for about 30 seconds.
- The unit will start in a special emergency mode with the IP address 10.10.10.1 and mask 255.255.255.0.
- Login to the unit and use "Restore factory settings" button on the "Maintenance" section to switch off emergency mode.
- Set new login and password, then save the configuration and restart the unit.