

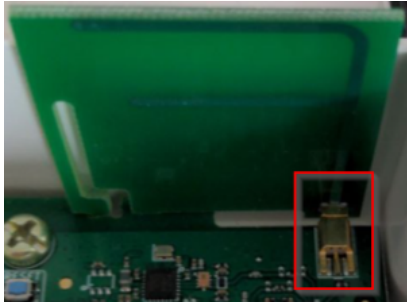
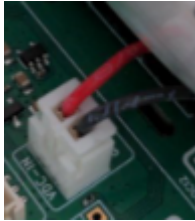

# Troubleshooting Guideline

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## Self Checks

### Hardware Checklist

Question	How To	Restriction
Is the antenna connected?	<ul style="list-style-type: none"><li>• Visually check the Antenna connection.</li><li>• Make sure the connector is fixed soldered on the PCB.</li></ul> 	
Is the battery connected?	<ul style="list-style-type: none"><li>• Visually check the Battery connection</li><li>• If in doubt, reconnect the Battery</li></ul> 	
Is the SIM-Card inserted?	<ul style="list-style-type: none"><li>• Visually check the SIM Card</li><li>• Check the orientation of the SIM Card</li></ul> 	Not for LoRaWAN operation

### Device not Working

The device is not connecting and no remote error analysis is possible.  
Local access to the device is required.

Device	Indication	Meaning / Causes
All	<ul style="list-style-type: none"> <li>Green LED Flashes every few seconds</li> </ul>	<ul style="list-style-type: none"> <li>Indicates a reboot Cycle</li> <li>SIM Card not connected?</li> <li>Hardware error?</li> <li>Local Configuration error (remote updates are validated!)</li> <li>Local Firmware Update error (remote updates are validated!)</li> <li>Battery low / brownout</li> </ul>
wMbus Gateway	<ul style="list-style-type: none"> <li>After Reset the Blue LED does flash for ~3 minutes</li> </ul>	<ul style="list-style-type: none"> <li>Mobile connection cannot be established</li> </ul>
All Battery Devices	<ul style="list-style-type: none"> <li>No green LED light after Reset</li> </ul>	<ul style="list-style-type: none"> <li>Battery empty</li> <li>Hardware error</li> </ul>




#### Further Error Analysis

Log from device can indicate the cause

## Software Checklist

1. Connect the Lobaro Configuration Adapter to the Hardware (see: [USB Config Adapter](#))
2. Install and connect via [Lobaro Maintenance Tool](#)

Question		
Check Firmware Version	<ul style="list-style-type: none"> <li>Go to Firmware Tab</li> <li>Reset the device</li> <li>Wait for Device Info Output</li> <li>Check Firmware and Address is correct</li> </ul>	<div>▶ Reset</div> <div> <div>UUID</div> <div>b0975833-9</div> </div> <div> <div>Firmware</div> <div>app-nrf9160-wmbus v0.15.7+hw3 TZ2 (Oct 12 2022 12:20:35)</div> </div> <div> <div>Address</div> <div>70b3d5e0</div> </div>

Check that Firmware starts up	<ul style="list-style-type: none"> <li>Go to Logs Tab</li> <li>Check that bootloader and firmware is loaded</li> </ul>	 <pre> Started app-mcuboot-nrf9160-sec v1.3.0+MB TZ2 MCU Boot v1.7.2 Compiled: Sep  9 2021 12:28:55  ----- Verifying firmware signatures...  Primary image: magic=good, swap_type=0x1, copy_done=0x3, image_ok=0x3 Scratch: magic=unset, swap_type=0x1, copy_done=0x3, image_ok=0x3 Boot source: primary slot Swap type: none Primary image: magic=good, swap_type=0x1, copy_done=0x3, image_ok=0x3 Scratch: magic=unset, swap_type=0x1, copy_done=0x3, image_ok=0x3 Boot source: primary slot Swap type: none  Success! Continue boot process...  ----- Started app-boot-nrf9160-sec v1.8.0 TZ2 Reset Reason: nRESET pin pulled low (0x1) Compiled: Dec  1 2021 14:46:57  ----- Device firmware Versions: (1) app-mcuboot-nrf9160-sec v1.3.0+MB TZ2 (Sep  9 2021 12:28:53) (2) app-boot-nrf9160-sec v1.8.0 TZ2 (Dec  1 2021 12:09:08) (3) app-nrf9160-wmbus v0.15.7+hw3 TZ2 (Oct 12 2022 12:20:35)  Booting main app image... </pre>
Check Configuration	<ul style="list-style-type: none"> <li>Go to Configuration tab</li> <li>Press "Reload Config"</li> <li>Check the parameters, especially the connectivity parameters <ul style="list-style-type: none"> <li>WAN, Host, SIM-Settings like APN, Operator, etc.</li> </ul> </li> </ul>	
Check Battery Voltage	<ul style="list-style-type: none"> <li>See logs and search for: e.g. LTE  Voltage: 3629mV</li> <li>Reset the device to get the value from after reset</li> </ul>	

## Fix issues

### Device does not start

- Update the Firmware to the latest or desired version

### Device does not connect to the mobile network

- Check connection with your mobile operator
- Try another SIM Card

## Retoure process

- Contact Lobaró with a description of the defects, type and number of devices. We will issue an Retour document and number.
- Ship devices without batteries. Else a fee for shipping dangerous goods must be applied.

## LoRaWAN Join fails

To find the reason for a missing / failing Join Request check the following information:

- What LNS is used?
- Is the device registered with the correct LoRaWAN Version (mostly 1.0.2 for Lobaró Devices)
- Is the device configured to use LoRaWAN v1.0 (v1.1 use should be avoided since it's not certified)
- Are all Device parameters correct in the LNS: DevEUI, JoinEUI (aka AppEUI), AppKey
- Is there a possibility to trace the Join request on LoRaWAN Gateway Level?
- Does the Server states any Errors when receiving the Join Request
- Is there any error indication inside the device log?
  - e.g. "hw error for tx data up"