

M2M LTE Cat.4 Router® - Quick Installation Guide

INTERFACES

- 1 – POWER (9-24V DC): Microfit power connector (for 12V DC adapter)
- 2 – SIM card slot (2FF)
- 3 – micro-SD slot
- 4 – micro-USB connector (for configuration)
- 5 – Reset button hole
- 6 – Ethernet (RJ45, 10/100 Mbit)
- 7 – Primary SMA antenna connector (SMA-M, 50 Ohm - MAIN)
- 8 – Secondary SMA antenna connector (SMA-M, 50 Ohm - DIVERSITY)
- 9 – 3pcs operation LEDs (LED1..LED3 fo status, re-configurable)

CURRENT & CONSUMPTION / OPERATING CONDITIONS

- 12V DC, 1A power adapter (9-24VDC), microfit 4-pins power connector
- Average current: 270mA, 12V DC / Consumption: 3.24W, 12V DC
- Cellular module: Telit LE910C4-EU (LTE Cat.4 with - 3G/2G "fallback")
 - Bands:
 - LTE: B1(2100) / B3(1800) / B7(2600) / B8(900) / B20(800) / B28(700)
 - UMTS: B1(2100) / B3(1800) / B8(900)
 - GSM/GPRS: B3(1800) / B8(900)
 - Speed (Download/Upload): • LTE FDD Cat.10 rel. 9: 150/50 Mbps / 3G (HSPA+): 42/5.76 Mbps / 2G (GSM / EDGE): 80/40 kbps
- SIM slot: mini SIM (type 2FF, push / insert)
- Operating / storage temperature: between -40°C and + 80°C, 0-95% rel. humidity
- Size: 92x85x35 mm, Weight: 180gr.
- Case/Mounting: IP51 protected industrial aluminum housing, with adapter for 35mm DIN-rail mounting by a DIN-rail adapter (order option)



INSTALLATION STEPS

1. Mount two SMA 50 Ohm antenna onto the **Main (7)** and **Diversity (8) antenna connectors**.
2. Insert an **activated SIM card** to the **SIM slot (2)** - the SIM chip surface must be look to top and the cutted edge of the SIM must look to the router – then push the SIM until it will be fastened (you will hear a click sound).
(In case of SIM removal, you have to power off the router and push the SIM, while it will be released and can be removed.)
3. **Connect an UTP cable** to the router's Ethernet titled RJ45 port (6). During the configuration the cable's opposite connector must be connected to the PC's Ethernet port. (After the configuration connect it to the network- or industrial device's RJ45 port.)
4. You can also configure the router through the **micro-USB slot* (4)** by a **microUSB-USB cable** of the PC connection.
5. Connect the **microfit DC power connector (1)** when the router begins its operation, where the LED lights will be signing and inform you about the current status of the device. **Alternately**, the DC power voltage input (interface nr. 1) can be provided by **9-24V DC power voltage** source and using our **Microfit cable** (order option).
6. The router is provided with pre-installed system (which contains the router firmware and OpenWrt® system, which is accessible on the local website of the router).
7. Connect to the router on **Ethernet** and enable access to the router's IP address in your computer's browser (IP address: **192.168.127.x** (x = 2-255), Subnet Mask: 255.255.255.0) - setup in Windows® **Control Panel / Network Sharing Center → Change adapter settings at Network Connections**.
8. Use the **default website's** URL to **login** as we described before.

ACCESSING THE ROUTER VIA USB CONNECTION

1. **Download** micro-USB driver and **install** it: https://www.m2mserver.com/m2m-downloads/USB_Ethernet_RNDIS_DRIVER.zip
2. Unzip the downloaded file to a directory and install it – right click on the **RNDIS.inf** file and choose the **Install** option.
3. Establish the **USB** connection between the PC and the router with a micro-USB cable.
4. Setup the IP address of the USB-Ethernet interface on the PC for the **"USB Ethernet / RNDIS Gadget"** network connection (in Microsoft Windows® check the **Ethernet** settings at the **Control Panel / Network / Network Adapter / Adapter Settings**.
(for **USB** settings configure this in the **Network Connections, USB Ethernet / RNDIS Gadget interface**)
5. Connect to the router on **USB** and enable access to the router's IP address in your computer's browser (IP address: **192.168.10.x** (x = 2-255), Subnet Mask: 255.255.255.0) - setup in Windows® **Control Panel / Network and Sharing Center → Change adapter settings at Network Connections, USB Ethernet / RNDIS Gadget interface**.)
6. Use the **default website's** URL to **login** as we described before.

BOOT SEQUENCE

- When starting the device (at power on) – or in case of rebooting – **all the three LEDs** of the router will be **active** for a few seconds.
- Then the **LED1** is **lighting** continuously **by green**, which signs that the system is during loading (boot progress).
- The system start requires about 1-2 minutes, while the device loads the necessary modules or the operation and prepares the web user- and configuration interface – the **LED2** will sign it. Then the web interface will be available for login.
- Configure the device's wireless internet module settings (**SIM** and **APN** data on the router web interface) for the cellular internet connection – otherwise the router will be restarting in ever 10 minutes.
- The modern registration to the cellular network is signed by the **LED3** will be **flashing** after the settings. If it was successful (to register the SIM card data to the network) then the **LED2** will be **lighting**, which shows that the router can access the cellular network already.
- If you notice an unusual LED sign or other operation misbehaviour symptoms, please read the **Installation Guide**.

CONNECTING THE ROUTER

1. On the router, the **DHCP service** of the **Ethernet** interface is disabled by default. Therefore, for a connected PC, you should manually configure an IP address at first. To connect to the router, allow the router IP address for the **Ethernet** connector interface in the Windows®'s network settings (**IP address: 192.168.127.100, Subnet mask: 255.255.255.0**)
2. Open the router's local website in Mozilla® Firefox™ browser. The **web user interface** (LuCI) URL on **Ethernet** port is <https://192.168.127.1:8888>
3. In case of **USB connection**, you have to setup the **USB Ethernet / RNDIS Gadget** virtual interface to the following IP: **192.168.10.100**, subnet mask: **255.255.255.0** On the **USB** connection the URL is <https://192.168.10.1:8888>
4. At the first time, you have to **accept the security risk** in the Mozilla® browser by choosing the **Advanced** option at the **Potential Security Risk** and choose the **Accept the Risk and Continue** option.
Then the router's local web interface will be loaded and you can login: **Username: root / Password: wmrpvd** Then push to the **Login** button.
5. Afterall, on the main page (**Status / Overview** menu), check the status of the router. At the **Network** part, you will find the **Modem Type, Modem ID** (IMEI), the **SIM ID** (ICC), **Modem RSSI, Modem SQ** and SIM card login information (**CREG, COPS**).

The router can be accessed through SSH connection also, when it is available on its IP address – use the *putty* terminal utility/tool for the connection. Connect to the 192.168.10.122 IP address. (**Login: root, Password: wmrpvd**). **Accept** the security risk (RSA token) **encryption key usage warning notice** (visible at first time only).
Then the Linux command line will appear, where you can use standard Uc Linux kernel 4.9 compatible commands and execute scripts on the device. You can also use *UCI command line interface* commands here. Read the **Installation Manual** for more info.

CONFIGURE THE ROUTER

1. Configure the cellular network settings: at the **Network / Interfaces** menu. Open the **WAN** interface, **General Setup** tab.
2. At the **Wireless network** field, we offer to use the **No Change** option or use the **4G/3G/2G** option (automatic detection mode with 3G/2G „fallback“ option). For further „fallback“ modes, choose **4G/2G** or **4G/3G** modes. If you want to use a dedicated network type, just choose it (e.g. 4G).
3. Setup the **SIM #1 APN** name according to the SIM card info. If you won't set any value for SIM #1 APN, the router will try to connect by the SIM-card automatically to the next available network's APN.
4. Fill the **SIM PIN** code if it is necessary for the connection.
5. If **SIM** requires a username and password for APN connection, then fill **SIM #1 PAP/CHAP username** and **SIM #1 PAP/CHAP password** fields also.
6. Click to the **Save & Apply** button to save your settings.
7. As you can see, the device is already connected to the mobile internet network and is currently active - **RX** (received data), **TX** (sent data) and **KB** (KBytes) are constantly increasing.
8. During these, the **LED2** indicates the network registration process - if the APN and SIM settings are correct, the LED will be **flashing by green**.
9. When the network registration was successful, the **LED2** will be **lighting continuously by green**.
10. Data traffic from the **WAN** interface (mobile network) is indicated by a fast **green** flashing of **LED2**.
11. You can find more network settings on the **Advanced Settings** tab if you want to set more.

IMPORTANT!

Change the login password before connecting the router to the public cellular network! Open **System / Administration** menu. Add the new **Password** and **Confirm password** fields and **Save** your settings. Note that next time you have to use these data for the login!

FURTHER SETTINGS

Ethernet settings

1. Configure the **LAN** settings in the **Network / Interface** menu, on the **General Setup** tab.
Push **Edit** button next to the **LAN** interface entry.
2. Change the default 192.168.127.1 address and add the new **IPv4 address** with the corresponding **IPv4 netmask** (subnet mask).
3. Save the settings by the **Save & Apply** button.

DHCP, DNS settings

1. In the **Network / DHCP and DNS** menu, under the **General Settings** tab, you can configure the **DNS** and **DHCP** settings – by enabling DHCP service.
2. At the **DHCP**, the **Start** field means the starting IP address and you can **Limit** how many IP addresses could be assigned.
3. If you want to enable the DHCP service, just deselect **"Disable DHCP for this interface"**.
4. You can also add devices by the **Add** button there, at the **Static Leases** part (by defining their **Hostname** and **MAC-Address** and **IPv4-Address**).
5. Save the settings by the **Save & Apply** button.

FIRMWARE UPDATE

Before performing a firmware update, ask our Sales for getting the proper firmware version!

Before upload a new firmware file to the router, save your settings. Open the **System** menu, **Backup / Flash Firmware** menu. At the **Backup / Restore** part, check **Download backup** and push to the **Generate Archive** button to save your settings. Save the setting to your computer.

IMPORTANT NOTES

- In case of a performing a restart, all the three **LEDs** will be flashing by **red** for 1 second, then they will be blank for a few seconds.
- If the router does not responds or if it was misconfigured: press the **Reset** labeled button with a thin object on the front panel for at least 10 seconds. Then the device will restart with the factory settings. After a few minutes it will be available on its default address. Configure the router on its web interface.

DOCUMENTATION & SUPPORT

Further documentations can be found on the product website: <https://www.m2mserver.com/en/product/m2m-router/>

In case of product support request, ask our support at the jotssupport@wmsystems.hu email address or check our support website for the further contact opportunities please: <https://www.m2mserver.com/en/support/>



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