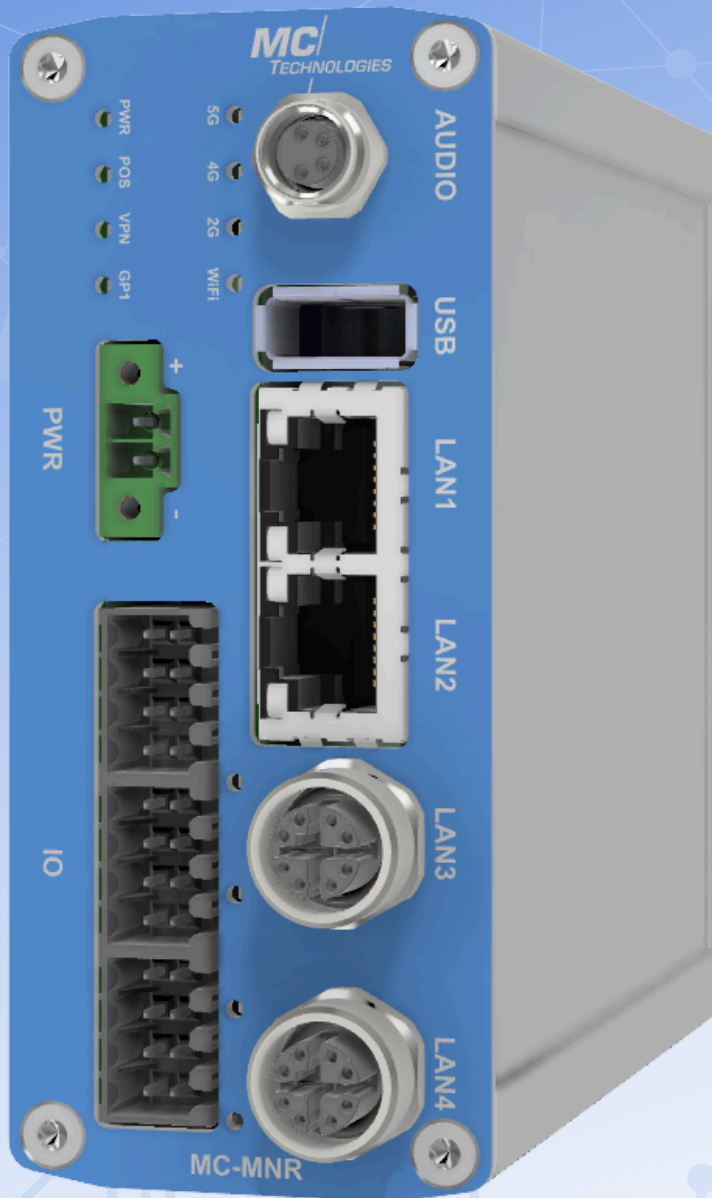


Release Notes

MC-MNR 5G Router



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1 INTRODUCTION

Thank you for choosing an MC Technologies product.

1.1 PURPOSE OF THE RELEASE NOTES

This document provides you with information about the current release of the MC-MNR plus basic instructions for the installation, operation, and maintenance of the 5G Router MC-MNR. It aims to ensure that users can effectively utilize the device while adhering to all relevant safety and regulatory standards.

1.2 TARGET AUDIENCE

This document is intended for users who will be installing and operating the 5G Router MC-MNR in various environments, including vehicles, offices, machinery, and control cabinets. It assumes that the reader has basic technical knowledge and skills, but no special training or qualifications are required to follow the instructions provided.

1.3 OVERVIEW OF THE DEVICE

The 5G Router MC-MNR is a high-performance, Linux-based router designed for M2M (Machine-to-Machine) and industrial IoT (Internet of Things) applications. It integrates several advanced technologies to provide robust connectivity and reliable performance in various industrial and commercial environments. Key features include:

- **5G Technology:** Provides high-speed, low-latency connectivity for demanding applications.
- **LTE Support:** Ensures reliable connectivity in areas where 5G coverage is not available.
- **Wifi 2.4 GHz:** Offers wireless networking capabilities for local area connections.
- **GNSS Receiver:** Provides precise location tracking and navigation capabilities.

The MC-MNR is equipped with an industrial-grade RK3568 quad-core ARM Cortex-A55 processor, delivering outstanding performance per watt for embedded industrial IoT gateway and edge computing solutions. Its integrated GPU and 1 TOPs@INT8 NPU make it future-proof for advanced multimedia processing and machine learning frameworks, essential for applications such as robotics control, real-time diagnostics, surveillance, and image recognition.

2 SOFTWARE

The MC-MNR operates with OpenWrt Linux distributions from MC Technologies GmbH only.

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3 CHANGELOG FOR OPENWRT

3.1 VERSION SNAPSHOT R26968-C3DF69A820

3.1.1 LINUX

- Linux kernel updated to 6.6.36
- Firewall based on nftables
- Switch configuration via DSA (Distributed Switch Architecture)
- Internal Modem connection using MBIM protocol
- GPIO and ADC available via file system (/sys/mc_extension)

3.1.2 CONFIGURATION INTERFACE (LUCI)

- Dashboard providing quick overview of system status
- Modem status page available in Status -> Modem
- Wireless configuration split into separate menus for access point and client mode
- Switch configuration including VLAN available in Network -> Devices

3.1.3 GENERAL

- All ethernet ports bridged by default
- SIM card multiplexing, fixed order of SIM1 and SIM2
 - Default state: SIM1-> Modem 1 (5G) , SIM2 -> Modem 2 (LTE)
- LED configuration
 - 4G: Modem 2 Activity
 - 5G: Modem 1 Activity
- Factory reset performed by pressing the RST button for 5 seconds during power up
- Power cycle of the SoC performed by pressing the PWR button
- MWAN3 available
- Read serial number from device tree instead of “/proc/cpuinfo”
- Reworked tty modem links
- M1 & M2 as identifier for the two modems
- shortened device specification to three characters:
 - reserved -> -res
 - Usbdm -> -dmi
 - Nmea -> -gps
 - Ppp -> -ppp
 - New: -log
 - Format example: ttyM1-res or ttyM2-gps

3.1.4 NOT YET AVAILABLE / NOT YET IMPLEMENTED

MC-MNR 5G Router

- MWAN3 configuration for automated modem selection
- A/B partitioning
- SecureBoot not activated yet
- 1GB storage available, full 16GB unlocked via future software upgrades

3.1.5 BUG FIXES

3.1.6 KNOWN ISSUES

- LEDs:
 - The 8 LEDs on the front plate are not yet assigned to its dedicated function
- Wifi:
 - After connecting an Access point in Station mode for the first time, it's required to restart the wireless interface "radio0" via LuCI to make it operable
 - In Station mode no signal strength of the connection is shown
- Modem
 - False error message "Pin code rejected" during dial in
- GPIO:
 - Software pin assignment in dev-Filesystem DI1 inverted, V-in and I-IN twisted

4 CONTACT INFORMATION

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