

onway Router on4800



User Manual

2026-07-09

onway ag, Switzerland



1 Safety Instructions

Please carefully observe all safety instructions in the manual.

Compliance Information

The onway routers must be used in compliance with any and all applicable national and international laws and with any special restrictions regulating the utilization of the communication module in prescribed applications and environments.

Information about the accessories / changes to the device

- Please only use original accessories to prevent injuries and health risks.
- Changes made to the device or the use of non-authorized accessories will render the warranty null and void and potentially invalidate the operating license.
- onway routers must not be opened (SIM cards may be used according to the instructions).

Information about the device interfaces

- All systems that are connected to the onway router interfaces must meet the requirements for SELV (Safety Extra Low Voltage) systems.
- Interconnections must not leave the building nor penetrate the body shell of a vehicle.
- Connections for antennas may only exit the building or the vehicle hull if transient overvoltages (according to IEC 62368-1) are limited by external protection circuits down to 1500 V_{peak}. All other connections must remain within the building or the vehicle hull.
- Always keep a distance of more than 40 cm from the antenna in order to reduce exposure to electromagnetic fields below the legal limits.
- Devices with a WLAN interface may be operated only with the applicable regulatory domain configured. Special attention must be paid to country, number of antennas and the antenna gain. The maximum allowed gain is 3 dBi in the relevant frequency range. To use WLAN antennas with a higher gain, contact onway about custom radio configurations. The antenna gain and cable attenuation need to be correctly configured by certified specialized personnel. A misconfiguration will lead to loss of the approval.
- Cellular antennas attached to the router must have an antenna gain of no more than 2.5 dBi. The user is responsible for the compliance with the legal regulations.
- Only CE-compliant power supplies with a current-limited SELV output voltage range may be used with onway routers.

General safety instructions

- Observe the usage limitations of radio units at filling stations, in chemical plants, in systems with explosives or potentially explosive locations.
- The devices may not be used in airplanes.
- Exercise particular caution near personal medical aids, such as pacemakers and hearing aids.
- onway routers may also cause interference in the nearer distance of TV sets, radio receivers and personal computers.
- Never perform work on the antenna system during a thunderstorm.
- The devices are generally designed for normal indoor use. Do not expose the devices to extraordinary environmental conditions worse than IP65.
- Protect them against aggressive chemical atmospheres and humidity or temperatures outside specifications.

2 Specifications and Features

Interfaces

- 1× Gigabit Ethernet (10/100/1000 Mbit/s)
- 4× PoE 802.3af/at PSE, total 60 W, Gigabit Ethernet (10/100/1000 Mbit/s)
- 6× Mini-SIM card slot
- 4× USB 3.1 Type-A
- 1× USB 2.0 M12 connector
- 1× Power input
- 1× VGA
- 3× D-Sub com ports RS232/422/485

Options

- Up to three LTE Category 12 modems or two 5G modems
- One dualband WLAN module (one AP or one station)
- 2× removable SSD mass storage for content

Dimensions

- Size of mounting base, excluding connectors: 260 mm x 256 mm
- Height: 110 mm
- Weight: 6500 g, depending on options

Environmental Conditions

- Input voltage: 24 V to 110 V (DC, $\pm 10\%$)
- Operating temperature range: $-40\text{ }^{\circ}\text{C}$ to $70\text{ }^{\circ}\text{C}$
- Storage temperature range: $-40\text{ }^{\circ}\text{C}$ to $80\text{ }^{\circ}\text{C}$
- Humidity: 0 % to 90 % (non-condensing)
- Altitude: 4000 m maximum
- Ingress protection rating: IP65

3 Connectors and Indicators



ON4800 Router Front View

Interface Connectors

Connector	Function
SIM1-1	SIM slot 1 (primary slot for mobile 1)
SIM1-2	SIM slot 2 (secondary slot for mobile 1)
SIM2-1	SIM slot 3 (primary slot for mobile 2)
SIM2-2	SIM slot 4 (secondary slot for mobile 2)
SIM3-1	SIM slot 5 (primary slot for mobile 3)
SIM3-2	SIM slot 6 (secondary slot for mobile 3)
WWAN1-WWAN4	5G Modem 1 4×4 MIMO RX/TX antennas, SMA female
WWAN5-WWAN6/WLAN1-WLAN2	5G Modem 2 4×4 MIMO RX/TX antennas, SMA female
WWAN1-WWAN2	LTE Modem 1 2×2 MIMO RX/TX antennas, SMA female
WWAN3-WWAN4	LTE Modem 2 2×2 MIMO RX/TX antennas, SMA female
WWAN5-WWAN6	LTE Modem 3 2×2 MIMO RX/TX antennas, SMA female
GNSS	Satellite navigation antenna, SMA female
WLAN3	Wifi 1 2.4 GHz RX/TX antenna, RP-SMA female
WLAN4	Wifi 1 5 GHz RX/TX antenna, RP-SMA female
USB-3.1	4 x USB-3.1 port

LED Description

P4 WLAN		WWAN4		LAN		ACT4		PoE4	
P3 GNSS		WWAN3		STORAGE		ACT3		PoE3	
P2 VPN		WWAN2		WLAN2		ACT2		PoE2	
P1 SYS		WWAN1		WLAN1		ACT1		PoE1	

Status Indicators

Name	State	Description
SYS		System booted in regular mode
		System booted in recovery mode
		First-boot system initialization
VPN		All VPN conn. redundantly established over all uplinks
		At least some VPN connections unavailable
		All VPN conn. established, but limited uplink redundancy
GNSS		GNSS 3D fix including altitude
		GNSS 2D fix without altitude
		No GNSS satellites in view or no GNSS fix
WLAN	AP	AP operational, no clients connected
	STA/MESH	Currently not connected to any configured network
		WiFi interface configuration error
	AP	AP operational and some clients connected
	STA/MESH	Connected to a configured network
WWAN1-4		WWAN IP connectivity established
		In Service, Roaming, blink ratio 1:3
		Unable to connect modem to mobile network, blink ratio 1:1
		No WWAN activity, WWAN not in use
LAN		LAN Ethernet port active
		LAN Ethernet port activity
		No LAN activity, LAN not in use
STORAGE		STORAGE activity
		No STORAGE activity

Name	State	Description
WLAN1-2		WLAN active
		No WLAN activity, WLAN not in use
ACT1-4		PoE Ethernet Port active
		PoE Ethernet Port activity
		No PoE Ethernet port activity, PoE Ethernet port not in use
PoE1-4		PoE Power active
		PoE Power not in use

Software Interface Mapping

The network interface naming and numbering used in the router configuration is different compared to the labels on the router housing. Refer to the following table to map between the two naming and numbering schemes.

Interface Name	Config Name
LAN	lan0
POE 1-4	lan1-lan4
WWAN 1-4	mbm0-mbm3
WLAN 1	wfi0



ON4800 Router Back View

Interface Connectors

Interface Name	Connector	Function
AUDIO	M8	1× Mic-in, 1× Line-out
LAN	M12 X-coded	LAN Gigabit Ethernet port
POE1	M12 X-coded	PoE 802.3af/at Gigabit Ethernet port 1

Interface Name	Connector	Function
POE2	M12 X-coded	PoE 802.3af/at Gigabit Ethernet port 2
POE3	M12 X-coded	PoE 802.3af/at Gigabit Ethernet port 3
POE4	M12 X-coded	PoE 802.3af/at Gigabit Ethernet port 4
VGA	Female DE-15	VGA port
USB	M12 A-coded	USB-2.0 port
DIO	M12 A-coded	Digital In/Out
COM1	Male DE-09	full RS232
COM2	Male DE-09	full RS232
COM3	Male DE-09	full RS232/422/485
DC-IN	M23 5-pin Male type	Power connector

Antenna Options

The installed cellular modems have multiple antenna ports. Two ports for 4G modems with 2×2 MIMO support, or four ports for 5G modems with 4×4 MIMO support. For optimal performance, these antennas should all be connected and use different polarizations and/or directions when using individual antennas. If two 5G modems are equipped, the WWAN5/6 and the WLAN1/2 ports are used as antenna ports.

When using only one antenna port of a 2×2 MIMO modem, the antenna must be connected to the primary (RX/TX capable) port, as the secondary port is for RX MIMO only. When using only two antenna ports of a 4×4 MIMO modem, the antennas shall be connected to the first two RX/TX capable ports, i.e. WWAN1/2 and WWAN5/6. Using a different combination of two ports, or using just one port of a 4×4 MIMO modem will result in decreased performance and/or missing frequency band support.

Supply Voltage

To power the router, a supply voltage of 24 V to 110 V DC must be provided on the DC-IN connector.

The required power supply rating depends on the installed options, but must be at least 120 W at 24 V DC. Under full load with PoE the rating must be 260 W at 24 V DC.

Reset

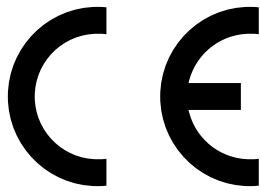
On the left side of the front there is a Reset Button. Pressing this button restarts the system.

USB Mass Storage Devices

The USB-A ports on the router support USB 2.0/3.0 mass storage devices. If enabled in the configuration or if the device has a signed partition, the device will be mounted automatically upon insertion. They are numbered from USB1 to USB4 in the following order: Upper left, lower left, upper right, lower right. Connecting mass storage devices through USB hubs is not supported.

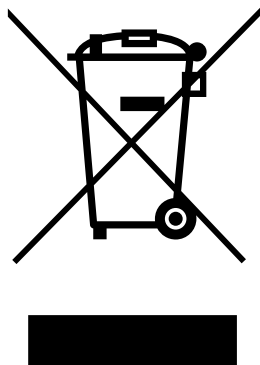
4 Conformity and Waste Disposal

Declaration of Conformity



onway routers comply with the relevant standards following the provisions of the RED Directive 2014/53/EU. To obtain a signed version of the Declaration of Conformity please contact the onway support.

Waste Disposal



This product is subject to the WEEE directive 2012/19/EU and compliant with the marking requirements. The WEEE symbol on this product indicates that it must not be disposed of with normal household waste at its end of life. Instead, it must be separated and returned to a designated collection point for waste electric and electronic equipment for proper recycling. Doing so helps to conserve natural resources and to protect the environment from unnecessary pollution.

5 Open Source Software Notice

This product does in part build on open source software. We are distributing such open source software to you under its respective license, and the licenses can be obtained here:

<https://support.onway.ch/onway-router/licenses/on4800/>

To obtain the corresponding open source codes covered by these licenses, please contact us at support@onway.ch.

Specific Acknowledgements

- This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>)

6 Contact Information

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