swissonic

Professional Router 2 MKII

User Manual

Router

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LAN1
LAN2

1 General information

This document contains important instructions for the safe operation of the product. Read and follow the safety instructions and all other instructions. Keep the document for future reference. Make sure that it is available to all those using the product. If you sell the product to another user, be sure that they also receive this document.

Our products and documentation are subject to a process of continuous development. They are therefore subject to change. Please refer to the latest version of the documentation, which is ready for download under *www.thomann.de*.

1.1 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this document.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is used to wirelessly connect Wi-Fi-enabled devices to each other to form a wireless local area network or to connect to the Internet. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety

DANGER!

Risk of injury and choking hazard for children!

Children can suffocate on packaging material and small parts. Children can injure themselves when handling the device. Never allow children to play with the packaging material and the device. Always store packaging material out of the reach of babies and small children. Always dispose of packaging material properly when it is not in use. Never allow children to use the device without supervision. Keep small parts away from children and make sure that the device does not shed any small parts (such knobs) that children could play with.

DANGER!

Danger to life due to electric current!

Within the device there are areas where high voltages may be present. Never remove any covers. There are no user-serviceable parts inside. Do not use the device when covers, safety equipment or optical components are missing or damaged.

NOTICE!

Risk of fire due to covered vents and neighbouring heat sources!

If the vents of the device are covered or the device is operated in the immediate vicinity of other heat sources, the device can overheat and burst into flames. Never cover the device or the vents. Do not install the device in the immediate vicinity of other heat sources. Never operate the device in the immediate vicinity of naked flames.

NOTICE!

Damage to the external power supply due to high voltages!

The device is powered by an external power supply. The external power supply can be damaged if it is operated with the incorrect voltage or if high voltage peaks occur. In the worst case, excess voltages can also cause a risk of injury and fires. Make sure that the voltage specification on the external power supply matches the local power grid before plugging in the power supply. Only operate the external power supply from professionally installed mains sockets that are protected by a residual current circuit breaker (FI). As a precaution, disconnect the power supply from the power grid when storms are approaching or it the device will not be used for a longer period.

NOTICE!

Damage to the device if operated in unsuitable ambient conditions!

The device can be damaged if it is operated in unsuitable ambient conditions. Only operate the device indoors within the ambient conditions specified in the "Technical specifications" chapter of this user manual. Avoid operating it in environments with direct sunlight, heavy dirt and strong vibrations. Avoid operating it in environments with strong temperature fluctuations. If temperature fluctuations cannot be avoided (for example after transport in low outside temperatures), do not switch on the device immediately. Never subject the device to liquids or moisture. Never move the device to another location while it is in operation. In environments with increased dirt levels (for example due to dust, smoke, nicotine or mist): Have the device cleaned by qualified specialists at regular intervals to prevent damage due to overheating and other malfunctions.

NOTICE!

Radio interference due to electromagnetic fields!

The unit emits electromagnetic radio signals. Overlapping radio waves may cause interference with the device and other devices. Do not use the device in locations where the use of wireless devices is prohibited.

NOTICE!

Risk of explosion due to electromagnetic fields!

The unit emits electromagnetic radio signals. Under unfavourable conditions, radio waves near explosive spots can cause fire or explosions. Do not use the device in the immediate vicinity of locations subject to explosion hazards.

NOTICE!

Possible staining due to plasticiser in rubber feet!

The plasticiser contained in the rubber feet of this product may react with the coating of the floor and cause permanent dark stains after some time. If necessary, use a suitable mat or felt slide to prevent direct contact between the device's rubber feet and the floor.

3 Features

- Wireless Dual Band Router (2.4 and 5 GHz)
- Easy Mesh Network
- Data transfer rate Wi-Fi up to 574 Mbps (2.4 GHz) or up to 1201 Mbps (5 GHz)
- 4 operation modes: Router, Repeater (Extender), Access Point, wireless ISP
- 1 WAN port (1000 Mbps)
- 4 LAN ports (1000 Mbps)
- Diversity
- Detachable antennas
- Lockable Neutrik RJ45 plugs on the front panel
- Built-in power supply
- 19" rack-mountable (1 RU)
- Wi-Fi 6 Standard (IEEE 802.11ax)
- OFDMA procedure
- MU-MIMO technology
- TWT function
- 880 MHz dual core CPU
- 5 PPTP tunnels for VPN
- Broad band functions: DHCP, Static IP, PPPoE PPTP and L2TP
- WPA3 security protocol

4 Installation and starting up

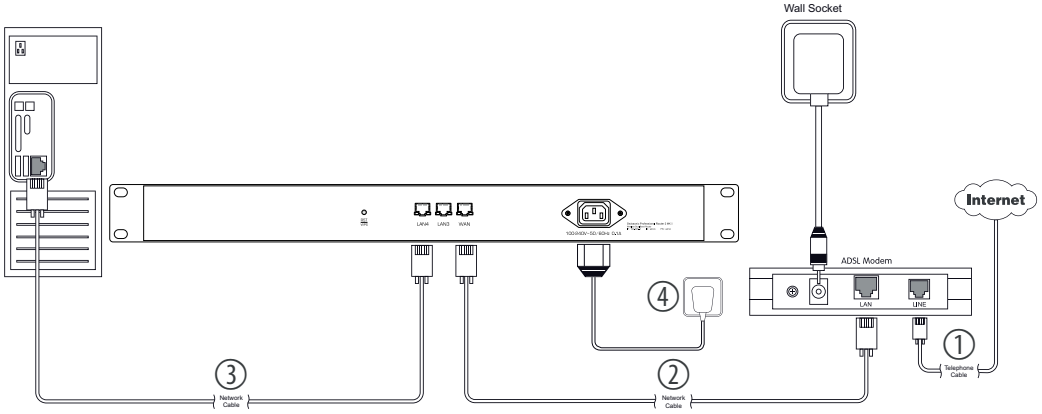
Unpack and check carefully there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the product against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

Notes on radio transmission

- This equipment uses a frequency range that is free of charge and registration within the European Union.
  For more information, please visit: *http://www.thomann.de*.
- Make sure that no metal objects are located between transmitter and receiver.
- Avoid interference by other radio and in-ear systems.

Connect the router



1. If you want to use the device with an existing DSL connection, connect the WAN socket of the router to the port provided at the DSL point of interconnection.
2. Configure the router as follows: Connect the LAN connector of the device to your PC via an Ethernet network cable.
3. Screw the four supplied antennas onto the connectors on the front panel of the device.
4. Connect the device to the power supply with a suitable mains cable.
5. Turn on the main switch.

   ⇨ The device is operational a few seconds after the main switch is turned on.

4.1 Setup on the PC (operating system: Windows® 10)

Activate the WLAN on your PC.

Set up WLAN on the router

1. Start the browser of your PC.
2. Enter `http://192.168.1.1` in the address line of the browser. Confirm with *[ENTER]*.

3. Enter the password and click *'Login'*. The default password is *'admin'*.
   ⇨ The *'Basic'* page opens. The connection state is displayed.

4. Go to *'Operation Mode'* and select the *'Gateway Mode'* operating mode for the router.

5. Go to *'Quick Setup'* and select the network access type.

With *'Dynamic IP'*, the router is automatically assigned an available dynamic IP address by the DHCP server (Dynamic Host Configuration Protocol) of the internet provider.

Select *'Static IP'* if your internet provider has provided a fixed IP address. Your internet provider will send you the values for *'IP Address'*, *'Subnet Mask'* and *'DNS'*.

PPPoE (Point-to-Point Protocol over Ethernet) is a virtual private protocol and allows encapsulated data transmission. Select 'PPPoE' if your internet provider offers this option. Your internet provider will send you the user name and the password.

PPTP (Point-to-Point Tunneling Protocol) is a virtual, private protocol that is used to set up a Virtual Private Network (VPN) in a computer network. Select 'PPTP' if your internet provider offers this option. Your internet provider will send you the user name and the password.

L2TP (Layer 2 Tunneling Protocol) is a network protocol that tunnels frames of data link layer protocols of the OSI model through routers between two networks over an IP network. Select 'L2TP' if your internet provider offers this option. Your internet provider will send you the user name and the password.

6. Confirm with *'Next'*.

7. Under *'IPTV'* you can activate IPTV (Internet Protocol Television) for transmission of television programmes and movies.

8. Confirm with *'Next'*.

9. Under *'Wireless'*, you can change the default SSID and encryption parameters as needed for *'Wireless 2.4GHz'* or *'Wireless 5GHz'*.

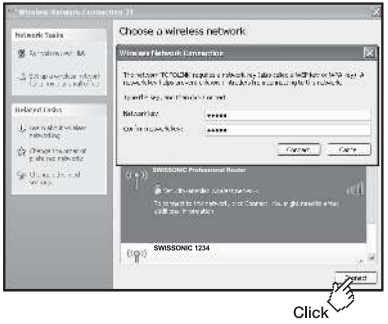
10. Confirm with *'Next'*.

11. The settings are now displayed under *'Summary'*. Complete the setup with *'Done'*.

Establish a WLAN connection

1. Click the button for networks in the task bar.

⇨ The available networks are displayed.



2. Select the network to which you want to connect. Check the box for *'Automatically connect'* and click *'Connect'*.

⇨ The WLAN connection is established.

4.2 Setup on a smartphone (Android®)

WLAN setup

1. Activate your smartphone.
2. Activate WLAN and select *'Swissonic Router 2 MKII 5G'*.
   ⇨ The WLAN connection to the smartphone is established.

Set up WLAN on the router

1. Start the browser on your smartphone.
2. Enter `http://192.168.1.1` in the address line of the browser.
   ⇨ The login mask appears on the display.
3. Enter the password and press *'Login'*. The default password is *'admin'*.
   ⇨ The start screen is displayed.

4. Go to *'Operation Mode'* and select the *'Gateway Mode'* operating mode for the router.

5. Go to *'Internet'* and select the network access type.

With *'Dynamic IP'*, the router is automatically assigned an available dynamic IP address by the DHCP server (Dynamic Host Configuration Protocol) of the internet provider.

Select *'Static IP'* if your internet provider has provided a fixed IP address. Your internet provider will send you the values for *'IP Address'*, *'Subnet Mask'* and *'DNS'*.

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6. Confirm with *'Next'*.

7. Under *'Wireless'*, you can change the default SSID and encryption parameters as needed for *'2.4G Network'* or *'5G Network'*.

8. Confirm with *'Next'*.

9. Under *'IPTV'* you can activate IPTV (Internet Protocol Television) for transmission of television programmes and movies.

10. Confirm with *'Next'*.

11. The settings are now displayed under *'Summary'*. Complete the setup with *'Done'*.

4.3 Set up an EasyMesh network

EasyMesh network function

The router has an EasyMesh network function. This function allows WLAN operation of multiple routers in a network. This interconnected operation ensures a wide network coverage of the WLAN network across the locations of all routers present in the EasyMesh network. The router configured as the master provides the WLAN network and manages the other slave routers in the network. End devices logged in to the WLAN network will then always send and receive the WLAN signal via the closest router with the best possible bandwidth. The master router automatically switches to the signal of the router that receives the strongest WLAN signal from the respective end device.

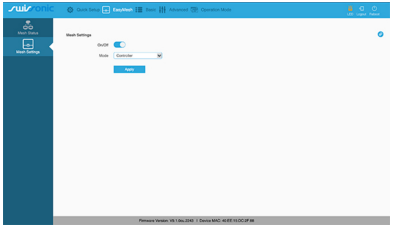
Master router setup

To set up a router as the master router, proceed as follows:

1. Make sure that the LAN socket of the router is connected to your PC via an Ethernet network cable.
2. Make sure that you have made the preliminary settings for the router.
3. Enter `http://192.168.1.1` in the address line of your web browser and log in to the web interface with the default password *'admin'*.

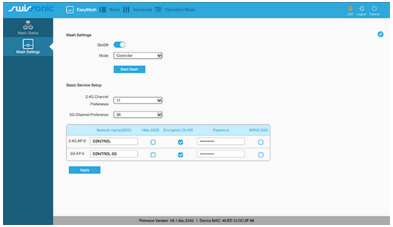
⇨ The *'Basic'* page opens. The connection state is displayed.

4. Select the *'EasyMesh'* area and then select *'Mesh Settings'*.



⇨ The *'EasyMesh'* page opens. The EasyMesh network settings are displayed.

5. Go to the *'Mesh Settings'* area and activate the *'On/Off'* switch.
6. From the *'Mode'* drop-down list, select the *'Controller'* entry.



7. Confirm with *'Apply'*.

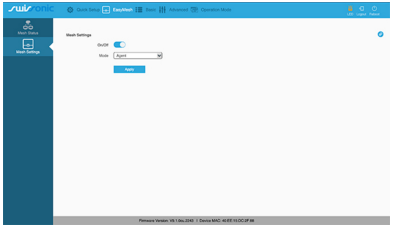
   ⇨ The router is set up as the master router. The *'Basic Service Setup'* area is displayed.

8. If necessary, change the default parameters for the 2.4 GHz and 5 GHz network as well as the SSID and the encryption.

9. Confirm with *'Apply'*.

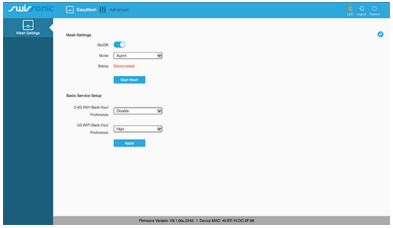
   ⇨ The router is set up as the master router with the selected WLAN settings.

Slave router setup



To set up a router as a slave router, proceed as follows:

1. To set up the slave router, perform 1 – 5 of the master router setup process.
2. From the *'Mode'* drop-down list, select the *'Agent'* entry.



3. Confirm with *'Apply'*.

   ⇨ The router is set up as a slave router. The *'Basic Service Setup'* area is displayed.

4. From the drop-down lists for the 2.4 GHz and 5 GHz networks, select the preferred frequency band for coordination among the routers.

5. Confirm with *'Apply'*.

   ⇨ The router is set up as a slave router with the selected WLAN settings.

Establish a WLAN connection between routers

Once the routers of an EasyMesh network have been set up, you need to establish a WLAN connection from the respective slave routers to the master router. To establish the initial connection, the slave routers must be in the immediate vicinity of the master router. Afterwards the routers can be positioned in their final locations.

To establish a WLAN connection between a slave router and the master router, proceed as follows:

1. Set the slave router(s) up in the immediate vicinity of the master router. The slave routers may be no more than 1 m away from the master router.

2. Make sure that the slave and master routers are switched on, and that the master router is connected to the DSL connection.

3. Briefly and **simultaneously** press the *[RST / WPS]* buttons on the master router and one slave router.

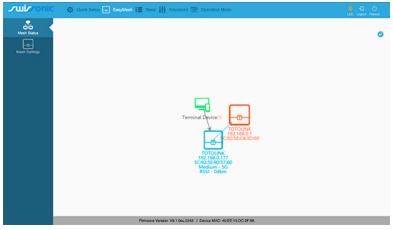
> *Do **not** press the buttons for more than 3 seconds, otherwise the routers will be reset to their default settings.*

⇨ The connection process is complete after approx. 30 seconds.

4. To establish a WLAN connection to another slave router, i.e. to add another router to the EasyMesh network:

Briefly press the *[RST / WPS]* button on the slave router.

⇨ The slave router sends a request to the master router and is automatically connected to the network after approx. 2 minutes.



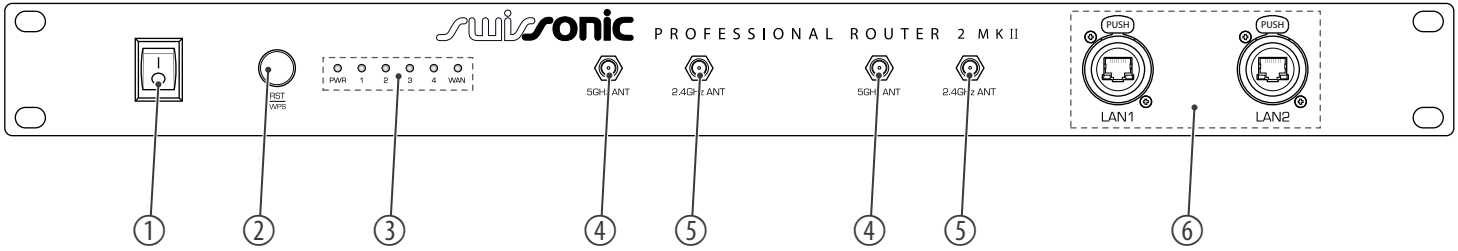
5. To view the status of the EasyMesh network:

Go to the web interface and select the *'EasyMesh'* area, then *'Mesh Status'*.

⇨ The EasyMesh network is displayed with all incorporated routers and end devices.

5 Connections and controls

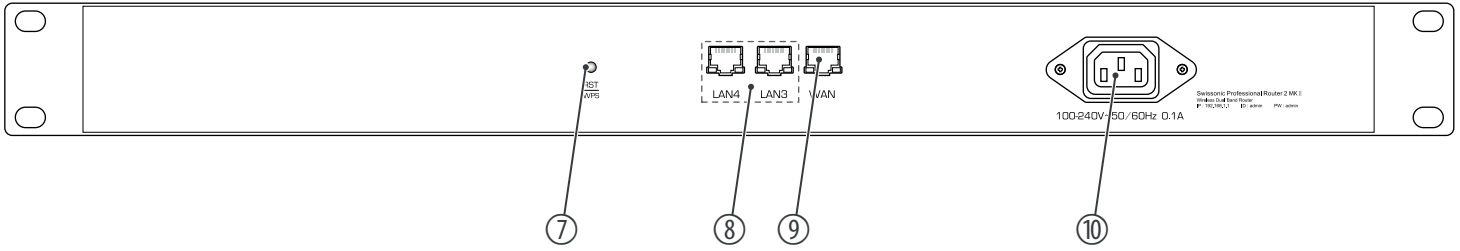
Front



1	Main switch. Turns the device on and off.
2	*[RST / WPS]* | Press the button to add a new device to the wireless network. Pressed and hold the button for more than 5 seconds to restore the device to its default settings.
3	LED indicator lights
	[PWR] | Lights up as soon as the router is connected to the power grid and operational.
	[1], [2], [3], [4] | Flashes when data are transferred via the corresponding LAN port
	[WAN] | Flashes when data are transferred via the WAN port
4	*[5GHz ANT]* | Connection for the 5 GHz omnidirectional antenna

5	*[2.4GHz ANT]* | Connection for the 2.4 GHz omnidirectional antenna
6	*[LAN1]*, *[LAN2]* | Lockable Neutrik RJ45 plugs for connection to local network devices

Back



7	*[RST / WPS]* | Flashes when data are transferred via the port Lights up while the device is reset to its default settings
8	*[LAN3]*, *[LAN4]* | LAN ports for connecting to local network devices
9	*[WAN]* | WAN port for connecting to the internet
10	Connection socket for the mains cable

6 Technical specifications

Input connections	Voltage supply	IEC chassis plug C14
	Data interface	1 × WAN port for internet connection
Output connections	Network interfaces	2 × LAN port for connection to local network devices
		2 × lockable Neutrik RJ45 plugs for connection to local network devices
Frequency range	2.4 GHz and 5 GHz	
Max. transmission power	100 mW	
Range in clear field of vision	up to 100 m indoors, up to 300 m outdoors	
Antenna gain	5 dBi	
Operating supply voltage	100 - 240 V ~ 50/60 Hz	
Dimensions (W × H × D), w/o antennas	483 mm × 44 mm × 180 mm	
Weight	2.1 g (incl. antennas)	
Ambient conditions	Temperature range	0 °C…40 °C
	relative humidity	20 %…80 % (non-condensing)
Standard IP address	192.168.1.1	

Standard user name	admin
Standard password	admin

Further information

Component type	Router
Wi-Fi standards	IEEE 802.11a, b, ac, ax, g, n
Data transfer rate Wi-Fi	up to 574 Mbps (2.4 GHz), up to 1201 Mbps (5 GHz)
PoE Class	no

7 Troubleshooting

In the following we list a few common problems that may occur during operation. We give you some suggestions for easy troubleshooting:

Symptom	Remedy
The *[PWR]* LED is not lit.	Check that the device is connected to the power supply via the mains adapter.
Router is not connecting to the local network or the Internet.	Check if there is a DSL connection.

If the procedures recommended above do not succeed, please contact our Service Center. You can find the contact information at *www.thomann.de*.

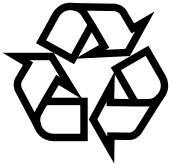
8 Cleaning

Clean the unit with a dry, soft, lint-free cloth. Stubborn dirt can be removed with a slightly dampened cloth.

Never use cleaners containing alcohol or thinner.

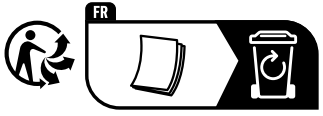
9 Protecting the environment

Disposal of the packing material



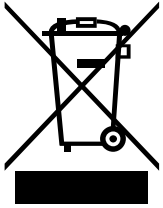
Environmentally friendly materials have been chosen for the packaging. These materials can be sent for normal recycling. Ensure that plastic bags, packaging, etc. are disposed of in the proper manner.

Do not dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the instructions and markings on the packaging.



Observe the disposal note regarding documentation in France.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) as amended.

Do not dispose of your old device with your normal household waste; instead, deliver it for controlled disposal by an approved waste disposal firm or through your local waste facility. If in doubt, consult your local waste management facility. You can also return the device to a retailer if they offer to take the device back for free or if they are legally obliged to do so. When disposing of the device, comply with the rules and regulations that apply in your country. You can also return your old device to Thomann GmbH at no charge. Check the current conditions on *www.thomann.de*.

Proper disposal protects the environment as well as the health of your fellow human beings. This is because the proper handling of old devices negates the potential negative effects of hazardous substances, and because it conserves resources by recycling them.

Also note that waste avoidance is a valuable contribution to environmental protection. Repairing a device or passing it on to another user is an ecologically valuable alternative to disposal.

If your old device contains personal data, delete those data before disposing of it.