

BATLINK FRONTRUNNER AM

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USER MANUAL



VEHICLE ROUTER
VR400W
Language: English





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Used symbols

The following symbols are used in this manual:



This symbol marks useful hints and tips.



This symbol marks important instructions that you should follow in any case to avoid malfunctions.

Before connecting, observe the following safety instructions to protect yourself, your surroundings and the FRONTRUNNER router from damage.

Do not operate the device during thunderstorms.

Disconnect the cable connection from the router/device during thunderstorms.

Safety instructions



Operating Instructions

Please observe the following instructions to ensure optimum functioning of the device. Please follow the individual steps for installation and correct commissioning of the device.

Legal regulations and limit values



When using this device, please observe the applicable laws - in particular the maximum permissible radiated power (EIRP) of a WLAN device. The permissible limits may vary from country to country.

Use in car



When using this device in a vehicle, traffic safety must always take priority and both hands must be free to control the vehicle. Operate the device only when stationary and with the engine switched off.



Hospitals and medical equipment

Please observe applicable laws and regulations. Switch off the device in the vicinity of medical equipment.



Working environment

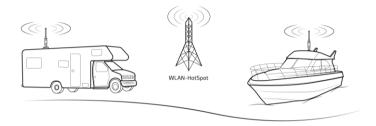
Please observe the notes for the permissible working environment: The permissible operating temperature is 0 to $+45^{\circ}$ C.

Scope of delivery



Functions and field of application

The FRONTRUNNER VR400W router is designed for mobile use to improve the Internet for boats, campers and RVs.



The FRONTRUNNER VR400W supports the following functions:

- 2.4 GHz up to 300 Mbps 802.11 N
- 5.8 GHz up to 900 Mbps 802.11 AC Maximum transmission rate: 1200Mbps
- WPA-PSK/WPA2-PSK, WPA/WPA3 encryption
- Operating mode controllable via software
- USB port supports WLAN sticks with the following chipsets:
 - MediaTek MT7610U (e.g. Tube-UAC2)
 - o RALINK RT3070 (AWUS036NEH) (e.g. Tube-UN)
 - MediaTek MT7612U (e.g. AWUS036ACM)
- LAN port supported:
 - In LAN mode: PoE out, WAN Optimized for FREELOADER2N
 - In USB mode: DHCP for LAN device (Printer, TV, game console, NAS, etc.)

Connections / LEDs



- Power supply
- ② LAN port
- ③ RP-SMA Antenna connection



- 4 Reset button
- ⑤ Operating LEDs
- ⑥ USB port

LED	CONDITION	MEANING
PWR/SYSTEM	On/Off	Power supply exists / not
2,4 GHz/5GHz	On/Off	WIFI active/ deactivated
WLAN	Blinking	Traffic (TX/RX)
LAN TRAFFIC	Off	Currently without function
INTERNET	On/Off	Online connection/not
	Blinking	HotSpot connected,
		without internet
		availability
HOTSPOT	Off	Currently without function
USB	On/Off	Antenna connected / not

Connecting / commissioning

- do not place the FRONTRUNNER router in a closed or covered environment, but in a suitable and dry place with sufficient ventilation possibility.
- Connect the FRONTRUNNER router to a 12V-24V power source. To do this, connect the supplied connection cable with fork clamps to its on-board power supply.



Pay attention to the polarization:

PLUS= red MINUS= black



2.1. Alternatively, you can use the supplied adapter cable (from Micro-Fit TPA socket 4 -pin to DC 2.1mm / 5.5mm hollow plug) to use our optional accessories - like the plug-in power supply for 230V or the connection cable with socket for cigarette lighter (KFZ).

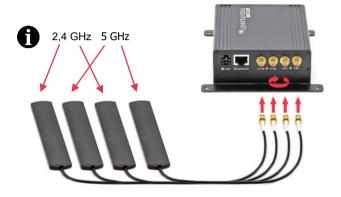


Optional suitable accessories (to be purchased separately under the following designation.)

230V plug-in power supply unit Cigarette lighter connection cable Designation: NT121 Designation: AK12FVZ



 Connect the 4 WLAN antennas that provide the signal in your vehicle to your FRONTRUNNER router. Make sure that the antenna elements keep a minimum distance of approx. 5-10 cm between each other and that the 2.4 GHz and 5 GHz variants are placed alternately (see picture).



Remove the protective adhesive film on the back of the antenna elements and ensure that the adhesive surface is free of grease residues and dust.





5. The FRONTRUNNER router has two modes of operation.

A) USB mode:

In this mode, various WiFi USB adapters are supported to establish a connection to remote WLAN hotspots. To do this, connect the WLAN adapter to the FRONTRUNNER via a USB cable or use our TravelConnector USB antennas.



B) LAN mode:

In this mode, the Ethernet port is switched as a WAN port. This allows the router to be operated, for example, with another Internet router or our TravelConnector FREELOADER antenna. Connect the external device e.g. the FREELOADER with an Ethernet cable to the LAN port.



With this reset button you can mechanically reset the FRONTRUNNER to factory settings.

Press and hold the button for 7 seconds during operation. The LEDs are briefly deactivated if the reset is deactivated



On the back of the FRONTRUNNER router you will find the nameplate with specific information such as login data, serial number and MAC addresses.



WLAN connection to the router

To use your FRONTRUNNER router, you need to establish a wireless connection with your end device (PC. Notebook, tablet, smartphone).

- Switch on your FRONTRUNNER router. As soon as the device receives voltage, the power LED lights up.
- Approx. 40 seconds after switching on the router, a new wireless network with the name: "FRONTRUNNER-4M"
- to connect to the network connect to the network, enter the key "FORmobility" or scan the QR code to establish the WLAN connection.



4. To access the user interface of the FRONTRUNNER router, open a browser on your end device and device and enter the following address line of the browser the following data: 192.168.44.1 or http://front.runner or scan the OR code.





Login FRONTRUNNER router



After confirming the address entry, the login page of the FRONTRUNNER router appears.

Log in for the first time with the device password: "admin4321".

The user name "admin" is already predefined at the factory and cannot be changed.



After you have successfully logged in, you will be taken to the status overview page.

Here you will find a basic overview of all devices and connections of the router. The individual status icons② show the connection status of the router connection status of the router, antenna and HotSpot. The three anchor menus③ can be used to display extended router information.



Overview of the operating and display segments

- (1) Menu
- (2) Status icons
- 3 Anchor menus

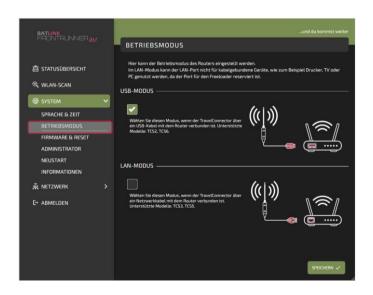


Initial setup Operating mode

Before the basic configuration of the router can be made, it is recommended to set the correct operating mode.

This setting can be found in the menu under System/Operating mode. Now select the appropriate mode for your desired application and apply the setting by clicking "SAVE". The router is configured to "USB mode" at the factory.

Provided that you have connected a FREELOADER when switching on the router, the FRONTRUNNER router will automatically switch to LAN mode.



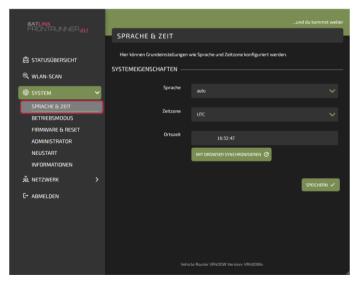


Initial Setup Language & Time

The language of the menu is automatically detected and adopted by your router. If you want to select another language, you can select it manually under the menu item "System / Language & Time". In addition, you can synchronize the time and date with your browser (time on your end device).

At the sub-item "Time zone" you can select the current time zone you are currently in.

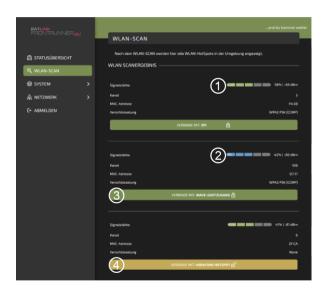
Example: If you are currently in Germany, select the item "Europe/Berlin".





Connect to WLAN HotSpot (USB mode)

After you have connected a compatible USB adapter to the FRONTRUNNER router via the USB port, you can use the menu item "WLAN-SCAN" to search the surroundings for WLAN hotspots. You will then be shown a list with the available HotSpots will be displayed.



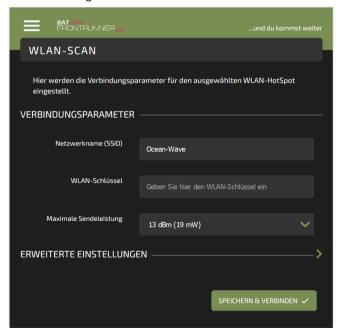
- (1) 2.4 GHz network with associated signal strength
- ② 5 GHz network with associated signal strength
- (3) Encrypted WLAN HotSpot button
- 4 Open WLAN HotSpot button without encryption



After you have selected your desired HotSpot by clicking on "Connect to (network name SSID)", the window for entering the connection parameters opens. The input field "WLAN key" is only displayed for encrypted HotSpots.



The transmission power to be set depends on the antenna gain and the respective country in which you are located. To determine the transmission power, please refer to the calculation example on page 31. Then apply the settings by clicking "SAVE & CONNECT".





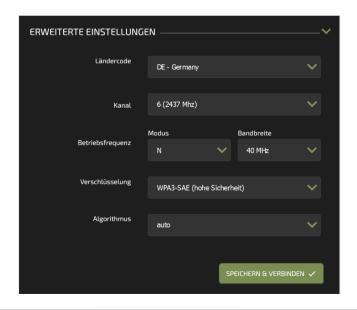
Expert settings can be made under the "Advanced settings" tab.



The "Country code" setting regulates the maximum transmit power "TX Power" and the transmit frequencies for the set country.

The FRONTRUNNER router receives the data "Channel", "Operating frequency", "Encryption" and "Algorithm" from the WLAN hotspot. An adjustment is usually not necessary here.

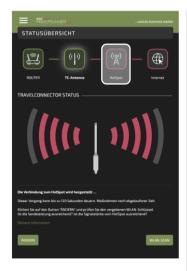
In addition, these settings can be edited again after an existing connection under the "CHANGE" button.

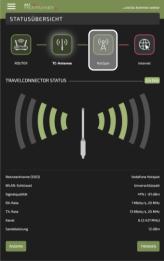




In the next step, the connection to the selected HotSpot is established. The connection setup is shown to you by the signal animation. You can find more information about the login process on the user interface under "More information". After the connection to the WLAN HotSpot has been successfully established, the color of the "HotSpot" status icon changes from red to green.

Public HotSpots that do not request a WLAN key usually require the user to agree to the T&Cs or enter access data to unlock Internet access.





Log in to public networks

If the redirection to the landing page does not take place automatically, it can be called up manually via the "Internet" status icon. Please note that the FRONTRUNNER router needs a few seconds until the authentication information is displayed.





WLAN HotSpot in LAN mode

In LAN mode, only 3 status icons are displayed, since the network search is performed via the FREELOADER (external modem). The status "TC antenna" shows the connection from the FRONTRUNNER router to the external modem. Please note that the FREELOADER (or your external modem) must be fully operational after plugging it into the Ethernet port for the "TC antenna" status icon to change to green.





After the FREELOADER is successfully connected to the FRONTRUNNER router, a connection to the WLAN HotSpot can be established via the FREELOADER menu. You can access the FREELOADER interface by clicking on the "FREELOADER" button in the "Internet" status icon or the "FREELOADER" menu item. Alternatively, you can also reach the FREELOADER via browser using the IP "192.168.33.1".

Please note that the FREELOADER interface can only be loaded if your end device is not actively using multiple network cards. Deactivate all network modules that are not required for operation. This also includes mobile data networks.

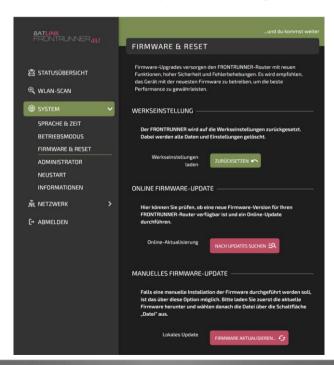




System - Firmware & Reset

Via the menu item "FIRMWARE & RESET" you can reset your FRONTRUNNER router to factory settings and update the firmware of the router. As soon as a new firmware version is available, you will be informed with a PopUp window. Alternatively, a firmware update can be performed offline via the section "Manual

Firmware Update" section to upload a firmware image.



System – Administrator



In this menu item the FRONTRUNNER device password (Router Login) can be changed. For security reasons, we recommend that you change the administrator password from "admin4321" to an individual password.

System - Restart

The operating system can be restarted via the "Restart" menu item. All settings of the FRONTRUNNER router are retained. A restart may be necessary if the router stops responding for no apparent reason or no longer establishes connections.

System - Information

In the "Information" menu item, you will find frequently asked questions (FAQ), the user manual, and general information on WLAN regulations and licenses. Here you will also find a digital version (PDF) of this manual.

Network - WLAN (2.4 GHz & 5 GHz)

The following graphic shows how WLAN settings of the FRONTRUNNER router can be configured.

These network settings only affect the local WLAN network that you need to connect to your end devices.

The FRONTRUNNER router has two radio modules.

With the respective selection fields (1) + (2) you can switch between the two frequency settings 2.4 GHz & 5 GHz.



The "SSID" field ③ is used to change the WLAN name. To ensure the maximum performance of the FRONTRUNNER router, we recommend that you name the SSID name consistently for both frequencies so that your end device can automatically select the best connection.



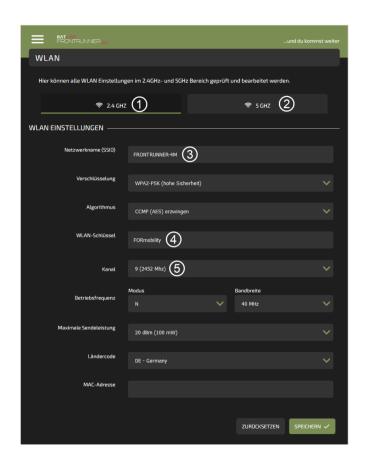
For security reasons, we recommend that you change the WLAN key ④. Please note that the WLAN key must be identical on both frequency settings if the SSID is the same.



To avoid transmission problems, we recommend that the channel setting (5) between the FRONTRUNNER router and the selected HotSpot is not the same.

Example: If the remote WLAN HotSpot transmits on channel 5, the channel of the FRONTRUNNER router should have at least 3 steps difference to channel 5, i.e. channel 2 or channel 8.

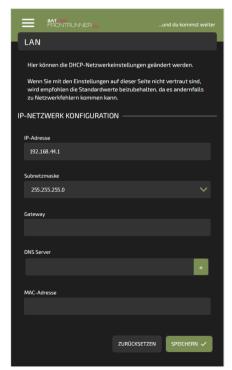






Network - LAN

The DHCP network settings can be changed here. If you are not familiar with the settings on this page, it is recommended to keep the default values, otherwise network errors may occur.

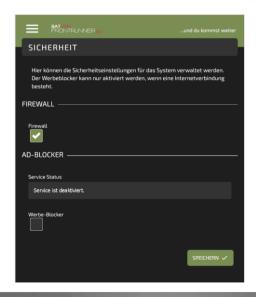


Network - Security

On this page the security settings of the FRONTRUNNER router are made. The firewall can be deactivated if required. However, we recommend that you do not deactivate it.

The "Ad Blocker" feature can be used to block advertisements on websites.

The "Ad Blocker" is deactivated in the delivery state. The "Ad Blocker" can be switched on and off via the "Ad Blocker" selection field. Please note that the ad blocker can only be activated if you have established an Internet connection.



Transmitting and radiating power



According to the regulations applicable in Germany, the radiated power (EIRP) of a WLAN device must not exceed 20 dBm or 100 mW. The customer assures to familiarize himself with the data protection, civil and criminal law regulations for the use of the technology purchased from us and to take appropriate precautions to comply with these regulations. Please observe the Telecommunications Act (TKG and FTEG) in your respective country. Possession and purchase of the equipment is permitted. By purchasing this item, you expressly agree not to violate any applicable laws.

The radiation power of the WLAN system is made up of the transmission power of the RF transmitter (WLAN device) and the antenna gain of the antenna. To calculate the radiation power of the WLAN system, all power or attenuation values in dB must be known. These are then added and subtracted.

Calculation example:

- +10.0 dBm (transmitting power WLAN device)
- +12.0 dBi (antenna gain)
- 2 dB (attenuation of cable and connector)
- = 20 dBm radiated power EIRP



Technical data

Product Name	BATLINK-FRONTRUNNER-4M	
Product number	VR400W	
Part number EAN	0616469945600	
Hardware	CPU: MT7XX 580 MHz / Flash:16MB Ram : DDR2 128MB	
WLAN Protocol Standards	IEEE802.11 a / b / g / n / ac	
Wireless	Frequencies: 2.4 GHz up to 300 Mbps 11N 5.8 GHz up to 900 Mbps 11AC Maximum transmission rate: 1200Mbps	
RF Transmit Power	802.11n 17±1dBm / 802,11g 17±1dBm / 802.11b 19±1dBm / 802.11n 15dBm±2dBm / 802.11a 18dBm±2dBm / 802.11ac 18dBm±2dBm	
Antennas	2x 5,8GHz RP-SMA 3dBi Flexible Positionierung 2x 2,4 GHz RP-SMA 3dBi Flexible Positionierung	
WLAN security	WPA-PSK/WPA2-PSK, WPA/WPA2, WPA3	
Connectors / Botton / LEDs	1x USB 2.0 interface 1x 10/100M LAN interface (PoE Out 11-28V) 4x RP-SMA antenna connector Micro-Fit TPA socket 4-pin 1x reset button 4x Status state via LED	
Power	11-28V DC / < 7,5W	
Case	Aluminum housing with mounting bracket	
Dimensions L*W*H Weight	125.5mm x 100.5mm x 40mm / 585 Gramm	
Operating environment	0°C bis 45°C	
Gateway-Modem	USB port supports WLAN sticks with the chipsets:MediaTek MT7610U (z.b. Tube-UAC2) Realtek RT3070L (z.b. AWU5036NEH, Tube-UN) MediaTek MT7612U (z.b. AWU5036ACM)	
	LAN port configuration: In LAN mode: PoE WAN Optimized for FREELOADER2N In USB mode: DHCP for LAN device (printer, TV, game console, NAS, etc.)	
System Management	Graphical WEB interface compatible for all major browsers. Optimized for smartphone and tablet.	

CF certification

CE

EU Konformitätserklärung EU Declaration of Conformity

Wir. die Firma Batlink

We the company Am Heilbrunnen 117 72766 Reutlingen

Deutschland/ Germany

erklären in alleiniger Verantwortung, dass das weiter unten genannte Produkt declare under our sole responsibility that the following product

Geräteart /Type of product: KE7 WI AN-Router

Modell: EAN-Artikelnummer weitere Angaben

Model EAN-Article-no further details

VR400W 616469945600 DC-Betrieb / DC-operation

die grundlegenden Anforderungen der aufgeführten EU-Richtlinien erfüllt:

Richtlinie über die Bereitstellung von Funkanlagen auf dem Markt 2011/65/EU

Richtlinie zur Beschränkung bestimmter gefährlicher Stoffe in Elektro- und

Elektronikgeräten

meets the essential requirements of the following EU-Directives:

2014/53/EU Directive on the making available of radio equipment on the market 2011/65/EU Directive on the restriction of the use of certain hazardous substances in electrical and

electronic equipment

angewandte Standards und Verordnungen lapplied standards and regulations:

EN 62311:2008

EN 301 489-1 V2.2.0 (2017-03) EN 301 489-17 V3.2.0 (2017-03)

EN 300 328 V2.1.1 (2016-11)

EN 301 893 V2.1.1 (2017-05)

EN 50581 :2012

Bevollmächtigter zur Zusammenstellung der technischen Unterlagen: Authorized person for technical documentation:

Name/Name, Position: Marcus Bensch, QMB

Reutlingen, 01.08.2018

Datum/Date

Taking back old equipment & legal



When your FRONTRUNNER has reached the end of its service life, take the old device to the collection point of your local waste disposal authority (e.g. recycling center). The adjacent symbol means that the must be disposed of separately from household waste. According to the Electrical and Electronic Equipment Act (Elektro- und Elektronikgerätegesetz), owners of old appliances are legally obliged to dispose of old electrical and electronic equipment separately.

Please help us and contribute to environmental protection by not disposing of the old equipment in the household waste.

The company BATLINK is registered at the foundation Elektro-Altgeräte-Register under the WEEE-Reg-No. DE DE44796572.

Rechtliche Hinweise

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Your own notes

	Mein WLAN Name (SSID):
Mein Gerätepasswort:	Mein WLAN Schlüssel:
Mein Gerätepasswort:	
	Mein Gerätepasswort:



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