MOBILROUTER

Quick Setup Guide

When developing our MOBILROUTER product line our main goal was to create devices that are easy to be installed and managed.

The manual describes the most important steps and functionalities giving you all the knowledge you need to have in order to be able to successfully install and manage the product you purchased.

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1. **Registration**

    1.1. The MOBILROUTER products are industrial VPN routers developed for remote management. Their management - settings and monitoring- is done on a password protected admin interface created for the routers on www.mobilrouter.com..

    1.2. The admin right of the routers is attached to user accounts. The first step is to create a user account on www.mobilrouter.com by clicking on 'registration' on the 'customer login' panel. (Figure 1) User identification is based on the email address and password given when registering on the website. The fields marked with * are mandatory to be registered successfully. The registration is completed by clicking on confirmation in the registration email sent to the user's email address.
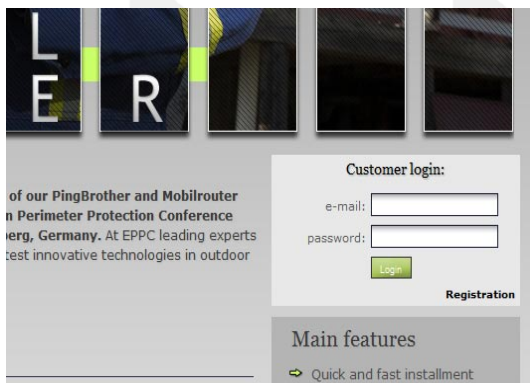
Figure 1
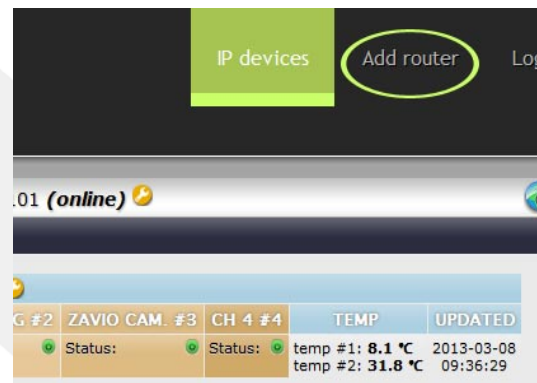
Figure 2

2. **Administration-adding the router to the user account**

    2.1. The user enters his own admin interface, using the user data created when registering, through the 'Customer login' panel on www.mobilrouter.com. The interface allows you to monitor and manage all your purchased mobilrouter as well as connected IP devices.

    2.2. When a new router is purchased and it does not appear on your interface, you need to click on 'Add router' on the upper horizontal menu bar to create access to the newly added device.

    2.3. The newly purchased router can be attached to the user account by entering the 'Router identification number' (6 digits) and the 'Product identification number' (7 digits) in the 'Add router' section of the menu bar (Figure 2). Both identification numbers can be found on the stickers placed on the product itself and its packaging.

    2.4. Any other person (on your behalf, family member, colleague, etc) is entitled to administer the device by registering the same way as explained above.

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2.5. **Important note!** The above detailed identification numbers and user details should be kept in a secure place. The devices can be added and administered from other user accounts created on the servers of www.mobilrouter.com by using your private identification data. **Be careful and place special emphasis on security!**

3. Connecting to the VPN server

3.1. The members of the MOBILROUTER family have been optimized to be fully managed remotely in order to avoid having to physically go to the device to implement any configuration change. Therefore the devices cannot be administered in offline mode. The router needs to be connected on the internet to the VPN center which provides all connecting services in order to be fully configured. The method of connection can be via mobile internet, or ethernet cable via the WAN port of the routerl.

3.2. Wired connection: Connect your router's WAN port by using 10/100 ethernet cable to a router providing dynamic IPs (DHCP), to a cable modem, to a set top box or to any other internet network. Once the automatic network configuration is completed, the router appears on the admin interface in a few minutes after having been connected. Further settings can be remotely done on the interface.

3.3. Connecting via mobile internet

3.3.1. SIM card: When connecting via mobile internet place a mobile internet enabled SIM card into the socket of the SIM card that is next to the GSM antenna of the router, as shown in the piktogram placed on the device. The SIM card socket is based on a so-called push/push system, which means that the card can be removed by pushing it.

3.3.2. The type of the SIM card can be a size 25x15 mm mini SIM card. **The usage of SIM cards smaller than that – micro or nano – with transformator adapter is not recommended as full contact cannot be guaranteed, which can disable connection via mobile internet or can lead to the mechanical damage of the socket!**

3.3.3. All SIM cards of any mobile internet providers with pre-paid or post-paid services can be used since the VPN connection provided by the MOBILROUTER technology makes it possible to access the router and the devices connected to it. Our technology works even with mobile internet providers using NAT – in which case a standard 3G router is not able to provide access to the connected devices not even with dyndns service.

3.3.4. **Important note: PIN code protected SIM cards is not supported in any way by MOBILROUTER devices.** The PIN code protection needs to be disabled if it applies. This can easily be done before using it for a MOBILROUTER device by placing it into a mobile phone that is unlocked or attached to the given service provider's network and deactivate the PIN code function under the security settings.

3.3.5. Service provider's APN settings

3.3.5.1. APN (Access Point Name) is a setting used by mobile service providers, which depends on the service provider and in some cases on the service type-by having the details of which mobile connection can be created. You can find the pre-stored APN codes of some of the service providers and you can choose one to use for settings under 'Router data edit/Mobile internet' menu board where you can also set your own APN (Figure 3). For further information on APN settings contact your mobile service provider. Entering the APN setting is only required once prior to creating the first mobile internet connection. If you change either service type or service provider you will need to enter the APN setting again.
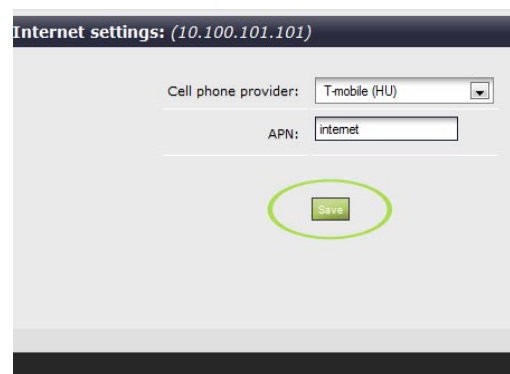
Figure 3   Figure 4

3.3.5.2. APN setting via wired internet connection: Connect the router as described in paragraph 3.2. through the WAN port of the device via wired internet. On the admin interface attached to the router you will find the 'Router data edit/Mobile internet' menu bar. Here you will need to choose the name of the SIM card service provider and the type of the service or by choosing 'Other' enter your APN setting, then click on 'save'. (Figure 4) After this leave the router on the wired connection for at least 30 seconds and only then unplug. If the SIM card is in the router the mobil internet connection is created in a few minutes. **Important note!** The above described settings on the admin interface can only be done if the router is online, that is connected to the internet!

3.3.5.3. APN setting via sending sms: If you are unable to connect your router to the admin interface via wired internet connection, sending an sms can be the alternative you can opt for. If choosing this method, send an sms to the SIM card used for MOBILROUTER with the following content. 'APN: serviceproviderapnsettings', for example: „APN: internet". When sending the sms the device does not necessarily have to be switched on. When the router with the SIM card is switched on, the router gets connected in 2-3 minutes and the device appears on the admin interface. In case the router does not appear on the admin interface in more than 3-5 minutes reset the router by switching it off and on again and wait for the connection to be created.

4. **The internet connection of MOBILROUTER**

connecting MOBILROUTER devices to the internet can be done by wired connection on the WAN port of the device or via mobile internet attached to the SIM card used. The router has an automatic 'failover backup' function, which means that if both the previously mentioned WAN connections are activated, the wired route is of the higher priority and so data traffic will be routed this direction. If for any reason internet connection is not provided in the mentioned route the router will automatically divert data traffic to mobile internet. If wired internet connection is restored the router automatically routes data traffic in 20 seconds to the wired WAN interface.

5. **The services and usage of the admin interface**

5.1. The structure of the admin interface (Figure 5)

5.1.1. Left side vertical menu bar: the routers and all connected IP devices can be managed on the admin interface attached to the user account. The names of the routers attached to the user accounts can be seen on the vertical menu bar on the left side. By clicking on the names of the routers you will be able to manage the devices on the right hand side panel. The name of the routers are the identification numbers as a default. This can be freely altered. The horizontally crossed off router name indicates that the given router is offline. When doing the basic settings of the routers, they can be classified into groups named individually. These will also appear on the left side router list.

Figure 5

5.1.2. Right side settings panel

It consists of 4 horizontal sections, which are as follows from top to bottom:
- Router: name, internal IP, status and the edit button
- PingBrother PO switches: name, status, parameters and the edit button. This section is optional appearing only if the given router is connected to a PingBrother switch. This applies to the following routers: GTRP106, GTRPO106. These integrate PingBrother 104POE switch.
- Connected IP devices section: this is where you can find the name, the status, the parameters of the connected devices as well as the edit button. If there are no IP devices connected to the router this section will not appear on the admin interface.
- The configuration menu bars of the router, POE switch or the connected IP devices appear in the lower section of the right hand side field, depending on which settings menu bar of the device or its components are opened by clicking the edit button.

5.1.3. Apart from the edit buttons you can use the icons showing the geographical position of the router or routers on a map. The tools that offer further functionalities are underlined.

5.2. Router settings

5.2.1. Basic settings: individual name given to the router, group classification defined, GPS co-ordinates given to show geographical position. (Figure 6)

Figure 6

5.2.2. Map
> The router's position appears on a map if GPS co-ordinates are given at basic settings or the router is equipped with GPS receiver. With the help of the button in the upper right hand side of the map, you can set the map to appear in a separate browser window.

5.2.3. Wireless
> The Wifi interface of the router can be switched on or off here. Also, the most important parameteres of the radio access point such as frequency, mode (802.11b/g/n), the method and keys of SSID and password protection. Please bear in mind that the settings menu bar will appear depending on the speed of the GSM network, in some cases in 2-6 seconds after pressing the Wireless button. The data displayed is retrieved by the dispatch server from the device via mobile internet network. (Figure 7)

Figure 7

Figure 8

5.2.4. Mobile internet
> This is where you set the service provider's APN to create mobile internet connection. As described in 3.3.5.2.

5.2.5. IP settings
> MOBILROUTER automatically allocates internal IPs to the dynamic IP devices connected to it. These cannot be changed as the allocation of the user defined public accesses are attached to them. If the user wants to connect his devices that belong to his own internal IP to the

router, it is possible to define 2 manually created internal sub-networks which are called 'Private' and 'Hotspot'. You can switch the DHCP server on and off in your own, defined range and can also define the IP range allocated by the DHCP server. (Figure 8)

5.2.6. Interface settings

You can categorize here the 4 internal LAN and WIFI interfaces one by one into IP sub-networks. It can be decided if they should be in the range of the VPN allocated by the system or of the user defined PRIVATE or HOTSPOT. If you allocate multiple interfaces to one IP range, these interfaces connect to the group of the bridge set in the range of the chosen IP. Example to illustrate: this way you can set that the IP cameras connected to the lan port 1 and 2 of the router are allocated VPN internal IPs generated by the system. Public access can be defined to this internal IP via the VPN tunnel from any other internet network, while the PCs connected to the router WIFI and the interface of 3 and 4 ethernet are routed to the user defined range of another IP. Avoiding the VPN tunnel, they connect to the internet directly via wired WAN or mobile internet connection.

5.2.7. Status update

By ticking the box here you can ask for regular updates on the changes of the online and offline statuses of the router. The system will automatically send updates to the email address provided if the router is disconnected from the server and if the connection is back again.

5.2.8. Deleting a router

Having deleted the router it will no longer appear on the interface of the user account. **Imporant note! All settings connected to the router will be deleted and cannot be restored!**

5.3. The settings of PingBrother POE switches

5.3.1. General information on PingBrother switches:

The central admin interface attached to the MOBILROUTER products is able to remotely manage PingBrother POE switches. This is extended functionality and service level and therefore some of our MOBILROUTER products are distributed with these hardware components integrated. By using this application, the following extra services are available:

- provide power for 802.3.af standard or midspan passive POE IP devices
- POE power can be switched on and off remotely from the admin interface.
- monitoring the voltage of the router and the switch
- the temperature of the environment can be monitored by optional outer temperature sensor
- 4 pieces of nc/no contact management output with the following inputs: remote management on the admin interface; user defined automatic intervention in case of

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change in temperature; user defined automatic intervention as an answer to the order received from the IP watchdog function of the device.

- IP watchdog function: by setting this function it intervenes on the switch POE feed output or by switching the contact management if a user defined monitored host 'froze', that is it does not respond to ping (icmp echo request) or its web server does not give regular http answers.
- email notification and log about events and automatic interventions.

Further information about PingBrother on www.pingbrother.com. Product brochure and manual are both available for download on www.mobilrouter.com as well.

5.3.2. The IP settings of the PingBrother switches

If you have purchased the PingBrother switch integrated into your MOBILROUTER product, its **IP settings are pre-configured** in a way that its services are available and can be modified on the admin interface. Therefore **please do not change these.** You can easily connect a PingBrother switch to your MOBILROUTER product subsequently. In this case please follow the below instructions when choosing an IP:

The first part of the switch IP is „10.". The second and third parts are the same, as the third and fourth parts of the connected router, and the last part can be chosen between 2-9. For example: If you want to connect an additional POE switch to a GTRP106 router with product number 101167, and internal IPv4 address 10.100.101.167, the IP address of the new switch should be between 10.101.167.3-10.101.167.10, subnet mask: 255.255.255.0, gateway 10.101.167.1. In this example the chosen Ip address is between 3 and 10, because the address 10.1.167.2 is already used by the originally integrated PingBrother switch. A maximum of 9 PingBrother switches can be connected to a MOBILROUTER.

5.3.3. Settings of the switches on the admin interface

The following settings are available on the MOBILROUTER admin interface:

5.3.3.1. Temperature

the temperature data measured by the temperature sensors of the POE switch is available for to the latest half an hour, hour and the date of the given day. Or with the help of a calendar you can go back to the day the device was installed.
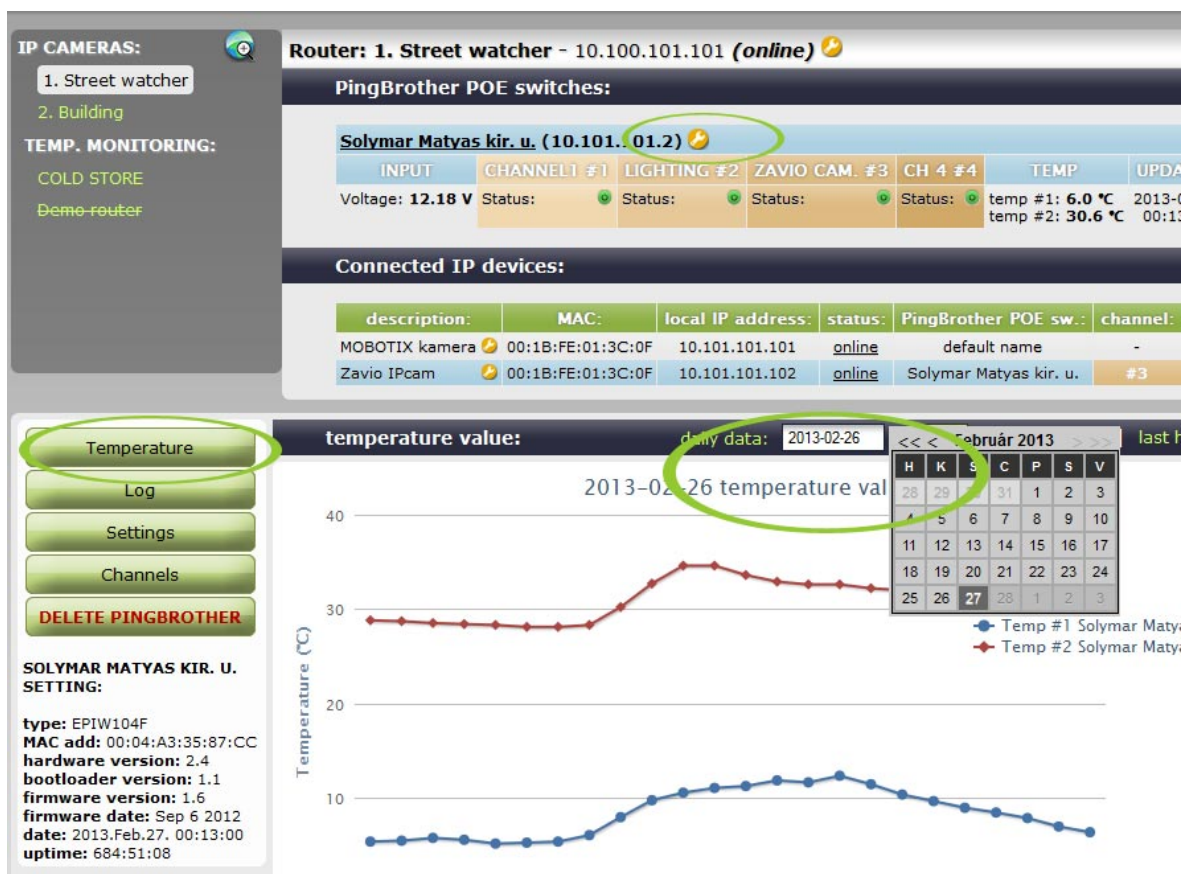(Figure 9)

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Figure 9

5.3.3.2. LOG

The diary of the monitored events set in the POE switch and the automatic reactions to them can be seen here.

5.3.3.3. Settings

The POE switch and the names of their output channels can be modified here. With the help of this the exact role and function of the device can be reviewed on the user interface. It can also be seen what further devices with which output channels are set to be managed.

5.3.3.4. Channels

The 4 channels of the switch can be set here. Powering the connected POE devices can be switched on and off on the admin interface depending on how the devices were installed and what hardware settings apply. Also, other devices can be switched thanks to the contact outputs.

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5.3.3.5. Deleting PingBrother

The PingBrother switch can be deleted here. Once deleted the device will no longer appear on the user interface. **Important note! All settings attached to the switch will be deleted and can never be restored!**

5.4. Settings of connected IP devices

5.4.1. Connecting IP devices

It was an important goal when developing the MOBILROUTER system that installing the products should be quick, easy and cost-effective. Therefore what you should do is easy: the IP device that you want to remotely manage should be set to dynamic (DHCP client) configuration and connected to MOBILROUTER or to the PingBrother switch attached to it. The switched on IP device appears in the right hand side of the admin interface in a few minutes under the name 'default' while its physical address and the allocated internal IP. If multiple devices are connected to the router it is best to connect them one after the other, re-naming them on the admin interface in order to be able to identify them easily at a later stage. Another alternative is if you make notes of the order of connecting the devices or the physical addresses of the devices based on which the devices can be identified.

5.4.2. Information on allocated internal IPs

the IPs allocated to the connected IP devices do not change if connected to an interface set in the VPN range as described in section 5.2.6. because the allocated IPs in this range remain attached to the physical addresses of the devices until the user keeps the given device on the admin interface. If deleted, it will no longer appear.

5.4.3. Using manually configured IP for connected devices

As per section 5.4.2. the dynamically allocated IPs themselves do not change-apart from when the user intervenes- and so in order to ensure continuous access the connected devices do not have to be set for a fix IP. If for any reason the connected device cannot be dynamicaly set (DHCP client) there is a way to manually set an IP in the VPN range as well. The first part of the devices IP is „10.". The second and third parts are the same, as the third and fourth parts of the connected router, and the last part can be chosen between 10.101.167.11-10.101.167.99. For example: If you want to connect an IP device with fixed IP settings to a GTRP106 router with product number 101167, and internal IPv4 address 10.100.101.167, the IP address of the new IP device should be between 10.101.167.11-10.101.167.99, subnet mask: 255.255.255.0, gateway 10.101.167.1. In this example the chosen Ip address is between 11 and 99, because the address rage 10.1.167.2 – 10.1.167.10 is already reserved for PingBrother switces, and the address range 10.101.167.101-10.101.167.254 is the VPN address pool of the MOBILEROUTER.

5.4.4. Settings of the connected IP devices on the admin interface

The list of your connected devices can be found in the right hand side column of the admin interface under 'Connected IP devices'. You can have a glimpse of the names of all the devices, their physical and IP addresses, their online or offline statuses. If a PingBRother POE switch is connected you can see which port of which switch is the connected one. By clicking the edit button next to the name of the device you will access the following settings:

5.4.4.1. Details of the IP device

The name of the device can be changed here. If the connection is through a POE switch you can define allocation to a PingBrother name and to the number of the channel it was connected to. If the device has a starting page in the browser its public url can be defined under 'Link', with the help of which it is one click away on the top tool menu bar under 'online status'. More information on generating public url can be found in section 5.4.4.2. The 'Snapshot link' menu bar: can be used if in the case of a connected IP camera or DVR the device has a url through which the live image can be 'stolen' from the device, which appears under the menu bar in edit mode on the admin interface so the identification process gets easier.

Figure 10

5.4.4.2. Port Forward

By defining these settings your IP devices connected to MOBILROUTER will be

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accessable to be remotely managed from anywhere. The ports necessary to operate the given devices can be defined by clicking on 'new port' under the 'add port' tab. You enter the number of the port in the input field and choose the right value under 'type' (TCP or UDP). (Figure 10) Prior to pressing the 'save' button multiple ports can be defined at the same time. **A maximum of 50 ports can be defined for a router, which refers to all of the connected IP devices together**. If you need to have more than 50 ports or you want to provide fully public IP for the device connected to the router, please contact our support team. Having clicked on the 'save' button the system automatically allocates public IPV4 address and port to the given ports of the devices. The values of the allocation can be reviewed by re-entering the menu bar of 'Port Forward'. With the help of the newly generated public IP/port access the device can be accessable from the browser or mobile device for DVR, NVR client or other remote management software. The automatically allocated public access does not change and remain accessable as long as the user does not delete the device, the port or the connected router from the system. Port Forward function is available for devices which are connected to interfaces that are allocated to the VPN IP sub-network in the menu bar of the router interface settings as described in 5.2.6. When a device is connected to the system for the first time (to the TCP port 80 which is the default http port of the browsers) the system generates a public access without intervention. If this function is not needed it can be deleted under 'delete port' tab. The user created but no longer needed port forward setting can also be deleted the same way as described above.

5.4.4.3. Status alert

By ticking this box status update request can be set. You need to enter your email address and or telephone number. The system will send email or sms notification if the offline/online status of the device changes or the device gets disconnected from the router and if the connection is restored. **Important note! Sending sms updates may be charged as described in the subscription contract attached to the SIM card placed in the router.**

5.4.4.4. Deleting a device

the connected device can be deleted in this menu bar. Once deleted the device will no longer appear on the user interface. **Important note! all of the settings attached to the device get deleted and can no longer be restored!**