wienet LR77 v2

LTE - mobile-router

USER'S GUIDE

Dok.-Nr. BA000868
Stand: 02/2014 (Rev. B)

Contents

Contents

1 About this document

Please read this chapter carefully before working with this users guide and the wienet mobile router

1.1 Function of this document

In this wienet mobile router User's Guide the device and the functions of it are described. Use the User's Guide, especially for the configuring of the mobile router.

1.2 Scope and revision level

This installation manual is valid for the products wienet VPN router, which are associated with this installation manual. The installation instructions accompanying the product is downloadable in the electronic catalog of Wieland. Be sure to always use the information provided in the current version of this installation manual. The version and revision level can be seen in the title page and the footer..

1.3 Target group

This manual is aimed at planners, engineers, installers and service personnel who are planning a remote control or remote maintenance solution and put into operation.

1.4 Function and design of this installation manual

This installation manual guide the technical staff of router installer on installation, programming, operation and diagnosis of wienet router.

Chapter "Safety instructions" on side 7 contain basic safety instructions. Please read and follow these instructions in each case.

NOTICE

You can also use our Internet site *https://eshop.wieland-electric.com/categories/1000006118* ".You can also download the following files:

- Product informations ***wienet*** router and switches
- Data sheets ***wienet*** router
- Technical notes WIE-SERVICE24.com VPN Server portal

1.5 Symbols and notations

The symbol "DANGER" means an imminent danger. If it is not avoided, can result in death or serious injury.

"DANGER" is used to warn of dangers at the time of the warning are already existing (eg hot surfaces, sharp edges, pinch points, etc.).

It is used exclusively in danger of personal injury!

The symbol "WARNING" indicates a possible threat. If it is not avoided, can result in death or serious injury could result.

The symbol "CAUTION" indicates a possible threat. If it is not avoided, slight or minor injury can result.

NOTICE

Refer to notes for special features of a device.

Instructions also tell you about a potentially harmful situation. If it is not avoided, the system can be damaged or something in their environment.

2 Safety instructions

This chapter is for your safety and the safety of equipment operators. Please read this chapter carefully before working with a VPN-Router.

General Safety
- Personnel who makes installation, programming, makes operational or maintenance of wienet router, must have read and understood this manual.
- The personnel must be thoroughly familiar with all warnings, instructions and requirements contained in this manual.
- The applicable local safety, protection and installation requirements must be observed.
- The user is solely responsible for selecting the correct product and the technical design in accordance with appropriate local regulations

2.1 Qualified persons

Wienet VPN router must be installed by competent persons only, configured in operation, commissioned and maintained. Qualified is, who

- has an appropriate technical training and
- has access to the wienet VPN router installation manuals, and this has been read and understood.

2.2 Intended Use

Please, observe the following instructions:

- The router must be used in compliance with all applicable international and national laws and in compliance with any special restrictions regulating the utilization of the router in prescribed applications and environments.
- To prevent possible injury to health and damage to appliances and to ensure that all the relevant provisions have been complied with, use only the original accessories. Unauthorised modifications or utilization of accessories that have not been approved may result in damage to the router and in a breach of applicable regulations. Unauthorized modifications or utilization of accessories that have not been approved may result in the termination of the validity of the guarantee.
- The router can not be opened.
- **Caution!** The SIM card could be swallowed by small children.
- Voltage at the feed connector of the router must not be exceeded.
- Do not expose the router to extreme ambient conditions. Protect the router against dust, moisture and high temperature.
- The router should not be used at petrol stations. We remind the users of the duty to observe the restrictions concerning the utilization of radio devices at petrol stations, in chemical plants, or in the course of blasting works in which explosives are used.
- Switch off the router when travelling by plane. Utilization of the router in a plane may endanger the operation of the plane or interfere with the mobile telephone network, and may be unlawful. Failure to observe these instructions may result in the suspension or cancellation of telephone services for the respective client, or, it may result in legal sanctions; it may also result in both eventualities.
- When using the router in the close proximity of personal medical devices, such as cardiac pacemakers or hearing aids, you must proceed with heightened caution.
- If it is in the proximity of TV sets, radio receivers and personal computers, the telephone may cause interference.
- It is recommended that you should create an appropriate copy or backup of all the important settings that are stored in the memory of the device

For any other use, or changes to the equipment - even in the context of mounting and installation - any warranty claim against Wieland Electric Gmb expired.

3 Router description

3.1 Introduction

LTE LR77 v2 router is used to wirelessly connect various equipments and devices via Ethernet interface 10/100 to the Internet or intranet. Thanks to high data transfer speed, up to 100 Mbit/s (download) and upload speed up to 50 Mbit/s it is an ideal wireless solution for traffic and security camera systems, individual computers, LAN networks, automatic teller machines (ATM) and other self-service terminals and machines.

As a standard, this LR77 v2 wireless router is equipped with one Ethernet 10/100, one USB Host port, one binary Input/output (I/O) port and one SIM card. To save and backup communication data a version with 2x SIM cards is available. The wide range of interface options of the router further expands an optional Port1 and Port2 - selected by the customer – for example Ethernet port 10/100, serial interface ports RS232/RS485/RS422/MBUS or (I/O - CNT).

Fig. 1: Basic version

		ETHERNET	I/O	USB Host	PORT1	PORT2	SIM1	SIM2
LR77 v2	Basic version	■	■	■	■	-	■	-
LR77 v2f	Full version	■	■	■	■	■	■	■

Configuration is done via web interface protected by password. The LR77 LTE router supports creation of VPN tunnels using technologies IPsec, OpenVPN, L2TP to ensure safe communication. Web interface provides detail statistics about the router activities, signal strength, detailed log, etc. Cellular router supports functions: DHCP, NAT, NAT-T, DynDNS, NTP, VRRP, control by SMS and many other functions.

Other diagnostic functions ensuring continuous communication include automatic inspection of PPP connection offering an automatic restart feature - in case of connection losses, or hardware watchdog which monitors the status of the router. With the help of a special window (start up script window) you may insert Linux scripts for various actions. For some applications the key option to create several different configurations for one LTE wireless router, the so-called profiles (maximum of 4), and the option to switch between them (for example via SMS, binary input status, etc.) is essential. Cellular wireless routers may automatically upgrade configuration and firmware from server. This allows mass reconfiguration of many routers in one time. For easy use additional software may be used - communication VPN server WIE-SERVICE24 and software for router monitoring R-SeeNet.

Examples of possible applications:

- remote support industry
- mobile office
- fleet management
- security system
- telematic
- telemetric
- remote monitoring
- vending and dispatcher

4 Contents of package

Basic deliverd set of router includes:

- router
- power supply
- crossover UTP cable
- two external antennas
- clips for the DIN rail
- assembly instruction
- Notice WIE-SERVICE24
- User Manual on USB-Stick

Fig. 2: contents of package

In addition to the basic components the following items can be ordered:

- Accon NetLink Pro - MPI to Ethernet adapter for S7-Remote-Support
- different antennas

5 Routerdesign

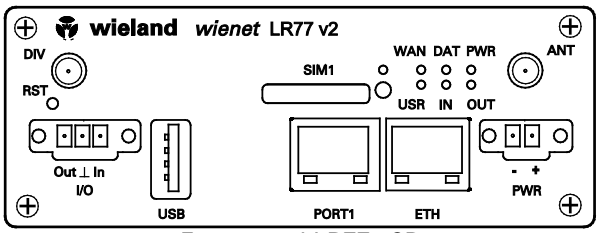
5.1 Version

Table 1: Versions

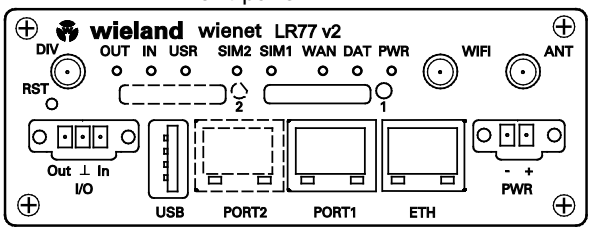
	Box	SIM1	SIM2	I/O	USB	PORT1	PORT2	ETH
LR77 v2F	Metal	■	–	■	■	□	–	■
LR77 v2F SL	Metal	■	■	■	■	□	□	■
■ = standard □ = optional with interface modules								

Table 2: Port 1 options

Module can be connected as follows	
PORT1	RS-232, RS-485/422, Ethernet, M-Bus, CNT,3-Port-Switch (together with PORT2)
PORT2	RS-232, RS-485/422, M-Bus, WiFi/WLAN 3-Port-Switch (together with PORT1)



Front panel LR77 v2B



Front panel LR77 v2F

5.2 Ordering Code

Basic Versions

Mobile LTE Router *wienet* LR77 v2 SL			
 Basic version	***wienet*** mobile router GSM/GPRS/EDGE/UMTS/LTE; metal housing; SIM-card-Slot; Interface: Ethernet 10/100 Mbit/s, USB 2.0 Type A Host, 1 digital input/1 digital output; Antenna connector SMA-50 Ohm; Max. Download 100 MBit/s; Max. Upload 50 MBit/s; Supply voltage: DC 10-30 V; Functions: openVPN, IPsec, DHCP (Client/Server), Web-Interface, FTP, NAT, PAT, SNMP, VRRP, DynDNS, NTP, SSH, SMS, eMail, automatic update		
Article number	**Port 1**	**Port 2**	**Housing**
83.041.0050.1	-	-	Metal
83.041.0051.1	RS-232	-	Metal
83.041.0052.1	RS-485/422	-	Metal
83.041.0053.1	M-Bus	-	Metal
83.041.0054.1	4DI, 2DO, 2AI	-	Metal
83.041.0055.1	Ethernet	-	Metal

Full versions

Mobile LTE Router *wienet* LR77 v2f SL			
	***wienet*** mobile router LTE , metal housing, 2 SIM-card-Slots, Interface: Ethernet 10/100 Mbit/s, USB 2.0 Type A Host, 1 digital input/1 digital output, Antenna connector SMA-50 Ohm, Max. Download 100 MBit/s, Max. Upload 50 MBit/s, Supply voltage: DC 10-30 V, Functions: openVPN, IPsec, DHCP (Client/Server), Web-Interface, FTP, NAT, PAT, SNMP, VRRP, DynDNS, NTP, SSH, SMS, eMail, automatic update		
Article number	**Port 1**	**Port 2**	**Housing**
83.041.0500.1	-	-	Metal
83.041.0501.1	RS-232	-	Metal
83.041.0502.1	RS-485/422	-	Metal
83.041.0503.1	M-Bus	-	Metal
83.041.0504.1	IO	-	Metal
83.041.0505.1	Ethernet	-	Metal
83.041.05606.1		WIFI/WLAN	Metal
83.041.0570.1	-	SD	
83.041.0511.1	RS-232	RS-232	Metal
83.041.0512.1	RS-485/422	RS-232	Metal
83.041.0513.1	M-Bus	RS-232	Metal
83.041.0514.1	IO	RS-232	Metal
83.041.0515.1	ETH	RS-232	Metal
83.041.0522.1	RS-485/422	RS-485/422	Metal
83.041.0523.1	M-Bus	RS-485/422	Metal
83.041.0524.1	IO	RS-485/422	Metal
83.041.0525.1	ETH	RS-485/422	Metal
83.041.0561.1	RS-232	WIFI/WLAN	Metal
83.041.0562.1	RS-485/422	WIFI/WLAN	Metal
83.041.0563.1	M-Bus	WIFI/WLAN	Metal
83.041.0564.1	IO	WIFI/WLAN	Metal
83.041.0565.1	ETH	WIFI/WLAN	Metal
83.041.0571.1	RS-232	SD	Metal
83.041.0572.1	RS-485/422	SD	Metal
83.041.0573.1	M-Bus	SD	Metal
83.041.0574.1	IO	SD	Metal
83.041.0575.1	ETH	SD	Metal
83.041.0599.1	3-Port Switch	3-Port Switch	Metal

wienet vendor antenna GXR626		
	wienet vendor antenna; GSM, GPRS, EDGE, UMTS, HSPA+; Flat antenna hight only 13 mm; with cable 2,5 m	83.041.0200.0
wienet outdoor rod antenna GXR606		
	wienet outdoor antenna in rod form; GSM, GPRS, EDGE, UMTS, HSPA+; rod lenght: 300 mm; inclusive stainless steel mounting bracket; with cable 5 m	83.041.0210.0
MPI-ETH ADADPTER ACCON-NETLINK-PRO		
	ACCON-NetLink-PRO compact is a handy communication and programming adapter between PC and S7 controllers.	F0.000.0031.8

5.3 Basic dimensions metal box

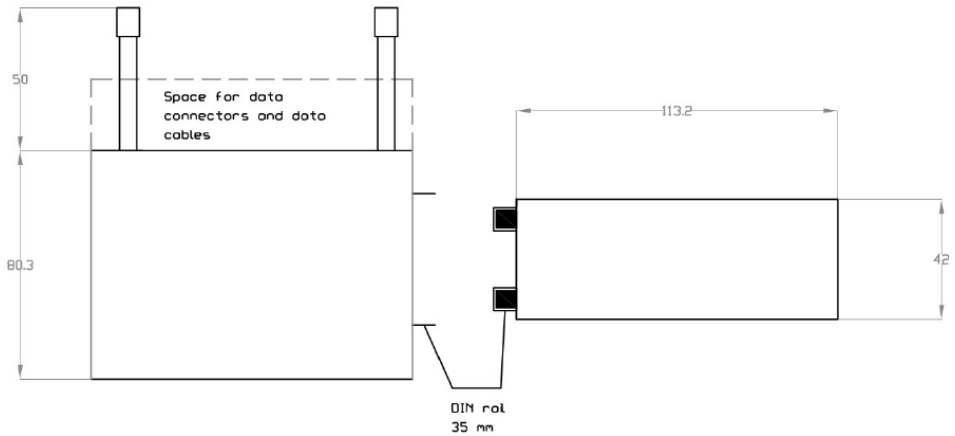


Fig 3: Basic dimensions metal box

5.4 Mounting recommendations

NOTICE

Mounting recommendations:
- possibility to be put on a work surface,
- DIN rail with clips CPD2 (Elpac clip SL for SL version) are included

For the most of applications with a built-in router in a switch board it is possible to recognize two kinds of environments:

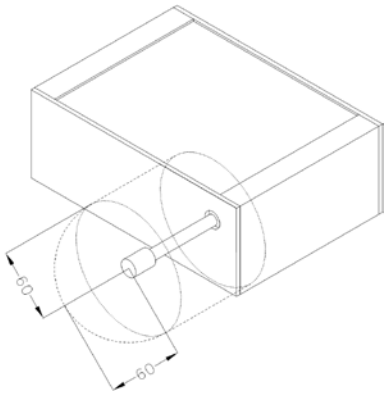
- no public and industry environment of low voltage with high interference,
- public environment of low voltage without high interference.

For both of these environments it is possible to mount router to a switch board, the following there is no need to have examination immunity or issues in connection with EMC according to EN 60439-1 ed.2:00 + A1:04.
For compliance of EN 60439-1 ed.2:00 + A1:04 specification it is necessary to observe next assembly of the router to the switch - board:

CAUTION

- for whip antennas we recommend to observe a distance of 6 cm from cables and metal surfaces on every side according to the next picture due to the elimination of interference, while using an external antenna except for the switch-board it is necessary to fit a lightening conductor,
- before mounting a router on sheet-steel we recommend using an external antenna

Fig 4: space around antenna

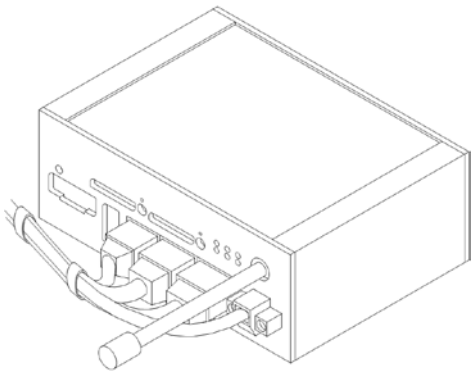


Space around antenna for metal version

CAUTION

- for every cables we recommend to bind the bunch according to the following picture, we recommend for this use:
  - length of the bunch (combination of power supply and data cables) can be maximum 1,5 m, if the length of data cables exceeds 1,5 m or in the event of, the cable leads towards the switch - board, we recommend installing over - voltage protectors (surge suppressors),
  - with data cables they mustn't carry cables with reticular tension ~ 230 V/50 Hz,
  - all signals to sensors must be twisted pairs

Fig 5: cable routing

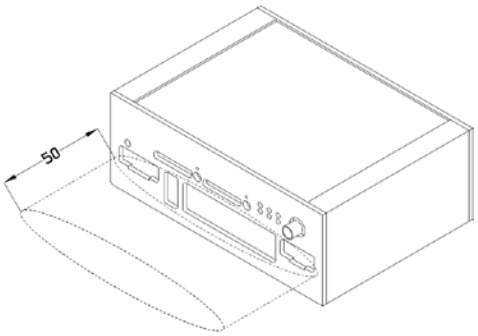


Cable routing for metal version

- sufficient space must be left before individual connectors for handling of cables

CAUTION

Fig 6: space in front connectors



Space in front connectors metal version

- for correct function of the router we recommend to use in the switch-board earth-bonding distribution frame for grounding of power supply of router, data cables and antenna

CAUTION

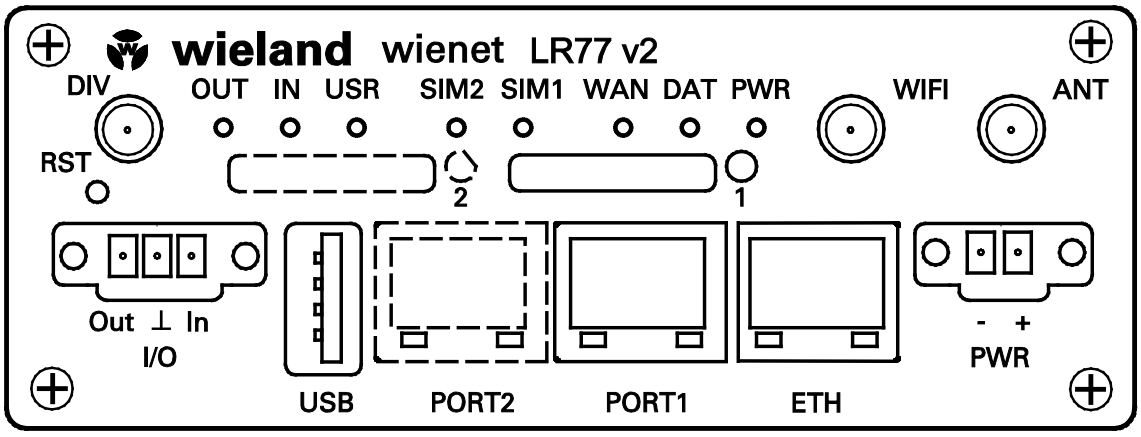
5.5 User interfaces (connectors)

On the front panel is located:

Table 3: Front panel

Label	Connector	Desciption
PWR	2-pin	Connector for connection the power adapter
ETH	RJ-45	Connector for connection into the local area network
Port1	RJ-45	Connector for connection equipment over RS-232, RS-485/422, Ethernet, M-Bus, CNT or XC-SW
Port2	RJ-45	Connector for connection equipment over RS-232, RS-485/422, Ethernet, M-Bus, CNT or XC-SW (only full version)
ANT	SMA	Connector for connection main antenna
AUX	SMA	Connector for connection diversity antenna
USB	USB-A Host	Connector– for connection the devices with the router, USB supports equipments with PL-2303 and FTDI USB/RS232 converter.
I/O	3-pin	Connector for connection of the binary input and output.
SIM1	-	Holder for first SIM card
SIM2	-	Holder for second SIM card (only full version)

Fig 7: Front panel LR77 v2



5.5.1 Status indication

About router status inform eight led indicators on the front panel and on every port are two LED indicators, which inform about port status.

Table 4: Status indication

Label	Color	State	Desciption
PWR	Green	Blinking: Permanently on:	Router is ready Starting of the router
DAT	Red	Blinking:	Communication in progress
WAN	Yellow	1x flash per second 2x flash per second 3x flash per second	Signal strength is from -50dBm to -69 dBm Signal strength is from -70dBm to -89 dBm or difference between neighbours cells is exactly 3 dBm Signal strength is from -90dBm to -113 dBm or difference between neighbours cells is smaller than 3 dBm
USR	Geen	Function selected by user	
OUT	Green	On:	Binary output active
IN	Green	On:	Binary input active
ETH	Green	On: Off:	Selected 100 MBit/s Selected 10 MBit/s
ETH	Yellow	On: Blinking: Off:	Network cable is connected Data transmission Network cable is not connected
PORT	Green	Description by Port (viz. Technical specification)	
PORT	Green	Description by Port (viz. Technical specification)	
SIM1	Yellow	On:	SIM card 1 is active
SIM2	Yellow	On:	SIM card 2 is active

5.5.2 Power connector PWR

Panel socket 2-pin

Table 5: Power connector

Pin number	Signal mark	Desciption
1	VCC (+)	Positive pole of DC supply voltage (+10 to +30 VDC)
2	GND (-)	Negative pole of DC supply voltage

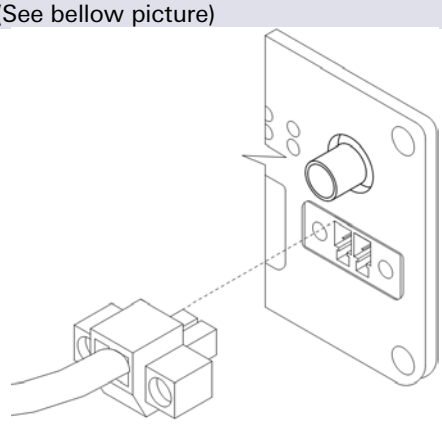
Fig 8: Power connector

Power supply for router is required between +10 V to +30 V DC supply. Protection against reversed polarity without signaling is built into the router.

The power consumption during receiving is 1W. The peak power consumption during data sending is 5,5W. For correct operation it is necessary that the power source is able to supply a peak current of 600mA.

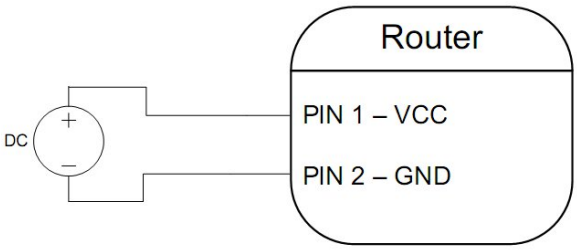
NOTICE Connector on the power cable connects into the power connector on the router head and tightens locking screws. (See bellow picture)

Fig 9: connection of power supply connector



Circuit example:

Fig 10: connection of power supply



NOTICE The positive pole VCC is marked by a red socket on the power.

5.5.3 Antenna connector ANT

The antenna is connected to the router using the SMA connector on the front panel.

The router can not operate without the antenna connected labeled as ANT.

CAUTION

Example of antenna:

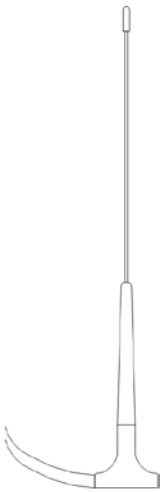


Fig 11: External antenna

The antenna is connected to screw the antenna connector SMA to SMA connector on the router head. (See figure below).

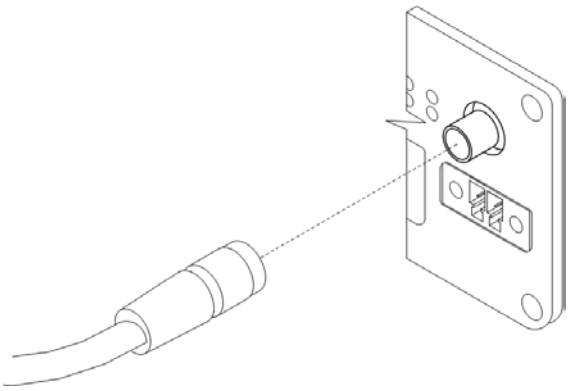


Fig 12: connecting the antenna

5.5.4 SIM card reader

The SIM card reader for 3 V and 1.8 V SIM cards is located on the front panel of the router. To initiate the router into operation it is necessary to insert an activated SIM card with unblocked PIN in the reader. The SIM cards might be of different adjusted APN (Access Point Name).

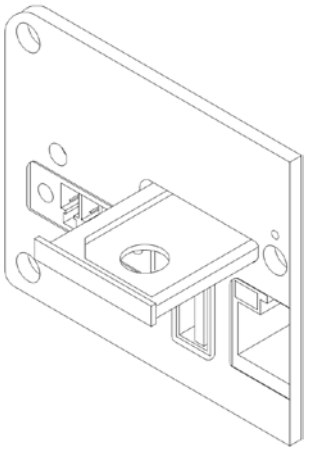
Changing the SIM card:

Press the small yellow button to eject the reader holder. Insert the SIM card into the reader holder and slide it in the reader. (See bellow picture)

CAUTION

Make sure that the gold contact side of the SIM card is facing up and orient yourself in the mechanical slot on the upper guide grooves.

Fig 13: Ejected the SIM card



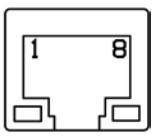
5.5.5 Ethernet Port

Panel socket RJ45

Table 6: Ethernet port

Pin number	Signal mark	Desciption	Data flow direction
1	TXD (+)	Transmit Data - positive pole	Input/Output
2	TXD (-)	Transmit Data - negative pole	Input/Output
3	RXD (+)	Receive Data - positive pole	Input/Output
4	---	---	
5	---	---	
6	RXD (-)	Receive Data - negative pole	Input/Output
7	---	---	
8	---	---	

Fig 14: Ethernet connector



CAUTION

ATTENTION! Port ETH is not POE (Power Over Ethernet) compatible!

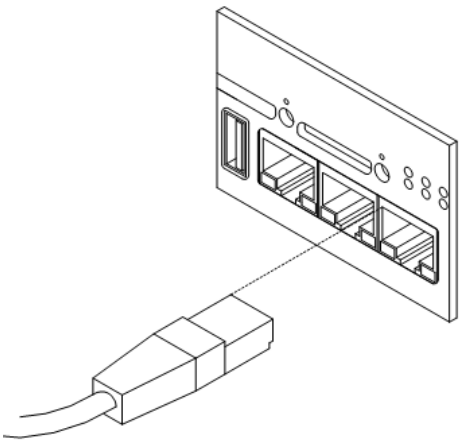


Fig 15: connection Ethernet cable

The Ethernet router connection:

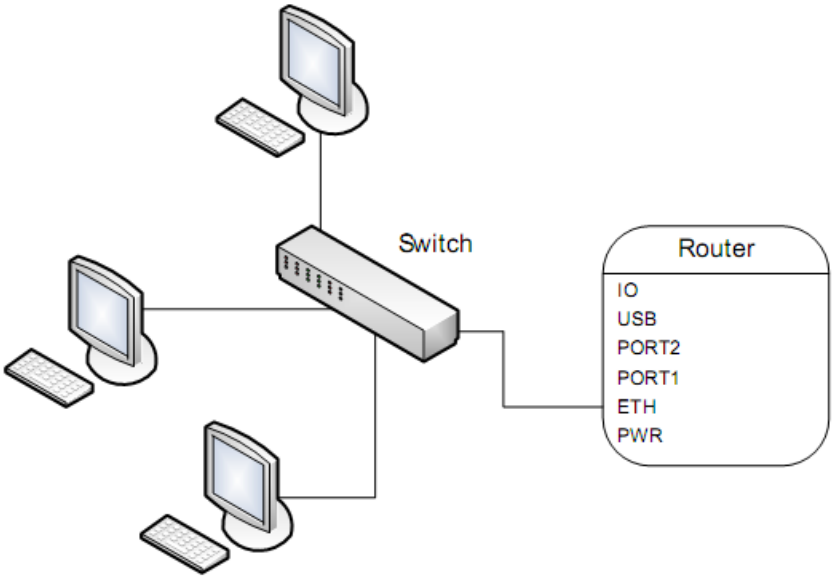


Fig 16: example of router connection

5.5.6 PORT1

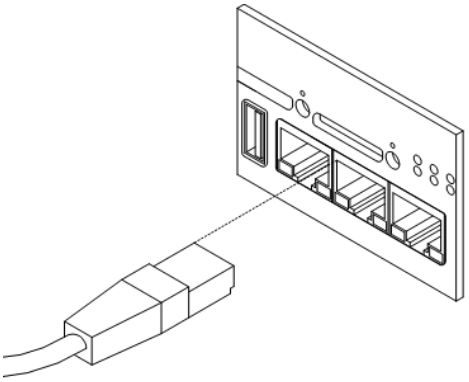
The PORT1 is equipped with one of the offered options ports. For PORT1 are available on the interface.

PORT1	**RS-232, RS-485/422, ETHERNET, M-BUS, IO, 3-Port-Switch (with PORT2), SD-Card**

NOTICE

Description, connection and examples of optional connection ports can be found in separate manuals expansion ports.

Fig 17: connection PORT1 cable



5.5.7 PORT2

The PORT2 is equipped with one of the offered options ports. For PORT1 are available on the interface.

PORT1	**RS-232, RS-485/422, M-Bus, WIFI, 3-Port Switch (only in Full version, Port 1 as 3-Port Switch also), SD Card**

NOTICE

Description, connection and examples of optional connection ports can be found in separate manuals expansion ports.

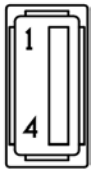
5.5.8 USB port

Panel socket USB-A.

Table 7: USB port

Pin number	Signal mark	Desciption	Data flow direction
1	+5V	Positive pole of 5V DC supply voltage	
2	USB data -	USB data signal - negative pole	Input/Output
3	USB data +	USB data signal - positive pole	Input/Output
4	GND	Negative pole of 5V DC supply voltage	

Fig 18: USB connector



NOTICE

Example of connecting devices with serial interface to the USB router:

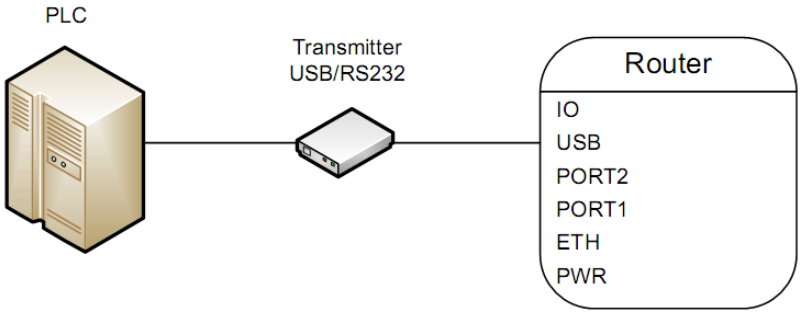


Fig 19: connection PLC to the router

Example of connecting of USB flash disk to the USB router:

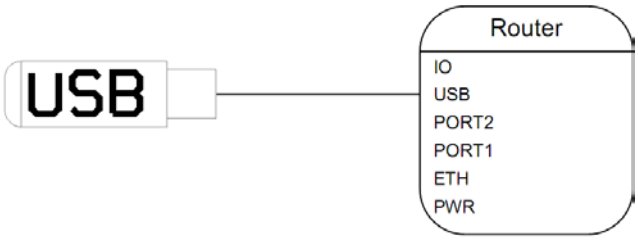


Fig 20: connection flash memory to the router

5.5.9 I/O port

Panel socket 3pin

Pin number	Signal mark	Desciption	Data flow direction
1	BIN0	Binary input	Input
2	GND	Signal ground	
3	OUT0	Binary output	Output

Table 8: I/O port

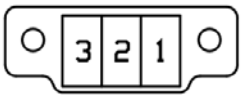


Fig 21: I/O connector

The user interface I/O is for processing of binary input signal and to control (settings) of binary output signal. Binary output is not switched to ground, by default configuration. Maximum load binary output is 30V / 100mA. The constant current supplied by the binary input is 3 mA.

NOTICE

Connector I/O cable connect into the I/O connector on the router head and tighten locking screws. (See bellow picture)

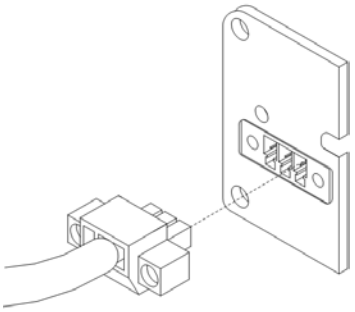
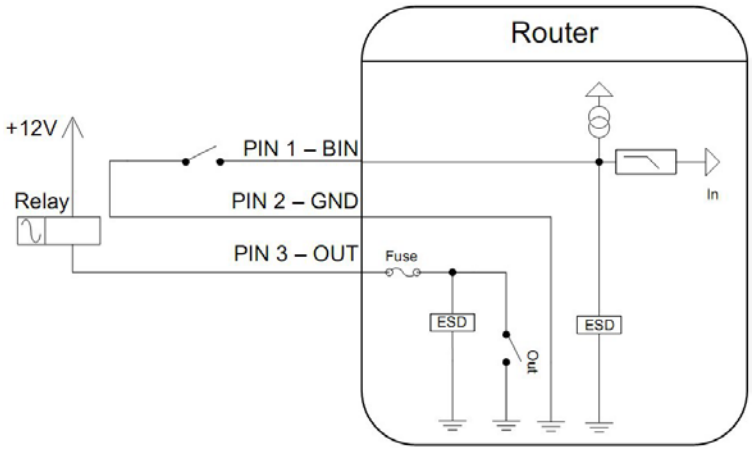


Fig 22: Connection I/O cable

NOTICE

Circuit example of a binary input or output equipment with router:

Fig 23: Connection input and output of router



5.5.10 Reset

NOTICE It is important to distinguish between reset and reboot the router.

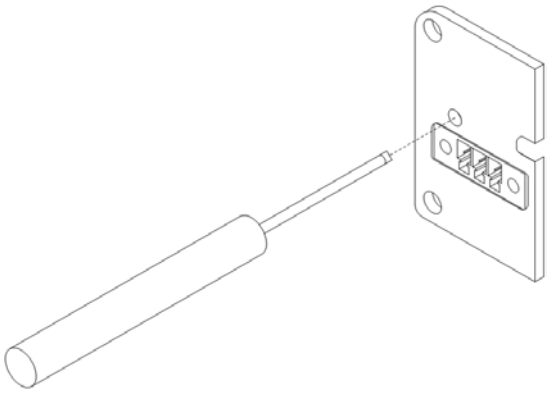
Table 9: Reset/Reboot

Action	Router behavior	Invoking events
Reboot	Turn off and then tur on router	Disconnect and connect the power
		Press the reboot button in the web configuration
Reset	Restore default configuration and to reboot the router.	Press RST button

After green LED starts to blink it is possible to restore initial settings of the router by pressing button RST on front panel. After press button RST it is restoration of factory configuration and reboot (green LED will be on).

NOTICE For pressing the RST button could be used a narrow screwdriver.

Fig 24: Router reset



NOTICE We recommend to backup your router configuration (See configuration guide), because reset router set configuration to the initial state.

6 First use

6.1 Connecting the router before first use

Before you give up the router, it is necessary to connect all components needed for the operation of your applications and the SIM card must be inserted. (See bellow picture)

The router can not operate without connected antenna, SIM card and power supply.

NOTICE

In operation, the router must be connected to the antenna, otherwise damage to the router.

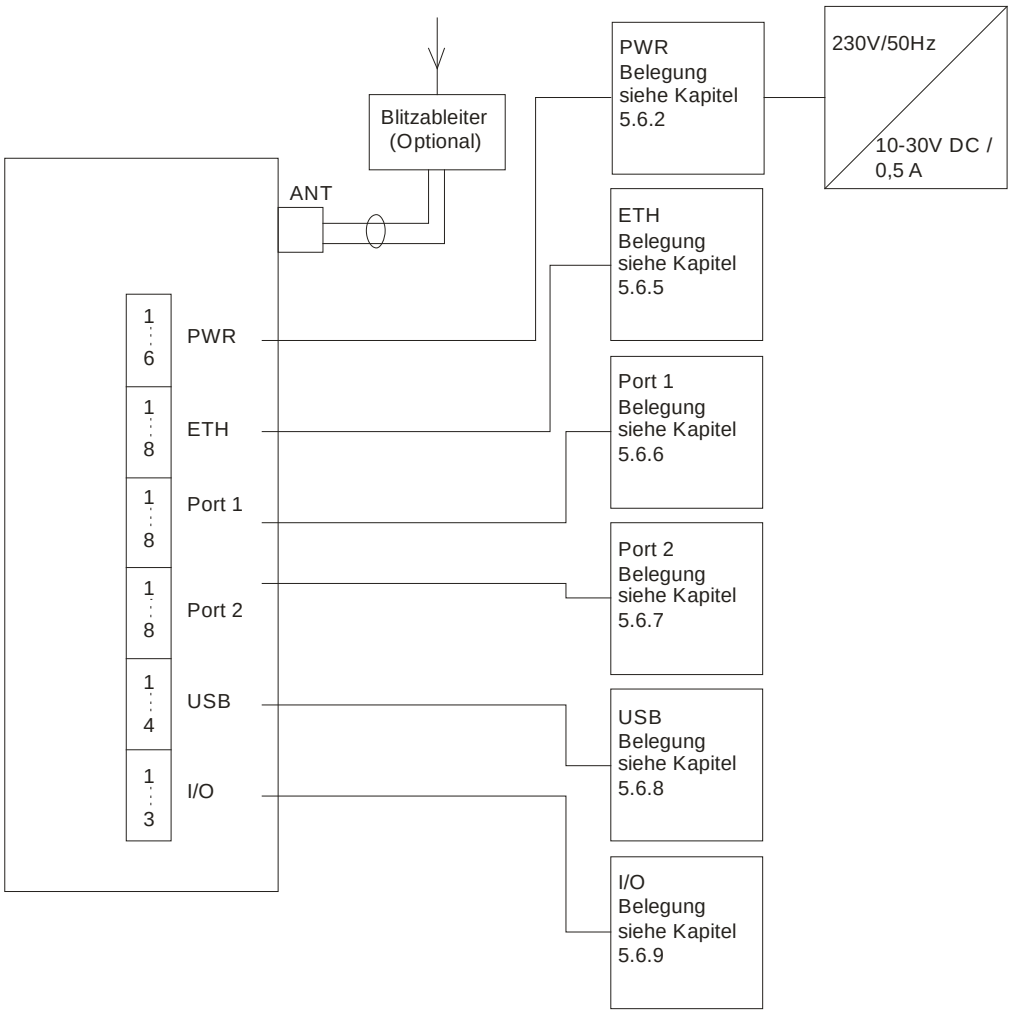


Fig 25: Router connection

6.2 Start router

The router is set up connecting the power supply to the router. In the default setting the router starts to login automatically to the preset APN. Device on the Ethernet port DHCP server will assign addresses. The behavior of the router can be modified by means of the web or Telnet interface, which is described in the configuration manual.
The power consumption during receiving is 1W. The peak power consumption during data sending is 5,5W. For correct operation it is necessary that the power source is able to supply a peak current of 600mA.

6.3 Router configuration

If the SIM card is not inserted in the router, then it is impossible to operate. The inserted SIM card must have activated LTE/HSPA+/UMTS/EDGE/GPRS.

6.3.1 Configuration over Web browser

Monitoring of the status, configuration and administration of the router can be performed by means of the web interface, which is available after insertion of IP address of the router into the web browser. The default IP address of the router is 192.168.1.1. Configuration may be performed only by the user "root" with initial password "root".

NOTICE A detailed description of the router settings via the Web interface can be found in the configuration guide.

6.3.2 Configuration over Telnet

Monitoring of status, configuration and administration of the router can be performed by means of the Telnet interface. After IP address entry to the Telnet interface it is possible to configure the router by the help of commands. The default IP address of the router is 192.168.1.1. Configuration may be performed only by the user "root" with initial password "root".

NOTICE A detailed description of the router settings via the Telnet interface can be found in the configuration guide.

7 Technical parameters

7.1 Technical parameters of router

wienet LR77 v2		
Complies with standards		EN 301 511, V9.0.2 EN 301 908-1&2, v3.2.1 EN ETSI 301 489-1 V1.8.1 EN 60950-1:06 ed.2 + A11:09 + A1:10
Temperature range	Operation Storage	-30 °C to +60 °C -40 °C to +85 °C
Protection rating		IP20
Supply voltage		+10 V DC to +30 V DC
Consumption	Reception GPRS LTE	300 mW To 3,5 W (GPRS transmission) To 5,5 W (LTE transmission)
Dimensions		42x76x113 mm (DIN 35 mm)
Weight		LR77 v2 SL - 280 g
Antenna connector		SMA - 50 Ohm
User interface	ETH USB PORT1 PORT2	Ethernet 10/100 MBit/s USB 2.0 type A host Optional RS-232, RS-485/422, ETHERNET, M-BUS or Input/Output (CNT), 3-Port Switch Optional RS-232, RS-485/422, WIFI*, M-BUS or Input/Output (CNT), 3-Port Switch* SD Card
	*only in full version	

Table 10: Technical parameters router

7.2 Technical parameters of module

Mobile-module	
LTE parameters	Bitrate 100 Mbps / 50 Mbps 3GPP rel. 8 standard Supported bandwith - 5MHz, 10MHz, 20MHz
HSPA+ parameters	Bitrate 21.1Mbps/5,76 Mbps 3GPP rel. 7 standard UE CAT. 1 to 6, 11, 12, 14 Data compress 3GPP
UMTS parameters	W-CDMA FDD standard PS bitrate - 384/384 kbps CS bitrate - 64/64kbps
GPRS parameters	GPRS multislot class 10, CS 1 to 4 EGPRS multislot class 10, CS 1 to 4 MCS 1 to 9
Transmit power	UMTS/HSUPA/HSDPA/HSPA+ - (20dBm) EGSM 900 - Class 4 (33 dBm) GSM 1800/1900 - Class 1 (30 dBm)
Support channel	GSM/GPRS/EDGE - 900 Mhz, 1800 Mhz, 1900 Mhz UMTS/HSUPA/HSDPA/HSPA+ - 900 Mhz, 2100 Mhz LTE - 800 Mhz, 900 Mhz, 1800 Mhz, 2100 Mhz, 2600 Mhz

Table 11: Technical parameters of mobile module

7.3 Technical parameters of processor

Table 12: Technical parameters of processor

32b ARM microprocessor	
Memory	512 Mb DDR SDRAM 128 Mb FLASH 1 Mb MRAM
Interface	Serial interface RS-232 Ethernet interface 10/100Mbit/s USB 2.0 interface

7.4 Technical parameters of I/O port

Table 13: Technical parameters of I/O port

I/O Port		
Input/Output	Binary Input	Reed contact with trigger level 1,3 to 1,4 V
	Binary output	120 mA / max. 30 V

7.5 Technical parameters of expansion port

Technical parameters of the expansion ports are to be found in separate manuals for expansion ports.

8 Recommended literature

[1] Wieland: Start guide,
[2] Wieland: Configuration manual VPN-Router,
[3] Wieland: Technical note WIE-SERVICE24 VPN Portal configuration

9 Possible problems

NOTICE

Some network cards are able to be set in situation, when it is not possible to connect the router. It is possible to solve this problem in the following steps:

- hand by selection communication rates 10 MB/s in property network cards,
- connect router over switch,
- start computer only after finalizing the start of the router.

10 FAQ

- I can't get from internet on equipment, which is connected to router and I have NAT enabled.
  - *The device's gateway has to be configured as the router.*
- Router resets itself, connection on Ethernet fails.
  - *It is necessary to use an antenna, which will be situated far from power supply.*
- I don't get on web server at NAT.
  - *The* remote *http access of the router has to be disabled, default server address has to be your web server and the gateway of the web server has to be the IP of router.*
- PPP connection fails.
  - *Check signal power. If signal power is weak, you will have to use a better antenna. If the environmental cells have a similar signal it will be necessary to use a directive antenna. Signal levels have to be in the range -50dBm and -90dBm.*
  - It is necessary to set ping, which will check the connection and, in the case of fail ping, restart connection.
- PPP connection won't be established.
  - *Recheck GPRS settings - APN, name, password and IP address.*
  - *Try to enter PIN – verification if the SIM card hasn't set PIN code.*
  - *In private APN it is appropriate to switch the DNS server send off.*
  - *Switch log system on and observe where the error turns up.*
- Connection fails on Ethernet or connection isn't establishing.
  - *On ethernet interface of the router it is possible to switch auto negotiation off and set a rate and duplex by hand.*
- DynDNS not function.
  - *In private APN not functional.*
  - *If the same IP address is recorded in your canonic name as dynamically assign address, it means that the operator is using NAT or firewall.*
  - *NAT is possible to verify by the help of the ping on address of your server with static IP address and by the help of the router address verify and address in ping.*
  - *Firewall is possible to verify, for example by remote access on web interface.*
  - *The operator doesn't give out address DNS servers and without DNS server's it is impossible to connect to server dyndns.org. In log system will be this message:*
    - DynDNS daemon started,
    - Error resolving hostname: no such file or directory,
    - Connect to DynDNS server failed.
- IPSec tunnel is establishing but communication doesn't function.
  - *Probably it is badly set up route conditionals of connected equipment or it is bad set up GW.*
- FTP doesn't function.
  - *Router doesn't support the active FTP mode, supports the passive mode only.*
- RS232 doesn't function.
  - *It is necessary to verify present the expansion port RS232.*
  - *Verify present the expansion port RS232 in router configuration in menu „external port", or verify connection locally by the help Telnet-Hyper terminal.*
- L2TP or IPSec isn't establishing.
  - *Verify the reason in the log system.*
- I switched the router to offline mode by the SMS message, but the router is in online mode after restart.
  - *Control SMS message doesn't change the router configuration. If the router is switched to offline mode by the SMS message the router will be in this mode up to next restart. This behaviour is the same for next all control SMS messages.*

11 Customers support

Up to date information about the product is on website:

http://www.wieland-electric.com/
http://eshop.wieland-electric.com/

Upkeep-advices:

NOTICE

The SIM-card must be handled carefully as with a credit card. Do not bend, do not scratch onthis and do not expose to static electricity.
During cleaning of the router do not use aggressive chemicals, solvents and abrasive cleaners!

Admission:
Wieland Electric hereby declares that the router narrated in this user's guide fits all basic demands of directive 1999/5/EC (R&TTE).

12 List of figures

13 List of tables

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