



Stationary GSM modem

900/1800 MHz (4 SIM, 1 Ethernet)

Data sheet

Device identification number

1. General Information

Stationary GSM modem 900/1800 MHz (4 SIM, 1 Ethernet) (hereinafter referred to as the device) is designed for connection of four GSM modems to different software via local network or Internet. The device supports secured VPN connection.

2. Manufacturer

RITM Company
195248,
Energetikov avenue, building 30, block 8,
St Petersburg, Russia
Tel.: +7 911 795 02 02
www.ritm.ru/en world@ritm.ru

3. Package Contents

Stationary GSM modem 900/1800 MHz (4 SIM, 1 Ethernet)	1 pc
Fuse 3.15A	1 pc
Enclosure bracket V15, white	1 pc
GSM antenna	4 pcs
SanDisk micro-SD memory card, class 4, 4 Gb with OS	1 pc
Power cable 220V 50Hz	1 pc
Bolt and concrete insert	4 pcs
Data sheet	1 pc
Package	1 pc

4. Technical Specifications

Specification	Value
Ethernet communication channels	100BASE-TX
2G Standard, MHz	850/900/1800/1900
Communication channels in the GSM network for data transmission	CSD, SMS, GPRS
GSM antenna	External passive (SMA)
Number of SIM-cards installable, pcs	4 Micro-SIM
VPN support ¹	+
Ethernet connectors, pc	1
External indicators, pc	8
Main power source voltage, V	220
Backup power source voltage, V	12±2
Device energy consumption, mA, max	100
Dimensions, mm	47×150×150
Weight, g	200
Operating temperature range, °C	-20...+85

¹ Available when using the file "vpn.json" (see section 7).

5. Designation of Elements

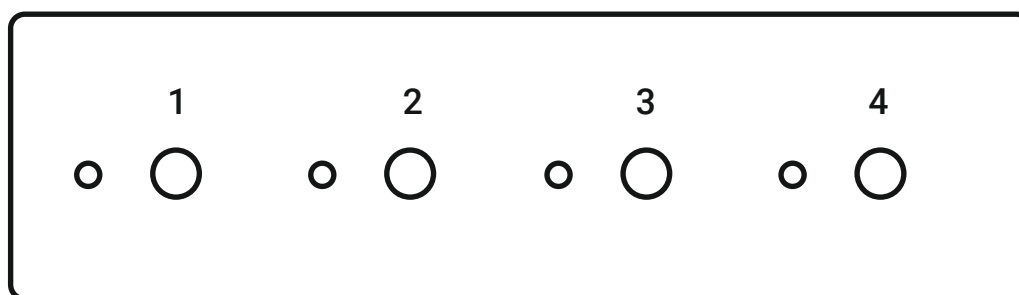


Figure 1. Device front side

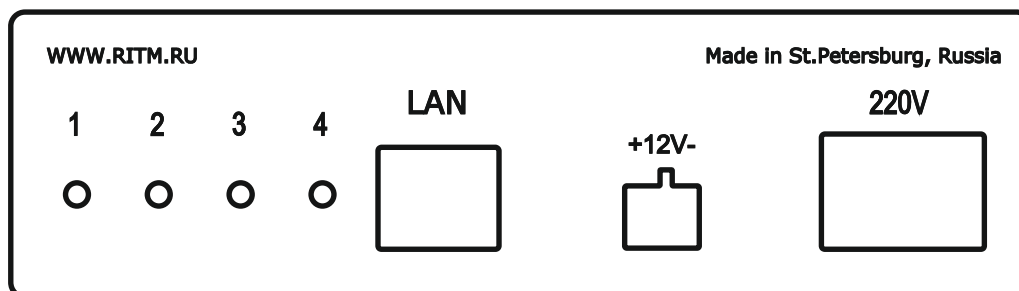


Figure 2. Device rear side

Element	Designation
1...4 (on the rear side)	Data transmission process indicators.
LAN	Connector for connection via Ethernet 100BASE-TX channel.
+12V-	Backup power source connector (12 V).
220V	Main power source connector (220 V).
Connectors 1...4 (on the front side)	SMA-connectors for external GSM-antenna connection.
1...4 (on the front side)	Modems operating indicators.

6. Visual Indication

Indicator	State	Designation
Standby mode		
1...4 on the rear side (data transmission process indicators)	Always on	The port is used.
	Blinking	Packet transmission.
	Off	The port is not used.
1...4 on the front side (modems operating indicators)	Blinks very frequently	The device is connected to the monitoring server.
	Blinks frequently	Registration in GSM network.
	Blinks slowly	The device modem has successfully registered in the GSM network.
	Off	The modem is switched off.
Boot (starting) mode		
Data transmission process indicator #4	On	L'alimentazione è attivata. Il dispositivo è a partire.
Test mode		
1...4 on the front side (modems operating indicators)	Blinking	Il test del modem. Il modem è in condizione di lavoro.
	Off	Il test del modem. Il modem è difettoso.

7. Getting Ready for Operation

1. Prior to inserting a SIM-card into the modem, insert it into a mobile phone. Turn off the PIN code request feature, check availability of data links that are proposed to be used, check if the SIM card account balance is positive. Repeat that procedure for each SIM-card.
2. Insert SIM cards into the device.



Install and replace SIM-cards only when the device power is off!

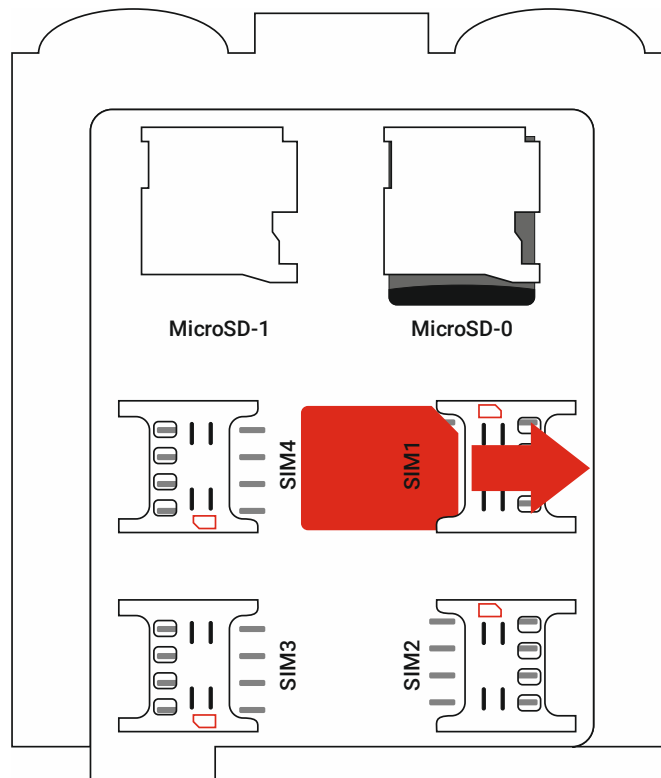


Figure 3. Elements under the cover

Element	Designation
SIM1...4	SIM card holder.
MicroSD-0	OS MicroSD holder. Attention! Do not remove the card from the holder and do not write anything on it!
MicroSD-1	MicroSD holder for configure files.



The correct way to install SIM cards is shown on the SIM-box holder.

3. Connect the device to a local network.
4. Connect the mains power cable to the 220V connector and a 12V backup power source to the +12V- connector.



When the device is starting, data transmission process indicator #4 is on. After starting, the device goes into modems test mode. After testing, the device enters the working (standby) mode.

5. To establish a connection you need to know the device IP-address and the connection port.

1. Each modem has the corresponding port and the device indicator:

Modem No.1	Port 10000	Indicator 1
Modem No.2	Port 10001	Indicator 2
Modem No.3	Port 10002	Indicator 3
Modem No.4	Port 10003	Indicator 4

6. Check the normal operation of the device:

- Determine the IP-address assigned by the router/specified in the file "network.json"². Perform the device identification via MAC-address. The MAC-address is indicated on the device box and at the first page of this data sheet.
- In the command line (Win+R→Cmd) run the following command:

```
telnet IP_assigned_to_the_device 10000
```



For example, telnet 192.168.1.33 10000.

- This starts the remote control mode.
- Run the modem control command. For example, check the registration state of the modem in the network using the command:

```
AT+CREG=?
```

The actual state of the modem registration in the GSM-network is sent in response.

7. For the device operation in the VPN network, you must place the file "vpn.json"³ with the correct connection settings to an external storage device installed in a slot MicroSD-1 (see Fig. 3).

8. Device operating principles

1. After turning on the power the device receives network settings and IP-address from the DHCP-service or uses settings specified in the file "network.json"⁴.
2. Modem is waiting for incoming connections via 10000-10003 ports at IP address, received from DHCP/specified in the file "network.json".
3. Data sent to ports 10000-10003 is transmitted to the corresponding GSM-modems (see section 5) and transferred via GSM-network.
4. Data received by GSM-modems is sent to the corresponding ports.
5. You can access the device from any point of the local network and via VPN.

9. Network Settings Manual Configuring

To configure the network settings (IP address, gateway, mask, DNS) you must place the file "network.json"⁵ to an external storage device installed in a slot MicroSD-1 (see Fig. 3). Before doing this, open the file with any text editor (e.g., Notepad) and enter the parameters in accordance with the configuration of your network.

If necessary, refine the network settings from your system administrator.

The "network.json" file is described in section 10.

² See sections 8 and 9.

³ <https://goo.gl/nUfh7B>

⁴ See section 9.

⁵ <https://goo.gl/gFhiwJ>

10. The "network.json" Structure

```
{
  "eth0":{
    "ip" : "192.168.13.91",
    "mask" : "255.255.255.0",
    "gate" : "192.168.13.1",
    "dns" : "8.8.8.8 8.8.4.4"
  }
}
```

The "network.json" file contains general parameters required for connecting the device to the local network:

Option	Value
ip	The device IP address
mask	The subnet mask
gate	The default gateway
dns	The DNS addresses (entered using "space")

11. Maintenance and Safety Measures

At least once per year check the integrity of leads and cables, connection locations, and fastening security.

All installation and maintenance activities applied to the device should be performed by duly qualified personnel.

12. Transportation and Storage

The device should be properly packed and transported in roofed vehicles. Storage premises should be free of current-conducting dust, acid and alkaline fumes, corrosive gases and gases harmful to insulation.

13. Manufacturer's Warranties

The manufacturer guarantees that the device complies to requirements of the technical specifications provided to the client, ensures compliances to conditions of transportation, storage, installation and operation.

Although **the warranty period** is 12 months from the commissioning date, it may not exceed 18 months from the production date.

The warranty storage period is 6 months from the production date.



Removing the SD-card with the operating system leads to early termination of the warranty!

The manufacturer shall not be responsible for quality of data links provided by GSM operators.

The manufacturer reserves the right for modification of the device in any way that does not degrade its functional characteristics without prior notice.

14. Information on Claims

In case of a device failure or defect during the warranty period, please fill in a malfunction report specifying the dates of issue and commissioning of the device and nature of the defect and submit it to the manufacturer.