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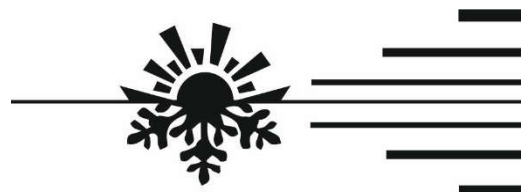
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GSM-SIMCOM

Modem

Operation Manual

ADVR.199.00.00.000 RE



Scan the QR code to download the Autoterm Control application.

1. Purpose

The GSM-SIMCOM modem (hereinafter “modem”) is designed for use with BINAR-5S liquid pre-heaters (hereinafter “product”).

The modem is used for manual and automatic control of the product and for sending data to a phone using SMS messages.

2. Specifications

No.	Name	Characteristics
1	Voltage (V): upper limit - lower limit -	32 10
2	Operating temperature range	from -40°C to +85°C
3	Dimensions (excluding antenna and cable)	(95 x 48 x 38) MM

3. Packing

- modem (1);
- modem connection harness (2);
- antenna (3);
- operation manual.

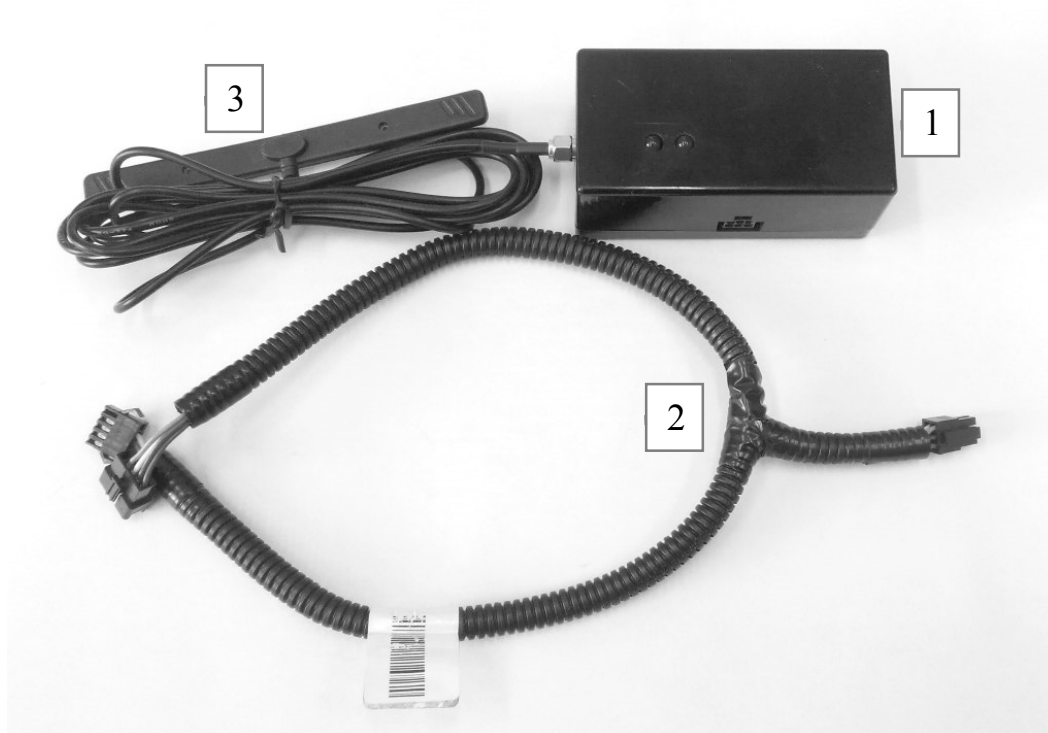


Fig.1 – Content of the box.

4. Modem Description

The modem has the following connectors:

- 6-pin cable connector (1);
- antenna connector (2);
- SIM-card holder (3);
- LED's (4).

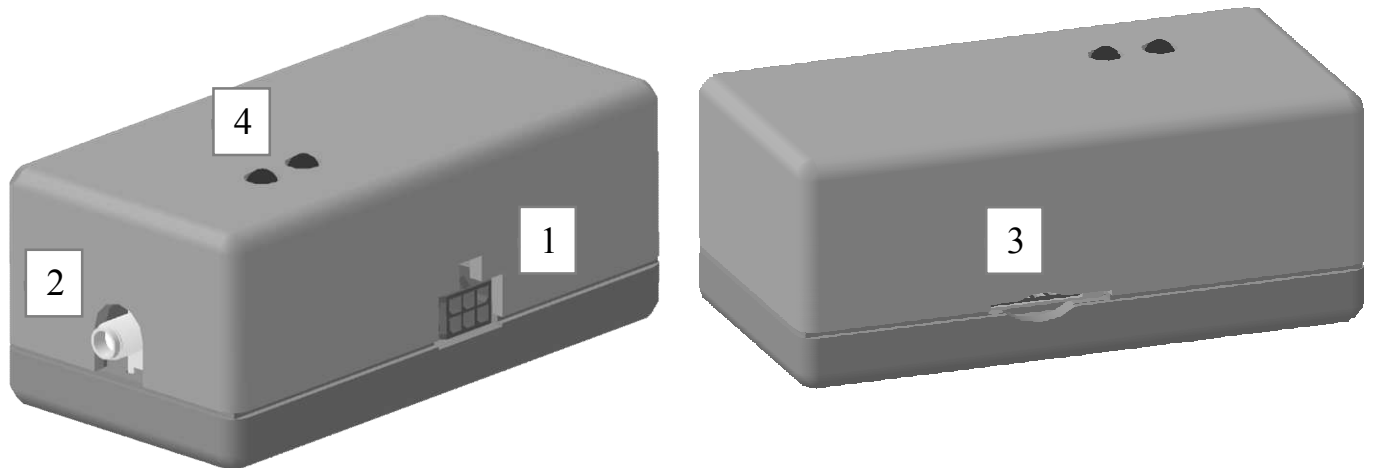


Fig.2 – Modem.

4.1 Modem Connection

To set the modem up, insert the SIM card, connect the antenna, connect the harness to the modem and place the modem in a clean location. Mount the antenna in an unobstructed location (for example, on the windshield).

Insert the SIM card in the slot with its contacts facing down, push carefully until a click. Then it is secured in its position. To remove the SIM card from the holder, press on the card using a flat object to release it and then remove it.

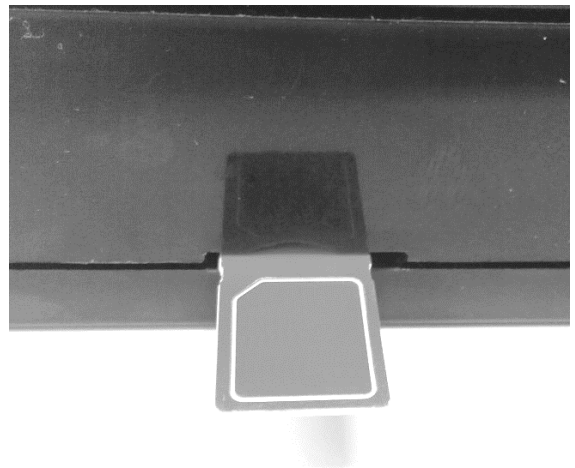


Fig.3 – Insertion of the SIM card.

To connect the cable to the modem, push it in the connector until a click, so the cable connector is fixed in place.

To disconnect the cable, depress the connector latch.

To connect the modem to the product, disconnect the control panel from the product harness and connect the harness to the modem as shown in Fig.4.

After connecting the modem to the power harness (modem power supply), the LED closest to the antenna connector starts to glow. The second LED will start to blink (connection and data exchange).

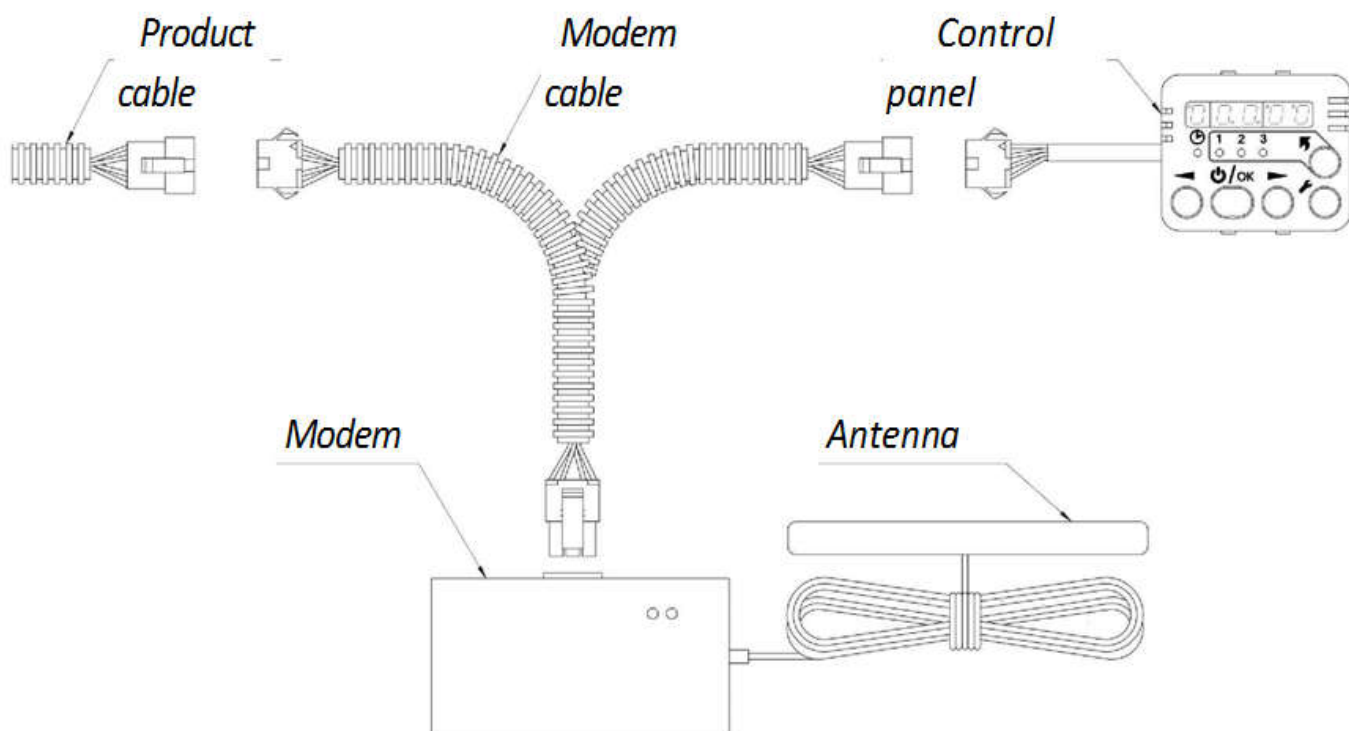


Fig.4 – Modem connections.

4.2 Preparation of SIM Card

To control the pre-heater by means of SMS-commands, phone numbers of SIM cards from which you plan to maintain control should be added to the contacts of the modem SIM card.

Insert the SIM card in the modem and turn on the power supply. When the connection is established (the LED indicating connection to the network is blinking slowly), you can add trusted numbers.

Attention! The first phone number to add is that of the Administrator. All further actions with trusted numbers are made only from this number.

Attention! Commands must be written in lowercase.

Adding the Administrator phone number:

SMS text: adminxxxxxxxxxxxx

where xxxxxxxxxxxxxx – the administrator phone number. This SMS-command should be sent from the administrator's phone.

Example: admin+71234567891

If the administrator's phone number is successfully entered, the following message is returned:

Admin: xxxxxxxxxxxx

where xxxxxxxxxxxx – the administrator's phone number .

Adding a trusted phone number:

SMS text: addxxxxxxxxxxx

xxxxxxxxxxx – trusted phone number.

Example: add+71234567892

The return message is as follows:

1. +71234567891
2. +71234567892

The first phone number on the list is the administrator's number. The rest (from 2 to 5) are trusted user numbers.

Viewing all trusted phone numbers

SMS text: list

The return message is as follows:

1. +71234567891
2. +71234567892

Removing a trusted number:

SMS text: delx

x = 2..5 – the sequential number of a trusted number in the list.

Example: del2

The return message is as follows:

1. +71234567891

Removing the administrator number (del1) with this command is not possible.

Removing all the numbers (including the Administrator's number)

SMS text: delall

The return message is as follows:

All the trusted numbers have been deleted.

After running this command, the administrator's number needs to be entered again.

There is also a possibility of entering trusted numbers by telephone. For that you can insert the SIM card of the modem in the phone and enter trusted numbers under the names of +1, +2, +3, +4, +5. Remember, the number 'one' should be the administrator's number, and all further actions with trusted numbers using SMS-commands will only be made from this number.

Telephone numbers are written in the following form:
(country code) (area code or access to mobile operator) (phone number).

Example of a number for Russia: +71231234567

Example of working with trusted numbers using SMS-commands:

Direction	SMS text	Description
To modem	admin+71234567891	Adding administrator number
Modem response	The Administrator is assigned.	
To modem	add+71234567892	Adding trusted number
Modem response	1. +71234567891 2. +71234567892	
To modem	add+71234567893	Adding trusted number
Modem response	1. +71234567891 2. +71234567892 3. +71234567893	
To modem	add+71234567894	Adding trusted number
Modem response	1. +71234567891 2. +71234567892 3. +71234567893 4. +71234567894	
To modem	list	Viewing the list of trusted numbers
Modem response	1. +71234567891 2. +71234567892 3. +71234567893 4. +71234567894	
To modem	del2	Removing trusted number No. 2
Modem response	1. +71234567891 3. +71234567893 4. +71234567894	

5. Controlling the Product.

Product can be controlled in three ways:

- 1) by means of a telephone call;
- 2) by means of a mobile application;
- 3) by means of SMS messages (dialed manually).

6. Controlling the Product by Means of a Telephone Call

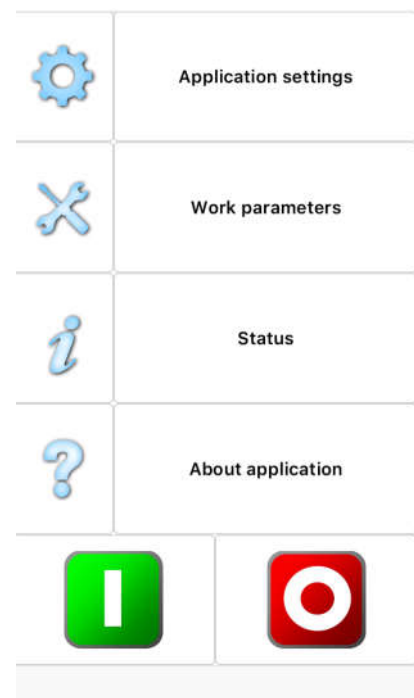
The product can be controlled only from a trusted phone number. When you call the modem number:

- If the product is stopped, the modem will respond with three beeps and will start the product.
- If the product is running, the modem will respond with two beeps and will stop the product.

7. Controlling the Product by Means of a Mobile Application

The product can be controlled by means of an application installed on a mobile phone with Android or iOS operating system. To do this, you need to download the app Autoterm Control from Play Market or from AppStore and install it on your phone.

After installation, click the Autoterm Control application to start it.



Autoterm Control settings:

- adding the product¹;
- ON/OFF SMS notifications;
- ON/OFF SMS malfunction notifications;
- confirm sending SMS;
- call notification²;
- language selection;
- about the product³.



Operation settings:

- set operation time of the pre-heater⁴;
- ON/OFF cabin heater;
- set cabin heater ON temperature;
- ON/OFF pump start-up at engine start;
- set temperature of pre-heater transition to standby mode;
- ON/OFF product control from the alarm system remote;
- ON/OFF auxiliary heater mode.



Requesting the current status of the product.



Account balance request on the modem card number.



Product start-up (if SMS notification is enabled, an SMS-message is returned confirming the start-up of the product).



Product shutdown (if SMS notification is enabled, an SMS-message is returned confirming the shutdown of the product).

- 1 – Telephone numbers are written in the following form:
(country code) (area code or access to mobile operator) (phone number).
Example of a number for Russia: +71231234567.
- 2 – When a voice call to the modem number is made, an SMS status notification is returned.
- 3 – Information on the serial number of the pre-heater, the software version of the electronic unit and modem software version are returned.
- 4 – Operation time can be set even when the product is running.

8. Controlling the Product by Means of SMS-Commands Sent from Mobile Phone

If your phone does not support installation of the Autoterm Control application, the product can be controlled by means of SMS-commands typed in manually. SMS-commands should be sent to the number of the SIM card installed in the modem.

A command consists of the start character (*), command number, command separator character and parameters (point), one or more parameters, separated by commas, and the character of the end of command (#).

Command number and parameters may consist only of numbers and English letters. Characters are case sensitive. That is the parameters P and p are different parameters. Using other characters is not allowed and commands with such characters are ignored.

Absence of one or more command parameters is allowed.

Example of a command: *1 . P1E1T40#

8.1 Description of Commands for Product BINAR-5S:

Start-up

SMS text: *1 . PΠ₁EΠ₂TΠ₃#

Description of parameters:

P – pre-heater sending confirmation of successful receipt of the command.

1 – send confirmation,

0 – do not send confirmation.

Default 1.

E – preheater sending error message in case of a failure in operation.

1 – send error message,

0 – do not send error message.

Default 1.

T – operating time in minutes. Time period can be set from 20 to 120 min.

Default 40 minutes.

Examples of the start-up command:

*1 . P1E1T60# – Start-up with confirmation of receipt, notification of a failure, operating time of 60 minutes.

Example of SMS confirmation of receipt of the start-up command:

Start confirmation
Mode: Ignition
U= 12,5V
T= 23C
Work Time 01:15

Example of SMS notification of a failure:

Information
Mode: Blowing
U= 12,5V
T= 23C
Work Time 00:49
Failure: 17

Operating parameters

This command is used to change the preheater parameters during operation.

SMS text: *2 . **P**₁**E**₂**T**₃#

Description of parameters:

P – preheater sending confirmation of successful receipt of the command.

1 – send confirmation,

0 – do not send confirmation.

Default 1.

E – preheater sending error message in case of a failure in operation.

1 – send error message,

0 – do not send error message.

Default 1.

T – operating time in minutes. Time period can be set from 20 to 120 min.

Default 40 minutes.

Examples of the command:

*2 . **P0E1T60**# – Change of parameters without confirmation of receipt, with a notification of failure, operating time of 60 minutes:

Example of return SMS:

Parameters.

Mode: Blowing

U= 12,5V

T= 23C

Work Time 00:49

Shutdown

SMS text: *3.P₁#

Description of parameters:

P – pre-heater sending confirmation of successful receipt of the command.

1 – send confirmation,

0 – do not send confirmation.

Default 1.

Example of SMS confirmation:

Stop confirmation.

Mode: Blowing

U= 12,5V

T= 23C

Work Time 00:49

Failure: 17

Information request

SMS text: *4#

Upon receipt of this command response is sent in any case.

Example SMS:

Information

Mode: Ignition

U= 11,2V

T= 02C

Work Time 00:02

Setting start-up time

SMS text: *5.P₁E₂T₃M₄#

Description of parameters:

P – pre-heater sending confirmation of successful receipt of the command.

1 – send confirmation,

0 – do not send confirmation.

Default 1.

E – preheater sending error message in case of a failure in operation.

1 – send error message,

0 – do not send error message.

Default 1.

T – operating time in minutes. Time period can be set from 20 to 120 min.

Default 40 minutes.

M – Delay in minutes after which the start of the preheater will be performed.

Examples of start-up commands: Text of SMS confirmation:

*5.P1E1T60M78#

Deferred start confirmation.

Cancelling deferred start-up

SMS text: *5#

Text of return SMS:

Deferred start has been canceled.

Information request on deferred start-up

SMS text: *6#

Example text of return SMS:

Start in 1 days 15 hours 26 minutes.

Setting up preheater operating parameters

SMS text: *7.P₁t₂W₃R₄J₅M₆N₇F₈r₉s₁₀#

Description of parameters:

- P** – preheater sending confirmation of successful receipt of the command.
1 – send confirmation,
0 – do not send confirmation.
Default 1.
- t** – transition temperature to standby mode when operating as a preheater
[20..95]°C. Default 88°C.
- W** – auxiliary heater mode.
0 – auxiliary heater mode turned off,
2 – automatic mode of auxiliary heater turned on,
3 – manual mode of auxiliary heater turned on.
- R** – relay ON temperature [30..60]°C. Default 40°C.
- J** – pump control signal with PWM / without PWM
1 – with PWM,
0 – without PWM.
- M** – pump operating conditions.
0 – in normal mode
1 – in normal mode + always turns on when the vehicle engine is running.
- N** – transition temperature to standby mode when operating as auxiliary heater [80..95]°C.
- F** – relay control of the cabin heater.
0 – operating in automatic mode.
1 – turned off.
- r** – pump operation with auxiliary heater in standby mode:
0 – in normal mode,
1 – turned off.
- s** – alarm channel control:
0 – in normal mode,
1 – turned off.

Examples of return SMS messages.

Example 1:

Settings: Tw=46C W=A Tr=49C P=No PWM PC=P Sp=OFF Th=95C R=OFF S=ON		<ul style="list-style-type: none"> – transition temperature to standby mode (heater) 46°C. – automatic mode of auxiliary heater turned on. – cabin heater relay ON temperature 49°C. – pump control signal without PWM. – pump operation only when the heater is running. – pump OFF with auxiliary heater in standby mode – transition temperature to standby mode (auxiliary heater) 95°C. – relay control signal of the cabin heater OFF. – alarm channel ON.
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Example 2:

Settings: Tw=88C W=M Tr=40C P=PWM PC=P+M Sp=ON Th=95C R=ON S=OFF		<ul style="list-style-type: none"> – transition temperature to standby mode (heater) 88°C. – manual mode of auxiliary heater turned on. – cabin heater relay ON temperature 40°C. – pump control signal with PWM. – pump operation when the heater and engine are running. – pump ON with auxiliary heater in standby mode. – transition temperature to standby mode (auxiliary heater) 95°C. – relay control signal of the cabin heater ON. – alarm channel OFF.
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Requesting operating parameters of the heater

SMS text: *7#

Upon receipt of this command response is sent in any case.

Text of return SMS:

Settings: Tw=46C W=OFF Tr=49C P=No PWM PC=P Sp=ON Th=80C R=OFF S=ON		<ul style="list-style-type: none"> – transition temperature to standby mode (heater) 46°C. – auxiliary heater mode turned off. – cabin heater relay ON temperature 49°C. – pump control signal without PWM. – pump operation only when the heater is running. – pump ON with auxiliary heater in standby mode. – transition temperature to standby mode (auxiliary heater) 80°C. – relay control signal of the cabin heater OFF. – alarm channel ON.
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Attention! Due to the limited number of characters, in SMS messages in Russian, parameters that are turned off are not displayed. Such parameters are indicated in the table by the "---" symbol.

Resetting the parameters of the heater (factory settings)

SMS text: *8#

Upon receipt of this command response is sent in any case.

Text of return SMS:

Settings :		
Tw=88C		– transition temperature to standby mode (heater) 88°C.
W=OFF		– auxiliary heater mode turned off.
Tr=40C		– cabin heater relay ON temperature 40°C.
P=No PWM		– pump control signal without PWM.
PC=P		– pump operation only when the heater is running.
Sp=ON		– pump ON with auxiliary heater in standby mode.
Th=95C		– transition temperature to standby mode (auxiliary heater) 95°C.
R=ON		– relay control signal of the cabin heater ON.
S=ON		– alarm channel ON.

Requesting heater serial number and software version

SMS text: *9#

In response to this command, an SMS message with the heater serial number and the version of the software of the electronic unit and software version of the modem is sent.

Example of return SMS:

Serial:0660000000.

CU Ver:6.1.0.0.

Modem Ver:1.0.1.2.

Attention! Due to the limited number of characters, in SMS messages in Russian, parameters that are turned off are not displayed. Such parameters are indicated in the table by the "---" symbol.

Настройка уведомлений.

SMS text: *15.P₁E₂C₃L₄#

Description of parameters:

P – preheater sending confirmation of successful receipt of the command.

1 – send confirmation,

0 – do not send confirmation.

Default 1.

E – preheater sending error message in case of a failure in operation.

1 – send error message,

0 – do not send error message.

Default 1.

C – preheater sending a message about information after the incoming call is completed

1 – send message,

0 – do not send message.

Default 0.

L – language selection for SMS

1 – Russian,

0 – English.

Example of return SMS:

Answer the incoming call ON. Language is English.

Requesting the balance

SMS text: *16#

Return SMS is received depending on the modem response on balance.

9. Overall Testing of Modem after Installation

After the installation and connection of the modem to the product, the modem is tested in the following manner:

- Check that the red LED is lit (closest to the antenna connector);
- Request the status of the product.

If an SMS response is returned after the request, the modem is installed correctly.

If the LED is not lit, check the wires and connectors of the modem harness.

The second LED flashes - modem with a SIM card communicates with the operator.

10. Transportation and Storage

Packed modem can be transported by any means of transport, provided the protection of products and packaging from precipitation is in accordance with storage conditions 2 (C) GOST 15150-69, and from the effects of mechanical impact per conditions of transportation GOST 23216 -78.

Transportation and storage conditions of the modem with regard to climatic factors must comply with the provisions of 2 (C) GOST 15150-69.

11. Certificate of Sale

Product	<u>Modem SIMCOM</u>
Manufacturer	<u>ADVERS OOO</u>
Date of sale	_____
Purchaser	_____
Seller	_____

Stamp

12. Warranty

12.1 The warranty period is 12 months from the date of sale of the product, on condition that the user complies with handling, transportation and storage requirements and as provided by the operation manual.

12.2 In the absence of the stamp of the seller organization with the date of sale the warranty period is calculated from the date of manufacture of the modem.

12.3 When a fault occurs during the warranty period due to the fault of the manufacturer, the modem is replaced by the manufacturer.

12.4 The manufacturer shall not accept claims on incompleteness of delivery or mechanical damage after the sale of the product.

12.5 This warranty does not cover defects resulting from:

- Force majeure (lightning, fire, flood, flooding, harmful voltage fluctuations, accident);
- Non-compliance with the rules of installation, operation, storage and transportation set forth in the operating instructions;
- Use of modem for other purposes.

12.6 In case the operation manual for the modem is lost, the user is deprived of the right to warranty service.