

**Limited liability company
«Santel-Navigatsiya»**

**Accident Emergency Call Device
(AECD)**

7.22

**Instruction manual special on vehicle
parameters configuration using a
MicroUSB connector
(ERA_COMM program)**

MPCB.464514.007-22 ИС

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Introduction

This manual is intended for personnel configuring the Accident Emergency Call Device (AECD) 7.22, hereinafter referred to as Device, using the «ERA_COMM» program, hereinafter referred to as Program, connecting to the Device via a MicroUSB cable.

The instruction shows how to configure the Device using the «ERA_COMM» software version 3606 or higher.

For «ERA_COMM» software versions other than the one specified above, the interface and software functions may slightly differ.

Additionally, please address to the User Manual MPCB.464514.007-22 UM.

1 Preparing the Device for Installation

After installing the Device on the vehicle, it is set up using the ERA_COMM RU.43489690.00501-04 program produced by Santel-Navigatsiya LLC.

The distribution kit of the ERA_COMM configuration program can be obtained from the technical support service by contacting support@santel-navi.ru.

1.1 Hardware Requirements

To configure the Device, you need the following equipment:

- personal computer (PC);
- MicroUSB cable.

1.2 PC Requirements

The personal computer must meet the following requirements:

- processor class not less than Intel® Pentium® 4 or AMD ATHLON64;
- processor frequency not less than 1.5 GHz;
- RAM, at least 512 MB;
- hard disk, at least 50 GB;
- USB port;
- Windows 7/10 operating system.

2 Installation and Removal

The Device is installed in workshops that have declared compliance with the qualifications required for performing work related to the installation of emergency call equipment and making a test call to the "ERA-GLONASS" State Automated Information System.

When connecting the "Mute" signal, maximum current switched by the "Mute-" contact is 100 mA at nominal voltage of 12 V;

3 Adjustment, Integrating and Testing

3.1 Installing and Setting up the Program

3.1.1 Installing the Program

To install the Program, you need to:

- run the setup_era_comm_(XX).exe file (where XX is the software version which may vary);
- specify the folder with the location of executable program files, by default the program is installed in the folder C:\Program Files (x86)\ERA_COMM;
- leave the remaining parameters unchanged.

3.1.2 Installing Drivers

To use the MicroUSB cable with the Program, you need to install the drivers on your PC.

To install the drivers:

- run SIM7X00DriverInstall_V2.0_mtu_cn.exe, which is located by default in the C:\Program Files (x86)\ERA_COMM\drivers\uveos_7.18 folder;
- install drivers SIM7X00DriverInstall_V2.0_mtu_cn;
- restart the computer;
- supply power to the Device (from the on-board electric system if the Device has been installed, or from a 12 V external power source);
- wait until the Device turns on (the Device button indicator will blink red twice);
- connect the Device to the PC via a MicroUSB cable.

If the drivers are installed correctly, the names of the SimTech ports will be displayed in the Windows Device Manager, under COM and LPT ports (Figure 1).

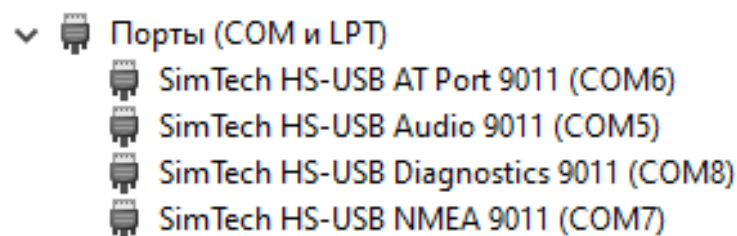


Figure 1

3.1.3 Setting up the Program

To set up the Program:

- run ERA_COMM.exe;
- open Settings (Figure 2), in the main window (Figure 4);

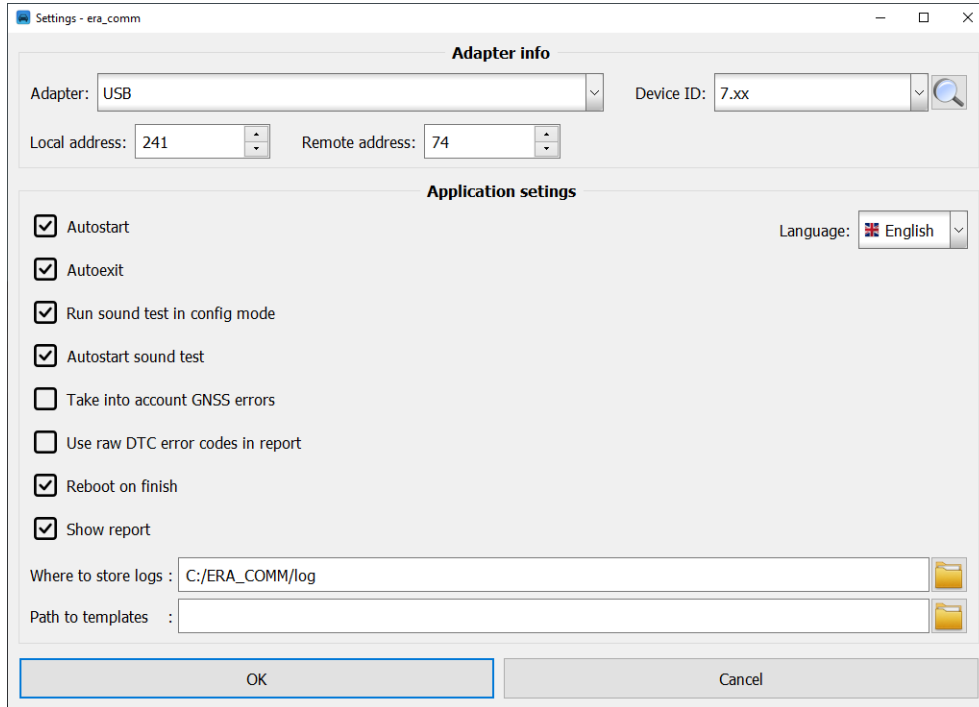


Figure 2 – Program settings window

- specify the parameter values on the settings page in accordance with Table 1;

Table 1 - Settings of the ERA_COMM program

Parameter Name	Parameter Description
Adapter	
Adapter	For MicroUSB cable: USB
Device ID	For MicroUSB cable: Select the 7.XX identifier from the drop-down list.
Local address	Application bus address (default is 241 (0xF1)).
Remote address	Device address on the bus (default is 74 (0x4A)).
Application settings	
Autostart	Configuration process launch mode. When further configuring the Device through the graphical interface of the Program, «Autostart» will be performed regardless of the checkbox. This parameter can be the following: The box is checked – programming will start automatically immediately after running the .bat file; The box is unchecked - to start programming, press the Start button. Recommended value: The box is checked.

Continuing Table 1 - Settings of the ERA_COMM program

Parameter Name	Parameter Description
Application settings	
Autoexit	<p>Closing the program can be set as following:</p> <p>The box is checked - after the operation is completed, the program window will automatically close;</p> <p>The box is unchecked - after the tests are completed, the user must close the program window.</p> <p>Recommended value: The box is checked.</p>
Sound test during configuration	<p>You can set the following conditions for the sound test during configuration:</p> <p>The box is checked - the sound test starts in the process of configuration;</p> <p>The box is unchecked – there is no sound test during configuration.</p> <p>Recommended value: The box is checked.</p>
Autostart sound test	<p>The condition for performing a sound test can take the following values:</p> <p>The box is checked - the sound test starts automatically, no operator actions are required to start the test mode and confirm the test result;</p> <p>The box is unchecked - the operator's participation is required to start the sound test and confirm the test result. The operator presses the appropriate buttons («Start test», «Sound test passed», «Error») in the program window.</p> <p>Recommended value: The box is checked.</p>
Take into account GNSS errors	<p>Conditions for accounting for GPS /GLONASS path errors can take the following values:</p> <p>The box is checked - errors are taken into account, and when they occur, the program closes and an error message is displayed;</p> <p>The box is unchecked - errors are not taken into account.</p> <p>Recommended value The box is unchecked.</p>
Display DTC error codes instead of description	<p>Type of DTC errors output in the program execution report, can be set to the following values:</p> <p>The box is checked - DTC errors are displayed as an error code (example: 0x9A6000xx);</p> <p>The box is unchecked - DTC errors are displayed in text format (example: mic_connection_failure).</p> <p>Recommended value The box is unchecked.</p>
Reboot on finish	<p>The condition for rebooting the Device after successfully saving the parameters can take the following values:</p> <p>The box is checked – reboot the Device;</p> <p>The box is unchecked - do not reboot the Device.</p> <p>Recommended value: The box is checked.</p>
Show report	<p>Displaying the report on program execution, can take the following values:</p> <p>The box is checked - display the report before the program termination;</p> <p>The box is unchecked - close the program without displaying the report.</p> <p>Recommended value: The box is checked.</p>

Continuing Table 1 - Settings of the ERA_COMM program

Parameter Name	Parameter Description
Application settings	
Language	Program interface language can be set as: «Russian» or «English» Restart the program to implement changes.
Where to store logs	Path to the debug log file, or path to the directory where session logs are saved.
Path to templates	Path to parameter files and audio profiles. Not specified.

— save the settings by pressing OK.

3.1.4 Configuring the Program Closing

After completing the configuration, the program has several closing options depending on the selected parameters.

The list of program parameters affecting its closure is given in Table 2.

Table 2– Program parameters affecting the its closure during configuration

	Parameter name				Result
	Autoexit	Sound test during configuration	Sound Test Autostart	Show report	
Checking the box	Checked	Checked	Checked	Checked	The program closes after clicking the «Close» button in the additional «Result» window that opens
	Checked	Checked	Unchecked	Checked	
	Checked	Unchecked	Unchecked	Checked	
	Checked	Checked	Checked	Unchecked	The program closes automatically
	Checked	Unchecked	Unchecked	Unchecked	
	Checked	Checked	Unchecked	Unchecked	The program closes automatically after confirming the test result
	Unchecked	Checked	Checked	Checked	The program is closed by pressing the Close button in the upper right corner of the Device configuration window
	Unchecked	Checked	Unchecked	Checked	
	Unchecked	Unchecked	Unchecked	Checked	
	Unchecked	Checked	Checked	Unchecked	The program is closed when the additional window «Result» is closed, and the Close button in the upper right corner of the product configuration window is pressed.
	Unchecked	Checked	Unchecked	Unchecked	
	Unchecked	Unchecked	Unchecked	Unchecked	

3.2 Device Preparation

The Device must be connected to the vehicle's on-board network or external power source using a connecting cord. The connection diagram for the connecting cord is shown on Figure 3.

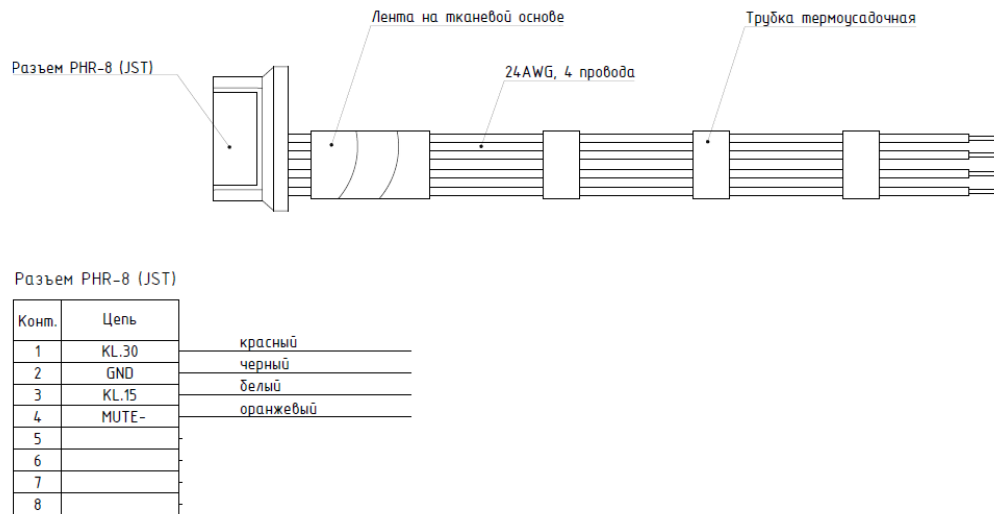


Figure 3

4 Configuring the Device

4.1 Sequence of Actions

IF THE VEHICLE HAS A DISCONNECT SWITCH, IT MUST BE SWITCHED ON (THE BATTERY IS NOT DISCONNECTED). DURING CONFIGURATION OF THE DEVICE, WELDING WORKS ON THE VEHICLE CHASSIS ARE PROHIBITED.

To configure the Device, you need to:

— supply power to the Device (from the on-board electric system if the Device has been installed, or from a 12 V external power source);

When the Device is powered up, it turns on and enters a self-diagnosis state.

The Device indication at the power-up has the following sequence:

- 1) lights up red from 3 to 10 seconds;
- 2) lights up green from 40 to 45 seconds;
- 3) blinks red 2 times.

If the ignition is turned off, the Device will turn off after a while.

If the ignition is turned on, the Device will remain in operating mode.

- wait until the Device turns on (the Device indicator will blink red 2 times);
- connect the MicroUSB cable to the Device and the PC on which the Program is installed;
- run the Program on the PC.

After starting the Program, the main window will open (Figure 4).

Figure 4 – Main window of the Program

The main window contains fields for entering customizable Device parameters, the description of which is given in Table 3.

Parameters with the checked box to the left of the parameter name are saved in the Device memory.

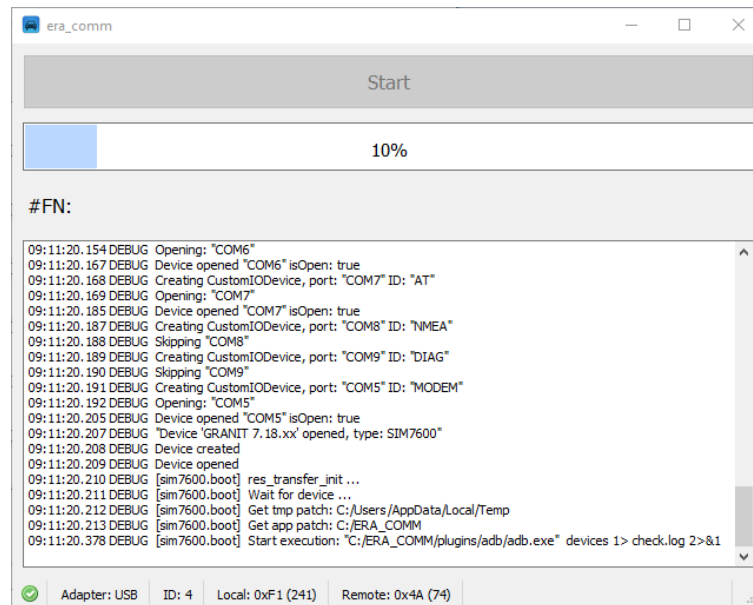
Table 3 – Description of the Device parameters in the graphical interface of the Program

Parameter name	Parameter description
Vehicle profile	The field for selecting a vehicle profile located in the «etc\params» folder, the value is selected from the drop-down list. To prevent the vehicle profile from being saved when configuring the Device, select the «Profile not set» value.
VIN	A 17-digit number of the vehicle to which the Device is installed. The number of characters in the VIN field other than the specified one will result in an error notification.
Color	Vehicle body color.
Vehicle type	The category of the vehicle on which the Device is installed, the value is selected from the drop-down list.
Fuel type	The type of fuel used in the vehicle on which the Device is installed, the value is selected from the list.
Passenger count	The maximum number of passengers allowed to be transported in the vehicle.
Overthrow angle	Leave the box UNCHECKED.
Make 3D positioning	Leave the box UNCHECKED.

Continuing Table 3 – Description of the Device parameters in the graphical interface of the Program

Output directory	The field for entering the file name and the directory where the test report file is located; when the checkbox next to the parameter «Use [VIN] .ini as the report file name» is checked, the file with the test results will be named according to the VIN number.
Write CSV file	The field for entering the file name and the directory for the file after setting the parameters of the Device. A CSV file will be generated for uploading to the JSC Glonass platform. The parameters of each manufactured device will be added to this file.

After entering the required values of the Device parameters, start the configuration process (Figure 5), by pressing the «Program device» button.

**Figure 5 – Device configuration window**

After configuring the Device and saving the main parameters, sound testing with voice prompts will begin.

4.2 Sound Testing

Depending on the Program settings, sound testing starts automatically or under control of the operator.

4.2.1 Autostart Sound Test

If the «Autostart sound test» program parameter box is checked, sound testing will start automatically (no additional action is required from the user).

During sound testing, you need to follow the voice prompts and press the «SOS» button to confirm the selected action.

ATTENTION:

WHEN PLAYING THE VOICE PROMPT: «To enter the service mode, press the button ...», DO NOT PRESS THE SOS BUTTON.

IF YOU PRESS THE SOS BUTTON, YOU GO TO THE «SERVICE» MODE FOR SERVICE WORKS.

IN THE «SERVICE» MODE, AUTOMATIC OPERATION IS DISABLED IN THE EVENT OF ROLLOVER AND CRASH IMPACT OF THE VEHICLE, THE DEVICE STATUS INDICATOR LIGHTS UP GREEN, BLINKS RED 3 TIMES EVERY 2 SECONDS, AND THE REMOTE SPEAKER EMITS AUDIBLE SIGNAL SOUNDS EVERY 7 SECONDS.

TO EXIT THE «SERVICE» MODE, PRESS THE SOS BUTTON. AFTER EXITING THE «SERVICE» MODE, PLEASE CLOSE THE PROGRAM DEPENDING ON ITS PARAMETERS (see p.3.1.4), AND START THE PRODUCT CONFIGURATION AGAIN.

4.2.2 Operator Launching of the Sound Test

If the «Autostart sound test» program parameter box is not checked, an additional «Sound test» window will open before the sound tests (Figure 6), where you need to press the «Start test» button to start the sound testing of the Device.

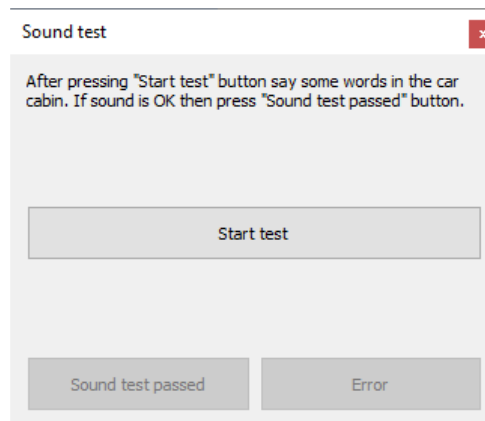


Figure 6 - Additional «Sound test» window

During the sound test, follow the voice prompts and press the «SOS» button to confirm the selected action.

After completing the sound test, in the additional window of the «Sound test» program (Figure 6), click the «Sound test passed» button if the test was performed without errors, or the «Error» button if errors were detected during testing.

ATTENTION:

WHEN PLAYING THE VOICE PROMPT: «To enter the service mode, press the button ...», DO NOT PRESS THE SOS BUTTON.

IF YOU PRESS THE SOS BUTTON, YOU GO TO THE «SERVICE» MODE FOR SERVICE WORKS.

IN THE «SERVICE» MODE, AUTOMATIC OPERATION IS DISABLED IN THE EVENT OF ROLLOVER AND CRASH IMPACT OF THE VEHICLE, THE DEVICE STATUS INDICATOR LIGHTS UP GREEN, BLINKS RED 3 TIMES EVERY 2 SECONDS, AND THE REMOTE SPEAKER EMITS AUDIBLE SIGNAL SOUNDS EVERY 7 SECONDS.

TO EXIT THE «SERVICE» MODE, PRESS THE SOS BUTTON. AFTER EXITING THE «SERVICE» MODE, PLEASE CLOSE THE PROGRAM DEPENDING ON ITS PARAMETERS (see p.3.1.5), AND START THE PRODUCT CONFIGURATION AGAIN.

4.3 Configuration and Sound Test Results

After completing the configuration and sound testing, the process of saving data to the Device memory and generating a report file will be displayed in the central part of the Program window.

Depending on the selected parameters (section 3.1.4), the Program has several options for closing.

When the program parameter «Show report» is enabled, a window with the result of the Device configuration will open on the screen (Figure 7).

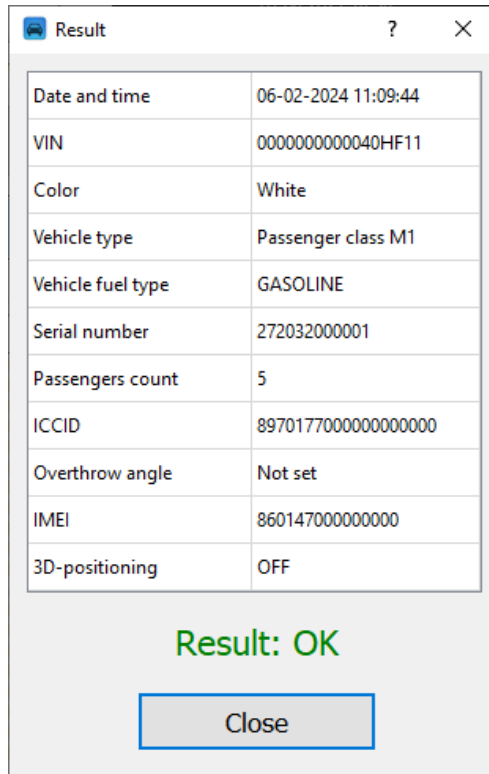


Figure 7 – Window with the results of the Device configuration and sound test

The report file will be located in the folder the path to which is specified during Device configuration, by default it is C:\Program Files\ERA_COMM.

The description of parameters contained in the report file is given in *Appendix 1*.

5 Complex Testing

5.1 Checking the Device functionality on the assembled chassis

To check the functionality of the Device on the assembled chassis, testing is required.

The «Test» mode is intended for checking the functioning of the automobile telecommunication system by the ERA GLONASS system operator.

Entering the «Test» mode is carried out by sequentially pressing the «SOS» button 5 times within 5 seconds. After entering the Service Mode selection state, wait 10 seconds without pressing any other buttons.

In the «Test» mode, the Device status indicator is green and blinks red 3 times every 2 seconds.

To complete the test, please follow the voice prompts (more details in appendix 3).

To complete the test, please follow the voice prompts.

Exit from the «Test» mode is carried out:

- after transferring the MSD (Minimum Set of Data) with the testing results to the system operator;
- when the external power is turned off.

5.2 Optional Testing

5.2.1 Checking the Parameter Values saved in the Device Memory

To read the parameters from the Device memory, do the following:

- supply power to the Device (from the on-board electric system if the Device has been installed, or from a 12 V external power source);
- wait until the Device turns on (the Device indicator will blink red 2 times);
- connect the MicroUSB cable to the Device and the PC on which the Program is installed;
- launch the ERA COMM program on the PC;
- click the «Read parameters» button in the program window;
- wait until the parameters reading is completed and the «Result» window is displayed (Figure 8);
- in the «Result» window, check the values of the saved parameters.

If the parameter values differ from those specified by the user during configuration, the Device should be reconfigured.

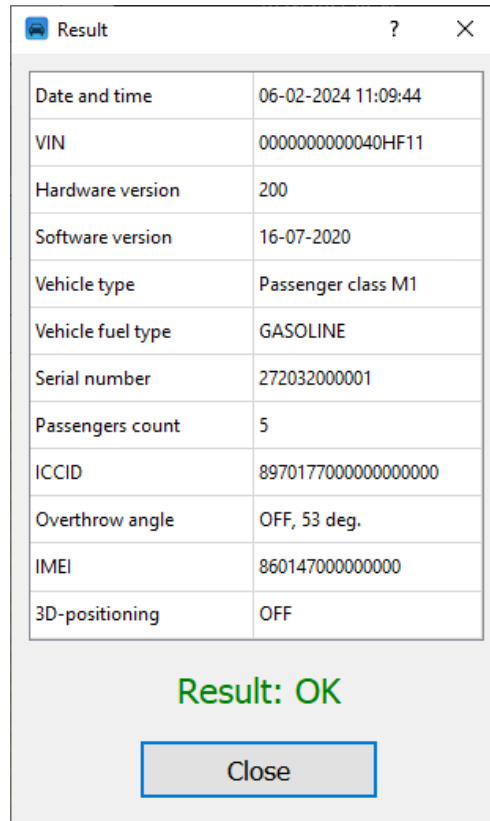


Figure 8 – «Result» window

If there are errors, the «Result» window will display the «DTC Errors» line (Figure 9). To eliminate errors, act in accordance with Table 7.

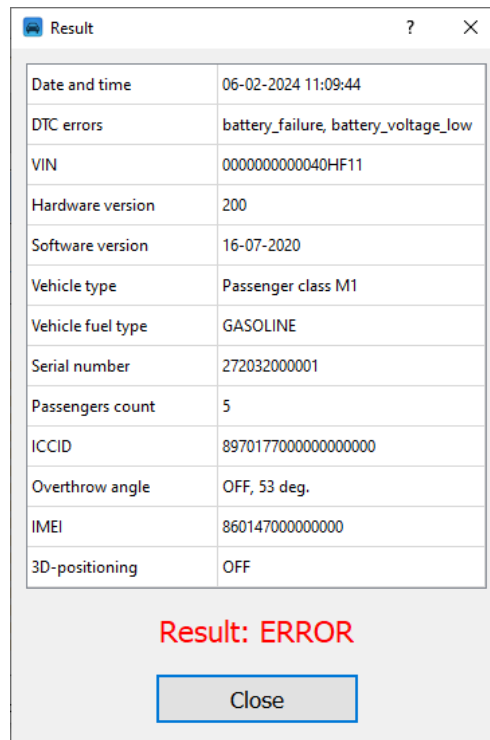


Figure 9 – «Result» window with DTC errors while reading the parameters

After the «Read parameters» operation has been completed, depending on the selected parameters, the Program has several options for closing. Exit from the Program is affected by the parameters "Auto exit" and "Show report" (see 3.1.4).

5.2.2 Testing the Device

To conduct sound testing and read the DTC errors, do the following:

- supply power to the Device (from the on-board electric system if the Device has been installed, or from a 12 V external power source);
- wait until the Device turns on (the Device indicator will blink red 2 times);
- connect the MicroUSB cable to the Device and the PC on which the Program is installed;
- launch the ERA COMM program on the PC;
- click the «Run test» button in the program window;
- wait for the voice testing to start and follow the voice prompts by pressing the «SOS» button to confirm the selected action.

ATTENTION:

WHEN PLAYING THE VOICE PROMPT: «To enter the service mode, press the button ...», DO NOT PRESS THE SOS BUTTON.

IF YOU PRESS THE SOS BUTTON, YOU GO TO THE «SERVICE» MODE FOR SERVICE WORKS.

IN THE «SERVICE» MODE, AUTOMATIC OPERATION IS DISABLED IN THE EVENT OF ROLLOVER AND CRASH IMPACT OF THE VEHICLE, THE DEVICE STATUS INDICATOR LIGHTS UP GREEN, BLINKS RED 3 TIMES EVERY 2 SECONDS, AND THE REMOTE SPEAKER EMITS AUDIBLE SIGNAL SOUNDS EVERY 7 SECONDS.

TO EXIT THE «SERVICE» MODE, PRESS THE SOS BUTTON. AFTER EXITING THE «SERVICE» MODE, PLEASE CLOSE THE PROGRAM DEPENDING ON ITS PARAMETERS (see p.3.1.5), AND START THE PRODUCT CONFIGURATION AGAIN.

- wait until the DTC error reading is completed and the «Result» window is displayed;
- Check that there are no DTC errors.

If there are errors, the «Result» window will display the «DTC Errors» line (Figure 10). To eliminate errors, act in accordance with Table 7.

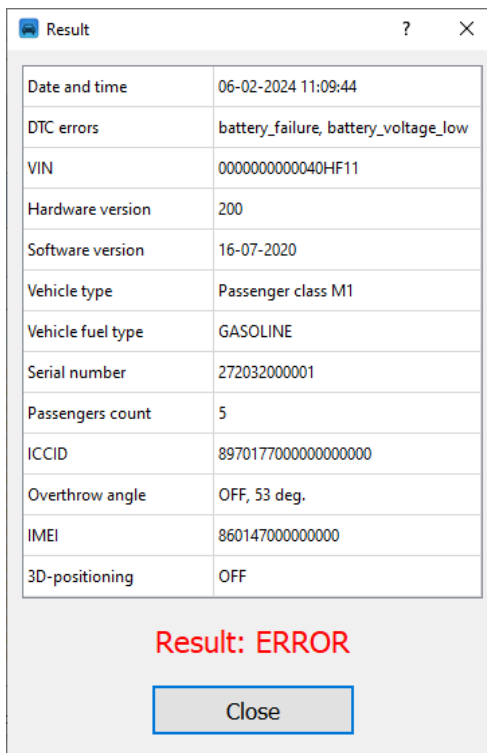


Figure 10 – «Result» window with DTC errors while reading the parameters

After testing, depending on the selected parameters, the Program has several options for closing. Exit from the Program is affected by the parameters "Auto exit" and "Show report" (see 3.1.4).

6 Possible inconsistencies

Inconsistencies may occur during the configuration and verification of the Device. The list of possible inconsistencies and ways to solve them are given in Table 4.

Table 4

Inconsistency	Solution
No voice prompts	1) Test the Device by switching to the «Test» mode. 2) Make sure the Device is in the «ERA» mode and make an emergency call.
No voice prompt «Turn the ignition off and on»	1) Check the ignition signal. 2) Turn off the ignition, disconnect the Device from the PC, make sure the Device goes to the «OFF» mode, and perform the testing again.

If an error occurs in the Program during the Device configuration, the window with the configuration result displays the stage number (the «TestNum» line), error code (the «ResultCode» line), description of the error itself (the «ResultDiscription» line) and a «DTC Errors» line.

The description of the values displayed in the «TestNum» line is presented in Table 5.

The description of the values displayed in the «ResultCode» line is presented in Table 6.

Table 5 – Device configuration stages

Stage number	Stage description
0	All stages
1	Initialization
2	Parameter recording
3	Vocal tract and button test
4	Unit self-diagnosis check
5	Reading the unit ICCID
6	Vehicle type record
7	Vehicle fuel type record
8	VIN record
9	Reboot

Table 6 – Device configuration errors

Error code	Error description
0	Successful completion
1	Input data error
2	Unit connection error
3	Unit Communication error
4	Sound test error
5	Unit self-test error
6	Unit configuration error

The description of the values (errors) displayed in the «ResultDiscription» line is presented in Table 7.

Table 7

Error description	Error code	Error cause	Error solution for AECD 7.18
mic_connection_failure	0x9A6000xx	Zero or low voltage at the microphone	Replace the electronic unit.
mic_failure	0x9A6100xx	Microphone does not work	Replace the electronic unit.
speakers_failure	0x9A6200xx	Zero or low voltage of the speaker in the electronic unit	<ol style="list-style-type: none"> 1. Wait 40 seconds. 2. If the error persists, replace the electronic unit.
ignition_line_failure	0x9A6300xx	Electronic unit does not see the ignition signal	<ol style="list-style-type: none"> 1. Check the connection of the cord (connector) to the ignition signal. 2. If the error persists, replace the cord (connector). 3. If the error persists, replace the electronic unit.
sim_chip_failure	0x9A6400xx	Modem cannot find the SIM-chip	<ol style="list-style-type: none"> 1. Wait 2-3 minutes. 2. If the error persists, replace the electronic unit.
status_indicator_failure	0x9A6500xx	Incorrect LED operation on the Device status indicator	<ol style="list-style-type: none"> 1. Wait 40 seconds. 2. If the error persists, replace the electronic unit.
battery_failure	0x9A6600xx	Back-up battery of the electronic unit is discharged or does not charge	<ol style="list-style-type: none"> 1. Remove the electronic unit from the vehicle. 2. Change the battery and turn the Device off. 3. Turn on the Device. 4. If the error persists, replace the electronic unit.
battery_voltage_low	0x9A6700xx	Electronic unit backup battery voltage is below 3600 mV	<ol style="list-style-type: none"> 1. Remove the electronic unit from the vehicle. 2. Change the battery and turn the Device off. 3. Turn on the Device. 4. If the error persists, replace the electronic unit.
gnss_receiver_failure	0x9A6A00xx	Navigation module is not working correctly at the moment	<ol style="list-style-type: none"> 1. Use a satellite signal booster. 2. Wait 2-3 minutes after receiving this error. 3. If the error persists, replace the electronic unit.
gnss_antenna_failure	0x9A6B00xx	Electronic unit cannot communicate with satellites or the signal is very weak	<ol style="list-style-type: none"> 1. Use a satellite signal booster. 2. Wait 2-3 minutes after receiving this error. 3. If the error persists, replace the electronic unit.
comm_module_interface_failure	0x9A6C00xx	Modem not found, or cellular networks are unavailable	<ol style="list-style-type: none"> 1. Wait 2-3 minutes after receiving this error. 2. Check if the cellular network signal is good (mobile phone) at the place of operation of the electronic unit. 3. Install a GSM signal amplifier. 4. If the error persists, replace the electronic unit.

APPENDIX 1 - Report file parameter description

The «result.ini» report file is located by default in the folder where the ERA_COMM program is installed, otherwise it is located in the folder specified by the user in the «Directory with report» program parameter. The report file can be opened in the Notepad application.

The typical content of the file is shown in Figure 1.1, the description of the parameters contained in the report file is given in Table 1.1.

```
[RESULTS]
RunType=TEST_AND_CFG
TestNum=2
ResultCode=6
ResultDescription=Failed to request seed
ICCID=
VINSaved=
GSMMode=WORK
VehicleType=
```

Figure 1.1 - Typical content of the result.ini file

Table 1.1 – Report file parameter description

Parameter Name	Value
RunType	Program call code
TestNum	Number of the stage at which the error occurred, can take values: 0 - All stages; 1 - Initialization; 2 - Sound parameters record; 3 - Test of the sound tract and buttons; 4 - Check of the unit self-diagnosis; 5 - ICCID reading; 6 - Vehicle type record; 7 - Vehicle fuel type record; 8 - VIN record.
ResultCode	A digital code for performing an operation, it can take values: 0 - Successful completion; 1 - Input data error; 2 - Error in connecting to the device; 3 - Error in communicating with the device; 4 - Sound test error; 5 - Self-test error; 6 - Device configuration error.
VIN	VIN of the vehicle that was recorded in the Device.
ResultDescription	Text description of the result.
Hardware version	Board version.
Software version	Internal software version of the Device.
VehicleType	Vehicle type stored in the Device memory.
Vehicle Fuel Type	Vehicle fuel type stored in the Device memory.
Serial number	Device serial number.
GSMMode	Always in WORK mode.
Passengers count	Maximum number of people to transport in the vehicle.

Parameter Name	Value
CMD Param	The required value is currently "-2". Can take the following values: -2: Do not use; -1: ERA only; 0: Zero; 1: Passive; 2: Active. If the parameter value is not specified or is specified with an error, it is considered equal to «-2».
ICCID	Identification number of the ERA-GLONASS device read from it according to the diagnostic protocol (if it was read successfully).
IMEI	The unique number of the GSM modem in the Device.
Telematic ICCID	The ERA-GLONASS device commercial profile identification number read from it according to the diagnostic protocol (if it was successfully read).

APPENDIX 2 – Device operating modes and Indication

1. Device operating modes

The Device has the following operating modes:

- «Off» mode;
- «ERA» mode;
- «Emergency call» mode;
- «Service» mode;
- «Test» mode.

1.1 «Off» mode

The Device is in the «Off» mode when the vehicle ignition is off. The Device exits the «Off» mode when the ignition is turned on.

1.2 «ERA» mode

In the «ERA» mode, the Device detects and registers vehicle parameters, detects accident events in automatic mode and provides a response to the user's control actions. The Device is in «ERA» mode when the vehicle's ignition is turned on for the first time, as well as after the end of the «Test» mode or termination of the «Emergency call» mode.

If the Device is ready for use, the Device indication will blink red twice.

1.3 «Emergency call» mode

The «Emergency call» mode is designed to transmit MSD (Minimum Set of Data) and establish a sound connection between vehicle users and the contact center operator. The «Emergency call» mode is performed in manual mode by pressing and holding the SOS button for at least 3 seconds.

To exit the «Emergency call» mode initiated in manual mode, at the stage of establishing a connection (if the connection with the system operator has not yet been established), press the «SOS» button once, and the emergency call will terminate.

When initiating the «Emergency Call» mode, the Device will switch to the «ERA» mode after the call is completed by the contact center operator.

In case of power failure during the emergency call, the Device will run on a backup battery to maintain active voice communication for 10 minutes and function in standby mode for at least 1 hour.

1.4 «Service» mode

The «Service» mode is designed to disable all functions of the Device while the vehicle is in the service center and/or to do repair work.

The «Test» mode is entered by pressing the SOS button 5 times within 5 seconds. After the voice prompt informing on entering the «Service» mode, press the SOS button. If you do not press the SOS button within 10 seconds, the Device switches to the «Test» mode.

In the «Service» mode, the Device status indicator lights up green, blinks red 3 times every 2 seconds, and audible signal sounds emit from the remote speaker every 7 seconds.

Exit from the «Service» mode is performed:

- after pressing the SOS button;
- when the external power is turned off;

Notes:

1. *When carrying out repair works or maintenance on cargo vehicles with the need to tilt the vehicle cab, the Device must be switched to the «Service» mode.*
2. *After completion of repair work or technical maintenance of the vehicle, the Device must be put to normal operation.*

1.5 «Test» mode

The «Test» mode is intended to check the performance of the automobile telecommunication system by the ERA GLONASS system operator.

The «Test» mode is entered by pressing the SOS button 5 times within 5 seconds. After the voice prompt about entering the «Service» mode, wait 10 seconds without pressing «SOS» button.

In the «Test» mode, the Device status indicator lights up green and blinks red 3 times every 2 seconds.

To complete the test, follow the voice prompts.

Exit from the «Test» mode is performed:

- after the transfer of MSD with the Device test results to the contact center operator;
- when the external power is turned off.

2. Indication of Device operating modes

The Device is turned on when external power is supplied.

When the Device is first powered up¹, regardless of the ignition state, the Device turns on and enters a self-diagnosis state.

The Device indication at the first power-up has the following sequence:

- 1) lights up red from 3 to 10 seconds;
- 2) lights up green from 40 to 45 seconds;
- 3) blinks red 2 times.

If the ignition is turned off, the Device will turn off after a while.

¹ - *When installing the Device at the car manufacturer's factory and/or disconnecting the external power supply (for example, in case of battery replacement)*

If the ignition is turned on, the Device will remain in operating mode.

On subsequent switching on, if the external power has not been turned off, the Device will switch to the ERA mode with indication in accordance with Table 2.1.

IMPORTANT: If you disconnect external power from the Device, the following powering up of the Device will lead to the Device indication corresponding to the first power supply.

Table 2.1 – Device operating mode indication

Operating mode	Indication
AECD turning on after the ignition is turned on	Lights up red for 3 to 10 seconds.
«ERA» mode	Lights up green when internal diagnostics are successful. Lights up red if there is a malfunction.
AECD malfunction	Lights up red continuously. The malfunction code can be read via USB connection.
The cellular operator's network is temporarily unavailable	Five short red blinks (5 Hz) and an optional voice prompt «The cellular operator's network is temporarily unavailable».
Establishing connection in «Emergency call» mode	Slow blink red/green (1 Hz). Optional voice prompt informs about mode:
Sending MSD in «Emergency call» mode	— «Establishing a connection»; — «Transferring data to the system».
Voice connection in the «Emergency call» mode	Lights up green continuously. Optional voice prompt «Connection established».
«Test» mode	Lights up green, three short red blinks (5 Hz), 2-second pause, repeat.
«Service» mode	Lights up green, three short red blinks (5 Hz), 2-second pause, repeat. Every 7 seconds there is an audible signal

APPENDIX 3 – Description of tests in the «Test» mode

The «Test» mode is intended to check the functioning of the product, with the ability to transfer test results to the system operator.

The «Test» mode is entered by pressing the SOS button 5 times within 5 seconds. After the voice prompt about entering the «Service» mode, wait 10 seconds without pressing any buttons.

To complete the test, follow the voice prompts.

The list of tests performed in «Test» mode is shown in Table 3.1.

Table 3.1

No.	Purpose of the test	Description of the test
1.	Checking the indication in «Test» mode	During the test, the status indicator lights up green and flashes 3 times red every 2 seconds. If the Device indication is as indicated, press the «SOS» button.
2.	Checking the microphone and speaker	The test requires you to say a phrase, listen to it and, if the sound quality and volume are satisfactory, press the «SOS» button.
3.	Ignition off/on test	During the test, after completing the voice prompt , it is required to turn off and then turn on the ignition of the vehicle.
4.	Informing the user about test completion and the beginning of transferring the test results to the system operator	When the test is completed, the phrase «Test completed» will be heard. By default, the MSD with the test results will be transmitted to the system operator. Press the «SOS» button to cancel the transmission of the MSD. After the MSD with the results is transmitted to the system operator or the user cancels the transmission of the MSD, the Device will enter the «ERA» mode.