"CH1-1022/1 control panel"
Software Description and Operation Procedure

Description

"CH1-1022/1 control panel" software is intended for demonstration of CH1-1022/1 frequency standard control and status monitoring capabilities via the integrated serial port interface. Manufacturer constantly works on improvement of its product therefore your software version may slightly differ from the specified description.

Operation procedure

To proceed with operation the available CH1-1022/1 frequency standard should be powered and connected to a serial port of the PC where this software is planned to be used. The software (hereinafter referred to as the "application") does not need installation and may be run directly from the supplied CD. Minimum PC system requirements: 1 GHz processor, 1 GB RAM, 15 MB available hard disc space and CD-ROM drive, keyboard and Microsoft Mouse or its equivalent.

To start using your software launch the application by double clicking the mouse button or pressing the "Enter" key. If successful, then the main application window will open (Fig. 1).
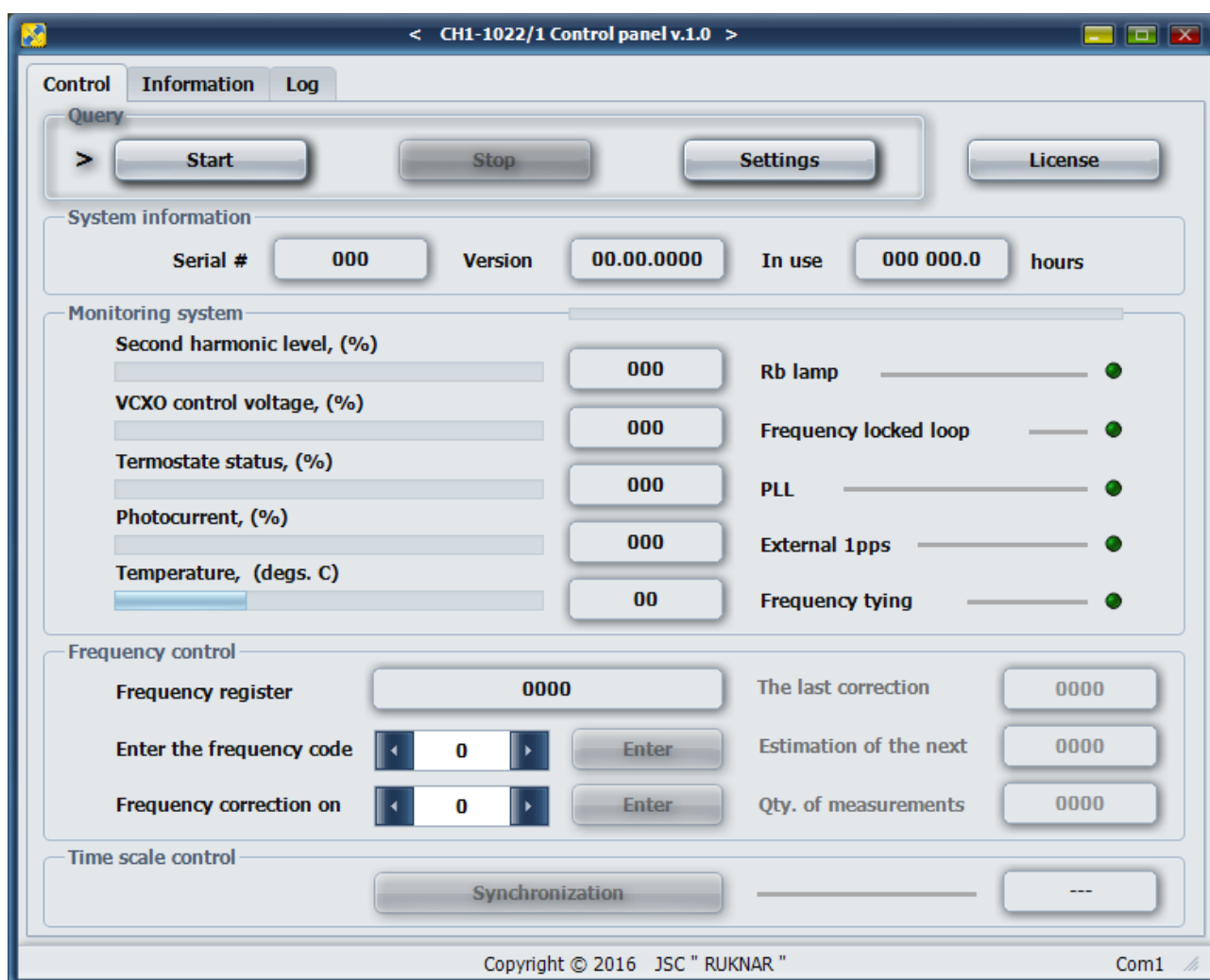

Fig. 1 Main application window

By default the English language interface will be launched and this document is dedicated

exactly to description of the English language interface. Russian language interface operation procedure is identical with the above mentioned one. To set up the Russian language interface press the "Settings" button in the "Control" tab and open modal window "Settings" (Fig. 2).
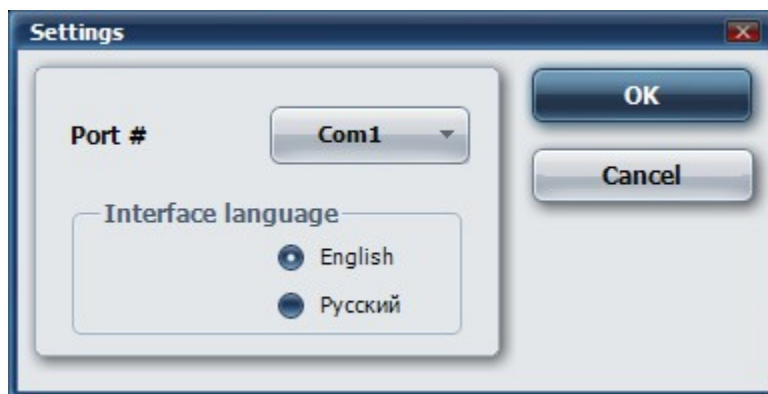

Fig. 2 Modal window "Settings"

Left click on item "Russian" in the "Interface language" field and then press "OK" button. "Settings" window will close and main application window will change as follows (Fig. 3).
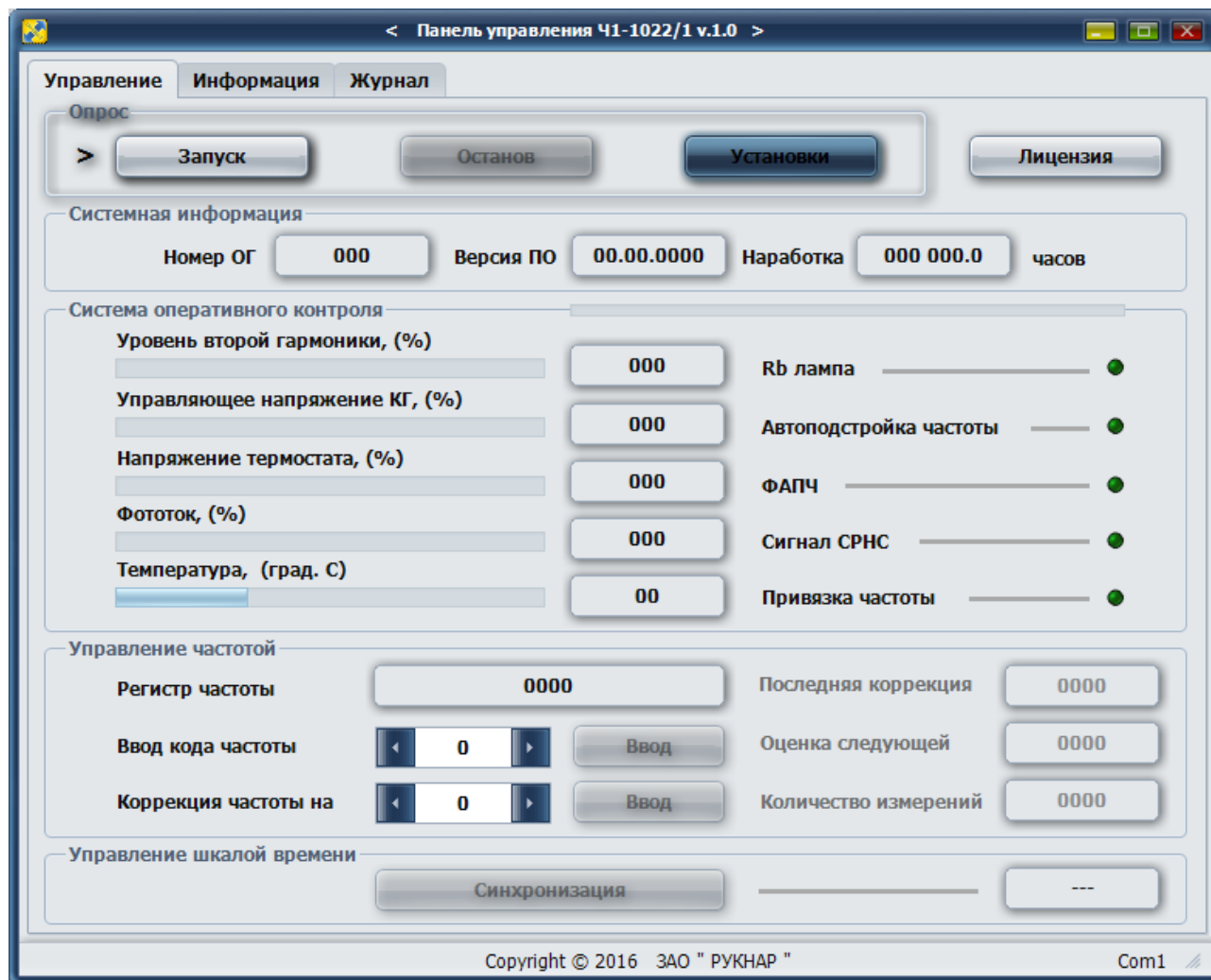

Fig. 3 Main application window with the Russian language interface

Main application window consists of the status bar and three tabs: "Control", "Information" and "Log". "Information" tab contains reference data about interface parameters and CH1-1022/1 frequency standard command system. "Logs" tab represents a system log where all actions with the instrument performed by user via this application are being recorded. The log may be saved and exported into a text file at any time by pressing the button "Save the log to file". After pressing the button a standard system dialogue will appear and offer file name, inclusive of current date and time, along with the file saving location (Fig. 4). By default file saving location is identical with the catalogue where the application has been run from, so be careful when launching the software via the supplied CD.
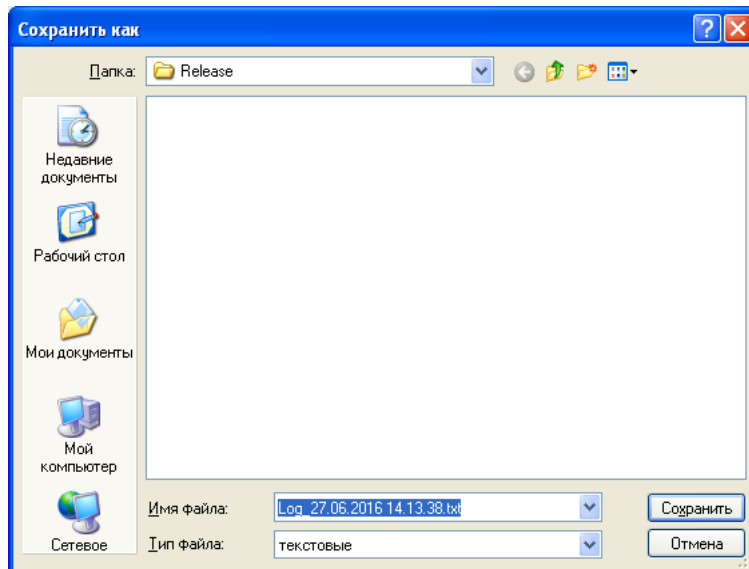

Fig. 4 Log saving dialogue

ATTENTION! Remember that this application is designed specifically for CH1-1022/1 instrument and does not support CH1-1022/2 and CH1-1022/3 versions. CH1-1022/2 and CH1-1022/3 models are supplied with their own version-compatible software.

Connection establishment

To configure the connection open modal window "Settings" once again and select the number of the PC serial port to which CH1-1022/1 frequency standard is connected in the "Port #." drop-down menu (Fig. 5).
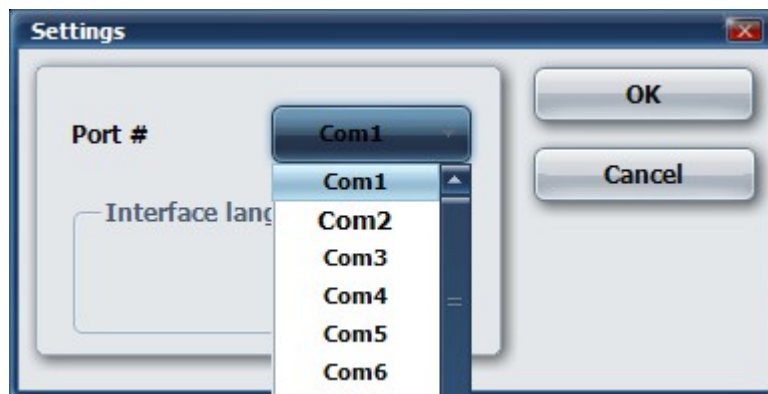

Fig. 5 Serial port selection.

Press "OK" button and close the window. Selected serial port number will be displayed in the right-hand corner of the status bar. Press "Start" button in the "Query" field of the "Control" tab and launch connection with the instrument. Track bar located in the upper part of the "Monitoring system" field will change its state after completion of each "query-reply" operation. Unchanged state of the track bar within several tens of seconds is the symptom of some connection problems. In this case the corresponding modal alert window will appear (Fig. 6).

Fig. 6 Connection setup failure alert window

All display panels will be filled in with current instrument parameters in several seconds after connection establishment (Fig. 7). "System information" field shows instrument serial number, software version and current state of the elapsed hours indicator. "Monitoring system" field contains data provided by the instrument in-line check system used to track the state of instrument critical parameters. "Frequency control" field is intended for instrument frequency regulation. In this context "Frequency register" panel is used to show current state of the instrument frequency register. "The last correction", "Estimation of the next" and "Qty of measurements" panels are not active.

_1pps time scale synchronization

If necessary, the synchronism between external and formed time scale may be established by pressing "Synchronization" button in the "Time scale control" field. Successful completion of operation is indicated by "OK" message popping up in the right-handed part of this field on the display panel.

_Instrument frequency change

Instrument frequency may be manually changed in the "Frequency control" field either via direct frequency code entry into the frequency register or via modifying frequency register state by a certain value. Direct code entry is effected in the "Enter the frequency code" field. Enter numeric value in the range of -9999 to 9999 and press the "Enter" key to the right of this filed. If an established connection is available entered value will be saved in the frequency register and the instrument will operate at a different frequency. Remember that the least significant digit value is equal to frequency change by $1 \cdot 10^{-14}$. Instrument frequency correction by a predetermined value is made in a similar way. Just enter correction value in the "Frequency correction on" field and press the "Enter" key to the right of this field. Entered value will be added or deducted depending on the digit in query and current frequency register value whereafter the instrument will operate at a different frequency.
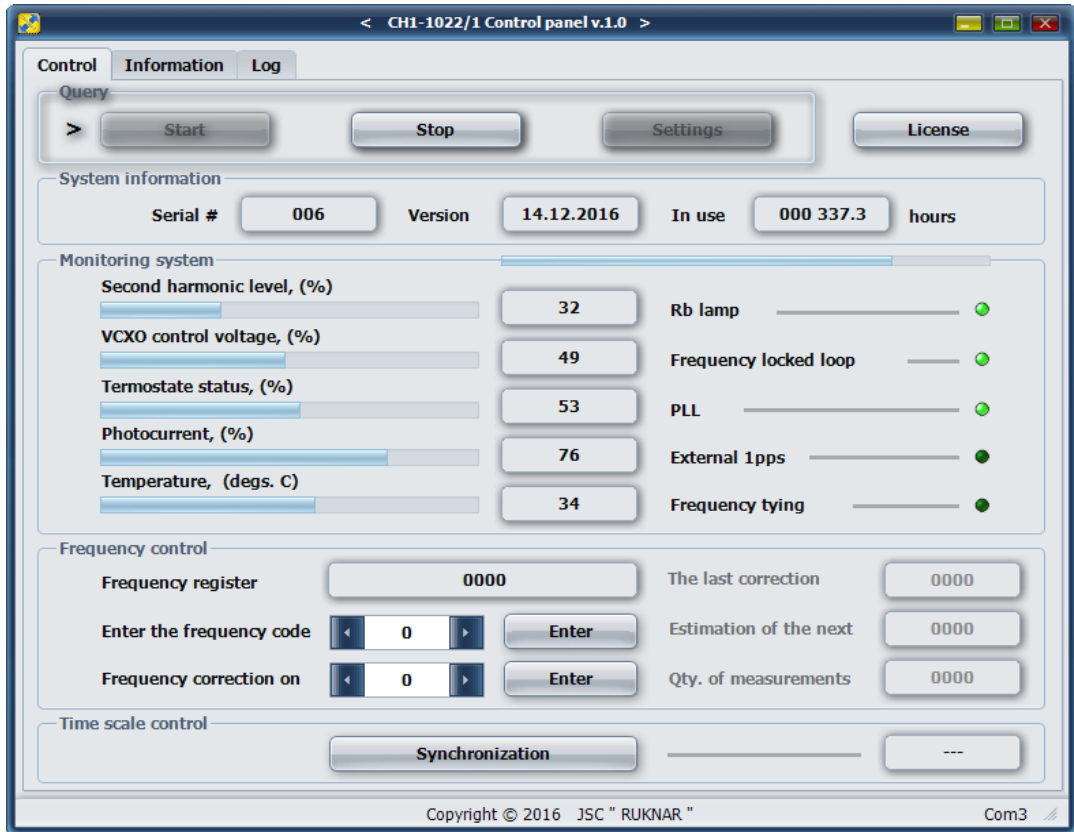
Fig. 7 "Control" tab after connection setup

License agreement

To read the license agreement text press the "License" button in the "Control" tab and open "License" window containing the license agreement text and accept and reject buttons as well.

Connection termination

To stop operating the instrument with an active connection press the "Stop" button. Then the application may be closed as usual.