ВИБРО
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Scientific and Production Enterprise
«VIBROBIT»
LIMITED LIABILITY COMPANY

Vibrobit Module Configurator

Operator Manual

ВШПА.421412.300.001 34

Rostov-on-Don
2019

ABSTRACT

“Vibrobit Module Configurator”. Operator Manual /
Author-developer G.A. Volkov etc. — RnD.: Vibrobit — 24 p.

The “Vibrobit Module Configurator” Operator Manual (OM) is intended to familiarize users (operation personnel) with program purpose and operation and also with control modules setup procedure.

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Revision 3 dated 20.10.2019

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AGREED NOTATION

To ease text comprehension the Manual uses the following special symbols:

– names of program elements are highlighted with **semi-bold face**;
– operation sequence is emphasized with *italic font*, arrows and square brackets: *[Calibration→ Test signal calibration].*

Some important issues are separated into special boxes. Please, read them carefully:

ⓘ Important information

Arranged here are information, advices, recommendations to pay special attention to.

1 “VIBROBIT MODULE CONFIGURATOR” PROGRAM DESCRIPTION

“Vibrobit Module Configurator” program (hereinafter program) is intended to view measurement results, correction and calibration of operation parameters of “Vibrobit 300” and “Vibrobit 400” instrumentation modules. Module communication is arranged via diagnostic interface module (MC01USB) or via Bluetooth radio channel via MC03Bluetooth module which is connected to diagnostic port of the module to be configured.

The program main functions:

– viewing and editing module parameters, measurement channels, communication interfaces, identification information;
– modules calibration;
– real-time observing the current readings of modules measured parameters;
– automatic detection of connected module;
– saving settings to file and loading settings from file;
– parameters search by name or address;
– report producing according to settings.

2 SYSTEM REQUIREMENTS

2.1 Hardware requirements

Specified minimum requirements of “Vibrobit Module Configurator” program to hardware are given in Table 1.

Table 1 - System requirements

Type	Minimum	Recommended
Processor	Pentium with clock frequency of 1.8 GHz or similar processor	Pentium with clock frequency of 2.4 GHz and higher or similar processor
RAM	512 MB	1 Gb and more
ROM (read-only memory)	30 Mb of free space	100 Mb of free space on disc and more

2.2 Software requirements

Installed for program operation should be operation system Windows not less than XP SP3 and .Net Framework installed of version not less than 4.0.

3 PROGRAM OPERATION

3.1 Program start

To start program operation, start ModuleConfigurator.exe file (start icon is shown on Figure 1).

Figure 1 - Program start icon

The program main window (Ref. Figure 2) consists of the following menu elements:

1) **Create new module setting** (Figure 2, item 1) – to create setting of specific control module;

2) **Open module settings from file** (Figure 2, item 2) – to open module settings from file;

3) **Search available modules** (Figure 2, item 3) – search of available modules and opening their configurations;

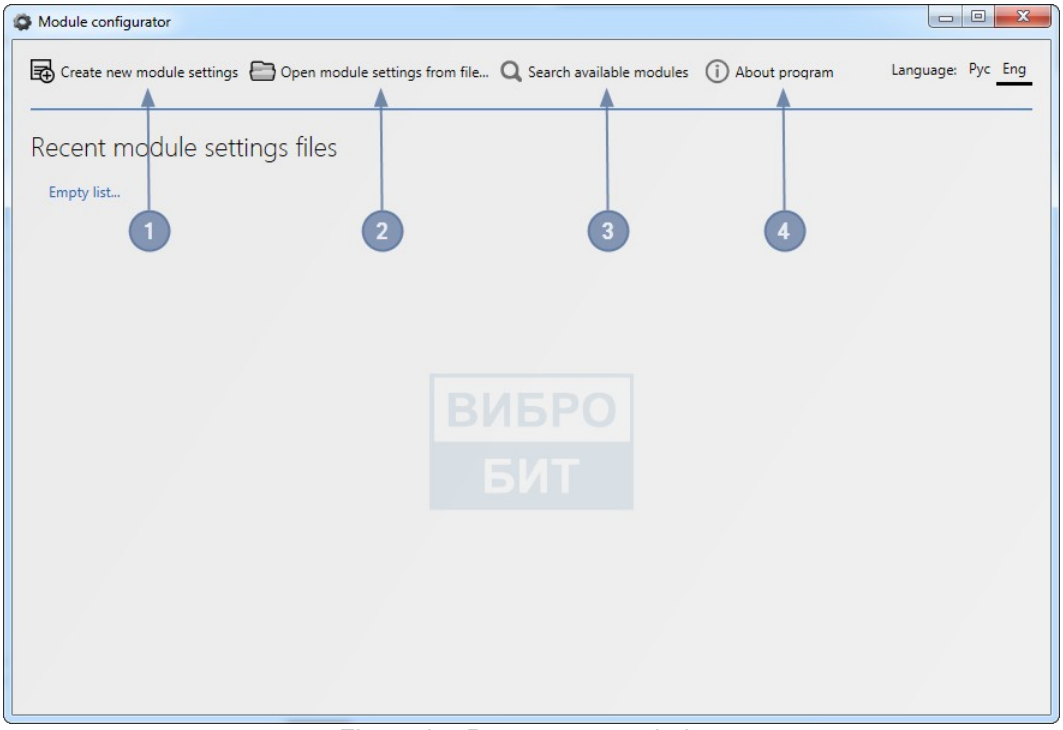

Figure 2 – Program start window

4) **About program** (Figure 2, item 4) – contains program reference information.

3.2 Work with modules configurations

To open new configuration (without parameters adjustment values), press button ***Create new module setting*** in program menu, a window will appear with a list of all modules with filtering by equipment type (Ref. Figure 3).

Each configuration has SPE “Vibrobit” LLC digital signature providing for information fidelity in module description file. If the signature is invalid, the configuration icon will have the appearance of yellow triangle with exclamation mark; SPE “Vibrobit” LLC shall not be liable for operation with such configuration.

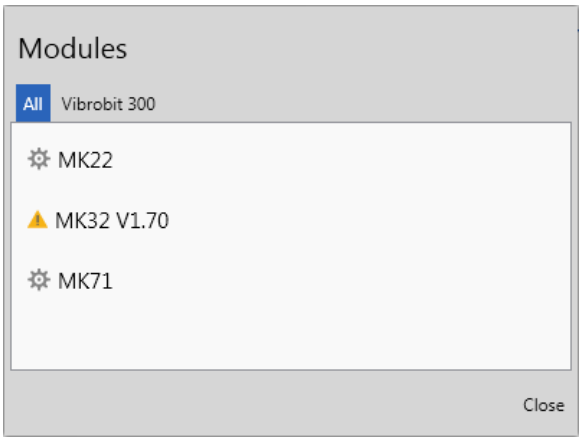

Figure 3 - Module configurations selection window

Mouse left click to open necessary configuration. A tab with configuration opens (Ref. Figure 4), then proceed to parameters editing (detailed information on parameters editing in p. 3.7 Parameter editing).

Configuration includes module parameter groups structure (Figure 4, area 1), area of current selected group parameters setup (Figure 4, area 2); buttons for module interaction, and also contains several other tools to work with configuration (Figure 4, area 3).

The program can have several open tabs with configurations.

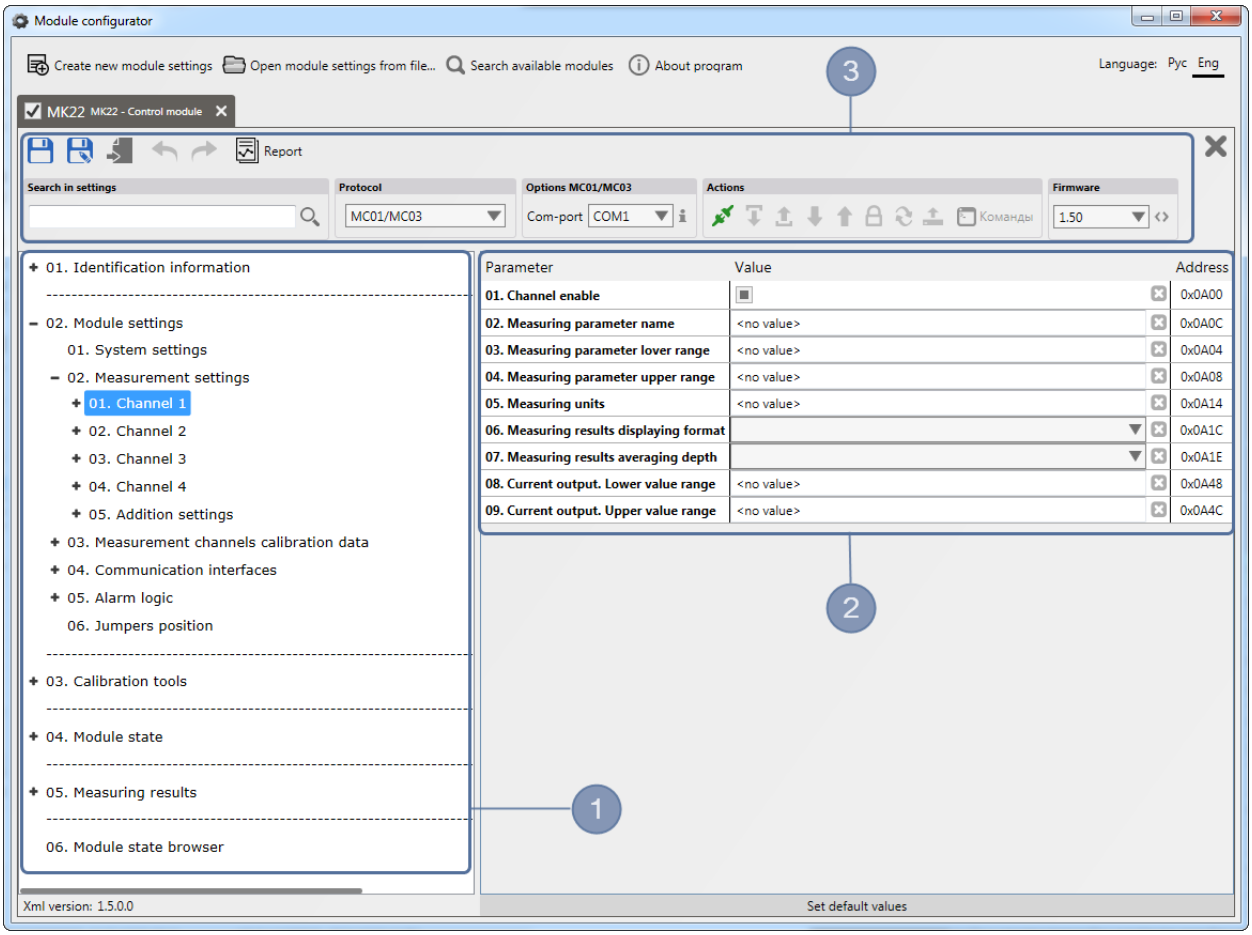

Figure 4 - Tab with module configuration (using MK22 module as an example)

3.3 Parameters filtering by module software version

Some module configurations (for example MK22 module configuration) have parameters filtering by module software (hereinafter SW) version. To exercise filtering, select necessary SW version in the filed, highlighted in Figure 5. After selecting necessary SW version, the parameter list is filtered according to the selected version.

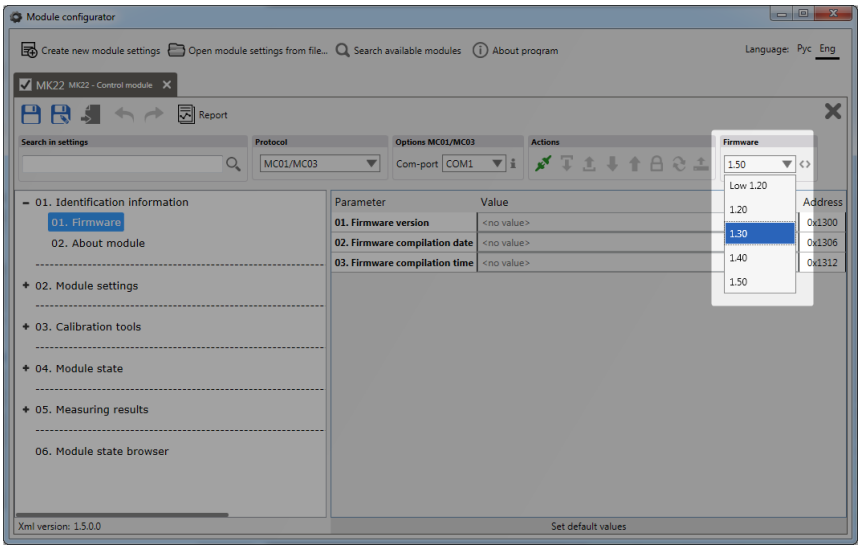

Figure 5 - Module firmware version selection

The program can compare modules SW versions, to this end press version comparison button, shown on Figure 6, at the top of appeared window select two versions for comparison, then displayed will be added parameters, deleted parameters, and also changed parameters of the version selected to the right, in comparison with the version selected to the left (Ref. Figure 7).

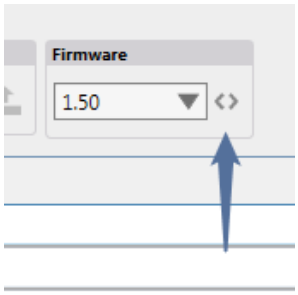

Figure 6 - SW versions comparison window button

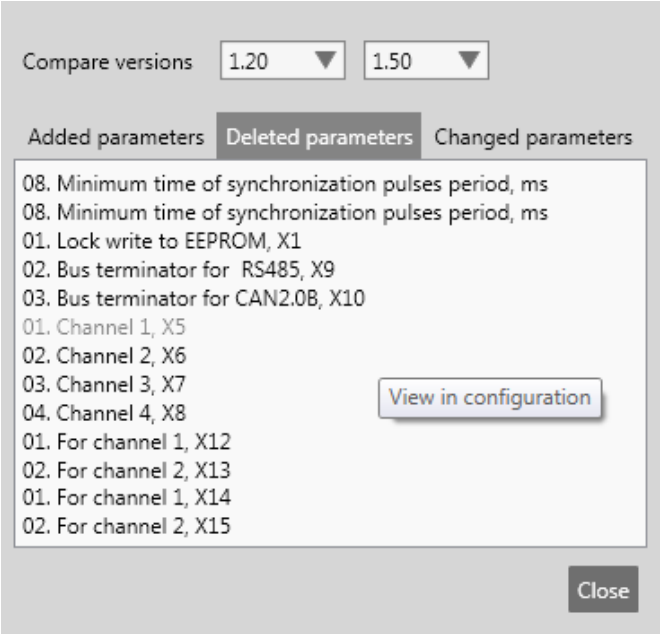

Figure 7 - SW versions comparison window

3.4 Settings operation

3.4.1 Open settings from file

To open settings from file, press ***Open module settings from file*** button in program main menu (Ref. Figure 8).

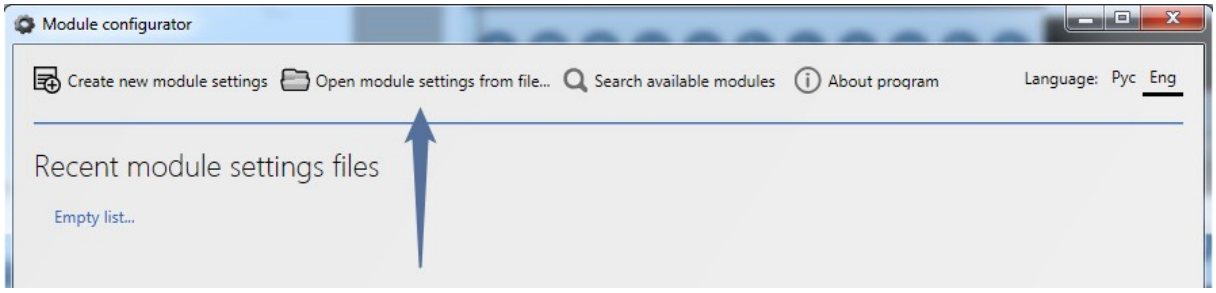

Figure 8 - Open setting from file button

Then in the opened dialog window select the necessary setting file. Setting files have extensions .modcfg or .modbcf (Ref. Figure 9).

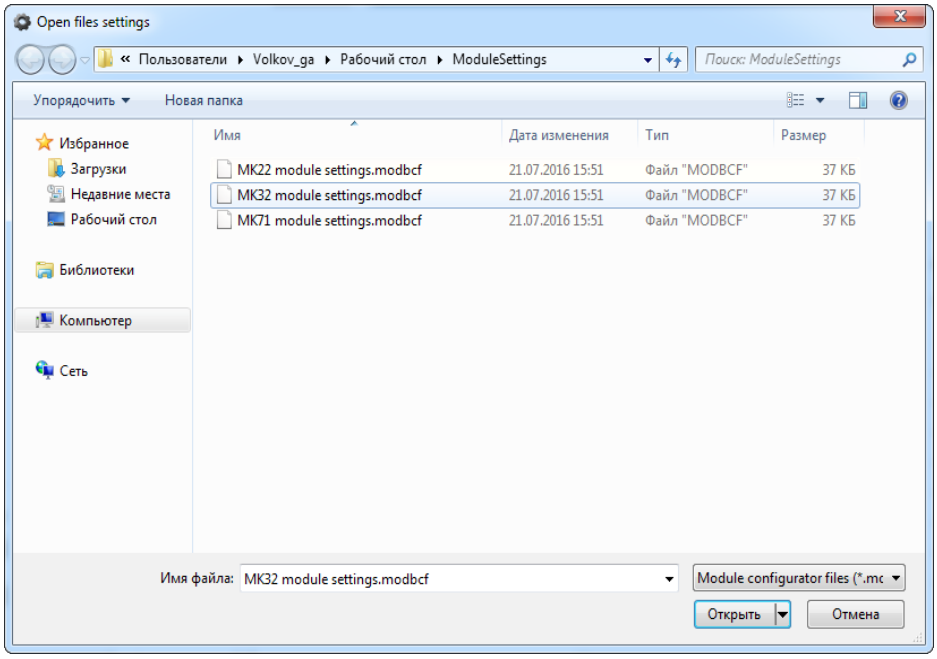

Figure 9 - Settings file selection

A window will open, in which select necessary groups of adjustment parameters (Ref. Figure 10) and press **OK** button.

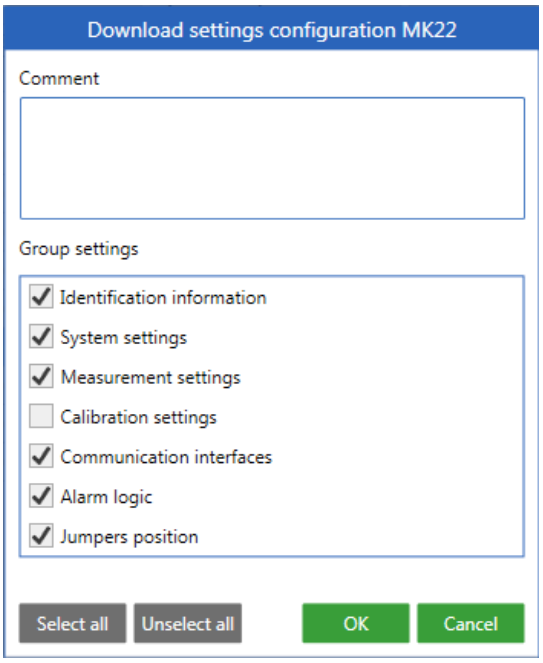

Figure 10 - Parameter groups selection window

Then a configuration will open with parameters set values (Ref. Figure 11). Parameters can be edited (parameters editing is described in p. 3.7 Parameter editing)

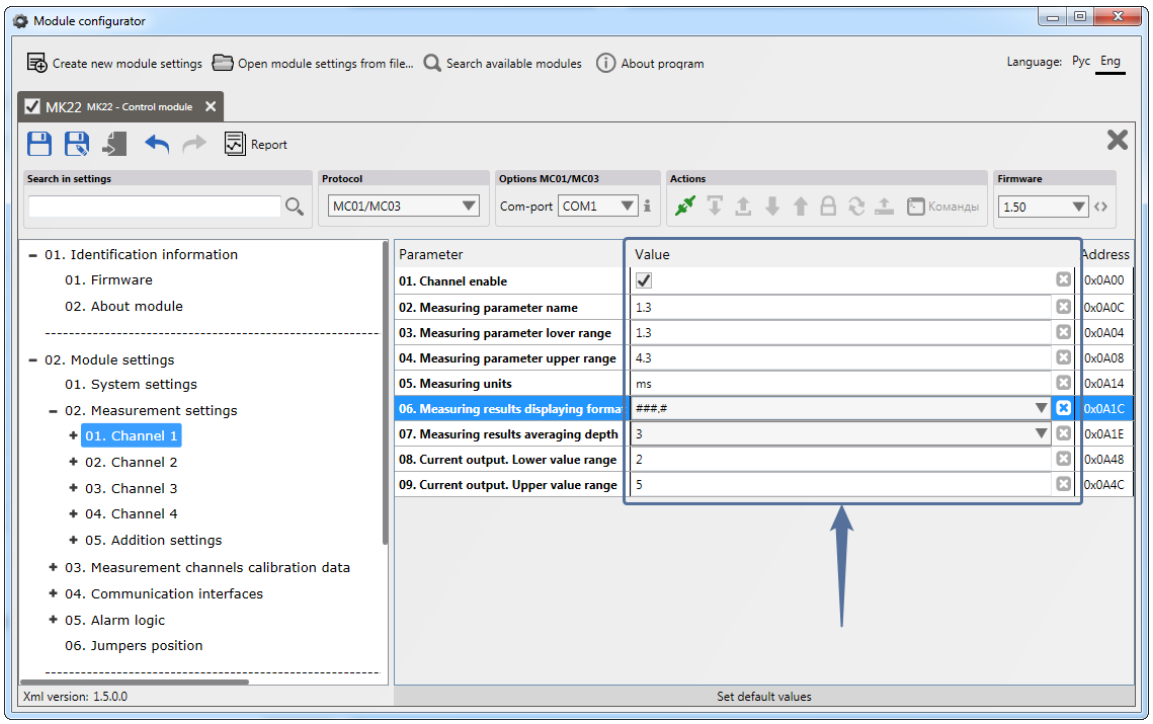

Figure 11 - Configuration with parameter values

3.4.2 Import settings from file

To import settings from file into open configuration, press button **Import**, shown on Figure 12.

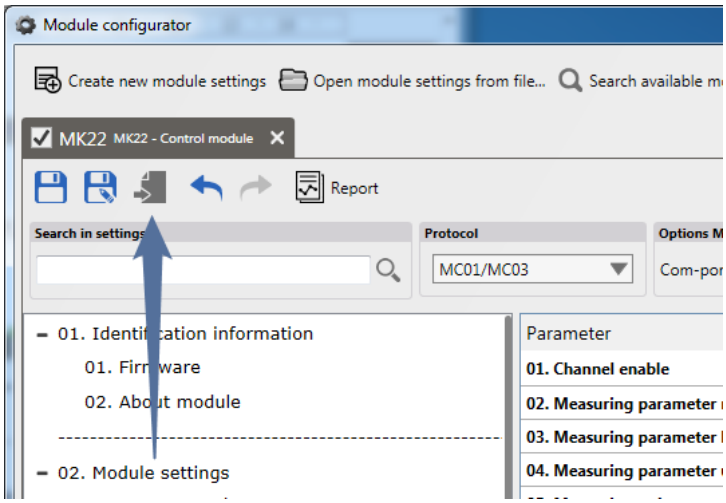

Figure 12 - Import settings from file button

ⓘ Important information

Configuration type should correspond to imported setting type.

Then in the opened dialog window select the imported setting file (Ref. Figure 10). A window will open, in which select necessary groups of adjustment parameters and press **OK** button (Ref. Figure 11). Opened configuration window will show imported parameter values of selected groups (Ref. Figure 12).

3.4.3 Save settings into file

To save settings of current open configuration into file, proceed as follows:

1) to save changes made into open settings file, press **Save** button (Figure 13, item 1) and go to step 3. To save settings file with another name, press ***Save as*** button (Figure 13, item 2) and go to step 2.

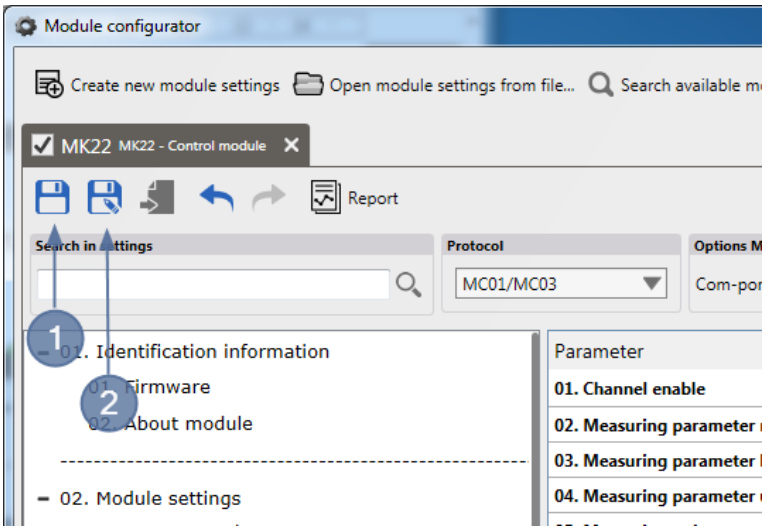

Figure 13 - Save menu

2) in dialog window select place where setting file will be saved (Figure 14);

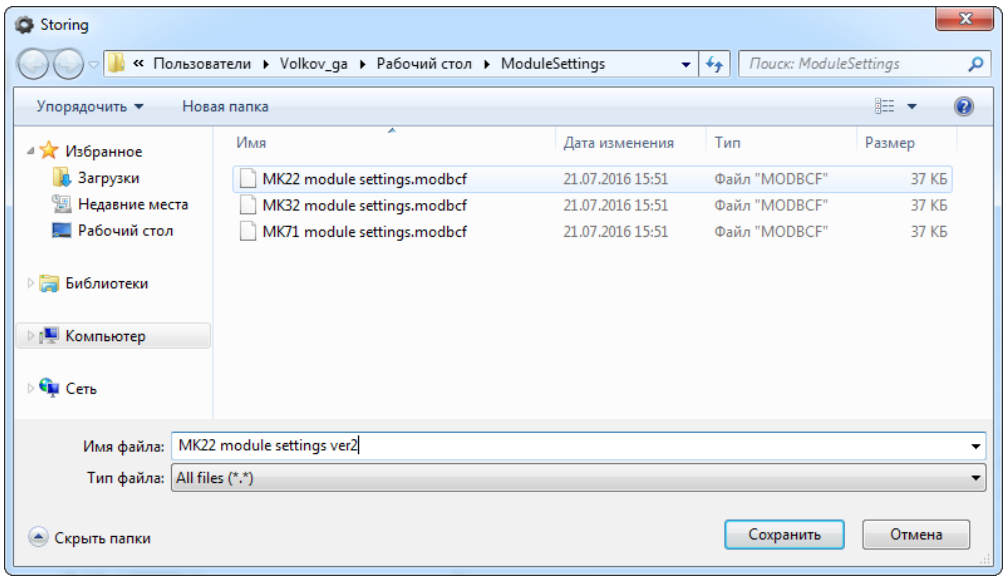

Figure 14 - Selecting setting save place

3) select parameter groups to be saved and press **OK** button (Figure 15). Upon that settings will be saved into file.

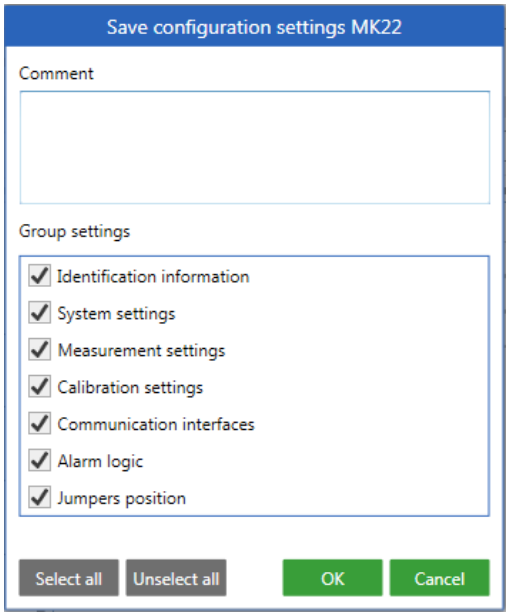

Figure 15 - Selecting parameter groups

Before closing configuration file, if the setting was not saved, the program will prompt to save current settings into file (Figure 16).

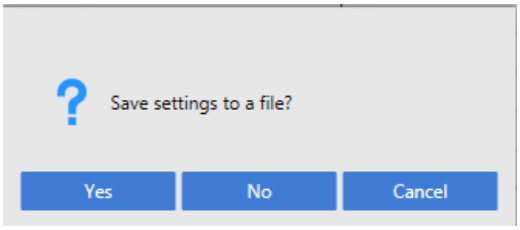

Figure 16 - Suggestion to save changes

3.5 Module connection

Connection to module is carried out as follows:

1) Connect computer and module using one of communication interfaces: MC01, MC03Bluetooth or RS485;

2) in program select menu item **Create new module settings** ans select module to be connected to;

3) in communication types list (Figure 17, item 1) select necessary module communication protocol, corresponding to the selected communication interface, for example if a module is connected using MC01, it is necessary to select communication type MC01/MC03;

4) in settings of the selected communication type, in this case MC01/MC03, select a com-port to which a module is connected to from a list of available com-ports (Figure 17, item 2).

5) press button “Connect” (Figure 17, item 3).

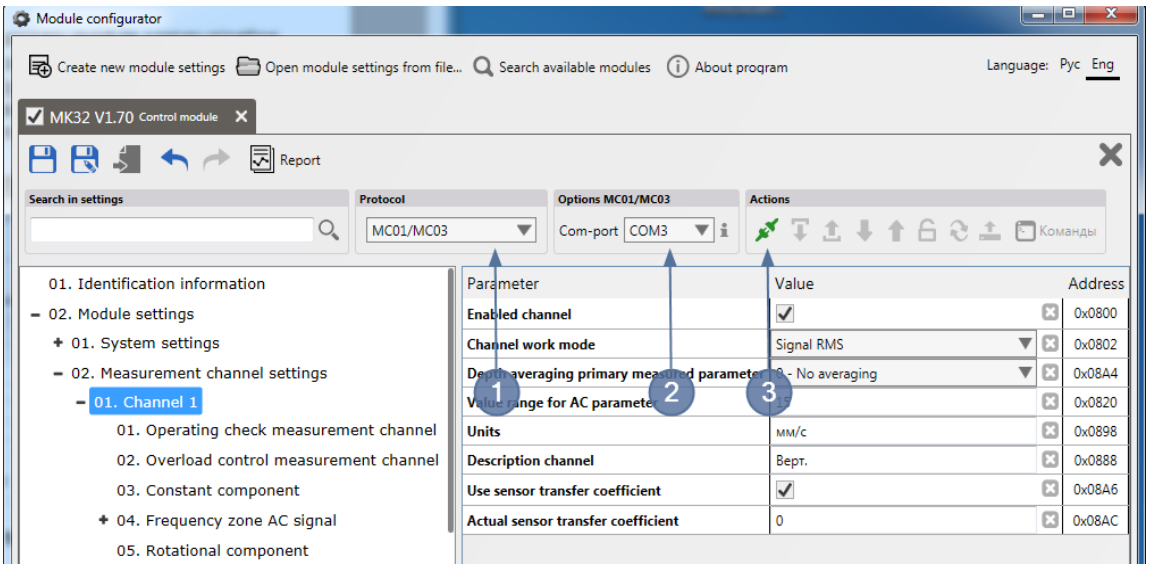

Figure 17 - Module connection procedure

After connection the program will determine module SW version and will automatically filter parameter set for the current SW of connected module.

3.6 Reading settings from module

Before reading setting the program should be connected to module (Ref. Section 3.5 Module connection)

To read all settings from module press **Read all settings from module** button (Figure 18, item 1). To read settings from module only for current selected branch press **Read settings from module** button (Figure 18, item 2).

When moving from branch to branch or when changing parameter values, the program compares the displayed values with values in module. Parameters which current displayed value is inconsistent with value in module will be highlighted with color (Figure 18, item 3).

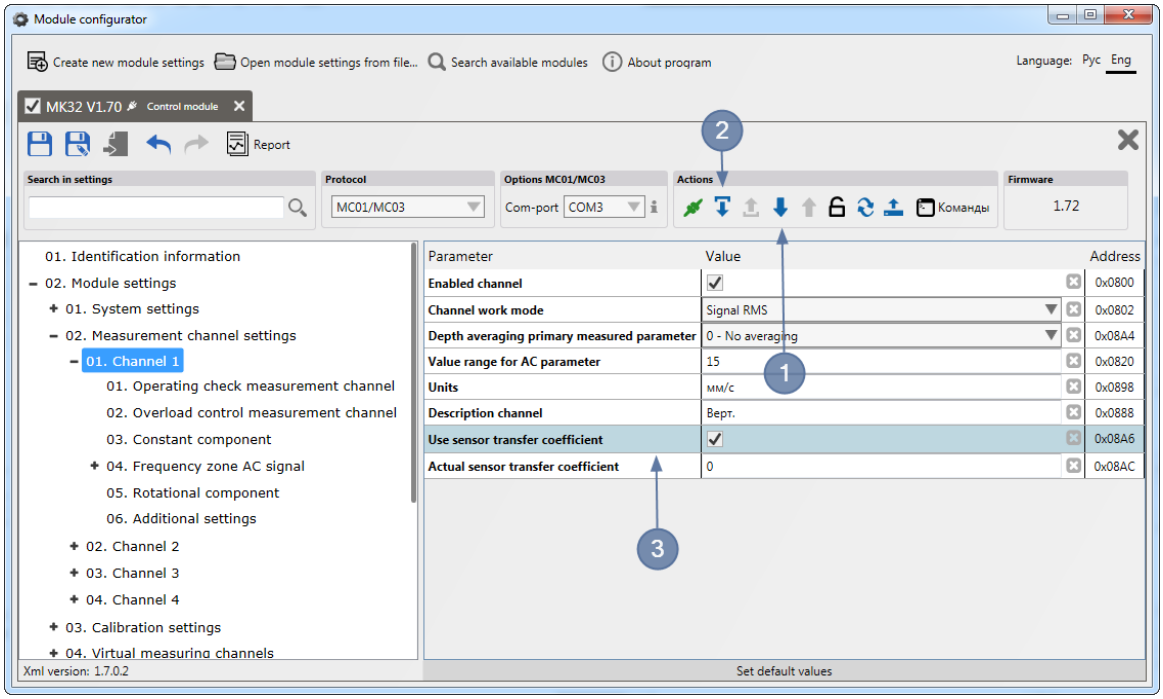

Figure 18 - Reading settings from module

3.7 Parameter editing

3.7.1 Main editor

To edit parameters select necessary parameter in column “Value” and enter value (Figure 19).

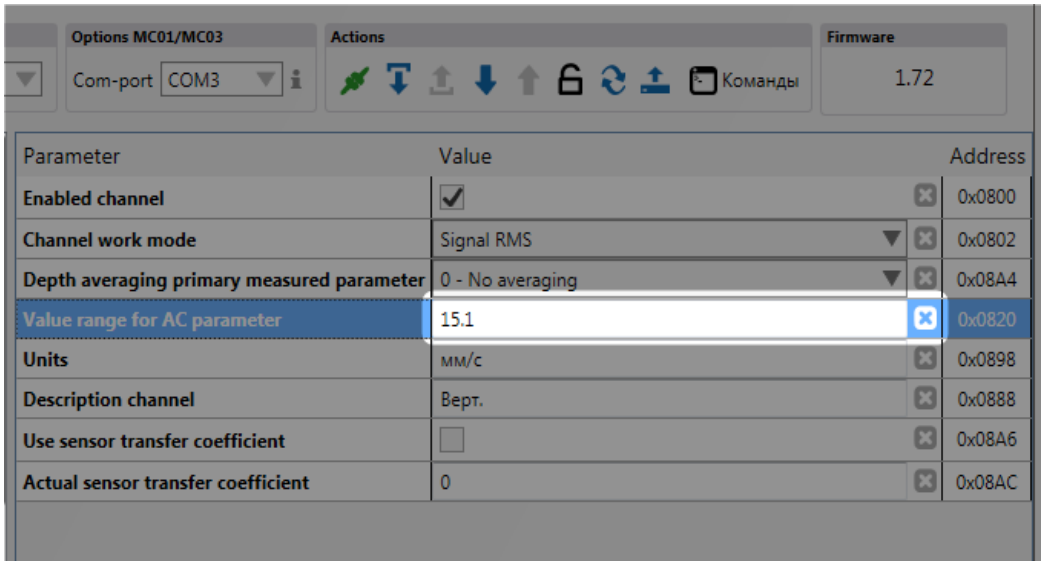

Figure 19 - Value entry field

Configurations of some modules have additional value editors intended for convenient adjustment of parameters. For example such editor is MK22 module logic signaling editor (Figure 20).

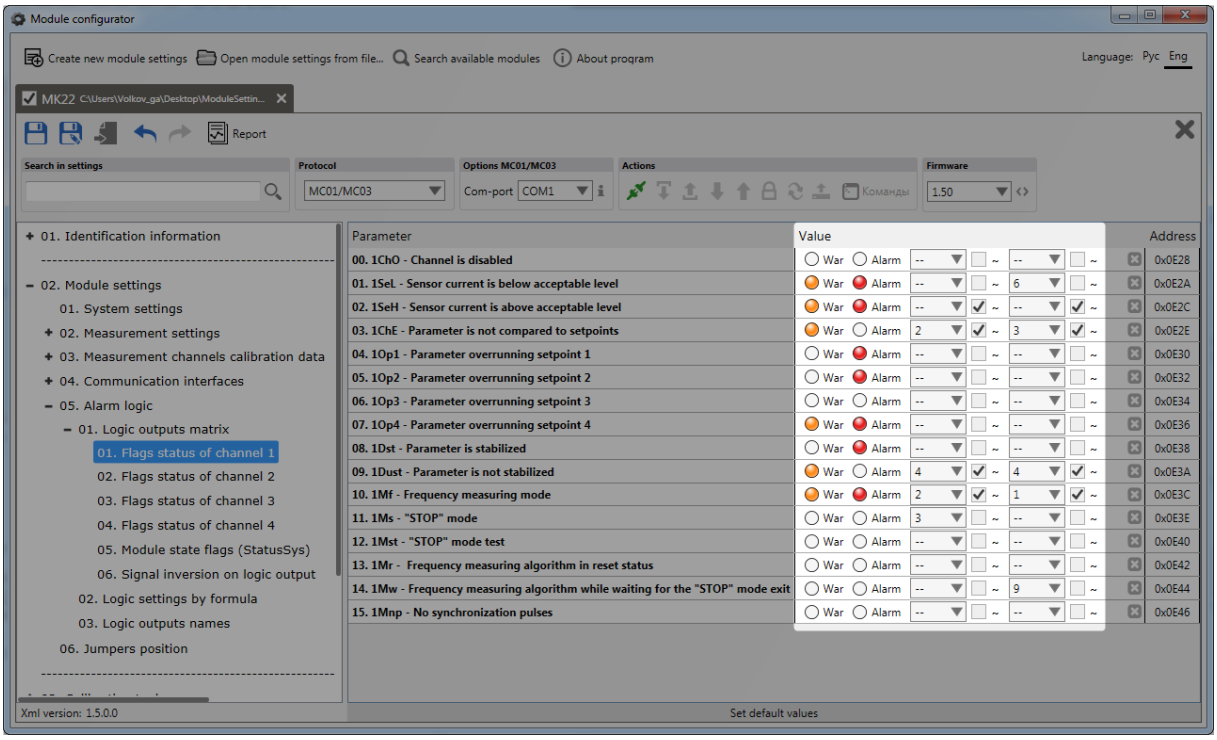

Figure 20 - Logic signaling editor

3.7.2 Parameter reset

Parameter values reset is available in configuration of group with parameters. To reset parameter values of the current selected group, press **Set default values** button (Figure 21, item 1) and confirm reset by pressing **Yes** button (Figure 21, item 2). Upon that the parameter values will be reset to 0.

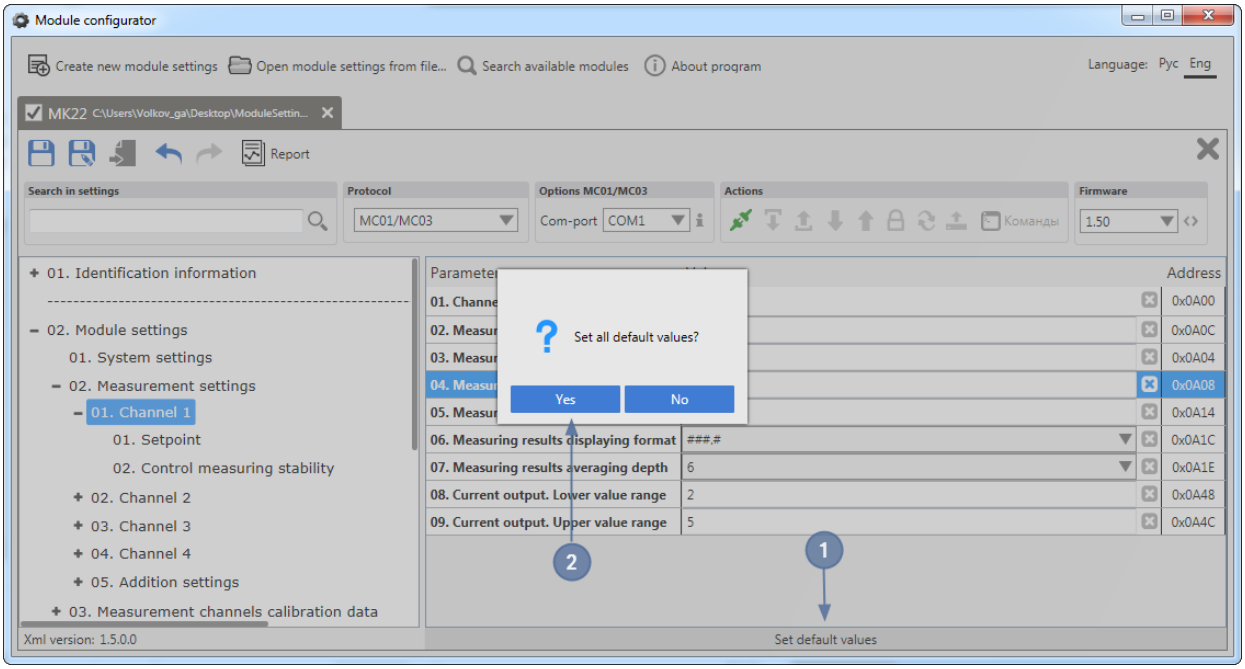

Figure 21 - Parameter reset

3.8 Parameters search by name or address

To find necessary parameter or parameter group by name or address, enter parameter or parameter group name or address in search field (Figure 22, item 1) and press Enter button, or press search button (Figure 22, item 2).

If found parameter is in parameter group, then yellow triangle will appear near group name (Figure 22, item 3). If a match is found in parameter group name, it will be highlighted with yellow color (Figure 22, item 4). Names of found parameters are highlighted with yellow color (Figure 22, item 5).

To reset search use keyboard to press Escape button or press **Reset** button (Figure 22, item 6).

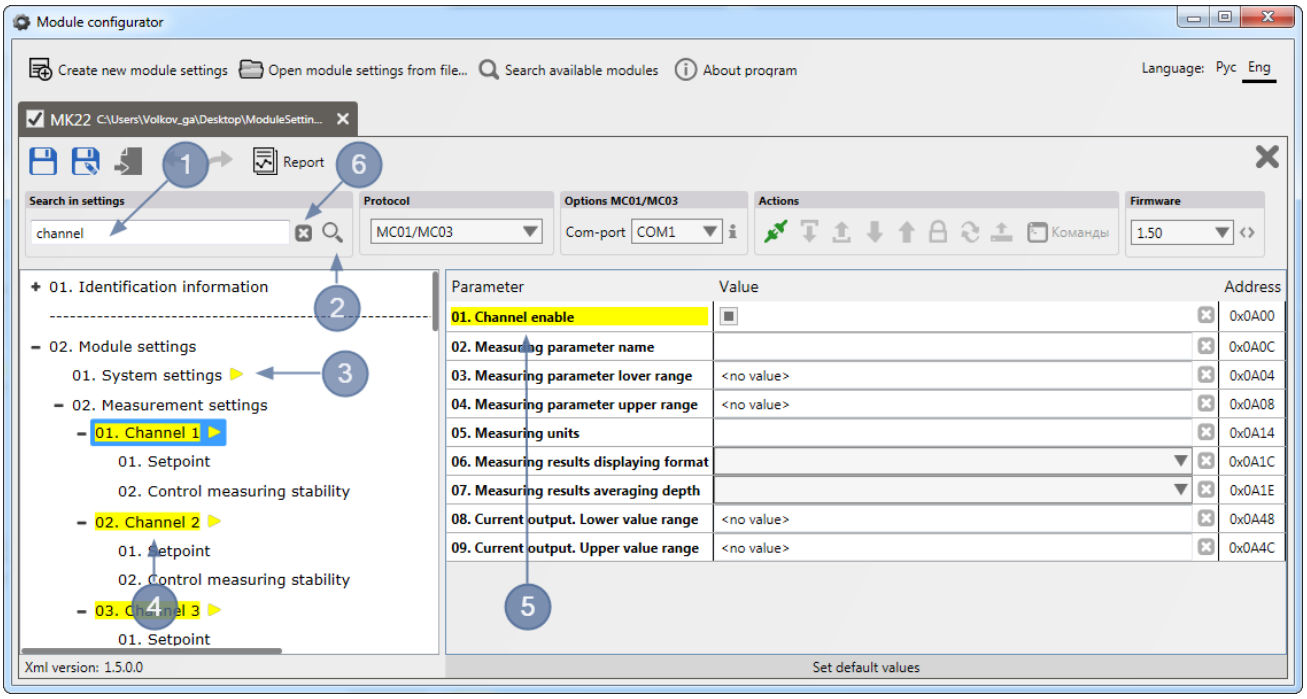

Figure 22 - Parameters search procedures

3.9 Recording settings into module

Before recording settings into module the program should be connected to module (Ref. Section 3.5 Module connection), and also in those modules with logic signaling block, it should be blocked. To block logic signaling of a module, press **Block logic signaling** button, thus setting it to position shown in Figure 33, item 1, therewith recording buttons (Figure 23, item 2 and 3) will become available.

Settings are recorded first into a module random access memory (RAM), and then into module non-volatile memory.

To record all settings into module RAM press **Record all settings into module** button (Figure 23, item 2). To record settings into module RAM only for current selected parameter group press **Record settings into module** button (Figure 23, item 3). For values recorded into module RAM to be saved into module non-volatile memory and available after module reset, press **Save all parameters into module non-volatile memory** button (Figure 23, item 4). Module will reset.

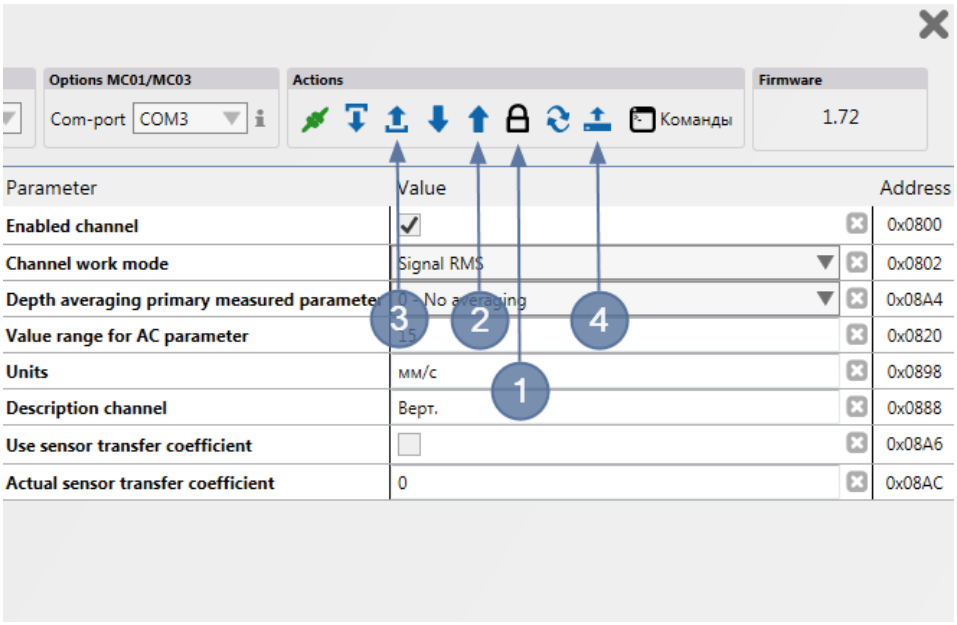

Figure 23 - Setting saving into module procedures

3.10 Module connection drop

To drop module connection press **Disconnect** button shown in Figure 24.

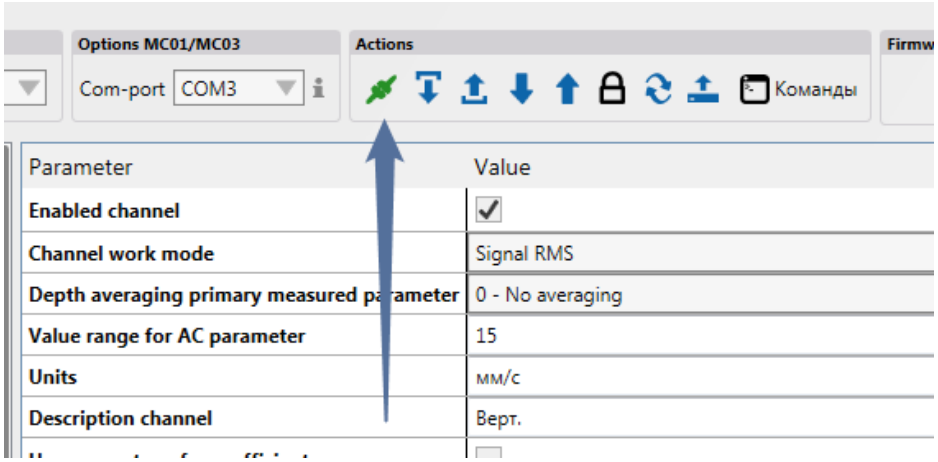

Figure 24 - Module connection drop button

3.11 Report producing

To produce adjustment values report of the selected configuration, proceed as follows:

1) press **Report** button (Figure 25, item 1);
2) in opened dialog window select report saving place (Figure 25, item 2);

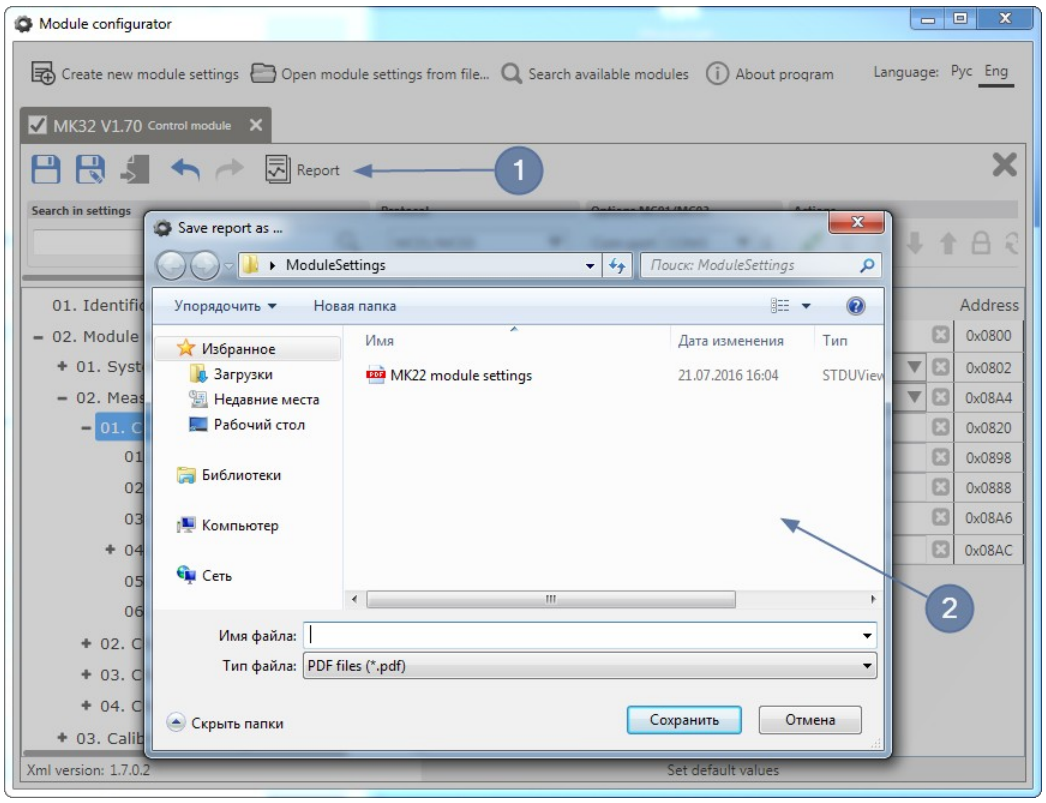

Figure 25 - Selecting report saving place

3) in parameter groups window select necessary groups and press **Generate** button (Ref. Figure 26);

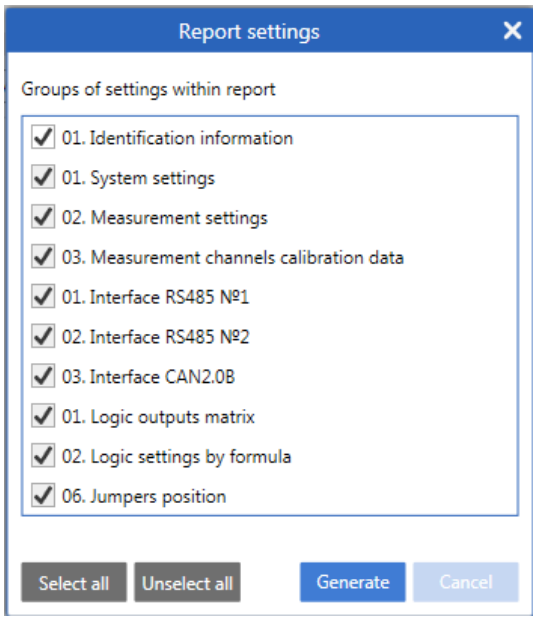

Figure 26 - Selecting parameter groups for report window

4) generation process will be displayed (Ref. Figure 27). The process itself can be stopped any time by pressing **Cancel** button.

5) After generation end the report will be automatically opened by a program for opening PDF documents. If such program is not installed – install it.

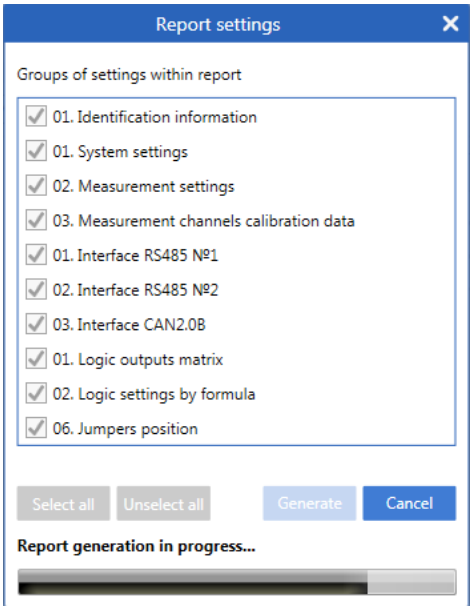

Figure 27 - Report generation process

4 APPENDIX A

(recommended)

Control module preparation from SPTA set

To prepare control module taken from SPTA set for operation, specify its operation parameters. Control module in SPTA set is supplied calibrated by inputs and unified outputs, therefore it should be setup carefully, to avoid module calibration parameters change. To prepare a pre-calibrated module for operation, proceed as follows:

1) prepare configuration file for the corresponding control module. Configuration file can be received by reading settings from existing control module and saving them as a file on disc , or using a ready-made file, recorded on disc, included into “Vibrobit 300” instrumentation delivery set;

2) connect to module;

3) read all settings from module;

4) import prepared configuration file: File->Import;

5) in appeared window select parameter categories that will be loaded into the program. Pay attention, marks against items “Calibration data...” should be removed to keep module calibration data unchanged;

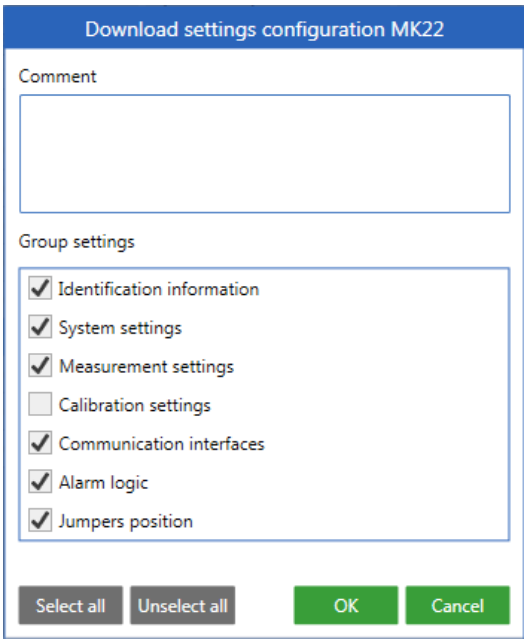

Figure 28 - Parameter groups

6) press “OK” button;
7) change module settings at your own discretion;
8) block module logic signaling;
9) record all settings into module;
10) save module settings into non-volatile memory. After saving module settings into non-volatile memory, module will reset;

To change module specific settings, leaving others untouched, proceed as follows:

1) connect module to personal computer via diagnostic interface (MC01USB) module;

2) start modules setup program *ModuleConfigurator.exe*;

3) create new operating window;

4) in appeared dialog window select module type, for example MK22;

5) specify port to which a module is connected;

6) connect to module;

7) in operating window left part activate (select/single mouse click) the targeted module configuration section (node/branch of parameters tree), for example “Communication interfaces”;

8) read parameters branch from module;

9) change parameter value, for example “Device address on RS485 bus” in the operating window right part;

10) block logic signaling;

11) record parameters branch into module;

12) save module settings into non-volatile memory. After saving module settings into non-volatile memory, module will reset.