SMConfig v1.1

Simple Modbus Configurator Quick Guide

Read the quick guide carefully before starting to use the software.
Producer reserves the right to implement changes without prior notice.

Introduction

Simple Modbus Configurator (SMConfig) is a software suitable for easy configuring of remote devices. Software can be used with any device using Modbus RTU communication protocol, however some functionality was developed especially for devices produced by SIMEX. Idea of program operation is based on the script files. The script file is a simple formatted text file indicating registers for write, and values to be written into. The main assumption is that all configuration data is stored in a Holding Registers, so function 3 is used to read the data from the device and function 6 for writing the data.

SMConfig user interface

In the figure below a main window is shown.

Figure 1. Main window of SMConfig software.

COM port   This is a field where user can select a serial port used for communication with the devices. During start-up program scans available ports, max. number of port is 255. While a USB/serial converter is used, com port number must be lower than 255.

Speed   This filed allows to set a required baudrate. Default value is 9600 bps, maximum is 921600 bits/s. All devices being programmed/verified must have the same speed.

MB Address   This edit box is used for choosing the device for programming/verifying. The Modbus allows to connect as many as 255 devices at the same time to the network, but every device have to have individual Modbus Address. Software allow to switch between devices being programmed without disconnecting them from the network. The value of this filed must be not greater than 255. The value 0 is a broadcast address, This value allows to write the data to the all connected device at the same time. Be careful using address 0, because it is very easy to damage a calibration settings or other important configuration data by accident.

[Select file]   Press this button to select a script file. The script file is a simple formatted text file contains informations about selected registers and data to be written to these registers. The same script file can be used for writing configuration to many devices. The selection of the device for programming can be done by MB address selection field. The script file format is described in the next chapter. A file selection window is presented in Fig. 2.
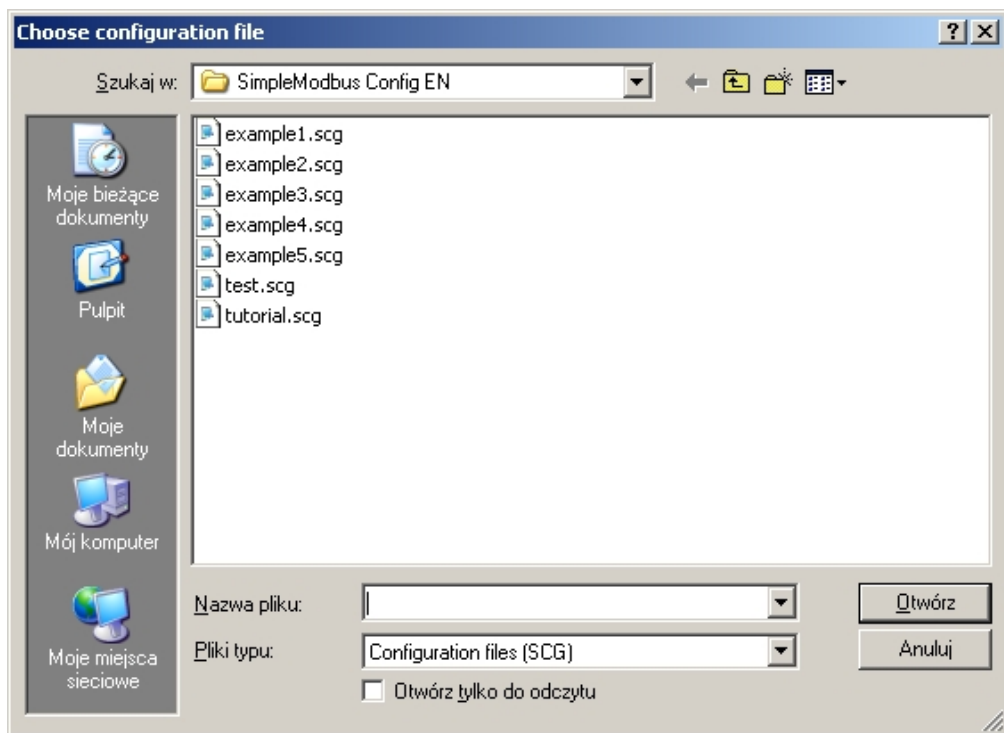
Figure. 2. File selection window.

[Program]   This button starts process of writing data from selected script file to the device with address equal "MB Address". Be sure that "MB Address" is selected correctly before start writing the data. If the device with selected address is not present, or do not responds then a message shown in a Fig. 3 appears. After successful writing process a message presented in a Fig.4 is displayed. Figure 5 shows the error message displayed when a user trays to program the device without loading the script file.

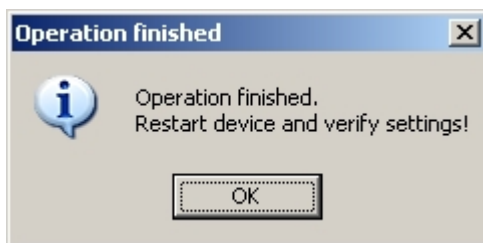Figure 3. Error message informing that write or read error occur.

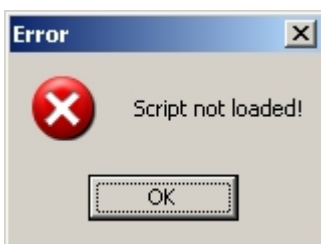Figure.4.Message window shown after successful data writing.

Figure 5. Error message – no script loaded before programming or verifying start.

[Verify]   This button allows to check data stored in a selected device. Software reads data from the registers indicated in the script file, and compares their values with data ascribed to them in a script file. After the process, a check report is displayed. An example of check report is shown in Figure 6. If SMConfig can not read data from the selected device then error message is displayed (Fig. 3). If script file was not loaded before verifying then error message presented in Figure 5 appears.
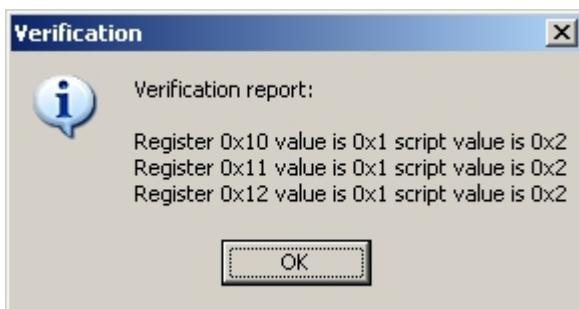

Figure 6. Example of verification report.

[Scan for devices]   This is a special button allowing auto scan of the network. All SIMEX devices have a special register (address 21h) where a Device ID is stored. SMConfig trays to read data from register 21h on the all devices (addresses 1-255). In fact first scanned address (device) is 255 because SIMEX devices have usually this address by default. This function can be also used for the devices other than SIMEX brand, the only condition is that, these devices must return any value when register 21h is being read. It is also important to set the

"Speed" of the all devices to the same value, because while "Network scanning" the SMConfig uses a baud rate selected by "Speed" field. After pressing [Scan for devices] button a message visible in figure 7 appears. Clicking OK user starts the scanning process, after about 2 minutes a "Scanning report" is displayed (Fig. 8). Below the word "Devices" addresses of all found devices are enumerated.
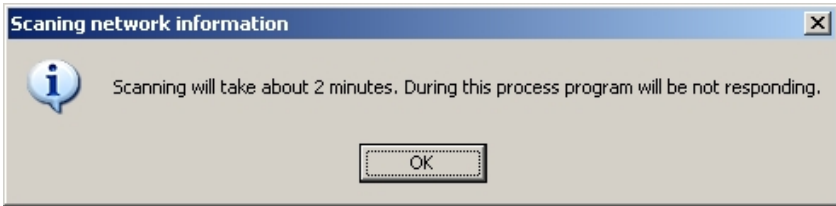

Figure 7. A message before start of network scanning.

Figure 8. Example of "Scanning report"

[About] This button cause displaying licence information window presented in Figure 9.
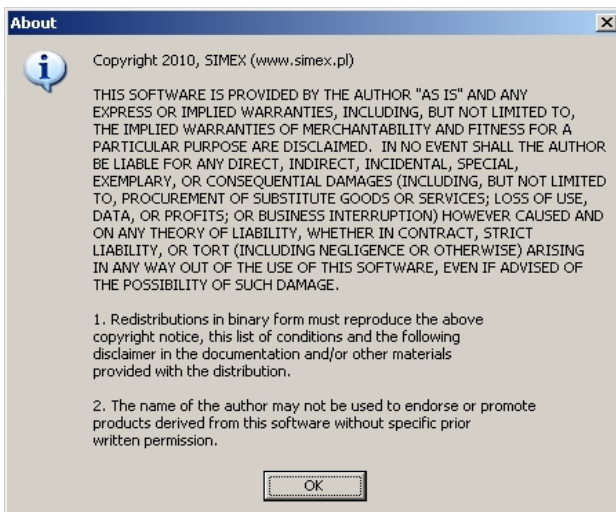

Figure 9. SMConfig licence information window.

Script file structure.

SMConfig script files are a simple formatted text files containing the informations about the registers and the data to be written. Script file can have a free name, but its extension must be "scv".

Single line in the file is related to single write command (or check). First argument is a destination register address, the second value to be stored. SMConfig accepts different data formats:

Decimal (1, 10, 112)
Hexadecimal (0x001, 0x1, 0x23, 0xABC7)
Binary (0b0001, 0b1, 0b00110110)

Data should have no space, and the arguments must be separated by comma. Follow arguments a comment may occur. Comment must be separated from arguments by double "/".If the line has an extra argument or is not end with EOL sign, then an unexpected results can occur while programming. The line can consist only form the comment, then it must starts from double "/". Below few examples of command and comments lines are presented.

// This is an example of comment line
0x0010,1 // to register 16 (10h) write 1
0x0011,0x12 // write 18 (12h) to register 17 (11h)
0x00A,0b11//write 3 to register 10

The best way to learn more about creating the script files for SMConfig is to practice it. Please see the examples, and *tutorial.scv* file to learn more about SMConfig script file structure.

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