Modbus Sniffer

User Manual

Revision 01A-01
11 August 2015

NewElec (Pty) Ltd

Head Office
c/o Soutter & Maltzan Street
Pretoria-West
Gauteng
South-Africa

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1. Abstract

NewElec Modbus sniffer is a tool used with any non-interference RS485 to RS232 device.

This allows too see what information is getting transmitted onto the Modbus. Modbus sniffer will also break down the messages into a readable format. Data can also be stored and view at a later stage.

This manual will explain how to use the Modbus sniffer in detail. The RS485 to RS232 that will be recommended is the ADAM4520. See the RS485 to RS232 converter user manual in order to configure the RS485 to RS232 converter.
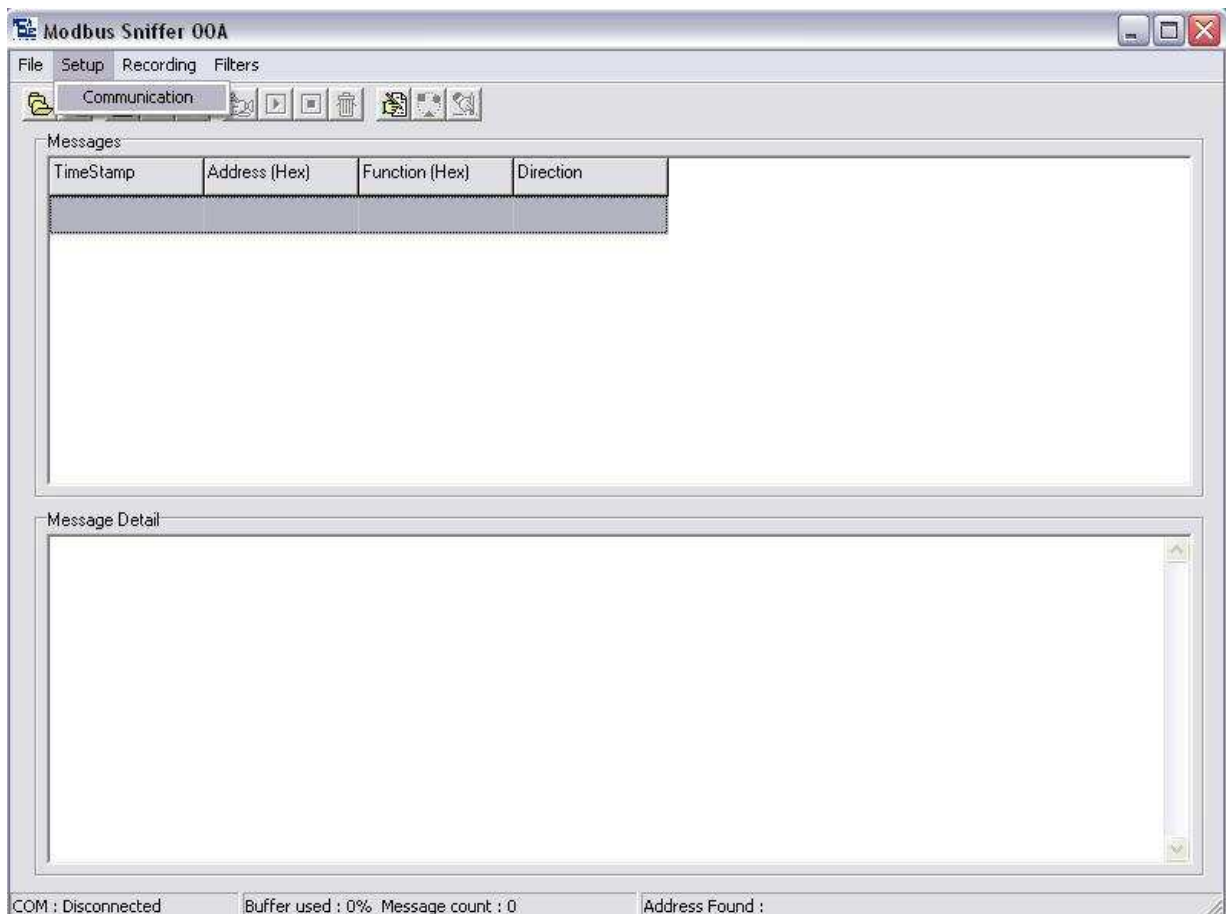
2. Specifications

- Window operating system.
- CPU: Pentium II 1 Ghz.
- RAM: 512Mb
- Hard drive space: 50Mb
- CD drive x 2 speed.
- Screen resolution:
  - o   800 x 600 minimum.
- RS232 port.
  - o   RS232 port must be active before starting Modbus sniffer.

3. Installing Software

- "ModbusSniffer.exe" can be copied over into any directory.
- Right click on "ModbusSniffer.exe" and select create shortcut.
- Copy the shortcut to the desktop.

4. Connecting To The Network

4.1 Setting Up The Communication Port

- Connect the RS485 to RS232 converter to the network and PC.
  - o Please see manufacture detail on how to setup the RS485 to RS232 converter.
- Select communication setup 🖥.
- A communication setup panel will show.

- Select the communication port the converter is plugged into.
- Select the baudrate of the Modbus network.
- Select the data bits of the Modbus network.
- Select the parity of the Modbus network.
- Select the stop bits of the Modbus network.
- Press the *"Apply"* button.

4.2 Connecting And Disconnecting

After the port configuration is correctly configured (See chapter 4.1). The Modbus frontend should be able to connect and sniff the bus.

- Connecting to the bus press the 🟢 connect button.
- To disconnect from the bus press the 🔴 disconnect button.

5. Recording

Two methods of recording are available. Recording to buffer and recording to file.

5.1 Recording To Buffer

Pressing the ▶ will start recording data to the PC RAM.

The data can always be saved by pressing the save button 💾.

Stopping the recording requires pressing the ◼ stop recording button.

5.2 Record To File

Before recording to a file a recording path needs to be setup.

Press *"Recording->Recording File Setup"*. The following interface will show.

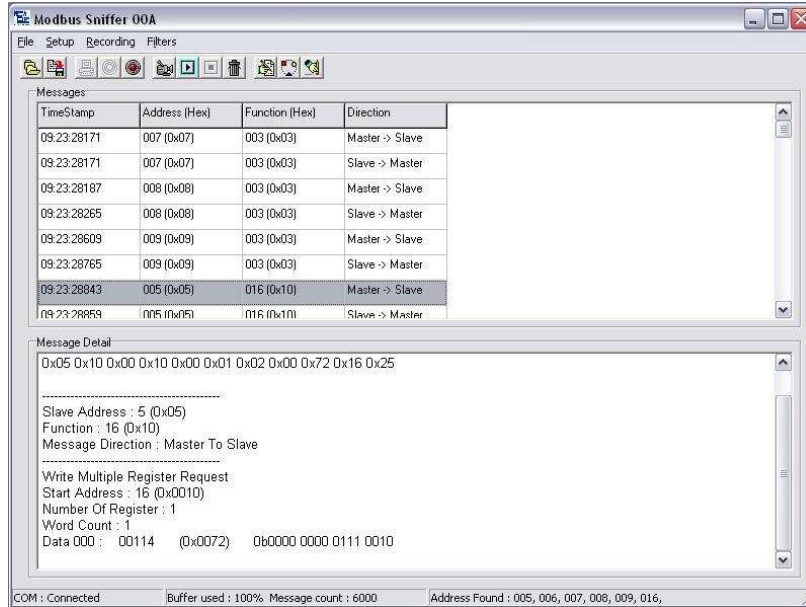Select the directory and name the file a base name. Press the *"OK"* button when done.

When completed, press the record to file button to start recording to the file.

Recording can be stop by pressing the stop recording button.

6. Viewing The Recording

The top block shows messages that are being transmitted. Messages are recorded with a date and time stamp indication.
Address shows the decimal and hexadecimal value.
Function shows the type of function message that was sent.
Direction indicates the direction that the message was moving.

Left clicking on a message will show the message in detail below.

7. Filtering Data

Applying a filter can ease faultfinding. The filter will disregard unwanted messages in the view window.

Pressing the [icon] filter setup button will open the filter dialog screen.

Filter can be applied to the following parameters:
- Address.
- Modbus function.
- Error Messages.
- Master To Slave communication.
- Slave To Master communication.
- Unknown messages.

After the filter is completed press the **"OK"** button.

Press the [icon] apply filter button to apply the selected filter configuration.

Press the [icon] clear filter button to remove the filter selections.
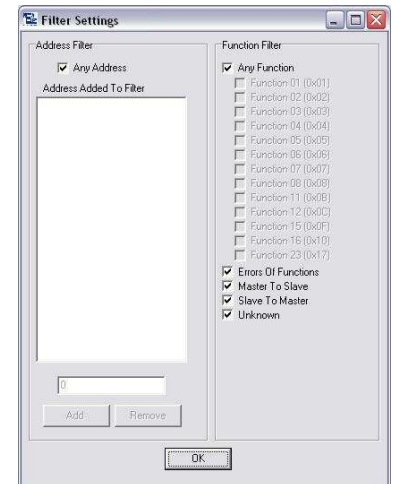
8. Opening Record

Modbus sniffer does not need to be connected to the bus in order to view files.

Pressing the [icon] open recording button will load the records into the view window. After the recording is loaded the filter can be applied to take a look at the data.

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