Modbus TCP Gateway

Introduction

Modbus Gateway is designed for easy integration of Modbus TCP and RTU network. With this device, Modbus RTU slaves can be made accessible to TCP master. It also has a remote web access panel that allows you to manage groups of devices. That makes integration customizable and easy.

1. Powering up

Please connect the Modbus Gateway device regarding to wiring schema and following list:

1. Connect the power supply to the device.
2. Connect the device to the LAN network.
3. Connect your Modbus RTU Slaves to COM3.

Recommended power supply:

- 9-30V
- min. 20W
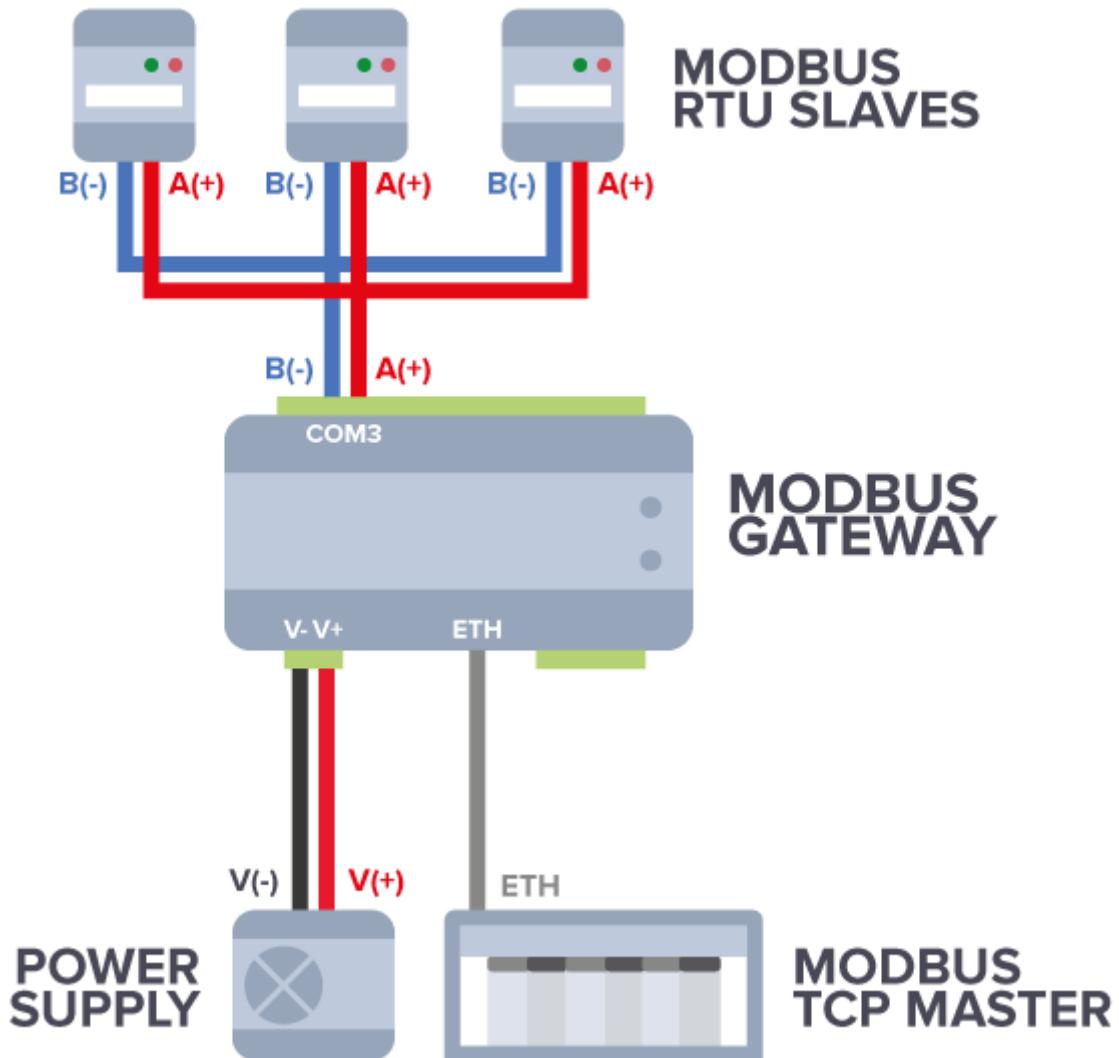
2. Default Settings

Default parameters of serial port	
Type	RS-485
Baudrate	115200
Parity	8N1
Default Modbus TCP Master settings	
port	502

In default configuration device can work with Modbus TCP Master via RS-485 and one Modbus RTU slave, which IP is 192.168.0.101. You can change default setting - skip to point **3. Advanced configuration**.

3. Advanced configuration

3.1. Login to the device

If the device is connected to the network you can find your device using SearchNPE.
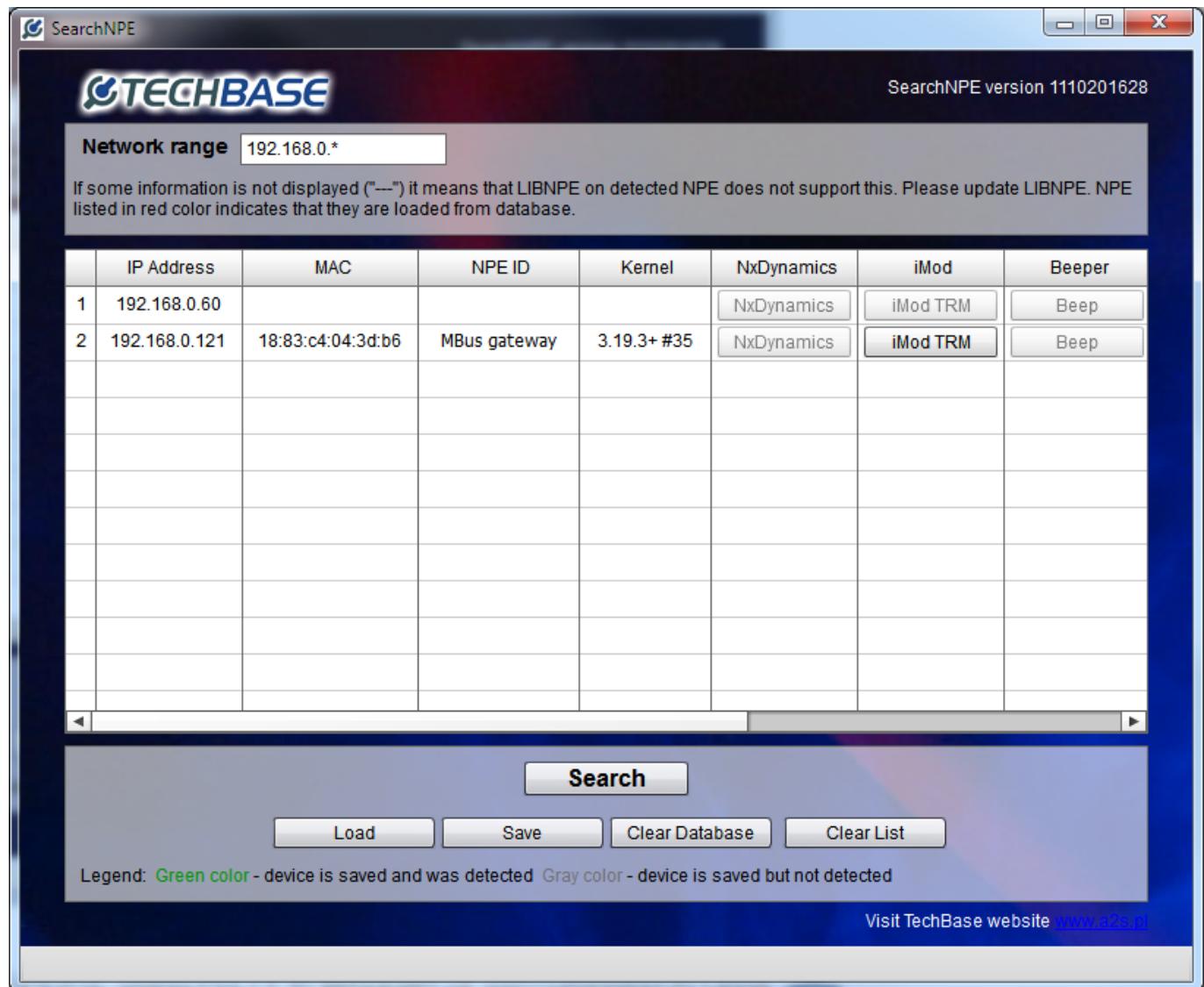
If you know IP address of the device, you can connect by port 22 (default in SSH) e.g., using PuTTY in

Windows or *ssh* command in Linux.
You can find PuTTY at following address: http://the.earth.li/~sgtatham/putty/latest/x86/putty.exe

- **port 22**
- **Login**: pi
- **Password**: raspberry

3.2. Editing default configuration

Default configuration of device is located in **/mnt/mtd/iMod/config/MainConfig.xml** you can edit this using editor i.e. nano.

```
nano /mnt/mtd/iMod/config/MainConfig.xml
```

3.2.1 Change serial port settings

To change default serial port settings please find following line in configuration file.

```
<port>"COM3-115200-8N1"</port>
```

After applying the change, please do following command:

```
imod start
```

3.2.2 Add more Modbus RTU slaves

To add more Modbus RTU slaves to configuration please add code like a following example to the configuration file before </groupe> tag. Just change device ID (or port settings) in **property name="device-id"** tag.

```
<source-channel name="ModbusRTU_Source">
    <protocol name="MODBUS">
        <property name="type" value="RTU"/>
    </protocol>
    <port>"COM3-115200-8N1"</port>
    <property name="device-id" value="1"/>
</source-channel>
```

3.2.3 Change network settings

In default DHCP is turned off. To set a dynamic IP address, edit the file in the location: **/etc/network/interfaces** as follows:

```
auto eth0
allow-hotplug eth0
iface eth0 inet manual
```

Then please do following commands:

```
cd /etc/init.d/
update-rc.d dhcpcd defaults
```

For more info check: Communication via the Ethernet port

Troubleshooting

1. Check status

If your device doesn't work you need to check some elements. First step is check configuration of serial port.

> comctrl -r

The correct settings are:

```
root@raspberrypi:/home/pi# comctrl -r
Controller 1 in RS-232 mode
Controller 2 in RS-485 mode
```

2. Default configuration

```xml
<?xml version="1.0" encoding="UTF-8"?>
<imod version="1.0.0">
    <group name="channels">
        <access-channel name="ModbusTCP_Access">
            <protocol name="MODBUS"/>
            <property name="device-id" value="1" />
            <port>"ET-502-TCP"</port>
            <property name="referenced-source-channel"
value="ModbusRTU_Source" />
        </access-channel>
        <source-channel name="ModbusRTU_Source">
            <protocol name="MODBUS">
                <property name="type" value="RTU"/>
            </protocol>
            <port>"COM3-115200-8N1"</port>
            <property name="device-id" value="1"/>
        </source-channel>
    </group>
</imod>
```