MIKRODEV®

Akıllı Kontrolde Teknoloji Devi

MODBUS GATEWAY

CONFIGURATION SOFTWARE

- MBS100 SERIES

  MODBUS GATEWAY

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Preface

Mikrodev MBS100 series MODBUS Gateways connects MODBUS RTU devices on RS232 and RS485 networks to MODBUS TCP networks. The MBS100 series gateways are optionally connected to the MODBUS TCP protocol via GPRS, ETHERNET or Wi-Fi networks. Serial ports can be selected as two different options as 1 port RS232, 1 port RS485 or 2 ports RS485.

It can work as client or server in TCP/IP connection, without depending on socket type specified in MODBUS protocol. At this point, it is possible to provide access to the devices over internet when port routing is not possible. It also provides multiple connection support for TCP socket connections and can serve up to 4 different TCP Master devices over the same port.

Automatic detection and reconnection of connection failure conditions; dynamic tail structure and bridge between different speeds is also important features of Mikrodev MBS100 series converters.

Assistant software is used for configuring Mikrodev MBS100 series devices. Thanks to the Assistant program, parameter settings of the MBS100 products are easily performed.

Please follow our site www.mikrodev.com for the upto date version of the document.

About Mikrodev

Since 2006, MIKRODEV has been developing and manufacturing industrial control and communication products. MIKRODEV serves the system integrators in the public and private sector, OEM and end users.

Our products are manufactured complying with the quality standards required by the industrial automation industry and the quality of our products are proved on the field for many years

MIKRODEV is one of the few companies in the world that has its own designed IEC 61131-3 compliant library for its programmable logic control devices. In addition, the open, flexible, programmable SCADA solution developed by MIKRODEV is also available to customers.

MIKRODEV products' performance and wide range of applications make them possible for customers to achieve faster, simplified and cost-effective results.

WARNING!

- ✓ Use the programming editor only for Mikrodev Certifed devices
- ✓ When you change your physical hardware configuration, update your development to the appropriate version.
- ✓ The developed program should be tested separately before taking to field service and should be shipped to the field after the tests are successfully completed.
- ✓ Take all accident prevention measures and safety measures identified by local law

Failure to comply with these rules may result in death, serious injury or property damage

1 MODBUS GATEWAY CONFIGURATION SOFTWARE

1.1 General Information

The Assistant software is used to make all necessary settings for the Mikrodev gateway devices. Thanks to the software, device settings can be made online and/or offline. The settings that are loaded on the device can easily be downloaded and the previously saved settings can easilly be uploaded into the device by the program.

The connection between the program and the device can be established in various ways such as USB, Ethernet, GSM, Wi-Fi. For Ethernet supported devices; there is also the ability to search the network and list the devices with connection information.

1.2 Device Connection

1.2.1 USB Serial Connection

One of the methods for establishing communication between PC and Mikrodev device in device configuration is USB serial connection. In order to perform USB connection between PC and device, you need to install USB driver for PCs with Windows 7/8 / 8.1 operating systems. There is no need to install the USB driver for Windows 10 operating systems. For serial connection over USB, "Connect over USB" box in the "Connect and Configure Your Device" section of the Assistant software is selected. In the "USB Port Selection" section, you should select the port and click "Connect". USB connection will be established after that. (Figure 1)
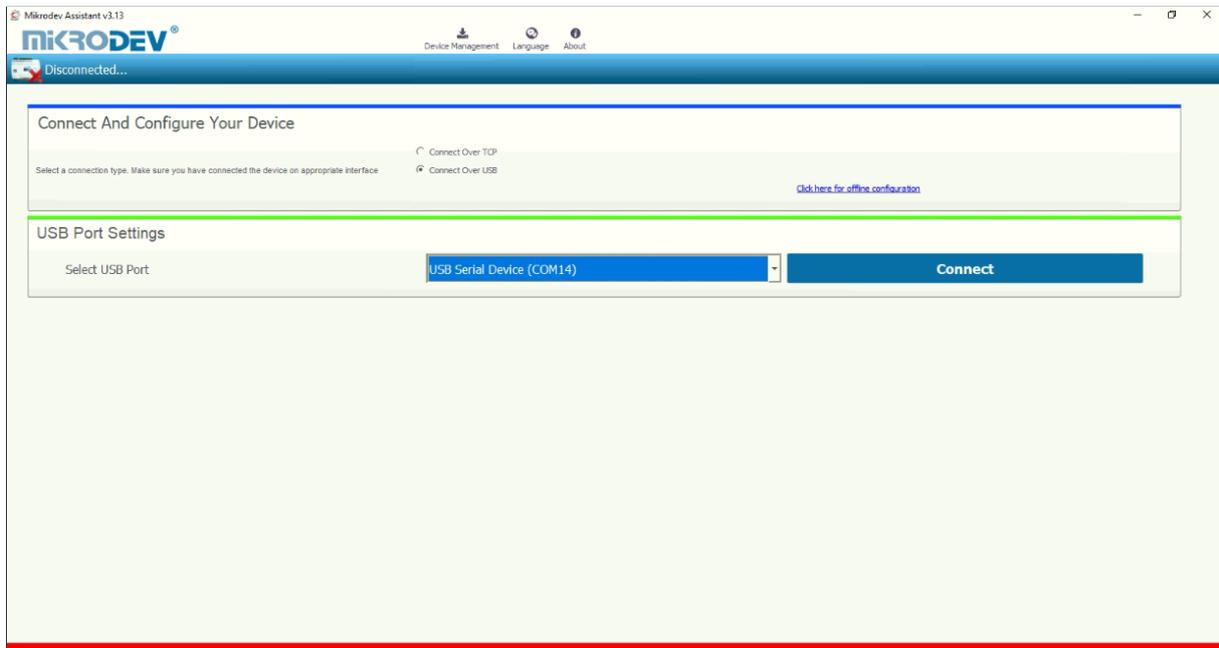
Figure 1 USB Connection

1.2.2 TCP Connection – Device Discovery Mode

"Network Discovery" option is used to detect and connect IP addresses of Mikrodev devices which are active in the local network. The "Network Discovery " box will be highlighted after the "Connect via TCP" box is checked in the "Connect and Configure to Device" section of the Assistant software. After clicking "Scan Network for Mikrodev Devices", the serial number, IP address, listening port and software versions of all Mikrodev devices which are active in the network are listed on the screen. (Fig. 2) You can connect the device on the list by double clicking on the device name on the screen.
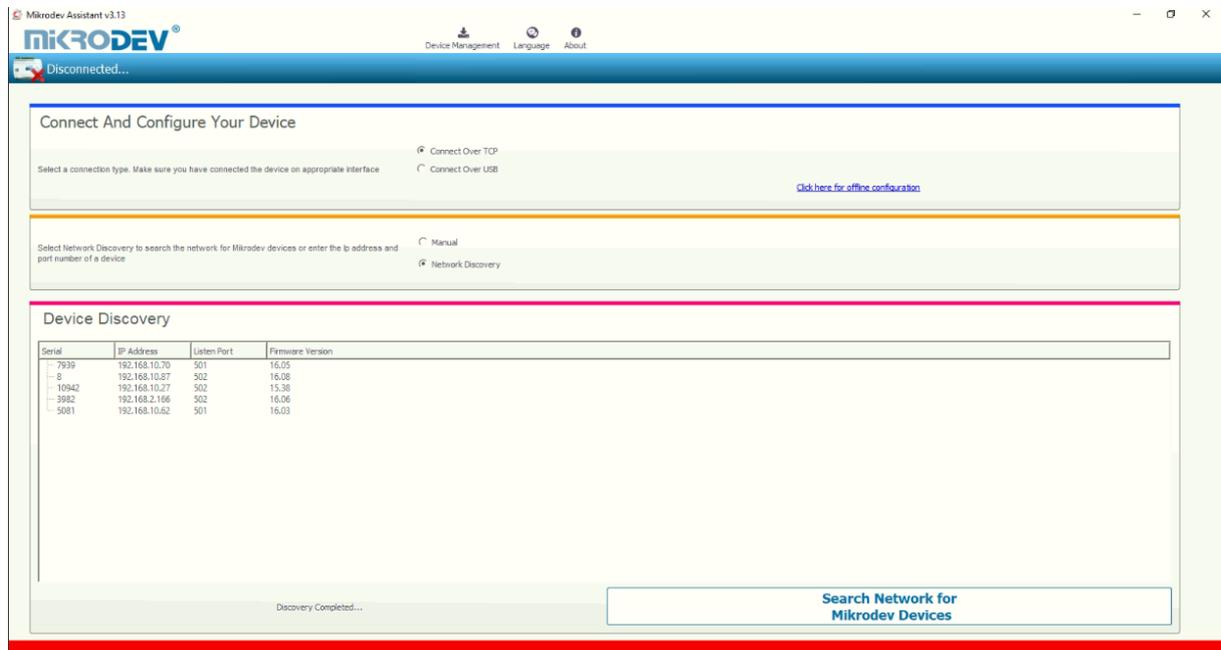
Figure 2 TCP Device Discovery

1.2.3 TCP Connection – Manual

When manually entering the IP address and port number of the device that is active in the local network, "Manual" option is used. The "Manual" box is checked after the "Connect over TCP" checkbox is checked in the "Connect and Configure Device" section from the Assistant software. The IP address of the device to be connected is entered into the "Device IP" section, the port number is entered into the "Port" section and "Connect" is clicked. (Figure 3) Assistan software connects to the Mikrodev device with specified IP address and port number.
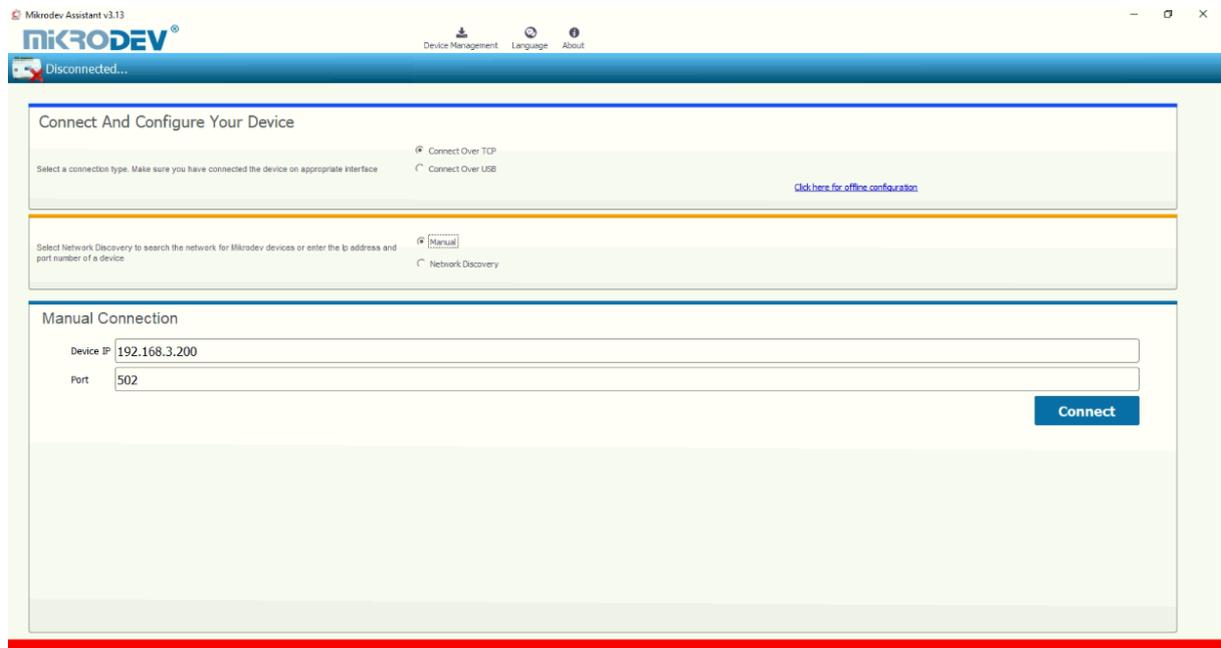
Figure 3 TCP Connection

1.2.4 Port Numbering

Port terminal places might difference according to PCB version of device. To do right configuration connect over USB to device and check version with AT commands.

Figure 4 Version Query

Response from device should be like below.

Figure 5 Response of Version Query

Check the PCB version number placed to last 3 character of response like "pXX"
VERSION=MBS100_E_s15.52**p66**

- If PCB version is p55 ;
    - o Port 1 -> RS 232 (ROUTE 1)
    - o Port 2 -> RS 485 (ROUTE 2)
- If PCB version is p66 ;
    - o Port 1 -> RS 485 (ROUTE 1)
    - o Port 2 -> RS 232 (ROUTE 2)

1.3 Offline Settings

Offline mode is used when parameter settings are made and saved without connecting to the device. Click on "Click here for offline configuration" on the Assistant main screen when you want to make the offline parameter settings. The device is selected in the screen that appears, and then "Select this device" is clicked. (Fig. 6) Offline parameter settings of the selected device can be made. In addition, using the "Load from configuration file" option on the same page, previously saved configuration values can also be loaded to the program.
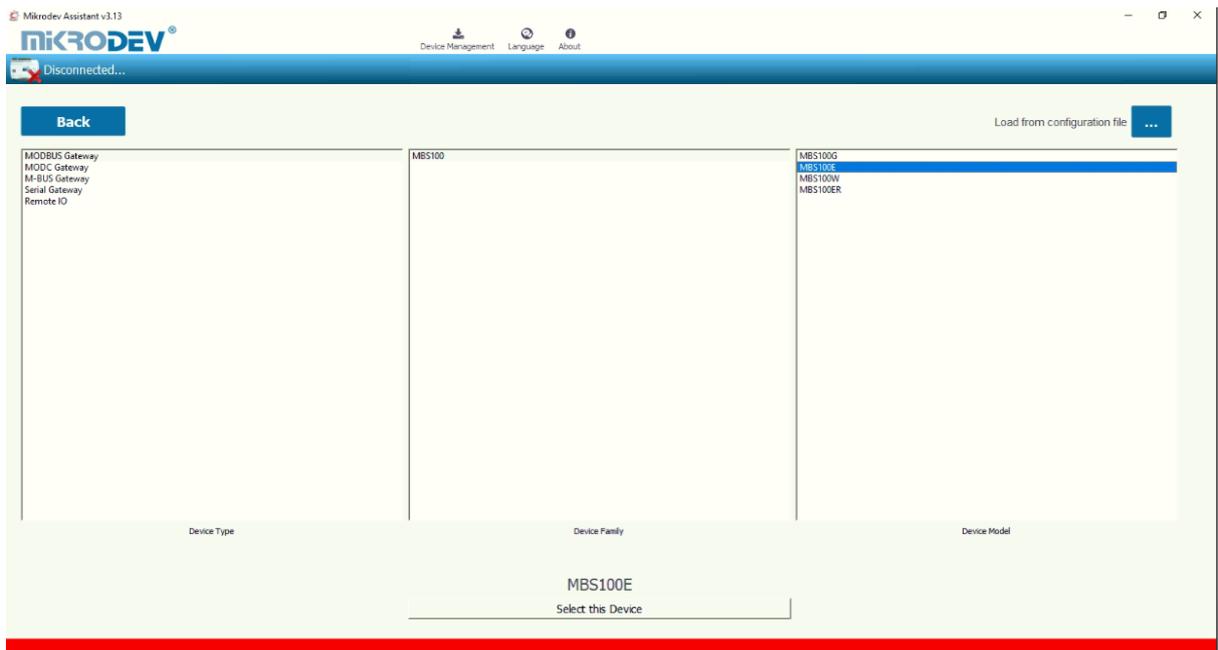
Figure 6 Offline Device Selection

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2 MODBUS GATEWAY SETTINGS

2.1 Status Screen

It is the status information screen which shows related information to the connected Mikrodev device. This screen contains the device's manufacturing information, IP settings and serial connection settings (port1, port2). (Fig. 7) You can access the web interface of the device from this screen as well. Select "Click here to access the web interface of the device" to access the web interface.
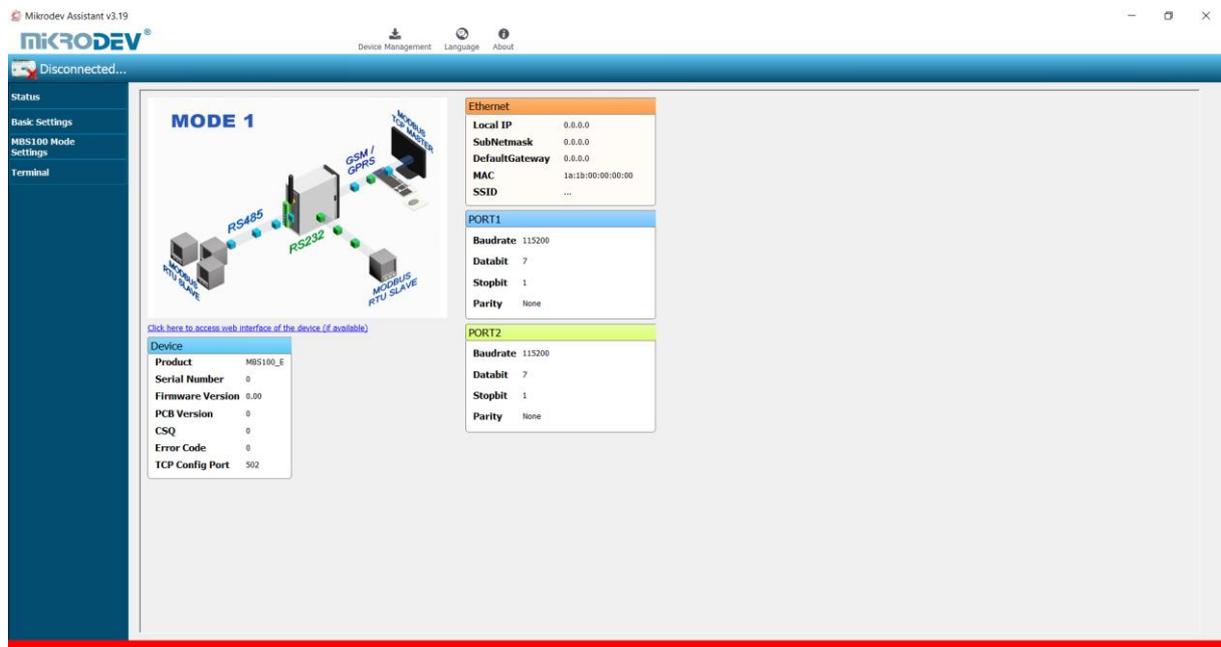
Figure 7 Status Screen

2.2 Basic Settings

In the basic settings section, parameter set values are entered according to communication types. When entering local IP, gateway IP, subnet for Ethernet connection; For GSM connection, APN, username, user password are entered. When Wi-Fi connection is desired, SSID (modem username), password, Wi-Fi local IP, Wi-Fi gateway IP and Wi-Fi netmask IP are entered. In addition, the password definition for access control to the Mikrodev device is performed on this page. Also, device connection follow-up duration, auto reset duration, and configuration port can be entered. You can send ID after connection by checking the "Send ID after connection" checkbox. (Figure 8)
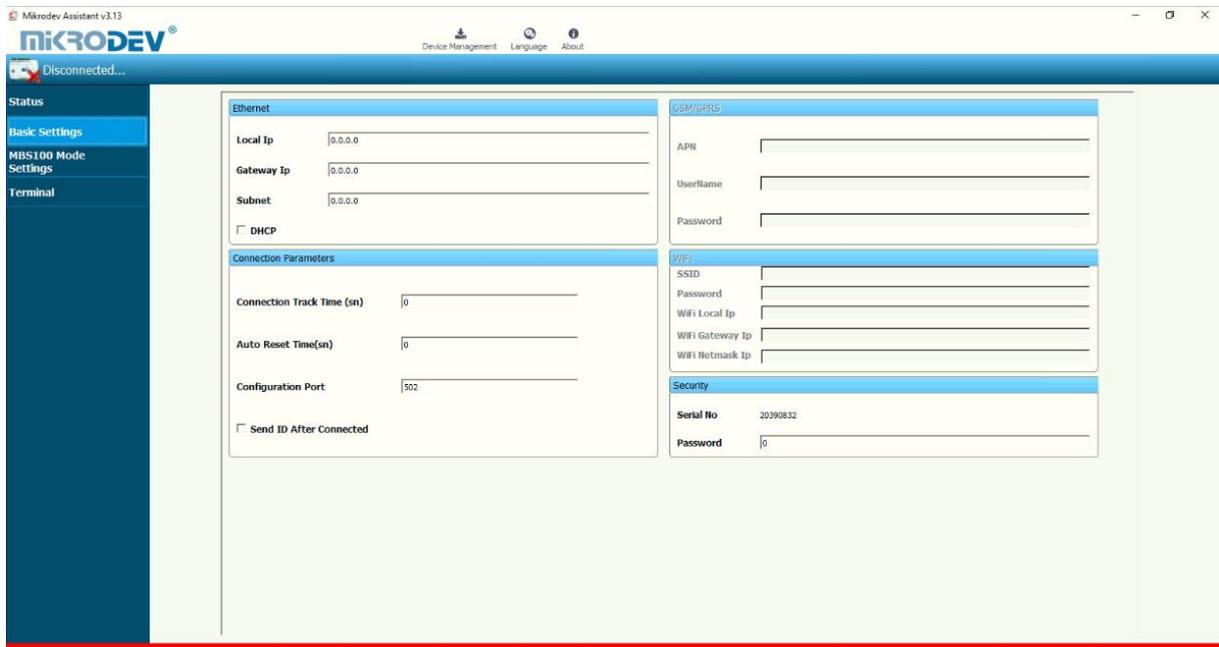
Figure 8 Basic Settings

2.3 MBS100 Mod Settings

The MODBUS settings of the device are made in MBS100 mod settings section. In the case of connection via MODBUS TCP, server or client selection of connection type is made and port settings are defined. When the MBS100 series gateways are to be operated in the client mode, the relevant box is marked according to the serial (RTU) connection types (RS232, RS485) and the IP setting, port number, baud rate, databit value, parity value and stop bit are set. (Figure 9)
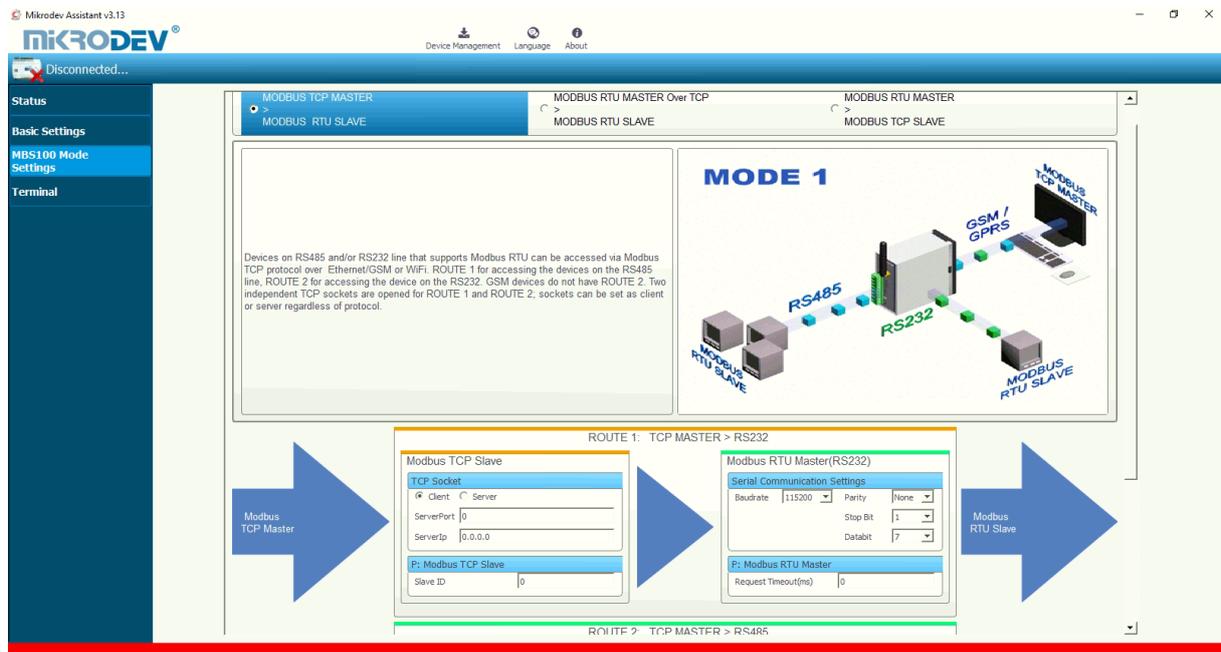
Figure 9 MBS100 Mod Settings

2.4 Loading Settings to Device

Click "Device Management" on the Assistant software to send the configuration settings to the device. Then click "Send Configuration" option. (Figure 10)
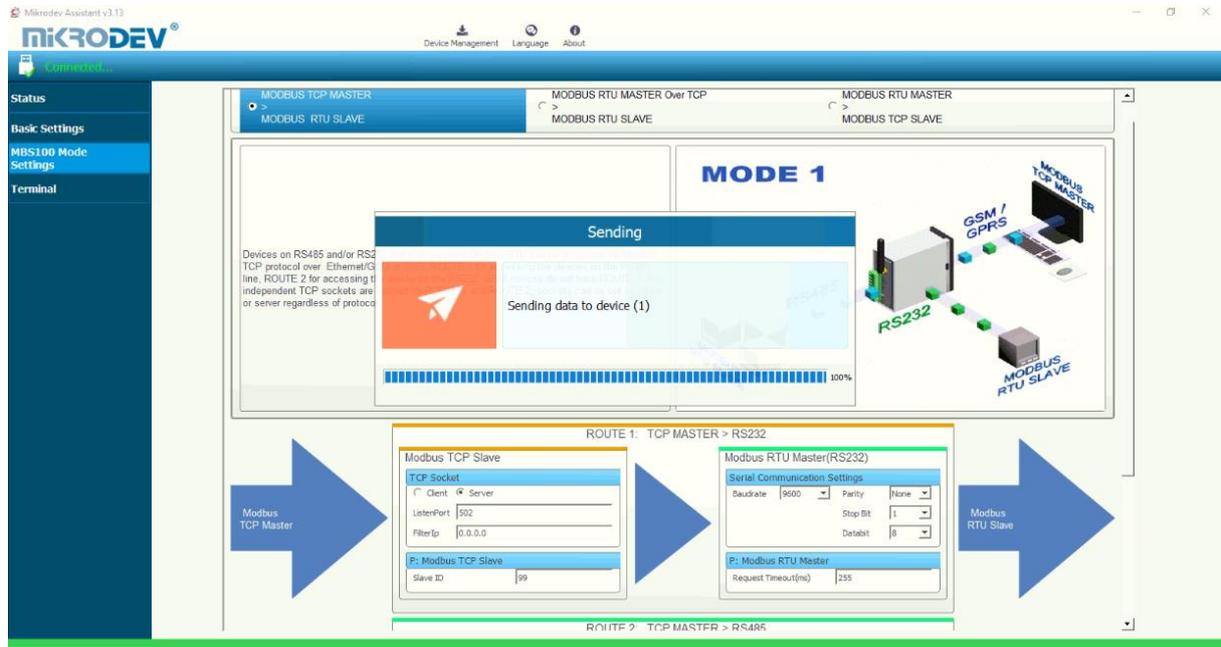
Figure 10 Load Settings

After completing the configuration, the device must be rebooted in order to register the settings. (Figure 11)
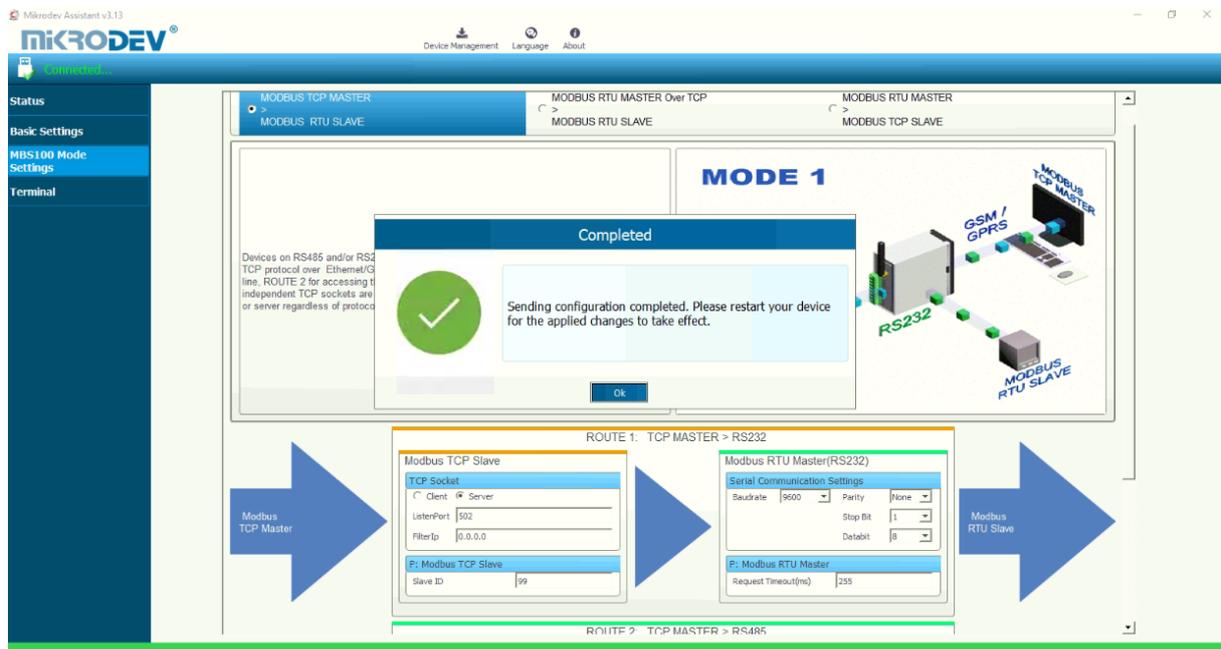
Figure 11 Load Confirmation

Restart the device by clicking "Restart Device" under "Device Management" on the main screen of the Assistant program. When the device is rebooted, you may need to remove and reinsert the USB cable to reconnect with the serial port. (Figure 12)
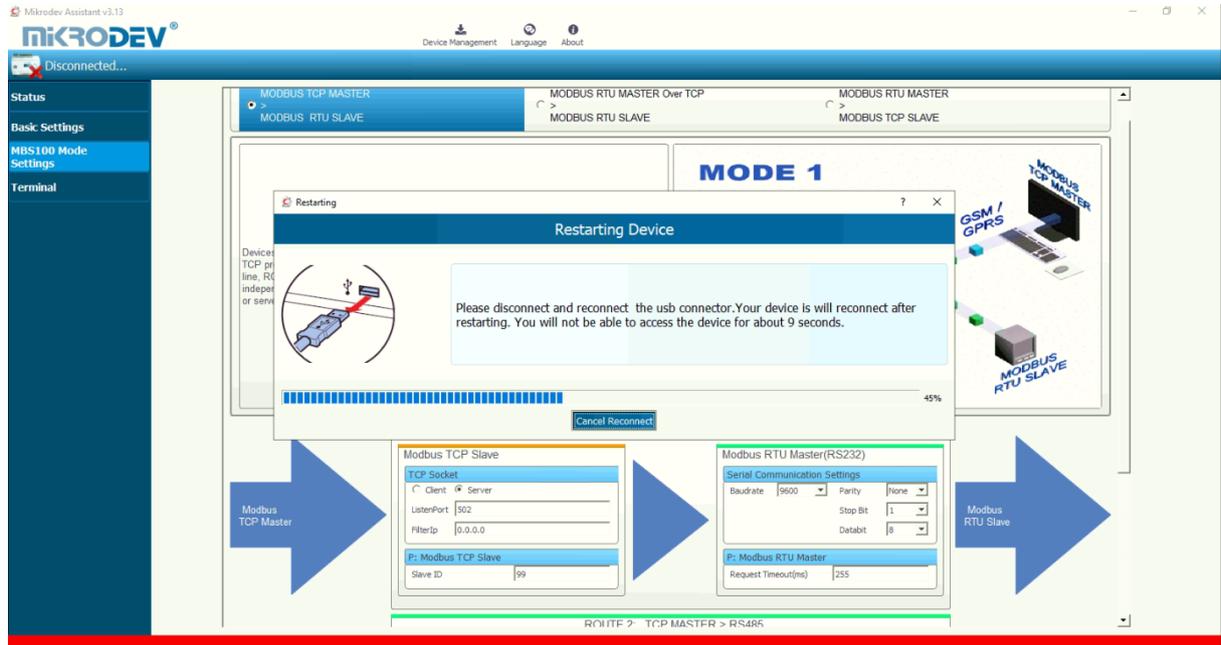
Figure 12 Serial Connection Reset

The TCP connection between the device and the PC will be established automatically after the device is rebooted, after waiting approximately 20 seconds to reconnect to the device through the TCP connection. (Figure 13)
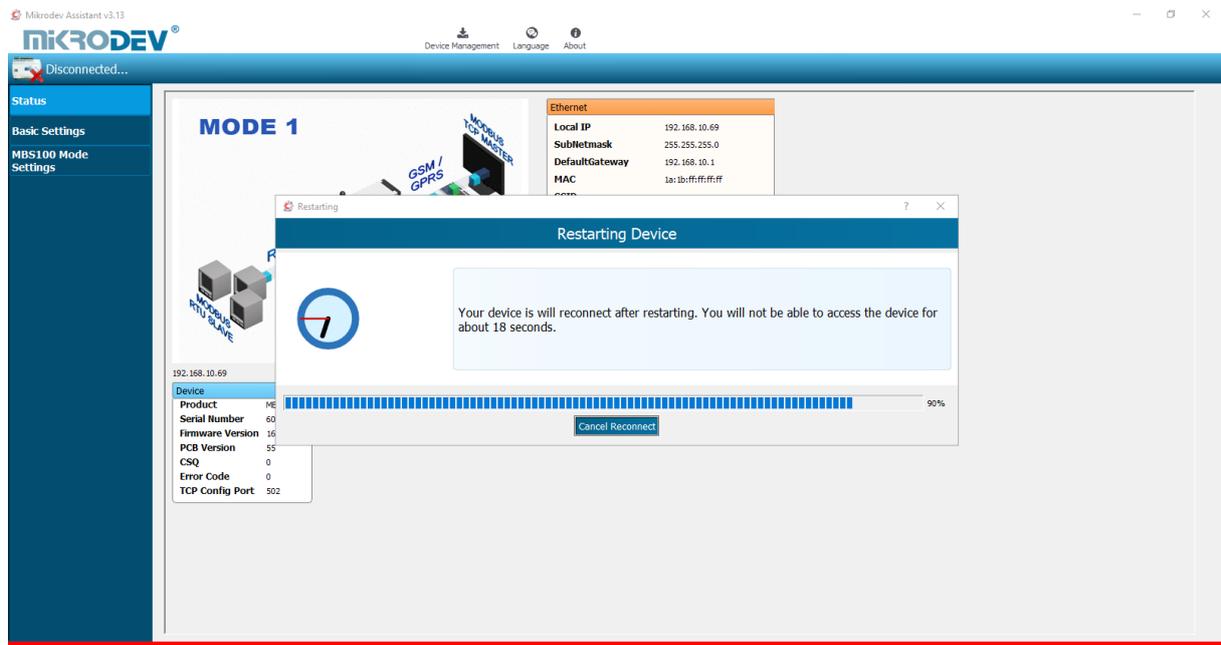
Figure 13 TCP Connection Reset

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2.5 Terminal

Terminal is the section where the command lines for the MBS100 series gateways are entered. In this section, information coming from the device is listed on the screen. In the "Custom Command Input" section, type the command to be queried (eg AT + VERSION =?) And click "Send" to send the query to the device. The query answer appears on the screen. (Fig. 14) Click "Clear History" in the "Console Window" section to clear the inquiries on the screen.
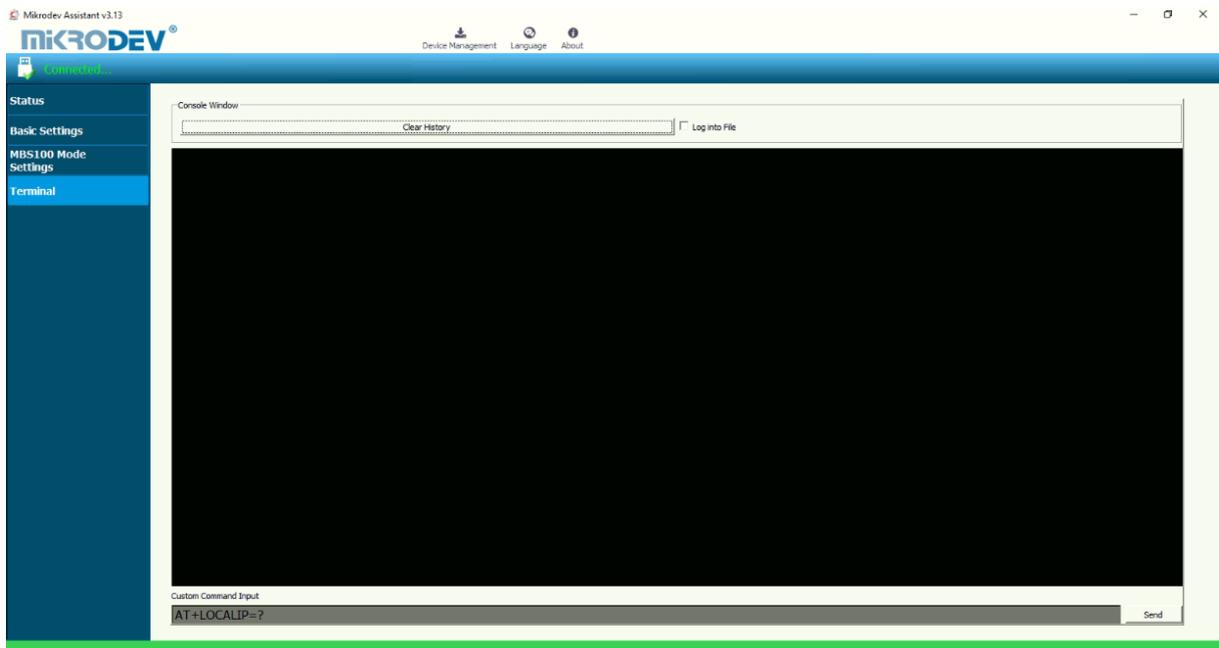
Figure 14 Terminal Commands