



Akıllı Kontrolde Teknoloji Devi

# **M-BUS MODBUS GATEWAY CONFIGURATION SOFTWARE**

- MMS100 SERIES  
M-BUS MODBUS GATEWAY

**12 / 2022**

**MIKRODEV\_SM\_MMS100\_CG\_EN\_v2.0**

# CONTENTS

FIGURES LIST .....	2
Preface.....	3
About Mikrodev .....	4
Warning! .....	5
1 M-BUS GATEWAY CONFIGURATION SOFTWARE.....	6
1.1 General Information .....	6
1.2 Device Connection.....	7
1.3 Offline Settings .....	11
2 M-BUS GATEWAY Settings .....	12
2.1 Status Screen .....	12
2.2 Basic Settings .....	13
2.3 MMS100 MODBUS Settings.....	14
2.4 Loading Settings to Device .....	15
3 M-BUS GATEWAY PARAMETER SETTINGS .....	17
3.1 MMS100 Serial Communication Settings.....	17
3.2 MMS100 Device Definitions.....	18
3.3 MMS100 Address Table .....	19
3.4 Terminal .....	20

# FIGURES LIST



Figure 1 USB Connection .....	7
Figure 2 TCP Device Discovery .....	8
Figure 3 TCP Connection.....	9
Figure 4 Version Query.....	10
Figure 5 Response of Version Query.....	10
Figure 6 Offline Device Selection .....	11
Figure 7 Status .....	12
Figure 8 Basic Settings.....	13
Figure 9 MMS100 MODBUS Settings.....	14
Figure 10 Load Settings.....	15
Figure 11 Load Confirmation .....	15
Figure 12 Serial Connection Reset .....	16
Figure 13 TCP Connection Reset .....	16
Figure 14 Serial Connection Settings.....	17
Figure 15 MMS100 Device Selection .....	18
Figure 16 MMS100 Address Table .....	19
Figure 17 Terminal Command Screen.....	20

# Preface



Mikrodev MMS100 series M-BUS MODBUS gateway is used to read M-BUS measuring devices (water meter, natural gas meter, heat meter, ...) from MODBUS TCP and/or MODBUS RTU master device. In this way, integration of M-Bus measuring devices into central control and monitoring systems is ensured. The MMS100 series gateway decodes the data packets it receives from measurement devices that support EN1434-3 M-BUS and writes them to possible MODBUS addresses. Four different model options are offered with a converter with Ethernet or GSM communication card and 2, 8, 16 and 32 M-BUS meters are read. For the Wi-Fi communication card, there is a model option with only 32 M-BUS meters read.

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 the 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.

Assistant software is used for configuring Mikrodev MMS100 Series gateways. Thanks to the Assistant program, parameter settings of the MMS100 products are easily performed.

Please follow our site <https://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 Certified 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**

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# **1 M-BUS GATEWAY CONFIGURATION SOFTWARE**

## **1.1 General Information**

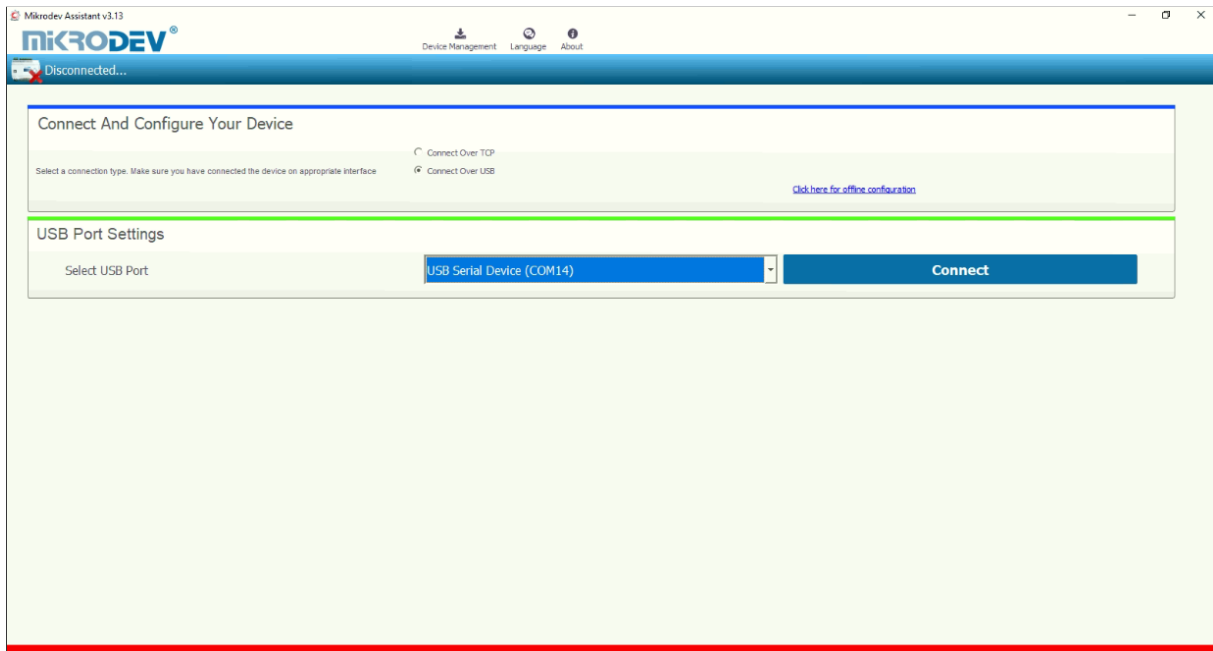
The Assistant software is used to make all necessary settings for the Mikrodev gateway devices. Thanks to the software, device settings can be made online and/or offline. The settings that are loaded on the device can easily be downloaded and the previously saved settings can easily be uploaded into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

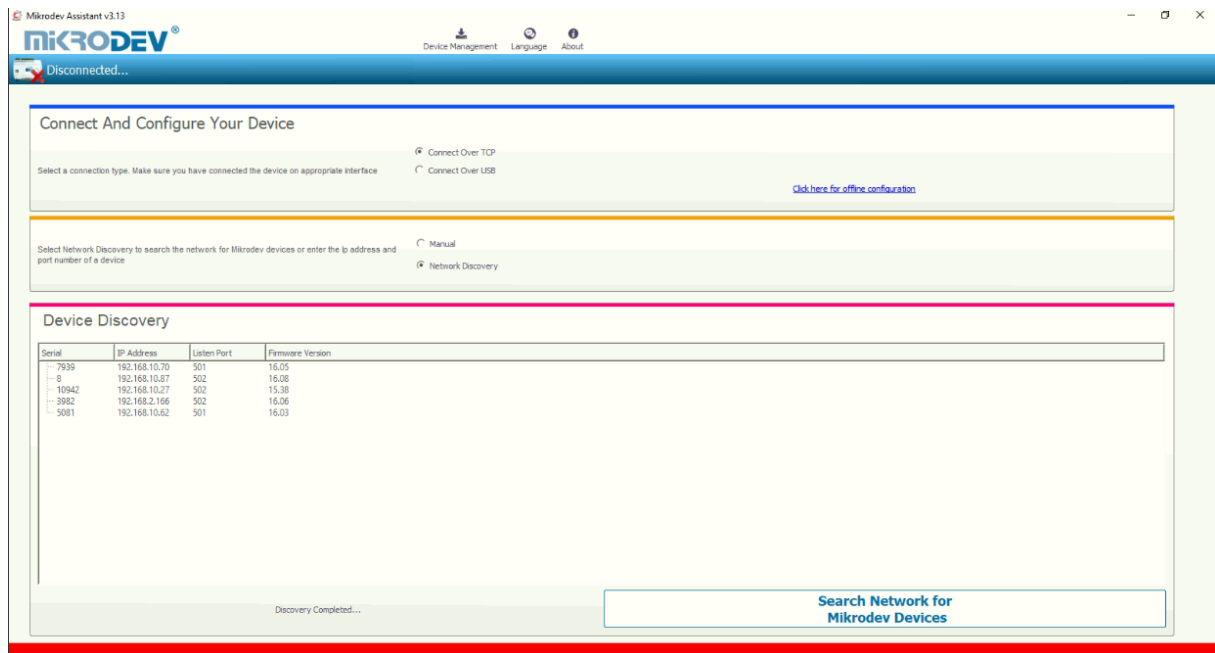


**Figure 1 USB Connection**



## 1.2.2 TCP Connection – Device Discovery Mode

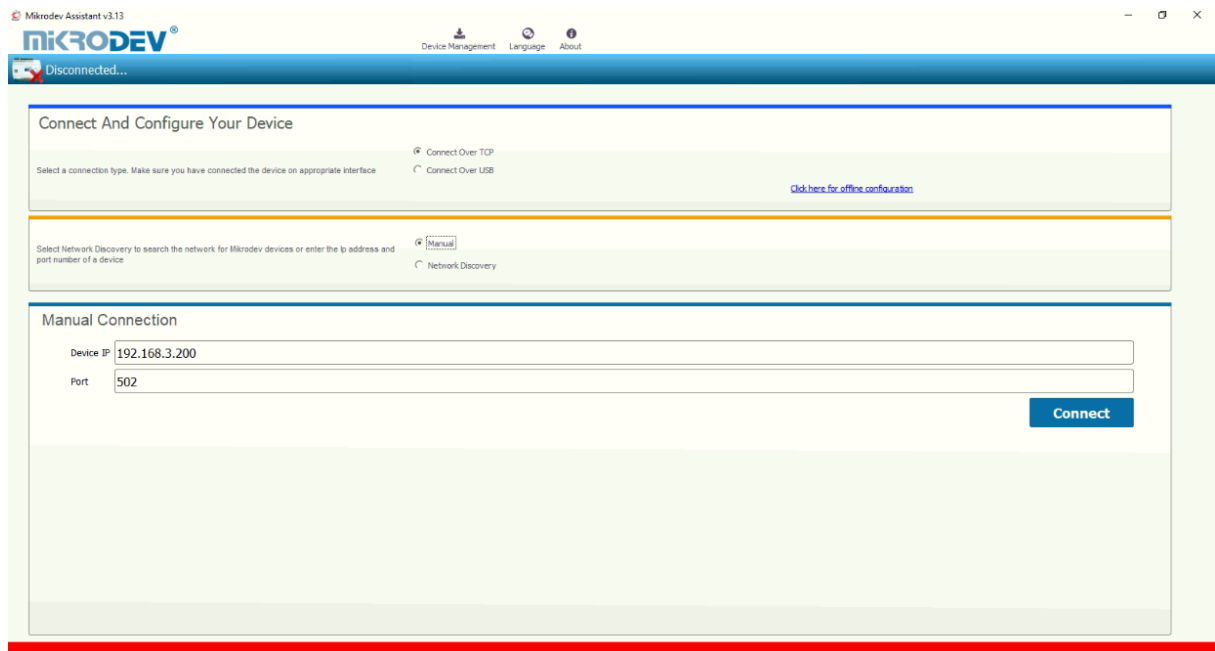
"Network Discovery" option is used to detect and connect IP addresses of Mikrodev devices which are active in the local network. The "Network Discovery" box will be highlighted after the "Connect via TCP" box is checked in the "Connect and Configure to Device" section of the Assistant software. After 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**

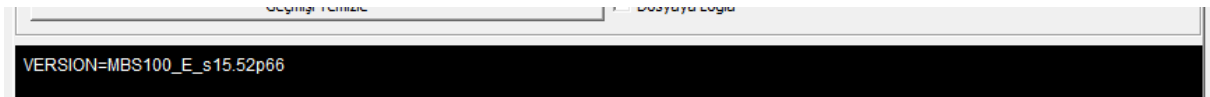
## 1.2.4 Port Numbering

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**

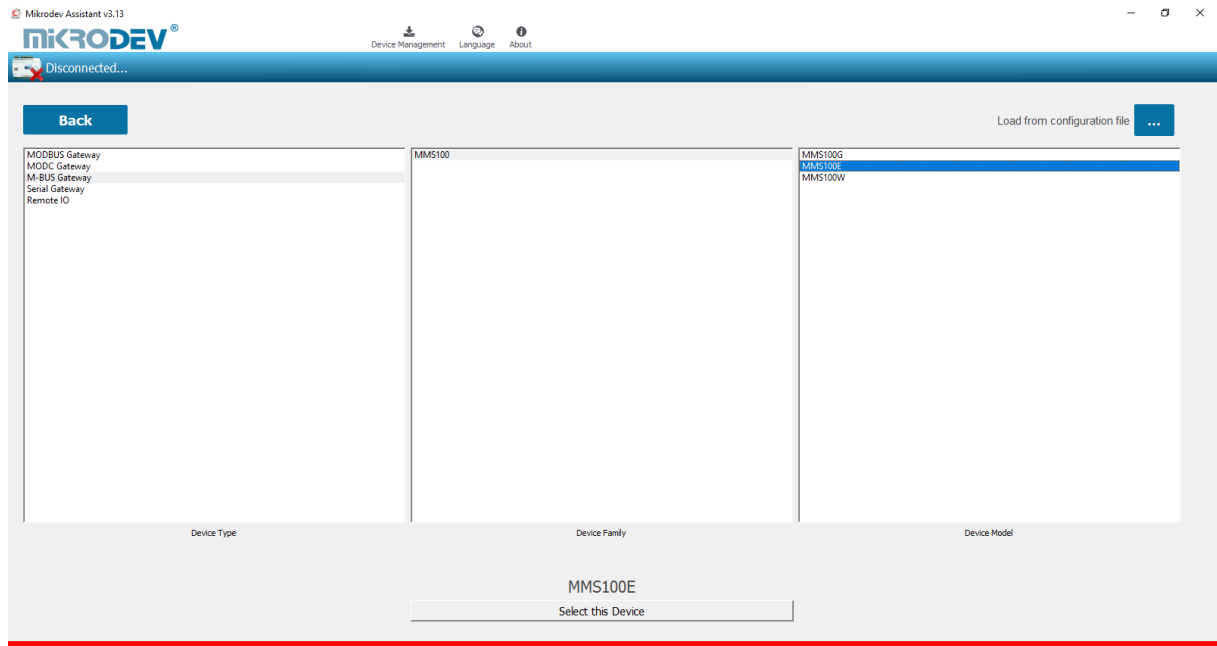
Check the PCB version number placed to last 3 character of response like “pXX”

VERSION=MBS100\_E\_s15.52p66

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

## 2 M-BUS 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). (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.

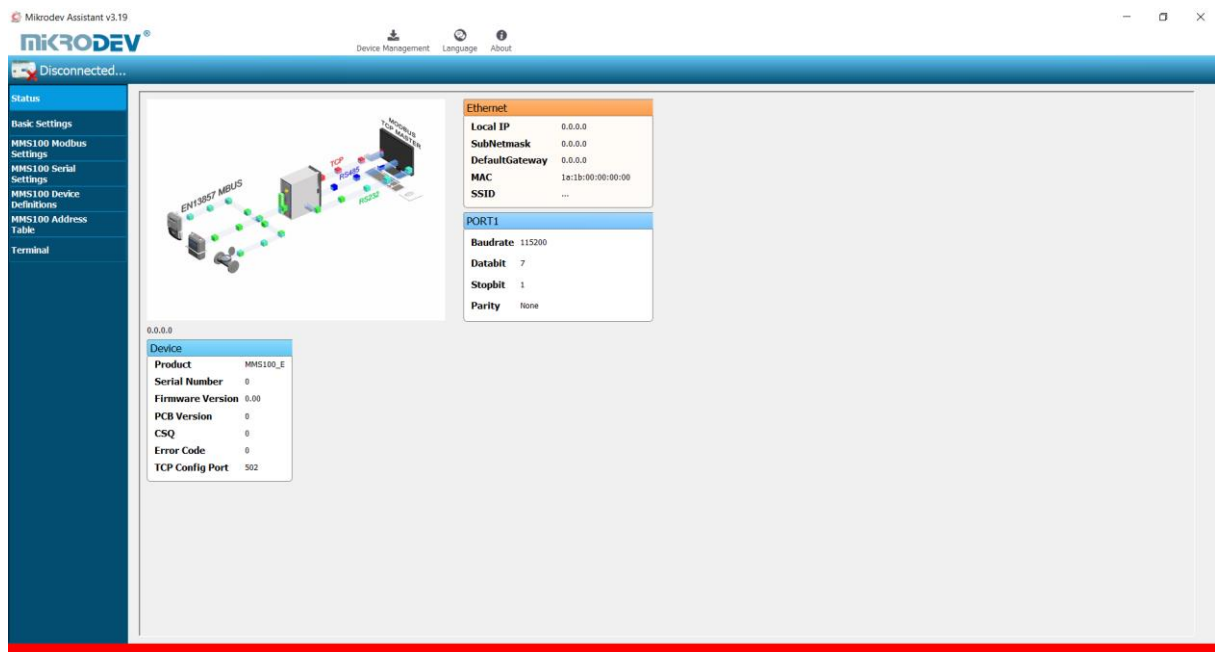
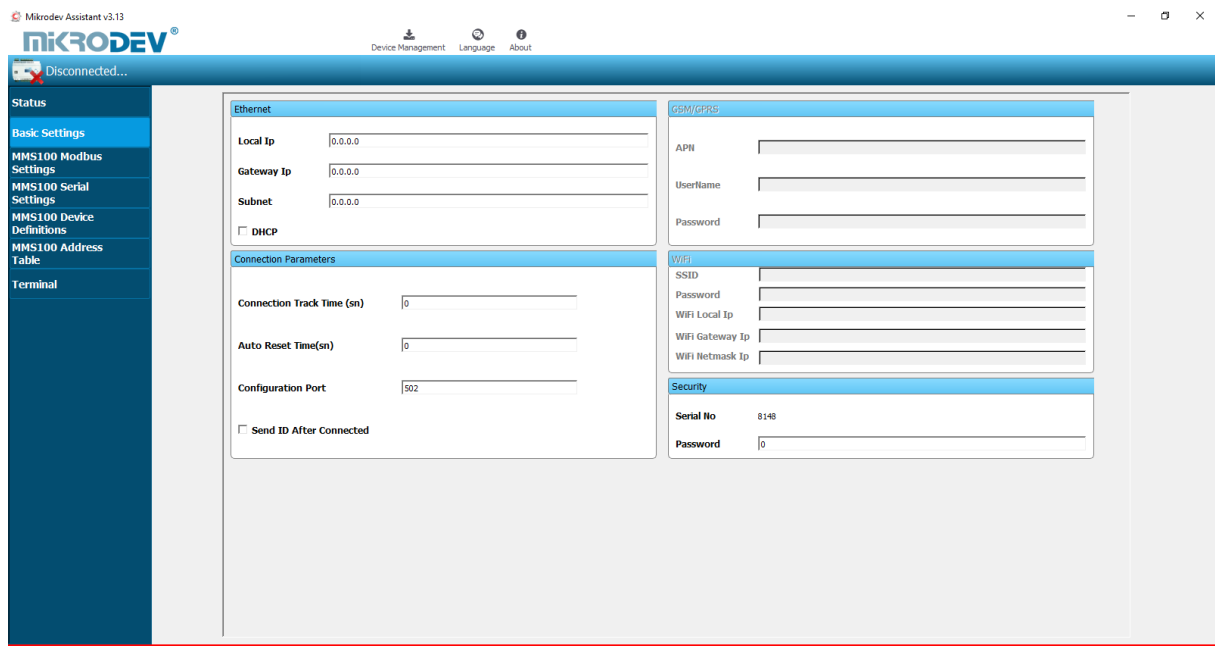


Figure 7 Status

## 2.2 Basic Settings

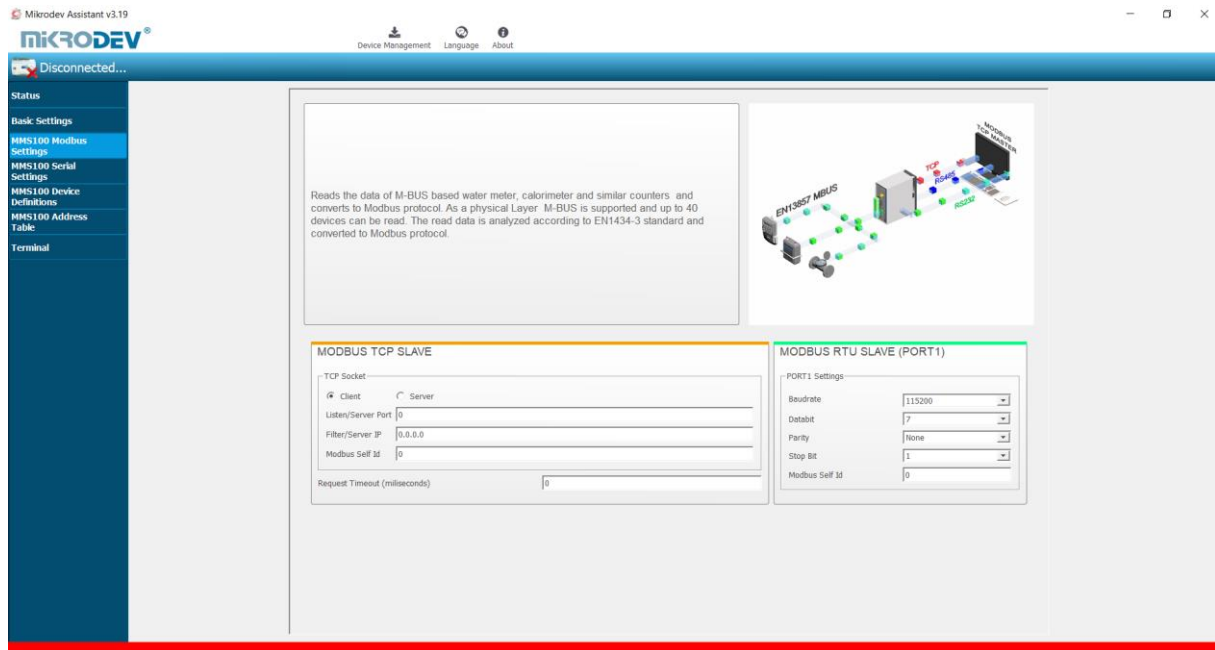
In the basic settings section, parameter set values are entered according to communication types. When entering local IP, gateway IP, subnet for Ethernet connection; For GSM connection, APN, username, user password are entered. When Wi-Fi connection is desired, SSID (modem username), password, Wi-Fi 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 MMS100 MODBUS Settings

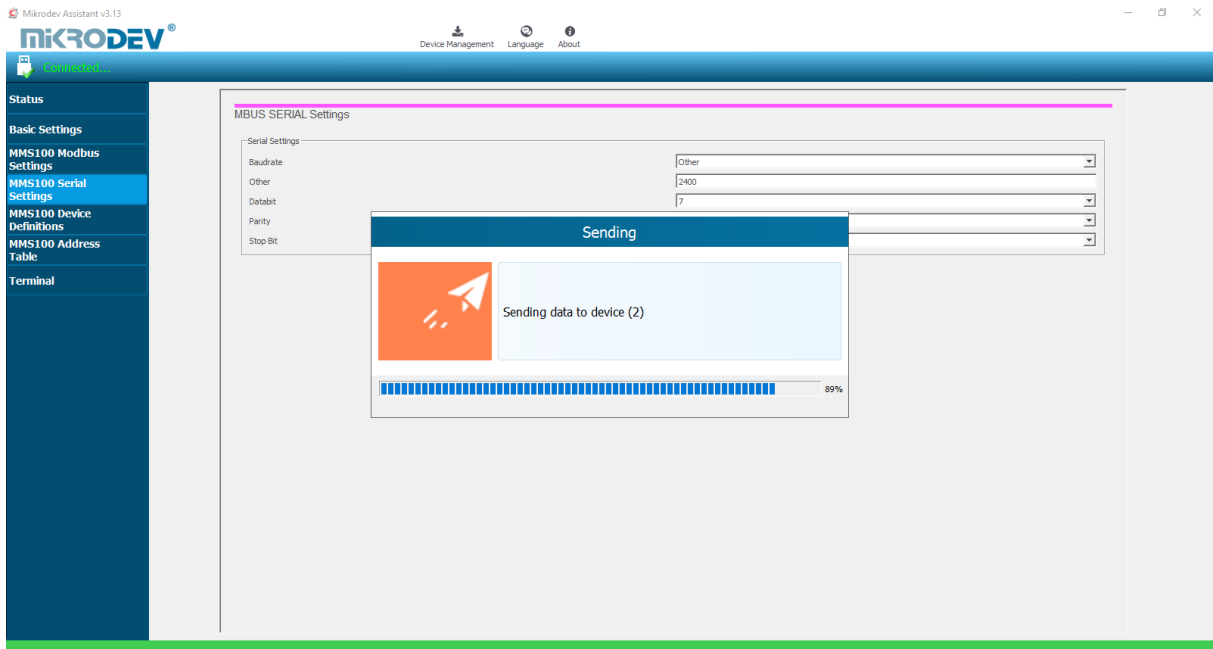
In the MMS100 MODBUS Settings section, MODBUS communication settings of the Mikrodev device are made. In the case of connection via MODBUS TCP, connection type, server or client selection and port settings are made. Depending on the serial (RTU) connection type selection (RS232, RS485) of the MMS100 series gateway, the corresponding box is checked and the IP setting, port number, baud rate, databit value, parity value and stop bit are set. (Figure 9)



**Figure 9 MMS100 MODBUS Settings**

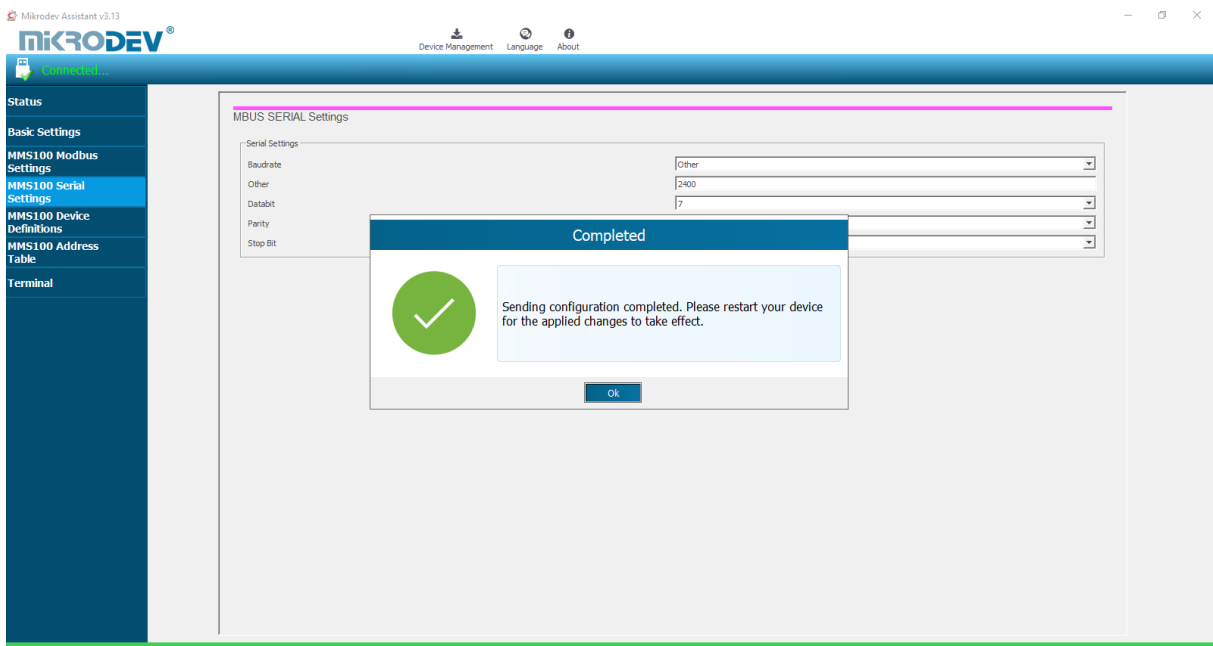
## 2.4 Loading Settings to Device

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**

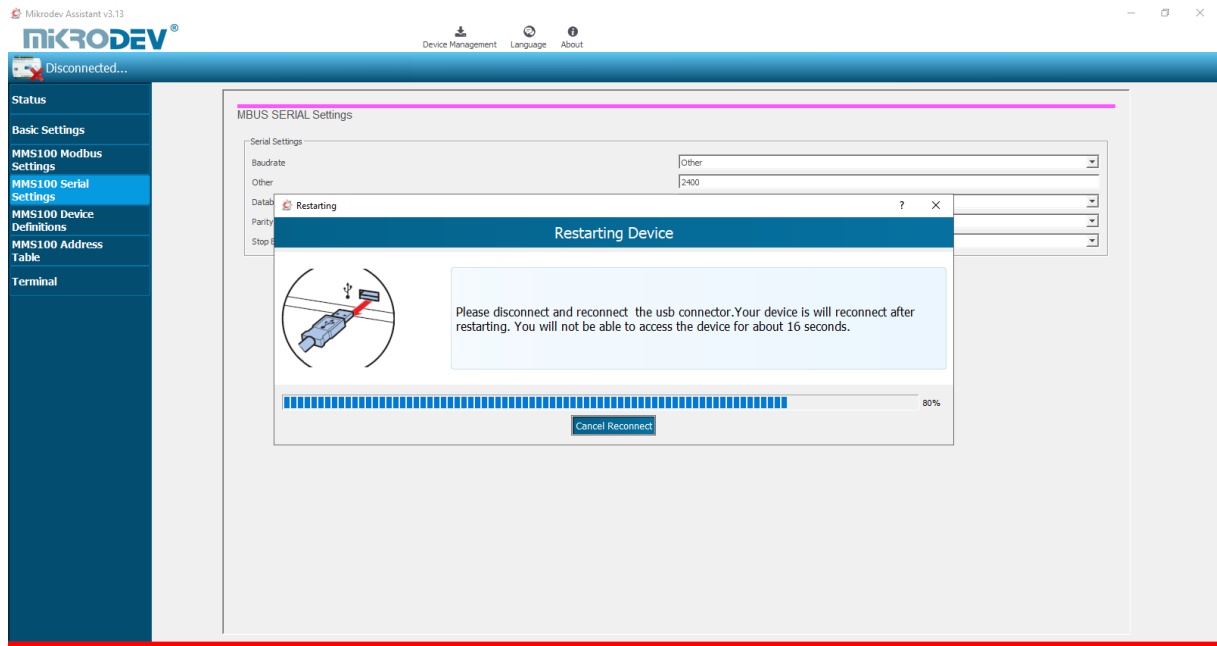
After completing the configuration, the device must be rebooted in order to register the settings. (Figure 11)



**Figure 11 Load Confirmation**

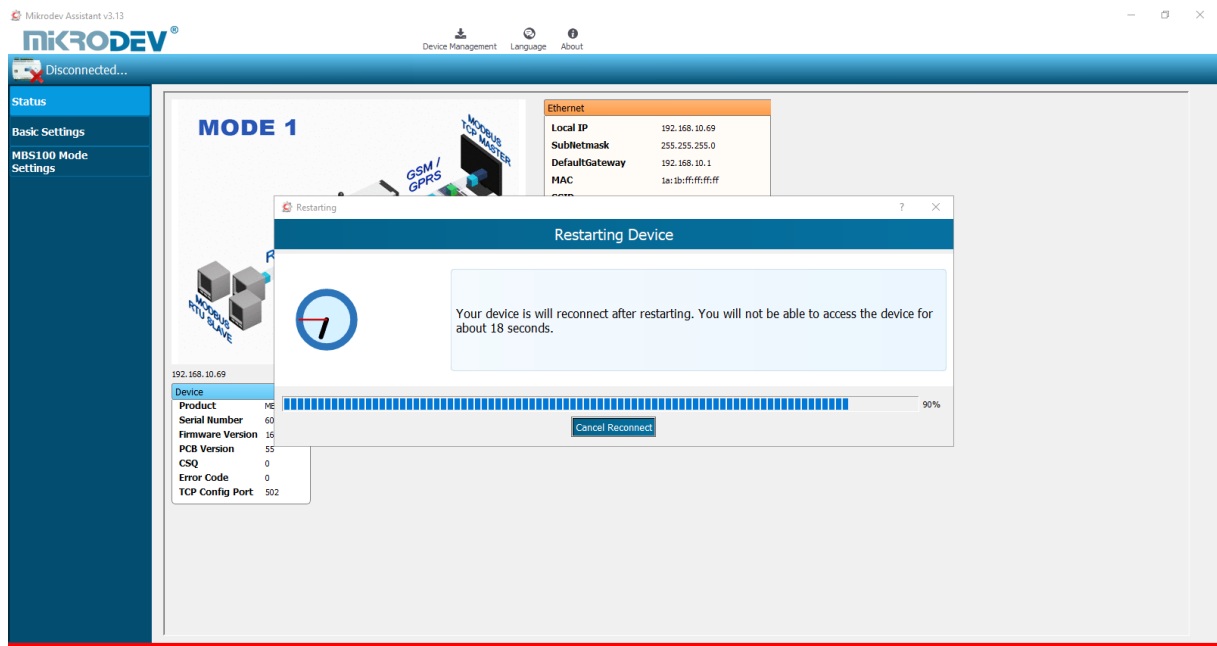


Restart the device by clicking "Restart Device" under "Device Management" on the main screen of the Assistant program. When the device is rebooted, you may need to remove and reinsert the USB cable to reconnect with the serial port. (Figure 12)



**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)

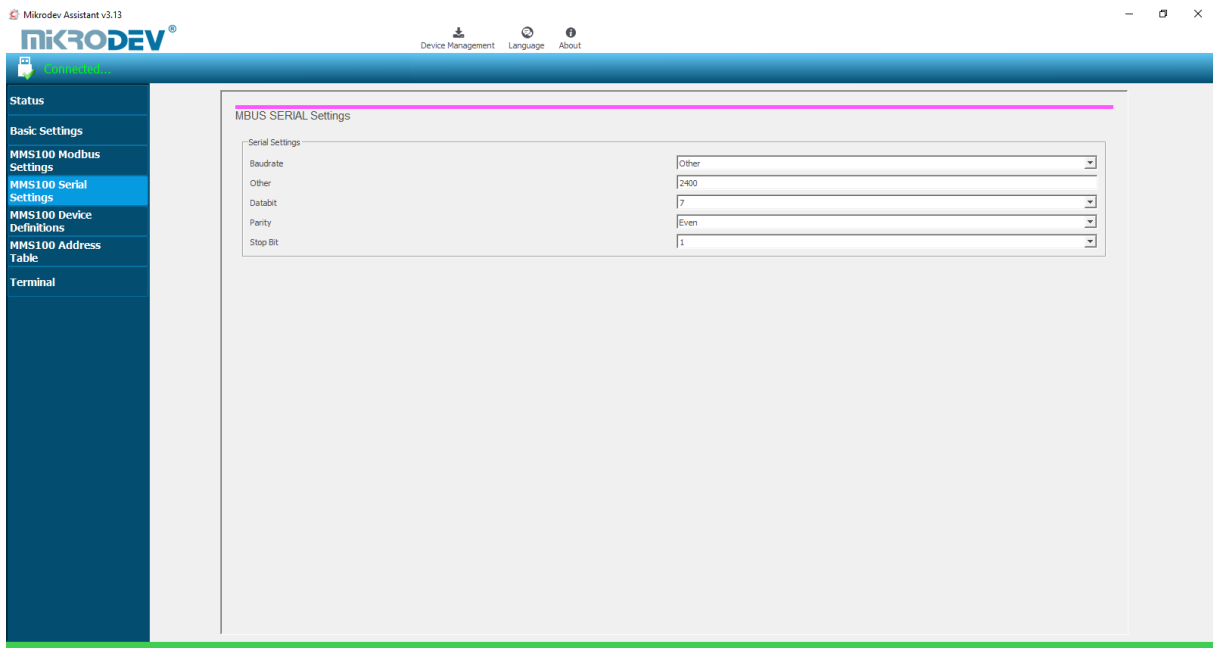


**Figure 13 TCP Connection Reset**

## 3 M-BUS GATEWAY PARAMETER SETTINGS

### 3.1 MMS100 Serial Communication Settings

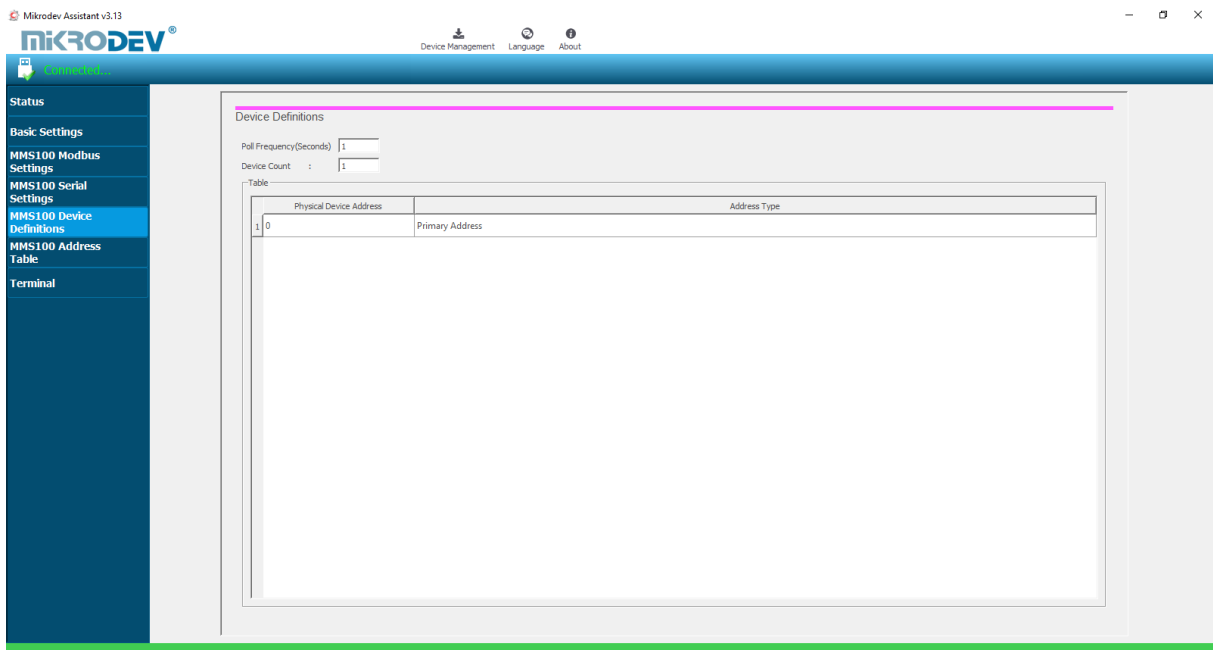
The serial (RTU) connection settings of the MMS100 series gateways are defined in this section. The baud rate, databit value, parity value and stop bit value of the device or devices (water meters, natural gas meters, calorimeters ...). (Figure 14)



**Figure 14 Serial Connection Settings**

### 3.2 MMS100 Device Definitions

The query sending period of the Mikrodev MMS100 series gateways are defined in the "Poll Frequency" section. The value is entered in seconds. The number of devices to be connected with the MMS100 series gateway is determined in the "Device Count" section. In the "Physical Device Address" section, the number of slots specified in the device count section starts from 1 and appended. In this section, the slave addresses of the devices in the field are defined. "Physical Device Address" is the section where the MODBUS addresses are determined according to the device selections.



**Figure 15 MMS100 Device Selection**

### 3.3 MMS100 Address Table

MMS100 address table section is the section in which the MBUS information of the MMS100 series gateways are written to which MODBUS address. In this section, device numbers, physical addresses (slave addresses), data types, the names of the addresses and the addresses of the MODBUS are displayed. (Figure 16)

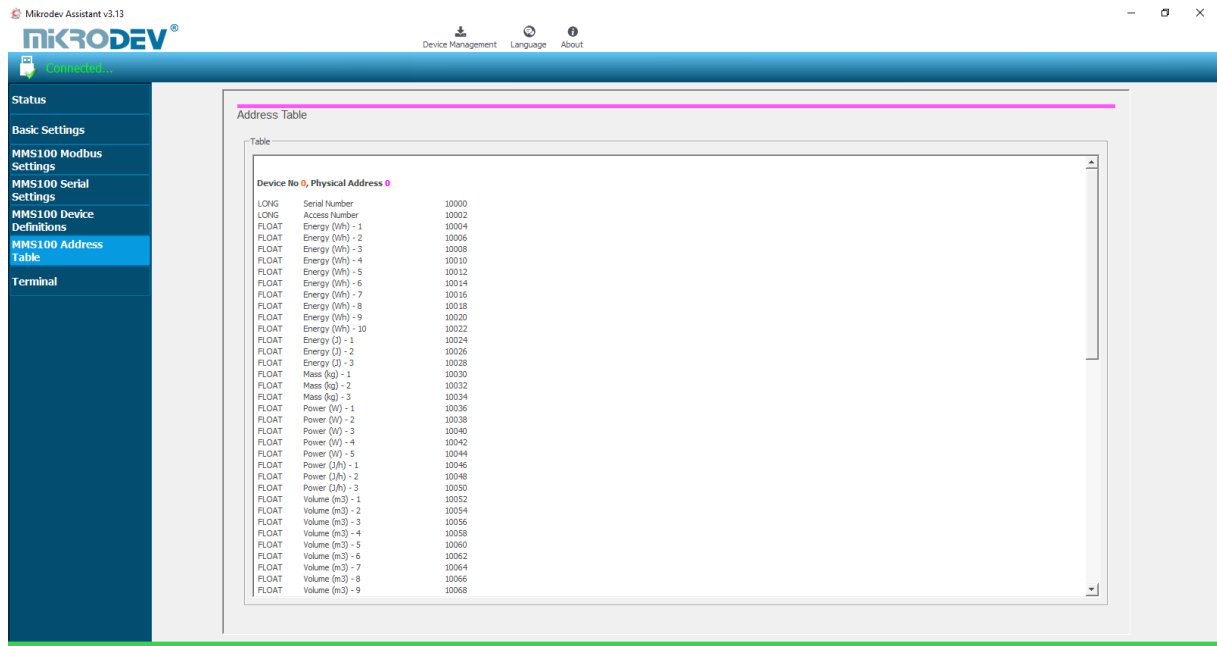
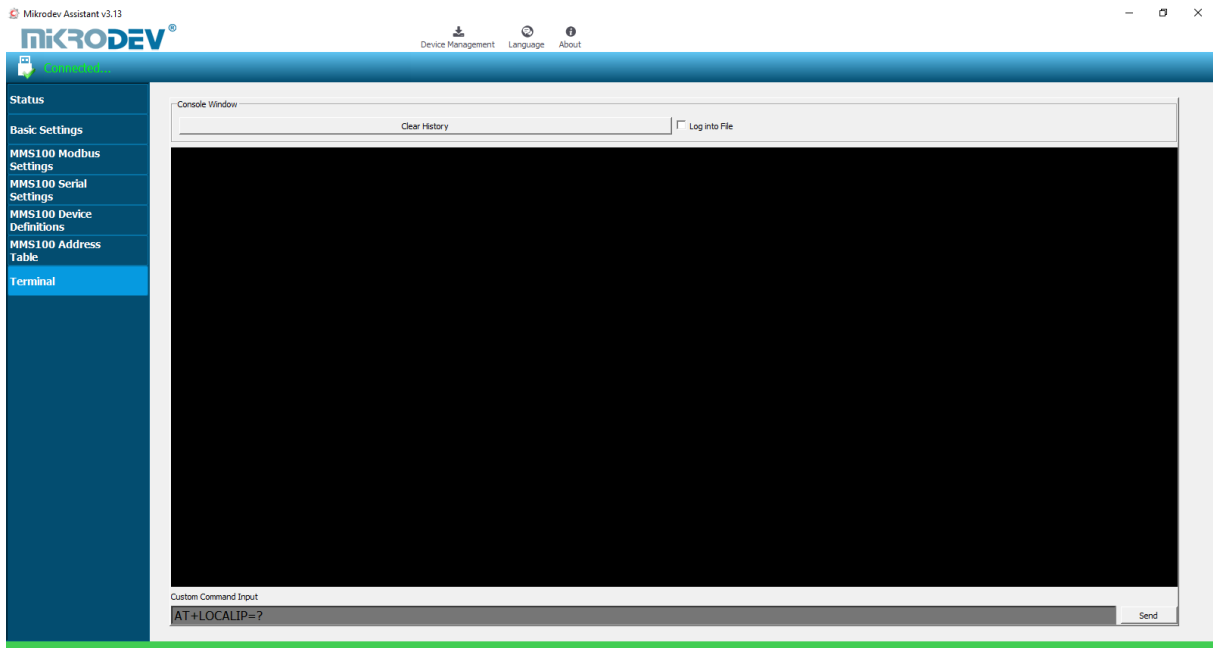


Figure 16 MMS100 Address Table

### 3.4 Terminal

Terminal is the section where the command lines for the MMS100 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. 17) Click "Clear History" in the "Console Window" section to clear the inquiries on the screen.



**Figure 17 Terminal Command Screen**