



REAL TIME AUTOMATION

# **460 MSMM**

## ***Quick Start Guide***

PREPARED BY REAL TIME AUTOMATION

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## Overview:

By following this guide, you will be able to configure the 460 MSMM Gateway for basic operation. You will set the device's network settings and parameters to the proper configuration for initial operation and physically place the device in the network.

## Before You Start:

You will need the following tools:

- ◆ **The 460 MSMM Gateway**
- ◆ **The provided CD-ROM**
- ◆ **A Working PC**
- ◆ **An Ethernet Crossover Cable**
- ◆ **A Power Source (7-30 VDC)**

You will also need to verify the following Modbus RTU Master Characteristics:

- ◆ **Connector (Port 0:T-Strip or Port 1:DB9)**
- ◆ **Mode (RS-232, RS-485 2-wire or 4-wire(RS-422))**
- ◆ **Baud Rate**
- ◆ **Parity**
- ◆ **Data Bits (Fixed at 8)**
- ◆ **Stop Bits**
- ◆ **Slave Device Addresses**
- ◆ **Slave Read and Write Registers/Coils**



## Configuring Network:

Before you can configure the gateway itself, you must configure the network settings to connect the gateway. The following steps will connect the gateway properly.

- 1) Connect the device to the PC using the crossover cable.
- 2) Connect the power source to the device.
- 3) Insert the provided CD-ROM.
- 4) Run the **IPSetup** program from the CD-ROM.
- 5) Configure the **IP Address** for your subnet.
- 6) Click **Set**.
- 7) Click **Launch Webpage**. The Main Page should appear. (Figure 1)

The screenshot shows the main page of the 460MSMM gateway configuration utility. The browser window title is "460MSMM - Main Page - Windows Internet Explorer" and the address bar shows "http://192.168.47.101/index.htm". The page content includes the RTA logo, the text "REAL TIME AUTOMATION", "Part # 460MSMM", "RTA 460 EDX Gateway", and "Revision 1.4.27". There are buttons for "Status and Summary", "Visualization", and "Utilities". A configuration table is displayed on the right side of the page.

Description		Edit
460MSMM	IP address: 192.168.47.101	
Network	Subnet mask: 255.255.255.0	
Settings	Default gateway: 192.168.0.1	Edit
	MAC address: 00-03-F4-02-FF-28	
Selected Communication Modules	<b>Modbus RTU Master</b> RS-232 on Port 1 19200 baud, no parity, 8 data bits, 1 stop bit	Edit
	<b>Modbus TCP Server</b> No configurable parameters	
Server Module Configuration	<b>Modbus TCP Server</b> No configurable parameters	Edit
Client Module Configuration	<b>Modbus RTU Master</b> No devices configured	Edit

Figure 1 — Main Page



**Error:**  
**Device Configuration  
Page Does Not  
Launch.**

If the Device Configuration Main Page does not launch, the IP Address is probably not set correctly. Correct the IP Address and try again.

If you do not know the IP Address, use the following procedure.

- 1) Open an MS-DOS Command Prompt.
- 2) Type ***ipconfig*** and press **enter**.
- 3) Note the IP Address.
- 4) To test if the communication between the PC and the unit is working, type ***ping (###.###.###.###)*** in the prompt and press **enter**. The ***(###.###.###.###)*** is a placeholder for the IP Address you used in step 5 of network configuration, which is ***192.168.0.100*** by default. If the device is connected to the network, the ping will show a response. If you get no response, check the crossover cable.



## Configuring Device:

Now that the device is on the network, you will configure the device settings. As a reminder, you will need to know the mode, baud rate, parity, data and stop bit settings of your device in order to complete device configuration.

- 1) If you would like to change the device description, on the main page, in the **Description** row, click **Edit**. Otherwise, skip to step 4.
- 2) Type the desired description into the text box.
- 3) Click **Save**.
- 4) In the **Selected Communication Modules** row, click **Edit**. (Figure 1)
- 5) In the **Modbus RTU Master** row, click **Edit**. (Figure 2)

The MSMM Gateway defaults to RS-232 for the DB9 (Port 1) and RS-485 for the T-Strip (Port 0). Please refer to Figure 2-1 of the 460 EDX User Manual to change the serial settings.

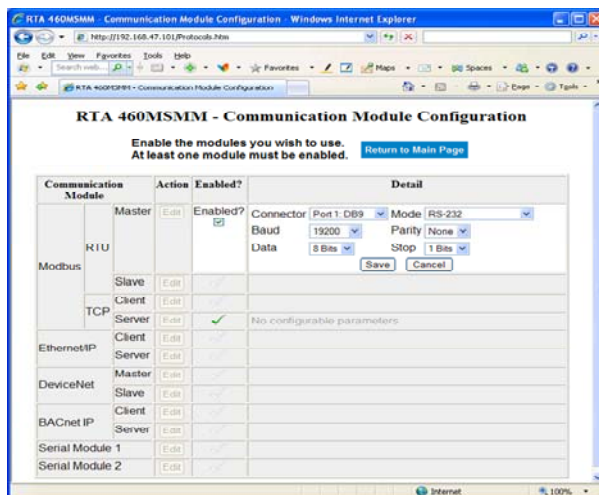


Figure 2 — Selected Communication Modules

- 6) Select the appropriate settings in the **Mode, Baud, Parity, Data** and **Stop** fields. The settings should match your device.
- 7) Click **Save**.

(Continued)



## Configuring Device:

- 8) Click **Return to Main Page**.
- 9) In the **Client Module Configuration** row, click **Edit**. (Figure 1)
- 10) Click the **Add Remote Modbus RTU Slave** button.
- 11) Configure up to 31 slave addresses between 1 and 254.

### Note:

There maximum length of registers per single read/write request is 100. You cannot configure more than 400 registers across all slaves for Data In. The same limit applies to Data Out.

Device Buffer #	Comm Module	Device Address	Data In			Data Out		
			Registers (or Coils)	Program Tags	Registers (or Coils)	Program Tags		
2	Modbus RTU Master	Slave Address 1 (1-254)	Point Type 4x Holding Reg	Address 401	Length 10	Point Type 4x Holding Reg	Address 1	Length 10
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	
			0	0	0	0	0	

Figure 3 — Modbus RTU Slave Configuration

- 12) To setup reads from a particular slave, enter the Slave Address, the type of data to read [Coil Status, Input Coil, Input Register, or Holding Register], the starting address of the read, and the length for the read message in the **Data In** column.
- 13) Repeat **Step 12** for the **Data Out** column to setup writes to a particular slave.

(Continued)



## Configuring Device:

### Note:

- 14) If you need to setup multiple slave addresses, they must be configured in their own Device Buffer. If you need additional Device Buffers, click the **Add Remote Modbus RTU Slave**.

If you need to setup more than 10 different read/write requests per Slave Address, you can use the same Slave Address across multiple Device Buffers.

**Example:** Both Device Buffer 2 and Device Buffer 3 could communicate to Slave Address 1.

- 15) When you are done making changes to a Device Buffer, click **Save** and you will see a summary of your selections for reads/writes. The Program Tags will be automatically calculated for slaves, but you can leave the values as they are.
- 16) Click **Main Page**.
- 17) Under the Real Time Automation Logo, click the **Utilities** button. (Figure 1)
- 18) Click **Restart**. (Figure 4)
- 19) Click **OK**. (Figure 4)

RTA 460EDX - Utilities	
<a href="#">Back to Main Page</a>	
IEC 61131-3 Project Information	Project: 460MTA.pro Title: Author: Revision: , on 2009-01-15
Restart this 460EDX	<a href="#">Restart</a>
IEC 61131-3 Global Variables	<a href="#">Build Tag List</a>
Save and Restore 460EDX Configuration	<a href="#">Save Configuration to File</a> Restore configuration from <input type="text"/> <input type="button" value="Browse..."/> <a href="#">Restore from File</a> 460EDX will restart after successful restore of the configuration.
IEC 61131-3 External Libraries	These are the latest libraries to be used with this 460 EDX firmware revision. These are typically installed in the C:\Program Files\3S Software\RTA_460_EDX\lib directory <a href="#">RTA-460EDX.lib</a> General library <a href="#">RTA-CIP.lib</a> DeviceNet and Ethernet/IP CIP message processing

Figure 4 — Utilities Page



## Checking Register Mapping:

After you have set up the Modbus RTU slaves, you can review the mapping between the slaves' registers and coils and the Modbus TCP server's registers and coils. To do so:

- 1) On the main page, in the Application Parameters field, click **Edit**.
- 2) Review the register mapping.

## Multiple Devices:

If you are configuring multiple devices in the same way, you can save the configuration settings from the first device into a file and copy those settings to the other devices. To do so, use the following steps:

- 1) From the Main Page, click the **Utilities** button.
- 2) Click **Save Configuration to File**. (Figure 4)
- 3) Click **Save**. (Figure 4)
- 4) Browse to the location you want to save the file.
- 5) Type in the desired file name.
- 6) Click **OK**.
- 7) Remove the first (current) device.
- 8) Repeat the “**Configuring Network**” section to connect the next device.
- 9) Once you launch the webpage, click the **Utilities** button.
- 10) Click **Restore from File**. (Figure 4)
- 11) Browse to the file you saved.
- 12) Click **Open**.



## Placing the Device:

Now that the gateway is configured properly, you must place the device in the network. The following instructions will tell you how to take the device from the configuration area to the shop floor or other operating environment.

- 1) Disconnect the crossover cable and power supply from the device.
- 2) Move the device to its intended location.
- 3) Attach the Ethernet cable from the Modbus TCP Client to the network port on the 460 MSMM Gateway.
- 4) Attach the serial cable from the device to the 460 MTA Gateway. Use the same port you configured earlier; either Port 0 (T-Strip) or Port 1 (DB9).
- 5) Connect the power supply.