

PARAMETERS



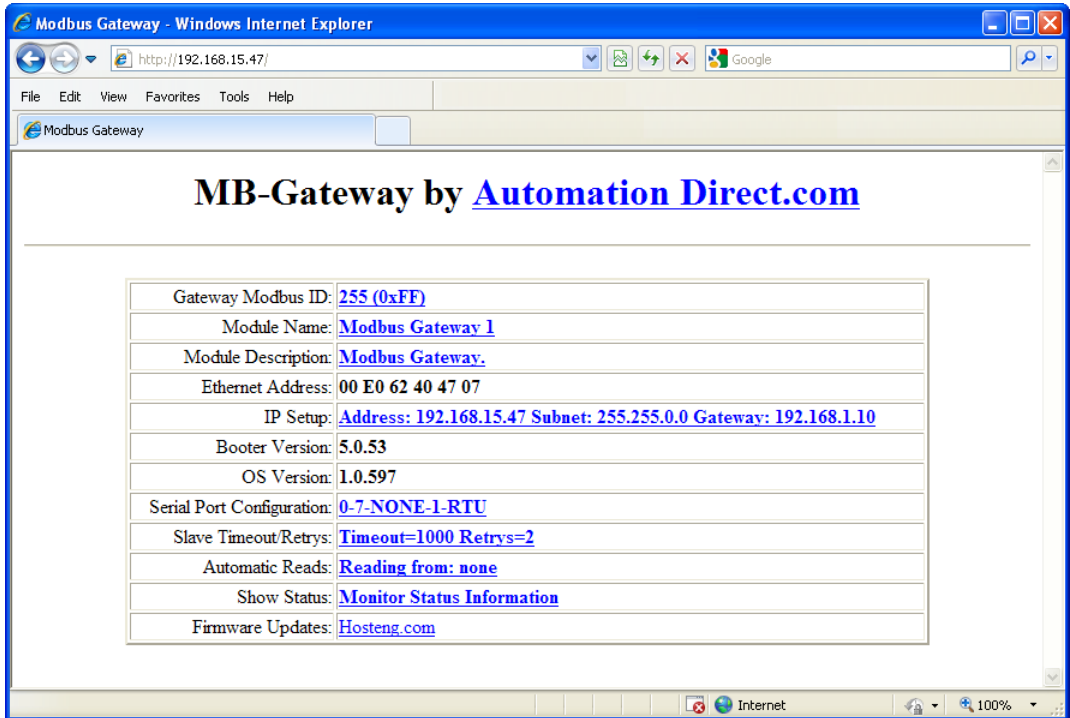
CHAPTER 4

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Home Page

The configuration of the MB-GATEWAY is accessed through a web browser at the well-known HTTP port 80 (not configurable). The image below shows the home page that will be displayed when the web server of the MB-GATEWAY module is accessed. From this page, all of the different setup screens can be accessed.



Gateway Modbus ID

The Gateway Modbus ID is used with the Automatic Read function. This is how the local data buffer is accessed by the Modbus Client device. The usage of this field will be explained in more detail in the Automatic Read Function section.



The Modbus ID used in this field should be unique to the serial network and not assigned to any real Modbus RTU device.



The Back, Send and Reset buttons that appear on these pages have the following behavior:

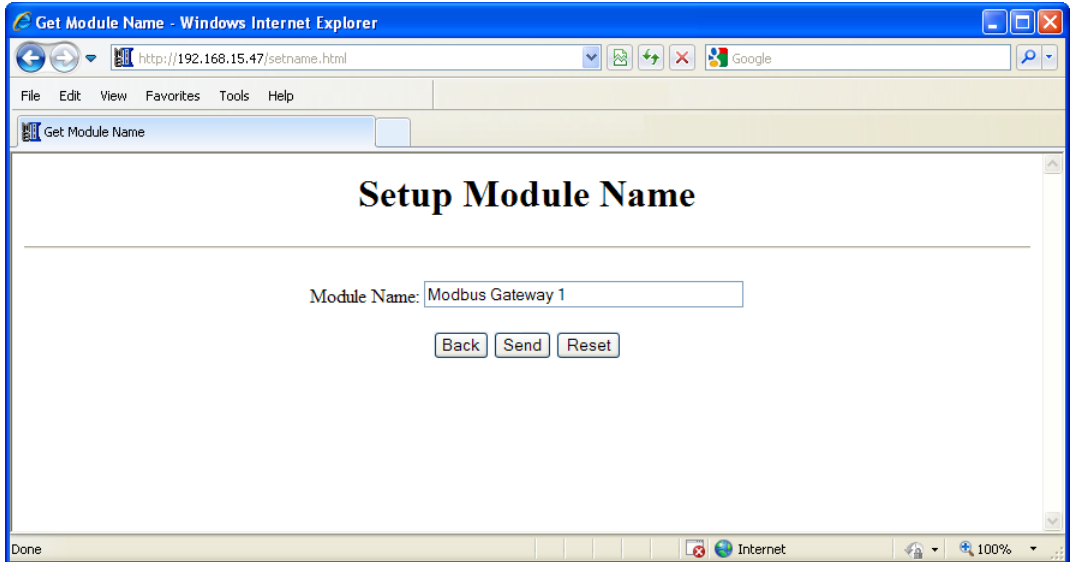
The Back button will browse back to the previous page viewed without saving any changes made on the current page.

The Send button will Send any changes made on this page to the MB-GATEWAY, effectively saving those changes.

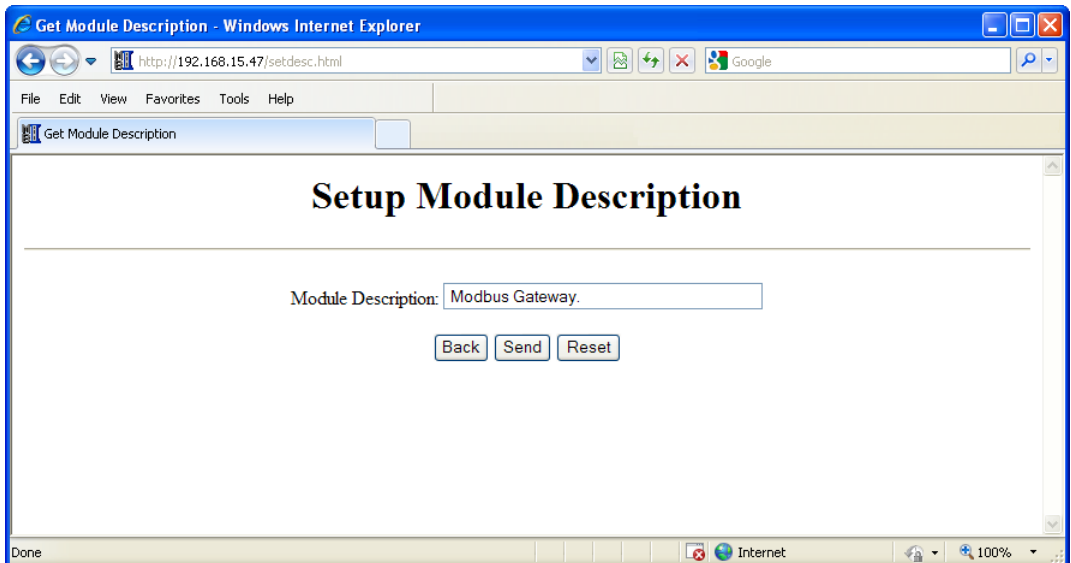
The Reset button will undo any changes made on this page, back to the values that have been Sent to the MB-GATEWAY previously.

Module Name and Module Description

These fields are used only for reference and identification when managing several different MB-GATEWAY modules on a network.



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IP Setup Configuration Page

The IP address, Subnet Mask and Default Gateway address can be configured on this page.



You may lose communications with the MB-GATEWAY module if you configure an IP address and/or Subnet Mask that is not compatible with the subnet of your PC's Network Interface Card. You may be required to change the subnet settings of your PC or use the NetEdit tool to regain communications in this situation.

Mode:	<input type="radio"/> Obtain an IP address automatically
	<input checked="" type="radio"/> Use the following IP address
IP Address:	192.168.15.47
Subnet Mask:	255.255.0.0
Gateway:	192.168.1.10

Back Send Reset

Serial Port Configuration Page

This page is used to configure the serial port parameters if you do not want to use the dipswitch settings or if baud rates different than the dipswitch settings range are desired. The serial port settings should match the settings of the Modbus RTU serial nodes connected to the MB-GATEWAY module. In some situations, such as a high amount of electrical noise, poor cabling, etc., it may be necessary to reduce the baud rate on the MB-GATEWAY module AND serial devices on the network.



In order to use the software based configuration, switches S0, S1, and S2 must be turned OFF.

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Get Serial Port Setup - Windows Internet Explorer

http://192.168.15.47/SetModSerial.html

File Edit View Favorites Tools Help

Get Serial Port Setup

Serial Port Configuration

Baud Rate:	<input type="radio"/> 115200 <input type="radio"/> 57600 <input checked="" type="radio"/> 38400 <input type="radio"/> 19200 <input type="radio"/> 14400 <input type="radio"/> 9600 <input type="radio"/> 4800 <input type="radio"/> 2400 <input type="radio"/> 1200 <input type="radio"/> 600 <input type="radio"/> 300
Parity:	<input type="radio"/> Even <input checked="" type="radio"/> Odd <input type="radio"/> None
Stop Bits:	<input checked="" type="radio"/> 1 <input type="radio"/> 2

Back Send Reset

Done Internet 100%

Set Up Slave Timeout / Retries Page

The “Set Up Slave Timeout/Retries” page is used to configure the timing on the serial side of the MB-GATEWAY module. By default, all serial requests will use the “Default Timeout” value and “Default Retries” value. If there are devices on the serial network that require different timing adjustments, those exception cases can be added to the table below. Simply specify the node ID, the timing value and retry count necessary for that device.

The way that the timeout and retry field is utilized is:

The MB-GATEWAY will send a request to the serial device, if there is no reply from the device within the Timeout value specified, the MB-GATEWAY will send another request and wait again. It will do this for the number of times specified in the Retry field. Once the MB-GATEWAY has attempted to access the device for the number of retry counts specified and no reply is forthcoming, the MB-GATEWAY will respond with an exception error: 04 (Slave device failure).

The “Inter-packet TX Delay” field specifies how long between serial requests the MB-GATEWAY module should wait. This applies to all serial requests to all serial devices on the serial side of the module.

Setup Timeouts / Retrys - Windows Internet Explorer

http://192.168.15.47/settimeouts.html

File Edit View Favorites Tools Help

Setup Timeouts / Retrys

Setup Slave Timeout / Retries

Default Timeout (ms):

Default Retrys:

Inter-packet Tx Delay (ms):

Exceptions		
Device	Timeout (ms)	Retrys
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Done Internet 100%

Gateway Device Status Page

The Gateway Device Status page contains statistical information about the MB-GATEWAY module that can be used to gauge the performance of the communications and to troubleshoot communications.

The screenshot shows the 'Gateway Device Status' page in a Windows Internet Explorer browser. The page contains the following data:

Automatic Reads (1)

Table Item	Error Count	Last Error	Retries	Timeouts	Number Completed
01	0		0	0	0
02	0		0	0	0
03	0		0	0	0
04	0		0	0	0
05	0		0	0	0
06	0		0	0	0
07	0		0	0	0
08	0		0	0	0
09	0		0	0	0
10	0		0	0	0
11	0		0	0	0
12	0		0	0	0
13	0		0	0	0
14	0		0	0	0
15	0		0	0	0
16	0		0	0	0

Last Modbus TCP Request (2)

Slave Number	0
Function	
Reference	0
Count	0
Data	
Status	
Return	

Last Modbus RTU Request (3)

Slave Number	0
Function	
Reference	0
Count	0
Data	
Status	
Return	

Status Information (4)

Status Page Updates	13
Modbus TCP Requests	0
Modbus TCP Cache Hits	0
Modbus RTU Requests	0
Request Errors	0
Last Request Error	
Request Retries	0
Request Timeouts	0

At the bottom of the page, there are three buttons: 'Stop Updates', 'Clear Values', and 'Back'.

1 Automatic Reads

This table shows statistical information about the requests being sent when the Automatic Read function is being utilized. This information can help to indicate whether this table has been configured correctly or not.

Table Item: Corresponds to the position in the table of the “Set Up Automatic Reads” page.

Error Count: Indicates how many error requests have occurred for that table item. This could be a timeout error or an exception response.

Last Error: Indicates the error code from the last error request. If the device fails to respond (Timeout), the error “Slave Device Failure” will be shown in this field.

Retries: Indicates how many retries have occurred. It is a cumulative value and does not reset unless the module has been power cycled or the “Clear Values” button at the bottom has been pressed.

Timeout: Indicates how many times a request has not received a reply within the specified timeout period. It is a cumulative value and does not reset unless the module has been power cycled or the “Clear Values” button at the bottom has been pressed.

Number Completed: Indicates how many requests have been sent for that table item.

2 Last Modbus TCP Request

This table shows statistical information about the last request that was received on the Modbus TCP side from a Modbus TCP Client device.

Slave Number: Indicates the “Unit ID” number within the Modbus TCP header of the Modbus TCP request.

Function: Indicates the Modbus function requested within the Modbus TCP request.

Reference: Indicates the starting address requested within the Modbus TCP request. The “Reference” value is the offset from 0. More information will be explained in the Automatic Read Function section as to how this Reference value corresponds to a Modicon style address that is found in many Modbus devices.

Count: Indicates the number of Registers, Coils or Bits requested within the Modbus TCP request.

Data: This field indicates the Data values written to the MB-GATEWAY module when a Write function has been sent from the Modbus TCP Client device.

Status: Indicates the action taken by the MB-GATEWAY module upon receiving the Modbus TCP Client request.

Found in cache = If the Modbus TCP Client request is targeted to the MB-GATEWAY Module’s Modbus ID and the request corresponds with an address mapped in the Automatic Read Function, the MB-GATEWAY module will respond with the data from its local cache. The MB-GATEWAY module will also return the data from its local cache if the TCP Client request corresponds with a node number and address that has been configured in the Automatic Read function table.

Completed = If the request does not meet the criteria explained above, a serial request is created.

Return: This field will indicate whether an error has occurred or not. If this field displays “No Error”, the request was successful. Otherwise, the Modbus error text will be shown. Refer to the Modbus specifications error code lists for detailed explanations of each error code.

3 Last Modbus RTU Request

This table shows the last Modbus RTU request formed by the MB-GATEWAY module based upon the Modbus TCP Client request received on the Ethernet side.

Slave Number: This is the Node number that was targeted in the last Modbus RTU serial request.

Function: Indicates the Function Code sent to the Modbus serial device in the last request.

Reference: Indicates the starting address requested within the Modbus RTU request. The “Reference” value is the offset from 0. More information will be explained in the Automatic Read Function section as to how this Reference value corresponds to a Modicon style address that is found in many Modbus devices.

Count: Indicates the number of Registers, Coils or Bits requested within the Modbus RTU request.

Data: This field indicates the Data values written to the Modbus RTU device when a Write function has been sent.

Status: Indicates the action taken by the MB-GATEWAY module on the Modbus RTU side.

Waiting for Header = This indicates that the MB-GATEWAY module has sent a request and is waiting for the Reply.

Timeout = If a request was sent to a Modbus RTU device and no reply is received, this message will appear.

Completed = If the request was sent and a reply was received, this message will show in the Status field.

Return: This field will indicate whether an error has occurred or not. If this field displays “No Error”, the request was successful. Otherwise, the Modbus error text will be shown. Refer to the Modbus specifications error code lists for detailed explanations of each error code.

4 Status Information

This table shows a summary of the current session (since power cycle or Clear Values button selected). Comparing Requests to Cache Hits can help indicate whether the Automatic Reads are configured to maximize efficient communications. And total Error, Retry and Timeout data can indicate health of communications.

A CRC error for an Automatic Reads table entry will flash the ERRor LED and set the Last Request Error to: MODBUS_ERROR_MEMORY_PARITY_ERROR.

For a direct request from a Modbus TCP server, a Modbus RTU parity error will return the error MODBUS_ERROR_MEMORY_PARITY_ERROR to the Modbus TCP server.

Setup Automatic Read Page

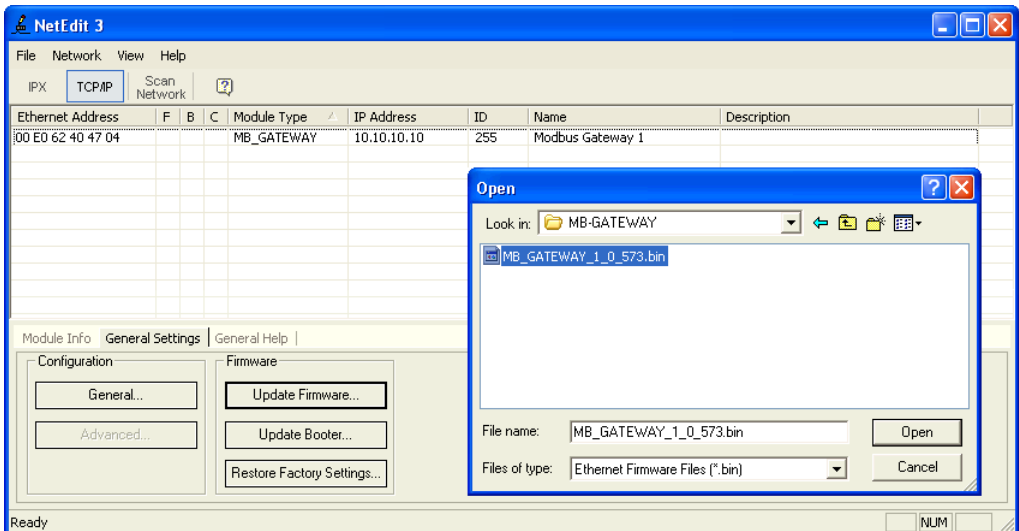
The Automatic Read Feature is explained in detail in [Chapter 5: Automatic Read Feature](#).

Firmware Updates

This link sends you to Host Engineering’s website to retrieve the latest firmware for the MB-GATEWAY module. The NetEdit tool is required to upgrade firmware in the MB-GATEWAY module. The steps are shown below:

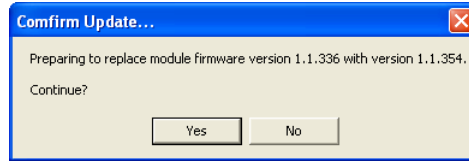
Open the NetEdit software. You may allow the NetEdit software to download the latest firmware for the MB-GATEWAY module by clicking on File-> Live Update.

Once you have the firmware file to load into the MB-GATEWAY module, click on the Scan Network button at the top left to browse for the MB-GATEWAY module that is in the subnet of the PC.

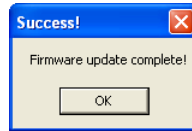


Click on the GATEWAY module that you wish to upgrade and then select the “General Settings” tab at the bottom of the screen. Click on the “Update Firmware” button in the “General Settings” tab. You will get a dialog box to select the firmware file that you wish to upgrade to. Select the correct file and click on the “Open” button.

Firmware Updates continued on the next page.



Confirm that you wish to perform the upgrade by clicking on the “Yes” button.



Once the process is complete, you will receive a dialog confirming success.