

***515RTAENI-N34***  
***Protocol Gateway***  
**Product User Guide**

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*Firmware Version 4.25*

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## Revision History

Version	Date	Notes
4.02	7/26/2017	<b>Bug Fixes</b> <ol style="list-style-type: none"> <li>1. Updated web UI diagnostics and counters.</li> <li>2. Added support for RSLinx straight Ethernet driver.</li> <li>3. Optimized message queue servicing.</li> <li>4. Added ability to download EDS file from webpage.</li> <li>5. Removed BOOTP support.</li> <li>6. Improved IP configuration implementation.</li> <li>7. Enabled force of at least 1 Admin when security is enabled.</li> <li>8. Minor webpage layout fixes.</li> </ol>
4.16	7/3/2018	<b>Bug Fixes</b> <ol style="list-style-type: none"> <li>1. Minor Web Updates</li> <li>2. EDS File Updated</li> <li>3. Node 244 and 245 removed</li> </ol> <p>Node 248 functional</p>
4.18	12/14/2018	<b>Features Added</b> <ol style="list-style-type: none"> <li>4. 1. Updated RTA Images</li> </ol>
4.21	9/28/2020	<b>Features Added</b> <ol style="list-style-type: none"> <li>1. Added functionality to work with Ingear PC based application.</li> <li>2. EDS file Updated</li> <li>3. Added additional diagnostic logging</li> <li>4. Improved functionality/performance</li> </ol>
4.25	4/14/2021	<b>Features Added</b> <ol style="list-style-type: none"> <li>1. Improved functionality/performance with 6 connections using UCMM explicit and connected explicit messaging</li> </ol>

## Overview

The 515RTAENI is a replacement for the Allen-Bradley 1761-NET-ENI and 1761-NET-ENIW modules. The 515RTAENI gateway:

- Provides the same Ethernet connectivity for all DF1 serial controllers, PanelView Standard Terminals, and other DF1 full-duplex devices
- Communicates between Allen-Bradley Logix and legacy controllers
- Generates email messages via Simple Mail Transport Protocol (SMTP)
- Allows ability to easily upload and download programs using standard Rockwell Automation tools
- Writes to Ethernet controllers like ControlLogix

However, the interface is improved by providing web browser configuration, allowing up to 6 Ethernet connections, adding support for string data types, and improving diagnostic functionality.



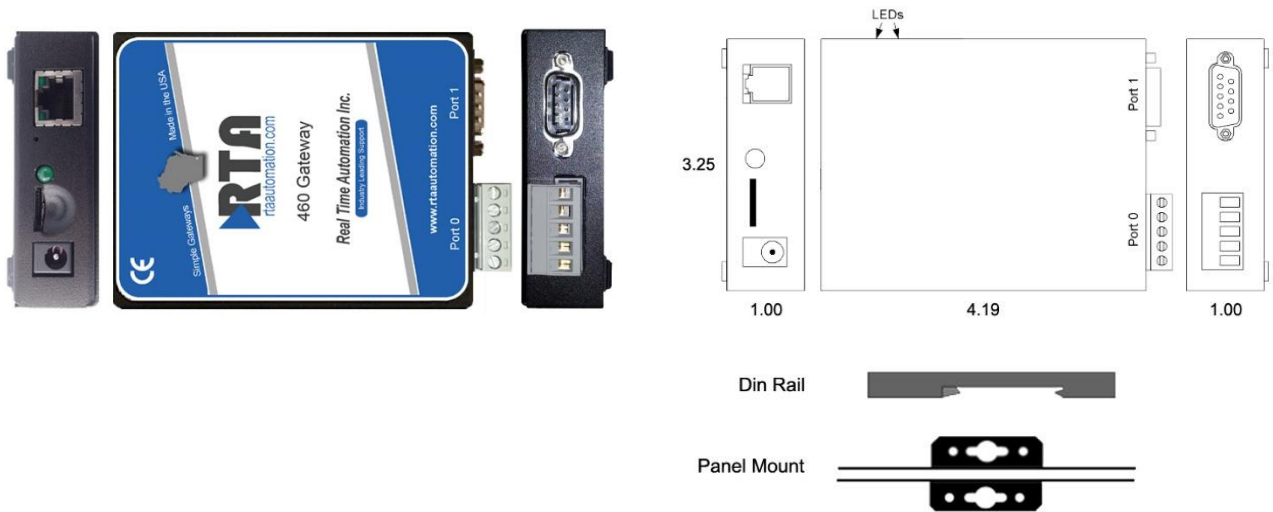
If at any time you need further assistance do not hesitate to call Real Time Automation support.

Support Hours are **Monday-Friday 8am-5pm CST**

**Toll free: 1-800-249-1612**

**Email: [support@rtautomation.com](mailto:support@rtautomation.com)**

## Hardware – N34



## Physical Specifications

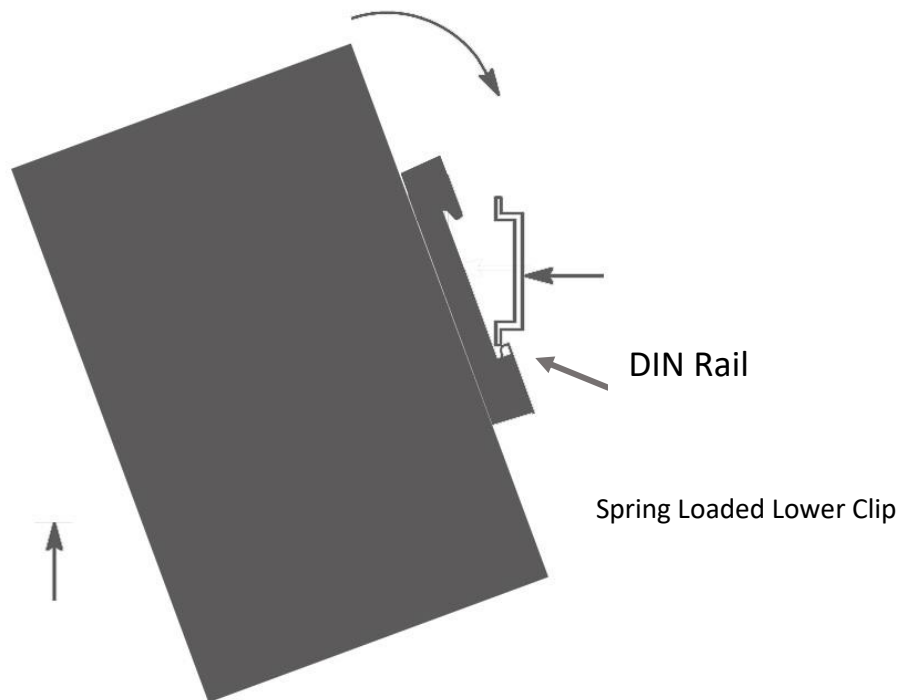
<b>POWER</b>	Operating range of 8-28VDC, 125mA at 24VDC Power can be received over serial cable
<b>TEMPERATURE</b>	Industrial Temperature Range -40°C to +85°C
<b>CERTIFICATIONS</b>	UL, C/UL, CE, FCC, CLASS 1 DIV 2
<b>MOUNTING</b>	Din Rail, Panel
<b>SIZE</b>	4.2" x 3.25" x 1"
<b>WEIGHT</b>	5 oz.
<b>COMMUNICATION PORTS</b>	
<b>SERIAL</b>	1 RS232
<b>ETHERNET</b>	1 10/100 Mbps BaseT Ethernet Port

## Mounting with a DIN Rail

### Installing

Follow these steps to install your unit.

- 1) Mount your DIN Rail.
- 2) Hook the bottom mounting flange under the DIN Rail.
- 3) While pressing the 515RTAENI against the rail, press up to engage the spring-loaded lower clip and rotate the unit parallel to the DIN Rail.
- 4) Release upward pressure.



### Removing

Follow these steps to remove your unit.

1. Press up on the unit to engage the spring-loaded lower clip.
2. Swing top of the unit away from the DIN rail

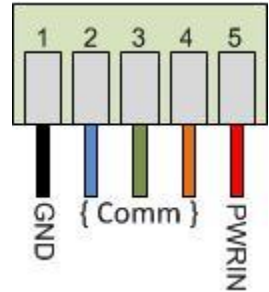


## Powering the Gateway

The following steps will allow you to properly and safely power the gateway.



**Warning** improper wiring will cause unit failure  
Use the Barrel Connector **OR** the Screw  
Terminals power connection, **NOT** both



1. Connect a 24VDC power source to the gateway.
  - a. The unit draws 125 mA at 24VDC
  - b. The gateway has a voltage operating range from 8-28VDC; 24VDC is recommended.

### Hazardous Environment Power & Installation Instructions



This equipment is suitable for use in Class I, Division 2, Groups A, B, C and D, or non-hazardous locations only.

**WARNING – EXPLOSION HAZARD** - Do not disconnect equipment unless power has been removed or the area is known to be non-hazardous.

**WARNING – EXPLOSION HAZARD** - Substitution of components may impair suitability for Class I, Division 2.

**THIS EQUIPMENT IS AN OPEN-TYPE DEVICE AND IS MEANT TO BE INSTALLED IN AN ENCLOSURE SUITABLE FOR THE ENVIRONMENT SUCH THAT THE EQUIPMENT IS ONLY ACCESSIBLE WITH THE USE OF A TOOL.**

**WARNING – POWER JACK (Barrel Connector, J1) IS FOR MAINTENANCE USE ONLY AND MAY ONLY BE USED WHILE THE AREA IS KNOWN TO BE FREE OF IGNITIBLE CONCENTRATIONS OF FLAMMABLE GASES OR VAPORS. IT IS NOT TO BE CONNECTED UNDER NORMAL OPERATION.**

In a Hazardous Environment, the unit must be powered with between 12-24 VDC; 860 mA (6 W) max. Supervised. The unit is certified to be operated at -40°C to 50°C.



## **Hazardous Environment Power & Installation Instructions**

Cet équipement est conçu pour être utilisé uniquement dans des lieux de classe I, division 2, groupes A, B, C et D, ou non dangereux.

**AVERTISSEMENT - RISQUE D'EXPLOSION** - Ne débranchez pas l'équipement à moins que le courant ne soit coupé ou que la zone ne présente aucun danger.

**AVERTISSEMENT - RISQUE D'EXPLOSION** - La substitution de composants peut compromettre l'adéquation à la classe I, division 2.

**CET APPAREIL EST UN DISPOSITIF DE TYPE OUVERT ET IL FAUT L'INSTALLER DANS UN ENCEINTE ADAPTÉ À L'ENVIRONNEMENT TEL QU'IL N'EST ACCESSIBLE À L'UTILISATION D'UN OUTIL.**

**AVERTISSEMENT** - LE POWER JACK (bornes à vis, J1) est destiné exclusivement à la maintenance et ne peut être utilisé que lorsque la zone est connue pour être exempte de concentrations inintéressantes de gaz ou de vapeurs inflammables. IL NE DOIT PAS ÊTRE CONNECTÉ SOUS UN FONCTIONNEMENT NORMAL.

Dans les environnements dangereux, l'unité doit être alimentée entre 12-24 VDC, 860 mA (6 W) max. Supervisé. L'appareil est certifié pour fonctionner entre -40 ° C et 50 ° C.

## Pinouts & Wiring

### Pinouts

The gateway has two connectors for communication: T-Strip (Port 0) and DB9 port (Port 1). Either port can be used for RS-232 communications using the pinouts in the diagram below.

**NOTE:** Only one physical port can be used at a time.



DB9 pinouts are as follows:
Pin 2 – RX
Pin 3 – TX
Pin 5 – GND

### CABLE INFORMATION:

### Wiring

It is recommended to use the following programming cables:

- 1761-CBL-PM02
  - <https://www.rtautomation.com/product/generic-micrologix-programming-cable/>
- CBL-FF-6
  - <https://www.rtautomation.com/product/null-modem-cable/>
- 1784-CP10
  - <https://www.rtautomation.com/product/1784-cbl/>

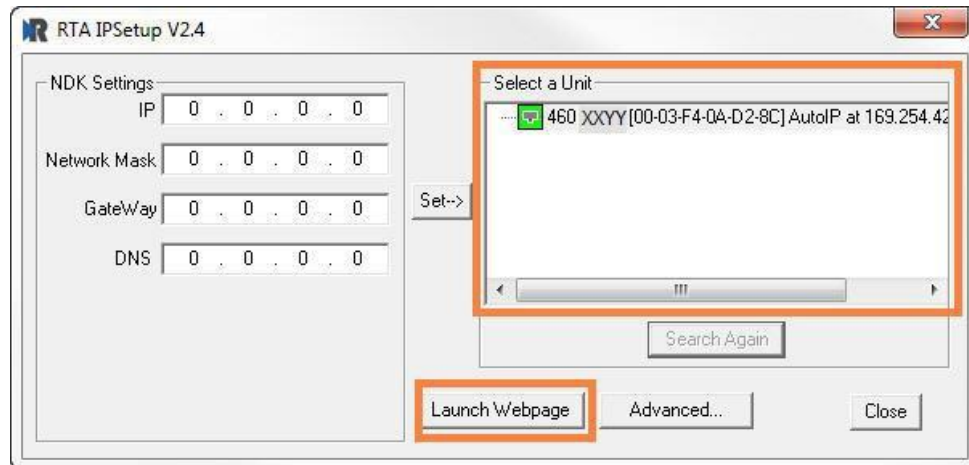
**❑ IMPORTANT:** The 1761-CBL-PM02 Ser. C when used with a SLC5/04 has a different pin out and will cause 515RTAENI hardware failure. Any 1761-CBL-PM02 cable is only to be used for MicroLogix PLCs.

It is highly recommended to follow wiring recommendations regarding the Allen-Bradley serial cables. Failure to do so may result in poor or inoperable intermittent communications.

## Accessing the Main Page

The following steps will help you access the browser-based configuration of the gateway. By default, DHCP is enabled. If the gateway fails to obtain an IP address over DHCP, it will Auto IP with 169.254.X.Y. For more information on your operating system network setting, refer to the Access Browser Configuration Doc on the CD or download it from our support web site, <https://www.rtautomation.com/515rtaenisupport/>

- 1) Insert the provided CD-ROM into a computer also on the network.



- 2) Run the IPSetup.exe program from the CD-ROM.
- 3) Find the unit under “Select a Unit.”
  - a. Change the gateway’s IP address to match that of your PC if DHCP has failed.
    - i. You will know DHCP has failed if the gateway’s IP address is AutoIP at 169.254.X.Y.
    - ii. If successful, it will say DHCP’d at ex: 192.168.0.100 or however your DCHP client is set up.
  - b. If you do not see the gateway in this tool, then your PC is most likely set up as a static IP.
    - i. Change your PC’s network settings to be Obtain and Address Automatically. If DHCP fails, it will change to be on the 169.254.x.y network.
    - ii. Disable your Wireless.
    - iii. Relaunch the IP Setup tool to see if gateway can be discovered now.
- 4) Click **Launch Webpage**. The main page should appear.

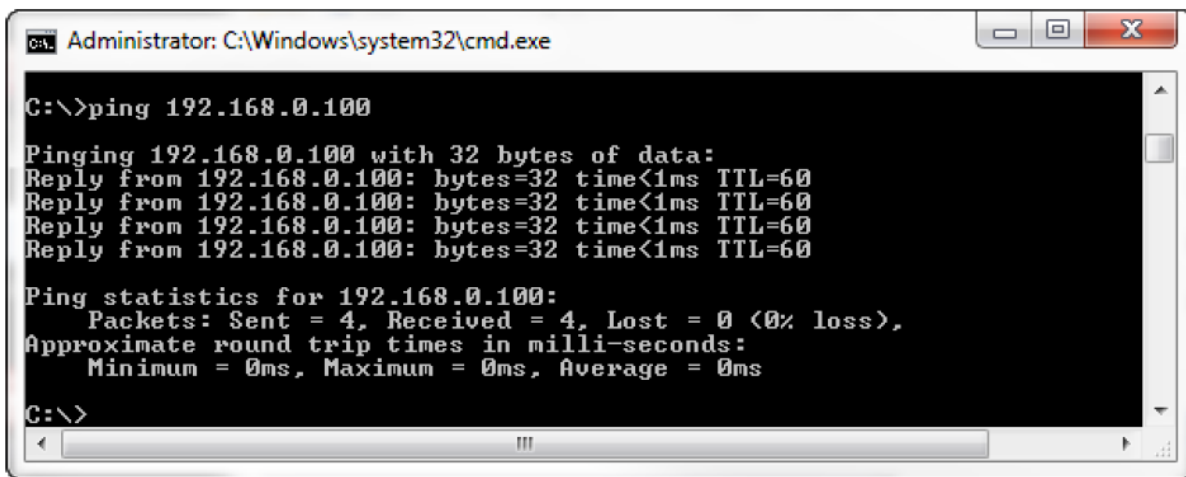
**Note:** If more assistance needed, please refer to our Accessing\_Browser\_Configuration.pdf that can be found on the CD provided or on our website:  
<https://www.rtautomation.com/515rtaenisupport/>

## Error: Main Page Does Not Launch

If the main page does not launch, please verify the following:

- 1) Check that the PC is set for a valid IP Address
  - a. Open a MS-DOS Command Prompt
  - b. Type “ipconfig” and press enter
  - c. Note the PC’s IP Address, Subnet, and Default Gateway
- 2) The gateway must be on the same Network/Subnet as the PC whether it’s set up for DHCP or Static.

Once you have both devices on the same network, you should be able to ping the gateway using a MS- DOS Command Prompt.



```
Administrator: C:\Windows\system32\cmd.exe

C:\>ping 192.168.0.100

Pinging 192.168.0.100 with 32 bytes of data:
Reply from 192.168.0.100: bytes=32 time<1ms TTL=60
Reply from 192.168.0.100: bytes=32 time<1ms TTL=60
Reply from 192.168.0.100: bytes=32 time<1ms TTL=60
Reply from 192.168.0.100: bytes=32 time<1ms TTL=60

Ping statistics for 192.168.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

The Screenshot above shows an example of what a successful ping looks like.

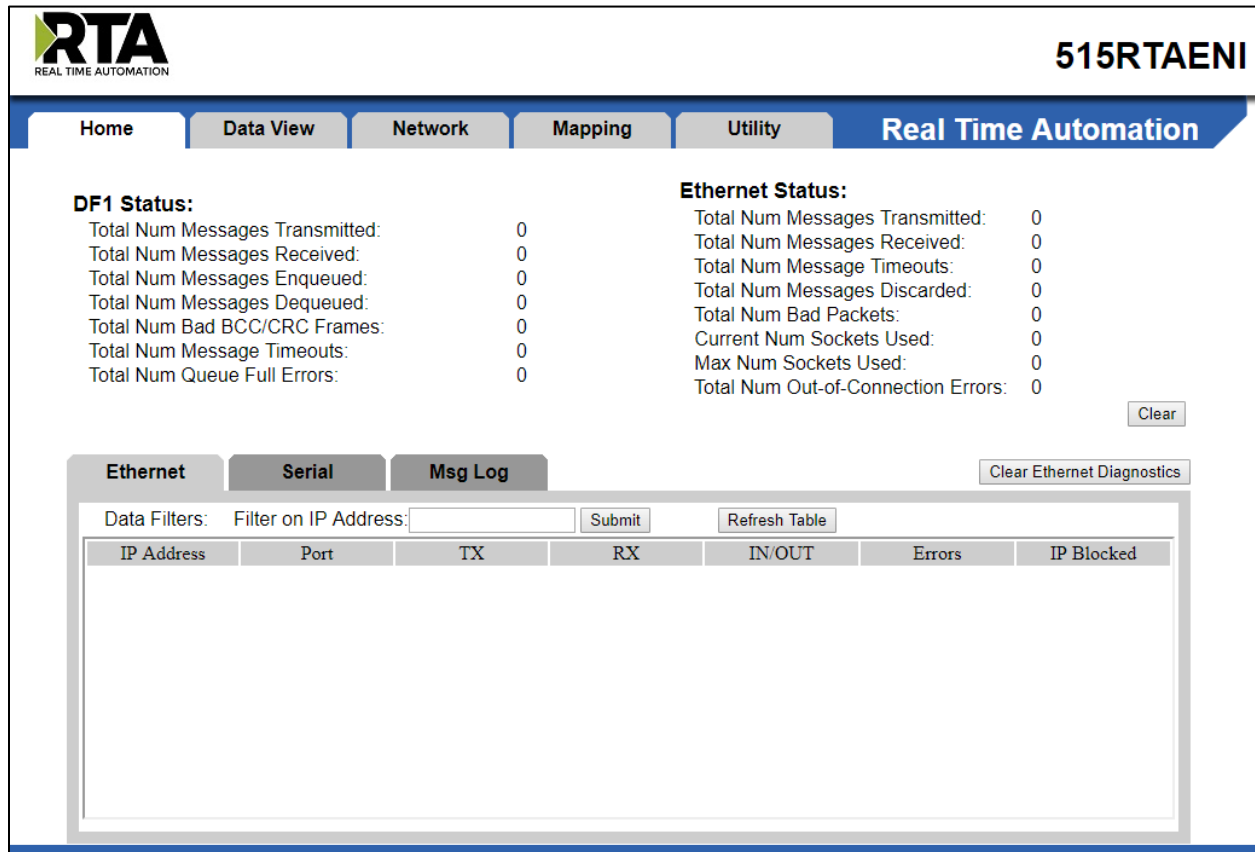
If you can successfully ping your gateway, open a browser and try to view the main page of the gateway by entering the IP Address of the gateway as the URL.

## Web Configuration Tabs

The 515RTAENI gateway has a built-in web server that can be accessed by entering the IP address of the gateway into a web browser's address bar.

All configurable fields inside the gateway are grouped into 5 different tabs. Below is a list of tabs and what information can be found on each one:

- 1) **Home** – used for diagnostics and status messages for both the DF1 and Ethernet sides
- 2) **Data View** – used to read, write, and display data from the controller
- 3) **Network** – used to configure all Ethernet, email, and serial port settings
- 4) **Mapping** – used to configure all the IP address DF1 node mappings
- 5) **Utility** – used for revision information, downloading the EDS file, updating firmware, configuring security settings, and saving/importing gateway configuration



The screenshot shows the web interface for the 515RTAENI gateway. At the top, there is a navigation bar with tabs for Home, Data View, Network, Mapping, and Utility. The current page is titled "Real Time Automation" and "515RTAENI".

Below the navigation bar, there are two status sections:

- DF1 Status:**
  - Total Num Messages Transmitted: 0
  - Total Num Messages Received: 0
  - Total Num Messages Enqueued: 0
  - Total Num Messages Dequeued: 0
  - Total Num Bad BCC/CRC Frames: 0
  - Total Num Message Timeouts: 0
  - Total Num Queue Full Errors: 0
- Ethernet Status:**
  - Total Num Messages Transmitted: 0
  - Total Num Messages Received: 0
  - Total Num Message Timeouts: 0
  - Total Num Messages Discarded: 0
  - Total Num Bad Packets: 0
  - Current Num Sockets Used: 0
  - Max Num Sockets Used: 0
  - Total Num Out-of-Connection Errors: 0


There is a "Clear" button next to the Ethernet Status section.

Below the status sections, there are three tabs: Ethernet, Serial, and Msg Log. The "Ethernet" tab is currently selected. To the right of the tabs is a "Clear Ethernet Diagnostics" button.


Under the "Ethernet" tab, there is a "Data Filters" section with a "Filter on IP Address:" input field, a "Submit" button, and a "Refresh Table" button.

Below the filters is a table with the following columns: IP Address, Port, TX, RX, IN/OUT, Errors, and IP Blocked. The table is currently empty.

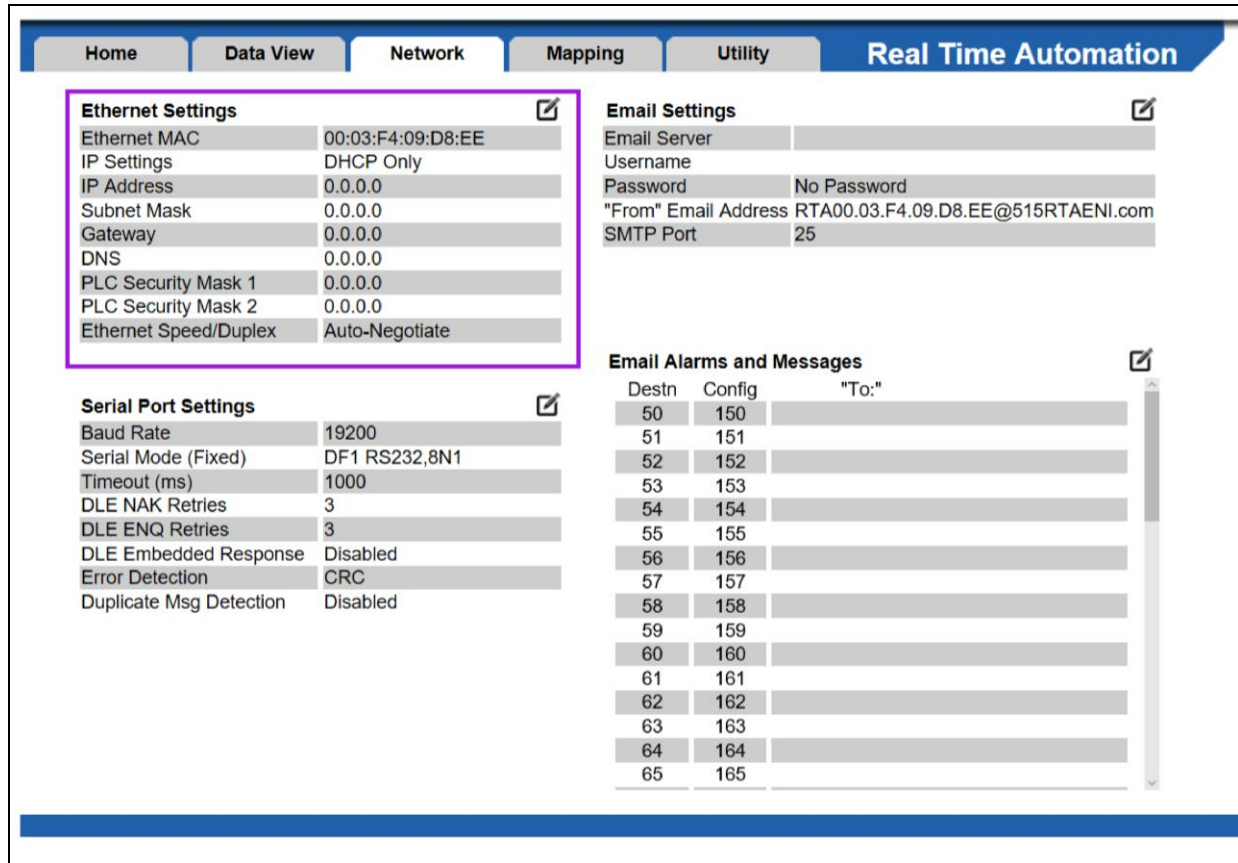
## Committing Changes to the Gateway

- 1) To make changes to the gateway, find the tab identifying which information to change. Next to the section to modify, there is an **Edit**  button.
- 2) Once the **Edit** button has been clicked, the icon will change into a **Save** button and any editable fields under that section will change into text boxes or dropdown lists. See the screenshot below as an example. The only field in this section that isn't configurable is the Serial Mode.

Serial Port Settings		Save
Baud Rate	19200	▼
Serial Mode (Fixed)	DF1 RS232,8N1	
Timeout (ms)	1000	
DLE NAK Retries	3	
DLE ENQ Retries	3	
DLE Embedded Response	Disabled ▼	
Error Detection	CRC ▼	
Duplicate Msg Detection	Disabled ▼	

- 3) Changes will not take effect until the **Save** button is clicked. While the save is in progress, the **Save** button will change into the  icon to indicate that the gateway is currently saving those settings.
- 4) If the Ethernet settings are changed, the gateway will reboot, and a message will be displayed prompting the user to enter the new IP address.

## Network Tab



The screenshot shows the 'Network' tab in the Real Time Automation software. The interface is divided into several sections:

- Ethernet Settings:**
  - Ethernet MAC: 00:03:F4:09:D8:EE
  - IP Settings: DHCP Only
  - IP Address: 0.0.0.0
  - Subnet Mask: 0.0.0.0
  - Gateway: 0.0.0.0
  - DNS: 0.0.0.0
  - PLC Security Mask 1: 0.0.0.0
  - PLC Security Mask 2: 0.0.0.0
  - Ethernet Speed/Duplex: Auto-Negotiate
- Serial Port Settings:**
  - Baud Rate: 19200
  - Serial Mode (Fixed): DF1 RS232,8N1
  - Timeout (ms): 1000
  - DLE NAK Retries: 3
  - DLE ENQ Retries: 3
  - DLE Embedded Response: Disabled
  - Error Detection: CRC
  - Duplicate Msg Detection: Disabled
- Email Settings:**
  - Email Server: [Empty]
  - Username: [Empty]
  - Password: No Password
  - "From" Email Address: RTA00.03.F4.09.D8.EE@515RTAENI.com
  - SMTP Port: 25
- Email Alarms and Messages:**

Destn	Config	"To:"
50	150	
51	151	
52	152	
53	153	
54	154	
55	155	
56	156	
57	157	
58	158	
59	159	
60	160	
61	161	
62	162	
63	163	
64	164	
65	165	

## Ethernet Settings


By default, the gateway is configured for DHCP.

There are **2** different options for the gateway to get an IP address:

- 1) **DHCP** – Attempts to receive an IP Address every time that the gateway is powered up. If DHCP fails, then an AutoIP address is used to make the webpages accessible and DHCP will continue to attempt to get an address.
- 2) **Static IP** – An IP address is statically set and will never change until the option is modified.



When configuring a static IP address, be sure to update the appropriate values in **IP Address**, **Subnet Mask**, and **Gateway** fields.

Home	Data View	Network	M
<b>Ethernet Settings</b>			
Ethernet MAC	00:03:F4:09:D8:EE		
IP Settings	DHCP Only		
IP Address	0.0.0.0		
Subnet Mask	0.0.0.0		
Gateway	0.0.0.0		
DNS	0.0.0.0		
PLC Security Mask 1	0.0.0.0		
PLC Security Mask 2	0.0.0.0		
Ethernet Speed/Duplex	Auto-Negotiate		

### Changing from DHCP to Static IP

- 1) Click the **Edit** button next to Ethernet Settings on the Network Tab in the gateway.
- 2) Change the dropdown of the **IP Settings** field to be Static IP.
- 3) Change the field **IP Address**, **Subnet Mask**, and **Gateway**.
- 4) Click the **Save** button.

### Additional Fields under Ethernet Settings

Field	Description
DNS	This is the IP of the DNS server on the network where the gateway looks up IP addresses. This is mandatory for email.
PLC Security Mask 1	This field limits what controllers can connect to and communicate with the gateway based on their IP address. This can only be used to allow a specific IP address or a specific IP address range. The value 255 is the wildcard value. A value of 0.0.0.0 or 255.255.255.255 allows any Ethernet device to connect. Security Mask 1 takes precedence over Security Mask 2.
PLC Security Mask 2	Secondary security mask field that is only used when PLC Security Mask 1 fails.

## Serial Settings

By default, the gateway is configured for the following settings:

- 1) Baud Rate: 19200
- 2) DF1 Error Detection: CRC
- 3) Serial Mode (fixed): DF1 Full-duplex, RS232, 8 data bits, parity none, 1 stop bit

These settings should match what is configured in the DF1 serial device, including the DLE parameters of **DLE NAK Retries**, **DLE ENQ Retries**, and **DLE Embedded Response**.

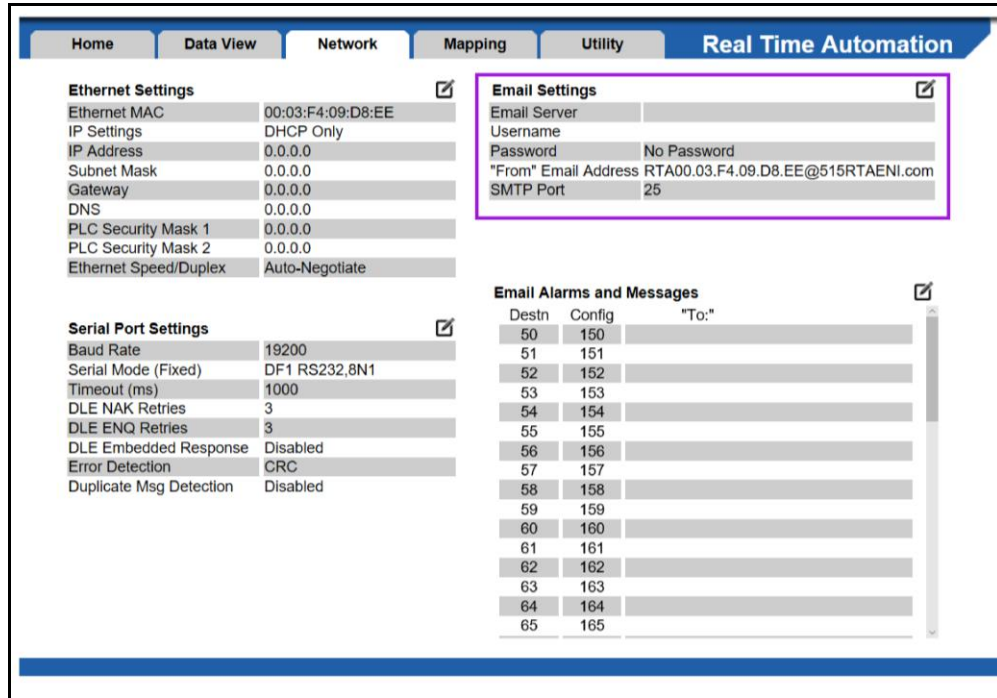
**NOTE:** Auto-baud is NOT supported. The 1761-NET-ENI/W serial PC Config Utility has an Auto-baud option, but this setting is not supported by the 515RTAENI gateway.

See table below for more explanation:

Value	Description
<b>Baud Rate</b>	Set the baud rate to match the baud rate configured for the 515RTAENI. 38,400 and 19,200 are the most used baud rates.
<b>Serial Mode</b>	Cannot be changed: DF1 RS232,8N1 (8N1 meaning 8 data bits, no parity bit, 1 stop bit)
<b>Timeout (ms)</b>	Elapsed time in milliseconds for sending or receiving data before an error is reported.
<b>DLE NAK Retries</b>	Response that signals that a message frame was not received successfully.
<b>DLE ENQ Retries</b>	Requests retransmission of a response.
<b>DLE Embedded Response</b>	Per the DF1 protocol, this allows a response to a previous message to be embodied in a new message.
<b>Error Detection</b>	DF1 error detection algorithm.
<b>Duplicate Msg Detection</b>	In the case of a duplicate, an error is reported in the attached PLC.

## Email Settings

This optional section can be filled out if alarms and messages need to be emailed out on the network. To configure, the following fields can be modified:



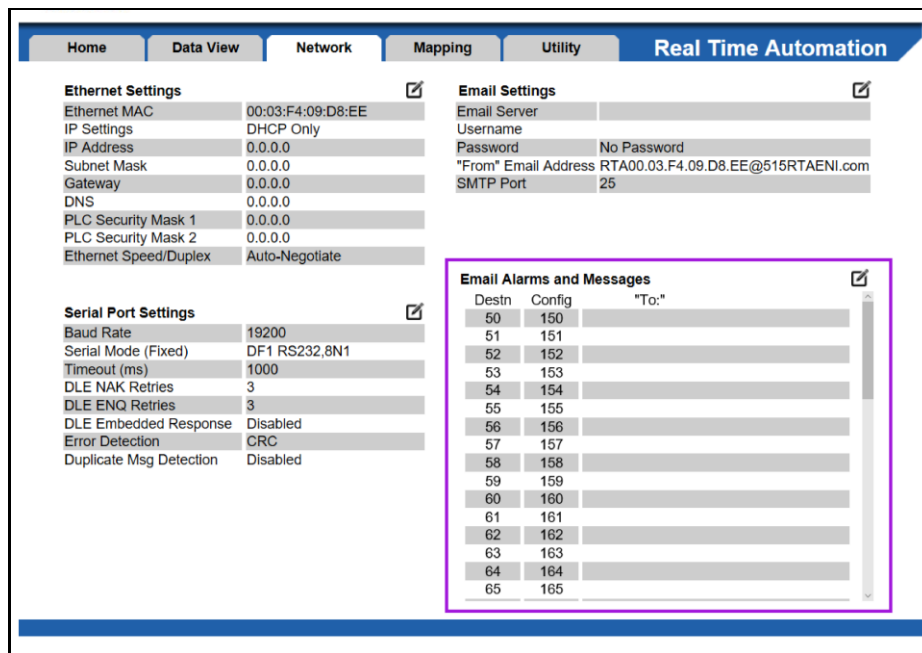
Destn	Config	"To:"
50	150	
51	151	
52	152	
53	153	
54	154	
55	155	
56	156	
57	157	
58	158	
59	159	
60	160	
61	161	
62	162	
63	163	
64	164	
65	165	

Field	Description
<b>Email server</b>	This is the TCP/IP address or name (maximum of 64 characters) of SMTP server.
<b>Username &amp; Password</b>	These fields are filled in if the email Server requires SMTP authentication. If the email server does not require SMTP authentication, the values here will be ignored and can be left blank. The maximum length for these fields is 64 characters.
<b>“From Email” Address</b>	This is an ASCII string that cannot be left blank, so by default it is filled in with a default value that can be modified. This is the message that is sent with any email message initiated by the gateway.
<b>SMTP Port</b>	This is the TCP port of the email server configured. Typically, this value is 25.

## Email Alarms and Messages

This optional section can be filled out if alarms and messages need to be emailed out on the network. Under the “To:” section, up to 50 email addresses (up to 64 characters) can be configured and stored. The “Config” column represents the node numbers (150 to 199) that are used to store the actual email address. The “Destn” column represents the node ID, any messages sent to that node ID, will be forwarded to the associated “To” address.

The controller will send a 485CIF write message to the DF1 destination node that is mapped to the destination email address. For the 515RTAENI to successfully send an email message, the **Email Settings** configuration needs to be set up correctly. The 515RTAENI stores the destination email address but does not store the actual data that is sent.

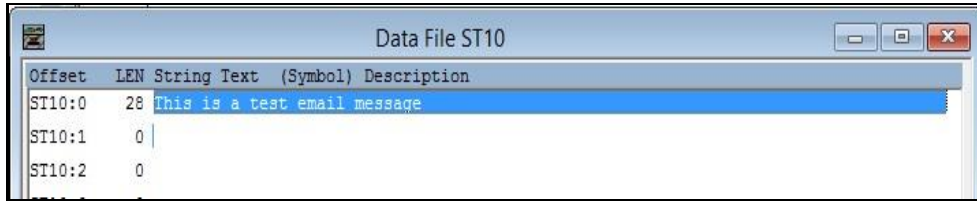


Home	Data View	Network	Mapping	Utility	Real Time Automation																																																			
<b>Ethernet Settings</b> <input checked="" type="checkbox"/> Ethernet MAC 00:03:F4:09:D8:EE IP Settings DHCP Only IP Address 0.0.0.0 Subnet Mask 0.0.0.0 Gateway 0.0.0.0 DNS 0.0.0.0 PLC Security Mask 1 0.0.0.0 PLC Security Mask 2 0.0.0.0 Ethernet Speed/Duplex Auto-Negotiate		<b>Email Settings</b> <input checked="" type="checkbox"/> Email Server Username Password No Password "From" Email Address RTA00.03.F4.09.D8.EE@515RTAENI.com SMTP Port 25		<b>Email Alarms and Messages</b> <input checked="" type="checkbox"/> <table border="1"> <thead> <tr> <th>Destn</th> <th>Config</th> <th>"To:"</th> </tr> </thead> <tbody> <tr><td>50</td><td>150</td><td></td></tr> <tr><td>51</td><td>151</td><td></td></tr> <tr><td>52</td><td>152</td><td></td></tr> <tr><td>53</td><td>153</td><td></td></tr> <tr><td>54</td><td>154</td><td></td></tr> <tr><td>55</td><td>155</td><td></td></tr> <tr><td>56</td><td>156</td><td></td></tr> <tr><td>57</td><td>157</td><td></td></tr> <tr><td>58</td><td>158</td><td></td></tr> <tr><td>59</td><td>159</td><td></td></tr> <tr><td>60</td><td>160</td><td></td></tr> <tr><td>61</td><td>161</td><td></td></tr> <tr><td>62</td><td>162</td><td></td></tr> <tr><td>63</td><td>163</td><td></td></tr> <tr><td>64</td><td>164</td><td></td></tr> <tr><td>65</td><td>165</td><td></td></tr> </tbody> </table>		Destn	Config	"To:"	50	150		51	151		52	152		53	153		54	154		55	155		56	156		57	157		58	158		59	159		60	160		61	161		62	162		63	163		64	164		65	165	
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<b>Serial Port Settings</b> <input checked="" type="checkbox"/> Baud Rate 19200 Serial Mode (Fixed) DF1 RS232,8N1 Timeout (ms) 1000 DLE NAK Retries 3 DLE ENQ Retries 3 DLE Embedded Response Disabled Error Detection CRC Duplicate Msg Detection Disabled																																																								

Field	Description
Destn	Messages to the node in this column will be sent to the associated “To” email address.
Config	Stores the defined node for each email address.
“To”	User can manually enter 114 one email address for every individual “To” line.

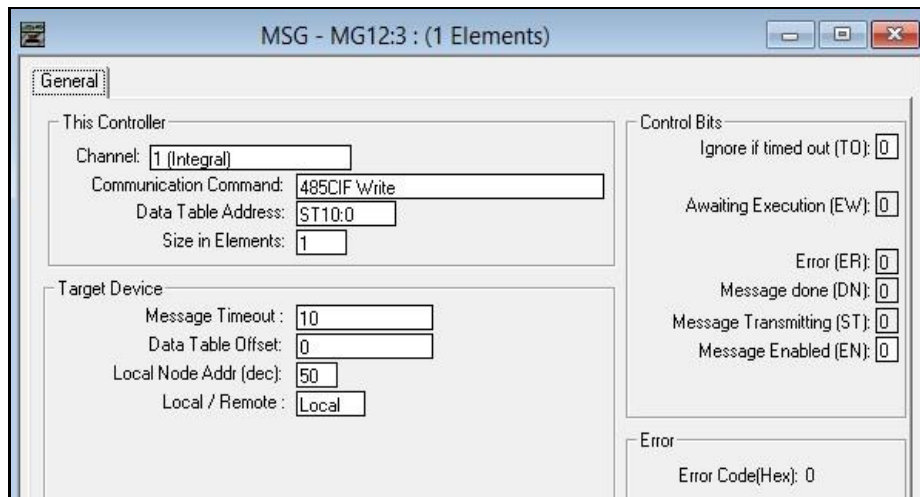
## Email Message Example

The email message data is a string that contains valid ASCII text as shown in the example below:



Offset	LEN	String Text	(Symbol)	Description
ST10:0	28	This is a test email message		
ST10:1	0			
ST10:2	0			

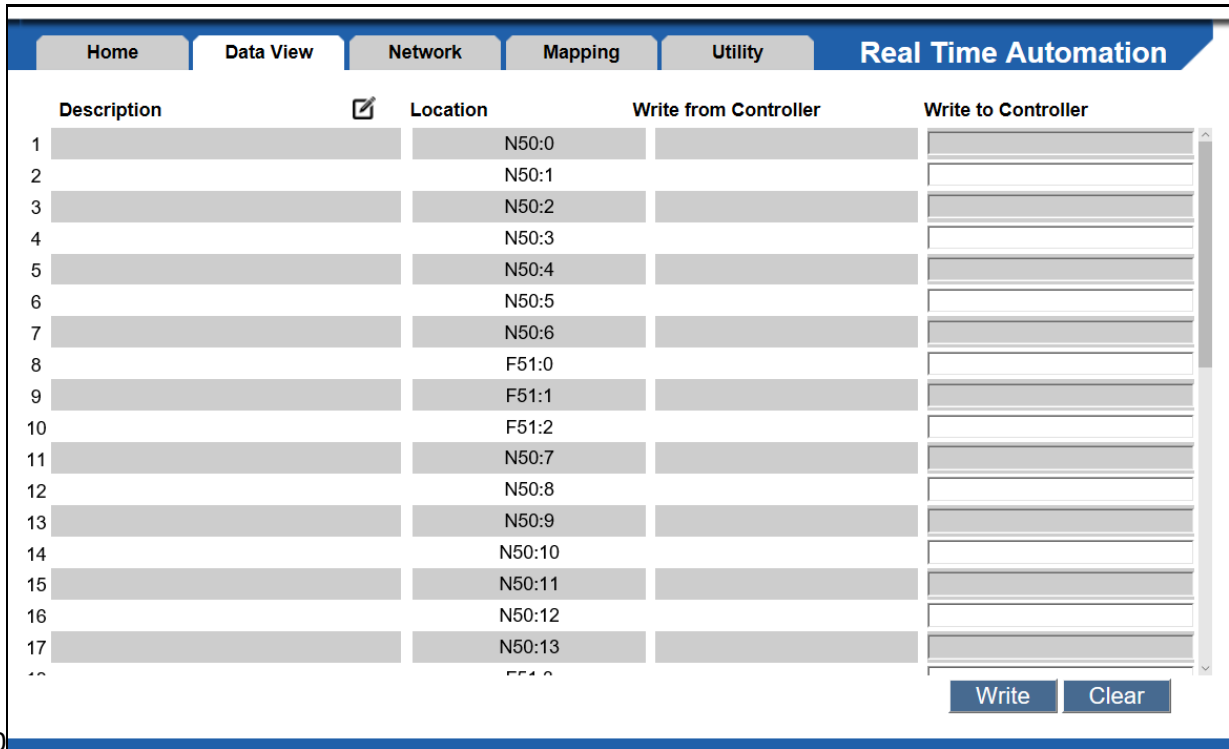
The controller would send a 485CIF write message with the write data being the email text to send, to the destination node (50 to 99) that corresponds to the destination email address. In this case, since we are writing to node address 50, the email address that will be use is the email address configured in node address 150 in the gateway’s webpage. The format of the email “subject” line is “515RTAENI.MSG”. This is how the MSG instruction would look:



**NOTE:** The two screenshots above display File Name ST10: 0 as a specific example. For the user, the email message data would display whatever String value they have chosen.

## Data View Tab

The Data View Tab shows the data that has been sent to the 515RTAENI from the attached serial controller. Using this page, data can also be written back to the serial controller. This page is designed to act as a “scratch-pad” function to show the data transfer with the serial controller.



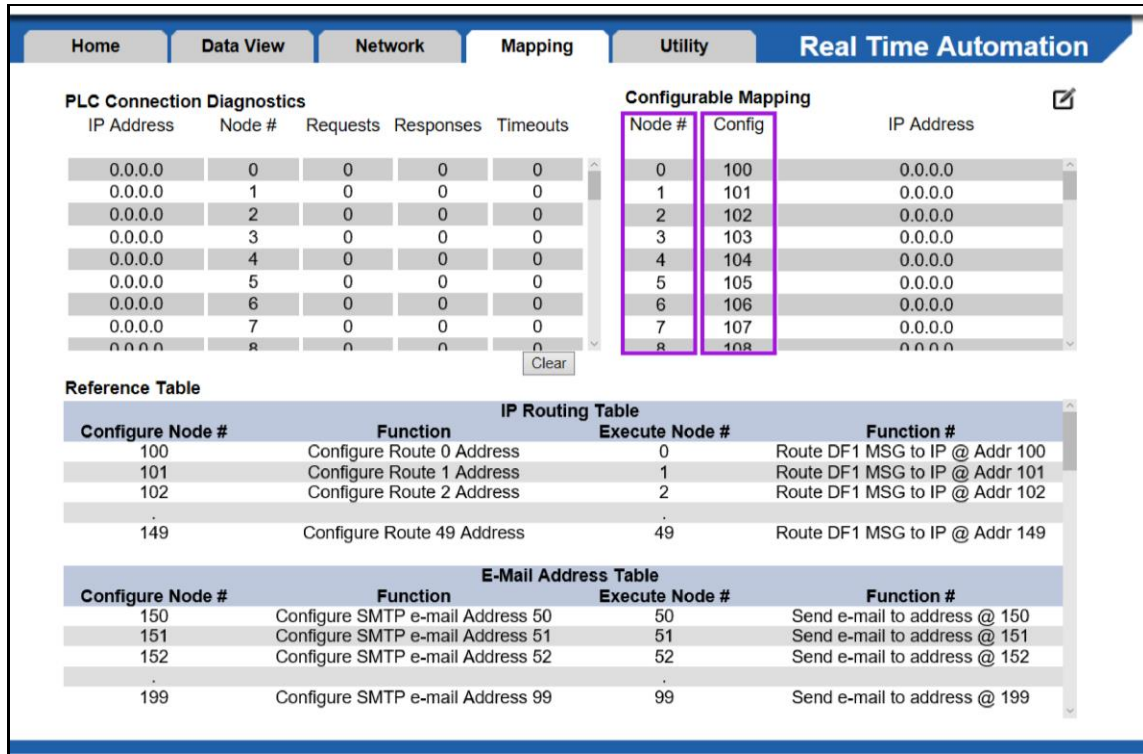
	Description	<input type="checkbox"/>	Location	Write from Controller	Write to Controller
1			N50:0		
2			N50:1		
3			N50:2		
4			N50:3		
5			N50:4		
6			N50:5		
7			N50:6		
8			F51:0		
9			F51:1		
10			F51:2		
11			N50:7		
12			N50:8		
13			N50:9		
14			N50:10		
15			N50:11		
16			N50:12		
17			N50:13		
18			F51:0		

This screen allows 40 user configurable descriptions for the reads and writes associated with the data table address ranges of N50:0-27, used in node #202, and F51:0-11, used in node #203.

Depending on the refresh rate configured at the top of the screen, values written from that location in the controller will display in the “Write from Controller” column. Values can be entered in the “Write to Controller” column and when the **Write** button is pressed, those values will be sent to the appropriate location. The gateway will send a separate DF1 write for each value entered.

## Mapping Tab

The Mapping page creates a routing table to associate DF1 Nodes with IP addresses.



The screenshot displays the 'Mapping' tab in the Real Time Automation software. It features a navigation bar with 'Home', 'Data View', 'Network', 'Mapping', and 'Utility' tabs. The main content area is divided into two sections: 'PLC Connection Diagnostics' and 'Configurable Mapping'.

**PLC Connection Diagnostics Table:**

IP Address	Node #	Requests	Responses	Timeouts
0.0.0.0	0	0	0	0
0.0.0.0	1	0	0	0
0.0.0.0	2	0	0	0
0.0.0.0	3	0	0	0
0.0.0.0	4	0	0	0
0.0.0.0	5	0	0	0
0.0.0.0	6	0	0	0
0.0.0.0	7	0	0	0
0.0.0.0	8	0	0	0

**Configurable Mapping Table:**

Node #	Config	IP Address
0	100	0.0.0.0
1	101	0.0.0.0
2	102	0.0.0.0
3	103	0.0.0.0
4	104	0.0.0.0
5	105	0.0.0.0
6	106	0.0.0.0
7	107	0.0.0.0
8	108	0.0.0.0

**Reference Tables:**

**IP Routing Table:**

Configure Node #	Function	Execute Node #	Function #
100	Configure Route 0 Address	0	Route DF1 MSG to IP @ Addr 100
101	Configure Route 1 Address	1	Route DF1 MSG to IP @ Addr 101
102	Configure Route 2 Address	2	Route DF1 MSG to IP @ Addr 102
...	...	...	...
149	Configure Route 49 Address	49	Route DF1 MSG to IP @ Addr 149

**E-Mail Address Table:**

Configure Node #	Function	Execute Node #	Function #
150	Configure SMTP e-mail Address 50	50	Send e-mail to address @ 150
151	Configure SMTP e-mail Address 51	51	Send e-mail to address @ 151
152	Configure SMTP e-mail Address 52	52	Send e-mail to address @ 152
...	...	...	...
199	Configure SMTP e-mail Address 99	99	Send e-mail to address @ 199

All messages received from a remote controller are decoded and the messages are transmitted to the local controller.

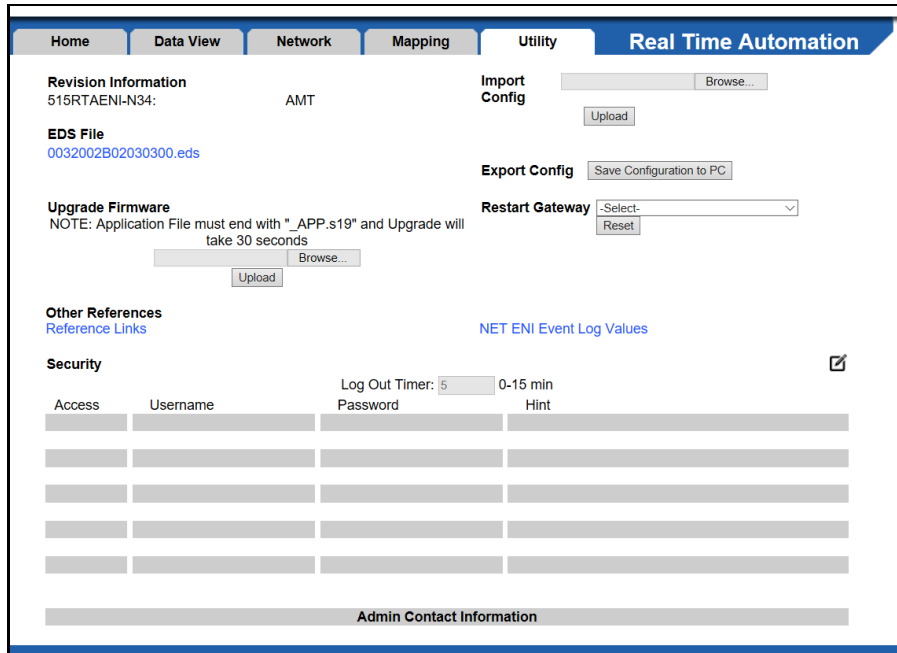
Configurable Mapping	
<b>Node #</b>	The 515RTAENI can route a DF1 message received from the attached controller to a compatible destination TCP/IP device, using DF1 node addresses 0 through 49. Node 45 – 49 must be used if talking to CompactLogix/ControlLogix/FlexLogix
<b>Config</b>	515RTAENI node addresses 100 through 149 store destination IP addresses.
<b>IP Address</b>	When the 515RTAENI receives a write message to nodes 100 to 149, it stores the destination IP address in the corresponding map register.

IP Routing Table example	
<b>Configure Node #</b>	100
<b>Function</b>	Configure route 0 address
<b>Execute Node #</b>	0
<b>Function #</b>	Send message to IP address @ DF1 node 100



## Utility Tab

The Utility page displays revision information, handles firmware upgrades, configuration files, and security features.



The screenshot shows the 'Utility' tab in the Real Time Automation web interface. The page is divided into several sections:

- Revision Information:** Displays '515RTAENI-N34: AMT'.
- EDS File:** Shows a file named '0032002B02030300.eds' with a 'Browse...' button.
- Upgrade Firmware:** Includes a note: 'NOTE: Application File must end with "\_APP.s19" and Upgrade will take 30 seconds'. It has 'Browse...' and 'Upload' buttons.
- Import Config:** Features a 'Browse...' button and an 'Upload' button.
- Export Config:** Contains a 'Save Configuration to PC' button.
- Restart Gateway:** Has a dropdown menu set to '-Select-' and a 'Reset' button.
- Other References:** Includes a link for 'Reference Links' and 'NET ENI Event Log Values'.
- Security:** Contains a 'Log Out Timer' set to '5' (0-15 min) and a checkbox. Below this is a table with columns for 'Access', 'Username', 'Password', and 'Hint', with several empty rows for data entry.
- Admin Contact Information:** A section at the bottom with a text input field.

## Export/Import Configuration

The Export Configuration option allows the current configuration of the gateway to be exported and saved to a PC for backup. The Import Configuration option allows the gateway to use a previously saved configuration file.

### Import Configuration

- 1) Click the **Choose File** button, and search for the configuration to load into the gateway.
- 2) Click the **Upload** button to begin installing the selected configuration file.
  - a) If the load failed, an error message will display.
  - b) If successful, the message "Import Successful, Using New Config" will appear on the web page.

### Export Configuration

- 1) Click the **Save Configuration to PC** button.
- 2) A prompt will then ask the type of file to save as, any type will suffice, though the default is \*.rtax.
- 3) Save the file to the PC.

## Restart Gateway

There are 3 options to restart the gateway:

- **Simple Reset**—performs a software reboot.
- **Reset out of box defaults**—brings the device back to its original manufacturing defaults, including setting the gateway to DHCP mode.
- **Reset out of box defaults except IP**—brings the device back to its original manufacturing defaults, except the current network settings.

## Upgrade Firmware

This option allows the gateway’s firmware to be upgraded from the web page.

- 1) Click the **Choose File** button and select the new firmware file to be installed in the gateway.
- 2) Click the **Upload** button to start the firmware upgrade process.

The firmware will automatically install, and the gateway will automatically reboot after the new firmware has been upgraded. The upgrade process will take approximately 30 seconds.

## EDS File

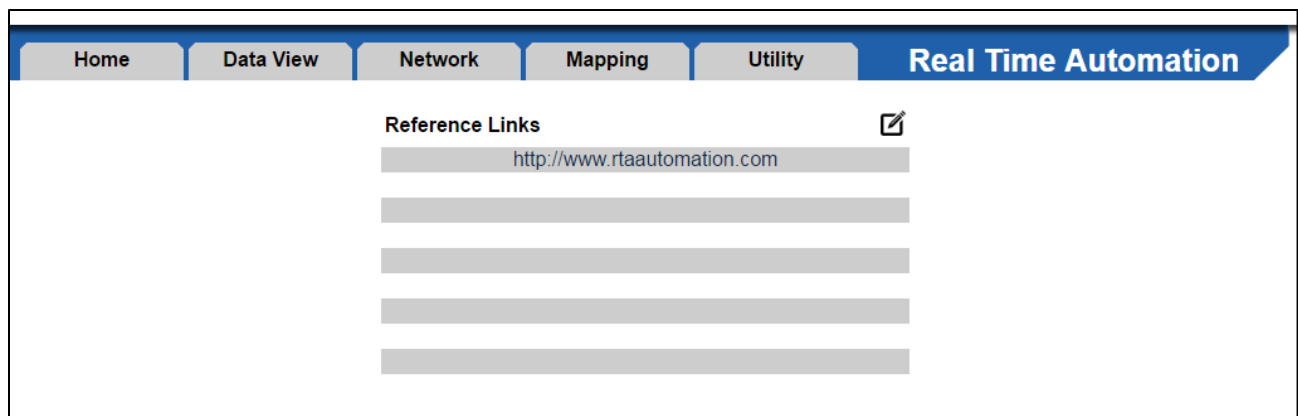
This link allows the EDS file to be downloaded directly from the gateway’s web server. Right click on the file name link below and select “Save Link/Target As...” to store the EDS file to the client PC.

## Other References

### Reference Links

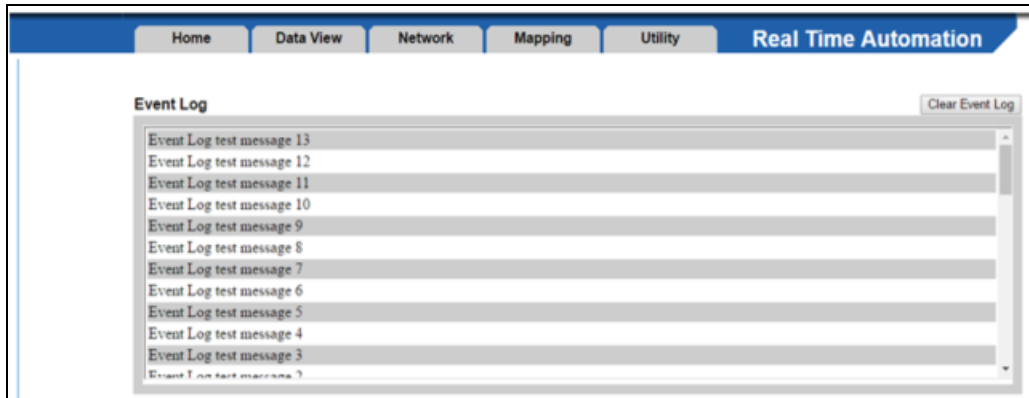
**NOTE:** If the user wants to access an external link, he or she must type <http://> as part of the address (**see screen below**).

The Reference Links page allows the user to select 10 user-defined URL links for the application. These URL links are not validated by the gateway and can be up to 64 characters in length. The URL is opened in a new browser window when the user clicks on the link.



## NET ENI Event Log Values

The NET ENI Event Log values page is a scratch pad where the PLC can write log values. Up to 50 data strings can be displayed here by writing to node 204 at element 0, with the newest event log displayed at the top. Writing a string to node 205 or a click on the **Clear Event Log** button will clear the buffer. If the event log is full and a new event is received, the new event will overwrite the oldest event in the list.



## Security Configuration

Access to the web pages inside the 515RTAENI gateway can be controlled by creating different access privileges. The first time the edit button is clicked, only one user can be configured. This is the primary account and will always have full access rights. Once the primary account is configured, the user can then log in to the primary account and create up to nine secondary accounts with different access privileges. Note that if the primary account is deleted, all the other accounts will be deleted with it.

### THIS IS **NOT** A TOTAL SECURITY FEATURE

The security feature offers a way to password protect access to diagnostics and configuration on the network. The security feature does not protect against “Air Gap” threats. If the gateway can be physically accessed, security can be reset. All security can be disabled if physical contact can be made. From the login page, click the Reset Password button twice. You will be forced to do a hard reboot (power down) on the gateway within 15 minutes of clicking the button. This process should be used in the event a password is forgotten.

Field	Description
<b>Log Out Timer</b>	The system will automatically log inactive users off after a length of time. <b>NOTE:</b> A time of 0 means that the user will not be automatically logged off. Instead, they must manually click the <b>Log Out</b> button at the top of the page.
<b>Access</b>	Users can either have “Full Access” or “View Only” access to all the gateway’s configuration pages.
<b>Username</b>	Enter a name for the security user, up to 32 characters.
<b>Password</b>	Enter a password for the security user, up to 32 characters, case sensitive.
<b>Hint</b>	Enter an optional hint that can be displayed for the security user, up to 32 characters.
<b>Admin Contact Information</b>	Enter up to 63 different characters worth of information on who to contact if security info is lost.

**Security** Save

Log Out Timer:  0-15 min

Access	Username	Password	Hint
Full Access ▼	admin	*****	a hint
Full Access ▼			
Full Access ▼			
Full Access ▼			
Full Access ▼			
Full Access ▼			
Full Access ▼			
Full Access ▼			
Full Access ▼			
Full Access ▼			

## Home Tab (Diagnostics)

The Home tab displays diagnostic counters that show the current gateway status. These diagnostics are useful for troubleshooting communication problems. There is also a logging table that can be used to further troubleshoot the Ethernet, Serial, and general gateway problems.

### DF1 Status

Home	Data View	Network	Mapping	Utility	Real Time Automation
<b>DF1 Status:</b> Total Num Messages Transmitted: 20 Total Num Messages Received: 20 Total Num Messages Enqueued: 20 Total Num Messages Dequeued: 20 Total Num Bad BCC/CRC Frames: 0 Total Num Message Timeouts: 0 Total Num Queue Full Errors: 0		<b>Ethernet Status:</b> Total Num Messages Transmitted: 24 Total Num Messages Received: 22 Total Num Message Timeouts: 0 Total Num Messages Discarded: 0 Total Num Bad Packets: 0 Current Num Sockets Used: 1 Max Num Sockets Used: 1 Total Num Out-of-Connection Errors: 0			
					Clear

### DF1 Counters

The counters under DF1 Status can help determine the state of the serial communication:

Field	Description
<b>Total Num Messages Transmitted</b>	Displays the total number of DF1 messages transmitted to the attached serial controller.
<b>Total Num Messages Received</b>	Displays the total number of DF1 messages received from the attached serial controller.
<b>Total Num Messages Enqueued</b>	Displays the total number of DF1 messages that are placed into the “Waiting to be processed” queue.
<b>Total Num Messages Dequeued</b>	Displays the total number of DF1 messages that are removed from the “Waiting to be processed” queue.
<b>Total Num Bad BCC/CRC Frames</b>	Displays the total number of corrupted DF1 messages that have been received.
<b>Total Num Message Timeouts</b>	Displays the total number of messages that have been received within the configured timeout period configured on the Network tab.

## Ethernet Status

Home
Data View
Network
Mapping
Utility
Real Time Automation

<b>DF1 Status:</b>		<b>Ethernet Status:</b>	
Total Num Messages Transmitted:	20	Total Num Messages Transmitted:	24
Total Num Messages Received:	20	Total Num Messages Received:	22
Total Num Messages Enqueued:	20	Total Num Message Timeouts:	0
Total Num Messages Dequeued:	20	Total Num Messages Discarded:	0
Total Num Bad BCC/CRC Frames:	0	Total Num Bad Packets:	0
Total Num Message Timeouts:	0	Current Num Sockets Used:	1
Total Num Queue Full Errors:	0	Max Num Sockets Used:	1
		Total Num Out-of-Connection Errors:	0

### Ethernet Status: Counters

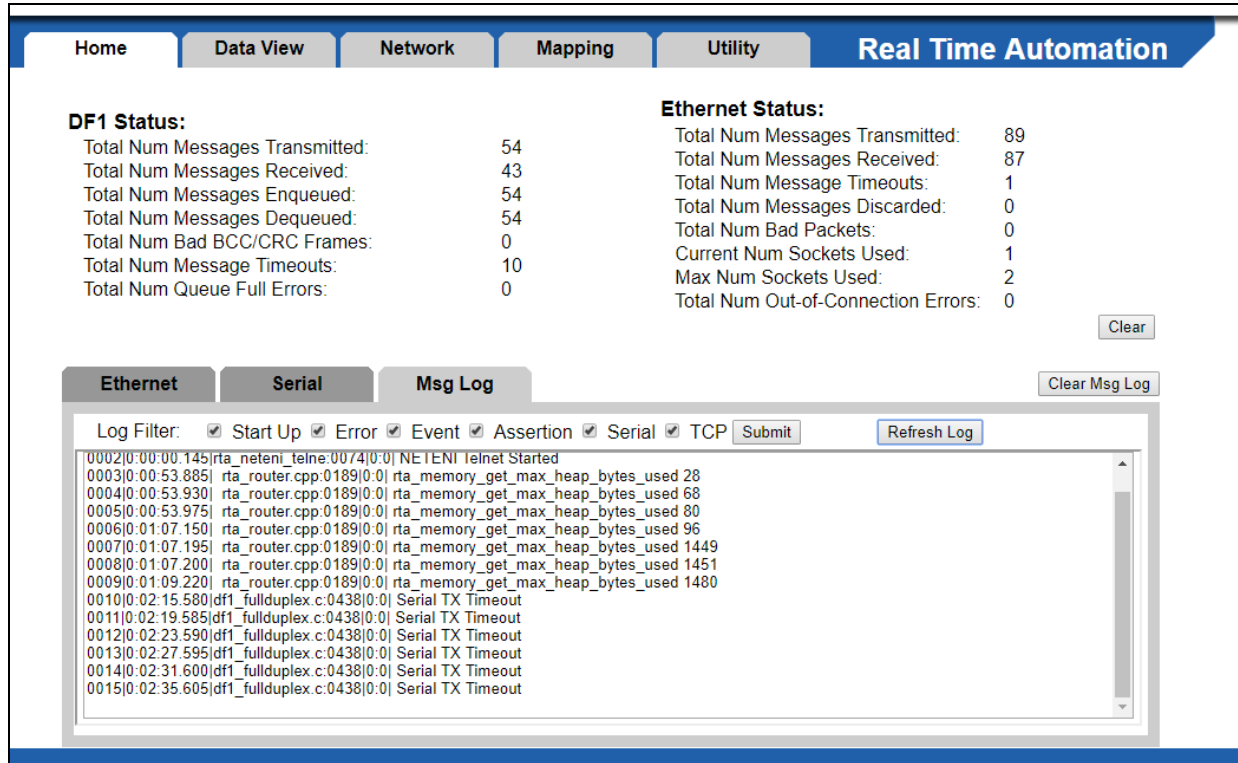
The counters under Ethernet Status can help determine the state of the Ethernet communication:

Field	Description
<b>Total Num Messages Transmitted</b>	Displays the total number of Ethernet messages transmitted by the gateway.
<b>Total Num Messages Received</b>	Displays the total number of Ethernet messages received by the gateway.
<b>Total Num Message Timeouts</b>	Displays the total number of Ethernet messages that have timed out. Timeout period is set to 2 minutes.
<b>Total Num Messages Discarded</b>	Displays the total number of Ethernet messages that have been discarded.
<b>Total Num Bad Packets</b>	Displays the total number of corrupted Ethernet messages that have been received. This should be 0.
<b>Current Num Sockets Used</b>	Displays the current number of open TCP sockets used by the gateway. The gateway can support up to 6 sockets at a single time.
<b>Max Num Sockets Used</b>	Displays the maximum number of TCP sockets that have been used by the gateway since power-up.
<b>Total Num Out-of-Connection Errors</b>	Displays the number of times the gateway had to reject a TCP connection due to too many sockets open at a single time.

## Logging

### Msg Log Tab

This tab displays the gateway's internal system status log messages and is only used for advanced troubleshooting. The log can be filtered by Start Up, Error, Event, Assertion, Serial, or TCP messages.



The screenshot shows the Real Time Automation interface with the following components:

- Navigation Bar:** Home, Data View, Network, Mapping, Utility, Real Time Automation
- DF1 Status:**

Total Num Messages Transmitted:	54
Total Num Messages Received:	43
Total Num Messages Enqueued:	54
Total Num Messages Dequeued:	54
Total Num Bad BCC/CRC Frames:	0
Total Num Message Timeouts:	10
Total Num Queue Full Errors:	0
- Ethernet Status:**

Total Num Messages Transmitted:	89
Total Num Messages Received:	87
Total Num Message Timeouts:	1
Total Num Messages Discarded:	0
Total Num Bad Packets:	0
Current Num Sockets Used:	1
Max Num Sockets Used:	2
Total Num Out-of-Connection Errors:	0
- Buttons:** Clear, Clear Msg Log
- Log Filter:**
  - Start Up
  - Error
  - Event
  - Assertion
  - Serial
  - TCP
- Log Messages:**

```

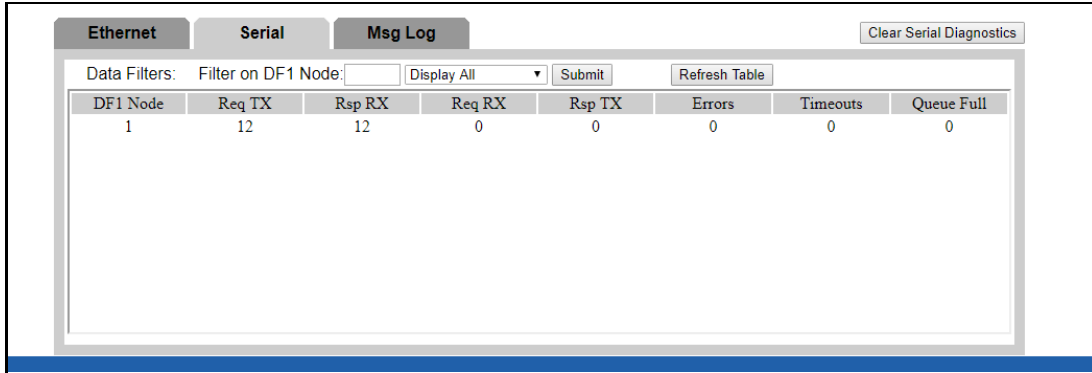
0002|0:00:00.145|rta_neteni_telnet:0074|0:0|NETENI Telnet Started
0003|0:00:53.885|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 28
0004|0:00:53.930|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 68
0005|0:00:53.975|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 80
0006|0:01:07.150|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 96
0007|0:01:07.195|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 1449
0008|0:01:07.200|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 1451
0009|0:01:09.220|rta_router.cpp:0189|0:0|rta_memory_get_max_heap_bytes_used 1480
0010|0:02:15.580|df1_fullduplex.c:0438|0:0|Serial TX Timeout
0011|0:02:19.585|df1_fullduplex.c:0438|0:0|Serial TX Timeout
0012|0:02:23.590|df1_fullduplex.c:0438|0:0|Serial TX Timeout
0013|0:02:27.595|df1_fullduplex.c:0438|0:0|Serial TX Timeout
0014|0:02:31.600|df1_fullduplex.c:0438|0:0|Serial TX Timeout
0015|0:02:35.605|df1_fullduplex.c:0438|0:0|Serial TX Timeout

```



## Serial Diagnostic Tab

The numbers under the DF1 Status can be further broken down by DF1 node by using the Serial Diagnostics table at the bottom of this page. Here, the user can filter a specific DF1 node, if desired, as well as use the following filters: Display All, Display Timeouts, Display Bad BCC/CRC, or Display Queue Full.



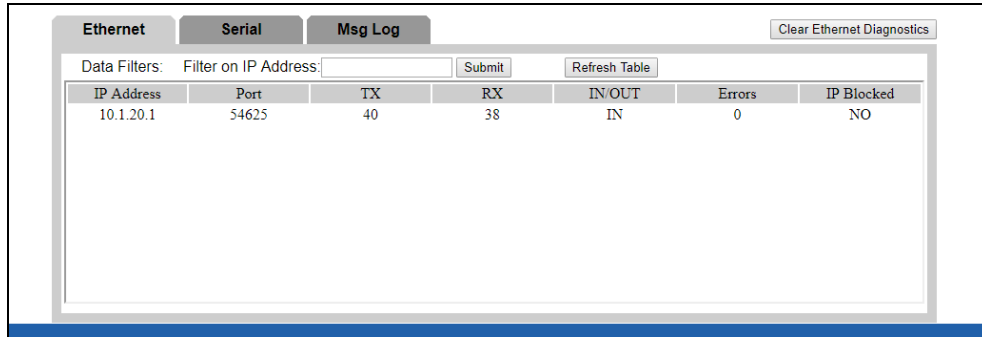
DF1 Node	Req TX	Rsp RX	Req RX	Rsp TX	Errors	Timeouts	Queue Full
1	12	12	0	0	0	0	0

The columns are briefly described as follows:

Field	Description
<b>DF1 Node</b>	DF1 message destination or source node.
<b>Req TX</b>	Number of requests transmitted.
<b>Rsp RX</b>	Number of responses received.
<b>Req RX</b>	Number of requests received.
<b>Rsp TX</b>	Number of responses transmitted.
<b>Timeouts</b>	Number of message timeouts for that DF1 node.
<b>Queue Full</b>	Number of times the processing queue was full for that DF1 node. Any new messages will be lost when the processing queue is full.

## Ethernet Diagnostics Tab

The numbers under the Ethernet Status can be further broken down by connection by using the Ethernet Diagnostics table at the bottom of this page. Here, the user can filter a specific IP address, if desired.



Ethernet		Serial	Msg Log	Clear Ethernet Diagnostics			
Data Filters:		Filter on IP Address:	Submit	Refresh Table			
IP Address	Port	TX	RX	IN/OUT	Errors	IP Blocked	
10.1.20.1	54625	40	38	IN	0	NO	

The columns are briefly described as follows:

Field	Description
<b>IP Address</b>	IP Address associated with the connection.
<b>Port</b>	Remote Port associated with the connection.
<b>TX</b>	Number of packets transmitted.
<b>RX</b>	Number of packets received.
<b>IN/OUT</b>	Identifies a connection as either a client (OUT) or server (IN).
<b>Errors</b>	Number of connection errors.
<b>IP Blocked</b>	Number of blocked connection attempts.

## LED Behavior

LED 1: Serial Port Status	
<b>Solid Green</b>	Serial communications are active and is communicating to the gateway within the Inactivity Timeout configured
<b>Blink Green</b>	No active communications (Idle)
<b>Blink Red</b>	No active communications (Timeout)
<b>Solid Red</b>	Fatal Error

LED 2: Ethernet Status	
<b>Solid Green</b>	Ethernet communication is active, and messages are successful
<b>Blink Green</b>	No active communications (Idle)
<b>Blink Red</b>	Ethernet cable is connected but there are no active/valid communications (Idle/Timeout)
<b>Solid Red</b>	Fatal Error
<b>Off</b>	Ethernet cable is unplugged



## DF1 Node Descriptions Reference Table

This table shows the DF1 nodes the 515RTAENI supports and what they are used for.

Node	Options/Description
0-49	Used to forward messages from the serial device to an IP address. A message sent to node n is sent to the IP address at node n+100. Therefore, a message sent to node 0 is sent to the IP address stored in node 100. ➔ <b>Mapping Tab, p23</b>
50-99	Writes to nodes 50-99 are used by the serial controller to send email messages. The controller generates a 485CIF write message with the email text as the data, to a node number that maps to the email destination address. ➔ <b>Email Alarms and Messages, p20.</b>
100-149	IP addresses mapped with nodes 0-49. ➔ <b>Mapping Tab, p23.</b>

150-199	Nodes 150-199 give the email addresses used for messages sent to nodes 50-99. There is 1 address per message, so each node is in a 1-1 relationship with the other. ➡ <b>Email Alarms and Messages, p20.</b>																						
200	<p>Defines URL links. These are shown in the 515RTAENI web configuration in the <b>Reference Links</b> tab on the Utility tab. The 515RTAENI does not validate the URL.</p> <p>The serial controller sends a write message to node 200 and the URL offset to define a new link on the Reference Links web page. Only one link is sent per write message. The controller uses a 485CIF write, where the URL string data is the write data, and the Offset value defines which URL link to define. Each URL string can be up to 45 characters. ➡ <b>Reference Links, p26.</b></p> <table border="1" data-bbox="347 646 919 1318"> <thead> <tr> <th>Offset</th> <th>Link</th> </tr> </thead> <tbody> <tr><td>4</td><td>1</td></tr> <tr><td>6</td><td>2</td></tr> <tr><td>8</td><td>3</td></tr> <tr><td>10</td><td>4</td></tr> <tr><td>12</td><td>5</td></tr> <tr><td>14</td><td>6</td></tr> <tr><td>16</td><td>7</td></tr> <tr><td>18</td><td>8</td></tr> <tr><td>20</td><td>9</td></tr> <tr><td>22</td><td>10</td></tr> </tbody> </table>	Offset	Link	4	1	6	2	8	3	10	4	12	5	14	6	16	7	18	8	20	9	22	10
Offset	Link																						
4	1																						
6	2																						
8	3																						
10	4																						
12	5																						
14	6																						
16	7																						
18	8																						
20	9																						
22	10																						
201	A write to node 201 is used to change the Data Description column displayed on the Data View web page. Up to 40 elements can be written, since there are 40 labels, but each element is written as one data transmission. In other words, the string and the element offset is written 40 different times to write 40 labels. Each write has the form of label/offset. ➡ <b>Data View Tab, p22.</b>																						
202	Integer data for display on the Data View page is written to node 202, offset elements 0 to 27. The Integer data written is displayed in the “Write from Controller” column. ➡ <b>Data View Tab, p22.</b>																						
203	Floating-point data for display on the Data View page is written to node 203, offsets elements 0 through 11. The data written is displayed in the “Write from Controller” column. ➡ <b>Data View Tab, p22.</b>																						

204	<p>The controller writes event strings to node 204. They show up on the <b>NET ENI Event Log Values</b> on the Utility page: it is a place for the serial controller to log events that can then be viewed in the 515RTAENI Event Log page. The Event Log page can display the 50 most recent event messages, and when the event list displays 50 event strings (i.e. event list full) a new event string written to the list will overwrite the oldest event displayed. The most recent events are displayed at the top of the <b>NET ENI Event Log Values</b> page, and older events are pushed down the page when new events are added.</p>												
205	<p>A controller write to node 205 will clear all events displayed on the <b>NET ENI Event Log Values</b> page (i.e. Clears the event list).</p>												
241	<p>A controller write to node 241 sets the Ethernet speed.</p> <table border="1" data-bbox="347 684 919 1062"> <thead> <tr> <th>Offset</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Auto Negotiate</td> </tr> <tr> <td>1</td> <td>10Mbps Half Duplex</td> </tr> <tr> <td>2</td> <td>10Mbps Full Duplex</td> </tr> <tr> <td>3</td> <td>100Mbps Half Duplex</td> </tr> <tr> <td>4</td> <td>100Mbps Full Duplex</td> </tr> </tbody> </table> <p>➔ <b>Ethernet Settings, p16.</b></p>	Offset	Operation	0	Auto Negotiate	1	10Mbps Half Duplex	2	10Mbps Full Duplex	3	100Mbps Half Duplex	4	100Mbps Full Duplex
Offset	Operation												
0	Auto Negotiate												
1	10Mbps Half Duplex												
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3	100Mbps Half Duplex												
4	100Mbps Full Duplex												
242	<p>A controller write to node 242 sets the SMTP username. ➔ <b>Email Settings, p19.</b></p>												
243	<p>A controller write to node 243 sets the SMTP password. ➔ <b>Email Settings, p19.</b></p>												
248	<p>A controller write to node 248 will cause the 515RTAENI gateway to save configuration settings and re-initialize.</p> <table border="1" data-bbox="347 1484 1037 1801"> <thead> <tr> <th>Offset</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Save Configuration to Flash</td> </tr> <tr> <td>1</td> <td>Simple Reset</td> </tr> <tr> <td>2</td> <td>Reset to out-of-box</td> </tr> <tr> <td>3</td> <td>Reset to out-of-box (Except IP)</td> </tr> </tbody> </table>	Offset	Operation	0	Save Configuration to Flash	1	Simple Reset	2	Reset to out-of-box	3	Reset to out-of-box (Except IP)		
Offset	Operation												
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2	Reset to out-of-box												
3	Reset to out-of-box (Except IP)												

249	<p>Email address. The 2nd element is the length of the email address and the 3rd is the email address. The “ST15:0” is a file and offset in the target Ethernet device. That will, of course, vary by device. ➡</p> <p><b>Email Settings, p19.</b></p> <p>ST15:0 17 <a href="mailto:12345679@abc.com">12345679@abc.com</a></p>																	
250	<p>A controller write to node 250 can assign IP address settings to the 515RTAENI.</p> <table border="1" data-bbox="363 573 1385 1270"> <thead> <tr> <th>Function</th> <th>Data Type</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>IP Address</td> <td>Integer 4 words</td> <td>Format aaa.bbb.ccc.ddd (decimal). First octet is between 1-223, not 127 First octet is not 169.254 or 169.255 0.0.0.0 returns an error</td> </tr> <tr> <td>Subnet Mask</td> <td>Integer 4 words</td> <td>Class A address (First octet is 1 to 126) 255.0.0.0 Class B address (First octet is 128 to 191) 255.255.0.0 Class C address (First octet is 192 to 223) 255.255.255.0</td> </tr> <tr> <td>Gateway</td> <td>Integer 4 words</td> <td>Only needed if there is a Default Gateway on the network.</td> </tr> <tr> <td>Security Mask 1</td> <td rowspan="2">Integer 4 words</td> <td>Default is set to 000.000.000.000</td> </tr> <tr> <td>Security Mask 2</td> <td>Default is set to 000.000.000.000</td> </tr> </tbody> </table> <p>➡ <b>Ethernet Settings, p16.</b></p>	Function	Data Type	Operation	IP Address	Integer 4 words	Format aaa.bbb.ccc.ddd (decimal). First octet is between 1-223, not 127 First octet is not 169.254 or 169.255 0.0.0.0 returns an error	Subnet Mask	Integer 4 words	Class A address (First octet is 1 to 126) 255.0.0.0 Class B address (First octet is 128 to 191) 255.255.0.0 Class C address (First octet is 192 to 223) 255.255.255.0	Gateway	Integer 4 words	Only needed if there is a Default Gateway on the network.	Security Mask 1	Integer 4 words	Default is set to 000.000.000.000	Security Mask 2	Default is set to 000.000.000.000
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251	<p>515RTAENI from email address. Messages sent will have this “From” address. ➡</p> <p><b>Email Settings, p19</b></p>																	
252	<ul style="list-style-type: none"> <li>● BootP Initially (<b>Unsupported by RTAENI</b>, will default to DHCP)</li> <li>● BootP Fallback (<b>Unsupported by RTAENI</b>, will default to DHCP)</li> <li>● BootP Always (<b>Unsupported by RTAENI</b>, will default to DHCP)</li> <li>● DHCP Only</li> </ul> <table border="1" data-bbox="347 1654 1037 1837"> <thead> <tr> <th>Offset</th> <th>Operation</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Use static IP address</td> </tr> <tr> <td>4</td> <td>Use DHCP to acquire IP address</td> </tr> </tbody> </table>	Offset	Operation	1	Use static IP address	4	Use DHCP to acquire IP address											
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	<table border="1" data-bbox="345 210 1037 275"> <tr> <td data-bbox="345 210 631 275"></td> <td data-bbox="631 210 1037 275">dynamically</td> </tr> </table> <p data-bbox="345 310 656 346">➤ Ethernet Settings, p16.</p>		dynamically												
	dynamically														
253	<p data-bbox="345 380 1255 411">A controller write to node 253 can set the serial baud rate in the 515RTAENI.</p> <p data-bbox="345 415 1117 447"><b>NOTE: Auto-baud is NOT supported by the 515RTAENI gateway.</b></p> <table border="1" data-bbox="345 483 703 926"> <thead> <tr> <th data-bbox="345 483 501 535">Value</th> <th data-bbox="501 483 703 535">Baud Rate</th> </tr> </thead> <tbody> <tr> <td data-bbox="345 535 501 602">1</td> <td data-bbox="501 535 703 602">1200</td> </tr> <tr> <td data-bbox="345 602 501 667">2</td> <td data-bbox="501 602 703 667">2400</td> </tr> <tr> <td data-bbox="345 667 501 732">3</td> <td data-bbox="501 667 703 732">4800</td> </tr> <tr> <td data-bbox="345 732 501 798">4</td> <td data-bbox="501 732 703 798">9600</td> </tr> <tr> <td data-bbox="345 798 501 863">5</td> <td data-bbox="501 798 703 863">19200</td> </tr> <tr> <td data-bbox="345 863 501 926">6</td> <td data-bbox="501 863 703 926">38400</td> </tr> </tbody> </table> <p data-bbox="345 966 626 997">➤ Serial Settings, p18.</p>	Value	Baud Rate	1	1200	2	2400	3	4800	4	9600	5	19200	6	38400
Value	Baud Rate														
1	1200														
2	2400														
3	4800														
4	9600														
5	19200														
6	38400														



## Use of Existing 1761-NET-ENI/W Tools

### Easily replace an existing NETENI device

The 515RTAENI supports the old Allen-Bradley ENI / ENIW Utility configuration tool. If you are doing a device replacement, use the ENI /ENIW Utility tool to get the configuration file from the old ENI and then do a “Save To” the 515RTAENI gateway. Note: If you were previously using a BOOTP IP acquisition mode with your 1761-NET-ENI, the 515RTAENI will revert to DHCP. The BOOTP modes are not supported by the 515RTAENI.

## Using RSLinx

### Ethernet Driver

**IMPORTANT:** In RSLinx, the **EDS file** for the 515RTAENI **must** be installed for RSLinx to recognize the device type. The **EDS file** can be downloaded from the product CD or via the **Utilities** tab of the 515RTAENI web user interface. Use the Rockwell EDS Hardware Installation Tool on the computer with RSLinx to install the 515RTAENI EDS file. Please note that the Rockwell EDS Hardware Installation Tool may require you to first copy the **EDS file** from the CD to your computer.

This driver is used to communicate to PLCs with serial RS232 DF1 communication.

To configure the RSLinx/RSLogix to use the Ethernet driver, first ensure that you have configured the 515RTAENI to match the serial settings on your serial PLC and that you have configured the Ethernet Network settings to something suitable to your network.

- 1) In RSLinx, select 'Configure Drivers...' from the 'Communications' menu.
- 2) If you already have an Ethernet driver configured and wish to add the 515RTAENI to that driver, simply add a new node to the driver with the 515RTAENI's IP address.
- 3) If you do not have an Ethernet driver configured, select 'Ethernet Devices' from the 'Available Driver Types' dropdown then click 'Add New...' and supply it with a suitable name in the resulting popup.
- 4) Enter the IP address of the 515RTAENI into the 'Host Name' entry for Station 0 and click **OK**.
- 5) Your serial PLC should now be accessible via the Ethernet driver. If not accessible, verify the serial settings in the 515RTAENI with your PLC. If you do not know the serial settings for your PLC, then reference the PLC Serial Setting section of the 515RTAENI Use Case doc located on the CD.

**Note:** EtherNet/IP drivers may still be used. It's best to use Ethernet drivers, that way you can see all 515RTAENI IP addresses that have been entered in manually. The disadvantage of an EtherNet/IP driver is any PLC connected serially won't show in the EtherNet/IP driver sections. Reference page 5 or 6 of the 515RTAENI Use Case doc located on the CD.

## Troubleshooting RSLinx and RSLogix Comms

<p><b>When attempting to configure the 515RTAENI in RSLinx I see “unrecognized device” and a yellow question mark. Why do I see this?</b></p>	<p>In RSLinx, when using EtherNet/IP, the EDS file for the 515RTAENI must be installed for RSLinx to recognize the device type. RTA recommends that you use the Ethernet driver. <b>Using RSLinx , pg. 41</b></p>
<p><b>When attempting to configure the RSLogix Controller Communications Comms Path, why do I get a 0x10 error after clicking the “Apply” button.</b></p>	<p>The 0x10 error indicates that either the serial baud rates do not match or there is an issue with the serial cable (<a href="#">version of cable, pg. 10</a>). Verify that the serial baud rate configured in the 515RTAENI is the same baud rate configured in the controller (<b>reference 515RTAENI Use Case document located on CD pg. 20</b>), also verify that the serial cable is the correct cable and is properly connected.</p>
<p><b>Why are the LEDs flashing red when connected to the 515RTAENI using RSLinx/RSLogix?</b></p>	<p><b>Please reference pg. 35</b> for the LED behavior.</p>

## Application Specific Tips

### PanelView Plus Comms

The following instructions are for communications set up in RSView. The 515RTAENI EDS file must be installed. Use the Rockwell EDS Hardware Installation Tool to install the EDS file supplied on the product CD. The EDS file may need to first be copied off the CD to your computer for the EDS installation tool to successfully install the file. Once the EDS file is installed and the Ethernet and serial settings have been set, you should be able to discover the 515RTAENI gateway in RSLinx.

515RTAENI_N34 EthernetIP-Serial R...	0032002B02030300.eds	10/24/2016 3:10 PM	EDS File	11 KB
EDS	Netburner_64x64.ico	10/24/2016 3:11 PM	Icon	6 KB
Gateway Documents				
Gateway Tools				

Figure xx - 515RTAENI RSLinx EDS file and Icon file

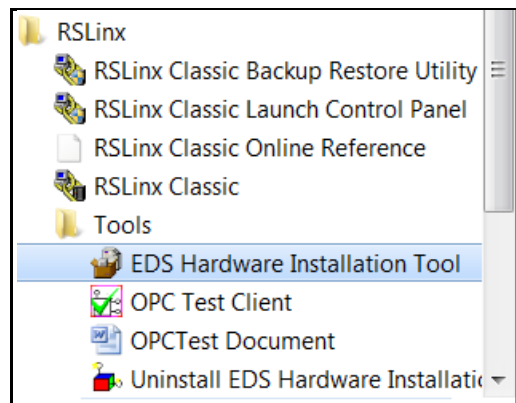
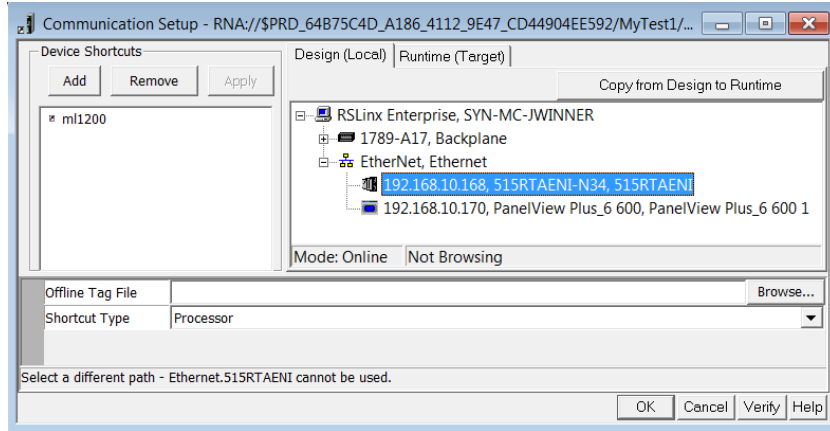
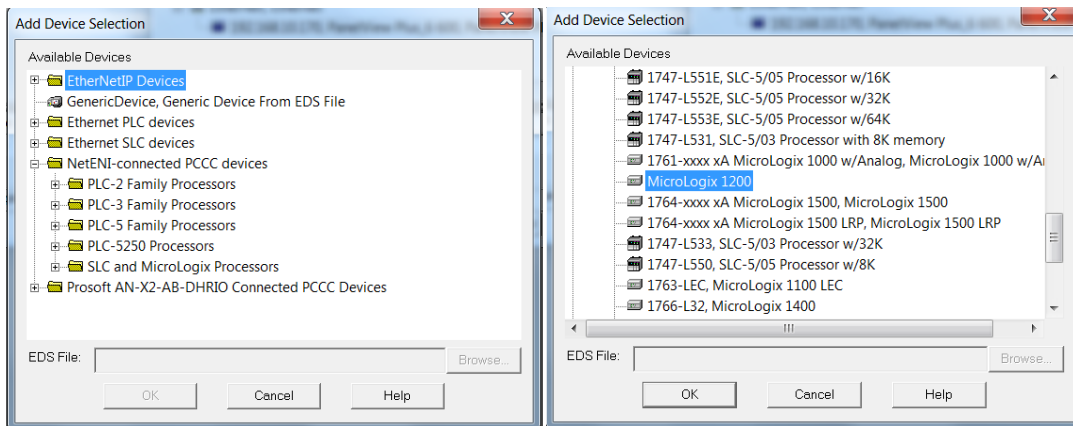


Figure xx - Rockwell RSLinx EDS Hardware Installation Tool

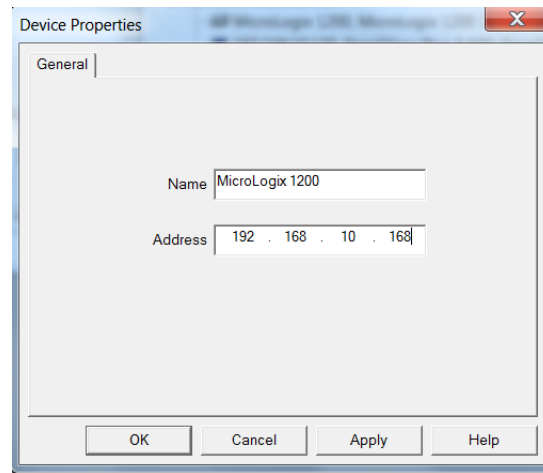
For PanelView Plus communications set up in RSView, verify RSLinx Enterprise finds the 515RTAENI module. Unplug the Ethernet cable to the 515RTAENI gateway. Then right click the unit, and delete it from the communications tree. See image below.



Right click the Ethernet Driver and select Add Device. From the Device Selection tool, select the NETENI-connected PCCC devices, select the appropriate processor family folder, and then choose your PLC from the list in the processor folder and click **OK**. The example screens below show the selection of a MicroLogix 1200 controller.



Enter the IP address assigned to the 515RTAENI gateway, and click **Apply**.



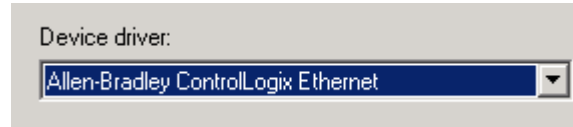
The RSView software should now be able to communicate over Ethernet to the serial input of the controller using the 515RTAENI gateway. If this procedure doesn't work the first time, delete the original target and rebuild the Comms as described above.

**IMPORTANT:** When using a PanelView Plus terminal the Duplicate Packet Detect option in the serial controller must be **DISABLED**, otherwise there may be a loss of communications.

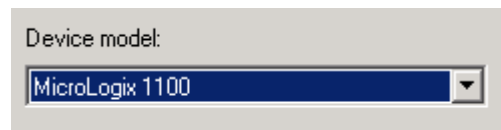
## Kepware Communications

In the Kepware server there is a NETENI driver for NETENI to MicroLogix communications, but this will not work with the 515RTAENI gateway. In the Kepware server you need to do the following to gather data from a SLC 5/03, SLC 5/04, or MicroLogix using the 515RTAENI.

- 1) Create a new item, name it, and then select a channel to use. For that channel, select the Device driver of Allen-Bradley ControlLogix Ethernet, see the image below.



- 2) After selecting the Device driver, select the Device model to use on the channel as MicroLogix 1100, see the image below.



- 3) Enter the IP address to access that device.