

**CAS 2700-58**

**XML to BACnet IP Gateway**

**For Functional Devices Wi-Fi Rib Devices**

**Manual**

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2015 Chipkin Automation Systems, 3381 Cambie St- Box 211, Vancouver, BC, Canada, V5Z 4R3

■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

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## 1. XML to BACnet IP Gateway Description

The XML to BACnet IP Gateway connects to an Ethernet enabled device that responds to commands XML commands. This implementation of the XML to BACnet IP Gateway communicates using specific XML commands and URLs to get data from and change parameters on a Functional Devices Rib Wi-Fi device. The Gateway can be configured to connect to multiple Rib devices.

The Gateway connects to the Rib device, reads data, and stores it internally. When a remote system requests data, the data is served in a form that is appropriate to the requesting protocol. In this case the protocol is BACnet IP.

The Gateway can also receive BACnet IP Write Property requests to certain points that will cause the Gateway to send XML write commands to the end Rib device.

This manual contains additional information about how the Gateway operates as well as instructions on how to setup the connections to the Gateway and how to configure and read data from the Gateway.

The following is a brief description of the sections covered in this manual.

### *2. Connections*

This section contains information about how to connect to the Gateway. It includes block diagrams and any wiring diagrams that are needed.

### *3. Setting up the Gateway*

This section describes how to connect to the Gateway initially and how to set the IP Address

### *4. Configuring the Gateway*

This section has instructions and images of how to configure the Gateway through the web page interface.

### *5. Reading the Data*

This section contains example of the Rib data that is stored on the Gateway and how to read the Reports Page

### *6. Commanding the Rib Device*

This section describes how the Gateway communicates with the Rib Device to poll for data and to send commands.

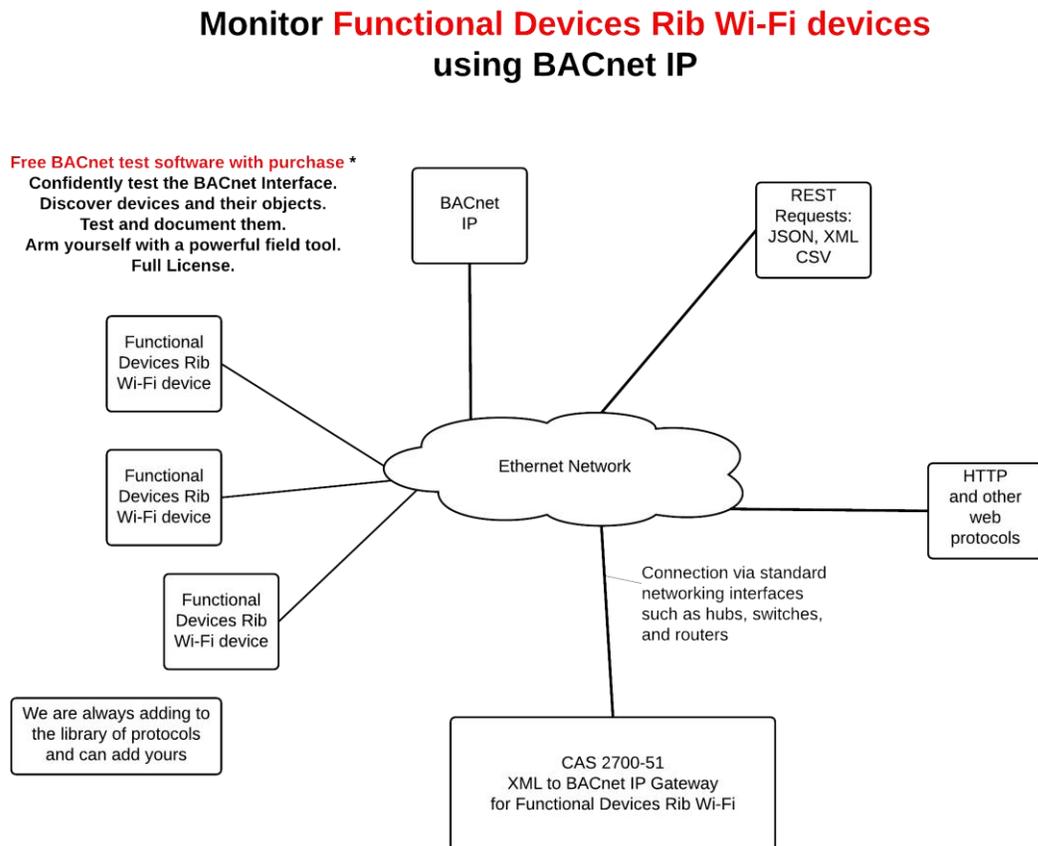
### *7. Commissioning, Diagnostics, and Troubleshooting*

This section contains details on what to bring to site when installing the Gateway, how to take diagnostics and the tools to use, and how to trouble shoot and take logs.

## 2. Connections

This section contains information about how to connect to the Gateway. It contains a block diagram and limitations and best practices when connecting the Gateway.

### 2.1 Block Diagram



*Image 2.1 – Block Diagram of CAS 2700-58 XML to BACnet IP Gateway*

## 2.2 Wiring and Connections

This section contains wiring diagrams for the various connections that are possible for this Gateway. The Gateway has 3 main ports:

### Port 0

This port is a RS485 port and is used primarily for Modbus RTU. It can support full and half duplex RS485. This port is **NOT** used by the XML to BACnet IP Gateway.

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■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

### *Port 1*

This port is setup a RS232 port and is **NOT** used by the Gateway.

### *Ethernet Port*

This port is used by the TCP/IP and UDP drivers of the Gateway. Default port for accessing the internal web server of the Gateway is 80.

## 2.3 Limitations and Best Practices

### *Maximum Number of Rib Devices per Gateway*

Using the configuration screen, users can add up to 25 Rib devices.

It is possible to add more devices, but will require a custom configuration. However, as more and more devices are added to a configuration, the Gateway will have more performance issues as there are more devices to poll from and data to decode.

Please contact sales if you would like to use a custom configuration consisting of more than 25 devices.

### 3. Setting up the Gateway

This section contains information and instructions on what to do when connecting to the Gateway for the first time.

#### 3.1 Determining the IP Address

Before connecting to the Gateway, you will need to determine the IP Address of the Gateway. By default, the Gateway is assigned a Static IP Address of **192.168.1.113** when it is shipped.

To find the IP Address, look on the back of the Gateway. There should be a business card attached to the back of the Gateway that has the IP Address and Reference #. See below for an example



*Image 3.1 – Business Card attached to back of CAS Gateway*

Take note of the Ref# as this will be used by the support team to pull up additional information about the project.

The IP Address that is written on the business card should be the Static IP Address assigned to the Gateway.

### 3.2 Connecting to the Gateway

To Change the IP Address of the Gateway (Section 3.3) or to Configure the Gateway (Section 4), you use a PC and connect to the Gateway using an Ethernet cable. (The Ethernet cable should have been provided with the Gateway when shipped).

Before connecting the Ethernet cable, set your computer's IP Address to be similar to the Gateway's IP Address.

For Example, a Gateway is assigned the following IP Address by default:

IP Address – 192.168.1.113

Netmask – 255.255.255.0

Gateway – 192.168.1.1

So set your computer to the following:

IP Address – 192.168.1.100

Netmask – 255.255.255.0

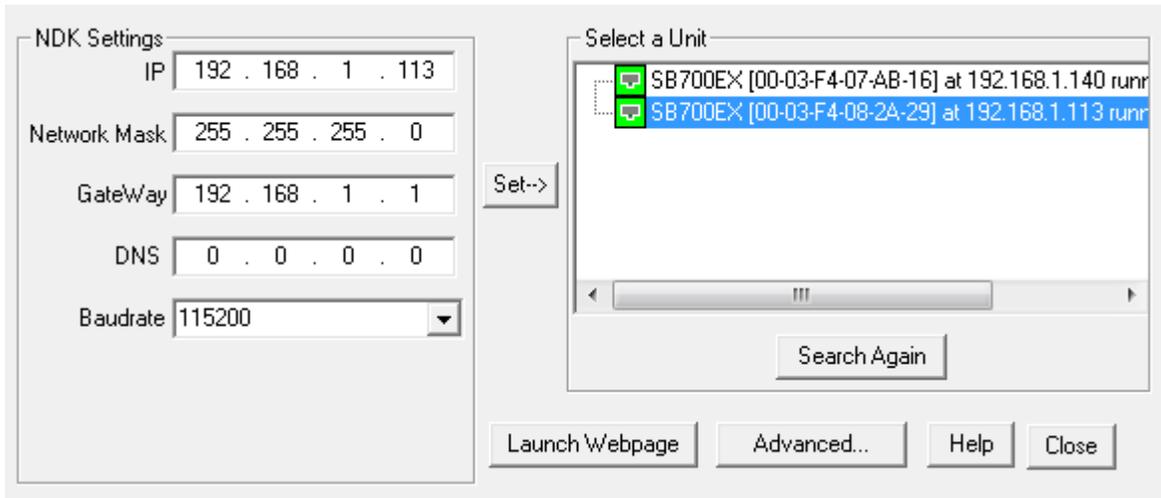
Gateway – 192.168.1.1

After setting the IP Address on the computer, connect the Ethernet cable to the computer and to the Gateway.

### 3.3 Changing the IP Address

To change the IP Address of the Gateway, you will need to use the IP Setup Tool. The tool can be found on the blue USB stick that should have come with the Gateway.

Run the IP Setup Tool application and you will see the following window open:



*Image 3.3 – IP Setup Tool*

The 'Select a Unit' section will have the Gateway you purchased listed with the assigned IP Address.

To change the IP Address, change the fields list on the left side under the 'NDK Settings'

**Note:** Please do **NOT** change the Baudrate value.

Once you have changed all of the settings, click the 'Set→' button in the middle of the window. The Gateway will automatically reboot to assign the new IP Address.

After you have finished changing the IP Address, you may not see the device in the 'Select a Unit' anymore when pressing the 'Search Again' button. This is because your computer is now on another subnet than the Gateway.

Change your computer back to the original address and you should be able to see the Gateway again when you press the 'Search Again' button.

Now you can add the Gateway to the site network. Note down the new IP Address so that others will know the assigned IP Address.

### 3.4 Testing the Connection

After changing the IP Address, test the connection to the Gateway.

To test the connection, you can use one of two methods.

1. Open a Web browser and type in the IP Address of the Gateway into the address bar.
2. If the IP Setup Tool is still open, click on the Gateway in the 'Select a Unit' section and press the 'Launch Webpage' button. This will open a Web browser to the start page of the Gateway.

Regardless of the method, you will see the Start Here page of the Gateway. It should be similar to the following:

CAS Gateway
Welcome
FAQ
Drivers

## Start Here

1. Connect power and an ethernet cable to the device.  
The power LED should illuminate and the ethernet LEDs should periodically blink.
2. Determine the devices IP address.  
See: What is the device's IP address and how do I change it?
3. Browse to the system page with a internet browser (Microsoft's Internet explorer, Mozilla's FireFox, Google's Chrome) to ensure that this device is functioning correctly. This page will contain information about the current system and will allow for configuration. This page may be password protected depending on the installation.

[System Page »](#)



**Attention**

Your device may have been shipped with a **default configuration**. Please contact technical support for help with configuring your device. To manually configure the CAS gateway please browse to the **System Page**. For additional information please refer to the **Drivers Page**.

### More help

We are here to help you.  
Please feel free to contact us directly with any questions, comments or suggestions.

<b>Email:</b>	info001@chipkin.com
<b>Phone:</b>	1-866-383-1657 (Toll Free)

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Tel: 1866 383 1657, Fax: (416) 915-4024  
Website: www.chipkin.com

*Image 3.4 – CAS Gateway Start Here page*

If this page is visible, then the connection to the Gateway is good and you can continue to the next step – Section 4: Configuring the Gateway

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■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: dfs@chipkin.com ■ Website: [www.chipkin.com](http://www.chipkin.com)

### 3.5 Logging In For the First Time

If you are browsing the webpages of the Gateway for the first time (or whenever the web browser's cache is cleared), you may be prompted for a user name and password.

By default, when shipped, the Gateway comes with the following username and password:

- Username: admin
- Password: admin

After logging in, it is possible to change the password by accessing the System Page at <http://ip/bin/system> where ip is the IP Address of the Gateway.

Look for the "Change Password" section on the System Page as seen in the image below

**Change password**  
The password must be greater than 4 letters.

Old password	<input type="text"/>
New password	<input type="text"/>
Confirm new password	<input type="text"/>

*Image 3.5 – CAS Gateway Change Password*

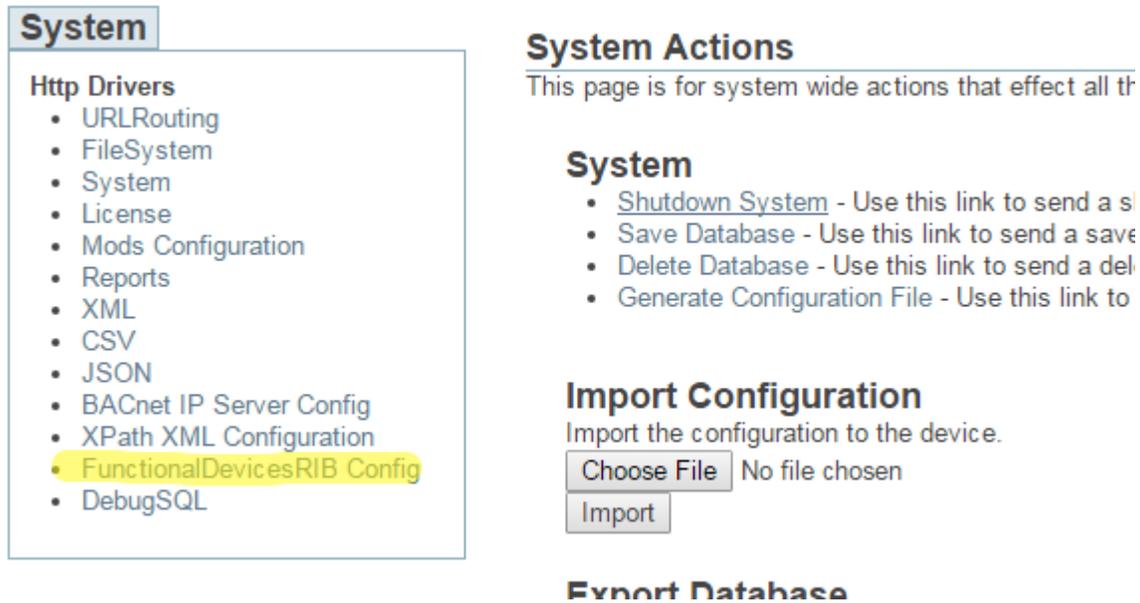
**Note:** Username will always remain 'admin'

## 4. Configuring the Gateway

To configure the XML to BACnet IP Gateway, refer to the following instructions:

1. Open a Web Browser
2. Browse to the following Web Page: <http://ip/bin/fdrib/config/> where ip is the IP Address of the Gateway.

Or by clicking on the FunctionDevicesRIB Config link highlighted in the image below.



The screenshot shows a web interface with a 'System' menu on the left and 'System Actions' on the right. The 'System' menu includes a list of options, with 'FunctionalDevicesRIB Config' highlighted in yellow. The 'System Actions' section contains a description, a 'System' menu with links for Shutdown System, Save Database, Delete Database, and Generate Configuration File, an 'Import Configuration' section with a file upload button and an 'Import' button, and an 'Export Database' section.

**System**

- URLRouting
- FileSystem
- System
- License
- Mods Configuration
- Reports
- XML
- CSV
- JSON
- BACnet IP Server Config
- XPath XML Configuration
- **FunctionalDevicesRIB Config**
- DebugSQL

**System Actions**

This page is for system wide actions that effect all th

**System**

- [Shutdown System](#) - Use this link to send a s
- [Save Database](#) - Use this link to send a save
- [Delete Database](#) - Use this link to send a del
- [Generate Configuration File](#) - Use this link to

**Import Configuration**

Import the configuration to the device.

No file chosen

**Export Database**

*Image 4.1 –Functional Devices RIB Configuration Link*

You will see the following form:

### Functional Devices Rib Configuration

#### BACnet IP Configuration

Port	Device ID	Device Name
47808	389001	Device (389001)

Save BACnet Device

#### FDRib\_devices

Configure up to 25 Rib Wifi devices to monitor

Actions: Insert| Download as CSV

Error: Table is empty

*Image 4.2 –Functional Devices RIB Configuration Page*

There are two different sections of the form to fill out.

**Note:** After finishing the configuration, you must save and reboot the Gateway for the configured settings to take place.

### 4.1 BACnet IP Server Configuration

The parameters for the BACnet IP Server Configuration are as follows: (Default values are **Bolded**)

- **Port:** The port for the UDP connection for BACnet IP. Default Value: **47808**
- **Device ID:** The BACnet Device ID for the Gateway. Default Value: **389001**
- **Device Name:** The name of this BACnet Device. Default Value: **Device (389001)**

Click on the 'Save BACnet Device'. If successful, you will see the following message banner.

Saved BACnet IP Device Configuration successfully. When finished with the complete configuration, please restart the CAS Gateway for any changes to take effect

*Image 4.3 –BACnet IP Server Configuration Successful*

## 4.2 Functional Devices Rib Configuration

To add Functional Devices Rib Wi-Fi devices to poll, click on the 'Insert' link highlighted below.

### FDRib\_devices

Configure up to 25 Rib Wifi devices to monitor

Actions: [Insert](#) | Download as CSV

Error: Table is empty

*Image 4.4 –FDRib Device Configuration Link*

A form will appear to add a new Rib device.

#### Insert new record in to 'FDRib\_devices'

Name	Value	Description
IP Address	<input type="text"/>	The IP Address of the RIB Device
Port	80	The Port of the RIB Device. <b>Default: 80</b>
Device Name	<input type="text"/>	The name of the RIB Device. Used to prefix data point values.
Password	<input type="password"/>	The password for connecting to the RIB Device. <b>Optional</b> - only provide if the Rib has been configured with a password.
Universal Input 1 Units	volts	The Units of the Universal Input 1 value.
Universal Input 2 Units	volts	The Units of the Universal Input 2 value.
Scan Interval	<input type="text"/>	How often in seconds to poll the RIB Device for data

*Image 4.5 –FDRib Device Configuration Form*

The fields for the form are as follows:

- **IP Address** – The IP Address of the Rib Device
- **Port** – The port for communicating with the Rib Device. Default is **80**.
- **Device Name** – The name of the Rib Device. Used as a prefix for the BACnet Object names.
- **Password** – Optional, only provide if the Rib device has been configured with a password.
- **Universal Input 1 Units** – The units of the Universal Input 1 value.
- **Universal Input 2 Units** – The units of the Universal Input 2 value.
- **Scan Interval** – How often in seconds to poll the Rib Device for data.

Once the form has been filled out, click the 'insert' button to add the device.

2015 Chipkin Automation Systems, 3381 Cambie St- Box 211, Vancouver, BC, Canada, V5Z 4R3

■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

If successful, you will see the Rib device added as a new row in the table.

Success, Record #1 has been added

#### FDRib\_devices

Configure up to 25 Rib Wifi devices to monitor

Actions: Insert| Download as CSV

Displaying 30 records from 0-1 of a total 1

action	id	Device Name	Password	port_id	timeout	Universal Input 1 Units	Universal Input 2 Units	url	username
Edit	1	TestRib	admin	1	3	volts	volts	/status.xml	admin

*Image 4.6 – FDRib Device Configuration Successful*

Continue adding more Rib devices.

**Note:** As mentioned before, the Gateway only supports using these configuration screens to configure up to 25 Rib devices. It is possible to add more, but will require custom configuration. These custom configuration may cause performance issues on the Gateway due to larger data point counts and number of devices to poll, resulting in much slower poll rates to the Rib devices and slower response rates to BACnet IP Clients.

### 4.3 Saving the Configuration

After adding all the Rib Devices to the configuration, return to the System Page by browsing to the following IP Address: <http://ip/bin/system/> where ip is the IP Address of the Gateway.

To Save the Database, click the ‘Save Database’ link, then click the Ok button when prompted. You will see some XML saying that the Save was successful. Click the ‘Back’ button in the web browser.

Now Reboot the Gateway by Clicking the ‘Reboot System’ link. When prompted, click the Ok button. Link is highlighted in the image below

## System Actions

This page is for system wide actions that effect all the drivers.

### System

- **Reboot System** - Use this link to send a reboot REST request to the system.
- **Save Database** - Use this link to send a save database REST request to the system.
- **Delete Database** - Use this link to send a delete database REST request to the system.
- **Generate Configuration File** - Use this link to generate a configuration file.

*Image 4.7 – System Actions Page – Reboot System*

The Gateway will take 30-45 seconds to reboot.

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■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

**Note:** The Gateway must be rebooted after configuration because the BACnet IP Objects are generated during the boot cycle.

## 5. Reading the Data

The Rib data read by this Gateway is made available through the BACnet IP Protocol. The Gateway acts as a BACnet IP Device. This section describes how the data is formatted, what data is stored in the Modbus Registers, and what functions are supported.

### 5.1 BACnet IP Data

The Gateway acts as a BACnet IP Server. Please refer to section 4 – Configuring the Gateway for more information on how to setup the BACnet IP Server parameters.

For more information about BACnet in general, please read this guide:

<http://www.chipkin.com/files/pdf/Bacnet%20For%20Field%20Technicians.pdf>

#### 5.1.1 Supported BACnet Services

The Gateway supports the following BACnet services:

- Who-Is
- Who-Has
- Read Property
- Read Property Multiple
- Write Property
- Write Property Multiple
- Subscribe COV
- Time Synchronization

**Note:** CAS is always updating the BACnet IP Driver. For a recent list of supported services, please visit [www.chipkin.com](http://www.chipkin.com) or contact us. If there are services that you require, please contact us to discuss how we can add them to the driver.

#### 5.1.2 BACnet IP Data

The following is a list of the BACnet IP Objects available when a Rib device is configured.

**Note:** Each of the BACnet Objects for a Rib device is offset by 20. Meaning, the first Rib device has objects 1-15, the second Rib device has objects 21-35, the third Rib device has objects 41-55, and so on.

The following is a list of the BACnet Objects that are generated for a Rib device

- |                     |                   |           |
|---------------------|-------------------|-----------|
| - RelayState        | Multi-State-Input | Read Only |
| - LastCommand       | Binary-Input      | Read Only |
| - DigitalInputState | Binary-Input      | Read Only |
| - UI1State          | Multi-State-Input | Read Only |

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■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

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- UI1Value	Analog-Input	Read Only
- DI1Value	Binary-Input	Read Only
- UI2State	Multi-State-Input	Read Only
- UI2Value	Analog-Input	Read Only
- DI2Value	Binary-Input	Read Only
- PowerOnState	Multi-State-Value	Read / Write
- BindingState	Binary-Value	Read / Write
- DeviceName	CharacterString-Value	Read Only
- DeviceLocation	CharacterString-Value	Read Only
- Device Version	CharacterString-Value	Read Only
- CommandRelay	Binary-Value	Read / Write

## 5.2 Reports Page

The reports page gives some additional information about the BACnet Data points. It also lists the current values as well as some notes about what the values mean.

To access the Reports page, type in the following to a web browser address bar:

<http://ip/bin/fdrib/report> where ip is the IP Address of the Gateway.

### Functional Devices Rib Reports

Data Point	BACnet IP	Value	Units	Notes
TestRib_relayState	multi_state_input (1)	2	see notes	1 = OVERRIDEEN OFF 2 = OFF 3 = OVERRIDDEN ON 4 = ON 5 = BOUND ON 6 = BOUND OFF
TestRib_lastCommand	binary_input (2)	0	see notes	0 = OFF 1 = ON
TestRib_digitalInputState	binary_input (3)	0	no units	
TestRib_ui1State	multi_state_input (4)	1	see notes	1 = 0-5V 2 = 0-10V 3 = 4-20mA 4 = T2 Thermistor F 4 = T2 Thermistor C
TestRib_ui1Value	analog_input (5)	0.00 V	volts	
TestRib_di1Value	binary_input (6)	0	see notes	0 = OPEN 1 = CLOSED
TestRib_ui2State	multi_state_input (7)	1	see notes	1 = 0-5V 2 = 0-10V 3 = 4-20mA 4 = T2 Thermistor F 4 = T2 Thermistor C
TestRib_ui2Value	analog_input (8)	0.00 V	volts	
TestRib_di2Value	binary_input (9)	0	see notes	0 = OPEN 1 = CLOSED
TestRib_powerOnState	multi_state_value (10)	2	see notes	1 = OFF 2 = ON 3 = Last State
TestRib_bindingState	binary_value (11)	0	see notes	0 = UNBOUND 1 = BOUND
TestRib_deviceName	characterstring_value (12)	TEST DEVICE	no units	
TestRib_deviceLocation	characterstring_value (13)	Test Office	no units	
TestRib_deviceVersion	characterstring_value (14)	v4.0.9.1.0 WIUI	no units	
TestRib_commandRelay	binary_value (15)	0	see notes	0 = BACnet Triggered OFF 1 = BACnet Triggered ON

## 6. Commanding the Rib Device

This section describes how the Gateway works when sending commands to a Rib device. As described in the previous section, after being configured the Gateway has some Commandable (Read/Write) BACnet Objects.

### 6.1 Command Relay

The CommandRelay BACnet Object is used to attempt to command the relay on the Rib device. Depending on what value is written to the object, a command will be sent to turn the relay on or off.

**Note:** Depending on the configured values of the digitalInputState and the bindingState, the relay may not turn on or off when commanded.

To turn the relay **ON**, use the Write Property to write a value of 1 to the CommandRelay Binary-Value object. This will send a /ribon.htm? command to the Rib device.

To turn the relay **OFF**, use the Write Property to write a value of 1 to the CommandRelay Binary-Value object. This will send a /riboff.htm? command to the Rib device.

The last sent command will be recorded in the LastCommand Binary-Input object.

### 6.2 Power On State

The PowerOnState BACnet Object is used to report the current configuration state of the PowerOnState parameter on the Rib device. This BACnet object can also be used to change the configuration by using a Write Property request.

To change the power on state to **OFF**, use the Write Property to write a value of 1 to the PowerOnState Multi-State-Value object. This will send a /config.htm?pwr=off command to the Rib device.

To change the power on state to **ON**, use the Write Property to write a value of 2 to the PowerOnState Multi-State-Value object. This will send a /config.htm?pwr=off command to the Rib device.

To change the power on state to **Last State**, use the Write Property to write a value of 3 to the PowerOnState Multi-State-Value object. This will send a /config.htm?pwr=off command to the Rib device.

### 6.3 Binding State

The BindingState BACnet Object is used to report the current configuration state of the BindingState parameter on the Rib device. This BACnet object can also be used to change the configuration by using a Write Property request.

To change the binding state to **UNBOUND**, use the Write Property to write a value of 0 to the BindingState Binary-Value object. This will send a /config.htm?dry=off command to the Rib device.

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■ **Tel:** (866) 383-1657, ■ **Fax:** (416) 915-4024 ■

**Email:** [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ **Website:** [www.chipkin.com](http://www.chipkin.com)

To change the binding state to **BOUND**, use the Write Property to write a value of 0 to the BindingState Binary-Value object. This will send a /config.htm?dry=on command to the Rib device.

## 7. Commissioning, Diagnostics, and Troubleshooting

### 7.1 What to Take for Site for Installing and Commissioning the Gateway

The following is a list of general Gateway tools. Take what you would need for your specific project and ignore the others.

1. The gateway and other supplied components.
2. USB->232 Converter and / or USB->RS485 Converter

Any will do. This will allow you run tests using the 232 or 485serial connection. Connect to the device and find out which COM port is now available, use CAS Modbus Scanner to retrieve data.

3. Laptop
4. Gateway IP Address Allocation Tool

Download from

<http://www.chipkin.com/articles/cas-gateway-ip-address-tool>

5. Wireshark packet sniffer software – free download  
<http://www.wireshark.org/download.html>
6. CAS Modbus Scanner – free download

CAS Modbus Scanner is a utility to retrieve coils, inputs, holding registers, and input registers from a Modbus enabled device. Values retrieved from the device can be viewed in many different formats including Binary, HEX, Uint16, Int16, Uint32, Int32, and Float32.

<http://www.chipkin.com/cas-modbus-scanner>

7. Serial Mini Tester



8. DB9 and DB25 male and female connector make-up kits (Solder free)

Always useful but not required if you have tested your cable prior to attending the site.

9. Rx / TX cross over.

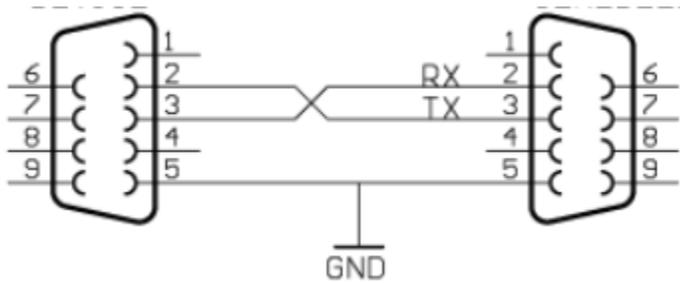
Always useful but not required if you have tested your cable prior to attending the site.

It is useful to be able to swap the conductors connected to pins 2 and 3. Take a module with you. It is easier than changing the wires.

For example, the Ziotek Null Modem Adapter DB25

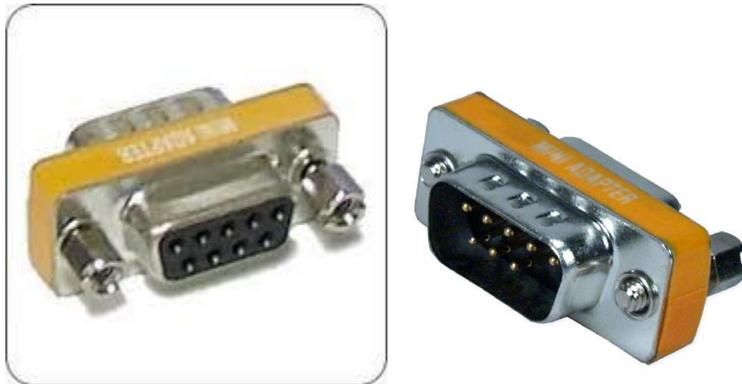
[http://www.cyberguys.com/product-  
details/?productid=751&rtn=750&core\\_cross=SEARCH\\_DETAIL\\_SIMILAR#page=page-1](http://www.cyberguys.com/product-details/?productid=751&rtn=750&core_cross=SEARCH_DETAIL_SIMILAR#page=page-1)

female shown



10. Gender Benders

Always useful but not required if you have tested your cable prior to attending the site.



11. Ethernet Patch cables

12. Hub

Used as a last resort if there are problems on Modbus or BACnet

A hub is not a switch. A hub can be used for trouble-shooting whereas only a 'supervised' switch can. Most switches are not supervised.

<http://www.chipkin.com/articles/hubs-vs-switches-using-wireshark-to-sniff-network-packets>

## 7.2 Diagnostics

### Gateway Hardware Diagnostics

1. Power Led: Green Solid = Normal Condition.
2. RJ45 LED: Green to show link.

### FDRib Driver or General Gateway Software Diagnostics

Open a Web Browser

Type in the following address: <http://ip/bin/system/info>

Example of the Stats Page

#### Stats

Name	Value
BACnetIP.init.success	1
CHTTPClient.error.could_not_send	1
FDRib.System.errors	1
FDRib.init.success	1
FDRib.task.1.read	56
FDRib.task.1.read.Ok	55
FDRib.task.1.read.error.fail	1
FDRib.task.1.read.status	OK
Http requests	11

Stats Page contains statistics of the various components of the driver and tasks of the Gateway. All errors are colored red. When calling Chipkin Automation Systems for Support, please take a screen shot of the Stats Page to give to Technical Support.

## 7.3 Trouble-Shooting

### 7.3.1 Taking Logs

Debugging and Error messages from the Gateway are sent on UDP port 514 to the broadcast IP address: {255.255.255.255} as plain ASCII text.

You can use Wireshark to take a log of these messages.

A Wireshark log is also very useful for any TCP (like Modbus TCP ) or UDP (like BACnet IP) protocols as the bytes and messages that are sent and received from the Gateway will also be logged.

**Note:** To properly take a log, a hub (not a switch) is required.

For more help with taking logs, please feel free to contact us.

2015 Chipkin Automation Systems, 3381 Cambie St- Box 211, Vancouver, BC, Canada, V5Z 4R3

■ Tel: (866) 383-1657, ■ Fax: (416) 915-4024 ■

Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

### 7.3.2 Testing BACnet – Use CAS BACnet Explorer

You have been provided with a USB key to the CAS BACnet Explorer. This key activates the software. It cannot run without it. If you don't have your USB key, you can still activate the application – it requires an internet connection. A video provides help.

<http://www.chipkin.com/articles/cas-bacnet-explorer-software-activation-video>

You might also want to refer to these articles.

<http://www.chipkin.com/articles/cas-bacnet-explorer-usbsoftware-activation-problems>

<http://www.chipkin.com/cas-bacnet-explorer-licenses-faq>

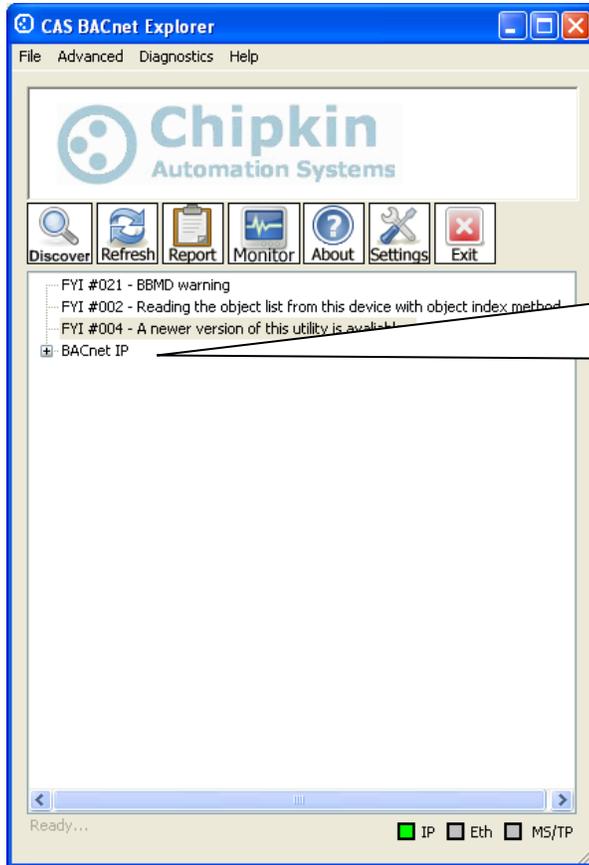
Install and activate the application. Download from here.

<http://www.chipkin.com/cas-bacnet-explorer/>

#### *Procedure*

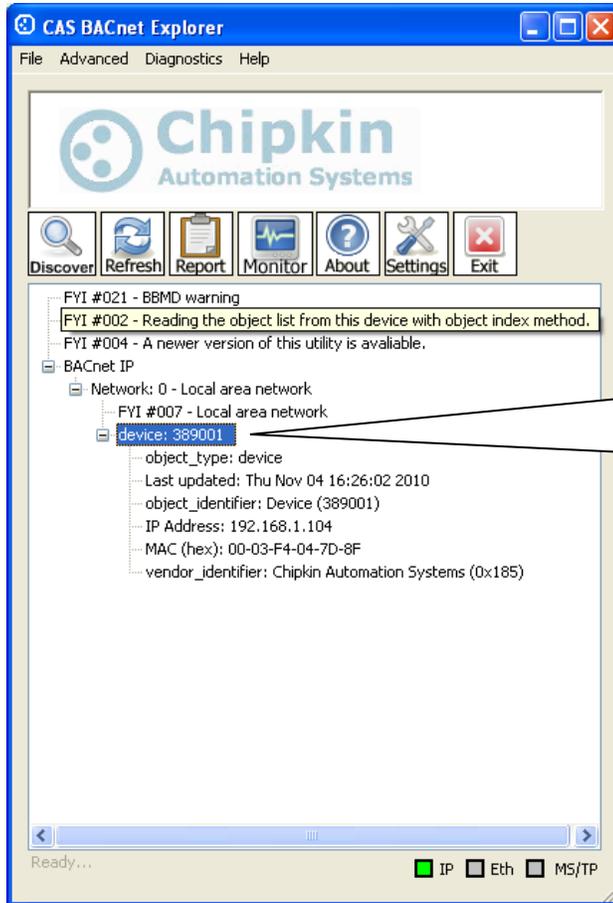
1. Start the application
2. Click Settings
3. Check IP – uncheck MSTP and Ethernet
4. Click on the network card you will use.
5. Click Ok.
6. Now click discover
7. Click Send

See the following set of images that describe the discovery process.

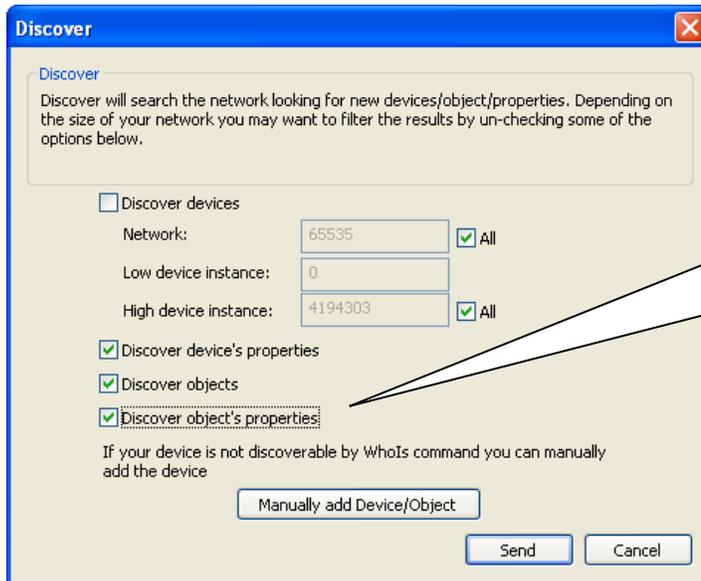


Device(s) were discovered.

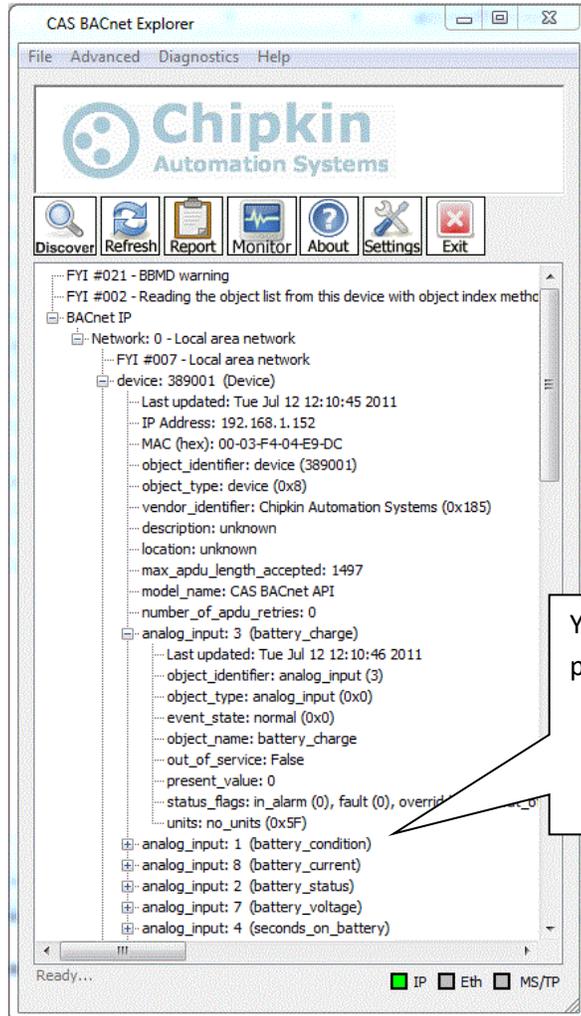
Click the + to open



Select the device and click discover again.



Check the 'Discover properties' box.  
Click the Send



```
analog_input: 3 (battery_charge)
... Last updated: Tue Jul 12 12:10:46 2011
... object_identifier: analog_input (3)
... object_type: analog_input (0x0)
... event_state: normal (0x0)
... object_name: battery_charge
... out_of_service: False
... present_value: 0
... status_flags: in_alarm (0), fault (0), override (0)
... units: no_units (0x5F)
```

Present value is the value found in the Veeder Device.

## 7.4 Additional Functionality

### 7.4.1 Another Method for Changing the IP Address – DHCP

This device supports DHCP, but when shipped, usually a Static IP Address is assigned.

IP = 192.168.1.113

Netmask = 255.255.255.0

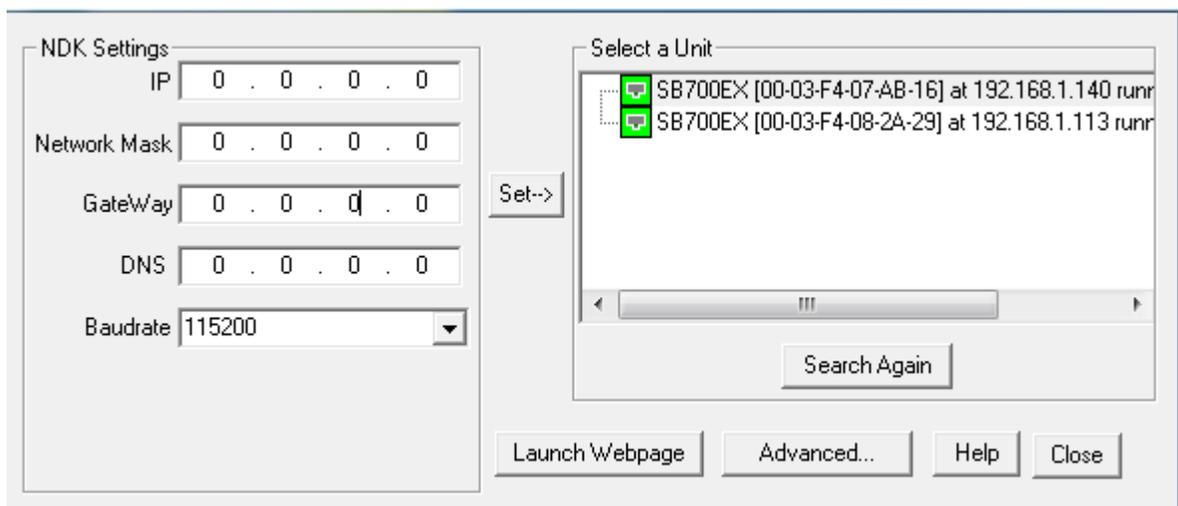
Gateway = 192.168.1.1

To enable and to set the Gateway to DHCP, follow these instructions:

1. Download the tool to change the IP address of the gateway. The tool can be downloaded from:

<http://www.chipkin.com/articles/cas-gateway-ip-address-tool>

2. When you start this tool it discovers gateways and list them in the right had side 'Select a Unit' area. If the area is blank then click the 'Search Again' button. If it remains blank check that the Ethernet connection is made – is there a green link LED on the RJ45 and on the hub/switch you are connected to.



3. To set it to DHCP, simply put all fields to 0.0.0.0 and click the 'Set' button as displayed in the image above.

### 7.4.2 Downloading New Firmware

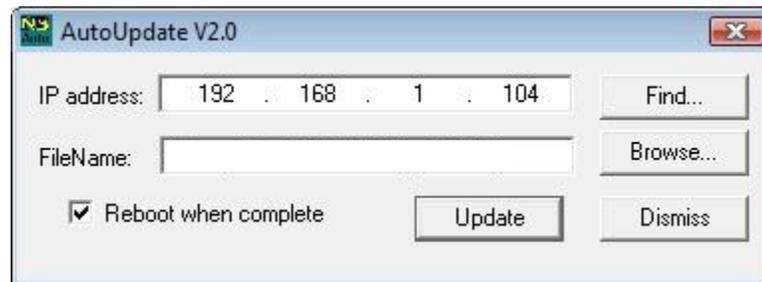
During support, it is sometimes required to download new firmware with bug fixes or additional debugging details.

If you are sent new firmware, you will be provided with specific instructions on how to load it. The following instructions are generic:

A tool is provided. It can be downloaded from

<http://www.chipkin.com/articles/cas-gateway-firmware-download-tool>

Screenshot from the Firmware update tool.



### 7.5 Support Contact Information

This driver was developed by Chipkin Automation Systems (CAS). CAS is proud to provide support for the driver. For support please call CAS at +1 (866) 383-1657 or contact by email at [support@chipkin.com](mailto:support@chipkin.com)

## 8. Hardware Specification

- **UL and ULc approved**
- 10/100BaseT with RJ-45 connector
- 1x RS232 Port
- 1x RS485 Port
- 2MBytes flash memory, 8MBytes of SDRAM
- Power: 5-24VDC
- Operating Temperature: 0 to 70 C
- Dimensions: 4.2" x 3.25" x 1"
- LEDs: Link, Speed/Data, Power

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Email: [dfs@chipkin.com](mailto:dfs@chipkin.com) ■ Website: [www.chipkin.com](http://www.chipkin.com)

## 9. Revision History

Date	Resp	Driver Ver.	Doc. Rev.	Comment
19 Aug 2015	ACF	0.01	0	Document Created