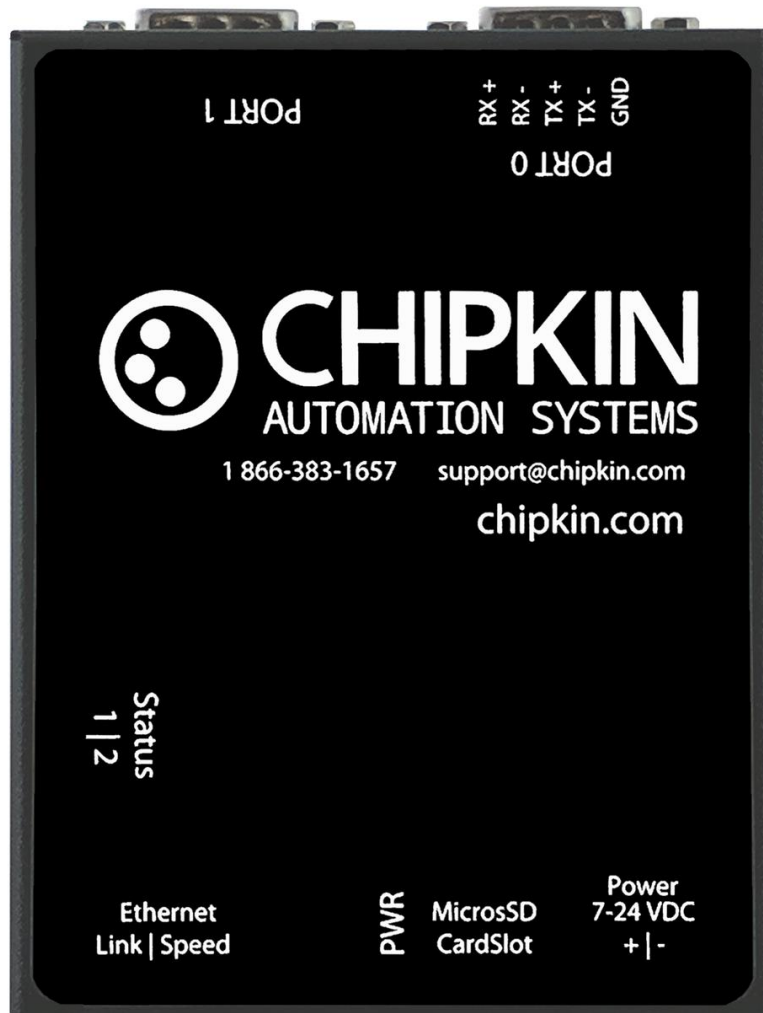




# Chipkin™ CAS2700-67 MQTT to BACnet IP USER MANUAL



VERSION: 1

PRODUCT NUMBER: CAS-2700-67

DOCUMENT REVISION: 1

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# DOCUMENT REVISION HISTORY

REVISION	DATE	AUTHOR	NOTE
1	2018-Feb-2	SWS	Created

# PREFACE

## WELCOME

As a new owner of Chipkin Automation Systems'™ (CAS) Gateway you have joined thousands of satisfied customers who use Chipkin's protocol gateways, data clients and integration services to meet their building and industrial automation requirements. Our configuration expertise in this field combined with free BACnet and other tools ensure your success; and our customer support via phone, email and remote desktop tools means that we're there when you need us. Thank you for choosing Chipkin's products.

## CHIPKIN

Chipkin offers expert solutions for your building and industrial automation requirements. We develop, configure, install and support gateways (protocol converters), data loggers, and remote monitor and controlling applications. Founded in October 2000, Chipkin provides expert solutions for converting BACnet®, Modbus®, and Lonworks®—to name just a few—and enabling interfaces for HVAC, fire, siren, intercom, lighting, transportation and fuel systems. The high-quality products we offer (including those from other vendors) interface with Simplex™, Notifier™, McQuay™, GE™ and many others—so you can rest assured that Chipkin will select the most appropriate solution for your application.

## SAFETY WARNINGS

The CAS Gateway User Manual provides information on how to install and configure the gateway and is intended for engineers, project management consultants and building management services. Before you install the device, please observe the safety warnings described in in this manual.

## CUSTOMER SUPPORT

Chipkin is a small responsive company, and we live or die by the quality of our service—and with offices in two time-zones—we can provide support when you

3381 Cambie Street, #211  
Vancouver, BC, Canada, V5Z 4R3  
**1-866-383-1657**



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need it. For information on sales, service, obtaining documentation or submitting a service request, please call us toll free at 1-866-383-1657. Thanks for choosing Chipkin's protocol gateways, data clients and integration services to meet your building and industrial automation requirements.

#### SALES AND CUSTOMER SUPPORT

TOLL FREE: 1-866-383-1657

FAX: 1-416-915-4024

Email: [salesgroup1@chipkin.com](mailto:salesgroup1@chipkin.com)

#### GENERAL

TOLL FREE: 1-866-383-1657

FAX: 1-416-915-4024

EMAIL: [support@chipkin.com](mailto:support@chipkin.com)

#### SHIPPING ADDRESS

3381 Cambie St., #211

Vancouver, BC, Canada V5Z 4R3

## OVERVIEW

### SYSTEM OVERVIEW

The CAS2700-67 is a protocol converter that converts data from one protocol and makes it available to devices that support a different protocol. The gateway typically sends polling messages, extracts any data values, and stores the values in an internal database. The data is then made available via other protocol specific formats.

## INSTALLATION AND CONFIGURATION SUMMARY

For more information on how to install and setup the CAS2700-67 MQTT to BACnet IP gateway please refer to the CAS Gateway Quick Start Guide.

Configuration of the device is completed primarily through a web interface.



# CONNECTIONS

## NETWORK CONNECTIONS

This block diagram lists common network connections for the CAS-2700-67 gateway supports. Other protocols are supported. Please contact sales for a complete list of supported protocols.

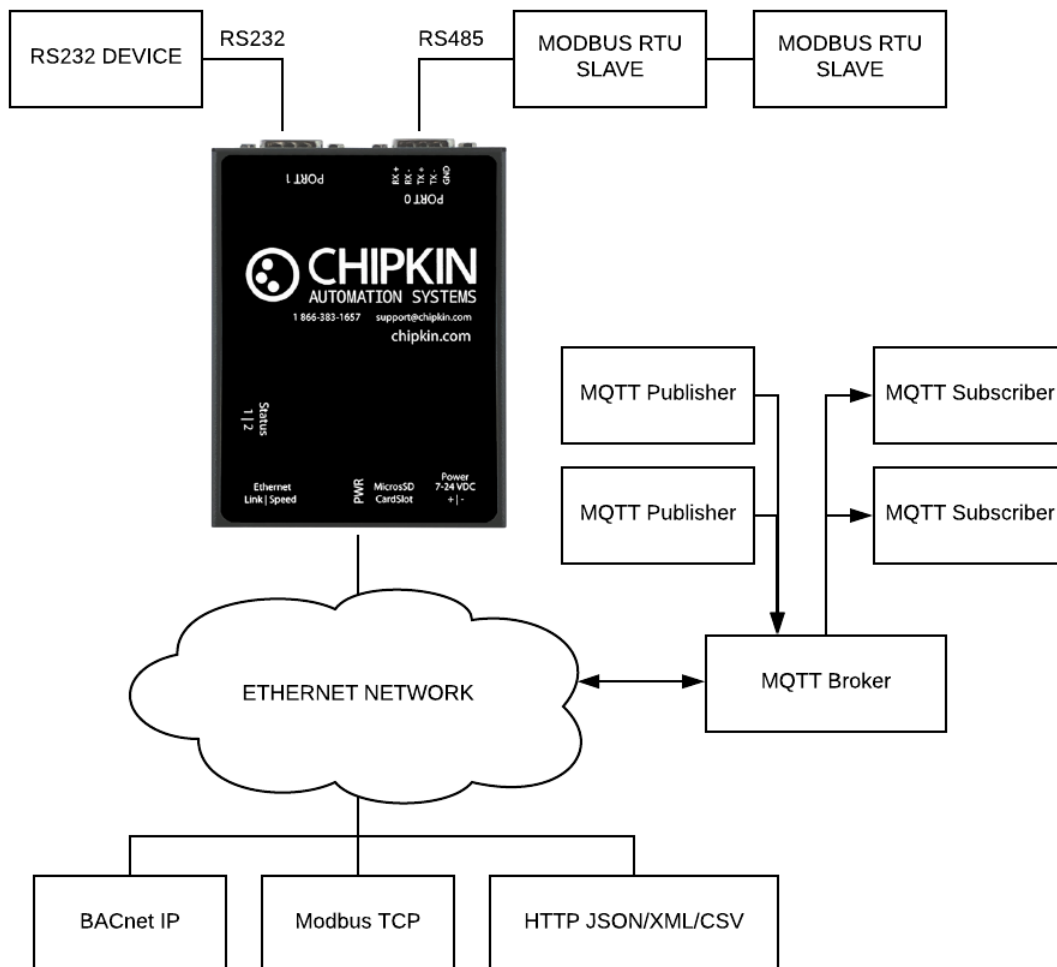
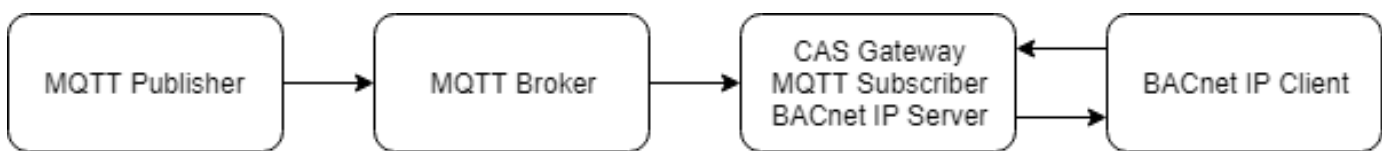


Figure 1. Network Connections Block Diagram

# CONFIGURE MQTT SUBSCRIBER TO BACNET IP SERVER

In this configuration the CAS Gateway will subscribe to one or more topics in an existing MQTT broker. When the MQTT broker receives an update to these MQTT topics the value will be sent to the CAS Gateway and stored in a local database. When BACnet IP clients poll the CAS Gateway for a BACnet object, the CAS Gateway will respond with the linked configured value in the database from the MQTT broker.



In this example we are using a HiveMQ public broker. For more information about HiveMQ public broker please see this page <https://www.hivemq.com/try-out/>

- 1) Go to the System action page  
<http://{IPAddress}/bin/system>
- 2) Resize the database to have enough space for MQTT topics that you want to create. One topic per row in the database.

## Resize Datatable

Change the size of the data table.

Resize Datatable

- 3) Go to MQTT configuration page  
<http://{IPAddress}/bin/mqtt/config/>
- 4) Click “Insert” in the broker section
- 5) Configure the broker that the MQTT subscriber will be connecting too and click the “Add broker” button.

## Broker Configuration

Host	<input type="text" value="broker.hivemq.com"/>
Port	<input type="text" value="1883"/>
ClientID	<input type="text" value="casgateway_0.12_frAQBc8v"/>
Username	<input type="text"/>
Password	<input type="password"/>
Keep Alive	<input type="text" value="60"/>
Clean Session	<input type="button" value="Yes"/>

## Add Last Will

Show

Add Broker

- 6) Click "insert" in the "Subscriptions" sections.
- 7) Configure the subscription with the topic from the MQTT broker

## Insert new record in to 'Subscriptions'

Name	Value
Topic	<input type="text" value="testtopic/1"/>
Data Table	<input type="text" value="da_data"/>
Data Offset	<input type="text" value="1"/>
Broker ID	<input type="text" value="1"/>
QoS	<input type="text" value="0"/>
Resubscribe Interval	<input type="text" value="600"/>
Data Template	<input type="text"/>

insert

To see the present value of the subscription, go to the reports page.

<http://{IPAddress}/bin/reports/>

## Reports

This table shows the flow of data within the CAS Gateway.

It will also show the current values of the datapoints as well as the timestamp of when the data was

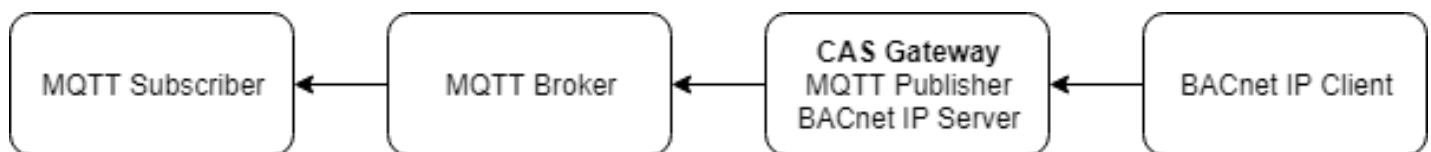
Displaying 30 records from 1-30 of a total 100

Next >>

Actions	Data			Read		P
	ID	Value	Modified	Driver	Task	D
Edit   XML   CSV   JSON	1	hello	2018-Feb-02 15:04:11 -0800	MQTT	testtopic/1	
Edit   XML   CSV   JSON	2	hi	Never Updated			

# CONFIGURE PASSIVE BACNET IP SERVER TO MQTT SUBSCRIBER

In this configuration the CAS Gateway is configured to have a series of BACnet IP server objects and connected MQTT topics. When a BACnet IP client writes to a BACnet IP server object on the CAS Gateway it triggers the CAS gateway to send a MQTT publish message to the MQTT broker with the updated value.



In this example we are using a HiveMQ public broker. For more information about HiveMQ public broker please see this page <https://www.hivemq.com/try-out/>

- 1) GoTo the System action page  
<http://{IPAddress}/bin/system>

- 2) Resize the database to have enough space for MQTT topics that you want to create. One topic per row in the database.

### Resize Datatable

Change the size of the data table.

Resize Datatable

- 3) Goto MQTT configuration page  
<http://{IPAddress}/bin/mqtt/config/>
- 4) Click “Insert” in the broker section
- 5) Configure the broker that the MQTT subscriber will be connecting too and click the “Add broker” button.

### Broker Configuration

Host	<input type="text" value="broker.hivemq.com"/>
Port	<input type="text" value="1883"/>
ClientID	<input type="text" value="casgateway_0.12_frAQBc8V"/>
Username	<input type="text"/>
Password	<input type="password"/>
Keep Alive	<input type="text" value="60"/>
Clean Session	<input type="text" value="Yes"/>






### Add Last Will

Show

Add Broker

- 6) Click “insert” under the “publishers” section.
- 7) Configure the publication task with the topic from the MQTT broker. Then click “insert” button to add the task.

### Insert new record in to 'Publishers'

Name	Value
Topic	testtopic/data/2 
Data Table	da_data
Data Offset	2 
Broker ID	1 
QoS	0 
Retain	No 
Publish Interval	600
CoV Increment	
Data Template	

insert

The value in the broker will be updated when the data changes or when the publish interval elapses.

## CONFIGURE BACNET IP SERVER OBJECTS

For more information on how to configure the CAS BACnet IP server objects please see the CAS BACnet IP server manual. Below is a quick start version of this process.

- 1) GoTo the System action page  
<http://{IPAddress}/bin/system>
- 2) Resize the database to have enough space for BACnet IP objects that you want to create. One property of an object per row in the database.

## Resize Datable

Change the size of the data table.

Resize Datable

3) Goto the BACnet IP server config page

<http://{IPAddress}/bin/bacnetipserver/config/>

4) Click “Insert” in the BACnetIP\_tasks section

5) Fill in the form to create a new BACnet IP object and click the “insert” button.

### Insert new record in to 'BACnetIP\_tasks'

Name	Value	Description
Name	<input type="text" value="temperature"/>	The name of the BACnet object. This name will be displayed to the BACnet clients polling this device
Object Type	<input type="text" value="Analog Input"/>	The type of the BACnet object. <b>Default:</b> Analog Input
Object ID	<input type="text" value="1"/>	The instance number of the BACnet object. The instance number should be unique amount all other objects of the same type.
Property	<input type="text" value="present_value"/>	The property that this data point is serving. Normally this will be present_value, <b>Default:</b> present_value
Units	<input type="text" value="no_units"/>	This is the units of the present_value property. Only used when Property is present_value. <b>Default:</b> no_units
Data Point	<input type="text" value="1"/>	This is a pointer to the data table. Should be non zero and less then the length of the database. You can resize the database from the System actions page.

insert

## CAS GATEWAY - GENERAL

The sections below are common to all 2700 CAS Gateways devices.

### WHAT TO TAKE TO SITE

Below is a list of software and hardware tools that should be taken to site for the install installation. Some of these tools are depend on the type of installation and

drivers on the gateway. Most of the software tools can be found on the included USB drive.

## Software

- **IP setup tool** - Used to update the IP address of the CAS Gateway. Free <http://www.chipkin.com/cas-gateway-ip-address-tool>
- **Autoupdate tool** - Used to update the firmware on the CAS Gateway. Free <http://www.chipkin.com/cas-gateway-firmware-download-tool/>
- **Wirehark** - Used to capture and log network traffic. Free <https://www.wireshark.org/>
- **CAS BACnet Explorer** – Used to test BACnet IP configurations. Trial <http://www.chipkin.com/products/software/bacnet-software/cas-bacnet-explorer/>
- **CAS Modbus Scanner** – Used to test Modbus TCP and Modbus RTU configurations. Free <http://store.chipkin.com/articles/modbus-scanner-what-is-the-cas-modbus-scanner>

## Hardware

- **A laptop** –Used to configure and diagnose the gateway. The laptop should include a ethernet port.
- **RS232 to USB converter** – Used when communicating with drivers that use RS232 such as Veederroot serial.
- **RS485 to USB converter** – Used when communicating with drivers that use RS485 such as Modbus RTU or BACnet MSTP.
- **Ethernet patch cable** – Useful for connecting the gateway to your laptop or into a local switch. Included in the accessory kit.
- **Micro screw driver set** – Useful for securing wires into screw terminals. Included in the accessory kit.
- **Ethernet hub** - Use a hub (and not a switch) as a last resort for troubleshooting problems with Modbus TCP or BACnet IP. A **hub is not a switch**, that most switches are not supervised and that only a supervised



switch can be used as an alternative. For more information about hubs and switches, please refer to this article: <http://www.chipkin.com/articles/hubs-vs-switches-using-wireshark-to-sniff-networkpackets>

- **Db9 gender benders** - Connector make-up kits are always useful but not required if you have tested your cable prior to attending the site.



- **Serial RS232 mini-tester** – Useful for testing to ensure that a serial cable has the correct pinout.



- **Serial cable** – A Null modem or crossover serial cable can be useful when communicating with drives that use serial connections such as Modbus RTU and Veederroot serial

## DISCOVER GATEWAY'S IP ADDRESS

By default the gateways are shipped with an IP address of 192.168.1.113. The IP address may have been changed since being installed on site. The following techniques can be used to discover the new gateways IP address.

### Setup reference card

By default, the gateways are shipped with a setup reference card attached to the bottom of the gateway. This setup reference card will show the configured IP address as well as the job reference number.



Figure 2 Setup reference card

## Using the IP Setup tool

1. Download the IP Setup tool from chipkin's website  
<http://www.chipkin.com/cas-gateway-ip-address-tool>
2. Run the IP Setup Tool application and you will see the following window

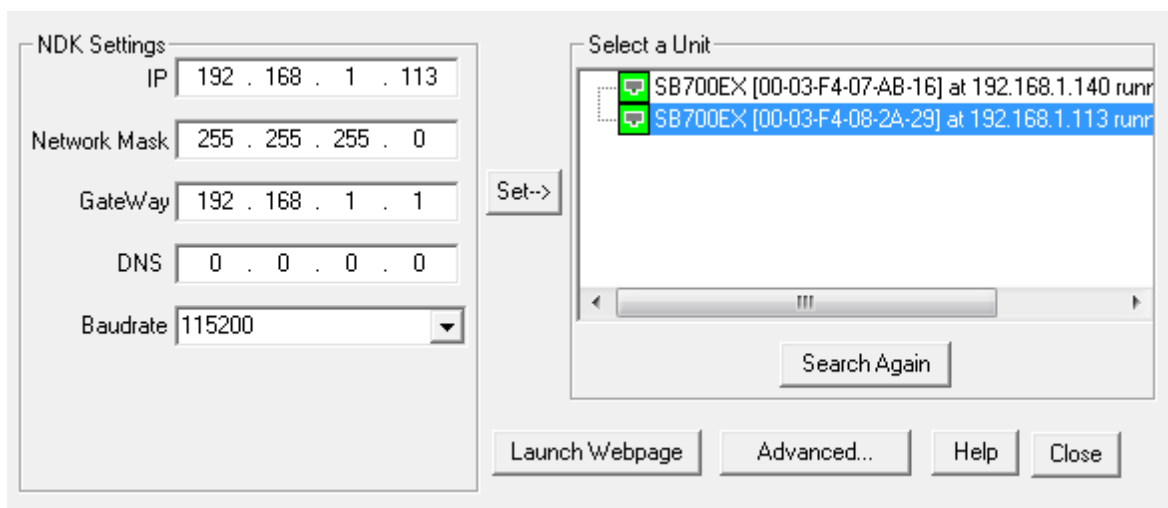


Figure 3 IP Setup tool

3. The IP address of the CAS Gateway will be shown on the right-hand side.

## DEFAULT USERNAME AND PASSWORD

To view or change the settings on the gateway, a username and password will need to be entered. By default, the username and passwords are

Username: admin

Password: admin

The default password can be changed on the system page.

<http://<IPAddress>/bin/system>

## DEBUG LOG OR WIRESHARK LOG

If a problem is discovered on site, you may be asked to take a debug log, or a Wireshark log.

### Debug logging

By default, the gateway has a debug logging level of 10 (important messages only) and logs messages to the syslog port (514). These settings can be changed on the system page. <http://<IPAddress>/bin/system>

#### *Settings*

- **Log to file** - Logs the system and driver messages to a log file on the SD card of the gateway. This log file can be viewed and downloaded by going to “log messages” page <http://<IPAddress>/bin/system/log>. The log file will automatically be disabled if the free space on the SD card is less than 10% of the total. **Default:** Disabled.
- **Log to Syslog** – Sends syslog (UDP 514) message for each system and driver log message. These log messages can be viewed by taking a Wireshark log. **Default:** Enabled.
- **Logging level** – The logging level that messages will be created. The higher the number the more messages that will be created. Logging levels higher

than NORMAL (50) may impact the performance of the gateway. **Default:** IMPORTANT (10)

## Wireshark log

Wireshark is a free utility used for capturing and logging network traffic. This tool can be instrumental in resolving local network issues. Wireshark can be downloaded for free from <https://www.wireshark.org/>

## CHANGE THE GATEWAY IP ADDRESS

By default, the gateway is shipped with a static IP address of 192.168.1.113. The default IP address can be changed using the IP setup tool.

4. Download the IP Setup tool from chipkin's website  
<http://www.chipkin.com/cas-gateway-ip-address-tool>
5. Run the IP Setup Tool application and you will see the following window

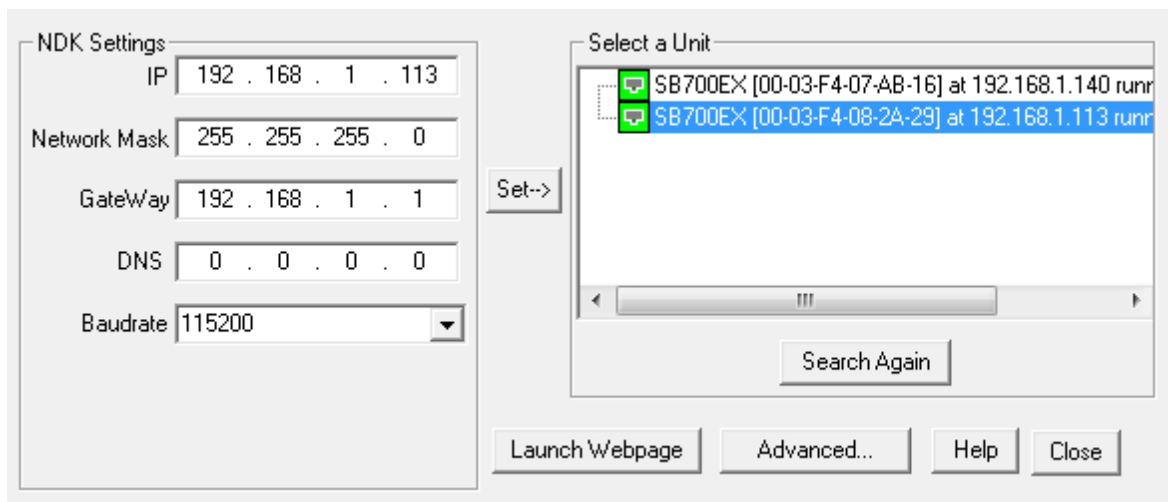


Figure 4 IP Setup tool

6. Select the Gateway from the list on the left.
7. Change the "NDK Settings" as required.

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

- Click the “Set -->” button to apply the new changes to the CAS Gateway. The gateway will automatically reboot with the new assigned IP address.

## UPDATING FIRMWARE

This document assumes that you have successfully connected to the gateway and can see the gateway in the IP Setup Tool.

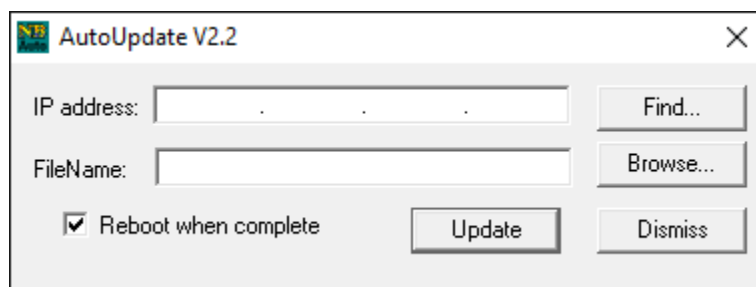


**Note:** Usually, the firmware is already loaded on the CAS Gateway when it is shipped. However, if there was a specific requirement that was developed or a bug fix, you may have to download an updated firmware which you will receive from Chipkin Automation Systems (CAS). All updated firmware files should come from CAS.

**Do Not** upload any other firmware files with this tool unless CAS specifically advises to do so.

To download the firmware to the gateway, follow the steps below:

- Download the CAS Gateway AutoUpdate tool from the following link:  
<http://www.chipkin.com/cas-gateway-firmware-download-tool/>
- Running the AutoUpdate application will display the following window:



*Figure 5 Autoupdate tool window*

The IP Address of the gateway should be filled out in the “**IP address**” section. If not, or if the IP address is wrong, then click the “**Find**” button and it will display the IP addresses of gateways on the network. Select the IP address of the gateway to download the firmware.

3. Click the “**Browse...**” button. This will open a file explorer. Navigate to the firmware file and click the “**Open**” button. The file path will be inserted into the “**FileName**” field.

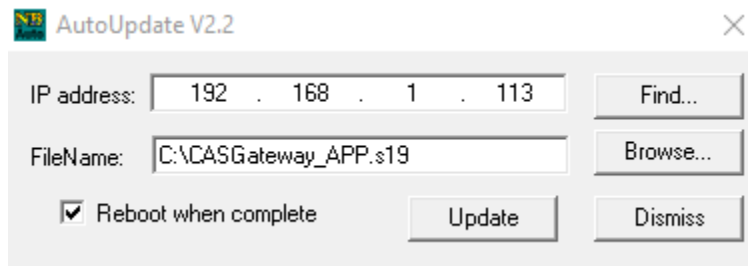


Figure 6 Autoupdate tool window

Image 2 – AutoUpdate tool with firmware file name

4. Verify that “**Reboot when complete**” is checked, as shown above.

5. **Before** pressing the “**Update**”, disconnect the Power from the gateway. Then reconnect the power.

6. As the gateway is booting, press the “**Update**” button. You will see a progress bar begin to fill up.

**Note:** If the progress bar does not fill after 60 seconds, there may be an issue with other Network adapters being enabled. Go to the Network and Sharing Center and disable all network adapters except for the Local Area Connection.

7. If the update was successful, you will see the following message:

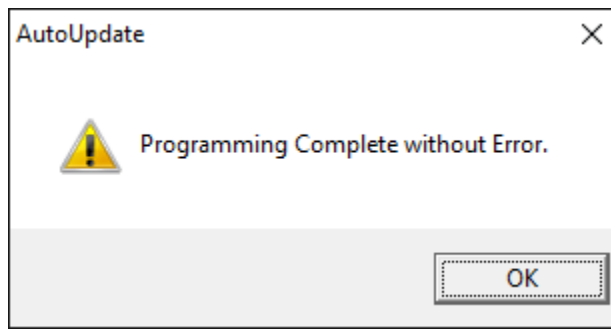


Figure 7 Firmware update success

If the update fails, you will see either “Update Failed” or “Updated Timeout”. If either of these messages appear, please contact us for support.

If a message appears stating that “The Gateway does not have enough RAM”, please return to step 5 and repeat.

## HARDWARE SPECIFICATIONS

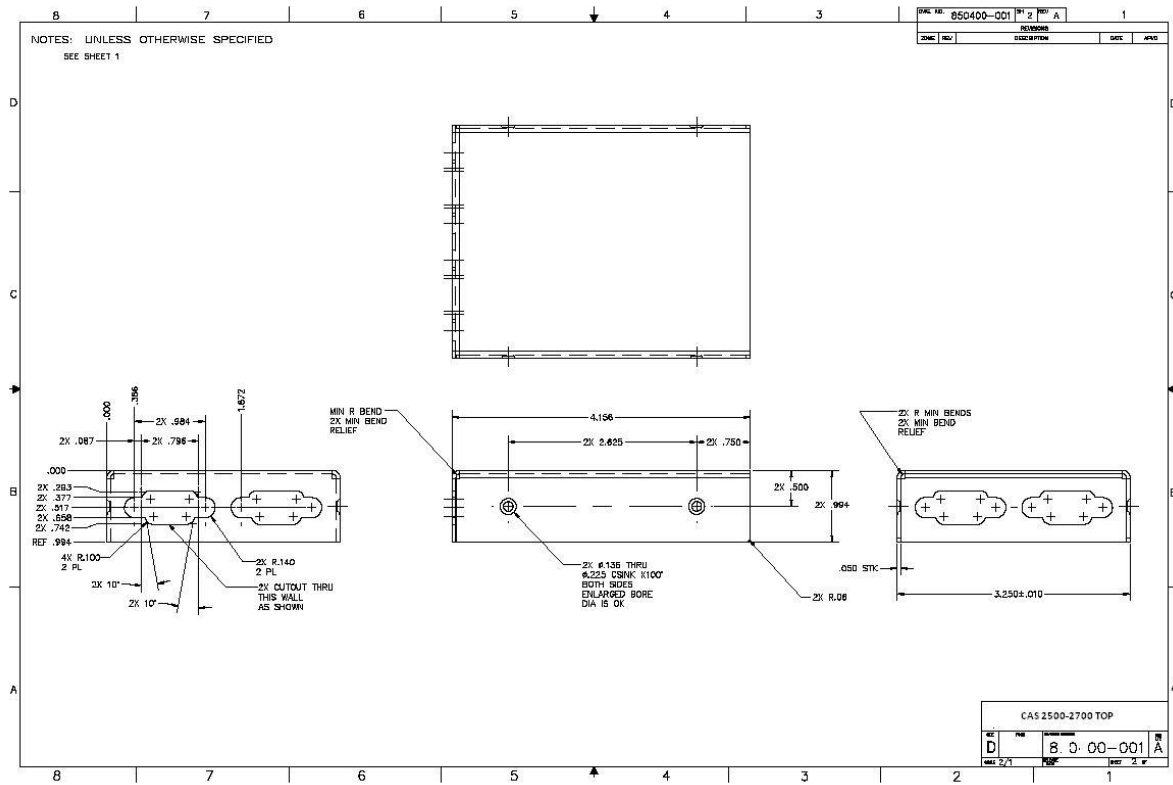
The following specifications for the CAS gateway are common to all Chipkin Gateways.

- UL, C/UL, CE, FCC approved
- 10/100BASE-T with RJ-45 connector
- 1x RS232 port
- 1x RS485 port (different models have additional ports)
- Power: 7 – 24 VDC @90 mA
- Operating temperature: 0 – 70 °C (32 – 158 °F)
- LEDs: link, speed/data, power
- Dimensions (LxWxH): 107 x 83 x 25 mm (4.2 x 3.25 x 1 in.)

## Mechanical drawing

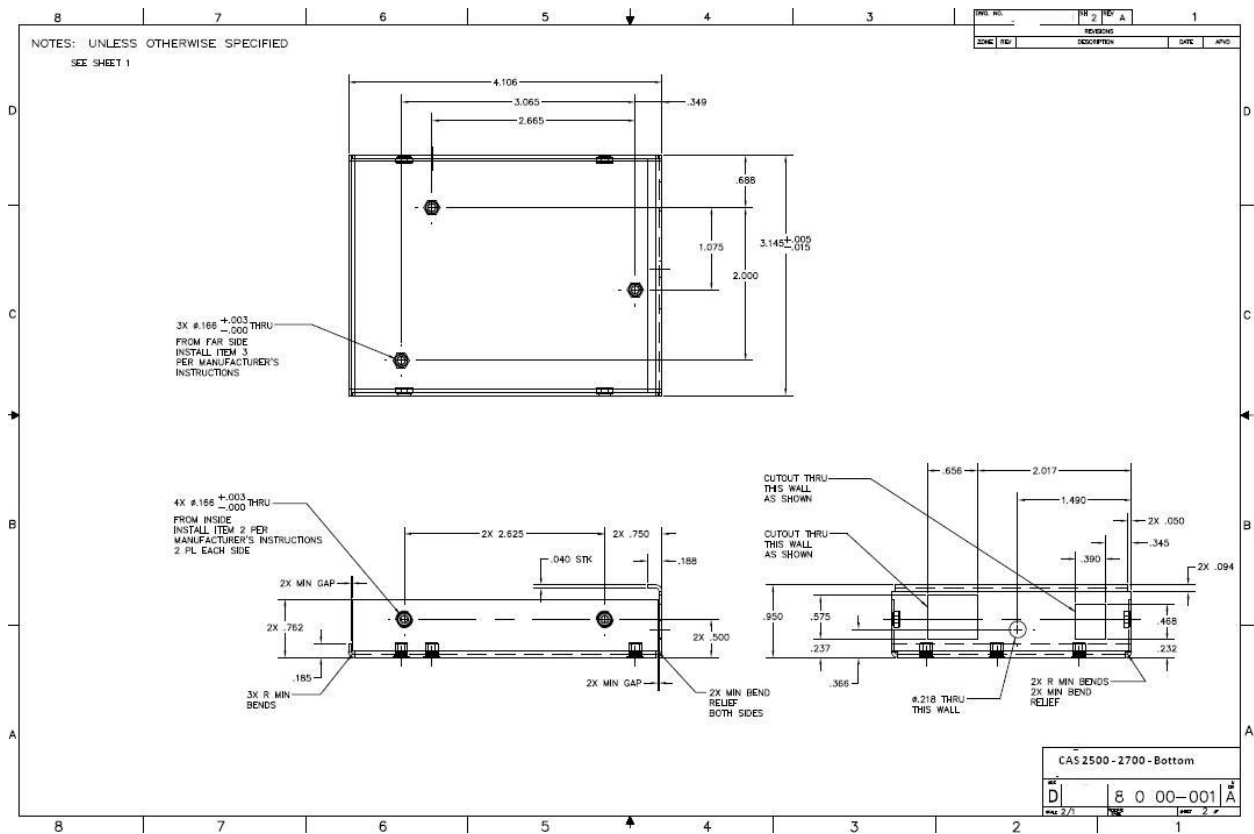
Applies to all CAS2700-xx products.

Top View



### Bottom View





Front Panel



Back Panel

## Connection Specifications

### Serial Protocols Supported

RS-232, RS-422, and RS-485

### Serial Configurations

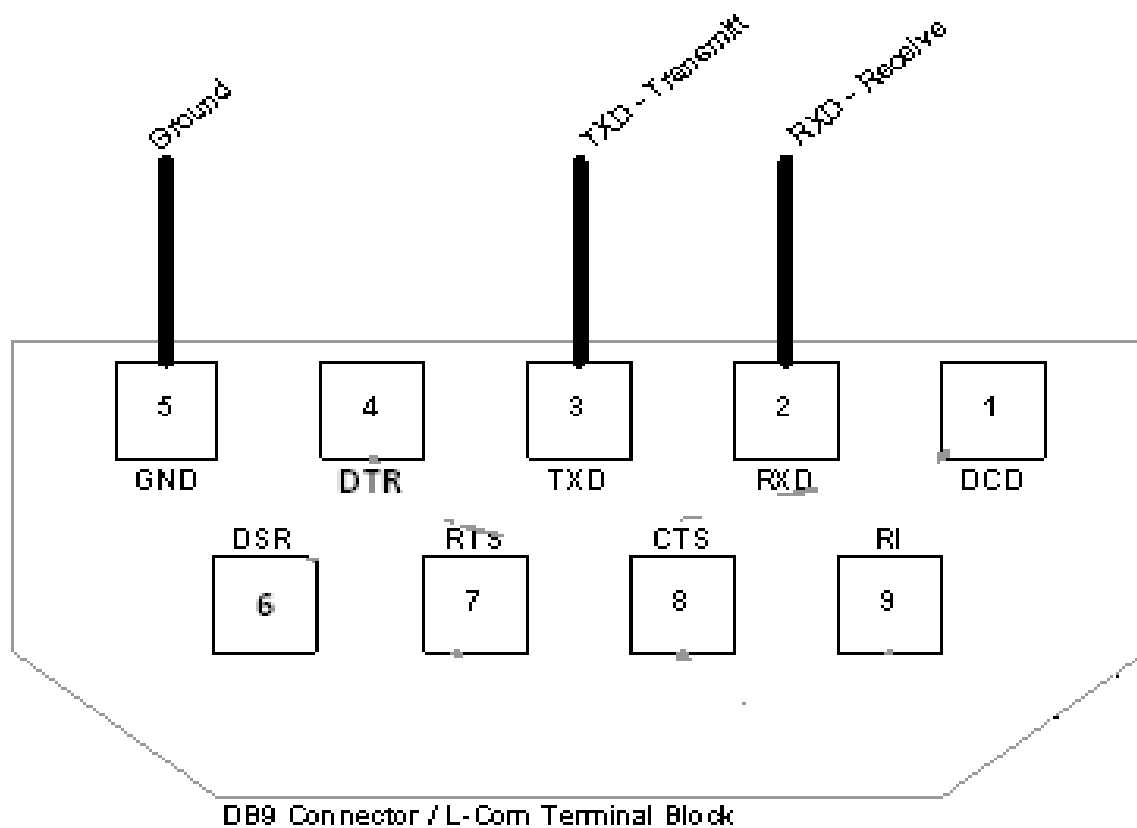
The two UARTs can be configured in the following ways:

- Two RS-232 ports
- One RS-232 port, one RS-485/422 port

### DB9 Pinout



### RS232- 3 Wire [No Handshaking]

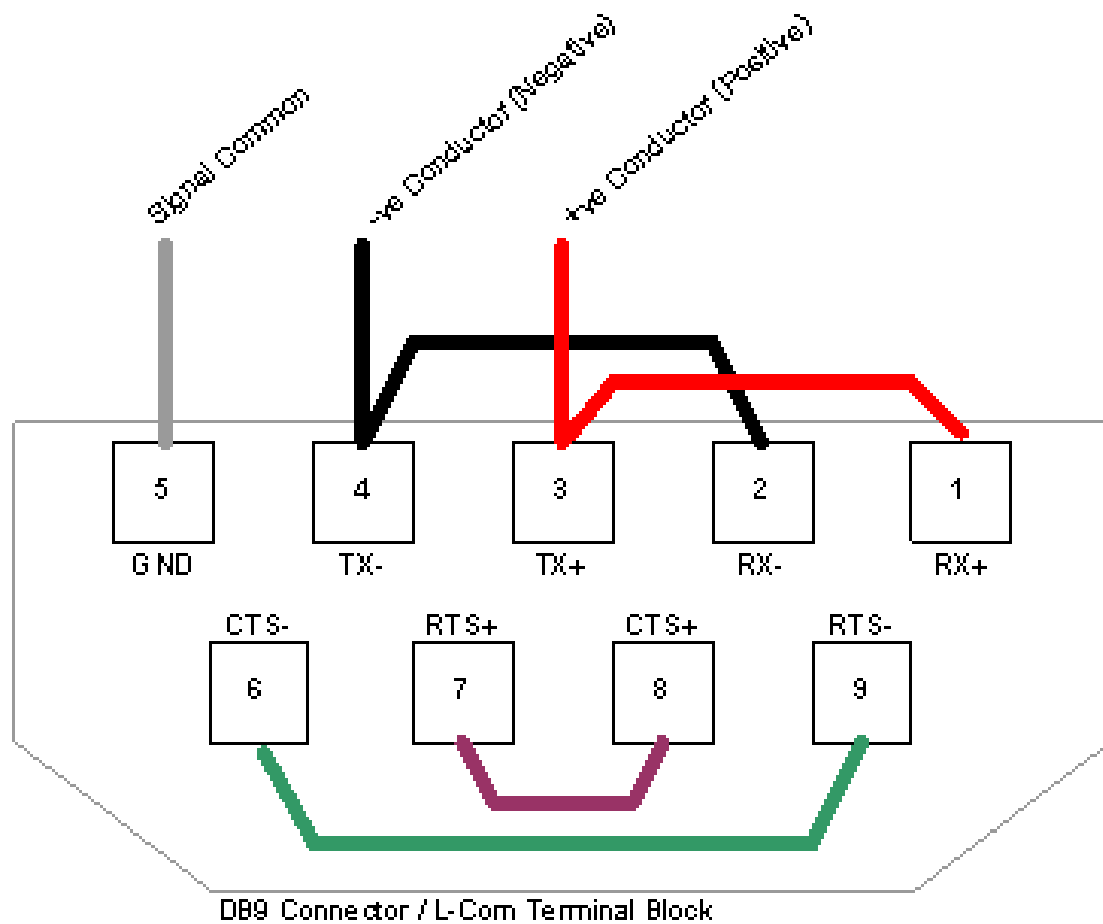


## RS485 – Half Duplex also known as 2 Wire

All 4 jumpers required for 2 wire operation.

CAS recommends the use of 3 conductors for so called 2-Wire RS485.

The signal common is there for purpose.



# APPENDIX A: SAFETY WARNINGS

BEFORE YOU INSTALL THE DEVICE, OBSERVE THE IMPORTANT SAFETY INSTRUCTIONS IN THIS SECTION.



This warning symbol means danger. You are in a situation that could cause bodily injury. Before you work on any equipment, be aware of the hazards involved with electrical circuitry and be familiar with standard practices for preventing accidents. Save these instructions.



**WARNING:** Ultimate disposal of this product should be handled according to all national laws and regulations



**WARNING:** Read and understand all instructions in the documentation that comes with the gateway before connecting it to a power source.



**WARNING:** Do not install or use this gateway near water or when you are wet



**WARNING:** Install the gateway securely on a stable surface.



**WARNING:** Install the gateway in a protected location where no one can step or trip over the connecting cables or power cords.



**WARNING:** Install the Gateway where the cables and power cords can't be damaged.



**WARNING:** There are no user serviceable parts inside. Refer servicing to qualified servicing personnel.



**IMPORTANT:** If the gateway doesn't operate normally, please contact Chipkin's Engineer Services, Development and Support



# APPENDIX B: LIMITED WARRANTY

## LIMITED WARRANTY

Chipkin Automation Systems provides a 30-Day Return Window (see Return of Non-Defective Products below) and the following limited warranty. This limited warranty extends only to the original purchaser.

Please note that any warranty services or questions must be accompanied by the order number from the transaction through which the warranted product was purchased. ***The order number serves as your warranty number and must be retained.*** Chipkin Automation Systems will offer no warranty service without this number.

Chipkin Automation Systems warrants this product and its parts against defects in materials or workmanship for *three years labor and one year parts* from the original ship date. During this period, Chipkin Automation Systems will repair or replace defective parts with new or reconditioned parts at Chipkin Automations Systems option, without charge to you. Shipping fees incurred from returns for under-warranty service in the first 30-days will be paid by Chipkin Automation Systems. All shipping fees both to and from Chipkin Automation Systems following this 30-day period must be paid by the customer. All returns, both during and following the 30-day period, must be affected via the Procedures for Obtaining Warranty Service described below.

All original parts (parts installed by Chipkin Automation Systems at the original system build) replaced by Chipkin Automation Systems or its authorized service center, become the property of Chipkin Automation Systems. Any after-market additions or modifications will not be warranted. The gateway system owner is responsible for the payment, at current rates, for any service or repair outside the scope of this limited warranty.

Chipkin Automation Systems makes no other warranty, either express or implied, including but not limited to implied warranties of merchantability, fitness for a particular purpose, or conformity to any representation or description, with respect to this computer other than as set forth below. Chipkin Automation Systems makes no warranty or representation, either express or implied, with respect to any other manufacturer's product or documentation, its quality, performance, merchantability, fitness for a particular purpose, or conformity to any representation or description.

Except as provided below, Chipkin Automation Systems is not liable for any loss, cost, expense, inconvenience or damage that may result from use or inability to use the gateway. Under no circumstances shall Chipkin Automation Systems be liable for any loss, cost, expense, inconvenience or damage exceeding the purchase price of the gateway.

The warranty and remedies set forth below are exclusive and in lieu of all others, oral or written, expressed or implied. No reseller, agent or employee is authorized to make any modification, extension or addition to this warranty.

## **WARRANTY CONDITIONS**

The above Limited Warranty is subject to the following conditions:

1. This warranty extends only to products distributed and/or sold by Chipkin Automation Systems. It is effective only if the products are purchased and operated in Canada or the USA. (Within the USA including US 48 States, Alaska and Hawaii.)
2. This warranty covers only normal use of the gateway. Chipkin Automation Systems shall not be liable under this warranty if any damage or defect results from (i) misuse, abuse, neglect, improper shipping or installation; (ii) disasters such as fire, flood, lightning or improper electric current; or (iii) service or alteration by anyone other than an authorized Chipkin Automation Systems' representative; (iv) damages incurred through



irresponsible use, including those resulting from viruses or spyware, overclocking, or other non-recommended practices.

3. You must retain your bill of sale or other proof of purchase to receive warranty service.
4. No warranty extension will be granted for any replacement part(s) furnished to the purchaser in fulfillment of this warranty.
5. Chipkin Automation Systems and its Authorized Service Center accepts no responsibility for any software programs, data or information stored on any media or any parts of any products returned for repair to Chipkin Automation Systems.
6. All pre-installed software programs are licensed to customers under non-Chipkin Automation Systems software vendor's term and conditions provided with the packages.
7. This warranty does not cover any third party software or virus related problems.
8. Chipkin Automation Systems makes no warranty either expressed or implied regarding third-party (non-Chipkin Automation System) software.
9. Thirty-day Return Window does not include opened software, parts, special order merchandise and shipping and handling fees.

## **RETURN OF NON-DEFECTIVE PRODUCTS**

A non-defective product may be returned to Chipkin Automation Systems within thirty (30) days of the invoice date for a refund of the original purchase price with the following amendments/fees:

1. Chipkin Automation Systems will refund neither the original shipping cost nor the shipping and handling fees incurred from the products return. If the original purchase was made under a "Free Shipping" promotion then a standard \$40 fee will be deducted from any return in counter to that offer.
2. No refund will be granted for software which has been opened, used, or tampered with in any way which jeopardized Chipkin Automation Systems ability to remarket or resell the product. Chipkin Automation Systems

maintains full discretion in decisions regarding a products fitness for return.

3. Any non-defective returns are subject to a 15% restocking fee, which percentage is taken from the final purchase price less any shipping or handling charges.
4. Quantity purchases of five systems or more are not eligible for return.

To return a defective product, please contact our Customer Service Department for a Return Merchandise Authorization (RMA) number and follow the Return of Products Instructions below. The RMA is valid for 10 days from date of issuance. **Returns will not be accepted without an RMA.** Manufacturer restrictions do apply. Any item missing the UPC on the original packaging may not be returned.

## PROCEDURES FOR OBTAINING WARRANTY SERVICE

RMA (Returning Merchandise Authorization) Policy:

If repairs are required, the customer must obtain an RMA number and provide proof of purchase. RMA and services are rendered by Chipkin Automation Systems only. Any shipping costs after 30 days (starting from the original date of purchase) on any item returned for repair is the customers' responsibility. All returned parts must have an

RMA number written clearly on the outside of the package along with a letter detailing the problems and a copy of the original proof of purchase. No COD packages will be accepted. No package will be accepted without an RMA number written on the outside of the package. RMA numbers are only valid for 30 days from the date of issue.

Should you have any problems with your gateway, please follow these procedures to obtain the service:

1. If you have purchased our on-site warranty, please find your warranty# (the order number from the transaction through which the warranted product was originally purchased) and contact Chipkin Automation

Systems Customer Service by phone at 1-866-383-1657 (Toll free) or 1-647-557-3330.

2. If the gateway must be repaired, an RMA number (Return Merchandise Authorization Number) will be issued for shipment to our repair department. Please follow the instructions given by Chipkin Automation Systems technical support staff to ship your gateway. Chipkin Automation Systems will not accept any shipments without an RMA number.
3. Pack the gateway in its original box or a well-protected box, as outlined in the Return Shipping Instructions. Chipkin Automation Systems will not be responsible for shipping damage/loss of any product outside the original 30-day Chipkin Automation Systems-paid service period. It is very important that you write the RMA number clearly on the outside of the package. Ship the gateway with a copy of your bill of sale or other proof of purchase, your name, address, phone number, description of the problem(s), and the RMA number you have obtained to:

Chipkin Automation Systems RMA# \_\_\_\_\_  
3381 Cambie St., #211  
Vancouver, B.C. Canada, V5Z 4R3

4. Upon receiving the gateway, Chipkin Automation Systems will repair or replace your gateway (at Chipkin Automation Systems discretion) and will ship it back to you within 2 weeks (dependent on parts availability) via UPS.
5. Cross-exchange (Parts only): You will need to provide a valid credit card number as a deposit guarantee when the RMA number is issued. Once approval has been obtained on your credit card, the part(s) will be shipped UPS. You will need to ship defective part(s) back to Chipkin Automation Systems within 15 days to avoid charges to your credit card. If such charges are incurred, the shipped part(s) will be billed at the then current price.

6. Chipkin Automation Systems will pay for shipping to and from the customer only within the first thirty days following the original product ship date. Following this 30-day period all shipping fees both for under warranty and post warranty repairs are the sole responsibility of the customer. The customer also assumes full liability for losses or damages resulting from shipping as well as all responsibility to pursue remuneration for such issues with their selected carrier.

#### **AFTER ONE-YEAR WARRANTY – POST WARRANTY REPAIR**

For post warranty repair, the procedure is the same as outlined above for RMA and shipping. However, you are responsible for shipping charges both ways, current labor (\$75 per hour if not under warranty), and the current price of part(s) used in repair.

# THANK YOU

Thanks for choosing Chipkin's protocol gateways, data clients and integration services to meet your building and industrial automation requirements!

Chipkin Automation Systems™ (Chipkin) is a building and industrial automation protocol expert. We develop, configure, install and support gateways (protocol converters), data loggers and remote monitor and controlling applications.

Founded in October 2000, Chipkin provides expert solutions for converting BACnet®, Modbus®, and Lonworks®—to name just a few—and enabling interfaces for HVAC, fire, siren, intercom, lighting, transportation and fuel systems. The high-quality products we offer (including those from other vendors) interface with Simplex™, Notifier™, McQuay™, GE™ and many others—so you can rest assured that we will select the most appropriate solution for your application.

With Chipkin you are buying a solution. Our configuration expertise in this field combined with free BACnet tools and other tools ensure your success; and our customer support via phone, email and remote desktop tools means that we're there when you need us. Chipkin is a small responsive company, and we live or die by the quality of our service—and with offices in two-time zones—we can provide support when you need it. Give us a call now!

## Sales and Customer Service

**Toll free: 1-866-383-1657**

**Email: [salesgroup1@chipkin.com](mailto:salesgroup1@chipkin.com)**