CAS-2700-21
SEC (Serial) Protocol for Mitsubishi UPS
Modbus (RTU and TCP) / BACnet / HTML Gateway

COMPUTER ENVIRONMENT SOLUTIONS

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1.   **SEC Protocol for Mitsubishi UPS Gateway Description**

The SEC protocol can be used to connect to suitably enabled UPS's manufactured by Mitsubshi. This is a serial protocol using RS232. The protocol is nodeless, so only one UPS can be connected to port of the gateway.

The Gateway connects to the UPS, reads data and stores it internally. When a remote system requests data, this data is served in a form that is appropriate to the requesting protocol. In the event that the connection to the UPS controller is lost, or data cannot be read, the gateway can signal this to the remote data client.

The gateway requires minimal configuration and can be considered a plug and play component of a system, in that it is ready to operate out of the box with the default configuration.

2.   Connections

2.1.   Block Diagram

Monitor and Control UPS's that support SEC protocol using BACnet, Modbus or Web

Free BACnet test software with purchase*
Confidently test the BACnet interface.
Discover devices and their objects. Test
and document them. Arm yourself with a
powerful field tool. Full license.

BACnet IP

Modbus TCP

HTTP
and other web protocols

Ethernet Network

Connection via std networking interfaces such as hubs, switches, routers.

We are always adding to the library of protocols and can add yours.

CAS-2700-21 Gateway

RS232

Modbus RTU Master

Modbus RTU Device(s)

RS485 for Modbus RTU server

Mitsubushi UPS
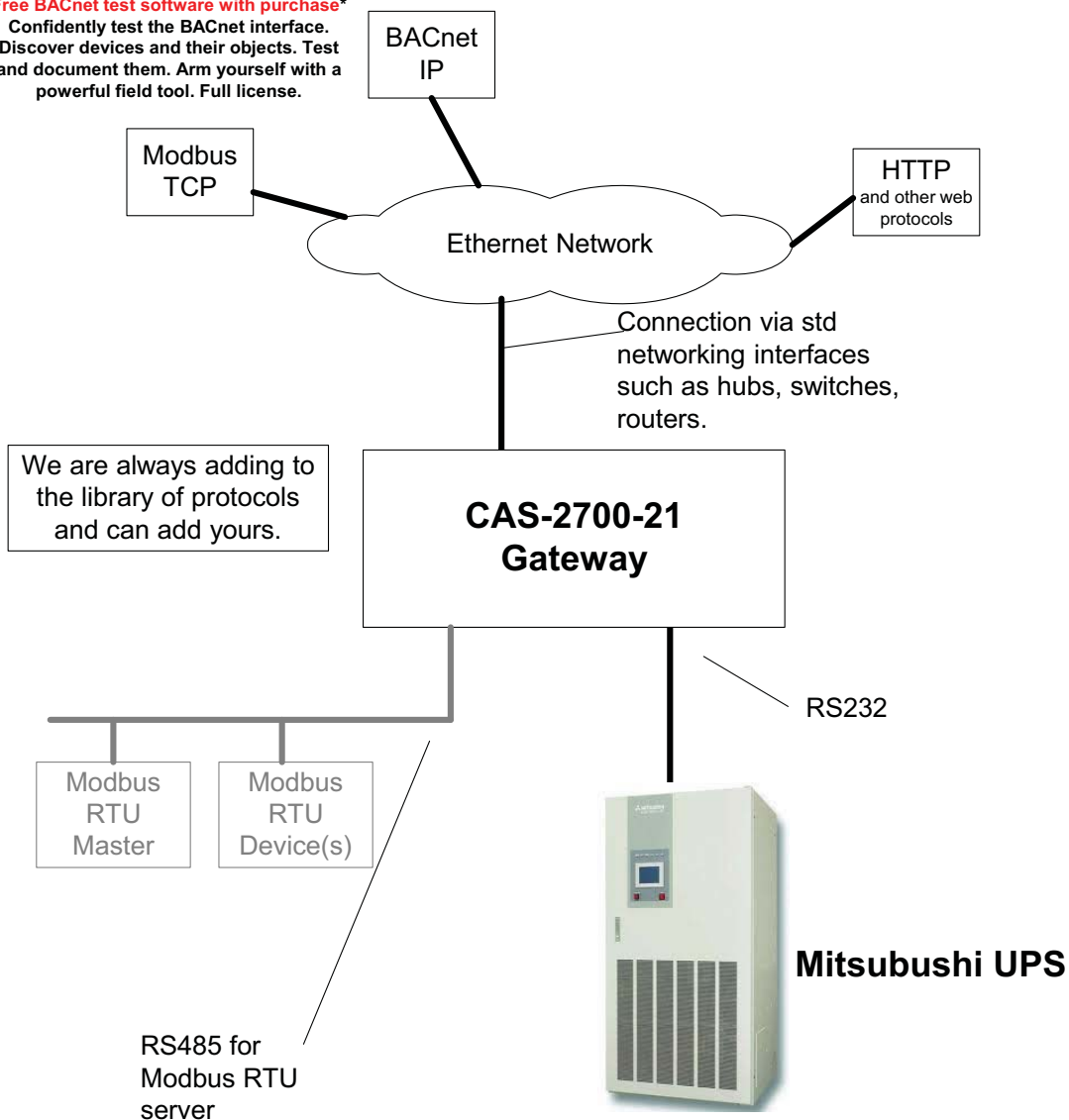
2.2.   Wiring / Connections

2.2.1.   Mitsubishi Connections

A Null Modem cable is suitable.

Gateway (Port 1)   UPS Device

9 Pin Female   9 Pin Female
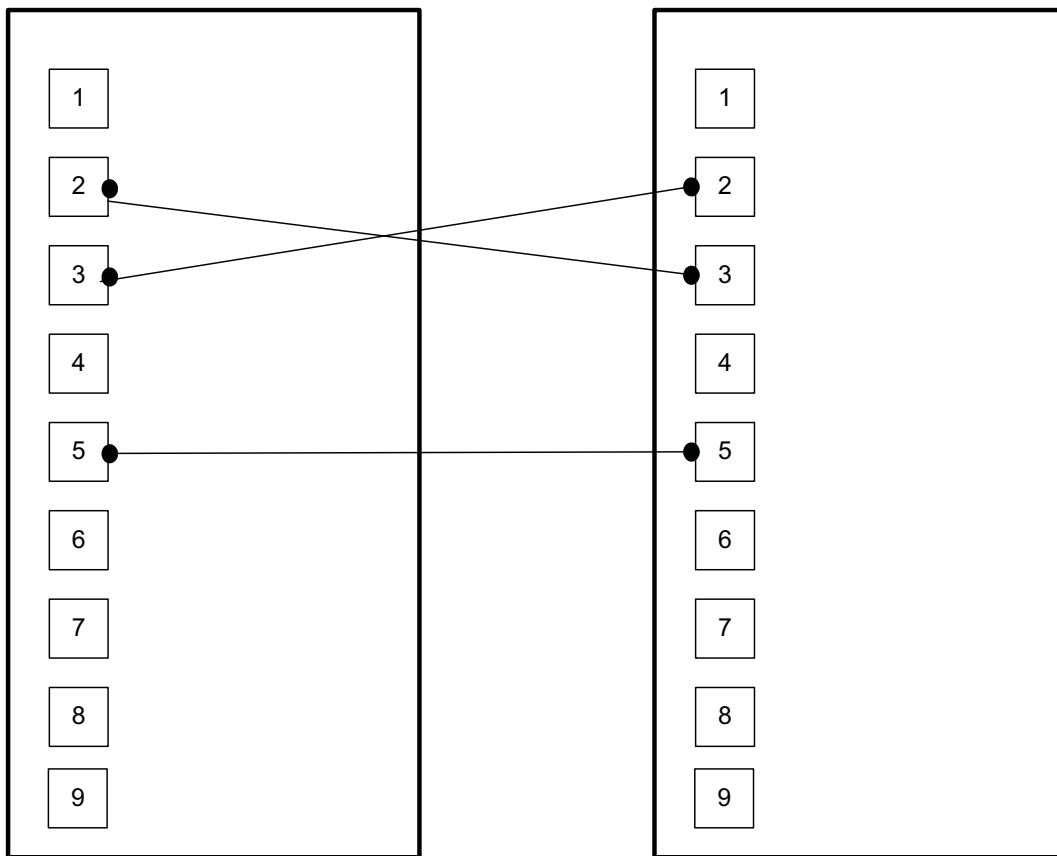
——————— Required connections

2.2.2.   Modbus RTU Connections

Port 0 – RS485 Mode Terminals

DB9 - Terminal 1 jumper to 3	RS485 – Positive
DB9 – Terminal 2 jumper to 4	RS485 – Negative
DB9 – Terminal 5	RS485 - Common
Jumper 7 to 8	
Jumper 6 to 9	
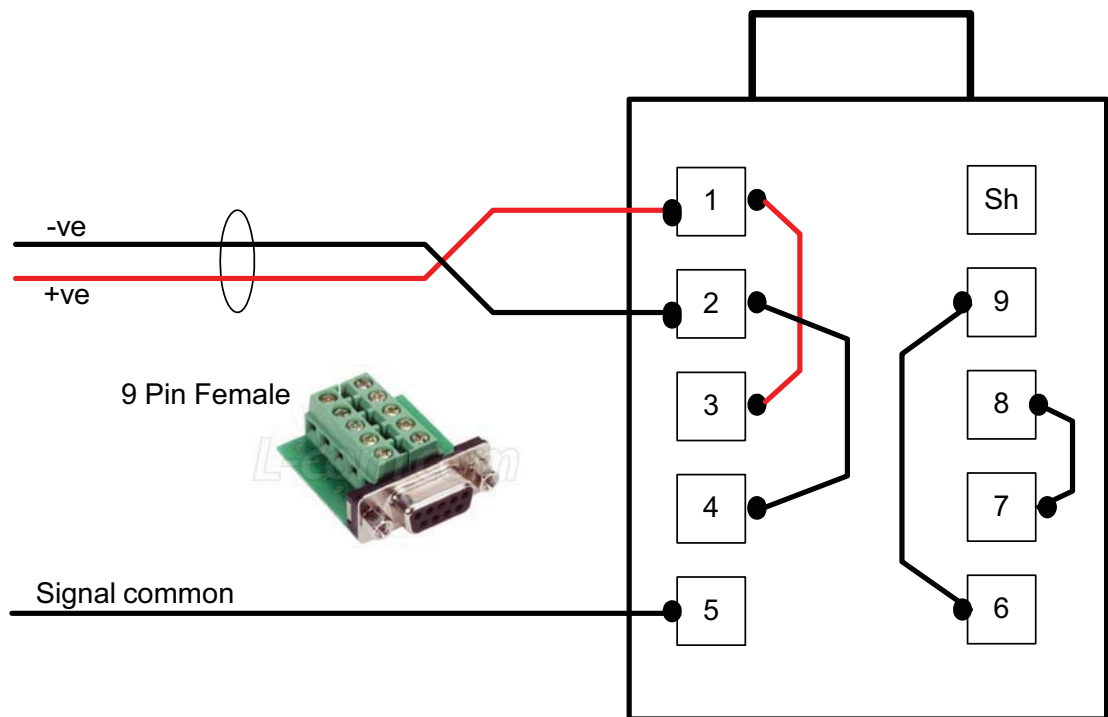
2.3.   Limitations and Best Practices

Maximum Number of UPS devices per Gateway

Only 1 Mitsubishi UPS device can be connected to a single gateway. This is a limitation of RS232 and of the SEC protocol.

RS232 Best Practices

We recommend a maximum of 30ft for the RS232 cable. A well made cable in a clean environment can easily run to 100ft and provide satisfactory performance.

3.   Configuration and Settings

3.1.   Mitsubishi UPS Connection Settings

The baud rate is a configurable setting for the Mitsubishi UPS device.

Baud Rate = 1200, 2400, 4800, 9600, 19200

Default Baud Rate = 9600

These settings are hard coded since they cannot be changed in the Mitsubishi UPS device.

Parity = None

Data Bits = 8

Stop Bits = 1

3.2.   ModbusTCP Settings

To connect using ModbusTCP you need to know the IP address of the gateway and the Modbus 'Station' number (also known as 'Device Address' or 'Node ID')

Modbus Station Number = 1 (This parameter is configurable).

Review section *7.6 Another Method for Changing the IP* Address - DHCP   to see the default IP Address settings and how to change them.

3.3.   ModbusRTU Settings

To connect using ModbusRTU you need to set the connection correctly and the Modbus 'Station' number (also known as 'Device Address' or 'Node ID')

Modbus Station Number = 1 (This parameter is configurable – shared with ModusTCP).

Connection Settings : 9600 (or 19200) Baud , 8 Data Bits, 1 Stop Bit, No Parity. The Baud Rate is configurable. The device is a ModbusRTU slave.

3.4.　　　BACnet IP Settings

BACnet supports discovery. Thus any BACnet tool will discover the gateway and report its properties. Each gateway must be allocated a unique device instance number and thus this is a configurable setting.

The Default BACnet Settings are

Device Instance Number = 389001 (This parameter is configurable)

It is important to note that BACnet messages cannot pass from one subnet to another without a BACnet technology called BBMD installed. The easiest installation and the best way to avoid this complication is to set the gateway's IP address so that it is on the same subnet as the BACnet data client (usually the BAS / Scada system).

Review section *7.6 Another Method for Changing the IP* Address - DHCP to see the default IP Address settings and how to change them.

3.5.　　Other Settings

Timeout :

If the gateway loses it connection to the controller it will mark the data as unreliable after some time has passed. The same is true if one particular data item cannot be read – that data item will be marked as unrealizable. This will affect how remote Modbus or BACnet clients will see the data.

Timeout = 120 seconds (Default)

This setting can be changed.

3.6.　　Configuration Settings

Use a Browser and browse to the IP address of the Gateway. For example: http://192.168.1.113/bin/mitsubishiups.

3.7.   Change Configuration Settings

Use a Web Browser and type the following into the address bar:

http://192.168.1.113/ bin/mitsubishiups

IP Address of your unit.

Mitsubishi UPS Configuration

BACnet Server

Port (?)	Device ID (?)
47808	389001

Modbus Slave

RTU Baud Rate (?)	Device ID (?)	TCP Port (?)
9600	1	502

Mitsubishi UPS Device

Device Type (?)	Baud Rate (?)
7011A (1000 VA)	9600

Mitsubishi UPS Settings

-10	Default Value (?)
10	Scan Interval (in seconds) (?)
3	Timeout Time (in seconds) (?)
3	Number of Retries after a Timeout (?)
1	Time between Retries (in seconds) (?)

Mitsubishi UPS Status

- ☑ Battery Status (ST1)
- ☑ Input Status (ST2)
- ☑ Output Status (ST3)
- ☑ Bypass Status (ST4)
- ☑ Alarm Status (ST5)
- ☑ Nominal Values (NOM)

Save Configuration

Change the Settings and click Submit to save them. To cancel changes simply close the page without submitting.

The Modbus Station ID is shared between ModbusRTU and ModbusTCP

Note on IP Addresses: Another method is provided to change the Netmask and Gateway address.

☞ Changes do not take effect until the device restarts. Use the Reset button the web page or recycle the power.

4.   Reading Data using HTML / Web Browser

Use a Web Browser to browse to this page.

http://192.168.1.113/status

This is the IP address of your gateway

You are presented with a screen similar to this one. (Age is explained in the section 'Gateway Status' of this manual)

Report: Current Status

The following table lists what values are stored in each Modbus Address register.

If the valued that is stored is the **default value**, it means that either the device does not have that parameter available, or it is undefined.

The table also contains the current data and its units from the device and the age of the data.

Note: Gaps may appear in the Modbus addressing if not all status groups were selected.

Legend	Description
Grey	Parameter unavailable on device
Red	Data is too old, unreliable

Modbus Address	Description	Data	Units	Value	Data Age	Notes
40001	Battery Condition	0	see notes	0	0	0 = Good, 1 = Weak, 2 = Replace
40002	Battery Status	0	see notes	0	0	0 = Battery OK, 1 = Battery Low, 2 = Battery Depleted
40003	Battery Charge	0	see notes	0	0	0 = Floating, 1 = Charging, 2 = Resting, 3 = Discharging
40004	Seconds On Battery	0	seconds	0	0	
40005	Estimated Minutes	461	minutes	461	0	
40006	Estimated Charge	-10	see notes	-10	0	value is a percentage
40007	Battery Voltage	272	0 1 volts	27 2	0	

5.   Reading Modbus Data

Need to know more about Modbus ? Read this guide.
http://www.chipkin.com/september-2010-newsletter

5.1.   Modbus Function Supported (RTU and TCP)

The Gateway supports functions 1, 2, 3, and 4. Most masters should be configured to use function 3 (Read Holding Registers). However it will respond to polls that use the other functions with offset equal to zero. You can read this data as 3xxxx, 1xxxx, 0xxxx or 4xxxx data.

5.2.   Modbus Data Map

Modbus Holding Register	Description	Engineering Units
40001	Battery Condition	None
40002	Battery Status	None
40003	Battery Charge	None
40004	Seconds On Battery	seconds
40005	Estimated Minutes	minutes
40006	Estimated Charge	None
40007	Battery Voltage	0.1 volts
40008	Battery Current	0.1 amps
40009	Battery Temperature	Degrees
40010	Input Line Bads	None
40011	Input Num Lines	None
40012	Input Frequency 1	0.1 Hz
40013	Input Voltage 1	0.1 volts
40014	Input Current 1	0.1 amps
40015	Input Power 1	Watts
40016	Input Frequency 2	0.1 Hz
40017	Input Voltage 2	0.1 volts
40018	Input Current 2	0.1 amps
40019	Input Power 2	Watts
40020	Input Frequency 3	0.1 Hz
40021	Input Voltage 3	0.1 volts
40022	Input Current 3	0.1 amps
40023	Input Power 3	Watts
40024	Output Source	None
40025	Output Frequency	0.1 Hz
40026	Output Num Lines	None

40027	Output Voltage 1	0.1 volts
40028	Output Current 1	0.1 amps
40029	Output Power 1	Watts
40030	Output Load 1	None
40031	Output Voltage 2	0.1 volts
40032	Output Current 2	0.1 amps
40033	Output Power 2	Watts
40034	Output Load 2	None
40035	Output Voltage 3	0.1 volts
40036	Output Current 3	0.1 amps
40037	Output Power 3	Watts
40038	Output Load 3	None
40039	Bypass Frequency	0.1 Hz
40040	Bypass Num Lines	None
40041	Bypass Voltage 1	0.1 volts
40042	Bypass Current 1	0.1 amps
40043	Bypass Power 1	Watts
40044	Bypass Voltage 2	0.1 volts
40045	Bypass Current 2	0.1 amps
40046	Bypass Power 2	Watts
40047	Bypass Voltage 3	0.1 volts
40048	Bypass Current 3	0.1 amps
40049	Bypass Power 3	Watts
40050	Alarm Temperature	None
40051	Alarm Input Bad	None
40052	Alarm Output Bad	None
40053	Alarm Overload	None
40054	Alarm Bypass Bad	None
40055	Alarm Output Off	None
40056	Alarm UPS Shutdown	None
40057	Alarm Charger Failure	None
40058	Alarm System Off	None
40059	Alarm Fan Failure	None
40060	Alarm Fuse Failure	None
40061	Alarm General Fault	None
40062	Alarm Awaiting Power	None
40063	Alarm Shutdown Pending	None
40064	Alarm Shutdown Imminent	None
40065	Nominal Input Voltage	Volts
40066	Nominal Input Frequency	0.1 Hz
40067	Nominal Output Voltage	Volts
40068	Nominal Output Frequency	0.1 Hz
40069	Nominal VA Rating	Volt-amps
40070	Nominal Output Rating	Watts
40071	Low Battery Time	Minutes
40072	Audible Alarm	None
40073	Low Voltage Transfer Point	Volts

40074	High Voltage Transfer Point	Volts
40075	Battery Installed Date	None
40076	Nominal Battery Life	Days

5.3.   Interpreting Modbus Data

Modbus does not have a mechanism for reporting the validity of data. What happens if the gateway loses its connection to the Mitsubishi UPS device? After a timeout period has elapsed the gateway will regard the data it had read previously, as unreliable.

The remote data client will see the value 65535 (-1, configurable) in the registers that contain unreliable data. In other words, rather than serve the old (possibly obsolete) data, the gateway serves a value that clearly identifies that the data is invalid.

Some values have been encoded as IEEE754 format floating point numbers. These values use 2x 16bit registers. They are clearly identified in the Modbus Map. Since Modbus does not support floating point numbers so all other values are served as whole numbers.
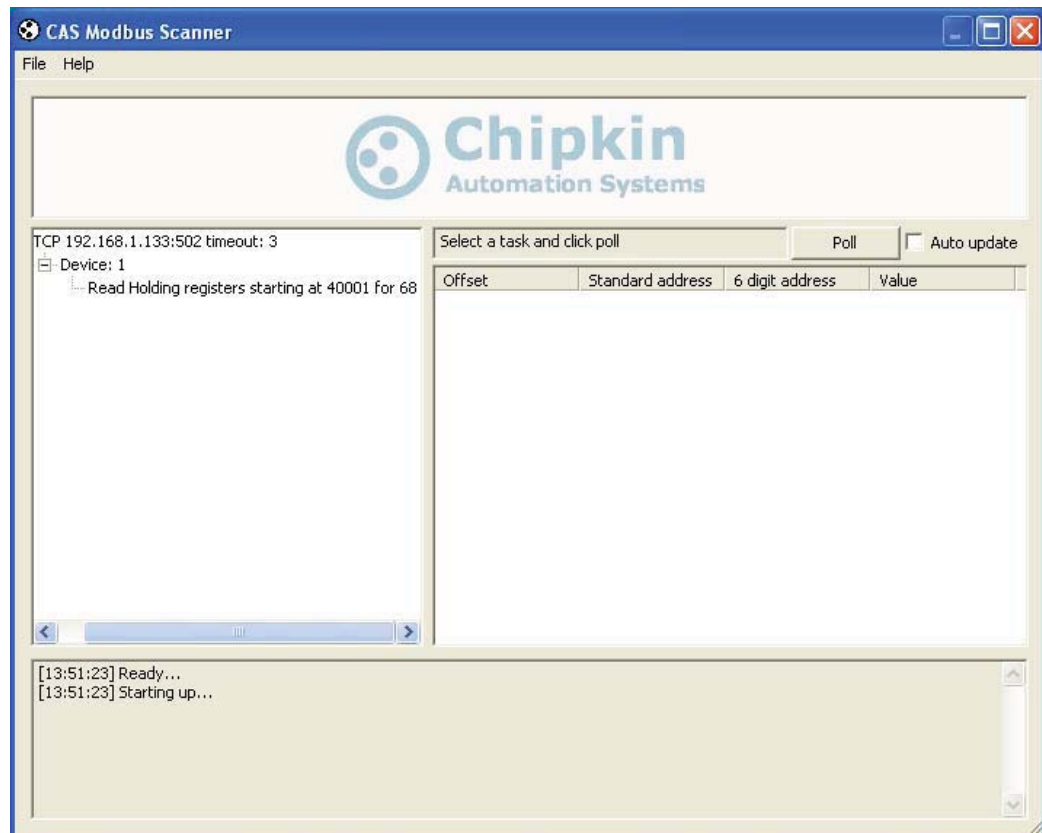
5.4.   Test Procedure – Use CAS Modbus Scanner

You can test the ModbusTCP data using free test software provided by Chipkin Automation Software.

This is a link to the download page. http://www.chipkin.com/cas-modbus-scanner

Configure the scanner as follows

1. Add a connection – specify the IP address of the gateway
2. Add a device to the connection. Set the device=1
3. Add a Request to the device: Read Holding register offset=1 Length=68

The result should be like this.

4. Click the Poll Button
5. Use the values found in the 'int16 column and the data map table to review the data.

CAS Modbus Scanner

File   Help

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TCP 192.168.1.104:502 timeout: 3
  Device: 1
    Read Holding registers starting at 40001 fo

Last update: Thu Nov 04 16:29:04 2010   Poll   ☐ Auto update

Offset	Standard address	6 digit address	Hex	char	uint16	int16	uint32	int32	float32
1	40001	400001	0x0041	A	65	65			
2	40002	400002	0x0044	D	68	68	4456...	4456...	0.000000
3	40003	400003	0x0056	V	86	86			
4	40004	400004	0x0050	P	80	80	5242...	5242...	0.000000
5	40005	400005	0x0032	2	50	50			
6	40006	400006	0x001E	☐	30	30	1966...	1966...	0.000000
7	40007	400007	0x006F	o	111	111			
8	40008	400008	0x0026	&	38	38	2490...	2490...	0.000000
9	40009	400009	0x0000		0	0			
10	40010	400010	0x0000		0	0	0	0	0.000000
11	40011	400011	0x0013	☐	19	19			
12	40012	400012	0x0028	(	40	40	2621...	2621...	0.000000
13	40013	400013	0x0026	&	38	38			
14	40014	400014	0x0006	☐	6	6	393254	393254	0.000000
15	40015	400015	0x000B	☐	11	11			
16	40016	400016	0x0004	☐	4	4	262155	262155	0.000000
17	40017	400017	0x000B	☐	11	11			

[16:29:04] <= Response: 01 03 C8 00 41 00 44 00 56 00 50 00 32 00 1E 00 6F 00 26 00 00 00 00 00 13 00 28 00 26 00 06 00 0B 00 04 00 0B 00 5A 00 1C 00 02 00 01 00 00 00 D0 00 07 00 9B 00 1C 00 00 00 57 00 00 00 12 00 23 00 1C 00 06 00 0B 00 04 00 12 00 23 00 1E 00 00 00 64 00 48 00 01 00 00 00 00 00 00 00 00 00 00 00 41 00 74 00 74 00 74 01 CF 01 CA 01 CC 01 01 01 02 01 03 00 00 00 00 00 00 01 03 00 00 00 00 00 4E 01 90 02 8C 01 02 00 00 00 00 00 FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
[16:29:03] => Poll: 01 03 00 00 00 64
[16:28:45] <= Response: 01 03 88 00 41 00 44 00 56 00 50 00 32 00 1E 00 6F 00 26 00 00 00 00 00 13 00 28 00 11 00 06 00 0B 00 04 00 0B 00 5A 00 1C 00 02 00 01 00 00 00 D0 00 07 00 9B 00 1C 00 00 00 57 00 00 00 12 00 23 00 1C 00 06 00 0B 00 04 00 12 00 23 00 1E 00 00 00 64 00 48 00 01 00 00 00 00 00 00 00 00 00 00 00 41 00 74 00 74 00 74 01 CF 01 CA 01 CC 01 01 01 02 01 03 00 00 00 00 00 00 01 03 00 00 00 00 00 4E 01 90 02 8C 01 02 00 00 00 00 00

6.   Reading BACnet Data

BACnet supports discovery. When you discover the gateway, objects and properties you will find appropriately named objects that report data from the Mitsubishi UPS device. Because BACnet supports discovery, usually knowledge of the BACnet Device Instance Number does not need to be known in advance.

Each BACnet device (like the gateway) needs to have a unique instance number. Therefore it may be necessary for you to change the instance number.

Need to learn some BACnet basics? Read this guide.

http://www.chipkin.com/bacnet-solutions

6.1.   Most Common BACnet Problem

If the device or application that is reading the BACnet data is on another subnet then it will not discover or be able to talk to the gateway. This can be resolved two ways. 1. Change the IP address of the gateway to be on the same subnet – a simple task. 2. Install BBMD – a non trivial task – but a task you can often pass the buck on – it is the responsibility of the company installing the BAS system to provide BBMD. You can read more about it at this link. http://www.chipkin.com/articles/bacnet-bbmd

6.2.   Interpreting BACnet Data

If the gateway loses communications with the Mitsubishi UPS device or if a data point cannot be read from the controller, the 'Out of Service' property of the data object is set true once the timeout has expired. The value of the 'Present Value' property is not changed, thus the last good value will be shown.

Scaling : Some Bacnet objects transport scaled data. The values served as BACnet values are the same as those served on Modbus. They are always whole numbers. Thus for example, referencing section   you see the current is served as 0.1 Amps. Thus if the Modbus register contains the value 123 it means the current is 12.3 Amps. The same applies to BACnet. If the Present Value of the object is 123 it means 12.3 Amps.

40018	Input Current 2	0.1 amps

6.3.   **BACnet Objects**

The following is a list of possible BACnet Objects. Please note that which objects appear in a BACnet explorer will depend on which UPS device was selected, and which Status groups were requested

- analog_input 1 (battery_condition)

- analog_input 2 (battery_status)

- analog_input 3 (battery_charge)

- analog_input 4 (seconds_on_battery)

- analog_input 5 (estimated_minutes)

- analog_input 6 (estimated_charge)

- analog_input 7 (battery_voltage)

- analog_input 8 (battery_current)

- analog_input 9 (battery_temperature)

- analog_input 10 (input_line_bads)

- analog_input 11 (input_num_lines)

- analog_input 12 (input_frequency_1)

- analog_input 13 (input_voltage_1)

- analog_input 14 (input_current_1)

- analog_input 15 (input_power_1)

- analog_input 16 (input_frequency_2)

- analog_input 17 (input_voltage_2)

- analog_input 18 (input_current_2)

- analog_input 19 (input_power_2)

- analog_input 20 (input_frequency_3)

- analog_input 21 (input_voltage_3)

- analog_input 22 (input_current_3)

- analog_input 23 (input_power_3)

- analog_input 24 (output_source)

- analog_input 25 (output_frequency)

- analog_input 26 (output_num_lines)

- analog_input 27 (output_voltage_1)

- analog_input 28 (output_current_1)

- analog_input 29 (output_power_1)

- analog_input 30 (output_load_1)

- analog_input 31 (output_voltage_2)

- analog_input 32 (output_current_2)

- analog_input 33 (output_power_2)

- analog_input 34 (output_load_2)

- analog_input 35 (output_voltage_3)

- analog_input 36 (output_current_3)

- analog_input 37 (output_power_3)

- analog_input 38 (output_load_3)

- analog_input 39 (bypass_frequency)

- analog_input 40 (bypass_num_lines)

- analog_input 41 (bypass_voltage_1)

- analog_input 42 (bypass_current_1)

- analog_input 43 (bypass_power_1)

- analog_input 44 (bypass_voltage_2)

- analog_input 45 (bypass_current_2)

- analog_input 46 (bypass_power_2)

- analog_input 47 (bypass_voltage_3)

- analog_input 48 (bypass_current_3)

- analog_input 49 (bypass_power_3)

- analog_input 50 (alarm_temperature)

- analog_input 51 (alarm_input_bad)

- analog_input 52 (alarm_output_bad)

- analog_input 53 (alarm_overload)

- analog_input 54 (alarm_bypass_bad)

- analog_input 55 (alarm_output_off)

- analog_input 56 (alarm_ups_shutdown)

- analog_input 57 (alarm_charger_failure)

- analog_input 58 (alarm_system_off)

- analog_input 59 (alarm_fan_failure)

- analog_input 60 (alarm_fuse_failure)

- analog_input 61 (alarm_general_fault)

- analog_input 62 (alarm_awaiting_power)

- analog_input 63 (alarm_shutdown_pending)

- analog_input 64 (alarm_shutdown_imminent)

- analog_input 65 (nominal_input_voltage)

- analog_input 66 (nominal_input_frequency)

- analog_input 67 (nominal_output_voltage)

- analog_input 68 (nominal_output_frequency)

- analog_input 69 (nominal_va_rating)

- analog_input 70 (nominal_output_rating)

- analog_input 71 (low_battery_time)

- analog_input 72 (audible_alarm)

- analog_input 73 (low_voltage_transfer_point)

- analog_input 74 (high_voltage_transfer_point)

- analog_input 75 (battery_installed_date)

- analog_input 76 (nominal_battery_life)

6.4.   BACnet Test Procedure

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
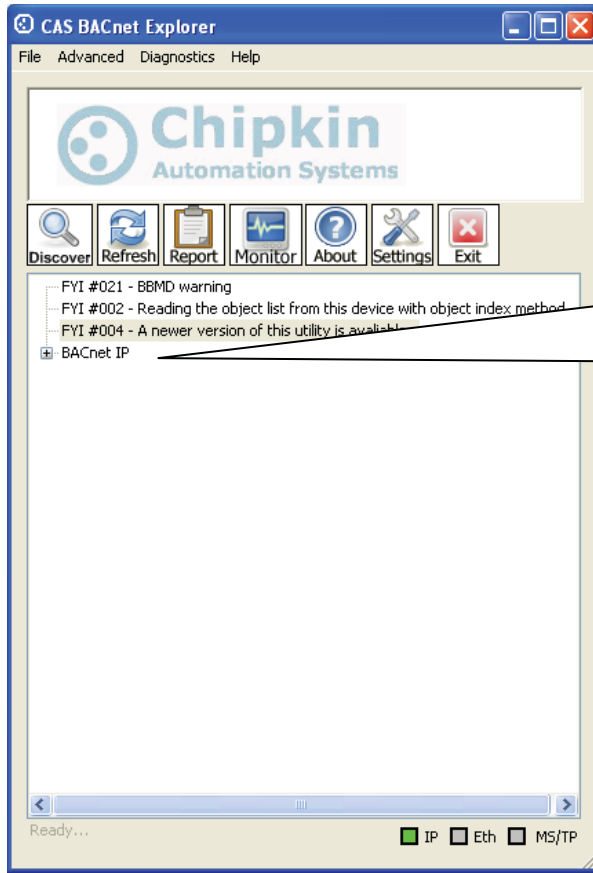
Device(s) were discovered.

Click the + to open up.
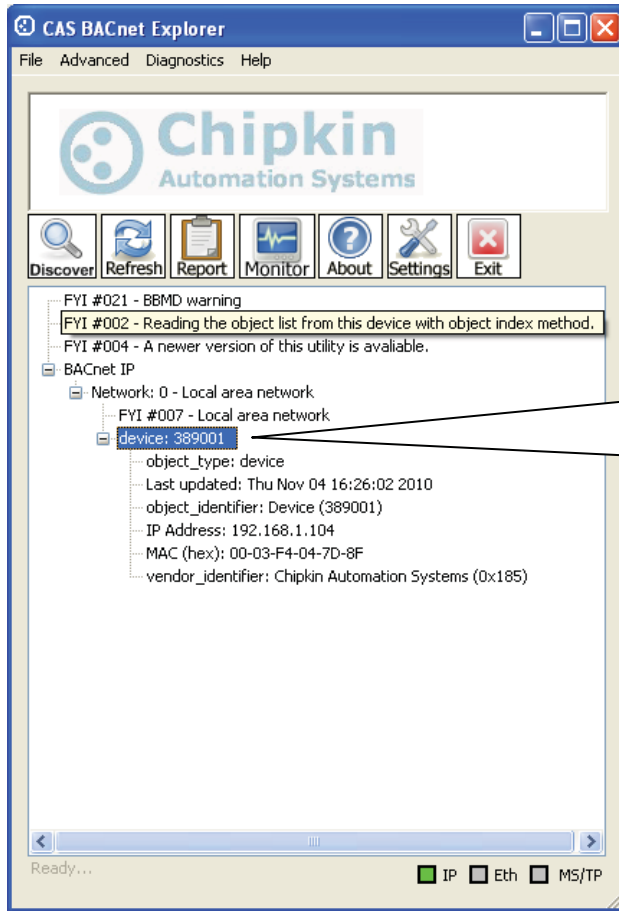
Select the device and click discover again.
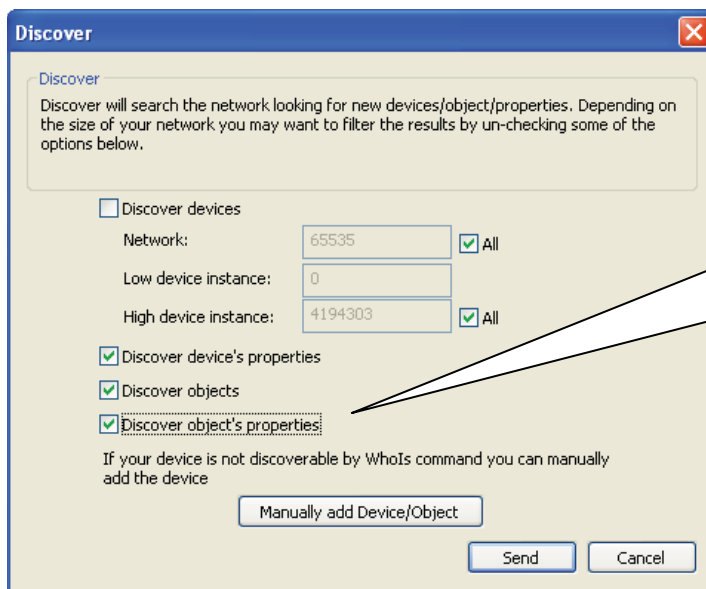
Check the 'Discover properties' box.

Click the Send button.
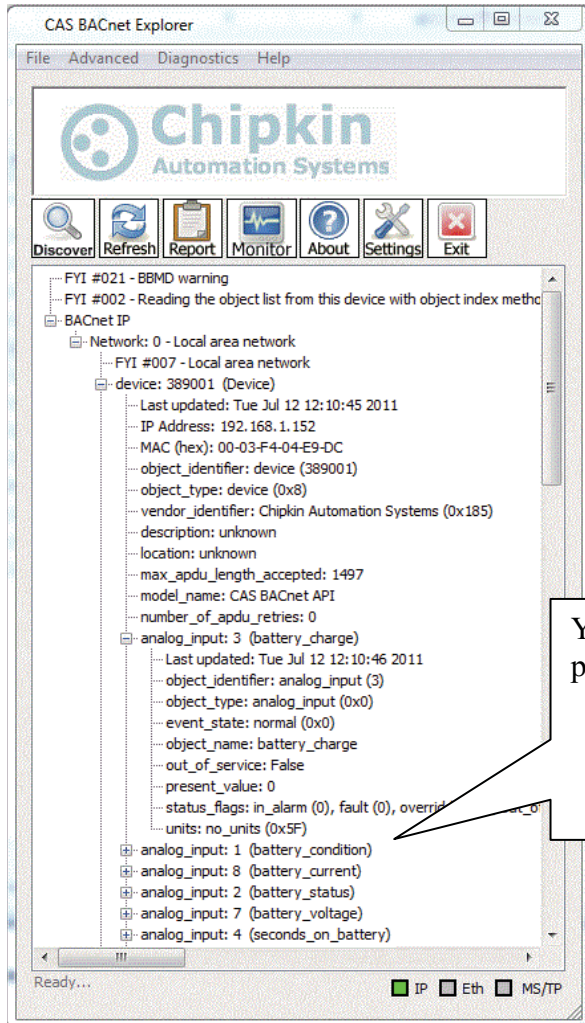
You get a list of objects with properties.

Out of Service=False means data from UPS is valid.

True=UPS data has timed out and cannot be read.

Present value is the value found in the UPS Device.

7.   Commissioning, Diagnostics and Trouble Shooting

7.1.   What to Take to Site for Commissioning

1. The gateway and other supplied components.

2. USB->232 Converter

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

3. Serial Cables

    A Null Modem cable is used to connect to the gateway diagnostic port. Take one with you. A Null Modem cable is used to connect the Mitsubishi UPS Device to the Gateway.

4. Laptop

5. Gateway IP Address Allocation Tool

    Download from
    http://www.chipkin.com/articles/cas-gateway-ip-address-tool

6. Wireshark packet sniffer software – free download

    http://www.wireshark.org/download.html

7. 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

8. Serial Mini Tester

9. 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.

10. 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

female shown
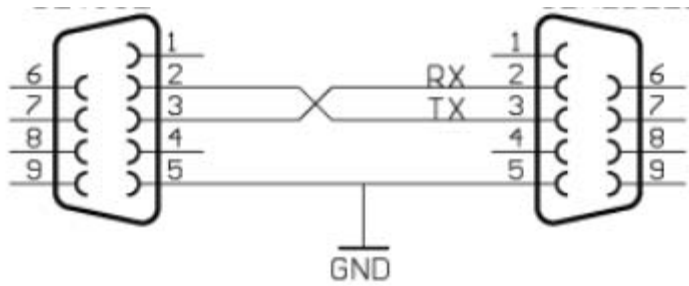
11. Gender Benders

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

12. Ethernet Patch cables

13. 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. Gateway Status

Browse to http://192.168.1.113/status and you will be the values of data, data age and data quality information.

The "data age" is now long it has been in seconds since the data was last updated. This value should be less then ~10 as it only takes 1-2 sec to poll every point on the Mitsubishi UPS device. The status is based off the data age, when the data age reaches [Mitsubishi UPS data timeout] {default: 120 sec} the status will change to "BAD" and be highlighted in red.

You must manually refresh this page to get the updated values.

7.3. Gateway Diagnostics

Power Led: Green Solid = Normal Condition.

RJ45 LED: Green to show link.

7.4. Debug log.

The debug messages are sent on UDP port 65534 to the broadcast IP address: {255.255.255.255} as plain ASCII text. You can use "logview4net" tool to view and recorded the debug messages as they are sent from the device.
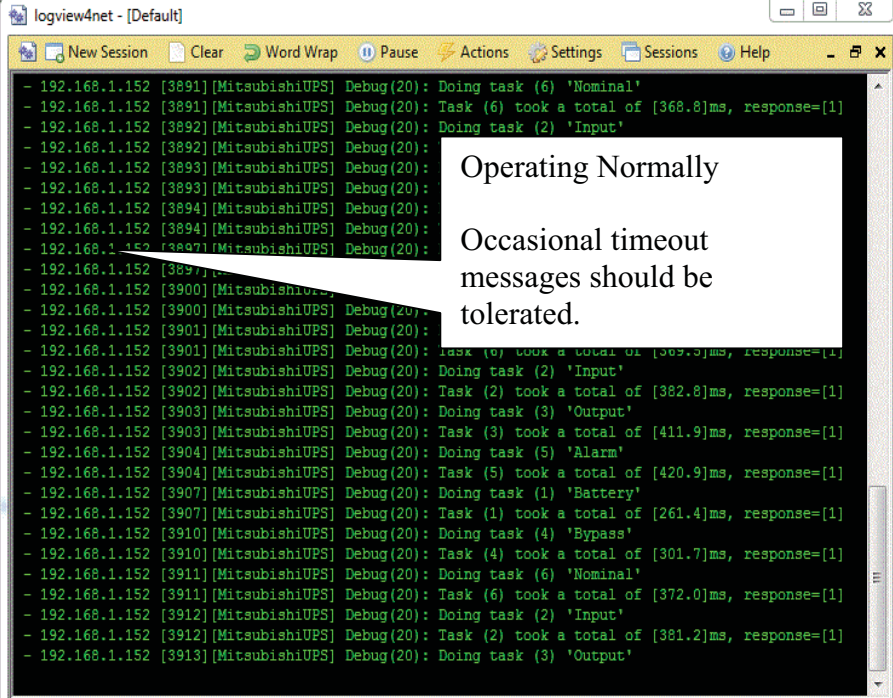
Logview4net
Free and open source tool built to viewing and monitoring logs. It works with many different file formats and protocols including UDP. This tool can be download for "free" from the publishers website http://logview4net.com/

Set IP Address
Port=65534 and
Encoding=US-ascii

Click Done
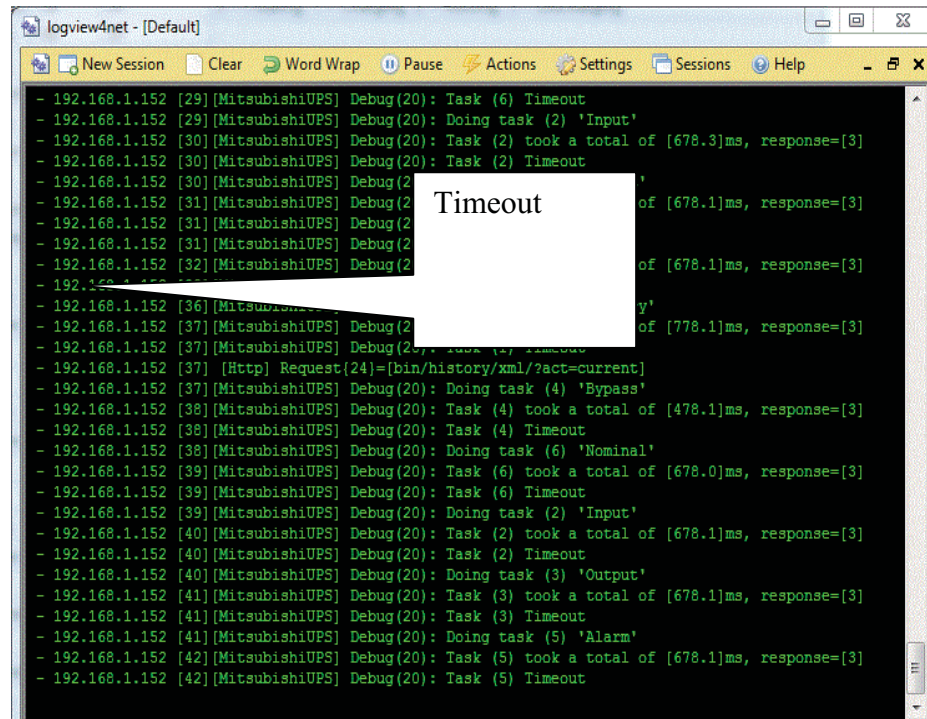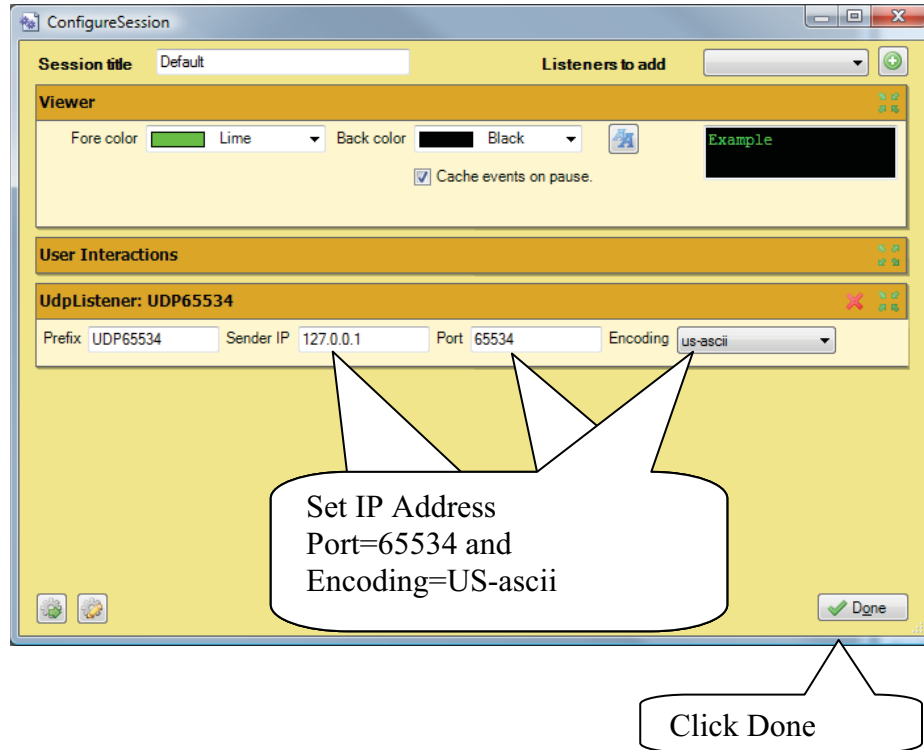
Abnormal operation. No communication with device. Perform Mitsubishi UPS Connection Diagnostics.

Normal Operation.

7.5.   Mitsubishi UPS Connection

Use a mini tester to check the serial ports.

Connect the cable to the Mitsubishi UPS device only – RD should be green. If it isn't this means the cable to the Mitsubishi UPS device is wrong or the port isn't working.

Connect the cable to the gateway only – TD should be green. If it isn't this means the cable to the gateway is wrong or the port isn't working.

During normal operation RD will flicker green/red

7.6.   Another Method for Changing the IP Address - DHCP

This device supports DHCP and DHCP is enabled.
When shipped the device
> IP = 192.168.1.x
> Mask = 255.255.255.0
> Gateway = 192.168.1.1

If you simply want to change the IP address then use the simpler method provided in section 3.7 Change Configuration Settings.
A tool is provided to change the IP address of the gateway. The tool can be downloaded from:
http://www.chipkin.com/articles/cas-gateway-ip-address-tool

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.
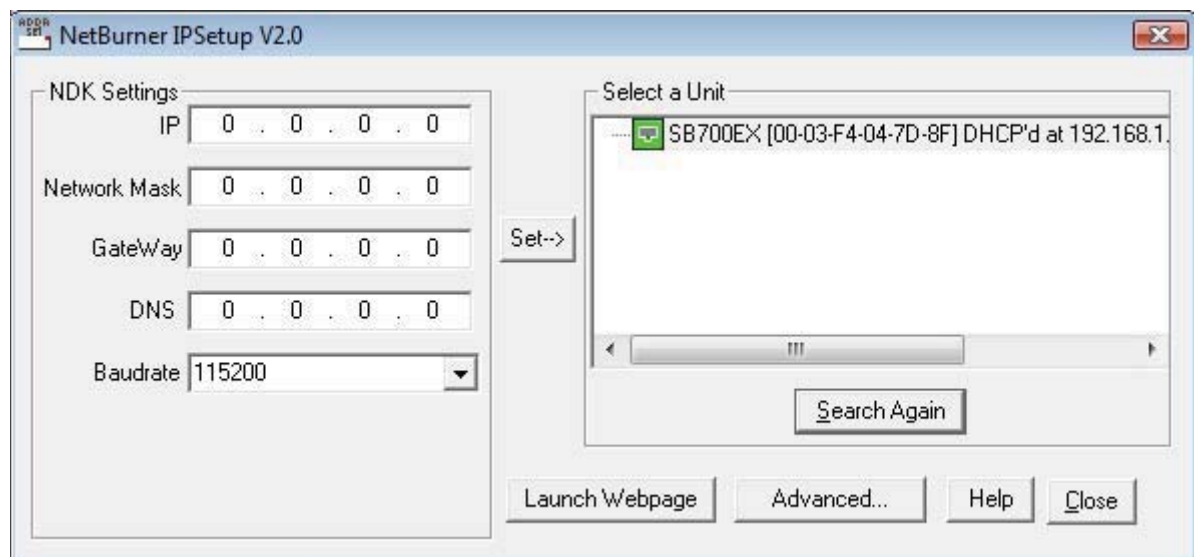
To change the IP address complete the Fields and click the 'Set' button.

7.7.   Discovering the Gateway

Use the tool provided to change the IP address to discover the gateway and learn what its pre-allocated IP address is. See section 7.6 Another Method for Changing the IP Address

7.8.   Downloading New Firmware

If you are sent new firmware you will be provided with specific instructions. These are generic – i.e. folder and file names may be different.

A tool is provided. It can be downloaded from
http://www.chipkin.com/articles/cas-gateway-firmware-download-tool

Screen Shot from the Firmware update tool.
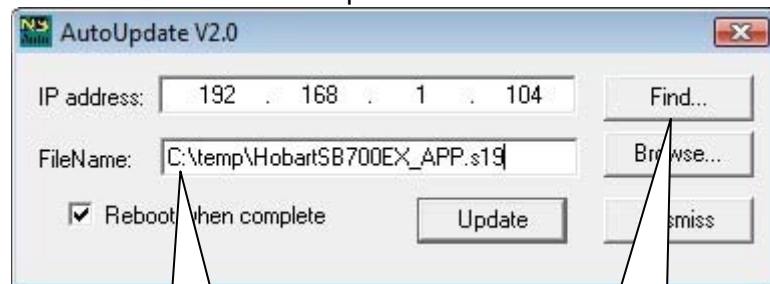
File name and path may change. You will be provided with specific instructions.

Click to find a gateway (discover)

8. **Specifications**

- **UL and ULc approved**
- 10/100BaseT with RJ-45 connector
- 1x RS232 Port
- 1x RS485 Port (Different Models have additional ports)
- 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

Revision History

Date	Resp	Format	Driver Ver.	Doc. Rev.	Comment
12 Jul 2011	ACF		1.00	0	Document Created
13 Jul 2011	PMC			1	Updated connection diagrams.