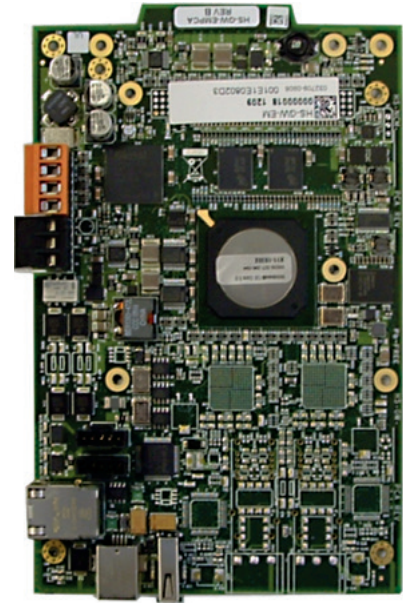# BACnet Gateway

The BACnet protocol is a Standard (Ansi/Ashrae 135-2004). With the Gateway Interface, devices on Vigilon fire alarm control panels are represented as BACnet objects to the BACnet client. The user subscribes to Event Notification objects from the FACP as required and the BACnet device receives events from objects on the FACP as a result of the subscription.

With the VIG-BNG-RW the BACnet client can also write to certain objects on the FACP.

The BACnet Gateway can be connected to a standalone EN54 FACP using an S4-34440-12 Interface or it can be connected to an EN54 Vigilon network via a VIG-NET-NODE. Each BACnet Gateway can support a maximum of 15 FACP or 15000 objects. Multiple Gateways can be used to interface with larger networks.

Description

The BACnet Gateway provides an interface between the EN54 Vigilon fire panel network using the BACnet/IP communication protocol.

KEY FEATURES

- Compatible with Vigilon Plus and Compact Plus range of panels
- PC programming using the BACnet Import generator tool

- Configurable selection of certain FACP objects reducing object count
- Auto discover or data file import of all objects on FACP`s

- Support for Life Safety operations

- With RW version, support for Enablement/ Disablement of Zones, Devices and Command Builds , Changing states of Sensors and On/Off control of Command Builds

- The BACnet Gateway can act as a foreign device when communicating with a third-party BBMD (BACnet Broadcast Management Device)

BACnet Gateway Technical Specifications

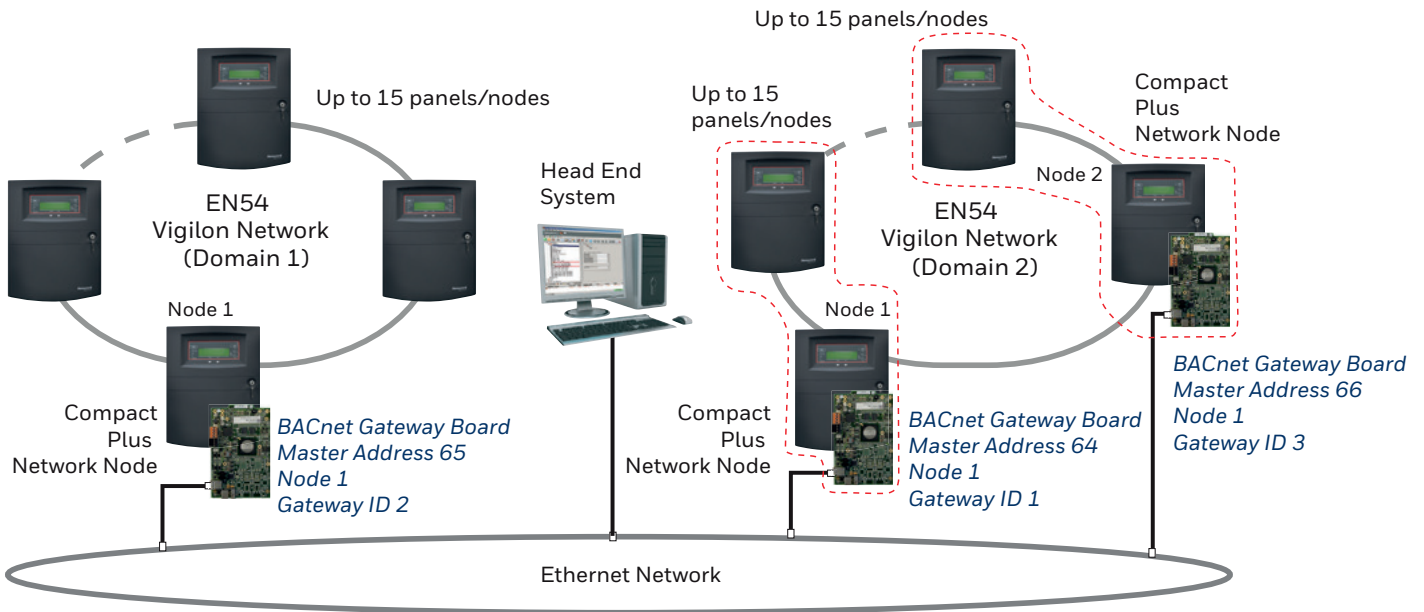| SPECIFICATION	
POWER REQUIREMENTS	24V DC @ 270mA nominal and supervised battery back up
OPERATING TEMPERATURE	32ºF to 120ºF (0ºC to 49ºC) 93% humidity non condensing at 30ºC
MIN FACP SOFTWARE REQUIREMENTS	MCC 4.41, NC 4.07, IOC 4.12

Connections

- The BACnet Gateway is connected to the Vigilon Network using an RS232 connection to port 1 of a VIG-NET-NODE having address 1. The PCB assembly is fitted in Loop Card 1 Slot.

- The BACnet Gateway is connected to a Standalone FACP using an RS232 connection to a VIG-IOC-DOM. The assembly is fitted on the din rail of an S4-34440-12 mains powered interface using a VIG-BNG-DINKIT.

- The BACnet Gateway is connected to the BACnet client via a standard RJ45 Ethernet connector.

PIC Statement/BACnet Information

The VIG-BNG and VIG-BNG-RW PIC Statement along with an event and instance listing for all FACP objects is available on request. For information on the BACnet protocol see www.bacnet.org

System Architecture

PC (BACnet IP Client) > Ethernet > VIG-BNG or VIG-BNG-RW > FACP (VIG-NET-NODE).

Product Information

The VIG-BNG and VIG-BNG-RW includes everything to fit inside and connect to a VIG-NET-NODE (Ethernet cable not included).

- Gateway PCB
- PCB Carrier
- Mounting Pillars
- 500mA Fuse
- 24v DC supply cable
- RS232 cable (NUP to open wire)

BACnet Gateway Technical Specifications

Conforms to BACnet Standard Annex J for IP and supports the following:

DEVICES AVAILABLE	BACnet OBJECT
PANEL	**DEVICE**
LOOP CARD	Multi State Output
SMS SENSOR/MCP	Life Safety Point
S-QUAD SENSOR/MCP	Life Safety Point
MONITORED LINE IP	Multi State Input
INTERFACE UNIT	Multi State Input/ Multi State Output
PANEL ZONES (1-128)	Life Safety Zones (all Life Safety points are associated to Life Safety Zone)
SECTOR	Multi State Output
COMMAND BUILDS (RW VERSION)	Binary Value
BATTERY, CHARGER AND PSU	Multi State Value
AUXILIARY RELAYS	Multi State Value
MASTER ALARMS	Multi State Value
MONITORED PANEL IP (COMPACT PLUS PANEL)	Multi State Value
COMMAND	**LIFE SAFETY OPERATION / WRITE COMMANDS**
SILENCE SOUNDERS	Silence
MUTE BUZZER	Silence Audible
EVACUATE	UnSilence
RESET SYSTEM	Reset
DISABLE (RW VERSION)	Out of service
C BUILD ON/OFF (RW VERSION)	Present Value
DEVICE SENSITIVITY (RW VERSION)	Setting

ORDER CODES	
VIG-BNG	BACnet Gateway Assembly for Vigilon Plus & Compact Plus
VIG-BNG-RW	BACnet Gateway Assembly for Vigilon Plus & Compact Plus with Controls & Command Builds
VIG-BNG-DINKIT	BACnet Gateway Din Rail Mounting Kit for Mains powered interfaces S4-344402/12

Content subject to change
without notice.

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Honeywell
G E N T

Installation and Configuration
Vigilon BACnet Gateway
(VIG-BNG & VIG-BNG-RW)
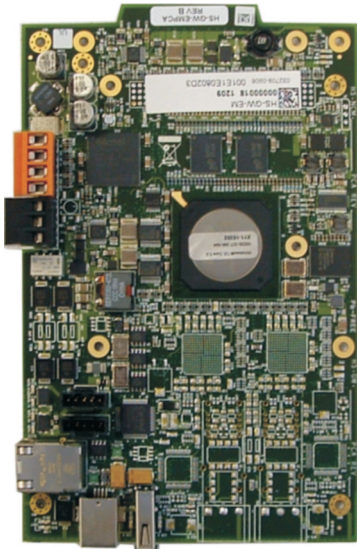
GENT
by Honeywell

The *Vigilon BACnet Gateway (VIG-BNG & VIG-BNG-RW#)* provides an interface between a computer network and GENT EN54 Vigilon fire detection and alarm system, using BACnet communication protocol.

General Data

Supports	Up to 15 GENT EN54 Vigilon panels/nodes in a network with up to 15000 object counts, ie loop devices
Conforms	BACnet standard Annex J for IP and support Device objects, Life Safety Points/Zones and Multistate inputs/outputs, Multistate values#
Power	24Vdc @ 360mA
Operating temperature	0°C to 49°C 93% humidity non-condensing at 30°C

\# Binary values on RW version only for Command build
BACnet protocol: see www.bacnet.org (Standard 135-2004)
GENT protocol: Vigilon 3217 protocol

The Vigilon BACnet Gateway kit consists of:

① 1 x BACnet Gateway Board

② 4 x Board Spacers (for BACnet Board)

③ 1 x Cable assembly RS232

④ 1 x Board Carrier

⑤ 2 x Board Spacers (for Board Carrier)

⑥ 1 x 1A fuse

⑦ 1 x Surge Protector for RJ45

⑧ 1 x Spare parts

⑨ 1 x Red and black wires for power supply

How to install *BACnet Gateway* kit into a Vigilon Compact Network Node

To install the kit inside a Vigilon Network node follow illustrated steps ❶ to ❹.

Up to 15 panels/nodes

EN54 Vigilon Network Domain 1

❶ Open doors

Vigilon Compact Network Node

Node 1

KEYBOARD INDICATORS AND DISPLAY

WARNING
REMOVAL OF COVER EXPOSES HIGH VOLTAGE

Master Control Board (MCB)

Power Supply Unit (PSU)

Network Card 2

CARD 2

CARD 1

❸

❷ Replace fuse

FS3 200mA

24V 0V B A TX1 RX1 TX2 RX2

PB15   PB6

FS3 1A

24V

FS3

⑥

❹

② ② ⑤ ⑤

② ②

④ Card Carrier

① BACnet Card
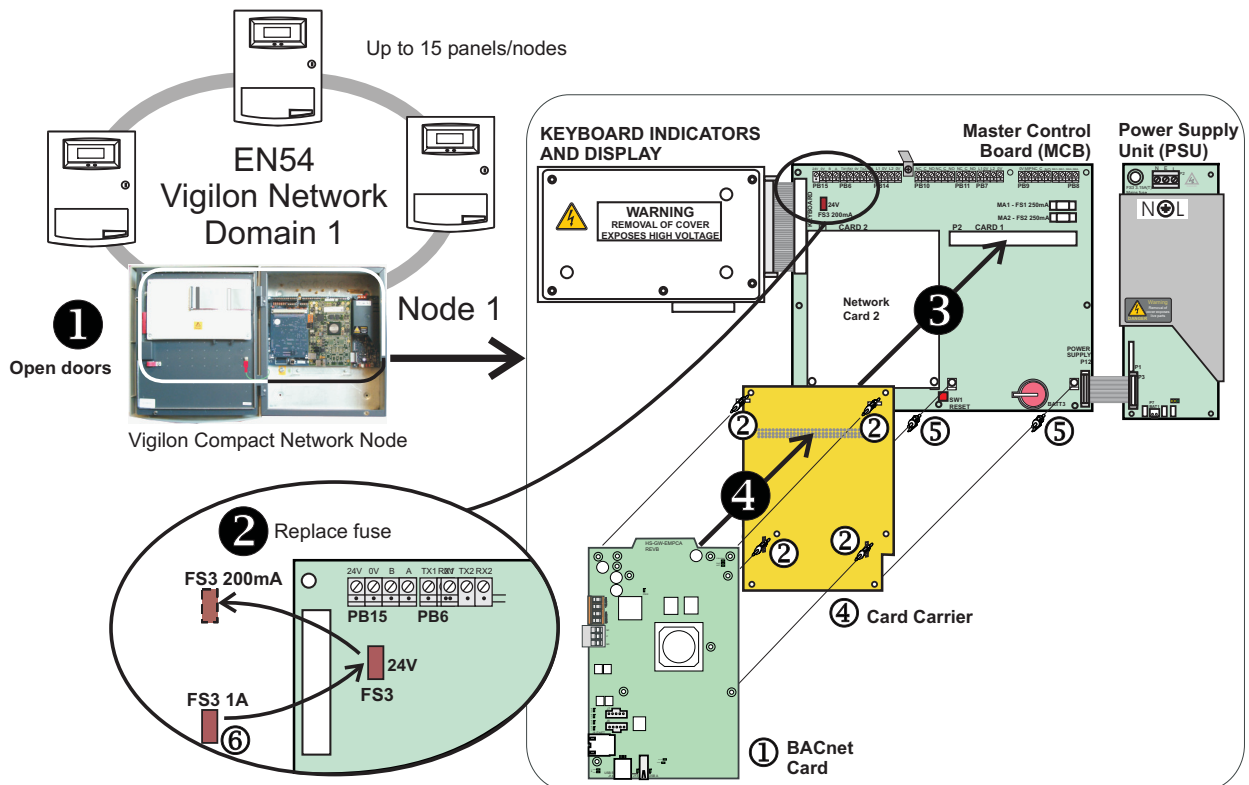
How to wire the *BACnet Gateway* board into the Vigilon Compact Network Node

The *BACnet Gateway* connects to GENT EN54 Vigilon Fire Alarm network via RS232 serial port and connects to *BACnet* front end via RJ45 Ethernet connector. To wire the *BACnet Gateway* board inside a Vigilon Network node follow illustrated steps ❺ to ❼.
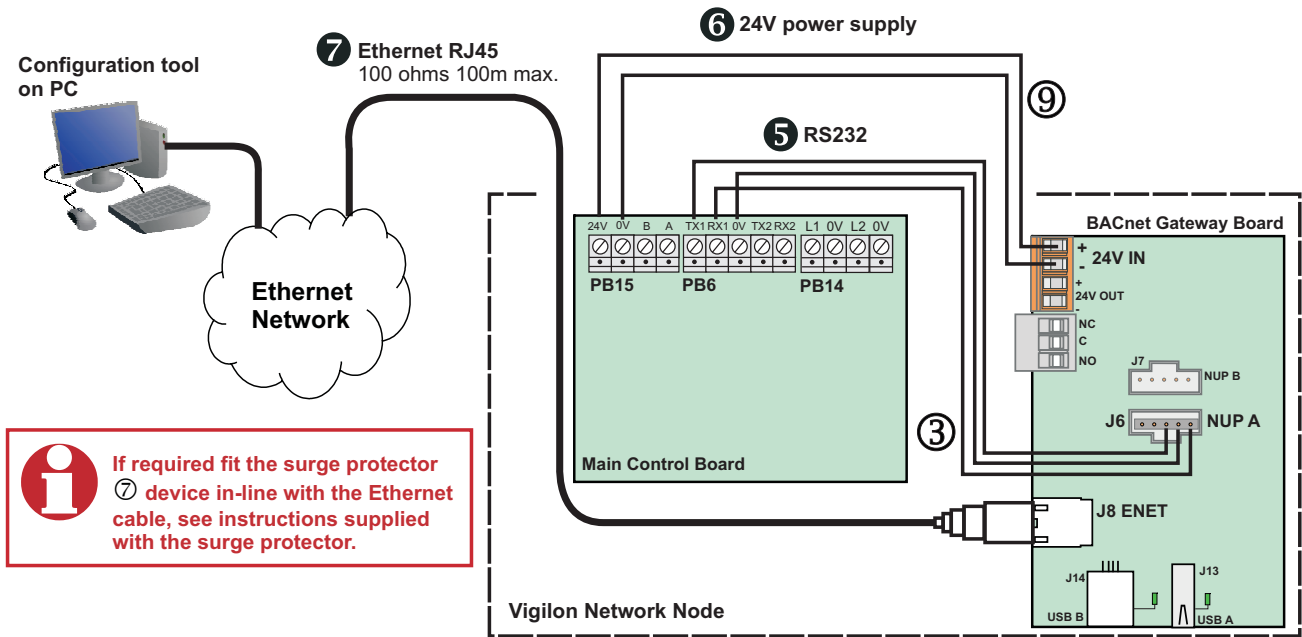
How to download the Configuration tool

A configuration tool is a programming utility used to configure the *BACnet Gateway.*

The configuration tool requires Windows® 2000, 98, NT version 4 or XP.

A *Vigilon BACnet Support file.zip* contain the Configuration tool for configuring the *BACnet Gateway* Board. The zip file can be downloaded from **GENT Expert**, website address:

http://gentexpert.co.uk/

Once the file is downloaded you will need to unzip the file and extract the files within for use.

How to configure the *GENTGW.ini* file

The *GentGW.ini file* is held in the flash of the *BACnet Gateway.* The file holds data of the Gateway BBMD device, Event Properties, Gateway IP Configuration, Gateway Properties and Time zone. The file is modified by the GENT Gateway Configuration tool and saved changes can be uploaded to the *BACnet Gateway card*.
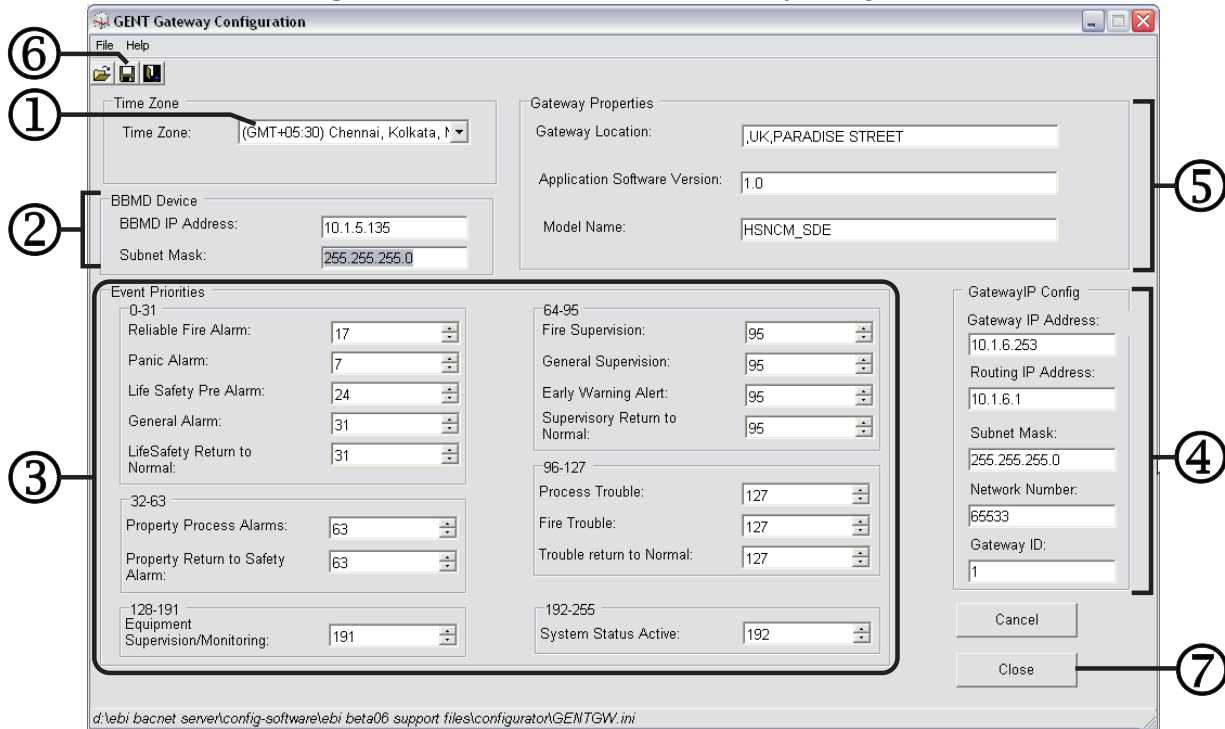
BACnet Gateway card

> 🛈   The *BACnet Gateway* **card leaves the factory initilised for the first time.**

The *BACnet Gateway* will have the following default settings:

☐ Gateway IP address: 10.1.6.253
☐ Routing IP address: 10.1.6.2
☐ Subnet mask: 255.255.255.0
☐ BBMD IP address: 10.1.6.2
☐ BBMD Subnet mask: 255.255.255.0 (Gateway registers as a foreign device)
BBMD - BACnet Broadcast Management Device.

a.   Connect the *BACnet Gateway* to a switch/hub.

b.   Change the IP address of the network adaptor on you PC to be the same as the Gateway Routing IP address (10.1.6.2).

c.   Launch the **GENT Configuration tool** and make the necessary changes to the GENTGW.ini file.

① Select the required time zone country / location.

②   Enter the require BBMD IP address and subnet mask to which *BACnet Gateway* registers as a foreign device in the same LAN to which the board is connected.

③   These default values set for *event priorities* are suitable for most applications.

④   If necessary enter the required Gateway IP configuration values to site specific requirements. The values shown are those set during initialisation.

⑤   Enter the business name in *Gateway location*.

⑥   Save the settings made to GENTGW.ini file.

The Network number and Gateway ID has to be different if two Gateways are using the same BACnet client and subnet.

d.   **Save** the changes made to the configuration.

e.   Set the IP address of the *BACnet Gateway* in the Destination IP and then **Upload** the configuration.
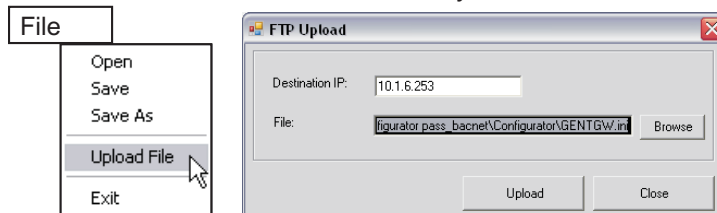
f.   Ensure the file GENTGW.ini file is in the same path and resides in the same directory as Configurator.exe.

g.   Restart the *BACnet Gateway* to ensure the configuration changes are effective.

h.   Reconfigure the network adaptor as required.

How to configure *GENTComm.ini*

The GENTComm.ini file is held in the flash of the *BACnet Gateway.* The file defines the Vigilon network and can be copied to the desktop on configuration PC from *BACnet Gateway* for editting. After the file is edited it can be saved back to the *BACnet Gateway.*

Vigilon network node settings

These procedures assume the Vigilon Network Node will have the following default settings:

☐ Domain address: 1

☐ Node address: 1

☐ RS232 Port 1

☐ Baud: 19200

How to FTP to BACnet Gateway

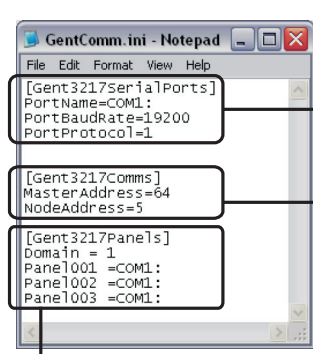The following method makes use of FTP to connect to the file storage on the *BACnet Gateway.*

It is assumed the default Gateway IP address is valid.

a. On your PC select *My Network Places* and then choose *Add Network Place.*

b. In the wizard select *'Choose another Network Location'.*

c. Enter **ftp://10.1.6.253/Flash** into the text box. (The 10.1.6.253 is the default Gateway IP address, if however this was changed then replace the with revised IP address).

d. Choose to log in as *anonymous*.

e. Give the link a name such as *Default Gateway Connection.*

f. Click *Finish*.

g. Then copy the **GENTComm.ini** file to the same directory as the GENTGW.ini file.

How to change the settings of GENTComm.ini

a. Open the **GENTComm.ini** file using *Notepad* and edit it as required with Vigilon network parameters:

① SERIAL PORT
COM 1 is NUP A on Gateway
19200 is the Baud rate value set at the Network node for RS232 to communicate with the Gateway.

Communication protocol is:
Full Duplex : **1** - for EN Vigilon network)

② COMMS
The *node address* of the Vigilon Compact Network node is usually **1.** With a BACnet Gateway it must be a value less than 64.

Master Address must be a value less than 255

③ PANELS
Enter the *Domain address* of the Vigilon network which is usually **1**.
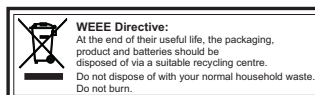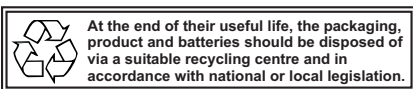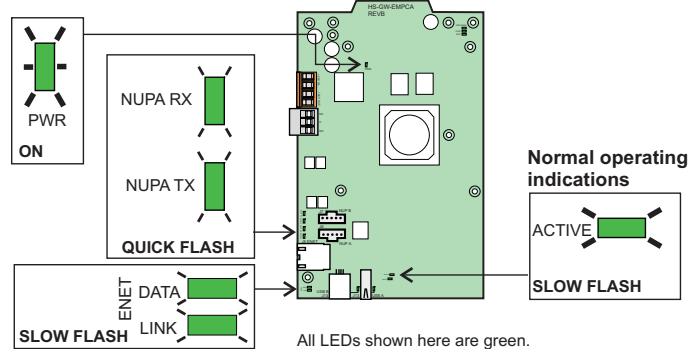
All the panels in the domain must be listed here, with each entry made in the form:
    Panel<Node Address> = <COM Port>
The *Node address* is the address set at each panel / node which uses COM1, which is NUPA on BACnet Gateway.

b. Copy the GENTComm.ini file back into the Flash of the *BACnet Gateway.*
As an alternative run the configuration tool ensuring Destination IP is correct and then from the *File* menu select the *Upload file* option and browse and select the GENTComm.ini file and then upload the file.
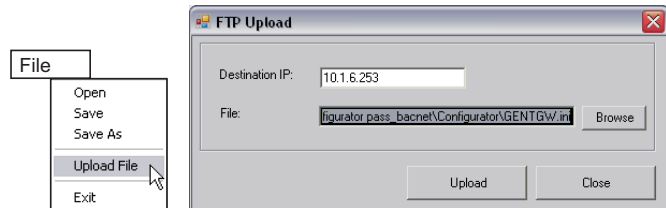
c. Restart the *BACnet Gateway* and ensure normal LED indications are given at the card.

All LEDs shown here are green.