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Connect without limits

Actisense Toolkit Basic User Guide

SAFER JOURNEYS THROUGH BETTER DATA

Specialists in marine networking (NMEA) technology, intelligent sensors & gateways. Renowned for quality, features & reliability

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Overview

Actisense Toolkit has been developed as a free to download, powerful software solution for configuration and updating of Actisense products. On top of this, the software also has a number of other capabilities;

- View a full list of the NMEA 2000 devices connected to the NMEA 2000 network and their individual properties*
- Change the device and system instances of NMEA 2000 devices*
- Source address control of Actisense products to increase / decrease priority of the device on the network*
- Show all IP Devices connected to the same network
- Logging of all NMEA 2000 data*

The Toolkit software allows Actisense NGT-1 owners to view NMEA 2000 device information directly from the network, helping users to easily identify potential problems. For viewing live NMEA 2000 or NMEA 0183 data we recommend our free NMEA Reader software, although this functionality will be added to Toolkit in future.

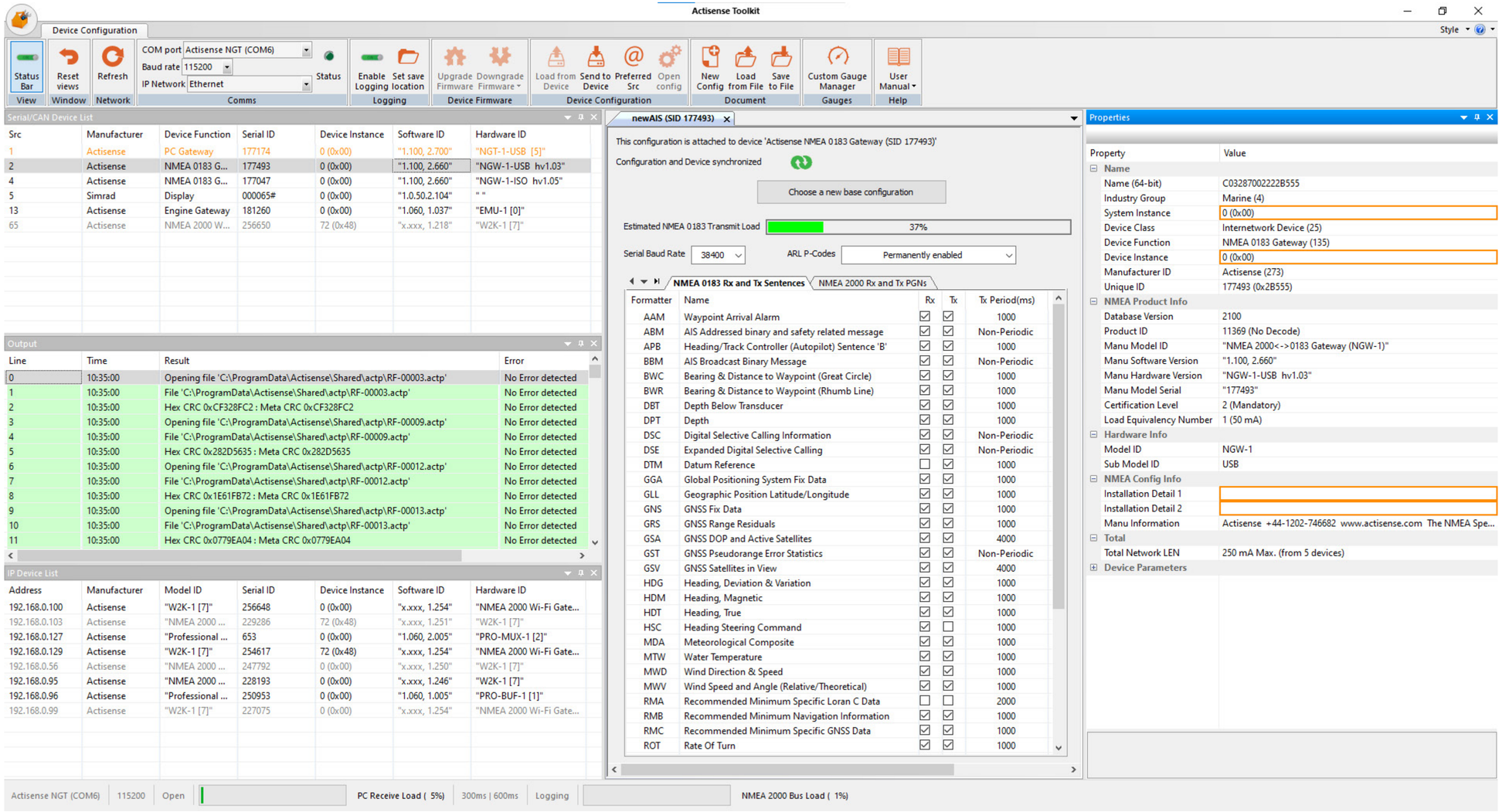
The remote connection to Actisense products, like the EMU-1, across the NMEA 2000 network from Toolkit allows the user to set the parameters for their specific gauges, alarms and RPM information. Product firmware for the EMU-1, PRO-MUX and PRO-BUF can also be updated using Toolkit.

A computer with Windows installed is needed for using Toolkit. If using Mac or Linux, a Windows emulator (like WINE) will need to be installed to use Toolkit.

* An Actisense NGT-1 is required

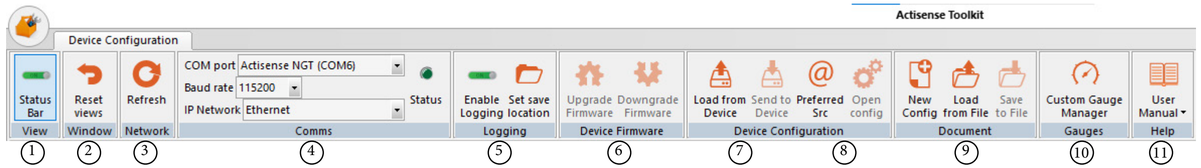
Full Screen

Click the relevant section on the image below to navigate to the corresponding section



Top Ribbon Menu options / Bottom Ribbon

Top Ribbon Menu



1. Status Bar: Enables / Disables the Bottom Ribbon Menu (Status Bar)

2. Reset Views: Resets windows to default size and position

3. Refresh: Refreshes the network device list. Used when a device is connected and doesn't show up straight away

4. Comms: COM Port, Baud Rate and IP Network are selected here. COM Port and Baud Rate are individually explained on this page.

5. Logging + Save Location: Logging will record data, and the save location is where the user can define the directory that the log files are saved to

6. Device Firmware: Upgrade your device to the latest firmware / Rollback your firmware to a previous version (not always possible)

7. Device Configuration: Pull a configuration from a device, or send a custom made configuration to the device.

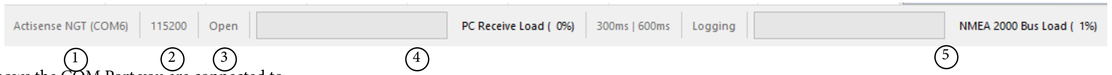
8. Device Configuration cont.: Preferred source allows you to change the source address of a device via the NGT-1 (Not possible for all devices).

9. Document: New config creates a new configuration file taken from a default one. Load and Save to file allow the config files to be saved locally, ideal for duplicating configs.

10. Gauges: Custom Gauge Manager is used to create gauges and parameters on the EMU-1 where your sender/gauge pairing is not contained within the large default library.

11. Help: User Manuals for various products can be found here

Bottom Ribbon / Status Bar



1. Shows the COM Port you are connected to

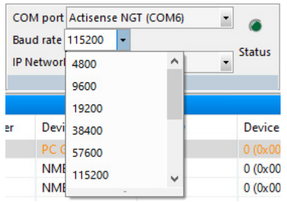
2. Current baud rate of the selected COM Port

3. Details if the COM Port is currently Open or Closed

4. PC Receive Load is the amount of bandwidth being used (as a %), by the data load going to the PC.

5. NMEA 2000 Bus Load is the amount of bandwidth being used (as a %) by the data on the network.

Baud rate setting



Baud rate is the rate at which data is transferred. e.g. 4800 baud = 4800 bits per second.

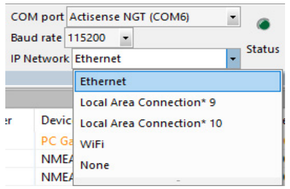
NMEA 0183 devices are typically 4800 or 38400 baud, whilst NMEA 2000 devices are usually 115200.

Baud rate on some devices can be changed. Ensure that the connected device or application is capable of operating at the defined baud rate.

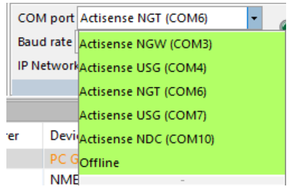
IP Networks

Some devices like our PRO Products connect via an Ethernet connection. This means that they are accessed using the IP Network selection.

Choosing the appropriate network that the devices sit on will populate the 'IP Device List' box with all NMEA devices connected.



COM Port Selection

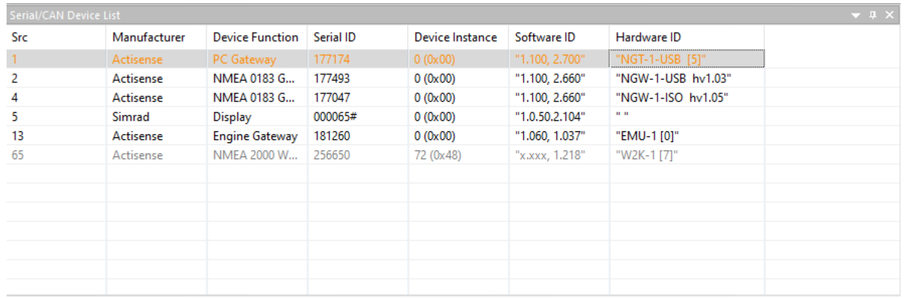


COM Port (Short for communication port) is the 'serial port' interface on computers. The COM Port is used to connect to devices plugged in (or virtual) via serial communication.

Most PCs and Laptops do not have serial ports anymore, and instead have been replaced with USB Ports. The same idea applies here where the USB is plugged in and assigned a Port No.

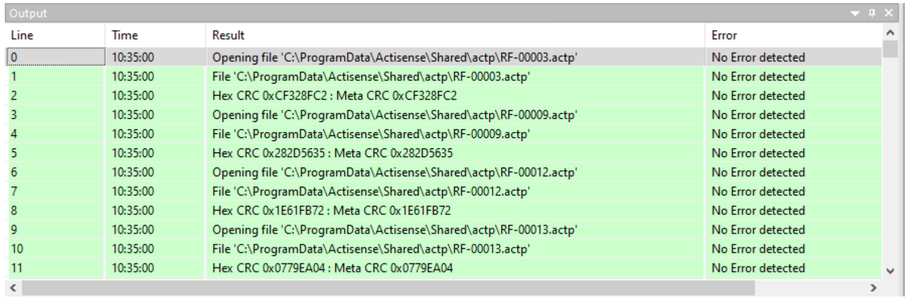
The way that the device identification works with our products, means the friendly name is displayed

Serial / CAN Device List, Output Log and IP Device List



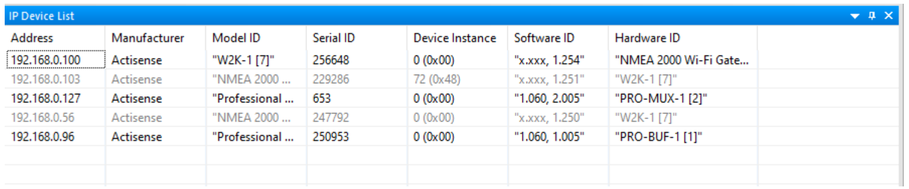
Src	Manufacturer	Device Function	Serial ID	Device Instance	Software ID	Hardware ID
1	Actisense	PC Gateway	177174	0 (0x00)	"1.100, 2.700"	"NGT-1-USB [5]"
2	Actisense	NMEA 0183 G...	177493	0 (0x00)	"1.100, 2.660"	"NGW-1-USB hv1.03"
4	Actisense	NMEA 0183 G...	177047	0 (0x00)	"1.100, 2.660"	"NGW-1-ISO hv1.05"
5	Simrad	Display	000065#	0 (0x00)	"1.0.50.2.104"	" "
13	Actisense	Engine Gateway	181260	0 (0x00)	"1.060, 1.037"	"EMU-1 [0]"
65	Actisense	NMEA 2000 W...	256650	72 (0x48)	"x.xxx, 1.218"	"W2K-1 [7]"

The Serial / CAN Device list populates with devices connected to a network / PC Directly. If using a direct serial connection to something like an NGW-1, then this will be the only device that shows. However, if using an NGT-1 NMEA 2000 to PC Gateway, the NGT-1 will transfer the data of all connected NMEA 2000 certified devices. This window populates the various data fields using the info provided by each connected device.



Line	Time	Result	Error
0	10:35:00	Opening file 'C:\ProgramData\Actisense\Shared\actp\RF-00003.actp'	No Error detected
1	10:35:00	File 'C:\ProgramData\Actisense\Shared\actp\RF-00003.actp'	No Error detected
2	10:35:00	Hex CRC 0xCF328FC2 : Meta CRC 0xCF328FC2	No Error detected
3	10:35:00	Opening file 'C:\ProgramData\Actisense\Shared\actp\RF-00009.actp'	No Error detected
4	10:35:00	File 'C:\ProgramData\Actisense\Shared\actp\RF-00009.actp'	No Error detected
5	10:35:00	Hex CRC 0x282D5635 : Meta CRC 0x282D5635	No Error detected
6	10:35:00	Opening file 'C:\ProgramData\Actisense\Shared\actp\RF-00012.actp'	No Error detected
7	10:35:00	File 'C:\ProgramData\Actisense\Shared\actp\RF-00012.actp'	No Error detected
8	10:35:00	Hex CRC 0x1E61FB72 : Meta CRC 0x1E61FB72	No Error detected
9	10:35:00	Opening file 'C:\ProgramData\Actisense\Shared\actp\RF-00013.actp'	No Error detected
10	10:35:00	File 'C:\ProgramData\Actisense\Shared\actp\RF-00013.actp'	No Error detected
11	10:35:00	Hex CRC 0x0779EA04 : Meta CRC 0x0779EA04	No Error detected

The Output window is essentially a running 'action' log within Toolkit. For the majority of users, this holds no benefit. However, it can be exported as a file and then sent to Actisense Tech Support which can be used to diagnose any potential issues you may have.



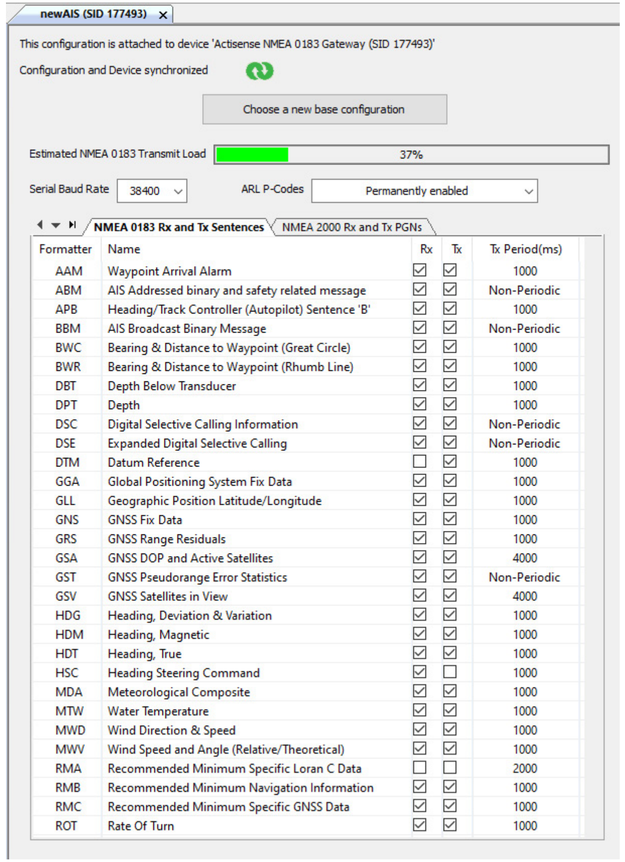
Address	Manufacturer	Model ID	Serial ID	Device Instance	Software ID	Hardware ID
192.168.0.100	Actisense	"W2K-1 [7]"	256648	0 (0x00)	"x.xxx, 1.254"	"NMEA 2000 Wi-Fi Gate...
192.168.0.103	Actisense	"NMEA 2000 ...	229286	72 (0x48)	"x.xxx, 1.251"	"W2K-1 [7]"
192.168.0.127	Actisense	"Professional ...	653	0 (0x00)	"1.060, 2.005"	"PRO-MUX-1 [2]"
192.168.0.56	Actisense	"NMEA 2000 ...	247792	0 (0x00)	"x.xxx, 1.250"	"W2K-1 [7]"
192.168.0.96	Actisense	"Professional ...	250953	0 (0x00)	"1.060, 1.005"	"PRO-BUF-1 [1]"

The IP Device List populates will all devices connected to the defined IP Network. Toolkit uses all the device info again, to populate the individual fields in the window.

Please note that the PC has to be on the same network or directly tethered with a device to populate these fields. The PC can't see IP Devices connected to a network without being on said network.

Configuration Window

NGW-1 Configuration



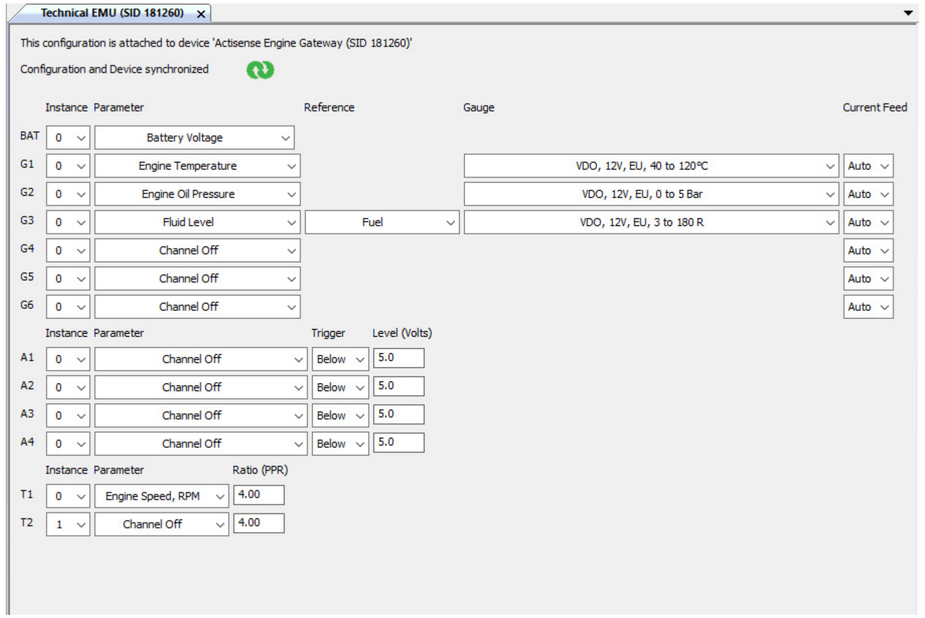
This is the NGW-1 configuration window. An existing configuration loaded from the device, or a new configuration will look similar to this.

Within this window, the baud rate, P-Code Enabling, NMEA 0183 sentences Recieved and Transmitted, and NMEA 2000 PGNs Recieved and Transmitted can all be defined.

The 'estimated' NMEA 0183 Transmit Load is also given. This highlights if the bandwidth of the NGW-1 is going to be full with the current configuration. Adjusting the baud rate to that of a higher one (i.e going from 4800 to 38400) helps with this, but it does require the recieving instrument / PC to also be at 38400 baud. This estimation is a 'worst case scenario' estimation, but it is worth taking note of.

The infinite symbol at the top indicates whether the configuration is linked to a device or not. If the icon is red then it is not loaded and synced to the NGW-1, if it is green then it is on the device. Anytime the configuration is adjusted this icon will go red as this configuration does not match the one currently on the device, meaning it has to be sent to the device again.

EMU-1 Configuration



The EMU-1 configuration window can be look complicated, but it is in fact very easy.

Each of the Gauge, Alarm and Tach Inputs are individually identified within the configuration file. This makes configuration of each input much easier (provided you know what analogue input it has connected). The Instance, Parameter and defined Gauge are all selected from the drop down menus.

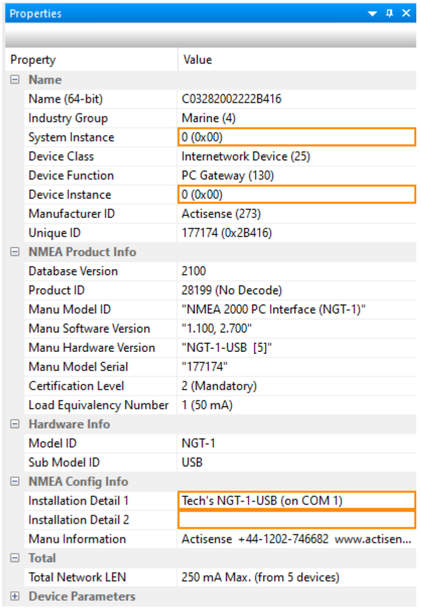
The same applies with the Alarms and Tachos except they don't have gauges, instead the Alarms have definable trigger points as a reference voltage.

For any installations which are using a gauge from the pre-defined menu, then the current feed should be left to 'Auto', which allows the EMU-1 to determine how much (if any) Current injection is required.

The infinite symbol at the top indicates whether the configuration is linked to a device or not. If the icon is red then it is not loaded and synced to the EMU-1, if it is green then it is on the device. Anytime the configuration is adjusted this icon will go red as this configuration does not match the one currently on the device, meaning it has to be sent to the device again.

Further details such as how to calculate the PPR if it's not been provided can be found in the user manual.

Properties



The properties window contains all of the device information given by each connected device. Some devices will give more than others, and some manufacturers do limit what their device reports.

You will notice the orange bordered boxes, these are the fields which are editable with Actisense products. Other manufacturers products should also support System and Device Instance changes, but we cannot guarantee this.

Again, a lot of the information here is of no use to the average user, however to an experienced technical installer or engineer trying to diagnose problems, some info in here may be very useful.