

Wireless Environmental Monitoring from NVSI®

 **EnviroPoint™ powered by accsense®**



user manual

ENVIROPOINT (LITE) OPERATORS MANUAL

revision record.

| Revision | Issue date | Nature of Amendment | Section No | Originator |
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Table 1: Revision Record

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1 OVERVIEW

1.1 Introduction

EnviroPoint is a flexible and powerful environment monitoring system that is adaptable to monitoring several variables simultaneously from multiple points around the installation site. The power of *EnviroPoint* lies in its Scalability. *EnviroPoint* can be configured to measure from one point or, depending on which variation you have purchased, from hundreds of points making it an ideal system for use in both large and small area environments. *EnviroPoint* comes in three variations to provide high quality solutions to meet the needs of a wide range of customers.

1.2 Document Description

This document is the Operators Manual written to accompany *EnviroPoint Lite*.

This Operators Manual will describe how *EnviroPoint* can be used in general operation. This manual should be read by anyone who works with *EnviroPoint* in any role.

Documents included in this package are

1. *EnviroPoint (LITE) Operators Manual*
2. *EnviroPoint (LITE) Administrators Manual*

1.3 System Requirements

EnviroPoint requires the following minimum computer specifications:

1.3.1 Hardware

- Pentium 4 3.0GHz
- 1GB RAM
- 30GB HDD for Application Installation
- 1280x1024 (256 Colour) Display
- 1 x RS232 ports
- 1 x Full height PCI Extension Slot

1.3.2 Software

| | |
|------------------------|---|
| Operating System | <ul style="list-style-type: none"> ▪ Windows 2000 Server Edition (or equivalent) with SP4 ▪ Windows XP Professional (or equivalent) with SP2 |
| Additional components* | <ul style="list-style-type: none"> ▪ Microsoft Internet explorer 6.0 SP1 ▪ Internet Information Services (IIS) 5.0 ▪ MSXML 6.0 ▪ .NET Framework 2.0 |

* *EnviroPoint has been tested using the versions stated. Later versions of these components may be compatible with EnviroPoint*

NOTE: Shaded items are not required for this variation. If you are unsure as to whether your system meets these requirements or for advice on upgrading please contact Technical Support (Section 1.5.).

1.4 **Included Components – EnviroPoint Lite**

- EnviroPoint Hardware
- EnviroPoint Software
- Accsense Gateway configuration utility

1.5 **Contacting Technical Support**

Please ensure your computer meets the minimum specifications before contacting technical support. If you are still experiencing difficulties, contact NVSI Technical Support:

NVSI Technical Support

+61 2 9809 7899 (Phone)

+61 2 9809 7499 (Fax)

support@nvs.com.au

2 OPERATION

2.1 The EnviroPoint Server application

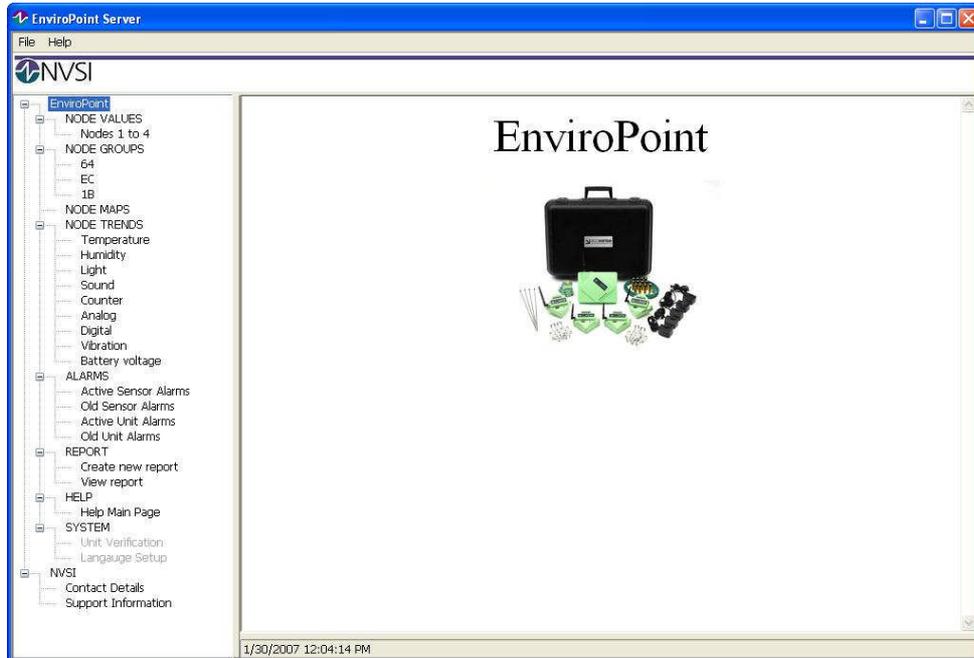


Figure 2.1: Main application screen

The main screen of the EnviroPoint Server application is designed to have the look and feel of an internet web browser. The application screen is divided vertically into a number of sections as shown in Figure No. 1.

1. Application tree structure – directory of application pages. (see section 2.1.1)
2. Application pages – provide access to the various system functions. (see section 2.2)
3. *Status bar* – displays the current system time and other status indicators to show when the system is performing background tasks such as loading data.
4. *Command bar* – provides users with a set of controls specific to the selected application page.
5. *Menu bar* – access general application commands similar to other windows applications

2.1.1 Tree Structure

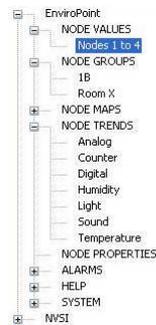


Figure 2.2: Tree structure

The tree structure provides a directory to all of the Application pages displayed on the right hand side of the divider. Users can expand or contract the structure to view the available pages in each branch. The tree structure is also used to display alarm conditions in the form of flashing icons that appear next to the appropriate branch.



Figure 2.3: Flashing alarm tree

The tree structure consists of 10 distinct branches

- Node Values
- Node Groups
- Node Maps
- Node Trends
- Alarms
- Report
- Data Export
- Help
- System
- NVSI

To expand a particular branch select the branch and press the “+” key. Alternatively, click on the “+” symbol to the left of the corresponding branch. Expanded branches will display a list of all the application pages available within

that branch. Generally all of the pages within a branch will share a common layout and display information of a similar nature. Hence a branch may be thought of as a category and a page as an item within that category.

To display an application page select the pages name in the expanded branch and the page will appear to the right of the divider.

To contract an expanded branch, click on the “-” symbol beside the expanded branch. Alternatively, select the branch and press the “-” key on the keyboard.

2.2 Application Pages

2.2.1 Node values and Node groups

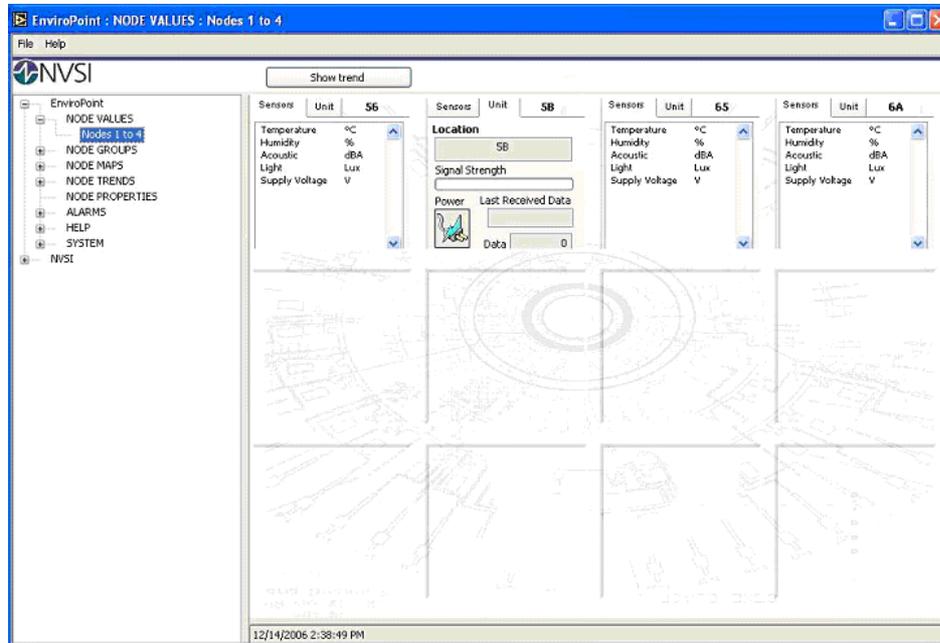


Figure 2.4: Node Values

Node Values shows the status of every node in the system arranged by index. Node Groups shows the status of every node assigned to the selected group. Nodes are shown as an array of sub-panels. The sub-panel corresponding to each node includes two tabs and an indicator.

Sensors – This tab displays a list of sensors attached to the node and the last recorded value measured by each sensor. Values are given in units appropriate to each sensor type.

Unit – This tab displays general diagnostic information about the node itself. Information shown includes

- Location - the node location
- Signal strength - relative signal strength
- Last Received Data - time of last received data
- Data - number of sensor values received in last transmission
- Power – source type, plug pack or battery

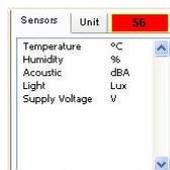


Figure 2.5: Flashing Node Alarm

The *indicator* in the top right hand corner shows the name of the node and indicates if an alarm is current for that node.

While these pages are displayed the command bar has the following functions (refer to Figure No. 4)

Show trend – This command opens a new application page displaying trend data for all nodes whose status appears on the current application page.

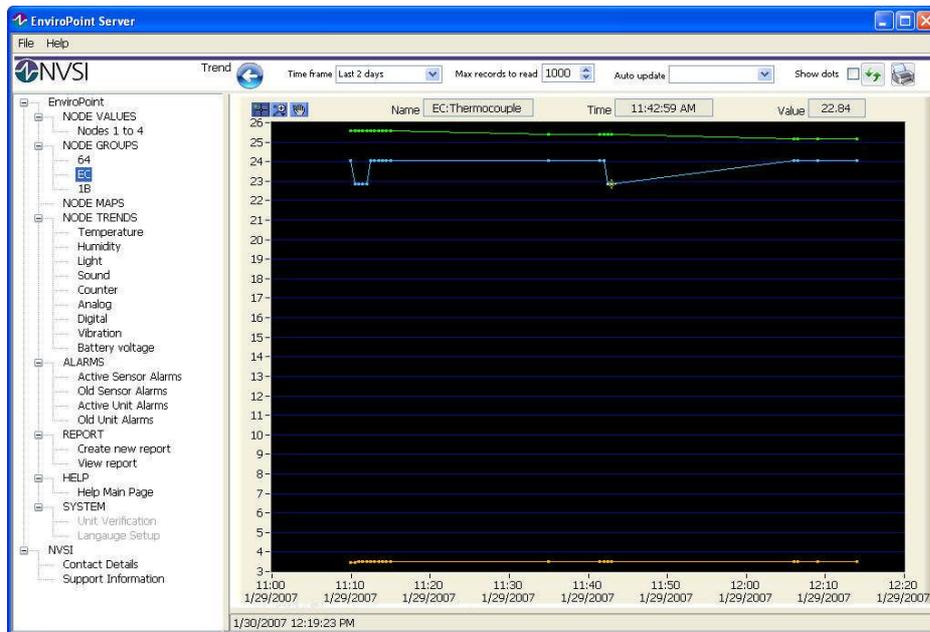


Figure 2.6: Show Trend

Features of this page shown in Figure 2. 6 are:

1. A graph of the selected trends
2. zoom and pan tools for graph
3. graph legend showing trend information
4. Selection boxes for trend types. Users can select/deselect trends for sensor types by double clicking on sensor type names.
5. Commands for this page are a subset of commands for Node Trends
 - Go Back – return to node status page
 - Time frame – determines graphing period for selected trends; options are 1 hour, 12 hours, 1 day, 2 days, 1 week, 1 month, 6 months, 1 year, all values recorded.
 - Max records to read – limit of number of points graphed for each trend

2.2.2 Node Maps

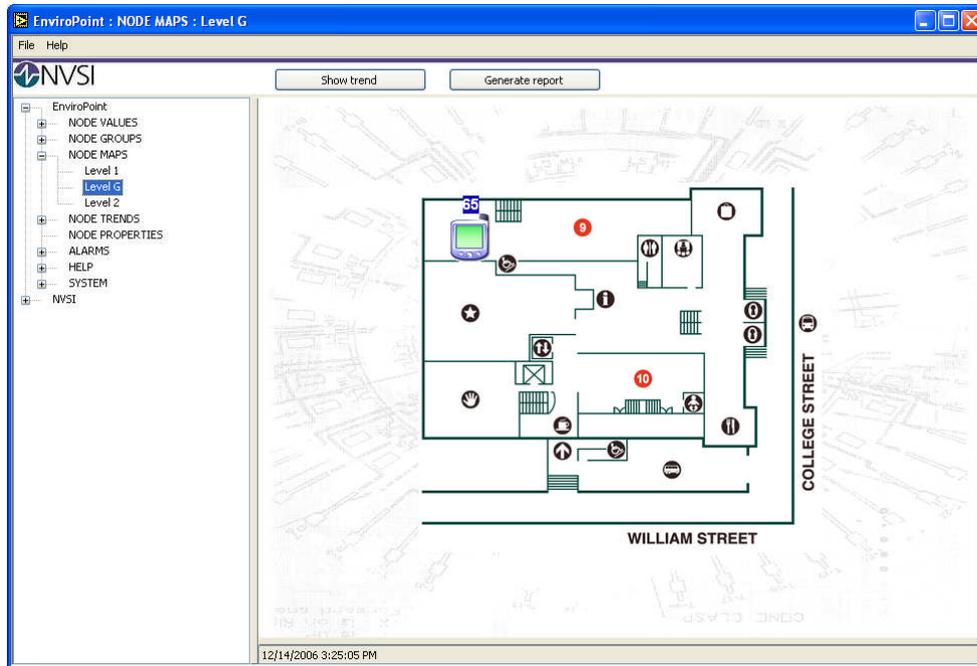


Figure 2.7: Node Map

Node maps are used to show the physical location of sensors within the site. Each map displays an image representing an area of the site and icons showing where each sensor is located in that area. Refer to the Administration manual for advice on map creation.

2.2.3 Node Trends

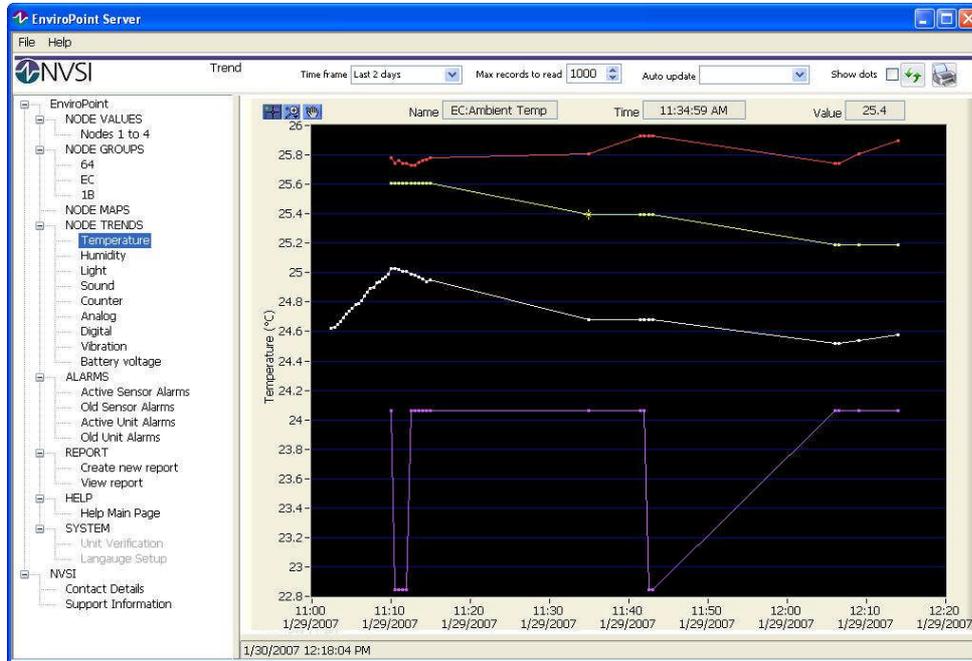


Figure 2.8: Node Trends

This page displays trend data for each of the nodes in the system grouped by sensor type. Users can view all of the trends corresponding to a particular sensor type by selecting that sensor type from the tree structure. Trends can be viewed more closely by using the zoom and pan tools at the top right corner of the graph. The X-Axis of the graph will always display time while the Y-Axis units reflect the type of sensor selected.

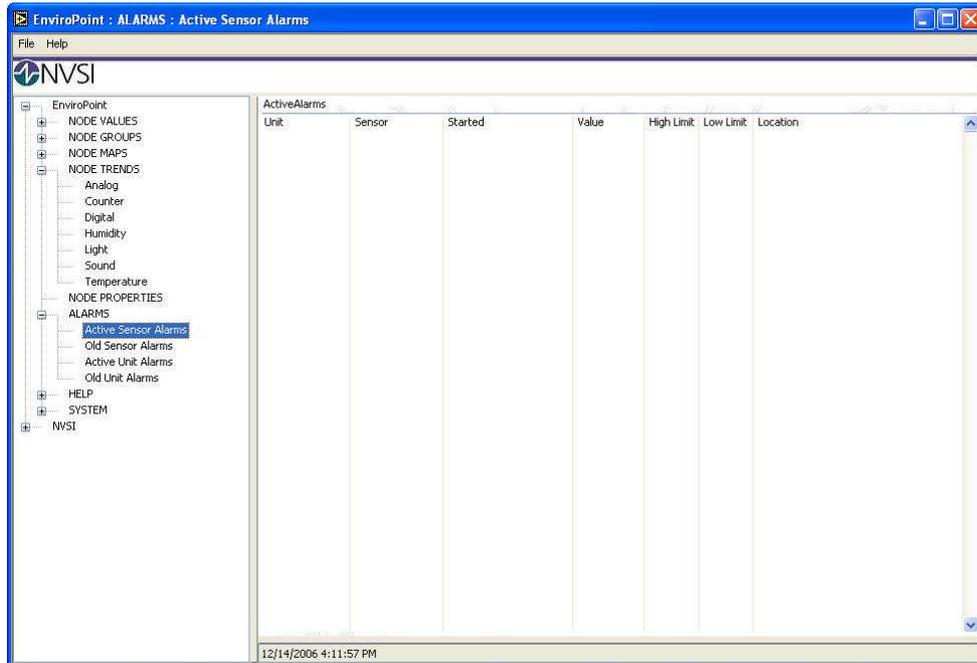
Controls in the command bar allow users to determine the data plotted for each trend on the graph.

- Time Frame - Trends can be displayed for varying time intervals. Users can select from 1 hour, 12 hours, 1 day, 2 days, 1 week, 1 month, 6 months, 1 year, all values recorded.
- Max Records to read – The maximum number of points graphed for each trend
- Auto Refresh – Users can select the graphs refresh rate. Blank indicates manual refresh mode.
- Show Point – Select this box to show each data point calculated on the graph
- Refresh – Manual Refresh button , redraws the graph.

2.2.4 Alarms

Alarms are divided into two types. Sensor alarms are activated when measured values are outside of the preset limits for that sensor (see administration manual). Unit alarms are activated when a fault occurs in a node causing it to lose communication with the network. There are four alarm application screens.

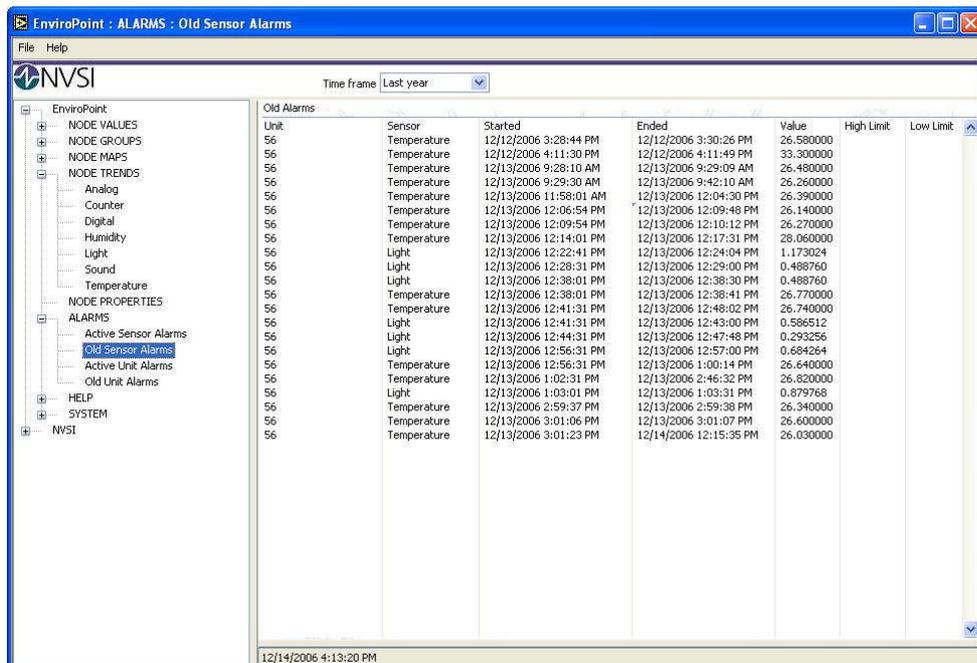
- Currently active sensor alarms



The screenshot shows the 'Active Sensor Alarms' window in the EnviroPoint software. The window title is 'EnviroPoint : ALARMS : Active Sensor Alarms'. On the left is a tree view with 'Active Sensor Alarms' selected. The main area is a table with the following columns: Unit, Sensor, Started, Value, High Limit, Low Limit, and Location. The table is currently empty. The status bar at the bottom shows the date and time: 12/14/2006 4:11:57 PM.

Figure 2.9: Current Sensor Alarms

- Old sensor alarms

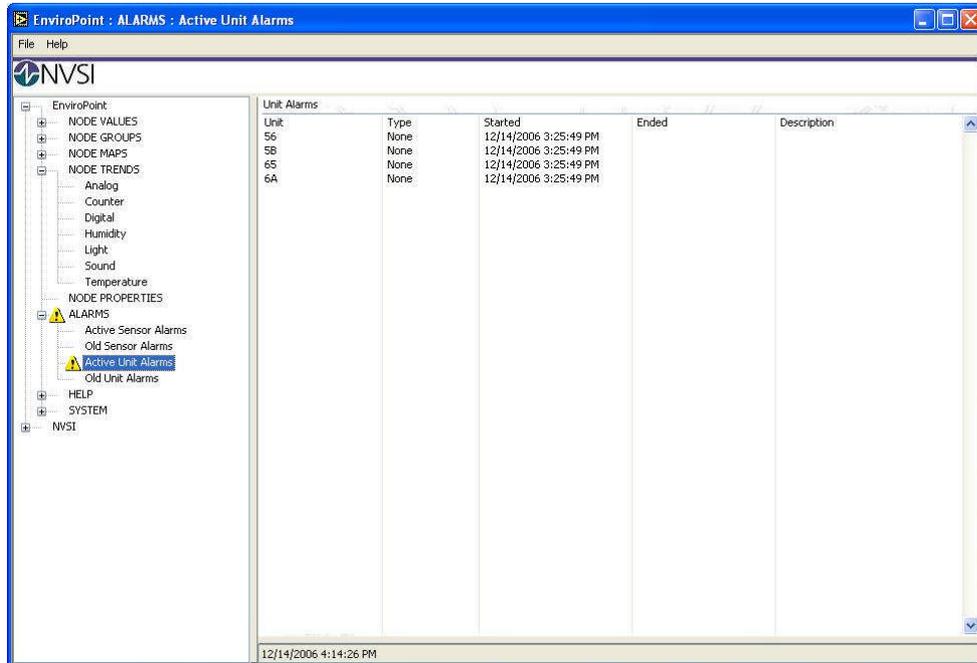


The screenshot shows the 'Old Sensor Alarms' window in the EnviroPoint software. The window title is 'EnviroPoint : ALARMS : Old Sensor Alarms'. On the left is a tree view with 'Old Sensor Alarms' selected. The main area is a table with the following columns: Unit, Sensor, Started, Ended, Value, High Limit, and Low Limit. The table contains 20 rows of data. The status bar at the bottom shows the date and time: 12/14/2006 4:13:20 PM.

| Unit | Sensor | Started | Ended | Value | High Limit | Low Limit |
|------|-------------|------------------------|------------------------|-----------|------------|-----------|
| 56 | Temperature | 12/12/2006 3:28:44 PM | 12/12/2006 3:30:26 PM | 26.580000 | | |
| 56 | Temperature | 12/12/2006 4:11:30 PM | 12/12/2006 4:11:49 PM | 33.300000 | | |
| 56 | Temperature | 12/13/2006 9:28:10 AM | 12/13/2006 9:29:09 AM | 26.480000 | | |
| 56 | Temperature | 12/13/2006 9:29:30 AM | 12/13/2006 9:42:10 AM | 26.260000 | | |
| 56 | Temperature | 12/13/2006 11:58:01 AM | 12/13/2006 12:04:30 PM | 26.390000 | | |
| 56 | Temperature | 12/13/2006 12:06:54 PM | 12/13/2006 12:09:48 PM | 26.140000 | | |
| 56 | Temperature | 12/13/2006 12:09:54 PM | 12/13/2006 12:10:12 PM | 26.270000 | | |
| 56 | Temperature | 12/13/2006 12:14:01 PM | 12/13/2006 12:17:31 PM | 28.060000 | | |
| 56 | Light | 12/13/2006 12:22:41 PM | 12/13/2006 12:24:04 PM | 1.173024 | | |
| 56 | Light | 12/13/2006 12:28:31 PM | 12/13/2006 12:29:00 PM | 0.488760 | | |
| 56 | Light | 12/13/2006 12:38:01 PM | 12/13/2006 12:38:30 PM | 0.488760 | | |
| 56 | Temperature | 12/13/2006 12:38:01 PM | 12/13/2006 12:38:41 PM | 26.770000 | | |
| 56 | Temperature | 12/13/2006 12:41:31 PM | 12/13/2006 12:48:02 PM | 26.740000 | | |
| 56 | Light | 12/13/2006 12:41:31 PM | 12/13/2006 12:43:00 PM | 0.586512 | | |
| 56 | Light | 12/13/2006 12:44:31 PM | 12/13/2006 12:47:48 PM | 0.293256 | | |
| 56 | Light | 12/13/2006 12:56:31 PM | 12/13/2006 12:57:00 PM | 0.684264 | | |
| 56 | Temperature | 12/13/2006 12:56:31 PM | 12/13/2006 1:00:14 PM | 26.640000 | | |
| 56 | Temperature | 12/13/2006 1:02:31 PM | 12/13/2006 2:46:32 PM | 26.820000 | | |
| 56 | Light | 12/13/2006 1:03:01 PM | 12/13/2006 1:03:31 PM | 0.879768 | | |
| 56 | Temperature | 12/13/2006 2:59:37 PM | 12/13/2006 2:59:38 PM | 26.340000 | | |
| 56 | Temperature | 12/13/2006 3:01:06 PM | 12/13/2006 3:01:07 PM | 26.600000 | | |
| 56 | Temperature | 12/13/2006 3:01:23 PM | 12/14/2006 12:15:35 PM | 26.030000 | | |

Figure 2.10: Old Sensor Alarms

- Currently active unit alarms

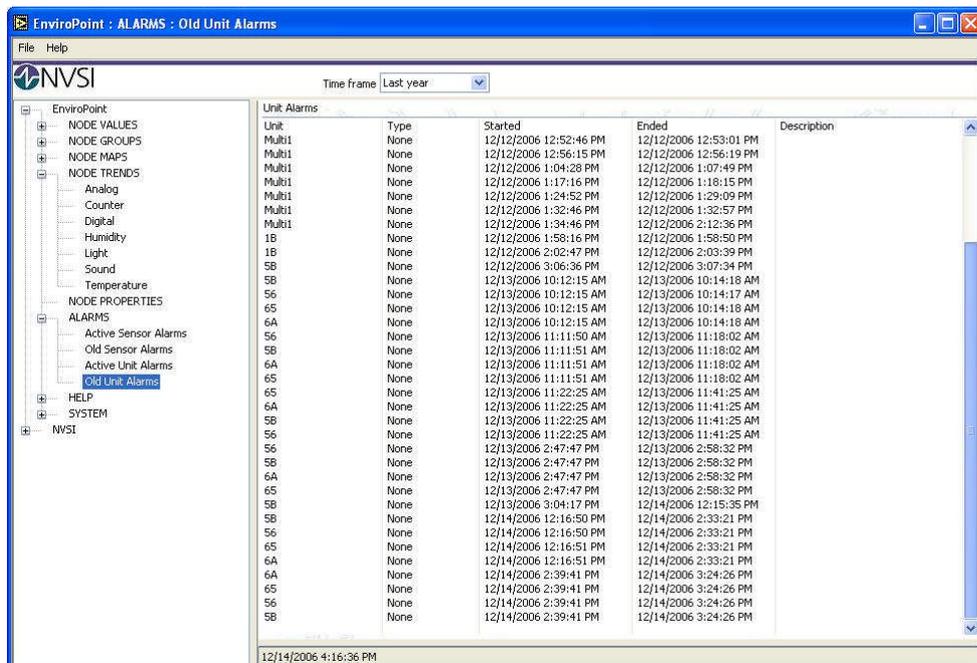


The screenshot shows the 'Active Unit Alarms' window in the EnviroPoint software. The left sidebar contains a tree view with 'Active Unit Alarms' selected. The main area displays a table with the following data:

| Unit | Type | Started | Ended | Description |
|------|------|-----------------------|-------|-------------|
| 56 | None | 12/14/2006 3:25:49 PM | | |
| 5B | None | 12/14/2006 3:25:49 PM | | |
| 65 | None | 12/14/2006 3:25:49 PM | | |
| 6A | None | 12/14/2006 3:25:49 PM | | |

Figure 2.11: Active Unit Alarms

- Old unit alarms.



The screenshot shows the 'Old Unit Alarms' window in the EnviroPoint software. The 'Time frame' is set to 'Last year'. The left sidebar shows 'Old Unit Alarms' selected. The main area displays a table with the following data:

| Unit | Type | Started | Ended | Description |
|--------|------|------------------------|------------------------|-------------|
| Multi1 | None | 12/12/2006 12:52:46 PM | 12/12/2006 12:53:01 PM | |
| Multi1 | None | 12/12/2006 12:56:15 PM | 12/12/2006 12:56:19 PM | |
| Multi1 | None | 12/12/2006 1:04:28 PM | 12/12/2006 1:07:49 PM | |
| Multi1 | None | 12/12/2006 1:17:16 PM | 12/12/2006 1:18:15 PM | |
| Multi1 | None | 12/12/2006 1:24:52 PM | 12/12/2006 1:29:09 PM | |
| Multi1 | None | 12/12/2006 1:32:46 PM | 12/12/2006 1:32:57 PM | |
| Multi1 | None | 12/12/2006 1:34:46 PM | 12/12/2006 2:12:36 PM | |
| 1B | None | 12/12/2006 1:58:16 PM | 12/12/2006 1:58:50 PM | |
| 1B | None | 12/12/2006 2:02:47 PM | 12/12/2006 2:03:39 PM | |
| 5B | None | 12/12/2006 3:06:36 PM | 12/12/2006 3:07:34 PM | |
| 5B | None | 12/13/2006 10:12:15 AM | 12/13/2006 10:14:18 AM | |
| 56 | None | 12/13/2006 10:12:15 AM | 12/13/2006 10:14:17 AM | |
| 65 | None | 12/13/2006 10:12:15 AM | 12/13/2006 10:14:18 AM | |
| 6A | None | 12/13/2006 10:12:15 AM | 12/13/2006 10:14:18 AM | |
| 56 | None | 12/13/2006 11:11:50 AM | 12/13/2006 11:18:02 AM | |
| 5B | None | 12/13/2006 11:11:51 AM | 12/13/2006 11:18:02 AM | |
| 6A | None | 12/13/2006 11:11:51 AM | 12/13/2006 11:18:02 AM | |
| 65 | None | 12/13/2006 11:11:51 AM | 12/13/2006 11:18:02 AM | |
| 65 | None | 12/13/2006 11:22:25 AM | 12/13/2006 11:41:25 AM | |
| 6A | None | 12/13/2006 11:22:25 AM | 12/13/2006 11:41:25 AM | |
| 5B | None | 12/13/2006 11:22:25 AM | 12/13/2006 11:41:25 AM | |
| 56 | None | 12/13/2006 11:22:25 AM | 12/13/2006 11:41:25 AM | |
| 56 | None | 12/13/2006 2:47:47 PM | 12/13/2006 2:58:32 PM | |
| 5B | None | 12/13/2006 2:47:47 PM | 12/13/2006 2:58:32 PM | |
| 6A | None | 12/13/2006 2:47:47 PM | 12/13/2006 2:58:32 PM | |
| 65 | None | 12/13/2006 2:47:47 PM | 12/13/2006 2:58:32 PM | |
| 5B | None | 12/13/2006 3:04:17 PM | 12/14/2006 12:15:35 PM | |
| 5B | None | 12/14/2006 12:16:50 PM | 12/14/2006 2:33:21 PM | |
| 56 | None | 12/14/2006 12:16:50 PM | 12/14/2006 2:33:21 PM | |
| 65 | None | 12/14/2006 12:16:51 PM | 12/14/2006 2:33:21 PM | |
| 6A | None | 12/14/2006 12:16:51 PM | 12/14/2006 2:33:21 PM | |
| 6A | None | 12/14/2006 2:39:41 PM | 12/14/2006 3:24:26 PM | |
| 65 | None | 12/14/2006 2:39:41 PM | 12/14/2006 3:24:26 PM | |
| 56 | None | 12/14/2006 2:39:41 PM | 12/14/2006 3:24:26 PM | |
| 5B | None | 12/14/2006 2:39:41 PM | 12/14/2006 3:24:26 PM | |

Figure 2.12: Old Unit Alarms

2.2.5 Reports

This screen allows you to view the settings for the reports set up by an administrator

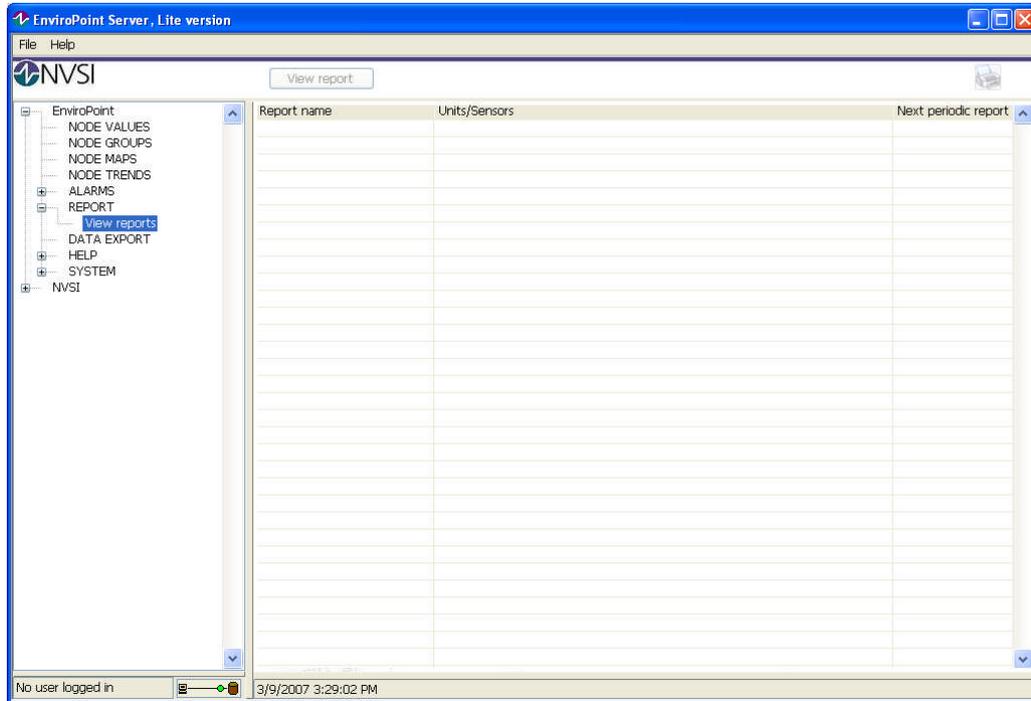


Figure 2.13: Report Screen

2.2.6 Exporting Data Records

You can export data records as an excel spreadsheet file by selecting Data Export from the tree structure. This screen allows you to select which units to include, the types of measurement, the time frame you wish to display and then press “Export Data to File”

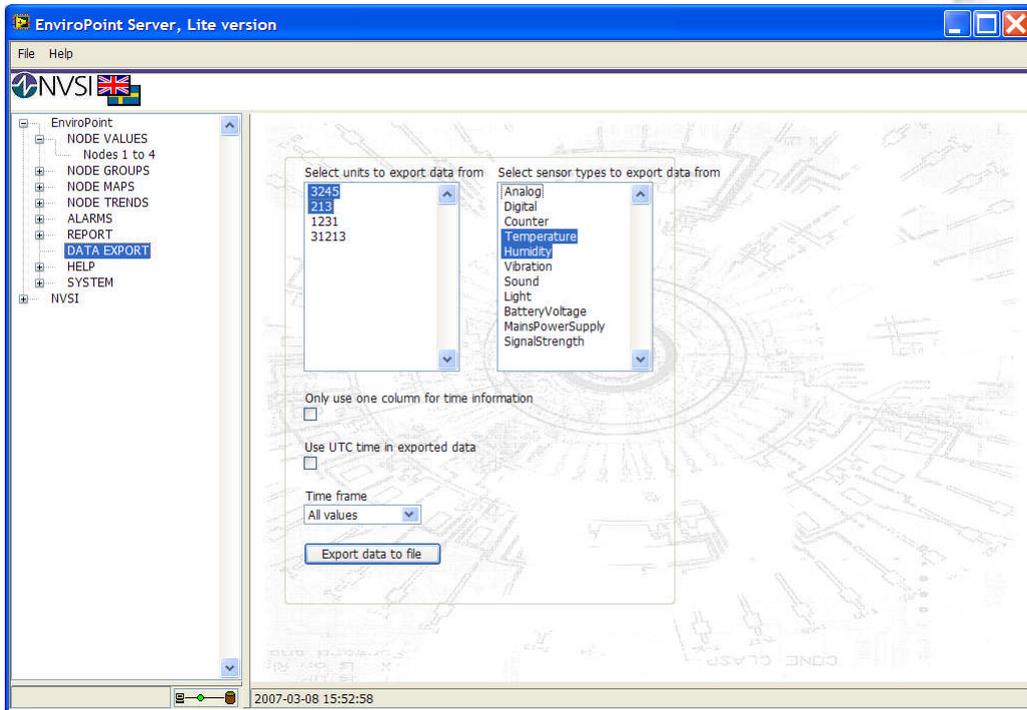


Figure 2.14: Data Exporting

An export file dialogue box will prompt you to choose how you wish to save the exported data file.

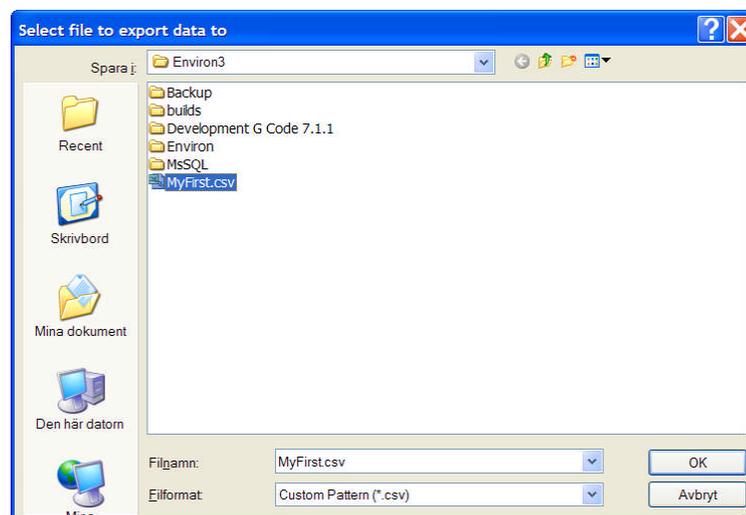
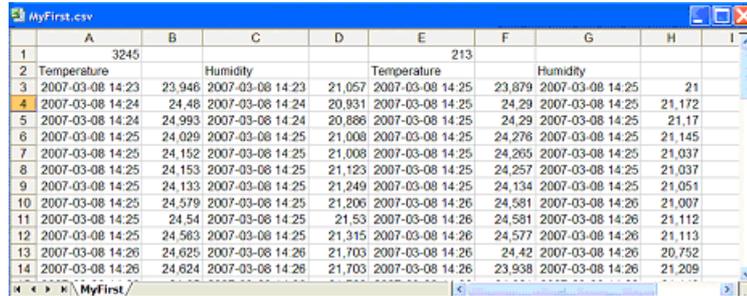


Figure 2.15: Export File dialogue

Exported Data files can be opened using a spreadsheet program such as Microsoft Excel or similar.



| | A | B | C | D | E | F | G | H | I |
|----|------------------|--------|------------------|--------|------------------|--------|------------------|--------|---|
| 1 | | 3245 | | | | 213 | | | |
| 2 | Temperature | | Humidity | | Temperature | | Humidity | | |
| 3 | 2007-03-08 14:23 | 23.946 | 2007-03-08 14:23 | 21.057 | 2007-03-08 14:25 | 23.879 | 2007-03-08 14:25 | 21.172 | |
| 4 | 2007-03-08 14:24 | 24.48 | 2007-03-08 14:24 | 20.931 | 2007-03-08 14:25 | 24.29 | 2007-03-08 14:25 | 21.17 | |
| 5 | 2007-03-08 14:24 | 24.993 | 2007-03-08 14:24 | 20.886 | 2007-03-08 14:25 | 24.29 | 2007-03-08 14:25 | 21.145 | |
| 6 | 2007-03-08 14:25 | 24.029 | 2007-03-08 14:25 | 21.008 | 2007-03-08 14:25 | 24.276 | 2007-03-08 14:25 | 21.037 | |
| 7 | 2007-03-08 14:25 | 24.152 | 2007-03-08 14:25 | 21.008 | 2007-03-08 14:25 | 24.265 | 2007-03-08 14:25 | 21.037 | |
| 8 | 2007-03-08 14:25 | 24.153 | 2007-03-08 14:25 | 21.123 | 2007-03-08 14:25 | 24.257 | 2007-03-08 14:25 | 21.037 | |
| 9 | 2007-03-08 14:25 | 24.133 | 2007-03-08 14:25 | 21.249 | 2007-03-08 14:25 | 24.134 | 2007-03-08 14:25 | 21.051 | |
| 10 | 2007-03-08 14:25 | 24.579 | 2007-03-08 14:25 | 21.206 | 2007-03-08 14:26 | 24.581 | 2007-03-08 14:26 | 21.007 | |
| 11 | 2007-03-08 14:25 | 24.54 | 2007-03-08 14:25 | 21.53 | 2007-03-08 14:26 | 24.581 | 2007-03-08 14:26 | 21.112 | |
| 12 | 2007-03-08 14:25 | 24.583 | 2007-03-08 14:25 | 21.315 | 2007-03-08 14:26 | 24.577 | 2007-03-08 14:26 | 21.113 | |
| 13 | 2007-03-08 14:26 | 24.625 | 2007-03-08 14:26 | 21.703 | 2007-03-08 14:26 | 24.42 | 2007-03-08 14:26 | 20.752 | |
| 14 | 2007-03-08 14:26 | 24.624 | 2007-03-08 14:26 | 21.703 | 2007-03-08 14:26 | 23.938 | 2007-03-08 14:26 | 21.209 | |

Figure 2.16: Excel Spreadsheet

2.2.7 Help

The Help Application Page gives access to the online electronic help documents

2.2.8 System

The System Application Pages will display general information regarding the EnviroPoint System and will also allow authorized users to modify some of these settings. This application page is intended for use by administrative personnel. Please refer to the accompanying Administrators manual for more details.

2.2.9 NVSI

This application page provides some information about the developers of this system. For technical support please contact your system administrator.