davicom

Site Monitoring Systems by Comlab

MacNet

Multi-Site Alarm Management Software

Version 5.40

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User Manual

MAN1008A

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1 INTRODUCTION

The **MacNet** management software can monitor a network of **MAC** and **MiniMAC** remote monitoring units. The software receives calls from **MAC** units spread over a large geographical area.

All information transmitted by **MAC** units is stored in a **Microsoft® Access** format database making it possible to precisely follow the changes in site data and ultimately, with the use of software like **Microsoft® Excel®**, plot the data related to specific site equipment. In addition, the **MacNet** database management software offers basic search tools.

In order to ensure the integrity of your remote monitoring network, **MacNet** includes a function allowing it to communicate at fixed intervals with each of the remote sites to confirm that **MAC** or **MiniMAC** units are functional and operating correctly.

In addition, the **MacNet** software can forward an alarm-call. A printer can also be configured so that every alarm message is printed when MacNet receives it.

2 SOFTWARE INSTALLATION

For operation, MacNet requires the following **minimum** configuration:

- Pentium Processor or higher
- Windows® 2000, XP, Vista or 7 (XP or higher recommended)
- 512 MB of RAM (1 GB for Vista and Windows 7)
- 2.1 GB[1] available hard drive space (two hard disk drives with RAID 1 arrangement recommended)
- CD ROM, Printer and UPS System recommended
- SVGA 1024 X 768 Graphic Adapter (19" Color Monitor or higher recommended)
- 2 Modems[2] (internal or external) recommended
- Davicom MAC units must be operating with Firmware version 2.42.5 or higher
- MacNet licensing depends on the number of MAC units in the network

Here are some details on the hardware requirements. If the monitor does not meet minimum specifications, installation will halt and a message will appear. MacNet also uses Windows® installed printers and if a fax program is used, it is essential that it does not use the same COM port as MacNet. If through inadvertence, another software program tries to use the MacNet COM port, a warning message will appear. Furthermore, when the MacNet software is running, it reserves the assigned port exclusively and blocks access to other programs.

Under **Windows® NT 4.0**, Service Pack 4 or higher is required to install or run MacNet.
Under **Windows® XP**, **Service Pack 1** or higher is required to install or run MacNet.

MacNet no longer supports **Windows® 95**. However, Microsoft patches make it possible to run MacNet under **Windows® 95**. Install Winsocket 2 for Windows® 95 and TAPI 2.1 provided in the **Microsoft Update** directory, located on the installation CD.

Note that Comlab does **not** offer support for MacNet used under **Windows® 95**.

Under **Windows® NT 4.0**, **Windows® 2000, Windows® XP and Windows® Vista / 7**, the user must be logged-on as **ADMINISTRATOR** to install and run MacNet.

When installing MacNet under **Windows® 95, 98** and **NT**, you might be prompted to upgrade operating system components. If you are installing MacNet from the installation CD, you will find most of the required updates in the **Microsoft Update** directory, located on the installation CD. If you are installing MacNet from the executable file you downloaded from the Davicom website, you will have to use the Microsoft website search engine to find the required updates (TCP-IP, TAPI, Internet Explorer, MDAC).

2.1 MACNET SOFTWARE INSTALLATION

Insert the MacNet CD ROM in the appropriate CD drive; Installation should automatically starts. If not, using Windows Explorer®, navigate to ..\MacNet\English\Installation\Setup.exe.
Double-click "Setup.exe" and follow the instructions.

It is possible to install the **MacComm** configuration and visualization software program from the same CD. Refer to the **MAC Remote Monitoring Control Units - Reference Manual** for details on its operation.

Warning: **Backup** and **Database** directories and their contents must be left in the **C:\Davicom\Macnet** directory or the folder chosen during the installation. Renaming or moving these directories will cause malfunction of the program.

[1] More space could be required depending on the amount of data archived.
[2] Single modem configuration is also supported, but requires the use of a Windows modem name (TAPI interface). See Appendix D on page 80 for details.

3 MACNET MAIN SCREEN DESCRIPTION

A typical MacNet with Bitmap View is shown below:

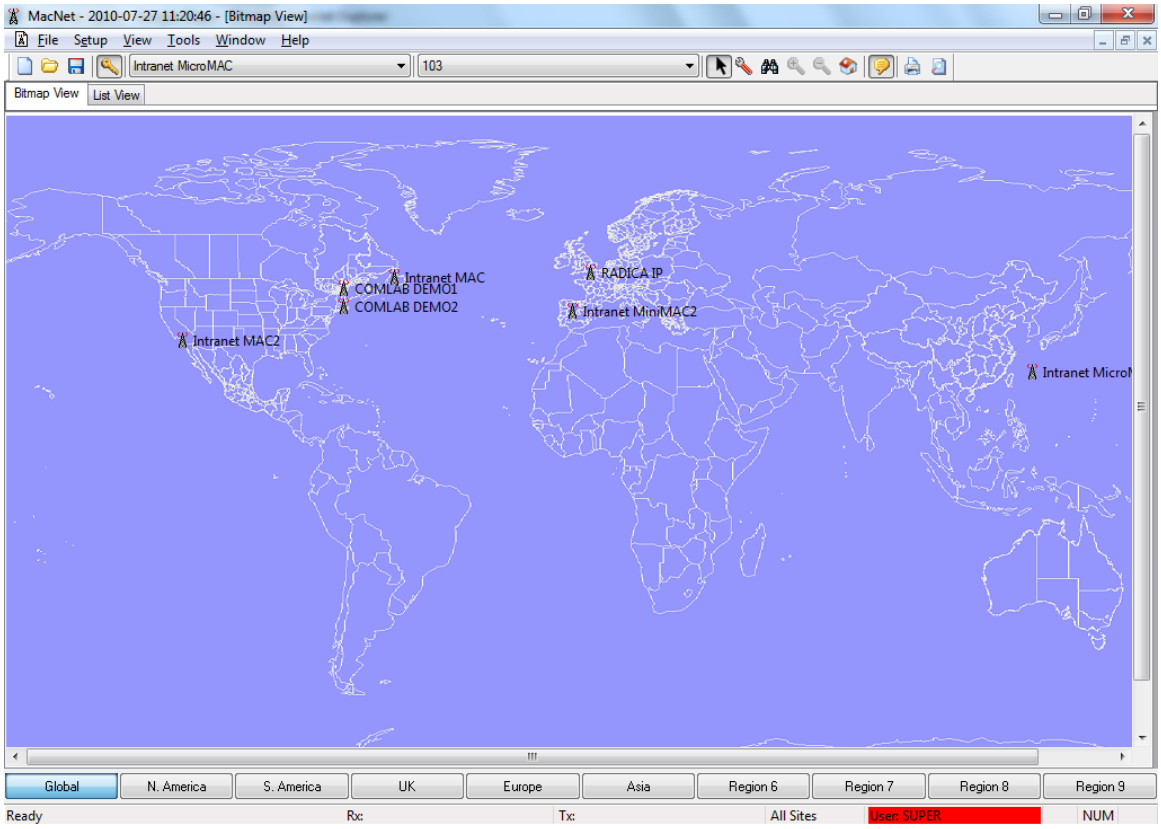

Figure 1 : MacNet Main screen

At the very top, the Windows title bar contains the name of the program along with the date and time, and at the right are the usual Minimize, Maximize and Close buttons.

The line below contains a standard Windows Menu bar. See detailed MacNet menu tree in Appendix E on page 82.

Directly below the Menu bar is the toolbar containing buttons and dropdown lists. The first series of buttons are for Workspace file operations and MacNet session logon/logoff, the next two dropdown lists can be used to select Site Name and Site ID, and the last series of buttons are for map and print operations. Refer to section 3.1 for more details.

At the bottom of the screen, a status bar indicates the present status of modems and the MacNet session. Just above, a row of function buttons allows management access to the different regions. Their operation is explained later in this manual.

The central part of the screen shows the geographical map of the area in which the sites are located. Note that if no bitmap is inserted, this screen presents a list of sites. You can customize this area by modifying the panel view properties and/or you can add more panel views by selecting **New View Panel** under the **Window** menu. See Section 5 on page 10 for more details.

3.1 MACNET TOOLBAR

Workspace File Operations

 New Workspace
 Open Workspace
 Save Workspace

MacNet Session

 Logon/Logoff to MacNet

Map Operations

 Select Site Mode
 Setup Site Mode
 Find Site Mode
 Zoom In Mode
 Zoom Out Mode
 Home View
 Show Label

Print Operations

 Print
 Print Preview

4 STARTING THE MACNET SOFTWARE

To start the MacNet software, use the shortcut that was placed on the desktop during installation. Otherwise, click your way to the C:\Program Files\Davicom\MacNet\MacNet.exe file.

If it is the first time you run MacNet on your computer, the Windows firewall could show you a Security Alert window (See Figure 2 below). You'll have to click the **Allow Access** button to enable alarm reception over IP.

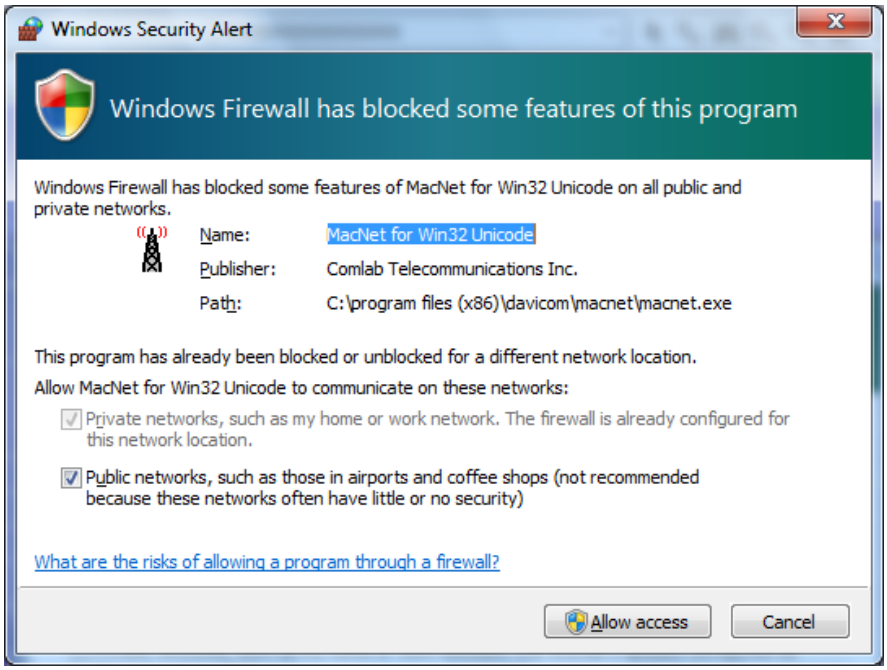

Figure 2 : Security Alert window

The software has three levels of secure access, and users can only gain access by entering a login name and password. By default, the MacNet software is delivered with the following access codes:

User Name	Password
SUPER	SSSSSSSS
ADMIN	AAAAAAAA
OPER	OOOOOOOO

To access the MacNet software, click the key  icon in the toolbar or the "User" field located in the status bar at lower right corner of the screen to open the User Logon dialog box shown below:

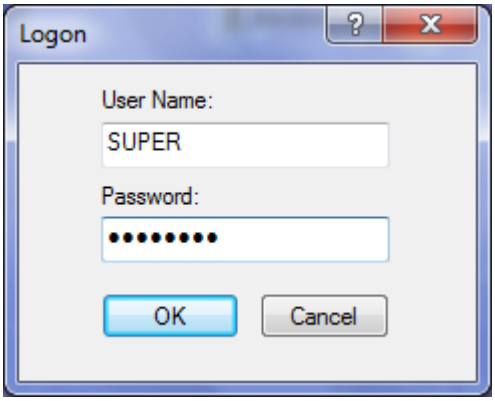

Figure 3 : User Identification dialog box

After entering the user identification information, clicking the OK button will grant access to the different MacNet functions according to the user's assigned access level.

When access has been confirmed, the User field changes color according to the user's access level and the user's name is displayed in the lower right corner of the screen, as shown below:

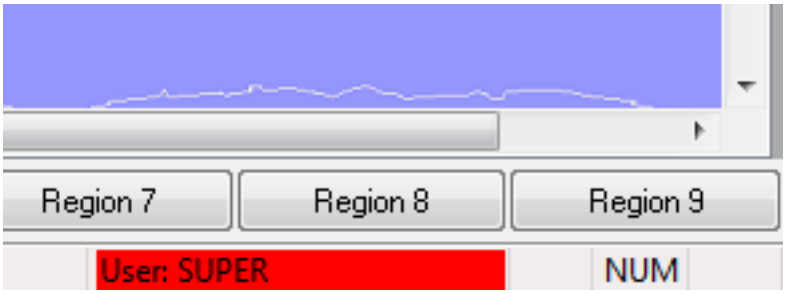

Figure 4 : User status field

Colors used for the different access levels are: **Red** for supervisor, **Yellow** for administrator, and **Green** for operator.

A session can be ended without stopping MacNet by clicking the key icon or the “User” field again and confirming the end of the session.

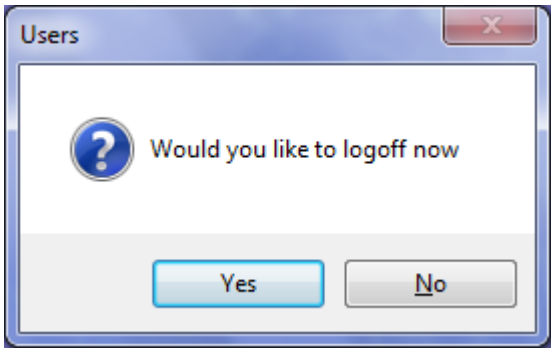

Figure 5 : End of session dialog box

Afterwards, MacNet will continue to operate autonomously. To ensure continuous operation of MacNet, it is important to have a shortcut in the Windows® Startup menu (done automatically during software installation). Thus, the software will start up automatically when the computer restarts, for example after a power failure.

5 MAIN SCREEN SETTING

MacNet allows you to choose from four main View Mode settings options (List View, Bitmap View, MapInfo View and MapPoint View).

5.1 LIST VIEW SETTINGS (NO MAP)

- Right click the center part of the screen or click the **Window** menu then select **Panel Properties.**

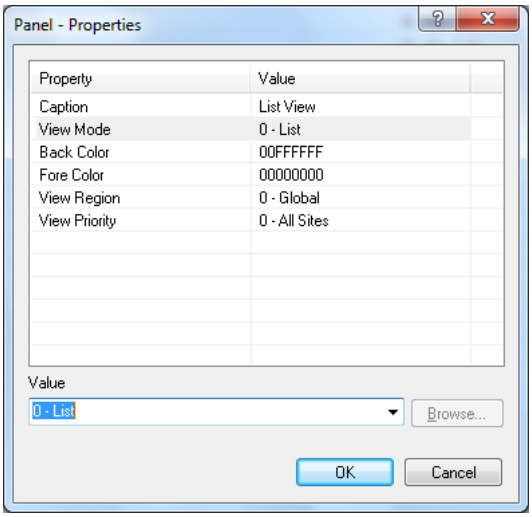

Figure 6 : List View Properties page

- Under the **View Mode** property, select **0 – List** in the **Value** dropdown list.
- Click OK.

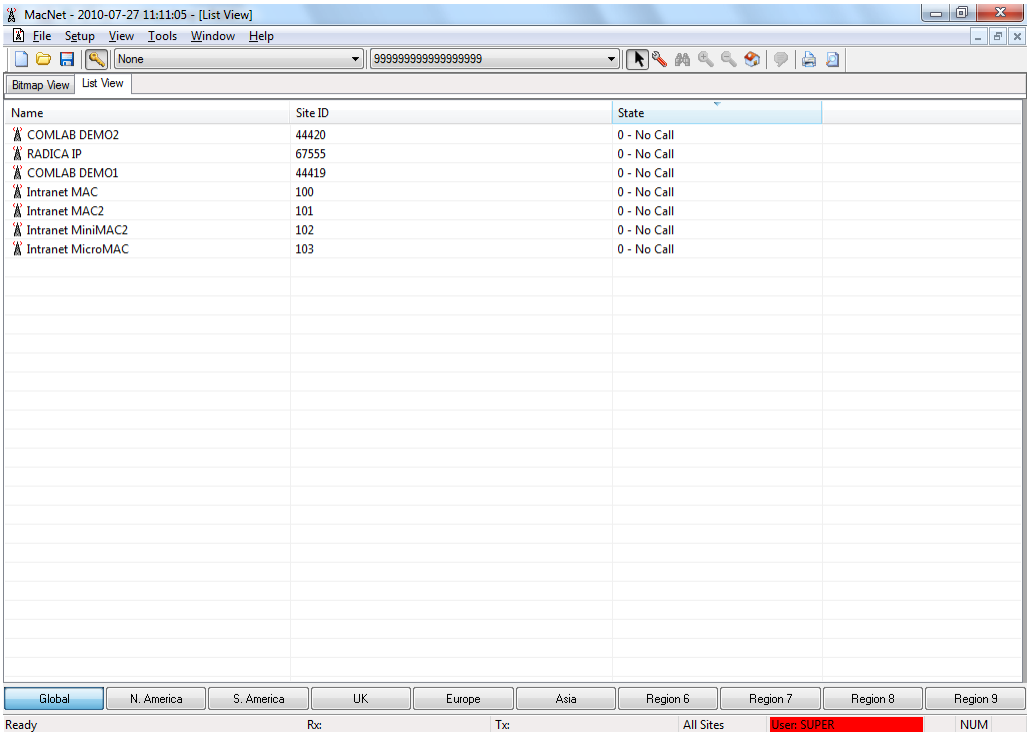

Figure 7 : List View screen

The Properties page allow you to set the following parameters:

- *Caption*
  Enter the caption of the Panel tab. Note that captions are displayed on a single line. You cannot wrap the text. Unicode character set is supported.

- *View Mode*
  You can choose from 4 view modes: 0 – List, 1 – Bitmap View, 2 – MapInfo View and 3 – MapPoint View. In this case, **0 – List** is selected.

- *Back Color*
  The hexadecimal value for the background color of the List screen. Default is white (00FFFFFF). You can change the color by entering a new hexadecimal value, or by clicking the **Browse** button to access the Windows® basic color palette.

- *Fore Color*
  The hexadecimal value for the foreground color of the List text. Default is black (00000000). You can change the color by entering a new hexadecimal value, or by clicking the **Browse** button to access the Windows® basic color palette.

- *View Region*
  You can filter which region of sites will be displayed. By default, the **Global** region is selected to show all sites.

- *View Priority*
  You can filter sites according to the Site Priority or Alarm only. By default, all sites are shown; no filter.

When you are done, click **OK** to save all your changes.

IMPORTANT NOTE

New View panels open in the default List View. To change to a different view (Bitmap, MapInfo, MapPoint), the Panel Properties dialog must be updated to access the specific properties for that view. To update the Panel Properties dialog, select the desired view, then click OK to close the dialog box. When the Panel Properties dialog is re-opened, the specific view properties will now be accessible.

5.2 BITMAP VIEW SETTING

For this option, you have to enter the geographical coordinates for your sites to appear at the correct location. If you do not know the precise geographical coordinates of the Upper-Left Corner and the Bottom-Right Corner of your map, DO NOT use this option. If you DO know the coordinates, then:

- Right click the center part of the screen or click the **Window** menu then select **Panel Properties.**

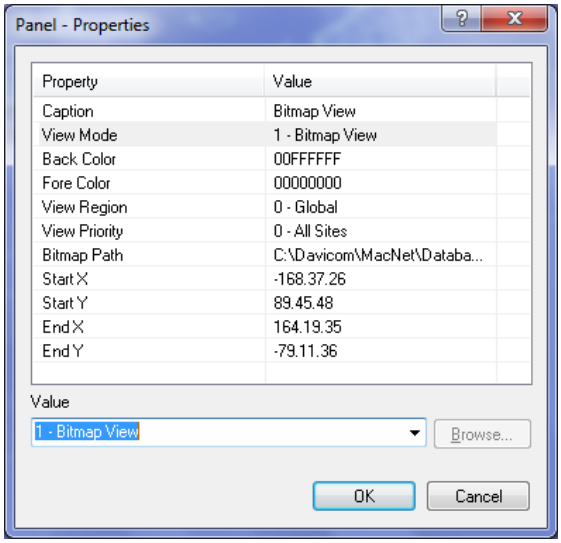

Figure 8 : Bitmap View Properties page

- Under the **View Mode** property, select **1 – Bitmap View** in the **Value** dropdown list.
- Click OK.

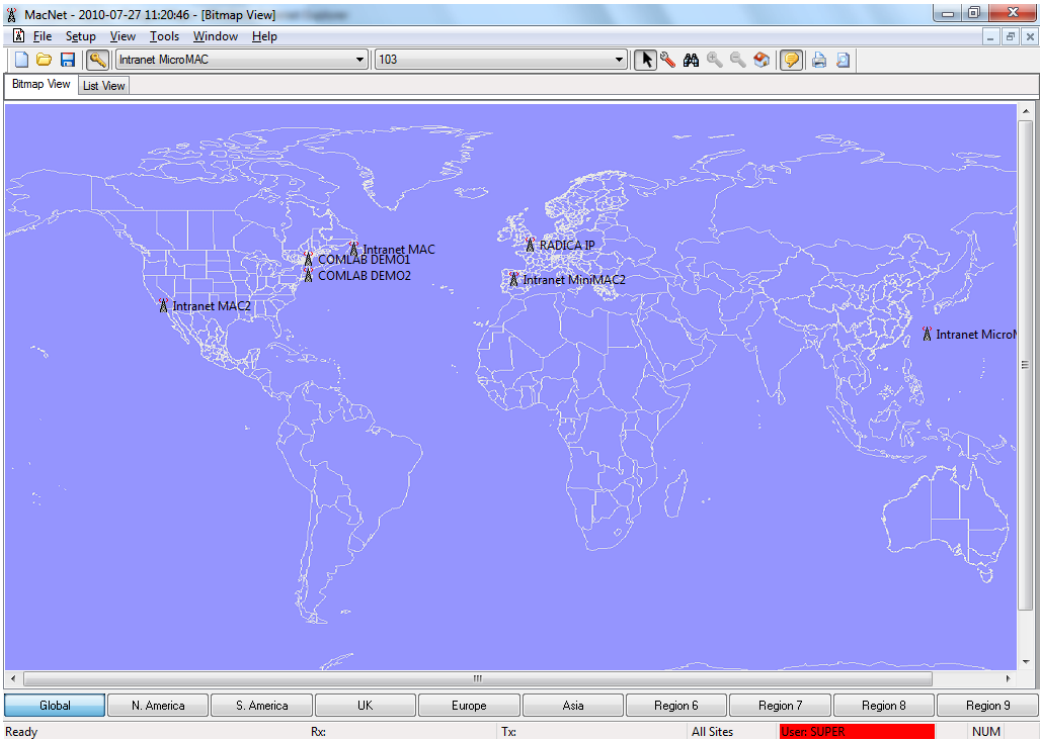

Figure 9 : Bitmap View screen

If configuring a new view panel, see IMPORTANT NOTE in Section 5.1

The Properties page allows you to set the following parameters:

- *Caption*
  Enter the caption of the Panel tab. Note that captions are displayed on a single line. You cannot wrap the text. Unicode character set is supported.

- *View Mode*
  You can choose from 4 view modes: 0 – List, 1 – Bitmap View, 2 – MapInfo View and 3 – MapPoint View. In this case, **1 – Bitmap View** is selected.

- *Back Color*
  The hexadecimal value for the background color of labels[3] and outside the Bitmap. Default is white (00FFFFFF). You can change the color by entering a new hexadecimal value, or by clicking the **Browse** button to access the Windows® basic color palette. Under Windows® XP and higher, special colors FFFFFFFF will show Label with shadow like the Windows® Desktop icon labels.

- *Fore Color*
  The hexadecimal value for the foreground color of the Label text. Default is black (00000000). You can change the color by entering a new hexadecimal value, or by clicking the **Browse** button to access the Windows® basic color palette.

- *View Region*
  You can filter which region of sites will be displayed. By default, the **Global** region is selected to show all sites.

- *View Priority*
  You can filter sites according to the Site Priority or Alarm only. By default, all sites are shown; no filter.

- *Bitmap Path (Bitmap View Only)*
  Enter the Bitmap file name and path you want to add to the main screen. By default, World Bitmap maps are installed in the C:\Davicom\MacNet\Database\Map folder for various screen resolutions from 800x600 to 1600x1200.

- *Start X (Bitmap View Only)*
  Enter the Upper-Left Corner longitude geographical coordinate of the map.

- *Start Y (Bitmap View Only)*
  Enter the Upper-Left Corner latitude geographical coordinate of the map.

- *End X (Bitmap View Only)*
  Enter the Bottom-Right Corner longitude geographical coordinate of the map.

- *End Y (Bitmap View Only)*
  Enter the Bottom-Right Corner latitude geographical coordinate of the map.

When you are done, click **OK** to save all your changes.

Notes : - Zoom feature is not available in the Bitmap View
- The use of Bitmap View requires Internet Explorer 4.01 sp1 or higher. When no events have been reported, site icons are shown as black towers  . These change to colored dots as soon as MacNet receives an event. See Table **3** on page 47.

[3] Under Windows® Vista and higher, the label background is transparent.

5.3 MAPINFO VIEW SETTING

MacNet can be used in conjunction with the **MapInfo® Professional** mapping software to allow precise site positioning with respect to actual geographical locations.

- Right click the center part of the screen or click the **Window** menu then select **Panel Properties.**

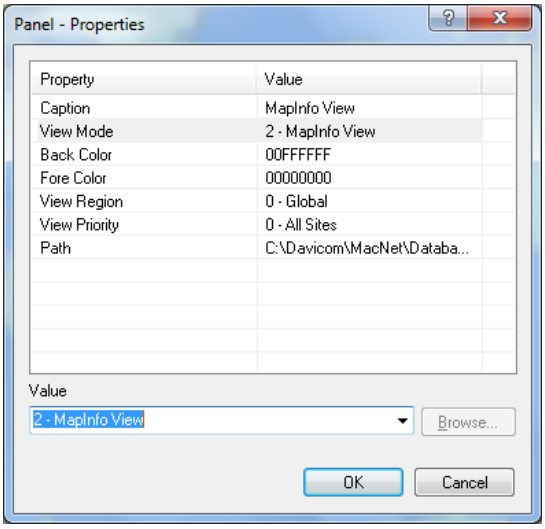

Figure 10 : MapInfo View Properties page

- Under the **View Mode** property, select **2 – MapInfo View** in the bottom **Value** dropdown list.
- Click OK.

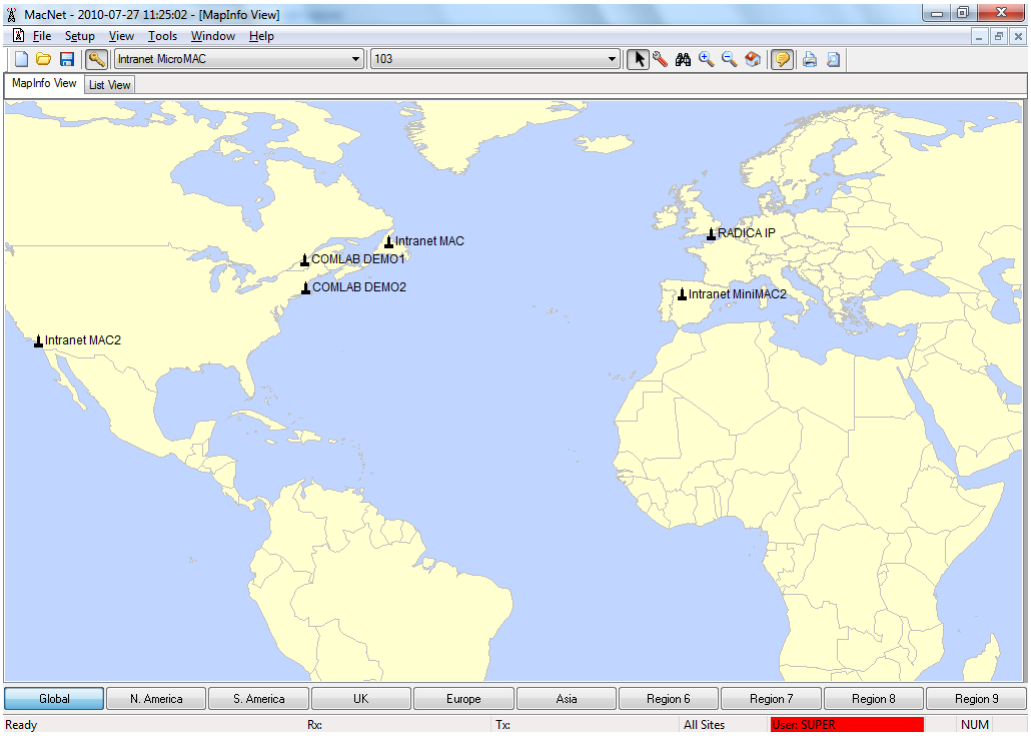

Figure 11 : MapInfo View screen

If configuring a new view panel, see IMPORTANT NOTE in Section 5.1

The Properties page allows you to set the following parameters:

- *Caption*
  Enter the caption of the Panel tab. Note that captions are displayed on a single line. You cannot wrap the text. Unicode character set is supported.

- *View Mode*
  You can choose from 4 view modes: 0 – List, 1 – Bitmap View, 2 – MapInfo View and 3 – MapPoint View. In this case, **2 – MapInfo View** is selected.

- *Back Color*
  The hexadecimal value for the background color. Has no effect under the MapInfo View mode.

- *Fore Color*
  The hexadecimal value for the foreground color. Has no effect under the MapInfo View mode.

- *View Region*
  You can filter which region of sites will be displayed. By default, the **Global** region is selected to show all sites.

- *View Priority*
  You can filter sites according to the Site Priority or Alarm only. By default, all sites are shown; no filter.

- *Path (MapInfo View Only)*
  Enter the MapInfo Map Folder you want to use in the main screen. By default, World, Canada and Quebec Map Folders are installed with MacNet in the C:\Davicom\MacNet\Database\Map folder.

When you are done, click **OK** to save all your changes.

Notes : - Zoom feature is supported under MapInfo View

- When no events have been reported, site icons are shown as black towers  . These change to colored dots as soon as MacNet receives an event. See the MapInfo Icons column in Table **3** on page 47.

5.4 MAPPOINT VIEW SETTING

MacNet can be used in conjunction with the **MapPoint®** mapping software to allow precise site positioning with respect to actual geographical locations.

- Right click the center part of the screen or click the **Window** menu then select **Panel Properties.**

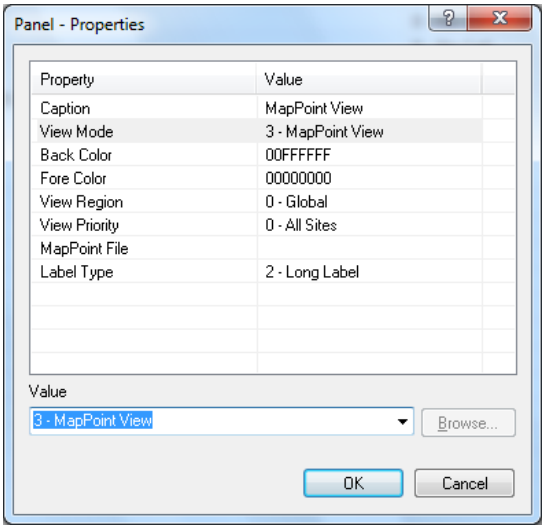

Figure 12 : MapPoint View Properties page

- Under the **View Mode** property, select **3 – MapPoint View** in the bottom **Value** dropdown list.
- Click OK.

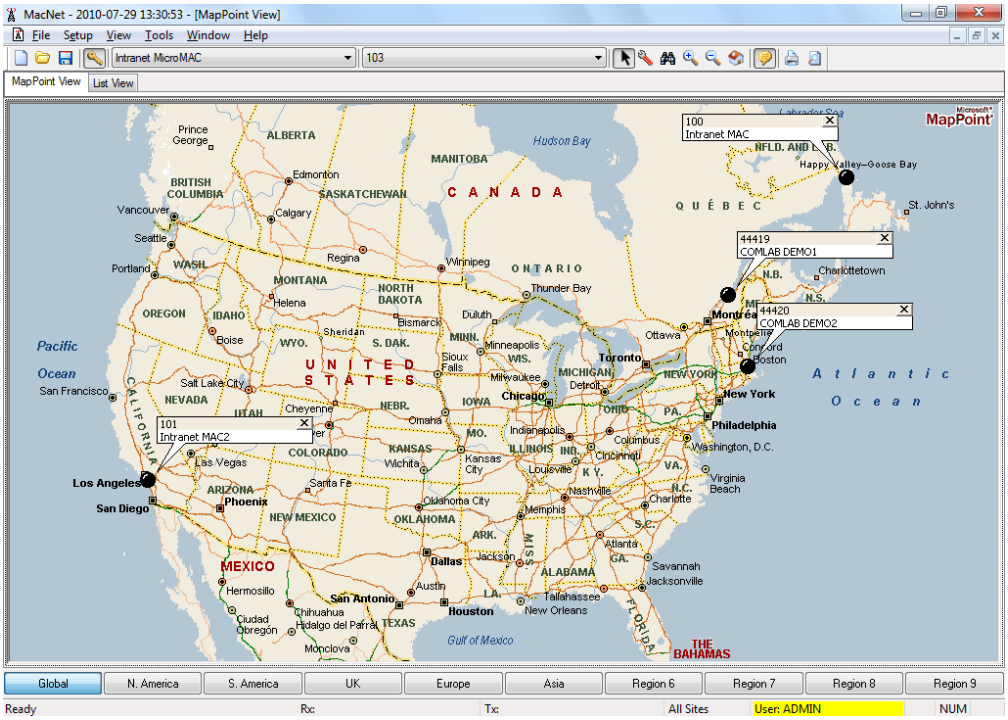

Figure 13 : MapPoint View screen

If configuring a new view panel, see IMPORTANT NOTE in Section 5.1.

The Properties page allows you to set the following parameters:

- *Caption*
  Enter the caption of the Panel tab. Note that captions are displayed on a single line. You cannot wrap the text. Unicode character set is supported.

- *View Mode*
  You can choose from 4 view modes: 0 – List, 1 – Bitmap View, 2 – MapInfo View and 3 – MapPoint View. In this case, **3 – MapPoint View** is selected.

- *Back Color*
  The hexadecimal value for the background color. Has no effect under the MapPoint View mode.

- *Fore Color*
  The hexadecimal value for the foreground color. Has no effect under the MapPoint View mode.

- *View Region*
  You can filter which region of sites will be displayed. By default, the **Global** region is selected to show all sites.

- *View Priority*
  You can filter sites according to the Site Priority or Alarm only. By default, all sites are shown; no filter.

- *MapPoint File (MapPoint View Only)*
  Enter the MapPoint File you want to use in the main screen. If this property is left blank, MacNet will use the default MapPoint Map.

- *Label Type (MapPoint View Only)*
  You can choose from 3 label types: 0 – No Label, 1 – Short Label (Site ID) and 2 – Long Label (Site ID and Site Name). By default Long Label is selected.

When you are done, click **OK** to save all your changes.

Notes : - Zoom and pan feature are supported under MapPoint View.

- When no events have been reported, site icons are shown as black dots  .These change to colored dots as soon as MacNet receives an event. See Table **3** on page 47.

6 MACNET SETUP

Complete setup of MacNet can be accessed under the **Setup** menu. The following items are available:

- Options
- ASA Configuration
- Module Manager
- Sites
- Users
- Task Scheduler
- Communications
- Alarm Forwarding

6.1 FUNCTION BUTTONS THAT APPEAR IN MULTIPLE WINDOWS

Several function buttons are used in multiple windows of the MacNet program. They include specific MacNet buttons, along with standard Windows® buttons. These different buttons are described below:

MacNet Function Buttons:

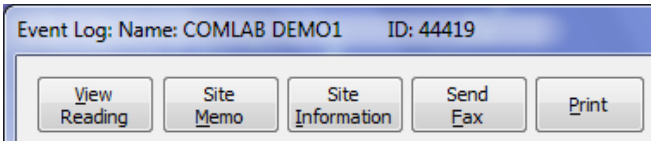

Figure 14 : Function Buttons

These command buttons are found in various menus and they always have the same function. For example, the **Site Memo** button will always open the site memo window, whether it is activated from within the Active Events Log window, the View Reading window, or elsewhere.

Standard Windows Buttons:

These buttons are found in several menus and open standard Windows dialog boxes related to print and fax functions.

6.2 OPTIONS PROPERTIES

When you select the **Options** item in the **Setup** menu, the Options Properties page will be shown.

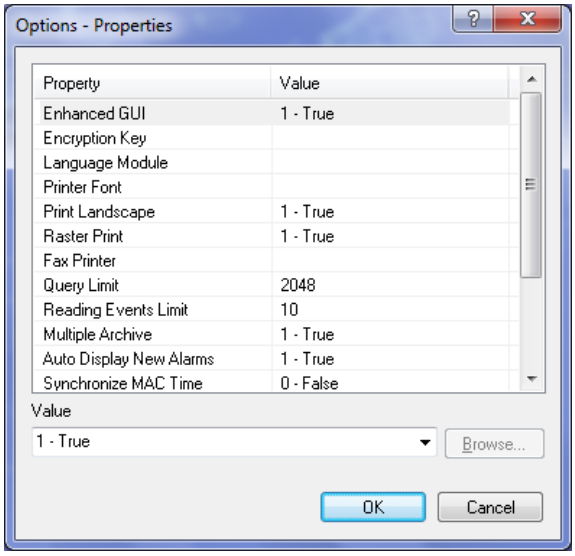

Figure 15 : Options Properties page

The Options Properties page allow you to set the following parameters:

- *Enhanced GUI*
  This option can be used to enable or disable the MacNet Enhanced GUI. By default this option is enabled to use Windows Themes and display high-color icon buttons.

- *Encryption Key*
  The MAC unit uses a factory-default confidential seed string to generate a 128-bit encryption key when this field is left blank. For maximum security, you can select your own string of characters.
  Note: Due to export restrictions, certain firmware versions only support 56-bit encryption keys.

- *Language Module*
  Set the Language Module Path. Language Modules can be found in the C:\Program Files\Davicom\MacNet folder. If this field is left blank, the default English language will be used.

- *Printer Font*
  To change the font used for headers, footers and tables, select the *Printer Font* line. Many fonts are available by clicking the **Browse** button.

- *Print Landscape*
  To change the default page setting to Portrait instead of Landscape, enter a 0 (zero) value.

- *Raster Print*
  By default, MacComm uses a relatively low resolution when printing a view screen. This setting ensures that all graphical elements will be printed correctly on any printer. You can change this setting to a higher resolution by entering a 0 (zero) value and see the effect on your printer.

- *Fax Printer*
  Printer device name used when sending a Fax. To get the list of available printers, click the **Browse** button.

- *Query Limit*
  This option is used to change the maximum number of entries per query. By default, this value is 2048 entries.

- *Reading Events Limit*
  This option is used to change the maximum number of events for Reading View. By default, this value is 10 events.

- *Multiple Archive*
  This option is used to enable archiving more than one event at a time. By default, this option is enabled.

- *Auto Display New Alarms*
  When this option is enabled (1 - True), the New Alarms list window will be shown when the user clicks **OK** on the Alarm Warning message window. See Section 7.2 for more details.

- *Synchronize MAC Time*
  This option is used to enable MAC time synchronization when MacNet receives a call or an auto call is performed. By default this option is disabled.

- *Alarm Sound*
  This option is used to select a wave sound file when an alarm is received. Click the **Browse** button to bring up the Windows® file browser dialog box. By default, the option field is blank for no sound. NOTE: If you write the word **beep** in this field, the PC speakers will beep when an alarm comes in.

- *Watchdog Base Address*
  When a Watchdog card is installed, this hexadecimal value is used to set the physical base address. Special address 0xFFFF is used for a Plug and Play card. By default this option is empty for no card.

- *Alarm Activation I/O Card*
  When a MacNet Alarm Activation I/O Card is used, this field shows the parameters selected for the I/O Card. Clicking **Browse** opens the I/O Card dialog box where parameters are selected.. Additional details about parameter selection and setup are given in Section 6.9.2 on page 39.

- *Check Unique IP Address*
  This option is used to validate that each site has a unique IP Address. By default this option is disabled.

When you are done, click **OK** to save all your changes.

6.3 ASA CONFIGURATION

Every time a MAC unit sends an alarm message to MacNet, it automatically gets an Alarm-call Sequence Acknowledgement from MacNet, which has for effect to instantly stop the MAC's Alarm Call Sequence.

You can configure MacNet so that it does not acknowledge any alarm, allowing the MAC to then continue with its Alarm Call Sequence. You can even configure specific exemption periods (during the night and weekends for example, when the MacNet computer might be left unattended). During such exemption periods, you may want the MAC unit to continue its Alarm-Call Sequence as long as it does not receive an ASA (**A**larm-call **S**equence **A**cknowledge) command for major alarms or an OK command for minor alarms from someone on the Alarm-Call List.

IMPORTANT NOTE

MacNet always acknowledges Alarms sent to MacNet by IP, even when an ASA exemption period is configured.

Tip: If you want the MAC to always contact someone in addition to advising MacNet, you must rank that person higher than MacNet in the Alarm Call List. Otherwise, the person might never be called. Refer to the **MAC Remote Monitoring Control Units - Reference Manual** for more details.

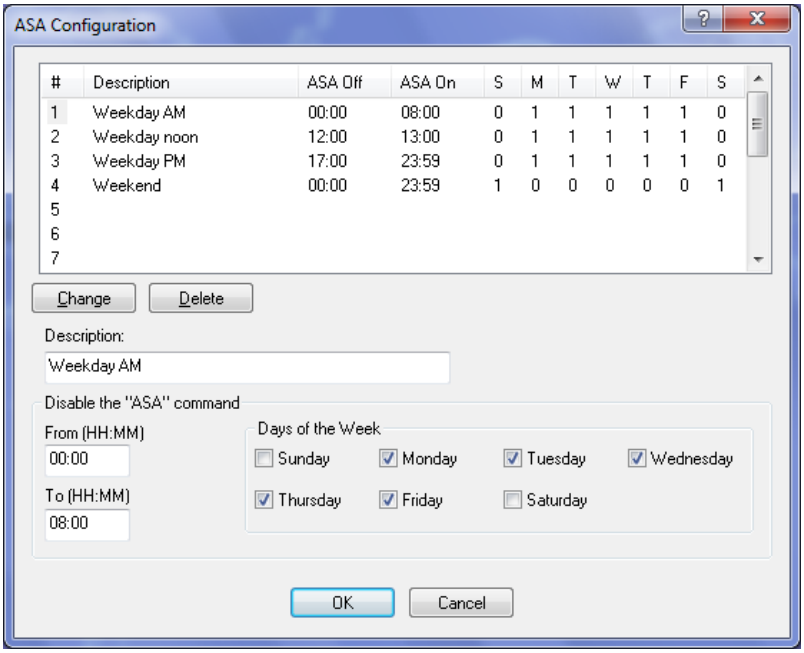

Figure 16 : ASA Configuration window

To configure a specific ASA exemption period, select the period # in the upper section of the dialog box (click the number). The lower portion allows you to change any of the following parameters for the selected ASA exemption period #:

- *Description*
  Optional field. Maximum 40 characters. Unicode characters set is supported.

- *From*
  The start time that will apply for all specified days during the period. Entry format is HH:MM where HH can be set from 00 to 23 (no AM or PM) and MM can be set from 00 to 59.

- *To*
  The end time that will apply for all specified days during the period. Entry format is HH:MM where HH can be set from 00 to 23 (no AM or PM) and MM can be set from 00 to 59. (To obtain a complete 24 hour time period, enter 00:00 in the FROM field and 00:00 in the TO Field.

- *Days of the week*
  Mandatory field. Check the day(s) of the week included in the ASA exemption period. If no days are checked, the exemption period will never activate. In the list, 0 means exemption not active and 1 means exemption active.

Once you are done with the configuration of an ASA exemption period, click **Change**.

To configure another period, select the appropriate period # (click the number in the column), set its parameters and then click **Change**.

To delete the settings of a period, select the appropriate period # (click the number in the column) and click **Delete**.

To exit the ASA Configuration dialog box, click **OK** and then **Yes** to save all your changes.

6.4 MODULE MANAGER

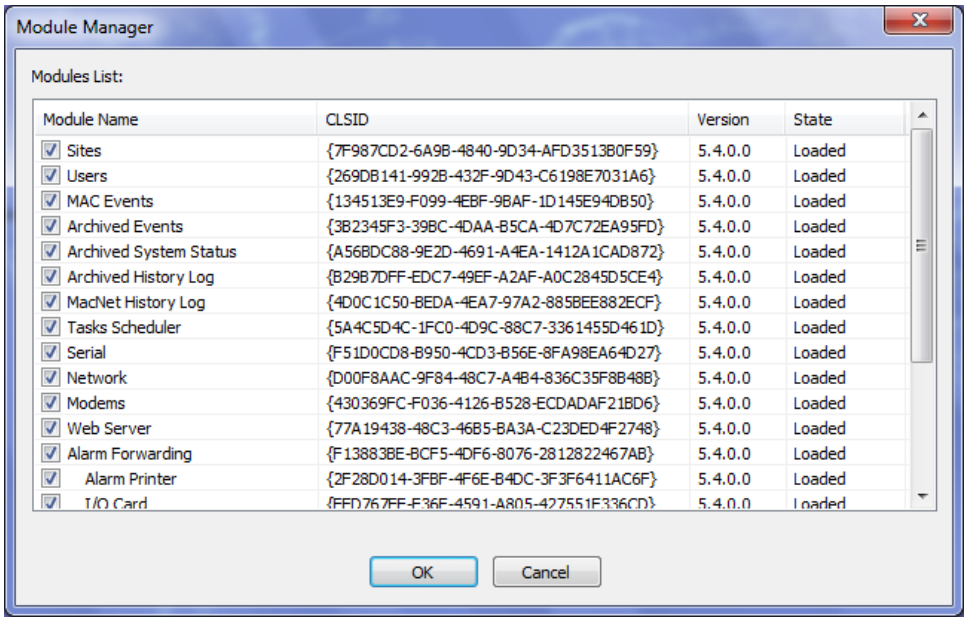

Figure 17 : Modules Manager window

The Module Manager window shows status and other information related to the MacNet modules. Users can enable/disable individual modules by clicking the check box next to the module.

Note: The user cannot disable the **Sites** or **Users** modules because they are required for MacNet operation.

When you are done with this window, click **OK** to save changes.

6.5 SITES CONFIGURATION

Selecting **Setup Site** in the **Tools** menu or clicking the **Setup site** icon in the Toolbar will set MacNet in Setup Site mode. In this mode, the mouse cursor changes to a plus sign. Move the cursor to the approximate map location of the site, and then click the left mouse button to open the Sites Configuration window. When working with a Bitmap View or List View, right clicking on the Map or on the List in **Select Site** mode will do the same. Note that clicking on the Map to open the Sites Configuration window automatically enters the geographical coordinates[4] of the site. If precise coordinates for the site location are required, they can be manually entered in the appropriate data fields.

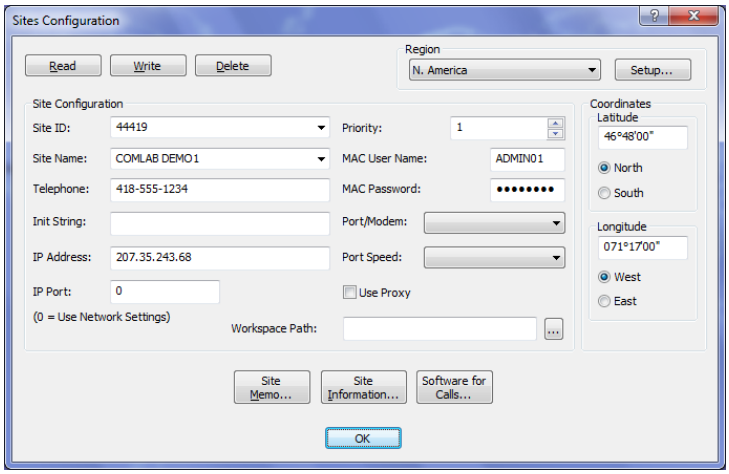

Figure 18 : Sites Configuration window

This window allows entry of the following site data in the appropriate field:

- *Site ID*
  Mandatory number with a maximum of 18 numerical characters.

- *Site Name*
  A name with a maximum of 40 characters identifying the site where the MAC unit is installed. Unicode characters set is supported.

- *Telephone* (modem communication)
  Mandatory input field for modem communication.

- *Init String* (ignored when using a Windows Modem)
  The modem initialization string can be found in the modem documentation provided by the modem manufacturer.

- *IP Address*
  IP address or URL of the MAC or MiniMAC unit located at the site. Mandatory for IP communication.

- *IP Port* (0 for default port)
  IP port used by the MAC or MiniMAC unit located at the site. This overrides the global setting.

- *Region*
  A choice can be made from the drop-down list. This allows display of the sites according to the region in which they are located.

- *Priority*
  A priority level from 1 to 5 can be selected to allow display of sites according to their priority level.

[4] If the **Site Configuration** window is accessed through the **Sites** item in the **Setup** Menu, the geographical coordinates will be left blank.

- *MAC User Name*
  Enter the username needed to log into the MAC. For MAC+ and MiniMAC+ units, this field **MUST** be left blank.

- *MAC Password*
  Enter the password needed to log into the MAC.

- *Port/Modem*
  Different port numbers or modems can be selected from the drop-down list for Serial or Modem communications. For single modem configuration, a modem name can be selected here or globally set in the MacComm Communication Parameters window.

- *Port Speed*
  Different baud rates can be selected from the drop-down list to set the communications speed at which the Serial Port or Modem connects to the PC.

- *Use Proxy*
  A check mark has to be added if the MAC or MiniMAC unit located at the site communicates via a proxy server.

- *Workspace Path*
  The file name and path of the MacComm Workspace file to use with the MAC.

- *Latitude*
  Geographical latitude coordinates of the site.

- *North South*
  Selection of North-South latitude of the site.

- *Longitude*
  Geographical longitude coordinates of the site.

- *West East*
  Selection of West-East longitude of the site.

To modify the configuration of a site, it is only necessary to enter the required changes in the appropriate data fields, then click the **Write** and/or **OK** buttons to confirm the changes.

In the Sites Configuration window, the following buttons interact directly with the database:

- *Read*
  Allows retrieval of information about a site without exiting the Site Configuration screen. From the **Site Configuration** window, select the desired **Site Name**, **Site ID**, or **Region**, then press the Read button to view the site information.

- *Write*
  Allows modification of existing site information or to add[5] a site to the database. Select the site to be modified from the list. Make necessary changes/additions and press the Write button. The selected site information will be modified or the new site will be added.

- *Delete*
  Allows deletion of a site from the database. Select a site from the list then press the Delete button. The selected site is removed from the database.

[5] If the Site ID of an existing site has been changed, MacNet will give the option to create a new site or modify the Site ID.

6.5.1 REGIONS CONFIGURATION

This window allows assignment of user-friendly names to the Region buttons.

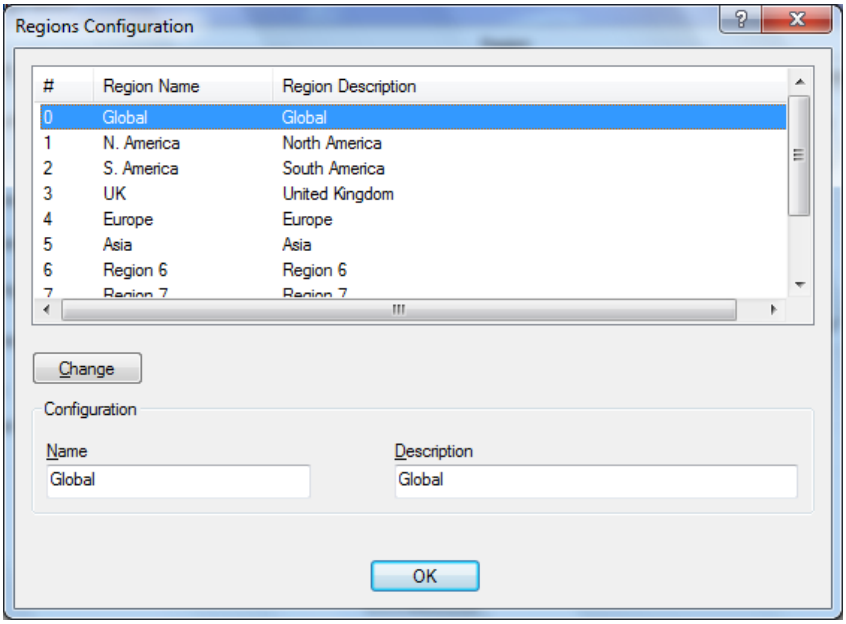

Figure 19 : Regions Configuration window

In the upper portion of the window, the list of current names is shown, and in the lower portion are the data fields allowing modification to parameters in the list. The list contains:

- *Name*
  Optional field. The name with a maximum of 18 characters will be displayed on the corresponding Region bar button. Unicode characters set is supported.

- *Description*
  Optional field. A more-detailed description of the region with a maximum of 30 characters. Unicode characters set is supported.

The procedure to modify an item in the list is as follows:

√ Select the row number in the list, left-hand column in the upper portion of the window;

√ Enter the desired changes in the corresponding data fields in the lower portion of the window;

√ Click the **Change** button to register the changes to the selected row;

Select another row in the list, or end the configuration session by clicking the **OK** button.

6.5.2 FUNCTION BUTTONS

At the bottom of the Sites Configuration window, Figure 18 on page 23, are three buttons which call up corresponding view windows:

6.5.2.1 *Site Memo Button*

This button opens Windows® WordPad utility that allows entry of information about site activities and status.

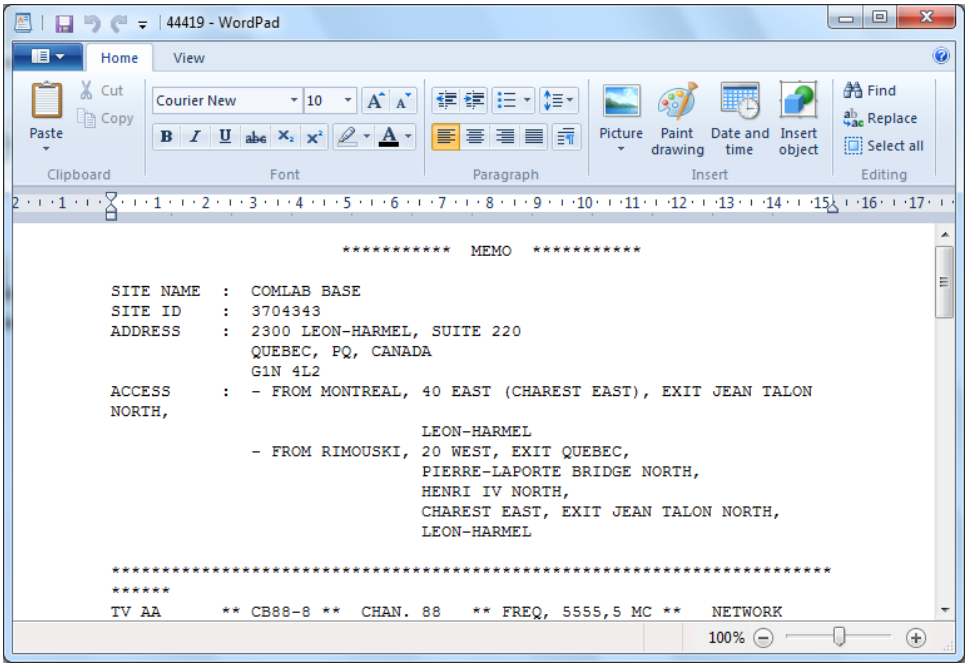

Figure 20 : Site Memo

6.5.2.2 *Site Information Button*

This button opens Windows® WordPad utility that allows specific information and details about the site to be noted. Examples are, emergency telephone numbers, fuel supply company phone number, directions to the site, etc.

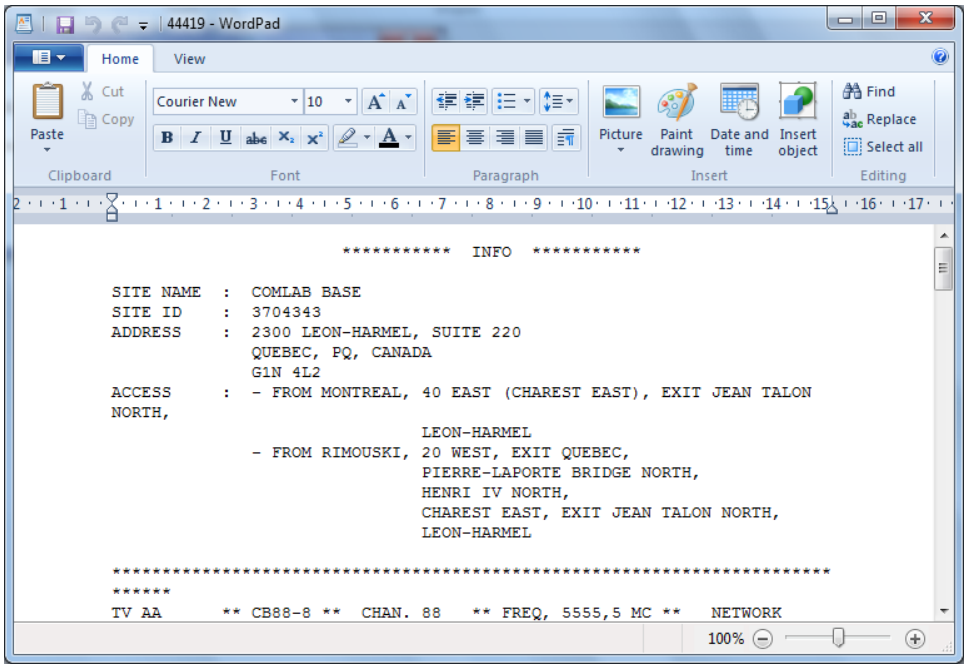

Figure 21 : Site Information

6.5.2.3 *Software for Calls*

This button opens a dialog window that allows configuration of IP, Modem, Serial or Local communications software other than MacComm. Parameters can be added at the end of the file path in order to make communications faster and easier. Variables listed in the Figure 22 can be used to automatically get the information from the Sites Configuration window. Two **Setup** buttons allow direct access to the configuration options for the selected software.

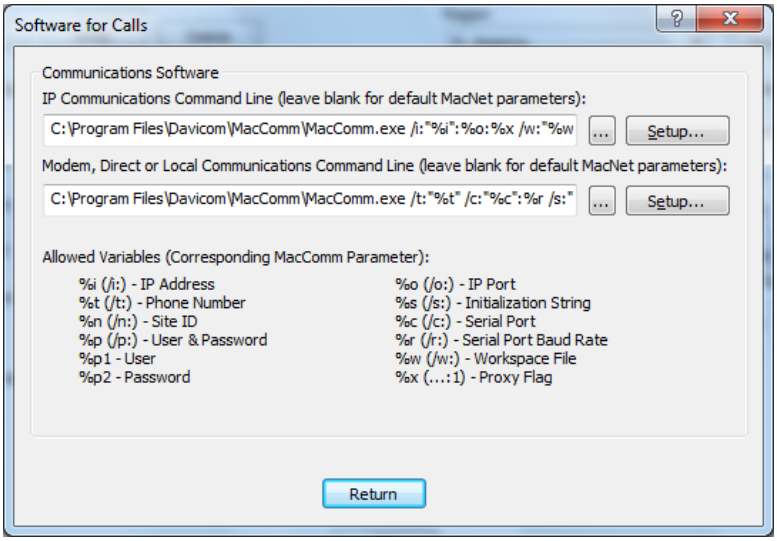

Figure 22 : Software for Calls

The Command Line Parameters use the same syntax as the DOS shell command prompt. If the fields are left blank, MacNet will automatically use MacComm with the appropriate parameters. See the following examples for Command Line Parameters:

1 – IP Communications with MacComm. It uses variables: **%i** for IP Address or URL, **%o** for IP Port, **%x** for Proxy Flag, **%w** for Workspace file and **%p** for User Name and Password.

C:\Program Files\Davicom\MacComm.exe /i:"%i":%o:%x /w:"%w" /p:%p

2 – Modem Communications with MacComm. It uses variables: **%t** for the Phone Number, **%c** for Modem or Serial Port, **%r** for Serial Port Baud Rate, **%s** for Initialization String , **%w** for Workspace file and **%p** for User Name and Password.

C:\Program Files\Davicom\MacComm.exe /t:"%t" /c:"%c":%r /s:"%s" /w:"%w" /p:%p

3 – Serial Communications with MacComm. It uses variables: **%n** for the Site ID, **%c** for Serial Port, **%r** for Serial Port Baud Rate, **%w** for Workspace file and **%p** for User Name and Password.

C:\Program Files\Davicom\MacComm.exe /n:"%n" /c:"%c":%r /w:"%w" /p:%p

4 – Local Communications with MacComm. It uses variables: **%w** for Workspace file and **%p** for User Name and Password.

C:\Program Files\Davicom\MacComm.exe /w:"%w" /p:%p

5 – Web Communications with MacComm. It uses variables: **%i** for IP Address or URL, **%p1** for the User Name and **%p2** for the Password.

C:\Program Files\Internet Explorer\iexplore.exe "https://%i/LoginForm?user=%p1&pass=%p2"

Note: The quotation marks are optional. They are only required when a parameter could contain space characters.

6.6 USERS CONFIGURATION

This window allows configuration of the users who will have access to MacNet, and it functions according to a particular hierarchical order. An ADMINISTRATOR user can only see user data about himself and OPERATOR users. It is not possible to see other ADMINISTRATOR users or to create new ones. The SUPERVISOR has access to all MacNet features and users.

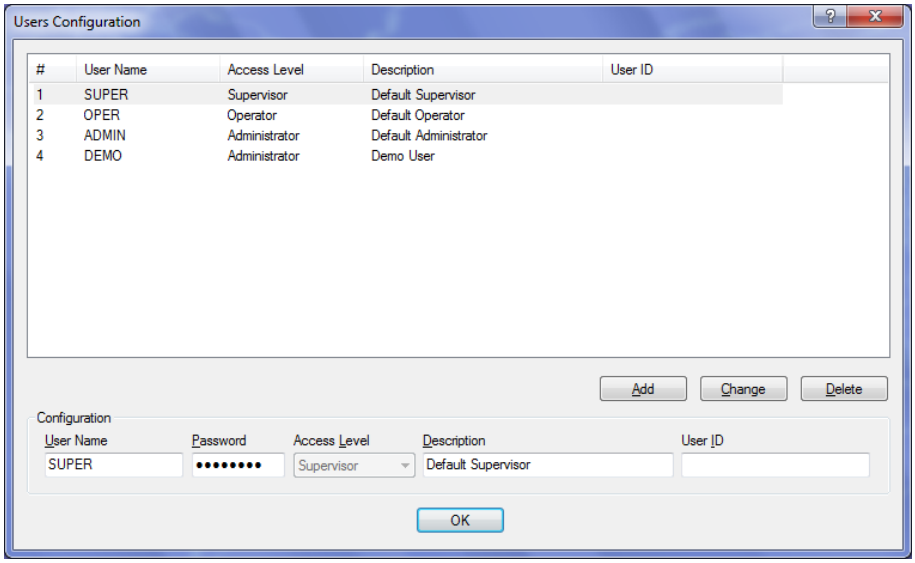

Figure 23 : Users Configuration

In the upper portion of the window, the list of current users is shown, and in the lower portion are the data fields allowing modification to parameters in the list. The list contains:

- *User Name*
  Mandatory input field. The user name required to start a MacNet session (20 characters maximum).

- *Password*
  Mandatory input field. User password (8 characters maximum).

- *Access Level*
  Mandatory input field. The access level assigned to the user.

- *Description*
  Optional field. The complete description of the MacNet user (30 characters maximum).

- *User ID*
  Optional field. A number assigned to the user (20 digits maximum).

An unlimited number of users can be added to the list. The procedure to change, add, or delete an item in the list is as follows:

√ Select the row number in the list, left-hand column in the upper portion of the window;

√ Click the **Delete** button to erase the information in the row.

or

√ Enter the desired changes in the corresponding data fields in the lower portion of the window;

√ Click the **Change** button to register the changes to the selected row, or **Add** to add a new user;

√ Select another row in the list, or end the configuration session by clicking the **OK** button.

6.7 TASK SCHEDULER CONFIGURATION

This window allows configuration of MacNet for automatic site calling. The purpose of Automatic Calls is to assess the communication status with sites. For each site in the list, the connection priority is as follows:
1) IP (when an IP address is configured for the site);
2) Modem (when a telephone number is configured for the site);
3) Serial (if neither an IP address nor a telephone number are configured for the site);

When the MAC unit is reachable using the given parameters and there are no Active Alarms in the MAC unit, MacNet by default does not display nor record an automatic call event[6].

When the MAC unit is reachable using the given parameters and there are unacknowledged Active Alarms in the MAC unit, MacNet takes an automatic capture of the site status, displays the active alarms for the site and records the event in its log.

When the MAC unit is unreachable using the given parameters, MacNet displays and records a Major Alarm for the site.

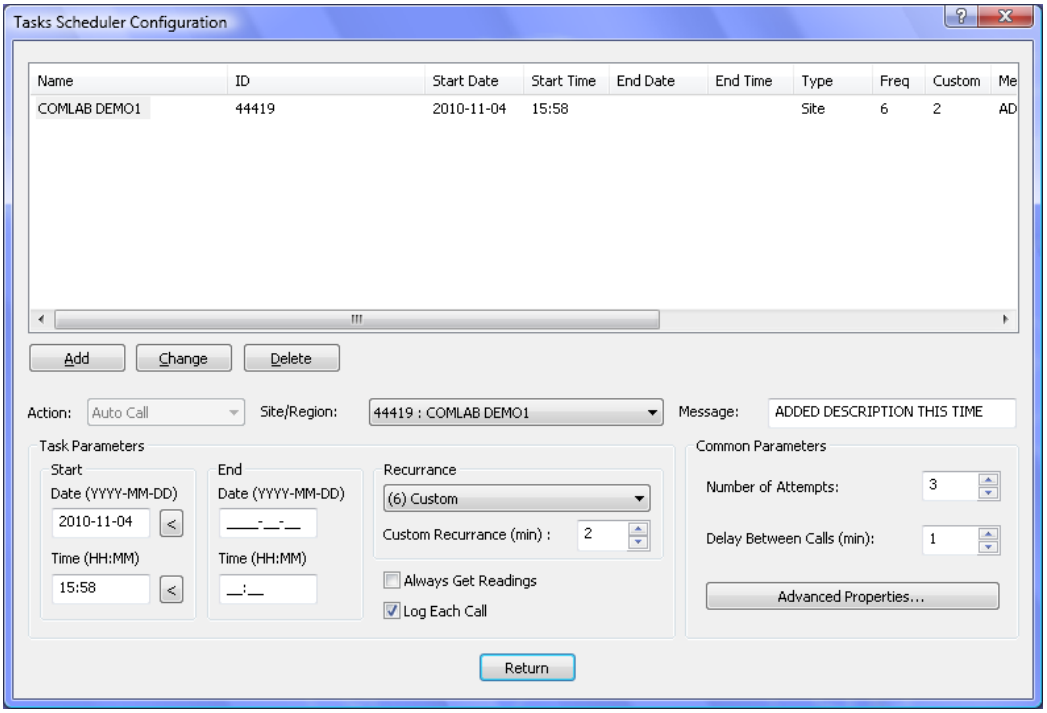

Figure 24 : Task Scheduler Configuration

From the **Site/Region** drop-down lists, select the site or region you want Automatic Calls to be made to.

In the **Message** field, enter the message you want to be displayed in the “DESCRIPTION” column when the Automatic Call alarm is displayed on your screen by MacNet or in the “MESSAGE” column when the Automatic Call alarm is sent to the printer.

[6] Automatic capture of the site status will be unconditionally done if the **Always Get Readings** is checked and an event will be recorded if **Log Each Call** is checked.

Setting the Task Parameters:

First, you have to set the time window (Start and End Date and Time) within which you want MacNet to do the task. **Note that for all Recurrence settings, when no End Date and Time have been set, MacNet will do the task from the Start Date and Time until further notice.**

In the upper portion of the window, the list of currently configured tasks is shown, and in the lower portion are the data fields allowing modification to parameters in the list. The list contains:

- *Site/Region*
  Mandatory input field. Selected from the drop-down list.

- *Message*
  Optional field. A personalized description for the call sequence can be entered. If this field is empty, the text “Auto Call” will be used.

- *Start Date/End Date*
  The start and end date of the period for the selected task. Entry format is YYYY-MM-DD.

- *Start Time/End Time*
  The start and end time that will apply for the selected task. Entry format is HH:MM where HH can be set from 00 to 23 (no AM or PM) and MM ranges from 00 to 59.

- *Recurrence*
  This drop-down menu sets the recurrence of the automatic calls. To temporarily suspend a call sequence without deleting the list, select "None". For Custom Recurrence, select Custom.

(0) None	Automatic Calls function is not active.
(1) Once	Automatic Calls will run once at the Start Date and Time set in the Start Date and Time fields.
(2) Hourly	Automatic Calls will run on an hourly basis from the Start Date and Time until the End Date and Time.
(3) Daily	Automatic Calls will run on a daily basis from the Start Date and Time until the End Date and Time.
(4) Weekly	Automatic Calls will run on a weekly basis from the Start Date and Time until the End Date and Time.
(5) Monthly	Automatic Calls will run on a monthly basis from the Start Date and Time until the End Date and Time.
(6) Custom	The Custom option allows you to set the recurrence interval between 1 and 9999 minutes. Automatic Calls will run according to the custom interval from the Start Date and Time until the End Date and Time.

Table 1 : Frequency table

- *Custom Recurrence*
  Number of minutes between 1 and 9999.

- *Always Get Readings*
  This setting can be used to get readings even if there is no alarm.

- *Log Each Task*
  This setting is used to log the task when there is no alarm.

- *Number of Attempts*
  Mandatory input field. Sets the number of times that an attempt (from 1 to 99) to call the site will be made, after which a major alarm message for the site will be entered in the log of the non-responding site. This setting is global.

- *Delay Between Attempts*
  Mandatory input field. Sets the delay in minutes (from 1 to 99) between each call. This setting is global.

An unlimited number of automatic calls can be configured. The procedure to modify, add, or delete an item in the list is as follows:

√ Select the row number in the list, left-hand column in the upper portion of the window;

√ Enter the desired changes in the corresponding data fields in the lower portion of the window;

√ Click the **Modify** button to register the changes to the selected row, or **Add** to add a new call or **Delete** to erase the information in the row.

√ Select another row in the list, or end the configuration session by clicking the **Return** button.

6.7.1 ADVANCED PROPERTIES

This window allows configuration of the Advanced Properties of the Task Scheduler. These settings are global.

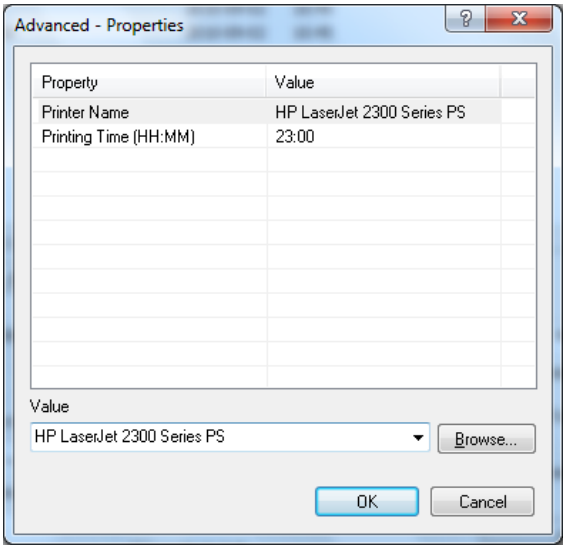

Figure 25 : Advanced Properties window

You can use this Properties page to set the following parameters:

- *Printer Name*
  Printer device name used when printing a report of the scheduled tasks. The report is disabled if this field is left blank.

- *Printing Time*
  Input field to obtain a report of the scheduled tasks at a specific time. Entry format is HH:MM where HH can be set from 00 to 23 (no AM or PM) and MM can be set from 00 to 59. The report is disabled if this field is left blank.

6.8 COMMUNICATIONS

The **Communication** sub-menu can be accessed under the **Setup** menu. The following items can be configured.

- Serial Configuration
- Network Configuration
- Modems Configuration
- MacNet Web Configuration

6.8.1 SERIAL CONFIGURATION

The Serial Configuration window allows configuration of the serial ports for alarm reception over a STL's, VHF & UHF radios or microwave channels. The number of physical serial ports available limits the number of serial ports that can be configured.

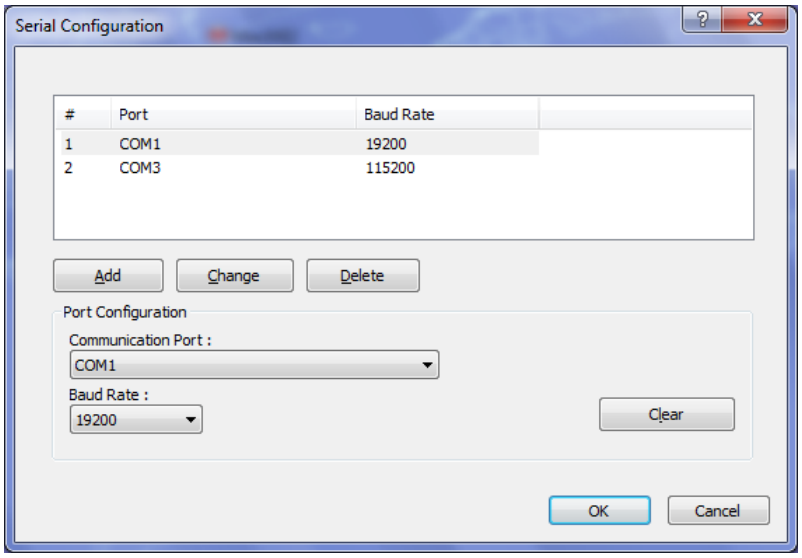

Figure 26 : Serial Configuration window

In the upper portion of the window, the list of current ports is shown, and in the lower portion are the data fields allowing modification to parameters in the list. The list contains:

- *Communication Port*
  Different port numbers can be selected from the drop-down list for Serial communications.

- *Baud Rate*
  Different baud rates can be selected from the drop-down list to set the communications speed at which the Serial Port connects to the PC.

The procedure to change, add, or delete an item in the list is as follows:

√ Select the row number in the list, left-hand column in the upper portion of the window;

√ Click the **Delete** button to erase the information in the row.

or

√ Enter the desired changes in the corresponding data fields in the lower portion of the window;

√ Click the **Change** button to register the changes to the selected row, or **Add** to add a new port;

Select another row in the list, or end the configuration session by clicking the **OK** button.

6.8.2 NETWORK CONFIGURATION

This window allows configuration of the Network communication information.

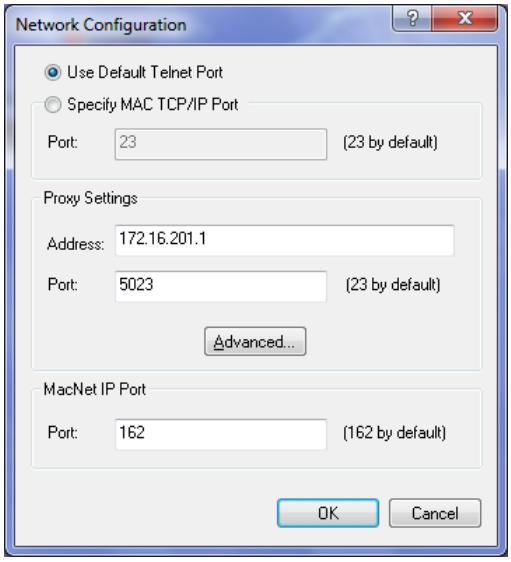

Figure 27 : Network Configuration window

This screen allows configuration of the following parameters:

- *Use Default Telnet Port*
  Select this radio button if the MAC units use the default IP Port (23).

- *Specify MAC TCP/IP Port*
  Select this radio button if the MAC units use a different IP Port other than port 23.

- *Port (MAC TCP/IP Port)*
  By default, MAC units use the TCP/IP port 23 (Telnet service) to reach the outside world. If your computer network has a firewall restricting access to port 23, you must specify another port in order to communicate with your MAC unit by IP. You must make sure that the same IP Port is set in the MAC unit. This setting is global.

- *Address (Proxy Settings)*
  Required field if your computer is connected to a network equipped with a proxy server, and the MAC unit is located outside the network perimeter. In these cases, you must specify the IP address of your proxy server which is a unique number consisting of 4 parts separated by dots (ex: 192.168.0.1).

  Note: Advanced proxy settings are also available. Contact your network administrator before changing any advanced setting.

- *Port (Proxy Settings)*
  If you have a proxy server, enter the port used by your proxy server to connect to your computer. Default value is port 23.

- *MacNet IP Port)*
  Set the IP Port for MacNet IP alarm reception. You must make sure that the same IP Port is set in the MAC unit. By default, the MacNet IP port is set at 162.

6.8.2.1 Proxy Advanced window

This window allows configuration of the advanced Proxy Server properties. This information is used to wait for prompts from, and to send commands to the proxy server.

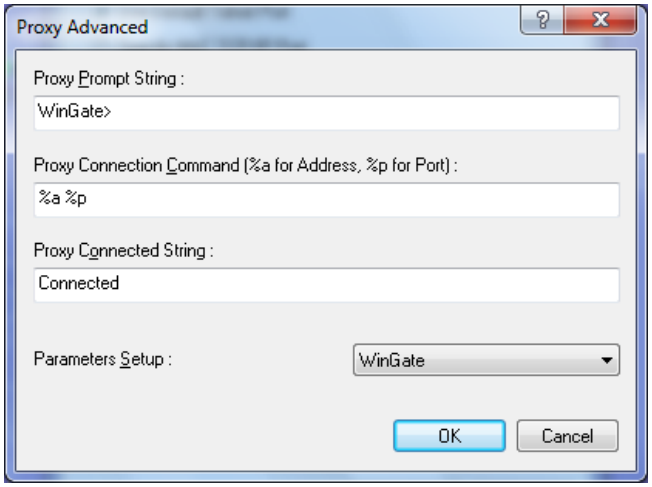

Figure 28 : Proxy Advanced window

The following parameters can be configured:

- *Proxy Prompt String*
  Mandatory field. MacNet will wait for this prompt string before sending the proxy connection command.

- *Proxy Connection Command*
  Mandatory field. MacNet will send this command to connect with the remote MAC unit. The two variables shown can be used. MacNet will append the Site IP Address when **%a** is used and the IP Port when **%p** is used.

- *Proxy Connected String*
  Mandatory field. MacNet will wait for this string before continuing the connection progress with the remote MAC unit.

- *Parameters Setup*
  Proxy profiles for commonly known proxy servers. Selection from the dropdown list will automatically fill in the appropriate fields with corresponding information.

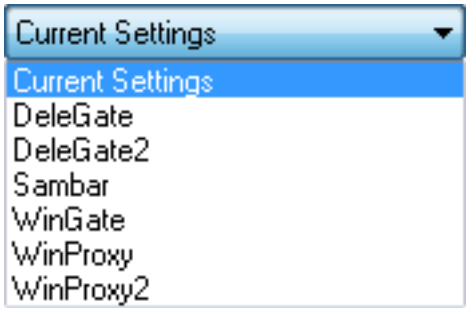

Figure 29 : Proxy Profile list

6.8.3 MODEMS CONFIGURATION

The Modems Configuration window allows configuration of the modems for alarm reception over a telephone line. The number of physical modems available limits the number of modems that can be configured.

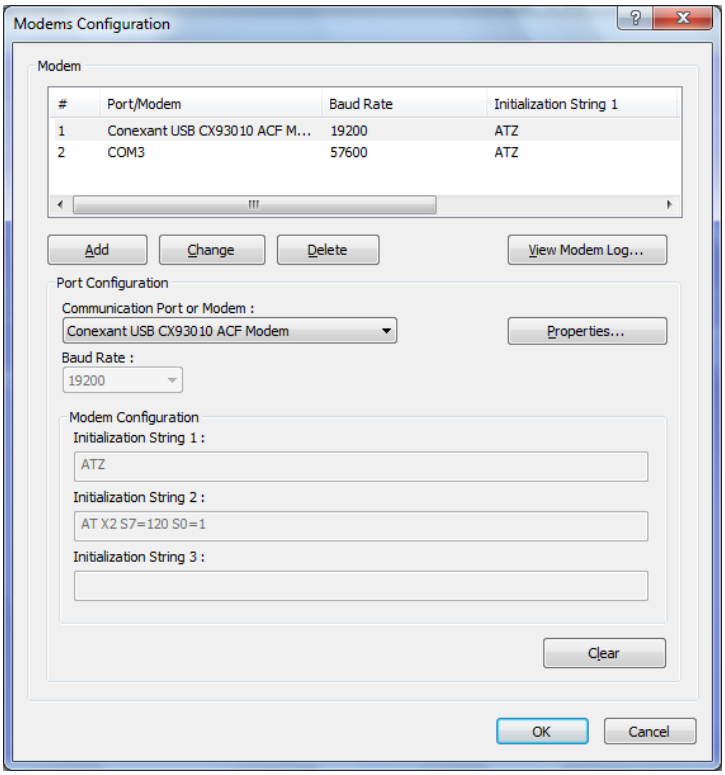

Figure 30 : Modems Configuration window

In the upper portion of the window, the list of current modems is shown, and in the lower portion are the data fields allowing modification to parameters in the list. The list contains:

- *Communication Port or Modem*
  A choice of COM ports and modems can be made from the drop-down list. The choices are from the devices installed by Windows®. The Initialization Strings fields are disabled when a modem name is selected.

- *Baud Rate*
  A choice from the available rates can be made from the drop-down list. This information sets the communications speed of the port. Note that this is the speed between the port and the modem, and not the connection speed established by the modem when connecting.

- *Initialization Strings 1,2 and 3*
  Up to three strings can be set in sequence, and the parameters depend on the modem being used. However, it is always recommended to use string 1 to reinitialize the modem, and the others to configure specific parameters. Refer to your modem's documentation to learn more about modem specific initialization strings.

Notes:
- The **Properties** button can be used only if a Windows® modem is selected. For the description of the Properties set-up please refer to your Windows® manual or the on-line help.
- In order to ensure timely reception of alarms from your sites, MacNet is optimized to operate with separate receive and transmit modems.

6.8.4 WEB SERVER CONFIGURATION

This window allows you to configure the MacNet web server parameters.

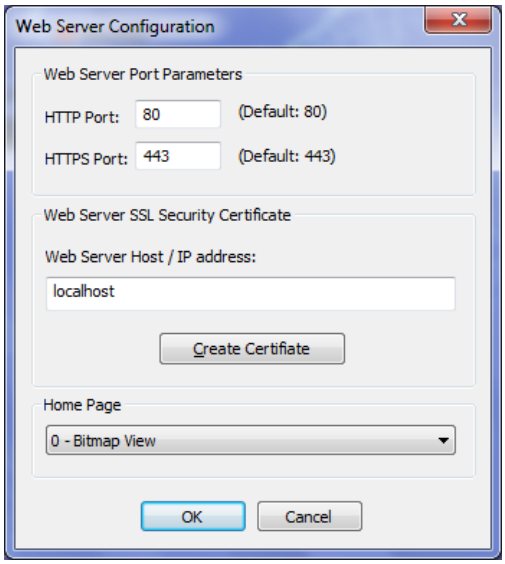

Figure 31 : Web Server Configuration

The following parameters can be configured:

- *HTTP Port*
  Set the IP Port for HTTP web communications. By default this value is 80.

- *HTTPS Port*
  Set the IP Port for HTTPS secure web communications. By default this value is 443.

- *Web Server Host / IP address*
  Address used to create the SSL Certificate. By default this value is set to the localhost.

- *Home Page*
  Select from the dropdown list the desired Home Page view. By default the Bitmap View is selected.

6.9 ALARM FORWARDING

This window allows you to create MacNet Virtual functions (MV1, MV2,..., etc) for alarm forwarding. ID numbering is automatic and there is no limit to the number of alarm forwarding functions that can be added.

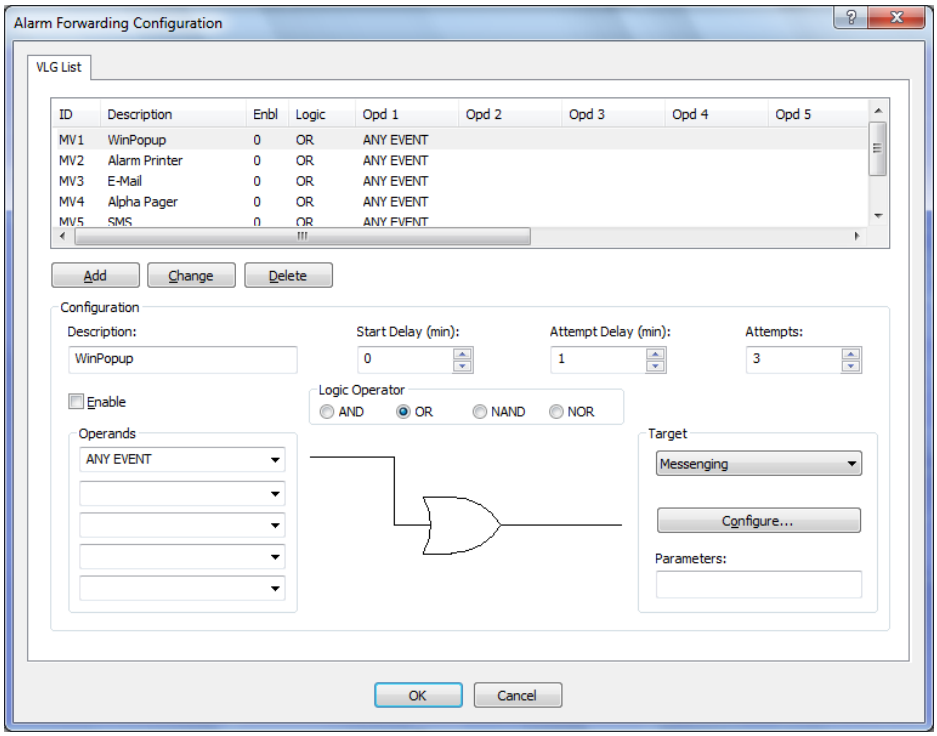

Figure 32 : Alarm Forwarding window

The upper portion of the window shows the list of current MacNet Virtual (MV) functions, and the lower portion provides the data fields allowing modification to parameters in the list. The list contains:

- *Description*
  Optional field. Maximum 40 characters. Unicode character set is allowed.

- *Start Delay*
  Mandatory input field. Sets the delay in minutes before starting the alarm forwarding sequence (from 0 to 99 minutes). The Alarm Forwarding list is scanned every 15 seconds, thus it could take up to 15 seconds before the alarm forwarding sequence starts when the delay is set to 0.

- *Attempt Delay*
  Mandatory input field. Sets the delay in minutes between each attempt (from 1 to 99).

- *Attempts*
  Mandatory input field. Sets the number of times to forward the alarm (from 1 to 999).

- *Enable*
  Check box to enable or disable the selected MV alarm forwarding function.

- *Logic Operator*
  Select one of the 4 Logic Operators (AND, OR, NAND, NOR) to be applied to all input operands in order to produce the desired logic output value for the MV function.

- *Operands*
  The MV alarm forwarding function can have up to 5 user-defined Operands as inputs. The Operands can be any MAC unit I/O, site or flag ID, any alarm/report event, or another MV function. However, if you need more than 5 Operands, you can cascade several MV functions to obtain the desired result. When there are fewer than 5 Operands, unused Operands are considered to be a logical 1 (True) for AND/NAND gates, and to be a logical 0 (False) for OR/NOR gates.

- *Target*
  Select from the drop down list the action to be performed when the MV function output is true. The following actions are supported:

Empty	No action
Alarm Printer	Alarm printout
I/O Card	Relay activation
E-mail	Send an e-mail
Messenging	Send a WinPopup message
SMS/Pager	Send an SMS/Pager Message

Table 2 : Alarm Forwarding Action list

- *Parameters*
  This field contains comma- and semicolon-separated parameters representing the Target action. Clicking the **Configure** button opens a dialog box allowing Target-specific parameter configuration. See Sections 6.9.1 to 6.9.5 for more details.

6.9.1 ALARM PRINTER PARAMETERS

This window allows configuration of the Alarm Printer device name. Clicking the Configure button opens the standard Print dialog box allowing selection of the desired printer.

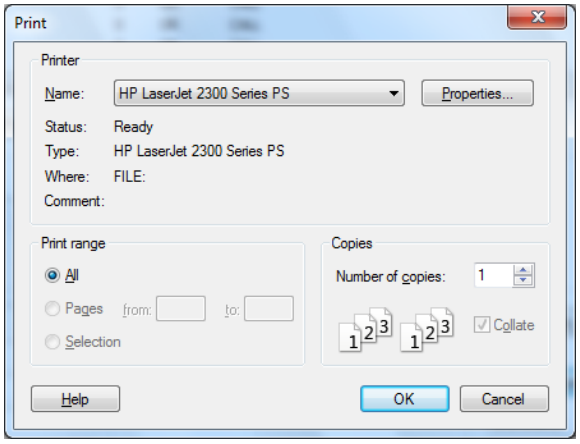

Figure 33 : Alarm Printer window

The resulting **Parameter** field in the **Target** section will contain the printer device name. For example if you select the printer shown in the Figure 33, the result will be:

Parameter format:
{Printer Device Name}

Example:
HP LaserJet 2300 Series PS

6.9.2 I/O CARD PARAMETERS

This window allows configuration of the Alarm-Forwarding I/O Card[7]. Each line in the list corresponds to a relay on the I/O Card.

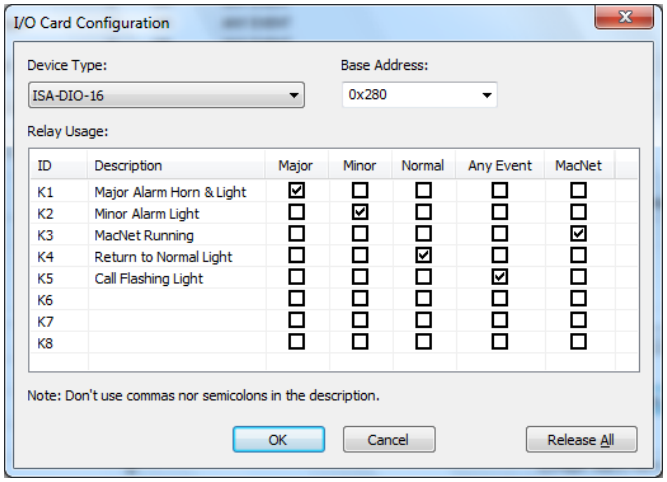

Figure 34 : I/O Card Setup window

The following parameters can be configured:

- *Device Type*
  Select from the dropdown list the type of I/O Card that is installed in the computer. The following I/O Cards are supported:

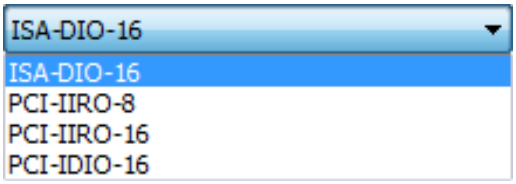

Figure 35 : Device Type list

- *Base Address*
  This hexadecimal value is used to set the physical base address. This field is ignored when a Plug-And-Play I/O Card is selected.

- *Description*
  Optional field. Click directly on the description in the list to turn on the edit box for the selected relay.

- *Major*
  Click the check box to turn on the selected relay with a Major Alarm Call.

- *Minor*
  Click the check box to turn on the selected relay with a Minor Alarm Call.

- *Normal*
  Click the check box to turn on the selected relay with a Return to Normal Call.

- Any Event
  Click the check box to turn on the selected relay with any event.

[7] To prevent conflict with the **MacNet Alarm-Activated I/O Card** feature, do not configure that physical I/O device in this window. That I/O Card feature is designed to behave like previous releases of MacNet (see Section 6.2). The new **Alarm-Forwarding I/O Card** feature works differently and provides more user flexibility for device operation..

- *MacNet*
  Click the check box to turn on the selected relay when MacNet is running.

Parameters Format:
{0:ISA-DIO-16, 1:PCI-IIRO-8, 2:PCI-IIRO-16, 3:PCI-IDIO-16};
{Base Address};
{Description Relay K1},{0-1:Major},{0-1:Minor},{0-1:Normal},{0-1:Any Event},{0-1:MacNet}
[[;{Description Relay K2},{0-1:Major},{0-1:Minor},{0-1:Normal},{0-1:Any Event},{0-1:MacNet}]
[; …]]

Example:
0;0x280;Major Alarm Horn & Light,1,0,0,0,0;Minor Alarm Light,0,1,0,0,0;MacNet Running,0,0,0,0,1;Return to Normal Light,0,0,1,0,0;Call Flashing Light,0,0,0,1,0;,0,0,0,0,0;,0,0,0,0,0;,0,0,0,0,0

6.9.2.1 Energized Relays window

When a call is received, Alarm Forwarding to the I/O Card will display the following window showing relays which have been activated.

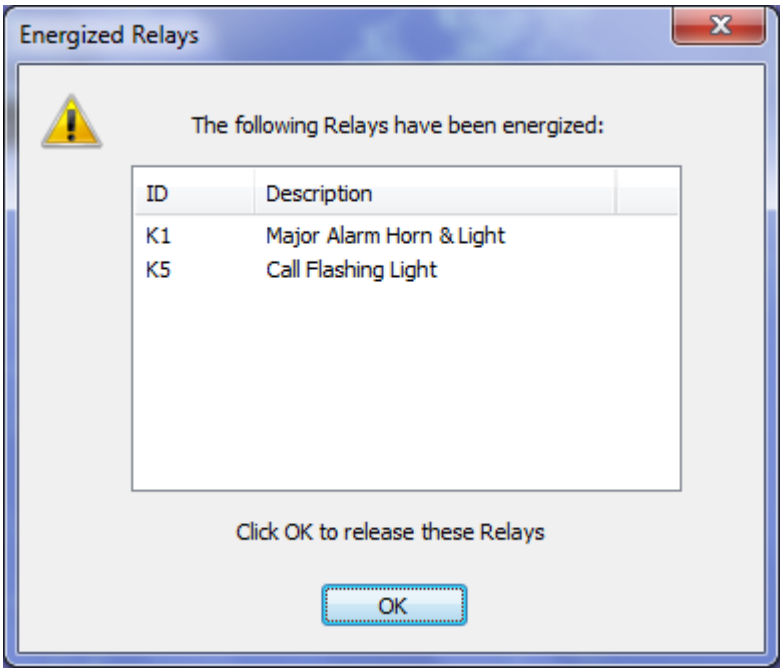

Figure 36 : Energized Relays window

The identification headings for the different elements in the list are:

- *ID*
  The relay number that is energized. K1 meaning relay #1, K2 meaning relay #2, etc.

- *Description*
  The user-configured description.

Clicking the **OK** button will close this window and release the energized relays.

6.9.3 E-MAIL PARAMETERS

This window allows configuration of the e-mail parameters.

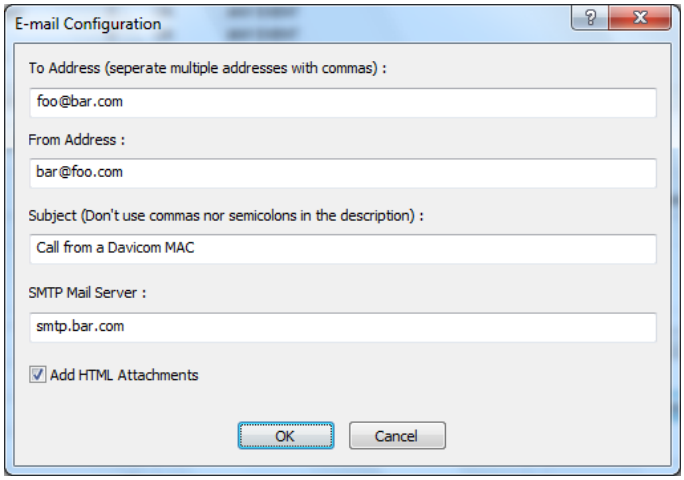

Figure 37 : Email Configuration window

The following parameters can be configured:

- *To Address*
  The target e-mail addresses in the form of foo@bar.com. Use commas to separate each address.

- From *Address*
  The sender e-mail address in the form of foo@bar.com.

- *Subject*
  A descriptive text that will be included in the subject line.

- *SMTP Outgoing Mail Server*
  The SMTP mail server that will be used to send e-mail.

- *Add HTML Attachments*
  Additional information will be appended in HTML format.

Parameters Format:
{To Address 1}[,{To Address 2}[, …]];{Return Address};{Subject};{SMTP Address};{0-1:Attachment}

Example:
foo@bar.com;bar@foo.com;Call from a Davicom MAC;smtp.bar.com;1

6.9.4 MESSENGING PARAMETERS

This window allows you to set up message transmission using the Windows Popup, Mail Slot or Windows Messenger service.

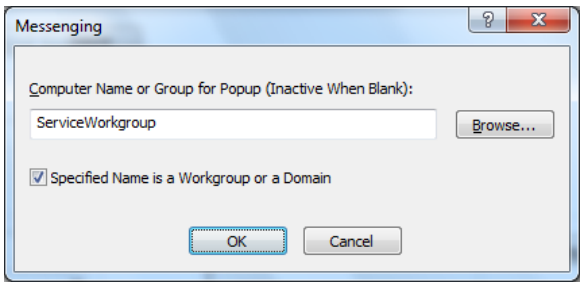

Figure 38 : Messenging Parameters window

The following parameters can be configured:

- *Computer Name or Group for Popup*
  Enter the Computer Name or the Workgroup Name that will receive the message. Click the **Browse** button to open the Computer and Network browser.

- *Specified Name is a Workgroup or a Domain*
  Check this box if the Name is a Workgroup or a Domain.

Parameters Format:
{Computer Name or Group};{0-1:Name is Workgroup or Domain}

Example:
ServiceWorkgroup;1

6.9.5 SMS/PAGER PARAMETERS

This window allows you to configure the SMS and Pager parameters.

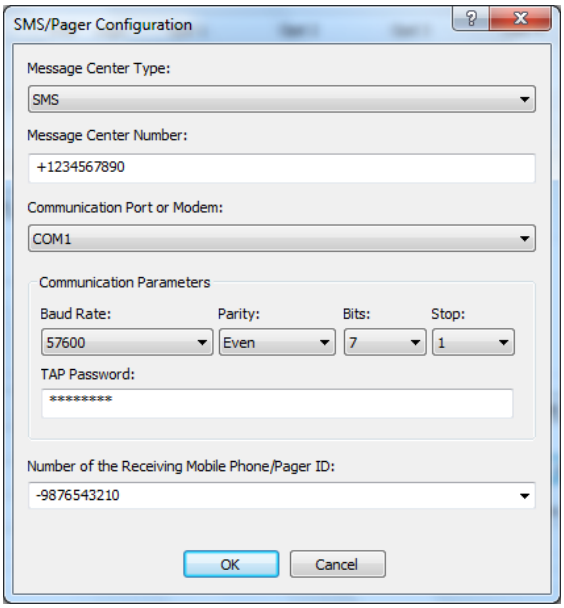

Figure 39 : SMS/Pager Parameters window

The following parameters can be configured:

- *Message Center Type*
  Select from the dropdown list the Message Center Type. Select **SMS** if your modem and the service provider support SMS protocol. Select **Alphanumerical Pager/TAP SMS** if the service provider supports the TAP protocol.

- *Message Center Number*
  The telephone number of the Message Center (service provider).

- *Communication Port or Modem*
  Different port numbers or modems can be selected from the drop-down list.

- *Baud Rate*
  Different baud rates can be selected from the drop-down list to set the speed at which the COM Port or Modem connects to the PC.

- *Parity*
  Select from the dropdown list the parity type (NONE, ODD or EVEN). NONE by default.

- *Bits*
  Select from the dropdown list the number of data bits (7 or 8). 8 by default.

- *Stop*
  Select from the dropdown list if 1 or 2 stop bits are necessary. 1 by default.

- *TAP Password*
  Optional field. Enter the TAP Password if required by your service provider.

- *Receiving Mobile Phone Number / Pager ID*
  Enter the target telephone number or Pager ID.

Parameters Format:
{0:SMS, 1:Alpha Pager/Tap SMS};
{Modem or COM Port},{Baud Rate},{Parity},{Data Bits},{Stop Bits};
{Message Center Number};
{Receiving Mobile Phone or Pager ID};{TAP Password}

Example 1:
0;COM1,57600,E,7,1;+1234567890;+98765432310;

Example 2:
1;Connexant USB CX93010 ACF Modem,57600,E,8,1;418-555-1234;418-555-4321;******

7 MACNET OPERATION

This section describes the operation of MacNet after it has been configured with parameters for at least one site. As mentioned previously, MacNet does not require a user to be logged on in order to receive calls. To ensure constant supervision by MacNet, it is recommended that the software be started automatically when the computer starts up. This function is automatically configured during installation of the MacNet program. If MacNet does not start automatically when Windows® starts-up, refer to the Windows manual for details on how to add a program to the Windows® Startup group.

7.1 GENERAL

When the MacNet software is started, the following window is displayed.

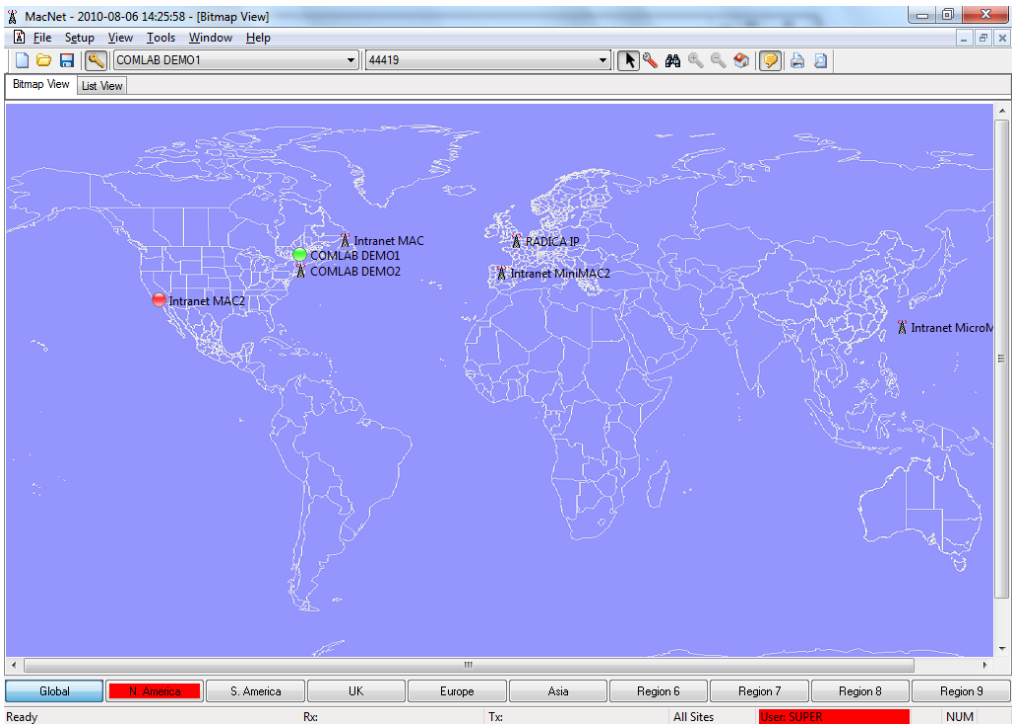

Figure 40 : Main window

Note There is an option in the dropdown lists called **None** or **9999999999999999**. This option allows opening of the active events log of a "virtual site" that is used to receive calls from MAC units not having a valid MacNet **Site ID** code because they have not yet been added to the MacNet site directory. This ensures that no alarm calls are missed in cases of site misconfiguration. Also, this “virtual site” can be used to acknowledge and archive all calls of all sites, including **Site System Status** and **Site History Log**.

Clicking an icon on the map, or selecting a site by **Site Name** or **Site ID** code from the dropdown lists, automatically opens the Active Events Log for the selected site (see Section 7.3).

7.1.1 RX FIELD IN THE STATUS BAR

- *Empty info box*
  All reception modes that were configured are ready to receive call.

- *ERROR:IP*
  The “ERROR:IP” message is displayed when MacNet is unable to monitor the MacNet IP Port configured in the **Network Configuration** window, see Section 6.8.2 on page 33. This is often the case when another program uses the same IP port. To correct this problem, shut down other program or use another IP Port.

- *ERROR: Modem Name or Port Number*
  This message is displayed when the Modem or Serial Port is unavailable, or there is an initialization problem. Refer to Section 6.8.1 or 6.8.3 to locate the configuration problem.

7.1.2 TX FIELD IN THE STATUS BAR

- *Empty info box*
  No outgoing call yet.

- *Calling: Site ID*
  Outgoing call in progress with the site “Site ID”.

- *Disconnected: Site ID*
  The last outgoing call with the site “Site ID”.

7.1.3 PRIORITY FIELD IN THE STATUS BAR

This field shows the priority level selected by the user. See the figure below for the priority level list. To select a priority level, right-click the Region bar above the Status bar.

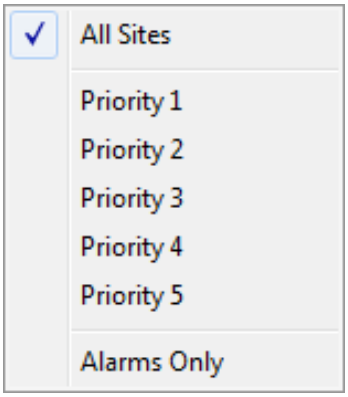

Figure 41 : Priority list

7.1.4 SESSION FIELD IN THE STATUS BAR

This field shows the user name and the access level currently logged on. See Section 4 for more details.

7.2 ALARM RECEPTION

When MacNet receives an alarm, several actions occur. Firstly, the status bar in the bottom of the window displays the sequence of events taking place in the **RX** information box. For example, when MacNet answers a call from site 101, "**Connecting…**" appears in the box, followed by "**Connected: 101"** and then, "**Disconnected: 101**". Afterwards, the MacNet warning window shown below appears on the screen. If the **Alarm Sound** and the **Alarm Activation I/O Card** options were configured, the desired sound file will play continuously and the appropriate relays will turn on while this warning is displayed. See Section 6.2. Finally, Alarm Forwarding will be trigged.

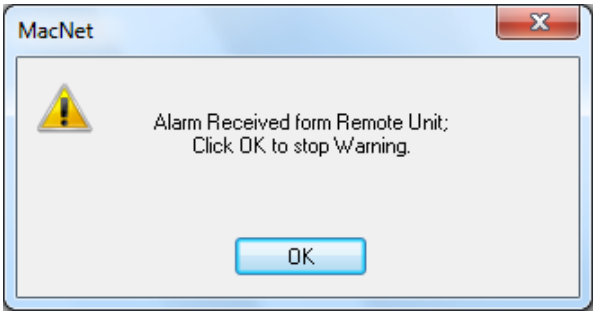

Figure 42 : Alarm Warning

This window indicates that MacNet has received an alarm call from a site. It could be a major or minor alarm call, or a return to normal call. Clicking the OK button closes the window, stops the **Alarm Sound,** and turns off the **Alarm Activation I/O Card** relays. The New Alarm Calls window then opens to display the list of all received alarms[8] that have not yet been acknowledged by the MacNet user. The list is displayed in the chronological order in which they were received. You can click on the list title bar to change the sort order according to the selected column. The date and time are those at which the event occurred at the MAC site and **do not establish the chronological order of the list**. Once the MacNet user has acknowledged or archived an event during consultation of the Active Events Log, it disappears from the list.

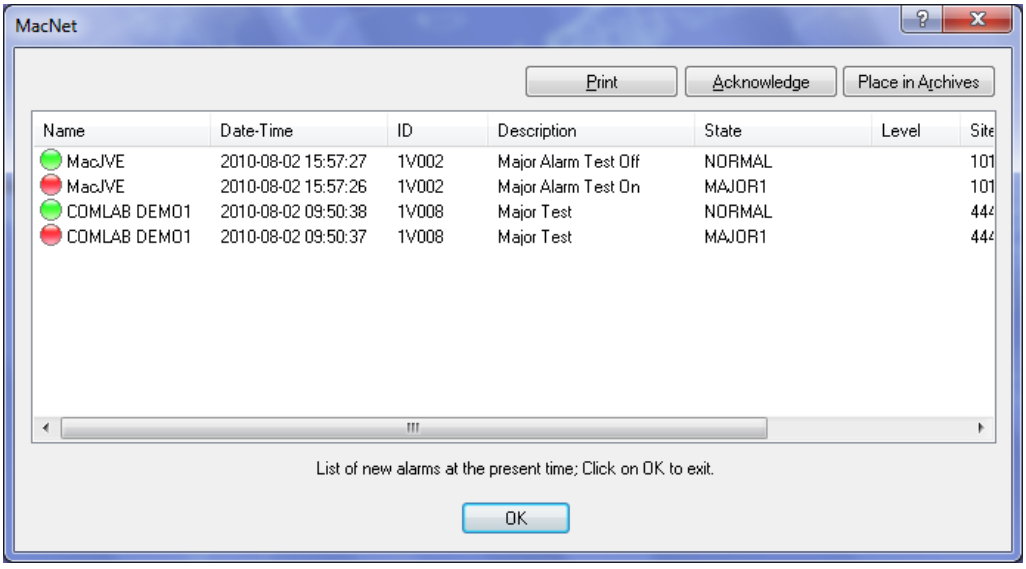

Figure 43 : New Alarm Calls window

A scroll bar appears when the list is longer than the default window size, to allow viewing of all items in the list.

[8] Note that this window doesn't show **Site System Status** and **Site History Log** calls. To view all calls, select the Site Name **None,** or the Site ID **999999999999999999**., in the toolbar dropdown lists. For more details, see Section 7.1.

Notes: - Function key F3 can be used as a shortcut to reopen the New Alarm Calls window.
- The **New Alarm Calls window** will not appear on the screen if the active **Event Log** is already open.

Double-clicking on an event in the list opens the active Events Log for the site (see Section 7.3). Clicking the OK button closes the window.

When a call is received by MacNet, the icon for the originating site changes color to visually indicate the status of the site as shown in Table 3.

Icons	MapInfo Icons	Colors	State
		Solid Black or Tower	No Event (Normal)
		Solid Red	Major Alarm
		Solid Yellow	Minor Alarm
		Solid Green	Return to Normal
		Solid Blue	Report
		Hollow Red	Acknowledged Major Alarm
		Hollow Yellow	Acknowledged Minor Alarm
		Hollow Green	Acknowledged Return to Normal
		Hollow Blue	Acknowledged Report
	None	Solid Grey	Archived Event

Table 3 : Icons and Color Code

Reception of a report (system status or history log) is not considered to be an alarm call. The only indication that a report was received will be the site map icon color changing to a blue dot if the site had no active alarms at the time. If the F3 key is used to open the list of new alarm calls, the report reception will not be shown in the list.

History log transfers via MacNet IP Port connection is a hardware-dependant feature only available in MAC2 units. However, status and history log transfers via modem, and alarm calls via MacNet IP Port are fully functional with MAC+ units. MAC+ units must NOT be configured to automatically send History Log reports via MacNet IP Port. For the MAC+ case, history logs can be sent by fax, e-mail or manually captured from the MAC.

7.3 CONSULTING THE ACTIVE EVENTS LOG

Four methods can be used to access the active Events Log (MacNet **must** be in the **Site Selection** mode). The first is by simply clicking the mouse on a site icon. The second and third ways are to select the Site Name or Site ID from the dropdown lists. The fourth method is to select any item in the list of new alarms that appears when an alarm call is acknowledged. Independently of the method used, a window similar to the one shown below will appear:

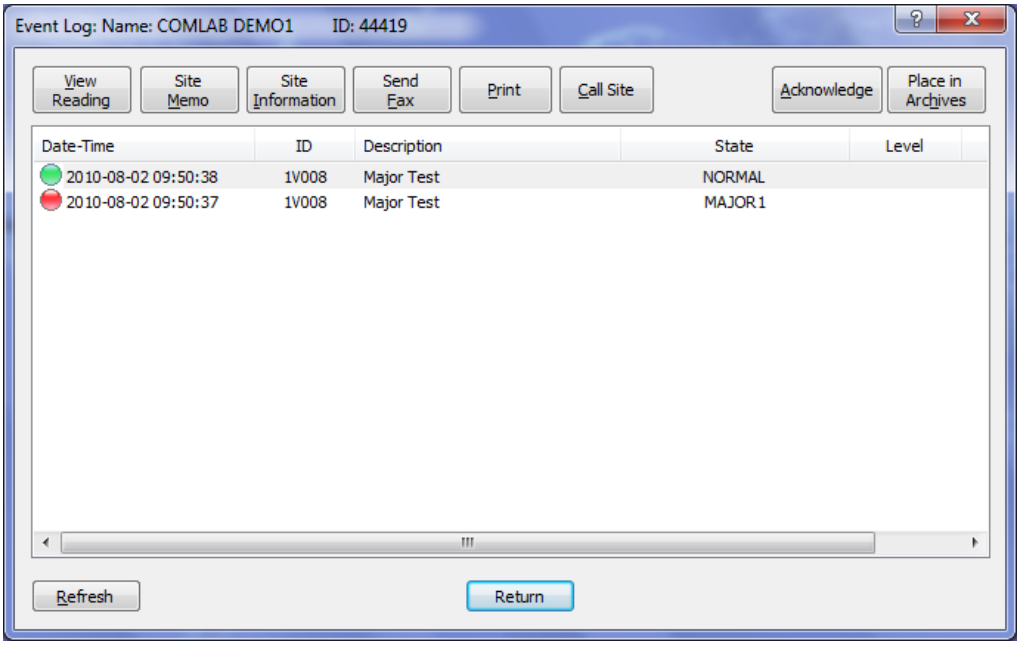

Figure 44 : Event Log window

As shown above, the active Events Log window contains a series of function buttons at the top as well as the list of events recorded by MacNet.

7.3.1 EVENTS LIST

The events in the list are given in chronological order with the most recent at the top of the list. You can click on the list title bar to change the sort order according to the selected column. The identification headings for the different elements in the list are:

- *Date-Time*
  The date and time at which the event occurred at the MAC site.

- *ID*
  Identification of the input or event that caused the call.

- *Description*
  A description of the input or event that caused the call.

- *State*
  The state of the input at the time of the call.

- *Level*
  The input level at the time of the call.

7.3.2 FUNCTION BUTTONS

The function buttons are:

- *View Reading*
  When this button is clicked, the View Reading window opens to display contextual information about the selected event and the site readings at the time of the event. Among the details shown are the reasons for the event, the list of active alarms at the time of the call, as well as the set of input and output readings at that time. The screen presentation of the information is the same as that used for VT100 mode or reception by fax.

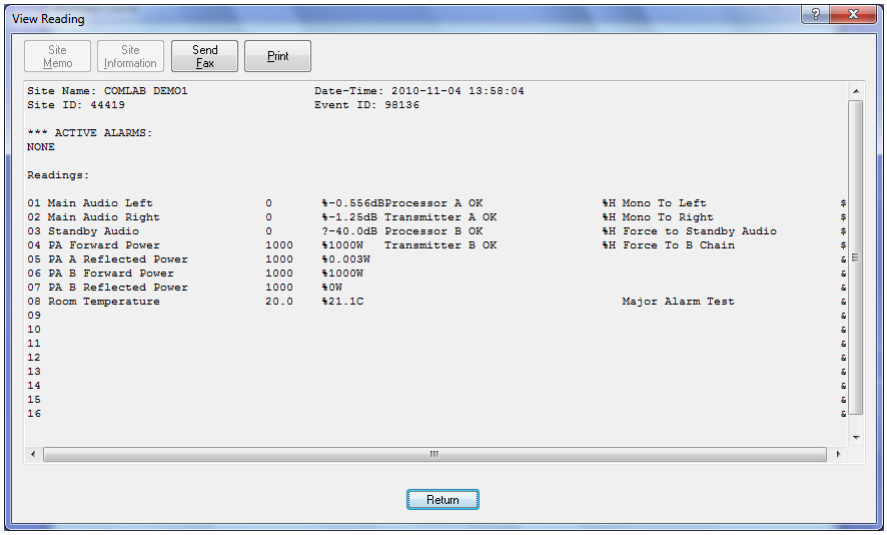

Figure 45 : View Reading

- *Site Memo*
  Clicking this button opens the Memo window (see Section 6.5.2.1).

- *Site Information*
  Clicking this button opens the Information window (see Section 6.5.2.2).

- *Send Fax*
  Clicking this button starts the Windows® fax utility software, and allows total or partial contents of the active Events Log to be sent by fax. To perform a partial transmission of contents, the user must select the desired event numbers from the list.

- *Print*
  Clicking this button allows total or partial printing of the contents of the active Events Log, using the standard Windows® "Print" dialog window. To perform a partial print of contents, the user must select the desired event numbers from the list.

- *Call Site*
  This button allows a call to be made immediately to the site via IP or modem (see Section 7.4 on page 51).

- *Acknowledge*

  This button allows alarm call acknowledgement. Once acknowledged, the event icon changes from a solid colored circle to a hollow colored circle (see below). Also, if there is only one event in the list, the site map icon will change from a solid colored dot to a hollow colored circle or a tower outline with the same color if MapInfo is used (See Table **3**). The corresponding region button will also change to a colored outline. If however, there are other events in the list which have not yet been acknowledged, the site map icon and the corresponding region button will maintain their full colored appearance according to the highest set priority. If all events in the list have been acknowledged, but have not been archived, the site map icon will change to a hollow colored circle or a tower outline colored according to the highest set priority, and the corresponding region button will do the same.

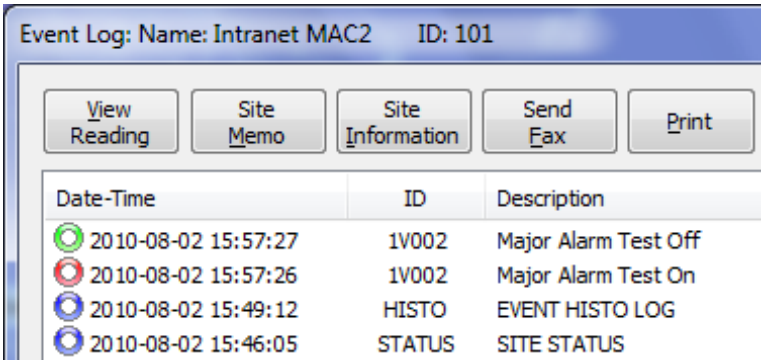

Figure 46 : Acknowledged Events

- *Place in Archives*

  Clicking this button sends acknowledged events to the data archives; only one item at a time can be archived unless **Multiple Archive** is enabled in the **Options Properties** (Section 6.2 page 18). When an event has been selected for archiving, the event icon changes to gray (see below). The event will disappear from the list when the **Refresh** button is clicked, or when the Active Event Log is closed. After events have been archived, they can be viewed again using the MacNet database utility. Since the data is saved as a Windows® Access97® file, it is possible to set up your own visualization program using Access97®.

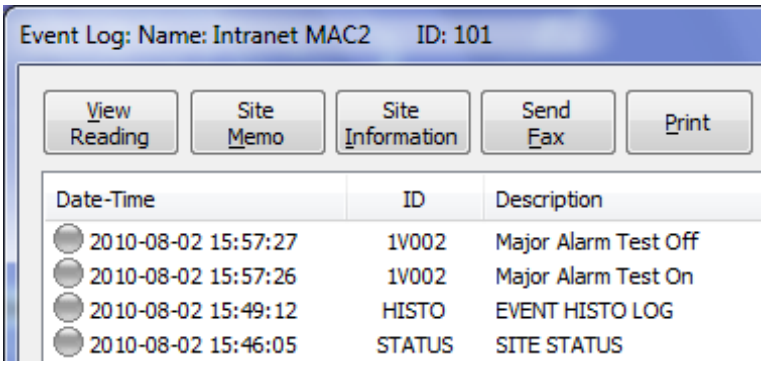

Figure 47 : Archived Events

- *Refresh*

  Clicking this button updates the information in the list and moves acknowledged items marked for archiving to the database archive.

- *Return*

  Clicking this button closes the active Events Log viewing session.

7.4 CALLING A SITE

To communicate with a site, it is only necessary to select the desired site, either from the map or from the **Site Name** or from the **Site ID** drop-down menu, in order to open the Active Events Log for the site, and then click the **Call Site** button. The following dialog box will appear on the screen if an IP Address and a Telephone number has been configured for the site.

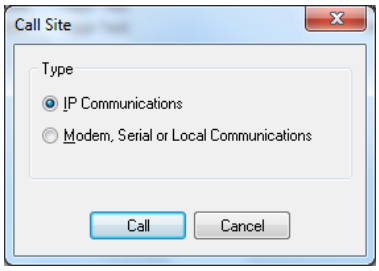

Figure 48 : Call Site window

When IP Communications is selected, MacNet launches the software configured in the *Software for Calls* window. If no software is configured, MacNet launches the MacComm software by default. MacNet will automatically transfer the respective access parameters to the MAC according to your account settings. However, if no access parameters are configured (MAC User Name and MAC Password), MacNet will automatically launch MacComm and the Connect window will appear. You will have to enter the MAC username and password yourself. If no IP address was configured for the site, MacNet immediately initiates the connection process according to the following connection priority: 1) Modem connection, 2) Serial port connection, 3) Local Connection. If only an IP address was configured, MacNet will initiate an IP connection.

Once communication is established, a window similar to the Global View window shown below for the site will appear.

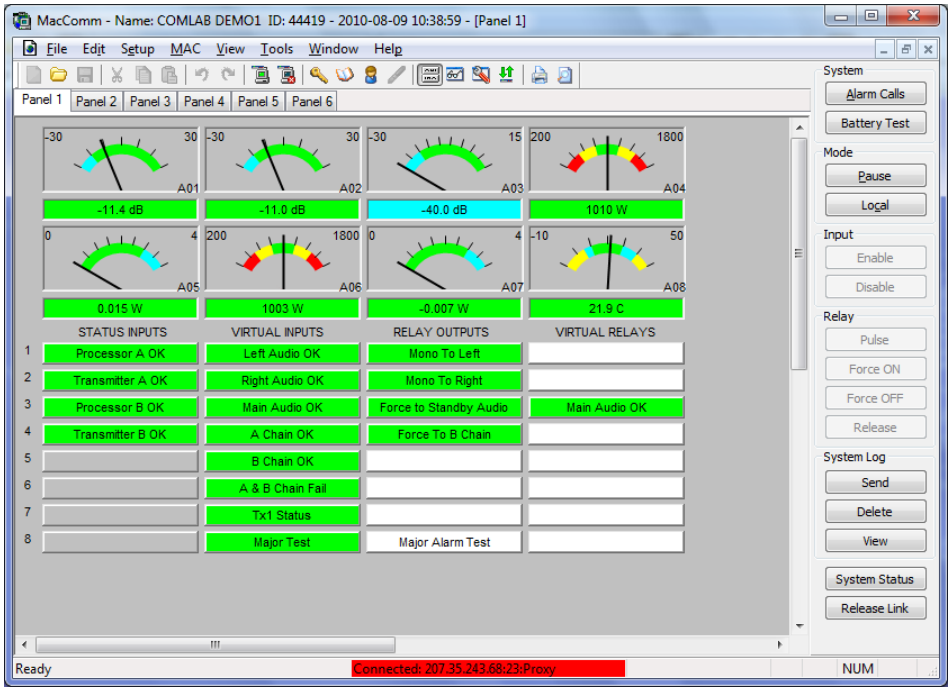

Figure 49 : Global View window

To obtain information about the Global View window, the configuration and visualization windows and the different command buttons, please refer to the “MAC Remote Monitoring Control Units - Reference Manual”. This manual also contains details about general operation of the MAC units.

7.5 WEB OPERATION

MacNet includes a web server for remote consultation and alarm acknowledgement. You can use your favorite Web Browser to access MacNet over the Internet (if your network is properly configured to forward HTTP and HTTPS ports to the PC that is running MacNet). In your favorite web browser, enter the MacNet PC's IP address (usually in a numerical format such as 207.35.243.68) in the address line of your browser.

If you have not connected to MacNet via Web Browser before, the **Security Alert** window may appear (see Figure 50), depending on the security settings of your computer.

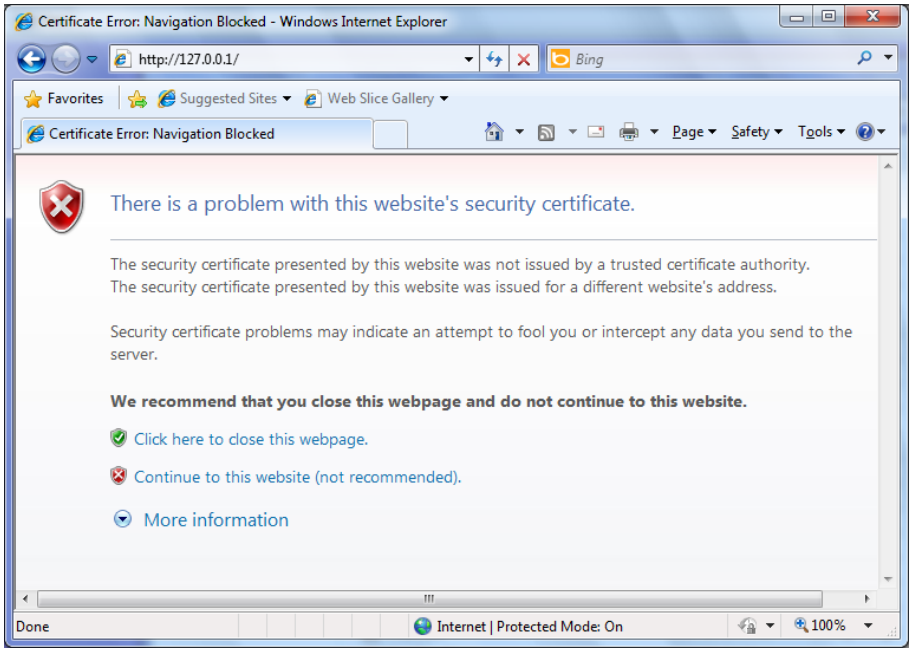

Figure 50 : Browser Security Alert

The reason this **Browser Security Alert** appears is that MacNet uses Secure HTTP (HTTPS) to encrypt communications with your computer's browser. HTTPS requires the acceptance of a Secure Socket Layer (SSL) security certificate (or encryption key) generated by a trusted authority and these certificates are generally associated with a specific IP address on the Internet.

Since each MacNet installation is usually at a different IP address, it is impossible to generate the certificate before MacNet is installed. MacNet therefore generates its certificate for the specific address at which it is installed (keep this in mind if you have to change the PC's IP address).

On the first connection, you can choose to proceed directly by selecting "Continue to this website" or "Yes" for older versions of Internet Explorer (see Figure 50 above) and logging in. The Web access login window should appear.

7.5.1 WEB LOGIN

Use the Default Supervisor User Name and Password (SUPER & SSSSSSSS) if this is the first time. Otherwise use your normal access codes. The **Main window** shown on the next page should appear.

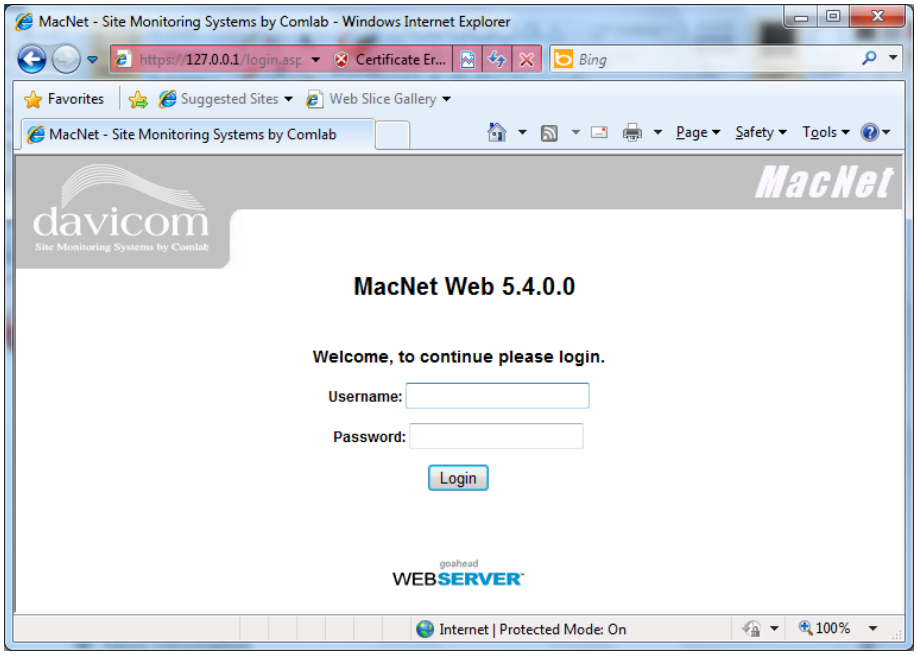

Figure 51 : Web access login window

7.5.2 WEB MAIN WINDOW

The main window is divided into three frames. The top frame contains a toolbar similar than the MacNet toolbar; there is a **Logout** button, three dropdown lists to select **Site Name**, **Site ID** and a **Database** query action, finally a **Home** button to refresh the main window. The bottom frame contains selection buttons to filter sites by region. The central frame shows site icons on a Map.

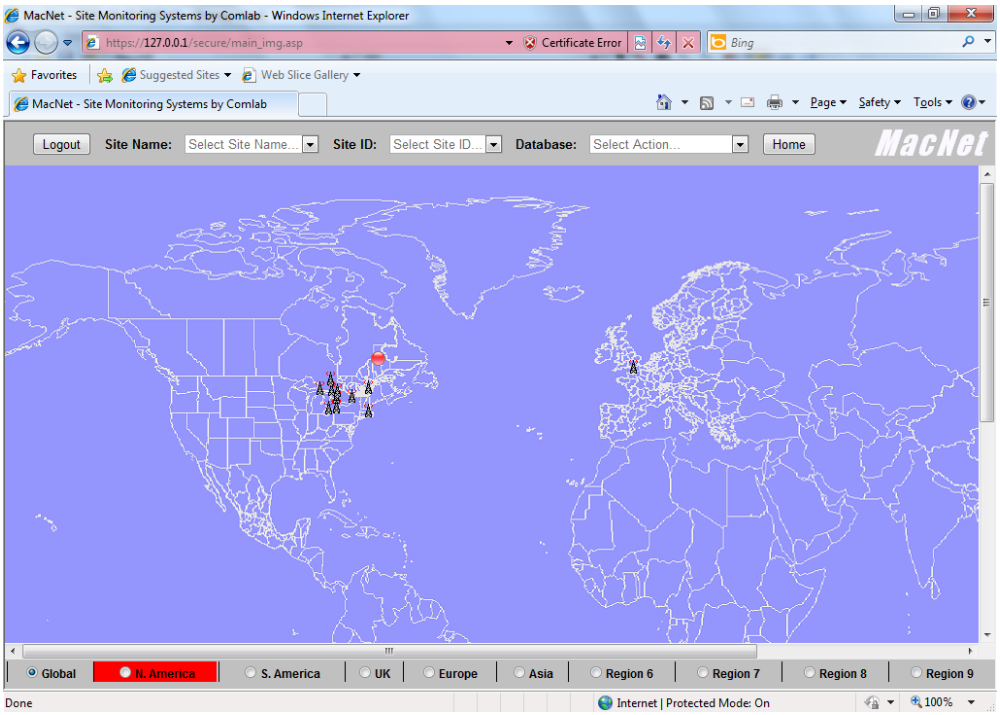

Figure 52 : Web Main window

7.5.3 EVENT LOG WEB PAGE

Three methods can be used to access the active Events Log. The first is by simply clicking the mouse on a site icon on the Map. The second and third ways are to select the Site Name or Site ID from the dropdown lists. Independently of the method used, a window similar to the one below will appear:

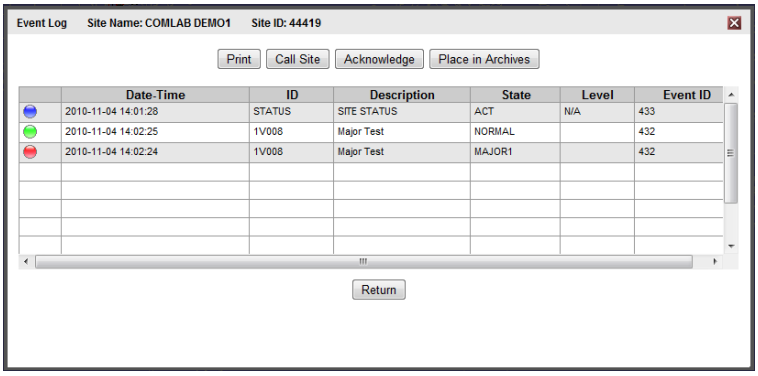

Figure 53 : Event Log web page

7.5.3.1 Function buttons

The function buttons are:

- *Print*
  Clicking this button allows printing of the contents of the active Events Log, using the standard Windows® "Print" dialog window.

- *Call Site*
  This button allows a call to be made immediately to the site Web page.

- *Acknowledge*
  This button allows alarm call acknowledgement (events must be selected in the list first). Once acknowledged, the event icon changes from a solid colored circle to a hollow colored circle (see below). Also, if there is only one event in the list, the site map icon will change from a solid colored dot to a hollow colored circle or a tower outline with the same color if MapInfo is used (See Table **3**). The corresponding region button will also change to a colored outline. If however, there are other events in the list which have not yet been acknowledged, the site map icon and the corresponding region button will maintain their full colored appearance according to the highest set priority. If all events in the list have been acknowledged, but have not been archived, the site map icon will change to a hollow colored circle or a tower outline colored according to the highest set priority, and the corresponding region button will do the same.

- *Place in Archives*
  Clicking this button sends acknowledged events to the data archives (events must be selected in the list first). When an event has been selected for archiving, the event icon changes to gray (see below). The event will disappear from the list when the **Refresh** button is clicked, or when the active Event Log is closed. After events have been archived, they can be viewed again using the MacNet database utility. Since the data is saved as a Windows® Access97® file, it is possible to set up your own visualization program using Access97®.

8 DATABASE MANAGEMENT

This section deals with database management, including queries, repair and maintenance utilities. Database queries are accessible in the **Database** sub-menu under the **View** menu. Database maintenance functions are accessible in the **Database Utilities** sub-menu under the **Tools** menu.

8.1 DATABASE QUERIES

The query functions allow viewing of the different elements that have been archived, such as alarms, system status, MAC history logs and MacNet history logs. Queries for the four categories are handled in the same way, and the descriptions of the different data fields, the function buttons, and the various columns in the list of results are given below. To perform a database query, it is only necessary to enter the search criteria and then click the View button. The results are presented in the text-view window.

8.1.1 GENERAL

Whenever a query request is made without specifying any selection criteria, the warning message shown below may appear:

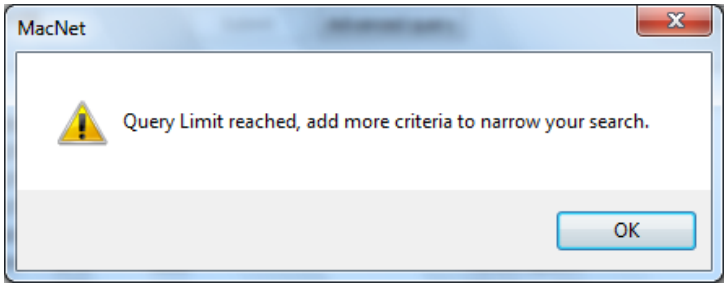

Figure 54 : Query Limit warning

If the user wishes to view a database that has a large quantity of entries, it may take several minutes before all events are displayed.

Note that queries that are more complex can be done on the databases by using MS-Access with which the files are compatible.

The structure of these database files is described in the file named: “MacNet database file structures.xls” on the accompanying CD.

8.1.1.1 Advanced Query

This window allows you to do a custom database query. You can enter specific search criteria using the standard SQL query language. See Figure 55 below.

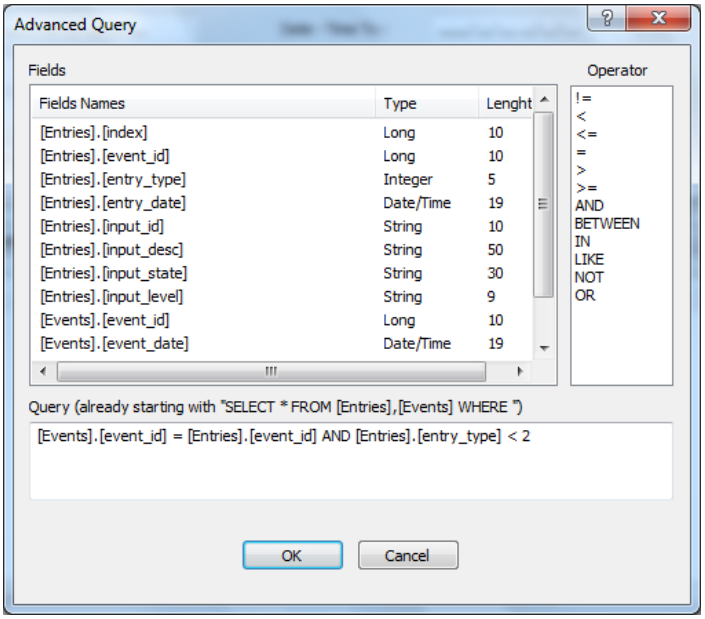

Figure 55 : Advanced Query window

This window is divided into 3 sections. The first section shows a list of all available data fields. It also gives the field type and the data length for complementary information. The second section lists available **SQL** operators that can be used in the query. The bottom section shows the **SQL** query that will be applied when **OK** is clicked.

8.1.2 ARCHIVED EVENTS (ARCENTRIES.MDB)

The **Archived Events** item in the **View/Database** menu allows queries of the Alarms (both major and minor) that have been received and archived by the user from the events log. It will work only if alarms have been configured in the MAC units. The database query can be done using different criteria such as dates, site ID's, type of alarms, input numbers and others. For example, from date A to date B, list all major alarms at site 101. A snapshot of all readings downloaded from the MAC at the time of each event is also available. .

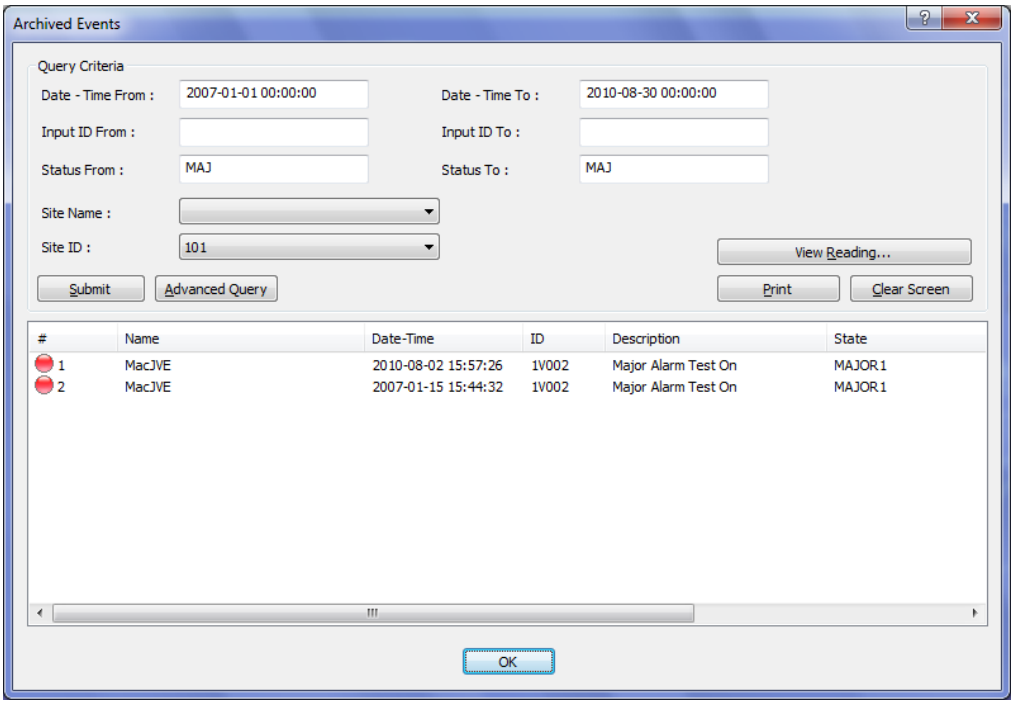

Figure 56 : Archived Events window

Data input and selection fields

These data fields allow entry of database search criteria, and descriptions of the data entry fields are given below:

- *Date - Time From:* *Date - Time To:*
  The beginning and end date/time of the search. If no beginning date/time is given, all date/time before the end date/time will be shown. If no end date/time is given, all date/time after the beginning date/time will be shown.

- *Input ID From:* *Input ID To:*
  The number of the input or the reason for the call from the MAC unit. If no **Input ID From** is given, all input ID starting with letters smaller than the **Input ID To** will be shown. If no **Input ID To** is given, all input ID starting with letters greater than the **Input ID From** will be shown.

- *Status From:* *Status To:*
  The input status or the reason for the call from the MAC unit. If no **Status From** is given, all status starting with letters smaller than the **Status To** will be shown. If no **Status To** is given, all status starting with letters greater than the **Status From** will be shown.

- *Site Name: or Site ID:*
  These drop-down lists allow selection of sites and regions. This allows further refinement of the search criteria entered in preceding data fields. The drop-down lists depend directly on the regions and sites that have been configured in MacNet.

Function buttons

In the different view windows there are several function buttons, as described below:

- *Submit*
  Clicking this button starts the database query according to the given search criteria.

- *Advanced Query*
  Clicking this button brings up the Advanced Query window before starting the database query. See Section 8.1.1.1 on page 55.

- *Clear Screen*
  Clicking this button clears all data fields and the list of results.

- *View Reading*
  Clicking this button allows viewing of site readings as described in Section 7.3.2.

- *Print*
  Clicking this button allows complete or partial printing of the query results, using the standard Windows® "Print" dialog window. To perform a partial print of the results, the user must select the desired event numbers from the list.

Presentation of results

- *#*
  A sequential number for the current query. This number is not related to any information in the database.

- *Name*
  The site name configured in the remote MAC unit.

- *Date-Time*
  The date and time at which the event occurred either with the MAC unit or MacNet.

- *ID*
  Identification of the input or event that caused the call.

- *Description*
  This description is the same as the one configured in the MAC unit for the corresponding input, or the transfer type description, or other reasons for the call from the MAC unit.

- *State*
  The state of the input at the time of the call.

- *Level*
  The input level during the event that caused the call.

- *Site ID*
  The ID number of the site.

- *Event ID*
  The record number in the Database.

Note: You can click on the list title bar to change the sort order according to the selected column.

8.1.3 ARCHIVED SYSTEM STATUS (ARCSTATUS.MDB)

The **Archived System Status** item in the **View/Database** menu allows queries of the Site System Status reports that have been received by MacNet. These reports will have been sent only if the MAC units have been configured to do so. The database query can be done using different criteria such as date, relay status and others. For example, from date A to date B, list all units that had inputs with minor alarm.

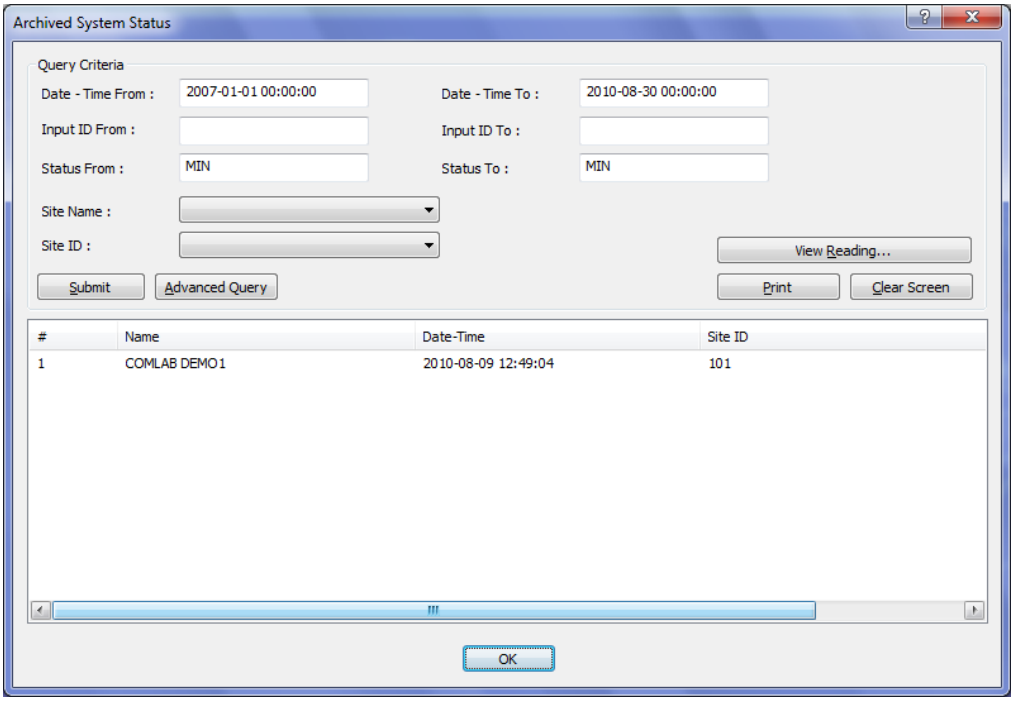

Figure 57 : Archived System Status

Data input and selection fields

These data fields allow entry of database search criteria, and descriptions of the data entry fields are given below:

- *Date - Time From:* *Date - Time To:*
  The beginning and end date/time of the search. If no beginning date/time is given, all date/time before the end date/time will be shown. If no end date/time is given, all date/time after the beginning date/time will be shown.

- *Input ID From:* *Input ID To:*
  The number of the input or the reason for the call from the MAC unit. If no **Input ID From** is given, all input ID starting with letters smaller than the **Input ID To** will be shown. If no **Input ID To** is given, all input ID starting with letters greater than the **Input ID From** will be shown.

- *Status From:* *Status To:*
  The input status or the reason for the call from the MAC unit. If no **Status From** is given, all status starting with letters smaller than the **Status To** will be shown. If no **Status To** is given, all status starting with letters greater than the **Status From** will be shown.

- *Site Name: or Site ID:*
  These drop-down lists allow selection of sites and regions. This allows further refinement of the search criteria entered in preceding data fields. The drop-down lists depend directly on the regions and sites that have been configured in MacNet.

Function buttons

In the different view windows there are several function buttons, as described below:

- *Submit*
  Clicking this button starts the database query according to the given search criteria.

- *Advanced Query*
  Clicking this button brings up the Advanced Query window before starting the database query. See Section 8.1.1.1 on page 55.

- *Clear Screen*
  Clicking this button clears all data fields and the list of results.

- *View Reading*
  Clicking this button allows viewing of site readings as described in Section 7.3.2.

- *Print*
  Clicking this button allows complete or partial printing of the query results, using the standard Windows® "Print" dialog window. To perform a partial print of the results, the user must select the desired event numbers from the list.

Presentation of results

- #
  A sequential number for the current query. This number is not related to any information in the database.

- *Name*
  The site name configured in the remote MAC unit.

- *Date-Time*
  The date and time at which the event occurred either with the MAC unit or MacNet.

- *Site ID*
  The ID number of the site.

- *Event ID*
  The record number in the Database.

Note: You can click on the list title bar to change the sort order according to the selected column.

8.1.4 ARCHIVED HISTORY LOG (ARCHISTO.MDB)

The **Archived History Log** item in the **View/Database** menu allows queries of the MAC history logs that have been downloaded into MacNet. These logs will have been downloaded only if the MAC units have been configured to do so. The database query can be done using different criteria such as time and date, input ID and others that appear in the query screen. For example, from date A to date B, list all operations done by the system administrator.

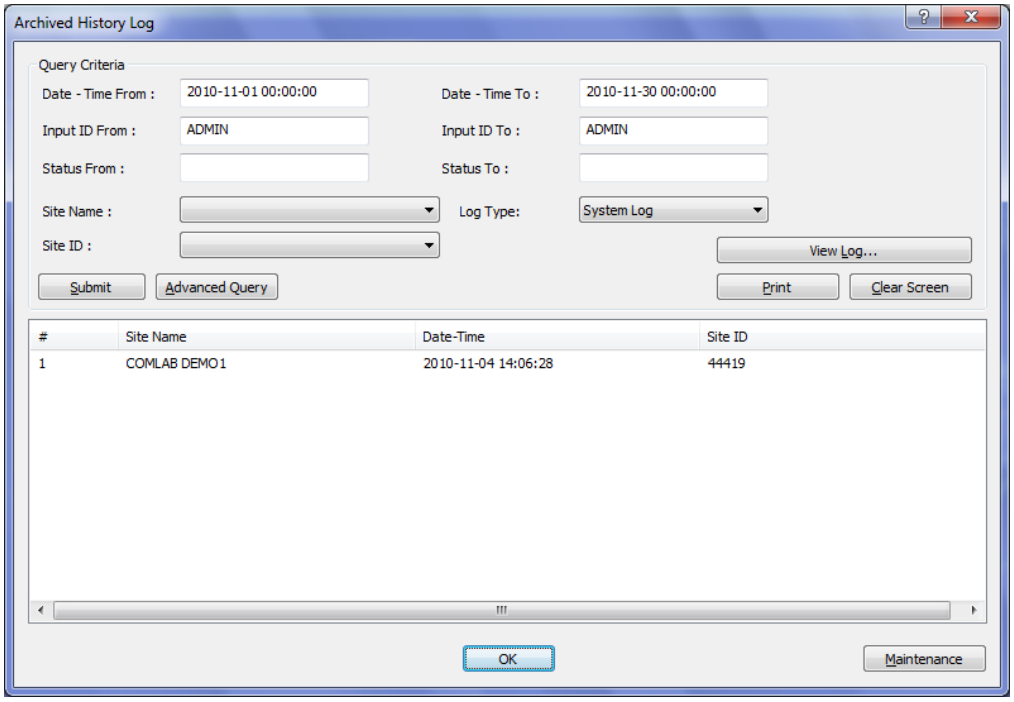

Figure 58 : Archived History Log

Data input and selection fields

These data fields allow entry of database search criteria, and descriptions of the data entry fields are given below:

- *Date - Time From:* *Date - Time To:*
  The beginning and end date/time of the search. If no beginning date/time is given, all date/time before the end date/time will be shown. If no end date/time is given, all date/time after the beginning date/time will be shown.

- *Input ID From:* *Input ID To:*
  The number of the input or the reason for the call from the MAC unit. If no **Input ID From** is given, all input ID starting with letters smaller than the **Input ID To** will be shown. If no **Input ID To** is given, all input ID starting with letters greater than the **Input ID From** will be shown.

- *Status From:* *Status To:*
  The input status or the reason for the call from the MAC unit. If no **Status From** is given, all status starting with letters smaller than the **Status To** will be shown. If no **Status To** is given, all status starting with letters greater than the **Status From** will be shown.

- *Site Name: or Site ID:*
  These drop-down lists allow selection of sites and regions. This allows further refinement of the search criteria entered in preceding data fields. The drop-down lists depend directly on the regions and sites that have been configured in MacNet.

- *Log Type:*
  This dropdown list allows selection of System Log, Custom Log or EAS Log.

Function buttons

In the different view windows there are several function buttons, as described below:

- *Submit*
  Clicking this button starts the database query according the given search criteria.

- *Advanced Query*
  Clicking this button brings up the Advanced Query window before starting the database query. See Section 8.1.1.1 on page 55.

- *Clear Screen*
  Clicking this button clears all data fields and the list of results.

- *View Log*
  Clicking this button allows viewing log details as described in Section 8.1.4.1.

- *Print*
  Clicking this button allows complete or partial printing of the query results, using the standard Windows® "Print" dialog window. To perform a partial print of the results, the user must select the desired event numbers from the list.

- *Maintenance*
  Clicking this button brings up the Maintenance dialog box to remove duplicates in the History Log. See section 9.1 on page 68.

Presentation of results

- *#*
  A sequential number for the current query. This number is not related to any information in the database.

- *Name*
  The site name configured in the remote MAC unit.

- *Date-Time*
  The date and time at which the event occurred either with the MAC unit or MacNet.

- *Site ID*
  The ID number of the site.

Note: You can click on the list title bar to change the sort order according to the selected column.

8.1.4.1 History Log View

The History log view provides a detailed and extensive view of all events related to the MAC unit. See Appendix B page 75 and Appendix C page 78 for details.

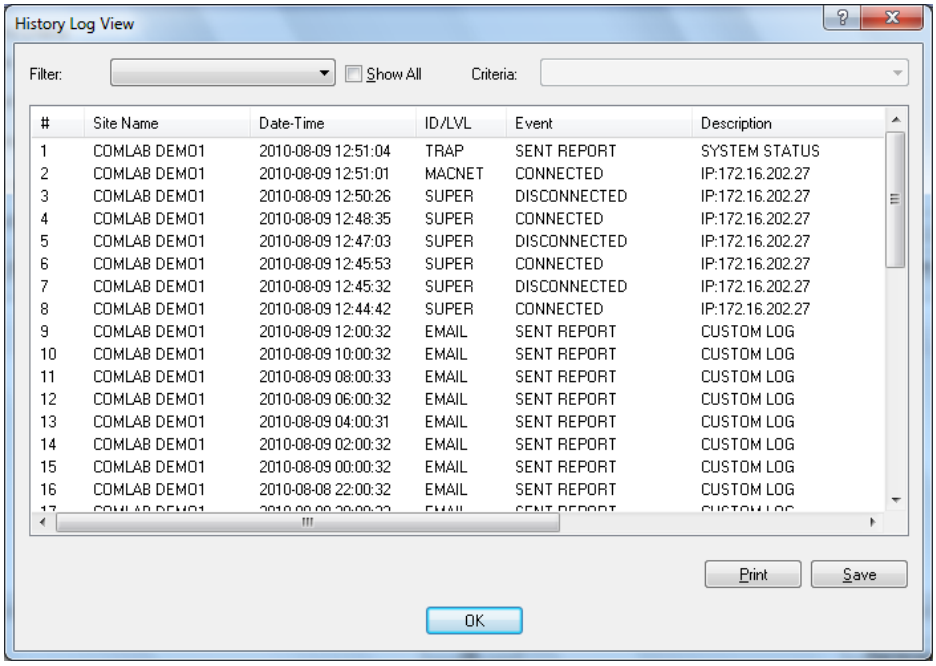

Figure 59 : History Log View window

Each event in the log is presented in a row of 6 columns:

- *# (Number)*
  The event number, #1 being the most recent log entry.
  Note: You must click on the number (# field) to select a log event. You can use the SHIFT and CTRL keys for multiple selections.

- *Site Name*
  A name identifying the site where the MAC unit is installed.

- *Date-Time*
  The date (yyyy-mm-dd) followed by the time (hh:mm:ss) at which the event occurred. Note that the date and time displayed in the log are those configured in the MAC unit. The time takes into account any Delay Before Action that might have been configured.

- *ID/LVL*
  This field will identify the concerned input/output by its identifier, or the MAC user's access level.

- *Event*
  The MAC provides short event descriptions that cannot be changed by the user.

- *Description*
  The description you configured for the concerned log entry is displayed. For system-related events, the MAC provides its own descriptions.

- *Value/User*
  The value of the metering or status input that caused an alarm; or the daily total of a timer (reset at midnight); or operations concerning a specific user will be recorded under his MAC user name; or automatic operations performed by the MAC unit will show SYSTEM.

- *Site ID*
  The ID number of the site.

- *Event ID*
  The record number in the Database.

Filtering History Log entries

- *Filter*
  Information can be filtered or highlighted based on the Description, Event, Site ID, Site Name, ID/LVL, or Value/User.

- *Show All*
  When this check box is checked, all information will be shown; the filter will only highlight desired information.

- *Criteria*
  Select the desired filtering criteria from the Dropdown list.

8.1.5 MACNET HISTORY LOG (MACNETHISTO.MDB)

The **MacNet History Log** item in the **View/Database** menu allows queries of the MacNet History Log database, and it should not be confused with the MAC Site History Log that is generated by the MAC unit. The MacNet log records all events that take place on the MacNet console such as who logged on and off, calls that came in and calls that went out and others. It should be noted that the current log can be viewed as well as archived logs that were stored in the past to make room in the active database.

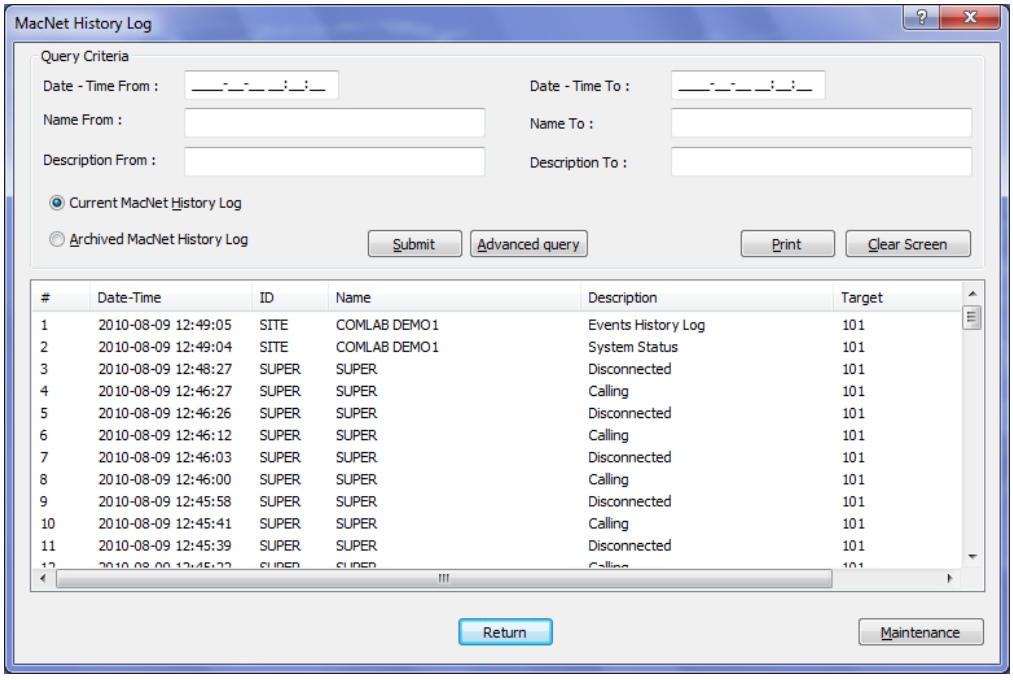

Figure 60 : MacNet History Log window

Data input and selection fields

These data fields allow entry of database search criteria, and descriptions of the data entry fields are given below:

- *Date - Time From:* *Date - Time To:*
  The beginning and end date/time of the search. If no beginning date/time is given, all date/time before the end date/time will be shown. If no end date/time is given, all date/time after the beginning date/time will be shown.

- *Name From:* *Name To:*
  The name of the entry. If no **Name From** is given, all names starting with letters smaller than the **Name To** will be shown. If no **Name To** is given, all names starting with letters greater than the **Name From** will be shown.

- *Description From:* *Description To:*
  The description of the entry. If no **Description From** is given, all descriptions starting with letters smaller than the **Description To** will be shown. If no **Description To** is given, all descriptions starting with letters greater than the **Description From** will be shown.

- *Current MacNet History Log:*
  This radio button allows selection of the current MacNet History Log.

- *Archived MacNet History Log:*
  This radio buttons allows selection of the archived MacNet History Log.

Function buttons

In the different view windows there are several function buttons, as described below:

- *Submit*
  Clicking this button starts the database query according the given search criteria.

- *Advanced Query*
  Clicking this button brings up the Advanced Query window before starting the database query. See Section 8.1.1.1 on page 55.

- *Clear Screen*
  Clicking this button clears all data fields and the list of results.

- *Print*
  Clicking this button allows complete or partial printing of the query results, using the standard Windows® "Print" dialog window. To perform a partial print of the results, the user must select the desired event numbers from the list.

- *Maintenance*
  Clicking this button brings up the Maintenance dialog box to move the current MacNet History Log into the archived MacNet History Log. See section 9.2 on page 69.

Presentation of results

- *#*
  A sequential number for the current query. This number is not related to any information in the database.

- *Date-Time*
  The date and time at which the event occurred either with the MAC unit or MacNet.

- *ID*
  The ID of the entry. This could be the user access level, Site identification, MacNet identification, etc. See Appendix A on page 73 for more details.

- *Name*
  The name of the entry. This could be the user log name, the site name, etc. See Appendix A on page 73 for more details.

- *Description*
  The descriptive information of the entry. See Appendix A on page 73 for more details.

- *Target*
  The target information of the entry. This could be the site ID, port number, etc. See Appendix A on page 73 for more details.

Note: You can click on the list title bar to change the sort order according to the selected column.

8.2 WEB DATABASE QUERY

The Web Main window top frame contains a list of Database Query actions to be performed. These actions are similar to those accessible from the **Database** sub-menu under the **View** menu in MacNet (see Section 8.1). The figure below lists the allowed actions from your web browser.

Figure 61 : Database Query actions

8.2.1 ARCHIVED EVENTS ACTION

When this action is selected, a new page will open and provide the same visualization tools as the MacNet Archived Events window. For more details, see Section 8.1.2 on page 56.

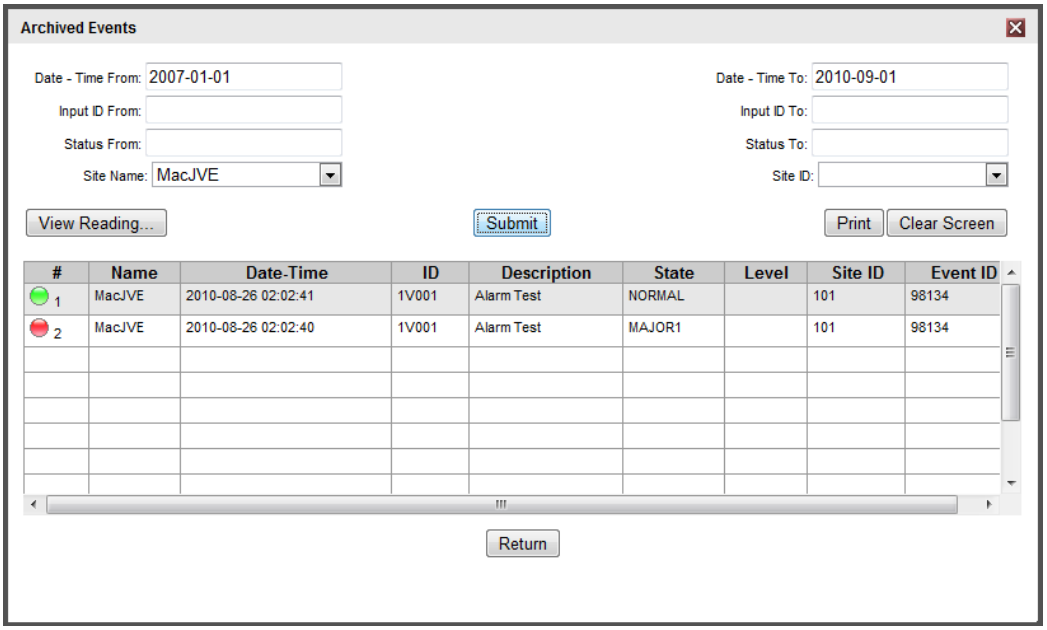

Figure 62 : Archived Events web page

8.2.2 ARCHIVED HISTORY LOG ACTION

When this action is selected, a new page will open and provide the same visualization tools as the MacNet Archived History Log window. For more details, see Section 8.1.4 on page 60.

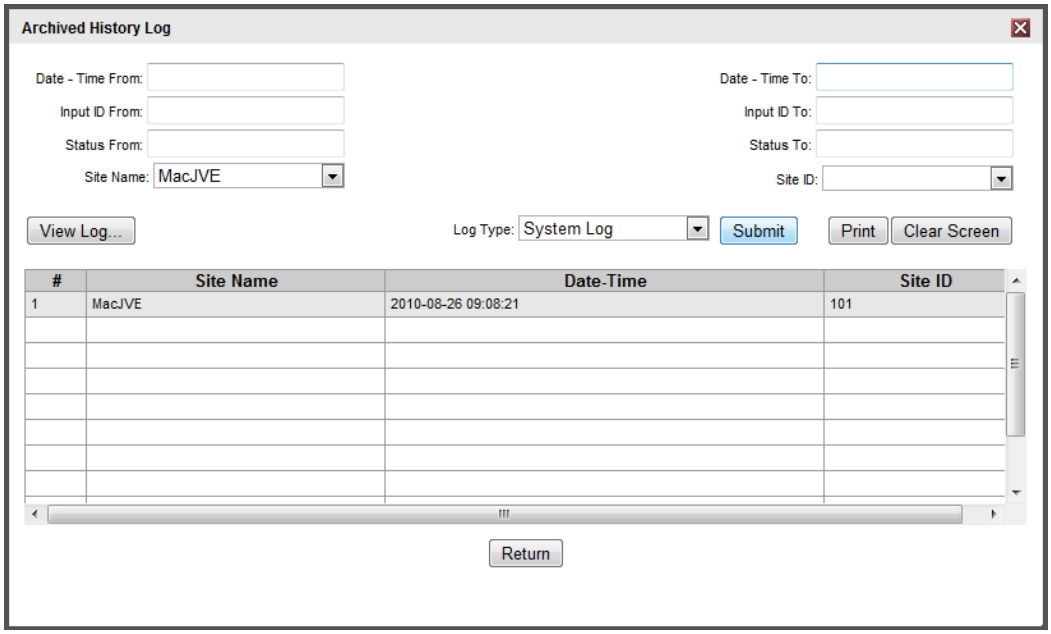

Figure 63 : Archived History Log web page

8.2.3 ARCHIVED SYSTEM STATUS ACTION

When this action is selected, a new page will open and provide the same visualization tools as the MacNet Archived System Status window. For more details see Section 8.1.3 on page 58.

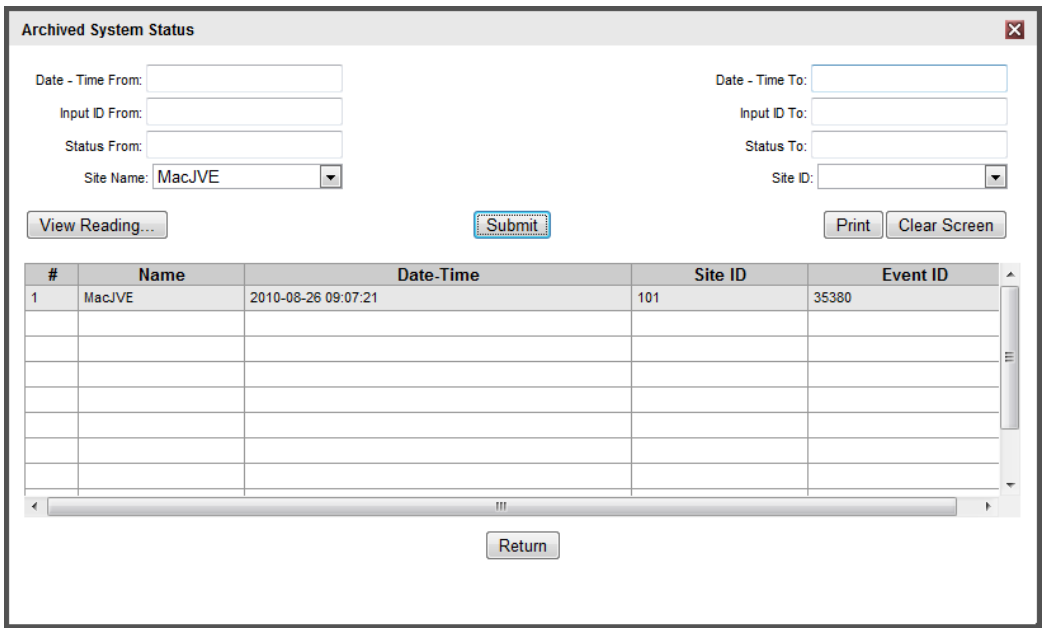

Figure 64 : Archived System Status web page

8.2.4 MACNET HISTORY LOG ACTION

When this action is selected, a new page will open and provide the same visualization tools as the MacNet History Log window. For more details see Section 8.1.5 on page 63.

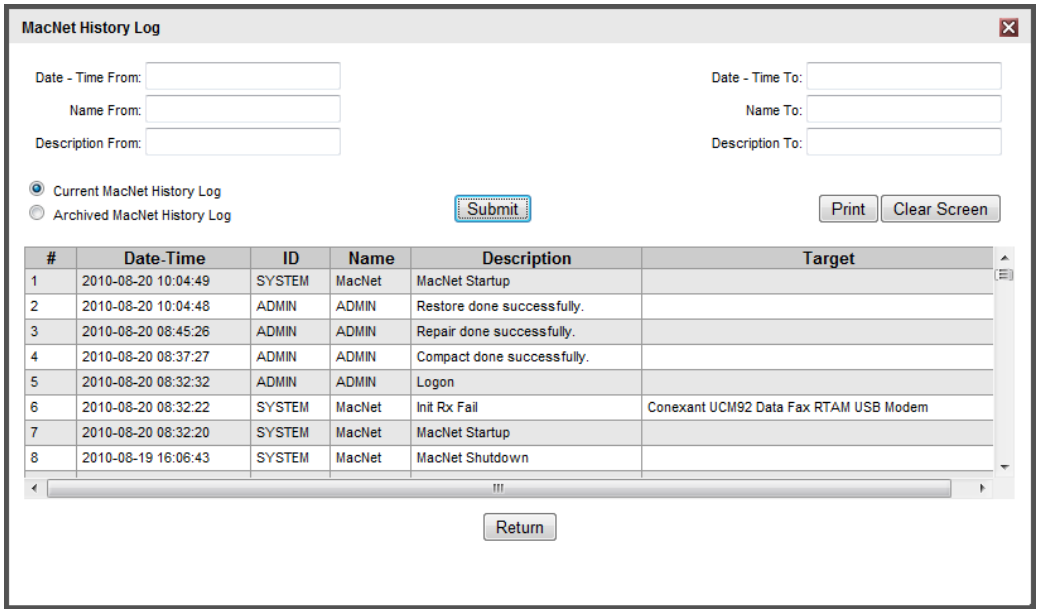

Figure 65 : MacNet History Log web page

8.2.5 NEW ALARMS ACTION

When this action is selected, a new page will open and provide the same visualization tools as the MacNet History Log window. For more details see Section 7.2 on page 46.

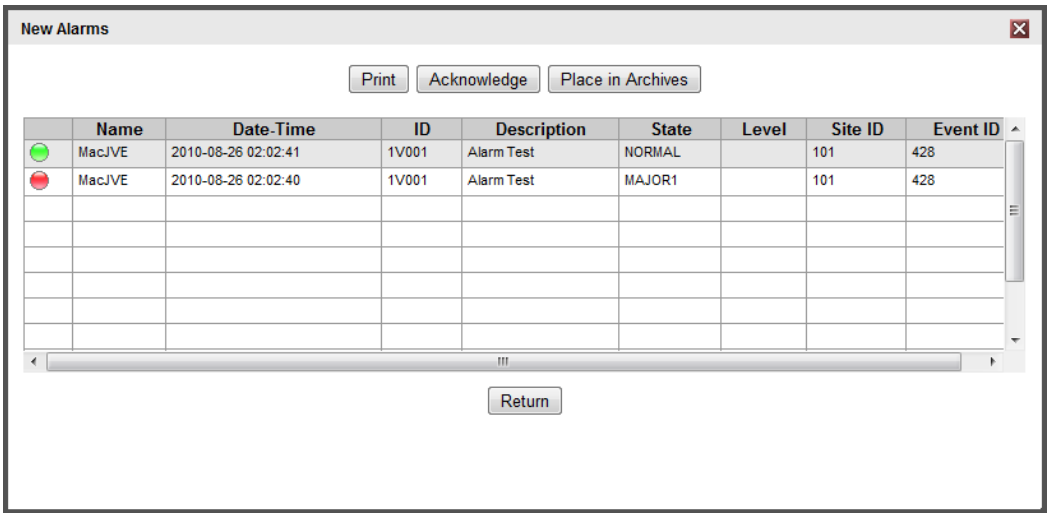

Figure 66 : New Alarms web page

9 DATABASE MAINTENANCE OPERATIONS

Various database maintenance operations can be performed, including backing up and restoring the database, as well as purging of duplicates. Purging should be performed regularly to remove duplicate entries. This is especially true when a user-requested history log transfer is performed because the MAC unit transfers a certain amount of duplicate data during history log transfers. Data archiving (backing up) should be performed every six months or so depending on the memory size, the quantity of data and the number of alarms. If significant system slow down is noticed, data archiving should be performed as soon as possible.

9.1 REMOVING DUPLICATES

The **Archived History Log** could contain duplicate entries in the database if transmission problems occurred, or manual History Log transmission was done, especially with older MAC+ units (black front panel). A maintenance utility allows removal of these duplicates. Under the **Archived History Log** window, clicking the **Maintenance** button will bring up the following popup window.

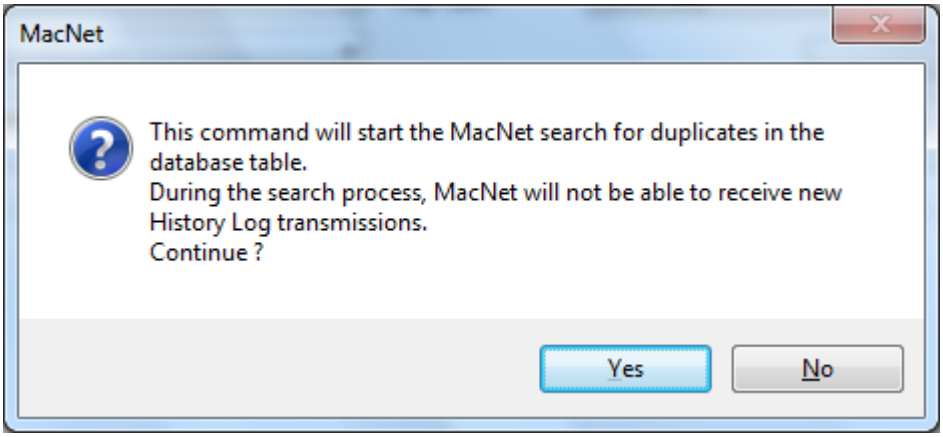

Figure 67 : Duplicates Removal Confirmation window

Click “Yes” to start the search. The search process could take several minutes[9] depending on the amount of data in the database.

If duplicates have been found, the following message will be shown.

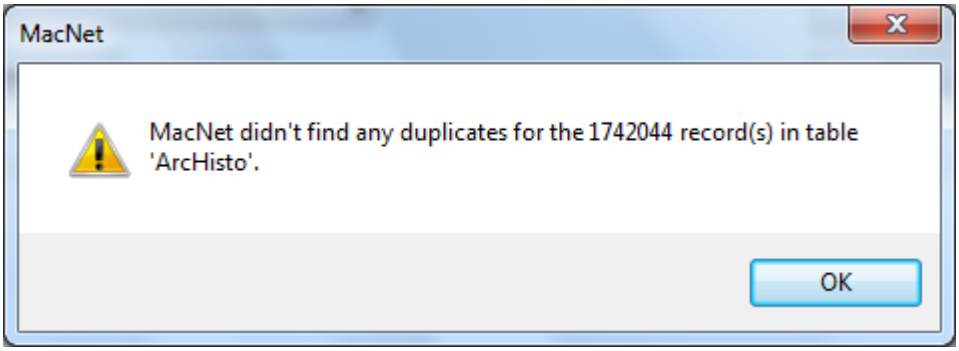

Figure 68 : No Duplicates Found window

If one or more duplicates have been found, the following message window will appear. To remove the duplicates, click “Yes”. Again this process could take several minutes depending on the amount of data in the database.

[9] During the duplicates search and removal process, History Log reception will be inhibited.

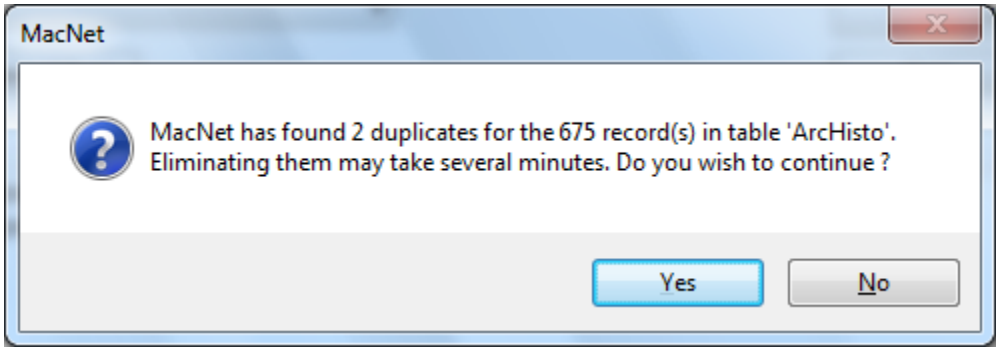

Figure 69 : Duplicates Found window

9.2 ARCHIVING THE MACNET HISTORY LOG

The current MacNet History Log records all the events that occur while MacNet is operating. This history log can become large over time. To optimize database queries, regular archiving of the Current MacNet History Log is recommended. Under the **MacNet History Log** windows, clicking the **Maintenance** button will bring up the following popup window.

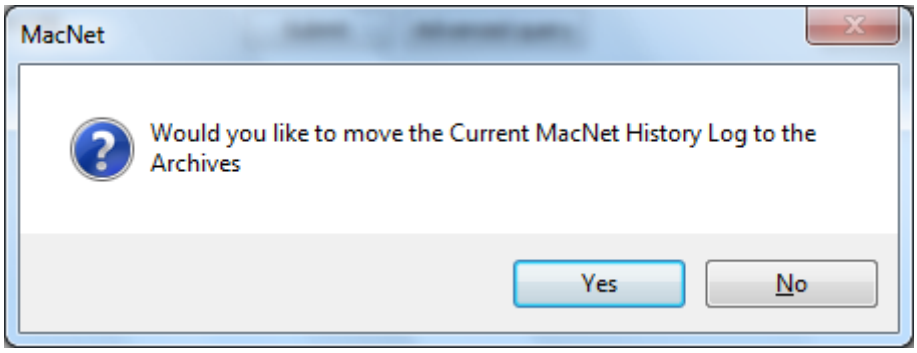

Figure 70 : Archive MacNet History Log window

Click "Yes" to move the Current MacNet History Log to the archives.

9.3 COMPACTING THE DATABASE

Due to **Microsoft® Access** file format limitations, Access Database files must not exceed 1 GB in size. Compacting the database keeps the database files as small as possible. Under the **Tools/Database Utilities**, selecting **Compact Database** will bring up the following window.

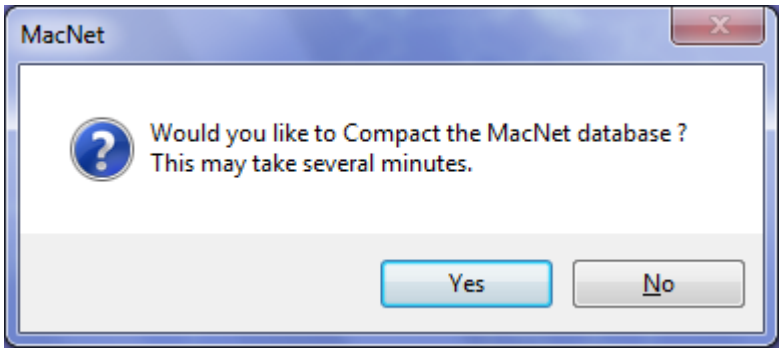

Figure 71 : Compact Database window

9.4 REPAIRING THE DATABASE

In the rare event where the database becomes corrupted, the repair operation can be performed to fix the database errors. Under the **Tools/Database Utilities**, select **Repair Database** to bring up the Repair Database window as shown below.

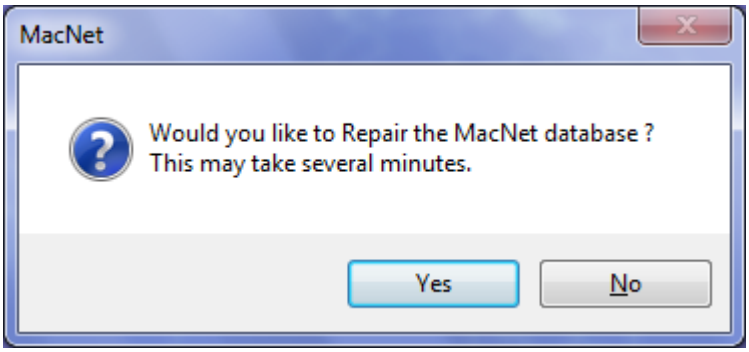

Figure 72 : Repair Database window

9.5 BACKUP DATABASE

This operation consists in compressing all files in the Database sub-folder to a compressed file named MacNet Backup File. The MacNet Backup Files are always stored in the sub-folder Backup, and the observed compression ratio is about 30% of the file's original size.

When performing a Backup, the software will automatically generate a file name using the current date and time, in the format "YYYYMMDD-HHMMSS.zip". Only MacNet related data is saved.

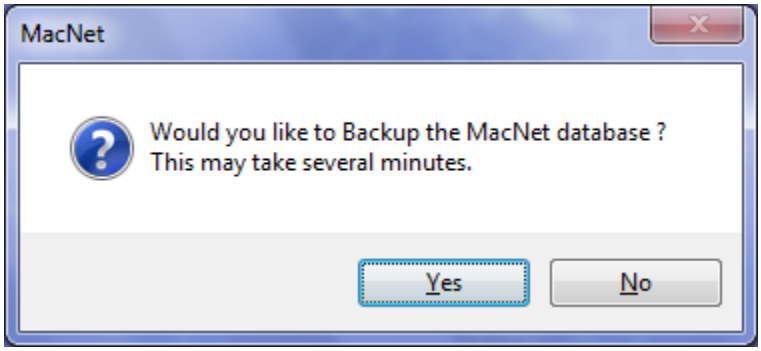

Figure 73 : Backup Database window

Answering **Yes** initiates the **Backup** operation, and the compression process begins. During the **Backup** operation, a progress window will show the file that is being compressed and a progress bar will show the overall progress. See Figure 74. This may take several minutes.

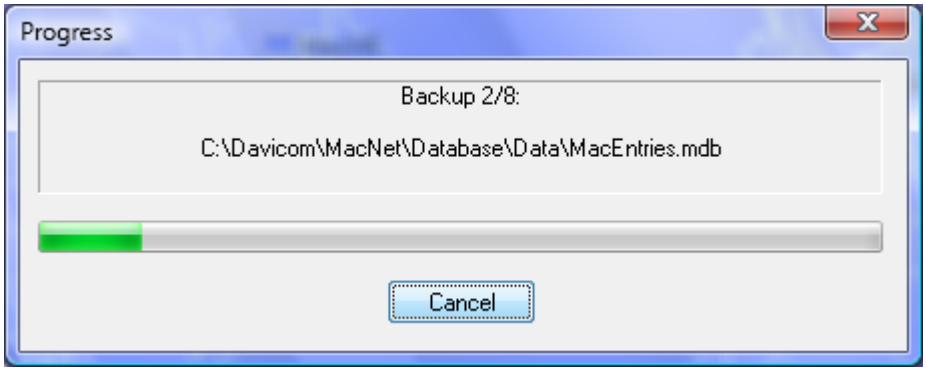

Figure 74 : Backup Progress window

9.6 RESTORING THE DATABASE

This operation consists in restoring all data found in the Database sub-folder at the time of the Backup operation. The restore operation replaces the data located in the Database sub-folder.

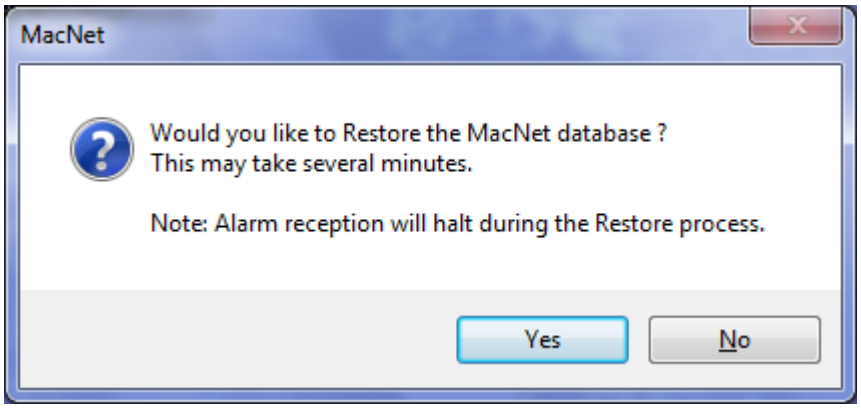

Figure 75 : Restore database window

Answer **Yes** to initiate the **Restore** operation. Before the restoration begins, you'll have the option to backup the actual database first. See Figure 76.

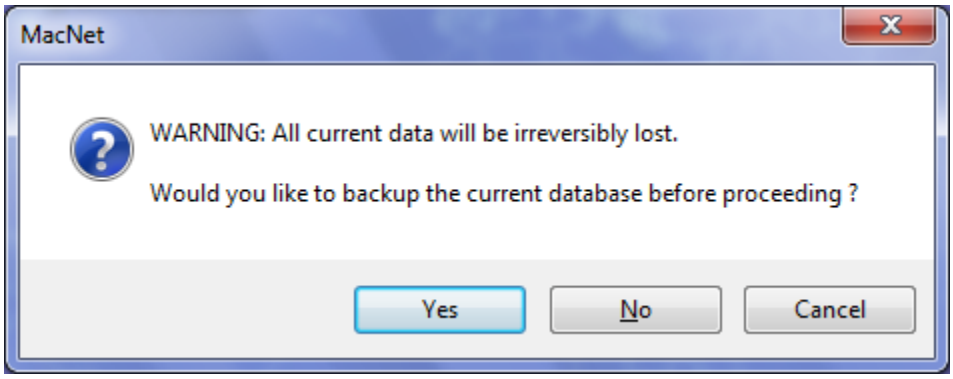

Figure 76 : Backup before Restore window

Clicking **Yes**, will allow the current database to be backed up. Clicking **No**, will allow the restore operation to continue without backing up the current database . To cancel the restore operation, click the **Cancel** button.

Before restoring the database, you must select the Backup File to be restored. See Figure 77.

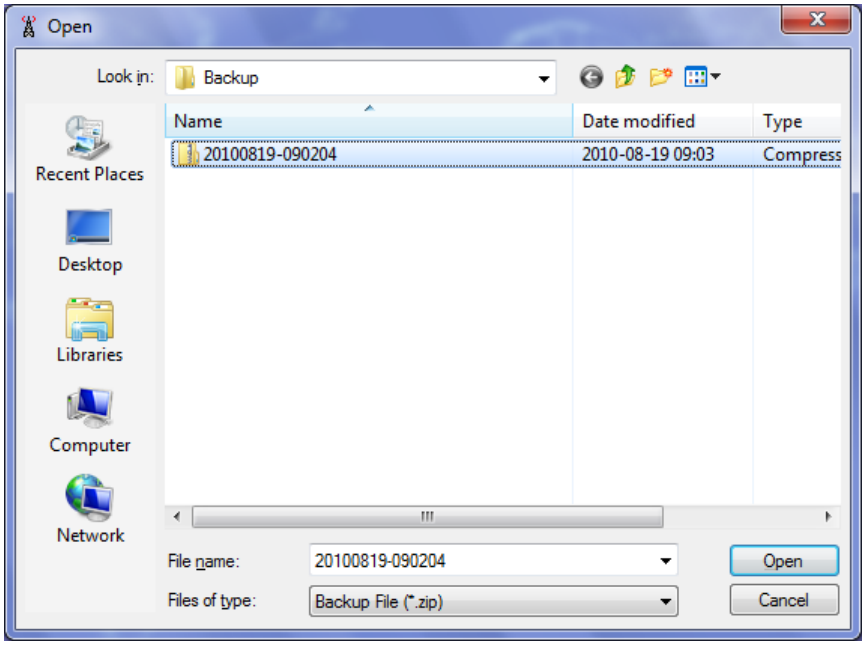

Figure 77 : Backup File selection window

Clicking **Open** will start the restore process of all MacNet-related, and clicking **Cancel** will abort the restore process. During the **Restore** operation, a progress window will show the file that is being uncompressed and a progress bar will show the overall progress. See Figure 78. This may take several minutes.

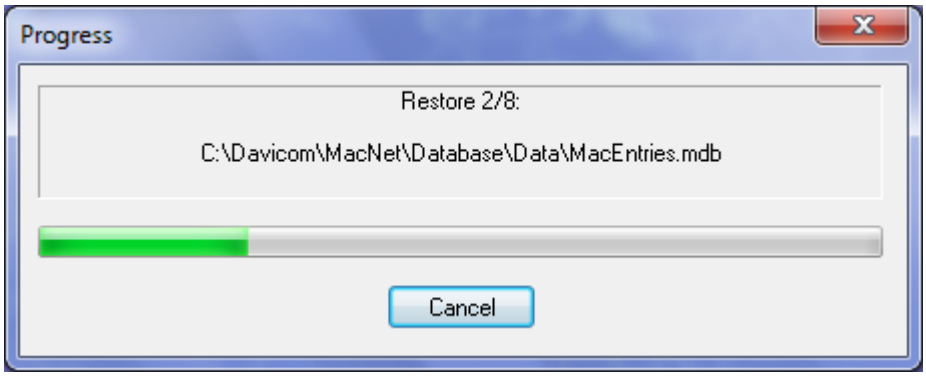

Figure 78 : Restore Progress window

APPENDIX A DESCRIPTION OF MACNET FILE ARCHIVE CODES

The following codes apply only to the MacNet history log.

General

N/A	Field not available

ID field

SUPER	Supervisor
ADMIN	Administrator
OPER	Operator
SITE	Site event
SYSTEM	System event

Name field

#NONE	None
MACNET	MacNet event
MacNet Auto Call	Auto Call event
Alarm Printer	Alarm Printer event
Mailing	E-mail event
Messenging	Messenging event
SMS/Pager	SMS or Pager event
I/O Card	I/O Card event
{User Name}	Event from this User Name
{Site Name}	Event from this Site Name

Description field

Major Alarm	Major alarm
Minor Alarm	Minor alarm
System Status	System status report reception
Event History Log	History log reception
MacNet Startup	MacNet software startup
MacNet Shutdown	MacNet software shutdown
Logon	MacNet session start
Logoff	MacNet session end
MacNet Setup	Configuration of MacNet
Compact done successfully	Database Compact operation succeeded
Repair done successfully	Database Repair operation succeeded
Backup done successfully	Database Backup operation succeeded
Restore done successfully	Database Restore operation succeeded
Compact operation failed	Error while doing a database Compact
Repair operation failed	Error while doing a database Repair
Backup operation failed	Error while doing a Backup
Restore operation failed	Error while doing a Restore
Init Rx Fail	Error while initializing an alarm receiver
Site Setup	Site configuration
User Setup	User configuration
Enable ASA	MacNet will send the ASA command
Disable ASA	MacNet will stop sending the ASA command
Watchdog Enabled	Starting the Watchdog Card
Watchdog Disabled	Stopping the Watchdog Card
Watchdog Timeout	Watchdog has triggered a Reset
Archive MacNet Histo	User archived the MacNet History Log
Calling	Outgoing Call in process with a MAC
Disconnected	Outgoing Call disconnect from a MAC
Web logon	Web user logged on
Web logout	Web user logged out
Task Lost	This scheduled task was lost
Task Failed	This scheduled task failed
Print Scheduled Tasks	Printing the scheduled tasks

Auto Call	Automatic Call done
{Task Message}	User defined scheduled task message

Target field

N/A	Not applicable
IP	Event from the IP receiver
{Event ID}	Event number
{Site ID}	Site number
{Modem Name}	Modem Name
{Port Number}	Port Number
{Printer Name}	Alarm Forwarding Printer Name
{E-Mail Addresses}	Alarm Forwarding E-Mail Addresses
{Computer Name or Group}	Alarm Forwarding Computer Name or Group
{Mobile Phone Number or Pager ID}	Alarm Forwarding Phone Number or Pager ID
{Relay Description}	Alarm Forwarding Relay Description

APPENDIX B DESCRIPTION OF MAC2 FILE ARCHIVE CODES

The following codes apply only to the MAC history log.

ID/LVL field

Communications:

EMAIL	E-Mail
FAX	Transmission to a FAX
MACNET	MacNet
SERIAL	Serial communications
TRAP	MacNet IP
VDT	Transmission to a Terminal

ID:

1CXX	Remote MAC command number XX
1E01	Call flag
1L01	IOIOI 1 flag
1NXX	Ping flag XX
1S01	AM station day command
1U01	USB flag
1W01	Password flag
1Y01	Clock Synchronization flag
PWRON01	Power ON
yAXX	Metering input number XX in MAC number y
yB01	Internal RAM battery in MAC number y
yB02	Battery Discharge Test in MAC number y
yDXX	Status input number XX in MAC number y
yHXXX	Timer number XXX in MAC number y
yJ01	Temperature flag in MAC number y
yMAXX	ModBus Metering input number XX in module y
yMDXX	ModBus Status input number XX in module y
yMRXX	ModBus Physical relay number XX in module y
yOXXX	Virtual relay number XXX in MAC number y
yRXX	Physical relay number XX in MAC number y
yVXXX	Virtual input number XXX in MAC number y
yP01	AC indicator in MAC number y
yP02	12 V flag in MAC number y

User:

SUPER	Supervisor
ADMIN	Administrator
OPER	Operator
UNKNOWN	Unknown

Event field

Alarms:

ACTIVE	Input in active state
ALARM CALL	Execution of alarm-call sequence
ALARM CALL FAILED	Alarm-call failed
ASA RECEIVED	Alarm-call sequence acknowledge
MACNET ASA	Alarm-call sequence acknowledge from MacNet
MAJOR1 to MAJOR8	Major alarm detected
MINOR1 to MINOR8	Minor alarm detected
NORMAL	Return to normal detected

Battery Test:

BDT RLY FAIL	Unable to activate BDT relay

Communications:

CALL RECEIVED	Call received by the MAC
CONNECTED	User connected
DISCONNECTED	User disconnected

History Log:

ABORTED	History log clear aborted

Operations:

COMMAND	Manual command;
CONFIG	Configuration modified
FIRMWARE UPGRADE	Firmware upgrade

Reports:

REPORT SEND FAIL	System status report transfer failure
SENT REPORT	System status report sent

Other:

TRAP ACKNOWLEDGE	Remote Command acknowledged by unit
TRAP ACKNOWLEDGE FAIL	Remote Command not acknowledged by unit
TRAP SENT	Remote Command sent
TIME SYNCHRONIZATION FAIL	Call to an ACTS / NTP server failed
DYNDNS	Synchronization with a DynDNS server

Description field

Battery Test:

BATTERY DISCHARGE TEST OK	Battery Test succeeded
BATTERY DISCHARGE TEST FAIL	Battery Test failed

Commands:

DELETE CUSTOM LOG	Custom log cleared
DELETE EAS LOG	EAS log cleared
DELETE SYSTEM LOG	System log cleared
DOWNLOAD	Download configuration
DOWNLOAD FAIL	Download configuration failed
ERASE CONFIG	Erase MAC configuration
LOCAL MODE ON	Local Mode enabled
LOCAL MODE OFF	Local Mode disabled
PAUSE MODE ON	Pause Mode enabled
PAUSE MODE OFF	Pause Mode disabled
RELEASE LINK	MAC's Remote Command Link released
RESTART MAC	MAC restarted
SEND CUSTOM LOG	Custom log sent
SEND EAS LOG	EAS log sent
SEND SYSTEM LOG	System log sent
UPLOAD	Upload configuration
UPLOAD FAIL	Upload configuration failed
VIEW CUSTOM LOG	Custom log dumped for viewing
VIEW EAS LOG	EAS log dumped for viewing
VIEW SYSTEM LOG	System log dumped for viewing

Communications:

DISABLE CALL	Alarm-call sequence disabled
ENABLE CALL	Alarm-call sequence enabled
LOCAL PORT	Local port connect/disconnect
MODEM 1	Connection via Modem 1
MODEM 2	Connection via Modem 2
IP:{IP Address}	Network connect/disconnect

Configuration:

ALARM ADDRESS/NUMBER	Alarm Call List configuration
ALPHA PAGER	Alpha Pager configuration
CALL PARAMETERS	Call Parameters configuration
CLOCK SETUP	Clock configuration
EMAIL	E-Mail configuration
IP	IP configuration
LOCAL MODE RELAY	Local Mode Relay configuration
MAC-BATTERY TEST	Battery discharge test configuration
SUPERVISOR MENU	Supervisor menu configuration
SYSTEM	System configuration
TRANSFER	Transfer configuration

General:

SUCCEED	Operation succeeded
FAIL	Operation failed

Inputs:

METERING CALIBRATION	Metering inputs calibrated
ENABLE INPUT	Input enabled
DISABLE INPUT	Input disabled

Relays:

FORCE ON	Relay forced on
FORCE OFF	Relay forced off
FORCE PULSE	Relay force on pulse
RELEASE	Relay released

Report:

CUSTOM LOG	Custom log report
EAS LOG	EAS log report
SYSTEM LOG	System log report
SYSTEM STATUS	System status report

Other:

ON SITE	On Site User
POWER ON	Power-on message
TIMEOUT	Time delay expired
{Telephone Number}	Telephone number for Time Synchronization
{IP Address or URL}	URL for Time Synchronization

Value/User field

MACNET	MacNet
SYSTEM	System
{Daily Total Time}	Accumulated daily active time
{User Name}	User name
{Metering Level}	Metering input level
{Status Level}	Status input level

APPENDIX C DESCRIPTION OF MAC+ FILE ARCHIVE CODES

Note that when working with an older MAC unit, History Log transfers are only possible via modem. No History Log transfers are possible via IP.

The following codes apply only to the MAC history log.

ID field

AXX	Analog input number XX
DXX	Digital input number XX
VXX	Virtual input number XX
HXX	Timer input number XX
RXX	Physical relay number XX
OXX	Virtual relay number XX
RSXX	RS-232 serial port number XX
P01	AC indicator
S01	AM station day command
ADM	Administrator
OPE	Operator
SYS	System
TEC	Technician

Description field

AC FAIL	AC Power Fail
ADC FAIL	A/D converter initialization fail
COMMAND	Manual command
DIAL TONE OK	The phone line is working
MODEM FAIL	The modem is defective or absent
NO DIAL TONE	The phone line is dead
POWER ON	Power-on message
RTC FAIL	Real time clock error
TELEPHONE	External call to system
TIMEOUT	Time delay expired

Status field

Inputs:

ENBL INPUT	Input enabled
DSBL INPUT	Input disabled
ANALOG CAL	Analog inputs calibrated

Relays:

RELAY IS ON	Relay is activated
RELAY IS OFF	Relay is deactivated
RLS RELAY	Relay released
FORCEON	Relay forced on
FORCEOFF	Relay forced off
FORCEON PULSE	Relay forceon pulse

Alarms:

MAJOR	Major alarm detected
MINOR	Minor alarm detected
NORMAL	Return to normal detected

Telephone:

ENBL CALL	Alarm-call sequence enabled
DSBL CALL.	Alarm-call sequence disabled
ASA RECD	Alarm-call sequence acknowledged
CALL RECD	Call received by the MAC
ALERT CALL	Execution of alarm-call sequence

Configuration:

CONFIG	System configuration modified

History Log:

LOG TX FAIL	History log transfer fail
HIST CLR	History log cleared
PRINT LOG	History log transmitted to fax
LOG FILE	History log transferred to file with manual command

Battery Test:

BDT RLY FAIL	Unable to activate BDT relay
BDT TX FAIL	BDT result transfer fail
BDT MSG	BDT end msg displayed or sent by telephone
BDT	Battery discharge test

Timeout:

CALL END	Telephone timeout by system
LOGOUT	Local VDT timeout by system

Reports:

RPT FAIL	System status report transfer failure
RPT SENT	System status report sent

Level: Analog input value or digital input level that caused an alarm, or daily total of a timer

APPENDIX D MACNET MODEMS AND PHONE LINES SETUP

Note that the PC hosting MacNet should be dedicated to running MacNet only to prevent conflicts between the RX and TX modems. MacNet comes with a version of MacComm that allows you to connect to any of the sites configured in MacNet by simply clicking on the Call Site button located in the Active Event Log window of the site (see Section 7.4).

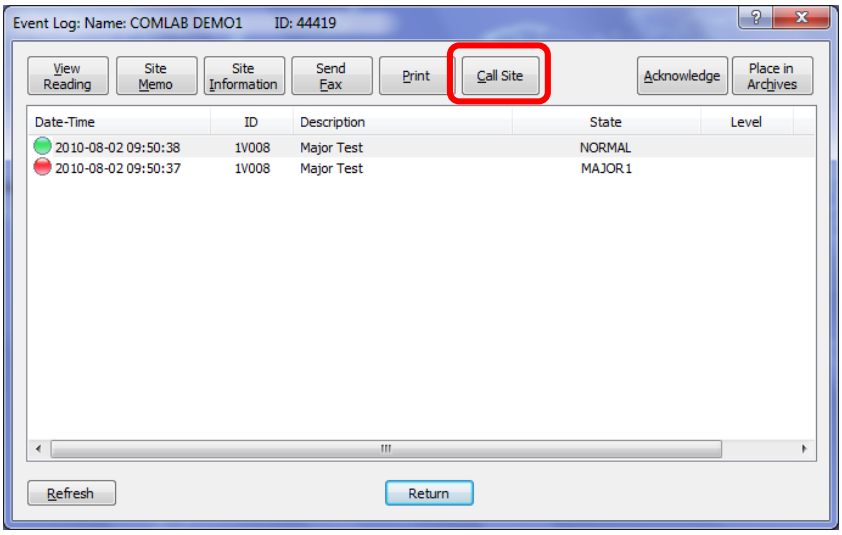

Figure 79 : Call Site button in the Active Events Log window

IMPORTANT

Whatever setup you use, MacNet always uses the RX modem to perform Auto Calls, unless site communications are IP only. Auto Calls are calls made automatically by MacNet at fixed intervals to sites. Therefore, when performing Auto Calls, MacNet cannot receive alarms from any of the configured sites. The TX modem is used by MacNet to make user-initiated calls (through the MacComm program) to the sites.

Two lines and two modems (ideal setup)

In this setup, both modems (RX and TX) use their own separate telephone line. This allows MacNet and MacComm to be fully functional at all times. MacNet can receive alarms calls from any site while you are connected to another site using MacComm.

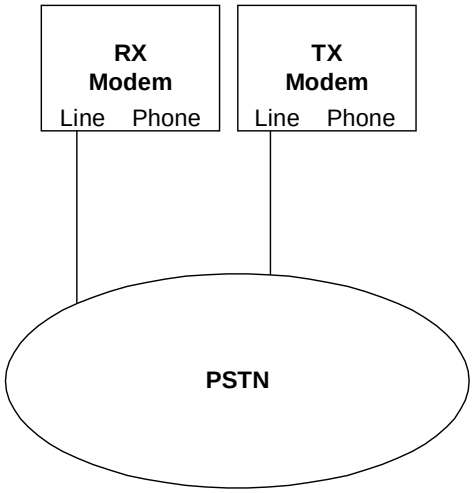

Figure 80 : Two lines, two modems diagram

One line and two modems (acceptable setup)

In this setup, both modems (RX and TX) use the same telephone line. Priority is given to the RX modem. When the RX modem is using the line, it is unavailable to the TX modem.

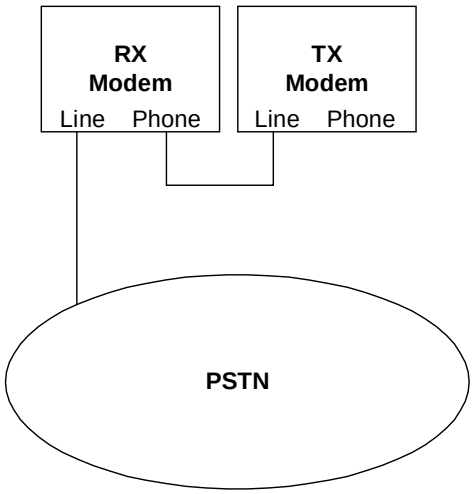

Figure 81 : One line two modems diagram

One line and one modem

This setup is not ideal but quite functional. However, if the MacComm always uses IP communications to connect to MAC units, this setup is as good as the “Two lines and two modems” setup.

If both modems share only one telephone line, the RX modem always has priority over the TX modem.

In the One line, One Modem setup, when MacComm is in use, MacNet Auto Calls and alarm reception are disabled.

MacNet periodically performs modem checks to make sure the modem is available. If the modem does not answer, an error message will appear in the Status bar under the RX field. See Section 7.1.1 on page 45.

APPENDIX E MACNET MENU TREE

File
- New Workspace (CTRL+N)
- Open Workspace (CTRL+O)
- Close Workspace
- Save Workspace
- Save Workspace As
- Set Current Workspace As Default
- Logon/Logoff User (ALT+O)
- Print (CTRL+P)
- Print Preview
- Print Setup
- Exit (ALT+X)

Setup
- Options
- ASA Configuration
- Modules Manager
- Sites
- Users
- Tasks Scheduler
- Communication
  - Serial
  - Network
  - Modems
  - Web Server
- Alarm Forwarding

View
- Toolbar
- Panel Selection Bar
- Region Toolbar
- Status Bar
- Alternate Language
- Display New Alarms (F3)
- Refresh (F5)
- Database
  - Archived Events
  - Archived Status
  - Archived History Log
  - MacNet History Log

Tools
- Database Utilities
  - Compact Database
  - Repair Database
  - Backup Database
  - Restore Database
- Select Site
- Setup Site
- Find Site
- Zoom In
- Zoom Out
- Show Label

Window
- New View Panel
- Delete View Panel
- Panel Properties
- Cascade
- Tile
- Arrange Icons

Help
- Help Topics
- License Key
- About MacNet