

Operating Instructions

Viewfind

Network Control Software

Issue: 2



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1 INTRODUCTION

Viewfind is a PC software package for remote control and monitoring of V1600 series racks and modules via DARTnet. Multiple PCs running *Viewfind* can be coupled to the same DARTnet and modules connected to another *Viewfind* PC by DARTnet may be controlled through a TCP/IP link between the PCs. In addition, access and control of multiple DARTnets is supported. All *Viewfind* controls have been designed for operation from a touch screen or a conventional display and mouse. A keyboard is only required for initial system configuration and for entry of user names etc.

Networked control and status monitoring of Vistek's V1600 series modular products is enabled by the provision of a DARTnet control interface on each rackframe. Within the rack, the rack controller communicates with the modules fitted using DARTbus.

DARTnet is a network link using conventional screened CAT5 networking cable with RJ45 connectors. DARTnet hardware employs the highly robust ISO11898 networking system, also known as CANbus. A single DARTnet segment supports interconnection of up to 64 nodes, which can be rack frames, V1605 control panels or PCs running *Viewfind*.

This manual applies to *Viewfind* release 1.1.

2 INSTALLATION

2.1 PC Requirements

Viewfind requires, as a minimum, a 90 Mhz Pentium PC, but for optimum response 233 MHz or faster is recommended.

Memory required is 32 Mb minimum.

One comm. port is required for each Dartnet to be controlled.

The following software must be installed before attempting to install *Viewfind*:

Windows 98 or Windows NT 4.0 with service pack 4.0 or later.

It is recommended that the PC on which *Viewfind* is installed is used only for *Viewfind*.

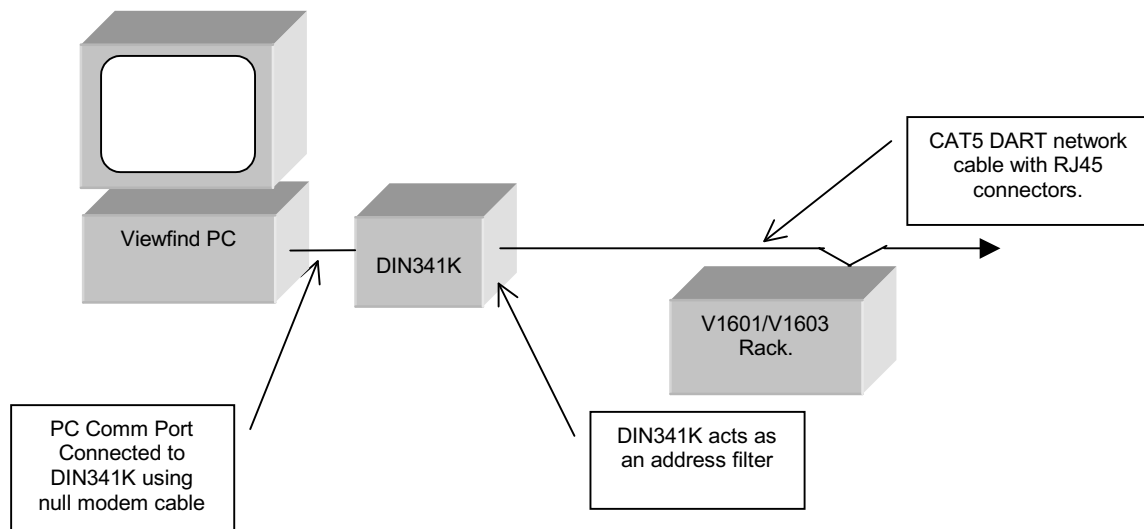
It is recommended that the screen resolution used is not less than 800 x 600.

2.2 Installing Viewfind

The *Viewfind* software and associated product databases are supplied on a CD ROM. To install *Viewfind* follow the instructions supplied with the CD ROM.

2.3 DIN341K DARTnet interface

Each DARTnet controlled from the *Viewfind* PC requires a DIN341K interface module, connected as shown below:



3 NETWORK CONFIGURATION

3.1 DARTnet Interconnections

NOTE: The CAT5 cables and RJ45 connectors used in DARTnet installations **must** be screened (shielded) with the screens securely connected to the metal shell of the connector.

The RJ45 interconnection between Viewfind PC controllers, V1605 controllers and V1600 series racks may be “daisychained” in any order. Termination switches (see below) should be set to “on” at each end of the network, with terminations on intermediate nodes set to “off”.

3.2 DART Addressing

To configure a DART network it is necessary to set : **Rack Addresses, DIN 341K Node Groups** and **Controller Addresses**.

3.2.1 Rack Addresses

The rack address is set on the rear panel of the V1608 Rack Controller on an 8way DIL switch along with two other functions:

| ON | TERM | OFF |
|-----------|-----------|-----------|
| 0 | Bit 5 MSB | 1 |
| 0 | 4 | 1 |
| 0 | 3 | 1 |
| 0 | 2 | 1 |
| 0 | 1 | 1 |
| 0 | Bit 0 LSB | 1 |
| 250kbit/s | Speed | 125kbit/s |

The TERM switch enables termination of the DARTnet. It should only be terminated at each end of the network.

The SPEED selects the data rate on the DARTnet. All racks and nodes must be set to the same speed. Only very long networks ($\geq 150\text{m}$) require to be run at 125kbits/s. The vast majority operate quite satisfactorily at 250kbit/s.

Bits 5..0 set the rack address. Normally the rack addresses on a network are set from zero upwards. Duplicate rack addresses may give spurious results on the

whole network. Duplication with any of the control node addresses in use (as shown below) must also be avoided.

3.2.2 DIN341K Node Group

The DIN341K interface acts as an address filter, passing only messages with addresses permitted by the node group selection.

These are set on an 8 way DIL switch that is on one end of the DIN341KDARTnet interface.

| | | | | | | | |
|------|-----------|---|---|---|---|-----------|------------|
| OFF | 1 | 1 | 1 | 1 | 1 | 1 | 125 kbit/s |
| TERM | Bit 5 MSB | 4 | 3 | 2 | 1 | Bit 0 LSB | Speed |
| ON | 0 | 0 | 0 | 0 | 0 | 0 | 250 kbit/s |

The TERM and SPEED switches work in exactly the same way as those on the rack controller.

The node group selected must include the address to which the controller is set (see below) and address 63, since the controller must receive broadcast messages that use this address.

The valid node groups which include address 63 are shown in the table below:

| Node group | Switches 234567 | Controller addresses | Baud rate kbaud | Notes |
|------------|-----------------|----------------------|-----------------|-------|
| 13 | dduudu | 31 | 9.6 | (i) |
| 14 | dduuud | 47 | 9.6 | (i) |
| 15 | dduuuu | 55 | 9.6 | (i) |
| 16 | dudddd | 59 | 19.2 | (i) |
| 17 | dudddu | 61 | 38.4 | (i) |
| 18 | duddud | 62 | 57.6 | (i) |
| 19 | dudduu | 31 | 115.2 | (ii) |
| 20 | dududd | 47 | 115.2 | (ii) |
| 21 | dududu | 55 | 115.2 | (ii) |
| 22 | duduud | 59 | 115.2 | (ii) |
| 23 | duduuu | 61 | 115.2 | (ii) |
| 24 | duuddd | 62 | 115.2 | (ii) |
| 34 | udddud | 60-62 | 9.6 | (iii) |
| 36 | uddudd | 7,15,23,31,39,47,55 | 9.6 | (iii) |
| 44 | uduudd | 56-62 | 9.6 | (iii) |
| 48 | uudddd | 48-62 | 9.6 | (iii) |
| 50 | uuddud | 32-62 | 9.6 | (iii) |
| 63 | uuuuuu | 0-62 | 9.6 | (iii) |

NOTES:

(i) There is no valid reason for using these node groups since those marked (ii) offer the same controller addresses at a higher baud rate.

(ii) These are the node groups to use if there are no more than 6 controllers on a single DARTnet.

(iii) These node groups should be used only if more than 6 controllers are required on a single DARTnet. Start with the lowest node group, i.e. the one with the fewest controller addresses, as the more addresses that are passed by the DIN341, the more processing is required by the controller which has to discard messages which are not intended for it.

3.2.3 Controller Address and Network Settings: Local Networks

Details for local networks (those connected to one of the PC's own Comm ports), including the controller address are set within the *Viewfind* software as follows:

- From the Menu bar select "Tools"
- Select "Network Manager" (this is available only when logged in at Engineer level).
- If the local network to be set up is displayed under "Local Networks", select it. If a new Network is to be added, click on the "Add a New Local Network" button on the Toolbar and select the new network.
- Default names are shown in the network local and system/share boxes and these can be overwritten as required. Enter the pc comm port number to which the network is attached, and the baud rate and node address appropriate to the DIN341K node group setting. This setting, along with the DIN341K version number is displayed in the "DIN341 Information" box when the adjacent "Enquire" button is pressed.
- If the Network is to be shared by another PC, ensure that the "Share Network" box is ticked, and enter the password. If the "Always Required" box is ticked, password entry will be required at the remote PC whenever the TCP/IP connection is set up.
- On completion, select "Apply", then "Close".

3.3 Setting Up Remote Networks

A local PC running *Viewfind* may access DART networks connected to a remote *Viewfind* PC by means of a PC network connection employing TCP/IP protocol.

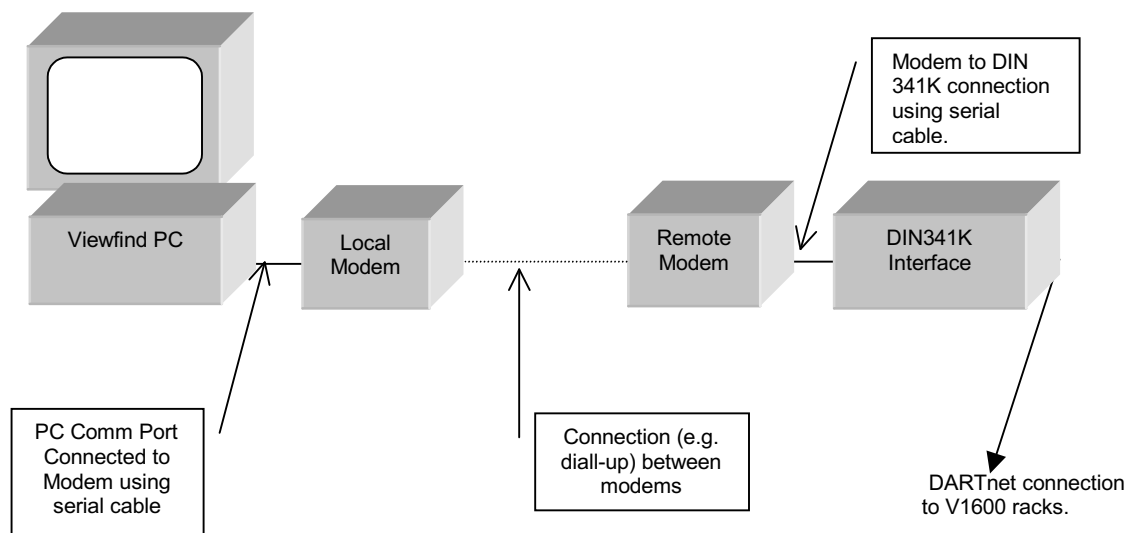
To set up access to DART networks connected to a remote PC, the remote PC must be set up for sharing as described in Section 3.2.3.

The local PC should then be set up as follows:

- From the menu bar select “Tools”
- Select “Network Manager” (this is available only when logged in at Engineer level).
- If the remote network to be set up is displayed under “Remote Networks”, select it. If a new remote network is to be added, click on the “Add a New Remote Network” button on the Toolbar and select the new network.
- A Default Name for the remote network is shown in the Local Name box. A new local name can be entered here if required.
- Enter the IP address of the remote PC in the “Server Hostname/IP Address” box and the password in the “Password” box.
- Select “Apply” before closing.

3.4 Setting Up a Modem Connection

A *Viewfind* PC may be connected to a remote DARTnet by means of a modem connection. The physical connections required are shown in the diagram below.



Note: The serial cables required for this application must have standard, not null modem wiring.

To configure a *Viewfind* PC for connection to a remote DARTnet via a modem, proceed as follows:

- from the “Tools” menu select “Modem Configuration”
- select the PC Comm Port to which the modem is to be connected
- if dial-up connection is required, select “Enable modem dialler for this port” and enter the telephone number required
- select “Apply”, then “Close”.

4 VIEWFIND BASICS

4.1 Viewing Physical Networks, Nodes and Modules

When a network is set up on *Viewfind*, it allocates all 63 potential rack nodes (numbered 00 to 62) with sixteen slots (numbered 00 to 15) in each rack. The structure of networks, racks and modules is displayed as a tree (similar to a Windows file structure display) in the Unit Selection Display Window that is always displayed on the left hand side of the screen. (This display of all potential racks and modules is only available with login at engineering level and with “All Units”, “Unfiltered” and “Engineering Display” selected under “View” on the toolbar.)

Networks, nodes and modules that are currently offline (including those that do not exist) have their treeview icons shown light grey. Networks, racks and modules that are online have dark grey icons.

Under the treeview display, networks may be expanded to show their constituent racks, and racks may be expanded to show their constituent modules by clicking on the “+” symbol beside the icon. The “-” symbol has the reverse effect.

At the top of the Unit Selection Display Window the ↑ and ↓ buttons scroll the treeview display up and down if the tree is longer than the window. The tabs enable either physical or virtual networks, nodes and modules to be viewed.

The content of the treeview display (i.e. the extent to which networks, racks and modules are shown) is influenced by:

- the login status - see Section 6.1
- the access level set for individual networks, racks and modules and the Display Locally/Hide Locally setting - see Section 6.2
- the type of display selected (Engineering, Supervisor or Operator) - see Section 6.3

- the filter settings (Unfiltered/Controllable Units Only and Unfiltered/Network Filter/Local Filter) - see Section 6.3

The appearance of the treeview display is influenced by:

- the use of the Small Icons setting - see Section 5.2.3
- the View Access Levels setting - see Section 6.3
- the Name type selected for display - see Section 6.4

4.2 Controlling Modules

A window that displays the controls and status indications appropriate to the module may be displayed by either:

- highlighting the rack on the treeview, pressing Mod Select and then pressing the required button in the Module Select window, (this is the method recommended for touch screen operation)
- or, double clicking on the module description in the treeview.

These methods apply to both physical and virtual modules.

4.3 Module Presets

Using Presets Manager, it is possible to store and recall different sets of physical module control settings for each module type. For more details see Section 6.6.

4.4 Virtual Nodes and Modules

In addition to the access and display of networks, racks, modules and controls on a logical basis that represents the physical arrangement of the modular system, using the *Viewfind* Virtual Module Builder it is possible to create a virtual network, containing virtual racks and virtual modules. A Virtual Module may include controls from a number of different physical modules which may be located in different physical racks or even on different physical networks.

The size of the virtual module window and the layout of the selected controls can be determined by the user and virtual racks and modules can be named to correspond to their functions within the system.

Virtual nodes and modules within the virtual network are created using the Virtual Module Builder, selected under “Tools” from the Menu Bar - see Section 6.6. A tree display of the virtual network and the virtual nodes and modules that have been created is available under the “Virtual” tab in the Unit Selection Display Window.

4.5 Login and Password Control

Viewfind provides three levels of login, which determine the facilities that can be accessed:

- Engineer level is the highest authority login level and provides access to all modules (within restrictions imposed by other filter options) and to all Viewfind setup functions.
- Supervisor level provides restricted access to setup functions and access to modules that have been set to Supervisor and Operator access level.
- Operator level provides access to modules set to operator access level only.

Engineer and Supervisor login may be password protected. For full details of Login and setting Passwords see Section 6.1

4.6 Access Control

Networks, nodes and modules may have their level of access set to one of four levels:

Level 1 - Full Access

Level 2 - Supervisor Access

Level 3 - Engineering Access

Level 4 - Units within the scope of the networks that have been set up that have either never been “seen” by *Viewfind*, or have been hidden or removed.

For fuller details see Section 6.2

4.7 Display Control

The *Viewfind* display can be set to correspond to the login level or to a display corresponding to a lower access authority. For example, a user logged in at Engineering Level can choose to have Engineering display, Supervisor display or Operator display.

Additionally, filters may be applied to restrict further the units that are displayed in the treeview.

For more information, see Section 6.3

4.8 User Names

The automatic identification of network components performed by *Viewfind* uses simple numerical identification of networks, nodes and module positions and reports the module type number. These are known as Default Names. *Viewfind* also enables two types of user name to be entered: Local Names, which are unique to the PC on which they are entered, and System Names which are applied globally. A simple menu bar selection determines which name type is displayed.

For more information see Section 6.4

4.9 Alarms

A wide variety of system parameters may be selected to trigger warnings and alarms. At node level, rack power supply and temperature values are monitored and threshold values are individually adjustable for alarm and warning conditions. Node level alarms and warnings may be made momentary, latching or turned off.

At individual module level, a range of module-specific status indications may be set to constitute warning conditions. Typically these are indications of input failure and selection of test conditions. These warnings may be set to upgrade to alarms after a preset time period.

Alarm occurrences give a prominent indication on the *Viewfind* display and details of the alarm condition may be automatically saved to a log file. Alarm Manager enables the duration of log files to be set and stored files to be selected for viewing or deletion.

For more information, see Section 6.7

5 SURVEY OF VIEWFIND CONTROLS

5.1 Tool Bar.

5.1.1 Minimise Button.

Shrinks the window to the appropriate windows default setting, from where it can be retrieved, still in an operating state.

5.1.2 Restore Button.

Shrinks the window from full screen and on the second press returns it to full screen. Whilst in the shrunken state the window can be sized to any shape.

5.1.3 Close Button.

Closes the software cleanly.

5.2 Menu Bar Selections.

5.2.1 Viewfind. *Alt + F*

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen.

Alarm Listing. *A*

Releasing the cursor selection on this option removes the dropdown list and opens the alarm listing window.

Open Local Names. *O Ctrl+O*

Releasing the cursor selection on this option removes the dropdown list and opens the Load Local Names window.

Save Local Names. *S Ctrl+S*

Releasing the cursor selection on this option removes the dropdown list and opens the Save Local Names window.

Login. *L*

Releasing the cursor selection on this option removes the dropdown list and opens the Login window.

Exit. **X**
Closes *Viewfind*.

5.2.2 Edit. **Alt + E**

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen.

Enable Rename / Disable Rename. **E / D**

Only available when the Naming Convention is set to System Names and logged in at Engineering level or Local Names and the treeview is displaying Physical Units. Toggles between Enable and Disable Rename on cursor releases and closes the dropdown list.

Enables and disables the control button for Renaming Units in the Top of the Unit Selection Display Window and similarly the Rename Unit selection within the same dropdown list.

Automatically disabled if the Naming Convention is selected into Default Names, or the treeview is switched to display Virtual Units.

Rename Unit. **R F2**

Only available when the Rename Option is Enabled.

Calls up the rename window for the highlighted unit, when the cursor is released over this option and closes the dropdown list.

5.2.3 View. **Alt + V**

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen.

All Units. **A**

Sets the treeview to display all units whether they are currently active or not, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with Controllable Units Only option, displaying a tick when selected.

Controllable Units Only. C

Sets the treeview to display only the active units, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with All Units option, displaying a tick when selected.

Unfiltered. U

Sets the treeview to display all units, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with System filter or Local Filter options, displaying a tick when selected.

Only available when logged in at Engineering access level.

Network Filter. N

Sets the treeview to display all units below Access level 4, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with Unfiltered or Local Filter options, displaying a tick when selected.

Local Filter. F

Sets the treeview to display all units below Access level 4, which have not been hidden locally, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with Unfiltered or System Filter options, displaying a tick when selected.

Default Names. D Ctrl+D

Sets the naming convention used for all physical units to the default names retrieved from the units, when the cursor is released over this option, displaying a tick when selected and closes the dropdown list.

System Names. Y Ctrl+Y

Sets the naming convention used for all physical units to the system names programmed by the user, when the cursor is released over this option, displaying a tick when selected and closes the dropdown list.

Local Names. L Ctrl+L

Sets the naming convention used for all physical units to the local names programmed by the user, when the cursor is released over this option, displaying a tick when selected and closes the dropdown list.

Engineering Display. E Shift + F3

Sets the treeview to display all units, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with Supervisor Display or Operator Display options, displaying a tick when selected.

Supervisor Display. S Shift + F2

Sets the treeview to display units below access level 3, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with Engineering Display or Operator Display options, displaying a tick when selected.

Operator Display. O Shift + F1

Sets the treeview to display units at access level 1, within the restrictions imposed by the other filter options, when the cursor is released over this option and closes the dropdown list.

Toggle action with Engineering Display or Supervisor Display options, displaying a tick when selected.

Small Icons. I

Sets the treeview display to showing half size icons and text when the cursor is released over this option and closes the dropdown list..

Toggle action with itself, displaying a tick when selected.

Single Control Window. W

Sets the control panel windows into a mode where only one can be open at any one time. If another is opened the previous window is automatically closed.

Selection / Deselection of this control occurs when the cursor is released over it and closes the dropdown list. It has a toggle action with itself and displays a tick when selected.

5.2.4 Set Access Levels. Alt + S

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen.

1. Full Access. 1 Ctrl+F1

Sets the currently highlighted unit to an access level of 1, when the cursor is released over the option and closes the dropdown list. The treeview display is automatically placed into View Access levels when this access level is selected.

The option is only available when logged in at Supervisor or Engineering Levels.

2. Supervisor Access. 2 Ctrl+F2

Sets the currently highlighted unit to an access level of 2, when the cursor is released over the option and closes the dropdown list. The treeview display is automatically placed into View Access levels when this access level is selected.

The option is only available when logged in at Supervisor or Engineering Levels.

3. Engineering Access. 3 Ctrl+F3

Sets the currently highlighted unit to an access level of 3, when the cursor is released over the option and closes the dropdown list. The treeview display is automatically placed into View Access levels when this access level is selected.

The option is only selectable when logged in at the Engineering Level.

4. Hide Systemwide. 4 Ctrl+F4

The option is only selectable when logged in at the Engineering access level and the unit highlighted is offline.

It sets the currently highlighted unit to an access level of 4, when the cursor is released over the option and closes the dropdown list. The treeview display is automatically placed into View Access levels when this access level is selected.

Remove Unit. R

Selectable only when logged in at Engineering access level and the unit highlighted is offline, by releasing the cursor over the option and closes the dropdown list. The highlighted unit will then be reset to an empty slot at access level 4.

Display Locally. D

Sets the highlighted unit to be displayed in the treeview window, within the restrictions of the other filters, when the cursor is released over the option and closes the dropdown list. The treeview display is automatically placed into View Access levels when this filter option is selected.

Hide Locally. H

Sets the highlighted unit to be hidden in the treeview window, when the local filter is applied, when the cursor is released over the option and closes the dropdown list. The treeview display is automatically placed into View Access levels when this filter option is selected.

View Access Levels. V

Selects and Deselects the Access level indications in the treeview window in place of the icons, when the cursor is released over this option and closes the dropdown list.

Toggle action with itself, with a tick present when displaying access levels.

Save Access Levels. S

Saves the currently selected access levels for all units on the attached networks when the cursor is released over the option and closes the dropdown list.

5.2.5 Tools.

Alt + T

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen.

Network Manager. N

Opens the network manager window when the cursor is released over the option and closes the dropdown list.

The option is only available when logged in at Engineering level.

Password Manager. P

Opens the Password manager window when the cursor is released over the option and closes the dropdown list.

The option is only available when logged in at Engineering or Supervisor level.

Alarm Manager. A

Opens the Alarm manager window when the cursor is released over the option and closes the dropdown list.

Virtual Module Builder. V

Opens the Virtual Module Builder window when the cursor is released over the option and closes the dropdown list.

Preset Manager. E

Opens the Preset Configurations window when the cursor is released over this option and closes the dropdown list.

Gateways. G

Opens the Gateway View window when the cursor is released over the option and closes the dropdown list.

Options. O

Opens the Options window when the cursor is released over the option and closes the dropdown list.

The option is only available when logged in at Engineering level.

Modem Configuration M

Opens the Modem Configuration window when the cursor is released over the option and closes the dropdown list.

Start Communications R

Stop Communications T

When the cursor is released over these options operation of the comm port associated with the selected Network is enabled/disabled. This is intended to be used only with comm ports supporting modem-connected Networks. If a direct DIN341K connection is detected, an error message is displayed advising the use of Network Manager. These options are only available if a Network is highlighted.

Update Module List Ctrl+U

Obtains an updated list of modules present at the selected node when the cursor is released over the option.

The option is only available when a node is highlighted.

Soft Reset. S

Resets the highlighted node when the cursor is released over the option.

The option is only available when a node is highlighted.

5.2.6 *Diagnostics.* Alt + D

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen.

Diagnostics is only available when logged in at Engineering level.

Debug Messages. D

Opens the Debug messages window when the cursor is released over the option and closes the dropdown list.

TCPIP Connection Window T

Opens the TCPIP connection window when the cursor is released over the option and closes the dropdown list.

Re-index Data Files R

Initiates re-indexing of the data files when the cursor is released over the option and closes the dropdown list.

5.2.7 *Window.* Alt + W

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen

Arrange All. A Shift + F4

Places opened control and module selector windows back into cascade when the cursor is released over the option and closes the dropdown list.

List of open windows. L

Lists the opened control and module selector windows currently active with a tick against the currently selected window.

Releasing the cursor over a listed window will bring it to the front and make it the currently selected window option and closes the dropdown list.

5.2.8 Help. *Alt + H*

Calls up the dropdown selections listed below when clicked on and remains until the cursor is moved to another heading on the menu bar, or the cursor is released in another area of the screen

Contents. C F1

Opens the help files when the cursor is released over the option and closes the dropdown list.

About. A

Opens the about window when the cursor is released over the option and closes the dropdown list.

5.3 Unit Selection Display Window.

5.3.1 Treeview Display.

Cursor or Keyboard navigation is possible within this window. The Tab key switches between active controls.

Treeview Window.

This window displays a list of Networks, Nodes and Modules which are currently available to the user, within the given access level and applied filter restrictions.

Networks and Nodes may be opened or closed, revealing or hiding the units within them.

The icons associated with the units in the physical display also show the operational state of the unit, with colour changes.

A single cursor click on a +/- will open or close the associated unit, without changing the highlighted selection. Clicking on the icon will highlight the unit, as will single clicking on the description. Double clicking on the description will open or close the unit appropriately, highlight the unit and open the Module selector window if its a Node or the Control Panel window if its a Module.

The program powers up with the tree at the same level of expansion as when it was closed down.

Physical / Virtual Tab Control.

The two lists are independent of each other. Switching between them does not affect the positioning or highlighted selection of the other, so they will display as previously left, when returned to.

Scroll Buttons.

These buttons have no action until the treeview scroll bar appears, when they then mimic the action of the scroll bar up / down buttons.

Scroll Slider + Buttons.

This control does not appear until the list in the treeview is greater than the windows height. The up / down buttons then take the view up and down the list with the scroll indicator giving a relative position. The scroll indicator can also be picked up with the cursor and used as the scrolling control mechanism.

5.3.2 Module / Control Selector Button.

When pressed it opens a Module Selector window when a node is highlighted and a Control Panel window when a module is highlighted.

5.3.3 Rename Button.

This button is only enabled when the menu bar selection under the Edit menu is enabled. The treeview also has to be on the physical display and showing System or Local Names. Selecting this button will then call up the rename window for that unit.

5.3.4 Alarm Viewer Button.

When pressed the button launches the Alarm Viewer window. The colour of the button changes to reflect the worst alarm condition in the list. Grey if no warnings and alarms are listed, yellow if only warnings are present and red if any alarms are present.

The colour of the button is reset to grey when the Alarm Viewer window is closed down.

Alarm Counter.

The counter is incremented every time a new alarm is registered. It is reset by the reset button in the Alarm Viewer window and matches the number in that display. It does not have to match the number of alarms listed as these are reset independently.

Warning Counter.

The counter is incremented every time a new warning is registered. It is reset by the reset button in the Alarm Viewer window and matches the number in that display. It does not have to match the number of warnings listed as these are reset independently.

5.4 Module Selector Window.

Opened by either double clicking on the node in the treeview or using the module selector button in the treeview when a node is highlighted. The Module selector window is used for both Physical and Virtual nodes.

When opened the window appears with a button per module, with a maximum of 8 buttons on a line, before starting a new line. Once open the window can be reshaped using the cursor and will snap to the closest shape to provide the horizontal and vertical size which will display all the buttons.

5.4.1 Physical Module Selector Window.

The window opens with the buttons available, according to the Naming convention, filters and access level currently in operation.

If the Naming convention is changed the names appearing in the buttons will also change.

If the filtering or access level is changed the window will also change to reflect the new combination of modules which are selectable. (At this stage the window can change shape as if it were shut down and reopened.)

5.4.2 Virtual Module Selector Window.

The window opens with the buttons available and operates in the same manner as the Physical Module Selector Window.

5.5 Control Selector Window.

A window containing the controls appropriate to the module type opens when a module is selected from a Physical Module Selector window or when a module is double-clicked on the Physical Treeview display. Controls take the form of buttons or sliders and status items are indicated by "l.e.d." type displays.

Similarly, when a Virtual Module is selected from the Virtual Module Selector window or when a Virtual Module is double-clicked on the Virtual Treeview display, a Virtual Module control window is opened containing the controls selected for the Virtual Module.

5.6 Alarm Viewer Window.

This window is opened by the Alarm Listing option on the menu bar under Viewfind or the Alarm button in the Unit Selection Display window.

The window is navigable with the cursor and TAB and Arrow Keys. The Physical and Virtual tabs on the main treeview may be selected with the Alarm Viewer window open.

5.6.1 Alarm Counter.

The counter is incremented every time a new alarm is registered. It is reset by the adjacent reset button and matches the number in the Unit selector Display window. It does not have to match the number of alarms listed as these are reset independently.

5.6.2 Warning Counter.

The counter is incremented every time a new warning is registered. It is reset by the adjacent reset button and matches the number in the Unit selector

Display window. It does not have to match the number of warnings listed as these are reset independently.

5.6.3 Alarm and Warning listing.

The main body of the window contains the listing of the Alarms and Warnings received. They are listed in a tabular form with identification of alarm or warning, date, time, default Network description, default Node description, default Module description and error description. The columns are headed and the rows numbered.

5.6.4 Clear Entry Button.

Releasing the cursor over this button clears the highlighted entry. It does not delete the entry as it will still be recorded in the log file when that is automatically stored, unless the program is shutdown prior to the log file storage.

5.6.5 Clear All Button.

Releasing the cursor over this button clears all the entries. It does not delete the entries as they will still be recorded in the log file when that is automatically stored, unless the program is shutdown prior to the log file storage.

5.6.6 Close Button.

Releasing the cursor over this button closes the Alarm viewer window.

5.7 Load Local Names Window.

The Load Local Names window is opened from the Viewfind menu on the menu bar.

5.7.1 File Listing.

The window lists all available local name files. These can be highlighted by cursor selection or the arrow keys.

Double clicking the cursor on a selection automatically loads the file and closes the window.

5.7.2 Cancel Button.

Allows the load local names window to be shut down without calling any files even if one is highlighted.

5.7.3 OK Button.

Loads the local names from the highlighted file and closes down the load local names window.

5.8 Save Local Names Window.

The Save Local Names window is opened from the Viewfind menu on the menu bar.

5.8.1 Current File Name window.

The window allows a new name to be typed or contains the file name highlighted from the list below, which can be edited if required.

5.8.2 File Listing.

The window lists all available local name files. These can be highlighted by cursor selection or the arrow keys.

5.8.3 Cancel Button.

Allows the Save local names window to be shut down without saving any files even if one is highlighted.

5.8.4 OK Button.

Saves the local names from the highlighted file and closes down the save local names window.

5.9 Login Window.

The login menu is opened by the Login option under Viewfind on the toolbar.

Once open the login window selections can be operated either with a cursor control device or from the keyboard. The cursor selections use the positioner controls and a left click button. The Keyboard operation uses the TAB key, the Left or up keys, the right or down keys, the enter key and the Esc key.

The arrow keys circulate around all the available keys, whilst the TAB key allows the selection to jump between the login level buttons and the close and OK buttons.

The Esc key has the same operation as the close button, and the Enter key has the same operation as the OK button. If either the Close or OK buttons are pressed the login window closes automatically.

A window close button is also available in the top right hand corner.

5.10 Rename Window.

The rename window is opened by the rename option under the edit menu, or the rename button in the Unit Selection Display window, when they are enabled.

Rename enables the local or system name of the network, node or module highlighted in the Physical treeview display to be edited, depending on the naming convention selected. Note that Default Names cannot be edited.

System names may only be edited by an Engineering level user, but Local names may be edited by any user.

The window lists the current names for all levels and provides an editing line to change the name. On opening the editing line has the appropriate name already inserted for editing.

The window may be navigated around using the keyboard or cursor control.

5.10.1 Controls.

Text editing window.

Opens with the highlighted units name in the window ready for editing. A maximum of 32 characters may be inserted for a name.

Cancel Button.

Exits the renaming process without changing the name and closes down the rename window.

OK Button.

Exits the renaming process, saving the name and closing down the rename window.

5.11 Network Manager Window.

Opened by the Network Manager option under the Tools menu on the Menu Bar.

5.11.1 Network List.

This lists the currently set Networks under Local Network and Remote Network symbols.

5.11.2 Local Network Settings

Displays the settings for the currently selected local network, all of which are editable. The DIN341 information is displayed when the Enquire button is pressed.

5.11.3 Remote Network Settings

Displays the settings for the currently selected remote network, all of which are editable. A list of networks available is displayed when the "List Available Networks" button is pressed.

5.11.4 Controls.

DEF Button.

Displays Default Names for Networks.

SYS Button.

Displays System Names for Networks.

LOC Button.

Displays Local Names for Networks.

Add Local Network Button.

Adds a Local Network to the Local Network section of the list.

Add Remote Network Button.

Adds a Remote Network to the Remote Network section of the list.

✓ Button.

Applies any changes made to the settings of the selected Network. Only available when a change has been made.

X Button.

Removes the selected Network.

Apply Button.

Applies any changes made to the settings of the selected Network. Only available when a change has been made.

Close Button.

Exits the network manager without storing any changes, but if unsaved changes have been made, provides a “Would you like to apply your changes?” window, before closing the main window.

5.12 Password Manager Window.

Opened with the Password manager option from the Tools menu on the menu bar. Navigation around the window can be done with the keyboard or a cursor. Password manager is not available when logged in at Operator authority. Facilities are restricted when logged in at Supervisor authority.

5.12.1 Current Users

Displays a list of users with symbols indicating their current authority levels.

5.12.2 Add Button.

Opens the Add New User window when the cursor is released over the button.

5.12.3 Add New User Window: Authority level selection.

Button selections to add a new password at the selected level. Engineering level only available when logged in at engineering level.

5.12.4 Add New User Window: New User Name.

Text entry box allowing the user to enter a new name.

5.12.5 Add New User Window: Enter Password.

Text entry box to allow the user to enter a password. The entry appears as * characters.

5.12.6 Add New User Window: Re-enter Password.

Text entry box to allow the user to confirm the password. The entry appears as * characters.

5.12.7 Add New User Window: Exit Controls.

The Cancel button will quit the Add new password window without saving the entries.

The OK button will save the new user and add it to the bottom of the user list, until the password manager is re-opened when they are ordered alphabetically. If the password entries do not match a warning window appears and when cancelled allows the corrections to be made.

5.12.8 Remove Button.

Only available when logged in with Engineering authority. Removes the user selected in the Current Users list when "Yes" is selected in the "Do you want to remove.....?" dialog box.

5.12.9 Change Password Button.

Releasing the cursor over the button selects the highlighted user and opens the Change Password window, if no user is selected a prompt window appears to tell the user to make a selection first.

Step 1.

A window then appears asking for the current password.

The Cancel button will abort the change password process.

The OK button, with an incorrect password entered will produce a warning message, which when acknowledged aborts the process.

Step 2.

If the password was correct the window changes to ask for the new password.

The cancel and OK buttons have the same effect as the previous stage.

Step 3.

When the new password is entered the window changes and asks for confirmation of the new password.

The Cancel button will abort the change password process.

The OK button, with an incorrect password entered will produce a warning message, which when acknowledged aborts the process. A correctly entered confirmation password will save the new password and shutdown the change password window.

5.12.10 Settings.

Area of the Password manager window which controls the password settings used by the program.

Supervisor Button.

When selected enables the password system for the Supervisor user when the Supervisor level is next selected from the Operator level, or the software is started at the Supervisor level.

This control is not selectable unless the Engineering password is also enabled.

The Supervisor password cannot be selected if there is no Supervisor password in the user list.

Engineering Button

When selected enables the password system for the Engineering user when the Engineering level is next selected, or the software is started at the Engineering level.

The Engineering password cannot be selected if there is no Engineering password in the user list.

5.12.11 Exit Controls.

Area of the Password manager window which controls the closing of the window.

Cancel Button.

Closes the Password Manager window without making any changes to the logon requirements

OK Button.

Closes the Password Manager window, implementing any changes that were made to the logon requirements.

5.13 Alarm Manager Window.

The Alarm Manager window is opened by selecting the option from the Tools menu on the menu bar.

The window contains settings for configuring node alarms or module alarms, depending whether a node or module is selected in the main treeview. If a network is selected in the main treeview, a “No Selection” error message is displayed. In both node and module configuration modes, a “Logging” button is available for editing Alarm Log settings.

A close button is included to shut down the window.

The window can be navigated with a cursor or the keyboard controls.

The Alarm Manager is available at all operational levels.

5.13.1 Logging.

Provides controls for producing log files manually or automatically to the users requirements.

The log files store all the Alarms and warnings received by the system, even if they have been removed from the Viewer display.

Log File list.

Lists all the log files stored on the system. Any item in the list may be highlighted for further actions.

View Log File Button.

Opens a windows text viewer and displays the contents of the highlighted file.

Delete Log File Button.

Deletes the highlighted file after prompting to make sure it is the required action.

Save Log File Now Button.

Saves a new log file regardless of the settings elsewhere, with the Next File Name from the File Details section.

Enable automatic logging.

Switches on the automatic logging process to store log files according to the File Details section.

File Prefix.

Text entry box allowing the user to enter their preferred prefix for log file names. If the last character is a number, it will automatically be incremented after every file save, (automatic or manual). Entering YYYYMMDDHHNN will produce a file name with the year, month, day, hour and minutes that the file was saved.

Next File Number

Used with file prefix text, it will automatically be incremented after every file save (manual or automatic).

Logging Duration.

Sets the time between each log file automatic save process. Manually adjustable by the user by typing into the text boxes. Minimum duration 1 minute.

5.13.2 Module Configuration.

Provides the controls for the user to configure the module Alarms and Warnings for the whole system on a module by module basis. Selection of the module to be configured is carried out in the main treeview window.

Alarm and Warning Selection Window.

This window lists the available Alarmable / Warnable parameters for the selected module type.

Against each parameter is the currently set option for alarm / warning.

Selection of this option produces a dropdown list of the available options. A new selection of the option is made by releasing the cursor over the desired option, which will then appear against the parameter.

The new options for the alarms and warning are not save until the save button is pressed.

Selected Module Display Window.

A text window displaying the Network, Node, and Module descriptions according to the naming convention plus the actual module 'V' type number.

Warning Upgrade Selection.

Any warnings selected to parameters can be automatically upgraded if they persist, on a module basis, to an alarm by activating the upgrade tick box.

The time before the upgrade occurs is settable by entering a number in the duration text box. A time may be set between 1 and 99 minutes.

Clear All Button.

The Clear All button will set all parameter alarms or warnings to off.

The settings are not actually stored until the save button is pressed.

Defaults Button.

The Defaults Button will set all parameter alarms and warnings to their default values, as set in the database .

The settings are not actually stored until the save button is pressed.

Save Button.

The save button will save the settings for all the parameters for the selected module when pressed.

5.14 Node Configuration.

Provides the controls for the user to configure the node Alarms and Warnings for the whole system on a node by node basis. Selection of the node to be configured is carried out in the main treeview display.

5.14.1 Node settings.

This is the area of the display where the node alarm and warning thresholds can be set. They may be adjusted at any time using text entry into the boxes. All setting for each node are independent.

Manufacturer.

This is a dropdown list from which the rack manufacturer can be selected. Currently the two options are Avitel or Vistek.

Single/Dual Supply.

This section allows the user to select whether the rack is fitted with single or dual supplies.

Bus Voltages.

The Bus voltages section allows high and low Warning and Alarm thresholds to be set for the highlighted rack.

Power Supply Voltages.

The power supply voltages section allows high and low Warning and Alarm thresholds to be set for the highlighted rack.

Temperature.

This section allows the over temperature thresholds to be set for the highlighted rack.

Warning and Alarm activation.

The two dropdown menus allow the Warning and Alarm styles to be controlled independently. The options are Off, Momentary or Latched.

Defaults Button.

Once the Manufacturer type has been selected, the default button will set all the threshold values to the factory settings. (see list at end of document)

Save Button.

Once the required values have been set the Save button must be pressed to store these settings. Closing the window or selecting another node without saving will discard the changes.

5.15 Virtual Module Builder.

Opened by the selection of the Virtual Module Builder option in the Tools Menu on the Tool Bar. The window opened fills the right-hand side of the control screen and contains all the controls for building and editing the virtual modules.

5.15.1 Treeview Display.

The treeview display, when the VM Builder is started displays the Virtual Network and the Virtual Racks within it. Using the TAB selectors on the top of the treeview display the window can be changed to show the real controls available from any selected real module in the main treeview display.

View Virtual Network.

This is the TAB which is defaulted to on the launch of the VM Builder. The initial display will only show the Virtual Network and the Virtual Racks within it. Expanding a virtual Rack by clicking on the '+' sign or double clicking the cursor on the Name of the rack will expand the rack to display the Modules within it.

Expanding a virtual Module by clicking on the '+' sign or double clicking the cursor on the Name of the module will expand the rack to display the controls within it.

Highlighting a Module by single clicking the cursor on the icon or the name, or double clicking on the name will also open the window display of the virtual module on the right-hand side.

Highlighting a Virtual Rack in a similar manner will not display anything on the right-hand side.

Changing between racks and modules highlighted changes the options available on the control buttons above the treeview.

Both the Racks and Modules should appear in alphanumeric order when the VM Builder is opened.

Select Control Window.

This TAB displays the controls available from a real module when one is selected in the main treeview on the left-hand side.

Available only when a Virtual Module is selected in the View Virtual Network TAB.

5.15.2 Editing Buttons 1.

Buttons along the top of the VM Builder window are used to provide various editing features.

Add New Rack Button.

Available only when the Virtual Network is the highlighted object. It will add another virtual rack to the system with a default name which may then be changed. It will appear at the bottom of the list until the VM Builder is restarted.

Add New Module Button.

Available only when a Virtual Rack is the highlighted object. It will add another virtual module to the system with a default name which may then be changed. It will appear at the bottom of the list until the VM Builder is restarted.

Add Real Module Button.

Available only when a Virtual Rack is highlighted. It will add the module, with all its controls, which has been selected in the main treeview window into the Virtual Rack.

Remove Unit / TAB Button.

Available only when a Rack, Module or TAB is highlighted. If a Rack or Module are highlighted the button will display 'Remove Unit' and have the action of removing that unit if pressed. If a TAB in the control panel view is selected the button will display 'Remove TAB' and have that action if pressed.

Rename Unit / TAB Button.

Available only when a Rack, Module or TAB is highlighted. If a Rack or Module are highlighted the button will display 'Rename Unit' and have the action of providing another window in which the name may be edited for that unit if pressed. If a TAB in the control panel view is selected the button will display 'Rename TAB' and have the same action if pressed.

Save Button.

Saves all the changes made to the Virtual Racks and Modules during the session, up to the time it is pressed.

Width and Height Windows.

Numerical entry boxes which control the size of the Virtual Module control window. The changes made in this box are immediately reflected in the area below where the control surface is constructed. These boxes are only displayed when a Virtual Module is selected.

Window Close (✕) Button.

Positioned in the conventional windows position it has the action of closing the VM Builder window. If Changes have been made but not stored a window

appears before the VM Builder is closed to prompt for a store or cancel, so that changes are not accidentally lost.

5.15.3 Editing Buttons 2

Buttons down the right hand side of the VM builder window provide further editing functions. Please see illustration 7.2 for identification of these buttons.

Free Floating Text Button.

When pressed, this inserts free floating text into the panel editing area. The position of the text may be positioned by drag and drop or by use of the nudge buttons with the text outline selected once the item has been pasted down. The text itself may be entered and edited in the “Display Text” area when the text outline is highlighted in the panel editing area.

Free Floating Group Box Button

When pressed, this inserts a free floating group box into the panel editing area. This takes the form of an a box outline of adjustable height and width with text in the top left hand corner. The box may be positioned by drag and drop or by use of the nudge buttons with the box outline selected once the item has been pasted down. The size of the box may be adjusted by dragging the right hand or bottom edges or by the use of the four buttons which increase or decrease the width or height. The text itself may be entered and edited in the “Display Text” area when the box outline is highlighted in the panel editing area.

Nudge Buttons (4)

The nudge buttons adjust the position of the item highlighted in the panel editing area in the direction indicated by the arrow on the button. These buttons are only active when an item is highlighted.

Box Size Adjustment Buttons (4)

These buttons adjust the size of a free floating group box as indicated by the symbols on the buttons. These buttons are only active when a free floating group box is highlighted.

Send to Back Button

Sends the highlighted outline in the panel editing area to the back of the list.

5.15.4 Display Text Box

The Display Text box below the top row of buttons is used to enter or edit text associated with the highlighted item in the panel editing area. When no item is highlighted, this box is inactive and displays “No control selected”. To enter or edit text, the cursor must be positioned in the Display Text box. The entered or edited text is transferred to the selected control by pressing enter on the keyboard.

5.15.5 Panel Editing Area.

With a Virtual Module highlighted in the Virtual Module Builder treeview, selecting the “Select Controls” tab displays the status and control items available from a module highlighted in the Unit Selection Display window. When a status or control item is selected, its outline is displayed in the Control Area, where it can be pasted down and subsequently repositioned by drag and drop or by the use of the nudge buttons. The size of the Panel Editing Area may be changed by clicking and dragging the right hand or bottom boundaries. Clicking and dragging the bottom right hand corner adjusts width and height together.

5.16 Edit Settings Window.

Selected from the Tools Menu, this option opens a window which provides access to some of the setting of the .ini file.

This option is only available at Engineering login level.

5.17 Debug Messages Window.

Opens a window on the screen when selected from the Diagnostics menu on the menu bar.

The window is fully sizeable by the user and displays the incoming and outgoing messages to the DLL software.

This option is only available at Engineering login level.

5.18 Help Files.

Opened from the menu bar under the Help option or by pressing F1. In most cases, pressing F1 with the cursor positioned over Viewfind display components will open the appropriate Help topic directly.

5.19 About Window.

Opened from the menu bar under the Help option.

Produces a window describing the version number of the Program and DLL loaded.

6 OPERATION

6.1 Login and Password control

6.1.1 Authority Levels

Viewfind has three levels of login authority:

Engineering Authority. This is the highest authority level and may optionally be password controlled. It provides access to every *Viewfind* facility, including access to modules irrespective of the allocated module access level, unrestricted ability to set module access levels, full module renaming and access to all password control functions. Those logged in with Engineering authority may choose to have the *Viewfind* screen displayed as any of the three authority levels.

Supervisor Authority. This authority level may be optionally password protected. It provides access to modules unless access is set to Engineering, has ability to set module access levels to either Supervisor or Operator, is able to rename modules with Supervisor or Operator access levels and can add Supervisor level passwords. Those logged in with Supervisor authority may choose to have the *Viewfind* screen displayed as either Supervisor or Operator authority levels.

Operator Authority. Operator authority access is not password protected. It provides access to only those modules set to Full Access and these may also be renamed.

6.1.2 Logging In

To login, select “Viewfind” from the toolbar, then “Login”. Select the login authority required and enter the username and password if these are enabled for the selected authority level, followed by “OK”.

6.1.3 Password Control

Users and passwords may be added, removed or changed using Password Manager, accessed by selecting “Tools” from the Menu Bar, then “Password Manager”.

To add a user, click on “Add”, then select the required Authority level. Enter a username, followed by “OK”, then enter and confirm the chosen password.

To change a password, select the user then click on “Change Password”. Enter the existing password, then enter and confirm the new password.

To remove a user, select the user from the list, click on “Remove” and then “Yes”.

The Remove and Change Password functions are only available when logged in at Engineering level. Supervisor users may be added when logged in at Supervisor level.

6.1.4 Enabling Passwords

Password control for Supervisor and Engineer authority levels may be selectively enabled or disabled. This may be done by selecting “Tools” from the Toolbar, then “Password Manager” and selecting the “Supervisor Password On” and “Engineer Password On” buttons as required.

The Supervisor passwords cannot be enabled unless Engineering passwords are enabled and there is at least one Supervisor password in the user list.

The Engineering passwords can only be enabled or disabled by a user logged on at Engineering authority and only if there is at least one Engineering password in the user list.

6.2 Setting Unit Access Levels

Access levels may be set by selecting the required Network, Node or Module from the treeview display in the Unit Selection Display window, and selecting the required access level under “Set Access Levels”.

Four access levels are available:

Level 1 - Full Access. No restrictions are applied.

Level 2 - Supervisor Access. Restricts access to selected unit to Supervisor and Engineering levels. This selection can only be made when logged in at Engineering and Supervisor levels.

Level 3 - Engineering. Restricts access to Engineering only. This selection may be made only when logged in at Engineering level.

Level 4. Level 4 access is automatically applied to units that have not been “seen” by *Viewfind*. Level 4 access may also be applied manually by selecting Level 4 “Hide Systemwide” from the “Set Access Levels” menu. “Hide Systemwide” cannot be applied to a Network. Selecting “Remove Unit” under “Set Access Levels” in the Toolbar sets the highlighted unit to level 4 and declares it an empty slot. This operation can only be performed with the selected unit offline.

Access level control is not available when logged in at Operator level.

6.3 Display Control

6.3.1 Engineering, Supervisor and Operator Display

The treeview display may be set to correspond to the user's login level or to a lower level by selecting "Engineering Display", "Supervisor Display" or "Operator Display" under "View" in the Toolbar. Selections that are not permitted at the login level in use are greyed out.

6.3.2 All Units/Controllable Units Only Filter

The treeview display may be set to display all units or only those that are currently on-line. This selection is made under "View" in the Toolbar.

6.3.3 Unfiltered/Network Filter/Local Filter

This selection is available under "View" in the Toolbar.

Unfiltered displays all nodes and modules that could be present on the Networks that have been set up on *Viewfind*. This selection is only available when logged in at Engineering level.

Network Filter displays only those nodes and modules that are present or have been present on the *Viewfind* networks.

Local Filter applies the "Display Locally"/"Hide Locally" selection available under "Set Access Levels" in the Toolbar.

6.3.4 Displaying Names

At any login level, the name type shown in the Unit Selection Display Window may be selected by selecting "Default Names", "System Names" or "Local Names" under "View" in the Toolbar. See Section 6.4 for details of naming conventions.

6.4 Naming Conventions

Viewfind automatically allocates logical names for networks nodes and modules for networks that have been set up. These take the form Network 1/Node 05/Modules 06 and are known as **Default Names**. In addition, two forms of user-determined name are available : **Local Names** which are unique to the pc on which they are

entered, and **System Names** which are applied globally. If local or system names have not been entered, default names are displayed in their place.

6.4.1 Adding Local and System Names

Local Names may be added or edited at any login level. To add a local name:

- select the unit to be renamed in the treeview,
- select “Local Names” under “View” in the Toolbar,
- select “Enable Rename” , then “Rename Unit” under “Edit” in the Toolbar
- type the new local name into the resulting dialogue box, and click on “OK”.

Alternatively, once renaming has been enabled, the dialogue box can be called by using the “Rename Unit” button at the top of the Unit Selection Display Window.

System Names may only be added or edited at Engineering level login. The process is identical to that for Local Name entry described above, except that “System Names” is selected under “View” in the Toolbar.

6.4.2 Saving and Opening Local Names

Once local names have been entered, they may be saved as follows:

- under ViewFind on the menu bar, select “Save Local Names”
- either select one of the existing filenames from the list (which may then be edited) or enter a new filename
- click on “OK” to save, or “Cancel” to exit without saving.

Previously saved local names may be recalled as follows:

- under ViewFind on the menu bar, select “Open Local Names”
- select the required filename from the list
- click on “OK” to load the file of local names, or “Cancel” to exit without loading.

Using these facilities it is possible to set up a number of set of local names, which may be recalled for use as required.

6.5 Module Selection and Control

A window that displays the controls and status indications appropriate to the module may be displayed by either:

- highlighting the rack on the treeview, pressing Mod Select and then pressing the required button in the Module Select window, (this is the method recommended for touch screen operation)
- or, double clicking on the module description in the treeview.

These methods apply to both physical and virtual modules.

Depending on the module type, the window may contain:

- indications of status items which cannot be controlled (e.g. the local/remote switch setting on the module), using “led” type indications.
- switch controls using buttons with “led” indications to indicate the active selection.
- variable controls which have both sliders and up/down buttons. The current parameter value is displayed as a percentage of nominal or a decibel value, as appropriate and the control may be reset to its nominal value by selecting the “Cal” button.

6.5.1 *Single/Multiple Control Windows*

If “Single Control Window” is selected from the View menu on the Menu bar, only one module control window is displayed at a time. If a module is selected, its controls replace any previously selected. If “Single Control Window” is not selected, each new module selection results in display of a further control window.

When multiple control windows are open, they may be arranged into cascade format by selecting “Arrange All” under “Window” in the Menu Bar.

6.6 Module Presets

Control settings for a physical module may be stored as a preset configuration as follows:

- open the required module control window and adjust the controls as required
- from the Tools drop-down menu select “Preset Manager”
- click on “Store Active Configuration”

- enter a name for the configuration to be stored in the dialogue box and click on “OK”

Previously stored configurations may be recalled as follows:

- open the required module control window
- from the Tools drop-down menu select “Preset Manager”
- select the required configuration from the list of presets
- click on “Recall Active Configuration”

Previously stored configurations may be deleted as follows:

- open a module control window of the type required
- from the Tools drop-down menu select “Preset Manager”
- select the required configuration from the list of presets
- click on “Delete Selected Configuration”

Note: The presets stored for a given physical module are available for recall whenever the physical module control window for a module of the same type is open, regardless of its location within the control network. However, operation of the presets is dependant on the Functional Revision Status (FRS) of a module as well as its Vxxxx product number. In other words, if presets are stored for a V1665 FRS1, these presets will not be available for recall to a V1665 FRS10. It is therefore necessary to set up separate presets for modules of the same product type that have different FRS status.

6.7 Creating Virtual Racks and Modules

In addition to the access and display of networks, racks, modules and controls on a logical basis that represents the physical arrangement of the modular system, using the *Viewfind* Virtual Module Builder it is possible to create a virtual network, containing virtual racks and virtual modules.

Virtual nodes and modules within the virtual network are created using the Virtual Module Builder, selected under “Tools” from the Menu Bar.

If it is attempted to close the Virtual Module Builder window without saving any changes that have been made, *Viewfind* prompts for changes to be saved (or not).

6.7.1 Adding and Deleting Virtual Racks

Once in Virtual Module Builder, virtual racks may be added to the virtual network by selecting “Virtual Network” on the Virtual Module Builder treeview and clicking on the “Add New Rack” button. A virtual rack may be deleted by highlighting the required rack in the Virtual Module Builder treeview and clicking on the “Remove Unit” button.

Virtual racks may be named or renamed by selecting the required rack, clicking on the “Rename Unit” button, entering the name and clicking on “OK”.

Once a virtual rack has been created, it is possible to add either a real module from any physical rack or to assemble a virtual module using controls selected from any of the physical modules on the system.

6.7.2 Adding Real Modules to Virtual Racks

Once a virtual rack has been created, it is possible to add a real module as follows:

- Within the Virtual Module Builder window, highlight the virtual rack to which the module is to be added
- Select the module to be added from the Unit Selection Display treeview
- Click on the “Add Real Module” button at the top of the Virtual Module Builder window. The module will be added to the selected virtual rack within the Virtual Module Builder treeview, identified by its default name.
- Click on the “Save” button at the top of the Virtual Module Builder window. The newly added module will now appear in the Virtual treeview within the Unit Selection Display window.

6.7.3 Adding Virtual modules to Virtual Racks

Once a virtual rack has been created, it is possible to add a virtual module. A virtual module can be used to assemble individual controls from any of the physical modules present on the networks connected to *Viewfind*.

To add a virtual module to a virtual rack, proceed as follows:

- With the Virtual rack highlighted, click on the “Add New Module” button at the top of the Virtual Module Builder window. This will create a virtual module identified as VM1 within the virtual rack. Further virtual modules created within the same virtual rack will be numbered in sequence VM2, VM3 etc. The virtual module may be renamed by selecting the required module, clicking on the “Rename Unit” button at the top of the Virtual Module Builder window, entering the name and clicking on “OK”.

- A window for the control and status items to be allocated to the virtual module is displayed on the right hand side of the Virtual Module Builder. The window size may be changed by typing in new width and height values into the boxes at the top right of the Virtual Module Builder window or by clicking and dragging the right hand or bottom boundaries of the window. Clicking and dragging the bottom right hand corner of the window adjusts width and height simultaneously. Additional tabs may be added by clicking on the “+” tab. Tabs may be removed or renamed by clicking on the tab, and then the “Remove Tab” or “Rename Tab” buttons. **Note:** “Remove Tab” and “Rename Tab” are only shown after a tab has been selected. The buttons have other functions with other items selected.
- A control or status item from a physical module may be allocated to the virtual module as follows:
 1. select the physical module from which the control or status item is to be taken in the Unit Selection Display window
 2. click on the “Select Controls” tab in the Virtual Module Builder.
 3. from the list of available control and status items, click on the one required.
 4. an outline of the selected item will be displayed under the currently selected tab. This may be positioned using the mouse and pasted down by clicking. It may be repositioned by drag and drop. Alternatively, the outline may be repositioned using the nudge buttons after returning to the “View Virtual Network” tab and highlighting the required outline either by clicking on it or by clicking on the control description.
 5. further control and status items may be added by repeating 1-4 above. The selected controls are shown under the virtual module, identified by their physical network/node/module.
 6. click on save and exit the Virtual Module Builder.
- The resulting virtual module display may now be examined by selecting the “Virtual” tab in the Unit Selection Display window , selecting the virtual module that has just been created, then clicking on “Select Controls”

6.7.4 Using Text in Virtual Module Windows

Control Labels

The text label for a control is initially the same text carried by the control in a physical module control window. This text may be edited by highlighting the control outline as described above, positioning the cursor in the “Display Text” and typing in a new name, followed by “Enter”.

Inserting Free Floating Text

Free floating text may be inserted into a Virtual Module window as follows:

- click on the Free Floating Text button
- position the text outline box within the panel editing area and paste it down with a left mouse click (it may be repositioned by using drag and drop or by use of the nudge buttons)
- position the cursor in the “Display Text” box and type in the required text, followed by “Enter”.

Inserting a Free Floating Group Box

A free floating group box consists of an outline of adjustable size with identifying text in the top left hand corner. The free floating group box may be used to provide a visual grouping of a number of virtual module control, with text identification.

A free floating group box may be inserted as follows:

- with the Virtual Module Builder open and with View Virtual Network tab selected, click on the Free Floating Text Box button.
- position the box and adjust its size by dragging the right hand and lower boundaries of the box or by use of the box size control buttons.
- enter the text required by positioning the cursor in the Display Text box and typing the text required, followed by Enter.
- click on Save.

6.7.5 Renaming Virtual Racks and Modules

Virtual racks and modules may be renamed as follows:

- Select the rack or module to be renamed within the Virtual Module Builder treeview display
- Click on the “Rename Unit” button at the top of the Virtual Module Builder window.
- Enter the new name in the dialogue box and click on “OK”.
- Click on the “Save” button at the top of the Virtual Module Builder window.

6.7.6 Deleting Virtual Racks and Modules

Virtual racks and modules may be removed from the Virtual Network as follows:

- Select the rack or module to be deleted within the Virtual Module Builder treeview display
- Click on the “Remove Unit” button at the top of the Virtual Module Builder window
- Click on the “Save” button at the top of the Virtual Module Builder window.

6.8 Alarms

Settings for node and module level warning and alarm conditions and Log file management settings are made within Alarm Manager which is selectable under “Tools” from the Menu Bar.

6.8.1 Rack Power Supply and Temperature Thresholds

Alarm and warning threshold values for rack power supply voltages and rack temperatures can be set for each rack , as follows:

- Select Alarm Manager
- On the main treeview, select the node (rack) required.
- Select the Manufacturer (Vistek or Avitel) - this determines the default settings that are applied.
- Select single or dual power supply configuration, depending on the option fitted to the rack selected. The default is for single power supply and a change to dual will only be necessary for a V1603 rack fitted with dual power supplies.
- The low and high alarm and warning voltage thresholds for power supplies and the rack bus voltage may then be entered and saved by pressing “Apply”. Alternatively, the default values may be set by pressing “Defaults”, then “Apply”. **Note:** The V1600 rack monitoring system measures the rack distribution bus voltage and the **lower** of the two possible power supply voltages. For single power supply systems, the latter will be zero. For single power supply racks, therefore, only the distribution bus voltage can be set to produce an alarm or warning.
- The over-temperature warning and alarm values may be entered, or the defaults selected as above.

- The warning and alarm types can be selected to be “Momentary”, “Latched” or “Off”.

6.8.2 Module Alarm Conditions

At individual module level, a range of module-specific status indications may be set to constitute warning/alarm conditions, as follows:

- Select Alarm Manager.
- In the main treeview, expand nodes as necessary and select the module required.
- From the displayed list of status parameters and alarm/warning types click on the “Type” column adjacent to the parameter required.
- From the resulting list of alarm/warning options select Off, Latched Warning, Latched Alarm, Momentary Warning or Momentary Alarm as required.
- “Clear All” sets all parameters to off, “Defaults” sets all parameters to default alarm/warning settings.
- Click on “Apply” before closing Alarm Manager.

6.8.3 Alarm Logging Setup

Alarm logging may be set up as follows:

- Select the “Logging” button in the Alarm Manager window
- Select the “File Prefix” entry box and type in the required prefix. This will normally be a suitably descriptive text title (e.g. studio).
- Select the “Next File Number” entry box and enter the number required (e.g. 1) Click on “Apply”. The next logfile filename will consist of the File Prefix with the Next File Number appended (studio1 in the example). Provided the Next File Number entered was numeric, subsequent filenames will be incremented by one (e.g. studio2, studio3...etc.).
- If automatic logging is required, check the “Automatic Logging Enabled” box and enter the time interval at which new logfiles are required to start.
- Click on the “Apply” button to save the settings that have been entered before closing Alarm Manager.

6.8.4 Viewing, Deleting and Saving Log Files

Log files may be viewed, deleted or saved as follows:

- Select the “Logging” tab under Alarm Manager
- To view a file, select a file from the file list and click on “View File”.
- To delete a file, select a file from the file list, press “Delete File” and confirm with the “Yes” button.
- At any time, a logfile save operation may be forced by clicking on “Save File”. The next file number will be used.

6.8.5 Working with Alarms and Warnings

When a condition that has been defined as an alarm or warning occurs, the “Alarms” button at the top of the Unit Selection Display window changes colour to red to indicate an alarm or yellow to indicate a warning. In the event that both warning and alarm conditions exist, alarm status is indicated.

Clicking on the “Alarms” button shows the Alarms and Warnings window, containing a list identifying the networks, nodes and modules responsible for alarms or warnings together with the time of occurrence and a description of the condition. Entries may be cleared from this list selectively by highlighting the entry and clicking on “Clear Entry”. All entries may be cleared by clicking on “Clear All”.

At the top of the Alarms and Warnings window are displays of the number of alarms and warnings that have occurred. Clicking on the adjacent “Reset” buttons resets these displays to zero and returns the Alarm button colour to grey.

7 ILLUSTRATIONS

7.1 Viewfind Screen showing Physical Treeview, Module Selector and Module Control Windows

The screenshot displays the ViewFind software interface. The main window is titled "ViewFind Access level: Engineer Naming convention: Local". It features a menu bar with "ViewFind", "Edit", "View", "Set Access Levels", "Tools", "Diagnostics", "Window", and "Help".

The interface is divided into several sections:

- Physical Treeview Window (Left):** A tree view showing the hierarchy of modules and their access levels. The "Transmission 1" folder is selected and highlighted in blue. Below it, "Empty Slot" is listed with a level of 4, and "Module 00 - V1635" through "Module 04 - V1615" are listed with a level of 1. A callout box points to this section with the text: "Physical Treeview Window (Large Icons) showing access levels."
- Module Selector (Top Right):** A grid showing modules fitted in a rack named "Transmission 1". The modules are: Empty Slot, Module 00 - V1635, Module 01 - V1635, Module 02 - V1640, Module 03 - V1651, Module 04 - V1615, Module 05 - V1662, Module 06 - V1662, Module 07 - V1635, Module 08 - V1635, Module 09 - V1640, Module 10 - V1651, Module 11 - V1615, Module 12 - V1662, Module 13 - V1662, and Module 15 - V1608. A callout box points to this section with the text: "Module Selector showing modules fitted in rack named 'Transmission 1'."
- Module Control & Status Window (Bottom Right):** A window titled "Network 1\Transmission 1\Module 12 - V1662" showing the "Module Status" tab. It includes controls for "Output Standard" (PAL I, PAL N, NTSC, NTSC 443, NTSC Japan, PAL M), "Module Status" (SDI Video Input, Video Reference, Video Levels Calibrated, Chroma Filter Normal, Video Blanking Normal, Output Timing Normal), and "Control Status" (Remote Control, Test Signal). There are also "Options" fields for "NONE" and "Input Fail Mode" set to "Black". A callout box points to this section with the text: "Module control & status window for V1662 showing Module Status tab."

The status bar at the bottom shows the date and time "16/05/00 14:37:54: Ready" and the current time "14:38".

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7.2 Virtual Module Builder showing build in progress

Free floating text button.

Free floating text box button.

Nudge buttons

Free floating text box size control buttons.

Send to back button.

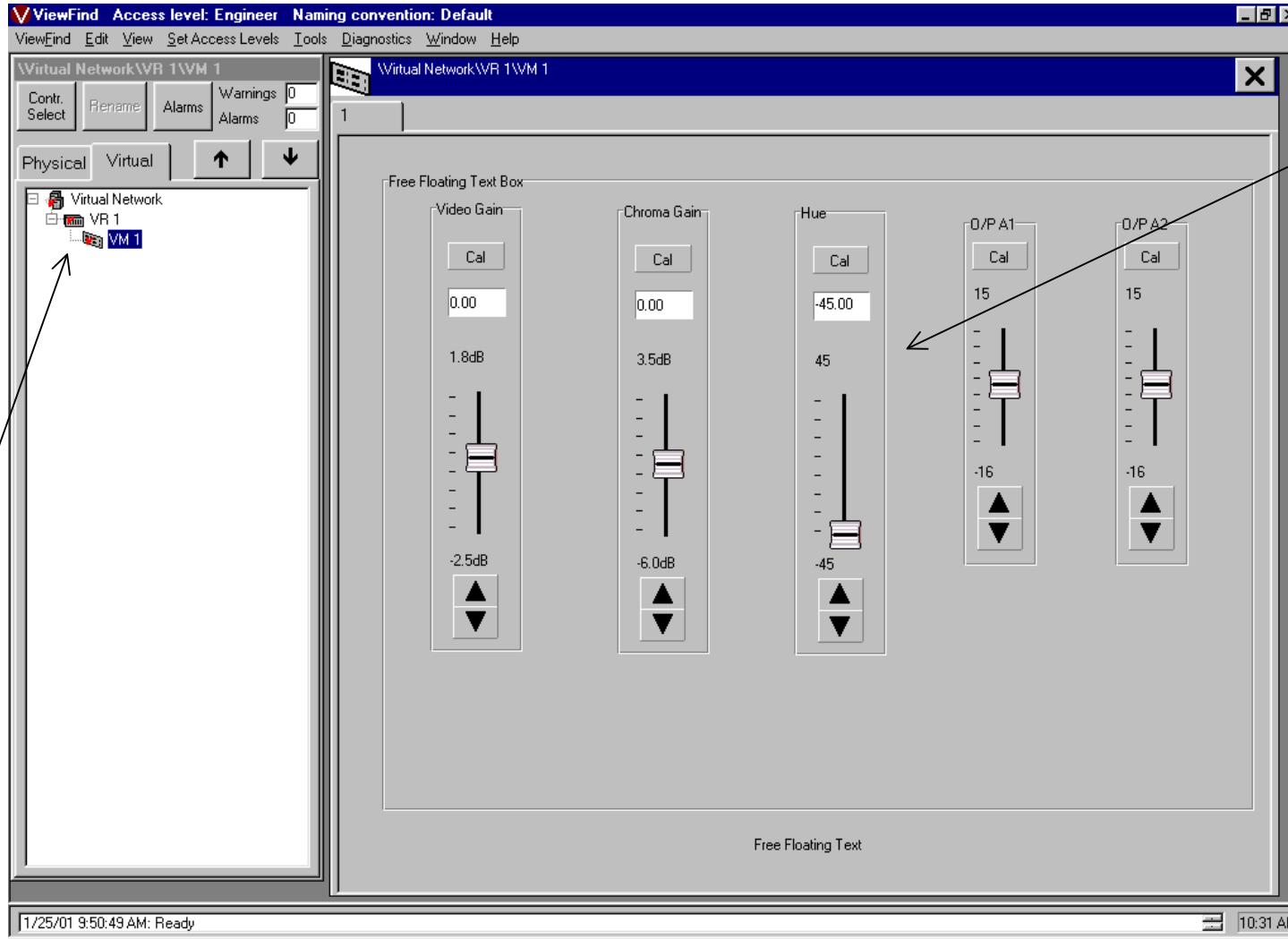
Outlines of controls so far selected.

Module for which control selection is displayed selected in physical treeview.

List of controls available from module selected in physical treeview.

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7.3 Virtual Module window display showing result of build shown in Illustration 7.2



Virtual treeview window showing virtual module selected.

Virtual module window containing controls from three different physical modules, with examples of a free floating text box and free floating text.

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7.4 Alarm Manager – Node Configuration Window

The screenshot displays the 'ViewFind' software interface. The main window title is 'ViewFind Access level: Engineer Naming convention: Default'. The menu bar includes 'ViewFind', 'Edit', 'View', 'Set Access Levels', 'Tools', 'Diagnostics', 'Window', and 'Help'. The main area is divided into two panes. The left pane, titled '\Network 01\Node 01', contains a treeview of the network structure. The right pane, titled 'Alarm Manager-\Network 01\Node 01', contains the configuration settings for the selected node.

Main treeview showing Node 01 selected.

Node configuration window enables voltage and temperature alarm and warning thresholds to be edited and alarm and warning types selected.

| Section | Parameter | Value | Unit |
|---------------------------------|-------------------|-----------|-------|
| Bus Voltage Thresholds | Warning Threshold | 12 | Volts |
| | Alarm Theshold | 9 | Volts |
| | High | 16.5 | Volts |
| | High | 18 | Volts |
| Power Supply Voltage Thresholds | Warning Threshold | 12.2 | Volts |
| | Alarm threshold | 9.7 | Volts |
| | High | 17.2 | Volts |
| | High | 18.7 | Volts |
| Over Temperature | Warning threshold | 36 | C |
| | Alarm Threshold | 40 | C |
| Warnings | Warning Type | Latched | |
| Alarms | Alarm Type | Momentary | |

01/06/00 08:25:50: VIEWFIND.DLL running 11:33

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7.5 Alarm Manager – Module Configuration Window

ViewFind Access level: Engineer Naming convention: Default

ViewFind Edit View Set Access Levels Tools Diagnostics Window Help

\Network 01\Node 00\Module 08 - V1662

Contr. Select Rename Alarms Warnings 0 Alarms 0

Physical Virtual ↑ ↓

Network 01

- Node 00
 - Module 00 - V1636
 - Module 01 - V1645
 - Module 02 - V1634
 - Module 03 - V1637
 - Module 04 - V1653
 - Module 05 - V1663
 - Module 06 - V1617
 - Module 07 - V1634
 - Module 08 - V1662**
 - Module 09 - V1634
 - Module 10 - V1627
 - Module 11 - V1615
 - Module 12 - V1672
 - Module 13 - V1671
 - Module 14 - V0
 - Module 15 - V1608
- Node 01
- Node 02
- Node 03
- Node 04
- Node 05
- Node 06
- Node 07
- Node 08

Alarm Manager-\Network 01\Node 00\Module 08 - V1662

Module Configuration

Warnings upgraded to Alarms after 0 Minutes

Network 01 Node 00 Module 08 - V1662 Version 1

| Parameter | Type |
|----------------------------------|------|
| Input Video Fail | Off |
| Reference Fail | Off |
| U and/or V Channels switched OFF | Off |
| Video Level Uncalibrated | Off |
| Chroma Level Uncalibrated | Off |
| Black Level Uncalibrated | Off |
| SC/H Phase Uncalibrated | Off |
| Pedastal Uncalibrated | Off |
| Test Signal ON | Off |
| Local Mode | Off |

Clear All Defaults Apply

Logging... Close

01/06/00 11:43:23: Ready 11:44

Main treeview showing Node 00 Module 08 selected.

List of conditions that may be used to generate alarms and warnings for the module type selected.

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7.6 Alarm Listing Window

Alarms and Warnings

0 Alarms 0 Warnings

| | A/W | Date | Time | Network | Node | Module | Error |
|----|-----|----------|-------|------------|---------|-------------------|---------------------------|
| 56 | A | 09/05/00 | 11.12 | Network 01 | Node 00 | Module 07 - V1634 | Module Removed |
| 57 | A | 09/05/00 | 11.15 | Network 01 | Node 38 | Module 15 - V1608 | Node Unavailable |
| 58 | A | 09/05/00 | 12.53 | Network 01 | Node 00 | Module 05 - V1663 | Input Video Fail |
| 59 | A | 09/05/00 | 12.53 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |
| 60 | A | 09/05/00 | 13.23 | Network 01 | Node 62 | Module 15 - V1608 | Node Unavailable |
| 61 | A | 09/05/00 | 13.40 | Network 01 | Node 62 | Module 15 - V1608 | Node Unavailable |
| 62 | A | 09/05/00 | 13.45 | Network 01 | Node 62 | Module 15 - V1608 | Node Unavailable |
| 63 | A | 09/05/00 | 14.06 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |
| 64 | A | 09/05/00 | 14.06 | Network 01 | Node 00 | Module 05 - V1663 | Input Video Fail |
| 65 | A | 09/05/00 | 14.16 | Network 01 | Node 00 | Module 05 - V1663 | Input Video Fail |
| 66 | A | 09/05/00 | 14.16 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |
| 67 | A | 09/05/00 | 14.23 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |
| 68 | A | 09/05/00 | 14.23 | Network 01 | Node 00 | Module 05 - V1663 | Input Video Fail |
| 69 | A | 09/05/00 | 14.54 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |
| 70 | A | 09/05/00 | 14.54 | Network 01 | Node 00 | Module 05 - V1663 | Input Video Fail |
| 71 | A | 09/05/00 | 16.41 | Network 01 | Node 00 | Module 05 - V1663 | Input Video Fail |
| 72 | A | 09/05/00 | 16.41 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |
| 73 | A | 09/05/00 | 16.49 | Network 01 | Node 62 | Module 15 - V1608 | Node Unavailable |
| 74 | A | 09/05/00 | 16.54 | Network 01 | Node 62 | Module 15 - V1608 | Node Unavailable |
| 75 | A | 11/05/00 | 11.44 | Network 01 | Node 01 | Module 15 - V1608 | Rack temperature too high |
| 76 | A | 11/05/00 | 11.44 | Network 01 | Node 00 | Module 15 - V1608 | Powersupply 1 voltage low |