XX177-24-00

Virtual Matrix Display Controller
Quick Manual

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Software Quick Manual

Vicon Part No. 8009-8177-24-00 Rev 715

Important Notice

This Manual is delivered subject to the following conditions and restrictions:

- This Quick Manual is intended as a reference guide for operators who have already undergone formal training. It is not intended to provide comprehensive detail. For more detailed information on using the Workstation, refer to the *Virtual Matrix Display Controller Software Manual.*
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About This Manual

This ViconNet Virtual Matrix Display Controller Quick Manual is a condensed version of the ViconNet Virtual Matrix Display Controller Manual. It should be used by operators for concise instructions for working with the Workstation.

The ViconNet Virtual Matrix Display Controller Quick Manual is comprised of the following chapters:

- **Chapter 1, Introducing ViconNet**, introduces the main concepts and system architecture of the ViconNet system.
- **Chapter 2, Getting Starting with Virtual Matrix Display Controller**, introduces the main ViconNet Virtual Matrix Display Controller application windows and their functionality.
- **Chapter 3, Viewing Live Video**, describes the mandatory and optional tasks involved in viewing live video.
- **Chapter 4, Playing Back Recorded Video/Audio**, describes the process for playing back recorded video and audio.

This manual assumes that your system has been registered and configured and is now ready for operation. For more detailed instructions on working with and configuring the VMDC, refer to the complete *Virtual Matrix Display Controller Manual XX177-04-0X*.

Table of Contents

Chapter 1

Introducing ViconNet

This chapter introduces the ViconNet system and the Virtual Matrix software application and includes the following sections:

- **What Is ViconNet?**, page 1, provides a brief overview of the ViconNet system.
- **What Is the Virtual Matrix Display Controller?,** page 1, describes overall functionality of the ViconNet system.
- **System Architecture**, page 1, illustrates the ViconNet system architecture.

What Is ViconNet?

ViconNet is innovative open-platform video management software (ONVIF-S conformant) that allows integration with IP cameras, encoders and IP edge devices, including megapixel cameras. Open platform cameras and edge devices from numerous industry-leading manufacturers are compatible with ViconNet software. Additionally, the ViconNet interface has integrated Events Management and ViconNet VI video intelligence.

ViconNet is a fully scalable secure network solution for Windows® platform. It allows viewing and recording of video from any camera anywhere on the network and integrates seamlessly with Vicon's line of Kollector DVRs and NVRs. It is compatible with Vicon's Express series NVRs and DVRs and supports Vicon's Access Control System (VAX). ViconNet version 8.X offers H.264 compression in addition to ViconNet's proprietary MPEG-4 optimized compression or JPEG compression.

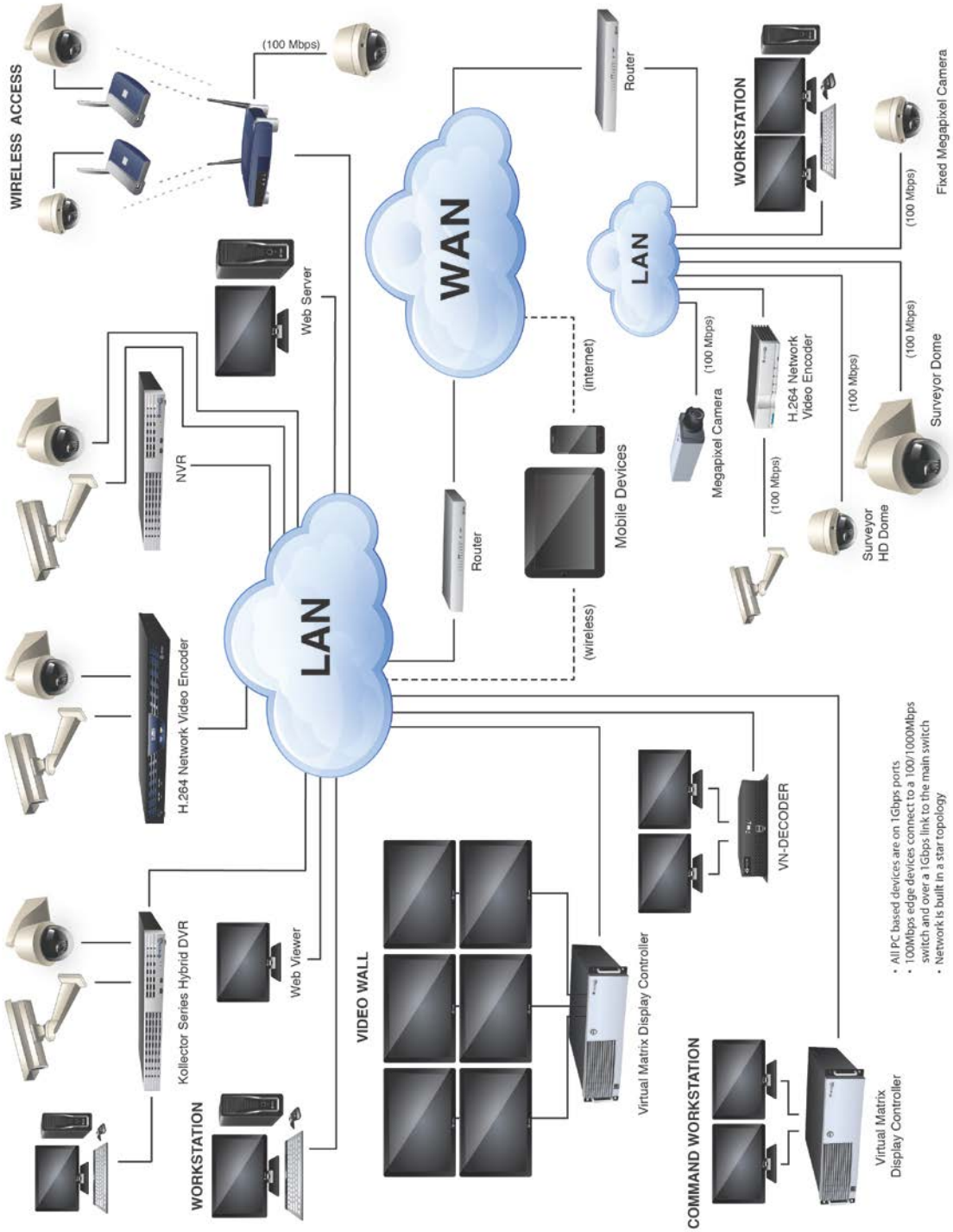
What Is the Virtual Matrix Display Controller?

The Virtual Matrix Display Controller (VMDC) is a self-contained, matrix control solution for the ViconNet Video Management system, designed to provide users with the ability to direct network video to multiple monitor displays. The VMDC solution is comprised of both a matrix command/control center software interface and a hardware decoding component that enables the high-quality ViconNet remote network video streams to be displayed on multiple monitors in multiple locations. The design enables each operator to display any camera on any monitor connected to the network; control can be shared by multiple operators. Camera selection may be controlled via a dedicated keypad or by using the graphical user interface. This enhancement is specifically designed to support the typical environment of a command center which includes workstations and video walls.

Typically, a VMDC would be installed in the command/control center for the video management system and provide both local control of monitors in the center and remote control of monitors located elsewhere in the facility, including monitor wall displays. Each VMDC can control up to 6 high-definition monitors. Control of additional monitors is as easy as connecting additional units to the network providing a scalable, cost-effective management solution.

System Architecture

The diagram shown below illustrates a ViconNet system structure that incorporates various ViconNet components.



Chapter 2

Getting Started with Virtual Matrix Display Controller (VMDC)

This chapter familiarizes you with the ViconNet application's components and functionality. This chapter contains the following sections:

- **Logging In**, page 3, describes how to log in to the ViconNet application.
- **Main Window**, page 4, introduces the basic elements in the ViconNet *Main* window.
- **Remote Monitors**, page 7, describes the remote analog monitors used to display ViconNet live and recorded video
- **Logging Out and Exiting,** page 8, describes how to log out with or without closing the ViconNet application, and how exit to the operating system, or to shut down or restart the ViconNet unit.

Note: *The performance and number of cameras is subject to many variables. Refer to the datasheet for actual display capabilities.*

Note: *Some of the screens shown in this manual may be slightly different in appearance than those that are on your screen. There should be no difference in content or functionality.*

Logging In

Logging in to the Virtual Matrix Display Controller is performed using your assigned user name and password. The allowed system operations are dependent on your assigned authorization rights.

To log in to the VMDC application:

At your Virtual Matrix Display Controller, double-click the ViconNet VMDC icon  on your Windows desktop.

Click  . The VMDC *Main* window is displayed, as shown in the following section.

Main Window

After logging in to the Virtual Matrix Display Controller, the *Main* window is displayed, enabling you to:

- View and listen to live video and audio.
- Play back recorded video and audio.
- Control video images.

A variety of other functions that can be performed, such as: record live video and audio, create and manage macros and schedules and generating reports are described in the *ViconNet Virtual Matrix Display Controller Manual.*

The following example illustrates the elements and options in the Virtual Matrix Display Controller *Main* window:

The window shown above provides access to all the basic functionality required to operate the system.

Alternatively, the screen can be viewed in ViconNet mode by selecting the ViconNet Mode button. The screen will change to the following (the button changes to VMDC Mode).

The ViconNet VMDC enables you to define several types of information to be displayed as text in the center of a remote monitor display location. The *Text Settings* feature enables you to select which information is to be displayed and define the duration that each of these details is to be displayed. Refer to Configuring Text Settings in the latest version of the full manual for the VMDC, XX177-0X.

Note: The maximum number of characters for each text display is 10 characters. If the text is longer than 10 characters, some information may be cut off when not in single view mode (i.e., quad). It is important to remember that a space is a character when defining your text information.

Remote Monitors

Using the Virtual Matrix Display Controller, ViconNet live and recorded video displays on remote analog monitors and control simulates that of a crosspoint switcher, as in a command center. The Virtual Matrix allows you to take advantage of the analog monitor's size, quality and visibility. The remote monitors provide you with the ability to view multiple very large video displays from multiple viewers simultaneously.

In order to translate the digital video from the network to analog (composite, VGA, S-Video), a decoder is required. The VMDC includes an integral PC-based decoder that can control up to 5 monitors; a version can be on a dedicated PC and control up to 6 monitors. Each monitor can then display up to 64 video streams. This decoder supports VGA and DVI/HDMI.

As an alternative, the VN-DECODER-2 is a key part of the ViconNet® Virtual Matrix Display Controller (VMDC) system. Used in conjunction with the VMDC, network data is received and converted from a digital IP source to an analog output for display on any monitor with a DVI or HDMI input (a DVI to VGA adapter can be used if VGA connection is required). This enables distribution directly to a monitor and offers an alternative display method to the PC-based client. Refer to XX256-2X for details on the VN-DECODER-2

About Picture Quality and Refresh Mode

Each ViconNet video has a quality level and refresh mode configured (manually or automatically) at the time of it is recorded. The notation at the bottom-left of each remote monitor display location (meaning, for each camera) indicates the picture quality and the refresh mode of the image in the view.

Picture quality (also known as resolution) refers to the compression level of the video images. The refresh mode refers to whether all the frame data (Full mode, represented by an **F** in the bottom-left of the camera view in the monitor) is displayed each time or only when changes occur in the frames or (Normal mode, represented by an **N** in the bottom-left of the camera view) is displayed. The view image is automatically played back in the refresh mode in which it was recorded.

Logging Out and Exiting

Logging Out

Logging out is performed when you want to exit from the Virtual Matrix Display Controller, but need the application to remain open, for example, to log in as a different user.

To log out of the Virtual Matrix Display Controller:

1. Click 

in the *Main* window toolbar. The following message is displayed:

Click **Yes**. T The VMDC *Login* window is redisplayed, as described in *Logging In*, page 3.

Exiting the Virtual Matrix

Exiting is performed when you want to exit the ViconNet application.

To close t the Virtual Matrix Display Controller and exit to the operating system:

Click the Close  button on the *Main* window toolbar. Click **Yes** to exit (close) the application.

- OR -

Click **Logout** in the *Main* Window Toolbar. The *Login* window is displayed. Click **Exit**.

Chapter 3
Viewing Live Video

This chapter includes the following sections:

- **Overview**, page 9, provides an overview of the viewing and listening process, and illustrates the main steps for viewing and listening to live video.
- **Step 1: Selecting the Monitor Layout,** page 10, describes how to select the required number of monitor display locations.
- **Step 2: Selecting Cameras**, page 10, describes how to select and control devices in order to view to their live video on your remote monitors.
- **Step 3: Controlling the Picture per Camera**, page 12, describes how to control the contrast and brightness of the live video display.
- **Step 4: Operating a PTZ Camera**, page 13, describes how to view video from a PTZ camera.

Overview

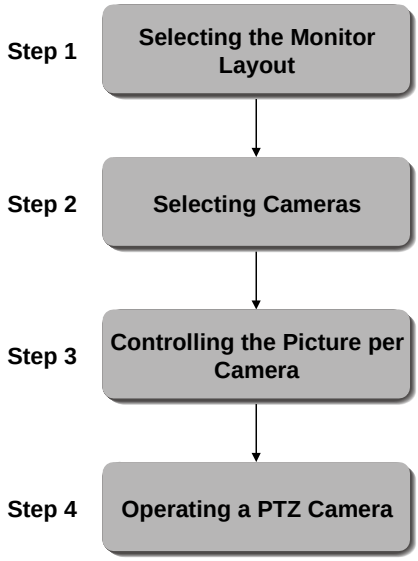
The ViconNet system enables you to monitor live video and audio using the cameras and microphones configured in the ViconNet system. The live video pictures and audio segments are sent by the transmitter to the relevant remote monitors via the network.

The Virtual Matrix software is a complementary application of ViconNet. In addition to video and audio monitoring, using the Virtual Matrix application together with ViconNet enables you to switch between live and recorded video on external remote monitors.

In order to view live video, you must select the display mode (monitor display locations) in the VMDC that is sufficient for the number of cameras that you want to monitor. Then you can select the devices using the **Sites/Maps** or **Groups** list.

NOTE: *Audio from the VMDC is played through the Workstation itself and not via the remote monitors.*

The VMDC also provides some optional functions that can be used when viewing and listening to live video and audio, for example, using a PTZ camera.



Step 1: Selecting the Monitor Layout

Selecting the monitor layout enables you to determine the maximum number of monitor display locations in the *Main* window **Monitor Display Layout** for viewing live video at one time on the remote monitors connected to your Virtual Matrix Display Controller.

Seven display modes (1, 4, 9, 16, 25, 36 or 64) are provided to accommodate your viewing requirements; (only 1 and 4 are available with KRX-3. You can choose the display mode from the *Main* window.

To select the monitor layout from the Main window:

- In the *Main* window, select the VMDC Display Mode button (

) that enables you to toggle between a choice of display modes.

 **maximizes** the **Video Display** area to fit the entire screen

To restore the maximized screen to its previous size, click the  icon in the top right corner

Step 2: Selecting Cameras

NOTE: *With ViconNet version 5.6 and up, all Kollectors support audio input.*

When you launch the VMDC, the *Main* window **Video Display** area and **Monitor Display Layout** are initially empty, as there is no automatic display of live video and audio. You must first select the device (camera or microphone) that transmits the required data.

When you select a device, the video is then streamed into the selected video display location in the remote monitor and into the *Main* window **Video Display** area. A *Connecting* message displays until the video displays. The audio is heard via the PC's speakers.

Use the VMDC **Sites, Maps** and **Groups** lists to select devices for viewing and listening to live video and audio by navigating through the list and selecting first the required transmitter or group and then the required devices.

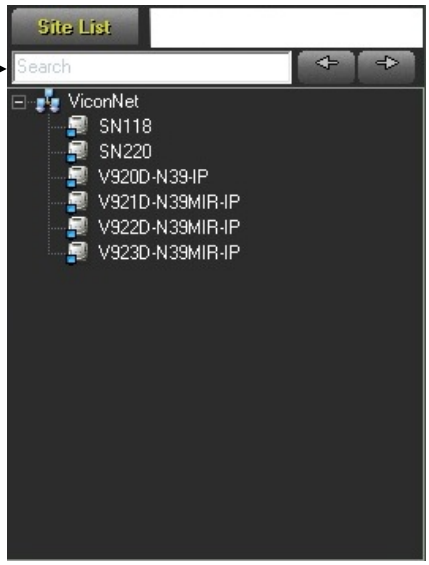
Selecting a device from the list automatically begins the device operation (video and audio transmission) in the selected video display location in the **Monitor Display Layout** in the *Main* window.

As transmission begins, the appropriate controls for the specific type of device that you selected become active in the **Control Dialog Display** area, which enables you to modify the live video and audio.

To select a device using the Sites or Groups List:

1. In the *Main* window, select the appropriate display mode, as described in the previous section.
2. Expand the required transmitter to display a list of the currently connected cameras and microphones.

Search Feature



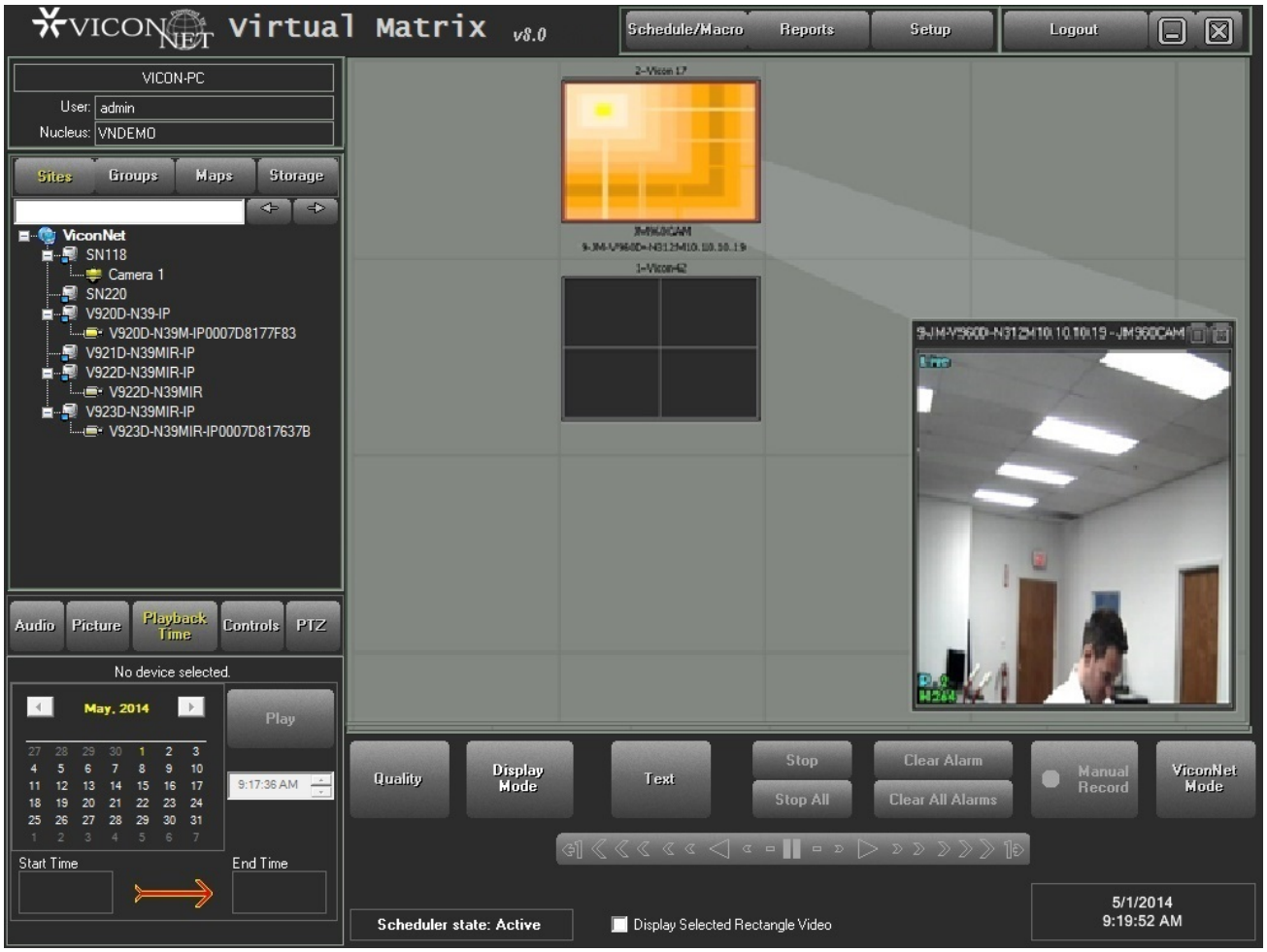
NOTES:

*The cameras and microphones that appear in the Sites/Maps/Groups List are automatically detected by the system during startup. If a camera is disconnected while it is active (meaning being displayed or recorded), a red **X** icon ( ) is displayed next to the relevant camera in the Sites/Maps/Groups List and a blank screen appears in the **Video Display** area.*

3. Select the required device from the *Sites/Maps/Groups List* in one of the following ways:

- In the **Monitor Display Layout**, select a video display location (indicated by the red border) and then select the required camera from the list; the  (local) or  (remote) icon is displayed in the **Monitor Display Layout**. The live video transmission is displayed automatically in the selected location, and the camera or microphone icon appears highlighted.
- Select ALL devices from a single transmitter by dragging and dropping the transmitter anywhere in the **Monitor Display Layout** area.

The following example shows a live video transmission displayed in the Video Display area. The names of the camera and transmitter are located in the top of the **Video Display** area. The  (local) or  (remote) icon is displayed in the **Monitor Display Layout** and the selected video is displayed on the selected remote monitor.



NOTE: *To turn off the video display in the Main window, so that the video is only displayed on the remote monitor, uncheck the* ☑ Display Selected Rectangle Video

NOTE: *You can manually stop the transmission at any time by clicking either* Stop / Stop All*, which stop either the selected video or all currently active video.*

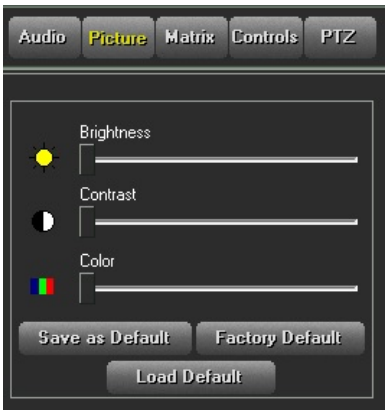
Step 3: Controlling the Picture per Camera

The VMDC enables you to control and change the settings of the current live pictures displayed on the remote monitors, such as the brightness and contrast. Any changes that you make to the picture settings affect the data that is currently being viewed or recorded on all connected Workstations and recorders displays, for the specific device selected.

To control the picture brightness, contrast and color for a specific camera:

1. Select the required camera from the **Sites/Groups** list or in the **Monitor Display Layout**.
2. Click 

. The picture controls are displayed in the **Control Dialog Display** area.

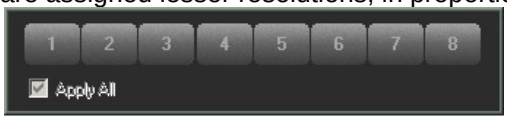


Option	Description
Brightness	Adjusts the light level on the display screen.
Contrast	Adjusts the difference between the lightest and darkest areas on the display screen.
Color	Adjusts the color intensity (amount of white contained in the basic colors) on the display screen.

3. Move the sliders to adjust the picture.

To control the live picture quality:

In order to improve transmission speed, the maximum quality of live images is set automatically according to the selected display mode. The Single mode is assigned the highest available resolution, while other modes are assigned lesser resolutions, in proportion to their number of views. When the 

and 

buttons in the *Main* window **Function Controls** area are enabled, you can manually override the display mode-determined live picture quality for the currently selected camera.

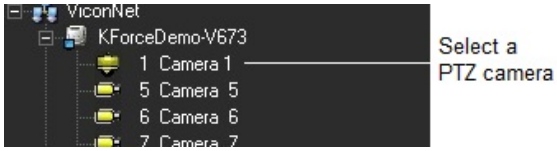
For more information about controlling picture quality, refer to the *Virtual Matrix Display Controller Manual*.

Step 4: Operating a PTZ Camera

From the Virtual Matrix *Main* window you can easily operate and control any PTZ camera configured in your system. All PTZ functions are performed and are available only for one selected PTZ camera at a time.

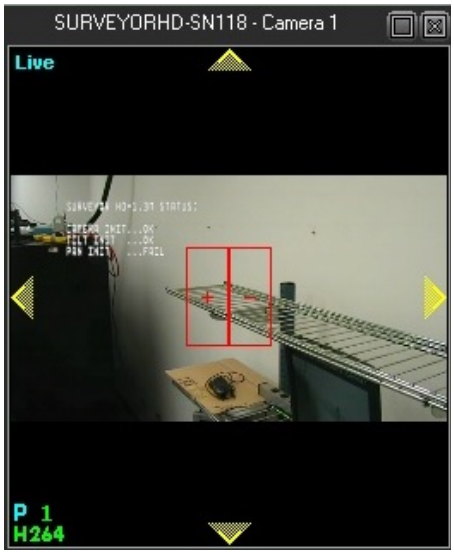
To operate a PTZ camera:

1. Ensure that the PTZ camera has been configured in the system.
2. Select the required PTZ camera from the **Sites/Maps/Groups** list.



3. Click the 

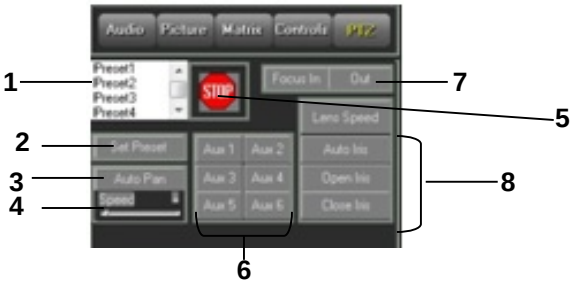
button. The live video from the selected camera is displayed in the on the remote monitor and in the **Video Display** area. The monitor display location is indicated in the *Main* window **Monitor Display Layout** by the  icon.



4. Use the PTZ controls in the video display location, as follows:

Option	Description
Yellow Direction Arrows	These arrows serve only as direction markers. Clicking anywhere in the video display will cause the camera to move in that direction. If you move the mouse (while still holding down the mouse button), the camera will follow the mouse. When using the mouse, the closer the mouse is to the center, the slower the camera movement. The farther away the mouse is from the center, the faster the camera movement.
Optical Zoom	To zoom in or out from the center of the displayed video, click the plus (**+**) or minus (**-**) symbols of the  icon.

5. Click the  icon. The following PTZ controls are displayed in the **Control Dialog Display** area:



Option	Description
Set Preset	You can define the "preset" choices in the preset scroll list to represent fixed location-and-zoom points in the video display. Then, when a preset (for example, **preset1**) is clicked, the view automatically focuses on the associated view area. You can define (or reassign) a preset, as follows: • Select the required preset from the scroll list. • Move to the required specific area/zoom using the window navigation functions. • Click Set Preset to lock that preset to the current location/zoom. ***NOTE:*** *Up to 99 presets (depending on the camera's model) may be defined. Presets can be selected either manually, as described above, or automatically, as part of a macro process.*
Auto Iris Open Iris Close Iris	These options affect the ability to observe objects in the video display location in relation to one another (proximity) by controlling the amount of light entering behind the PTZ lens, as follows: Clicking Auto Iris automatically adjusts the amount of light in the displayed video. Clicking Open Iris adds more light to the displayed video. Clicking Close Iris reduces the amount of light in the displayed video.
Auto Pan	Sets the PTZ camera to automatically rotate around 360° while displaying the video.
STOP	Stops uncontrolled directional movement of the video display in the case of a malfunction.
Focus In Out	Moves the PTZ camera lens to focus in and out (near and far).
Aux 1 Aux 2 Aux 3 Aux 4 Aux 5 Aux 6	Auxiliary buttons for configuring internal PTZ settings, used in accordance with the PTZ camera operating manual instructions. (This applies only to Vicon PTZ cameras.)
Speed	Determines the speed of the autopan.

Chapter 4

Playing Back Recorded Video/Audio

This chapter includes the following sections:

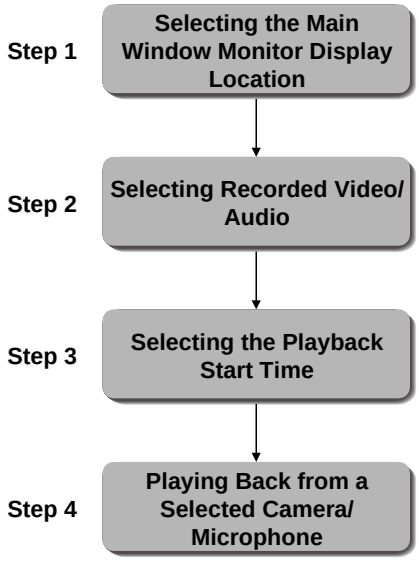
- **Overview**, page 16, provides a general overview of the playback process.
- **Playback Workflow**, page 17, illustrates the main steps for playing back recorded video and audio segments.
- **Step 1: Selecting the Monitor Display Location,** page 17, describes how to change the location where the recorded video is displayed on the monitor, if required.
- **Step 2: Selecting Recorded Video/Audio,** page 18, describes how to select the initial parameters for the recorded video and audio that you want to play back.
- **Step 3: Selecting the Playback Start Time,** page 19, describes how to select a specific point in a recorded video and audio segment at which playback will begin.
- **Step 4: Playing Back from a Selected Camera/Microphone,** page 20, describes how to play back recorded segments from one or all cameras and a selected microphone, and discusses the Quick Playback feature, which enables you to play back video from a camera/microphone that is currently recording, without interrupting the recording process.

Overview

The ViconNet system enables you to select and play back recorded video and audio segments that have been stored in defined storage locations. You can play back data that has been recorded in your ViconNet system. In addition, you can play back data that was recorded manually or that was recorded automatically as a result of an alarm event or a preconfigured schedule. You can display and play back the selected segments simultaneously or individually on a remote monitor, as required.

Playback Workflow

The following workflow illustrates how to play back recorded video and audio segments using the VMDC. Each step is described in the sections that follow.



Step 1: Selecting the Monitor Display Location

The VMDC provides you with the option to select the monitor display location for each camera that you select in the **Sites**/ **Maps/Groups**/**Storage** list. When a camera is selected, it is automatically assigned to the selected video display location on the remote monitor and represented in the **Monitor Display Layout** in the *Main* window. You can select the monitor display location by selecting an unused display location in the **Monitor Display Layout,** overriding a used display location or removing a camera from a display location and reassigning a different camera to that location.

To select the *Main* window monitor display location:

In the *Main* Window **Monitor Display Layout**, move the red border to the required monitor display location by clicking on the required location and then selecting the required camera from the list.

The selected camera name automatically appears under the selected monitor display location (as shown on page 18), the first frame is shown and the monitor icon turns the orange color.

NOTE: *When using a VMDC with a decoder, the number of cameras that can be viewed at one time is dependent on the number of decoders and the number of monitor locations in the currently selected display mode (up to four display locations for each monitor, and up to two monitors for each decoder).*

When using a decode monitor with the VMDC on the same PC, up to 5 monitors are available with up to 64 display mode. On a decode monitor only PC, up to 6 monitors are available for viewing up to 64 display mode. For actual number of cameras and performance, refer to the datasheet.

Step 2: Selecting Recorded Video/Audio

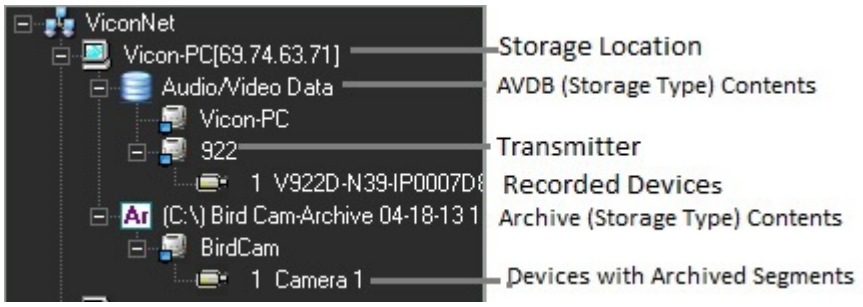
Select a Storage source (always a remote site for VMDC)**,** Site or Archive and the Recorded camera or microphone device that has recorded the data to view and play back. Cameras can be selected by using standard drag and drop functionality.

To select recorded video/audio:

1. From the *Main* window, click **Storage**. The **Storage** list is displayed.

2. Expand the tree to display a list of the system's available storage locations and archives and expand the required storage location to display a list of the currently connected transmitters.

3. Expand the required transmitter to display a list of currently recorded cameras and microphones, and/or expand the required archive to display its contents, as shown below:



4. From the **Storage** list, select the camera or microphone with the recorded segment(s) that you want to view or listen to. A calendar is displayed in the **Control Dialog Display** area (lower-left corner).

Step 3: Selecting the Playback Start Time

The ViconNet system provides an option to select the playback start time by selecting the exact playback point in the recorded segment, including hour, minute, and second, or selecting “how long ago” to start playback. This option enables you to play back only the required portion of the recorded segment instead of having to play the entire segment.

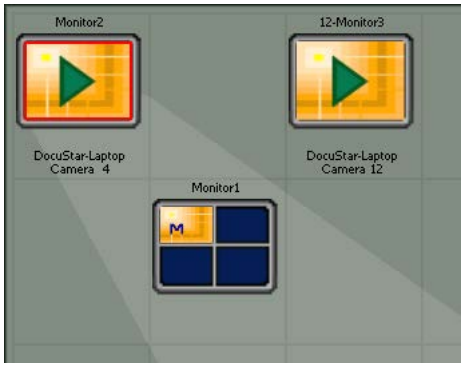
To select the playback start time:

1. Select the playback start time of the recorded segment by using the calendar and time controls in the bottom-left corner of the window by selecting the required start date in the calendar or selecting the required start time in the time field.

2. Click **OK**. If there is recorded data available for the time and date selected, the playback  icon is displayed in the monitor location selected in the **Monitor Display Layout**, the starting point of the video is displayed on the monitor in the selected display location and in the **Video Display** area (if it is turned on) and playback controls are displayed under the **Monitor Display Layout**.

If no data is available for the selected time, a message is displayed.

3. If the playback controls are displayed, you can use them to start, stop, rewind and forward the video. Upon playback, the names of the selected camera and of the transmitter appear at the top of the **Video Display** area and the name of the selected camera and the name of the transmitter appear under the playback icon in the **Monitor Display Layout**, as shown below:



NOTES:

The recorded devices that you select can be displayed simultaneously with live video and audio on the monitor.

The 

button stops all the currently active videos.

The 

button stops the currently selected video (indicated by a red border).

Step 4: Playing Back from a Selected Camera/Microphone

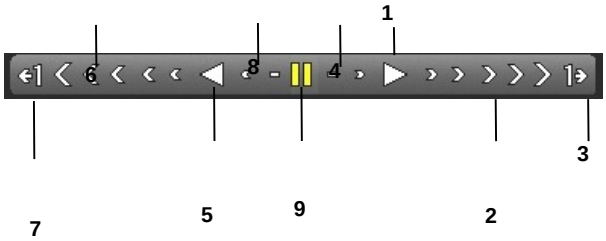
The Virtual Matrix Display Controller enables you to view recorded video and audio segments on remote monitors and a single recorded segment in the *Main* window **Video Display** area. Viewing/listening to play back from several cameras/microphones simultaneously can be done by assigning cameras/microphones to specific monitor display locations and watching the remote monitor.

To play back from a selected camera/microphone:

1. In the *Main* window, select the monitor display location that contains the recorded segment that you want to play back. The red border indicates the currently selected monitor display location.

   Click the **Play Forward** button . The selected recorded segment plays, and the camera source details change accordingly.

3. (Optional) Use the playback buttons to navigate through the recorded segment(s) during playback, as required.



Option	Description
1	Play Forward
2	Forward x2, x5, x10, x50, x100
3	Forward – frame by frame
4	Forward x¼, x½
5	Play Reverse
6	Reverse x2, x5, x10, x50, x100
7	Reverse – frame by frame
8	Reverse x¼, x½
9	Stop/Pause

Quick Playback

The Start Playback From Time or Edge Playback options are available for quick playback of videos and allows you to play back video from a camera that is currently recording.

To perform quick playback (Start Quick Playback From/Edge Playback):

1. In the *Main* window, right-click in the required camera display location.
2. Select **Start Quick Playback From** and the number of seconds from the current moment from which you want to play back. If **Edge Playback** is selected, playback will display directly from the device interface.

   The playback is shown on the selected monitor in the selected video display location.

   If no recording is associated with the selected time, a warning is displayed.

   To stop the quick playback, click the **Stop All** or **Stop** button, click the camera icon in the **Storage** list or

   Click the Stop button in the playback controls.

NOTE: *Playback can also be started from the Alarm History Report window.*

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