Tempest Microsystems® Network Digital Video Recorder User Guide

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Chapter 1 *DVR Introduction*

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Summary

Your Tempest Network Digital Video Recorder is an advanced recording and monitoring device designed to give you years of trouble free service when operated in a clean and conditioned environment. Please refer to the installer's guide for important safety and operation guidelines.

In this chapter, basic functions of the Tempest Tsunami™ DVR software are introduced. The Tsunami™ software controls all aspects of the DVR's operation, including recording, playback, remote access and user interfaces.

1.1 Controlling Your DVR

Your DVR can be controlled using either the Infra-Red (IR) remote control (included), mouse (included) or keyboard.

1.1.1 Using the Remote Control

The IR remote control shown in Figure 1 and receiver module, shown in Figure 2, is the primary and recommended control device for your DVR.

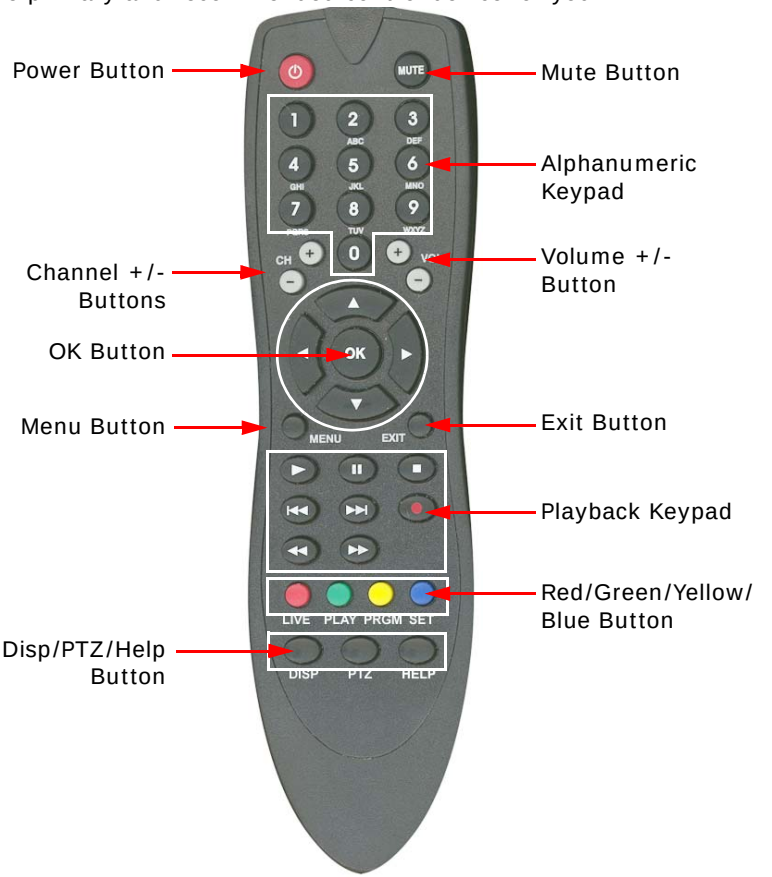


Figure 1. IR Remote Control

The keypad of the IR remote control is divided into several functional groups. This makes navigating the DVR software easy and intuitive.

- **Power Button -** Pressing the Power button will bring up the shut-down menu which lets you reboot/shutdown your machine.
- **Mute Button** - Pressing the Mute button in the live feed or playback will change the current audio channel.
- **Alphanumeric Keypad (0-9) -** The keypad is used on menus that contain fields that require numerical/text input. It is also used to navigate through sub-menus. Each sub-menu contains a numerical representation, which is written next to the name of the sub-menu. Pushing the corresponding number would open its particular sub-menu.
- **Channel +/- Buttons -** Buttons used to increment and decrement certain fields in the DVR software.
- **Volume +/- Buttons** - Unused
- **OK Button -** Button used to select and confirm certain changes in the DVR software.
- **Navigation Keypad (Up, Down, Left, Right) -** This keypad is used to navigate through the menus and sub-menus of the DVR software.
- **Menu Button -** Button used to exit out of the current menu and return to the top level of the menu system.
- **Exit Button -** Button used to exit out of the current menu and return to the top level of the menu system, if the current menu is a first level menu. If the current menu is a second-level, or a sub-menu of a first level menu, pressing the Exit button will return you to the first level menu.
- **Playback Keypad (Play, Pause, Stop, Next Chapter, Prev Chapter, Fast Forward, Rewind) -** This keypad is normally used during the playback of a recorded clip. The buttons function as their name implies.
- **Red/Green/Yellow/Blue Buttons -** These buttons are reserved for core DVR functions. Mainly, the red button would enter the Live Feed mode, Green operates Recordings, Yellow enters Schedule and Blue, Settings.

- **Disp / PTZ / Help Buttons -** The Disp (Display) button is used to toggle the on-screen display in the live feed. The PTZ (Pan/Tilt/Zoom) button provides access to the PTZ menu. The Help button will display relevant help information to the current menu.

Figure 2. IR Receiver Module

Note: The IR module, used to receive signals from the IR remote must be connected to one of the USB connectors in order for the remote to function. It is also crucial that the IR module is connected before the DVR is turned on. A good connection would result in a blinking red light when the remote is used with the server on.

1.1.2 Using a Mouse

Your DVR may also be controlled using a 3-button mouse, as shown in Figure 3.

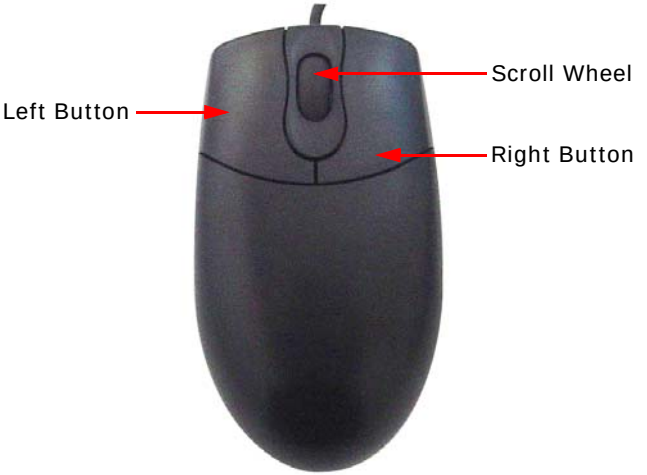


Figure 3. 3-Button Mouse

The buttons on the mouse are used to:

- **Left Button -** Select a component, such as buttons in menus, text input fields, and checkboxes. This is similar to the **OK button** of the remote.
- **Right Button -** Exit one-level out of the current menu. This is similar to the **Exit button** of the remote.
- **Scroll Wheel** - Scroll up and down in list boxes. It is also used to zoom in and out of certain components.

> ***Note:*** Only a 3-button mouse is supported. A 3-button mouse consist of a left, right button and a scroll-wheel.

1.1.3 Using a Keyboard

A keyboard may also be used to control your DVR. The mapping of the keyboard is shown in Figure 4.

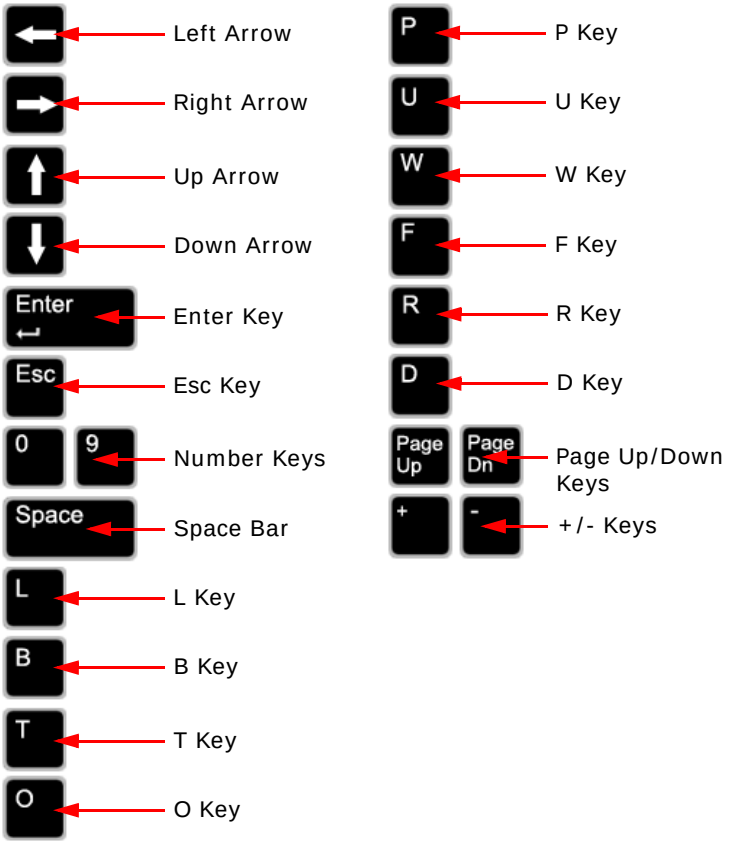


Figure 4. Keyboard Map

The keys on the keyboard are separated into two functional groups. The first group deals with menu navigation. This group of keys include:

- **Left Arrow -** Navigate to the left.
- **Right Arrow -** Navigate to the right.
- **Up Arrow -** Navigate upward.
- **Down Arrow -** Navigate downward.
- **Enter Key -** Press the currently selected button.
- **Esc Key -** Go up one-level from the current menu.
- **Number Keys -** Enter a digit into the number control.
- **Space Bar -** Auto detect channels.
- **L Key -** Go to the Live Feed mode.
- **B Key -** Go to the Recordings menu.
- **T Key -** Go to the Settings menu.
- **O Key -** Go to the System menu.

The second group of keys deals with playback and record functions. This group of keys include:

- **P Key -** Play selected video.
- **U Key -** Pause selected video.
- **W Key -** Rewind selected video.
- **F Key -** Fast-forward selected video.
- **R Key -** Record instantaneously until the R key is pressed again.
- **D Key -** Toggles whether or not information is shown in the Live Feed mode.
- **Page Up/Down Keys -** Go to the next/previous value of a selector control.
- **+/- Keys -** Go to the next/previous value of a selector control.

1.2 Setting Time and Date

The first time you bootup your DVR, it will ask you to set the time and date. For proper operation of the DVR, it is important to set the time and date correctly (Figure 5). An incorrect time and date will make it difficult to interpret recorded files and to determine the time events were recorded.

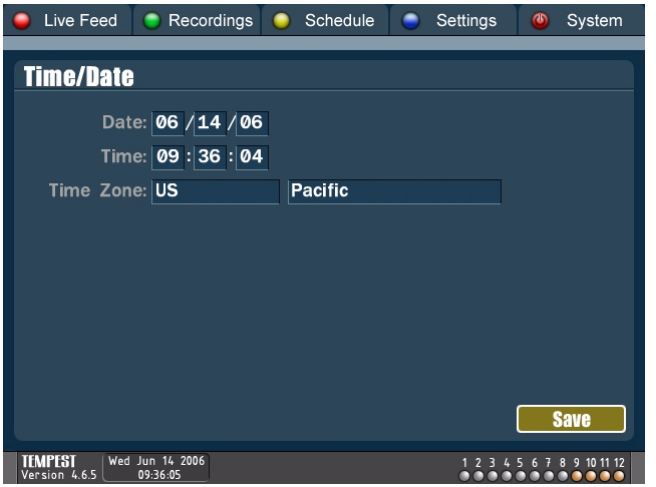


Figure 5. Time and Date Sub-Menu

To set the Time/Date:

1. Navigate to the Date textbox. Enter the month, day, and year using the numerical keys on the remote.
2. Navigate to the Time textbox. Enter the time of day using a 24-hour format. In the case of Figure 5, 13:06:06 represents 1:06:06 pm.
3. Select the Time Zone.
4. Select the **Save button** to save your changes.
5. After the settings are saved, restart the DVR by going to **Systems > Shutdown > Restart**.

1.3 Viewing a Live Feed

During normal operation of the DVR, it is possible to simultaneously view all or a selected group of cameras in the Live Feed mode.

To select the Live Feed mode:

1. Press the **Red button** on the remote or select the **Live Feed button** on the main navigation bar.
2. A live feed will automatically begin with detected cameras, as shown in Figure 6. By default, the DVR is setup to accept NTSC cameras. If the camera type needs to be changed, please visit the Cameras menu (See "Configuring Cameras" on page 30).

Figure 6. Live Feed Display

The Live Feed control panel is located on the bottom of the Live Feed screen. The elements found in the control panel, shown in Figure 7, includes (from left to right):

- **Hide Button** - Used to hide the menu bar. Once the menu bar is hidden, hitting any key on the remote will bring it back into view.
- **Version** - Displays the Tsunami DVR software version.
- **Date/Time** - Displays the current date and time.
- **Audio Channel Selection -** Toggles between the different audio channels to stream during the live feed.
- **Screensaver Checkbox** - Used to enable/disable screensaver.
- **Preset/Dynamic Buttons** - Buttons to toggle between preset and dynamic display modes. Under the Preset mode, the number of live feed displays will be adjusted to the settings that are defined under the Display sub-menu (See "Display Mode" on page 29). While using the Dynamic mode, the number of live feed displays will automatically be adjusted to the number of feeds that is selected in the Live Feed Selection area.
- **Live Feed Selection** - Area used to set/unset live feeds to display on the screen.
- **Exit Button -** Used to exit out of the Live Feed mode.

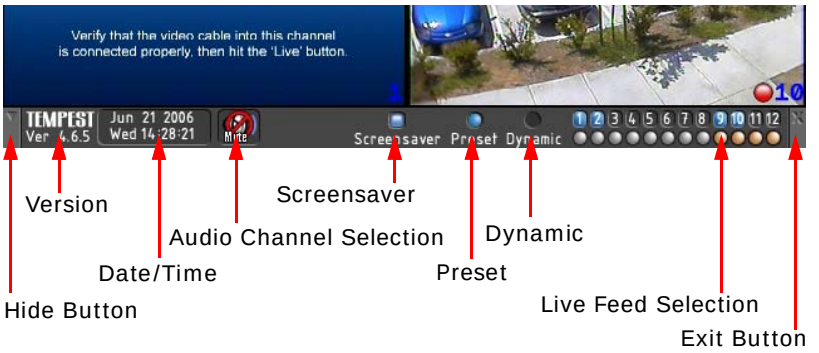


Figure 7. Live Feed Control Panel

Each display in the Live Feed mode can be customized for best viewing. The user may decide which channels are viewable (or hidden) and their corresponding location on the stage. Display characteristics of each channel may also be adjusted.

To begin adjusting the display in the Live Feed mode:

1. Using the arrow keys on the remote, navigate to the display you wish to adjust. A chosen display will have a green box surrounding it (Figure 8).

Figure 8. Live Feed Display Settings

2. There are five types of settings for each display. These settings include switching the channel that the display is showing, expanding the display to full-screen mode, editing the picture settings for the display, opening a magnifier tool for zooming into your picture, and controlling the pan / tilt / zoom of the camera, if it's supported.
3. To change the channel that the display is showing, click a number on the remote corresponding to the channel you wish to switch to.
4. To view the particular display in full screen mode, press the **OK button** on the remote.

5. To edit the picture settings for the particular display, press the **Blue button** on the bottom right of the remote. In the picture settings menu, you may change the brightness, hue, color and contrast of the display using the arrow keys on the remote, as shown in Figure 9.

Figure 9. Live Feed Picture Settings

Warning: Changing the brightness or contrast to 0% may result in a screen that will appear completely black. This may lead the user to believe that a feed is not available or a camera is not working properly.

6. To open up the magnifier tool, press the **Yellow button** on the bottom of the remote. The magnifier tool can be moved with the mouse or with the **Up / Down / Left / Right buttons** on the remote. To zoom in and out with the magnifier, use the scroll wheel on the mouse or the **Channel + / - buttons** on the remote.

Figure 10. Magnifier Tool

7. To control the pan / tilt / zoom of a supported camera, press the **PTZ button** on the remote. The PTZ Control Panel will appear on the bottom of the screen, similar to that shown in Figure 11.

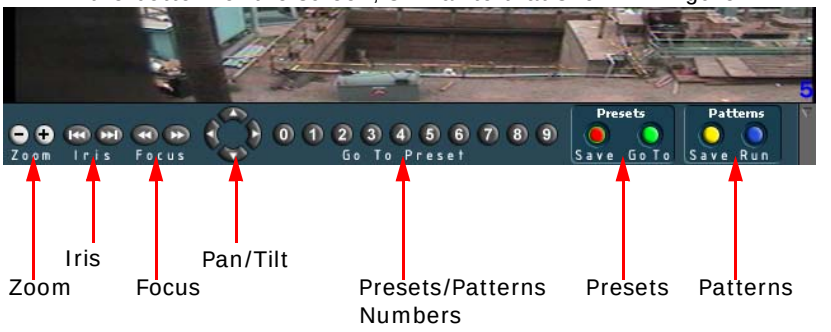


Figure 11. PTZ Control Panel

To control a PTZ camera:

1. Ensure the camera is configured to be a PTZ camera (See "Configuring Cameras" on page 30).
2. Select the display in Live Feed mode with the PTZ camera you wish to control.
3. Press the **PTZ button** on the remote.
4. The PTZ Control Panel will appear. The PTZ camera will then be able to be controlled using the buttons on the remote shown on the PTZ Control Panel. These buttons include:
   - **Pan/Tilt -** Adjusts the pan and tilt of the camera. (Up/Down/Left/Right)
   - **Zoom -** Adjusts the zoom of the camera. (Ch +/-)
   - **Iris -** Adjusts the iris size of the camera. (Prev/Next Ch)
   - **Focus -** Adjusts the focus of the camera. (Rew, FF)
   - **Presets -** To save a particular PTZ view of your camera, press the Red button then a number (0-9). To go to that preset, press the Green button then the preset number.
   - **Patterns -** To record a pattern, press the **Yellow button** then press a number (**0-9**). It will now begin recording your camera's PTZ motions. When you are done, press the **Yellow button** again. To run your pattern, press the **Blue button**, then the number of your pattern.

1.4 Viewing Recorded Video

Video clips that have been recorded on the DVR can be accessed under the Recordings menu. The Recordings menu can be opened using the **Green button** on the remote control or selected by navigating to the **Recordings button** on the menu bar. Video clips are separated into three different categories, each having its own sub-menu under the Recordings menu.

These categories and their respective sub-menus include:

1. **All Recordings -** All recordings, including continuous recordings and ones from motion and trigger events can be found under the Recordings sub-menu, as shown in Figure 12.
2. **Motion Events -** Motion triggered recordings can be found under the Motion Evts sub-menu,
3. **Trigger Events -** External input triggered events can be found under the Trigger Evts. sub-menu.
4. **POS Events** (optional) **-** Point of Sale transaction events can be found under the POS sub-menu.

Figure 12. Recordings Sub-Menu

The steps needed to search and view a single recording in any of the recordings sub-menus are as follows:

1. First select a channel to view its list of captured recordings. Switching channels can be accomplished by using the **CH +/- keys** on the remote.
2. Select a date to view recordings from. The date can be switched by pressing the **Next/Prev Chapter keys** on the remote.
3. Select a time to view recordings from. The time can be switched by using the **Left/Right navigation keys** on the remote.
4. Choose the file you wish to preview by pressing the **Up/Down navigation keys** on the remote. The recordings are listed in chronological order, with the latest recordings at the bottom of the list.
5. Press the **OK button** on the remote to playback recording. Playback will begin for the single selected file, as shown in Figure 13.

Figure 13. Single File Playback

Searching for a video clip is also made easy with the use of the two time lines and calendar that resides on the Recordings menu, as shown in Figure 14. The first time line represents a 24-hour day while the second time line represents a 1-hour segment within that day. If a recording was made on that particular

day, strips of video clips will appear on these time lines. These strips will show you exactly when the recording was first triggered and when it ended. The calendar on the other hand shows the exact date of the month that these recordings were made. Dates that contain recordings will be highlighted in white. A hollow square will be drawn over the current date while a filled square will be drawn over the day you are viewing.

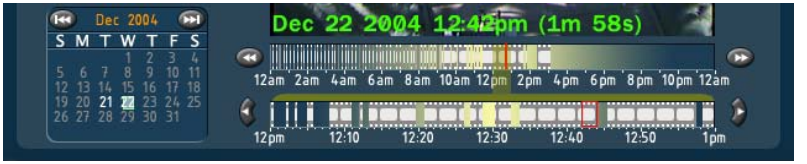


Figure 14. Recordings Menu Time-Line and Calendar

During playback of the recording, you may use the **Playback keypad** on the remote control or the **Playback buttons** in the Playback Control Panel, shown in Figure 15, to alter the speed of the video clip.

When using the **Playback keypad** on the remote control:

- Press to stop the video clip.
- Press to pause the video clip.
- Press to rewind the video clip. Pressing multiple times will rewind faster and faster. Pressing while paused will step backward frame by frame.
- Press to fast forward the video clip. Pressing multiple times will fast forward faster and faster. Pressing while paused will step forward frame by frame.
- Press to resume playback of video clip.
- Press to jump to the previous recording.
- Press to jump to the next recording.

The Playback Control Panel, which closely resembles the Live Feed Control Panel, contains the **Playback buttons** and features controls for simultaneous playback of multiple recordings. The Playback Control Panel is shown in Figure 15.

Figure 15. Playback Control Panel (TODO: Update picture)

The **Date/Time Control** displays the playback time, and allows you to quickly jump to a different time and date for playback. To change the playback time, simply navigate to the **year, month, day, hour, minute, or second field** on the Date/Time Control, then use the **Ch +/-** or the number (**0-9**) buttons on the remote to change the field to the desired time and date.

To view multiple recordings simultaneously:

1. First follow the steps to view a single recording from the procedure above.
2. Once playback has begun, select additional channels you wish to playback simultaneously from the Playback Selection on the Playback Control Panel. You can also press the **Dynamic button** to automatically show all cameras with recorded video, or the **Preset button** to adjust the display to show the number of playback channels as defined under the Display sub-menu (See "Display Mode" on page 29).
3. With channels selected from the Playback Selection area, video clips that were recorded at the time shown in the **Date/Time Control** will be displayed on the screen.

1.5 Scheduling a Recording

You can program the DVR to record video at specified times and periods. Scheduling a recording can be done in two different modes, a Basic and an Advanced mode. To schedule a recording, first press the **Yellow button** on the remote or navigate to and select the **Schedule button**. Then select the mode you wish to schedule your recording in.

1.5.1 Scheduling in Basic Mode

The Basic mode, shown in Figure 16, allows for a quick setup of a record schedule while providing many powerful options. Parameters such as start/end time, channel, record type and frame rate may be adjusted.

Figure 16. Schedule Menu - Basic Mode

To program a recording schedule in Basic mode:

1. Select the **Basic button** under the Schedule menu.

2. Select the channel to which the particular schedule will apply. If the schedule is to be the same for all active channels, select **All Channels**.
3. Select the **24/7 checkbox** if you wish to continuously record 24 hrs a day, 7 days a week. Selecting this option will disable the Start and End time fields.
4. Select the type of recording. The record type can either be **Continuous**, **On Motion, or Custom**. **Continuous** recording will set the DVR to record all the time. **On Motion** recording will set the DVR to record only when motion is detected. **Custom** allows for more advanced settings. All three will record during the specified time period.
5. Enter the frame rate at which the DVR is to record at in the **FPS textbox**. The higher the rate, the smoother the feed and the greater the size of the recorded clip.

Then, for each day of the week:

1. Enter the **Start time**, which is the time you wish the recording to start at. This field can only be adjusted if the **24/7 checkbox** has not been selected.
2. Enter the **End time**, which is the time you wish the recording to end at. This field can only be adjusted if the **24/7 checkbox** has not been selected.
3. The duration of the recording will be shown in the **Duration field** for each day.

> ***Note:*** Selecting the same Start and End time will cause the DVR to stop recording. Start and End time are based on a 24-hour time format, with 00:00:00 being 12:00 am and 23:59:59 being 11:59:59pm.

To configure more advanced settings to record at different frame rates continuously, on motion, or on trigger input:

1. Set the record type to **Custom**.
2. To record on motion detection, check the **Motion checkbox**, then specify the motion record frame rate in the **FPS field**.
3. To record continuously, check the **Continuous checkbox**, then specify the continuous frame rate in the **FPS field**.
4. To record on alarm input, check the desired **Alarm Input checkboxes,** then specify the input record frame rate in the **FPS field.**

5. The DVR is now setup to record at different frame rates continuously, on motion, or on trigger input. In the example below, the DVR will record continuously at 1 fps, bumped up to 10 fps on motion detection, or to 30 fps on input trigger 0 or 2.

Figure 17. Basic Scheduling, Custom Mode

After you have set the schedule, save it by navigating to the **Save button** and press the **OK button** on the remote to save your changes. You may also clear the current schedule by navigating to the **Clear button** and pressing the **OK button** on the remote.

The schedule will be repeated weekly until it is changed. For more complicated scheduling, including one time recording and monthly recording, use the Advanced mode or use the Interceptor™ software. The scheduling in the Advanced mode and the Interceptor™ software does not constrict you to weekly scheduling.

1.5.2 Scheduling in Advanced Mode

Scheduling in Advanced mode, as shown in Figure 18, allows for more complicated and flexible recording schedules to be set.

Figure 18. Schedule Menu - Advanced Mode

In the Advanced scheduling mode, you can:

- Schedule different types of recordings, including Continuous, On Motion and On Trigger. The DVR will record all the time when it is set on Continuous. While On Motion, the DVR will record only when motion is detected. On Trigger will cause the DVR to record when a signal is detected on the USB external input/output module (sold separately). Recording continuously and bumping up the frame rate on motion or on trigger is supported by scheduling multiple recordings at the same time.

- Schedule different modes of recordings, including Once, Daily, and Weekly. Selecting Once as the recording type will program the DVR to only record one-time at the specified period. Daily recording will schedule recording for every day of the week. Weekly recording will allow you to select certain days of the week to record on.
- Allows for multiple recording schedules with different types and modes of recording. The DVR will follow the criteria of each schedule simultaneously.

To program a recording schedule in Advanced mode:

1. Select the **Advanced button** under the Schedule menu.
2. Select the channel to which the particular schedule will apply. If the schedule is to be the same for all active channels, select **All Channels**.

Figure 19. On Trigger Scheduling

3. Select the type of recording. The different types of Recording includes **Continuous**, **On Motion** and **On Trigger**. When the type **On Trigger** is selected, an additional **Trigger Inputs** setting will

appear. Select the inputs, numbered from 0-7, of which you would like to trigger the DVR to begin a recording when a signal is detected. For example, as shown in Figure 19, the DVR will begin recording at 10 FPS when a signal is detected on inputs 0, 3, and 5 between the time of 12:00pm and 11:59 pm.

4. Select the frame rate.
5. Select the mode of recording. The different modes of Recording includes **Once**, **Daily** and **Weekly**. When **Once** is selected, a Date setting will appear in the menu, as shown in Figure 20. When **Weekly** is selected, checkboxes of the days of the week will appear in the menu. Select the days of the week you wish to record on by clicking on the corresponding days. For example, Figure 21 shows a schedule for recording at 10 FPS from 12:00am to 10:00am on Sunday, Monday and Wednesday.

Figure 20. One-Time (Once Recording)

Figure 21. Weekly Recording

6. Enter the start and end time for the recording schedule.
7. Select the **Add button** and click the **OK button** on the remote. The schedule with your desired parameters will appear on the Schedule Records list on the left-hand side of the menu. To add an additional schedule to the list, repeat steps 1-7.
8. Select the **Save button** and click the **OK button** on the remote.

Note: When adding a new schedule, please confirm that the item "Select This Entry To Add a New Record" is selected in the Schedule Records list. If you wish to edit an old entry in the list, navigate to the particular entry, make the desired changes and click either the **Add button** or the **Save button**.

1.6 The Status Menus

The Status page provides vital statistics about your Video Recorder. The Status page is located in the Settings menu, which can be reached by pressing the **Blue button** on the remote and navigating to the **Status button**. There are three main pages to the Status Menu: the Main Status Page, the Network Status Page, and the Hard Drives Status Page. Each of the three pages can be reached by clicking on the **Status, Network,** and **Hard Drives button tabs**, respectively, located at the top of the page.

1.6.1 Main Status Page

The information that is displayed in the **Main Status** page includes:

- Software version and machine serial number
- Hard drive space usage and disk information
- Network IP (internal) and MAC addresses
- Host Name for remote access server
- Total client connections
- Connected cameras and cameras that are being recorded
- Triggered inputs (if USB I/O module is connected to the DVR)
- Case and CPU fan speed, CPU temperature

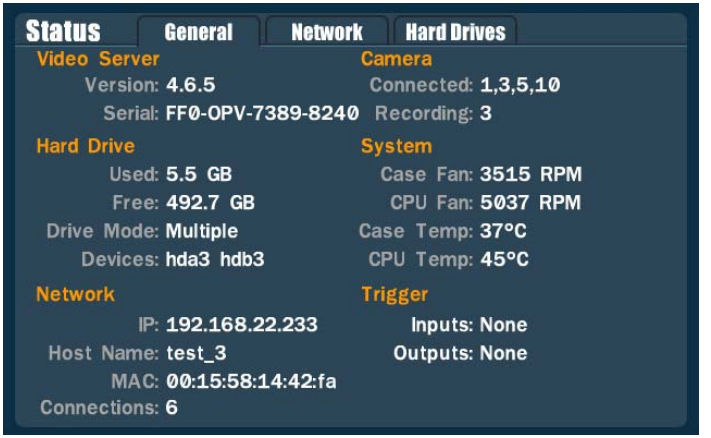


Figure 22. Status Sub-Menu

1.6.2 Network Status Page

The **Network Status** page contains useful information that can be used for configuring, testing, and troubleshooting your network connection. The information in the Network Status page includes:

- **External IP**: Can be used to connect in over the Internet
- **Host Name:** Can be used to connect in over the Internet using the remote access server
- **Internal IP**: Can be used to connect in over a local area network, i.e. the same building
- **Port**: Used for connecting in using the Interceptor Remote Windows software
- **Web Port**: Used for connecting in using a web browser
- **Gateway**: This is usually the address of your network router
- **Netmask**: Defines the range of your local area network
- **Bytes Received/Sent**: The number of bytes received and sent over the network

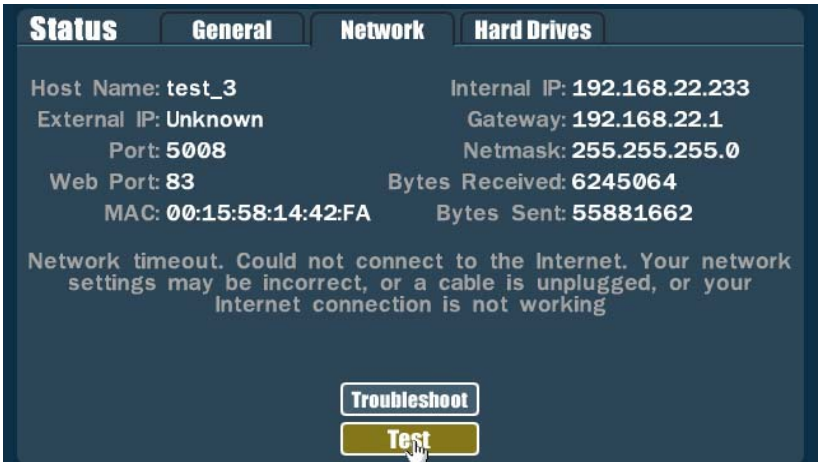


Figure 23. Network Status Page

The Network Status page can also be used to test whether or not your DVR is accessible over the Internet. This can be done by pressing Test button. If the Test fails, it will give you a description of the problem and an option to troubleshoot the problem.

1.6.3 Hard Drive Status Page

The **Hard Drive Status** page displays useful information on the health of the DVR's hard drives. For each drive in the system, the Hard Drive Status page contains the following information:

- The capacity of each hard drive and the amount of space used
- The time/date range of files recorded onto the drive
- The temperature of the drive (a sustained temperature above 50ºC will reduce the life of the hard drive)
- The number of remapped sectors (when this grows beyond 20-50, your hard drive should be replaced)
- The number of SMART errors (these errors are not critical, but if this number continues to increase, it could mean your drive is about to fail)

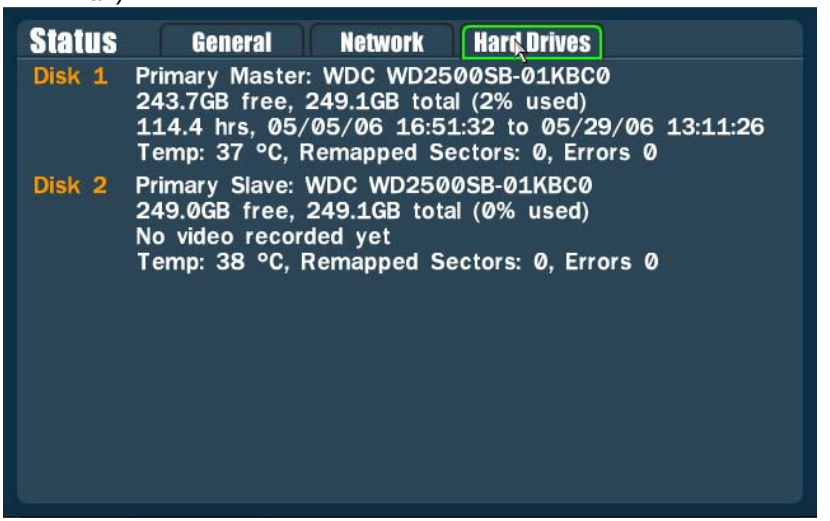


Figure 24. The Hard Drives Status Page

1.7 Display Mode

The live display mode can be setup to display any number of cameras as defined by the user. To change the way the live video feed is displayed, press the **Blue button** on the remote and navigate to the **Display button** and press **OK** on the remote. You should see the Display menu with a list of display types, as shown in Figure 25.

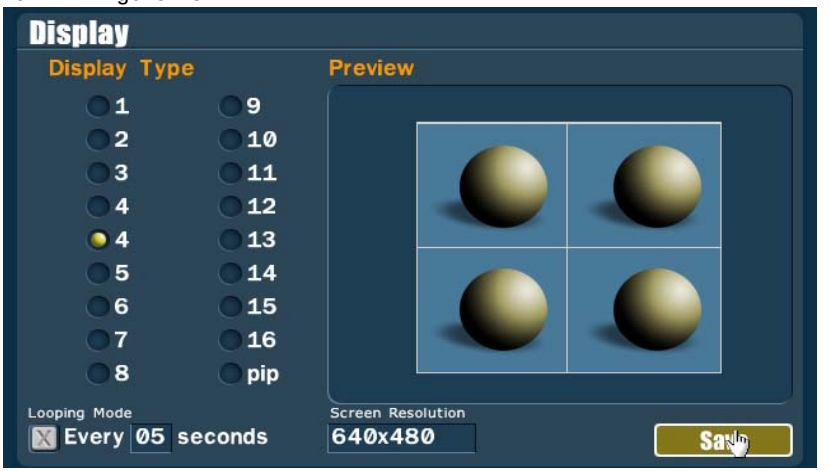


Figure 25. Display Sub-Menu (Quad Mode Shown)

To select a different display mode:

1. Press **OK** on the radio button corresponding to the desired display. A preview of the display type will showup.
2. To enable Looping Mode, press **OK** to check the **Looping Mode checkbox**. In looping mode, the live feed will switch which cameras are shown after the specified number of seconds.
3. To change the monitor resolution, press the **Ch+/- buttons** while on the **Screen Resolution control**.
4. Press **OK** on the **Save button**

To view the newly changed live feed press the **Menu button** on the remote, this will escape you from the Display sub-menu into the main menu. From here navigate to the **Live Feed button** and press **OK**.

1.8 Configuring Cameras

The Cameras sub-menu in the Settings menu allows you to specify the type of cameras that are connected to the video inputs, as well as to set the quality and resolution of each camera, as shown in Figure 26. By adjusting the settings for each camera, you may fine tune the amount of storage space and network bandwidth allocated to each feed.

Figure 26. Cameras Sub-Menu

Camera settings can be adjusted for each individual camera or for all the cameras at the same time. To adjust the camera settings:

1. Select which camera to adjust in the **Camera field**. Select **All** if you want to have the same settings for all the cameras.
2. Select the camera **Type** (**NTSC / PAL / NONE**). Selecting **NONE** will disable the camera.
3. Select the **Flip checkbox** if you wish to flip the image of the camera vertically.
4. Select the **Resolution** (160x120, 320x120, 320x240, 640x240, 640x480).

5. Adjust the **Quality** of each camera. The higher the quality selected, the cleaner and sharper the feed will be. It is also important to note that higher quality feeds will lead to larger sized video clips that the server records.
6. Select a **PTZ Input, PTZ Protocol** type, and **PTZ Device #** if you are using a PTZ camera.

As you are adjusting the camera setting for a camera or a group of cameras, the result will be shown in the window on the right of the Camera sub-menu. The estimated storage will also change according to the settings that were entered. Entering different frame rates and number of connected cameras will vary the available storage time. The estimated space is in terms of **continuous** recording. Recording on motion will yield much longer storage times (usually 2 to 30 times longer). This is just a storage calculator tool for visualization purposes**. The actual record frame rates must be set in the Schedule Menu**.

After you have entered the desired values for all connected channels, navigate to the **Save button** and press **OK** on the remote.

Warning: The camera type selection affects DVR functionality. If you are having trouble with the feeds displaying properly, please check these settings again.

Note: For optimum performance, it's advisable to use similar cameras for every input. If different cameras must be used, it's best to separate the different types onto different capture cards (in groups or pairs).

1.9 Transferring Video to CD/DVD

Your DVR supports transferring or backing up previously recorded video clips directly to CD, DVD (optional), or USB hard drive (optional, See "Transferring Video to USB Drive" on page 35). The CD/DVD Backup sub-menu as shown in Figure 27 can be found under the Recordings menu, which can be reached with the **Green button** on the remote.

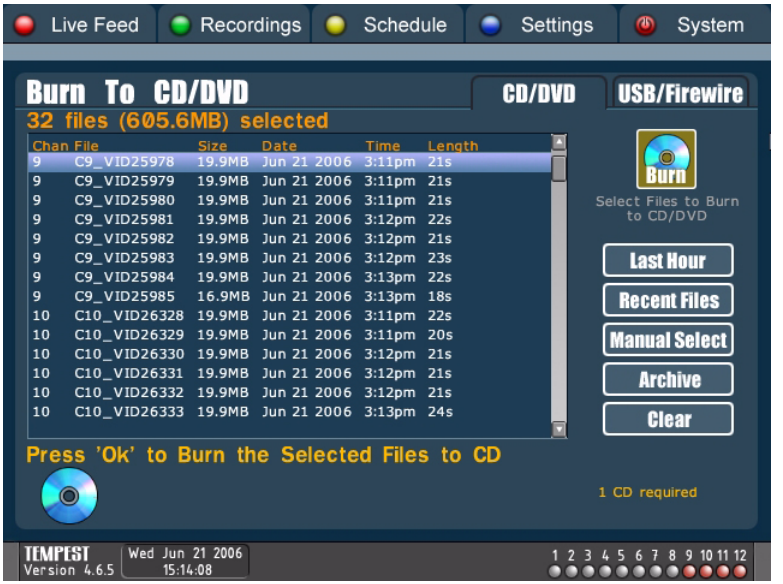


Figure 27. CD/DVD Backup Menu

To backup recorded files to a CD/DVD, the following steps need to be taken:

1. Insert a writable CD or DVD (DVD writing support is only available if the DVR was purchased with a DVD writer option, or connect your USB hard drive.
2. Select the **CD/DVD** or **USB/Archive tab** in the top right-hand corner of the screen, depending on what backup medium you are using.
3. Next, you must select the files that you want to backup. There are four methods to select these files.

- The first method enables you to choose files that have been recorded in the last hour. To choose this method, click the **Last Hour button** under *Select Files to Burn To CD*.
- The second method is to burn a full CD with the most recent files. This method can be selected by clicking the **Recent Files button**.
- The third method will let you select your own files from the list of all recordings under the Recordings menu. To manually select your own files, click the **Manual Select button**. The screen will then automatically change into the Recordings menu. From here, you can mark the files you would like to burn by hitting the **Record button** on the remote on the desired file. To unmark a file, hit the **Record button** on the same file again. The **Record button** is located directly below the **Stop button** on the remote. After you have finished selecting the files, return to the CD/DVD Backup menu.
- The fourth and last method enables you to backup recorded files that were never burned before. This method can be selected by clicking the **Archive button**.

4. Once files have been selected, they will appear in the file list box of the CD/DVD Burn menu. Relevant information including the Channel, Filename, Size, Date, Time and Length of each file will be displayed. The number of CDs required to burn these files will also be shown on the bottom left corner of the screen.
5. Navigate to the **Burn button** and press **OK** on the remote.
6. The burning process will begin. You will be able to view the progress in the progress bar. If errors with the disc or burning process occur, it will be displayed in the menu.

After the CD/DVD burning has been completed, files on the CD/DVD may be viewed on a PC.

To view the contents of your CD/DVD backup:

1. Insert CD/DVD into PC, or connect the USB hard drive.
2. A prompt will appear asking for the playback method. Recordings on a CD/DVD/drive backup may be played through the Interceptor™ client software or through a web browser.
   - **Interceptor™ Client Software -** To playback recorded clips on the Interceptor™ software, select the **Run Interceptor™ button.** If Interceptor™ is not installed on the current PC, it will be installed automatically. A prompt confirming if you would like to begin playback of the recorded clips will appear on the screen.

By selecting the **Yes button**, recorded clips of each individual channels on the burned CD/DVD will be opened in separate displays and playback will begin. To select a particular clip to playback, first select a display with the desired channel. Then select the video clip directly from the time line

- **Web Browser -** To playback recorded clips using the web browser, select the **Internet Explorer button**. Internet Explorer will be opened, assuming that Microsoft® Internet Explorer is the default web browser on the local PC, and will scan the CD/DVD for recorded clips. A screen resembling that of Figure 28 will be shown. Recorded clips may then be accessed by left-clicking on the playback screen, selecting the desired camera, and selecting the desired date and time.

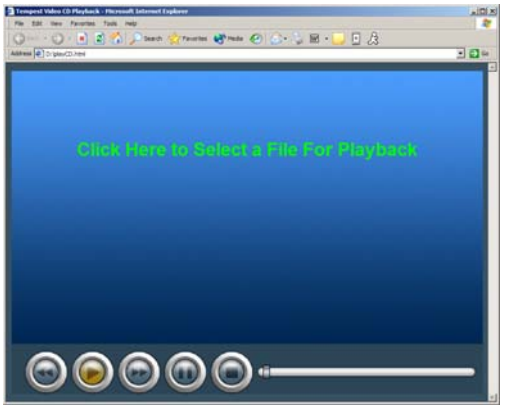


Figure 28. Web Browser CD/DVD Playback

1.10 Transferring Video to USB Drive

Recorded videos from your DVR may also be transferred onto an optional external USB hard drive (Model 1040, sold separately). The Tempest 1040 External USB Hard Drive, shown in Figure 29, is a mass storage device that can be used to effortlessly backup, archive, or share recorded video files from your DVR.

Figure 29. USB External Hard Drive (Model 1040)

1.10.1 Setting Up External Drive for Archiving

To archive your files to the Tempest 1040 External USB Hard Drive, use the following steps:

1. With your DVR already powered on and running, plug in the 1040 into the USB port on the back of your unit.
2. Turn on the power switch on the 1040 external drive.
3. A message will appear on the screen stating that a hard drive has been detected. Select **Configure Drive in Archive Mode**, as shown in Figure 30, and press the **OK button**.

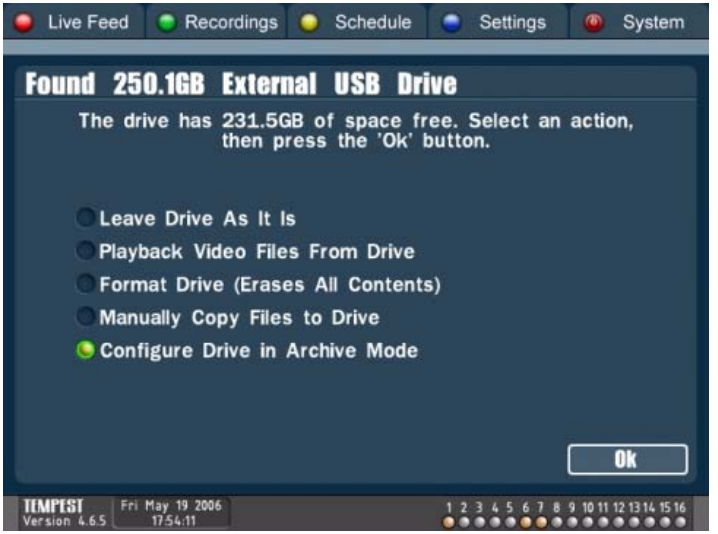


Figure 30. Configure Drive in Archive Mode

4. Select **Begin Archiving All Files** and press the **OK button**.
5. Your DVR will then automatically begin archiving files to the 1040 external drive. A screen will appear with additional advanced archiving controls (See "Advanced Archiving Options" on page 37). If you choose not to change any of the default settings, you may exit out of this screen and the archive process will continue to run in the background.
6. An onscreen display will appear on the lower left-hand corner of the screen. When the display status says **Drive Full**, press the **Safely Remove Hard Drive button** located in the **Recordings > Archive** menu. Replace your 1040 USB hard drive with a new one and repeat steps 1-6.

Warning: Never remove or power down your USB hard drive while it is in the process of archiving, otherwise you are at risk of damaging your files.

1.10.2 Advanced Archiving Options

The **Archiving** menu, shown in Figure 31 will automatically appear when you first configure your hard drive for archiving. It is also accessible by navigating to the **Recordings > Archive** menu.

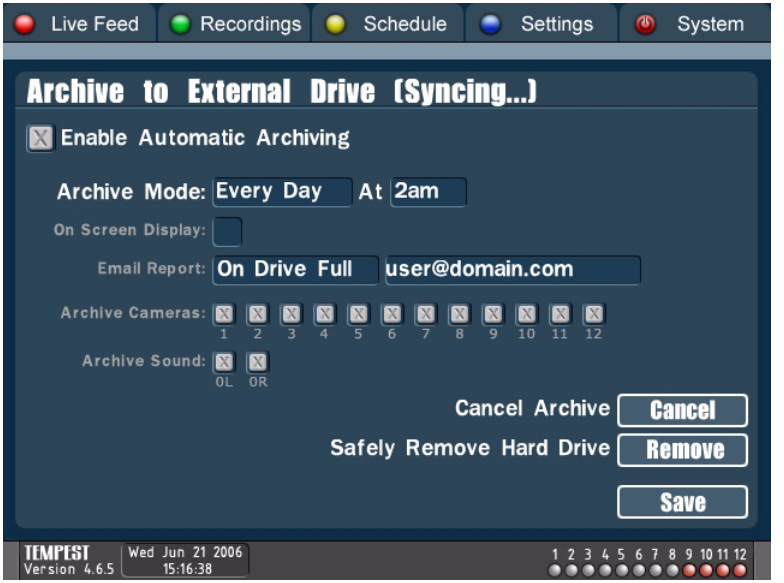


Figure 31. Advanced Archiving Options

The advanced archiving options found under this menu includes:

- **Enable Automatic Archiving -** If this box is checked, your DVR will automatically archive your video/audio files. New files will be copied to your drive as they are created.
- **Archive Mode -** If this field is set to **Every Day**, your DVR will synch up all newly recorded files at the specified time. If it is set to **Every Hour**, it will synch up newly recorded files every hour. If it is set to **Immediately**, it will synch up newly recorded files as they are recorded. In all three cases, your DVR will automatically archive your video files in the background without interrupting the regular functions of your DVR. The **Every Day** option is the best use of your DVR's resources and is the recommended option.

- **E-mail Report -** If e-mail reports are enabled, your DVR will send e-mails to the specified e-mail address about the status of your external hard drive. The **Daily Report** and **Weekly Report** options will send you an e-mail outlining the amount of space left on your drive and the times of the files residing on your drive. The **Drive Full** option will only send you an e-mail once your drive has been filled up.
- **On Screen Display -** If this box is checked, a status box will appear in the lower left-hand corner of the screen, indicating the amount of space left on your drive and the times of the files residing on your drive. This status box will remain viewable in all menus of your DVR.
- **Archive Cameras -** Check the box for each camera you want to include in your archiving.
- **Archive Sound -** Check the box for each audio device you want to include in your archiving.
- **Cancel -** Momentarily stops your drive from archiving. To permanently stop archiving, uncheck the **Enable Automatic Archiving** box.
- **Remove -** Press this button when you want to disconnect your hard drive from your DVR. It will indicate when it is safe to unplug your hard drive.

1.10.3 Manually Backing Up Videos to External Drive

To manually select files to backup to the Tempest 1040 USB External Hard Drive:

1. With your DVR already powered on and running, plug in the external hard drive into the USB port on the back of your DVR. Power on the drive.
2. A message will appear on the screen stating that a hard drive has been detected. Select **Manually Copy Files to Drive** then press the **OK button**, as shown in Figure 32.

Figure 32. Manually Copy Files to Drive

3. You will be taken to the **Burn** menu (Figure 32). Select the files you want to burn using the available menu options. To manually select individual files, press **Manual Select** then use the **Record button** on your remote to select files to burn. When you are ready to begin copying files to your drive, press the **Burn button**.

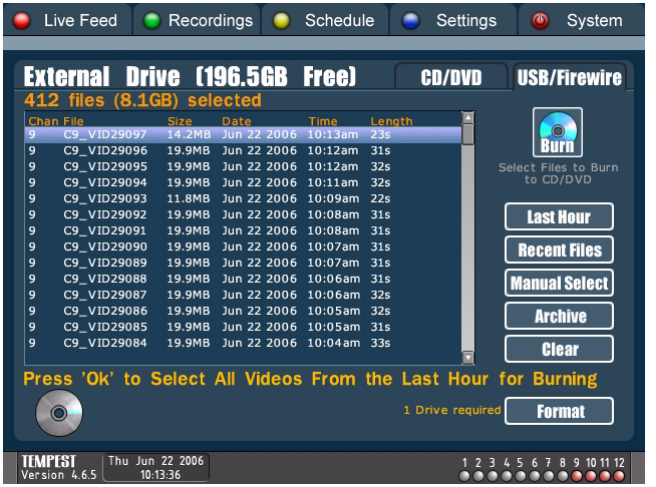


Figure 33. Burn Menu

Warning: Do not mix using the same drive in Manual Backup and Automatic Archive mode. If you want to switch from one mode to the other, make sure you format your drive first.

1.10.4 Playing Back Videos from External Drive

To playback videos using your DVR, use the following steps:

1. With your DVR already powered on and running, plug in the 1040 external hard drive into the USB port on the back of your DVR. Power on the drive.
2. A message will appear on the screen stating that a hard drive has been detected. Select the **Playback Video Files From Drive**, then press the **OK button**, as shown in Figure 34. This will take you to the Recordings menu, and you may select a camera and time to begin playback.

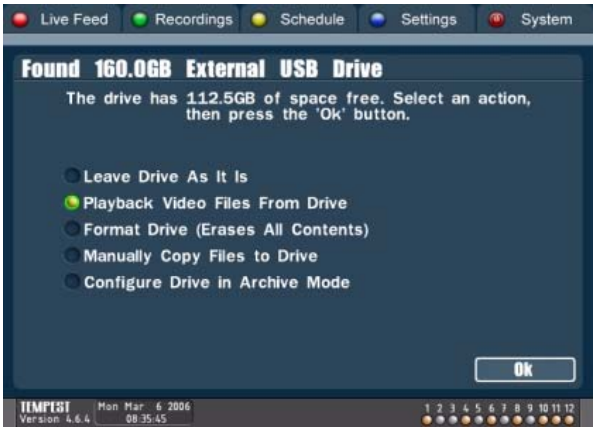


Figure 34. Playback Video Files From Drive

To playback your videos using a Windows™ based PC, use the following steps:

1. Connect the external hard drive to a USB port on your Windows PC. Power on the drive. Windows may take a minute to detect and recognize your hard drive.
2. A message, similar to that shown in Figure 35 will appear onscreen asking you to choose a playback method. Select **Run Interceptor**. This will open up the Interceptor Client Software program.

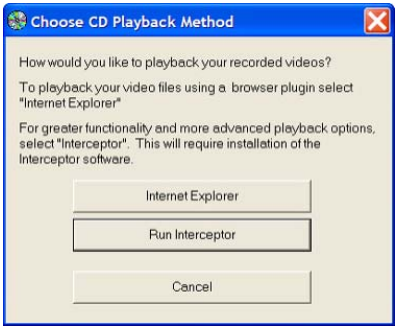


Figure 35. Playback Method Window

1.11 Shutting Down/Rebooting Your DVR

For various reasons at one time or another, it might be necessary to shutdown or reboot the DVR. The DVR may be shutdown or rebooted in the Shutdown sub-menu. To reach the Shutdown sub-menu:

1. Click the red **Power button** on the remote.
2. Navigate to the System menu and select the **Shutdown button**.

Once the Shutdown sub-menu appears, click on the **Shutdown button** or the **Restart button** as required. Shutting down the DVR will take approximately 15 seconds, at which point the system will use this time to close files and clean up any loose ends. While the system is shutting down, the shutdown screen will appear as shown in Figure 36.

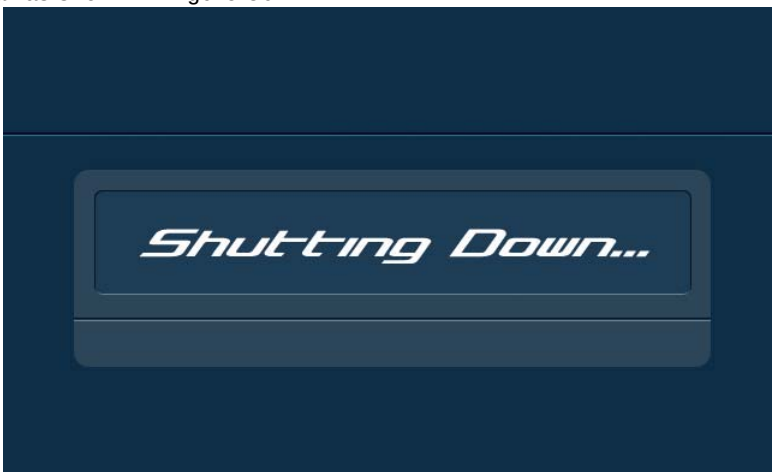


Figure 36. Shutdown Splash Screen

After the DVR powers down, it is safe to unplug the system's power. If you selected the **Restart button** in the System screen, it would not power down, but will re-initialize and restart the DVR.

Chapter 2 *Advanced Operation*

Quick Index

Summary

In this chapter, advanced functions of the Tsunami™ DVR software will be discussed. These functions, some of which are vital for remote accessing of your DVR includes:

- Customizing motion detection zones for different cameras.
- Configuring network and dial-up properties of your DVR.
- Managing passwords and bandwidth usage.
- Restoring and upgrading the firmware of your DVR.

2.1 Motion Detection

The DVR software features controls for customizing motion detection for multiple zones on each camera. Customizing the motion detection will effectively improve disk space utilization of the DVR by only recording when motion activity is detected as defined by the user, or by recording at a slower frame rate when no motion is present. With the ability to define different sensitivity levels and sizes for user-defined zones, you may fine tune the motion detection to suit your own needs. By default, the motion detection is set to be highly sensitive and to detect across the whole field of view.

To customize motion detection:

1. Navigate to the Settings menu and select the Motion sub-menu.
2. Select the channel that you wish to adjust motion detection for by using the **CH +/- buttons** on the remote.
3. The live feed from that particular channel will be shown in the preview window with an overlaying grid. Navigate to the preview window. Using the arrow keys on the remote, move to the regions on the grid that you would like to not have motion detected in and begin making it inactive by clicking **OK**. You may also make a region active by clicking **OK** over an inactive region. Inactive regions will appear as translucent blue filled boxes, as shown in Figure 37.
4. Using the **Prev/Next Chapter buttons**, adjust the Sensitivity, which is how much movement creates a motion trigger. For example: *Let's say you have a camera focused on the street in front of your store. You don't want to trigger recording when the trees gently sway in the breeze. So you make the sensitivity just low enough to avoid triggering motion detection when the trees sway but high enough to capture any other activity.*
5. Using the **Rewind/Fast Forward button**, adjust the Minimum Size, which is how large an object needs to be to trigger a motion event. For example: *Again, let's say you have a camera focused on the street in front of your store. You don't want to trigger recording when birds fly by in the sky but you don't want to miss a helicopter. You can make the motion sensitivity size small enough to not capture the birds, but large enough to capture people, cars and helicopters.*
6. Once completed, press the **Menu button** on your remote to save your changes.

In the preview window, confirmed motion events will be highlighted in red. This is useful to help you calibrate the size and sensitivity of your custom motion detection zones. Note that the DVR will record on motion if **ANY** object is detected and highlighted in red. Be careful to not set the motion sensitivity too high. It's ok if the moving object is not entirely highlighted in red, so long as part of the moving object is highlighted.

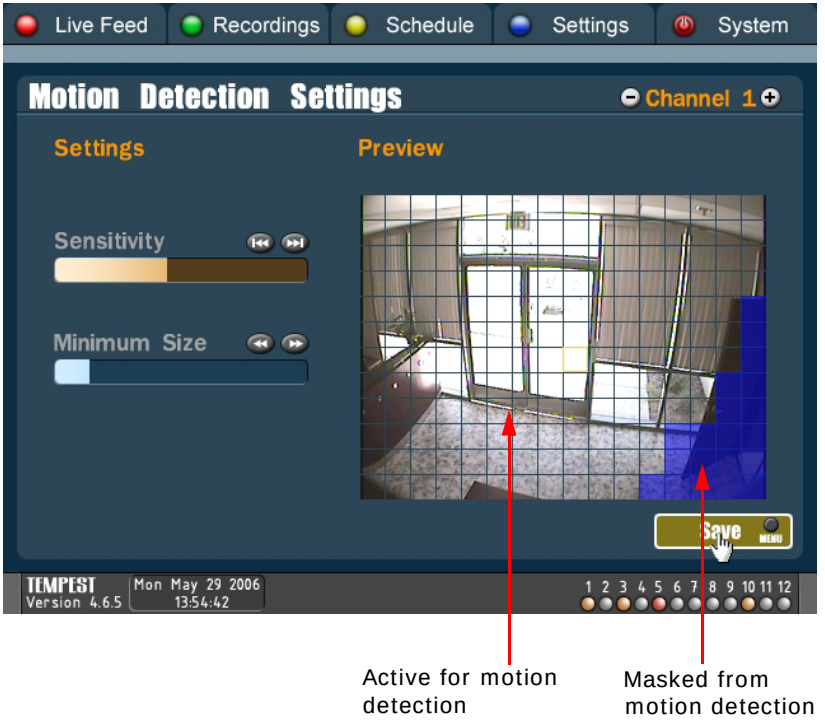


Figure 37. Motion Detection Sub-Menu

2.2 Setting Trigger Operations

By using the Tempest USB External Input/Output module (Model 1014, sold separately) in conjunction with your DVR, you may configure trigger inputs and outputs. The USB IO module, as shown in Figure 38, contains optically isolated inputs and C relay ouputs.

Figure 38. USB External Input/Output Module (Model 1014)

In order to access the Trigger menu to configure the different trigger inputs and outputs, the USB I/O module must be first connected to the DVR before the DVR is turned on. The USB I/O module is connected to the DVR using the supplied USB cable. If the connection was successful, an eighth sub-menu, titled **Triggers** will appear under the **Settings menu**, as shown in Figure 39.

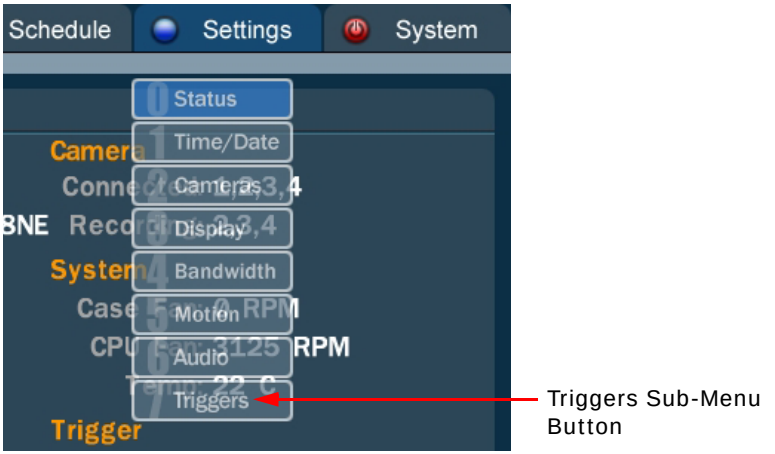


Figure 39. Triggers Sub-Menu Button

2.2.1 Trigger Outputs

The outputs can be configured to be triggered on alarm inputs, recording, motion detection, camera disconnects, and DVR health status (see below). In addition, they can be triggered by hand over the network using the Interceptor Remote Software.

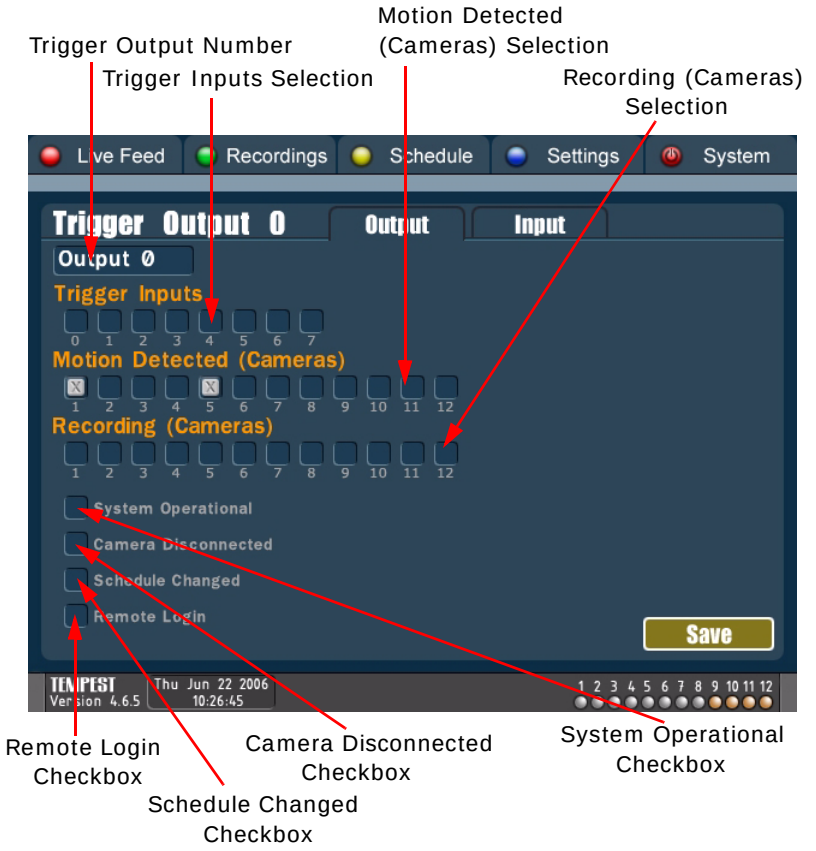


Figure 40. Triggers Sub-Menu

The **Trigger Output Page** can be found by navigating to the **Triggers Sub-Menu** under the **Settings Menu**, then clicking the **Outputs tab** at the top of the page. The components of the Triggers Output Page include:

- **Trigger Output Number** - The number corresponding to the output on the USB I/O module. This is the output that the inputs and other trigger settings will affect.
- **Trigger Inputs Selection -** A selection of inputs from the USB I/O module. If a signal is sensed on any of the selected inputs (inputs that are checked), the output will be triggered.
- **Motion Detected (Cameras) Selection -** Motion detection on any of the selected cameras (cameras that are checked), will cause the output to be triggered.
- **Recording (Cameras) Selection -** The output will remain triggered so long as the selected cameras (cameras that are checked) are recording video.
- **System Operational Checkbox -** When checked, the output will remain triggered so long as the DVR is in an operational state.
- **Camera Disconnected Checkbox -** When checked, the output will be triggered for 10 seconds after a camera is disconnected from the DVR (i.e. a video signal loss).
- **Schedule Changed Checkbox -** When checked, the output will be triggered for 10 seconds after a recording schedule has been changed on the DVR.
- **Remote Login Checkbox -** When checked, the output will be triggered for 10 seconds after a remote login over the network connects into the DVR.

To configure the settings for a particular trigger output:

1. Select the trigger output to configure settings for in the **Trigger Output number field**.
2. Select a single or a combination of inputs that you would like to trigger the output when a signal or event is detected. Inputs include the Trigger Inputs Selection, Motion Detected (Cameras) Selection, Recording (Cameras) Selection, System Operational Checkbox, Camera Disconnected Checkbox, Schedule Changed Checkbox, and Remote Login Checkbox.
3. After you have made your selection, navigate to the **Save button** and hit the **OK button** on your remote.

Since multiple input components can be used in conjunction with one another for each particular output, the trigger combinations are nearly endless. The figures below are some examples of how the triggers can be configured.

- **Example 1 -** Motion Detected (Cameras). The previous figure, Figure 40, shows Trigger Output 0 is configured to be triggered when motion is detected on camera 1 or 5.
- **Example 2 -** Trigger Inputs, Camera Disconnected, Schedule Changed. Figure 41 below shows Trigger Output 0 is configured to be triggered when input 2 or 6 are triggered. Output 0 will also be triggered when a camera signal is lost or the record schedule is changed.

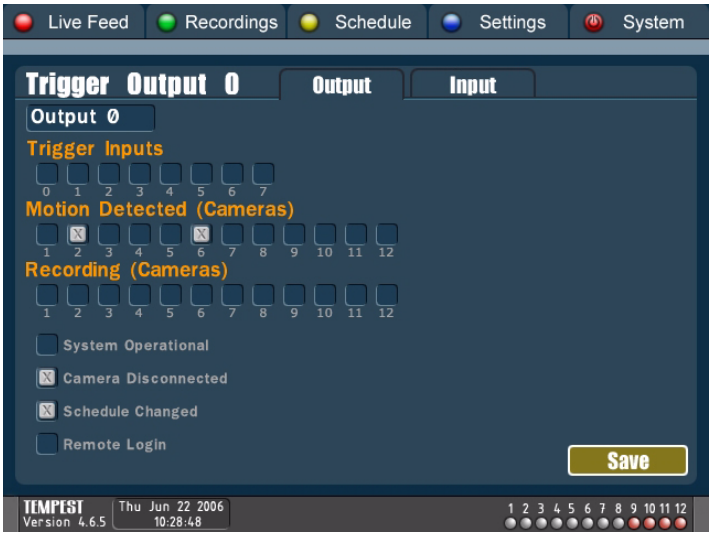


Figure 41. Triggers Sub-Menu (Example 2)

2.2.2 Trigger Inputs

The inputs can be setup to trigger recording (*See "Scheduling a Recording" on page 19*), send e-mail notifications (*See "Configuring E-mail Notifications" on page 62*), and control the cameras shown in the live display (*see below*). Input trigger events are also stored and catalogued, and can be used to facilitate quick search features during playback (*see "Viewing Recorded Video" on page 15*).

To use inputs on your USB I/O module to control which cameras are shown in the live feed:

1. Navigate to the **Triggers sub-menu** under the **Settings menu**, then click on the **Inputs tab** at the top of the page.
2. For each input, enter the desired action to occur when that input is triggered. Available actions include going into full-screen mode on a particular camera, and switching between dynamic, preset, mono, and quad mode.
3. If you would like the effects of changing the live display mode to be temporary, set the **Reset Mode selector** to the desired time. The DVR will revert back to the previous display setting after this amount of time has elapsed.
4. When you are done, press the **Save button**

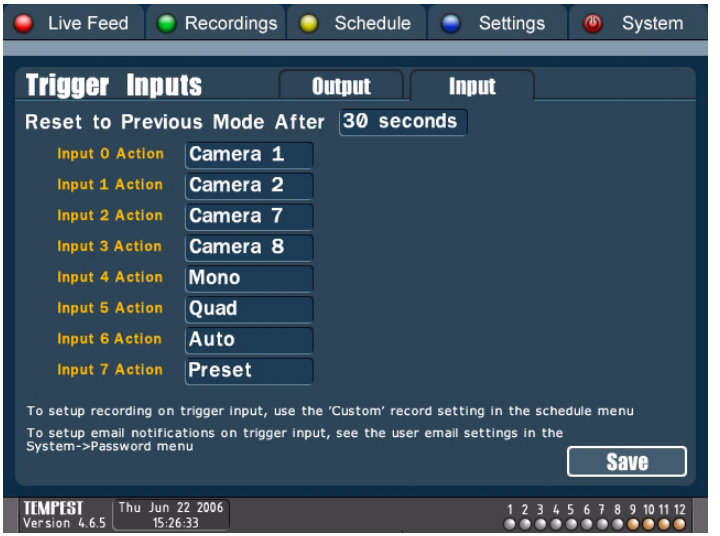


Figure 42. Trigger Inputs Page

2.3 Audio Configuration

The Tsunami™ DVR software allows for the recording and playback of multiple audio sources. It is also designed to enable two-way communication between the remote PC and the local DVR. To configure audio settings, first navigate to the **Settings menu** and select the **Audio sub-menu**. A screen similar to that of Figure 43 will appear.

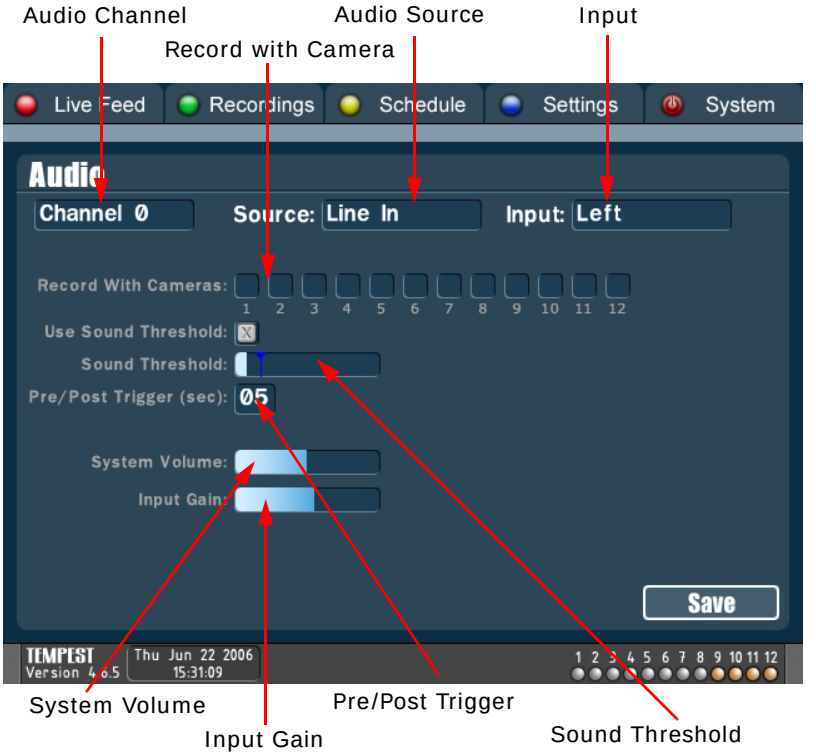


Figure 43. Audio Sub-Menu

The components found on the Audio sub-menu includes:

- **Audio Channel -** Number corresponding to the audio channel of the DVR. Select All Channels if you wish to have the same settings for every audio channel present.
- **Audio Source -** A list of input audio sources of the DVR. This list includes: Line In, Microphone, CD In and None. The Line In input is the blue input on the back of the DVR, and is a stereo input jack. If you want to connect two different audio devices to your DVR, you should use the Line In input, and will need to connect a splitter cable that has a stereo audio plug on one side and two mono inputs on the other side. The Microphone input is the red input on the back of the DVR, and is a mono input jack.
- **Input -** This option only appears when Line In or CD In is selected. The Input component defines the left and right channel of an stereo audio input.
- **Record with Camera -** Checkboxes representing camera feeds. This component, along with the Sound Threshold and Pre/Post Trigger setting controls when audio will be recorded. When a checkbox is checked, the selected Audio Channel will begin recording when the following criteria are satisfied:
  1. The corresponding camera begins to record.
  2. The audio signal is greater then the limit set by the Sound Threshold.
  3. The duration of the audio signal is greater then the time given by the Pre/Post Trigger.
- **Sound Threshold -** The second criteria to determine if audio will be recorded. The Sound Threshold criteria will be satisfied when the audio signal is greater then the user-defined limit.
- **Pre/Post Trigger -** The third and last criteria to determine if audio will be recorded. Audio will be recorded if the sound threshold was exceeded sometime within the specified number of seconds. For example, if the Pre/Post Trigger time is set to be 3 seconds, audio will begin recording 3 seconds before a sound exceeds the threshold and will continue recording for 3 seconds after.
- **System Volume -** Defines the system volume of the DVR unit. When an audio source is connected, it is auditory when the Audio sub-menu is opened. Audio may also be heard if it is selected in the Live Feed mode. Lastly, audio can be heard if someone is transmitting audio from a remote location over the network. You will need a speaker plugged into the green audio jack on the back of the DVR.

- **Input Gain -** The Input Gain is used to amplify the signal of a audio input device. Noise may be introduced if the Input Gain is set too high.

To configure audio settings:

1. Navigate to the Settings menu and select the Audio sub-menu.
2. Select an Audio Channel in which the settings will apply to.
3. Select the Audio Source. If either Line In or CD In is selected, select the desired Input channel (Left / Right).
4. Set the audio recording criterions. These include the Record With Camera, Sound Threshold and Pre/Post Trigger criteria.
5. Adjust the System Volume and Input Gain.

2.4 Network Configuration

In order to access your DVR over a network, you must first set up its networking settings. By remotely accessing your DVR, you may view the live feeds, review previously recorded video clips and accomplish certain administrative functions from a distant location. It is recommended that you read the Networking section of the Installer's Guide for more detailed information.

To configure the networking, use the following steps:

1. Navigate to the Networking sub-menu, which is located under the System menu, shown in Figure 44.
2. Set the networking type (Static, DHCP). If you are not sure what the values to these fields should be, please ask your System Administrator or Internet Service Provider.

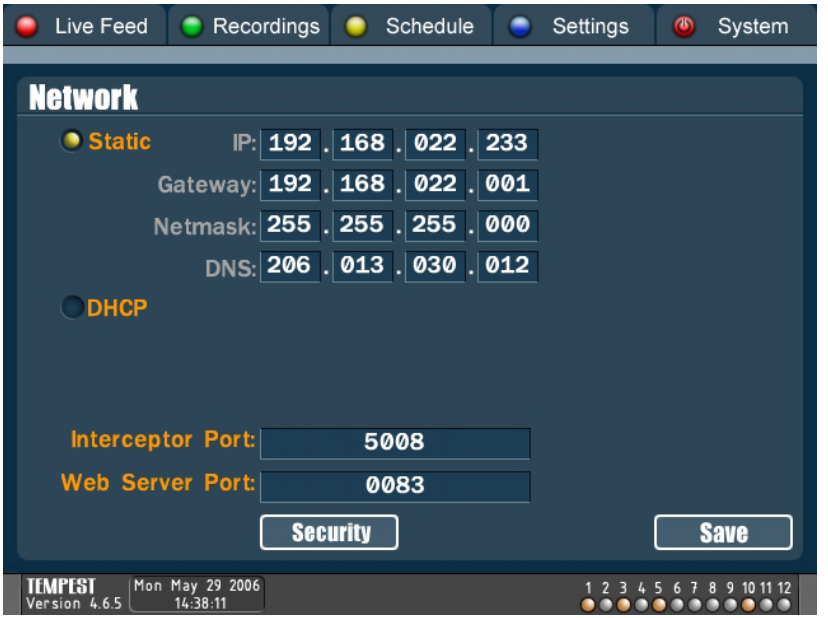


Figure 44. Network Sub-Menu

3. **Static** - If you have a static connection (this is the same thing as the *Use the following IP address* option in Windows), select the radio button corresponding to static, and then fill in the IP, Gateway, Netmask and DNS.
4. **DHCP** - If you have a DHCP connection (this is the same thing as the *Obtain an IP address automatically* option in Windows), make sure the radio button corresponding to DHCP is selected. The dynamic IP that is set to your DVR will be shown in the Status menu.
5. **Interceptor™ Port -** Set the Interceptor™ Port number. If you are unsure of which port to use, then the default port of 5005 is fine. If you change the port, make sure you use that same port when you are trying to connect with Interceptor™.
6. **Web Server Port -** Set the Web Server Port number. The default port of 80 is typically used. If you change the port, make sure you use that same port when you are trying to connect with the Web Server.
7. **Security** - This will allow you to setup a custom firewall within your DVR. The firewall can be used to block the Interceptor or Web Ports.

After you have made your changes select the **Save button** and your changes will be put into effect immediately. If you wish to discard your changes, press the **Menu button** on the remote.

2.5 Configuring Dial-Up Access

When a high-speed network is not readily available and remote access is required, you may use the Dial-Up access feature to access a DVR remotely (with optional Tempest External 56K Modem module, Model 1012). Using a regular telephone line connection, you may dial into your unit using the Interceptor™ client software (See ”Connecting to a Remote Server” on page 94) and accomplish tasks similar to those when connecting over a network.

To configure Dial-Up access, navigate to the Dial-Up sub-menu, which is located under the System menu, as shown in Figure 45.

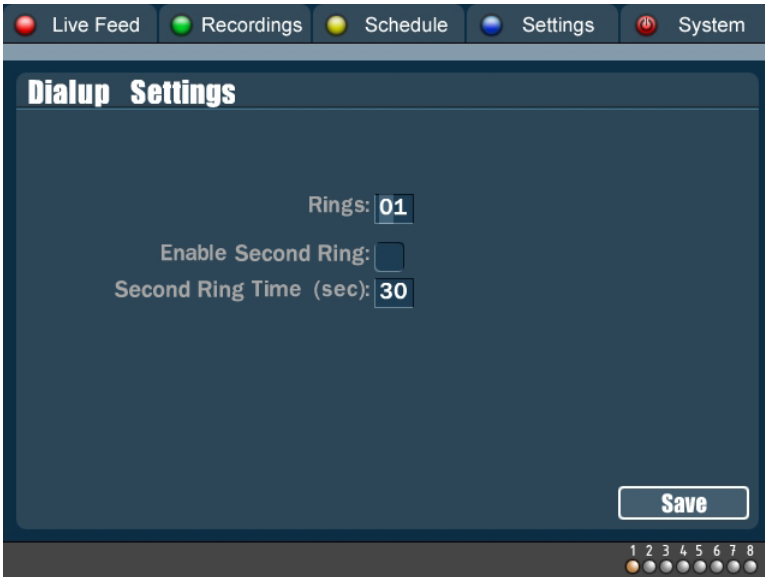


Figure 45. Dial-Up Sub-Menu

There are two different methods to set up how the DVR will respond to incoming calls. These methods include:

1. Requests the DVR to answer after a certain number of rings on the first incoming call from the Interceptor™ client software.
2. Requests the DVR to answer after a certain number of rings on the second incoming call after a set duration of time from the first incoming call. The first incoming call to the DVR would be ignored.

To configure the dial-up settings:

1. Enter the number of rings before the DVR will pick up the incoming call in the Rings textbox.
2. If you wish to use the second ring method, select the Enable Second Ring checkbox. Once selected, enter the duration of time the server will have to wait for the second call back.
3. Select the **Save button**.

Warning: The Second Ring method is designed for DVRs that are not connected to a dedicated phone line. A dedicated phone line (highly recommended), is one that is connected directly to the DVR without connections to any other devices. When sharing a phone line (e.g. voice, fax, etc.), you may risk encountering a busy signal.

2.6 Selecting a Host Name

A remote access server may be defined for DVRs that are connected to a dynamic IP address (an IP address that changes after a period of time by the Internet service provider). Most DSL and Cable modem Internet connections will have a dynamic IP address. By defining a remote access server and a host name for your particular DVR, you may connect to it using the host name rather than the IP address. With this feature enabled, you would not have to rely on looking up an IP address that constantly changes, but only have to remember a host name to connect to your DVR.

To define a remote access server and the host name for your machine:

1. Navigate to the **System menu** and then **Host Name sub-menu**, as shown in Figure 46.
2. Select the **Use Remote Access Server checkbox**.
3. Define a system identifier under the **Host Name text** field by using the **1-9 buttons** on the remote. Letters of the alphabet can be used by continuously clicking the number that the letter corresponds to on the remote. Pressing the **Stop button** on the remote will clear the entire field. The host name must a unique identifier that no one else is using.
4. Make sure the IP of the Remote Access Server and Secondary Access Server are correct. You should usually keep the default values and never change these. The Remote Access Server will track your IP address as it changes, and the secondary server is a backup in case that server is down.
5. Select the **Test button**. Your unit will then try to connect to the Remote Access Server with the provided IP address. It will attempt to register the requested Host Name on the Server. If there are any errors, such as a duplicate Host Name already existing in the database, the error will by printed to the screen.
6. If the Test was successful and the Host Name was registered with the Remote Access Server, select the **Save button**.

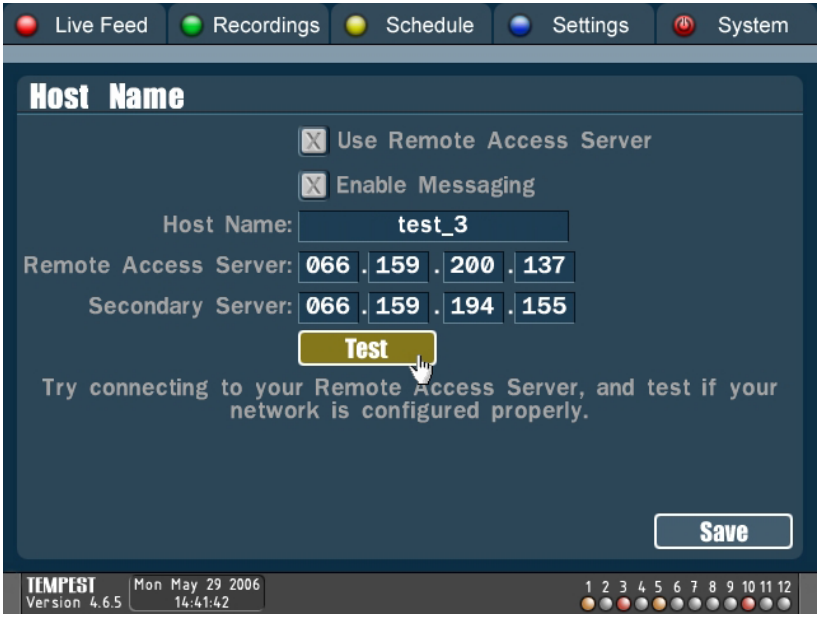


Figure 46. Host Name Sub-Menu

2.7 Managing Passwords

Passwords are provided as a security measure to prevent unauthorized access to your DVR and its settings. Passwords for the DVR may be set in the Passwords sub-menu, which is located under the System menu, as shown in Figure 47. The first user, "admin," by default has unlimited access to all of the DVR features. An admin user can schedule recordings, delete files, change recording resolution and more. The second user type, "guest," has fewer privileges. The guest by default can view the live video and recorded video and use the immediate record features among other things.

To configure user and password settings:

1. Navigate to the listbox on the left-hand side of the screen. Select the user you'd like to configure.
2. Press the **Edit button** to edit the selected user, or the **Add button** to add a new user. This will open up the Edit User Dialog.

Figure 47. Passwords Sub-Menu

> ***Important:*** The default PIN# for admin/guest is 123456.

3. In the **User field** enter the user name that will be used for remote login.
4. In the **PIN# field** enter the number password for remote login.

5. If you would like to configure the DVR to send e-mail notifications, See ”Configuring E-mail Notifications” on page 62

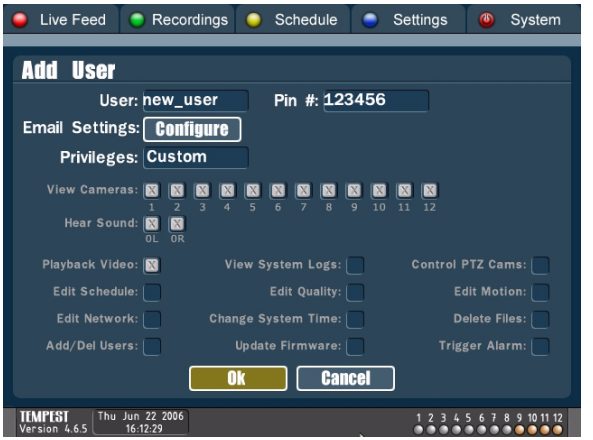


Figure 48. The Edit User Dialog

6. In the **Privileges selector** enter the access privileges of this user (Admin, Guest or Custom). **Guest** privileges will give the user access to live view and playback, but no system configuration access. **Admin** privileges will give the user full access to system configuration. **Custom** privileges will allow you to define exactly what privileges you want to give each user. The Custom options include:
   - **View Cameras**: The user will only be allowed to view the cameras that are checked
   - **Hear Sound:** The user will only be allowed to listen to the audio devices that are checked
   - **Playback Video:** The user is allowed to playback recorded video
   - **View System Logs**: The user can view system logs such as network changes, system settings changes, and user logins
   - **Control PTZ Cams:** The user can control pan/tilt/zoom cameras
   - **Edit Schedule**: The user can change the record schedule remotely
   - **Edit Quality**: The user can change camera resolution and quality remotely
   - **Edit Motion**: The user can configure motion detection remotely
   - **Edit Network**: The user can change the DVR's network settings

- **Change System Time**: The user can change the DVR's system time
- **Delete Files:** The user can delete recorded video files
- **Add/Del Users**: The user can configure user/password login settings and add/edit/delete users
- **Update Firmware**: The user can update the DVR's system firmware
- **Trigger Alarm**: The user can trigger outputs on the DVR's USB I/O module

7. When you are done configuring settings for your user, press the **OK button**.
8. Follow steps 2-6 to continue to edit/add more users. When you are done, press the **Save button**.

2.7.1 Configuring E-mail Notifications

The DVR can be configured to send e-mail notifications on motion detection, alarm input, and important system changes. The **E-mail Notification Configuration dialog** can be found under the **Edit User dialog** under the **Passwords sub-menu**. You can send e-mails to different e-mail addresses by configuring different e-mail addresses for different users. To configure e-mail notifications:

1. In the **Passwords sub-menu** under the **System menu**, select a user then click the **Edit button**
2. In the **Edit User dialog**, click the **E-mail button**. This will open up the **E-mail Notification Configuration dialog**
3. In the **E-mail Address field**, enter your e-mail address

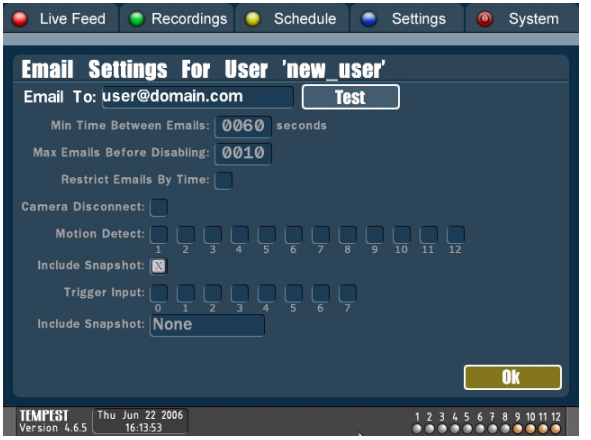


Figure 49. E-mail Notifications Dialog

4. If you want to receive e-mails on motion detection, check the appropriate **camera checkboxes**. If you want to include an image snapshot of the detected motion, check the **Include Snapshot checkbox**
5. If you want to receive e-mail notifications on alarm input trigger (optional USB I/O module required), check the appropriate **input checkboxes**. If you want to include an image snapshot with your e-mail, select the desired camera in the **Include Snapshot selector**.
6. If you want to receive e-mails on camera disconnect or network change, check the **Network Change** or **Camera Disconnect checkboxes**.
7. The **Min Time Between E-mails field** will limit the frequency of e-mails sent to the specified time. If a second e-mail trigger event occurs before that amount of time has elapsed, the second e-mail will not be sent.
8. The **Max E-mails Before Disabling field** will limit the number of e-mails you can receive before the DVR stops sending you e-mails. You will have an option available in each e-mail to request the DVR to begin sending e-mails again.
9. When you are done configuring your settings, press the **Ok button**. Remember to save your changes by pressing the **Ok button** in the **Edit User Dialog**, then the **Save button** in the **Passwords submenu**.

2.7.2 Locking System Settings

Also found in the Passwords sub-menu, the Lock Settings option places an administrative lock on selected settings on the DVR locally. To enable this lock feature:

1. Navigate down to the **Lock button** in the Passwords sub-menu.
2. Click the **OK button** on the remote and a new menu titled Lock Administrative Settings will appear, as shown in Figure 50.
3. Navigate down to the Password textbox and enter the password for the Lock.
4. If you wish to maintain the lock after server reboot, check the Maintain Lock After Reboot checkbox.
5. Select the **Lock button** and hit **OK** on the remote.

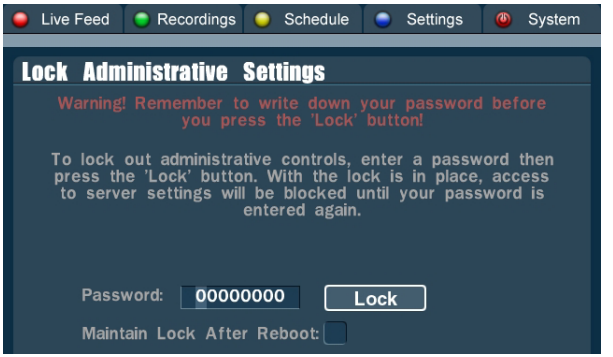


Figure 50. Lock Administrative Settings Menu

> ***Important:*** Remember to write down you password before you press the **Lock button**.

To unlock the administrative menus:

1. Navigate to a menu that is currently locked
2. Enter password into **Password textbox** and click the **Unlock button**.

2.8 Bandwidth Management

When your DVR is installed in a networked environment, it will tend to generate lots of traffic because video is network intensive. The bandwidth management feature allows you to allocate a fixed portion of your Local Area Network capacity to the DVR so other computers are not adversely affected by video traffic generated from the DVR.

Your DVR software allows bandwidth management at several different levels, including adjustments of total bandwidth, user priorities, and camera priorities. To adjust the bandwidth, navigate to the Bandwidth Management sub-menu, which is located under the System menu, as shown in Figure 51.

Figure 51. Bandwidth Management Menu

Three different levels of bandwidth management is allowed. These include:

1. **Maximum Total Bandwidth** - Restrict the DVR to only consume a certain amount of available bandwidth on the network. The setting ranges from 1.1 Kb/sec to 100 Mb/sec.

2. **User Level Bandwidth Priorities -** Sets the bandwidth priorities between admin and guest users. Unlike Maximum Total Bandwidth, this setting adjusts the percentage of the maximum bandwidth an admin user can consume in relation to a guest user. *For example, if the slider of the admin user was set to 100%, and the slider of the guest user was set to 33%, the Admin user is allowed to have approximately three times the bandwidth of the guest user.*
3. **Camera Level Bandwidth Priorities** - Similarly to User Level Bandwidth Priorities, Camera Level Bandwidth Priorities allows you to adjust the percentage of the maximum bandwidth consumption of each camera in relation to each other.

2.9 Viewing System Logs

System logs from the DVR unit may be view by navigating to the Recordings menu and down to the System Logs sub-menu. The System Logs sub-menu is separated into multiple categories that corresponds to different events that may occur on the DVR. These categories include:

- Remote network login
- System startup/shutdown
- Camera connection status
- User/password changes
- Record schedule changes
- System time change
- System firmware update status

Searching and viewing the event logs of the DVR is very similar to searching for a video clip in the Recordings sub-menu., as shown in Figure 52.

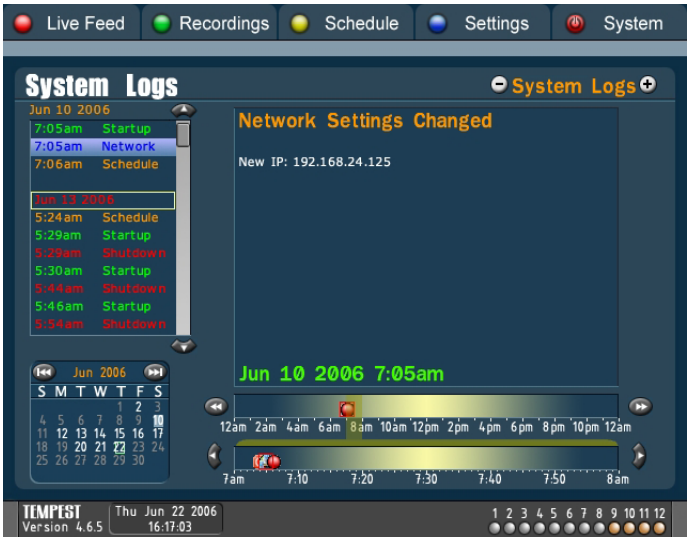


Figure 52. System Logs Sub-Menu

To view an event log:

1. Select an event log category to view. To toggle between different categories, press the **CH +/- keys** on the remote.
2. Select a date to view event logs from. The date can be switched by pressing the **Next/Prev Chapter keys** on the remote.
3. Select a time to view event logs from. The time can be switched by using the **Left/Right navigation keys** on the remote.
4. Choose the event log you wish to view by pressing the **Up/Down navigation keys** on the remote. The event logs are listed in chronological order, with the latest logs at the bottom of the list.

2.10 Point of Sale

Point of Sale (POS) functionality is supported by all Tempest DVRs. To enable the POS feature of your DVR, you must first purchase and obtain a POS license from Tempest. An additional POS module (Model 1030, Tempest USB POS Module), which is sold separately may also be required depending on the DVR package that you purchased. You may consult with Tempest to determine the necessary hardware/software requirements for your particular DVR.

To install the POS license code after obtaining it from Tempest:

1. Navigate to the **Licenses sub-menu** under the **System menu**.
2. Enter POS license code into the field labeled **Point of Sale**, as shown in Figure 53.

Figure 53. Licenses Sub-Menu

3. Click the **Install button**.
4. If the license has been accepted, your DVR will prompt you to reboot. After the reboot, a new sub-menu titled **Point of Sale** will appear under the **Recordings menu**.

2.10.1 Configuring the POS Interface

Before configuring the POS interface, it is first necessary to decide which camera feeds you want to associate with specific registers. Each serial port on either the DVR or the optional 1030 USB POS Module will be numbered "PORT1," "PORT2" and so forth. Please keep in mind that it is important to write down the port number corresponding to each register as you will need this information when configuring the POS interface.

To configure the POS interface:

1. Navigate to the **Recordings > Point of Sale sub-menu**.
2. If an input device already exist on the list of registers and you would like to add a new register, select the **Configure button**. This will bring you to the **Point of Sale Configuration sub-menu**, as shown in Figure 54. If this is your first time setting up a register for POS, you will also be brought to this sub-menu.

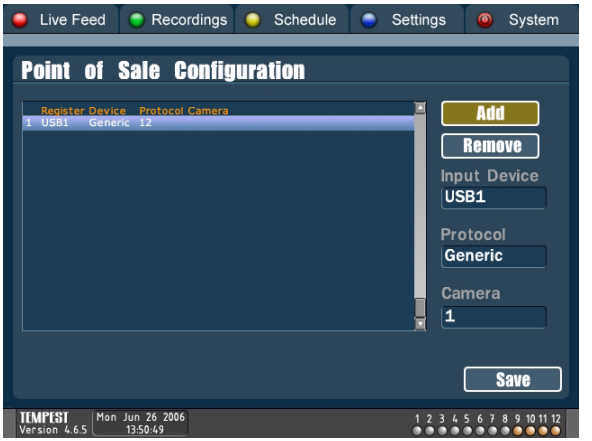


Figure 54. Point of Sale Configuration

3. Select an **Input Device**. USB 1-16 corresponds to PORTS 1-16 on the 1030 POS Module.
4. Select the **Protocol** matching your register brand. If one is not available, select **Generic** for protocol type.
5. Select **Camera** to associate with register.
6. Select the **Add button**. A new entry will appear in the list of registers.

7. Configure the rest of registers in a similar fashion and click the **Save button** when completed. Please allow 20 seconds for the settings to take effect before using the interface.

After you have finish configuring the POS interface, you may navigate back to the **Recordings > Point of Sale sub-menu**. The Tsunami POS Interface incorporates three main features. These features, which will be explained in the following sections include:

- Overlaying transaction details on top of live and recorded camera feeds, both locally and remotely via Interceptor™.
- Creating exception reports based on a set of specifications for up to 10 days preceding the current date.
- Searching all transactions up to date based on various search criteria.

2.10.2 Viewing POS Overlay

Once the POS interface is configured properly, POS data from the specified cash register will begin to appear on the chosen camera, as shown in Figure 55. POS overlay display can be toggled on and off by clicking the display button on the remote or on the keyboard and selecting the appropriate on-screen display mode. The **Display Full** on-screen display mode will show the POS overlay while other modes will not.

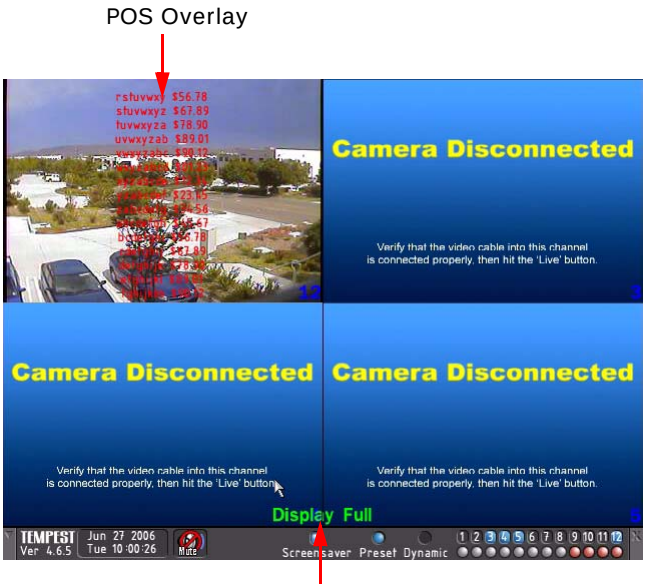


Figure 55. POS Overlay in Live Feed

2.10.3 Creating and Using Exception Reports

The POS interface stores every single line of data that it receives from the registers. Obviously only some of this information is useful. One way to create a filter for useful information is to configure exception reports.

To create an exception report, use the following steps:

1. Navigate to the **Recordings > Point of Sale sub-menu**.
2. Select the **Ex. Config** (Exceptions Configuration) **button**. This will bring you to the **Exceptions Configuration sub-menu**, as shown in Figure 56. Inside this menu, you will find checkboxes corresponding to predefined transaction types. You will also find two lists pertaining to **Watched Strings** and **Watched Prices**.

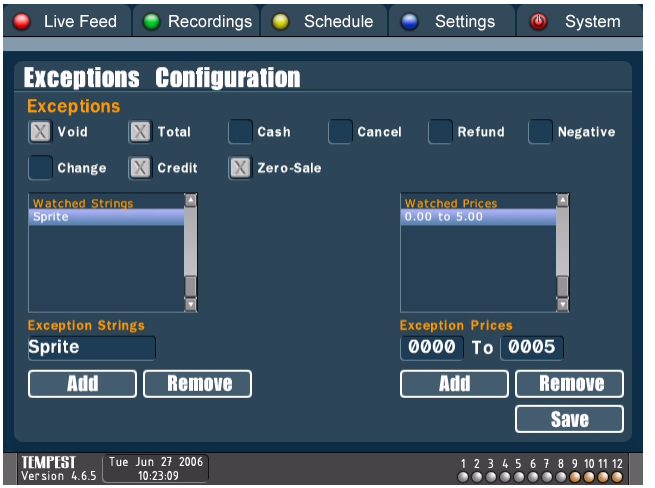


Figure 56. Exceptions Configuration Sub-Menu

3. If you would like to search in a specific price range, enter the starting and ending amount in the **Exception Prices text boxes** and click the **Add button**. The price range that you added will appear in the **Watched Prices list**. You can enter multiple price ranges to broaden your search.
4. If you would like to search for specific text within your transaction, you may enter the text string in the **Exception Strings textbox** and click the **Add button**. The text string that you added will appear in the **Watched Strings list**. You can enter multiple text strings to broaden your search.
5. After you have selected the necessary filters, click the **Save button**.

Exception reports get generated every night for the previous day for up to 10 days prior to the current date.

To retrieve exception reports:

1. Navigate to the **Recordings > Point of Sale sub-menu**.

2. Click the **Ex. Reports** (Exception Reports) **button**. The DVR will begin retrieving the generated exception reports. Once the exception reports are retrieved, all the days that have reports associated with them will be highlighted, as shown in Figure 57.

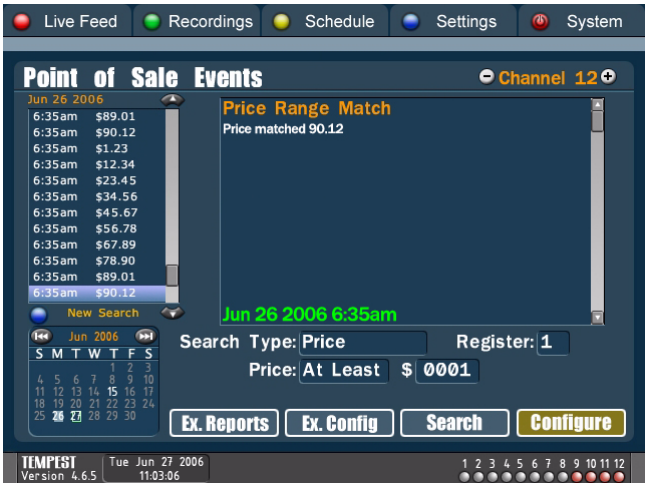


Figure 57. Exception Reports Display

3. Select a date from the **Calendar**. If there is an exception report associated with the specified date, the transactions from this report will appear in the list on the left side of the menu.
4. Select a transaction to view its details. A brief description of the transaction will be shown in the display window on the right side of the menu.
5. Double-click on it with the mouse or press enter with the keyboard/ remote to playback the video that is associated with the particular transaction.

2.10.4 POS Search Functionality

Since the DVR only stores 10 days worth of exception reports, really old transaction cannot be viewed using an exception report. Exception reports also get generated nightly, which means most recent transaction are likewise not viewable. In order to access all of the POS information that is stored on the DVR, you would need to use the search functionality of the POS interface.

To use the search functionality of the POS interface:

1. Navigate to the **Recordings > Point of Sale sub-menu**.
2. Select the **Search Type**. This can be a search for a specific text string, a transaction or a price.
3. Select the register to run the search on.
4. Enter the search criteria.
5. Click the **Search button**. The search will begin and once it has completed, the "Searching" indicator will disappear, as shown in Figure 58.

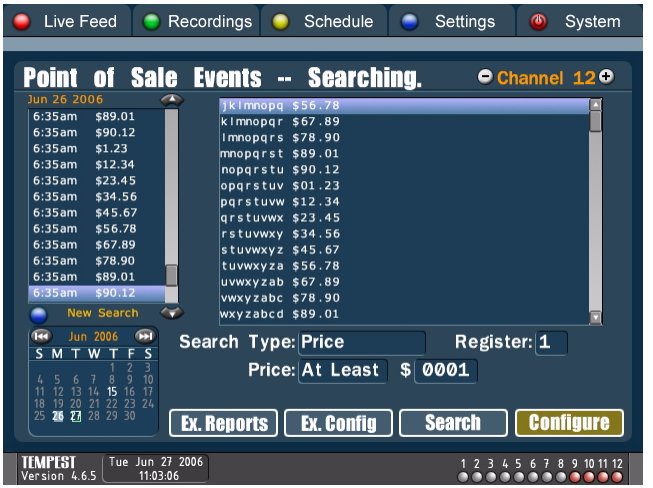


Figure 58. POS Event Search

6. Once the results are returned, you may select a transaction and double-click on it with the mouse or press enter on the keyboard/ remote to access the video that is associated with the transaction.

2.11 Restoring System Defaults

At times, you may wish to restore the system to its default state or erase all recorded video files on the hard disk. To restore the system to its default state, navigate to the System menu and select the Upgrade sub-menu. There is a section in the Upgrade sub-menu called Restore System Defaults. By clicking on the **Restore button** in this section, the following screen resembling Figure 59 will appear.

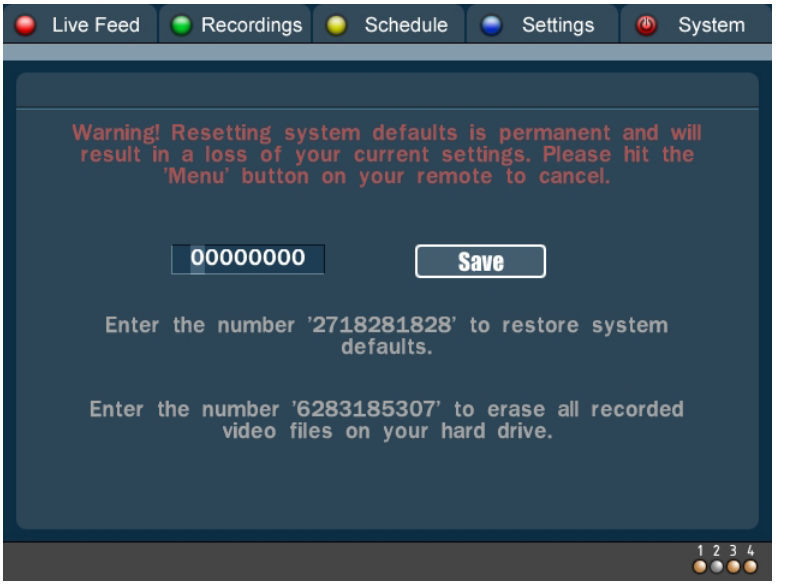


Figure 59. System Restore Menu

On this screen, two options are listed with unique confirmation numbers. If you wish to restore the system to its default settings, execute the following steps:

1. Enter the number shown on the first line with the numerical keypad of the remote. The number is 10-digits in length.
2. Select the **Save button**.
3. If the number was entered incorrectly, selecting the **Save button** will change the numbers you entered back to zeros.
4. If the number is correct, the DVR will reboot and the default settings will be restored.

If you wish to erase all recorded video files on the hard disk, execute the following steps:

1. Enter the number that is shown on the second line with the numerical keypad of the remote. The number is 10-digits in length.
2. Select the **Save button**.
3. If the number was entered incorrectly, selecting the **Save button** will change your entered numbers back to zeros.
4. If the number is correct, the DVR will reboot and previously recorded video files will be deleted.

Warning: Note that restoring the system defaults and/or erasing all recorded video files on the hard disk drive is a PERMANENT action. A loss of your current settings and/or previously recorded files will result. If you would like to cancel your action before entering the confirmation number, hit the **Menu button** on your remote.

2.12 Upgrading the DVR Software

It is important to periodically update the DVR software with newer versions. Updating your software version allows you to benefit from new features and patch problems as they become known. There are two ways to upgrade your system: over the network, and using an Update CD. Some update versions are only available by CD.

2.12.1 Upgrading via Network

To upgrade the DVR software over the network:

1. Confirm that the DVR is connected to a network and has internet access.
2. Navigate to the **System menu** and down to the **Upgrade sub-menu**, as shown in Figure 60. Enter the IP address of the remote server where the upgrade software resides. If you are not sure, contact your dealer for support.

Figure 60. Upgrade Menu

3. After you have entered the IP address, press OK on the **Update button** to begin updating. The progress bar will indicate how the upgrade is progressing and also if there are any errors during the upgrade. If the upgrade is completed successfully, the server will automatically restart to make the changes take effect. If the

upgrade fails for some reason, an error message will be printed to the screen so that you can correct the problem and try the upgrade again.

2.12.2 Making a Custom Install CD

You can save your current system settings to a custom install CD in the **Upgrade menu** using the supplied **Recovery CD** (green disc). It is a good idea to make a custom install CD when you are done configuring your DVR when you are setting up your DVR. If in the future your DVR begins having problems, you can use the recovery CD to reinstall your DVR. The recovery CD will save your current system settings, but **will not save your recorded video files**. To build a custom install CD:

1. Navigate to the **Upgrade sub-menu** under the **System menu**
2. Insert a writable CD into the CDROM tray on the DVR
3. Press the **Burn button** at the bottom of the Upgrade page
4. The DVR will now burn your custom install CD. In the future, you can use your CD to reinstall your system using the instructions in the next section.

2.12.3 Upgrading via CD

It is also possible to update or reinstall the DVR software using an Tsunami™ installation CD. The latest installation CD can be obtained from your DVR vendor. To update or reinstall the DVR software using an installation CD, execute the following steps:

1. Insert the Tsunami™ installation CD into the CD-ROM drive
2. Turn on or reboot the DVR.
3. The DVR will boot from the CD into an install menu. On this menu, there are two options, *Install* and *Update.* Installing will re-install a fresh version of the software with default settings, erasing all previously recorded files and settings. Updating the software will install only the new components, keeping previously recorded files and settings. The install progress will be shown in the progress bar, shown in Figure 61.

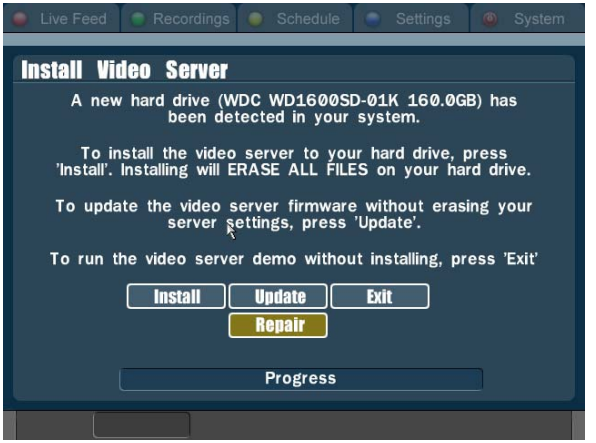


Figure 61. Tsunami™ Installation Menu

4. After the install has been completed, a completion message will appear on the screen, and the installation CD will automatically be ejected. Remove the installation CD from CD-ROM tray, then press any key on the remote to reboot the DVR.

Warning: Reinstalling the Tsunami™ DVR software will erase all previously recorded files and settings. Please proceed with caution.

2.13 Hard Drive Repair Utilities

The Tsunami software comes with utilities to diagnose and repair filesystem and hard drive related errors. It can be used to repair damages to your DVR's firmware or storage space, or to scan your hard drives for physical damage. If a hard drive in your DVR is physically damaged, then the only solution is to have the defective hard drive replaced. A filesystem corruption on your DVR on the other hand, can be repaired. Filesystem corruptions are usually caused by a power loss or by shutting down the DVR improperly.

To begin using the hard drive repair process:

1. Insert the red Tsunami Installation CD into the DVR's CD-ROM/DVD-ROM drive.
2. Turn on or reboot the DVR.
3. At the installation screen, shown in Figure 61, select and press the **Repair button**. This will bring you to the **Hard Drive Repair Utilities menu**, shown in Figure.

Figure 62. Hard Drive Repair Utilities Menu

4. In the **Filesystem selector**, select the filesystem you would like to scan or repair. To check your entire DVR, you will need to select and run each possible option separately.
   - Select **Firmware** if you would like to attempt to repair potential damage to your DVR's firmware. Damage to your DVR's firmware can cause your DVR to fail to boot up or to behave correctly. Note that an Update or Install via CD will also repair your DVR's firmware and may be a more complete option.

- If you want to scan/repair your DVR's storage space, select the appropriate drive (e.g. "**1st SATA**" will scan the first hard drive, "**2nd SATA**" will scan the second one, etc.).

5. In the **Action selector**, select the type of scan/repair option that you want to perform.
   - Select **Block Check** to scan your hard drive for physical damage. This option will take a while, but if you have the time it is a good idea to run first, because the repair options will not work on a physically damaged hard drive.
   - Select **Scan** to passively scan your filesystem for errors. This option will check for errors, but will not repair them.
   - Select **File Check** to repair basic filesystem problems.
   - Select **Rebuild** to repair more extreme filesystem problems.
   - Press the **File Check button** to begin the scan/repair.

Chapter 3 *Interceptor™ Introduction*

Quick Index

Summary

Interceptor™ is a powerful remote client software application that allows you to interact with up to sixteen DVRs and 256 cameras using a Windows® based PC. With Interceptor™ running on a personal computer, you can connect to a DVR over the network and access a variety of powerful capabilities:

- Monitor live cameras in real time.
- Record the live feed from the cameras onto your DVR or PC
- Watch previously recorded video clips.
- Set motion detection triggered recording.
- Configure a variety of system settings on your DVR

3.1 Getting Started with Interceptor™

3.1.1 System Requirements

Prior to installing the Interceptor™ remote video access software on your PC, make sure that your PC meets or exceeds the following requirements:

- Microsoft® Windows® XP, Windows® 2000, or Windows® 98
- Pentium III, 1GHz
- 256 MB RAM
- A high-speed LAN or Internet connection
- Display resolution of 1024x768 or higher, 16-bit color
- Graphics Card acceleration for DirectX®
- 3 button mouse with wheel scroll button

Please note that the PC video display refresh rate is a function of the type of PC used. A powerful PC will support higher refresh rate and multiple servers. For optimal performance, use 1GB of RAM or more, and a dual core processor, such as a Pentium D, Core Duo, or Athlon 64 X2.

3.1.2 Installing the Interceptor™ Software

To install the Interceptor™ Software, follow the instructions below:

1. Log onto your PC with Administrator privileges
2. Insert the Interceptor™ CD into the CD-ROM drive
3. The setup process, resembling that of Figure 63, should automatically begin once the CD is inserted. If not, use Windows® Explorer to browse the CD and select the Setup.exe file
4. Follow on-screen instructions

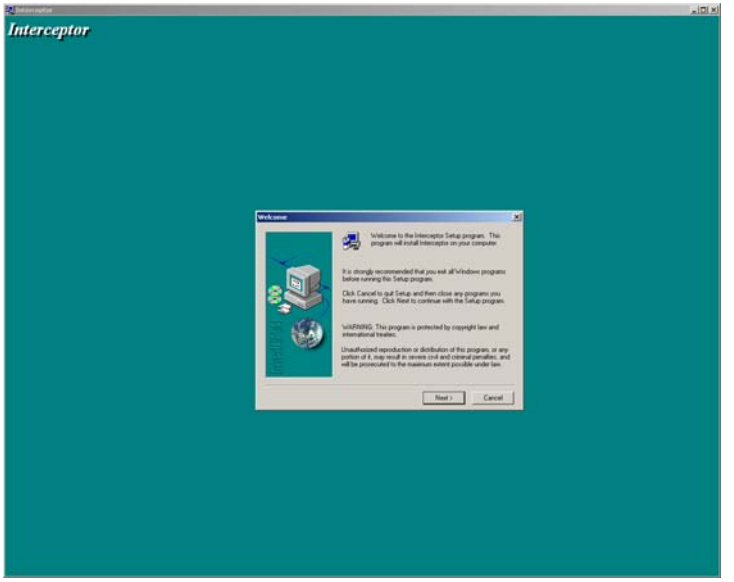


Figure 63. Interceptor™ Setup Screen

The installation procedure creates a separate group for the Interceptor™ software. The icon for the Interceptor™ software will appear in this group.

3.1.3 Running the Interceptor™ Software

1. Log onto your PC with Administrator privileges.
2. Double-click the Interceptor™ icon in the Interceptor™ group. Interceptor™ will proceed to load. Once loaded, you will see the Interceptor™ main screen, resembling that of Figure 64.
3. Add the DVR that you wish to connect to the Server list (See "Adding a Server" on page 94).

Connect to the Server by right clicking in any Interceptor™ display window and selecting the server.

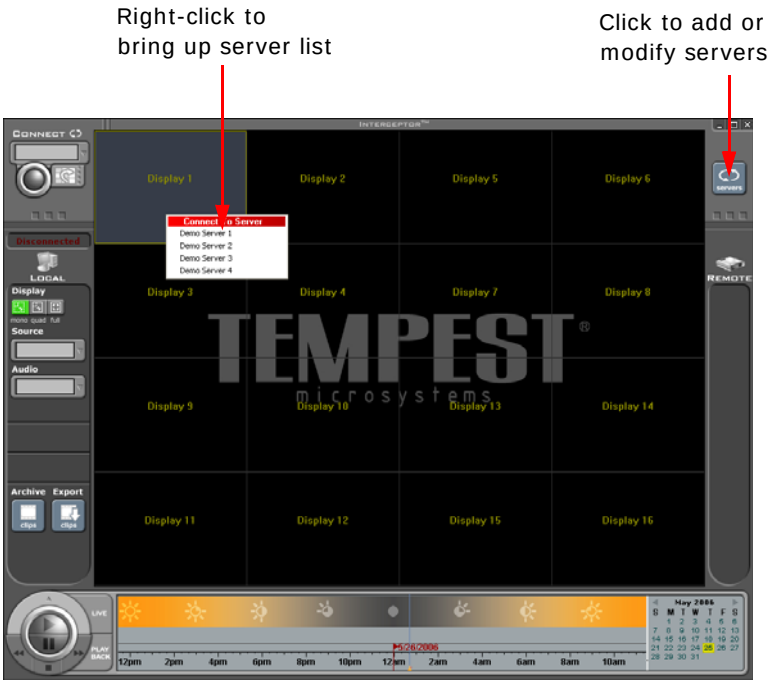


Figure 64. Connecting to a Server

3.2 Functional Overview

The Interceptor™ client software is designed for accessing high resolution, real-time video streams from network DVRs and other supported devices. Interceptor™ has an easy-to-use interface supporting advanced functionality. The software integrates a variety of features and functions for viewing, retrieving, and locating video data.

Interceptor™ works best when in 1024 x 768 pixel (or higher) screen mode supporting up to 16 servers and 256 cameras. The software has four main functional areas, shown in Figure 65, which include:

1. The **Local** panel on the left side of the screen.
2. The **Stage** in the middle with 16 independent displays. Each display window in the stage can support an independent connection to a particular server
3. The **Remote** panel on the right side of the screen.
4. The **Search Companion** panel on the bottom of the screen.

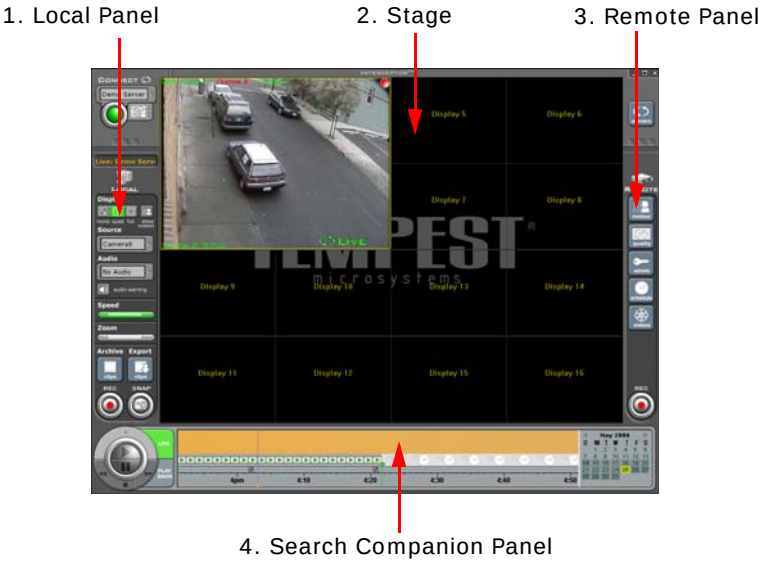


Figure 65. Interceptor™ Main Screen

3.2.1 Key Terms and Definitions

Stage - Consists of the large rectangular area to the right of the local control station and to the left of the remote control station. The stage is composed of individual windows called display windows where viewing of video data takes place.

Display Windows - Up to sixteen of these individual windows can be located within the stage. They are where viewing of video data takes place.

Panels - There are different panels located on the Interceptor™ main screen. A panel has either remote, local, or remote and local functionality.

Local - A local event or action has local functionality. It is one that is local to the user's computer, referred to as a desktop event.

Local Panel - The desktop user can configure how live video data will be displayed on his/her computer, and also manage local files, record locally, and take snapshots. The Local Panel will resemble that of Figure 68.

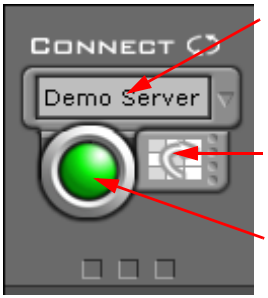
Remote - In contrast to a local event, a remote event changes the remote DVR's settings, affecting all users that connect into the DVR. It is referred to as a network event.

Remote Panel - Using the remote panel shown in Figure 69, the administrative user can change the motion detection settings used on the DVR, set the quality of the video being recorded on the DVR, administrate users of the DVR, schedule recordings, trigger alarm outputs, and manage remote videos on the DVR.

Search Companion Panel - The Search Companion panel, shown in Figure 70, allows the user to visualize recorded video files and system events, select files for playback, and manipulate playback settings. There are three elements in the Search Companion panel: the playback control buttons, the time line, and the calendar.

3.3 Connection Features

A connection is the link between the Interceptor™ software on your personal computer and your remote DVR. There are two elements associated with a connection in the Interceptor™ software. The first element is the server list **Connect button** grouping, located above the **Local** panel, shown in Figure 66. The second is the **Servers button** located above the **Remote** panel, shown in Figure 67.



Server List - Sets the server associated with the active display so that when you press the connect button, Interceptor™ will connect to that specified server.

Recall Button - Brings up the dialog that lets you add/recall display presets.

Connection Button - Initiates the connection to the server specified in the servers list. It is green when the connection is active.

Figure 66. Servers List and Connect Button

Servers Button - Brings up the dialog that lets you manage (add, edit, delete) the servers list.

Figure 67. Servers Button

Note: To use the Interceptor™ Client Software with your DVR, you must have both your DVR and PC correctly setup on the network. Your DVR and your PC must either both be connected to a network using an Ethernet cable, or both connected to a phone line using a modem. The networking can then be configured in the DVR software (See "Network Configuration" on page 54).

3.4 Local Panel Features

The **Local** panel resides to the left of the stage area and is designated with an icon of a personal computer, shown in Figure 68. A local event is an event that will not change the way the DVR performs, it only changes the way Interceptor™ looks and will not affect other DVR users. This means that any changes you make to a local function will only affect you.

There are no privilege requirements to use the **Local** panel. Some of the parameters on the **Local** panel might disappear if the active display is not connected to a DVR.

Mono Button - Sets the selected display to normal size.

Quad Button - Sets the selected display to quarter size.

Full Button - Sets the selected display to full size.

Show Motion Button - Allows you to show motion detection in the selected display.

Camera List (Channel) - Allows you to choose the source input channel of server to display.

Audio List (Channel) - Allows you to choose the audio input channel to stream.

Audio Warning - Performs an audible sound when motion is detected in the display.

Speed Slider - Allows you to adjust the frame rate of the live feed being displayed.

Zoom Slider (Local) - Performs a software zoom on a selected display by. A pan/tilt can be performed on the zoomed image by dragging the video display.

Export Clips Button - Opens a dialog that allows you to export an archive clip as a Windows® formatted video clip.

Archive Clips Button - Opens a dialog that allows you to view a locally saved video.

Snapshot Button - Saves a snapshot of the current frame of the selected display window to the desktop user's local file system.

Record Button - Records a movie onto the desktop user's local file system.

Figure 68. Local Panel

3.5 Remote Panel Features

The **Remote** panel resides to the right of the stage area and is designated with an icon of a DVR, shown in Figure 69. A remote event is an event that will change the way the DVR performs. This means that any changes made to a remote function will affect any other user that is connected to the same DVR.

Only the administrator(s) are authorized to use this panel. The **Remote** panel will become deactivated for users with view only privilege.

Motion Button - Opens Motion Manager, which allows you to set custom motion detection parameters.

Quality Button - Opens Quality menu, which allows you to set the image quality of the recorded clips.

Admin Button - Opens Admin menu, which allows you to administrate the users for the DVR.

Schedule Button - Opens Schedule Manager, which allows you to manipulate the recording schedule of the video sever.

Videos Button - Opens up File Manager, which allows you to manage movie files stored on the DVR.

PTZ Button - Opens up the PTZ remote control.

Alarm Button - Opens up Alarm output controls.

Record Button - Starts the DVR recording immediately.

Figure 69. Remote Panel

3.6 Search Companion Features

The panel at the bottom of the stage area, shown in Figure 70, is known as the **Search Companion** panel (See "The Search Companion" on page 116). It can

be associated with the local PC or the remote DVR depending on the state of the active display. That is if the active display is not connected to a DVR the **Search Companion** panel will be associated with the local computer. If the display is connected to a DVR, it will be associated with the DVR that it is connected to.

Figure 70. Search Companion Panel

Features that are associated with the Search Companion panel include:

- **Play Button -** Plays the selected movie clip.
- **Pause Button -** Pauses the selected movie clip.
- **Stop Button -** Stops the selected movie clip.
- **Rewind Button -** Rewinds the selected movie clip.
- **Fast-Forward Button -** Fast forwards the selected movie clip.
- **Time-Line -** Displays system logs and video clips for playback. The time range shown in the time line can be changed by clicking and dragging the mouse, and zoomed in and out using the scroll wheel on the mouse. Clips in the time line can be clicked to be played back.
- **Calendar -** Shows the current day. It is also used to change the day in the time line.

3.7 Connecting to a Remote Server

To connect to a remote server using the Interceptor™, you must:

1. Add a server with network/dial-up and login information.
2. Connect using either the short-cut method (See "Short-Cut Connection" on page 99) or menu-based method (See "Menu-Based Connection" on page 99).

3.7.1 Adding a Server

In order to view video, a server must be added first. Servers may be added in the "Configure Remote Servers" window, which may be accessed by clicking the **Servers button**, as shown in Figure 71. This dialog functions as a server manager. It maintains the list of all the servers that can be connected to over the network.

Figure 71. Servers Button and Configure Remote Servers Dialog

> ***Note:*** The server list is local, so only the servers that the desktop user adds will appear in the server list on that computer. Other desktop users connected to the network can add servers to their server list, but these too will remain local to their desktops.

The Server dialog has a scrollable menu box where the list of servers is displayed. At the bottom of this box are two buttons labeled **Add** and **Delete**. By clicking on Add, you will bring up the *Add Server Wizard*. The add server dialog is shown in Figure 72.

Figure 72. Add Server Dialog

Use the following steps to add a server on a particular desktop PC:

1. Click the **Add button** with the mouse. A small dragable window labeled *Add Server Wizard* will pop up, as shown in Figure 72.
2. Using the keyboard, type a name into the textbox, which is used to describe the server you are connecting to. Give it a creative, purposeful name in order to distinguish it from other servers added later on. Then click **Next**.
3. On this menu, two methods of connection are shown, *Ethernet* and *Dial-up*. *Ethernet* applies to regular network connections, while *Dial-up* involves dialing directly into your DVR using a modem and a phone line. Using the mouse, select the corresponding method of connection for this particular server. If *Ethernet* was selected, continue on to step 4. If *Dial-up* was selected, continue to step 5.
4. If you wish to connect to the DVR using a registered host name, check the Remote Access Server checkbox (See "Configuring a Remote Access Server" on page 97). Enter the host name of the machine in the Host Name text field. If a Remote Access Server is not used, uncheck the Remote Access Server checkbox and enter the IP Address in the field labeled IP Address. The IP Address is what identifies a particular server. Giving an IP Address is analogous to giving a telephone number. When the right number is called, the server answers. After you enter the IP information, enter the Port number. The Port number specifies which Port the DVR can be connected on. If you are not sure which port to use, enter 5005 for this field. Now click **Next** and go to step 6.
5. Enter the Phone Number of the corresponding server following the format 1-800-555-2121. In this case, 800 being the area code and 555-2121, the phone number. Click **Next**.
6. Finally, enter either the administrator or the viewer username and the associated pin number. The default username is admin and the default pin number is 123456. Now click **Finish**.

3.7.2 Editing a Server

If you wish to change some of the information for a DVR connection, you can do so without creating a new one. You can modify the connection settings using the Configure Remote Server Settings dialog.

1. Click on the **Servers button**.
2. Select the server you wish to modify from the servers list by clicking on it. This will populate the fields below the list with the current values of the server.

3. Modify the server settings by clicking in the textbox appropriate to the settings you wish to change, and make your changes.
4. Click **OK** to save your changes. If you do not wish to save your changes click on the **Cancel button** to discard your changes and exit the dialog.

The changes will take effect immediately. You can now connect to that DVR using the newly implemented settings.

3.7.3 Deleting a Server

To remove a server from the server list:

1. Click on the **Servers button**.
2. Select the server you wish to modify from the servers list by clicking on it.
3. Click the **Delete button** to the right of the servers list. This will remove the DVR from the servers list.
4. Click **OK** to save the deletion and exit the dialog.

> ***Note:*** Deleting a DVR from the server list is a PERMANENT action. Proceed with caution!

3.7.4 Configuring a Remote Access Server

To configure the Interceptor™ client software to connect to a server machine using a host name rather than an IP address, the correct Remote Access Server must first be set (the same server that your DVR uses). Usually, you should use the default Remote Access Server settings and never change these.

To specify a Remote Access Server:

1. Click on the **Servers button**.
2. Click the **Remote Access Server button**.
3. Enter the IP for Remote Access Server under the Host Name Server text field.
4. Click the **OK button**.

3.7.5 Adding and Recalling Display Presets

Display presets may be added and recalled in the Interceptor™ software. Adding a display preset will save the current state of the Interceptor™ software,

which include the position of all active connected servers in the Stage area and the cameras that each server is connected to. Recalling a preset will bring back all the connections that were saved in that particular preset.

To add or recall display presets:

1. Click the **Recall button** on the Connect panel, shown in Figure 66.
2. The *Interceptor™ - Display Presets* dialog, resembling that of Figure 73 will appear.

Figure 73. Display Presets Dialog

3. To add a new preset, you must first make sure you are connected to the servers/cameras that the preset is going to reflect. If you are not connected, click the **Cancel button** and exit out of the *Display Presets* dialog and connect to the desired servers and cameras. If you are connected, entered the Name and Description that you would like to use for this particular preset. Click the **Add button**.
4. To recall a saved preset, first select the Preset to recall. Then click the **Recall button**.

3.7.6 Short-Cut Connection

The easiest way to connect to a server is simply moving your mouse to a display window area, right clicking and selecting a server from the list that instantly appears, as illustrated in Figure 74.

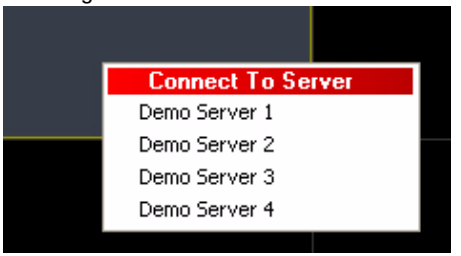


Figure 74. Short-cut Connections

Once this is done, a video display should appear in the designated display window. If Interceptor fails to initiate a connection to the server, an error message stating "Connection refused by server" will pop up. If the server does exist but there are no cameras connected to it, a blank blue screen will appear in that window.

3.7.7 Menu-Based Connection

You can also use the **Connect** panel to connect as shown in Figure 75. Click and hold the mouse on the text box, release on the server you wish to connect to. Notice the scrollable list that drops down contains all the DVRs added to Interceptor™.

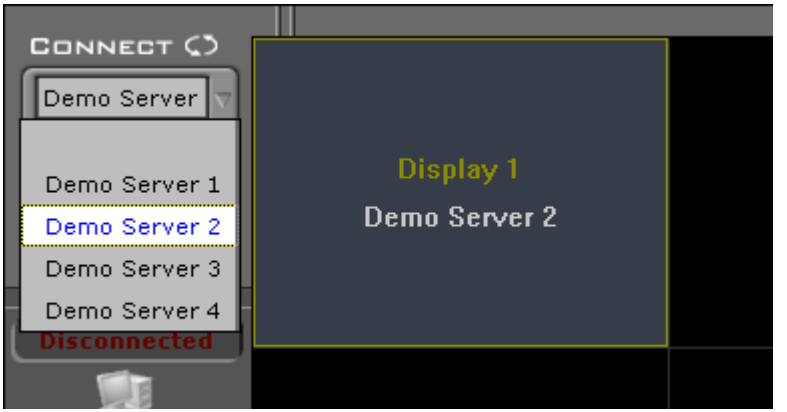


Figure 75. Connect panel - Server List

Now choose one of the displays, which are represented by sixteen small windows each labeled with a display number (Display 1 to Display 16) in the stage area. Selecting Display 1 will cause the live footage from the server to appear in the Display 1 window on the stage. Selecting Display 13 will result in footage being sent to the Display 13 window on the stage and so on. To select a Display, left-click the display window. This will make it active.

Now click on the **Connect button** as shown in Figure 76.

Figure 76. Connect panel - Server List and Connect Button

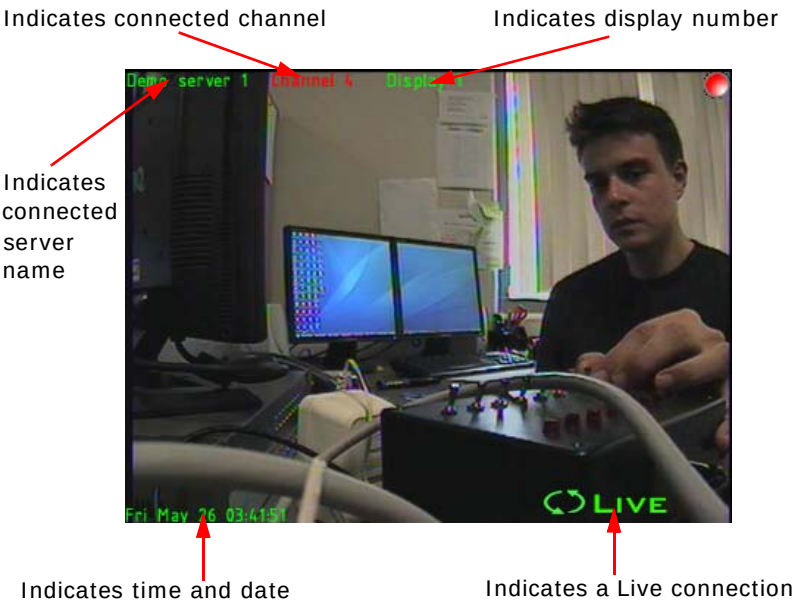


Figure 77. Live Video Feed

Live video and feed properties, such as those of Figure 77 should appear in the designated display window if the connection was a success. If Interceptor is unable to initiate a connection to the server, an error message stating "Connection refused by server" will pop up.

3.8 Controlling the Remote Video Display

The remote video display may be manipulated using the controls found on the **Local** panel in the Interceptor™ software. The controls in this panel will only affect the current user on their local desktop PC.

As shown in Figure 78, these controls include:

1. Mono/Quad/Full
2. Show Motion
3. Source
4. Audio Warning
5. Speed
6. Zoom

In order for any of these options to work, you must be connected to a server and that server needs to have a visible video output. The display to be manipulated must also be selected. Left clicking on a display window with the mouse will do this. If no window is selected, by default, Interceptor™ will automatically select the last display window that was opened.

Mono / Quad / Full Button - Defines the 3 different screen modes each display can have. Mono allows 16 different servers to be connected and viewed at the same time, as shown in Figure 79. Quad display takes up a quarter of the stage area, which allows 4 simultaneous feeds if each feed was to use quad mode, as shown in Figure 79. Full-size mode expands the display to encompass the whole stage area, shown in Figure 80.

Show Motion Button - Selecting this button will cause motion events to be displayed on the display window.

Source List (Cameras) - This list allows you to choose which source input to show in the active display window. To change cameras, click on the list and choose the camera to display.

Audio Warning - A sound will alert you when there is motion detected on the display.

Speed Slider - Allows you to adjust the frame rate (FPS) of the incoming video feed of the active display window.

Zoom Slider (Software) - Allows you to adjust the zoom, either by using the zoom slider or by using the mouse wheel while a display window is selected. By zooming in, you can also pan and tilt by dragging the mouse in the display window. However, if the display is not zoomed in, the tilt and pan parameters are disabled.

Figure 78. Display Controls

Figure 79. Mono/Quad Mode

Figure 80. Full-Screen Mode

The advantage of a larger display size is more detail. The smaller display size however, is useful for connecting to many servers simultaneously.

3.9 Controlling a PTZ Camera

Compatible Pan/Tilt/Zoom (PTZ) cameras may be controlled from a remote location using the Interceptor™ client software. If a PTZ camera is connected and configured correctly on the DVR (See "Configuring Cameras" on page 30), a PTZ icon will appear under the **Remote** panel of the Interceptor™ software when the camera is brought up in the display.

To control a PTZ camera:

1. Select the display with the PTZ camera.
2. Click on the **PTZ button**. A PTZ Remote will appear on the screen. The **PTZ button** and PTZ Remote is shown in Figure 81.

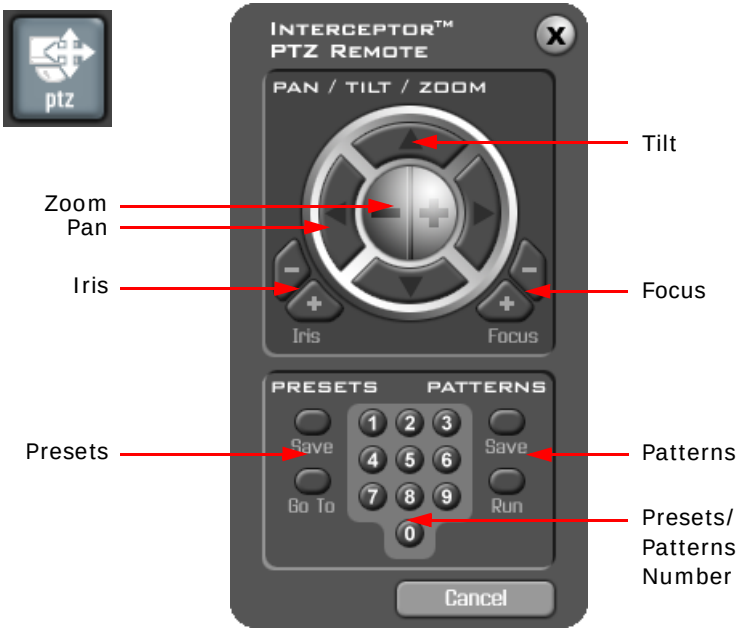


Figure 81. PTZ Button and PTZ Remote

3. The PTZ camera can then be controlled by using the buttons found in the PTZ Remote. These buttons include:
   - **Pan/Tilt -** Adjusts the pan and tilt of the camera.

- **Zoom -** Adjusts the zoom of the camera.
- **Iris -** Adjusts the iris size of the camera.
- **Focus -** Adjusts the focus of the camera.
- **Presets -** Controls used to save and go to user-defined locations. This control is used in conjunction with the Presets/Patterns Numbers. Save a preset by clicking the Preset Save button, then clicking one of the number buttons. Recall a preset by clicking the Preset Go To button then clicking the same number button.
- **Patterns -** Controls used to save and run user-defined patterns. This control is used in conjunction with the Presets/Patterns Numbers. Begin recording a pattern by clicking the **Pattern Save button**, then clicking one of the number buttons. Next move your camera around to the desired pattern of motion. When you are done, press the **Pattern Save button** again. Run the pattern by clicking the **Pattern Run button** then clicking the same number button.
- **Presets/Patterns Numbers -** Buttons used in conjunction with the Presets and Patterns controls.

A PTZ camera may also be controlled in the Interceptor™ software with a 3-button mouse (2 buttons + scroll-wheel). You may pan and tilt the camera by dragging on the display that corresponds to the PTZ camera. Zoom may be achieved by scrolling the scroll-wheel of the mouse.

3.10 Instant Recording

The Interceptor™ client software features instantaneous recording which allows you to record live video feeds or recorded clips at the click of a button. The instantaneous recording feature is divided into two functions, local and remote record. The local record function saves live video feeds or previously recorded clips to your local personal computer, while the remote record function saves live video feeds to the DVR's hard drive.

3.10.1 Recording to a Remote DVR

Use the following steps to make a remote recording:

1. Make sure there is a server connection.
2. Select the display where the live video you want to record is.
3. Click on the **Record button** in the **Remote** panel. Notice that a red dot will appear in the upper right hand corner of the display window on the stage, indicating that recording is in progress, as shown in Figure 82.

Figure 82. Remote Record Button and Remote Record

4. To stop recording, click a second time on the **Record button** and notice that the flashing red light on the stage disappears.

The recorded video is automatically saved to the hard drive of the DVR. See "The Search Companion" on page 116 for more information on playing back remotely recorded videos.

3.10.2 Recording to a Local Computer

Use the following steps to make a local recording:

1. Make sure there is a server connection.
2. Select the display where the live video you want to record is.
3. Click on the **Record button** in the **Local** panel. Notice that a red dot will appear in the lower right hand corner of the display window on the stage, indicating that recording is in progress, as shown in Figure 83.

Recording light in lower right hand corner indicates that local recording is in progress

Figure 83. Local Record Button and Local Record

4. To stop recording, click a second time on the **Record button** and notice that the flashing red light on the stage disappears.

The recorded video is automatically saved to the hard drive of your PC. See ”Local Video Clips” on page 111 for more information on playing back locally recorded videos.

3.11 Taking a Snapshot

The snapshot function stores a JPEG file to your local hard disk on your PC (rather than on a remote server) from the video images currently displayed on a selected display window.

To take a snapshot:

1. Click on the display window you wish to capture to make it active (It should have a highlighted frame around it when it is active).
2. Click on the **Snap button**, shown in Figure 84, which is located in the **Local** panel.

Figure 84. Snapshot Button

After you have taken a snapshot, the image will be stored on your computer's hard drive. Still images (snapshots) are recorded to the folder where the Interceptor™ program has been installed (e.g. C:\Program Files\Interceptor\images\Tue May 30 14;15;46 2006.jpg).

To view the JPEG image use Explorer to locate the file and then open it with a viewer program (e.g. Internet Explorer.)

3.12 Locating a Video Clip Using File Manager

3.12.1 Remote Video Clips

1. First make sure there is a connection to the DVR with the file you wish to view. Click on the display window associated with that server to make it active.
2. Click on the **Videos button** to open the *Interceptor™ - File Manager* dialog, shown in Figure 85.
3. Select the file to open for playback by clicking on it to make it active (this will make the background around the file turn dark blue).
4. Click on the **Open button**, this will open the file in the active display and exit the *File Manager* dialog. Use the **Playback buttons** to manipulate the playback.

Figure 85. Videos Button and File Manager Dialog

> ***Note:*** The DVR will record over old video clips if the space on the hard drive is depleted. To avoid this, remove old video clips using the *File Manager* or change the hard drive when it reaches its maximum capacity.

3.12.2 Local Video Clips

Video that is recorded locally using the **Local Record button** is saved directly to the PC's hard drive of the user. Use the **Archive Clips button** on the **Local** panel or choose a clip from the time line to view a previously recorded video. It is important to note that an unconnected display window must be selected or the **Archive Clips button** will not become activated.

To view a locally recorded file:

1. Select the display window on the stage to view the recorded file. The display window must not be connected to a server (it must be empty).
2. Click on the **Clips button**, shown in Figure 86, or choose a clip from the time line.
3. A window similar to that of Figure 86 will pop up. If video data was recorded on the user's local hard drive, a list of segments will appear listing the record time, date, and length of video.
4. Select a movie file and click the **Open button** to view it on the stage. Think of it as having gone into a movie library and deciding which movie to rent.
5. You will notice that a new video will begin to play in the display window on the stage that was connected to that particular server.

Figure 86. Archive Clips Button and File Manager Dialog

Following this step, you will notice that the date and time of the video feed currently being viewed will appear in the bottom left hand corner of the display window as shown in Figure 87.

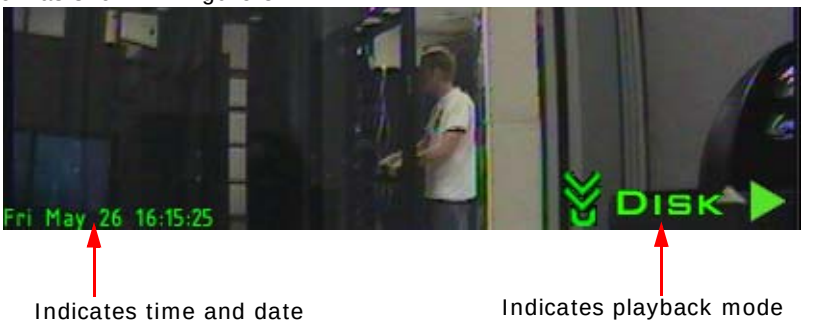


Figure 87. Display Playing a Previously Recorded Video Clip

3.13 Deleting a Video Clip

1. First make sure there is a connection to the DVR with the file you wish to delete. Click on the display window associated with that server to make it active.
2. Click on the **Videos button** to open the *Interceptor™ - File Manager* dialog, as shown in Figure 85.
3. Select a file and make it active by clicking on it with the mouse (this will make the background around the file turn dark blue).
4. Click on the **Delete button** to delete the file. The file will disappear from the list.
5. Click Exit to leave the dialog.

Warning: Deleting a video file is a PERMANENT action. Delete video files with caution!

Chapter 4 *Interceptor™ Advanced*

Quick Index

Summary

The Interceptor™ remote client software also includes many advanced features that makes system administration and file management easy. In this chapter, some of the main topics that we'll introduce include:

- Locating video clips and events using the Search Companion.
- Customizing motion detection zones for different cameras.
- Setting up recording schedules for different cameras.
- Exporting/transporting video clips to the local PC.

4.1 The Search Companion

The Search Companion panel of the Interceptor™ client software is the horizontal bar at the bottom of the Interceptor™ screen and consists of the time line, calendar and video playback controls (See ”Search Companion Features” on page 92). With the Search Companion panel, you can easily search and locate specific events and the time that they occurred. These events include:

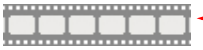
- Motion/alarm events
- User login attempts
- Schedule/network/time change
- Camera activation/deactivation
- DVR start/shutdown
- Upgrade event
- Recorded video clips
- Scheduled recording events

The following sections will help familiarize you with the icons used to distinguish between these events.

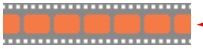
4.1.1 Locating Video Clips

Previously recorded video clips can be retrieved using the time line and calendar of the Search Companion. Different states of the video clips, such as those that are viewed, unviewed, and marked for deletion are represented by different sets of icons. The following icons, shown in Figure 88, are used on the time line to differentiate between these states.

Unviewed Video Clip - Video clip that has not been viewed.



Viewed Video Clip - Video clip that has been viewed.



To be Deleted Video Clip - Old video clip that is marked for deletion.

Normal Schedule Video Clip - Video clip representing a schedule for normal recording.

Motion Schedule Video Clip - Video clip representing a schedule for motion recording.

Figure 88. Video Clip Icons

Additionally, icons that are used to signify different recording event types are as follow:

Motion Event - Signify that the recording was triggered from a motion detected event.

Normal Event - Signify that the recording was triggered by a schedule.

Figure 89. Recording Event Icons

To retrieve a video clip for playback:

1. Activate a display window on the stage by clicking on it. Remember that to view local video clips, you must first activate a display that is not connected to a DVR.
2. Find the day the recording was taken by using the calendar. Use the arrows by the month to either increment or decrement the month. Once you have the proper month click on the day the recording was taken. This will highlight the day with a yellow outline and bring that day up in the time line, as shown in Figure 90.

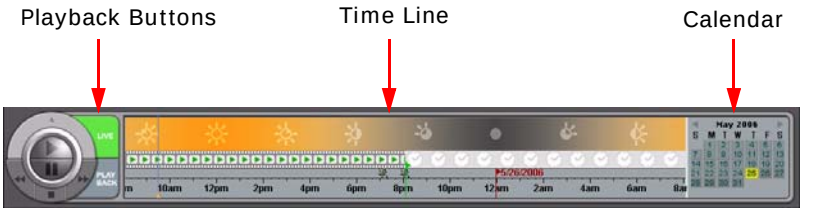


Figure 90. Search Companion panel

3. Use the mouse to drag the time line to locate the approximate time of the beginning of the recording. Each day on the time line is separated by a red flag. Video clips, like those described in Figure 88 will be shown on the time line if recordings are present. When the mouse hovers over such clips, the cursor turns into an icon of an eye.
4. Use the wheel on the mouse to zoom into the time line. Locate the beginning of the movie and click on it. This will start it playing in the active display window. Notice in Figure 91 that the green flag indicates the progression of the playback of the video clip on the time line.
5. Use the **Playback buttons**, shown in Figure 92, to manipulate the playback of the video clip.

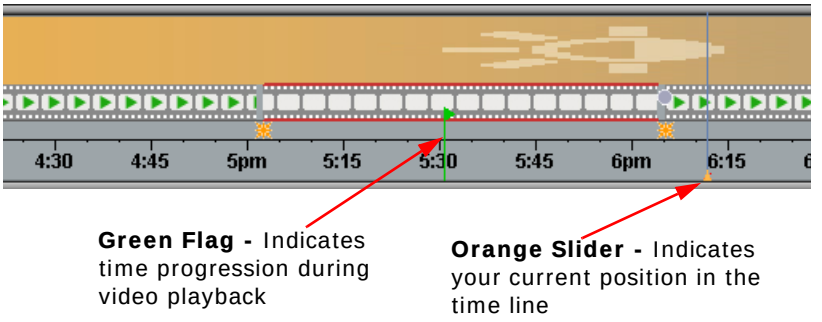


Figure 91. Time-Line (Zoomed In)

6. Click on the **Live button** to return to live video feed.

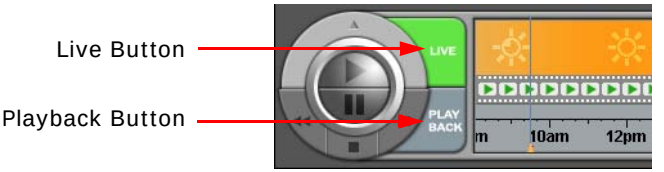


Figure 92. Playback Buttons

> ***Note:*** Previously recorded videos (local or remote) will display the word *Disk* in the bottom right of the display. You can distinguish between a live and a previously recorded video feed by the text present in the bottom right of the display, shown in Figure 77 and Figure 87.

4.1.2 Locating DVR Events

DVR events, such as login attempts from different users can also be located using the Search Companion. Different DVR events can be distinguished from each other by their own unique icon on the time line, shown in Figure 94.

To locate DVR events using the Search Companion:

1. Activate a display on the stage and connect to your DVR.
2. Using the calendar and the time line, locate the DVR event.

A short description of the event and all related information will be shown when the mouse is hovering over the event icon as shown in Figure 93.

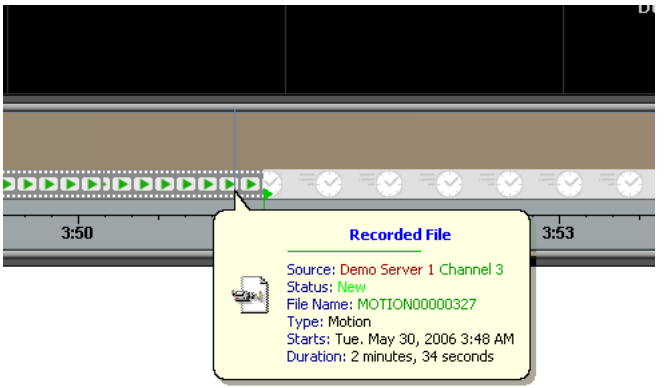


Figure 93. Event Description

To be Deleted Video Clip - Indicates the start position of old video clips that are marked for deletion.

User Login - Indicates a successful/unsuccessful user login attempt to the DVR.

Camera Change - Indicates a loss of signal from a camera on the DVR.

Network Change - Indicates the change of network settings on the DVR.

Record Schedule Change - Indicates the change of a recording schedule on the DVR.

Password Change - Indicates the change of password(s) on the DVR.

Time Change - Indicates the change of time on the DVR.

DVR Startup - Indicates the DVR was started at the time shown.

DVR Shutdown - Indicates the DVR was shutdown at the time shown.

Upgrade - Indicates an update was done at the time shown.

Figure 94. DVR Event Icons

4.2 Customizing Motion Detection

By default motion detection is set to detect motion across the whole display area. To save hard drive space and time you may wish to customize motion detection to suit your needs.

To start, make sure that there is a connection to a DVR. Then select the corresponding display window on the stage for that server. Click the **Motion button** in the **Remote** panel, as shown in Figure 95.

Figure 95. Motion Button and Motion Manager Dialog

A window titled *Interceptor™ - Motion Manager* will pop up as shown in Figure 95. Select the Motion Options as follows:

1. Manipulate the red lasso by dragging with the mouse. Use this to choose what regions you wish to have motion detection. Lets say, for example, you have a camera focused on the street in front of your store. You don't want to trigger recording when birds fly by in the sky, so you make the motion sensitive area smaller by lassoing only the street, building, and sidewalk.

2. Choose the sensitivity, which is how much movement creates a motion trigger, by sliding the bar labeled Sensitivity with the mouse. Again, let's say you have a camera focused on the street in front of your store. You don't want to trigger recording when the trees gently sway in the breeze. So you make the sensitivity just low enough to avoid triggering motion detection when the trees sway but high enough to capture any other activity.
3. Choose the size, which is how large an object needs to be to trigger a motion event, by sliding the bar labeled Size with the mouse. In this case, let's say you have a camera focused on the street in front of your store. You don't want to trigger recording when birds fly by in the sky but you don't want to leave out the sky just in case a helicopter should land on your building. So you make the motion sensitivity size large enough not to capture the birds, but small enough to capture people, cars, and helicopters.
4. Click the **Apply button** with the mouse to make the settings take effect, and the **OK button** to exit the Motion Manager dialog.

> ***Note:*** To leave this dialog (or any of the other dialogs described in this chapter) without keeping any changes, click on the **Cancel button**. This will exit the dialog without making any changes.

The **Motion Detected button** will flash when a motion event is recognized. The object that is causing the event will also be highlighted in red. This is useful to help you calibrate the size and sensitivity of your custom motion detection scheme.

4.3 Configuring Remote Video Quality

Configuring remote video quality is also made possible using the Interceptor™ Client Software. The video quality of a feed may be adjusted to allow for a better picture or for a faster connection. It is important to note that a high video quality will provide a sharper image, but it will also require more network bandwidth during the transmission and recording of video streams. On the other hand, a lower video quality will take up less space and be faster to transmit, but will lose details.

To set the remote video quality, make sure that there is a connection to a server and select the corresponding display window on the stage for that server. Click the **Quality button** in the **Remote** panel, as shown in Figure 96.

A window titled *Interceptor™ - Configure Server Video Quality*, resembling that of Figure 96 will pop up. Select the Quality Options as follows:

1. Select the Image Resolution by clicking on the textbox. A drop down menu will appear with the possible resolutions. Note that the higher the resolution you choose the more space it will take up on the DVR hard drive.
2. Select the Image Quality by moving the slider to the right or left. Note how this affects the sample image in the window and the text box displaying the image size. Shifting the slider to the left will decrease the image quality while shifting to the right will increase it.
3. Click the **OK button** with the mouse to make the settings take effect and exit the Configure Server Video Quality dialog.

Figure 96. Quality Button and Configure Server Video Quality Dialog

Any saved changes you make will take effect immediately and will also affect the quality of the live feed displays. Also remember that any changes you make here will affect any other users watching live video from this server.

4.4 Remote Scheduling

4.4.1 Adding a Recording Schedule

To schedule a video recording, first make sure there is a connection to a server. Then select the corresponding display window on the stage for that server. Click the **Schedule button** in the **Remote** panel, as shown in Figure 97.

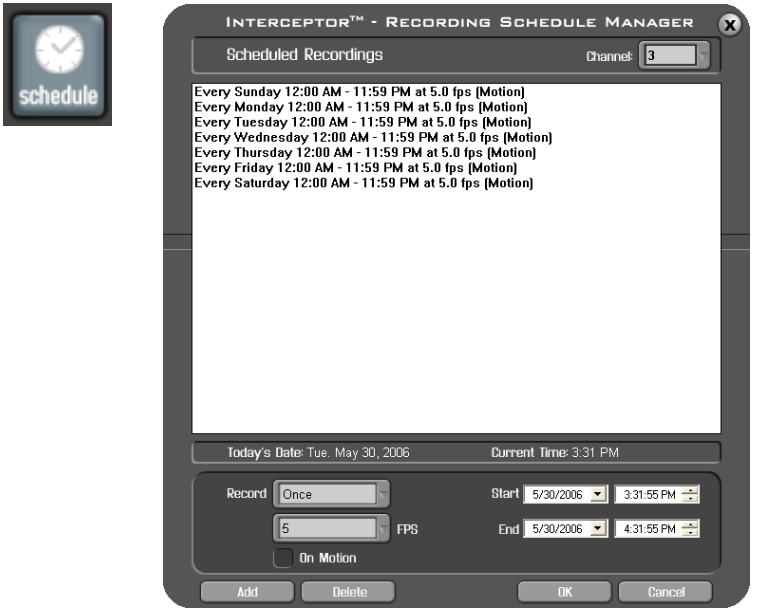


Figure 97. Schedule Button and Schedule Manager

A window titled *Interceptor™ - Recording Schedule Manager*, resembling that of Figure 97 will pop up. Select the Record Settings Options as follows:

1. Select the channel of the camera you want to change the scheduling for, or select channel **All** to have the scheduling changes affect all cameras.
2. There are three recording parameters: Record Once, Record Daily, and Record Weekly. Depending on your surveillance needs, the method of recording will vary.
   - **Record Once** - Record during the specified time period once.

- **Record Daily** - Record during the specified time period every day between the start date and the end date.
- **Record Weekly** - Record during the specified time period once a week between the start date and the end date.

3. The second parameter in record options is a drop down menu where the duration and record frame rate (the higher the frame rate, the more storage required on the DVR) can be set. A storage rate of 5 fps is recommended.
4. The **On Motion** is a toggle button that if set will only record motion events during the specified time period. This option is recommended if you are trying to minimize the hard drive space used.
5. Click the **Add button**. Observe that the Record information appears in the display window labeled Pending Recordings.

To save all the changes you have made to the recording schedule and exit the dialog, click on the **OK button**. To exit the dialog without saving any of the changes you have made, click on the **Cancel button**.

4.4.2 Removing a Recording Schedule

1. Select the recording time in the Pending Recordings box with the mouse, turning the background around the time blue.
2. Click on the **Delete button**.
3. Click on the **OK button** to save the deletion and exit the dialog.

4.5 Point of Sale

Similar to the Tsunami Video Server software, Interceptor™ also supports three main features relating to point of sale. These features include:

- Overlaying transaction details on top of live and recorded camera feeds.
- Creating exception reports based on a set of specifications for up to 10 days preceding the current date.
- Searching all transactions up to date based on various search criteria.

4.5.1 Viewing POS Overlay

Once connected to a DVR with a valid POS configuration, you can view overlaid POS transactions on your live or pre-recorded feed.

To view the POS overlay:

1. Right click on display with video feed.
2. Select **Display POS N**, where N is the register number you want to display, as shown in Figure 98.

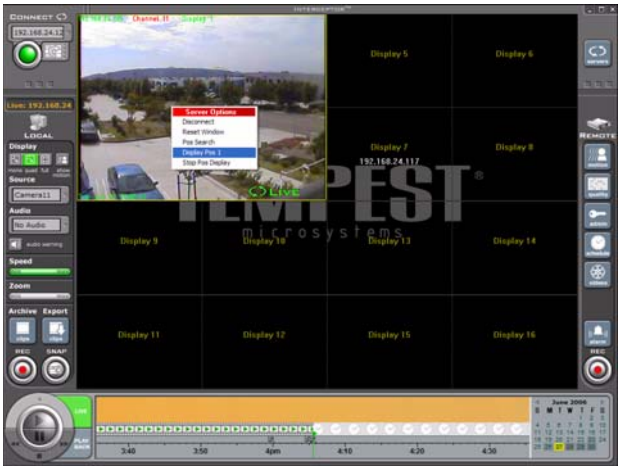


Figure 98. Selecting POS Overlay in Interceptor

3. POS information will begin to appear in the left hand corner of the display. If you wish to cancel the display of POS information, you can right click on the display and select **Stop POS Display**.

These actions can be performed in both live and playback mode. Note that in playback mode, the POS transactions displayed are those that were recorded at the time the video was recorded.

4.5.2 Creating and Using Exception Reports

Custom POS exception reports can also be created and viewed in Interceptor™.

To create an exception report, use the following steps:

1. Connect to a server and a camera that has POS pre-configured.
2. Right click on the display that the connection was made and select **POS Search**. This will bring up the **Interceptor™ POS Manager** window.
3. Click on the **Config button**. This will bring up the **Interceptor™ Configure Exceptions** window, as shown in Figure 99.

Figure 99. Interceptor™ Configure Exceptions

4. Select the different exceptions to report and/or add a text string to the field labeled **Text Search** to track text in transactions. You may also watch for transaction within a specific price range by entering it into the **Range textboxes.**

5. Click the **Save button**.

To view an exception report, use the following steps:

1. Connect to a server and a camera that has POS pre-configured.
2. Right click on the display that the connection was made and select **POS Search**. This will bring up the **Interceptor™ POS Manager** window.
3. Click on the **Report button**. Interceptor™ will begin downloading exception report information from your DVR. A green scrolling indicator will show the status of the retrieval.
4. As Interceptor™ receives the report, it will begin to highlight the days on the calendar in green to designate that an exception report exist on that day.
5. If the day currently selected has a report associated with it, the transactions in this report will be displayed in the left list box, as shown in Figure 100. If transactions appear in the left list box, you may select an entry to view a brief description of the transaction.

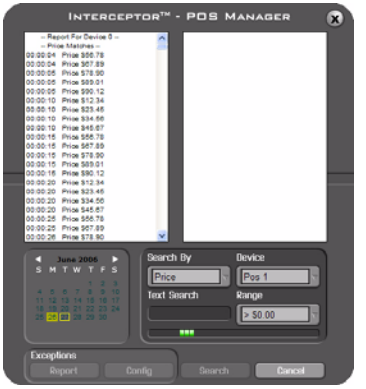


Figure 100. Interceptor™ POS Report

6. To view exception reports from another day, select the date and click on the **Report button** again.
7. Double-clicking on a transaction on the left list will bring up the corresponding recording (if any).

4.5.3 POS Search Functionality

POS searches in Interceptor™ works in a similar way as it does in Tsunami. In order to search POS data, you must first choose the search type and configure the search criteria that is associated with each type.

To search for POS transactions:

1. Connect to a server and a camera that has POS pre-configured.
2. Right click on the display that the connection was made and select **POS Search**. This will bring up the **Interceptor™ POS Manager** window.
3. Select the search type from the **Search By field**.
4. Select the register from the **Device field**.
5. Enter a combination of text string search in **Text Search** and/or price range search in **Range** as criteria for the search.
6. Click the **Search button**. Once the search is completed, the days for which the search matches will be highlighted in the calendar. Also, all the matches for the selected day will be displayed in the left list of the menu. In the right list, all of the transaction found for the selected day will be displayed.
7. If you decide to select another day to run the search on, you must click on the **Search button** again to bring up the new results.
8. Double-clicking on a transaction on the left list will bring up the corresponding recording (if any).

4.6 User Administration

To change user privileges, add a new user to the DVR, or delete a user from the DVR, use the User Administration dialog. Start by making sure there is a connection to the server and select the corresponding display window. Click the **Admin button** in the **Remote** panel, as shown in Figure 101.

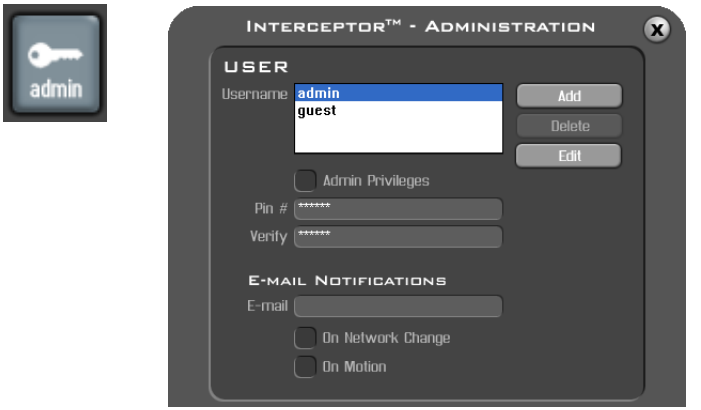


Figure 101. Admin Button and User Administration Dialog

A window titled *User Administration,* resembling to that of Figure 101 will pop up. Select the Admin Options as follows:

1. Select a user if you wish to edit or delete their profile, or new user to create a new user.
2. Click the **Admin Privileges button** if you wish to give this user Administrative privileges.
3. Enter or change the user's pin# and verify it. The user can change it later.
4. Click on the **Add** or **Del button** to add a new user or delete an existing user.

After you are finished adding/editing/deleting users click **OK** to save the changes and exit the dialog. If you wish to discard the changes click **Cancel**.

4.7 System Administration

A DVR may also be shutdown, rebooted, or upgraded from the Interceptor™ client software. To shutdown, reboot, or upgrade a DVR, make sure there is a connection to the server and select the corresponding display window. Click the **Admin button** in the **Remote Panel**. The User Administration dialog would appear (Figure 58). The System menu can also be found on the bottom of the User Administration dialog (Figure 59).

Figure 102. System Menu

To shutdown/reboot the DVR:

1. Click the **Shutdown** or **Reboot button**.
2. A dialog confirming your action will appear. Click **Yes** to continue or **No** to cancel.

To upgrade the DVR:

1. Click the **Upgrade button**.
2. A dialog requesting the Upgrade Server IP will appear. Enter the IP address of the upgrade server in the form 'upgrade=xxx.xxx.xxx.xxx;'.
3. Click **OK** to continue upgrade or **Cancel** to exit upgrade.

4.8 Exporting a Video Clip

Both locally or remotely recorded files can be exported as a Windows™ AVI format video file. Exporting a locally recorded file can be done using two methods. The first method involves using the **Export Clips button** on the **Local** panel, shown in Figure 103. The second method involves clicking the **Export button** on the selected file in the **Local** File Manager, which can be opened using the **Archive Clips button**, shown in Figure 86. Exporting a remotely recorded file can be done by using the **Export button** found in the **Remote** File Manager, which can be brought up using the **Videos button**.

Figure 103. Export Button

Either method will require the following steps:

1. By clicking either the **Export Clips button** or the **Export button** in the File Manager, a screen resembling that of Figure 104 will be shown in the selected display on the stage area.

Figure 104. Export Screen

2. Select the video clip you would like to export from the graphical time line using the two vertical bars to adjust the start and end time of the exported video, as shown in Figure 105. Using the mouse, click and hold to adjust the position of either bars. Release the mouse when a desired position has been obtained.

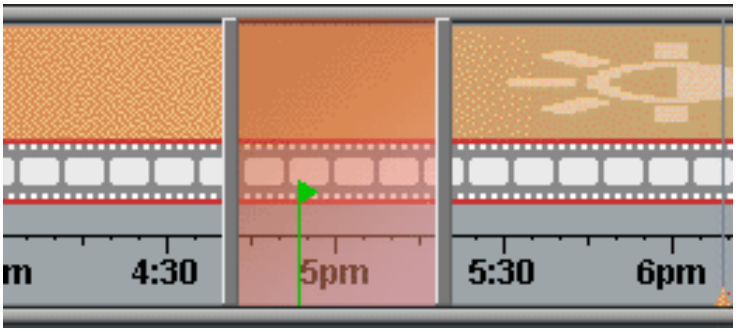


Figure 105. Exporting Video Clip Time Line

3. After the video clips have been selected, select the **Record button** found on the export screen, shown in Figure 104.
4. A dialog requesting the location to save the file will pop up. Enter the location and file name.
5. Below the file name is the type of Video Compression and the Time Stamp option. Choose the type of compression. If you want a timestamp to display below the video, make sure the **Draw Time Stamp checkbox** is checked. When you are all done, click **OK**.
6. The video clip will begin playing in a fast-forward manner while exporting. Once the clip has finished, a *Save Complete!* dialog box will appear on screen.

After the video clips have been exported, they may be played back with any video player that supports ".avi" format, such as Windows™ Media Player.

4.9 Transferring a Video Clip

Use the following steps to transfer video files to your local PC:

1. Make sure that there is a server connection.
2. Select the display window on the stage where the live video that you wish to record is. If you wish to record a section of a previously recorded video clip, select the video clip and begin playback.
3. Click on the **Record button** in the **Local** panel. Notice that a red dot will appear in the bottom right hand corner of the display window on the stage, indicating that recording is in progress, as shown in Figure 106.

Figure 106. Local Record Button and Local Record

4. To stop recording, click a second time on the **Record button** and notice that the flashing red light on the stage disappears.

After recording has stopped, the recorded video is automatically saved to the folder where Interceptor™ was installed. These recorded videos can then be played back in Interceptor™ (See "Local Video Clips" on page 111).

Chapter 5 *Browser Interface*

Quick Index

Summary

Remote access to the DVR is also possible using a standard web browser that supports ActiveX™ plug-ins (e.g. Microsoft® Internet Explorer™). The Browser Interface was designed to resemble the local DVR software, simplifying user interaction.

5.1 Connecting to a Remote Server

To connect to a remote server using the Browser Interface on a PC, follow the steps below:

1. Open your computer's Internet browser (i.e. Microsoft® Internet Explorer™).
2. In the address bar, enter the IP address that was given to the DVR when it was first set up. (See "Network Configuration" on page 54)
3. Hit Enter on the keyboard. If the network was set up properly, the Browser Interface login screen will appear in your browser, shown in Figure 107.

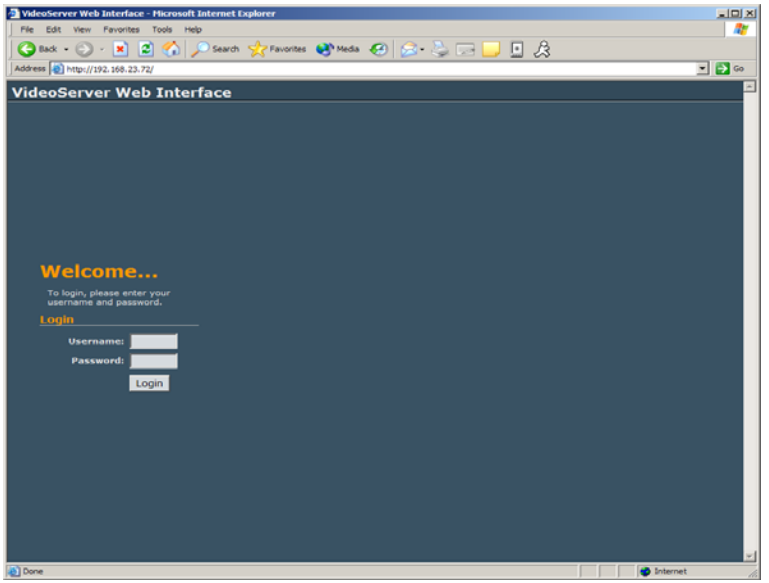


Figure 107. Browser Interface Login

4. Enter the Username and Password into their respective fields under Login. The Username and Password are identical to the ones set in the DVR. (See "Managing Passwords" on page 60)
5. Click the **Login button** to proceed.

On a successful login, you will be directed to the Browser Interface Status screen, similar to the one shown in Figure 108. If however a bad username/ password was entered, an error will be displayed on the Login screen.

> ***Note:*** Login privileges will be restricted when multiple attempts are made with an incorrect username/password. A temporary restriction of login will occur for 3 minutes, after which you may try to login again.

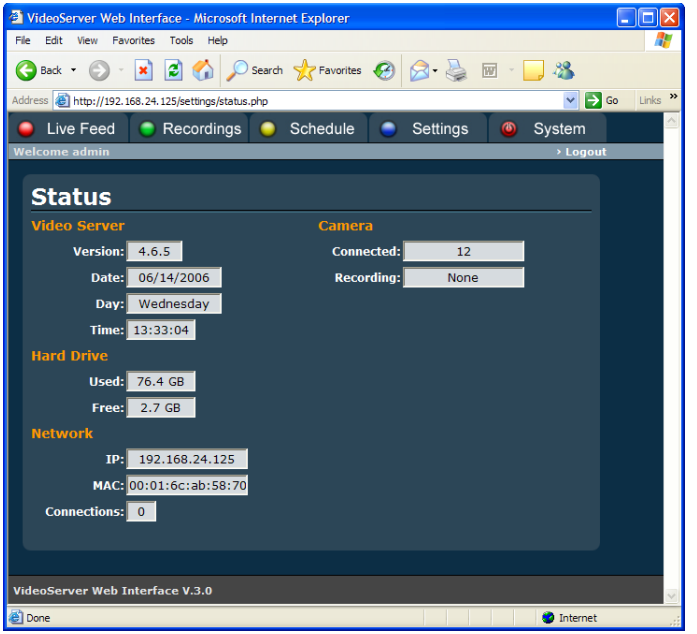


Figure 108. Status Sub-Menu

5.2 Viewing a Live Feed

To view a live feed using the Browser Interface, click the **Live Feed button** located on the upper left of the menu bar. A menu similar to that of Figure 109 will appear.

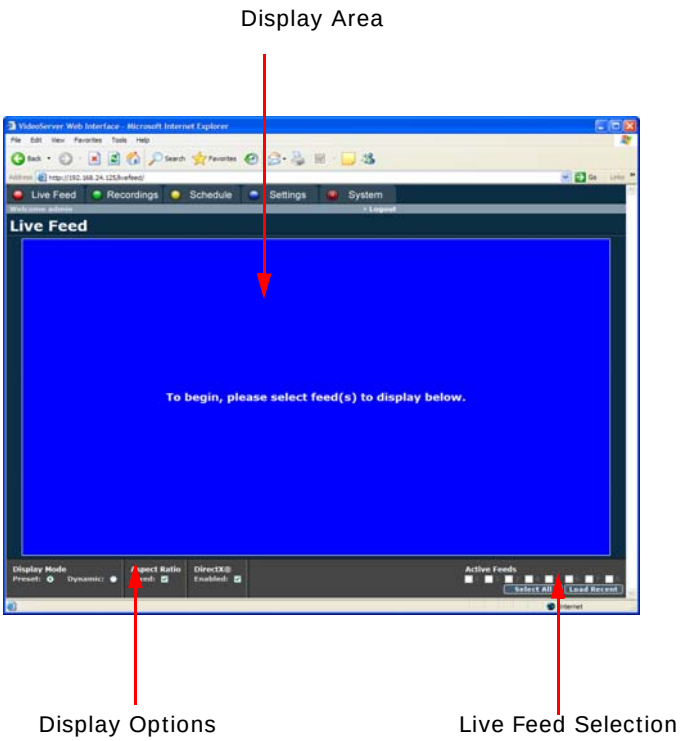


Figure 109. Live Feed Menu

There are four different areas on the Live Feed Menu. They include:

1. **Display Area** - The Display Area is the place that live feed(s) will be shown. The number of displays shown is determined by the settings in the Display menu.

2. **Live Feed Selection** - In this section, you can choose the camera (feed) to show in the Display Area, as shown in Figure 110. Clicking on the camera checkboxes will activate the display with the corresponding feed. Unchecking it will deactivate the corresponding feed in the display. You may also select all available feed by clicking the **Select All button**. Recent feeds can be reselected by clicking the **Load Recent button**.

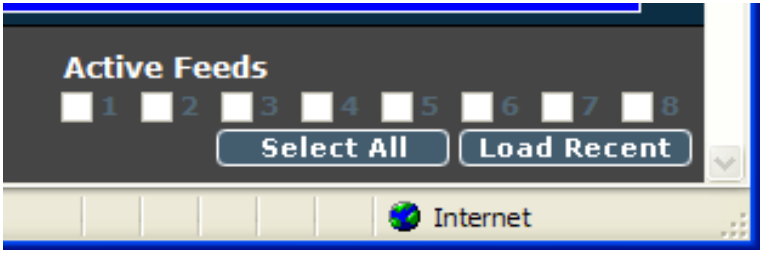


Figure 110. Live Feed Selection Panel

3. **Display Options** - The Display Options panel allows you to manually adjust the display modes or have the interface automatically determine the correct mode. There are four main items under Display, as shown in Figure 111. The first item, **Preset Mode**, will switch the current display to the selected mode found under **Settings > Display**. The second item, **Dynamic Mode**, acts as a toggle switch to turn on/off automatic display mode selection. The third item titled **Aspect Ratio** will fix the aspect ratio of each display when checked. The fourth and last item, labeled **DirectX®**, allows you to turn on/off DirectX® acceleration for the live feed display.

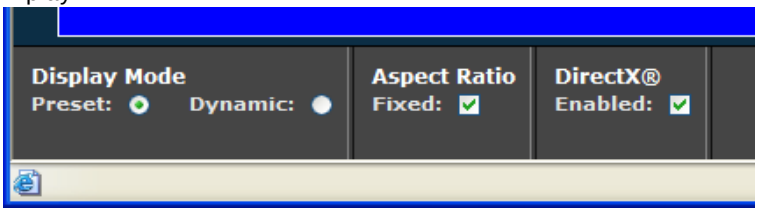


Figure 111. Display Panel

The steps needed to view a live feed with the Browser Interface are as follows:

1. Select a Display mode. Either manually select the mode or have it on auto mode.
2. Select feed(s) to display in the Live Feed Selection Section. Feeds selected will automatically begin in the Display Area.
3. Select an audio channel if you wish to stream audio during the live feed.

If an **X** appear where your live video feed should be, your browser's security settings may be blocking the ActiveX™ plug-in that is used for displaying video. To install the ActiveX™ control in Microsoft® Internet Explorer:

1. Click the **Tools** menu at the top of your browser.
2. Choose **Internet Options**.
3. Next click on **Security**.
4. Click on the **Trusted Sites** logo.
5. Click on **Sites...** button.
6. You will now need to uncheck the box labeled **Require server verification (https:) for all sites in this zone**.
7. Enter the IP address of your DVR (i.e. http://192.168.0.100) in the upper box and click **Add**.
8. Click **OK**.
9. Now return to the Live Feed in the web interface.
10. In the bottom right, initiate a feed by checking one of the cameras. This will prompt for the download of the ActiveX™ control.
11. Choose to install the Active™ control.
12. Video should now appear in the live display.

5.3 Changing the Display Mode

To change the display mode for live feed viewing:

1. Navigate to the Settings menu and select the Display sub-menu.
2. Click on the desired display type under Display section. A preview of the display mode will be shown under the Preview heading, as shown in Figure 112.

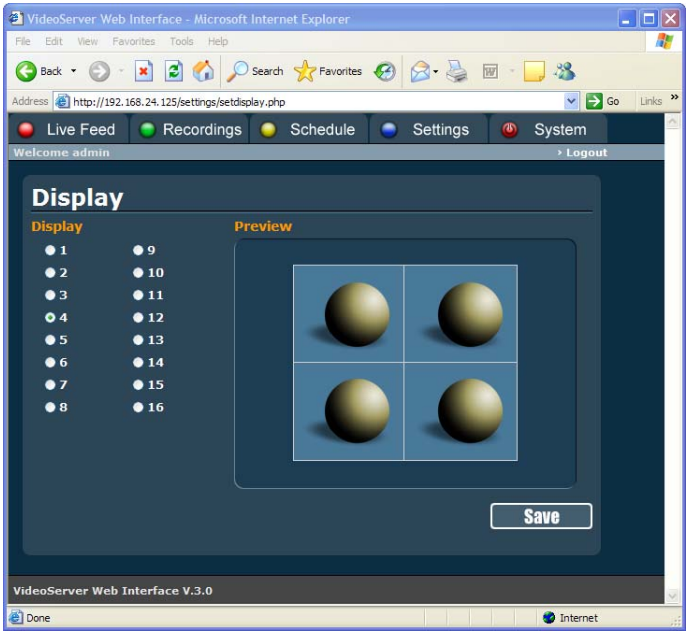


Figure 112. Display Sub-Menu

3. When satisfied, click the **Save button**.

Once the changes have been made, you can see it take effect by viewing the live feed under the Live Feed menu.

5.4 Configuring Cameras

Cameras settings may also be adjusted from the PC Browser Interface. There are three different settings for each individual camera. They include the type of camera used, the quality to display and record each camera at, and the option of whether or not to display the camera in the live feed.

To configure a camera:

1. Select the camera you wish to configure by clicking on the camera's corresponding radio button under the Camera section, as shown in Figure 113.

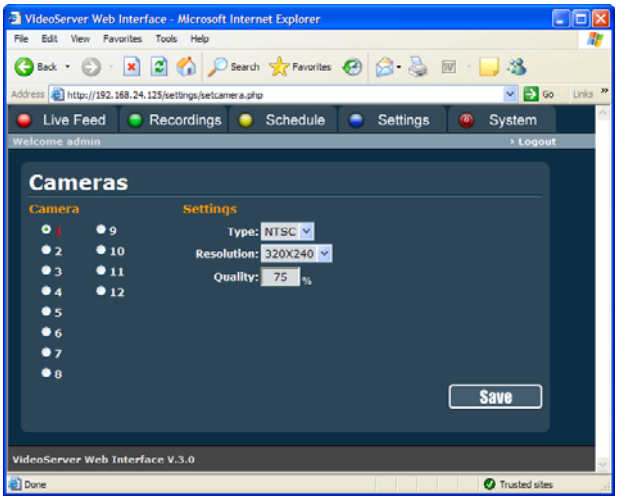


Figure 113. Cameras Sub-Menu

2. In the Settings section, choose the Type of camera (NTSC, PAL, none).
3. Set the desired resolution of the camera.
4. Enter the quality setting of the camera. A higher percentage will lead to a better image quality but at the sacrifice of bigger recorded video clips.
5. After you have made your changes, click the **Save button**.

5.5 Scheduling a Recording

The scheduling capabilities of the Browser Interface are similar to that of the local DVR software. Schedules based on individual cameras or a general schedule for all the cameras may be created.

To create a recording schedule, the following steps need to be taken:

1. Click on the **Schedule button** at the top navigation menu.
2. A menu resembling that of Figure 114 will appear. If you wish to set a schedule for an individual camera, choose the camera in the Channels scroll-list. If the schedule is for all the cameras, click on the All Channels checkbox.

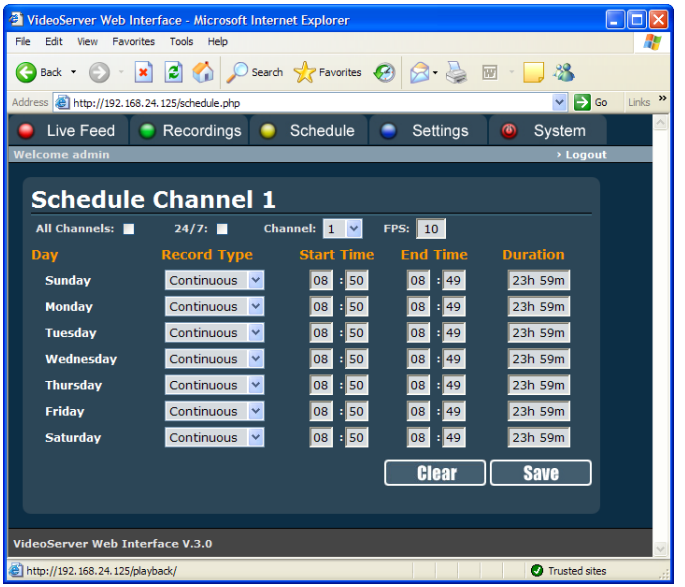


Figure 114. Schedule Menu

3. Enter the frame rate to record at in the FPS text box. A higher frame rate will result in a smoother playback, but at the sacrifice of storage space on the DVR.
4. Select the 24/7 checkbox if you wish to automatically set the start and end time for every day of the week to reflect a 24 hour period.

5. Select type of recording (Continuous, On Motion, On Trigger, Combination). A “Continuous” recording will set the cameras to record all the time. “On Motion” will cause the cameras to only record when a motion event is detected. “On Trigger” sets the cameras to record when a signal from an alarm input is detected. Using “Combination” will allow the cameras to record both “On Motion” and “On Trigger.”
6. If the 24/7 checkbox was not previously selected, enter the desired Start and End Time of the recording for each day of the week. The entered time should be formatted using a 24 hour day (i.e. 12:00 being noon and 19:00 being 7:00 pm). The duration of the recording will be shown in the Duration column of the schedule.
7. If you are satisfied with the schedule, click the **Save button**.

5.6 Viewing a Video Recording

The necessary steps needed in viewing a recording are:

1. Navigate to the **Recordings button**, the second button to the left on the upper navigation bar. Once selected, the Recordings menu will appear, as shown in Figure 115.

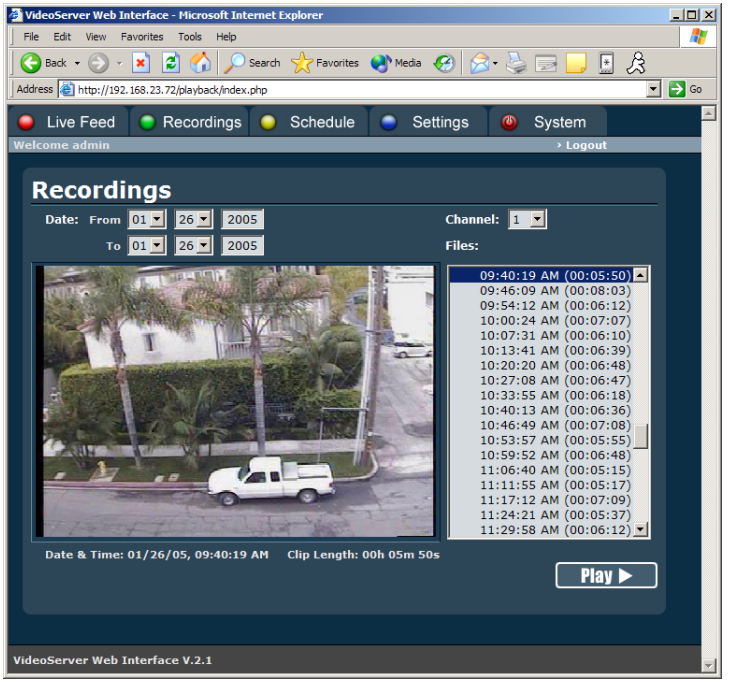


Figure 115. Recordings Menu

2. Select the date range to search for recordings under the section labeled “Date.”
3. Select the channel to search for recordings in under the section labelled “Channel.”
4. If there are recorded video clips on the selected date range and channel, a listing will appear in the section under “Files.”

5. Select a file to playback by clicking on it with the mouse. A preview of the video clip will appear on the display window to the left of the Files listing.
6. Click the **Play button** to begin playback of the file. Playback will begin in a display panel resembling that of Figure 116.

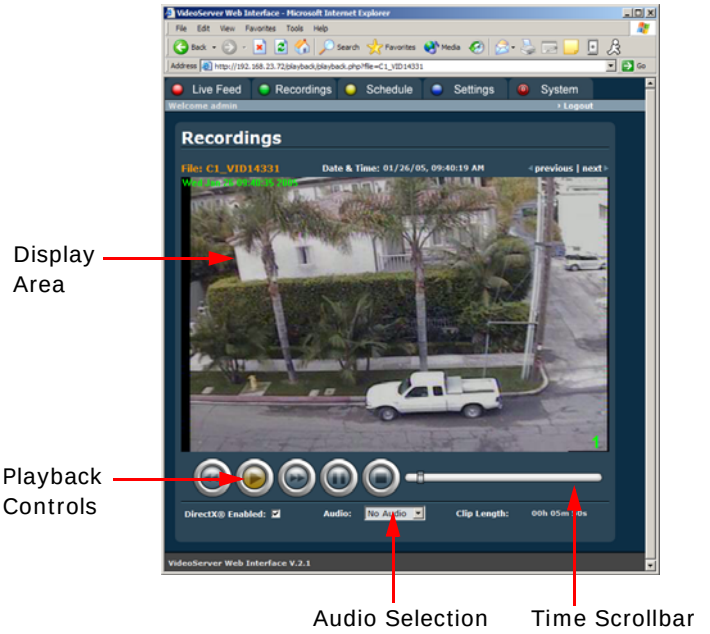


Figure 116. Playback Screen with Playback Controls

When playback has begun, the speed of the video clip may be manipulated by clicking on the different controls on the playback screen. You may rewind, play, fast-forward, pause or stop the file using the buttons in the Playback Controls area. You may also search the video clip using the Time Scroll-Bar by dragging the slider to the desired position. Audio may also be played back concurrently with the recorded video clips. To play back audio, select the channel of which to play back audio from under the Audio section.

5.7 Viewing the Status of the DVR

The status of the DVR can be viewed directly from the Browser Interface. To do so, navigate to the Settings menu and click on the Status sub-menu, as shown in Figure 117.

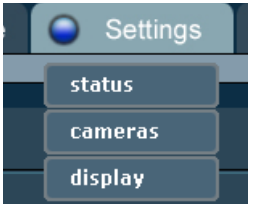


Figure 117. Settings Menu

A menu similar to that of Figure 118 will appear on the screen.

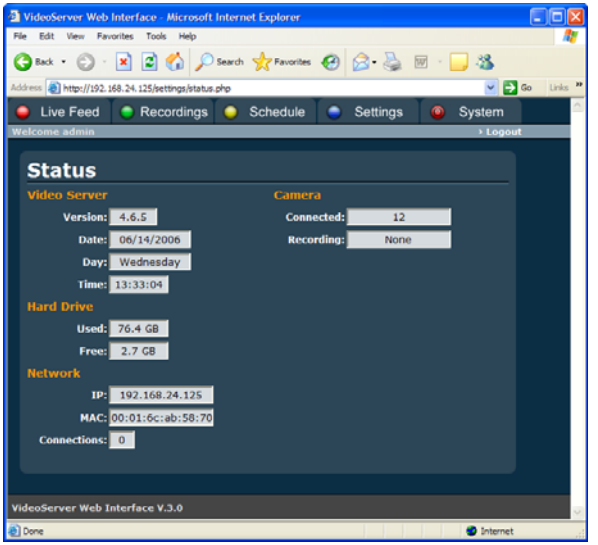


Figure 118. Status Sub-Menu

On the Status sub-menu, relevant information such as the Version number of the DVR and current time/date, and IP settings will be displayed. The hard disk drive free and used space will also be shown on the menu.

5.8 Changing Network Settings

The DVR's network configuration can be changed in the following way:

1. Select the type of networking (Static, DHCP), as shown in Figure 119. Click on the radio button that corresponds to the type of network you wish to use. If you are not sure which type to use, please contact your System Administrator or Internet Service Provider.

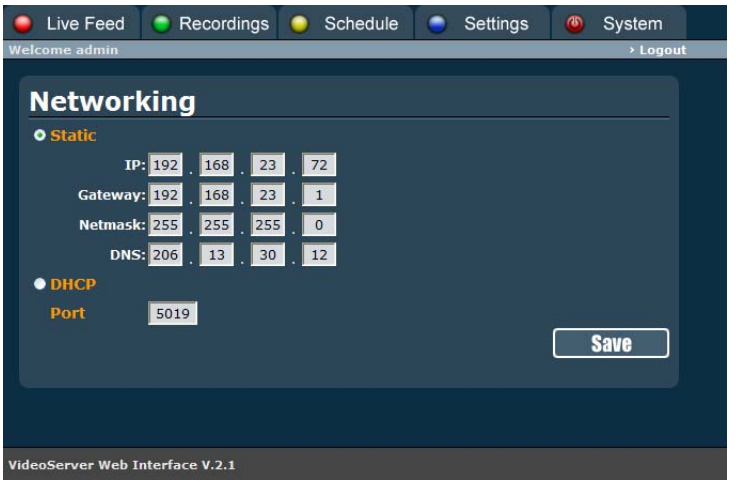


Figure 119. Networking Sub-Menu

2. **Static Network -** If a Static type of network was chosen, enter the IP address, Gateway, Netmask and DNS for your network.
3. **DHCP -** There are no settings for a DHCP network. If a DHCP type of network was chosen, click the **Save button**.
4. **Port -** Enter the Port number. If you are unsure of which port to use then the default (5005) is fine. If you change the port make sure you use that same port when you are trying to connect with Interceptor™.
5. Click the **Save button**.

Warning: Proceed with caution when changing the network settings. Changing the networking may lead the Browser Interface to log you off. To log back on to the Interface, you must enter the new IP address into the address bar of your browser.

5.9 Managing Passwords

To change the admin or guest password:

1. Navigate to the System menu and select the Passwords sub-menu, as shown in Figure 120.

Figure 120. Passwords Sub-Menu

2. Modify and confirm the password for either Administrator or Guest user.
3. Click the **Save button**.

Warning: Changing the passwords on the Browser Interface will lead to a change of passwords on the DVR.

5.10 Shutting Down and Restarting the DVR

The Browser Interface also has the capability to shutdown or reboot the DVR. To shutdown or reboot the server:

1. Navigate to the System menu and select the Shutdown sub-menu, as shown in Figure 121.

Figure 121. System Menu

2. The Shutdown sub-menu similar to that of Figure 122 will appear on the screen.

Figure 122. Shutdown Sub-Menu

3. If you wish to shutdown the system, select the **Shutdown button**. If you wish to restart the system, select the **Restart button**.

By selecting the **Shutdown button**, the DVR will initiate the shutdown process. At this point, you may close the Browser Interface because it will not function unless the DVR is on. Similarly, if the DVR was restarted, the Browser Interface will not function until the server has properly booted up.

5.11 Logging Out of the Web Server

It is important to log out of the Web Server when it is not in use to conserve bandwidth. To log out of the Web Server, simply click the Logout link on the upper right hand corner of the interface, as shown in Figure 123.

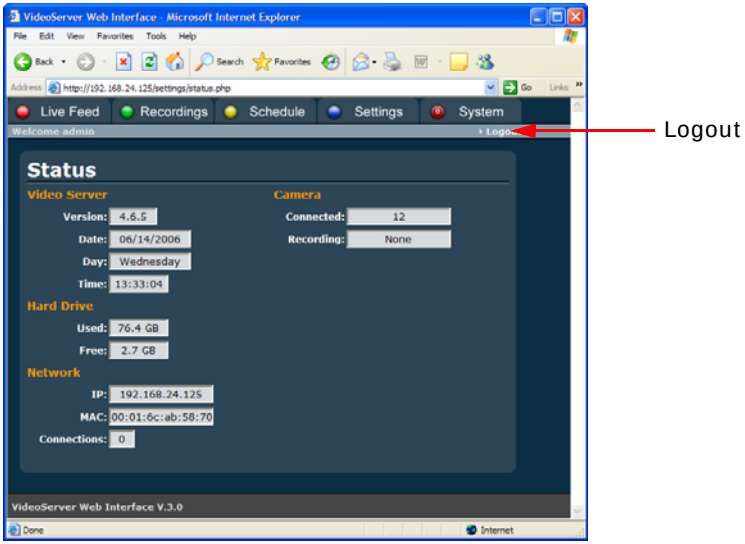


Figure 123. Logout Link

Chapter 6 *Quick Reference*

Quick Index

6.1 Navigating the DVR Menu System

The menu system of the local DVR software consists of five main menus. Out of these five menus, two are broken down into sub-menus. The following map is a hierarchy of the menu system that is used in the DVR software, as shown in Figure 124:

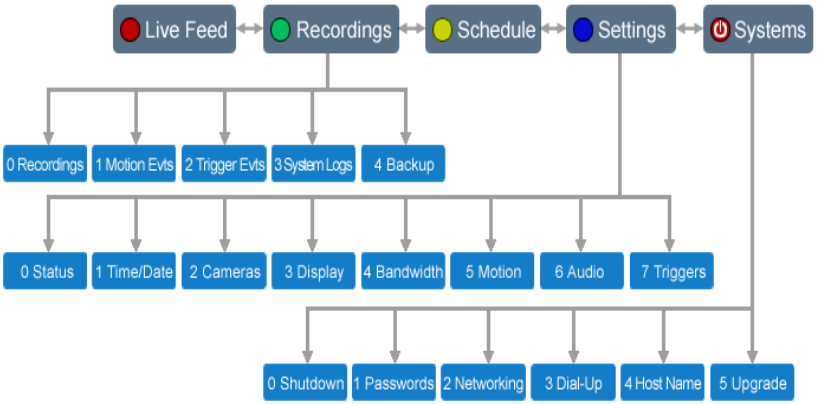


Figure 124. DVR Software Menu Hierarchy

To use the remote control with the DVR software:

- Press , , , to navigate within a screen.
- Press OK to activate a component.
- Press or to increment or decrement a field.
- Press 0 - 9 to make a numeric field jump to that number. When either the Settings menu or Systems menu is selected, pressing 0-9 would select the corresponding sub-menu.
- Press OK to toggle the value of a check box or radio button.
- Press MENU to move up a level in the menu system.
- Press the **Red**, **Green**, **Yellow**, or **Blue** **button** to jump to the respective menu shown in Figure 124.

- Press the **power**  **button** to jump to the System menu.

6.1.1 Recordings Menu

Sub-menus relating to past recordings and system logs can be found under the Recordings Menu, as shown in Figure 125. The Backup sub-menu is also located under the Recordings Menu.

Figure 125. Recordings Menu

6.1.2 Settings Menu

The Settings menu holds all the buttons that lead to sub-menus where you can configure custom options for the DVR, as shown in Figure 126.

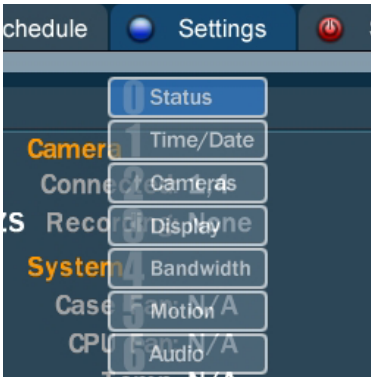


Figure 126. Settings Menu

6.1.3 System Menu

In the system menu, many advanced features such as networking and dial-up controls, passwords management, system upgrade, backup and shutdown can be found, as shown in Figure 127.

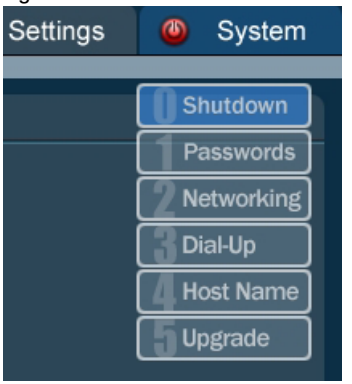


Figure 127. System Menu

6.2 Navigating the Browser Interface Menu System

6.2.1 PC Browser Interface Menu System

Since the Browser Interface's design was made to replicate that of the local DVR, it is no coincidence that the menu system will also be similar. The menu system consists of five main menus, of which three are broken down into sub-menus. The following map is a hierarchy of the menu system that is used in the Browser Interface, as shown in Figure 128:

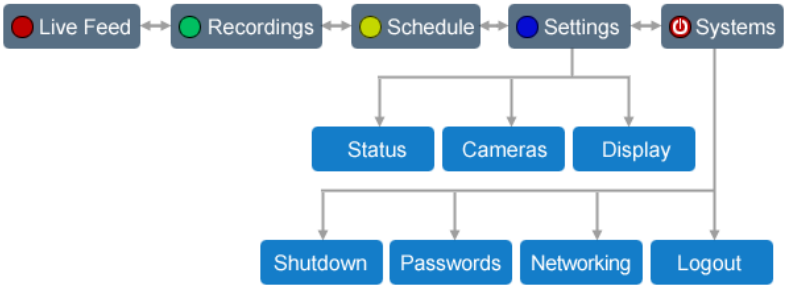


Figure 128. Browser Interface Menu System (PC)

GLOSSARY

DNS - Domain Name Server. A unique identifier which assigns a name to a specific IP address.

Ethernet - A technology that interconnects computer into a high speed network using 10base-T or coaxial cables.

HTTP - Hyper Text Transfer Protocol. The standard language that computers connected to the World Wide Web use to communicate with each other.

IR - Infra-Red. A way of transmitting data using light waves. The remote control of your DVR unit uses infra-red to communicate with the IR module that is attached to the unit.

IP Address - Internet Protocol address. A unique numerical address consisting of four numbers separated by periods. Each IP address identifies a certain computer on the Internet.

LAN - Local Area Network. LAN represents a communication network, such as Ethernet, that is limited to a small geographical area.

MAC Address - MAC address, short for Media Access Control address, is a unique hardware address that identifies each node of a network.

NTSC - National Television Standards Committee. A standard broadcast signal received by televisions in the United States. All televisions in the United States must meet this standard. NTSC delivers 525 lines of resolution at 60 half-frames per second.

PAL - Phase Alteration Line. A standard broadcast signal received by many European countries. PAL delivers 625 lines of resolution at 50 half-frames per second.

Port - A logical connection to a network. Different port numbers are used for different purposes. For example, the Interceptor software is set to use port 5005 while the web server (HTTP) is set to use port 80.

WAN - Wide Area Network. A computer network that spans a wider area than that of a local area network (LAN).

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