Operating Instructions

Panorama®
Web Viewer

mindray

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Foreword

The Panorama Web Viewer Operating Instructions are intended to provide the information required to configure and operate the Panorama Web Viewer client. For additional information and technical assistance, contact a Mindray Representative.

A general understanding of the features and functions of the Panorama Web Viewer, as well as the Panorama Patient Monitoring Network and its components, is a prerequisite for the proper use of this equipment. Therefore, do not operate this equipment before reading these instructions thoroughly, including all appropriate warnings and cautions.

CAUTION: **US Federal law restricts the sale of this device to, by or on the order of a physician.**

NOTE: **Figures in this manual are provided for reference purposes only. Screens will likely differ based on the tab configuration settings, parameters selected, and patient configuration of the Panorama Patient Monitoring Network.**

Warnings, Precautions and Notes

Read and adhere to all of the warnings and precautions listed throughout this manual.

A **WARNING** is provided to alert the user to potentially serious outcomes (death, injury or serious adverse events) to the patient or the user.

A **CAUTION** is provided to alert the user that special care should be taken for the safe and effective use of the device. They will include actions to be taken to avoid effects on patients or users that will not be potentially life threatening or result in serious injury, but about which the user should be aware.

A **NOTE** is provided when additional general information is available.

Warnings

WARNING: **Clinical judgement should be used when the Panorama Web Viewer is utilized in connection with management of patient care.**

Precautions

CAUTION: **For a proper understanding of the Panorama Web Viewer application, knowledge of the Panorama Central Station is required. For additional information regarding the Panorama Central Station and/or the Panorama Patient Monitoring Network, refer to the Panorama Central Station Operating Instructions. Refer to "Technical Support" on page vi for part numbers (P/Ns).**

CAUTION: **Display calibration is required for the waveforms to be of diagnostic quality.**

CAUTION: **The waveforms displayed at the Panorama Web Viewer may have less than a five (5) second latency in comparison to the corresponding patient monitor**

CAUTION: **When using Panorama Web Viewer, the operator should always verify that the correct patient is selected.**

CAUTION: **The Panorama Web Viewer should never be used as a primary monitoring device. It could be a secondary monitoring device when the patient device is an ambulatory Telepack device (Panorama Central Station would be primary source in this case). The Panorama Web Viewer could be tertiary if the patient device is a bedside monitor (primary is bedside monitor with the central station being secondary). The Panorama Web Viewer could be an adjunct to clinical decision making.**

CAUTION: **Due to variations in printers and print drivers some text and/or graphics may not print. If you choose to print from the CD, ensure the printed document matches the displayed document.**

Indications For Use

Panorama Web Viewer

The indications for use for the Panorama Web Viewer include:

A. Viewing near real-time patient clinical data

B. Viewing historical graphical and numeric trended clinical data

C. Viewing clinical and technical event data

D. Printing of displayed web pages via the web browser print function

NOTE: **The Panorama Web Viewer does not enunciate any physiological alarms or technical alerts.**

The clinical data displayed by the Panorama Web Viewer is obtained from one or more Panorama Central Stations and includes: ECG waveforms, Heart Rate, Blood Oxygenation (SpO_2), Invasive and Non-Invasive Blood Pressure, CO_2 (inspired and end tidal), Respiration Rate, Temperature, Cardiac Output (CO), Hemodymamics, Bispectral Index (BIS), ST Segment Analysis, QT Analysis (QT, QTc, QT-HR). Refer to the Common Waveforms and Parameters chapter for a complete list of supported parameters.

The Panorama Web Viewer is intended for use in a health care environment to provide clinicians and physicians with remote access to patient physiological data using Microsoft® Internet Explorer.

Symbols and Descriptions

⚠   Attention, Consult Accompanying Documents / Refer to Manual

Technical Support

For technical assistance, contact your area or regional Mindray Representative.

Additional information relating to the installation, servicing and repair of the Panorama Patient Monitoring Network is provided in the following documents:

Panorama Operating Instructions:

- P/N 0070-00-0669-XX for Panorama 8.4.X software
- P/N 0070-00-0679-XX for Panorama 8.5.X software
- P/N 0070-00-0680-XX for Panorama 8.6.X software
- P/N 0070-00-0690-XX for Panorama 8.7.X software
- P/N 0070-00-0707-XX for Panorama 8.8.X software
- P/N 0070-00-0728-XX for Panorama 8.9.X to 13.X.X software

Refer to the Panorama Web Viewer Installation Manual included on the installation CD (P/N 0996-CD-0178-XXX) for more in depth installation directions.

1.0 _Getting Started_

1.1 Introduction

The Panorama Web Viewer application offers remote viewing for the Panorama Patient Monitoring Network. The application is web-enabled and provides access to the patient data using Microsoft® Internet Explorer. The application supports up to eight (8) concurrent users and can access any central station on the network. When Panorama Web Viewer application is launched, patient events, trends, and near real-time waveforms can be viewed.

1.2 Panorama Web Viewer Workstation Requirements

To access the Panorama Web Viewer application, the following is needed:

- Access to the hospital intranet or access to the hospital intranet via a Virtual Private Network (VPN)
- Microsoft® Windows XP and 7.
- Microsoft® Internet Explorer 8, 9, 10 or 11.
- Pre-installation of Microsoft® .NET 3.5 Framework on client workstation
- Application Uniform Resource Locator (URL) or web address to web server
- User ID and password (assigned by system administrator)

Additionally, Microsoft® Internet Explorer shall be configured to accept cookies, run active content, automatically download plug-in controls, and enable .NET components. Add the Web Viewer web page address to the "Trusted Sites" list. For example, add "http://10.6.6.225" to the "Trusted Sites" list, where 10.6.6.225 is the IP Address of the Web Viewer Server.

When using IE 10, also add the Web Viewer Server to the "Compatibility View Sites" list.

NOTE: **Microsoft®.NET Framework 3.5 must be installed.**

If Microsoft®.NET Framework 4.5.x is also installed, the following steps must be performed.

1. Select **Run** and enter **rgedit**.
2. Select the subnet.
    - For a 32-bit machine, select the subnet HKEY_LOCAL_MACHINE/Software/ Microsoft/.NETFramework.
    - For a 64-bit machine, select subnet HKEY_LOCAL_MACHINE/SOFTWARE/ Wow6432Node/Microsoft/.NETFramework.
3. Add **DWORD** and name it as **EnableIEHosting**.
4. Set the value of **EnableIEHosting** to 1.
5. Exit regedit.
6. Restart the machine.

1.3   Panorama Web Viewer Server

A web server must be set up to support the client Web Viewer application. For information regarding the hardware requirements and installation of the Web Viewer server, refer to the Web Viewer Installation Guide (P/N 0070-00-0688).

NOTE: **Before installing Panorama Web Viewer, users are advised to install their own anti-virus software.**

1.4   Understanding Login ID's

It is important to understand the difference between a Microsoft® Windows account (or login) and the Panorama Web Viewer application account. Microsoft® Windows accounts will generally be setup by the facility IT department. Microsoft® Windows accounts are necessary to access and use the workstation software applications. The Panorama Web Viewer accounts are in addition to the standard Microsoft® Windows accounts and are needed to access the Panorama Web Viewer web server. Panorama Web Viewer accounts are setup by the system administrator using the Web Viewer Administration application, which is also accessed using Microsoft® Internet Explorer. Both account types are required to access the Panorama Web Viewer application.

Different Panorama Web Viewer accounts that use one Microsoft® Windows login share the same configuration settings. When the Panorama Web Viewer is first accessed, the default system configuration settings established by the system administrator is used. If one of the users sharing a Microsoft® Windows ID changes the default configuration settings, a local configuration is established. These settings are saved to the local browser by creating digital tokens, or browser cookies. Local configuration settings are shared by all users accessing the workstation with the same Microsoft® Windows ID. Once local configuration settings are established, they are used instead of the system configuration settings.

NOTE: **When browser cookies are deleted from a workstation, the local Windows ID configuration settings will be reestablished.**

Understanding the differences between the different types of accounts becomes particularly important when configuring views. Configuring views is detailed in the "Views" chapter.

1.5   Accessing the Panorama Web Viewer Application

To access the application:

1. Open Microsoft® Internet Explorer.

2. Navigate (using the Internet browser favorites list) or enter the application URL in the web browser address line. The Authentication Page (shown in FIGURE 1-1) displays.

NOTE: **Contact the facility IT department if the application URL is unknown.**

NOTE: **When the Internet Explorer version is too low, the Authentication Page displays the following message: Your IE version is X (X for the actual version). The Web Viewer only supports IE 8/9/10/11. Please upgrade your IE.**
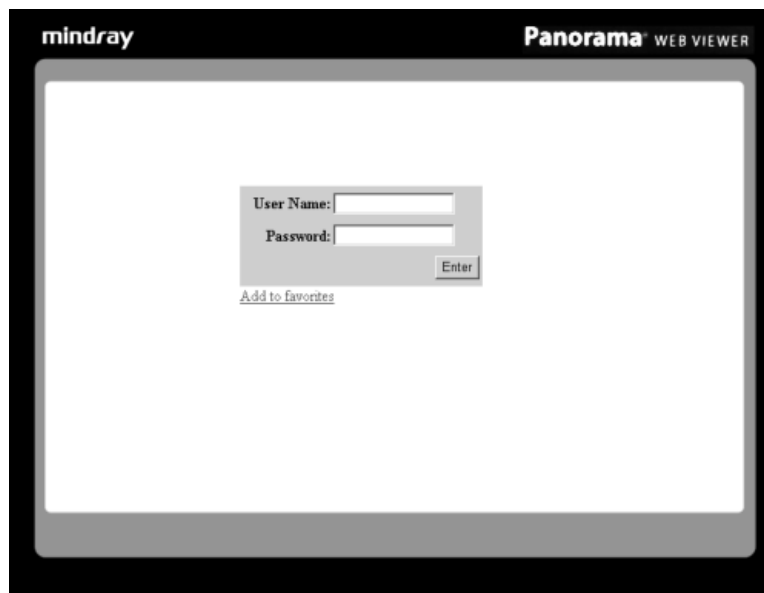
FIGURE 1-1 Authentication Page

3. (Optional) Click the **Add to favorites** text, then click the **OK** button to add this URL to the Internet browser favorites list.

4. Enter a valid User Name (text box is case sensitive).

5. Enter a valid Password (text box is case sensitive).

NOTE: **For security purposes, the letters typed are encrypted and not shown.**

NOTE: **The User Name and Password are established by the facility IT department.**

6. Click the **Enter** button. The Web Viewer application opens and the Tab view displays.

1.6   Tab View

The Tab view is the portal for the Panorama Web Viewer application because it provides access to all of the application features. Once logged in, the Tab view will be displayed with either the **PREFERENCES** tab (shown in FIGURE 1-2 on page 1-5) or **PATIENT SELECTION** tab (shown in FIGURE 1-4 on page 1-7) opened. If a previous calibration setting has not been established for the workstation ID, the **PREFERENCES** tab Calibration view displays. If an existing calibration setting exists, the application displays the **PATIENT SELECTION** tab. The **PREFERENCES** tab and the **PATIENT SELECTION** tab are discussed in the following sections.

1.6.1   PREFERENCES Tab

Access the **PREFERENCES** tab to configure the display and password.

1.6.2   Display Calibration View

Access the Display Calibration view (shown in FIGURE 1-2 on page 1-5) to change waveform calibration settings. Horizontal and vertical calibration is needed to ensure that the waveforms are displayed at the 25mm/sec waveform speed and show proper wave gains. Calibration is required when a previous calibration setting does not exist.

> **CAUTION:**   **Display calibration is required for the waveforms to be of diagnostic quality.**

> **NOTE:**   **When browser cookies are deleted from a workstation, the local Windows ID configuration settings will be reestablished.**

The objective of a successful calibration is to ensure that each 1 cm division on the screen ruler matches the 1 cm measurement of the hand-held ruler.

> **NOTE:**   **A hand-held, flexible ruler is needed to properly perform display calibration.**

> **NOTE:**   **If the display's resolution or the display is changed, recalibration is required.**
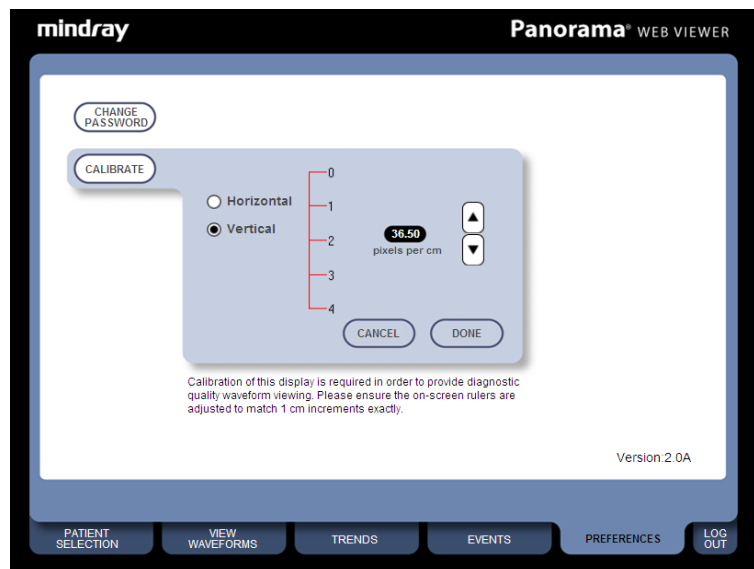
FIGURE 1-2 PREFERENCES Tab - Display Calibration View

To calibrate the application display for the first time:

1. From the Calibration view, line up the hand-held ruler to the display vertical ruler.

2. Using the up and down arrow buttons beside the display ruler, increase or decrease the vertical pixels per cm to match the vertical spacing on the hand-held ruler.

3. Click the Horizontal radio button.

4. Line up the hand-held ruler to the display horizontal ruler.

5. Using the up and down arrow buttons beside the display ruler, increase or decrease the horizontal pixels per 1 cm to match the horizontal spacing on the hand-held ruler.

6. Click the **DONE** button to accept the settings or the **CANCEL** button to discard the settings.

NOTE: **The CANCEL button will only be enabled if a prior calibration setting exists.**

To calibrate the application display when a calibration setting exists:

1. Click the **PREFERENCES** tab from any application view.

2. Click the **CALIBRATE** button. The Calibration view displays. The Vertical radio button is selected by default.

3. Follow steps 1 through 6 from the "To calibrate the display for the first time" section.

1.6.3   Password Maintenance

Access the Change Password view (shown in FIGURE 1-3) to change an existing password (the old password is required).

NOTE: Passwords can be alphanumeric and are case sensitive.
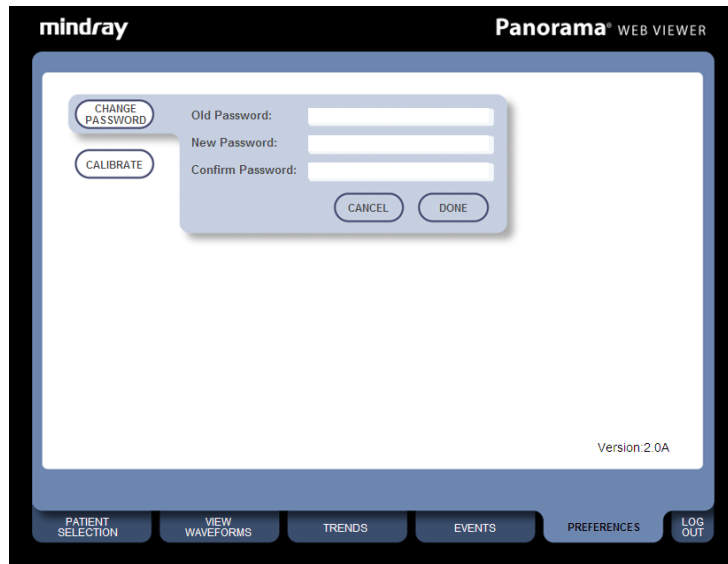
FIGURE 1-3 PREFERENCES Tab - Change Password View

NOTE: For security purposes, the letters typed are encrypted and not shown.

To access the Change Password view:

1. Click the **PREFERENCES** tab.
2. If necessary, click the **CHANGE PASSWORD** button.
3. Enter the existing password in the Old Password text box.
4. Enter the new password in the New Password text box.
5. Re-type the new password in the Confirm Password text box.
6. Click the **DONE** button to accept the settings or the **CANCEL** button to discard the settings.

1.7   Selecting a Patient

To view patient data, it is recommended that the Panorama Central Station monitoring the patient be known. A patient can be found without knowing which central station a patient is assigned to, but the process may take longer.

NOTE: **Display calibration is required before patient selection can occur. For additional information, refer to the section ''Display Calibration View'' on page 1-4.**

Selecting a patient with an established Display Calibration:

1.   Click the **PATIENT SELECTION** tab.

2.   If the central station needed is not shown in the drop-down box, click the central station drop-down list (shown in FIGURE 1-4) to view all the currently active central stations in the network.

NOTE: **Active network central stations are listed in alphabetical order.**

System Message Area

FIGURE 1-4 PATIENT SELECTION Tab

3.   Click the central station needed. If the selected central station has active patient tiles assigned, the patient list is populated.

NOTE: **By default, no patient is selected in the PATIENT SELECTION list when the list is first entered.**

NOTE: **The patient list is initially sorted in ascending alphabetical order by patient last name.**

4.   (Optional) Re-sort the list by Bed, Last Name, First Name, ID, Doctor, or Tile by clicking the column heading. Re-sort any column in the opposite order by clicking the column heading again.

5. (Optional) If the central station or patient is not found, click the **REFRESH** button to ensure that the central station drop-down and patient list contains the most current data.

6. Select the appropriate radio button beside the patient. The row highlights.

NOTE: **Only one patient may be selected.**

7. Select the **VIEW WAVEFORMS**, **TRENDS**, or **EVENTS** tab to view the patients real-time and historical views.

NOTE: **Verify that the correct patient was selected by locating the patient name in the view (shown in FIGURE 1-4 on page 1-7).**

For additional information about navigating in the **VIEW WAVEFORMS**, **TRENDS**, or **EVENTS** tabs, refer to the "Views" chapter.

1.8 Navigating in the Panorama Web Viewer Application

The web browser navigation buttons and web browser menus should NOT be used to navigate in the Web Viewer application. If they are used, the data retrieved may not be accurate because it is not current. To view previously viewed tabs, click the application tabs (for example, EVENTS, TRENDS, etc.).

1.9 Exiting the Panorama Web Viewer Application

- Click the **LOG OUT** tab to close the Panorama Web Viewer application and return to the Authentication Page.

NOTE: **Do not select Close from the browser File menu or use the Internet Explorer Close button [×] to exit the Web Viewer application. If the session is not properly closed by logging out, the user session license may not be released, which may reduce the number of permissible concurrent users. If this happens, the system administrator needs to release the license(s) from the web server.**

1.10   Troubleshooting

This section lists some of the potential messages and issues that may occur while trying to select a central station or select a patient in the **PATIENT SELECTION** tab.

MESSAGE/ISSUE *	REASON	SOLUTION
Your login attempt exceeds the number of allowed logins for this version. Please contact your system administrator.	The Web Viewer application supports eight (8) concurrent user licenses.	Wait for a license to become available.
Seven licenses are in use, and a eighth license is available but another user is still not able to login.	The application was closed using the browser file menu or the Internet Explorer Close button ☒ was used to exit the application instead of selecting the **LOG OUT** tab.	Contact the system administrator to assist in releasing the license. Refer to the Web Viewer Installation Guide for additional information.
Your login attempt was not successful. Please try again.	The user name and/or password entered is incorrect.	Try again. If login unsuccessful again, contact the system administrator.
No Central Stations Found	There are no central stations currently on the Panorama network.	Wait until the central stations are installed or are networked to the web server.
Password should be 4-10 characters.	Password is not a valid length.	Enter a password that is between 4 and 10 characters in length.
No Patients Found	The system did not find patients or active tiles for the selected central station.	Click the **REFRESH** button. If the list still is not populated, contact the system administrator for assistance or select another central station from the drop-down list.
Standby	The patient is in a Standby state at the central station.	Release patient from Standby state at the central station or wait until patient is active again.
Discharged	The patient state changed since the web page was loaded and now the patient tile is in a discharge state at the central station.	Click the **REFRESH** button to update the patient list.
Communications Lost	There was a loss of communication between the central station and the monitoring device.	Investigate the loss of communication or contact the system administrator for assistance.
Waiting for Patient	Central station patient tile is in a Waiting for Patient state.	Remove the patient from the Waiting for Patient state at the central station.
Central Communications Lost	Central station monitoring the patient tile is in a communications lost state.	Investigate why central station is in a communications lost state or contact the system administrator for assistance.

*   Messages are shown in all bold text.

MESSAGE/ISSUE *	REASON	SOLUTION
Selected patient is no longer available. Please refresh.	The patient state changed since the web page was loaded and now the patient selection data is no longer valid.	Click the **REFRESH** button to update the patient list, then select a new patient.
Your password update was successful.	The password has been successfully changed.	No solution required.
Enter all the values and click DONE.	The **DONE** button was selected before one of the three password text boxes was populated.	Enter the correct information in all three password text boxes, and then select the **DONE** button.
Incorrect password. Please try again.	The Confirm Password entered does not match the New Password entered.	Reenter the passwords again.
	The Old Password entered was not correct.	Reenter the correct Old Password again.
Please calibrate horizontal pixels/cm.	The **DONE** button was selected before the horizontal calibration was completed.	Renter the CALIBRATE screen and complete the horizontal calibration.
Please calibrate vertical pixels/cm.	The **DONE** button was selected before the vertical calibration was completed.	Renter the CALIBRATE screen and complete the vertical calibration.
Calibration of this display is required in order to provide diagnostic quality waveform viewing. Please ensure the on-screen rulers are adjusted to match 1 cm increments exactly.	Complete calibration settings have not been established.	Complete the calibration process.
Your IE version is X. The Web Viewer only supports IE 8/9/10/11. Please upgrade your IE.	The Internet Explorer version is not supported by the Panorama Web Viewer.	Install the Internet Explorer with version of 8.x, 9.x, 10.x, or 11.x.
All tabs in the Tab view are disabled except for PREFERENCES and LOG OUT.	An existing calibration setting does not exist.	Enter the Calibrate view to complete the calibration process.
All tabs in the Tab view are disabled except for PATIENT SELECTION, PREFERENCES and LOG OUT.	An existing calibration setting does exist but a patient has not yet been selected.	Select a patient.
CALIBRATION tab displayed after authentication.	Calibration settings have not been established.	Establish calibration settings.
Patient name is not displayed in the PREFERENCES and LOG OUT views.	The application does not display patient name in the PREFERENCES and LOG OUT views.	No solution required.
Desired central station is not in the central station drop-down list.	Central station is not currently active.	Click the **REFRESH** button. If unsuccessful again, contact the system administrator.

*   Messages are shown in all bold text.

MESSAGE/ISSUE *	REASON	SOLUTION
The PATIENT SELECTION tab does not clear the currently selected patient after selecting another central in the central station drop-down list	System does not recognize the new selection until the list is refreshed.	Click the **REFRESH** button.
When a tab is selected, a icon is displayed in the upper left corner of the view.	Patient data is loading.	Wait until the data is loaded.

* *Messages are shown in all bold text.*

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2.0 *Views*

2.1 Viewing Near Real-Time Data

Near real-time data for a selected patient can be viewed by accessing the **VIEW WAVEFORMS** tab (shown in FIGURE 2-1 on page 2-2). This view contains a Waveform Tile Area and a Parameter Tile Area. The number of waveforms, the waveform type, the wave gain, and the displayed digital tile parameters may be customized.

This view, and the configuration of this view, is described in the following sections.

> **CAUTION:** **The VIEW WAVEFORMS tab will not indicate when a parameter is in an alarm state.**

> **CAUTION:** **The waveforms displayed at the Panorama Web Viewer may have less than a five (5) second latency in comparison to the corresponding patient monitor.**

> **CAUTION:** **The waveforms displayed at the Panorama Web Viewer may have less than a five (5) second latency in comparison to the corresponding patient monitor.**

> **CAUTION:** **The Panorama Web Viewer should never be used as a primary monitoring device. It could be a secondary monitoring device when the patient device is an ambulatory Telepack device (Panorama Central Station would be primary source in this case). The Panorama Web Viewer could be tertiary if the patient device is a bedside monitor (primary is bedside monitor with the central station being secondary). The Panorama Web Viewer could be an adjunct to clinical decision making.**
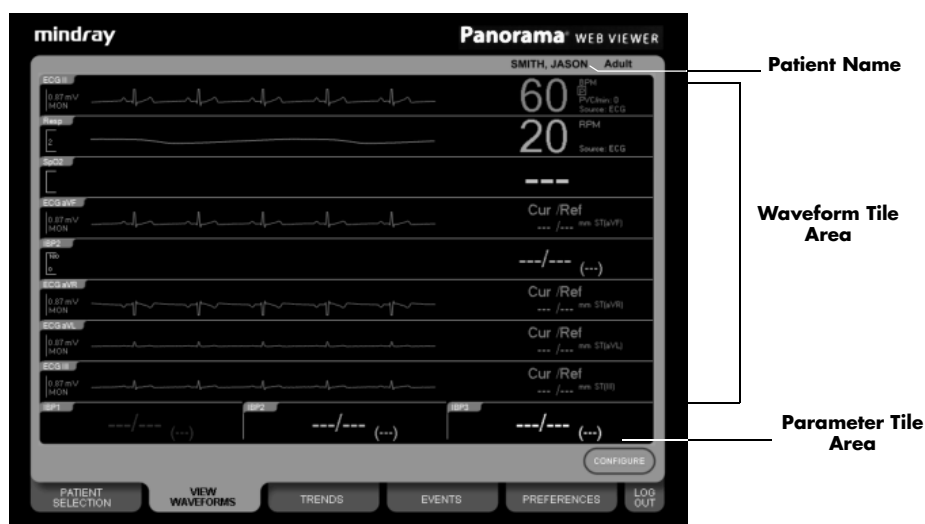
FIGURE 2-1 VIEW WAVEFORMS Tab - Waveforms View

2.1.1 Accessing the Waveforms View

- Once a patient is selected, click the **VIEW WAVEFORMS** tab.

The following section describes the areas of the View Waveforms view.

Waveform Tile Area

The Waveform Tile Area (shown in FIGURE 2-1 on page 2-2) displays the configured waveforms for the selected patient. This area has the following characteristics:

- Area is located above the parameter tiles

- Can be configured to display three to eight waveform tiles

- Always displays an ECG waveform tile and a heart rate parameter tile in the top most waveform position

- Displays the PVC/min numeric value in the heart rate parameter tile when Arrhythmia is active at the central station

- Displays the Pause/min numeric value in the heart rate parameter tile when viewing a patient connected to a V Series or a Telepack monitor and Arrhythmia is active at the Central Station

- Allows the same waveform to display in more than one waveform tile

- Displays the waveform data from the bedside monitor sensors, when available

- For ECG waveforms, displays the ECG filter set at the bedside monitor

- Provides an **Off** choice for waveform positions two (2) through eight (8)

- Displays a waveform scale bar with the corresponding scale size beside it

- Displays the waveform speed at 25 mm/sec (if the display was properly calibrated)

- Displays the units of measure from the bedside, or the units of measure from the central station for the Telepack, and a wave gain setting, when applicable

- Uses the waveform labels from the Panorama Central Station (for example, SpO$_2$, Resp)

- Displays the configured pacer enhancement setting from the central station with certain limitations

NOTE: **For additional information regarding Pacer Enhancement settings, refer to "Pacer Enhancement Settings" on page 3 - 3.**

- Displays the active lead in the top most waveform position, regardless of the configuration setting, when a 3-lead cable is in use
- Displays the waveform in the system configured parameter color, which is configured by the system administrator.
- Displays a yellow pacer spike if Pacer Enhancement for the selected patient is enabled at the Panorama Central Station, a paced beat has been detected, and the ECG waveform color is not set to yellow
- Displays a green pacer spike if Pacer Enhancement for the selected patient is enabled at the Panorama Central Station, a paced beat has been detected, and the ECG waveform color is not set to green
- The ECG waveform will use a 60 ms Pacer Filter setting

NOTE: **For information regarding Pacer Enhancement, refer to the Panorama Central Station Operating Instructions.**

Parameter Tile Area

The Parameter Tile Area displays the configured digital parameters for the selected patient. This area has the following characteristics:

- Tiles are located directly below the Waveform Tile Area
- Displays a maximum of three parameter tiles side-by-side per the configuration
- Allows the same digital data to display in more than one parameter tile
- Uses the parameter labels from the Panorama Central Station (for example, PAWP, CO/CI)
- Displays parameter tile even when the tile is set to **Off** in the configuration view
- Displays the parameter data from the bedside monitor sensors, when available
- Displays digital data if the parameter is being monitored at the bedside monitor
- Displays the parameter in the system configured parameter color, which is configured by the system administrator.

For information regarding parameter formats and labels, refer to the Panorama Central Station Operating Instructions.

2.1.2   Configuring the Waveform/Parameter View

The number of waveforms and digital parameters displayed in the Waveform/Parameter view can be configured by accessing the Waveform/Parameter Configuration view.

NOTE: **Local configuration settings are stored as browser cookies. If the cookies are deleted from the system, the local Windows ID configuration settings will be reset. For additional information, refer to "Understanding Login ID's" on page 1 - 2.**

To access the Waveform/Parameter Configuration view:

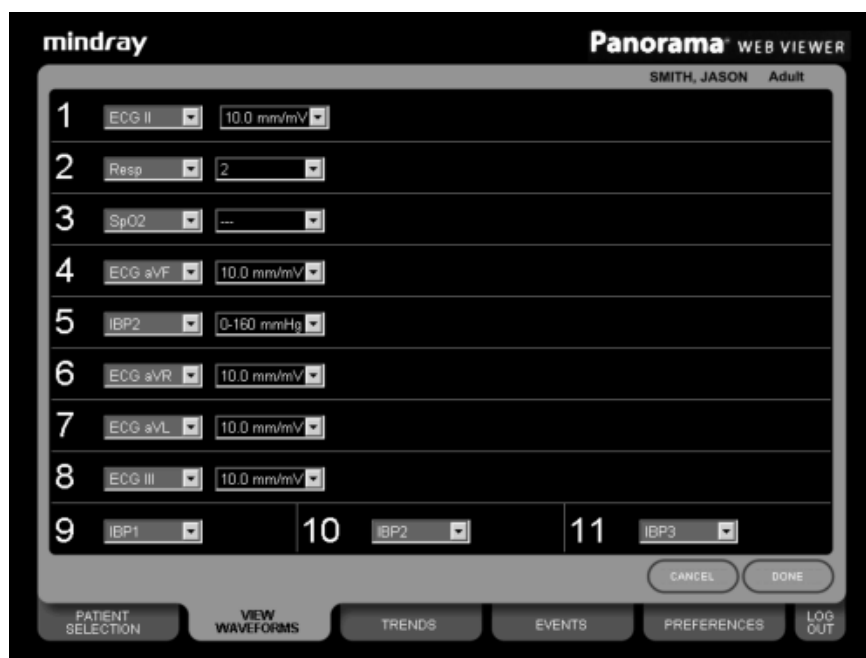- Click the **CONFIGURE** button from the **VIEW WAVEFORMS** tab.

FIGURE 2-2 VIEW WAVEFORMS Tab - Waveform/Parameter Configuration View

To change the current configuration settings:

1. Click any of the drop-down lists to change the selected parameter. For the waveform parameters, also select a wave gain.

NOTE: **The waveform drop-down lists are independent of the sensors in use at the bedside monitor. If a waveform is selected that is currently not in use at the bedside monitor, the waveform can be selected, but no data will be displayed at the Web Viewer.**

2. (Optional) To display fewer waveforms in the Waveforms view, select **Off** in any of the waveform drop-down lists.

NOTE: **The first ECG waveform position cannot be turned off.**

NOTE: **The Waveform Tile Area displays waveforms until a waveform tile is set to "Off" in the configuration view.**

3. (Optional) To turn off any of the three parameter tiles (positions 9, 10, and 11), select **Off** from the drop-down list.

NOTE: **If the parameter is set to Off, the tile displays but does not contain any digital data.**

4. Click the **DONE** button to accept the settings or the **CANCEL** button to discard the settings.

Refer to the "Common Waveforms and Parameters" chapter to see a complete list of the drop-down list choices.

2.2   Viewing Historical Data

Access the **TRENDS** tab or **EVENTS** tab to view a selected patient's historical data (for example, event and trend data). Historical tabs indicate when an alarm or a specific event type has occurred by displaying the alarm with its corresponding alarm priority color or event in blue.

- Red indicates that the trend or event was stored during a Priority 1 physiological alarm condition
- Yellow indicates that the trend or event was stored during a Priority 2 or 3 physiological alarm condition
- Blue indicates that the trend was stored when a user marked event occurred at either the Panorama Central Station or the bedside monitor. It could also indicate that the Nurse Call button was pressed on the Panorama Telepack.

Once a historical tab is selected, the data will not be updated again until the **REFRESH** button is selected. Selecting the **REFRESH** button ensures that the data displayed at the Web Viewer is the most current data available from the selected Panorama Central Station.

2.2.1   TRENDS Tab

The **TRENDS** tab provides access to a patient's trended digital data from the central station. The monitoring device, utilized parameters, and configured settings determines the data that displays in the **TRENDS** tab. All previously collected parameter data displays, even if the parameter is not currently being monitored.

Trends can be viewed in two formats, either as a list (List Trend view), or graphically (Graphic Trend view). Both views, and the configuration of these views, are described in the following sections.

2.2.1.1   Accessing the List Trend View

The List Trend view is displayed first when the **TRENDS** tab is selected. The List Trend view displays all the patient's trended data in a list format. The List Trend view displays the most recent trend record in the first column of the grid when it is first accessed.

Refer to the "Common Waveforms and Parameters" chapter to review a list of the parameters that may be displayed in the List Trend view.

To access the List Trend view:

- Once a patient has been selected, click the **TRENDS** tab. The List Trend view displays (shown in FIGURE 2-3 on page 2-6).

FIGURE 2-3 TRENDS Tab - List Trend View - (15 minute trend interval)

The List Trend view has the following characteristics:

- Displays the most current trend record in the first column
- Does not support trend row and column selection
- Displays the date and time horizontally below the patient name
- Uses the configured trend interval when displaying the time
- Displays the parameter name and units of measure from the bedside, or the units of measure from the central station for the Telepack, vertically on the far left side
- Displays vertical and horizontal scroll bars only when needed
- Displays a parameter background color when a trend is associated with an alarm

NOTE: **For additional details regarding alarm priority colors, refer to "Viewing Historical Data" on page 2 - 5. Refer to the Panorama Operating Instructions for additional information regarding alarm priorities.**

2.2.1.2 Accessing the List Trend Configuration View

The configured trend display settings determine at what interval the trend data displays. Trend data is automatically stored at the central station every minute but, by default, is displayed in 15 minute intervals (shown in FIGURE 2-3 on page 2-6) unless an alternate Trend Display interval is selected.

NOTE: **Local configuration settings are stored as browser cookies. If the cookies are deleted from the system, the local Windows ID configuration settings are reset. For additional information, refer to "Understanding Login ID's" on page 1 - 2.**

To change the trend interval:

1. Click the **CONFIGURE** button from the List Trend view.

2. Click the **Trend Interval (minutes)** drop-down box, then select an interval period. Interval periods include 1, 5, 10, 15, 30, 60, and 120.

3. Click the **DONE** button to accept the settings or the **CANCEL** button to discard the settings.

2.2.1.3   Accessing the Graphic Trend View

The Graphic Trend view (shown in FIGURE 2-4 on page 2-7) provides a graphical representation of all the selected patient's trended digital data. This view is divided into three sections. A zoomed-in or uncompresed area, a trend parameter area, and a zoomed-out or compressed area. What is displayed in the compressed area (lower portion of view) and parameter portion, (middle of view) is dependent on where the Trend Scroller is positioned in the uncompressed area (top portion of view).The Graphic Trend view displays the most recent graphic trend record when it is first accessed.

To access the Graphic Trend view:

- Click the **GRAPHIC TREND** button from the List Trend view. The Graphic Trend view displays (shown in FIGURE 2-4 on page 2-7).
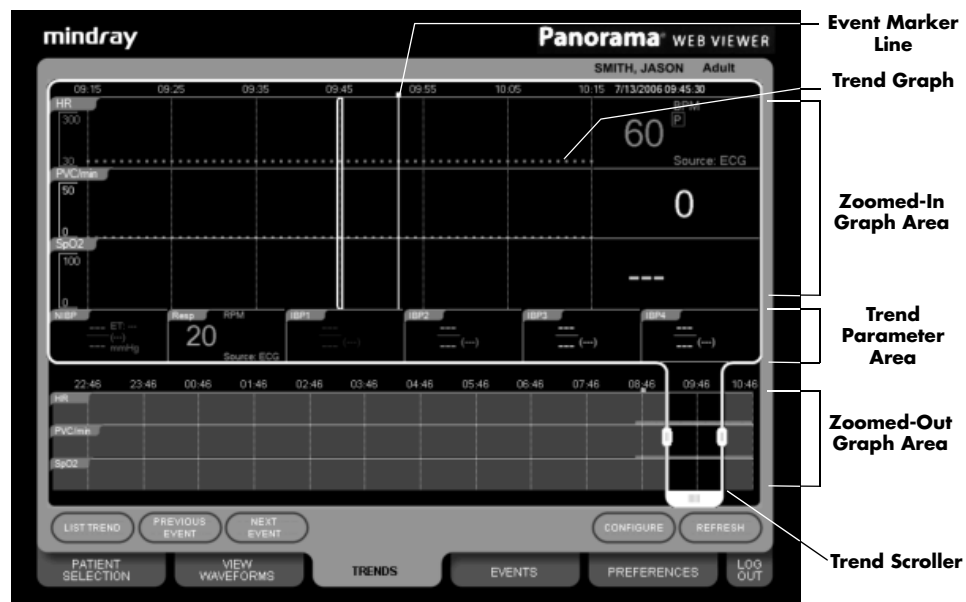

FIGURE 2-4 TRENDS Tab - Graphic Trend View

Zoomed-In Graph Area

The Zoomed-In Graph area displays the following:

- Two or three Trend Graphs per the configuration
- Trend data in the time range specified by the Trend Scroller
- Trend record as a colored plotted point, which is defined by the Web Viewer system administrator
- Dashed vertical grid lines at configured trend intervals
- Trend time cursor
- Date-time showing the value of the trend time cursor
- Trend tile parameter labels
- Scale bars for each graphed trend parameter
- Colored vertical event marker lines for each physiological event

NOTE: **For additional details regarding alarm priority colors, refer to "Viewing Historical Data" on page 2 - 5.**

- Dashed vertical grid lines represent the Trend Scroller time range. (Refer to the Table 2-1 on page 2-10 on page for specific intervals.)
- Gaps in data may be attributed to clock changes, placing the patient in Standby or when communication was lost
- An orange dashed vertical grid line indicating that the clock of the central station collecting the selected patient's data was adjusted backwards.

NOTE: **The Zoomed-In Trend Graph Area will not plot graphic trend data between the orange clock adjusted dashed vertical grid line and the next dashed vertical grid line.**

Refer to the Panorama Operating Instructions for additional information regarding alarm priorities.

Event Markers

The Graphic Trend view displays colored vertical event markers indicating that a physiological event, user marked event, or a nurse call event occurred at that time. The event marker color is related to alarm priority or the specific event type.

- Red indicates that the event was stored during a Priority 1 physiological alarm condition
- Yellow indicates that the event was stored during a Priority 2 or 3 physiological alarm condition
- Blue indicates that the event was stored when a user marked event occurred at either the Panorama Central Station or the bedside monitor. It could also indicate that the Nurse Call button was pressed on the Panorama Telepack.

NOTE: **For additional details regarding alarm priority colors, refer to "Viewing Historical Data" on page 2 - 5.**

To view the associated event waveforms:

1. Navigate to an event marker line (shown in FIGURE 2-5 on page 2-9).

2. Left click the event marker line to display the event message, the event time, and a "Click for details." message (shown in FIGURE 2-5 on page 2-9).

NOTE: **When a deleted event is selected (which may happen if the event was deleted at the central station and the Web Viewer page was not refreshed), the system will automatically open the Event List view.**
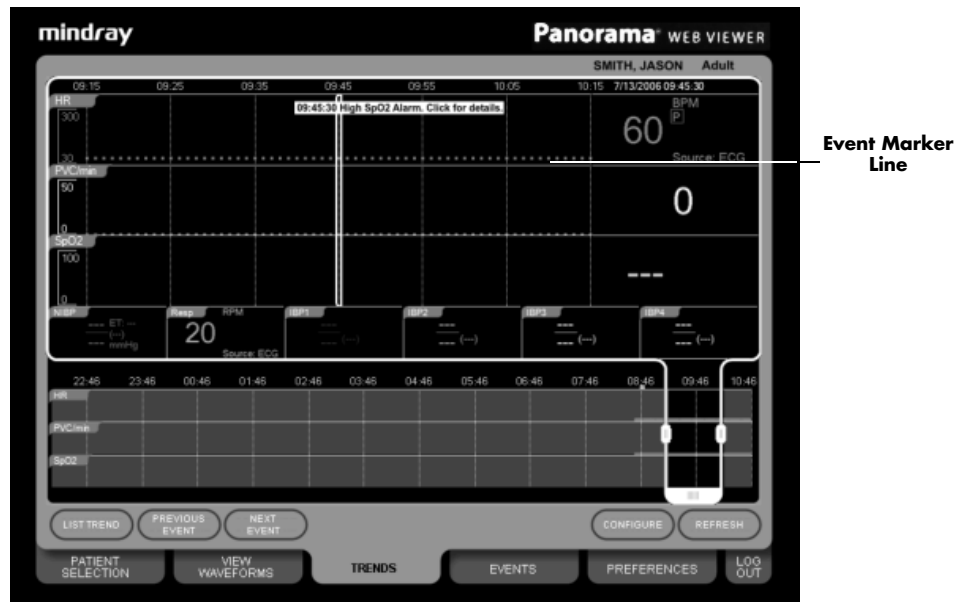
FIGURE 2-5 TRENDS Tab - Graphic Trend View - Selected Event Marker

3. (Optional) Left click outside the "…Click for details" message to hide the message or left click the event message to navigate to the Event Detail view.

NOTE: **Closing the Event Detail view for the selected event marker will return you to the Event List, not to the Graphic Trend view.**

Trend Parameter Tile Area

The Trend Parameter Tile Area will display six (6) parameter tiles. The parameters that are displayed may be customized in the Graphic Trend Configuration view.

Zoomed-Out Graph Area

The Zoomed-Out Graph area displays the following:

- Trend Date-Time below the Parameter Area
- Dashed vertical grid lines at one-hour increments
- Event Markers (indicated by colored squares) for physiological events
- Trend Scroller which controls the time interval displayed in the Zoomed-In Graph area
- A 12-hour time period in the visible scrolling region

Refer to the Panorama Operating Instructions for additional information regarding alarm priorities.

Navigating in the Zoomed-Out Graph Area

Navigating in the Zoomed-Out Graph area can be done by using the Trend Scroller (shown in FIGURE 2-4 on page 2-7) or the **PREVIOUS EVENT** and/or **NEXT EVENT** buttons. Refer to Table 2-1 for a list of trend scroller time intervals.

Using the Trend Scroller:

- Scroll the trend time back by pressing and holding the left mouse button on the bottom handle of the Trend Scroller and sliding it to the to the left. The Trend Scroller will stop moving when it has reached the beginning of the trend data.
- Scroll the trend time forward by pressing and holding the left mouse button on the bottom handle of the Trend Scroller and sliding it to the to the right. The Trend Scroller will stop moving when it has reached the end of the trend data.
- Expand the trend time period by stretching (using the vertical handles on either side of the scroller) the Trend Scroller on either side
- Compress the trend time period by contracting (using the vertical handles on either side of the scroller) the Trend Scroller on either side

TABLE 2-1 Trend Scroller Time Intervals

INTERVAL	TIME PERIOD SHOWN IN ZOOMED-IN VIEW
10-minute	1 hour (default)
15-minute	2 hours
30-minute	4 hours
45-minute	6 hours
1-hour	8 hours

Using the PREVIOUS EVENT and NEXT EVENT buttons:

- Click the **PREVIOUS EVENT** button to skip to the previous event in the List Trend view (from the time of the cursor)
- Click the **NEXT EVENT** button to skip to the next event in the List Trend view (from the time of the cursor)

2.2.1.4   Configuring the Graphic Trend View

The trend graphs and digital parameters displayed in the Graphic Trend view can be configured by accessing the Graphic Trend Configuration view.

NOTE: **Local configuration settings are stored as browser cookies. If the cookies are deleted from the system, the local Windows ID configuration settings are reset. For additional information, refer to "Understanding Login ID's" on page 1 - 2.**

To access the Graphic Trend Configuration view:

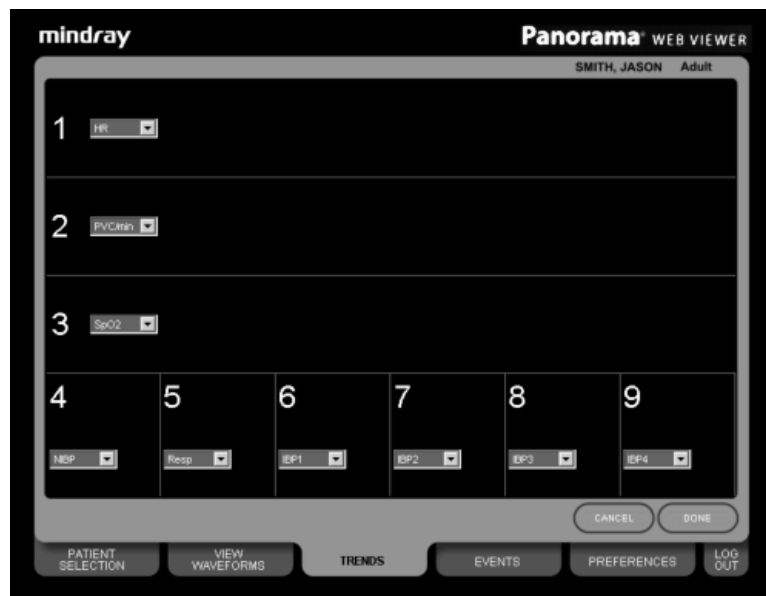• Click the **CONFIGURE** button from the Graphic Trend view.

FIGURE 2-6 TRENDS Tab - Graphic Trend Configuration View

To change the configuration settings:

1. Click any of the drop-down lists to change the parameter.

2. (Optional) To display fewer graphs in the Graphic Trend view, select **Off** in the third waveform drop-down lists.

NOTE: **Trend Graph position one (1) and two (2) cannot be turned Off.**

3. (Optional) To turn off any of the six (6) parameter tiles (position 4 through 9), select **Off** from the drop-down list.

NOTE: **If the parameter is set to Off, the tile displays but does not contain any digital data.**

4. Click the **DONE** button to accept the settings or the **CANCEL** button to discard the settings.

For a complete list of all the options available in the parameter drop-down list, refer to the "Common Waveforms and Parameters" chapter.

2.2.2   EVENTS Tab

The **EVENTS** tab provides access to a patients event data. The monitoring device at the time of the event, utilized parameters, and configured settings determines the data that is displayed in the **EVENTS** tab. The displayed data is based on what was monitored at the time that the event was saved.

Events can be viewed in two formats, either as a list (Event List view), or in a more detailed view (Event Detail view). Both views are described in the following sections.

2.2.2.1   Accessing the Event List View

The Event List view displays first when the **EVENTS** tab is selected. The list is sorted in descending order displaying the most recent event time at the top. The Event List view includes both physiological and non-physiological (or an event with no waveform data) events.
The following displays once a physiological event is selected:

- ECG waveform for the active lead with a corresponding heart rate tile
- Two columns of parameter tiles related to the event
- Event description in the System Message Area

When a non-physiological event is selected, no waveform, parameters or event description displays.

To access the Event List view:

- Once a patient is selected, click the **EVENTS** tab. The **EVENTS** tab List view displays (shown in FIGURE 2-7 on page 2-13).
- Click the **REFRESH** button periodically to update the view.

NOTE: **No event is selected when the Event List view is first accessed.**

FIGURE 2-7 EVENTS Tab - Event List View

2.2.2.2   Accessing the Event Detail View

The Event Detail view displays 20 seconds of the selected physiological event or marked event in the Event List view. The waveforms and parameters displayed in the Event Detail view can be customized.

To access the Event Detail view:

• Click the **DETAIL VIEW** button after selecting a physiological event in the Event List view.
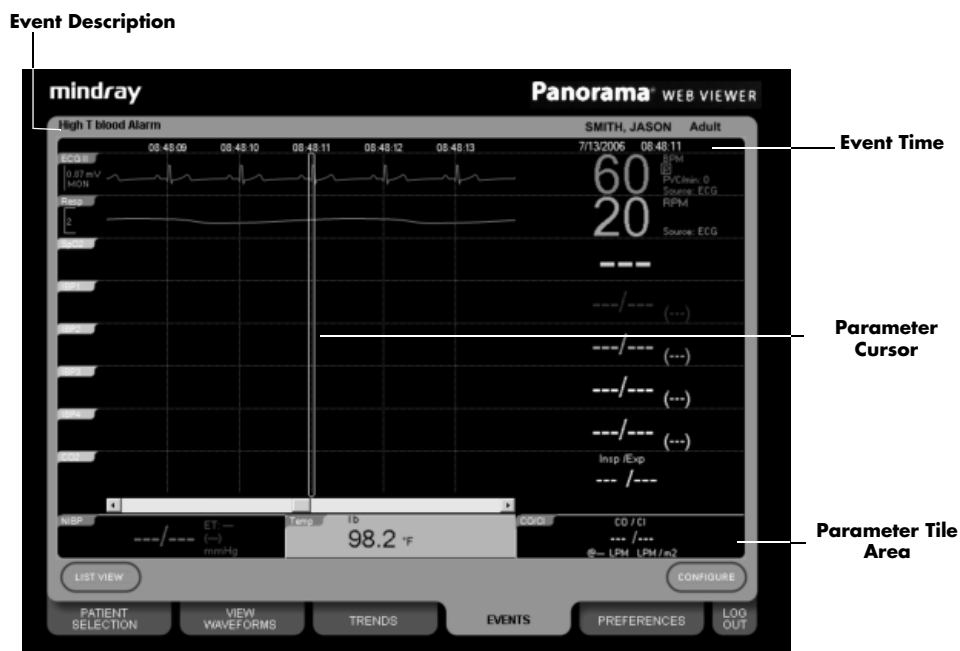
Event Description

FIGURE 2-8 EVENTS Tab - Event Detail View (Eight row configuration)

The Event Detail view has the following characteristics:

• Same screen layout as the Waveforms view

• Contains a Parameter Cursor

• Displays a horizontal scroll bar to move the Parameter Cursor in the twenty-second waveform region

• Movement of the Parameter Cursor controls the digital values shown in the Parameter Tile Area

• Displays a parameter background color when a parameter is associated with an alarm

NOTE: **For additional details regarding alarm priority colors, refer to "Viewing Historical Data" on page 2 - 5.**

• Corresponds the parameter values to the position of the Parameter Cursor

• Displays the event time from the position of the Parameter Cursor

• Displays the event description in the System Message Area

2.2.2.3   Configuring the Event Detail View

The number of waveforms and digital parameters displayed in the Event Detail view can be configured by accessing the Event Detail Configuration view.

NOTE: **Local configuration settings are stored as browser cookies. If the cookies are deleted from the system, the local Windows ID configuration settings are reset. For additional information, refer to "Understanding Login ID's" on page 1 - 2.**

To access the Event Detail Configuration view:

•   Click the **CONFIGURE** button from the Event Detail view

The Event Detail Configuration view functions identically to the Waveform/Parameter Configuration view. For specific instructions, refer to ''Configuring the Waveform/Parameter View'' on page 2 - 3.

For a list of all the Panorama Central Station event descriptions, refer to "Alarms and Events" chapter of the Panorama Central Station Operating Instructions.

2.3   Troubleshooting

This section lists some of the potential messages and issues that may occur while using the **TRENDS** and **EVENTS** tab.

MESSAGE/ISSUE *	REASON	SOLUTION
No Parameters Available is displayed in the Event Parameter Area	No event is selected or a non-physiological event is selected.	Select a physiological event.
	The parameter is not currently being monitored at the bedside monitor.	Change the configuration settings to remove the parameter from the view.
No Waveforms Available is displayed in the Event Waveform Area	No event is selected or a non-physiological event is selected.	Select a physiological event.
	The waveform is not currently being monitored at the bedside monitor.	Change the configuration settings to remove the waveform from the view.
No historic data is displayed in the **TRENDS** and **EVENTS** tab.	The setting **Network Security: LAN Manager authentication level setting** in Windows Server 2008 is improperly set.	In the Windows Server 2008, configure **Network security: LAN Manager authentication level setting** to **Send LM&NTLM response**. Then restart the server.

*   *Messages are shown in all bold text.*

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3.0 *Common Waveforms and Parameters*

3.1 Waveform and Parameter Tile Options

The waveforms and parameters that are displayed in the Waveform/Parameter view and Event Detail view may be customized using the same configuration view. The configuration view contains drop-down list boxes with various waveform and parameter choices. The drop-down list box choices are included in table Table 3-1 and Table 3-2. The waveforms, wave gains, and parameters are listed in the table in the order they will be displayed in the drop-down list. The waveform and parameter drop-down lists are independent of the sensors at the bedside monitor.

NOTE: **Agent, O$_2$, and N$_2$O are not available in the parameter display options drop-down list box.**

TABLE 3-1 Waveform Parameter Choices

WAVEFORMS	WAVE GAINS
ECG I	2.5 mm/mV
ECG II	5.0 mm/mV
ECG III	10.0 mm/mV
ECG aVR	20.0 mm/mV
ECG aVL	30.0 mm/mV
ECG aVF	
ECG V/VI	
ECG V2	
ECG V3	
ECG V4	
ECG V5	
ECG V6	
Resp	1
	2
	3
	4
	5
SpO$_2$	— (no wave gain settings available)

TABLE 3-1 Waveform Parameter Choices (Continued)

WAVEFORMS	WAVE GAINS
IBPx (1-8)	0-20 mmHg 0-40 mmHg 0-80 mmHg 60-140 mmHg 0-160 mmHg 0-225 mmHg 0-320 mmHg (-10)-10 mmHg
CO_2 (unit options mmHg, %, kPa)	40 mmHg 60 mmHg 100 mmHg
	5.0 % 7.5 % 10.0 %
	5.0 kPa 7.5 kPa 10.0 kPa
Off	– (no wave gain settings available)

TABLE 3-2 Parameter Choices

AVAILABLE PARAMETERS	
SpO_2	ST-I
NIBP	ST-II
Resp	ST-III
IBPx (1-8)	ST-aVR
CO_2	ST-aVL
Temp	ST-aVF
CO/CI	ST-V/VI
CCO/CCI	ST-V2
CCO/CCI STAT	ST-V3
SVR/SVRI	ST-V4
SvO_2	ST-V5
$ScVO_2$	ST-V6
PAWP	QT
BIS	Off

3.1.1   Waveform Display Labels

The Panorama Web Viewer waveform labels mimic the Panorama Central Station waveform labels. For a complete list of parameters labels, refer to the Panorama Central Station Operating Instructions.

3.1.2   Parameter Sources

The parameter source originates from the bedside monitor. For example, the Heart Rate parameter tile displays ECG as the source when the bedside monitor uses ECG as the source.

3.1.3   Waveform/Parameter Colors

The Panorama Web Viewer waveform parameter colors are configured by the Panorama Web Viewer Administrator.

3.1.4   Pacer Enhancement Settings

The ECG waveform tile displays the Pacer Enhancement setting from the Panorama Central Station at the time the patient is selected at a single workstation. If a patient with configured pacer enhancement settings is being viewed at multiple workstations, the pacer displayed enhancement settings mimic those displayed at the single workstation, even if they were changed at the central station. The updated settings will not be displayed at the Web Viewer workstation until one of the following conditions occurs:

- The patient is reselected from the patient list
- The patient tile at the central station transitions from Communications Lost to Active
- The patient transitions from Standby to Active
- The patient transitions from Discharge to Active
- The patient is admitted to a Panorama ViewStation

3.2   Graphic Trend Parameter Tile Options

The Graphic Trend view may be configured to use selected parameters. The choices available for all the parameter drop-down list boxes contained in the Graphic Trend Configuration view (for positions 1-8 in the configuration view), are included in Table 3-3:

TABLE 3-3

AVAILABLE PARAMETERS

HR	ST-I
PVC/min	ST-II
Pause/min	ST-III
SpO_2	ST-aVR
NIBP	ST-aVL
Resp	ST-aVF
IBPx (1-8)	ST-V/VI
CO_2	ST-V2
T1	ST-V3
T2	ST-V4
T3	ST-V5
TBlood	ST-V6
CO/CI*	BIS
CCO/CCI	BIS L
CCO/CCI STAT	BIS R
SVR	QT
SvO_2	Off**
$ScVO_2$	
PAWP	

*   *CO/CI is only available in position 4-9.*
**   *The Off option will not be available in the first and second trend configuration position.*

3.3   Invalid Data Display

The Panorama Web Viewer uses dashes (–), Xs (XX) or a straight line (waveform) to show invalid data.

Dashes (--) Digital Data

Digital data is replaced with dashes (–) for the following reasons:

- Data is above the maximum value
- Data is below the minimum value
- Parameter is not available
- Lead or a sensor is off
- Sensor is not zeroed
- Parameter is zeroing
- Measurement has not been taken
- Measurement is being taken
- Measurement has timed out
- Measurement is being retried
- Parameter is turned off
- View 12™ card is relearning
- PVC/min counter reset
- Gas module or the source agent is occluded
- Gas module or the source agent is purging
- Gas module is turned off
- ST license is not available
- Learning ST Values
- SQI is below 15%

Xs (XX) Digital Data

Digital data is replaced with Xs (XX) for the following reasons:

- IBP parameter is not zeroed
- NIBP parameter failed to obtain a reading