

Training Workbook

Panorama®

CENTRAL STATION



Inservice Objectives

- The Panorama Training Workbook is intended to review the features and functions of the Panorama Central station. A complete description of all features can be found in the Panorama Central Station Operator’s Manual.
- The Panorama Training Workbook is an adjunct to clinical inservicing and is designed to assist in meeting the educational objectives for the use and application of the Panorama Central Station.
- Each topic in the Panorama Training Workbook contains assessment and performance criteria areas to familiarize the clinician with each listed topic.
- Not all topics covered within the Panorama Training Workbook may apply.

Hospital Name:

Department:

Completed By:.....

Date:

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Introduction



ECG Lead Placement Procedure

Site preparation and ECG electrode placement directly impact the quality of an ECG signal. Optimizing an ECG signal is imperative for accurate monitoring.

The processes involved in successful lead placement include:

- Skin Preparation
- Electrode Patches
- Lead Placement Methods: AHA

Skin Preparation

Proper skin preparation is essential to obtain accurate ECG data. Electrode sites should be clean, dry and should provide a smooth flat surface. Incidental electrical activity and inaccurate readings may occur due to incorrect skin preparation. The following skin preparation is recommended for secure patch application:

1. Clip the chest hair in a 2-4 inch diameter of the electrode site.
2. Use a dry gauze pad to remove excess skin oils, skin cells and residue from the electrode sites. Never rub the skin until it is raw or bleeding.

NOTE: Prepare the electrode site with alcohol only if the skin is extremely greasy. If alcohol is used as a drying agent, always allow the skin to dry before placing the electrode patch on the skin.

Electrode Patches

NOTE: Store electrode patches at room temperature in a sealed package until just prior to use.

NOTE: Avoid more than one type of electrode on a patient because of variations in electrical resistance.

NOTE: Avoid placing electrode patches directly over bony prominences or over any areas that move during activity such as shoulders or arms because muscle motion produces electrical activity. If an electrode patch is placed over a large muscle such as the pectorals, the monitor may detect this additional muscle activity which could lead to false arrhythmia calls.

1. Peel the backing off of the electrode patch only when it is ready for use to prevent evaporation of the contact gel medium. Visually inspect the contact gel medium for moistness. If the gel medium is not moist, do not use the electrode patch. Dry electrode patches are not conductive.

NOTE: If using the snap type electrode wires, attach the electrode patch to the lead wire before placing patch on the patient.

2. Attach the electrode patch to the skin at the prepared site. Smooth the electrode patch down in a circular motion to ensure proper skin contact. If using soft gel electrodes, never push down directly over the contact gel medium as this may displace the gel and cause monitoring artifact. If using hard gel electrodes, it is recommended that during application, the center of the electrode should be slightly pressed onto the skin to ensure direct contact. Consult the electrode patch manufacturer's instructions for specific use.
3. Secure the lead wires to the patient according to hospital practice. For additional information, refer to "Lead Placement Methods: AHA" on page 4-3. If using a Panorama Telepack, always secure the device to the patient according to hospital standard.

WARNING: As with all medical equipment, carefully route cables and connections to reduce the possibility of entanglement or strangulation.

NOTE: It is recommended that electrode patches be changed at least every 24-36 hours to maintain proper contact with the skin. Some patients may require electrodes to be changed more often. Electrode patches are disposable and should not be reused or reapplied. Try to avoid reusing the exact same electrode site during reapplication. If an electrode becomes wet with fluid, change the electrode patch.

Lead Placement Methods: AHA

The lead placement procedure that is utilized has a direct impact on the quality of an ECG waveform. The algorithm works best when a patient's R wave is significantly larger than the P or T waves to avoid difficulty in identifying the appropriate waves. On some patients, electrode patch placement and/or the ECG lead viewed may need to be adjusted to obtain a more prominent R wave.

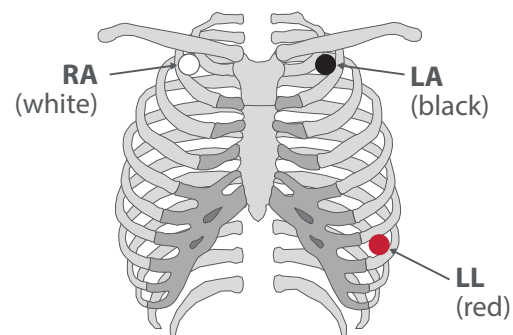
The following section outlines lead placement procedures for the American Heart Association (AHA).

3-wire Lead Set

A 3-wire lead set can monitor one of three ECG vectors (I, II, or III). The recommended 3-wire ECG lead placement is as follows.

3-wire Lead Placement (AHA)

- Place RA (white) electrode under right clavicle, mid-clavicular line within the rib cage frame.
- Place LA (black) electrode under left clavicle, mid-clavicular line within the rib cage frame.
- Place LL (red) electrode on the lower left abdomen within the rib cage frame.

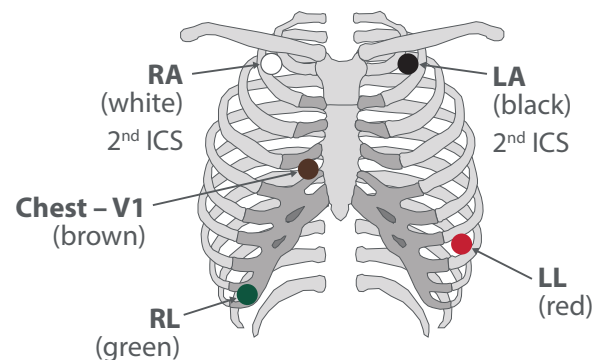


5-wire Lead Set

A 5-wire lead set can monitor seven ECG vectors (I, II, III, aVR, aVL, aVF, and V) simultaneously. The recommended 5-wire ECG lead placement is as follows.

5-wire Lead Placement (AHA)

- Place RA (white) electrode under the right clavicle, mid-clavicular line within the rib cage frame.
- Place LA (black) electrode under the left clavicle, mid-clavicular line within the rib cage frame.



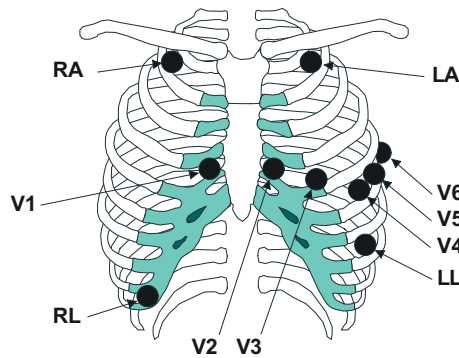
ECG Lead Placement Procedure

- Place LL (red) electrode on the lower left abdomen within the rib cage frame.
- Place RL (green) electrode on lower right abdomen within the rib cage frame.
- Place V (brown) chest lead in the proper positioning for desired lead V1-V6.

12 Lead utilizes a 10-wire ECG lead set that can monitor 12 ECG vectors (I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, and V6) simultaneously. The recommended AHA lead placement for a 12 lead ECG is as follows.

View 12 Lead Placement (AHA)

- Place RA (white) electrode under the right clavicle, mid-clavicular line within the rib cage frame.
- Place LA (black) electrode under the left clavicle, mid-clavicular line within the rib cage frame.
- Place LL (red) electrode on the lower left abdomen within the rib cage frame.
- Place RL (green) electrode on lower right abdomen within the rib cage frame.
- Place V1 (brown) chest lead in the fourth intercostal space, right sternal border.
- Place V2 (brown) chest lead in the fourth intercostal space, left sternal border.
- Place V3 (brown) chest lead midway between V2 and V4 on a straight line.
- Place V4 (brown) chest lead in the fifth intercostal space, mid-clavicular line.
- Place V5 (brown) chest lead in the fifth intercostal space, anterior axillary line.
- Place V6 (brown) chest lead in the fifth intercostal space, mid-axillary line.



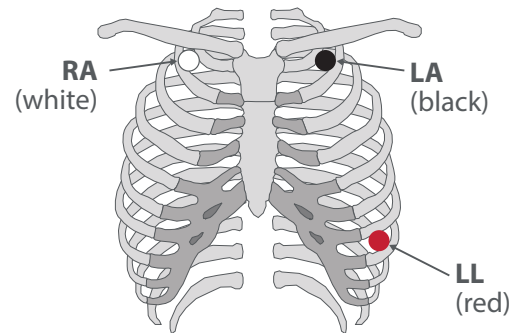
ECG Lead Placement Procedure

Lead II Monitoring

The recommended lead placement for Lead II monitoring is as follows.

Lead II Monitoring (AHA)

- Place RA (white) electrode under right clavicle, mid-clavicular line within the rib cage frame.
- Place LA (black) electrode under left clavicle, mid-clavicular line within the rib cage frame.
- Place LL (red) electrode on the lower left abdomen within the rib cage frame.



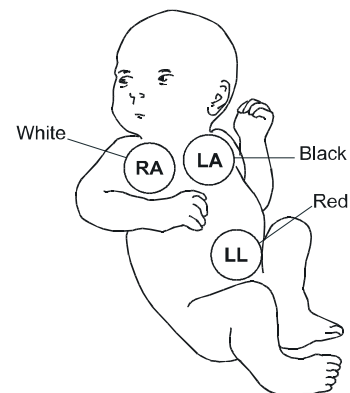
Select the ECG Lead II at the bedside monitor. Lead II is the direct electrical line between the RA (white) electrode and the LL (red) electrode.

Neonatal Electrode Placement

When using a 3-wire lead set, ECG lead placement on a neonate is usually directed towards obtaining the best possible respiration data through the ECG thoracic impedance technique. Thoracic impedance is usually measured between the Right Arm and Left Arm electrode patches. These patches should be placed on the chest directly across from each other to optimize the measurement of the neonate's chest movement. The recommended lead placement for neonate monitoring is as follows.

Neonatal 3-wire Lead Placement (AHA)

- Place RA (white) electrode under patient left clavicle, mid-clavicular line within the rib cage frame.
- Place LA (black) electrode right sternal border, fourth intercostal space within the rib cage frame.
- Place LL (red) electrode on the patient's lower left abdomen within the rib cage frame.



Monitoring A Pacemaker Patient

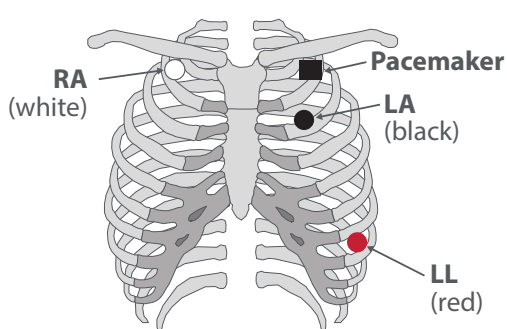
A Pacemaker patient usually requires a different electrode patch placement configuration than a non-pacemaker patient.

Do not place an ECG electrode directly over the pacemaker generator. Place the electrode patches 3-5 inches away from the pacemaker generator area to avoid electrical interference. If the electrode patches are placed closer to pacemaker generator, the ECG will contain artifact, sometimes called "picket fence syndrome." For example, if the pacemaker generator is located in the right subclavian area, relocate the Right Arm (white) electrode closer in towards the center of the chest.

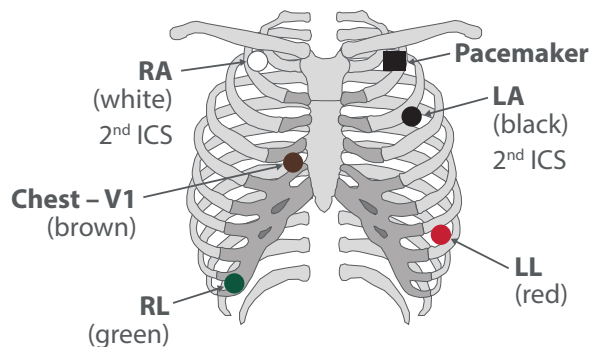
WARNING: PACEMAKER PATIENTS – Indication of the heart-rate may be adversely affected by cardiac pacemaker pulses or by cardiac arrhythmias. Keep pacemaker patients under close surveillance. Refer to "ECG Performance Requirements" in section 16 of the Panorama Operators Manual for disclosure of the pacer rejection capability.

CAUTION: Some pacemakers may contain a respiratory sensor that may produce artifact on an ECG waveform.

The recommended lead placement for a pacemaker patient is as follows.



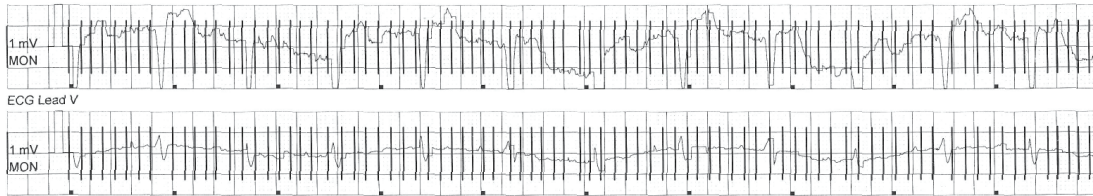
Placement for a Pacemaker Patient –
3-wire Lead (AHA)



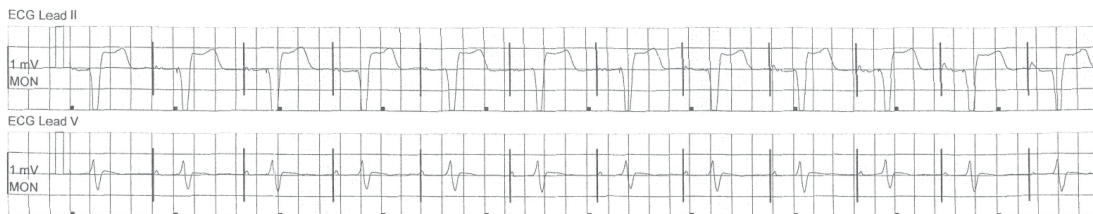
Placement for a Pacemaker Patient –
5-wire Lead (AHA)

ECG Lead Placement Procedure

Example of “Picket Fencing” – electrode too close to pacer



Corrected Lead Placement



Artifacts

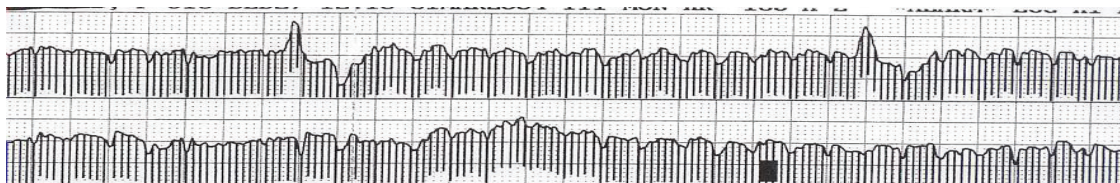
Scenario 1:

In these clinical scenarios either the pacemaker detection is turned on but the patient does not have a pacemaker or the patient has a pacemaker and the lead closest to the pacemaker is too close. The monitor is picking up an electrical signal from an alternative source.

Problem: ELECTRICAL INTERFERENCE

Solution: Turn the pacemaker detection off if no pacemaker or move electrode 3-5 inches down and away from pacemaker.

- Does patient have a TENS unit or other nerve stimulator?
- TENS units transmit electrical impulses; avoid placing ECG electrode patches near TENS electrodes. ECG electrode patches may need to be repositioned and the ECG “lead viewed” may need to be adjusted until the optimum ECG tracing is obtained.



Scenario 2:

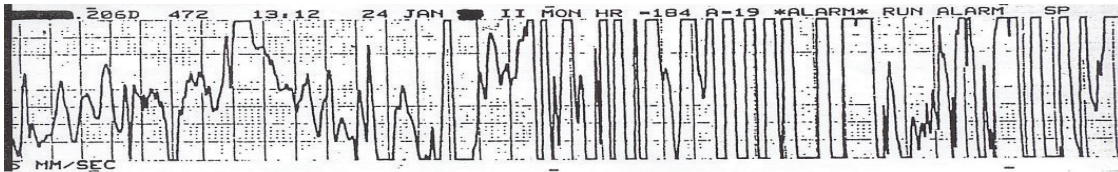
The ECG tracing is “Railing” all over the place. Monitor is constantly alarming.

Problem: POSSIBLE BROKEN LEAD WIRES

Solution: To target the broken lead wire, verify the leads you are able to monitor in.

Examples:

- If you can monitor in Lead I but not Lead II > check left leg wire
- If you can monitor in Lead III but not Lead I > check right arm lead wire



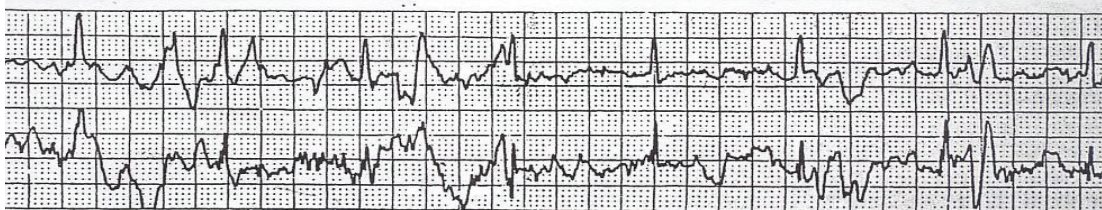
Scenario 3:

The patient is febrile, diaphoretic or the electrodes are dried out

Problem: DRY OR NON-ADHERING ELECTRODES

Solution: Change electrodes daily and PRN

- Prepare skin for electrode application



Ambulatory Telepack (Optional)



Electrode Patch Placement

All electrode patches should be placed on the patient to maximize signal and minimize interference. Refer to Electrode Patch Placement section for further details.

The Panorama Telepack can use a 3-wire lead set or a 5-wire lead set.

Battery Insertion

The telemetry telepack requires 2 AA Alkaline batteries. Batteries inserted with positive end facing upwards. Refer to marking on telepack battery compartment for further details.

- Automatic admission with battery insertion
- Secure the batteries by twisting the cap in a clockwise direction

Note: Avoid storing batteries in telepack when storing telemetry telepacks.

Nurse Call Button

Pressing **Nurse** on the Ambulatory Telepack activates a Nurse Call alarm event at the Panorama Central Station.



The Nurse Call event will store 20 seconds of waveform data and can be configured to automatically print a report. It can also be configured to generate a page for Central Stations that are equipped with the Paging option.

Ambulatory Telepack (Optional)

Attendant Present Function

Simultaneously pressing and holding **Attendant Present** buttons for 5 - 6 seconds activates an Attendant Present event at the Panorama Central Station. Pressing and holding the Attendant Present buttons simultaneously for 5 - 6 seconds acknowledges the Nurse Call alarm on the selected patient.

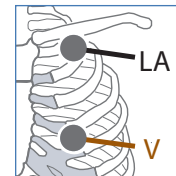


LED Indicators

The ambulatory telepack uses LED indicator lights to verify the telepack's functionality.

Press the **System Check** button to verify function:

- ECG Electrode placement diagram:
 - Steady green light = Good impedance
 - Unlit = No impedance, no batteries
- Central Station Communication Link Status:
 - Steady green light = Good communication
 - Flashing = Limited communication
 - Unlit = No radio communication with antennae system
- Battery Status:
 - Steady = Good battery status
 - Flashing = Less than 2 hours of battery life remain
 - Unlit = No battery status



Printing an All Strip Report

Press the **Remote Record** button to print an All Strip Report at the Panorama Central Station on the selected patient.

Changing an ECG Lead Vector when using a 3-Wire Lead Set

Pressing the **Lead Select** button on the telepack changes the active lead displayed in the patient's tile on the Panorama Central Station.

- Press repeatedly to toggle between leads I, II, and III
- LED indicator lights illuminate on the electrode patches corresponding to the selected lead

Cleaning the Ambulatory Telepack

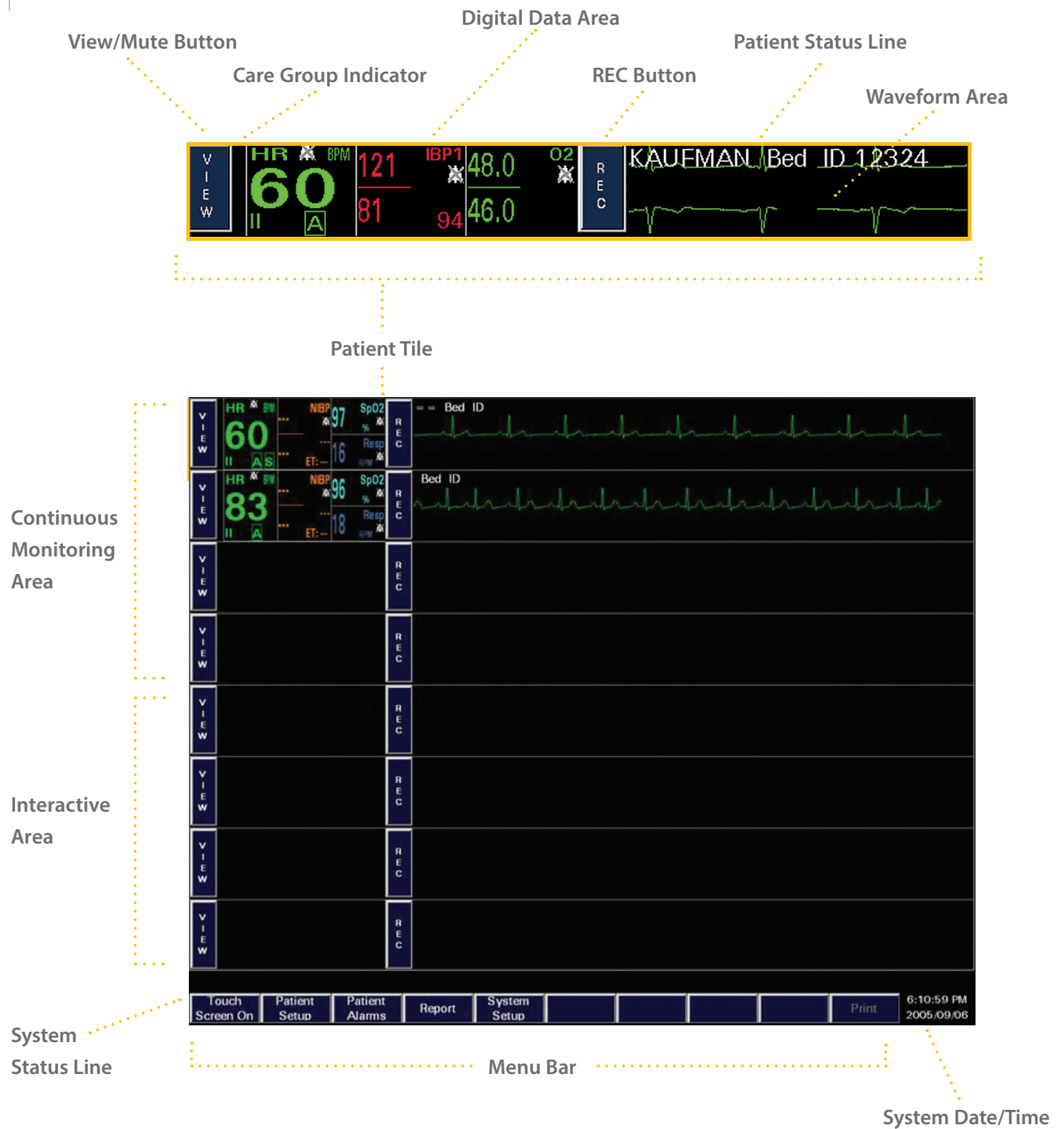
- Remove batteries and reattach the battery compartment's cap.
- Wipe telepack; do not submerge.
- Disconnect lead wire sets from telepack when vigorous cleaning is required.
- Allow to air dry before inserting new batteries

Note: Refer to the Panorama Operator's Manual for further details.

Cleaning the SpO₂ Module

- Remove the SpO₂ Module from the Ambulatory Telepack.
- Insert the SpO₂ Module cleaning plug into the telepack/module connector at the lower inside of the module.
- Wipe module; do not submerge.
- Allow to air dry before use.

Panorama Central Station Overview



Main Screen

- Each patient tile can display all numeric and waveform parameters utilized on the patient
- Uses a split screen display for entering and modifying patient information
 - Top Half: Continuous Monitoring
 - Bottom Half: Interactive area
- Touch screen or mouse interface
- Patient Tiles
- Menu Bar
- System Status Line
- System Date/Time Area

Patient Tile

Each Tile is specific to one patient and one monitoring device. A patient tile includes:

- **VIEW/MUTE** Button
- Care Group Indicator
- Digital Data Area
- **REC** Button
- Waveform Data Area
- Patient Status Line

VIEW/MUTE Button

The text of this button is either **VIEW** or **MUTE** depending on the patient's state

- **VIEW:**
 - During a non-alarm state
 - Is used to gain access to patient's historical information
- **MUTE:**
 - During an alarm state
 - Used to silence the audio portion of an alarm

Care Group Indicator

The indicator is a colored rectangular bar, located between **VIEW** and the patient's HR tile, illustrating the care group assigned to the patient. It can be used to signify a diagnostic grouping, clinician assignment, etc.



Digital Data Area

The Digital and Waveform Data Area includes:

- Up to 5 Digital Parameters Displayed
- ECG Lead Indicator
- Arrhythmia and ST Indicators
- Alarm Icons/Visual Indicators
- Parameter units of measurement

Waveform Data Area

Configurable to display up to two waveforms. Includes the Patient Status Line.

REC Button

Selecting REC prints an All Strip Report for the patient. The All Strip report contains 10 seconds of waveforms.

Patient Status Line

Configurable to display patient demographic information. Displays physiological and technical alarm text strings.

System Status Line

Displays system events, transfer messages, and other system-wide information.

Menu Bar



Located at the bottom of the display and are used to navigate the system.

- Touch Screen On/Off Menu Button

Note: With the Panorama software version 8.6 and above, the Touch Screen On/Off function has been moved to the System Setup Touch Screen tab.

- Patient Setup Menu Button
- Patient Alarms Menu Button
- Report Menu Button
- System Setup Menu Button
- Paging Menu Button (Optional)
- Print Menu Button

Automatic Admit

Auto Admit

If a patient is connected to a monitoring device assigned to the Panorama Central Station, the patient is automatically admitted for immediate monitoring. Demographic information is NOT needed for auto admit. Alarms, parameters, options and other settings are initially configured based on default settings configured in the System Setup Menu.

Note: Patient must be discharged to ensure Auto Admit for next patient.

Ambulatory Telepack

Auto Admit occurs once the batteries are inserted into the ambulatory telepack and the battery door is secured.

Note: Remember to discharge previous patient prior to attempting auto admit.

Bedside Monitor

Auto Admit occurs once the bedside monitor becomes active.

Note: Remember to discharge previous patient prior to attempting auto admit.

Ambulatory Telepack with Nonin SpO₂ Module

With the Nonin SpO₂ Module attached, the Ambulatory Telepack must be powered down and back on to enable the SpO₂ module. This will allow for the Auto Admit of the telepack and the SpO₂ module.

Note: Remember to discharge previous patient prior to attempting auto admit.

Alarm Behaviors

Visual and Audio Alarm Indicators

As configured, the Panorama Central Station can produce visual and audio notifications upon identification of certain alarm conditions. The Panorama Central Station has three types of alarm condition categories:

- **Physiological Alarms** – Such as Arrhythmia alarms, numeric parameter alarms, etc.
- **Technical Alarms** – Such as Leads Off, Sensor Off, etc.
- **System Alarms** – Such as laser out of paper, etc.

These alarms produce varying visual and audio alarm notifications based on configured importance. Consult your system administrator and the Panorama Operator's Manual for further details.

Note: Ensure that the volume level of the audio alarms is set high enough to be heard above the ambient noise level of the monitored area. For assistance 24 hours a day with emergency clinical issues, call 1-800-288-2121 (press 0) ask the operator for "Clinical Support."

Latched Alarms

A latched alarm is an alarm which will continue to produce visual and audio alarm notifications after the condition that produced the alarm has resolved until it is acknowledged by a clinician.

Asystole, V-Fib, and V-Tach are latched alarms. They will continue to produce sound and flash the alarm message until acknowledged by the clinician.

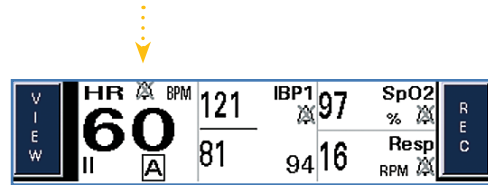
To acknowledge a latched alarm that has subsided, select over the digital or waveform data area of the patient tile.

Note: Some **technical** alarms (i.e. Lead Off) will continue to alarm until acknowledged. The alarm message will remain until the condition is resolved. Refer to the Panorama Operator's Manual for further details.

Patient Selection

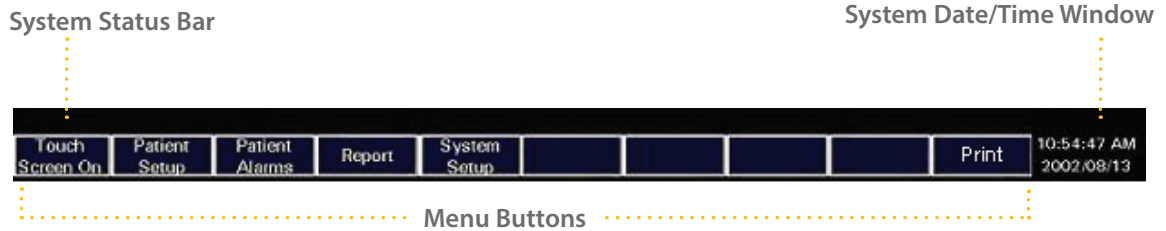
Selecting a Patient Tile

To choose a patient, select the digital or waveform area of the patient tile. This will highlight the selected tile's digital area in a white background. A tile can be selected once the Menu Button is open, a monitoring device is assigned to the patient tile and admission has occurred.



The Panorama allows for navigation between patients simply by choosing another patient tile.

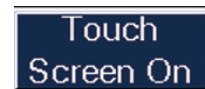
Menu Bar



TOUCH SCREEN ON/OFF MENU BUTTONS

Note: With the Panorama software versions 8.6 and above, the Touch Screen On/Off function has been moved to the system setup Touch Screen tab.

When the text displays "**Touch Screen On**", the touch screen is active. When the text displays "**Touch Screen Off**", the touch screen is disabled to allow for cleaning of display.



To clean the screen:

- Select "**Touch Screen On**" button to change button label to "**Touch Screen Off**" thereby disabling the touch screen interface.
- Clean screen according Panorama Operator's Manual guidelines

Note: Remember to select the "**Touch Screen Off**" button to change button label to "**Touch Screen On**" after cleaning to re-enable the touch screen interface.

Menu Bar • Patient Setup Menu Button

PATIENT SETUP MENU BUTTON

DEMOGRAPHICS TAB

The Demographics Tab allows for entry and modification of patient demographics information. It can only be accessed if a monitoring device is assigned to a patient tile.

The screenshot displays the 'Demographics' tab within a patient setup interface. The top navigation bar includes buttons for 'Demographics', 'Transfer', 'Discharge', 'Display', 'Standby', 'Wave Gain', and 'Print Setup'. The 'Demographics' tab is active, showing a form with the following fields and controls:

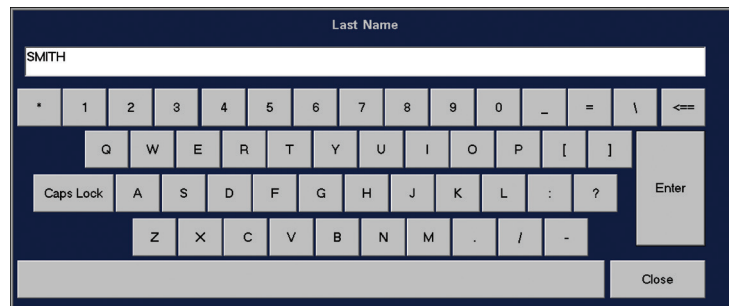
- Device Label:** ICU
- Bed:** [Redacted]
- Last Name:** [Redacted]
- First Name:** [Redacted]
- ID:** [Redacted]
- Height:** [Redacted] in, [Redacted] cm
- Weight:** [Redacted] lbs, [Redacted] kg
- Gender:** Unspecified
- Date Of Birth:** [Redacted]
- Patient Size:** Adult
- Doctor:** [Redacted]
- Comment:** [Redacted]

On the right side of the form, there is a vertical stack of buttons: 'Pacer', 'Arrhythmia', 'Care Group', 'Retrieve Discharged Pt.', and 'Normal Screen'.

Entering Patient Demographics using Keyboard (Name, ID Number, Gender, DOB, Doctor, Comment)

To enter patient information:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient tile
- Select the white edit box to display the on screen keyboard
- Type in the patient's information using the on screen keyboard
- Select **ENTER** to accept the information
- Last Name, First Name and/or ID number are necessary for patient retrieval after discharge. Refer to Retrieving Discharged Patient section for further information.



BIDIRECTIONAL

Entering information at the central station enters it at the bedside monitor and entering information at the bedside monitor enters it at the central station.

Note: Bed numbers can only be entered at the Panorama Central Station for a patient on an Ambulatory Telepack. Bed numbers for monitors **must** be entered at the bedside monitor.

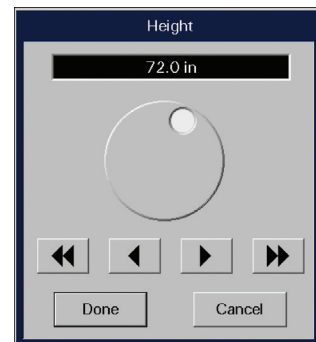
Simultaneous Patient Demographic Tab Editing

If using a bedside monitor with the Panorama Central Station, patient demographic changes cannot be made at the bedside monitor and the central station simultaneously. Refer to the Panorama Central Station Operator's Manual for further details.

Entering Patient Demographics using Round Dial Controls (Height, Weight, Date of Birth)

To enter patient information:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient tile
- Select the white edit box to display the round dial controls
- Use the dial control to enter the value by rotating it clockwise or counter clockwise. Arrows below the dial control allow for incremental changes.
- Select **DONE** to enter information and return to the **DEMOGRAPHICS** tab.



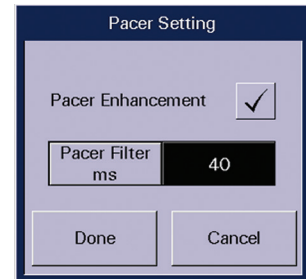
BIDIRECTIONAL

Entering information at the central station enters it at the bedside monitor and entering information at the bedside monitor enters it at the central station.

Pacer Sidebar Button

To adjust Pacemaker settings:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient tile
- Select **PACER** sidebar button
- When enabled, the Pacer Enhancement places:
 - A ✓ mark in the Pacer Enhancement checkbox in the Pacer Setting dialog.
 - A **P** above the Heart Rate tile in the Bedside Tab.
 - A colored (yellow or green) spike is displayed before all pacemaker-induced ECG complexes.
 - The Pacer Filter adjusts the blanking period for filtering of the ECG data.

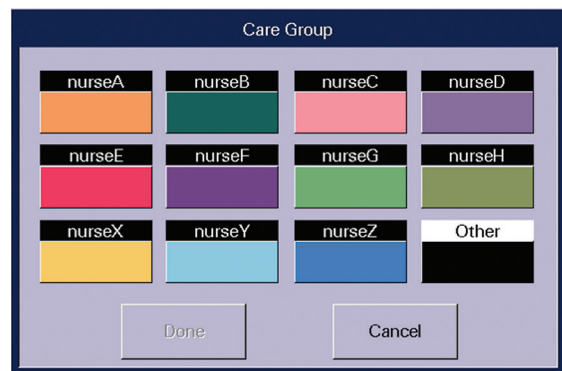


Care Group Sidebar Button

The “Care Group” button is used to associate a patient tile with a specific care group.

To assign a patient to a care group:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient tile
- Select **CARE GROUP** sidebar button
- Select color/care group name
- Select **DONE** to complete



This will place the colored Care Group indicator next to the **VIEW** button on the selected patient’s tile.

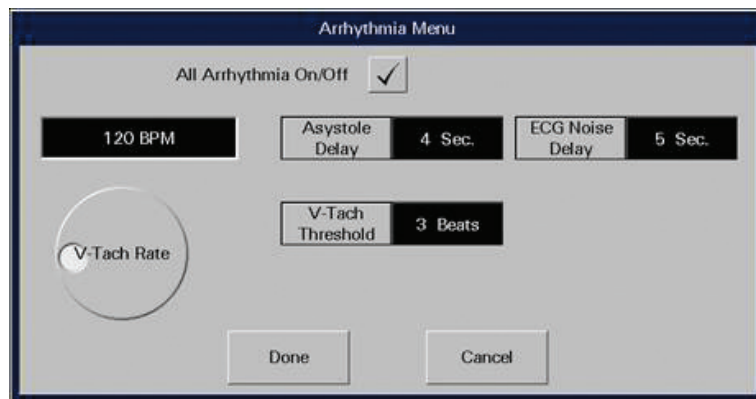
Arrhythmia Sidebar Button (Optional)

The arrhythmia algorithm is enabled at the Panorama Central Station when the assigned device for the selected tile is an Ambulatory Telepack. Enabling/Disabling arrhythmia analysis must be done at the bedside monitor when the assigned device for the selected tile is a bedside monitor. Refer to the bedside monitor operator's manual for details.

To adjust Arrhythmia settings:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient's tile
- Select **ARRHYTHMIA** sidebar button

- Arrhythmia checkbox: Select the Arrhythmia checkbox to enable/disable the arrhythmia analysis when the assigned device for the selected tile



is an Ambulatory Telepack. A checked Arrhythmia checkbox means that arrhythmia analysis is enabled. This checkbox will not appear when the assigned device for the selected tile is a bedside monitor.

- **V-Tach Rate:** establishes the heart rate required for V-Tach to occur
- **V-Tach Threshold:** establishes the number of consecutive PVCs required for V-Tach to occur
- **Asystole Delay:** establishes the delay period for an Asystole event
- **ECG Noise Delay:** establishes the delay in the notification of ECG Noise
- Select **DONE** to enter adjustments made in the Arrhythmia dialog

When Arrhythmia analysis is enabled:

- A \checkmark mark appears on the Arrhythmia checkbox
- An **A** is placed in the HR digital parameter tile for the selected patient



BIDIRECTIONAL

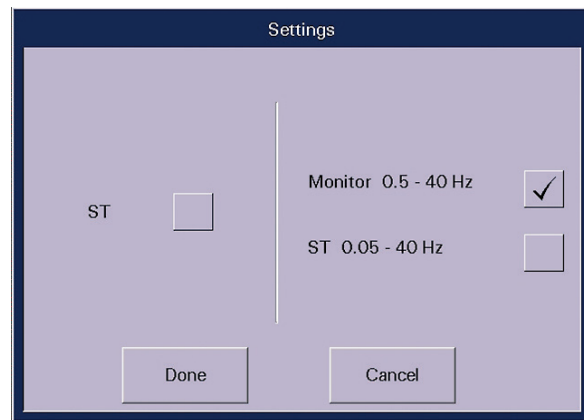
Adjusting arrhythmia settings at the Panorama Central Station enters it on the bedside monitor and adjusting arrhythmia settings at the bedside monitor enters it on the Panorama Central Station.

Simultaneous Patient Arrhythmia Editing

If using a bedside monitor with the Panorama Central Station, patient arrhythmia changes cannot be made at the bedside monitor and the central station simultaneously. Refer to the Panorama Central Station Operator's Manual for further details.

Settings Sidebar Button (Optional)

The ST algorithm is enabled at the Panorama Central Station when the assigned device for the selected tile is an Ambulatory Telepack. Enabling/Disabling ST analysis must be done at the bedside monitor when the assigned device for the selected tile is a bedside monitor. Refer to the bedside monitor operator's manual for further details.



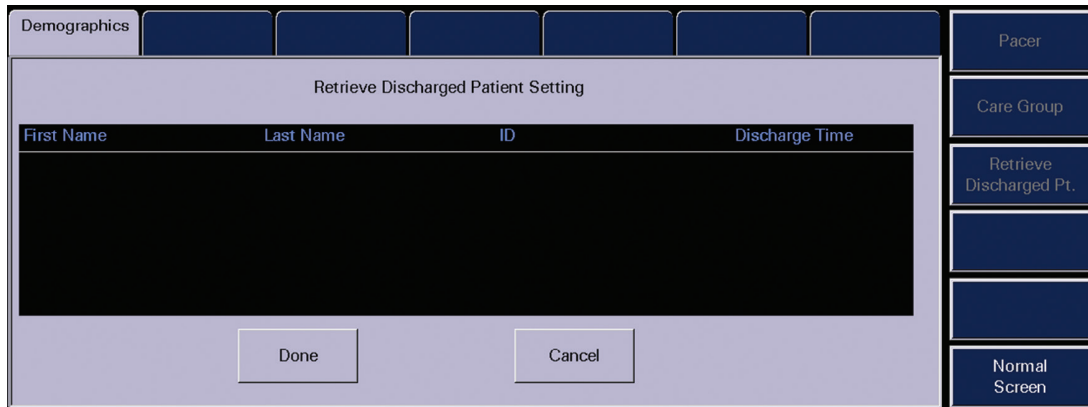
To adjust ST settings:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient's tile
- Select **SETTINGS** sidebar button
 - **ST** checkbox: Select the ST checkbox to enable/disable the ST analysis when the assigned device for the selected tile is an Ambulatory Telepack. A checked ST checkbox means that ST analysis is enabled. This checkbox will not appear when the assigned device for the selected tile is a bedside monitor.
 - **Monitor** Filter: Adjusts the ECG filter to a monitor range.
 - **ST** Filter: Adjusts the ECG filter for an ST diagnostic range.

When ST is enabled:

- A √ mark appears on the ST checkbox when the assigned device is an Ambulatory Telepack.
- An **S** is placed in the HR digital parameter tile for the selected patient.

Retrieve Discharged Patient Sidebar Button



To retrieve a discharged patient:

- Select **PATIENT SETUP** menu button
- Select **DEMOGRAPHICS** tab
- Select the patient's tile
- Select **RETRIEVE DISCHARGED PATIENT** sidebar button
- Select patient to be retrieved (Last Name, First Name and/or ID will be displayed)
- Select **DONE** to retrieve patient information into the selected tile

A patient can only be retrieved into an unmonitored tile with an assigned device. The patient can only be retrieved if at least two demographics fields (Last Name, First Name and/or ID) were entered on the patient prior to discharge. **The retrieved patient's data is seen once the destination device is activated.**

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

TRANSFER TAB

The Transfer Tab allows for the transfer of patient information from a source tile to a destination tile.



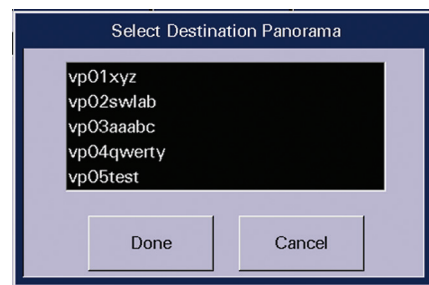
- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **TRANSFER** tab

A patient can only be transferred if at least two demographic fields (Last Name, First Name, and/or ID) are entered.

Room to Room without Device allows for the transfer of patient monitoring information to a different destination tile on the same central station.

- Select **Room to Room without Device** push button
- Select unmonitored patient tile
- Activate destination device to see transferred information

Central to Central without Device allows for the transfer of patient monitoring information to a different central station.



To **initiate** a Central to Central without Device transfer at the source central station:

- Select **Central to Central without Device** push button
- Select networked destination central station
- Select Done to start transfer process

To **accept** the Central to Central without Device transfer at the destination central:

- Transfer In request message shall appear in the System Status line at the destination central station.
- Open the **Transfer** tab and Accept incoming transfer
- Select destination tile
- Confirm **“Yes”** to begin receiving the transferred patient’s monitoring data
- When the transfer is complete a message will appear in the system status line of both the source and destination central stations.

Recovering, Deleting, and Transferring Failed Transfers



To Recover a patient from the Failed transfer list:

- Select **PATIENT SETUP** menu button
- Select **TRANSFER** tab
- Select **RECOVER PATIENT** sidebar button
- Select patient to be recovered from list
- Select the destination tile on the source central station
- Select **RECOVER** to initiate the recovery process

This will place the failed transfer patient into the selected destination tile.

To Delete from the Failed transfer list:

- Select **PATIENT SETUP** menu button
- Select **TRANSFER** tab
- Select **DELETE FAILED PATIENT** sidebar button
- Select the patient to remove from list
- Select **DELETE** to initiate the deletion process

This will delete the failed transfer patient from the system.

To Transfer from the failed transfer list:

- Select **PATIENT SETUP** menu button
- Select **TRANSFER** tab
- Select **TRANSFER FROM FAILED LIST** sidebar button
- Select the patient to transfer from list
- Select **TRANSFER**
- Select destination from list using the arrows
- Select **DONE** to initiate a transfer

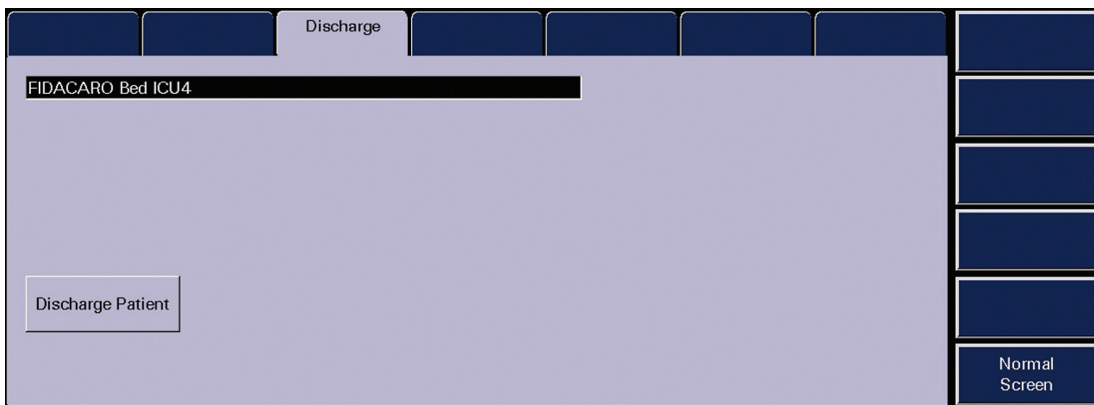
This will initiate a transfer for the selected patient tile.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

DISCHARGE TAB

The Discharge Tab clears all patient information and places the patient in the Retrieve Discharge Patient list if the required demographic information has been entered.



To **Discharge** a patient when the selected device is an Ambulatory Telepack:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **DISCHARGE** tab
- Select **DISCHARGE PATIENT**
- Select **YES** to confirm or **NO** to cancel discharge

To **Discharge** a patient at the central station when the selected device is a **Bedside Monitor**:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **DISCHARGE** tab
- Select **BEDSIDE AND PANORAMA DISCHARGE**
- Select **YES** to confirm or **NO** to cancel discharge
- Select **YES** will discharge the patient tile at the central station and will discharge the bedside monitor.

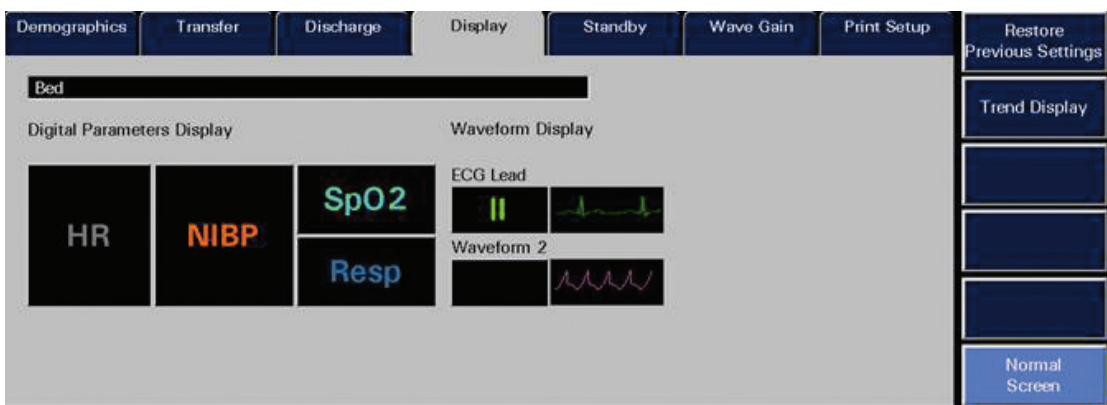
Note: When the assigned device is a bedside monitor, the discharge function may be performed at the bedside monitor using the bedside monitor's **DISCHARGE FROM BOTH** feature. This action will discharge both the bedside monitor and the patient tile at the central station.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

DISPLAY TAB

The Display Tab allows the clinician to modify the digital and waveform data in the patient's tile. Regardless of display, all digital and waveform data on a patient can be viewed and is being stored.



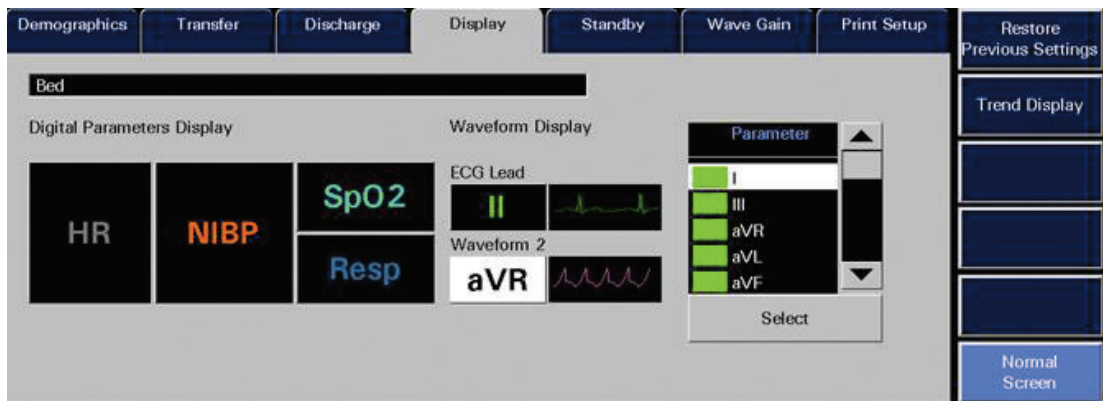
Modifying Display of Digital Parameters

To change the digital data displayed:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **DISPLAY** tab
- Select the digital parameter to change
- Choose the new parameter to display from the parameter list box
- Use the arrows to scroll and highlight the parameter
- Choose **SELECT** to confirm

Note: The central station will automatically configure the display based on the parameter's size. HR is always located in the first tile and cannot be changed.

Modifying Display of Waveform Parameters



To change the displayed waveform:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **DISPLAY** tab
- Select the waveform parameter to change
- Choose the new waveform from the waveform list box
- Use the arrows to scroll and highlight the waveform
- Choose **SELECT** to confirm

Note: The first waveform is always ECG with the lead displayed in the HR tile.

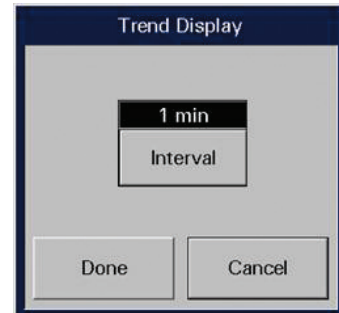
Restore Previous Settings Sidebar Button

This sidebar button will return the settings to the ones assigned prior to opening the tab.

Modifying Display of Stored Trends

To change the interval the Trends are displayed:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **DISPLAY** tab
- Select **TREND DISPLAY** sidebar button
- Select interval
- Choose **DONE**



Trends storage continues at every one minute interval while Trend Display allows configuration to display those trends. Trend Report intervals will print trends based on the Trend Display setting.

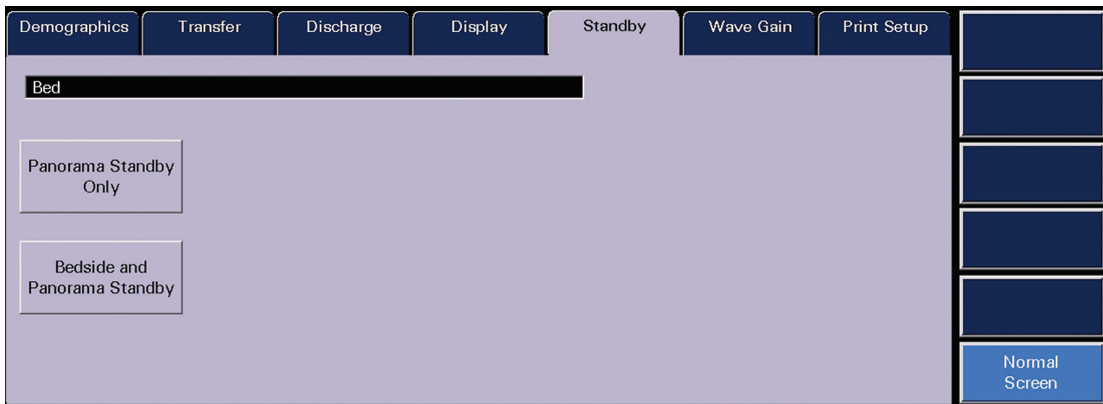
The Trend Display dialog is also located in the Trends tab.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

STANDBY TAB

The Standby Tab allows the clinician to suspend monitoring on a patient. While in standby, the patient is not monitored. All previous data and settings are preserved.



To place a patient into Standby:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **STANDBY** tab
- Select **“Panorama Standby Only”** (Bedside monitor) or **“Standby”** (Ambulatory Telepack) to place only the central station into standby

OR



BIDIRECTIONAL

Select **“Bedside and Panorama Standby”** to place both the bedside monitor and the Panorama Central Station into standby. Selecting **“Standby”** at the bedside monitor will also put both locations into Standby.

Standby Location

To enter a location once in Standby:

- Select the location from the Patient Location list using the up and down arrows
- Choose **SELECT** to confirm

Resume Monitoring from Standby Mode

To Resume Monitoring from a Standby mode:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **STANDBY** tab
- Select **RESUME MONITORING** button

Note: If both the bedside monitor and central station are in standby, resume monitoring must be initiated at the bedside monitor by selecting the **STANDBY** quick key on the front of the bedside monitor. Refer to the bedside monitor operator's manual for further details.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

WAVE GAIN TAB



To adjust a patient's wave gain:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **WAVE GAIN** tab
- Select the wave repeatedly to scroll through the gain values
- Select **DONE** to accept

Note: Adjusting the wave gain does not impact arrhythmia analysis.

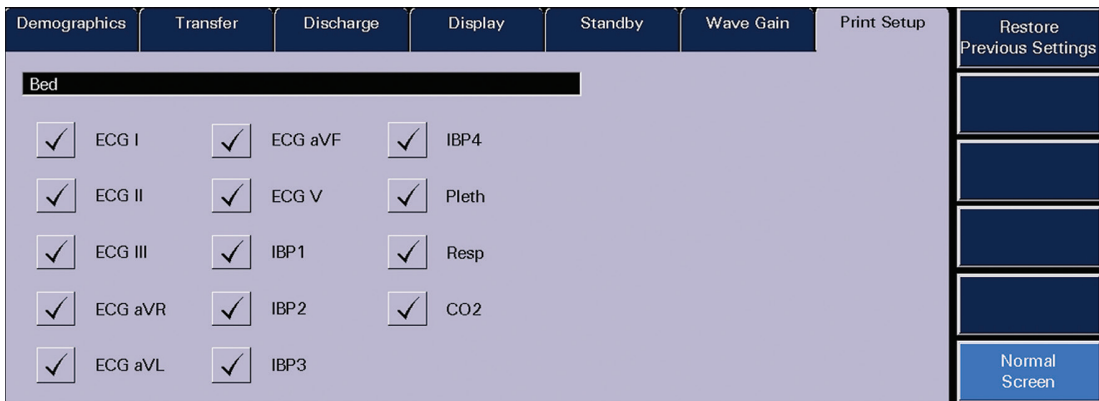
Restore Previous Settings Sidebar Button

This sidebar button will return the settings to the ones assigned prior to opening the tab.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

PRINT SETUP TAB



To select a waveform to print on all the patient's reports:

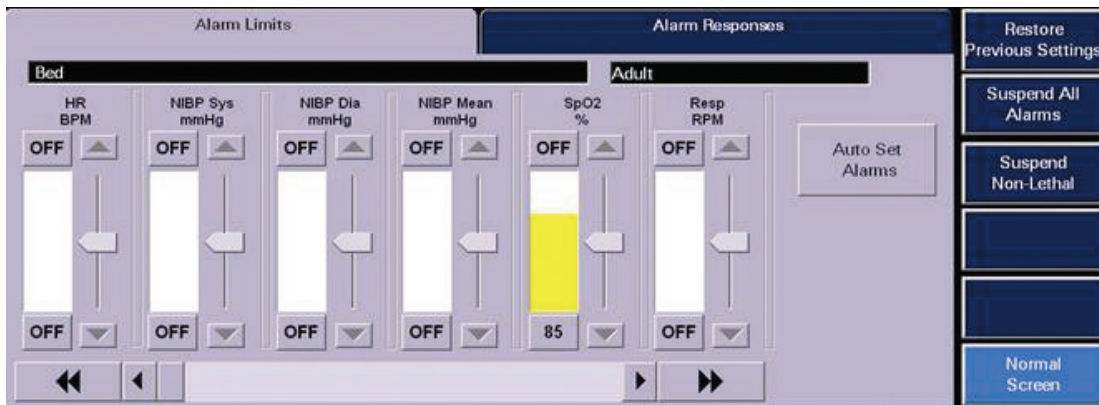
- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **PRINT SETUP** tab
- Select the waveforms for printing. A ✓ mark appearing on the wave checkbox indicates that the waveform is chosen for printing.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

Menu Bar • Patient Alarms Menu Button

PATIENT ALARMS MENU BUTTON

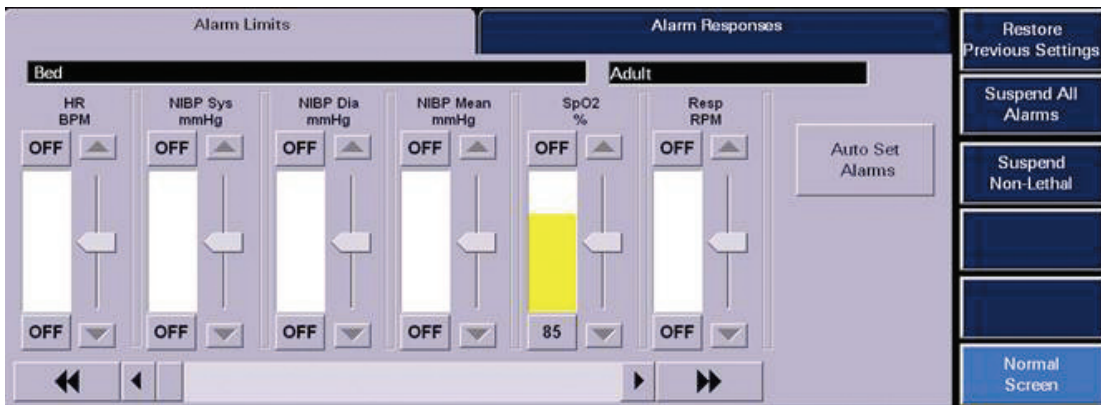


PATIENT ALARMS SETUP TAB



A password may be required to access the Patient Alarms tabs. Please consult your system administrator for details.



ALARM LIMITS TAB



To adjust alarm limits:

- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM LIMITS** tab
- Select the Parameter to be adjusted using the  or  buttons
- Select the “**High**” (upper) or “**Low**” (lower) alarm limit button on the slider
- Use the up and down arrows or drag and drop the scroll box in the slider control to change the limit to the desired value



BIDIRECTIONAL

Changing alarm limits at the Panorama Central Station will automatically change alarm limits on the bedside monitor and changing alarm limits at the bedside monitor will automatically change alarm limits on the Panorama Central Station.

Note: Simultaneous Patient Alarm Limits Editing

If using a bedside monitor with the Panorama Central Station, patient alarm limit changes cannot be made at the bedside and at the central station simultaneously. Refer to the Panorama Central Station Operator’s Manual for further details.

Auto Set Button

Selecting “**Auto Set**” automatically recalculates the alarm limits for most parameters based on their current values, varying from 3 – 30%. Please see the Panorama Operator’s Manual for complete details.

Restore Previous Settings Sidebar Button

This sidebar button will return the settings to the ones assigned prior to opening the tab.

Suspend All Alarms Sidebar Button (Optional)

If available, selecting “**Suspend all alarms**” suspends ALL alarms on the selected patient including lethal arrhythmias.

To suspend All Alarms:

- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM LIMITS** tab
- Select **SUSPEND ALL ALARMS** to suspend all alarms

The message **All Alarms Suspended** shall be displayed in the selected patient’s tile and the **SUSPEND ALL ALARMS** sidebar button will turn white when the function has been enabled.

Note: When in an **All Alarm Suspended** mode, **no alarm notification of any kind** will occur at the Panorama Central Station for the selected patient tile.

Selecting the **SUSPEND ALL ALARMS** sidebar button a second time will turn the button blue again, will disable the function, remove the All Alarms Suspended message from the patient tile, and resume all configured alarm notifications.

Suspend Non-Lethals Sidebar Button

Selecting “Suspend Non-Lethal Alarms” suspends all alarms on a selected patient **except** alarms with a priority 1.

To Suspend all non-priority 1 alarms:

- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM LIMITS** tab
- Select **SUSPEND NON-LETHALS** to suspend all non-lethal alarms

The message **Non-Lethal Alarms Suspended** shall be displayed in the selected patient’s tile and the **SUSPEND NON-LETHALS** sidebar button will turn white when the function has been enabled.

Note: When in a **Non-Lethal Alarms Suspended** mode, only Lethal alarms will produce alarm notification at the Panorama Central Station for the selected patient tile.

Selecting the **SUSPEND NON-LETHALS** sidebar button a second time will turn the button blue again, will disable the function, remove the Non-Lethal Alarms Suspended message from the patient tile, and resume all configured alarm notifications.

Relearn Sidebar Button (Ambulatory Telepack)

Selecting “Relearn” updates the ST and Arrhythmia templates.

Print Menu Button

To print a patient's Alarm Report:

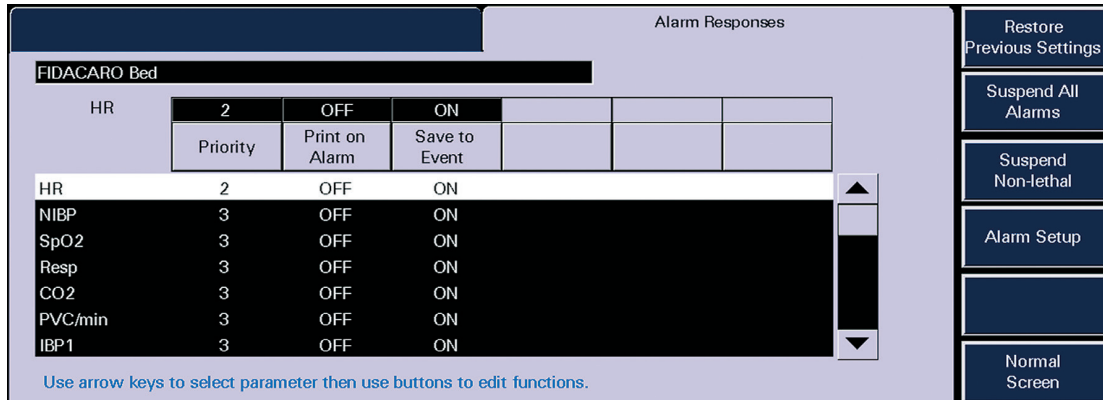
- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM LIMITS** tab
- Select **PRINT** menu button

Note: This Report can also be printed from the **Report Menu**.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen

ALARM RESPONSES TAB



HR	2	OFF	ON			
	Priority	Print on Alarm	Save to Event			
HR	2	OFF	ON			
NIBP	3	OFF	ON			
SpO2	3	OFF	ON			
Resp	3	OFF	ON			
CO2	3	OFF	ON			
PVC/min	3	OFF	ON			
IBP1	3	OFF	ON			

Use arrow keys to select parameter then use buttons to edit functions.

The **Alarm Responses Tab** adjusts the response of the central station when an alarm condition exists.

To adjust a patient's Alarm Responses:

- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM RESPONSES** tab
- Select the parameter to modify by tapping over the field or using the Up/Down arrows
- **PRIORITY:** Defines the importance of the alarm. The **lower** the priority the **higher** the severity.
 - Priority 1: Red visual alarm notifications. High level audio alarm notifications.
 - Priority 2: Yellow visual alarm notifications. Mid level audio alarm notifications.
 - Priority 3: Yellow visual alarm notifications. Tertiary level audio alarm notifications.

Note: Alarm Priorities apply if alarm limits are set for numeric parameters.

- **PRINT ON ALARM:** Determines if an automatic recording is produced upon identification of alarm condition.
 - ON – Automatically produces a print out
 - OFF – Does not produce a print out
- **SAVE TO EVENT:** Determines if the event is saved in the **Events** Tab at the Panorama Central Station allowing for retrieval at a later time.
 - ON – Automatically saves the event
 - OFF – Does not save the event
- **PAGE ON ALARM (Optional):** Determines if the alarm event sends a paging message to the assigned pager(s) once the paging delay criteria has been met.
 - ON – Automatically pages on the alarm event
 - OFF – Does not page on the alarm event

Restore Previous Settings Sidebar Button

This sidebar button will return the settings to the ones assigned prior to opening the tab.

Suspend All Alarms Sidebar Button (Optional)

If available, selecting “Suspend All Alarms” suspends ALL alarms on the selected patient.

To suspend All Alarms:

- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM RESPONSES** tab
- Select **SUSPEND ALL ALARMS** to suspend all alarms

The message **All Alarms Suspended** shall be displayed in the selected patient’s tile and the **SUSPEND ALL ALARMS** sidebar button will turn white when the function has been enabled.

Note: When in an **All Alarms Suspended** mode, **no alarm notification of any kind** will occur at the Panorama Central Station for the selected patient tile.

Selecting the **SUSPEND ALL ALARMS** sidebar button a second time will turn the button blue again, will disable the function, remove the All Alarms Suspended message from the patient tile, and resume all configured alarm notifications.

Suspend Non-Lethals Sidebar Button

Selecting “Suspend Non-Lethal Alarms” suspends all alarms on a selected patient **except** alarms with a priority 1.

To suspend all non-priority 1 alarms:

- Select **PATIENT ALARMS** menu button
- Select the patient tile
- Select **ALARM LIMITS** tab
- Select **SUSPEND NON-LETHALS** to suspend all non-lethal alarms

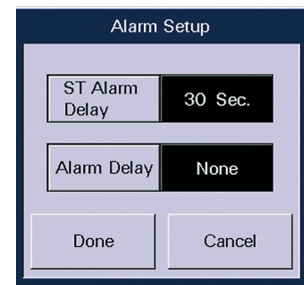
The message **Non-Lethal Alarms Suspended** shall be displayed in the selected patient's tile and the **SUSPEND NON-LETHALS** sidebar button will turn white when the function has been enabled.

Note: When in a **Non-Lethal Alarms Suspended** mode, only Lethal alarms will produce alarm notification at the Panorama Central Station for the selected patient tile.

Selecting the **SUSPEND NON-LETHALS** sidebar button a second time will turn the button blue again, will disable the function, remove the Non-Lethal Alarms Suspended message from the patient tile, and resume all configured alarm notifications.

Alarm Setup Sidebar Button (Ambulatory Telepack)

The **Alarm Setup** sidebar button will be displayed when the assigned device for the selected tile is an Ambulatory Telepack. **Alarm** and **ST Delays** can be adjusted via this sidebar button. The time selected is the amount of time required for an alarm response to occur.



Normal Screen Sidebar Button

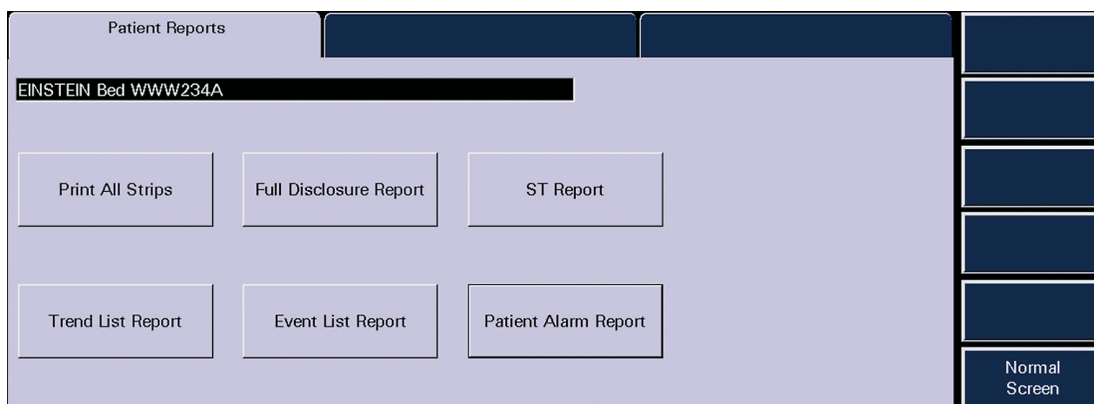
Select to close tab and return to Normal Main Screen.

Menu Bar • Reports Menu Button

REPORTS MENU BUTTON

PATIENT REPORTS TAB

The **Patient Reports** Tab contains a variety of reports a clinician can print on a specific patient. The waveforms to be printed are configured in the “**Print Setup**” Tab.



Print All Strips Button

This laser printout contains all patient demographics, all real time digital data and 10 seconds of waveform data.

To print an All Strip Report:

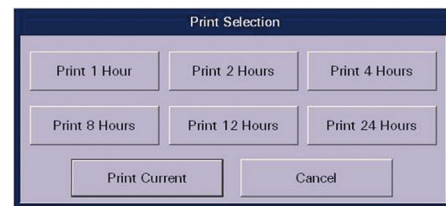
- Select **REPORT** menu button
- Select patient tile
- Select **PATIENT REPORTS** tab
- Select **PRINT ALL STRIPS** button

Full Disclosure Report Button

This laser printout contains all patient demographics, HR, PVC and a compressed view of waveform data for the selected time period.

To print a Full Disclosure Report:

- Select **REPORT** menu button
- Select patient tile
- Select **PATIENT REPORTS** tab
- Select **FULL DISCLOSURE REPORT** button
- Select time period



ST Report Button

This laser printout contains all patient demographics, the current averaged ECG complex, the referenced average ECG complex and digital ST value. The number of available leads determines the number of complexes.

To print an ST Report:

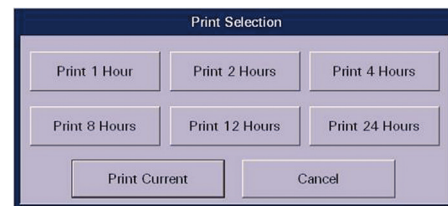
- Select **REPORT** menu button
- Select patient tile
- Select **PATIENT REPORTS** tab
- Select **ST REPORT** button

Trend List Report Button

This laser printout contains all patient demographics and all the digital trend data for the selected time period.

To print a Trend List Report:

- Select **REPORT** menu button
- Select patient tile
- Select **PATIENT REPORTS** tab
- Select **TREND LIST REPORT** button
- Select time period

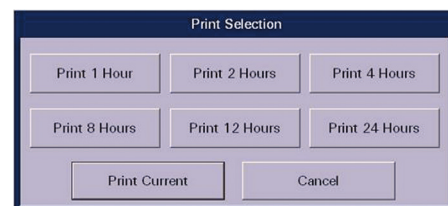


Event List Report Button

This laser printout contains all patient demographics, the date, time and the event list for the selected time period.

To print an Event List Report:

- Select **REPORT** menu button
- Select patient tile
- Select **PATIENT REPORTS** tab
- Select **EVENT LIST REPORT** button
- Select time period



Patient Alarm Report Button

This laser printout contains all patient demographics and current alarm settings.

To print an Alarm Report:

- Select **REPORTS** menu button
- Select patient tile
- Select **PATIENT REPORTS** tab
- Select **PATIENT ALARM REPORT** button

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

SYSTEM REPORTS TAB



All Strips/All Patients Report Button

All patients currently assigned to the central station will have an All Strip Report printed when this button is selected.

Equipment Report Button

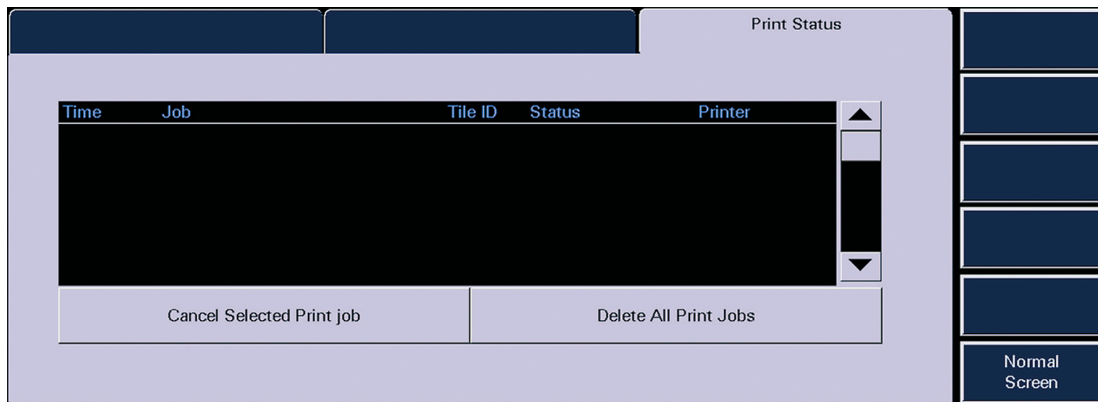
This laser printout contains a list of devices currently assigned to the central station, including the device label, the type of device, the assigned tile, the device ID, and the current patients' names and IDs.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

PRINT STATUS TAB

This tab displays all pending print requests. This tab can be used to cancel print requests.



- Select **Cancel Selected Print job** to remove a select report

OR

- Select **Delete All Print Jobs** to cancel all print reports waiting to be printed

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

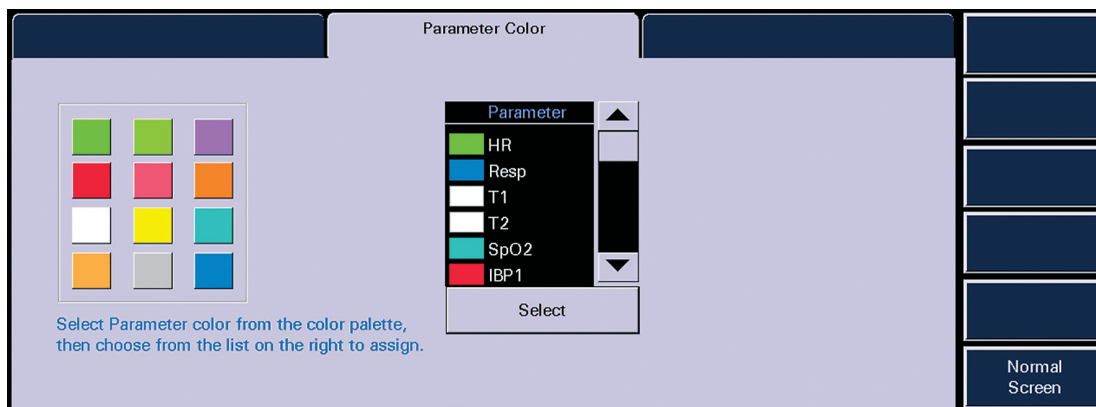
Menu Bar • System Setup Menu Button

SYSTEM SETUP MENU BUTTON

System Setup Menu

This tab allows adjustments to be made to the touch screen and parameter colors. Advanced functions are found behind a password-protected area.

PARAMETER COLORS TAB



To change a parameter color for all patients:

- Select **SYSTEM SETUP** menu button
- Select **PARAMETER COLOR** tab
- Select the color
- Scroll using the arrows and highlight the parameter
- Select **SELECT** to complete

RECALIBRATE TOUCH TAB

Note: With Panorama software versions 8.6 and above, the Recalibrate Touch function has been moved to the System Setup Touch Screen Tab.

To recalibrate the touch screen:

- Select **SYSTEM SETUP** menu button
- Select **RECALIBRATE TOUCH** tab
- Touch the red targets on the screen
- Touch the screen for verification
- Select **YES** to complete

Note: Remember to complete the recalibration of the touch screen once initiated. The recalibration process should take less than 15 seconds. During the recalibration process, real time monitoring of patients is obscured.

INSTALLATION TAB

This tab provides access to password protected areas of the Panorama Central Station. Consult your system administrator for details.

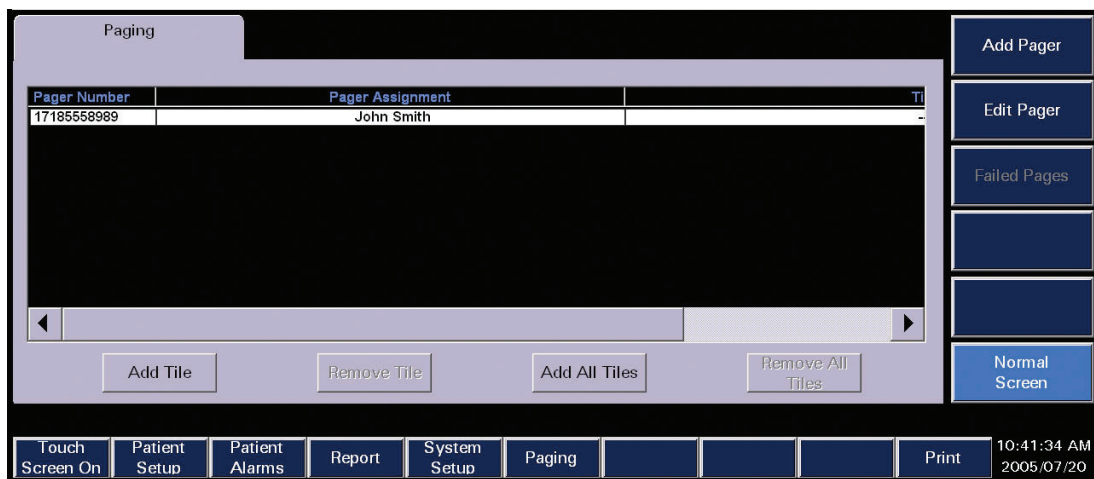
Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

Menu Bar • Paging Menu Button

PAGING MENU BUTTON (Paging Optional)

The Paging Tab allows for the configuration of pager information for the Panorama Central Station.



PAGE SETUP TAB

A password may be required to access the Page Tab. Please consult your system administrator for details.

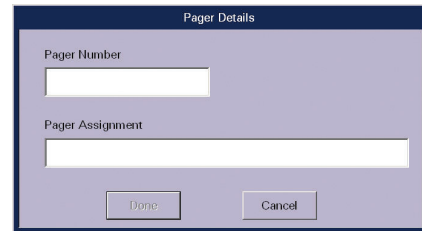


Add Pager Sidebar Button

This sidebar button allows a pager to be added to the Panorama Central Station.

To add a pager:

- Select **PAGING** menu
- Select **Add Pager**
- Select the white edit box to display the on screen keyboard
- Type in the Pager Number and Pager assignment
- Select **Done** to enter information and return to the Paging Tab



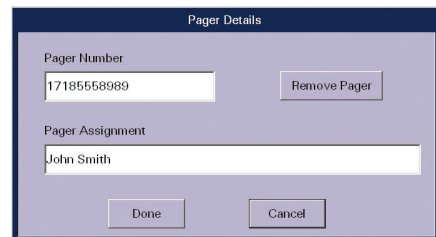
The screenshot shows a dialog box titled "Pager Details" with a light purple background. It contains two input fields: "Pager Number" and "Pager Assignment". Below the fields are two buttons: "Done" and "Cancel".

Edit Pager Sidebar Button

This sidebar button allows a pager's information to be edited on the Panorama Central Station.

To edit a pager:

- Select **PAGING** menu
- Select Pager from Paging List
- Select **Edit Pager**
- Select the white edit box to display the on screen keyboard
- Type in the Pager Number and Pager assignment
- Select **Done** to enter information and return to the Paging Tab



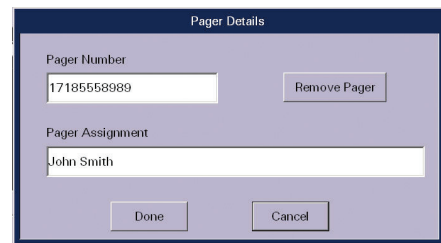
The screenshot shows a dialog box titled "Pager Details" with a light purple background. It contains two input fields: "Pager Number" (containing "17185558989") and "Pager Assignment" (containing "John Smith"). A "Remove Pager" button is located to the right of the "Pager Number" field. Below the fields are two buttons: "Done" and "Cancel".

Edit Pager Sidebar Button

This sidebar button allows a pager to be removed from the Panorama Central Station.

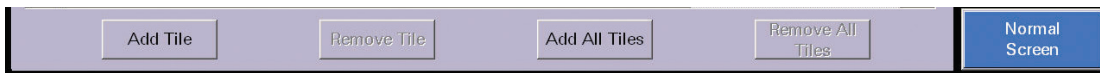
To remove a pager:

- Select **PAGING** menu
- Select Pager from Paging List
- Select **Edit Pager**
- Select **Remove Pager**
- Select **Yes** to accept



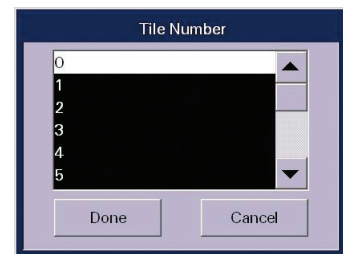
Add Tile Button

The Add Tile button adds a monitoring device (patient) to a pager in the paging list on the Panorama Central Station.



To add a tile to a pager:

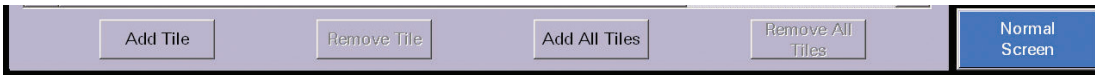
- Select **PAGING** menu
- Select Pager from Paging List
- Select **Add Tile**
- Select tile to add
- Select **Done** to accept



Note: A pager is assigned to a tile until removed. Each tile can be assigned to a maximum of 10 pagers.

Add All Tiles Button

The Add All Tiles button adds all monitoring devices (patients) to a pager in the paging list on the Panorama Central Station.



To add tile to a pager:

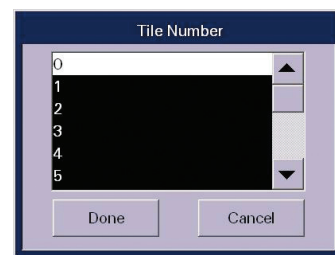
- Select **PAGING** menu
- Select Pager from Paging List
- Select Add All Tiles
- Select **Done** to accept

Remove Tile Button

The Remove Tile button removes a monitoring device (patient) from a pager in the Paging List on the Panorama Central Station.

To remove a tile from a pager:

- Select **PAGING** menu
- Select Pager from Paging List
- Select **Remove Tile**
- Select tile to remove
- Select **Done** to accept



Remove All Tiles Button

The Remove All Tiles button removes all monitoring devices (patients) from a pager in the Paging List on the Panorama Central Station.

To remove a tile from a pager:

- Select **PAGING** menu
- Select Pager from Paging List
- Select **Remove All Tiles**
- Select tile to remove
- Select **Yes** to accept

Printing A Page List Report

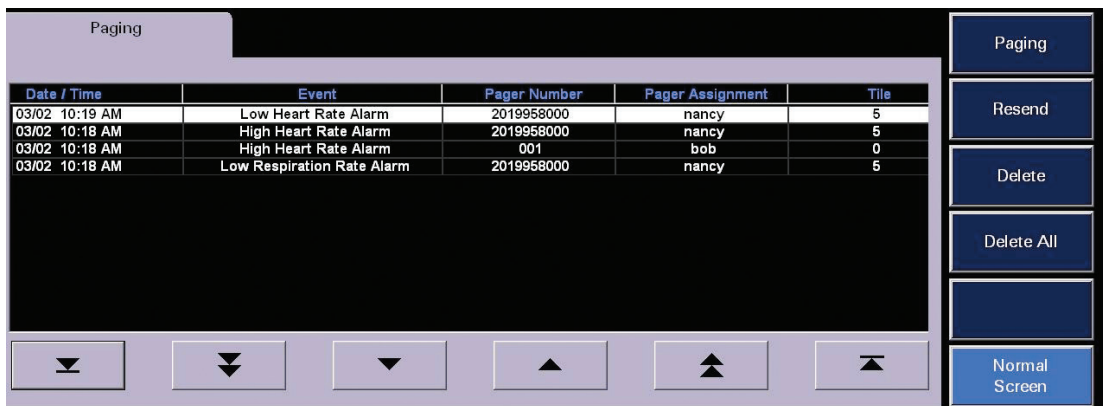
This laser printout contains a list of all pager numbers, pager assignments and tile assignments on the Panorama Central Station.

To print a Pager List Report:

- Select **PAGING** menu button
- Select **PRINT** menu button

Failed Pages Sidebar Button

The Failed Pages Sidebar button displays a list of pages that failed to be sent. It contains the date/time, event, pager number, pager assignment, and tile assignment.



Paging Sidebar Button

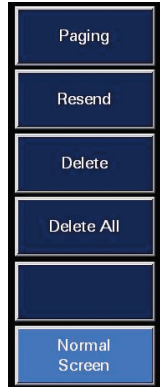
Select to close the Failed Pages List and return to Paging List.

Resend Sidebar Button

To resend a failed page:

- Select **PAGING** menu
- Select **Failed Pages**
- Select specific failed page event
- Select **Resend**

Note: The failed page event will be removed from the Failed Pages List if successfully resent.



Delete Failed Page

To delete a failed page:

- Select **PAGING** menu
- Select **Failed Pages**
- Select specific failed page event
- Select **Delete**
- Select **Yes** to delete

Delete All Failed Pages

To delete all failed pages:

- Select **PAGING** menu
- Select **Failed Pages**
- Select **Delete All Events**
- Select **Yes** to delete

PAGING FOR PHYSIOLOGICAL ALARM EVENTS

All physiological alarm events can be configured to send a message to the assigned pager for a specific tile (patient). Refer to the Alarm Response Tab section for further details.

PAGING FOR TECHNICAL ALARM EVENTS

The following technical alarms can be configured to send a message to the assigned pager for a specific tile (patient).

These include:

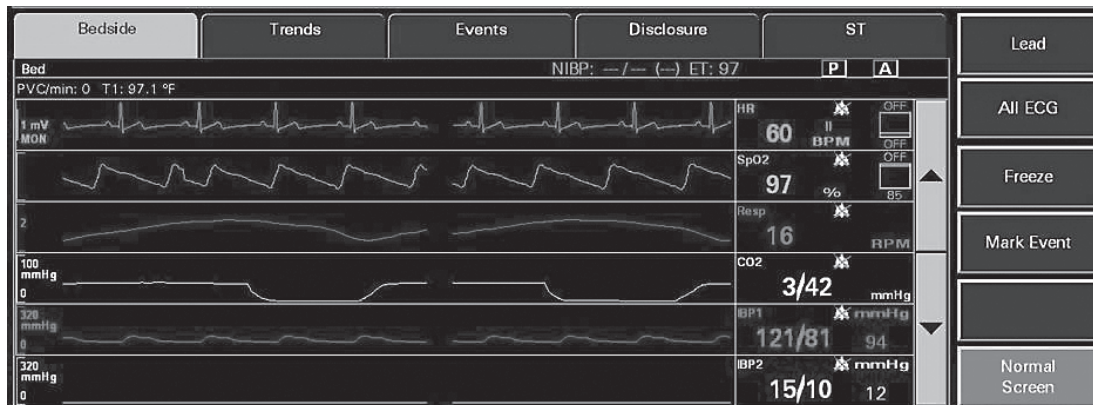
- Comm. Loss
- Leads Off
- Low Battery

PAGING MESSAGE CONFIRMATION

A Page Marker (*) is placed next to the alarm event in the Events Tab and Disclosure Zoom In Tab. The **Comment Sidebar** button provides additional information related to the paging message. Refer to these Tabs for further information.

View • Bedside Tab

BEDSIDE TAB



Selecting the **VIEW** button in the patient tile displays the **Bedside Tab**. The Bedside Tab provides an expanded view of the patient's waveform and numeric data. The upper and lower arrows allow for scrolling through all the waveforms.

Note: All available waveforms can be viewed in this area even if they are not being viewed at the bedside.

Lead Sidebar Button (5-wire lead set or 12-lead card only)

Select to change the top lead of ECG displayed in the **Bedside Tab**.

All ECG Sidebar Button

Select to view all available ECG waveforms in the **Bedside** Tab. When selected, the **ALL ECG** button will turn white. To resume viewing all waveforms, select the **ALL ECG** button to turn button blue again.

When the assigned device is an Ambulatory Telepack which is not using an SpO₂ module, the **Bedside** Tab is always in an **ALL ECG** mode.

Note: The number of ECG lead vectors displayed depends on the utilized lead wire set.

Freeze Sidebar Button

Select to freeze the **Bedside** Tab's waveforms. When the waveforms are frozen the **FREEZE** sidebar button turns white and the **Measure** sidebar button appears.

Select **FREEZE** a second time to turn the **FREEZE** sidebar button blue and to display real-time waveforms.

Measure Sidebar Button



To measure intervals and use the on screen calipers:

- Select **VIEW** on the patient's tile
- Select **BEDSIDE** tab
- Select **FREEZE** sidebar button
- Select **MEASURE** sidebar button
- Select the measurement to be taken:
 - PR
 - QRS
 - QT
 - R to R
 - ST
- Select the waveform or use the arrows to adjust the first line (dotted)
- Select the same measurement as above
- Select the waveform or use the arrows to adjust the second line (solid)
- Select **CALCULATE** to perform the calculation

Repeat above steps for additional measurements.

Mark Event Sidebar Button

Select to store a **Central User Marked Event** in the **Events** Tab and mark the event in Full Disclosure.

Note: Selecting **MARK EVENT** at the Panorama Central Station will mark the event time in the bedside monitor's **Trends** menu.

Using the **MARK EVENT** quick key button at the bedside monitor, will mark a **Bedside User Marked Event** in the **Events** Tab at the Panorama Central Station.

Print Menu Button

Select the Print menu button to print an All Strip Report for the selected patient tile.

Normal Screen Sidebar Button

Select to close tab and return to Normal Main Screen.

View • Trends Tab

TRENDS TAB

The screenshot shows the Trends Tab interface with a table of patient data and navigation controls. The table has the following columns: Date / Time, HR BPM, NIBP S/D (Mean) mmHg, SpO2 %, Resp RPM, CO2 In/Ex mmHg, PVC/min, and IBP1 S/D mmHg. The data rows show values for 06/24 from 03:41 PM to 03:50 PM. The interface includes tabs for Bedside, Trends, Events, Disclosure, and ST. On the right, there are buttons for Graphic, Trend Display, and Normal Screen. At the bottom, there are navigation buttons for Previous Event, Next Event, and scroll arrows.

Date / Time	HR BPM	NIBP S/D (Mean) mmHg	SpO2 %	Resp RPM	CO2 In/Ex mmHg	PVC/min	IBP1 S/D mmHg
06/24 03:50 PM	83	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:49 PM	82	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:48 PM	83	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:47 PM	82	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:46 PM	83	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:45 PM	82	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:44 PM	83	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:43 PM	82	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:42 PM	83	---/--- (---) ET:---	96	18	0/34	0	117/77
06/24 03:41 PM	82	---/--- (---) ET:---	96	18	0/34	0	117/77

Select to view trended digital data in either list or graphic form. The stored data is updated every 1 minute and includes all utilized parameters. The interval the list trends are displayed is based on the Trend Display setting.

Displaying List Trends

To display trends on a patient:

- Select **VIEW** on the patient's tile
- Select **TREND** tab to display the most recent digital data in List format
- Select the arrows to scroll through the list:
 - To scroll one entry at a time
 - To scroll one page at a time
 - To scroll to the top or bottom of the list
 - To view more parameters
 - Select "**Previous/Next Event**" to scroll to trend times based on alarm conditions
- Alarms are color-coded based on priorities:
 - Priority 1: Red
 - Priority 2, 3: Yellow

Modifying Display of Stored Trends

To change the interval the Trends are displayed:

- Select **PATIENT SETUP** menu button
- Select the patient tile
- Select **DISPLAY** tab
- Select **TREND DISPLAY** sidebar button
- Select interval
- Choose **DONE**



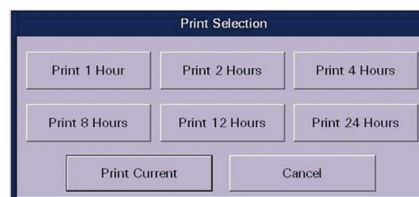
Trends storage continues at every one minute interval while Trend Display allows configuration to display those trends. Trend Report intervals will print trends based on the Trend Display setting.

The Trend Display dialog is also located in the Trends tab.

Printing List Trends Reports

To print the List Trends Report on a patient:

- Select **VIEW** on the patient's tile
- Select **TREND** tab
- Select Print Menu button
- Select the interval



Note: This Report can also be printed from the Report Menu.

View • Graphic Trends Tab

GRAPHIC TRENDS TAB

Graphic Sidebar Button

Selecting this button allows for access to the Graphic Trends tab.



To display and print Graphic Trends on a patient:

- Select **VIEW** on the patient's tile
- Select **GRAPHIC** sidebar button
- Select the arrows to scroll through the graphic display:
 - To scroll through the available parameters
 - To scroll forward and backward in time
- Select **"Zoom In/Zoom Out"** to view 2-8 hour time intervals
- Select **PRINT** menu button to print the Graphic Trend Report

Note: The List and Graphic Trend Report can be printed from the bedside monitor. Refer to bedside monitor's operator's manual for further details.

View • Events Tab

EVENTS TAB




The screenshot shows the 'Events' tab interface. At the top, there are tabs for 'Bedside', 'Trends', 'Events', 'Disclosure', and 'ST'. Below these is a header for 'WEB Bed' with '5 Total' events. The main table has columns for 'Date / Time', 'Event (5 Displayed)', 'HR BPM', 'NIBP S/D (Mean) mmHg', 'SpO2 %', and 'Resp RPM'. The table contains five rows of event data. To the right of the table are buttons for 'View Waveforms', 'Events Filtering', 'Comments', and 'Normal Screen'. At the bottom of the table are navigation arrows and buttons for 'Delete Single Event' and 'Delete Events'.

Date / Time	Event (5 Displayed)	HR BPM	NIBP S/D (Mean) mmHg	SpO2 %	Resp RPM
07/20 10:56 AM	Central User Marked Event	60	---/--- (---) ET:999	97	16
07/20 10:56 AM	Central User Marked Event	60	---/--- (---) ET:999	97	16
07/20 10:23 AM	Arrhythmia On				
07/20 10:23 AM	ST On				
07/20 10:23 AM	Admit				

The **Events** Tab stores all physiologic and technical events on a patient. Physiologic events are stored based on the settings in the **Alarm Response** Tab (see **Patient Alarms** Menu Button).

Displaying Events

To display a patient's stored events:

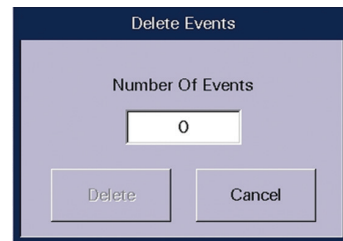
- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the most recent event digital data in a list format
- Select the arrows to scroll through the list:
 - To scroll one entry at a time 
 - To scroll one page at a time 
 - To scroll to the top or bottom of the list 
 - To view more parameters
- Select **"Previous/Next Event"** to scroll to trend times based on alarm conditions.
- Alarms are color-coded based on priorities:
 - Priority 1: Red visual alarm notifications. High level audio notification
 - Priority 2: Yellow visual alarm notifications. Mid level audio notification
 - Priority 3: Yellow visual alarm notifications. Tertiary level audio notification

Deleting an Event

To delete a patient's stored event:

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the most recent event digital data in a list format.
 - Select and highlight the event to be deleted
 - Select **"Delete Single Event"** to erase the event
 - Select **"Delete Events"** to erase events older than the highlighted event
 - Enter the number of events to be deleted
 - Select **"Delete"**
 - Select **"Yes"** to confirm

Note: Not all events can be deleted. If an event is deleted it will be unmarked in the **Disclosure** Tab.



Print

To print an Event list:

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab
- Select print menu button
- Select the interval

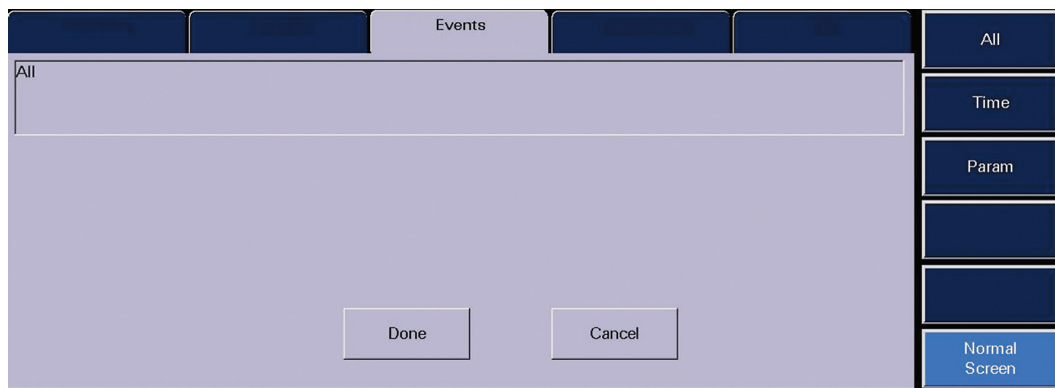


Note: This Report can also be printed from the Report Menu.

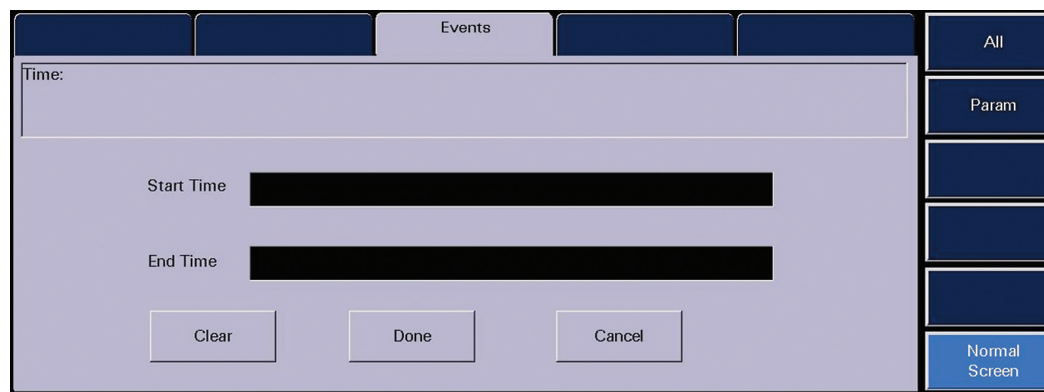
Event Filter Sidebar Button

To adjust the list seen in the Events Tab:

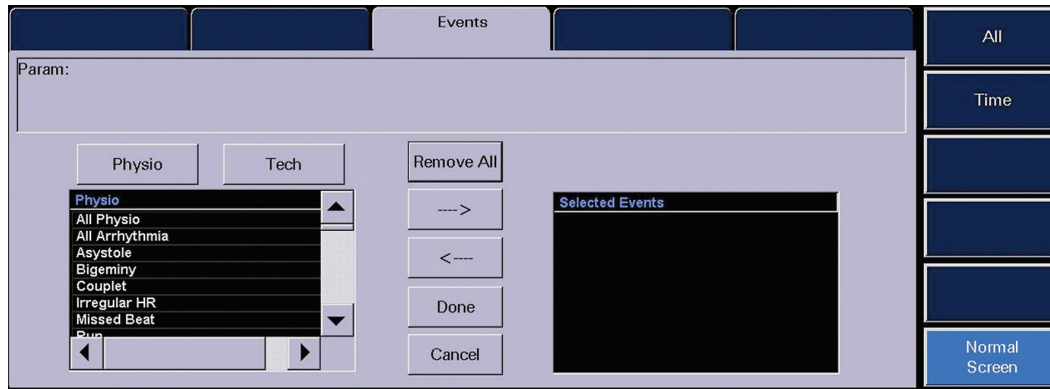
- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the most recent event digital data in a list format
- Select **EVENT FILTER** sidebar button



- Select **ALL** sidebar button to view all events



- Select **TIME** sidebar button to view events occurring during a specific time period
 - Select **“Start”** and **“End”** Time
 - Select **“Done”**
- Select **DONE** to display the filtered Event list



- Select **PARAMETER** to view specific physiologic and/or technical events
 - Select “**Physio**” and/or “**Tech**”
 - Select the parameter from the list
 - Use the arrows to select (add) or deselect (remove) the parameter in the filtered list
- Select **DONE** to display the filtered Event list

View • Event View Waveform Tab

EVENT VIEW WAVEFORMS TAB



To view and print a specific physiological event that is associated with a waveform:

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the event conditions collected for the selected patient tile
- Select the specific event to view
- Select **VIEW WAVEFORMS** sidebar button to show an expanded view of the event

Note: All available waveforms can be viewed in this area even if they are not being viewed at the bedside.

Navigational Arrows

Select the arrows to scroll through the event data:

- Select the Double Up arrow to display the previous page of waveforms
- Select the Up arrow to move the group of waveforms displayed up one position
- Select the Double Down arrow to display the next page of waveforms
- Select the Down arrow to move the group of waveforms displayed down one position
- Select the Double Left arrow to display the previous nine seconds of event data
- Select the Left arrow to move the colored vertical cursor line one second back in time
- Select the Right arrow to move the colored vertical cursor line one second forward in time
- Select the Double Right arrow to display the next nine seconds of event data

Next Event Button

Select the **NEXT EVENT** button to locate and display an event that occurred later than the current event time began.

Previous Event Button

Select the **PREVIOUS EVENT** button to locate and display an event that occurred earlier than the current event time began.

ST Push Button (Optional)

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the event conditions collected for the selected patient tile
- Select the specific event to view
- Select **VIEW WAVEFORM** sidebar button to show an expanded view of the event
- Select **ST** button to display the ST Dialog Box

The ST Dialog Box will display the ST numerics data associated with the event.

- Select the Left Arrow to view the ST data for the previous second of the event
- Select the Right Arrow to view the ST data for the next second of the event
- Select the **DONE** button to close the ST Dialog box

View List Sidebar Button

Select to return to the **EVENTS** tab.

Lead Sidebar Button (5-wire lead set or 12 lead card only)

Select to change the top lead of ECG displayed in the **EVENT VIEW WAVEFORM** tab.

All ECG Sidebar Button

Select to view all available ECG waveforms in the **EVENT VIEW WAVEFORM** tab. When selected, the **ALL ECG** button will turn white. To resume viewing of all waveforms, select the **ALL ECG** button to turn button blue again.

When the assigned device is an Ambulatory Telepack which is not using an SpO₂ module, the **EVENT VIEW WAVEFORM** tab is always in an ALL ECG mode.

Note: The number of ECG lead vectors displayed depends on the utilized lead wire set.

Measure Sidebar Button



To measure intervals and use the on screen calipers:

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the event conditions collected for the selected patient tile
- Select the specific event to view
- Select **VIEW WAVEFORM** sidebar button to show an expanded view of the event
- Select **MEASURE** sidebar button
- Select the measurement to be taken:
 - **PR**
 - **QRS**
 - **QT**
 - **R to R**
 - **ST**
- Select the waveform or use the arrows to adjust the first line (dotted)
- Select the same measurement as above
- Select the waveform or use the arrows to adjust the second line (solid)
- Select **CALCULATE** to perform the calculation

Repeat above steps for additional measurements.

Comments Sidebar Button (Paging Option)



Select the **COMMENTS** sidebar button to view paging text associated with paged event.

Print Menu Button

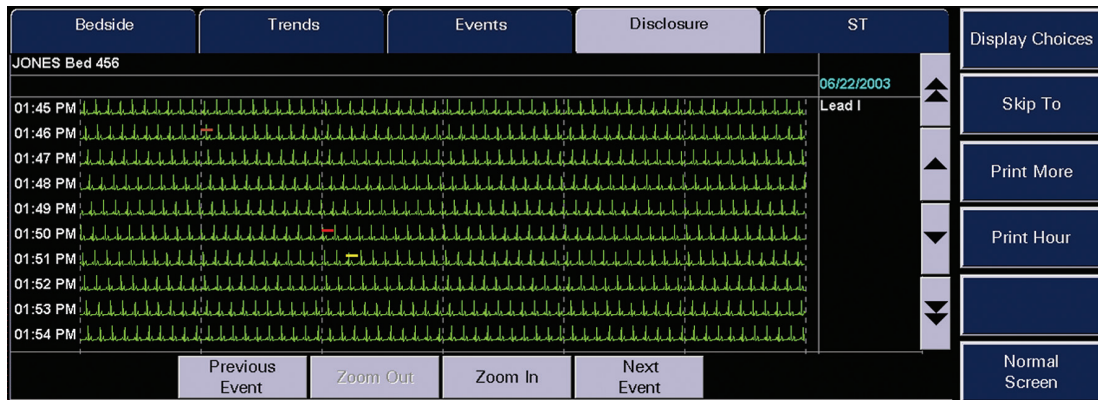
Select the **PRINT** menu button to print an Event View Waveform strip for the selected event.

Normal Screen Sidebar Button

Select to close tab and return to Normal Screen

View • Disclosure Tab

DISCLOSURE TAB



The Disclosure Tab stores continuous digital and waveform data for the specified time period.

Displaying Disclosure Data

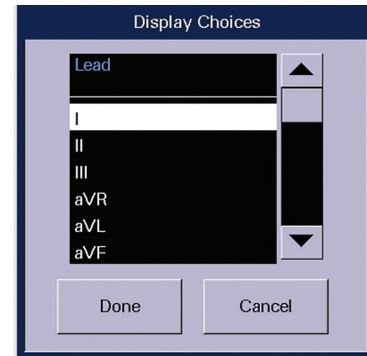
To display waveforms in the Disclosure Tab:

- Select **VIEW** on the patient's tile
- Select **DISCLOSURE** tab
- Provides a 10 minute view of waveform data at one time
- Use arrows to scroll:
 - Forwards/backwards 1 minute in time
 - Forwards/backwards 10 minutes in time
- Select **"Previous/Next Event"** to scroll based on alarm conditions
- Select **"Skip To"** to enter a specified day and time period to view

Display Choices Sidebar Button

To change the waveform displayed in the Disclosure Tab:

- Select **VIEW** on the patient's tile
- Select **DISCLOSURE** tab
- Select **DISPLAY CHOICES** sidebar button
- Select waveform
- Select **DONE** button



Skip To Sidebar Button

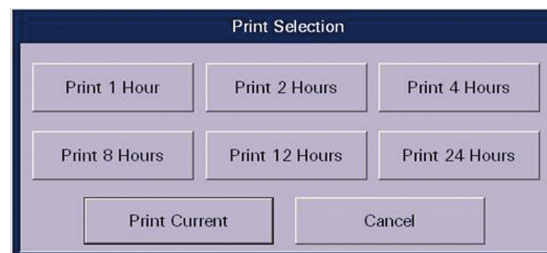
To skip to a specific time in the Disclosure record:

- Select **VIEW** on the patient's tile
- Select **DISCLOSURE** tab
- Select **SKIP TO** sidebar button
- Enter the specific time and date
- Select **DONE** button

Print Menu Button

To print a Disclosure Report:

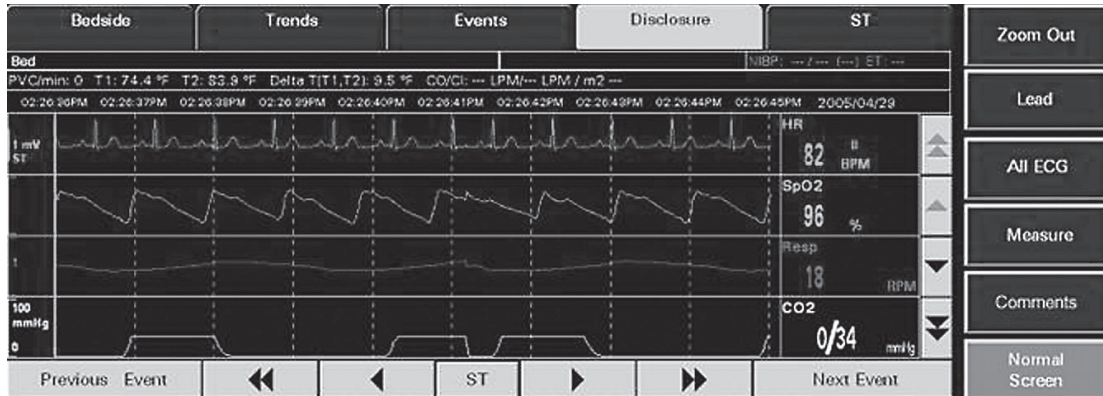
- Select **VIEW** on the patient's tile
- Select **DISCLOSURE** tab
- Select **PRINT** menu button
- Select the interval



Note: This Report can also be printed from the Report Menu.

View • Disclosure Zoom In Tab

DISCLOSURE ZOOM IN TAB



To view and print a specific waveform data:

- Select **VIEW** on the patient's tile
- Select **DISCLOSURE** tab to display 10 minutes of waveform data collected for the selected patient tile
- Select the specific waveform data to view
- Select **ZOOM IN** button to show an expanded view of the waveform data

Note: All available waveforms can be viewed in this area even if they are not being viewed at the bedside.

Navigational Arrows

Select the arrows to scroll through the event data:

- Select the Double Up arrow to display the previous page of waveform data
- Select the Up arrow to move the group of waveforms displayed up one position
- Select the Double Down arrow to display the next page of waveform data
- Select the Down arrow to move the group of waveforms displayed down one position
- Select the Double Left arrow to display the previous waveform data
- Select the Left arrow to move the colored vertical cursor line one second back in time
- Select the Right arrow to move the colored vertical cursor line one second forward in time
- Select the Double Right arrow to display the next waveform data

Next Event Button

Select the **NEXT EVENT** button to locate and display an event that occurred later than the current event time began.

Previous Event Button

Select the **PREVIOUS EVENT** button to locate and display an event that occurred earlier than the current event time began.

ST Push Button (Optional)

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the event conditions collected for the selected patient tile
- Select the specific waveform data to view
- Select **ZOOM IN** sidebar button to show an expanded view of the event
- Select **ST** button to display the ST Dialog Box

The ST Dialog Box will display the ST numerics data associated with the waveform data.

- Select the Left Arrow to view the ST data for the previous second of the event
- Select the Right Arrow to view the ST data for the next second of the event
- Select the **DONE** button to close the ST Dialog box

Zoom Out Sidebar Button

Select to return to the **DISCLOSURE** tab.

Lead Sidebar Button (5-wire lead set or 12 lead card only)

Select to change the top lead of ECG displayed in the **DISCLOSURE ZOOM IN** tab.

All ECG Sidebar Button

Select to view all available ECG waveforms in the **DISCLOSURE ZOOM IN** tab.

When selected, the **ALL ECG** button will turn white. To resume viewing of all waveforms, select the **ALL ECG** button to turn button blue again.

When the assigned device is an Ambulatory Telepack, which is not using an SpO₂ module the **DISCLOSURE ZOOM IN** tab is always in an ALL ECG mode.

Note: The number of ECG lead vectors displayed depends on the utilized lead wire set.

Measure Sidebar Button

To measure intervals and use the on screen calipers:

- Select **VIEW** on the patient's tile
- Select **EVENTS** tab to display the event conditions collected for the selected patient tile
- Select the specific event to view
- Select **VIEW WAVEFORM** sidebar button to show an expanded view of the event
- Select **MEASURE** sidebar button
- Select the measurement to be taken:
 - **PR**
 - **QRS**
 - **QT**
 - **R to R**
 - **ST**
- Select the waveform or use the arrows to adjust the first line (dotted)
- Select the same measurement as above
- Select the waveform or use the arrows to adjust the second line (solid)
- Select **CALCULATE** to perform the calculation

Repeat above steps for additional measurements.

Comments Sidebar Button (Paging Option)



Select the **COMMENTS** sidebar button to view paging text associated with paged event.

Print Menu Button

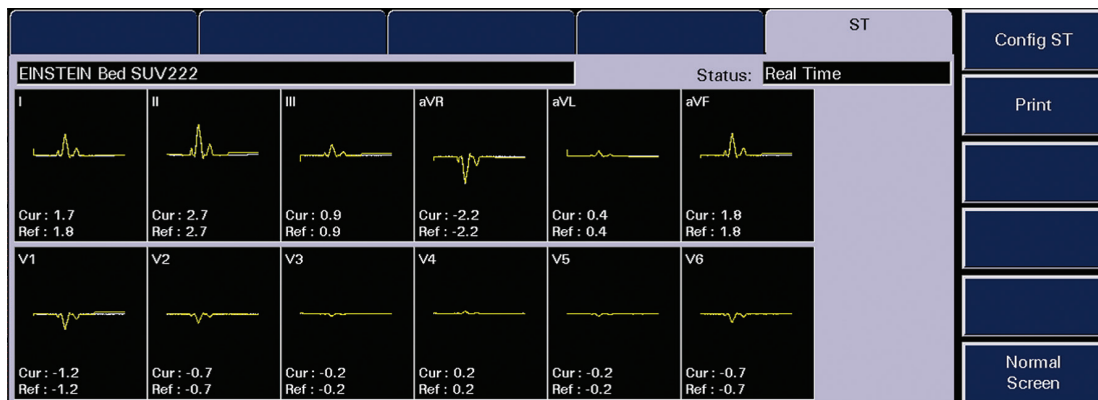
Select the **PRINT** menu button to print a Disclosure Zoom In strip for the selected waveform data.

Normal Screen Sidebar Button

Select to close tab and return to Normal Screen

View • ST Tab (Optional)

ST TAB (OPTIONAL)



The ST Tab displays the ST templates for the selected patient. The ST data is dependent upon the lead set utilized.

- 3-Wire Lead Set – 1 vector of ST data
- 5-Wire Lead Set – 7 vectors of ST data
- 12 Lead Card – 12 vectors of ST data

Note: When using a WMTS 608 bedside monitor, the ST Tab will not display ST current or ST referenced templates.

Displaying the ST Templates

To view all leads of ST:

- Select **VIEW** on the patient's tile
- Select **ST** tab. The ST templates are displayed:
 - The current ST template is yellow
 - The reference ST template is white
 - The digital data for the reference and current ST templates is displayed below the corresponding templates



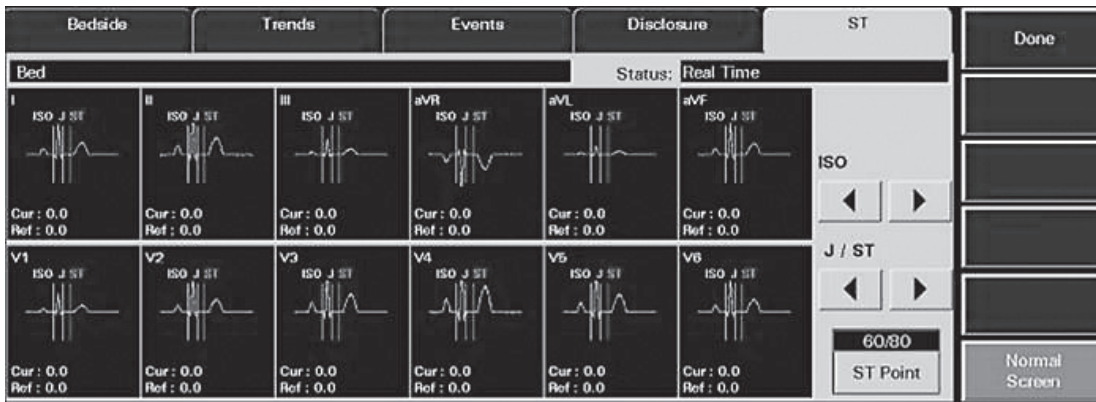
Current





Reference

Config ST Sidebar Button

Note: The Config ST Sidebar Button is not available when the assigned device is a WMTS 608 bedside monitor.



To adjust the ST measurements:

- Select **VIEW** on the patient's tile
- Select **ST** tab. The ST templates will be displayed.
- Select **CONFIG ST** sidebar button
- Select the  below ISO to adjust the Isoelectric reference line (white)
- Select the  below J/ST to adjust the J reference line (yellow) and ST reference line (green)
- Select **"ST Point"** to change time period from the J reference line to the ST reference line



BIDIRECTIONAL

Configuring the ST at the bedside monitor will configure at the Panorama Central Station and configuring the ST at the Panorama Central Station will configure the bedside monitor.

Print

Note: The Print Menu Button is not available when the assigned device is a WMTS 608 bedside monitor.

To print an ST Report:

- Select “**View**” on the patient
- Select “**ST**”
- Select “**Print**” Menu Button

Note: This Report can also be printed from the Report Menu.

ViewStation (Optional)

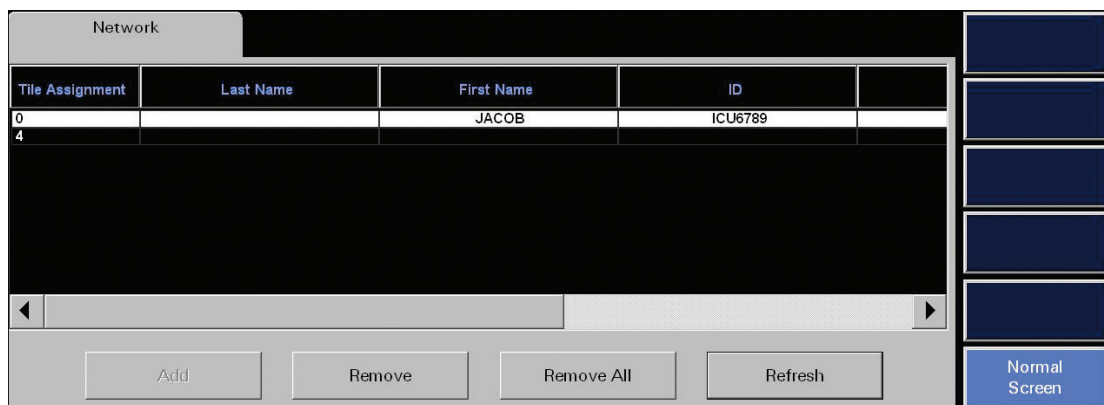
VIEWSTATION

The ViewStation allows a clinician to view any patient on the Panorama Central Station Network:

- Display real time information
- Print real time waveforms on a patient
- Print historical data and waveforms
- Display patient information and settings

NETWORK MENU

The Network Menu displays a list of all monitoring devices (patients) on the Panorama Central Station Network. The Network Menu is used to add or remove patients displayed on the ViewStation.



Sorting Monitoring Devices (Patients)

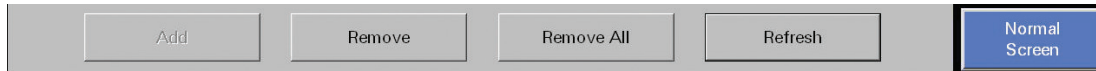
The Network List can be sorted by patient information, bed number, or host Panorama Central Station.

To sort the Network list by category:

- Select **NETWORK** menu
- Use the arrows to scroll to the category
- Select the category

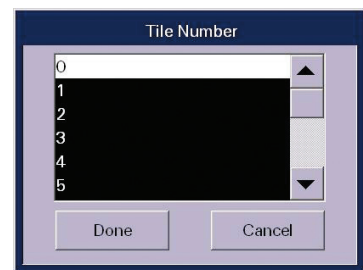
Note: If a monitoring device (patient) is added or removed, the Network is resorted based on the tile assigned on the ViewStation.

Adding a Monitoring Device (Patient)



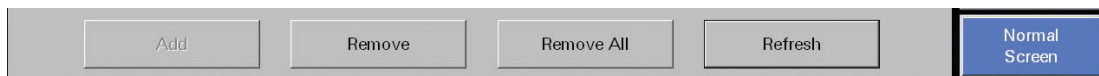
To assign a monitoring device (patient) for viewing on the ViewStation:

- Select **NETWORK** menu
- Select monitoring device (patient)
- Select **ADD**
- Select tile
- Select **Done**



Note: The monitoring device (patient) is assigned to tile until removed.

Removing a Monitoring Device (Patient)



To remove a monitoring device (patient) from being displayed on the ViewStation:

- Select **NETWORK** menu
- Select monitoring device (patient)
- Select **REMOVE**
- Select **Yes** to confirm

Note: Removing the monitoring device (patient) does not discharge it from the Panorama Central Station.

Removing all Monitoring Devices (Patients)

To remove all monitoring devices (patients) from being displayed on the ViewStation:

- Select **NETWORK** menu
- Select **REMOVE ALL**
- Select **Yes** to confirm

Note: Selecting **Refresh** will update the Network List while the menu is opened.

Selecting a Patient on the ViewStation

Selecting a patient on the ViewStation is the same as selecting on the host Panorama Central Station. Refer to Patient Selection for further details.

VIEWSTATION CONSIDERATIONS

When using a ViewStation there are a few important considerations:

- Initial settings on a monitoring device (patient) are determined from the host Panorama Central Station (Central Station with monitor assigned to it)
- Patient must be displayed on host Panorama Central Station to be displayed on ViewStation
- Adjustments made on ViewStation do not impact host Panorama Central Station
- Any monitoring interruptions will make ViewStation re-poll host Panorama Central Station

Arrhythmia Definitions

Asystole

An absence of detectable QRS complexes for a user-defined period of time in the absence of V-Fib.

3 - 8 seconds (12-Wire Lead Set)

3 - 10 seconds (3- or 5-Wire Lead Set)

V-Fib

An absence of recognizable P, QRS, and T waves for four consecutive seconds.

V-Tach

Number of consecutive PVCs equal to or greater than the user selected "V-Tach Threshold" at a rate equal to or greater than the user "V-Tach Rate".

Run

The number of consecutive PVCs at a heart rate equal to or greater than the user defined "V-Tach Rate".

Trigeminy

Three or more cycles of one PVC followed by two normal beats.

Bigeminy

Three or more cycles of one PVC followed by one normal beat.

Couplet

Two consecutive PVCs between two normal beats.

V-Rhythm

The number of consecutive PVCs greater than two and the ventricular rate is less than the user defined "V-Tach Rate".

High PVC

A total number of PVCs exceeding the set threshold value.

Arrhythmia Definitions

Bradycardia (3, 5 wire lead sets only)

Heart rate 10% lower than selected low heart rate limit.

Pause (12 wire lead set)

No beats detected during 1.8 times or more of the current R-R interval and the next beat is not a PVC.

Appendix A

ARRHYTHMIA ANALYSIS FREQUENTLY ASKED QUESTIONS

What ECG vectors are used for Beat Detection?

3-wire lead set	Viewed ECG vector
5-wire lead set and 12 lead	II and V

What ECG vectors are used for Beat Typing?

3-wire lead set	Viewed ECG vector
5-wire lead set and 12 lead	I, II, and V

What ECG vectors are used for V-Fib Detection?

3-wire lead set	Viewed ECG vector
5-wire lead set and 12 lead	II and V

How is the Heart Rate calculated?

Leads use the mean R-R interval of the last 16 beats if the HR > 48 bpm. If the Heart Rate derived from the last 4 beats is \leq 48 bpm, then that rate is used for HR. PVCs and Paced beats are included.

What is the algorithm's definition of Asystole?

No QRS detection for a configurable time period (3-10 Seconds)

What is the algorithm's definition of V-Fib?

Presence of a Fib waveform with no recognizable P, QRS, or T waves in a 5 second window

What is the algorithm's definition of V-Tach?

When the rate and number of consecutive PVCs for the configurable V-Tach setting have been met.

What are the user configurable options for the V-Tach rate?

The V-Tach rate can be set between 100-180 bpm.

What are the user configurable options for the V-Tach threshold?

The V-Tach threshold can be set between 3-15 consecutive PVCs.

What is the algorithm's definition of Run?

The PVC Rate meets criteria for V-Tach rate but did not meet the number of consecutive PVCs to be called V-Tach

What is the algorithm's definition of Ventricular Rhythm?

Number of consecutive PVCs is >2 and the V-Tach rate is not reached

What is the algorithm's definition of Irregular Heart Rate?

When the measured variations in the R-R interval over a period of time exceed a preset limit established by the arrhythmia analysis algorithm

What is the algorithm's definition of Bigeminy?

Three or more N-V or V-N consecutive sequences

What is the algorithm's definition of Trigeminy?

Three or more N-N-V or V-N-N consecutive sequences

What is the algorithm's definition of Bradycardia?

Heart rate 10% lower than selected Low HR alarm limit

What does Relearn do?

Selecting "Relearn" updates the ST and Arrhythmia templates

Note: Relearn sets new ST baselines and the ability to compare to initial baseline will be lost.

Note: Ensure waveform being learned is the patient's baseline rhythm and not a lethal arrhythmia or artifact.

When does an Automatic Relearn occur?

3-wire lead set

- Change in viewed ECG vector

3-wire lead set, 5-wire lead set and 12 lead

- Initial admission
- Resume monitoring after a Standby mode
- Arrhythmia and/or ST is enabled
- After correction of lead fault of >60 sec

When should a Manual Relearn be done?

- Suspected false alarm calls
- Change in patient's dominant beat and/or rhythm occurs

What arrhythmia calls can be made during a Learn period?

Only calls during Learn:

- Asystole (once 3 beats have been detected)
- V-Fib (once 3 beats have been detected)

What does the message "ECG Noise" mean?

The algorithm has detected noise in the ECG waveform and cannot perform arrhythmia analysis during this time. Correct the noise to return to arrhythmia processing.

Does adjusting the wave gain (size) of the ECG waveform impact algorithm performance or heart rate calculation?

No.

The monitor is calling "Asystole" or "Low Heart Rate" despite the visual presence of an ECG waveform. What could be the issue?

- Alarm may be latched (Asystole)
 - Acknowledge a latched alarm by selecting over the patient's digital or waveform area to clear the latched alarm if condition is resolved.
- The QRS complexes are too small for detection by the algorithm.
 - Move ECG patches closer together to increase the voltage of the QRS complexes.
 - Select "Relearn" to establish new baseline templates
 - Change displayed lead (3-wire lead set)

Why is the V-Tach alarm called when V-Tach is not present in the waveform?

- Alarm may be latched (V-Tach)
 - Acknowledge a latched alarm by selecting over the patient's digital or waveform area to clear the latched alarm if condition is resolved.
- Baseline rhythm has changed and arrhythmia templates need to be updated
 - Select "Relearn" to establish new baseline templates
- Artifact may be present
 - Poor connectivity or skin contact
 - Secure ECG lead wires and cables
 - Electrocautery interface
- The algorithm may not clearly distinguish the QRS complexes from T waves that are similar in height
 - Reposition ECG patches to establish taller QRS complexes

Are there any special considerations for patients with permanent Pacemakers?

- HR is calculated from the patient's QRS complex, not the Pacemaker enhancement.
 - Reposition electrodes away from the pacemaker device to reduce "pacemaker noise"

Appendix B

PANORAMA® CENTRAL STATION GUIDELINE

This document is a guideline only to be used as an aid to comprehensive Inservice training.

Name: Hospital:

Validator: Date:

A. NORMAL SCREEN	PERFORMED	NOT PERFORMED	NOT APPLICABLE
1. Turn Touch Screen On/Off			
2. Discuss proper procedure for cleaning Touch Screen			
3. Record a waveform on any patient			
4. Locate and discuss the Mute/View Button			
5. Locate Menu Bar			
6. Locate Date/Time			
7. Discuss resources available for assistance			
8. Discuss the available options available for each patient			
B. PATIENT SETUP			
1. Discuss skin prep			
2. Discuss auto admit for bedside monitor – What is required for auto-admit to occur?			
3. Discuss auto admit for ambulatory telemetry pack			
a. Perform a battery and electrode status check			
b. Discuss the Nurse and Attendance Present button			
c. Initiate a recording			
d. Change lead to Lead I (3-lead)			
e. Discuss proper cleaning of telemetry pack			

Appendix B

B. PATIENT SETUP (continued)	PERFORMED	NOT PERFORMED	NOT APPLICABLE
4. Discuss SpO ₂ module for telemetry pack (optional)			
a. Enabling/Disabling SpO ₂ module			
b. Cleaning SpO ₂ module			
c. Connecting SpO ₂ patient cable and SpO ₂ sensors			
5. Enter the following Demographics:			
a. John Smith			
b. Dr. Jones			
c. Height: 160cm			
d. Weight: 75 kg			
e. What demographic information is necessary to retrieve a discharged patient or transfer a patient to another central station?			
6. Activate/Deactivate Pacer Enhancement			
7. Assign Mr. Smith to a Care Group			
8. Verify Arrhythmia analysis is enabled and adjust the V-Tach settings to:			
a. V-Tach rate of 100bpm			
b. V-Tach Threshold of 5 PVC			
9. Enable/Disable ST analysis (Optional)			
10. Transfer Mr. Smith to another tile on same Panorama Central Station – What message is displayed once transfer is complete? When will all patient information be displayed?			
11. Transfer Mr. Smith to another tile on a different Panorama Central Station (Advanced) – What message is displayed once transfer is complete? When will all patient information be displayed?			
12. Upon transfer completion, what is required to auto admit the next patient on the source bedside monitor?			

B. PATIENT SETUP (continued)	PERFORMED	NOT PERFORMED	NOT APPLICABLE
13. Place Mr. Smith into Standby:			
a. With X-Ray as his location Resume monitoring (telemetry pack)			
b. At both locations with X-Ray as his location. Resume monitoring (bedside monitor)			
14. Discharge a patient from a:			
a. Telemetry pack			
b. Bedside Monitor			
1. At the bedside monitor			
2. At the central station (optional)			
15. Retrieve a previously discharged patient (Advanced) – What message will be displayed once retrieval is complete? When will all patient information be displayed?			
16. Rearrange a patient's tile to display:			
a. HR, PVC, Battery Percentage (telemetry pack only)			
b. HR, NIBP, SPO ₂ , and RESP			
17. Rearrange a patient's waveforms to display ECG1 and:			
a. SPO ₂			
b. Lead V (5-Lead)			
18. Adjust the ECG wave gain to 20 mm/mV			
19. Adjust the printing on a patient to print Lead I, II, and V (5-Lead)			
C. PATIENT ALARMS			
1. Adjust High HR limit to 135			
2. Adjust the Low SPO ₂ limit to 87%			
3. Discuss Priority 1, 2, and 3 alarms			
4. Adjust the alarms to automatically print for Asystole, V-Tach and V-Fib			
5. Adjust the alarms to store Bigeminy but not to produce an alarm sound			
6. Mute an alarm How long is the alarm muted?			

Appendix B

C. PATIENT ALARMS (continued)	PERFORMED	NOT PERFORMED	NOT APPLICABLE
7. Discuss latched alarms. Which alarms are latched?			
8. (Optional) Discuss Suspend All alarms/Suspend Non-lethal alarms. Does this include lethal alarms?			
9. Print an Alarm Report for the selected patient tile			
D. VIEW			
1. Display all leads of ECG			
2. Mark an event for future review			
3. Print a strip in the Bedside Tab – What waveforms will be printed?			
4. Display the Trend List information			
5. Adjust the list to display every 30 minutes			
6. Display graphic trends – Return to list trends			
7. Print the last 2 hours of Trend information			
8. Display a list of all events stored on a patient			
9. Print a 1 hour Event List Report			
10. Delete an event			
11. Filter the list to include physiological events only (Advanced)			
12. Filter the list to include only arrhythmia events (Advanced)			
13. Highlight the marked event and display its waveforms			
14. Display all leads of ECG			
15. Use on screen calipers to measure a PR interval (Advanced)			
16. Print the Event Zoom In Report – What waveforms will be printed?			
17. Change to Lead V in Disclosure (5-Lead)			
18. Skip back in time 30 minutes			
19. Discuss the color coded events in Disclosure			
20. Highlight and zoom in to show an expanded view			

D. VIEW (continued)	PERFORMED	NOT PERFORMED	NOT APPLICABLE
21. Print a Disclosure Zoom In Report			
22. Discuss the ST Tab (Optional)			
23. Print an ST report (Optional)			
E. REPORTS			
1. Print a Current Trend list report on a patient			
2. Discuss how to print a strip on all the patients			
F. VIEWSTATION (OPTIONAL)			
1. Discuss the interaction between the Panorama Central Station and ViewStation			
2. What menu button is used to add and remove patients for display at the ViewStation?			
3. Add a monitor (patient) to view at the ViewStation			
4. Adjust the printing on a patient to print Lead II, and III (5-Lead) – What happens to these settings if the monitoring is suspended or interrupted?			
5. Sort the ViewStation network list based on bed number			
6. Print an All Strips report at the ViewStation			
7. Print an Event Zoom In report at the ViewStation			
8. Silence an alarm at the ViewStation. How long does it remain silenced?			
9. Silence all alarms at the ViewStation. How long do they remain silenced?			
10. Remove a patient from being displayed at the ViewStation. Does that discharge the patient at the host central station?			
11. Remove all patients from being displayed at the ViewStation			
12. How can the network list at the ViewStation be updated while the Network tab is open?			

Appendix B

G. PAGING (OPTIONAL)	PERFORMED	NOT PERFORMED	NOT APPLICABLE
1. What menu button is used to add, assign and remove pagers?			
2. Add a pager with the following information:			
a. Betty Smith			
b. 2882121			
3. Edit Betty's pager with the following information:			
a. Betty Smyth			
b. 9958000			
4. Assign Betty's pager to monitoring devices (patients) on tile 1 and 4			
5. Remove tile 4 from Betty's pager			
6. Betty is covering shift report – Assign all the tiles (monitoring devices) to Betty's pager			
7. Print a Page Report			
8. Display a list of pages that were not delivered			
9. Resend a failed page			
10. Delete a failed page – How can all failed pages be deleted?			
11. Discuss the paging delay – Adjust Mr. Smith's alarm settings to automatically page for Asystole, V-Tach, V-Fib, and HR			
12. Discuss mute and acknowledging latched alarms with respect to paging			
13. What is a page marker? Where can it be viewed? Confirm a stored strip set for paging was sent			
14. Remove all tiles assigned to Betty's pager			
15. Remove Betty's pager from the list			

H. SYSTEM SETUP	PERFORMED	NOT PERFORMED	NOT APPLICABLE
1. Adjust the ECG color to yellow			
2. Recalibrate the Touch Screen (Advanced)			
I. DISPLAY SETUP			
1. Discuss Side Monitor Buttons			
2. Discuss On/Off Power Switch			
3. Discuss locking and unlocking Side Monitor Buttons			
• OSD locked			
• OSD unlocked			
4. Discuss shortcut to Display input			
• Verify display is in Analog mode			
5. Discuss ability to return to original settings if inadvertently changed			
6. Verify external speakers are active			
7. Verify Side Monitors Buttons are in the “OSD locked” position			

