


MULTIVIEW WORKSTATION

with

INFINITY Telemetry System

User's Guide



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**MULTIVIEW WORKSTATION
with INFINITY™ Telemetry Option
User's Guide
Software VC1**

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CE 0123

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WARNING: The use of non-Siemens approved software on the CPU of the MULTIVIEW WORKSTATION is strictly forbidden.



CAUTION: *The MULTIVIEW WORKSTATION and the INFINITY receiver are not intended for use in the patient vicinity.*



WARNING: Diagnosis based on interpretation of lead monitoring results should only be done by qualified personnel. Prior to final interpretation and diagnosis, qualified physicians should review suggested diagnostic statements and all other available information.



CAUTION: *Federal Law in the United States restricts the sale of these devices to sale by, or on order of a physician.*



The connection of non-Siemens approved equipment to the INFINITY™ network is strictly forbidden.



Overview of Contents

MULTIVIEW WORKSTATION - Basic Version

This chapter describes the scaled-down version of the MULTIVIEW WORKSTATION.

MULTIVIEW WORKSTATION - Enhanced Version

This section contains all of the following chapters.

Chapter 1 - About the MULTIVIEW WORKSTATION

This chapter introduces the INFINITY NETWORK™ and the MULTIVIEW WORKSTATION™.

Chapter 2 - About the Transmitter

This chapter describes the transmitter and how to customize it according to an individual patient's needs.

Chapter 3 - MULTIVIEW WORKSTATION Setup

This chapter explains how to configure the monitoring characteristics of the MULTIVIEW WORKSTATION and the available CLUSTERVIEW layouts.

Chapter 4 - Telemetry System Setup

This chapter explains how to set defaults for the various telemetry configuration functions.

Chapter 5 - CLUSTERVIEW

This chapter describes the CLUSTERVIEW, the main screen of MULTIVIEW WORKSTATION.



Chapter 6 - Patient Setup - BEDVIEW

This chapter describes the different BEDVIEW screens of the MULTIVIEW WORKSTATION.

Chapter 7 - Admit/Discharge

This chapter explains how to admit and discharge patients from the MULTIVIEW WORKSTATION.

Chapter 8 - Arrhythmia/ECG Monitoring

This chapter describes how to customize the arrhythmia screen for an individual patient.

Chapter 9 - MICRO₂ Monitoring

This chapter describes how to setup a Telemetry patient for monitoring using a MICRO₂ oximeter.

Chapter 10 - ST Segment Analysis (Option)

This chapter describes the ST analysis option of the MULTIVIEW WORKSTATION and the corresponding setup functions.

Chapter 11 - Alarms

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Chapter 13 - Trends

This chapter describes the function of the MULTIVIEW WORKSTATION and the available display features of the trend graph and the trend table.



Chapter 14 - Full Disclosure (Option)

This chapter describes the Full Disclosure option of the MULTIVIEW WORKSTATION.

Chapter 15 - Event Disclosure (Option)

This chapter describes the Event Disclosure option of the MULTIVIEW WORKSTATION.

Chapter 16 - The VIEWSTATION Option

This chapter introduces the VIEWSTATION Option, which is a scaled-down model of an Enhanced MULTIVIEW WORKSTATION.

Chapter 17 - Biomed Functions

This chapter provides a general overview of the password-protected Biomed functions, which are intended for the service personnel.

Appendix A - Patient Preparation

This appendix provides information on how to prepare a patient for telemetry monitoring and how to achieve the clearest signals.

Appendix B - Technical Data

This appendix lists all the technical data for the MULTIVIEW WORKSTATION and the INFINITY Telemetry Option.

Appendix C - Accessories

This chapter lists all of the accessories for the MULTIVIEW WORKSTATION and the INFINITY System.

Appendix D - Cleaning

This appendix provides general instructions for cleaning the MULTIVIEW WORKSTATION, the mouse, the keyboard, the transmitter and the MICRO2 oximeter.



Index

The index is designed as a quick-reference guide. It also contains the various messages that may appear during monitoring and points you to specific chapters in the user's guide which contain related solutions and explanations.

Safety Considerations

Recommendations

Siemens recommends the use of a UPS (uninterruptible power supply) in conjunction with the MULTIVIEW WORKSTATION (with or without Telemetry option).

Transmitter Precautions



WARNING: Under NO circumstances should the transmitter be used without the battery cover securely in place.

General Precautions



WARNING: Because of the danger of electric shock, never remove the cover of any device while it is in operation or connected to a power outlet.

The user must check that the equipment functions safely and that it is in proper working condition before being used. In the interest of safety, regular equipment inspection and maintenance is required. Once a year, check all cables, devices, and accessories for damage, ground resistance, chassis and patient leakage currents, and all alarm functions. Also, ensure that all safety labels are legible. Maintain a record of these safety inspections. Safety checks, device verification, calibration, and maintenance should be performed by qualified personnel, in accordance with the instructions found in the Telemetry Service manual.



CAUTION: Conductive parts of electrodes and associated connectors for applied parts, including the neutral electrode, should not contact other conductive parts including earth.



Maintenance, Modifications, and Repairs

Siemens is liable for the safety, reliability, and performance of equipment only if:

- maintenance, modifications, and repairs are carried out by authorized personnel.
- components are replaced with Siemens-approved spare parts.
- the devices are used in accordance with Siemens operating instructions.

A full technical description of the Telemetry INFINITY System is available from your local Siemens representative.

Site of Operation

The site of operation must meet temperature, humidity, and air pressure requirements. For details, see Appendix B.



WARNING: Do not operate the INFINITY Telemetry System or its remote displays in the presence of flammable gases.



Pacemaker and TENS Precautions

Certain difficulties are inherent to ECG monitoring and require special attention, such as patients with pacemakers and the TENS devices.

Pacemakers

Avoid misinterpreting ECG waveforms of patients with pacemakers.



WARNING: Pacemaker Performance:

In areas of uncertain performance, the monitor has been designed to err in the direction of false positive rather than false negative alarms.

In paced patients, QRS complexes may not be correctly identified, resulting in false low rate alarms under the following circumstances:

- 1. Fused beats and asynchronous pacers when coupling intervals are +10 to -90 msec.*
- 2. 700 mV pacer pulses followed by QRS complexes smaller than 0.5 mV.*
- 3. Asynchronous pacer pulses with overshoot.*

Even though the MULTIVIEW WORKSTATION passed AAMI pacer pulse rejection test, it is not possible to analyze every waveform characteristic. The system may not calculate heart rates accurately and may misinterpret rate-dependent arrhythmias in some paced patients. Do not rely entirely on the displayed heart rate to assess a paced patient's condition. Always closely observe these patients and carefully monitor all their vital signs.



AV Sequential or DDD Pacemakers:

The monitor *may* misinterpret the second pacer artifact as QRS complex, especially if the AV interval is set below 15 msec. ***Cardiac arrest may go undetected*** in these instances.

For Pacemaker Patients:

- Always attach five electrodes, allowing a choice of leads.
- Turn *Pacer Detection* on.
- Display the lead with the least interference and the highest wave in the patient's waveform channel 1.
- Verify that the HR calculation is accurate in comparison to the ECG waveform.
- Verify that the ♥^P symbol is displayed for each paced beat.

For Patients Without a Pacemaker:

- Disable the pacer detection (the message *NP* is displayed and an advisory alarm sounds).
- TENS signals are similar to pacemaker spikes and may be labeled as such.



WARNING: Valid QRS complexes following mislabeled TENS signals could be rejected. The result may be false asystole or low heart rate alarms. Follow the steps outlined for pacemaker patients. If TENS signals continue to be interpreted as pacer spikes, disable the pacemaker detection.



MICRO₂ Precautions

Excessive amounts of ambient light may affect the values. counter the effects of external light sources, cover the monitoring site.

SpO₂ measurements are particularly sensitive to the pulsation of the artery and the arteriole. Measurements may, therefore, be inaccurate if the patient is experiencing shock, hypothermia, anemia or has received certain medications that reduce the flow in the arteries.



WARNING: Check the sensor at least every four hours. Move the sensor if there is any sign of skin irritation or impaired circulation.

1. Bright sunlight can interfere with pulse oximetry measurements, causing erratic or missing values. When the sensor is likely to come in contact with direct sunlight, it should be covered with an opaque material.
2. Elevated levels of carboxyhemoglobin or methemoglobin in monitored patients can result in inaccurate pulse oximetry readings.



CAUTION: Infrared remote control devices, such as those used with televisions and VCRs, can interfere with pulse oximetry measurements if aimed directly at the sensor. Significant levels of indocyanine green, methylene blue or other intravascular dyes interfere with accurate pulse oximetry measurements.

CAUTION: Use only Siemens-approved power supplies and batteries (refer to the MICRO₂ operating instructions).

Defibrillators



WARNING: Use only Siemens-approved Nellcor sensors. Other Nellcor sensors may not provide adequate protection against defibrillation.

Electromagnetic Compatibility

The Telemetry INFINITY system has been designed and tested for compliance with current regulatory standards as to its capacity to limit electromagnetic emissions (EMI), and also as to its ability to block the effects of EMI from external sources.

The Telemetry INFINITY system complies with the following standards pertaining to EMI emissions and susceptibility: EN55011 and EN60601-1-2.

Reducing EMI

To reduce possible problems caused by electromagnetic interference, we recommend the following:

- Use only Siemens-approved accessories, as listed in Appendix C, *Accessories*.
- Ensure that other products used in areas where patient monitoring and/or life-support is used comply to accepted emissions standards (EN55011).
- Try to maximize the distance between electromedical devices.
- Strictly limit access to portable radio-frequency sources, for example, cellular phones and radio transmitters. Be aware that portable phones may periodically transmit even when in standby mode.
- Maintain good cable management. Try not to route cables over electrical equipment. Do not intertwine cables.
- Ensure all electrical maintenance is performed by qualified personnel.

Device Markings

The device housing carries the following standard markings



Consult accompanying documents.



Display ON/OFF button



CPU ON/OFF LED

IPX7

Protected against temporary immersion in w



Device of Type B



MULTIVIEW WORKSTATION

Software Release Notes VC1

- You may notice small waveform segments drawn in unused waveform channels after you switch screens. Switching screens again will remove these segments.
- The message PACER OFF remains displayed in the top waveform channel in BEDVIEW even after ECG is assigned to another channel on the bedside monitor.
- You may notice small gaps in the Full Disclosure waveform. These gaps are a result of adding or removing bedside monitors from CLUSTERVIEW. You should, therefore, minimize Pick and Go™ operations to ensure the integrity of the Full Disclosure data.
- Do not remove the network cable from a Full Disclosure server while a client device is viewing the server; doing so resets the client device.
- If you activate the Help screen while you are in the system console, some graphical anomalies may occur. These may be cleared by clicking on the **Main Screen** button.
- The clinical log does not record an entry when a recorder goes offline.
- MIB values appear clipped at the MULTIVIEW WORKSTATION if the MIB parameter is assigned to the top parameter box at the bedside monitor.
- The MULTIVIEW WORKSTATION will reset if you view a bedside monitor that has changed its language to Russian.
- The Full Disclosure application may occasionally reset during the start-up of a MULTIVIEW WORKSTATION.
- When you select a Full Disclosure client who does not have Event Disclosure from a server who does, the highlighting bar on the client moves to the next line even though the patients are displayed correctly. In this instance disregard the highlighting bar.

MULTIVIEW WORKSTATION: Basic Version

The Basic Version of the MULTIVIEW WORKSTATION can up to eight or sixteen patients on a single screen, depending on the option chosen by your facility. The central station offers viewing and recording functions without remote controls.

This section highlights the specific features of the Basic Version. Functions which are shared by the Enhanced Version are described in detail in the main body of the user's manual. Chapters 1 to 4 instruct you how to

- use the MULTIVIEW WORKSTATION
- setup the transmitter for telemetry patients.
- customize your MULTIVIEW WORKSTATION for your specific monitoring purposes.
- setup the local telemetry channels.

The rest of the chapters address specifics on patient setup and monitoring characteristics of individual parameters.




CLUSTERVIEW Setup

The screen layout in the Basic Version is identical to the CLUSTERVIEW of the Enhanced Version. Please refer to Chapter 5, CLUSTERVIEW for detailed information. In the Basic version, you can configure the CLUSTERVIEW according to the following layouts:

- 8 x 1 (eight patients; one waveform each)
- 16 x 1 (sixteen patients; one waveform each)

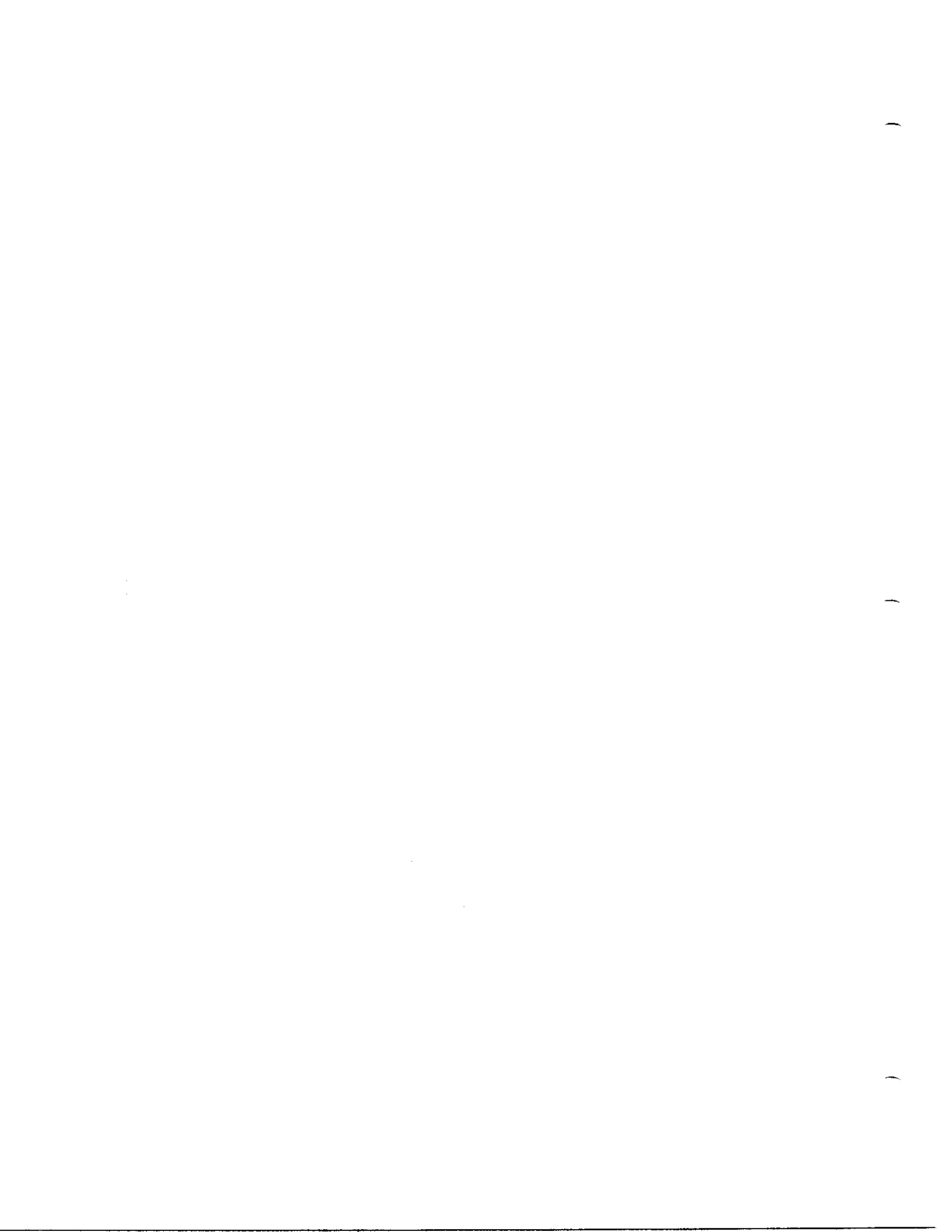
You can perform all of the CLUSTERVIEW functions with the exception of remote control and viewing other central layouts.

There are two ways to silence alarms at the Basic MULTIVIEW WORKSTATION. At the right end of the menu bar there is an **Alarm Silence** button which will silence alarms at the MULTIVIEW WORKSTATION, but not at the bed/remote central. The Remote Bed Silence icon  in the waveform area silences the alarm at the bed/remote central. For other alarm functions, see Chapter 11, Alarms.

Online Help is available by clicking the **Help** button in the CLUSTERVIEW menu bar.

MultiView WorkStation

Enhanced Version



1 About the MULTIVIEW WORKSTATION

With the help of the INFINITY NETWORK™, the MULTIVIEW WORKSTATION™ meets the ever increasing demands for distribution and retrieval of clinical data by giving you access to patients' information from anywhere in the hospital. To provide optimal flexibility, this MULTIVIEW WORKSTATION can accommodate a mixed patient population consisting of ambulatory telemetry patients and patients who are connected to bedside monitors.

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General Description

The **MULTIVIEW WORKSTATION** is a central station able to accommodate a mixed patient population, consisting of ambulatory telemetry patients whose signals are transmitted via an antenna system and stationary patients who are directly connected to a bedside monitor. In either case, the **MULTIVIEW WORKSTATION** functions as a central station for devices connected to or communicating with the **INFINITY™** network such:

- SC 6000 P™ patient monitors
- SC 9000™ and SC 9015™ patient monitors
- VIEWSTATIONS
- R 50™ recorders
- recorder and bedside CPSs (Communication Power Supply)
- remote displays
- telemetry transmitters (provided the telemetry option is activated at the **MULTIVIEW WORKSTATION**)

The **MULTIVIEW WORKSTATION** displays waveforms and parameter data and provides visual and audible alarms for bedside monitors and bedside CPSs (provided they are connected to the network and assigned to the **MULTIVIEW WORKSTATION** for monitoring) as well as for networked recorders, recorder CPSs and telemetry components.

System Components

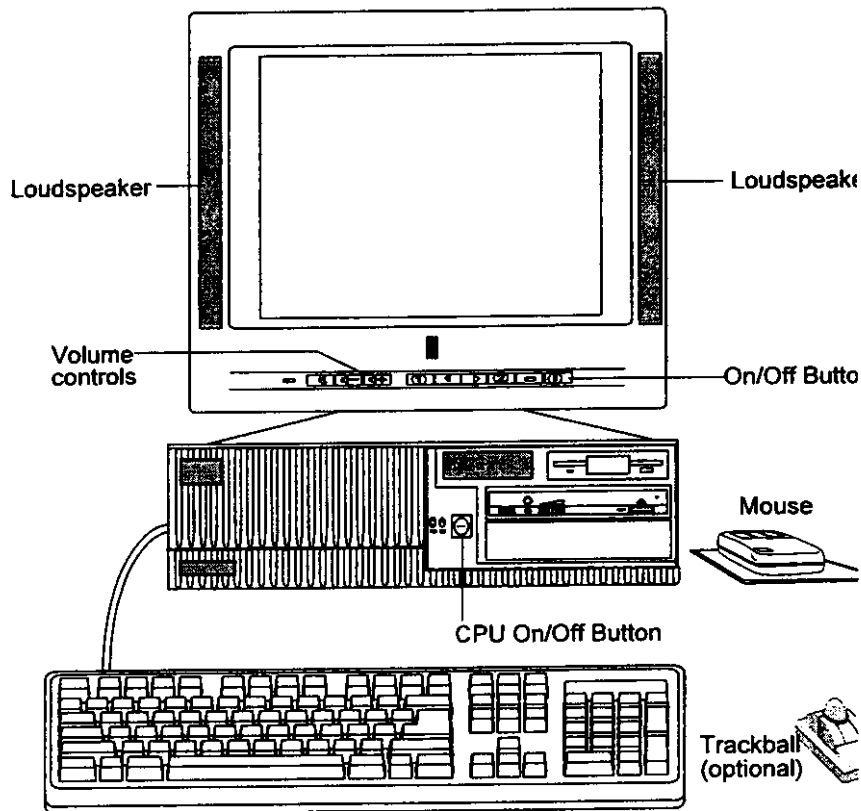
A **MULTIVIEW WORKSTATION** consists of the following components:

- a CPU that processes parameter, waveform, and alarm from the bedside monitors, transmitters, and other devices within the network
- up to two main displays (provided the Dual Display option is activated), with integrated speakers. The main display monitor, where data such as parameter values and waveforms are displayed and commands are activated and entered. The speakers provide audible alarm signals.
- remote displays, or **VIEWSTATIONS**, whose contents are identical to those of the color displays to which they are connected. The remote displays have no audio capability and allow limited user interaction.
- a mouse or an optional trackball for interacting with the displays
- a keyboard for entering text and issuing commands
- an optional laser printer for generating print screens and reports

In addition to the above elements, a **MULTIVIEW WORKSTATION** has the capability of becoming an Infinity Telemetry System with the addition of the following system components:

- transmitters for 3-lead and 5-lead monitoring. These transmitters are worn by the patients and transmit the patient signals to the central station.
- an antenna system that relays information from the transmitters to the dedicated **MULTIVIEW WORKSTATION** for collection
- a transmitter programming port which connects to the transmitter and is used for programming the transmitter

MULTIVIEW WORKSTATION Front Panel

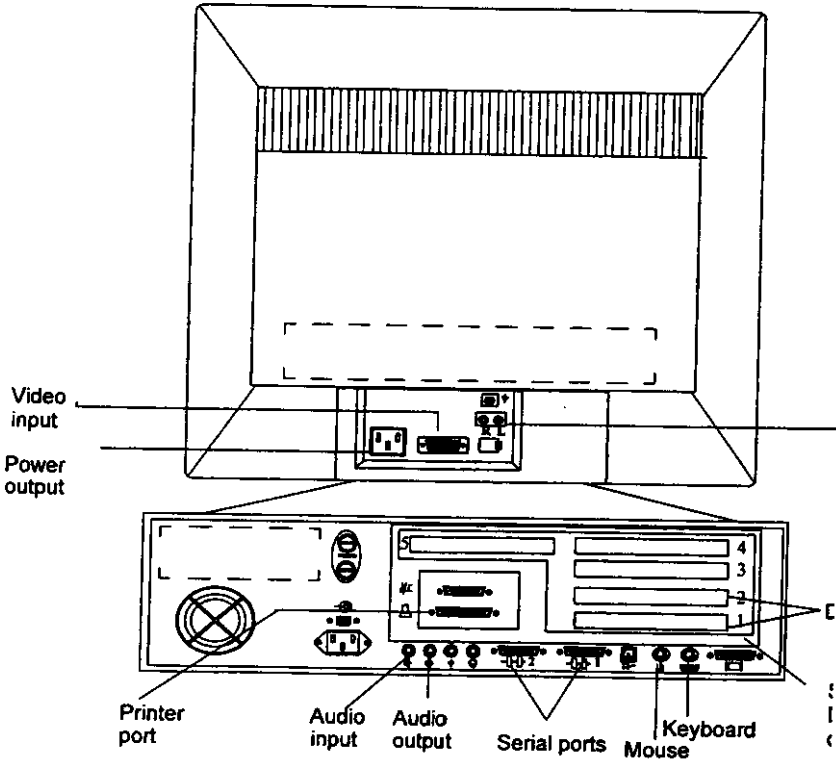


WARNING: The MULTIVIEW WORKSTATION and its display(s) must always remain on. Never press any of the ON/OFF buttons to turn the CPU or the display(s) off.

- The MULTIVIEW WORKSTATION CPU must be placed such a way that it can be heard in the event that the display loudspeakers are non-functional.

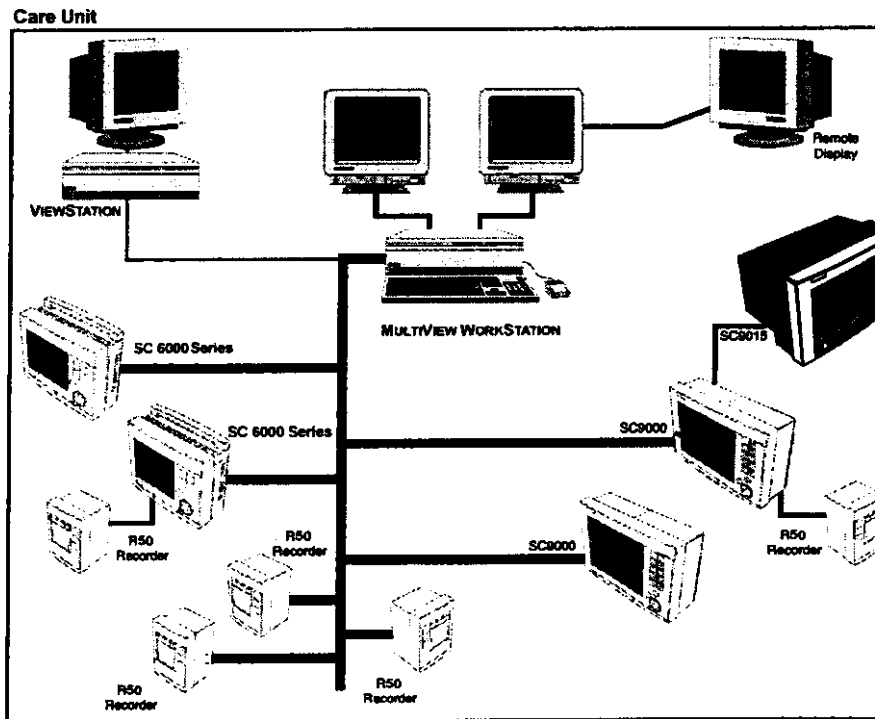
About the MultiView WorkSt

MULTIVIEW WORKSTATION Rear Panel



The INFINITY™ NETWORK

The INFINITY NETWORK links your hospital's monitors, record MULTIVIEW WORKSTATION(s), VIEWSTATION(s), and transmitters (for telemetry monitoring), providing a wide range of monitoring and viewing functions. Like a hospital, the network may consist of several "care units" or departments (example: CCU). The following illustration shows a basic INFINITY™ network configuration (*without* Telemetry).



About the MultiView WorkSt

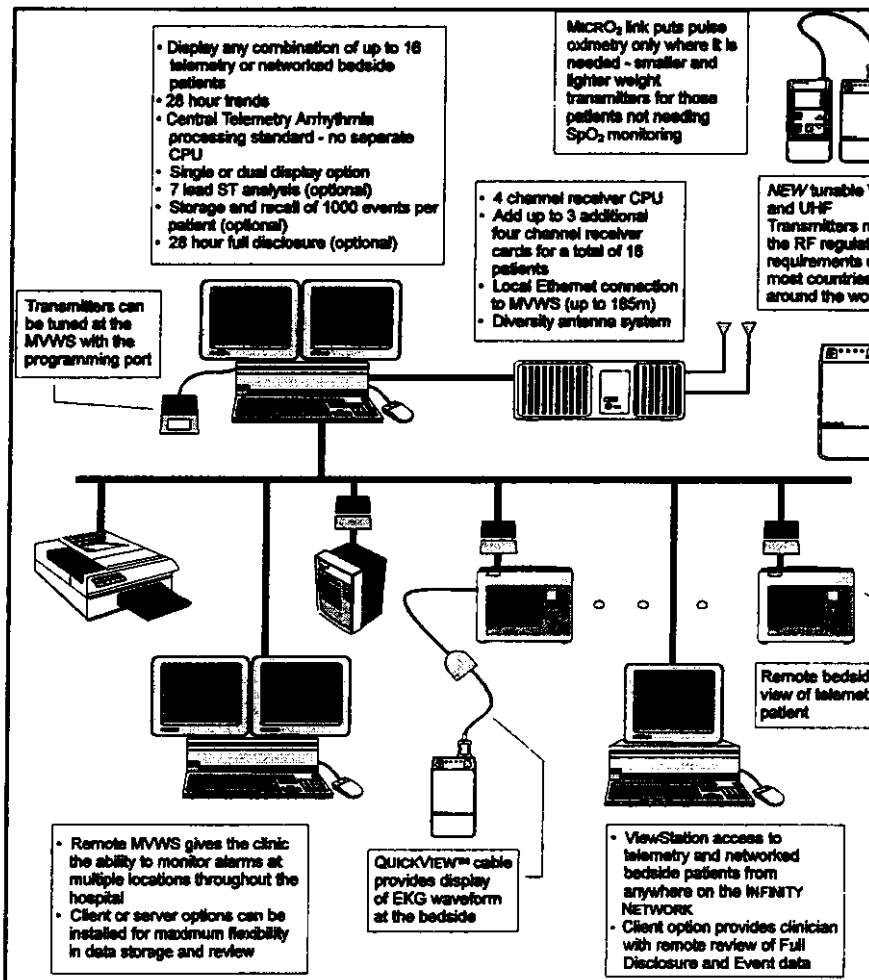
The network may consist of more than one **MULTIVIEW WORKSTATION**, each capable of monitoring up to 16 patients. With telemetry monitoring capability activated, the **MULTIVIEW WORKSTATION** accommodates a mixed patient population consists not only of patients that are connected to bedside monitors, but also ambulatory patients who are wearing transm

Each central processing unit (CPU) can support up to two displays if the Dual Display option has been activated. Each display can in turn support remote display(s) which mirror contents of the main display for remote viewing. These remote displays do not have any audio capabilities and allow limited interaction.

The **MULTIVIEW WORKSTATION** only displays the patient have been assigned to it. If the Bed Control and the Bed S features are enabled (see chapter 3, page 3-6) and/or Remote Control is activated for telemetry patients (see chapter 4, page 4-6), you can execute functions such as setting alarm limits, silencing alarms for remote patients directly from the **MULTIVIEW WORKSTATION**. In addition, you can view and control beds within the same monitoring unit that have not been assigned to your **MULTIVIEW WORKSTATION**.

INFINITY Telemetry System

The following illustration shows a typical Infinity Telemetry System configuration.



Overview of Features

The following list highlights the major features of the MULTIVIEW WORKSTATION:

- optical and acoustic alarm signals for displayed telemetry patients, bedside monitors and other network devices
- local alarm silence for all active alarms at the MULTIVIEW WORKSTATION
- remote alarm silence
- remote control of alarm setup, arrhythmia setup and diagnostic graphic data
- remote BEDVIEW of any bed in the network
- BEDVIEW and CLUSTERVIEW print screens
- timed and continuous recordings for displayed patients
- QUICKNOTES for entering/displaying patient notes
- configuration/selection of six CLUSTERVIEW layouts (two to four)
- dual display option (to display a maximum of 16 patients)
- review of patient data, such as trends.
- Full Disclosure option (provided the Full Disclosure option is unlocked)
- Event Disclosure option (provided the Event Disclosure option is unlocked)
- Telemetry option



NOTE: The remote features listed above are only available if the corresponding remote functions are enabled at the corresponding MULTIVIEW WORKSTATION. For telemetry patients these functions are only available if the Telemetry option is activated.

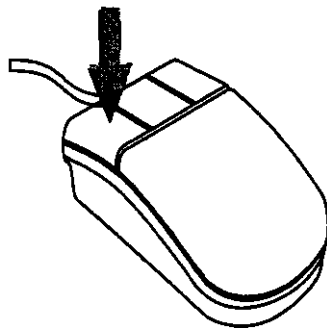
Interacting with the MULTIVIEW WORKSTATION

To interact with the MULTIVIEW WORKSTATION, you can use either a mouse or trackball and a keyboard.

Mouse

To select any object on the screen, simply move the mouse or hard surface, preferably a mouse pad, until the arrow points to desired object, and click the left mouse button. If a screen object is not selectable, it appears "ghosted" or gray. If the arrow turns into an hourglass, you cannot interact with the MULTIVIEW WORKSTATION. Wait for the arrow to reappear before you continue.

To select a group of characters in a text entry box, click on the first character, continue to hold the left mouse button down, and move the cursor to the end of the text you wish to select and release the button. You can now delete or edit the selected block of text.



About the MultiView WorkS

Keyboard

Use the keyboard for entering text and executing special commands (see page 1-13, *Keyboard Text Entry* for detailed information and special considerations).

In addition to entering text, the keyboard is equipped with following quick-access keys for frequently used functions:

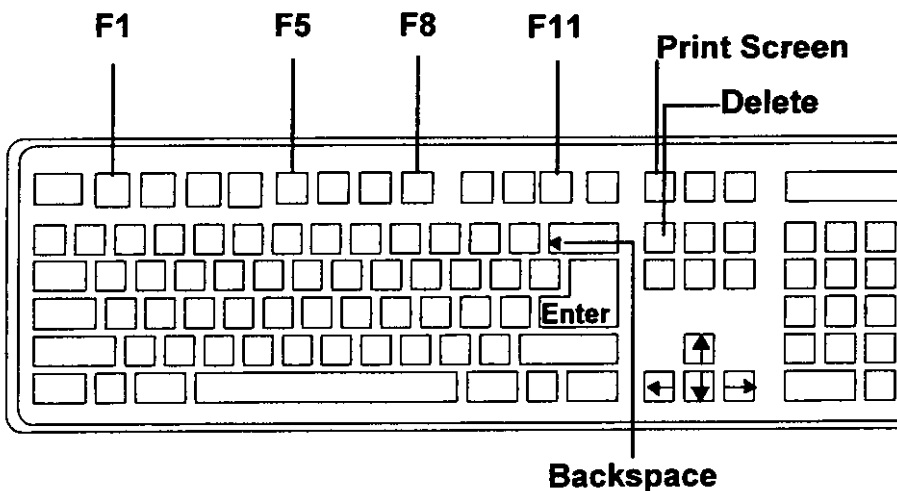
- ☒ **Alarm Silence (F1)** silences all active alarms at the VIEW WORKSTATION for 1 minute.
- ☒ **Main Screen (F5)** exits the current menu and return CLUSTERVIEW.
- ☒ **Help (F8)** invokes the Online Help function.
- ☒ **Record All (F11)** initiates a timed recording for all that are displayed in CLUSTERVIEW. If the Dual Disp option is unlocked, recordings are generated for the di which the pointer is located.
- ☒ **Print Screen** prints the contents of a screen on an o laser printer that is connected directly to the MULTIVI WORKSTATION.



In addition, the keyboard has the following special keys:

- **Enter** (↵) moves the cursor to the next input field or selects a highlighted menu item.
- **Delete** erases either the character to the right of the cursor or an entire selected text block.
- **Backspace** erases the character to the left of the cursor.
- **Keyboard arrow keys** are only active in text entry boxes where they move the cursor in the direction indicated by the arrow.

Keyboard Function Keys



About the MultiView WorkS

Keyboard Text Entry

The MULTIVIEW WORKSTATION provides text entry boxes that allow you to enter text using the keyboard. There is no type-ahead mode.

Sample Text Entry Box

Name:	<input type="text"/>
--------------	----------------------

With the help of the keyboard, you can manually enter or edit text in a text box as follows:



NOTE: The flashing "I" bar indicates a text box is ready to accept text.

- ☒ Click inside the text entry box and type in your text.



NOTE: Depending on where you are entering text, the pointer must be positioned in a specific way or your text will not be accepted. For example, when you enter a note, the pointer must be within the Notes window; when you enter text into a popup window, the pointer must be within the boundaries of the popup; when you enter text in a menu, the pointer must be within the boundaries of the menu window.

- ☒ To edit existing text, click at the point you wish to start editing or click and drag the pointer to select a block of text to modify it as desired.

- ☒ To move the pointer to the next text entry box in a screen such as Admit, proceed as follows:

press the **Enter** key on the keyboard

or

click directly inside the desired text entry box.



User Interface - Buttons

The user interface of the MULTIVIEW WORKSTATION provides different 'tools' which allow you to interact with it:

- Buttons
- Menus
- Popup windows

The following sections describe each type of user interface.

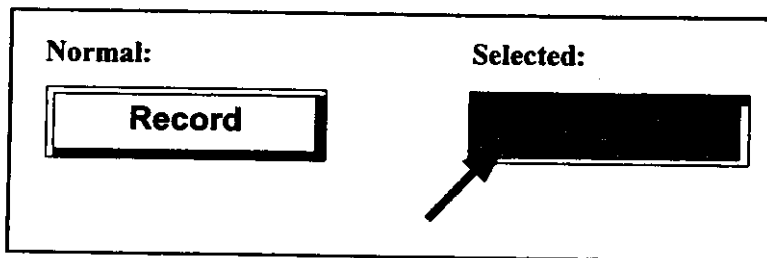
Buttons

The MULTIVIEW WORKSTATION is equipped with the following types of buttons, each with a unique function:

- Action buttons
- Menu buttons
- Option buttons
- Radio buttons
- Incrementer buttons
- Page buttons/scroll bars

About the MultiView WorkS

Action Buttons execute a specific function. When you click on an action button, it appears "highlighted". To cancel the function, click on the button again. The button immediately returns to its normal display. Except for the **Bed Silence** and **Alarm Silence** buttons (see below), all action buttons remain selected until their function is executed.



The following list contains some of the most frequently used action buttons:

- The **Alarm Silence** button silences all alarms at the VIEW WORKSTATION for one minute. It remains highlighted until either the 1-minute timer expires or a new alarm occurs.
- The **Bed Silence** button silences the alarms of an inpatient.
- **Accept** stores any changes made in any screen and either returns to the previous screen, or confirms a proposed action in a password/authentication popup and closes that popup.
- **Yes** confirms a proposed action in a confirmation popup window.
- **No** disregards a proposed action in a confirmation popup window and closes that popup window.



- **Undo** restores any settings in a screen to the values that were last saved.

- **Cancel** closes a password/application popup without performing the proposed action.

- **Continue** either closes an information popup window or continues to the next application.

- **Exit** closes a displayed window without saving any changes.

About the MultiView WorkSt

Menu Buttons allow you to activate a menu which contains several related selections. Click on the desired menu item or continue to hold the mouse button while 'dragging' the mouse through the menu items. Several menu buttons form a menu bar which spans across the top of the screen. To dismiss a menu, click on the mouse button outside the current menu.

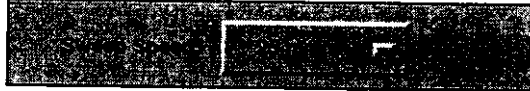
Menu bar consisting of several menu buttons



Option Buttons allow you to choose one setting from a list of available selections. Option buttons are identified by a small horizontal bar that appears inside the button. When activated, these buttons display a list of available choices. Click on the desired choice. As soon as you make your selection, the list disappears and the current selection is displayed in the button.

The following example shows an option button for selecting a different sweep speed:

Option Button



Activated Option button





Radio Buttons also provide several choices. Unlike option buttons, the available choices for radio buttons remain visible even after you make your selection. However, the current selection is highlighted in a different color than the others (see arrow).

If you choose a different setting, the previously selected button resumes its normal color.

Example of a radio button



Incrementer Buttons allow you to scroll through a sequence of predetermined values in consecutive order:

- ☐ Click on an incrementer button once to increase or decrease selection one value at a time.
- ☐ Click on an incrementer button and hold down the left mouse button to advance through the settings more rapidly. Release the mouse button when the desired setting appears.

Example of incrementer buttons



Page Buttons allow you to navigate through information on a whole “screen page” at a time. This is especially useful in screens such as the Trend Table where you may want to view data page by page.

Example of a Page button



About the MultiView WorkSt

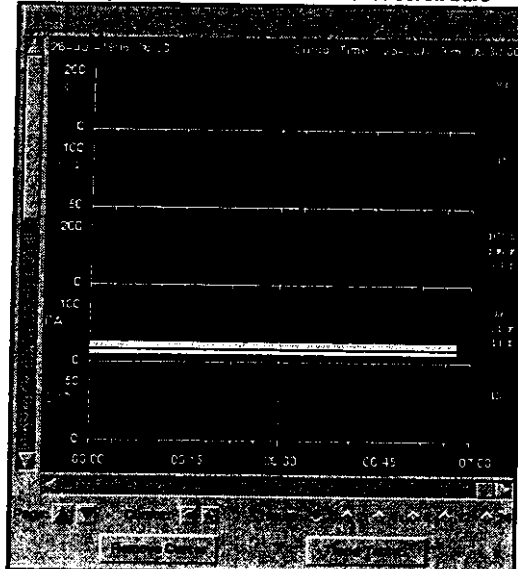
Scroll Bars allow you to navigate through data horizontally and vertically. The position of the slider inside the scroll bar identifies the position of the displayed information relative to the entire data set. If the available information can be displayed on one screen, the slider occupies the entire scroll bar leaving no empty area. If the data occupies more than one screen, the slider fills the scroll bar only partially, leaving a portion of it empty (as shown in the following illustration).

Scroll bar when entire data set *cannot* be displayed on one screen



- To view another subset of information, click on the slider and drag it in the desired direction.
- To view the next page of information, click in the empty area of the scroll bar.
- To scroll through the information, click on the arrows at either end of the scroll bar.

Trend Graphs with horizontal and vertical scroll bars



User Interface - Menus

The MULTIVIEW WORKSTATION provides numerous menus that allow you to access functions quickly and efficiently.

Menu Bars

Menu bars appear at the top of a window or a screen and consist of several menu buttons for invoking pull-down menus, each of which displays multiple selections for executing related functions.

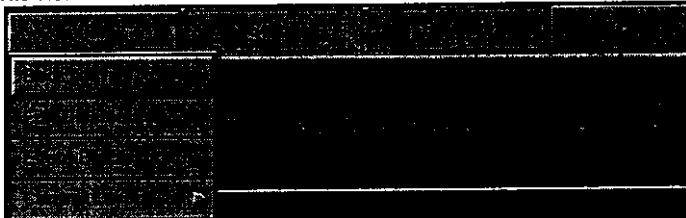
CLUSTERVIEW menu bar



Menus

Menus are lists of related choices that appear when you click on a top-level button on the menu bar, such as **View**. Select an item either by clicking on it or by holding down the left mouse button while dragging the cursor through the list and releasing it when the cursor is over the desired item. (The Full Disclosure/Event Disclosure menu selections are only available if the corresponding options are activated).

The View Menu

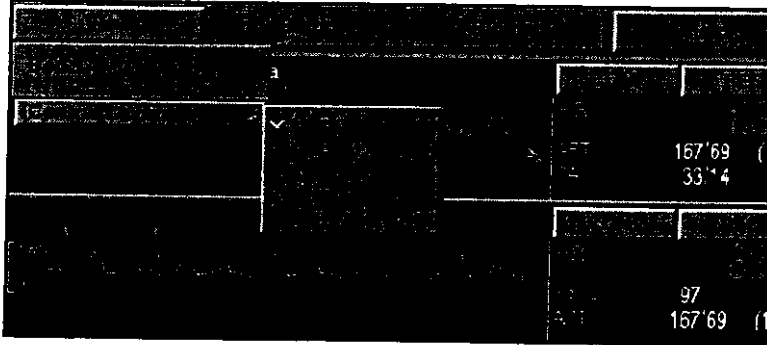


Any submenu item or any button followed by an ellipsis (...), such as **Bed...**, activates the menu/function directly.

About the MultiView WorkSt

Submenu items followed by an arrow designate a cascading menu with additional related selections. Simply click on such a menu item to activate its cascading menu.

Example of a Cascading Menu



User Interface - Popup Windows

The MULTIVIEW WORKSTATION uses the following kinds of popup windows or "popups":

- Confirmation
- Information
- Password
- Menu-specific

You must respond to a popup before you can execute any other functions. However, depending on the type of popup window, this is accomplished in different ways.

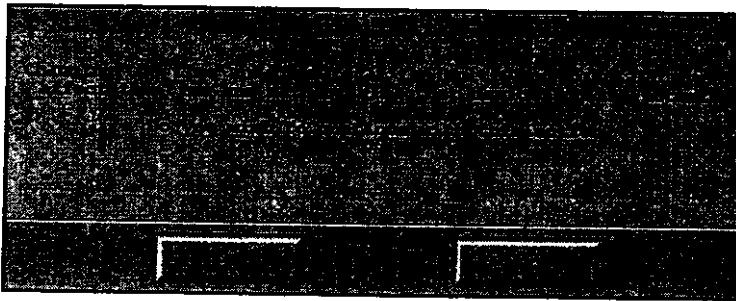
Type of Popup	To acknowledge or confirm the intended action...	To disregard the intended action or exit the popup...
Confirmation	Click on Yes	Click on No
Information	Click on Continue	<i>not applicable</i>
Password and menu-specific	Click on Accept	Click on Cancel

As soon as you click on a button inside the popup, it disappears from the screen.

About the MultiView WorkSt

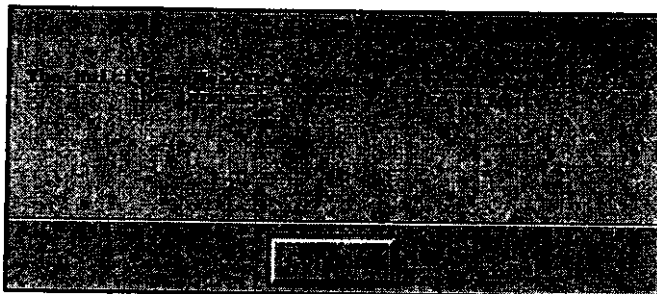
Confirmation Popups

Confirmation popups safeguard against accidental execut function that may have significant consequences. For exam is illustrated below, when you try to change the time, a pc appears asking you to confirm your command because yo affect other devices on the network.



Information Popups

These popups contain information about operational error about the status of a device. These popups may also conta ational warnings. To dismiss an information popup, selec tinue.

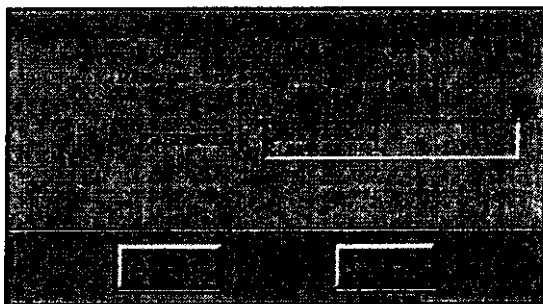




Password Popups

Password popups restrict access to critical functions only intended for authorized personnel. Two types of passwords are the *clinical* and the *biomedical (Biomed)*.

- The *clinical password* safeguards the overall setup functions of the MULTIVIEW WORKSTATION and also limits access to the Diagnostic Logs and the Clinical Events Logs. Often these setup procedures are performed by a Nurse Manager, a Unit Director and are designed to meet the unit's special needs such as the layout of the CLUSTERVIEW. The clinical password is user-configurable.
- The *biomedical password* protects functions only intended for use by Service or biomedical personnel. These functions include setting up the MULTIVIEW WORKSTATION, accessing the system console, and configuring locked options.



About the MultiView WorkS

Menu-Specific Popups

Menu-specific popups provide information specific to an action, and may allow you to change settings. The following is an example of the Assign Bed popup in the Setup Central Lab menu which allows you to select another bed in the network display.

IC1			
ICCU	IC5	Martin Smith	948770587
ICCU	IC3	Bill Buresh	028476
ICCU	IC2	Paul Gilman	38457589
ICCU	IC1	Brenda Yocum	9578367
ICCU	IC7	Luis Pena	0975884502
ICCU	IC4	Bernadine Bellmore	9858589
ICCU	IC6	Daniela Orłowski	9048745
ICCU	IC8	Marie Anne DeWarren	987629076
LAB	BED37		



Online Help

Online Help provides information directly on the screen about how to operate your MULTIVIEW WORKSTATION and any connected devices.

Help Table of Contents

The *Help Table of Contents* lists all of the available topics with Online Help. When active, it occupies the left side of the screen.

Accessing Online Help

1. Click on the **Help...** button in the CLUSTERVIEW or BEDVIEW menu bar.
2. Click on any of the underlined words or phrases to access information on the desired topic.
3. Click on the underlined words or phrases to access information on related topics.



NOTE: Click on the **Back** button to 'page' backwards through Help topics in the sequence in which you accessed them.

4. Click on the **Contents...** button at the top of the Help window to return to the Table of Contents.
5. Click on the **Exit** button in the upper left corner of the Help window to exit Help and return to the screen from where Help was requested (either CLUSTERVIEW or BEDVIEW screen).

2 About the Transmitter

This chapter describes the transmitter that is used to monitor telemetry patients. It also describes how to customize the transmitter according to an individual patient's needs. The table at the end of the chapter contains various transmitter messages that appear during monitoring. These messages provide help in eliminating certain operational errors.



WARNING: Under NO circumstances should the transmitter be used without the battery cover securely in place.

General Description	
Transmitter Components	
Lead Connector	
Interface Connector / Programming Port	
Transmitter Buttons	
LED Status Patterns	
Transmitter Operating Modes	
Replacing the Transmitter Battery	
Transmitter Setup	
Accessing the Transmitter Setup Menu	
Transmitter Status Information	
Available Functions - Transmitter Setup Menu	
Customizing the Transmitter Buttons	
Activating a Spare Transmitter	
Programming the Transmitter	
Programming the Transmitter	
Reprogramming a Corrupted Transmitter	
Selecting the Lead Cable Type	
Attaching the Transmitter to the Patient	
Transmitter Messages	
Status Messages	
Programming Messages	

General Description

The transmitter is worn by the patient and can be used either with a 3-lead or a 5-lead cable, which is attached to the ECG electrodes.

The lead cables detect the patient's ECG, including paced beats. The transmitter broadcasts these signals to the dedicated MULTIVIEW WORKSTATION for display.



CAUTION: Because the lead cables also function as antennas, do not roll or loop them together. Instead, tape each lead separately to the patient.

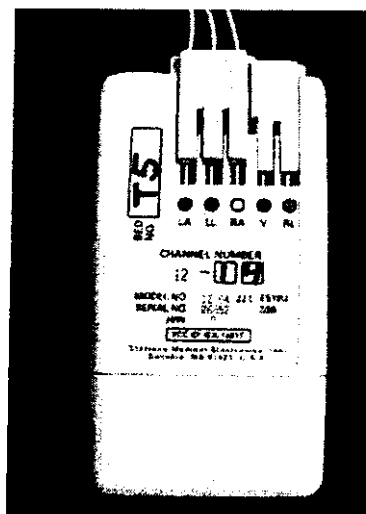
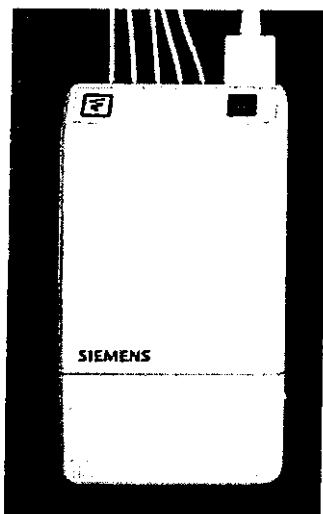
The transmitter sends the following information to the MULTIVIEW WORKSTATION:

- ECG data from leads I, II, and V (with pacemaker pulses detected on leads I and II)
- push button activities for recording and staff alert requests and for issuing a 1 mV calibration pulse
- transmitter ID
- current transmitter software
- battery voltage

About the Trans

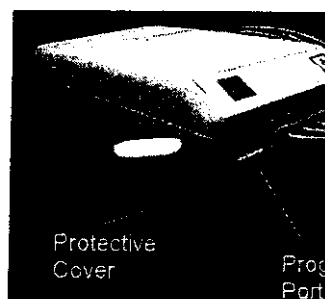
Transmitter Components

The following illustrations show the transmitter's various components. Each element is discussed in this section.



Lead Connector

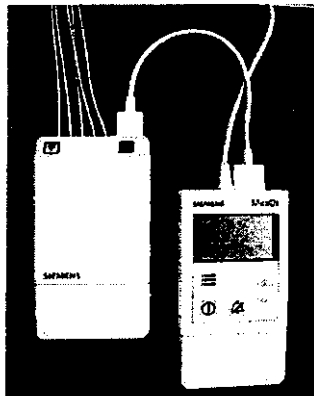
The lead connector accepts either a 3 or a 5-lead set. If you use a 3-lead set, use the protective cover to protect the otherwise two exposed pins.



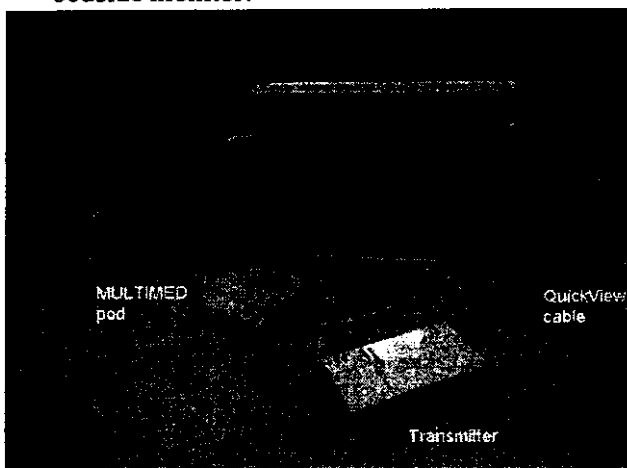
Interface Connector / Programming Port

The transmitter is equipped with a special interface connector that can be used for the following purposes:

- **connecting a MICRO2 oximeter** - allows you to also monitor a patient's SpO₂ and pulse rate. Please refer to chapter 9, *MicrO2 Monitoring* for detailed information on MICRO2 monitoring.



- **connecting a QUICKVIEW cable** - allows you to view a patient's ECG waveform (lead II) and possible pacer spikes. The cable attaches to the transmitter's programming port and a bedside monitor.



- **programming the transmitter** (see page 2-14, *Programming the Transmitter*).

Transmitter Buttons

The transmitter is equipped with the following two push buttons:

- The red *staff alert* button allows the patient to initiate a serious alarm tone at the MULTIVIEW WORKSTATION. You can silence this alarm by clicking on the **Silence** button at the MULTIVIEW WORKSTATION. In addition, the message *STAFF ALERT* is displayed in the patient's waveform channel.



- The white *recording* button allows you to initiate a recording. For a timed recording press this button less than 3 seconds; for a continuous recording, press it longer than 3 seconds.



The two LEDs next to the recording button blink once for a timed recording and three times for a continuous recording.

If you press both transmitter buttons simultaneously, a 1 mV calibration pulse is superimposed on the ECG at the MULTIVIEW WORKSTATION.

LED Status Patterns

The transmitter is equipped with four light indicators (LEDs) which indicate the transmitter's operating status and any error conditions such as a lead-off condition. The following table describes the various LED patterns and their corresponding causes. (The illustration shows the orientation of the transmitter as you are examining the LED patterns.)



Alternating LED pattern		Description	Action
From	To		
○○○● ○○○○ ○●●● ●○○○	●●●● ●●●● ●●●● ●●●●	Critical hardware error	Reinsert the battery. If the error persists, take the transmitter out of service.
○○○● ○○○○ ○○○● ○●●○ ●○○● ●○○○	●●●● ●●●● ●●●● ●●●● ●●●● ●●●●	Serious error	
LEDs ripple		Battery charge is very low	Replace the battery (see page 2-8).
○○○●	○○○○	The transmitter is outside the receiver range.	Reprogram the transmitter.
●●●○	○○○○	Hardware configuration error	Reinsert the battery. If the error persists, take the transmitter out of service.
○○○○	○○○○	QuickView cable is connected	
●○○●	○○○○	Pacer self-test failure.	Reinsert the battery. If the error persists, take the transmitter out of service.
●●●●	○○○○	EKG baseline recovery circuit failure.	
●●●○	○○○○	Configuration error	
●●●●	○○○○	Corrupted transmitter	Reprogram the transmitter.

Transmitter Operating Modes

The transmitter functions in one of two operating modes. In normal mode, the transmitter is connected to the patient collection data, which it relays to the MULTIVIEW WORKSTATION. In staff mode, the transmitter is not connected to a patient, and you can diagnose its status.

Normal Operating Mode

When you first insert a battery into a transmitter, it performs a self-test and, if it is completed successfully, all of the LEDs flash for a brief moment. However, if an error is detected, the transmitter LEDs first flash all at once and then alternate with an error-specific pattern (see page 2-6). An error message may also appear at the MULTIVIEW WORKSTATION. For a list of possible messages and suggestions on how to solve common error conditions, see the troubleshooting page 2-19. If you cannot correct the problem, take the transmitter out of operation and contact your Biomed.

Should the transmitter detect a fatal error during normal operation, it resets itself or shuts down while the LEDs display a fatal error code (see page 2-6).

Staff Mode

This mode is used to troubleshoot the transmitter. To activate staff mode, press the red button for more than 3 seconds. The transmitter LEDs may identify the following possible error conditions:



NOTE: The staff mode lasts for 30 seconds, after which it returns to normal operating mode.

- **Low battery** - The four LEDs ripple quickly once every 10 seconds.
- **Lead(s)-off** - the LED(s) corresponding to the detached lead flash(es).
- **Reference lead-off** - all four LEDs flash simultaneously.







NOTE: If you use a 3-lead cable, only 3 LEDs flash when the reference lead is off.

- **Low battery and lead-off** - the LED patterns alternate between the two conditions.

Replacing the Transmitter Battery

If the transmitter LEDs ripple quickly once every 3 seconds during normal operation, the battery is low and needs to be replaced.

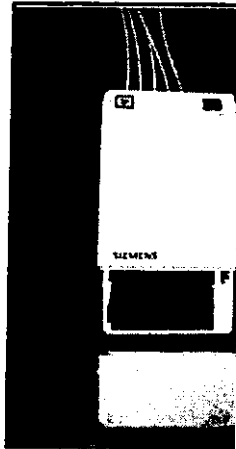
The following table lists the compatible batteries.

Battery Type	Nominal Voltage	Typical Battery Life	Characteristics
Alkaline/manganese oxide	9 V	2 days, minimum	General purpose battery; good shelf life
Lithium/manganese dioxide	9 V	4 days, minimum	High energy density; excellent shelf life  WARNING: If you use lithium batteries, use only the brand ULTRALIFE (model U9V). Any other lithium battery may present a risk of fire or explosion.
Zinc/air	8.4 V	4 days, minimum	Unlimited shelf life if sealed pouch is not opened. Use of this battery requires the vented battery cover.  CAUTION: To prevent water from entering the battery compartment via the vent holes, the transmitter must be wrapped in plastic if it is worn in the shower.
 Note: Recycle and dispose of all batteries properly according to EC Directive 91/156/EWG or equivalent, country-specific regulations.			
 WARNING: To avoid explosion, do not recharge or disassemble battery or dispose of it in fire.			

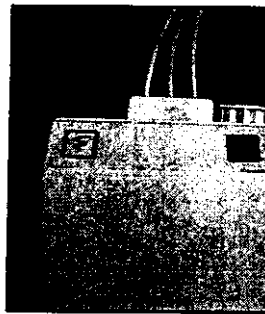
About the Transm

Steps: Replacing the Battery

1. Remove the transmitter cover by grasping it firmly and pulling it straight down.
2. Insert a fully charged battery from the back of the transmitter (see illustration). The transmitter performs a self-test and, if it is completed successfully, all of the light indicators flash for a brief moment. If the lights ripple, or if some flash while others do not, the transmitter indicates one of several technical conditions (see page 2-6).
3. Slip the transmitter cover on with the sharp corners facing upward.



To prevent water from entering the battery compartment, wrap the transmitter in plastic if it is to be worn in the shower. Also, cover the transmitter's programming port with the protective cap (see arrow) before exposing it to water to prevent any damage.



NOTE: If the transmitter is not likely to be used for some time, remove the battery.

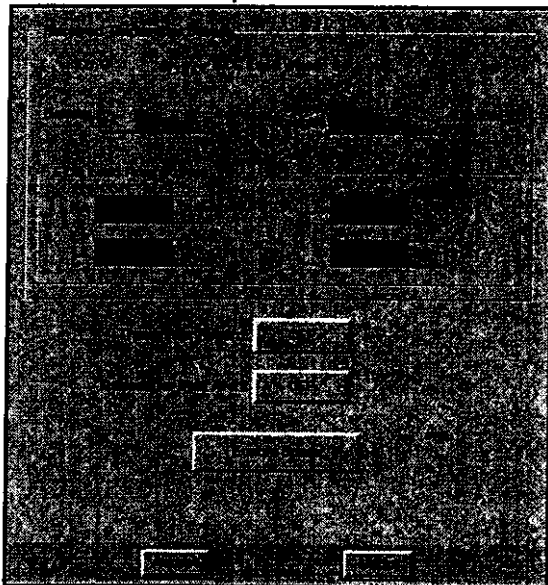
Transmitter Setup

The Transmitter Setup menu (illustrated below) provides not only transmitter setup and status information but also allows you to customize the transmitter to the patient's needs. However, the functions can only be configured for *local* telemetry channels (local patient is one who is being monitored by the MULTIVIEW WORKSTATION where s/he was admitted).

Accessing the Transmitter Setup Menu

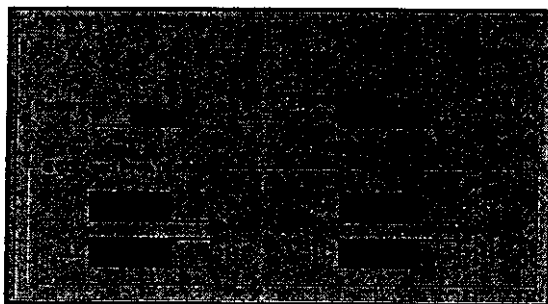
1. Click on the patient's parameter area in CLUSTERVIEW to access the BEDVIEW window.
2. Click on the **Setup** button.
3. Click on the **Telemetry** ► button (if this button is not visible, the Telemetry option must first be unlocked by your Biomed).
4. Click on the **Transmitter Setup** button to display the Transmitter Setup menu.

The Transmitter Setup menu



Transmitter Status Information

The following illustration shows upper portion of the Transmitter Setup menu.



This part of the Transmitter Setup menu displays the following status information for the transmitter that is currently assigned to the selected telemetry patient channel:

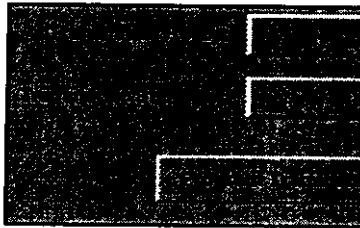
- the transmitter's ID (cannot be changed; it is configured by your Biomed)
- the selected lead wire (either 3-lead or 5-lead)
- a battery voltage bar graph that shows the battery charge and the current voltage. The color of the bar graph indicates the charge remaining in the battery (green = good; yellow = average; red = discharged).
- an RF signal strength bar graph that identifies the detected signal strength from the transmitter. The color of the bar graph indicates the signal quality (green = good; yellow = average; red = poor).
- ECG lead prep bar graphs for each lead. The color of the bar graph indicates the quality of the signal (green = good; yellow = average; red = off).

Refer to page 2-10 for information on how to access the Transmitter Setup menu.

Available Functions on the Transmitter Setup Me

In the lower portion of the Transmitter Setup menu (see illustration) you can do the following:

- customize the transmitter's recording and staff alert buttons.
- program a spare transmitter to the operating frequency of the corresponding receiver channel.



Customizing the Transmitter Buttons

You can either activate or deactivate the transmitter's recording and staff alert buttons for a patient as follows:



NOTE: You can only activate/deactivate the transmitter button for an individual patient if the 'Per Patient' mode was selected during setup (see page 17-28).

Steps:

1. Access the Transmitter Setup menu (see page 2-10).
2. Click on the **On/Off** button next to the menu selection "Transmitter Record:" to activate/deactivate the transmitter recording button.

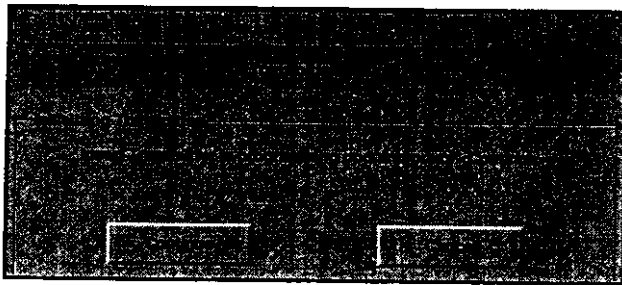
and/or

Click on the **On/Off** button next to the menu selection "Transmitter Staff Alert:" to activate/deactivate the transmitter staff alert button.

3. Click on **Accept** to store your selection or on **Undo** to revert to the previous setting.

Activating a Spare Transmitter

1. Access the Transmitter Setup menu (see page 2-12).
2. Click on the **Program Transmitter** button (this activates the following popup).

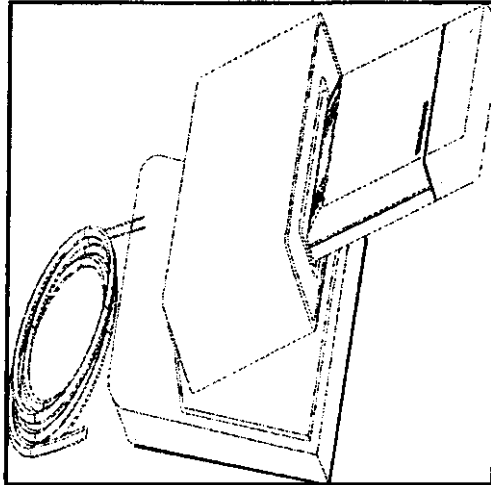


3. Insert the transmitter into the programming port and press **<Enter>** on the keyboard.
4. Click on the **Continue** button inside the popup to program the transmitter.

Programming the Transmitter

A transmitter is programmed to an operating frequency with the help of a portable programming port.

Programming device with transmitter



A transmitter requires reprogramming under the following circumstances:

- if you change the transmitter to a selected receiver channel operating frequency
- if you switch between 3- and 5-lead monitoring
- after each repair
- if it was corrupted

About the Transmitter

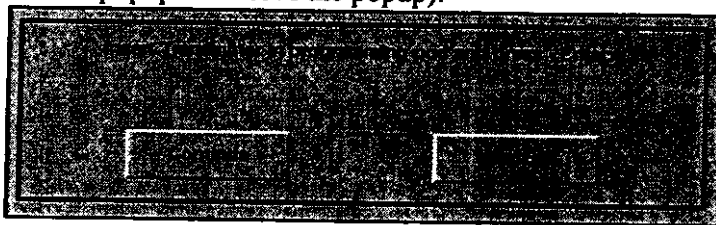
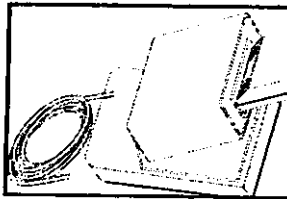
Programming the Transmitter



CAUTION: If you are reprogramming a transmitter that has been interrupted, refer to page 2-16.

Steps:

1. Make sure the programming port is connected properly to the MULTIVIEW WORKSTATION CPU.
2. Access the Transmitter Setup menu (see page 2-10).
3. Insert the transmitter into the programming port.
(Remove the protective cap from the transmitter's programming port if it was previously inserted to protect the transmitter from water damage.)
4. Press **<Enter>** on your keyboard. The message *Read Transmitter Data* appears in the BEDVIEW screen. If communication with the transmitter is established, the Program Transmitter popup appears, which displays the current transmitter ID and ECG lead settings (click on **Cancel** with the mouse to remove the popup).



NOTE: If communication with the transmitter cannot be established, the message *Transmitter Read Error* appears. Reinsert the transmitter again. If the message persists, contact your Biomedical Engineer.

Continued on next page...

5. Select either the 3-lead or 5-lead mode within the popup.
6. Click on the **Program** button. The message *Programming Transmitter...*, *Warning, Do not Remove Transmitter from Service Port* is displayed in a popup window. As soon as settings and the new operating frequency are written to the transmitter successfully, the popup window disappears and you can remove the transmitter from the programming port.



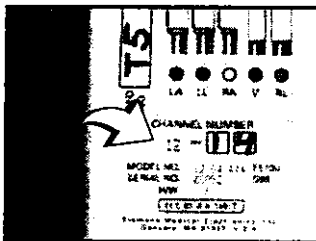
NOTE: If the data transfer was not successful, the message *Set Data Write Error, try again* is displayed in the CLUSTERVIEW status area. Try again. If the message reappears, contact your Biomed.

Reprogramming a Corrupted Transmitter

Special caution is required when you reprogram a transmitter that has been corrupted.

Steps:

1. Follow steps 1 - 3 for programming a transmitter (see page 15).
2. Press **<Enter>** on the keyboard. If you are restoring a corrupted transmitter, the following popup appears: *Restoring Defaults - Programming transmitter to TV channel xx. Do you wish to continue?*
3. Make sure that the channel number of the transmitter (see arrow) matches the TV channel number in the popup.



CAUTION: You will have to take the transmitter out of service and send it back to Siemens for repair if you click on **Accept** and the two numbers do not match.

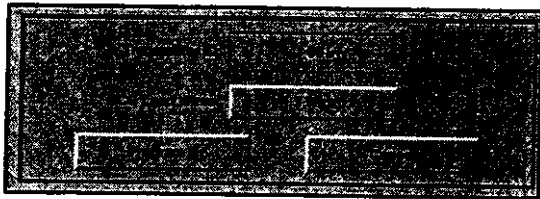
4. Click on **Accept** if the two numbers match; click on **Cancel** if the two numbers do not match and contact your Biomed.

About the Transmitter

Selecting the Lead Cable Type

You can switch from 3-lead to 5-lead cable type (or vice versa) from the Transmitter Setup menu:

1. Access the Transmitter Setup menu (see page 2-10).
2. Make sure the programming port is connected properly to the MULTIVIEW WORKSTATION CPU.
3. Insert the transmitter into the programming device and wait until the message *Programming Transmitter...*, *Warning: Do Not Remove Transmitter from Service Port* disappears.

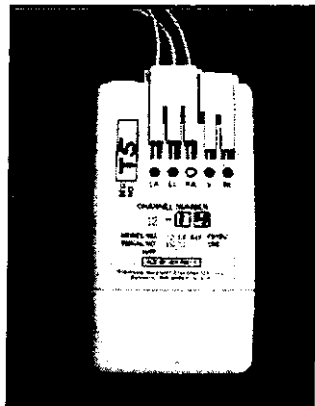


4. Click on the **ECG Lead Wires** button to select either 3-lead or 5-lead monitoring mode.
5. Click on **Accept** to store your selection or on **Undo** to revert to the previous setting.

Attaching the Transmitter to the Patient

After the transmitter is properly programmed, connect it to the patient as follows:

1. Verify that the transmitter is programmed for the intended monitoring mode (3-lead or 5-lead cable). Reprogram it if necessary (see page 2-14).
2. Apply electrodes according to the desired configuration.
3. Connect the lead block to the patient's transmitter.



➤ **NOTE:** Connect the 3-lead insert to the transmitter if you use a lead set to protect the two otherwise exposed pins.

4. Attach the lead wires to the electrodes.
5. Admit the patient to the channel, for which the transmitter programmed (see chapter 7 for details).

About the Trans

Transmitter Messages

The following table lists various transmitter-related messages that may appear during monitoring of a telemetry patient.

Status Messages

Alarm Message		Alarm Grade	Description	Action
Parameter Area	Status/Information Area			
HR: <value> ARR: <value> PVC/min: <value> SpO ₂ : <value> PLS: <value> STx: <value>	Staff alert	SER	The patient has pressed the staff alert button on the transmitter. Note: this message remains on the screen until you acknowledge it.	•Check the patient.
HR: *F* ARR: <blank> PVC/min: <blank> SpO ₂ : <blank> PLS: <blank> STx: <blank>	Transmitter Failure	ADV	The transmitter has detected an internal error and is defective.	•Call your Biomed. •Replace the transmitter.
HR: *N* ARR: <blank> PVC/min: <blank> SpO ₂ : <blank> PLS: <blank> STx: <blank>	Transmitter No Signal	ADV	The transmitter cannot be detected by the receiver.	•Make sure the patient is outside the antenna. •Check the cable connections. •Replace the battery.
HR: *I* ARR: <blank> PVC/min: <blank> SpO ₂ : <blank> PLS: <blank> STx: <blank>	Transmitter Interference	ADV	Transmitter experiences interference.	•Make sure the patient is outside the antenna.
HR: *I* ARR: <blank> PVC/min: <blank> SpO ₂ : <blank> PLS: <blank> STx: <blank>	Transmitter ID incorrect	ADV	The transmitter ID does not match the programmed ID.	•Reprogram the transmitter with the correct ID. •Make sure that two transmitters have not been programmed to the same ID.



Alarm Message		Alarm Grade	Description	Action
Parameter Area	Status/Information Area			
HR: <blank> ARR: <blank> PVC/min: <blank> SpO ₂ : <blank> PLS: <blank> STx: <blank>	Transmitter low battery	ADV	Transmitter's battery charge is low. Note: This message remains until the bat- tery is replaced.	•Replace the battery.

Programming Messages

The following technical messages may appear at the MULTIVIEW WORKSTATION during the programming of a transmitter.

Message	Description	Action
<i>No Transmitter in Programming Port</i>	The MULTIVIEW WORKSTATION cannot communicate with the transmitter.	<ul style="list-style-type: none"> • Make sure the programming port is connected to the MULTIVIEW WORKSTATION CPU. • Make sure the transmitter is equipped with a good battery and is inserted all the way into the programming port. • Verify the above.
<i>Programming transmitter... Warning, Do Not Remove Transmitter from Service Port During Programming</i>	The new settings are written to the transmitter.	Wait until the message disappears.
<i>Setup Data Write Error, try again</i>	The transmitter cannot accept the new settings (could be a faulty transmitter).	<ul style="list-style-type: none"> • Program the transmitter again. • Contact your Biomed if it fails again.

3 MULTIVIEW WORKSTATION Setup

This chapter describes how to configure the monitoring characteristics of the MULTIVIEW WORKSTATION and the available CLUSTERVIEW layouts. Some of these setup functions apply exclusively to non-telemetry patients such as, for example, Bed Silence function.

For information on how to configure remote control and recording functions for telemetry patients, please refer to chapter *Telemetry System Setup*.

- Overview
- Setting Up the MULTIVIEW WORKSTATION
- Accessing the Setup Central Menu
- Available Functions on the Setup Central Menu
- Setting up the Recorder Attributes
- Accessing the Setup Recorders Menu
- Available Functions on the Setup Recorders Menu
- Setting Up the Central Layout
- Accessing the Central Layouts Menu
- Available Functions on the Setup Central Layouts Menu



Overview

The Setup menus allow you to configure the **MULTIVIEW WORKSTATION** according to your unit's monitoring needs. If the password control feature has been enabled, a clinical password restricts access to these setup functions to authorized individuals such as Nurse Managers or Care Unit Managers. If the functions are password-protected, the selected Setup menu is displayed after you enter the correct password. If the password is incorrect, an error tone sounds, the text entry box is cleared, and an error message in the popup informs you that the password was entered incorrectly. In this case, verify the password and enter it again.

All settings under the clinical password are stored unless factory defaults are restored. The configuration settings are affected neither by discharging patients, changing **CLUSTERVIEW** layout, nor by turning the **MULTIVIEW WORKSTATION** off and on.



NOTE: The flashing "I" bar indicates a text box is ready to accept text.

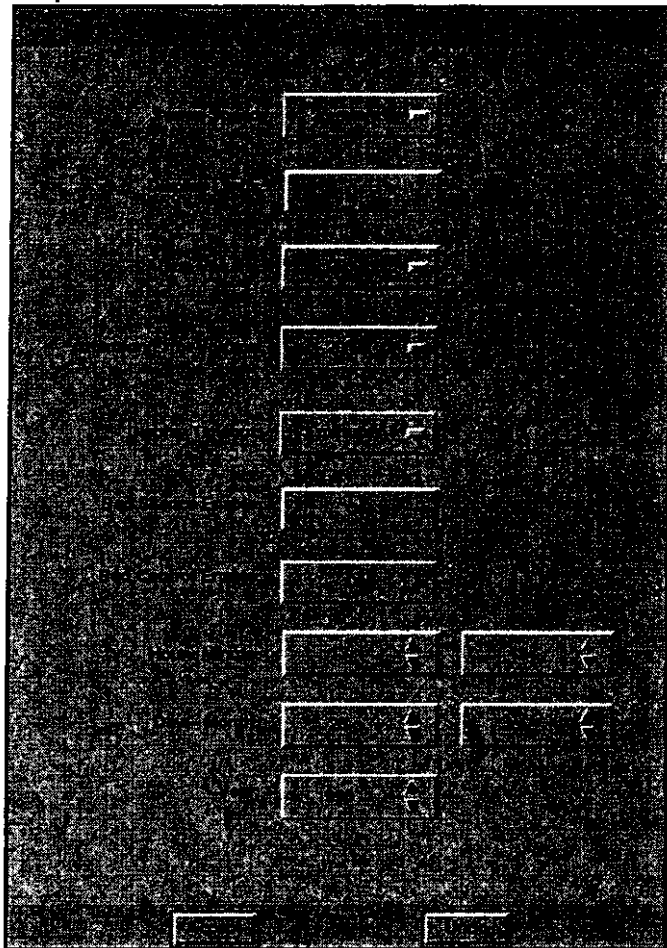
Setting Up the MULTIVIEW WORKSTATION

The Setup Central menu allows you to set up a wide range of monitoring attributes.



NOTE: If you are operating the MULTIVIEW WORKSTATION dual-display configuration, you can access the Setup Central menu from either display. Any changes you make on one display apply to the other.

Setup Central Menu





Accessing the Setup Central Menu

1. Click on the **Setup** button in the CLUSTERVIEW menu bar.
2. Click on the **Central...** menu selection. If the clinical password was enabled under the Biomed function, the password popup window appears. In this case proceed with step 3, otherwise go to step 5.



NOTE: You can only enter the password if the mouse pointer is within the boundaries of the password popup window.

3. Enter your unit's clinical password. As you type, asterisks (****) are displayed instead of the actual characters to safeguard the password.
4. Click on the **Accept** button to confirm the password or on the **Cancel** button to dismiss the popup and return to CLUSTERVIEW. If the password is accepted, the Setup Central menu is displayed. If not, an error tone sounds, the text entry box is cleared, and an error message in the popup informs you that the password was entered incorrectly. Enter the password again as described above.
5. Click on the button corresponding to the monitoring attribute you wish to change. Depending on the selection, a list of choices appears or the selected button changes to its opposite value, e.g., from On to Off. Refer to the tables starting on page 3-5 for detailed configuration information on the available attributes that can be modified on the Setup Central menu.
6. Click on the **Accept** button to store your changes or on the **Undo** button to retain the previous settings.

MultiView WorkStation

Available Functions on the Setup Central Menu

Please refer to page 3-3 for information on how to access Setup Central menu.




Menu Button	Description	Available Settings
Sweep Speed	This selection determines how fast the erase bar sweeps across the screen to update the waveforms.	<ul style="list-style-type: none"> • 25 mm/s • 50 mm/s
Display Limits	This selection determines whether or not alarm limits appear in the parameter areas of the MULTIVIEW WORKSTATION.	<ul style="list-style-type: none"> • On • Off
Alarm Volume	This selection determines the volume of alarm tones. A sample tone sounds after you make your selection.	10% - 100% (in increments of 10%)
Attention/Error Volume	This selection determines the volume of attention and error tones. A sample tone sounds after you make your selection.	10% - 100% (in increments of 10%)
Display Timeout	<p>This selection determines the amount of time that may elapse without user interaction before a menu is dismissed and you are returned to CLUSTERVIEW.</p> <p>Note: The display timeout does not apply to help or screens displaying context-sensitive Help.</p>	1, 3, 5 min or No Timeout

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous settings.

Menu Button	Description	Available Settings	Default
Bed Silence Enable	<p>This selection determines whether or not you can silence bedside alarms from the MULTIVIEW WORKSTATION.</p> <p>Note: Even if you enable this feature at the MULTIVIEW WORKSTATION, remote silence is only possible if this function is also activated at the bedside CPS.</p>	<ul style="list-style-type: none"> • On - You can silence bedside alarms from the MULTIVIEW WORKSTATION if the function is also activated at the bedside • Off - You cannot remotely silence alarms from the MULTIVIEW WORKSTATION. In BEDVIEW the silence button appears ghosted and the bed silence icon does not appear in CLUSTERVIEW 	On
Bed Control Enable	<p>This selection determines whether or not you can control the bedside monitor from the MULTIVIEW WORKSTATION.</p> <p>Note: Even if this function is disabled, the MULTIVIEW WORKSTATION can still silence bedside alarms provided the Bed Silence Enable function (see above) is activated.</p> <p>Note: Even if you enable this feature at the MULTIVIEW WORKSTATION, remote control is only possible if this function is also activated at the bedside CPS.</p>	<ul style="list-style-type: none"> • On - you can control the bedside from the MULTIVIEW WORKSTATION if the function is also activated at the bedside. • Off - You cannot control the bedside from the MULTIVIEW WORKSTATION. The alarm limit and arrhythmia setup entries as well as the Relearn button appear ghosted. 	On

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous settings.

MultiView WorkStation S

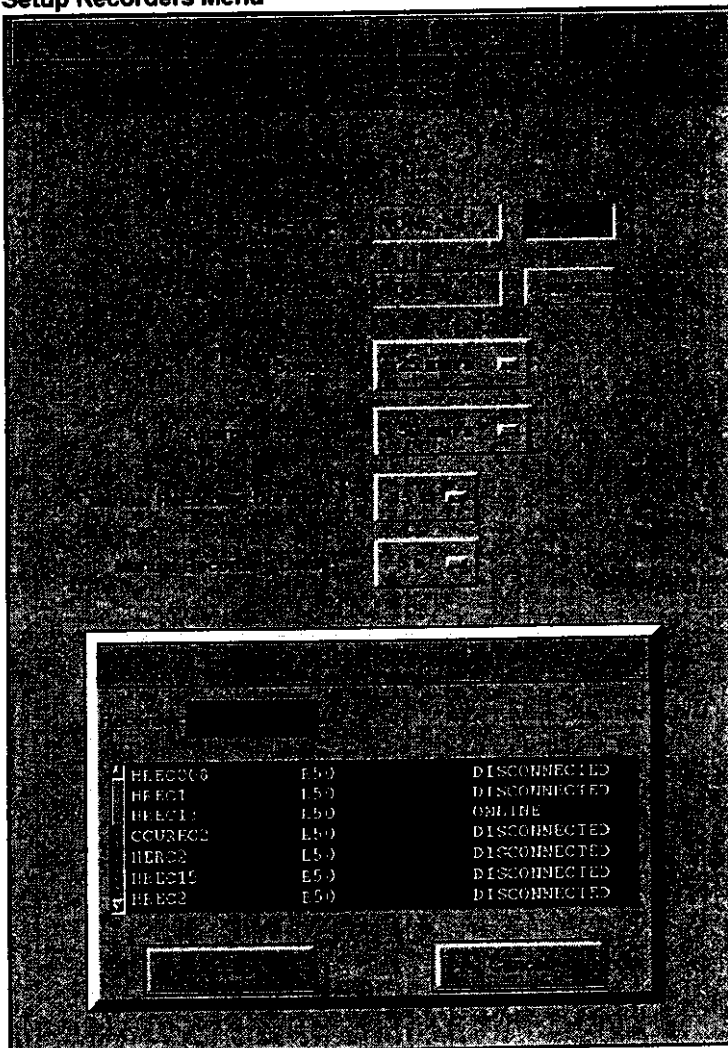
Menu Button	Description	Available Settings
Hour:Minute	<p>These selections allow you to enter the time at the MULTIVIEW WORKSTATION.</p> <p> Warning: A confirmation popup alerts you to the fact that changing the time at the MULTIVIEW WORKSTATION also changes the time at all devices connected to the network. You cannot undo the changes once you have confirmed them with the confirmation popup.</p>	<ul style="list-style-type: none"> • Hour - 0, 1... 23 • Minute - 0, 1... 59
Day - Month	<p>These selections allow you to enter the date at the MULTIVIEW WORKSTATION.</p> <p> Warning: A confirmation popup alerts you to the fact that changing the date at the MULTIVIEW WORKSTATION also changes the date at all devices connected to the network. You cannot undo the changes once you have confirmed them with the confirmation popup.</p>	<ul style="list-style-type: none"> • Day - 1, 2... 31 • Month - Jan, Feb... Dec
Year	<p>This selection allows you to enter the year at the MULTIVIEW WORKSTATION.</p> <p> Warning: A confirmation popup alerts you to the fact that changing the year at the MULTIVIEW WORKSTATION also changes the year at all devices connected to the network. You cannot undo the changes once you have confirmed them with the confirmation popup.</p>	Four-digit number from 1995 to 2099.

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous settings.

Setting up the Recorder Attributes

The Setup Recorders menu allows you to customize a variety recording functions, which are outlined in the table on page 3-

Setup Recorders Menu



Accessing the Setup Recorders Menu

1. Click on the **Setup** button in the CLUSTERVIEW menu.
2. Click on the **Recorders...** menu selection. If the clinical password was enabled under the Biomed function, the password popup window appears. In this case proceed with step 3, otherwise go to step 5.



NOTE: You can only enter the password if the mouse pointer is within the boundaries of the password popup window.

3. Enter your unit's clinical password. As you type, asterisks (****) are displayed instead of the actual characters to guard the password.
4. Click on the **Accept** button to confirm the password or the **Cancel** button to dismiss the popup and return to CLUSTERVIEW. If the password is accepted, the Setup Recorders menu is displayed. If not, an error tone sounds, the text entry box is cleared, and an error message in the popup informs you that the password was entered incorrectly. Re-enter the password and enter it again as described above.
5. Click on the button corresponding to the attribute you want to change and refer to the tables starting on page 3-10 for detailed configuration information on the available features that can be modified in the Setup Recorders menu.
6. Click on the **Accept** button to store your changes or the **Undo** button to retain the previous settings.

Available Functions on the Setup Recorders Menu

Please refer to page 3-10 for information on how to access the Setup Recorders menu

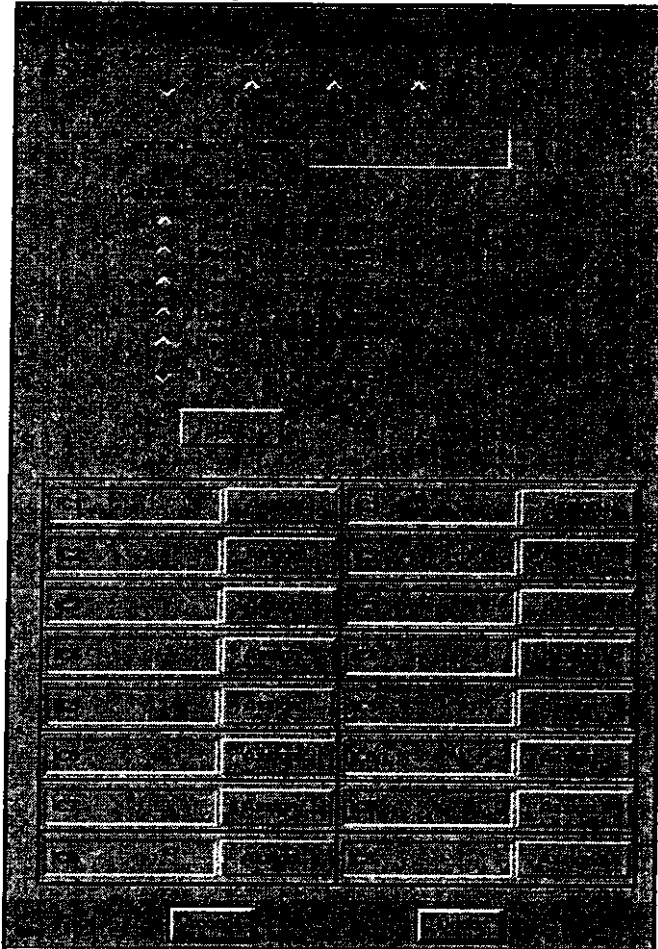
Menu Button	Description	Available Settings	Default
Primary recorder	This selection chooses the preferred recorder.	Click on the Assign... button to activate a popup with available recorders	
Secondary recorder	This selection chooses a recorder for executing print requests when the primary recorder is unavailable.	Click on the Assign... button to activate a popup with available recorders	
Speed	This selection determines the recording speed.	• 50, 25, 12.5, 6.25, 1 mm/s	25 mm/s
Alternate Speed	This selection determines the recording speed when you press the Alternate Speed key at a R 50 recorder.	• 50, 25, 12.5, 6.25, 1 mm/s	50 mm/s
Manual Recording Duration	This selection determines the length of a manually requested timed recording.	• 5, 10, 15, 20 s	15 s
Manual Recording Delay	This selection determines the amount of pre-event data is included in the timed recording	• 5, 10, 15 s	5 s

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous settings.

Setting Up the Central Layout

The central layout determines the number of beds and the number of waveforms per bed to be displayed in CLUSTERVIEW. The Central Layouts menu allows you to configure up to four CLUSTERVIEW layouts. Once these layouts have been configured, the hospital staff can select them at any time via the View menu in CLUSTERVIEW.

The Setup Central Layouts Menu





Accessing the Central Layouts Menu

1. Click on the **Setup** button in the CLUSTERVIEW menu bar.
2. Click on the **Central Layouts...** menu selection. If the clinical password was enabled under the Biomed function, the password popup window appears. In this case proceed with step 3, otherwise go to step 5.



NOTE: You can only enter the password if the mouse pointer is within the boundaries of the password popup window.

3. Enter your unit's clinical password. As you type, asterisks (****) are displayed instead of the actual characters to safeguard the password.
4. Click on the **Accept** button to confirm the password or on the **Cancel** button to dismiss the popup and return to CLUSTERVIEW. If the password is accepted, the Setup Central Layout menu is displayed. If not, an error tone sounds, the text entry box is cleared, and an error message in the popup informs you that the password was entered incorrectly. Enter the password again as described above.
5. Click on the button corresponding to the layout attribute you wish to change and refer to the tables starting on page 3-1 for detailed configuration information on the available attributes that can be modified in the Setup Central Layout menu.
6. Click on the **Accept** button to store your changes or on the **Undo** button to retain the previous settings.



NOTE: If you are in Dual Display mode, each display can have its own set of layouts (A, B, C, or D). However, you must configure the layouts for each display separately.

MultiView WorkStation S

Available Functions on the Central Layouts Menu

Please refer to page 3-12 for information on how to access the Central Layouts menu

Menu Button	Description	Available Settings	D
Select Central Layout	This selection chooses the specific layout so you can configure it.	A, B, C, or D	
Central Layout Name	Use this text entry box to assign a name to the central layout. It is advisable to use a name that will aid your staff in remembering the special properties of each layout such as <i>Day Shift</i> or <i>Night Shift</i> .	1 to 12 characters	
Central Layout Mode	This selection assigns how many beds and how many waveforms per bed are part of the selected central layout.	<ul style="list-style-type: none"> • 2 beds x 4 waveforms • 4 beds x 2 waveforms • 4 beds x 4 waveforms • 8 beds x 2 waveforms (if Dual Display option is enabled and Enhanced 9-16 patient option is unlocked or Enhanced 1-8 Patient option is enabled and Dual Display option is locked) • 8 beds x 1 waveform (if Dual Display option is enabled and Enhanced 9-16 patient option is unlocked or Enhanced 1-8 Patient option is enabled and Dual Display option is locked) • 16 beds x 1 waveform (if the Enhanced 9-16 patient option is enabled and Dual Display option is locked) 	2 4 fc

Note: Click on the **Accept** button to store your changes or click on the **Undo** to retain the previous settings.



Menu Button	Description	Available Settings	Default
Notes	<p>This selection determines whether or not the notes areas for entering patient notes will appear to the left of all waveform areas.</p> <p>Note: This function is available only in the following central layout modes: 2 x 4; 4 x 2, and 8 x 1.</p>	<ul style="list-style-type: none">• Off - any previously stored notes for beds in this central layout will be deleted and the QuickNote area will not be displayed.• On - the QuickNote area is displayed.	Off
Assign...	<p>This selection activates the assign bed popup which allows you to assign beds to the selected layout.</p>	<ul style="list-style-type: none">• Beds in the monitoring unit. <p>Note: Care unit label, bed label, patient name, and ID # are also displayed.</p>	

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous settings.

4 Telemetry System Setup

This chapter describes how to set defaults for the various try configuration functions. The configuration menus are, ever, available only *after* the Telemetry function is unlock your Biomed.

- Overview
- The Telemetry Setup Menus
- Accessing the Telemetry Setup Menus**
- System Setup
- Available Functions on the System Setup Menu**
- Assigning a Channel Label**
- Patient View Defaults Menu
- The ST Defaults Menu**
- Available Functions on the ST Defaults Menu**
- The Recordings Menu
- Available Functions on the Recordings Menu**
- Alarm Limits Defaults Menu
- Available Functions on the Alarm Setup Menu**
- The Arrhythmia Defaults Menu
- Available Functions on the Arrhythmia Menu**
- Selecting the Arrhythmia Monitoring Level**



Overview

As soon as the Telemetry function is unlocked (see chapter 1, page 17-12) you can configure the Telemetry monitoring features. These settings are global, and affect all telemetry patient channels. After each telemetry patient discharge, the default settings you configure here are activated for that particular patient channel. You can also activate these defaults for a patient at any time by clicking on the **Restore System Defaults** key in the patient's **BEDVIEW**.

The Telemetry Setup menus allow you to configure the **MULTIVIEW WORKSTATION** according to your unit's monitoring needs. If the password control feature has been enabled, a clinical password restricts access to these setup functions to authorized individuals such as Nurse Managers or Care Unit Managers. If the password is entered correctly, the selected Setup menu is displayed. If the password is entered incorrectly, an error tone sounds, the text entry box is cleared, and an error popup informs you that the password was incorrect. In this case, verify the password and enter it again.

All settings under the clinical password are preserved unless factory defaults are restored. Furthermore, these default settings are affected neither by discharging patients, changing **CLUSTERVIEW** layouts, nor by turning the **MULTIVIEW WORKSTATION** off and on.



NOTE: The flashing "I" bar indicates when a text box can accept text.

The Telemetry Setup Menus

The following menus are available for customizing the te monitoring environment:

- ☒ System...
- ☒ Patient View Defaults...
- ☒ ST Defaults (Option)
- ☒ Recordings
- ☒ Alarm Limits Defaults
- ☒ Arrhythmia Defaults

These settings affect *all* telemetry channels of the MULTI\ WORKSTATION server and determine such features as the Alarms Off Time.

The following sections describe each menu in detail.



Accessing the Telemetry Setup Menus

1. Click on the **Setup** button in the CLUSTERVIEW menu bar.
2. Click on the **Telemetry ►** menu selection.
3. Click on the **System..., Patient View Defaults..., ST Defaults** (if the Option is not unlocked, this menu selection is not available), **Recordings, Alarm Limits Defaults** or **Arrhythmia Defaults** menu selection to access the desired setup menu. If the clinical password was enabled under the Biomed function, the password popup window appears. In this case proceed with step 4, otherwise go to step 6.



NOTE: You can only enter the password if the mouse pointer is within the boundaries of the password popup window.

4. Enter your unit's clinical password. As you type, asterisks (****) are displayed instead of the actual characters to safeguard the password.
5. Click on the **Accept** button to confirm the password or on the **Cancel** button to dismiss the popup and return to CLUSTERVIEW. If the password is accepted, the selected menu is displayed. If not, an error tone sounds, the text entry box is cleared, and an error message in the popup informs you that the password was entered incorrectly. Verify the password and enter it again as described above.
6. Click on the button(s) corresponding to the monitoring attribute(s) you wish to change. Depending on the selection, a list of available choices appears or the selected button changes to its opposite value, e.g., from On to Off.
7. Click on the **Accept** button to store your changes or on the **Undo** button to retain the previous settings.

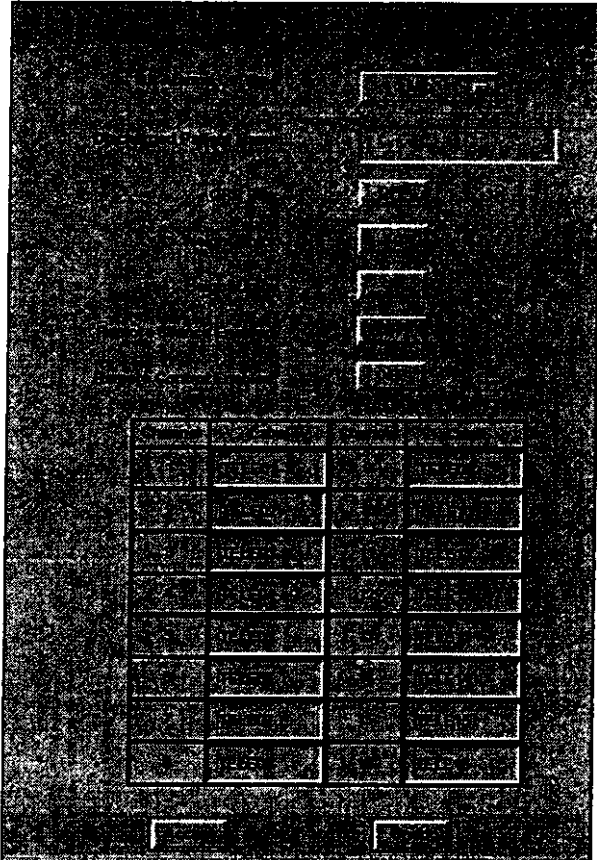
Setting up the Telemetry System

The System menu allows you to configure a wide range of attributes that will apply to all telemetry channels.



NOTE: If you are operating the MULTIVIEW WORKSTATION dual-display configuration, you can access the Display Setup from either display. Any changes you make on one display affect the other.

System Menu



Please refer to page 4-4 for information on how to access menu.

Available Functions on the System Menu

The upper part of the System menu (see page 4-5) consists of several display functions, which you can configure either with stepper buttons that allow you to scroll to the desired value, or with On/Off buttons that enable you to active/deactivate a certain function (see the following table).

Menu Button	Description	Available Settings	Factor Default
All Alarms Off Time	This selection determines the duration of the alarm silence state. Note: If you select 'No time-out', the All Alarms Off button is ghosted in BedView .	<ul style="list-style-type: none"> • Disable • 1, 2, 3, 4, and 5 min • No time-out 	3 min
Alarm Validation	This selection limits the number of false positive alarms.	<ul style="list-style-type: none"> • On • Off 	On
Discharged Patient Name	This selection assigns a default discharge label that is displayed automatically in the patient channel after you discharge a patient (e.g. <i>DISCHARGED</i>).	<ul style="list-style-type: none"> • up to 25 characters the user types in 	
Remote Silence Enabled	This selection determines whether or not you can silence alarms for telemetry patient's from remote network devices. Note: If you select 'Off', the Bed Silence button is ghosted in BED-VIEW and the bed Silence icon will not appear in CLUSTERVIEW during an alarm.	<ul style="list-style-type: none"> • On • Off 	On
Remote Control Enabled	This selection determines whether or not you can control telemetry patients from remote network devices.	<ul style="list-style-type: none"> • On • Off 	On

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous settings.

Assigning a Channel Label

The bottom half of the System menu contains a table that you to assign a channel label to the desired channel receive

Steps:

You can assign a label to a certain telemetry channel as fo

1. Access the System menu (see page 4-4).
2. Click in the "Label" column corresponding to the channel you wish to assign a label to.
3. Type in the desired label (up to 7 characters).
4. Click on **Accept** to store the label or on **Undo** to revert to the previous label.



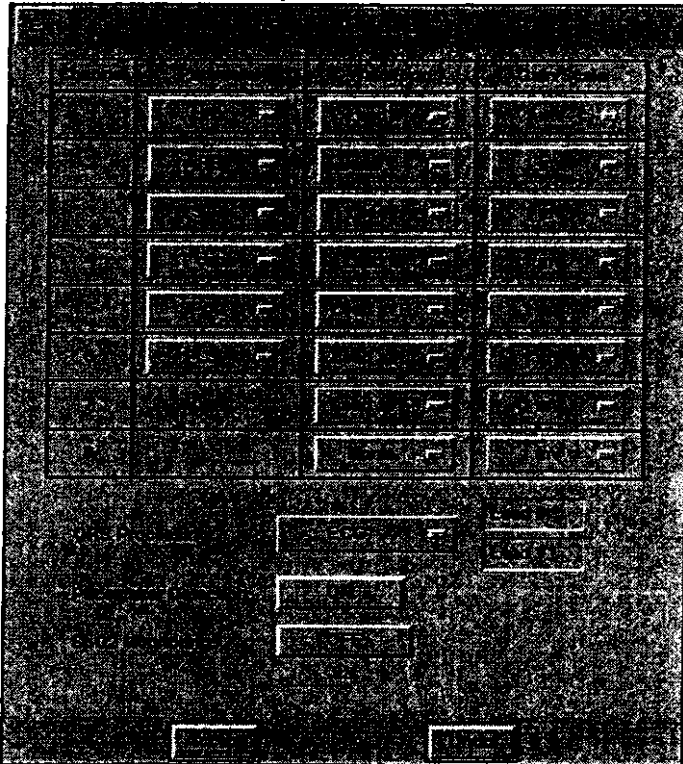
Patient View Defaults Menu

This menu allows you to configure the **BEDVIEW** screen as well as ECG monitoring functions.



NOTE: If you are operating the **MULTIVIEW WORKSTATION** in a dual-display configuration, you can access this menu from either display. Any changes you make on one display apply to the other.

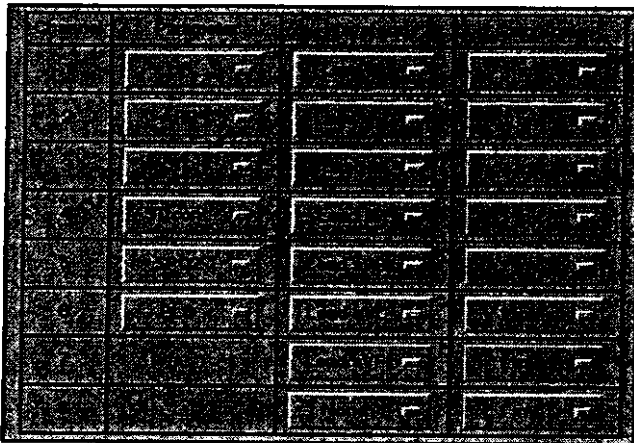
Patient View Defaults Setup Menu



Telemetry System

Configuring the Channels in the Patient View Defaults

The upper portion of the Patient View Defaults menu contains a configuration table that allows you to setup the defaults for each channel as outlined in the following graphic:



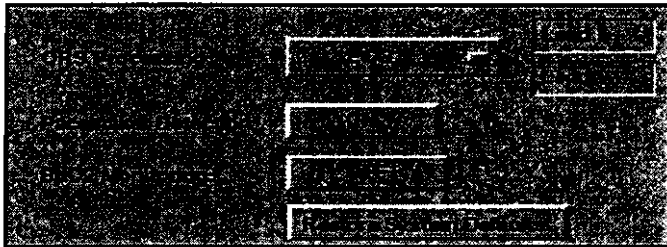
Steps: Configuring a Channel

1. Access the Patient View Defaults menu (see page 4-4)
2. Click successively on the columns labeled "Parameter", "Waveform", and "Gain/Scale" of the channel you wish to configure. Whenever you click on a field inside the configuration table, a popup with available settings appears. Click the desired selection to dismiss the popup and proceed to further selections.
3. Click on **Accept** once you are finished with all the channel configuration setup to store these values as defaults or click on **Undo** to revert back to the original settings.



Configuring the Monitoring Functions

The lower portion of the Patient View Defaults menu (shown the following illustration) allows you to configure the functions outlined in the table below.



Menu Button	Description	Available Settings	Factory Default
QRS Processing	This selection determines which leads will be processed for ECG and ARR monitoring.	<ul style="list-style-type: none">• ECG1• ECG1 & ECG2	ECG1 & ECG2
Pacemaker Detection	This selection determines whether or not pacer detection is turned on and pacer spikes will be displayed on a patient's waveforms.	<ul style="list-style-type: none">• On• Off	On
SpO₂ Monitoring	This selection determines whether or not you can perform SpO ₂ monitoring.	<ul style="list-style-type: none">• On• Off	Off

Steps:

1. Access the Patient View Defaults menu (see page 4-4).
2. Click on the button of the function you wish to configure.
3. Click on the desired setting
4. Click on the **Accept** button to store your changes or on the **Undo** button to retain the previous settings.

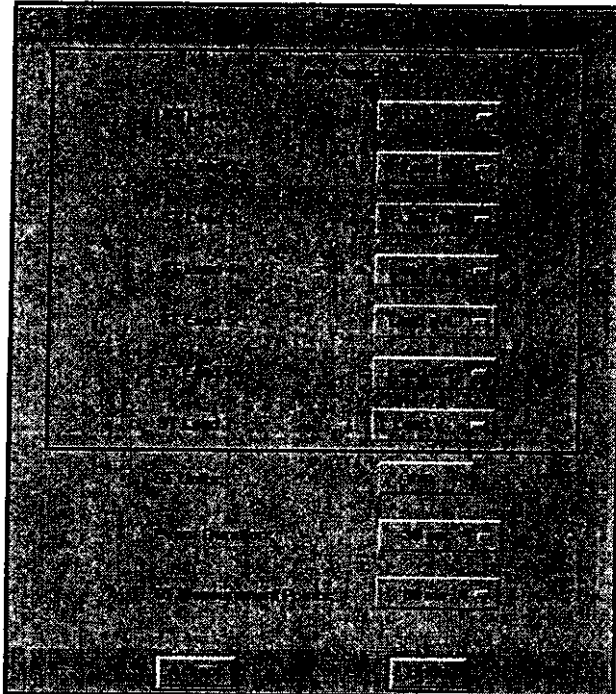
The ST Defaults Menu

This menu allows you to setup ST monitoring defaults. ST alarm defaults are configured in the Alarm Limits menu (see 4-16, *Alarm Limits Defaults Menu*).

ST defaults are activated whenever a patient is discharged; you click on the **Restore System Defaults** button.

The ST Defaults Setup menu is almost identical to the ST menu in BEDVIEW, which allows you to customize each monitoring feature to suit the individual patient's needs for the duration of his/her monitoring session (for further information refer to chapter 10, *ST Segment Analysis (Option)*).

The Setup ST Menu





Available Functions on the ST Defaults Menu

The ST Defaults menu allows you to configure the defaults for each ST lead as well as the ST monitoring functions. The available settings are outlined in the table on the following page. Please, use the column entitled 'User Defaults' to record your defaults for future reference (for information on how to access the ST Defaults menu, refer to page 4-4).

Steps: Configuring the ST Defaults

1. Access the ST Defaults menu (see page 4-4).
2. Click on the setting you wish to configure. A popup list with available settings appears.
3. Click on the desired setting. The popup window disappears and the new setting takes effect.
4. Repeat steps 2 and 3 for other selections.
5. Click on **Accept** to store the selection or on the **Undo** button to revert to the previous setting.

Telemetry System

Menu Button	Description	Available Settings	Factory Default	U D
ST Lead 1	Selects ECG lead vector for first ST value in parameter box	• I, II, III, aVF, aVL, aVR, V, None	I	
ST Lead 2	Selects ECG lead vector for second ST value in parameter box	• I, II, III, aVF, aVL, aVR, V, None	II	
ST Lead 3	Selects ECG lead vector for third ST value in parameter box	• I, II, III, aVF, aVL, aVR, V, None	III	
ST Lead 4	Selects ECG lead vector for fourth ST value in parameter box	• I, II, III, aVF, aVL, aVR, V, None	aVR	
ST Lead 5	Selects ECG lead vector for fifth ST value in parameter box	• I, II, III, aVF, aVL, aVR, V	aVL	
ST Lead 6	Selects ECG lead vector for sixth ST value in parameter box	• I, II, III, aVF, aVL, aVR, V, None	aVF	
ST Lead 7	Selects ECG lead vector for seventh ST value in parameter box	• I, II, III, aVF, aVL, aVR, V, None	V	
Event Duration	This selection determines how long an ST event has to remain outside the set ST alarm limit before an alarm is generated.	• 15, 30, 45, 60, 75, 90, 105, 120 sec	60 sec	
ST Measurement Point	This selection determines whether the ST measuring point is 60 or 80 ms after QRS offset.	• 60 ms • 80 ms	80 ms	



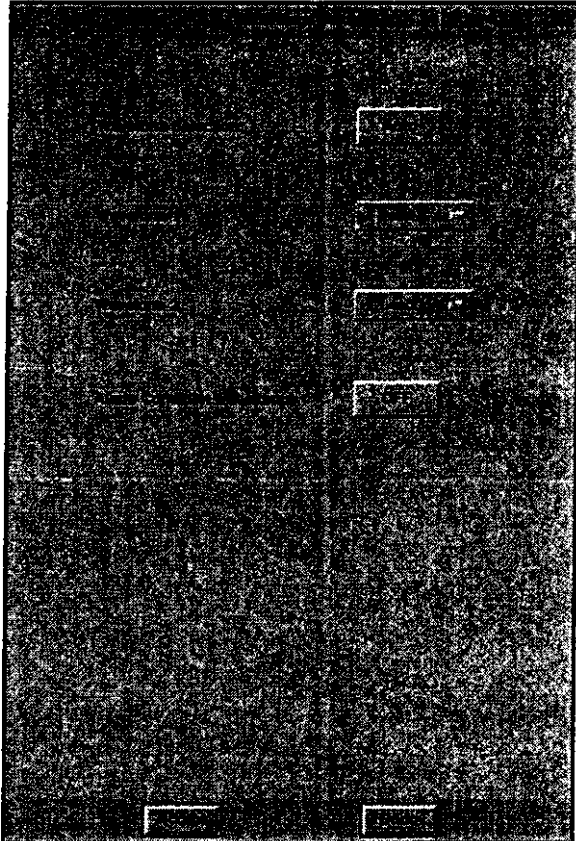
The Recordings Menu

The Recordings menu allows you to configure various telementry specific recording attributes, which are independent of the base recorder settings used by the MULTIVIEW WORKSTATION.



NOTE: If you are operating the MULTIVIEW WORKSTATION in a dual-display configuration, you can access the Recording Setup menu from either display. Any changes you make on one display apply to the other.

The Recordings Menu



Telemetry System

Available Functions on the Recordings Menu

The following table outlines the recording attributes that can be setup in the Recordings menu.

Menu Button	Description	Available Settings	Function
Waveform Selection	This selection determines whether waveforms to be printed are selected automatically or manually.	<ul style="list-style-type: none"> • Auto - The topmost displayed waveform is automatically selected for recordings. • Manual - The waveforms that have been selected under Waveform 1 and Waveform 2 are printed. 	Auto
Waveform 1	This selection chooses the top waveform for R50 recordings.	<ul style="list-style-type: none"> • I, II, III, aVF, aVL, aVR, and V 	II
Waveform 2	This selection chooses the waveform for channel 2 on R 50 recordings.	<ul style="list-style-type: none"> • Disable • 1, 2, 3, 4, and 5 min • No time-out 	V
Alarm Condition Waveform	This selection determines whether or not pre-event data is included in an alarm recording. Note: If you choose <i>Off</i> , the recording consists only of real-time data.	<ul style="list-style-type: none"> • On, Off 	On

Steps: Configuring a setting

1. Access the Recordings menu (see page 4-4).
2. Click on the selection you wish to configure.
3. Select the desired setting.
4. Repeat steps 2 and 3 for other selections.
5. Click on the **Accept** button to store your changes or click on the **Undo** button to retain the previous setting.

Alarm Limits Defaults Menu

This menu allows you to configure alarm defaults for telemetry patient channels. These defaults are activated whenever a patient is discharged or you restore defaults manually by clicking on the **Restore System Defaults** button.

If a telemetry patient is admitted to Event Disclosure, the alarm setup table with the 'Alarm Archive' column appears. If the telemetry patient is *not* admitted to Event Disclosure/Full Disclosure, the alarm setup table resembles the SC 6000 table, which does not have the STORE or the REC/STORE setting.

The Alarm Limits menu is almost identical to the alarm limits table in **BEDVIEW**, which allows you to configure an individual patient's alarm setup for the duration of his/her monitoring session (for further information, please refer to chapter 6, *Patient Setup - BedView*).

SC 6000 - Alarm Table

HR	ON	120	45	REC/STO
S:02	100	90	REC	
P:5	120	45	REC	
ST1	120	-20	REC	
ST2	120	-20	REC	
ST3	120	-20	REC	
P:O min	10		ON	

SC 9000 - Alarm Table

HR	ON	120	45	REC/STO
S:02	100	90	REC	
P:5	120	45	REC	
ST1	120	-20	REC	
ST2	120	-20	REC	
ST3	120	-20	REC	
P:O min	10		ON	

Please refer to page 4-3 for information on how to access this menu.

Telemetry System

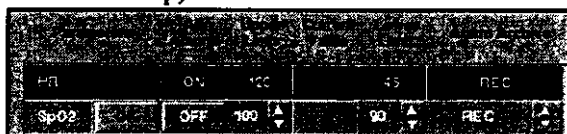
Available Functions on the Alarm Setup Menu

For the HR, SpO₂, Pulse, and ST parameters you can control the following default settings:

- ☒ *alarms on or off* - when this function is enabled for a parameter, an alarm sounds in response to a limit violation.
- ☒ *upper alarm limit*
- ☒ *lower alarm limit*
- ☒ *alarm archive* - this function determines if a timed record is generated or an event is stored (only available for telemetry patients who have been admitted to Event Disclosure)

Steps: Assigning Defaults to a Parameter

1. Access the Alarm Limits Defaults menu (see page 4-4).
2. Click on the table row of the channel you wish to configure (this activates the Up/Down arrows for that channel's configuration setup).



The screenshot shows a table with the following columns: HR, ON, 100, 45, REC. The selected row is for SpO2, with settings OFF, 100 (with up/down arrows), 90 (with up/down arrows), and REC (with up/down arrows).

HR	ON	100	45	REC
SpO2	OFF	100 ▲▼	90 ▲▼	REC ▲▼

3. Click on the Up/Down arrows in the columns labeled “All Alarms”, “Upper Limit”, “Lower Limit”, and “Alarm Archive” (or “Record”), to select the desired settings (the table on the following page lists the available settings for each parameter). Use the column entitled ‘User Defaults’ record your particular settings.

➤ **NOTE:** The above illustration shows the alarm setup table for a telemetry patient who has not yet been admitted to Event Disclosure/Full Disclosure. The columns in the alarm setup table for a telemetry patient who has been admitted to Event Disclosure/Full Disclosure are identical except for the last column, which is labeled ALARM ARCHIVE instead of RECORD and has the settings STORE and REC/STORE.

4. Click on the **OK** button of the selected parameter row.
5. Repeat steps 2 and 3 to configure further parameters.
6. Click on **Accept** once you are finished with all the channel configuration setups to store these values as defaults or click on **Undo** to revert back to the original settings.

Telemetry System

Alarm Defaults

Parameter	Function	Factory Default	Possible Settings	User I
<i>HR</i>	Upper Limit	120 beats/min	20 - 300 beats/min	
	Lower Limit	45 beats/min	15 - 295 beats/min	
	Alarms	On	On/Off	
	Alarm Recording	On	On/Off	
	Store	Off	On/Off	
<i>SpO₂</i>	Upper Limit	100%	75 - 100%	
	Lower Limit	90%	70 - 95%	
	Alarms	Off	On/Off	
	Alarm Recording	Off	On/Off	
	Store	Off	On/Off	
<i>PLS</i>	Upper Limit	120 beats/min	20 - 300 beats/min	
	Lower Limit	45 beats/min	15 - 295 beats/min	
	Alarms	Off	On/Off	
	Alarm Recording	On	On/Off	
	Store	Off	On/Off	
<i>PVC/min</i>	Upper Limit	20 beats/min	1 - 60 beats/min	
	Lower Limit			
	Alarms	Off	On/Off	
	Alarm Recording	On	On/Off	
	Store	Off	On/Off	



Parameter	Function	Factory Default	Possible Settings	User Default
ST	Upper Limit	+2mm / +0.2 uV	-15 mm to +15mm -1500 uV to +1500 uV	
	Lower Limit	-2mm / -0.2 uV	-15 mm to +15 mm -1500 uV to +1500 uV	
	Alarms	Off	On/Off	
	Alarm Recording	On	On/Off	
	Store Note: This setting affects all st leads.	Off	On/Off	

The Arrhythmia Defaults Menu

This menu allows you to configure the individual arrhythmia event defaults. These defaults are activated whenever a patient is discharged or you click on the **Restore System Defaults** button in a telemetry patient's **BEDVIEW**.

If a telemetry patient is admitted to Event Disclosure, the arrhythmia setup table with the 'Alarm Archive' column appears. If a telemetry patient is *not* admitted to Event Disclosure/Full Disclosure, the arrhythmia setup table resembles the SC 6000 table which does not have the STORE or the REC/STORE settings.

The Arrhythmia Defaults menu is almost identical to the arrhythmia table in **BEDVIEW**, which allows you to customize each category to suit the individual patient's needs for the duration of his/her monitoring session (for further information, please refer to chapter 6, *Patient Setup - BedView*).

Arrhythmia Setup Table (SC 9000)

ACV					REC STORE
AF					REC STORE
VT	CT	PRZ	PRZ		REC STORE
APTE					REC STORE
RUN	SER	PRZ	PRZ		REC STORE
AIR	AD7				REC STORE
OPT	AD7				REC STORE
BCM	AD7				REC STORE

Arrhythmia Setup Table (SC 6000)

ACV				
AF				
VT	CT	PRZ	PRZ	
APTE				
RUN	SER	PRZ	PRZ	
AIR	AD7			
OPT	AD7			
BCM	AD7			

Refer to page 4-4 for information on how to access this menu.



Available Functions on the Arrhythmia Menu

The Monitoring Setup Arrhythmia menu allows you to

- select the arrhythmia monitoring level
- configure each arrhythmia event category

Selecting the Arrhythmia Monitoring Level

You can determine the extent of the arrhythmia monitoring by selecting one of the monitoring choices listed in the following table.

Selection	Available Parameters
Full	All event categories listed in the Setup table.
Basic	ASY, VF, ARTF, and VT (other events are not selectable)
Off	Arrhythmia monitoring is disabled.

Steps: Selecting the Monitoring Level

1. Access the Arrhythmia Defaults menu (see page 4-4).
2. Click on one of the following radio buttons, which are located below the setup table (*Basic*, *Full* or *Off*).



Configuring an Arrhythmia Event

The bottom half of the Monitoring Setup Arrhythmia menu maintains a table with several columns, which allow you to configure the following settings for each arrhythmia event category

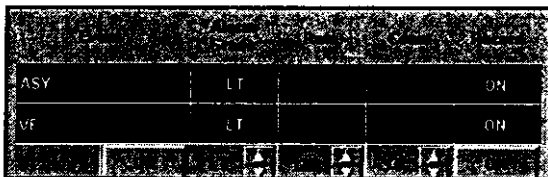
- *Alarm grade* - When this function is enabled for a patient, an alarm sounds in response to a limit violation.
- *Rate, beats/min*
- *Count*
- *Alarm Archive (SC 9000 and Telemetry patients who admitted to Event Disclosure)* - This selection determines whether or not an event triggers a timed recording or is stored in the Event Disclosure system.

OR

Record On/Off (SC 6000) - this selection determines whether or not an event triggers a timed recording or not. All events are automatically stored in the Event Disclosure system provided the patient is admitted to it.

Steps: Configuring an arrhythmia event

1. Access the Arrhythmia Defaults menu (see page 4-4).
2. Click on the table row of the event you wish to configure. This activates the up/down arrows for that channel's configuration setup.
3. Click on the Up/Down arrows in the columns labeled, "Alarm Grade", "Rate", "Count", "Record" to select the desired settings.



ASY	LT	LT	ON
VF	LT	LT	ON

NOTE: The above illustration shows the arrhythmia setup table for a telemetry patient who has not yet been admitted to Event Disclosure/Full Disclosure. The columns in the arrhythmia setup table for a telemetry patient who has been admitted to Event Disclosure/Full Disclosure are identical except for the last column which is labeled ALARM ARCHIVE instead of RECORD and the settings STORE and REC/STORE.

4. Click on the **OK** button of the selected parameter row.
5. Repeat steps 2 and 3 to configure further parameters.
6. Click on **Accept** once you are finished with all the channel configuration setup to store these values as defaults or click on **Undo** to revert back to the original settings.

The following table lists each event category's setup possibilities. Use the row entitled 'User Default' to record your selections.

Telemetry System

Event	Count (in beats)	Rate (in beats)	Alarm Grade	Rec Time (in seconds)	Store Time (in seconds)
ASY			LT *	Off, 5, 10, 15 (default), 20	Off, 5, 10, 15 (default), 20
User Default					
VF			LT*	Off, 5, 10, 15 (default), 20	Off, 5, 10, 15 (default), 20
User Default					
VT	5 - 15 (increments of 1) Default: ≥ 10	100 - 200 (increments of 1) Default: ≥ 120	LT (default), SER, ADV, OFF	Off, 5, 10, 15 (default), 20	Off, 5, 10, 15 (default), 20
User Default					
ARTF			LT, SER, ADV, OFF (default)	Off (default), 5, 10, 15, 20	Off (default), 5, 10, 15, 20
User Default					
RUN	Not adjustable; upper value is VT count - 1. Default: 3 - 9	Not adjustable; same as VT rate. Default: ≥ 120	LT, SER (default), ADV, OFF	Off, 5, 10, 15 (default), 20	Off, 5, 10, 15 (default), 20
User Default					
AIVR	Not adjustable Default: ≥ 3	Not adjustable; upper value is VT rate - 1. Default: ≥ 119	LT, SER, ADV (default), OFF	Off (default), 5, 10, 15, 20	Off (default), 5, 10, 15, 20
User Default					

* cannot be changed.

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to exit the menu and retain the previous settings.



Event	Count (in beats)	Rate (in beats)	Alarm Grade	Rec Time (in seconds)	Store Time (in seconds)	Store On/Off
CPT			LT, SER, ADV (default), OFF	Off, 5, 10, 15 (default), 20	Off (default), 5, 10, 15, 20	On/Off
User Default						
BGM			LT, SER, ADV (default), OFF	Off, 5, 10, 15 (default), 20	Off (default), 5, 10, 15, 20	On/Off
User Default						

* cannot be changed.

Note: Click on the **Accept** button to store your changes or click on the **Undo** button to exit the menu and retain the previous settings.

5 CLUSTERVIEW

This chapter describes the CLUSTERVIEW, the main screen of the MULTIVIEW WORKSTATION.

At the end of the chapter are several tables with status messages that identify certain operational conditions that may occur during monitoring.

- Overview
- ClusterView Layout
- Split Screen vs. Full Screen ClusterView
- Viewing/Selecting a Different CLUSTERVIEW Layout
- 2 x 4 CLUSTERVIEW Layout (2 Patients, 4 Waveforms Each)
- 4 x 2 ClusterView Layout (4 Patients, 2 Waveforms Each)
- 4 x 4 ClusterView Layout (4 Patients, 4 Waveforms Each)
- 8 x 1 ClusterView Layout (8 Patients, 1 Waveform Each)
- 8 x 2 ClusterView Layout (8 Patients, 2 Waveforms Each)
- 16x1 ClusterView Layout (16 Patients, 1 Waveform Each)
- Setup of the CLUSTERVIEW Screen
- Menu Bar
- Waveform Area
- Stopping Waveforms
- Parameter Areas
- Notes Area
- Status Area
- CLUSTERVIEW STATUS AREA MESSAGES



Overview

The **CLUSTERVIEW** is the main screen of the **MULTIVIEW WORKSTATION**. It displays waveforms, parameter values, status messages, banners and alarm messages for telemetry and non-telemetry patients assigned to the **MULTIVIEW WORKSTATION**.

The **CLUSTERVIEW** can be configured according to several different layouts (a minimum of two beds or a maximum of 8 beds per main display).

With the Enhanced 9-16 Patient option, the monitoring capabilities of *one* main display can be increased to accommodate up to 16 patients.

With the Dual Display option, the monitoring capabilities can further be expanded to *two* main displays and up to 16 beds.

For some layout configurations QuickNotes (**QUICKNOTE™**) can also be displayed to the left of each patient waveform area.

From the **CLUSTERVIEW** you can access information for each patient on the **INFINITY NETWORK**.

CLUSTERVIEW Layout

The MULTIVIEW WORKSTATION only displays patients that are assigned to the current CLUSTERVIEW. To accommodate the unit's patient acuity and census level, you can choose among CLUSTERVIEW layouts A, B, C, or D. You can switch to any layout at anytime which gives you exceptional flexibility because you can always select the one that meets the needs of your current monitoring tasks.

Each of these CLUSTERVIEW layouts can be customized through the password-protected Setup Central Layout menu (see page 3, page 3-1) and assigned one of the following unique display modes:

- ✱ **2 x 4 CLUSTERVIEW layout** - 2 patients with 4 waveforms each (see page 5-6)
- ✱ **4 x 2 CLUSTERVIEW layout** - 4 patients with 2 waveforms each (see page 5-7)
- ✱ **4 x 4 CLUSTERVIEW layout** - 4 patients with 4 waveforms each (see page 5-8)
- ✱ **8 x 1 CLUSTERVIEW layout** - 8 patients with 1 waveform each (see page 5-9)
- ✱ **8 x 2 CLUSTERVIEW layout** - 8 patients with 2 waveforms each (see page 5-10)
- ✱ **16 x 1 CLUSTERVIEW layout (optional)** - 16 patients with 1 waveform each (see page 5-11)

Split Screen vs. Full Screen CLUSTERVIEW

Depending on the selected layout, the CLUSTERVIEW either displays more patients with less waveform data per patient or few patients with more waveform data per patient. The layout also determines the availability of notes (QUICKNOTE™).

Selected CLUSTERVIEW Layout	Split Screen	Full Screen	Amount of Waveform Data (approx.)	Quick Note Yes/No
2 x 4		Yes	8 - 10 seconds	Yes
4 x 2		Yes	8 - 10 seconds	Yes
8 x 1		Yes	8 - 10 seconds	Yes
4 x 4	Yes		4 seconds	No
8 x 2	Yes		4 seconds	No
16 x 1	Yes		4 seconds	No

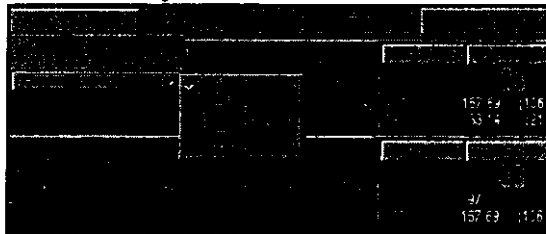
* Note: If QuickNotes are enabled, the waveform channel contains approximately seconds of waveform data. If QuickNotes are disabled, the waveform channel displays approximately 10 seconds of waveform data.

Viewing/Selecting a Different CLUSTERVIEW Layout

You can view a different CLUSTERVIEW layout than the currently displayed as follows:

1. Click on the **View** button in the CLUSTERVIEW menu.
2. Click on the **Central Layout** ► menu selection. A submenu with the four available CLUSTERVIEW layouts appears.

View Central Layout Submenu



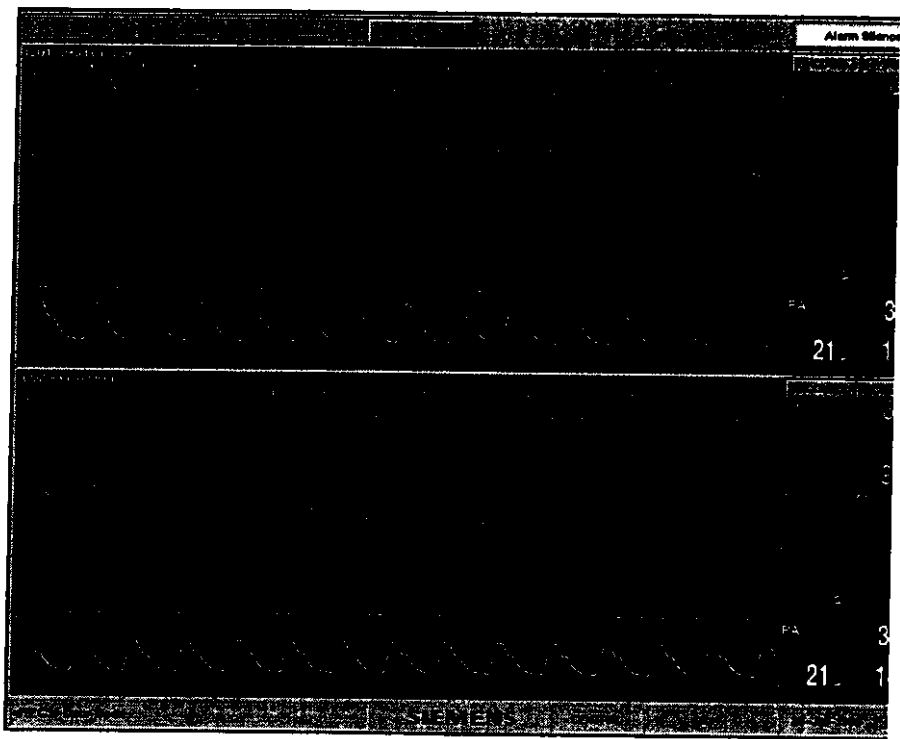
3. Click on the desired layout (A, B, C, or D). A popup is displayed, informing you that a change of layout deletes notes and cancels pending recordings for patients not included in the new layout. The selected layout is highlighted by a diamond.
4. Click on the **Yes** button in the popup window to activate the new layout or on the **No** button to exit this menu and return to the current layout.



NOTE: Local patients assigned to a different layout than currently displayed (or no layout at all), are advertised to work as BED OFFLINE.

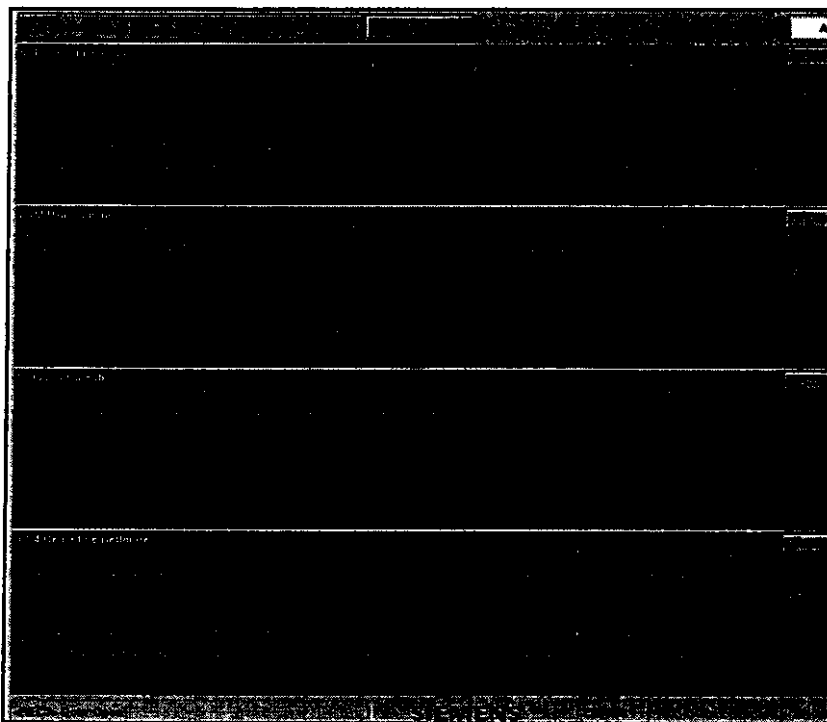


2 x 4 CLUSTERVIEW Layout (2 Patients, 4 Waveforms Each)



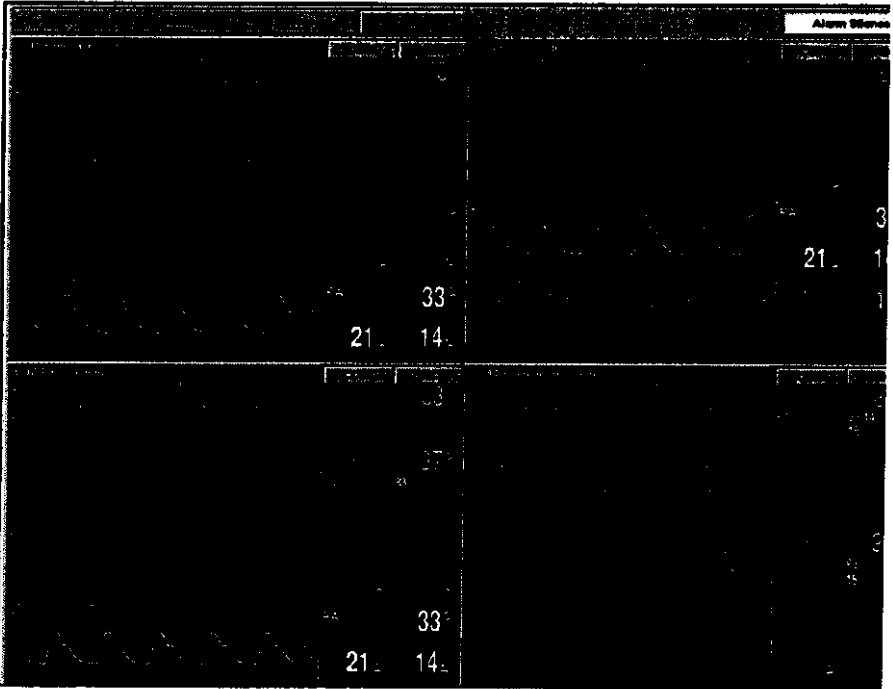
Cluste

4 x 2 CLUSTERVIEW Layout (4 Patient Waveforms Each)



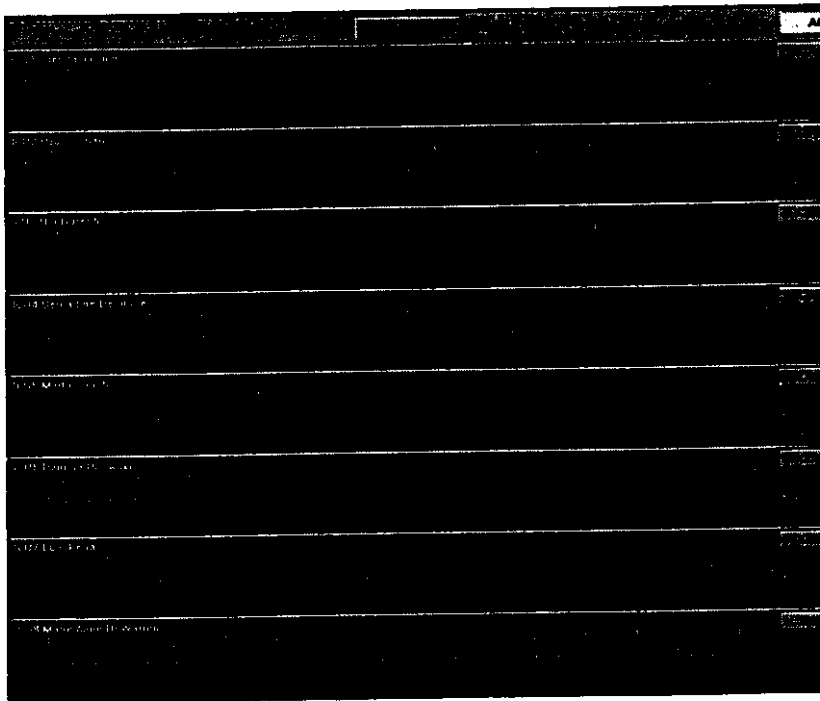


4 x 4 CLUSTERVIEW Layout (4 Patients, 4 Waveforms Each)



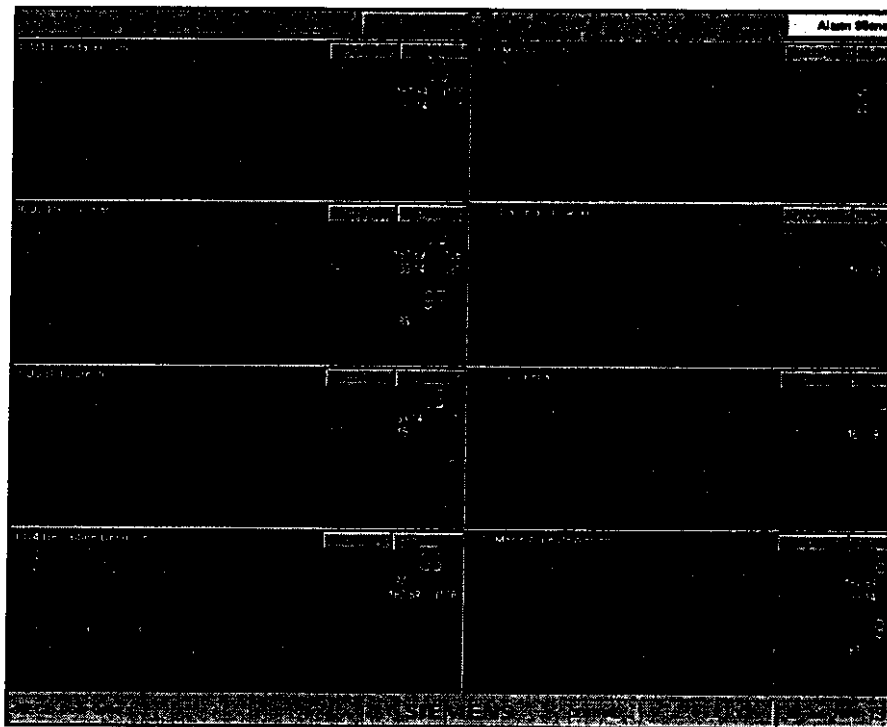
Cluste

8 x 1 CLUSTERVIEW Layout (8 Patients Waveform Each)



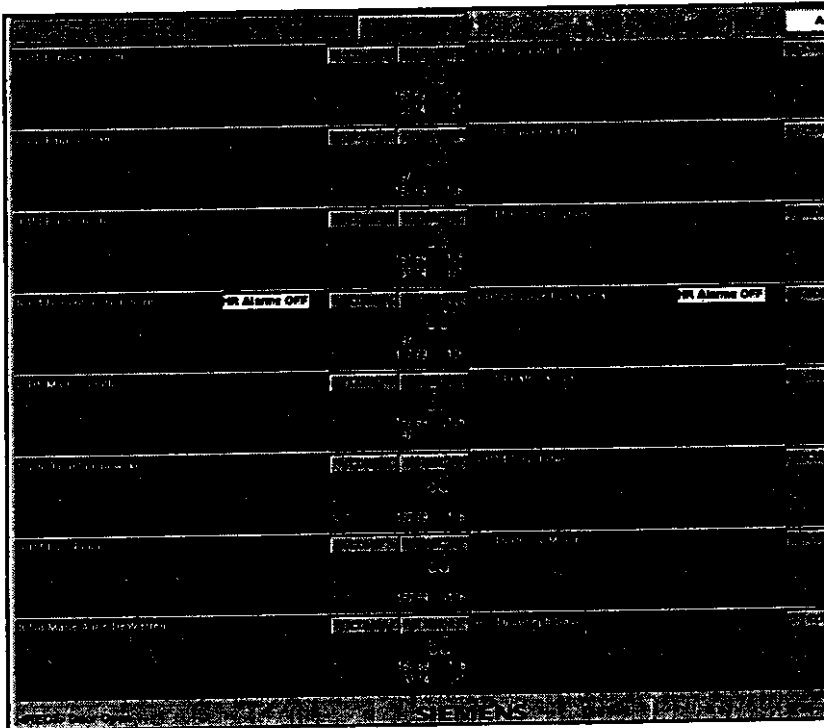


8 x 2 CLUSTERVIEW Layout (8 Patients, 2 Waveforms Each)



Cluste

16x1 CLUSTERVIEW Layout (16 Patient Waveform Each)



Setup of the CLUSTERVIEW Screen

The CLUSTERVIEW screen consists of the following areas:

- Menu bar
- Waveform area
- Parameter area
- Status area
- QUICKNOTE area (available only with certain layouts)

Menu Bar

The menu bar is located along the top of the CLUSTERVIEW screen and contains the following main menu buttons: **View**, **Setup**, **Biomed**, **Help**, and **Alarm Silence**. The function of the various buttons is described in the following sections.

The CLUSTERVIEW menu bar



VIEW Button

This button allows you to

- view any bed outside the current CLUSTERVIEW (see chap 6, *Patient Setup - BedView*).
- access the Diagnostic and Clinical Events logs (see chapter 17, *Biomed Functions*).
- view a different CLUSTERVIEW layout.
- view Full Disclosure and Event Disclosure data (Options).

SETUP Button

This button allows you to

- configure the monitoring characteristics of the MULT WORKSTATION.
- configure the layout of the CLUSTERVIEW screens (see chapter 5, *ClusterView*).
- access the Telemetry setup menus (see chapter 4, *Telemetry System Setup*) provided the Telemetry option is unlo

BIOMED Button

This button is intended for qualified service personnel or technical engineers, allowing them to

- observe the status of all devices on the network.
- configure the MULTIVIEW WORKSTATION and the telemetry receivers.
- enable locked options.
- access the system console.

HELP Button

This button accesses Online Help (see chapter 1, *About the ClusterView WorkStation*).

ALARM SILENCE Button

This button silences all active alarms at the MULTIVIEW WORKSTATION for 1 minute.



Waveform Area

Depending on the selected CLUSTERVIEW layout, each waveform area may contain from one to four waveforms per patient. All patient waveforms are updated from left to right with the eraser bar.

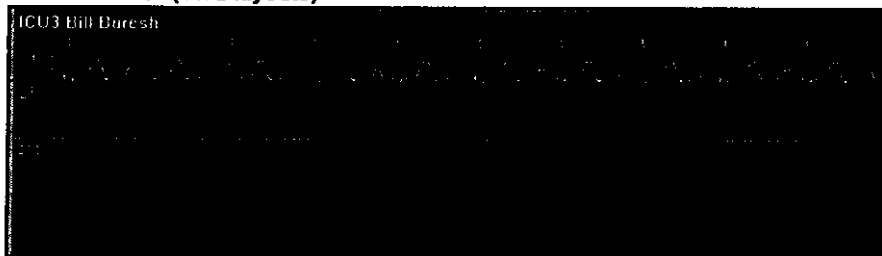


NOTE: When a patient is put into standby, the waveform area continues to display waveforms, the patient's name, the lead labels, scales as well as the banner STANDBY.

In full screen CLUSTERVIEWS (2 x 4, 4 x 2, and 8 x 1), each waveform displays approximately 10 seconds of data at a sweep speed of 25 mm/s (up to 8 seconds if QuickNotes are enabled).

In split screen CLUSTERVIEWS (4 x 4, 8 x 2, and 16 x 1) each waveform displays approximately 4 seconds of data at a sweep speed of 25 mm/s.

Waveform Area (4 x 2 layouts)



Labels

In addition to waveforms, waveform areas display other information from the bedside monitor. The following list describes various components that may be present at any given time:

- **Waveform scales and scale bars** are displayed in waveform areas to the left of each waveform. Lead labels and the gain scale are displayed to the right of the ECG scale bar. Invasive pressure and other scales appear as dotted lines that extend across the entire waveform area.
- The **Bed Label** identifies the bedside and appears in the upper left corner of the top waveform channel.
- The **Telemetry icon** to the right of the bed label distinguishes a telemetry patient from a non-telemetry patient.
- The **Patient Name** appears to the right of the bed label.



NOTE: You can click on the **Bed Label** and **Patient Name** to access the Admit menu for that bed.

- **Bedside Alarm Messages/Banner and bedside status messages** appear in the upper right corner of the top waveform channel. Only the alarm message for the active alarm with the highest alarm grade is displayed. Bedside alarm messages appear in the color of their respective alarm grade (see 11-6). Banners are displayed as black text on a colored background.



NOTE: The MULTIVIEW WORKSTATION cannot display bedside alarm messages at the same time. The only exception is when alarm messages override the HR ALARMS OFF banner.

The following banners and bedside status messages may appear in the banner field of the CLUSTERVIEW.

Banner	Telemetry-specific	Monitor-specific	Background	Description
CODE ¹ (SC 9000 only)	No	Yes	Black text on red background	Code fixed key was pressed at the bedside monitor.
BED DISCONNECTED	No	Yes	Black text on white background	The bedside monitor was disconnected for patient transport.
DISCHARGE	No	Yes	Black text on white background	Patient was discharged at the bedside monitor.
ALL ALARMS OFF	Yes	Yes	Black text on yellow background	The patient's alarm function is disabled.
HR ALARMS OFF ²	Yes	Yes	Black text on yellow background	The patient's HR alarm function was deactivated.
STANDBY	Yes	Yes	Black text on white background	The patient is put into standby.
Pacer Off	Yes	No	Black text on white background	The pacemaker detection is disabled for that telemetry patient.
Status message			Appearance	Description
BEDSIDE OFFLINE	Yes	Yes	Yellow text	Patient or CPS is communication with the network.
CPS OFFLINE	No	Yes	Yellow text	The CPS is offline.
DUPLICATE ADDRESS	No	Yes	Yellow text	The bedside CPS detects that it has the same IP address as another device on the network.

¹ If a code condition is activated at the bedside during an alarm, the banner CODE replaces the alarm message.

² If an alarm occurs while this banner is displayed, the alarm message replaces the banner for the duration of the alarm.

Icons

Several icons are available to indicate the status of certain functions.



The **Bed Silence icon** appears in the upper right corner of a waveform channel when the patient has an active non-silencing alarm or a latching alarm message (a message from an alarm whose condition no longer exists but that has not been acknowledged). Click on this icon if you wish to clear a latching alarm message or silence the current alarm for 1 minute (for a telemetry patient the alarm is silenced at the MULTIVIEW WORKSTATION; for a non-telemetry patient it is silenced at the bedside monitor and at the MULTIVIEW WORKSTATION).



NOTE: The Bed Silence icon only appears if the *Bed Silence* function is enabled for non-telemetry patients (see page 3-6) or the *Remote Silence* function is enabled for telemetry patients (see page 4-6). If the remote control functions are not enabled, the icon does not appear and you cannot silence alarms remotely.



The **All Alarms Off icon** is a yellow crossed bell that appears next to a particular parameter value in place of the alarm icon when the parameter's alarms have been disabled.



The **Bedside Alarm Volume Zero icon** is displayed in the upper right corner of the top waveform channel if the alarm tone has been turned off at the bedside monitor.



The **Telemetry icon** is displayed in the front of the bedside monitor to identify a telemetry patient.



Markers

Pacer spikes for all leads are displayed as blue spikes starting from their point of detection in the waveform and extending to the height of the ECG scale bar.


Breath detection spikes for impedance respiration are displayed as white lines vertically centered on the waveform at the point of detection and extending 1 cm, provided the respiration marker is enabled at the bedside monitor (SC 9000 only).

Stopping Waveforms

You can stop all waveforms for a displayed patient by clicking anywhere in the waveform area. Stopping waveforms for a patient in **CLUSTERVIEW** does not stop them in **BEDVIEW**.

Stopping waveforms has the following consequences:

- The banner **WAVE(S) STOPPED** is displayed at the bottom of the top waveform channel.
- The **CONT** and **REC** buttons appear 'ghosted' in the parameter area, indicating that you cannot request manual recordings of stopped waveforms. However, you can request a print screen (see chapter 12, page 12-23) for detailed information on print screens.

While waveforms are stopped, parameter values and banners continue to be updated and the bed silence  icon and alarm message are displayed in case of an alarm.

To restart waveforms, click inside the waveform area again. All previously displayed waveforms are erased and replaced by current waveform data.

Parameter Areas

In CLUSTERVIEW the parameter areas are located to the left of the waveform areas and display the patient's vital sign information. A parameter area may consist of several parameter displays depending on the selected CLUSTERVIEW layout.



NOTE: Parameters which originate from devices that are part of the INFINITY NETWORK and which duplicate parameters transmitted at the SC 9000 are marked by an asterisk in the color of the displayed parameter. The devices which generate these measurements are MIB devices (not available in the US).

The parameter areas allow you to access each patient's BedView (for more detailed information, see chapter 6, *Patient Setup and BedView*).

If the patient is in alarm, the background of the respective parameter area on the MULTIVIEW WORKSTATION flashes in the color associated with the highest grade active alarm for that bed.

A parameter area appears blank if no parameter data is available for a displayed patient due to one of the following conditions:

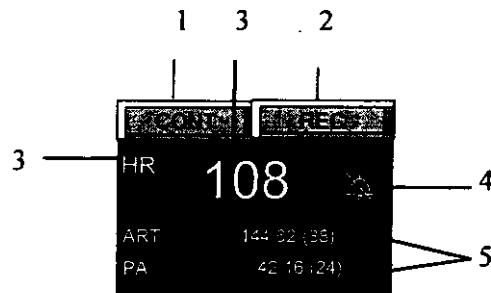
- the patient is in standby or the patient has been discharged
- the monitor has been disconnected for patient transport
- the monitor/transmitter has stopped communicating with the network.



NOTE: The parameter area does not flash or change color if the patient is in a standby condition, the monitor is CPS offline, bedside offline, or duplicate address condition.

A parameter area is reserved for the following information/buttons (refer to illustration for location of numbered elements):

1. **CONT** button for requesting continuous manual recording
2. **REC** button for requesting timed manual recordings
3. **Primary parameter values and labels** (parameter labels displayed to the left of the parameter values; primary labels and values appear larger)
4. **Primary parameter alarm limits** (provided the display of alarm limits is enabled at the bedside) or **crossed bell icon** (to indicate that the display of alarm limits has been turned off)
5. **Secondary parameter values and labels**



NOTE: Parameter units are only displayed at the MULTIVIEW WORKSTATION if they are also displayed at the bedside monitor. For telemetry patients, units are always visible.

Primary vs. secondary parameters

The MULTIVIEW WORKSTATION displays primary and secondary parameters. The primary parameter has an associated waveform displayed in the waveform area. Secondary parameters do not. The number of a patient's displayed primary and secondary parameters depends on the selected CLUSTERVIEW layout (see the following table).

Current Layout	Number of primary parameters displayed per patient	Number of secondary parameters displayed per patient
16 x 1	One	up to two
8 x 1	One	up to two
8 x 2	Two	up to four
4 x 2	Two	up to four
4 x 4	Four	up to eight
2 x 4	Four	up to eight

Each parameter field may contain

- one single-valued primary parameter and up to two secondary parameters

or

- one multi-valued parameter set, such as pressures

The **primary parameter** is distinguished by its larger size. The primary parameter value(s) and the label appear in the color of the associated waveform. If the primary parameter has no waveform displayed, as is the case with Cardiac Output, the value and the label are displayed in white.

Up to two **secondary parameters**, not associated with waveforms, can be displayed per primary parameter. Secondary parameters appear smaller and in white.

Secondary parameters consisting of triple-valued pressures are displayed in a single row, in the format SYS/DIA (MEAN).

Allocation of Parameters - Bedside Monitors


The SC 6000 series and the SC 9000 bedside monitors determine how the parameters are allocated to the parameter areas of the MULTIVIEW WORKSTATION.

If more parameter slots are available than there are patient parameters to fill them, the unallocated fields appear blank.

If no parameters are available for a bed that is assigned to the CLUSTERVIEW because it is in standby, the patient has been discharged, or the monitor has been removed for transport, the entire waveform and parameter area for that bed appears blank. In an case, a message banner in the waveform area explains the reason for the absence of data.

SC 9000 parameters are assigned in descending order, where the top waveform/parameter of the bedside monitor becomes the first primary parameter/waveform at the MULTIVIEW WORKSTATION. Parameters continue to be assigned in consecutive order (primary parameters first, then secondary parameters) from the bedside to available parameter fields at the MULTIVIEW WORKSTATION.

The MULTIVIEW WORKSTATION supports two icons specific to the SC 9000.

- the  symbol in the parameter box alerts the users that the O2 lower alarm limit has been set to a value less than 21% of the MultiGas Module (MGM).
- Parameters which originate from devices that are not part of the INFINITY NETWORK and which duplicate parameters that originate at the SC 9000 are marked by an asterisk (*) in the color of the displayed parameter. The devices which generate these measurements are called MIB devices.

If the next parameter box at the bedside monitor is a "set" of parameter values for ST or MIB, only the topmost parameter value will be used as a secondary parameter.



NOTE: If a single-value primary parameter has minor parameter(s) associated with it (e.g., SpO₂ has Pulse (PLS) as a minor parameter), the MULTIVIEW WORKSTATION designates the minor parameter(s) to be secondary parameters.

SC 6000 parameters are assigned slightly differently. The waveform and corresponding parameter become the first waveform/parameter at the MULTIVIEW WORKSTATION.

The second waveform and associated parameter fill the primary/secondary fields. The rest of the parameters are assigned in a top to bottom, left to right fashion from the bedside parameter boxes to available parameter fields at the MULTIVIEW WORKSTATION.



Allocation of Parameters - Telemetry Channels

The waveforms selected for display in **BEDVIEW** determine the display order of parameters and waveforms in **CLUSTERVIEW**. Any changes in the waveform and parameter assignments in **BEDVIEW** are therefore automatically reflected in **CLUSTERVIEW**.

The top waveform and parameter in **BEDVIEW** occupies the top waveform channel and parameter field in **CLUSTERVIEW**. The next waveforms and parameters are assigned to the remaining slots in **CLUSTERVIEW**. As soon as the waveform channels and primary parameter fields are filled in **CLUSTERVIEW**, the next parameters displayed in **BEDVIEW** are assigned to the secondary parameter fields until the entire **CLUSTERVIEW** parameter area is filled.

If a primary parameter has an associated minor parameter (e.g. PVC/min with ARR), the minor parameter is considered a secondary parameter and assigned to the **CLUSTERVIEW** parameter area as described above.

If *one* ST value is displayed as a primary parameter, the top three ST values are displayed in the **CLUSTERVIEW** parameter area. If *two* ST values are designated as primary parameters in **BEDVIEW**, the **CLUSTERVIEW** parameter area displays all ST values.

Notes Area

If the QUICKNOTE function is enabled (see page 3-14), the 4 x 2, and 2 x 4 layout modes contain text entry boxes to the right of each waveform area for entering patient notes. These notes are only stored locally at the MULTIVIEW WORKSTATION, they are not stored at the bedside monitor.

Notes are deleted when you

- reconnect any bedside monitor to that network location
- discharge the patient
- remove the patient from CLUSTERVIEW
- select a CLUSTERVIEW layout for display that does not include that patient



NOTE: Notes can only be printed on the optional laser printer by pressing the **Print Screen** fixed key on the keyboard.

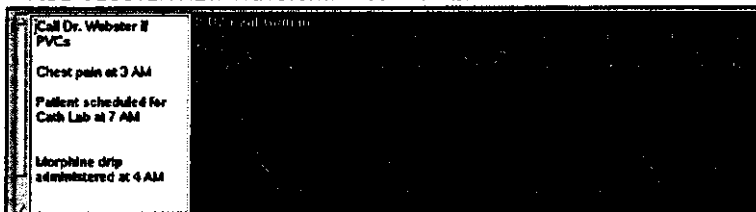
You may want to enter the following information as a note:

- treatments ordered
- destination and time of patient transport
- administered medications
- messages to attending physician
- nurse on duty
- family information such as emergency telephone number

The size of the notes area is always relative to the number of waveform channels in a waveform area. Thus, in single-waveform layout modes such as 8x1, each notes area has the same height of a single waveform channel, while in the four-waveform layout mode such as 2x4, it has the display height of four waveform channels.

Regardless of its height, each notes area can accommodate up to 300 characters of text. If not all text is visible at once, due to the height of the notes area, a scroll bar becomes available to the left so you can scroll through all of the text.

4 X 2 CLUSTERVIEW Waveform Area with QuickNotes



Steps: Entering a Note

1. Click inside the desired notes area.
2. Type the text using the keyboard. For information on specific keyboard keys and use of the keyboard, see page 1-11.

Steps: Editing existing Notes

1. Locate the text you wish to edit. If the text is not displayed, use the scroll bar inside the notes area to locate it.



NOTE: The scroll bar only appears inside the notes area when there is more text than can be displayed simultaneously in the notes area.

2. Click at the insertion point, or click on the text and drag the mouse to group the text you wish to edit or delete.
3. Type the desired text, or press the **del** or **backspace** keyboard key to delete the selected text.

Status Area

The status area is located along the bottom edge of the screen and is divided into the following fields:



- The **Alarm and Status Messages** appear on the left side of the status area in black. These messages may originate from the MULTIVIEW WORKSTATION, from networked recorders, from Communication Power Supplies (CPSs) as well as from the INFINITY NETWORK. If the Dual Display option is enabled and where the MULTIVIEW WORKSTATION is connected to the network, the status messages are displayed in the status area of both devices.

Some status messages appear only briefly and indicate a one-time occurrence, such as when the MULTIVIEW WORKSTATION requests a recording or a network recorder is disconnected from the network. Others appear for as long as the cause for the message exists (e.g. when a recorder door is open).

- The **Host Label** (for example, *CCU C01*) identifies the particular MULTIVIEW WORKSTATION. It is assigned during the initial installation.
- The **Central Layout Name** identifies the currently selected CLUSTERVIEW layout.
- The **Network Time and Date** appear in the lower right corner of the status area.

CLUSTERVIEW STATUS Area Messages

The following table lists all possible status messages that may be displayed in the CLUSTERVIEW status area, located at the bottom of the screen (the shaded rows pertain to telemetry channels only). For recorder-specific status messages see chapter 12, *Recordings*.

Device/Network Status Messages		
Status Message	Tone	Description
<i>Central Offline</i>	Serious	The MULTIVIEW WORKSTATION is not communicating with the network because the configuration information is incorrect.
<i>XXXX Offline</i>	Serious	Telemetry receiver(s) not communicating with the MULTIVIEW WORKSTATION.
<i>Reverting to Default Settings for yyy Data</i>	Serious	Error during a setup file read operation
<i>yyy Data Not Saved</i>	Serious	Error during a setup file write operation
<i>Central Configuration Incomplete</i>	Serious	Not all labels identifying the MULTIVIEW WORKSTATION have been entered.
<i>Receiver Configuration Incomplete</i>	Serious	<ul style="list-style-type: none">Ethernet address is not assigned to receiver(s);CPU/Receiver runtime software and/or receiver configuration/setup data is incompatible with MULTIVIEW WORKSTATION software.
<i><xxx> Remote Control Failed</i>	Attention	Remote control action failed for the indicated device.

Note: <xxx> stands for the device/host label; yyy stands for the specific setup data file.

Cluster

Device/Network Status Messages		
Status Message	Tone	Description
<i>Notes Access Error</i>	Attention	Notes cannot be accessed.
<i>Central Duplicate Address</i>	Serious	MULTIVIEW WORKSTATION CPS has same address as another networked
<i>Duplicate Receiver Address</i>	Serious	Central detects that its receiver(s) has same IP address as another device on receiver's local area network (LAN).
<i>File Access Error</i>	Attention	File cannot be accessed.

Note: <xxx> stands for the device/host label; yyy stands for the specific setup data

Menu-specific Status Messages			
Status Message	Tone	Description	Action
<i>No Bed Assigned</i>	Attention	No bed has been assigned to the selected parameter area in CLUSTERVIEW.	Select the correct parameter and assign a patient to the available
<i>Copy Logs Started</i>		The copying of the logs has started.	Wait until process is finished.
<i>Copy Logs Formatting Disk</i>		The disk is being formatted.	
<i>Copy Logs Completed - Remove Disk</i>	Attention	The logs have been copied successfully.	None
<i>Copy Logs Failed</i>	Advisory	The logs could not be copied.	Try to copy them again (see chapter 17, <i>Biomechanics</i> .)



Recorder Status Messages		
Status Message	Tone	Description
<ul style="list-style-type: none">• <i>Timed Recording Request Accepted <xxx></i>• <i>Cont. Recording Request Accepted <xxx></i>• <i>Cont. Recording Now Timed (for SC 6000 Series only)</i>		The bedside monitor has accepted the recording request, but the recorder is currently unavailable to print it. The recording is pending or stored until the recorder becomes available.
<ul style="list-style-type: none">• <i>Timed Recording Started <xxx></i>• <i>Cont. Recording Started <xxx></i>		The requested recording is being printed.
<ul style="list-style-type: none">• <i>Timed Recording Finished <xxx></i>		The recording has finished printing or has finished being stored.
<ul style="list-style-type: none">• <i>Timed Recording Canceled <xxx></i>• <i>Cont. Recording Canceled <xxx></i>		The recording might have been canceled due to a special condition (see chapter 12, page 12-27).
<ul style="list-style-type: none">• <i>Timed Recording Interrupted <xxx> (SC 9000 monitors only)</i>• <i>Cont. Recording Interrupted <xxx></i>		The recording was interrupted.

Note: <xxx> stands for the device/host label.

Recorder Status Messages (continued)		
Status Message	Tone	Description
<ul style="list-style-type: none"> • <i>Artifact - Timed Recording Canceled <xxx></i> • <i>Artifact - Cont. Recording Canceled <xxx></i> 		Recording was canceled due to excessive artifact.
<i><xxx> Disconnected</i>	Advisory	The recorder(s) is not connected to the network.
<i><xxx> Door Open</i>	Advisory	The recorder door needs to be closed.
<i><xxx> Out Of Paper</i>	Advisory	Recorder paper needs to be replaced.
<i><xxx> Failure</i>	Serious	Recorder failed.
<i><xxx> Offline</i>	Serious	Recorder CPS is offline; recorder communication with network failed.
<i><xxx> Duplicate Address</i>	Serious	Recorder CPS has detected a duplicate address.
<i>Recording Request Not Accepted - Queue Full</i>	Attention	The recording request was not accepted because the bedside monitor's priority queue is full.
<i>Recording Status Unknown - Connection Failed</i>	Attention	The recording status is unknown due to a communication error to the bed.
Note: <xxx> stands for the device/host label.		



6 Patient Setup - BEDVIEW

This chapter describes the different BEDVIEW screens of MULTIVIEW WORKSTATION. The numerous functions of the menu allow you not only to view an individual patient's data but also to customize his/her setup functions. Since the chapter addresses telemetry patients as well as those patients who are being monitored by bedside monitors, the chapter is divided into two sections. The first section addresses general BEDVIEW aspects such as, for example, the layout as well as the available setup functions for non-telemetry patients. The last section deals with the setup functions specific to telemetry patients.



NOTE: You cannot perform any remote control functions if you are using the VIEWSTATION.

- Overview
- Accessing a Patient's BEDVIEW
- BedView Main Screen
- Waveform Assignment
- Layout of the BedView Main Screen
- The Menu Bar
- BEDVIEW Action Buttons
- Information Area
- Waveform Area
- Stopping Waveforms
- Putting a Patient into Standby
- Parameter Areas in BedView
- Parameter Allocation
- Parameter Area Display Colors
- BedView REVIEW Menus
- Accessing a Patient's Trends
- Reviewing a Patient's Full Disclosure Data (optional)
- Reviewing a Patient's Event Disclosure Data (optional)
- BedView Setup Menus

Telemetry Patient Setup

The last section of this chapter is specific to telemetry patients. These functions are available only after the Telemetry option has been unlocked by your Biomed.

Telemetry Alarm Setup	6
Telemetry Arrhythmia Setup	6
The Patient View Menu	6
Configuring a Patient's Display Setup	6
Selecting Leads for QRS Processing	6
Turning the Pacemaker Detection On/Off	6
Turning MICRO2 On/Off	6
Restoring System Defaults	6
The ST Setup Menu	6
The ST Measuring Points Setup Menu	6
The Transmitter Setup Menu	6
Programming the Transmitter	6

Overview

In BEDVIEW you can

- access a remote view of an individual patient's monitor
- view the data of an individual telemetry patient (provided the telemetry option has been unlocked).

The BEDVIEW display constantly updates patient data, immediately reflecting changes in configuration or signal availability from the bedside monitor or the telemetry transmitter. If a signal is unavailable, the corresponding menu selection is grayed out.

If the telemetry option is unlocked, you can customize the individual telemetry patient channels and temporarily supersede system defaults until you discharge a patient or request that the system defaults be restored. However, you can perform these setup functions for *local* telemetry patients (at MULTIVIEW WORKSTATION where the patient was admitted). If you are viewing a telemetry patient from a remote MULTIVIEW WORKSTATION, you can view but not change any setup functions.

You can view patients that are currently displayed in CLINICAL VIEW as well as any other patient that is advertised on the LOCAL NETWORK.

In addition to viewing data, you can perform numerous other setup functions. Depending on whether or not a patient is with the monitoring unit of the MULTIVIEW WORKSTATION, the availability of these functions differs (see the following table).

Function	Patient WITHIN the monitoring unit	Patient OUT-SIDE the monitoring unit
Relearn ECG	Yes	No
Request a timed recording	Yes	No
Silence an alarm	Yes	No
Setup alarm limits	Yes	No
Setup arrhythmia events	Yes	No
Admit a patient	Yes	No
Edit patient demographic information	Yes	No
ST Setup and measuring points	Yes	No
Request a print screen of the BEDVIEW window	Yes	Yes
Stop waveforms	Yes	Yes
Review trend graphs and the trend table	Yes	Yes
Review alarm limits	Yes	Yes
Review the arrhythmia event setup	Yes	Yes
Review the patient's demographic information	Yes	Yes
Review Full Disclosure Data (if Client option is unlocked)	Yes	Yes
Review Event Disclosure Data (if Client option is unlocked)	Yes	Yes

Accessing a Patient's BEDVIEW

The BEDVIEW function allows you to view any patient on INFINITY NETWORK directly at the MULTIVIEW WORKSTATION, whether the patient is currently displayed in CLUSTERVIEW or not.

Steps: Viewing a Patient Displayed in CLUSTERVIEW

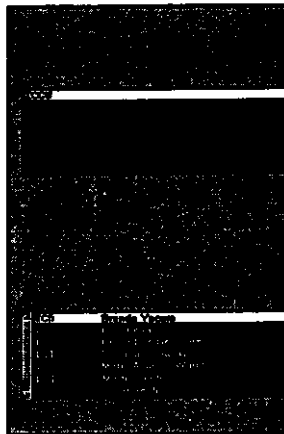
- Click on the patient's parameter area in CLUSTERVIEW



NOTE: Click different parameter areas in succession to perform "electronic rounds". In the 16x1 split screen, electronic rounds are not possible.

Steps: Viewing a Patient not Displayed in CLUSTERVIEW

- Click on the **View** button on the CLUSTERVIEW menu bar.
- Click on the **Bed...** menu selection. Two list boxes appear: one to select the Care Unit on the network and one to select the desired patient within the selected Care Unit.
- Click on the desired Care Unit in the upper list box. The list of patients changes to reflect available patients within the selected Care Unit. Use the scroll bars to scroll through the available patients.
- Click on the desired patient in the lower list box. The list box displays the bed/channel label, patient name, and status (disconnected, standby, offline etc.) for all patients within that particular Care Unit.
- Click on the **Continue** button to view the selected patient on the **Main Screen** button to return to CLUSTERVIEW.

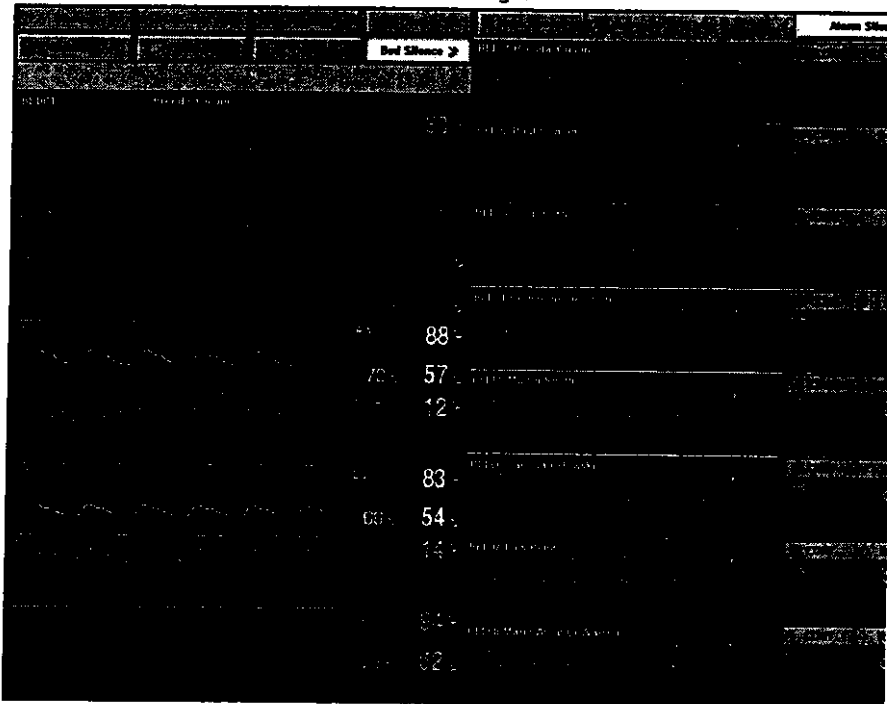


BEDVIEW Main Screen

The **BEDVIEW** main screen displays up to eight waveform channels and up to eight parameter areas for the selected patient.

Depending on the source, the displayed parameters either originate at the bedside monitor or are transmitted via a Telemetry transmitter. The **BEDVIEW** window occupies the left half of the screen while the **CLUSTERVIEW** remains visible on the right side. You can, therefore, still observe the status of all other assigned patients while you are in an individual patient's **BEDVIEW**. The **BEDVIEW** main screen also provides access to all other **BEDVIEW** menus which allow you to view additional data and customize the patient's setup.

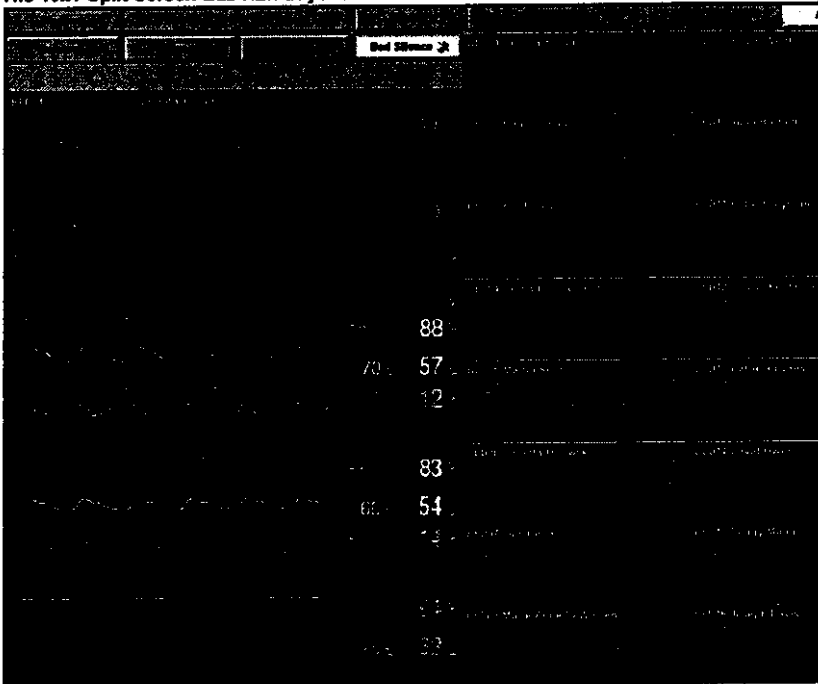
BEDVIEW Main Screen with **CLUSTERVIEW** on the right



NOTE: Cascaded ECG and Neonatal OxyCRG waveforms are displayed. Also, if there are not enough parameters to fill available parameter slots at the **MULTIVIEW WORKSTATION**, the remaining parameter slots appear blank.

Patient Setup - Bed

The 16x1 Split Screen BedVIEW Layout



NOTE: In the 16x1 format you cannot request recordings cannot perform 'electronic rounds'. However, alarm messages are displayed, although they may overlap the patient name.

Click on the **Main Screen** button to exit any **BEDVIEW** and return to **CLUSTERVIEW**.



Waveform Assignment

For SC 9000 Monitors

The BEDVIEW main screen reflects all possible main screen layouts on an SC 9000 monitor. For example, if the SC 9000 displays parameter areas in a waveform channel, they are displayed identically in BEDVIEW.

For SC 6000 Series Monitors

The BEDVIEW main screen for an SC 6000 series monitor displays the waveforms and parameters of the two display channels in the top two channels of the BEDVIEW main screen. Remaining parameters are assigned to the remaining parameter fields in the BEDVIEW main screen from left to right.

For Telemetry Patients

You can assign each of the eight available BEDVIEW waveform channels specific parameters and waveforms (see page 6-32 for detailed information). The availability of the displayed waveforms depends on the ECG configuration mode (3 or 5 lead) of the transmitter assigned to a particular patient channel.

Layout of the BEDVIEW Main Screen

All BEDVIEW main screens are divided into several areas are described below.

The Menu Bar

The BEDVIEW menu bar is located across the top of the B main screen and contains the following buttons:

BEDVIEW menu bar



- **Review** allows you to access a patient's **trends** (see 13, *Trends*), **Full Disclosure data** see chapter 14, *Full Disclosure (Option)* or **Event Disclosure data** (see chapter 14, *Event Disclosure (Option)*).
- **Setup** provides access to the Arrhythmia submenu (see 8-6) and the Alarm Limits submenu (see page 11-18, *Setting Alarm Limits*). When the Telemetry option is enabled, the **Setup** button also provides access to the **Telemetry Setup** button for the configuration of telemetry functions (see 6-23, *Telemetry Patient Setup* for detailed information).
- **Admit** provides access to the Admit window from which you can admit a patient to the bedside monitor and edit existing demographic data at the bedside monitor from the MultiView WORKSTATION (see chapter 7, *Admit/Discharge*).
- **Help...** provides access to the Online Help function (see chapter 1, *About the MultiView WorkStation*).
- **Main Screen** allows you to return to CLUSTERVIEW.

BEDVIEW Action Buttons

The BEDVIEW action buttons, which are located below the main menu bar, perform frequently-used functions. The following table lists which functions are available for telemetry and/or non-telemetry patients.



NOTE: If any of the buttons appears ghosted, remote control is disabled or that particular function is not available.

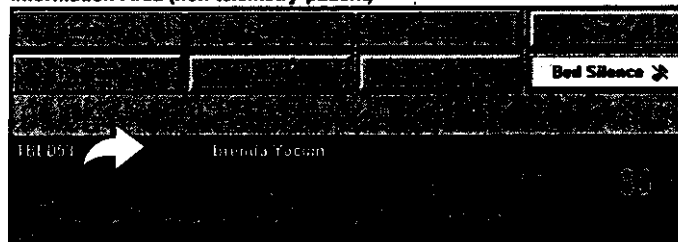


Non-Telemetry Patients	Telemetry Patients	Description
	Relearn	This button activates a pull-down menu with the following two menu selections: Relearn ARR/ST. Click on this button to initiate a remote relearn of the normal ECG waveform template for processing arrhythmias and ST. If arrhythmia monitoring is turned off, this menu selection appears ghosted and you cannot initiate a relearn of the ECG waveforms. Relearn RESP. Click on this button to initiate a remote relearn of the breath detection threshold (only available for non-telemetry patients).
	Record	This button starts a timed recording of waveforms for the selected patient.
	Print	This button initiates a print screen of the BEDVIEW screen on the laser printer (optional). If the button appears ghosted, no printer has been configured yet.
	Bed Silence	This button silences active alarms at the viewed bed for a minute (non-telemetry patients) or active alarms for the selected telemetry patient at the MULTIVIEW WORKSTATION.
	All Alarms Off	This button suppresses any further alarms for that telemetry patient for a predefined amount of time.
	Standby	This button allows you to interrupt monitoring of a telemetry patient. The banner STANDBY is displayed. For local patients who are in standby you can still change the patient setup.
	Save Event	This button allows you to manually store a 20-second waveform at the telemetry patient's MULTIVIEW WORKSTATION server (local or remote - if it is remote, the server's remote control function must be enabled before you can store events remotely).

Information Area

The information area is located directly above the waveform. It is visible even during the display of a BEDVIEW menu; therefore, you can always view alarm and bedside messages.

Information Area (non-telemetry patient)



The information area displays the following information:

- ❖ The **bed label/channel label** and **patient name** appear in white text on the left side of the information area and the bedside monitor/telemetry channel and the patient demographics are available at the bedside monitor).
- ❖ A **telemetry icon** next to the bed label distinguishes a telemetry patient from a non-telemetry patient.
- ❖ The **neonatal patient category label** 'Neonate' appears in the center of the information area to identify a neonatal patient. This label only appears if the corresponding patient category is selected and displayed at the bedside monitor.

- **Bedside/Telemetry Messages and banners** appear on the right side of the information area. For further detail on banners and messages, please refer to the following table.

Message Type	Display Color	Description
Banners		
<i>Code¹ (SC 9000 Only)</i>	Black text on red background	The Code fixed key was pressed.
<i>All Alarms Off (SC 9000 and telemetry only)</i>	Black text on yellow background	Alarms have been turned off for the selected patient.
<i>HR Alarms Off^{2, 3}</i>		HR alarms are turned off.
<i>Bed Disconnected</i>	Black text on white background	The bedside monitor is disconnected.
<i>Standby</i>		The patient has been placed in standby.
<i>Discharge</i>		The patient has been discharged at the bedside monitor.
Local Messages		
<i>Remote Limit Change</i>	Black text on white background	Alarm limits or arrhythmia limits were changed remotely.
<i>Remote Silence</i>		An active alarm has been silenced from a remote location for the particular telemetry patient.
<i>Parameter-specific local messages</i>		Refer to chapter 8, Arrhythmia/ECG Monitoring, for further messages.
<i>Staff alert</i>		Someone pressed the staff alert button on the transmitter.
<i>Transmitter Failure</i>		Technical error
<i>Transmitter No Signal</i>		No signal is received from the transmitter.
<i>Alarm Messages</i>	Color corresponding to alarm grade (refer to the end of each parameter chapter for parameter-specific alarm messages).	
¹ If a code condition is activated at the bedside during an alarm, the banner CODE replaces the alarm message. ² If an alarm occurs while this banner is displayed, the alarm message replaces the banner for the duration of the alarm. ³ This banner appears if no local bedside messages are displayed.		

Waveform Area

Each waveform in **BEDVIEW** consists of approximately 4 seconds of data. For non-telemetry patients, the source monitor determines the waveform colors. For telemetry patients the waveform colors are set as follows:

Parameter	Color
HR	Green
ARR, PVC/min	Green
STx	Green
SpO ₂ and PLS	Blue



NOTE: Waveforms in **BEDVIEW** are always updated at a speed of 25 mm/s, regardless of the selected setting at the monitor.

Adjacent ECG waveforms can extend into the next display panels. Scales and scale bars appear in gray to the left of the waveforms.

The waveform area does not display a waveform under the following conditions:

- the bedside monitor/transmitter is disconnected.
- the patient has been discharged.
- the patient is in standby.
- the bedside monitor is offline.
- the bedside CPS is offline.



Top Waveform Channel

The top waveform channel of the BEDVIEW main screen (see illustration on page 6-6, *BedView Main Screen*) is reserved for the following information:



- The **Bedside Alarm Volume OFF Icon** appears in the lower right corner of the top waveform channel. This icon is displayed whenever the alarm volume has been turned off at the bedside monitor.

- The message **PACER OFF** appears in the lower left corner of the top waveform channel when pacer detection is turned off at the bedside monitor.

- The message **WAVE(S) STOPPED** (see the following page) appears in white text at the bottom of the top waveform channel when waveforms have been stopped.

Stopping Waveforms

You can stop all waveforms for a displayed patient by clicking anywhere in the waveform area. Stopping waveforms for patient in **BEDVIEW** does not stop them in **CLUSTERVIEW** vice versa. Stopping waveforms has the following consequences:

- the banner **WAVE(S) STOPPED** is displayed at the bottom of the top waveform channel.



- the **Record** button is ghosted, indicating that you can request manual recordings while waveforms are stopped.

Parameter values and banners continue to update. If an alarm occurs while waveforms are stopped, alarm messages are displayed instead.

To restart waveforms, click inside the waveform area again. Previously displayed waveforms are erased and replaced with waveforms that reflect the most recent data.



Putting a Patient into Standby

You can temporarily interrupt a patient's monitoring session by placing him/her into standby. However, at the **MULTIVIEW WORKSTATION** you can only put telemetry patients in standby (non-telemetry patients must be put in standby at the bedside monitor).



NOTE: You can always put a *local* telemetry patient in standby; however, for a *remote* telemetry patient it is only possible if the remote control function has been enabled (see chapter 4, page 4-4). A local patient is one who is being monitored by the **MULTIVIEW WORKSTATION** where s/he was admitted.

Whenever you place any patient into standby, the banner **STANDBY** is displayed in the patient's waveform channel.

During an active standby, you can view all of the patient's stored data such as trends and configuration settings from any **MULTIVIEW WORKSTATION** client. If you are at a **MULTIVIEW WORKSTATION** server and remote control is enabled, you can even change the patient setup (e.g. alarm setup).

Steps: Putting a Telemetry Patient into Standby

1. Access the telemetry patient's **BEDVIEW**.
2. Click on the **Standby** button. This button remains selected until the patient comes out of standby.



NOTE: To resume monitoring of a patient who is in standby, click on the **Standby** button again.

Patient Setup - Bed

The following happens when you put a patient into standby:

- waveforms continue to be displayed, if available.
- parameter values are no longer displayed although the parameter labels are still visible.
- the banner **STANDBY** appears in **CLUSTERVIEW** and in the patient's **BEDVIEW** in the upper right corner of the top form channel.
- all recordings are canceled and the recording function is disabled.
- all active and latched alarms become inactive.



NOTE: Once a patient comes out of standby, any previous active and latched alarms are treated as new alarms (see chapter *Alarms*).

- the alarm silence and all **Alarms OFF** (telemetry only) buttons are disabled.
- the buttons **Save Event**, **Bed Silence**, and **All Alarms Off** appear ghosted.
- blank spaces are added to the trends for the duration of the patient's standby.

Parameter Areas in BEDVIEW

Each waveform channel in BEDVIEW has an associated parameter area which displays a variety of information such as the parameter value and the parameter's alarm state. As the following table illustrates, the amount of information may differ slightly between non-telemetry and telemetry patients.

Displayed Information	Non-Telemetry Parameter Area	Telemetry Parameter Area
Parameter values	HR, ARR, PVC/min, ST, SpO ₂ , and PLS	
Alarm limits	Displayed only if available at the bedside monitor	Always displayed.
Crossed bells when alarms are disabled	Crossed bells when alarms are disabled	Crossed bells when alarms are disabled

Parameter Allocation

For telemetry as well as non-telemetry patients, each parameter area may contain one of the following:

- One single-valued parameter such as HR
- up to two single-valued parameters such as temperature
- one dual-valued parameter such as SpO₂ and PLS
- one triple-valued parameter such as pulsatile pressure

Patient Setup - Bed

Parameter Area Display Colors

For non-telemetry channels, the colors of the parameters those of their associated waveforms at the bedside monitor. For telemetry patients, the colors are defined in the following table.

If displayed at the bedside monitor, alarm limits are also displayed in gray in the BEDVIEW parameter areas. For telemetry patients, alarm limits are always displayed.



NOTE: If parameter units are displayed at the bedside monitor, they are also displayed in the corresponding BEDVIEW parameter areas in the color of the waveform.

Non-Telemetry Channels		Telemetry Channels	
Parameter Labels/Units	Color	Parameter Labels/Units	Color
HR	Matching the color of the associated waveform at the bedside monitor	HR	Green
ARR, PVC/min		ARR, PVC/min	Green
STx		STx	Green
SpO ₂ and PLS		SpO ₂ and PLS	Blue
Alarm Limits	Color	Alarm Limits	Color
HR	Gray (provided the limits are displayed at the bed)	HR	Gray
ARR, PVC/min		ARR, PVC/min	
STx		STx	
SpO ₂ and PLS		SpO ₂ and PLS	



BEDVIEW Review Menus

The BEDVIEW Review menus allow you to access a patient's Trends and, if the corresponding options are unlocked, Full Disclosure, and Event Disclosure data. Because the Review menu are so extensive, they are each described in a separate chapter.

Accessing a Patient's Trends

1. Access the patient's BEDVIEW.
2. Click on the **Review** button.
3. Click on the **Trend Graphs...** menu selection

or

Click on the **Trend Table...** menu selection (see chapter 1 *Trends* for detailed information).

Reviewing a Patient's Full Disclosure Data (optional)

1. Access the patient's BEDVIEW.
2. Click on the **Review** button.
3. Click on the **Full Disclosure...** menu selection. Refer to chapter 14, *Full Disclosure (Option)* for more information

Reviewing a Patient's Event Disclosure Data (optional)

1. Access the patient's BEDVIEW.
2. Click on the **Review** button.
3. Click on the **Event Disclosure...** menu selection. Refer to chapter 15, *Event Disclosure (Option)* for more information.



NOTE: If the Event and/or Full Disclosure option(s) are not unlocked, the corresponding buttons appear ghosted.

BedView Setup Menus

The BEDVIEW application provides access to two setup menus for customizing a patient's alarm or arrhythmia monitoring attributes. The Alarm Limits and Arrhythmia tables mirror entries in the corresponding tables at the respective bedside monitor, which dictates the possible choices. For telemetry patients, please refer to page 6-23, *Telemetry Patient Setup*.



NOTE: The MULTIVIEW WORKSTATION only sends changes to a particular row of a setup table after you click on the OK button.

When the bed acknowledges that it is being remotely configured, a message is displayed in the local message area at the bedside monitor. When the bed has successfully processed the change, the setup tables at the bedside monitor and at the MULTIVIEW WORKSTATION reflect the change.

If the bed is unable to receive or process a change in setup, the following happens:

- the table entry returns to the previously saved value.
- a corresponding status message is displayed in the status area of the MULTIVIEW WORKSTATION (chapter 5, *Clustered Status Messages* for a detailed list of status messages).
- an attention tone sounds.

To exit a setup table and return to the BEDVIEW main screen, click on the **Exit** button in the BEDVIEW window.

Alarm Setup

You can configure each parameter's alarm setup in the Setup Alarm Table. Please refer to chapter 11, *Alarms*, in particular the sections outlined in the following table for detailed information on how to configure the various alarm setup functions.

Alarm Setup Function	Reference
Assigning an alarm grade to a parameter	see chapter 11, page 11-5
Setting alarm limits	see chapter 11, page 11-18
Turning all alarms on/off	see chapter 11, page 11-16
Turning alarm recordings on/off	see chapter 11, page 11-21
Turning alarm storage on/off	see chapter 11, page 11-26

Configuring a Patient's Arrhythmia Setup

You can also configure each event's arrhythmia setup in the Set Arrhythmia Table. Please refer to chapter 8, *Arrhythmia/ECG Monitoring*, in particular the sections outlined in the following table, for detailed information on how to configure the various arrhythmia setup functions.

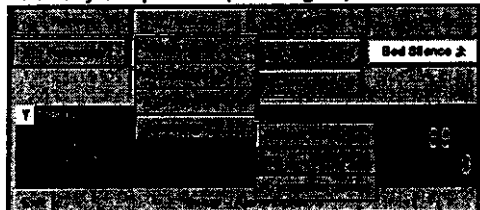
Arrhythmia Setup Function	Reference
Assigning an alarm grade to an event	see chapter 8, page 8-8
Setting the rate	see chapter 8, page 8-10
Setting the count	see chapter 8, page 8-11
Turning event recordings on or off	see chapter 8, page 8-12
Determining the level of arrhythmia monitoring	see chapter 8, page 8-7

Telemetry Patient Setup

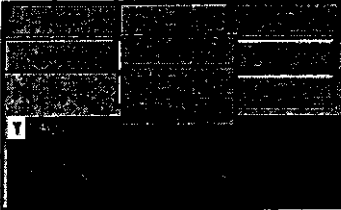
As soon as the Telemetry option is unlocked (see page 17), you can customize the individual telemetry channels according to your patients' needs. These patient settings temporarily supersede the system defaults (see chapter 4, *Telemetry System Setup*). When you discharge the patient or request manually that the system defaults are restored.

With the Telemetry option unlocked, the BEDVIEW Setup down menu includes the **Telemetry ▶** menu which includes several submenus (see following illustration):

Telemetry Setup Menu (Including ST)



Setup Menu without Telemetry



Telemetry Alarm Setup

Once the Telemetry option is unlocked, you can customize a telemetry patient's alarm setup functions such as alarm limits and the alarm recording function in the Alarm Limits menu. The procedure(s) for configuring a telemetry patient's setup is the same as for any non-telemetry patient with the addition of the parameters SpO₂, PLS, and ST. Please refer to the following pages for information on how to configure the various functions.

Alarm Setup Function	Reference
Turning all alarms on or off	see chapter 11, page 11-16
Setting alarm limits	see chapter 11, page 11-18
Turning alarm recordings on or off	see chapter 11, page 11-21
Alarm limit selection for all parameters (autoset)	see chapter 11, page 11-20

Telemetry Arrhythmia Setup

The process of configuring the individual arrhythmia events is basically the same for telemetry and non-telemetry patients. In both cases you setup each event in the Setup Arrhythmia menu. Please refer to chapter 8, *Arrhythmia/ECG Monitoring*, in particular the sections outlined in the following table for detailed information on how to configure the various arrhythmia setup functions for a telemetry patient.

Arrhythmia Setup Function	Reference
Assigning an alarm grade to an event	see chapter 8, page 8-8
Setting the rate	see chapter 8, page 8-10
Setting the count	see chapter 8, page 8-11
Turning event recordings on or off	see chapter 8, page 8-12
Turning event storage on or off	see chapter 8, page 8-17
Determining the level of arrhythmia monitoring	see chapter 8, page 8-7

The Patient View Defaults Menu

This Telemetry menu allows you to customize the following telemetry functions for *local* channels only (a local patient is one who is being monitored by the MULTIVIEW WORKSTATION when s/he was admitted):

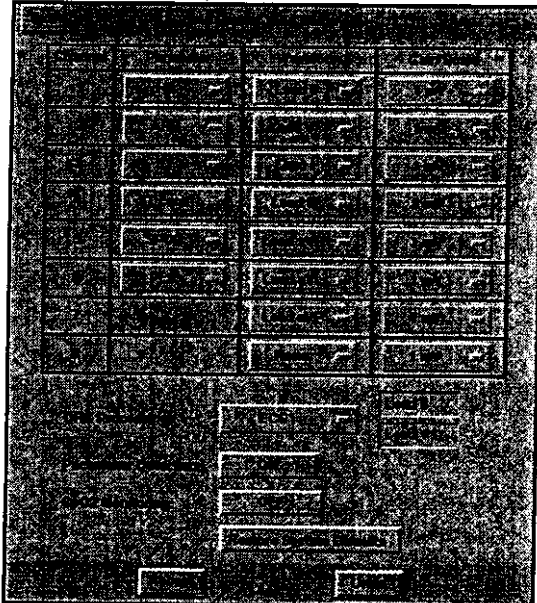
- select QRS processing
- turning pacer detection on/off
- turning SpO₂ monitoring on or off
- selecting the lead order for display
- restoring the system defaults



NOTE: For remote channels these menu selections appear grayed out and are therefore not selectable.

Any changes in any of these menus supersede the system setup until the patient is discharged at which point the system defaults are restored for that channel or until you select the **Restore System Defaults** button (see page 6-32).

The Patient View Setup Menu



Patient Setup - Be

Configuring a Patient's Display Setup

The upper portion of the Patient View menu (see illustration on previous page) consists of a table representing 8 available channels. You can customize each *local* channel's following attributes:

- parameter assignment** - the availability of parameter depends on the selected monitoring functions. For example, if SpO₂ monitoring is turned off, the parameters SpO₂ and ST are not available to assign to a channel (the same is true for ST). In addition, the availability of arrhythmia event markers depends on the selected arrhythmia monitoring level (OFF, Basic or Full). The availability of the parameters depends on the status of the various functions as the following table illustrates.

Basic Arrhythmia ON	Full Arrhythmia On	ST Monitoring On	SpO ₂ Monitoring On	Available Parameters
Yes	No	No	No	HR, ARR
Yes	No	Yes	No	HR, ARR, S
Yes	No	No	Yes	HR, ARR, S PLS
Yes	No	Yes	Yes	HR, ARR, S SpO ₂ , PLS
No	Yes	No	No	HR, ARR, P
No	Yes	Yes	No	HR, ARR, P min, ST
No	Yes	No	Yes	HR, ARR, P min, SpO ₂
No	Yes	Yes	Yes	HR, ARR, P min, ST, SpO ₂
No	No	Yes	No	HR, ST
No	No	Yes	Yes	HR, ST, SpO ₂

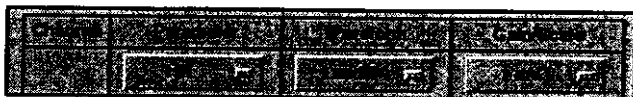


NOTE: If the ST and/or SpO₂ functions are disabled after having been activated *and* their parameters are assigned for the allotted spaces will remain blank until the respective functions are enabled again.

- *waveform assignment* - the availability depends on whether the 3-lead or 5-lead cable type is selected). If the 3-lead mode is selected, only Lead II is available. If the 5-lead mode is selected, the following leads are available for selection: I, III, aVR, aVL, aVF, and V.
- *Amplitude* of the displayed waveform.

Steps: Setting up a Channel

1. Click on the patient's parameter area in CLUSTERVIEW to access the BEDVIEW window.
2. Click on the **Setup** button.
3. Click on the **Telemetry** ► button (if this button is not visible, the Telemetry option must first be unlocked by your Biomed).
4. Click on the **Patient View** button to display the Patient View Setup menu.
5. Click on the table row of the channel you wish to setup. This activates the up/down arrows for that channel.



6. Click on the up/down arrows in the columns labeled "Parameter", "Waveform", and "Gain/Scale" to select the desired settings for that particular channel.
7. Repeat steps 5 and 6 for as many channels as you wish to configure.
8. Click on the **Accept** button to store your selection or on the **Undo** button to revert to the previous setting.



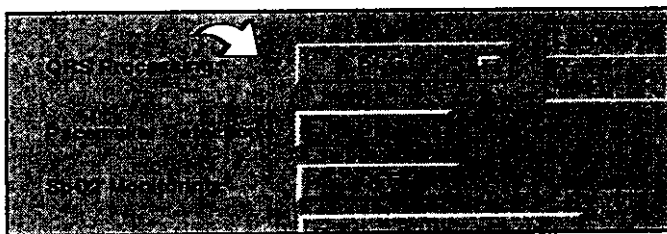
NOTE: If the changes cannot be accepted, the settings return to their previous values, a corresponding message appears in the CLUSTERVIEW status area and an attention tone sounds (see chapter 5, *ClusterView* for a list of status messages).

Selecting Leads for QRS Processing

You can select the processed leads for ECG/Arrhythmia for individual patient.

Steps:

1. Click on the patient's parameter area in CLUSTERVIEW to access the BEDVIEW window.
2. Click on the **Setup** button.
3. Click on the **Telemetry** ► button (if this button is not available, the Telemetry option must first be unlocked by your Biomed).
4. Click on the **Patient View** button to display the Patient View Setup menu.
5. Click on the **ECG/ECG1 & 2** button next to the mention 'QRS Processing' (whenever you click on this button toggles to the opposite value).



6. Click on the **Accept** button to store your selection or **Undo** button to revert to the previous setting.

Turning the Pacemaker Detection On/Off

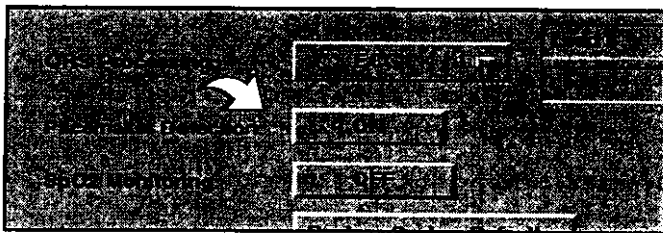
When this function is enabled, a waveform spike is displayed the waveform whenever a pacemaker impulse is detected.



WARNING: Please read the safety considerations listed in the front matter of this User's Guide entitled **Pacemaker and TENS Precautions.**

Steps:

1. Click on the patient's parameter area in **CLUSTERVIEW** to access the **BEDVIEW** window.
2. Click on the **Setup** button.
3. Click on the **Telemetry** ► button (if this button is not visible, the Telemetry option must first be unlocked by your Biomed).
4. Click on the **Patient View** button to display the Patient View Setup menu.
5. Click on the **On/Off** button next to the menu selection "Pacemaker Detection" (the button toggles to its opposite state)



6. Click on the **Accept** button to store your selection or on the **Undo** button to revert to the previous setting.

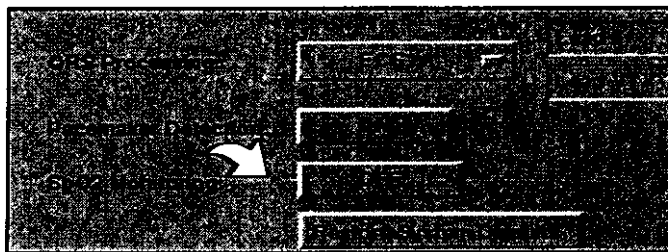
Turning SpO₂ Monitoring On/Off



NOTE: You can only activate or deactivate this function on telemetry channels. For remote channels this menu selection appears ghosted.

Steps:

1. Click on the patient's parameter area in CLUSTERVIEW to access the BEDVIEW window.
2. Click on the **Setup** button.
3. Click on the **Telemetry** ► button (if this button is not available, the Telemetry option must first be unlocked by your Biomed).
4. Click on the **Patient View** button to display the Patient View Setup menu.
5. Click on the **On/Off** button next to the menu selection "Monitoring". The button toggles to its opposite value.



6. Click on the **Accept** button to store your selection or the **Undo** button to revert to the previous setting.

If SpO₂ monitoring is deactivated, OFF is displayed in the parameter field for SpO₂ and PLS (the parameter boxes for SpO₂ and PLS appear blank).

Restoring System Defaults

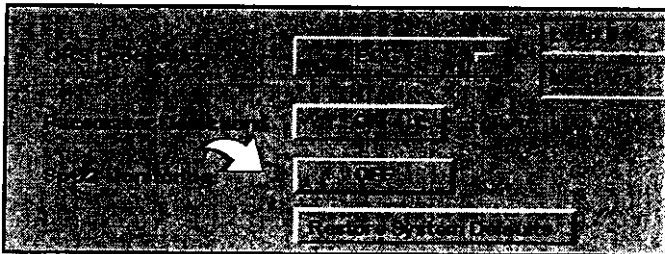


NOTE: You can only restore system defaults for local telemetry channels. For remote channels this menu selection appears ghosted.

Telemetry system defaults are automatically restored when you discharge a patient. However, you can restore these defaults for a telemetry channel at any time.

Steps:

1. Click on the patient's parameter area in **CLUSTERVIEW** to access the **BEDVIEW** window.
2. Click on the **Setup** button.
3. Click on the **Telemetry ▶** button (if this button is not visible, the Telemetry option must first be unlocked by your Biomed).
4. Click on the **Patient View...** button to display the Patient View Setup menu (see illustration on page 6-26).
5. Click on the **Restore System Defaults** button at the bottom of the screen.



6. Click on the **Accept** button to store your selection or on the **Undo** button to revert to the previous setting.

All patient settings revert to the previously defined system defaults (see chapter 4, *Telemetry System Setup* for detailed information).

The ST Setup Menu

The ST Setup menu becomes available as soon as you un
ST option (see page 17-12).



NOTE: The ST... menu selection is not available for rem
telemetry patients.

Please see chapter 10, *ST Segment Analysis (Option)* for
information on how to customize the ST functions for an
ual patient.

The ST Measuring Points Setup Men

This is another ST-related Setup menu that becomes avai
upon unlocking the ST option (see page 17-12). Please se
ter 10, *ST Segment Analysis (Option)* for detailed inform
how to configure the ST measuring points.



The Transmitter Setup Menu

This menu provides not only transmitter setup and status information but also allows you to customize the transmitter according to the patient's needs. Please refer to chapter 2, *About the Transmitter*, for detailed information on how to configure the various functions for *local* telemetry channels. For remote channels, the menu selections appear ghosted and are, therefore, not selectable.

Programming the Transmitter

To program a transmitter to a specific receiver channel, refer to chapter 2, *About the Transmitter*.

7 Admit/Discharge



This chapter describes the Admit function, which enables view, enter, and/or edit demographic information, and also explains how to discharge patients from the MULTIVIEW \ STATION.



NOTE: The Admit/Discharge functions are not available on a \ TION.

- Overview**
- Admitting a Patient**
 - The Patient Admit Window**
- Entering Patient Demographics**
- Admitting Under Special Conditions**
- Discharging a Patient**



Overview

The Admit screen allows you to view, enter, and edit demographic information such as the name, ID #, birth date, etc. for any patient that is advertised on the INFINITY™ network and located within the monitoring unit of the MULTIVIEW WORKSTATION. Although entering demographics is not a prerequisite for monitoring, the data provides helpful information.



NOTE: You must enter a name and ID for a patient's data to be available for admission to the Full Disclosure and/or Event Disclosure application(s).

For telemetry patients all demographic data is stored at their local MULTIVIEW WORKSTATION (a *local* patient is one who is being monitored by the MULTIVIEW WORKSTATION where s/he was admitted). For non-telemetry patients the same information is stored at the bedside monitor. Therefore, you cannot access a non-telemetry patient's demographic data if the bedside monitor has been removed for transport. If the monitor is not communicating with the network, the Admit window appears blank.

Any changes or additions to a patient's demographic data which are performed at the MULTIVIEW WORKSTATION are stored only when you click on the **Accept** button.

To end a patient's monitoring session on the MULTIVIEW WORKSTATION, you must discharge the patient. For non-telemetry patients, the discharge must take place at the respective bedside monitor. For telemetry patients, the discharge must be performed at their local MULTIVIEW WORKSTATION (a remote discharge not possible).

Admitting a Patient

You can access a patient's Admit screen (see illustration 7-4) either from CLUSTERVIEW or from BEDVIEW.

You can always admit, edit, and view local patients; however, you can only perform these functions for remote patients if the control function is enabled at the respective MULTIVIEW STATION. If remote control is disabled, you cannot interact with the Admit screen except for viewing the data (in addition, the 'Category' field of the Admit screen appears ghosted).

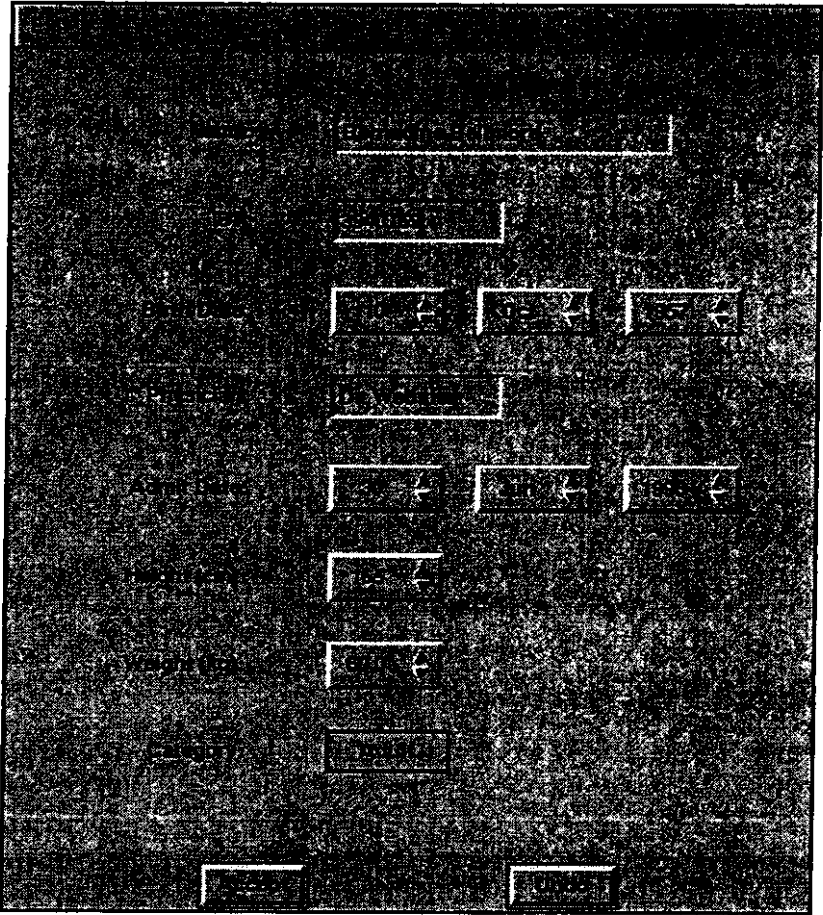
Admission from CLUSTERVIEW	Admission from BEDVIEW
<ol style="list-style-type: none"> 1. Click on the Bed Label/Patient Name Field in the patient's waveform area. You are now in the Admit window. 2. Proceed with editing/viewing the patient's demographic information. 	<ol style="list-style-type: none"> 1. Click on the Admit button in the BEDVIEW menu bar. 2. Click on the Admit... menu selection. 3. Proceed with editing the patient's demographic information.
<p>Note: When you are finished entering or editing the patient's demographic information, click on the Accept button to transmit the changes to the bedside monitor or click on the Undo button to restore all previous settings.</p>	



NOTE: If the bedside monitor was removed for patient transport and the monitor is not communicating with the network, you view, enter or edit demographic data. In this case the Admit screen viewed patient appears blank.



The Patient Admit Window



Entering Patient Demographics

In addition to viewing the demographics, the Admit window (illustration on page 7-4) allows you to enter and/or edit a patient demographic information.

When you enter the Admit window, the **Name** text entry box is preselected and ready for text entry.

You can move to the next text entry box by pressing the **Tab** key on the keyboard or access any other text entry box by clicking inside it.



NOTE: The flashing "I" bar indicates when a text box can accept input.

For entering the height, dates, etc., arrow keys are available. You can scroll to the desired numbers.

To save your changes, transmit them to the bedside monitor. In the case of telemetry patients, store them at the **MULTIVIEW WORKSTATION**, click on the **Accept** button. This closes the Admit window. Any changes pertaining to the patient name are reflected immediately in **CLUSTERVIEW** and **BEDVIEW**.

To cancel your changes and restore all text entry boxes to their previous settings, click on the **Undo** button.

The following table lists the available demographic data selections of the Admit window.



NOTE: To be able to enter information into a text entry box, make sure the pointer is within the boundaries of the Admit window.

Each demographic data selection has unique characteristics and certain restrictions such as length. The following table describes each selection in detail.



NOTE: The flashing "I" bar indicates when a text box can accept text.

Text Entry Box	Possible Settings	Special Consideration
Name	1 to 25 characters	
ID#	1 to 12 characters	
Birth Date	Day-Month-Year format	Click on the up/down arrow buttons scroll to the appropriate settings for each category.
Physician	1 to 12 characters	
Admit Date	Day-Month-Year format	Click on the up/down arrow buttons scroll to the appropriate settings for each category.
Height	<ul style="list-style-type: none"> ☒ 20 to 240 cm (increments of 1 cm) or ☒ 8 to 100 inches (increments of 1 inch) 	Click on the up/down arrow buttons scroll to the appropriate settings.
Weight	<ul style="list-style-type: none"> ☒ 0.0 to 270.0 kg (increments of 0.1 kg) ☒ 0 to 10000 g (increments of 1 g for neonates) ☒ 0 to 600 lb (increments of 1 lb) 	<p>The unit of measure is determined by the bedside monitor.</p> <p>Click on the up/down arrow buttons scroll to the appropriate settings.</p>
Category	Adult or Neonate (For telemetry patients only the setting 'adult' is available)	Obtained from the bedside monitor, cannot be modified.