Central Station

OPERATOR'S MANUAL

Rx Only

MD

CE

NB 2797

Revision D
January 2026
NIHON KOHDEN DIGITAL HEALTH SOLUTIONS | 14 BUNSEN | IRVINE | CA 92618
2026 © NIHON KOHDEN DIGITAL HEALTH SOLUTIONS

About This Manual

In order to use this product safely and fully understand all its functions, read this manual before using the product. Keep this manual near the instrument or in the reach of the operator and refer to it whenever the operation is unclear.

Accompanying Documentation

The Central Station comes with the following manuals. Refer to the manual depending on your needs.

- **Operator's Manual (OM)**
  OM focuses on essential tasks, including those:
  - Necessary for safe use
  - Related to critical functions
  - That may result in use error or harm if misunderstood
- **Administrators Guide (AG)**
  AG provides detailed instructions for configuring and managing the Central Station, including:
  - In depth instructions on all features
  - All configurations that require a password
- **Installation Instructions (II)**
  II provides detailed instructions for installing the Central Station.

Copyright Notice

The entire contents of this manual are copyrighted by Nihon Kohden. All rights are reserved. No part of this document may be reproduced, stored, or transmitted in any form or by any means (electronic, mechanical, photocopied, recorded, or otherwise) without the prior written permission of Nihon Kohden.

This product stores personal patient information. Manage the information appropriately.

Patient names on the screen shots and recording examples in this manual are fictional and any resemblance to any person living or dead is purely coincidental.

The contents of this manual are subject to change without notice. If you have any comments or suggestions on this manual, please contact us at: https://www.digitalhealthsolutions.com/

Rx Only

Federal law restricts this device to sale by or on the order of a physician.

1 General 5
1.1 Intended Use/Indications for Use 5
1.2 Intended Users 5
1.3 Warnings/Cautions 5
1.4 Lifetime 6
1.5 Operational Restriction 6
1.6 Symbols 7
2 Basic Operations 8
2.1 All Beds Screen 8
2.2 Individual Bed Window 9
2.3 Opening the Menu Window 11
2.4 Sound Settings 12
3 Admitting, Discharging, Transferring and Exchanging Patients 13
3.1 Overview 13
3.2 Admitting a Patient 14
3.3 Readmitting a recently discharged patient 15
3.4 Discharging a patient 16
3.5 Pausing monitoring of a patient 17
3.6 Transferring Patient to Another Monitoring Device 18
3.7 Changing the monitoring device (moving data to another monitoring device) 19
3.8 Exchanging two beds 20
4 Alarm and Parameter Functions 21
4.1 Alarm Overview 21
4.2 Alarm Display 22
4.3 Silencing Alarms 23
4.4 Parameter, Scale and Sensitivity Setup 24
4.5 Setting Arrhythmia Alarms 25
4.6 Setting ST Alarms 26
4.7 All Beds Limits Window 27
4.8 All Beds Alarm Events Window 28
5 Reviewing Patient Data 29
5.1 Displaying a review window 29
5.2 Expanded Waveform Pane 30
5.3 Measuring a Waveform with Calipers 31
5.4 Trend Windows 32

5.5 Tabular Trend Window 33
5.6 Full Disclosure Window 33
5.7 Arrythmia Recall Window 34
5.8 ST Recall Window 34
5.9 Event List Window 35
5.10 Alarm Events Window 36
5.11 ECG 12 Lead Analysis Window 36
5.12 Hemodynamics List Window 37
5.13 SpO2 Trend Window 37
5.14 Reviewing Data of Discharged Patients 38
6 Printing and Report Functions 39
6.1 Individual Waveform Printing 39
6.2 All Beds Waveform Printing 39
6.3 Review Window Printing 39
6.4 Report Printing 40
7 Troubleshooting and Error Messages 41
7.1 Troubleshooting 41
7.2 Error Messages 43

1 GENERAL

1.1 INTENDED USE/INDICATIONS FOR USE

Central Station is a network device intended to display, record and print monitored physiological data from Nihon Kohden bedside monitors, telemetry receiver and/or transmitters.

Central Station does not perform any data processing on the data received from the Nihon Kohden compatible devices. When Central Station is to connect with the Nihon Kohden bedside monitors and telemetry receivers/transmitters the Central Station can:

- Admit and discharge patients on the Nihon Kohden network.
- Display and manage compatible devices' real-time patient clinical data, vital signs, alarms and waveforms.
- Review and trend data calculated by connected Nihon Kohden devices.
- Store and transfer historical clinical data for the connected systems.
- Print patient data.

1.2 INTENDED USERS

Central Station is intended for use in professional medical facilities by trained medical personnel.

Patient Target Groups

Central Station is intended for use with patients of all ages who require monitoring of patient data such as vital signs, alarms and waveforms as determined by qualified medical personnel.

1.3 WARNINGS/CAUTIONS

⚠**WARNING**	A warning alerts the user to possible injury or death associated with the use or misuse of the instrument.
⚠**CAUTION**	A caution alerts the user to possible injury or problems with the instrument associated with its use or misuse such as instrument malfunction, instrument failure, damage to the instrument, or damage to other property.

⚠WARNING

Do not diagnose a patient based only on data acquired by the central monitor. Overall judgement must be performed by a physician who understands the features, limitations and characteristics of the central monitor and by reading the biomedical signals acquired by other instruments.

⚠WARNING

Accessing the instructions for use electronically will provide the user with the most recent version. Downloaded and/or paper versions of the instructions for use are only valid on the day of downloading or printing.

Note to Users:
Any serious incident that has occurred in relation to the device should be reported to the European Representative designated by the manufacturer and the Competent Authority of the Member State in which the user and/or patient is established.

1.4 LIFETIME

The software is designed and manufactured to operate safely and effectively for a period of 20 years from the date of first release. During this period, the software's performance and safety characteristics will not be adversely affected to such a degree that the health or safety of the patient, user, or other persons are compromised. Regular software maintenance will be performed per the manufacturers design control and post-market surveillance procedures to ensure continued compliance with safety and performance standards

1.5 OPERATIONAL RESTRICTION

Category	Description
General	• One instance running Central Station per PC. • Can display a maximum of 32 patients.

1.6 SYMBOLS

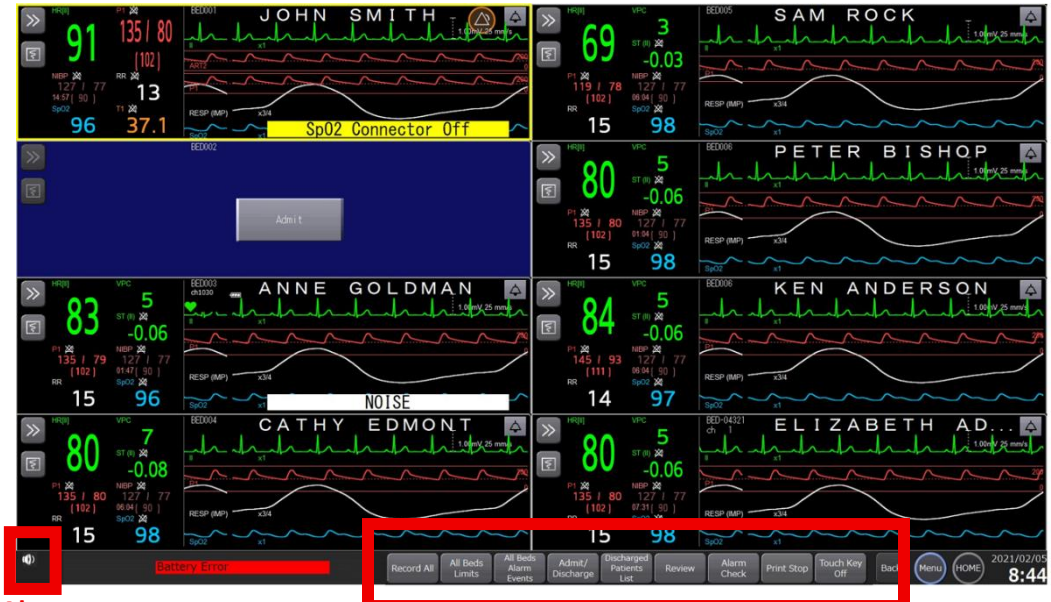
Symbol	Description
	Date of Manufacture
	Manufacturer
Rx Only	Prescription Device
	Silence Alarms Key
	Alarm Silence
	Audio Off
	All Alarms Off/Vital Sign Alarm Limit Off
	Alarms Suspended at the Transmitter
	Alarm Suspended
	Alarm Notice
	Alarm Volume 1 to 3
	Alarm Volume 4 to 6
	Alarm Volume 7
	Warning
	Update Notice
	Printer Error
	Gives additional information and suggestions
	Additional information
[Square brackets]	Indicates a touchscreen key
“Quotation marks”	Indicates a screen message, setting item, etc.

Symbol	Description
	Record
	Print
	Display Onscreen Keyboard
	Enter a Comment
	Display a Comment
	Pause Timer
	ECG Technical Icon – Replace ECG
	SpO2 Technical Icon – Check probe
	QRS/Pulse Sync Icon
	Touch Keys Disabled
	Non-paced
	Change Transmitter Battery[1]
	Remaining Transmitter Battery Level[1]
	Display/close Individual Bed Icon Keys
	Data Output in Progress
	WLAN Transport Icon
	ZM-View
	HiQ-View

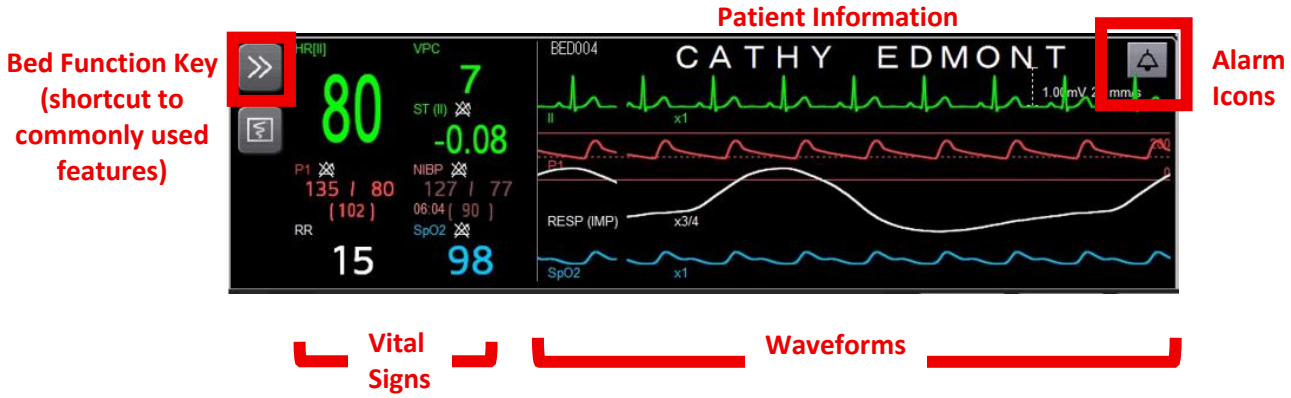
[1] Only available for transmitters with a transmitter battery status display function and setting on the transmitter is required.

2 BASIC OPERATIONS

2.1 ALL BEDS SCREEN



Individual Patient Tile

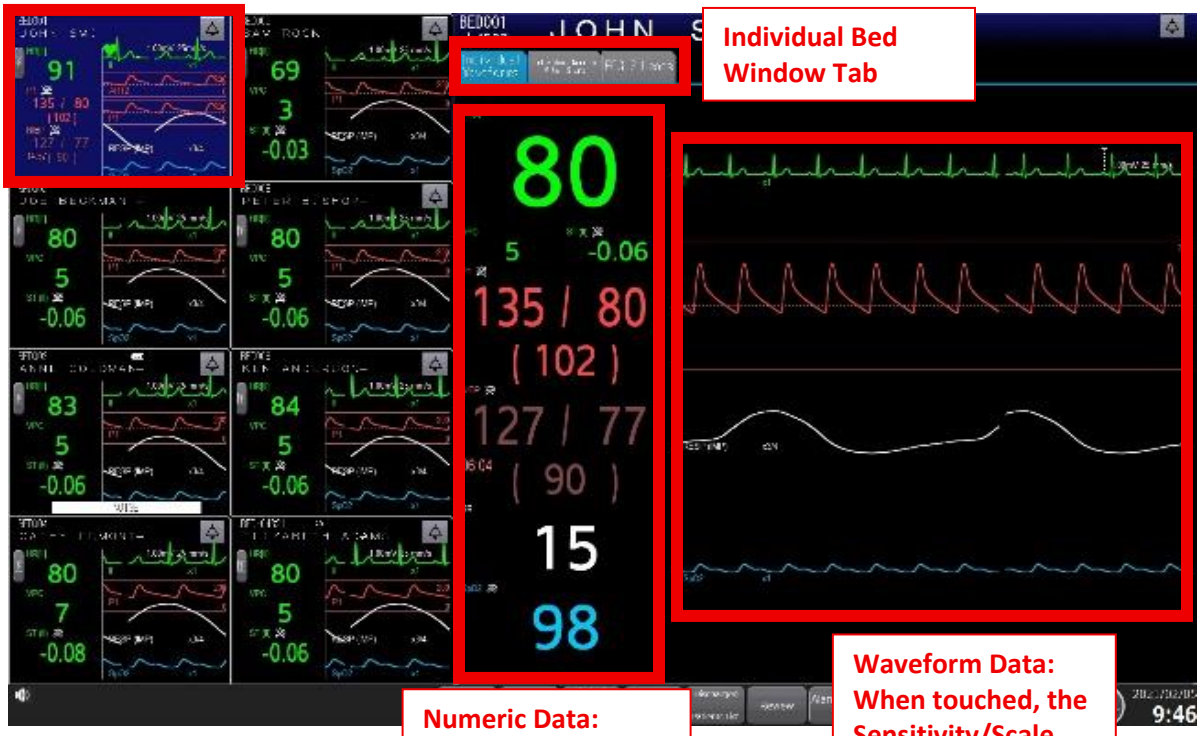


- To go back to the All Beds screen from another screen, touch [HOME] in right lower corner.

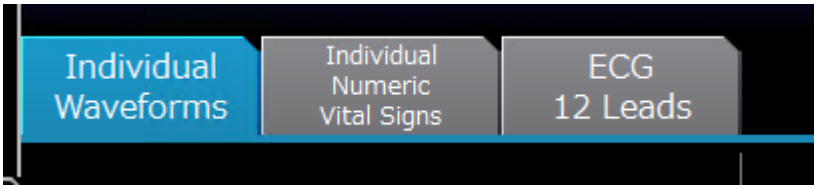
2.2 Individual Bed Window

- To display the Individual Bed Window, touch any patient tile in the All Beds Screen.

Background of displayed patient turns blue



Individual Bed Window Tabs



- Displays alternate views of individual Bed Window

Individual Numeric Vital Signs Window

ECG 12 Leads Window

- On the ECG 12 Leads Window, the following ECG and Numeric Data is displayed:
  - Waveform:
    I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6, V, MCL, ECG1, ECG2
  - Numeric data:
    HR, VPC, ST (I), ST (II), ST (III), ST (aVR), ST (aVL), ST (aVF), ST (V1),
    ST (V2), ST (V3), ST (V4), ST (V5), ST (V6), ST (V), ST (MCL), ST (ECG1), ST (ECG2)

2.3 Opening the Menu Window

1. Touch [Menu] to display the Menu window.
2. The lower part of the Menu window consists of the category icons.

Window Icons: Icons that belong to the category selected below are shown here.

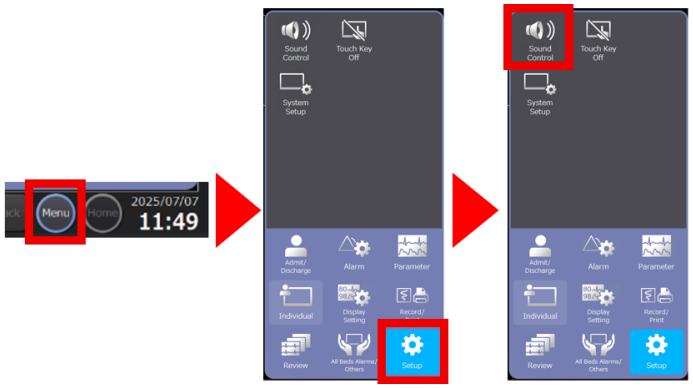
Category Icons: Icons are categorized according to the contents of the windows.

3. Touching a category icon displays the window icons that are associated with the selected category.
4. To close the Menu window, touch [Menu] again.

2.4 SOUND SETTINGS

Sound Settings

1. [Menu] > [Setup] > [Sound Control]



Alarm Volume

⚠CAUTION

Alarm volume cannot be set below the limit defined in the System Setup screen's Alarm Volume Limit setting.

1. Touch the [Alarm] tab on the Sound Control window
2. Set the alarm volume.

Sync Volume

⚠CAUTION

The sync sound at the central monitor has a time delay of 1 to 3 seconds because of network connection.

⚠CAUTION

Central monitor lacks ECG analysis capability. QRS sync sound may not align with actual patient QRS during pacing or complex arrhythmias.

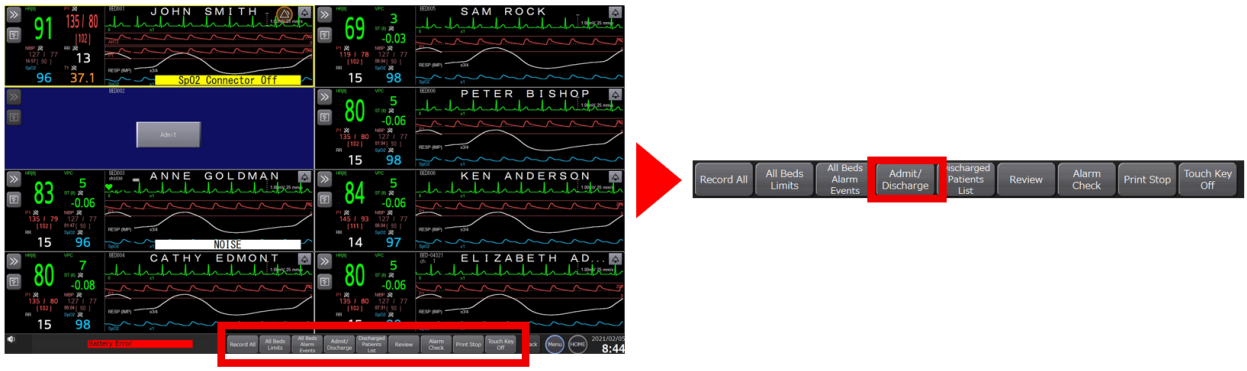
The central monitor cannot perform ECG analysis, causing potential desynchronization of the QRS sync sound during pacing or complex arrhythmias.

1. Touch the [Sync Sound] tab on the Sound Control window
2. Change the settings.

3 ADMITTING, DISCHARGING, TRANSFERRING AND EXCHANGING PATIENTS

3.1 OVERVIEW

Admit/Discharge/Transfer/Exchange functions can be accessed by touching the [Admit/Discharge] Key at the bottom of the screen.



Alternatively, the [Menu] Key can be used to access all Admit/Discharge/Transfer/Exchange functions.

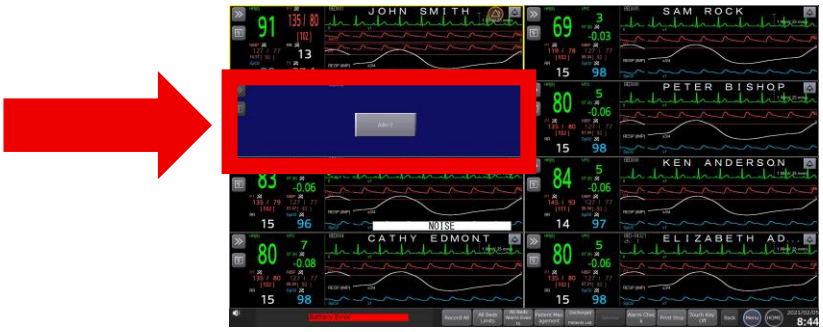
3.2 ADMITTING A PATIENT

⚠WARNING

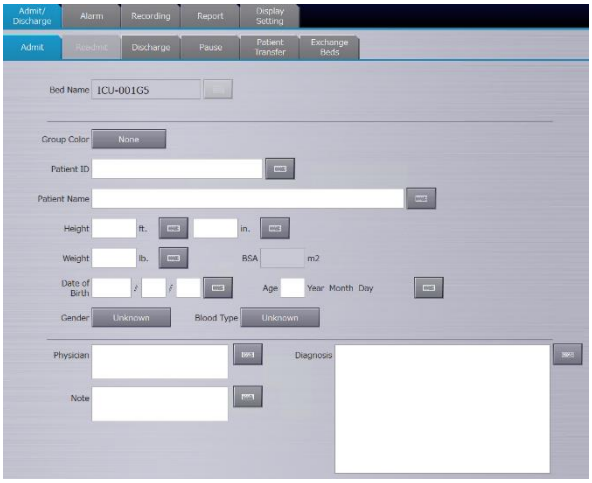
Check the alarm settings when admitting a new patient.

When a patient is admitted on the Central Station, the patient is also admitted on the bedside monitor connected to the patient.

1. Touch [Admit] on the data display area of the bed which the patient is assigned to on the All Beds screen. A message to confirm admitting the patient appears.



2. Check the displayed information and touch [OK]. The Admit window opens.



If there is a [ ] key beside the input field, an on-screen keyboard appears when the key is touched.

3. Touch each input field to enter the patient information or scan patient bar code (if enabled).
4. Confirm that the entered information is correct.

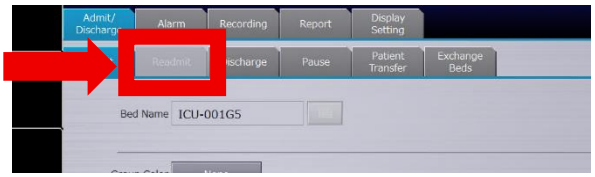
3.3 READMITTING A RECENTLY DISCHARGED PATIENT

You can readmit a patient who was discharged within the past 120 hours. After a patient was readmitted, newly acquired data is added to patient information and review data that was acquired before the discharge.

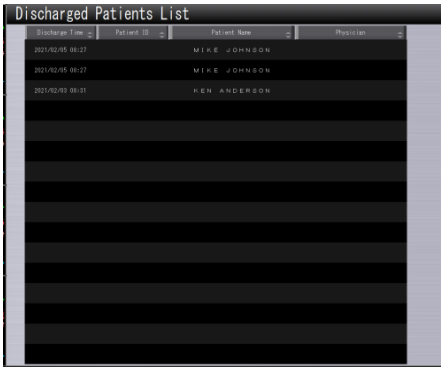
When a patient is readmitted, alarm settings and stored wave settings of review windows are the settings before the patient was discharged.

1. Touch [Admit] on the data display area of the bed to readmit the patient. A message to confirm admitting the patient appears.

2. Touch [Readmit] tab . The list of discharged patients appears.



3. Touch the data of the patient to readmit. The patient information before discharge of the selected patient appears.



4. Confirm that the correct patient is selected by checking the displayed information, and touch [Admit]. A confirmation message appears.
5. Check the message and touch [OK]. The patient is readmitted and monitoring starts.

3.4 DISCHARGING A PATIENT

When a patient is discharged, patient data stored in the central monitor is deleted and monitoring of the patient at the central monitor ends.

1. [Menu] > [Admit/Discharge] > [Discharge]. A message to confirm discharging the patient appears. Check the message and touch [OK].

2. All data of the patient in the selected bed is deleted and alarm settings are returned to the Alarm Master 1 setting.

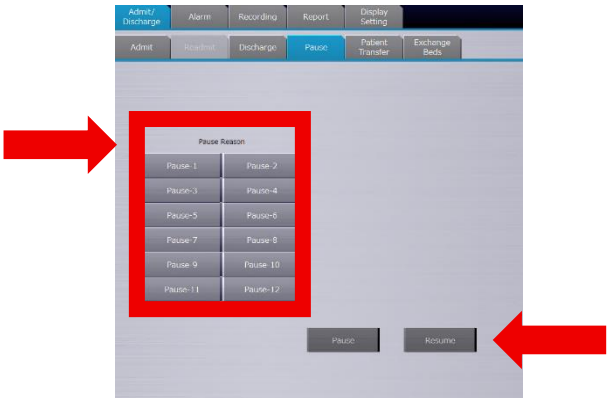
3.5 PAUSING MONITORING OF A PATIENT

When the patient is temporarily away from the bed and no data from that bedside monitor is sent to the central monitor, you can pause monitoring of the patient without deleting the patient data and settings.

The pause function pauses the displaying of measurement values and alarm function without losing patient information and settings. While monitoring is paused, a pause reason is displayed beside the paused bed on the central monitor screen.

1. Select the patient tile
2. [Menu] > [Admit/Discharge] > [Pause].

3. Touch to select a pause reason from “Pause Reasons”.



4. Touch [Pause]. The [This Bed Is Paused] key appears on the data display area of the selected bed. Inside the key, the pause reason is also indicated.
5. To resume paused monitoring, touch [This Bed is Paused] Key

6. Touch [Resume]

3.6 TRANSFERRING PATIENT TO ANOTHER MONITORING DEVICE

⚠CAUTION

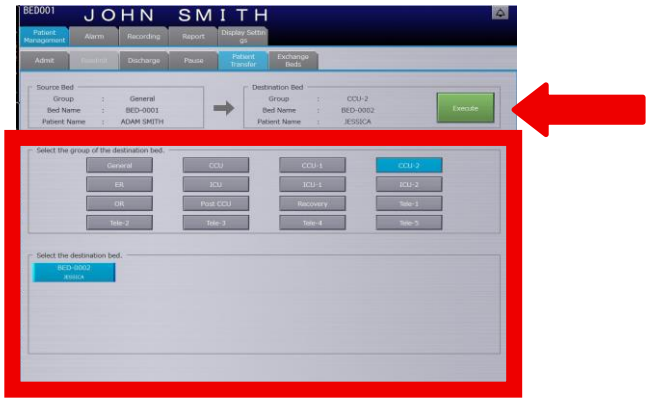
After patient transfer, settings other than patient information and alarm settings are returned to the default settings.

⚠CAUTION

Keep the source bedside monitor and the destination bedside monitor power on and connected to the network until the patient transfer or bed exchange is complete or data may be lost.

1. Select the patient tile
2. [Menu] > [Admit/Discharge] > [Patient Transfer].

3. Select the group of the destination bed and the destination bed.



4. Touch [Execute]. A confirmation message appears. Confirm that the correct source bed and destination bed are selected by checking the patient information items (bed name, patient name, patient ID) of both beds.
5. Touch [Yes].
6. Touch [OK]. The patient is discharged from the source bed and admitted to the destination bed.

3.7 CHANGING THE MONITORING DEVICE (MOVING DATA TO ANOTHER MONITORING DEVICE)

This procedure is only available for a bed whose data is saved in this Central Station.
The bed position for the patient on the Central Station does not change. The measurement data and settings (such as waveform selection) for the bed are kept after the monitoring device is changed.

⚠CAUTION

Keep the source bedside monitor and the destination bedside monitor power on and connected to the network until the patient transfer or bed exchange is complete or data may be lost.

1. Turn on the monitoring device to monitor a patient, then connect the device to the network.
2. [Menu] > [Admit/Discharge] > [Admit].

3. Touch the data area of the bed whose monitoring device you want to change
4. Touch [Change Device]
5. Select the group of the new device.
6. Select the new device in “Select the new device”.

7. Touch [Execute]. A confirmation message appears.
8. Touch [Yes]
9. After the data is transferred to the destination device, a “Change Device: success” message appears.
10. Touch [OK]. The patient is automatically admitted to the destination device.

3.8 EXCHANGING TWO BEDS

⚠CAUTION

Keep the source bedside monitor and the destination bedside monitor power on and connected to the network until the patient transfer or bed exchange is complete or data may be lost.

1. Touch the data area of either of the two beds to exchange.
2. [Menu] > [Admit/Discharge] > [Exchange Beds].

3. Select the group of the bed to exchange with.
4. Select the bed to exchange with in “Select the bed to exchange with”.

5. Touch [Execute]. A confirmation message appears.
6. Confirm that the correct source bed and destination bed are selected by checking the patient information (bed name, patient name, patient ID) of the two exchanged beds. Touch [Yes].
7. After the beds are exchanged, an “Exchange Beds: Success” message appears. Touch [OK].

4 ALARM AND PARAMETER FUNCTIONS

4.1 ALARM OVERVIEW

⚠WARNING

Set the appropriate alarm sound volume according to the environment where the central monitor is used.

When an alarm occurs, the Central Station indicates the alarm as follows according to the alarm level.

- ✓ Alarm sound
- ✓ Alarm indicator blinks or lights for the alarm with the highest level among the currently generated ones.
- ✓ When an alarm with a priority of CRISIS or WARNING occurs, the border of the data display area for the bed where the alarm is occurring lights or blinks.
- ✓ Alarm message is displayed. For vital sign alarms, the numeric data of the parameter is highlighted.
- ✓ When any of the following conditions occur simultaneously with another alarm, the messages are displayed alternately: “ALL ALARMS OFF”, “ALARMS SUSPENDED”, “Change Transmitter Battery”, “Arrhythmia Analysis Off”, “Comfort Care”, “All Alarms Off Comfort Care”.

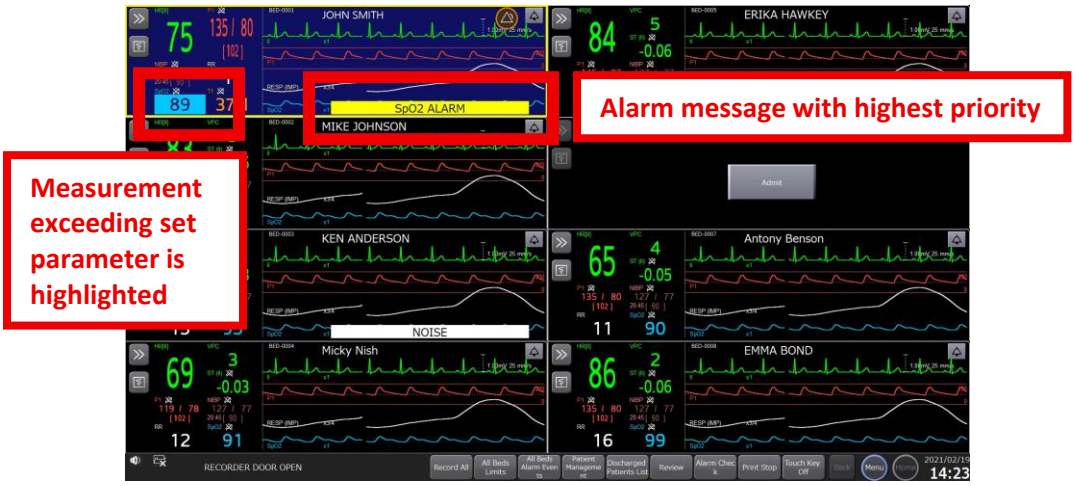
When an alarm is deactivated or suspended or the alarm function is turned off, one of the following icons is displayed on the screen.

Icon	Description
	Indicates that the current alarms are deactivated for a certain period. The remaining deactivation time is also indicated with this icon.
	Indicates that all alarms are suspended for a certain period on a bedside monitor.
	Indicates that the upper or lower ST or other alarm limit or arrhythmia alarm is set to off. This is available only when Limit Alarm Off Mark is set to ON. Indicates that all the alarms are turned off on the bedside monitor.
	Indicates all the alarms are suspended for a certain period on the transmitter.

4.2 ALARM DISPLAY

When different level alarms occur simultaneously, the alarm sounds and the alarm indicator blinks or lights for the highest level alarm.

All Beds Screen



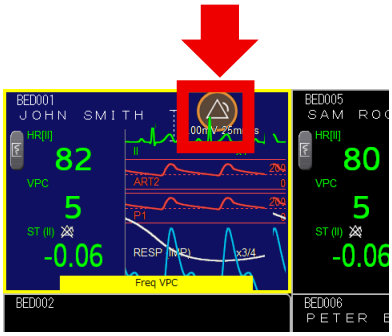
Individual Bed Window

4.3 SILENCING ALARMS

⚠WARNING

When an alarm is silenced at the Central Station, the alarm is also silenced at the monitoring device.
When an alarm is silenced at the monitoring device, the alarm is also silenced at the Central Station.

1 Touch [ ] in the data display area of the bed to silence the alarms.



2 The alarm silence icon ( ) and the remaining minutes are displayed on the bed whose alarms are silenced.

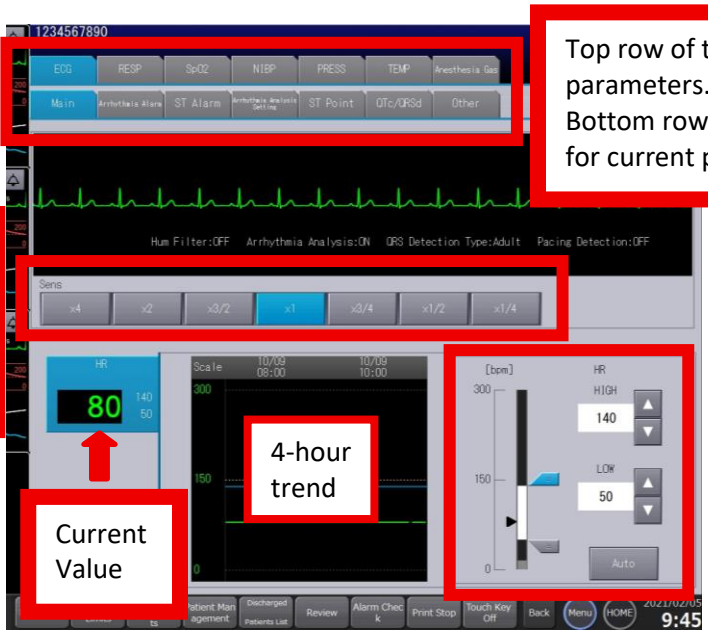
Alarm sound	Alarm sound stops - alarm message remains displayed on the screen.
Screen indication during alarm silence	The alarm silence icon ( ) and the remaining minutes are displayed.
Conditions for alarms to reactivate	• When an alarm different from the silenced alarm occurs • When the cause of the alarm was eliminated temporarily, but reoccurs • When the cause of the alarm continues after the silenced period.

4.4 Parameter, Scale and Sensitivity Setup

1. Select the patient tile
2. Touch [Menu] Key in right lower corner of screen

3. Touch the [Parameter] key

All parameter options will appear. Choosing any of them will open the Parameter Setup Window



Top row of tabs alternates between parameters.
Bottom row of tabs indicates details for current parameter selected.

Touch to change desired sensitivity /scale

4-hour trend

Current Value

Use arrows or slider to change high and low settings.

4.5 SETTING ARRHYTHMIA ALARMS

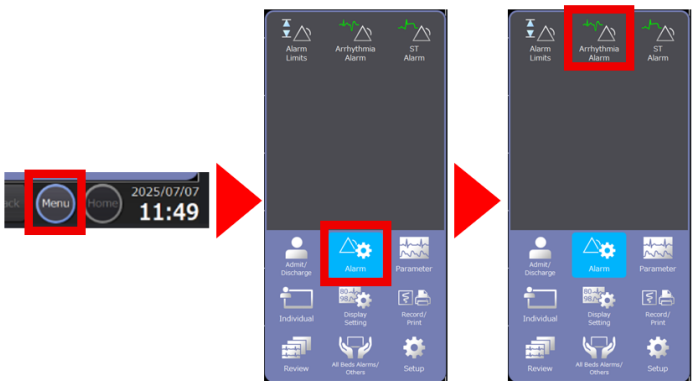
⚠WARNING

For arrhythmia monitoring, set ARRHYTHMIA ANALYSIS to ON. Otherwise, there is no sound or indication for arrhythmia alarms other than ASYSTOLE.

⚠WARNING

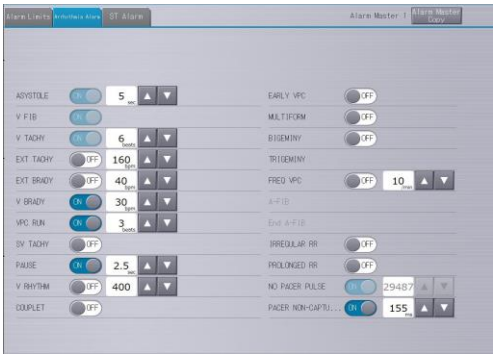
When the alarm is turned OFF for an arrhythmia, there will be no alarm for that arrhythmia type.

1 [Menu] > [Alarms] > [Arrythmia Alarm].



2 Touch the data area of the bed you are going to set alarms for.

3 Set the arrhythmia alarm [ON] or [OFF].

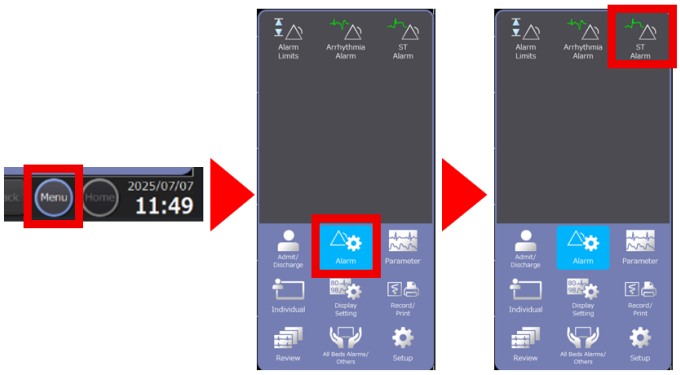


4 Set the detection condition using [▲] or [▼].

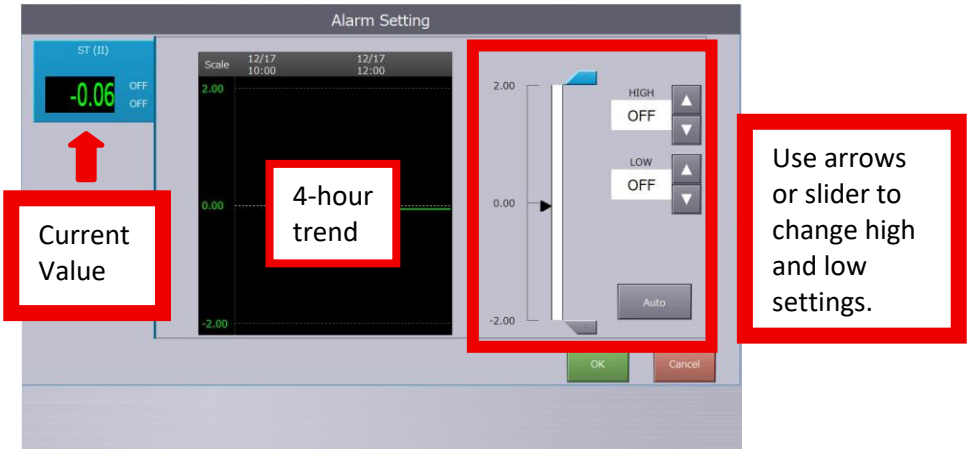
ASYSTOLE, V FIB and V TACHY are fixed to ON.

4.6 SETTING ST ALARMS

1. [Menu] > [Alarms] > [ST Alarm].



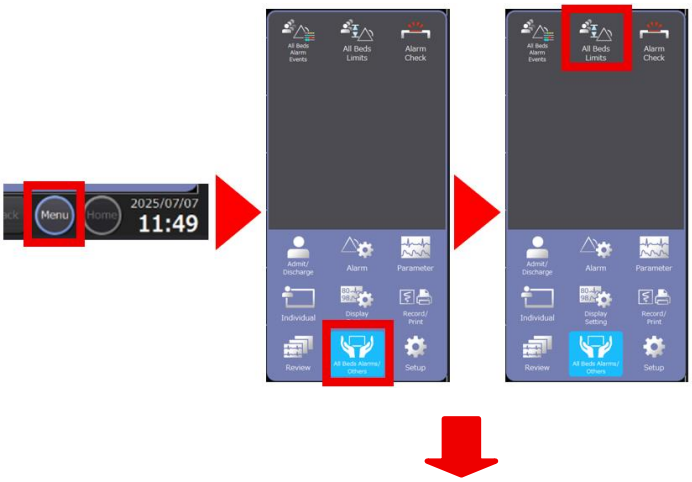
2. Touch the data area of the bed you are going to set alarms for.
3. Touch the parameter key to set the alarm limits. The Alarm Setting window opens.
4. Use the upper/lower limit slide bar to set the alarm limits **OR** Adjust the value by touching [▲] or [▼].



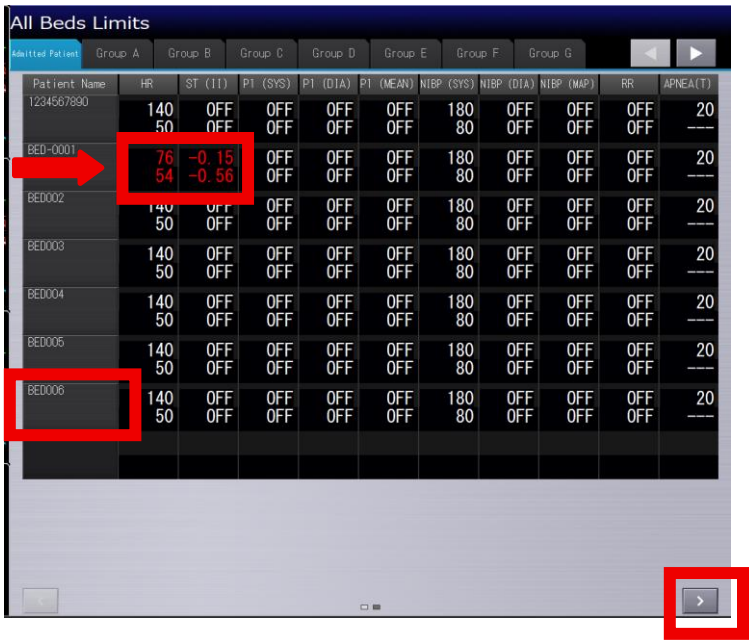
4.7 ALL BEDS LIMITS WINDOW

Displays the alarm limit settings for multiple patients at the same time.

1 [Menu] > [All Beds Alarms/Others] > [All Beds Limits].



Alarm Master settings appear in white. If a limit setting is changed from the Alarm Master setting, the color of the value becomes red.



Touch any bed to display alarm settings window

Scroll to see additional parameters

4.8 ALL BEDS ALARM EVENTS WINDOW

Displays all alarm events for admitted patients on a single window.

The All Beds Alarm Events window displays up to 20 hours of alarm events for multiple patients in the most recent files (up to 10,000 events per patient).

1 [Menu] > [All Beds Alarms/Others] > [All Beds Alarm Events].

5 REVIEWING PATIENT DATA

5.1 DISPLAYING A REVIEW WINDOW

1. Select the patient tile
2. Touch [Menu] Key in right lower corner of screen

All review options will appear. Choosing any of them will open the Review Window

Individual Review Window

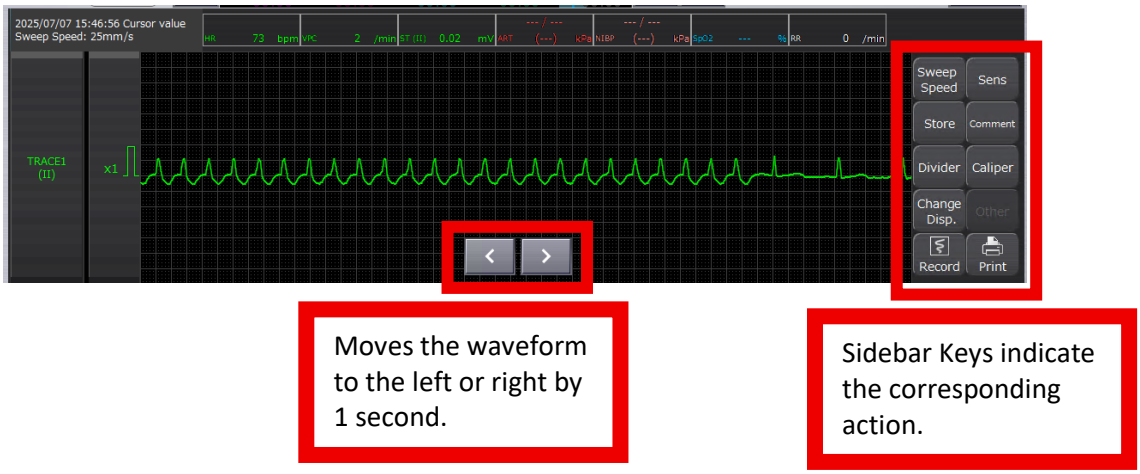
Top row of tabs alternates between review windows. Bottom row of tabs indicates details of review window selected. Use arrows to show additional review windows.

Display Time Scale

Expanded Waveform Pane – shows 10 seconds of the waveform selected in each review window.

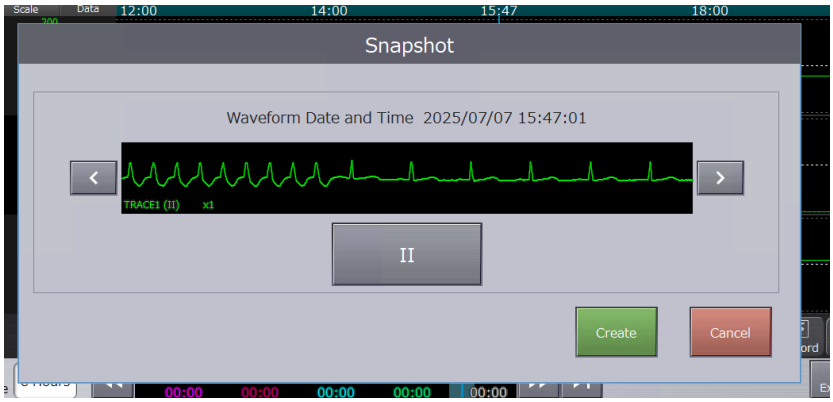
5.2 EXPANDED WAVEFORM PANE

➢ Access by touching [Show Expanded] Key on right lower corner of Review Window



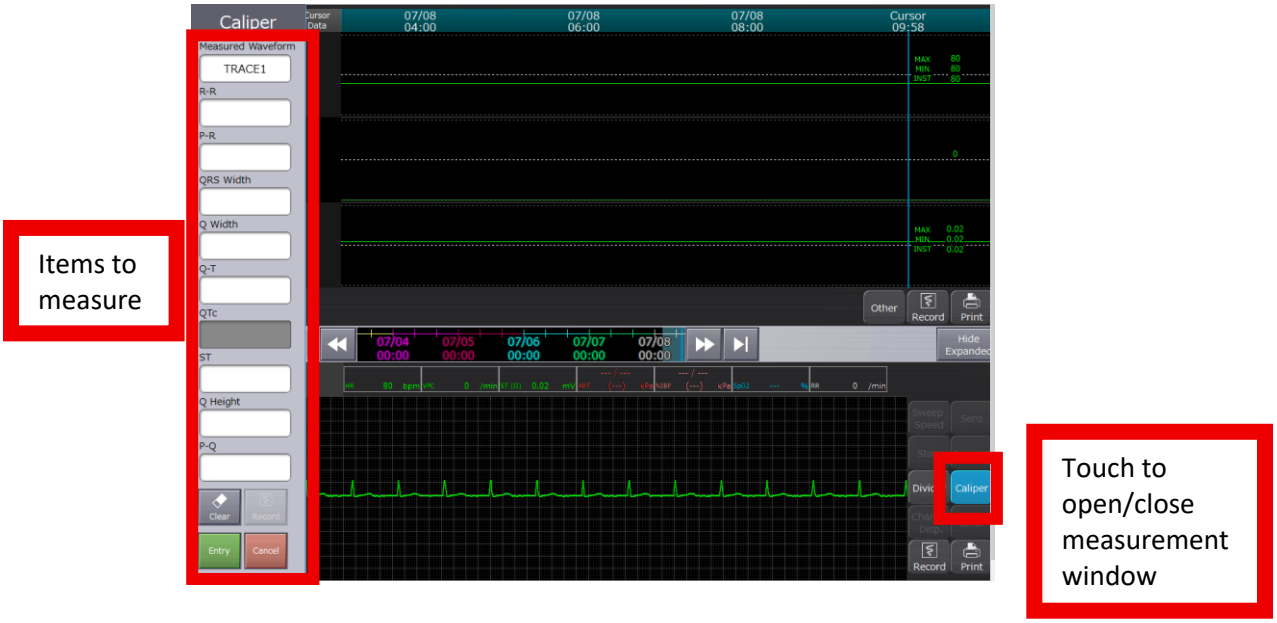
➢ You can create an arrythmia recall file for a selected 8-second segment of ECG

1. Touch [Store] Key on sidebar and Snapshot Window appears
2. Touch [Nothing Selected] Key and choose ECG lead. Use arrows to make adjustments
3. Touch [Create] to create the recall file. The ECG wave of the selected lead is registered in an arrythmia recall file



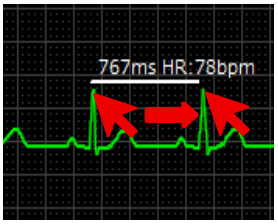
5.3 MEASURING A WAVEFORM WITH CALIPERS

1 Touch [Caliper] on the sidebar. The measurement window opens.



2 Touch the item to measure (R-R, P-R, etc.).

3 Touch desired start and end point on the waveform.



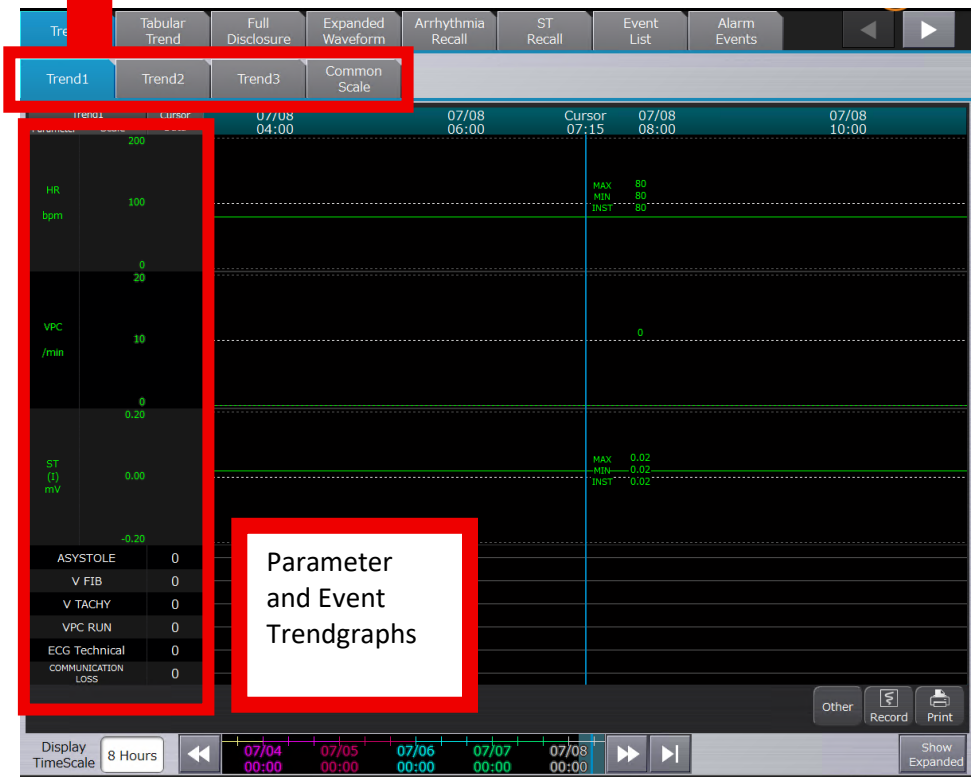
4 Repeat steps 2 and 3 for all desired measurements.

5 Touch [Entry] to register the caliper measurement value to the event list.

5.4 TREND WINDOWS

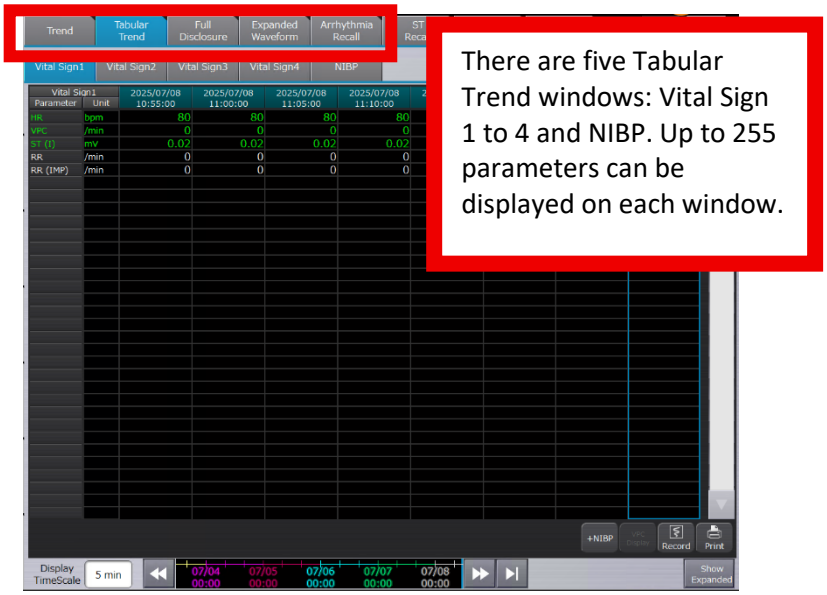
The Trend windows show measured parameter values and events of the most recent 120 hours as trendgraphs.

Window Name	Number of Parameters Displayed	Number of Events Displayed
Trend 1	3	6
Trend 2	3	6
Trend 3	7	3
Common Scale	4	3



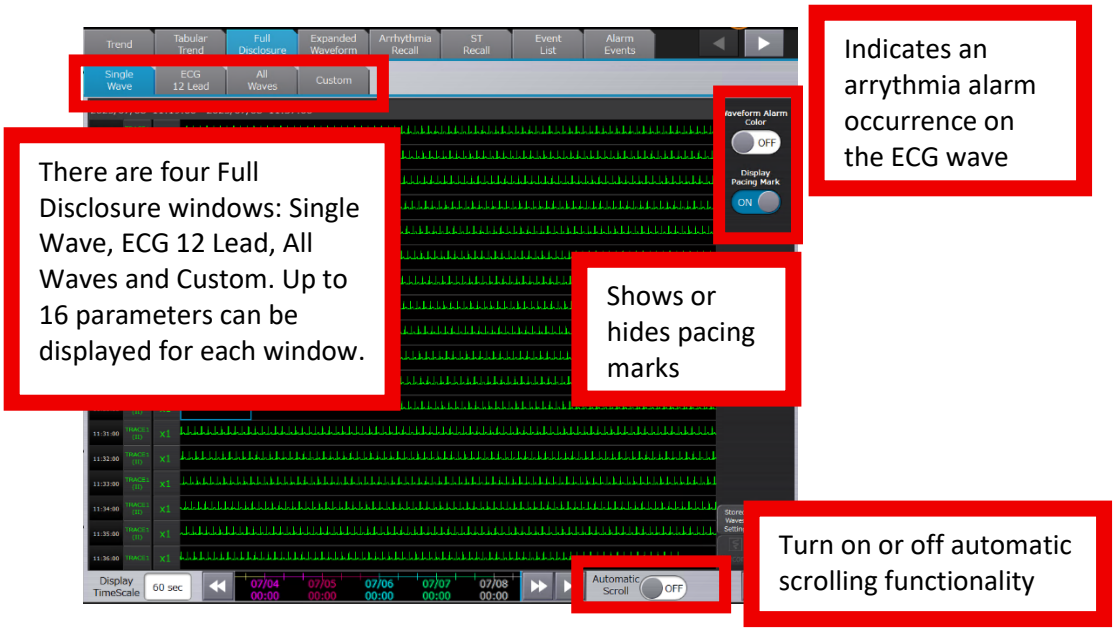
5.5 Tabular Trend Window

The Tabular Trend windows show measured parameter values of the most recent 120 hours as a tabular trend.



5.6 Full Disclosure Window

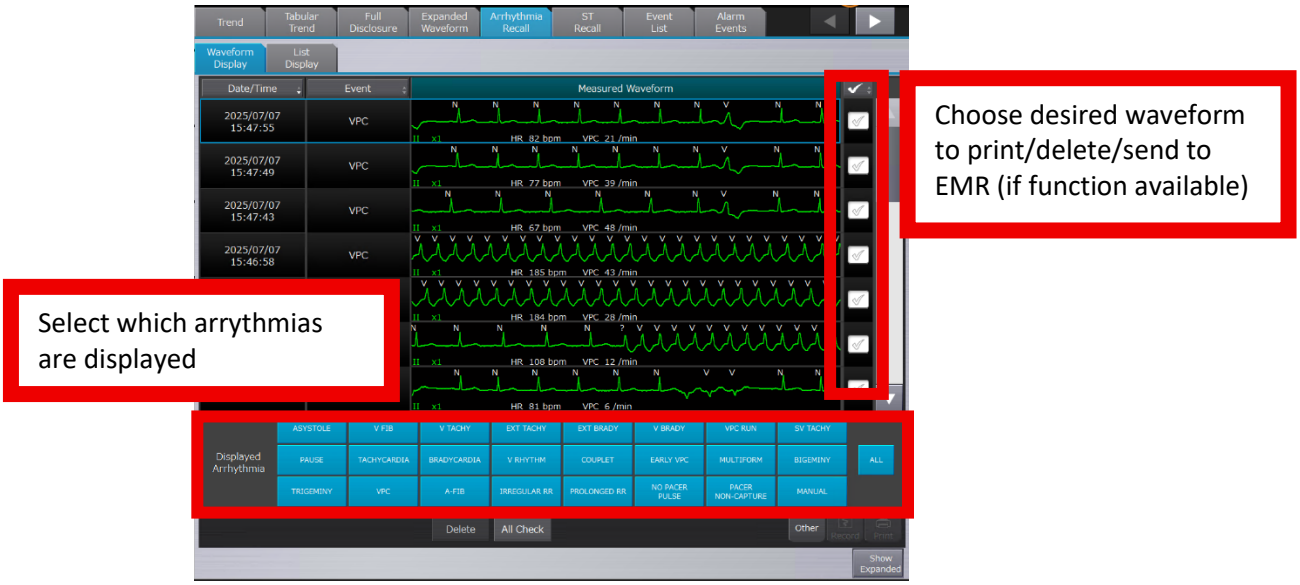
The central monitor saves 120 hour full disclosure waveforms for up to 16 parameters for each monitored bed. You can select the full disclosure waveforms to display from the stored parameters.



5.7 Arrythmia Recall Window

The Arrhythmia Recall windows show the list of recall files that are automatically created when an arrhythmia occurred.

The arrhythmia recall files are created for the most recent 1,500 arrhythmias for each bed.

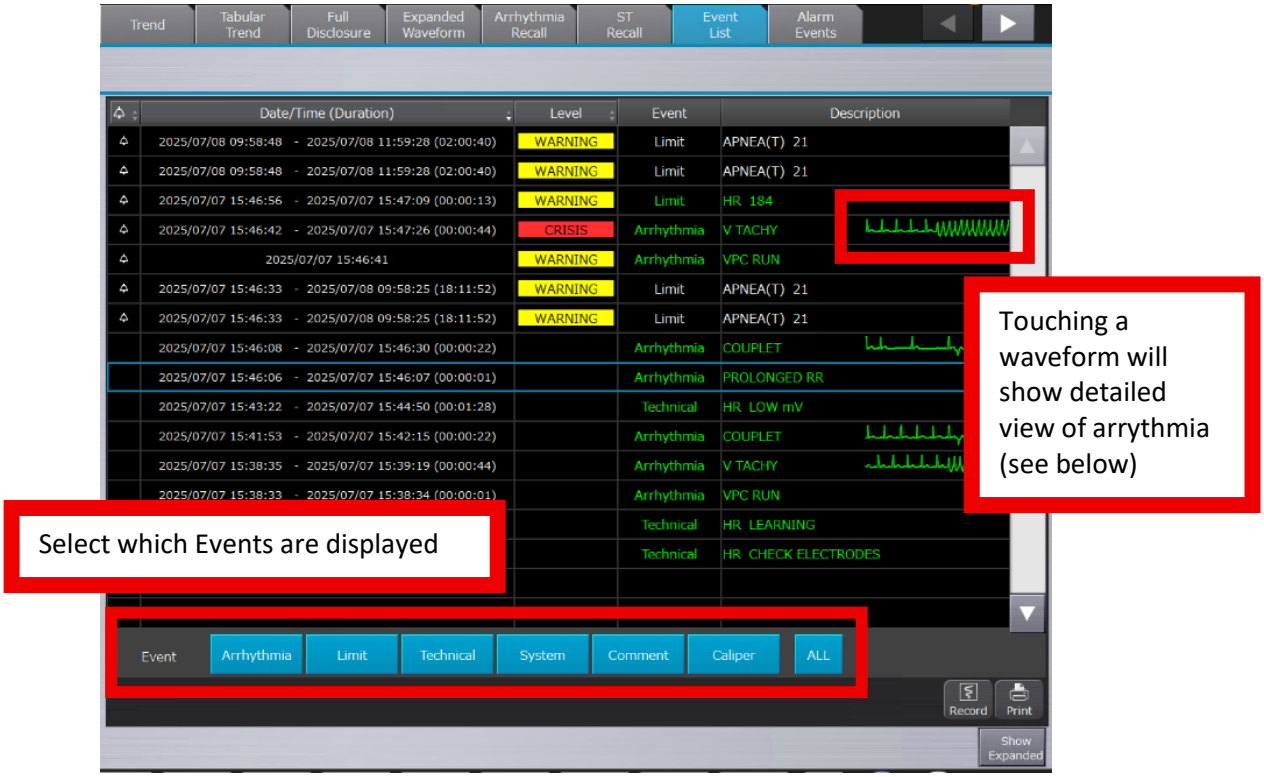


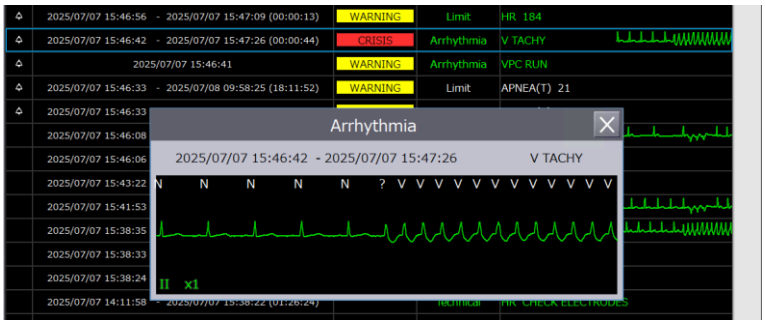
5.8 ST Recall Window

The ST Recall window shows ST recall files of up to 120 hours. ST recall files are created every minute.

5.9 EVENT LIST WINDOW

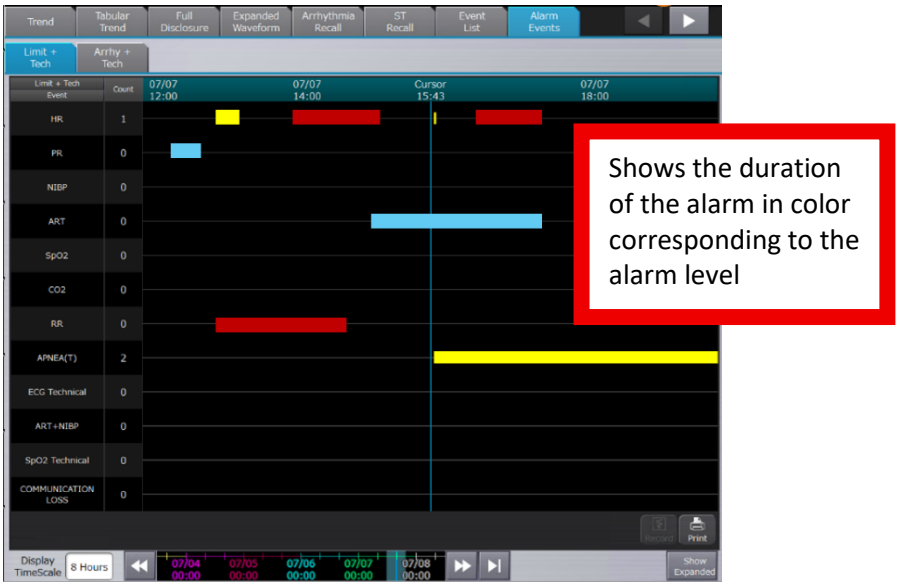
The Event List window shows the latest 120 hours of events on the monitored beds. The most recent 10,000 files can be saved for each bed.





5.10 Alarm Events Window

The Alarm Events windows show up to 10,000 files of alarm events for one patient in the most recent 120 hours. There are two Alarm Events windows: Limit+Tech, and Arrhy+Tech. Up to 12 events can be displayed for each window.

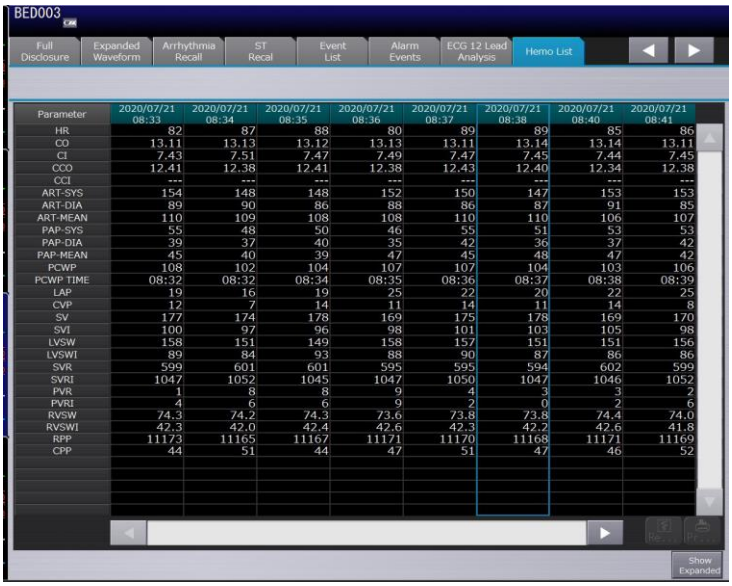


5.11 ECG 12 Lead Analysis Window

The ECG 12 Lead Analysis windows show the results of ECG 12 lead analysis performed at bedside monitors. Up to 200 files can be saved for each bed at the central monitor.

5.12 Hemodynamics List Window

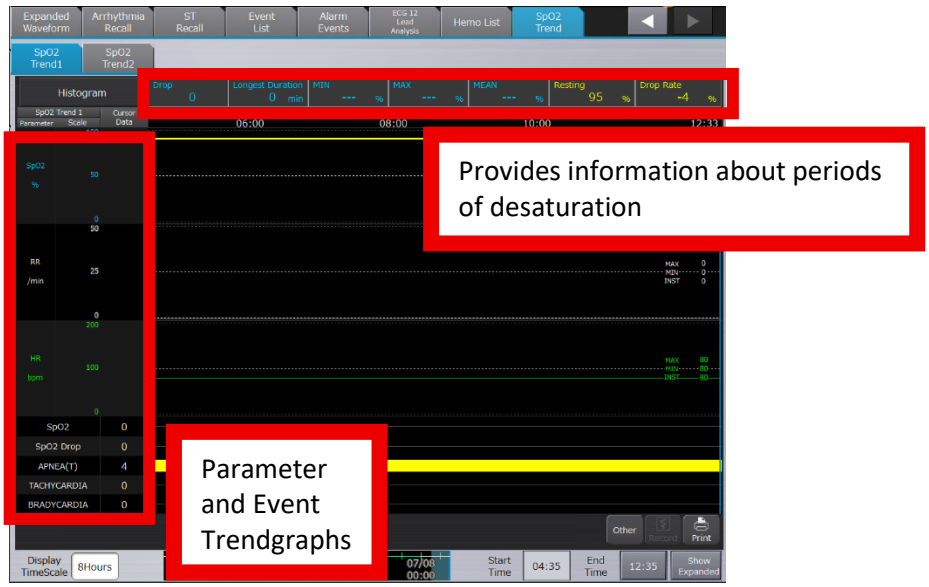
The Hemodynamics List window shows hemodynamics parameter values registered on the CO measurement window, blood pressure value entry window and hemodynamics parameters. Hemodynamics parameter values are automatically registered when CCO is measured on a bedside monitor.



Parameter	2020/07/21 08:33	2020/07/21 08:34	2020/07/21 08:35	2020/07/21 08:36	2020/07/21 08:37	2020/07/21 08:38	2020/07/21 08:40	2020/07/21 08:41
HR	82	87	88	80	89	89	85	86
CO	13.11	13.13	13.12	13.13	13.11	13.14	13.14	13.11
CI	7.43	7.51	7.47	7.49	7.47	7.45	7.44	7.45
CCO	12.41	12.38	12.41	12.38	12.43	12.40	12.34	12.38
CCI	---	---	---	---	---	---	---	---
ART-SYS	154	148	148	152	150	147	153	153
ART-DIA	89	90	86	88	86	87	91	85
ART-MEAN	110	109	108	108	110	110	106	107
PAP-SYS	55	48	50	46	55	51	53	53
PAP-DIA	39	37	40	35	42	36	37	42
PAP-MEAN	45	40	39	47	45	48	47	42
PCWP	108	102	104	107	107	104	103	106
PCWP TIME	08:32	08:32	08:34	08:35	08:36	08:37	08:38	08:39
LAP	19	16	19	25	22	20	22	25
CVP	12	7	14	11	14	11	14	8
SV	177	174	178	169	175	178	169	170
SVI	100	97	96	98	101	103	105	98
LVSW	158	151	149	158	157	151	151	156
LVSWI	89	84	93	88	90	87	86	86
SVR	599	601	601	595	595	594	602	599
SVRI	1047	1052	1045	1047	1050	1047	1046	1052
PVR	1	8	8	9	4	3	3	2
PVRI	4	6	6	9	2	0	2	6
RVSW	74.3	74.2	74.3	73.6	73.8	73.8	74.4	74.0
RVSWI	42.3	42.0	42.4	42.6	42.3	42.2	42.6	41.8
RPP	11173	11165	11167	11171	11170	11168	11171	11169
CPP	44	51	44	47	51	47	46	52

5.13 SpO2 Trend Window

The SpO2 Trend window shows the trend information of the selected time period. You can select the time period of the data to display on the windows from the data acquired in the most recent 120 hours. The windows show trendgraphs and histograms of SpO2 values, including number and duration of SpO2 drops.



5.14 Reviewing Data of Discharged Patients

The Discharged Patient List window shows the information of the patients who were discharged from the Central Station within the past 120 hours and the patients whose data were deleted from the Central Station within the past 120 hours. This includes patients who were deleted by changing the channel.

1. Select the patient tile
2. [Menu] > [Admit/Discharge] > [Discharged Patients List]

3. Touch the name of the patient whose data you want to review.

The review window will open for selected patient. Refer to Sections 5.1 – 5.13 for more information.

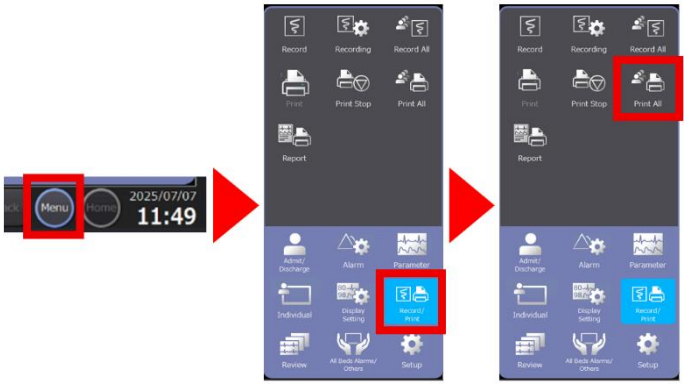
6 Printing and Report Functions

6.1 Individual Waveform Printing

1 [Menu] > [Record/Print] > [Print].

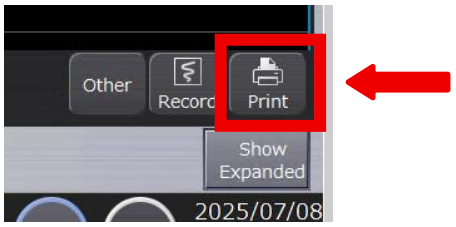
6.2 All Beds Waveform Printing

1 [Menu] > [Record/Print] > [Print All].
Printing automatically stops after all waves have been printed.



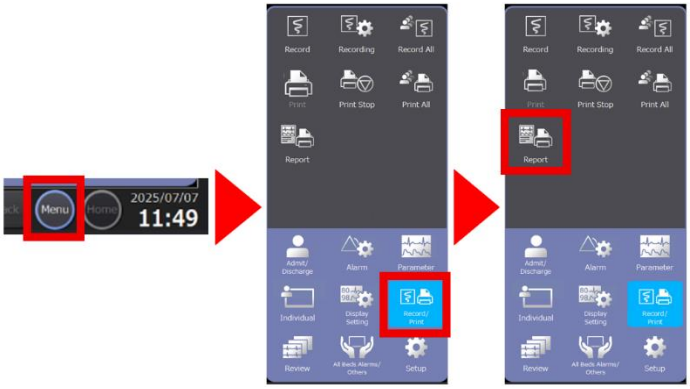
6.3 Review Window Printing

➢ All review window data can be printed by touching [Print] key in right lower corner of any Review Screen.

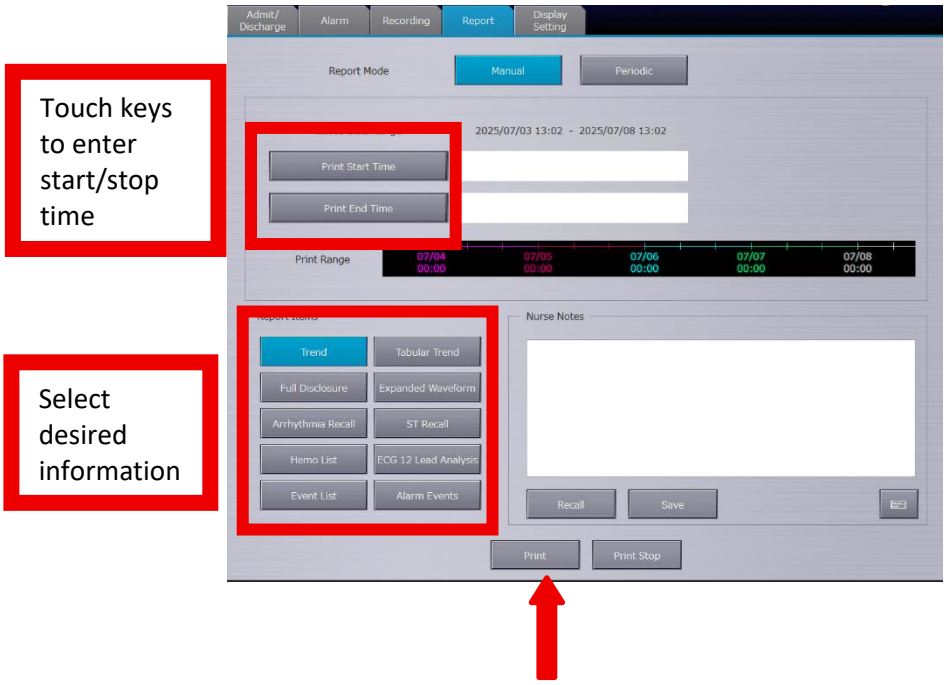


6.4 REPORT PRINTING

1 [Menu] > [Record/Print] > [Report]



2 Enter requested information on Report Window



3 Touch [Print] then [Yes] to confirmation message.

7 TROUBLESHOOTING AND ERROR MESSAGES

7.1 TROUBLESHOOTING

Problem	Possible Cause	Action
Admitting/Discharging/Transferring/Exchanging		
Cannot transfer a patient's data, pause monitoring or exchange monitored beds.	The patient's data is not saved in the central monitor.	Perform this operation on the central monitor which the patient's data is saved to.
Cannot change the receiving channel.		
Cannot admit/discharge a patient.	The patient's data is not saved in the central monitor.	Perform this operation on the central monitor which the patient's data is saved to.
Cannot select a bed as a destination of patient transfer or bed exchange.	The bedside monitor is turned off	Turn on the bedside monitor.
A "Transferring" message appears on the screen but it does not change to "Completed" after patient transfer.	During patient transfer or changing the monitor, the central monitor was turned off. Or, there was trouble on the network and the transfer failed.	When a patient data remains on the Discharged Patients List window, readmit the patient. Set alarm settings because the alarm settings are initialized when the patient is readmitted.
When the patient data does not remain on the Discharged Patients List window, the patient data is deleted. The deleted data cannot be recovered. Admit the patient again.		
A "Patient Transfer: Failed" message appears on the screen after patient transfer.		
A "Change Device: Failed" message appears on the screen after changing the monitor.		
All patient's data is lost after patient transfer.		
Cannot resume monitoring after monitoring pause.	The bed was paused on a transmitter that has the pause function and the transmitter power is on.	Turn the transmitter off then on to resume monitoring.
Viewing Patient Data		
Waveform is not displayed.	The bed is discharged.	Admit the patient.
	The monitoring of the bed is paused.	Resume monitoring.

	The bedside monitor, the multiple patient receiver or vital sign telemeter is turned off.	Turn on the bedside monitor, the multiple patient receiver or vital sign telemeter.
	The currently measured lead/ label is different from the lead/ label to be displayed on the screen.	Confirm the setting so that the currently measured lead/label matches the lead/label to be displayed on the screen.
	The waveform is not selected as a displayed waveform.	Set the waveform as a displayed waveform.
Numeric data is not displayed.	The parameter of the numeric data is not selected as the displayed parameter.	Set the parameter of the numeric data to the displayed parameter.
	The label of the currently measured numeric data is different from the label to be displayed.	Confirm the setting so that the label of the currently measured numeric data matches the label to be displayed.
	A vital sign alarm occurred in a parameter that is not set to a displayed parameter and its numeric data took the place of a numeric data that is set to the displayed parameter.	The numeric data of a parameter whose vital sign alarm is currently occurring has a higher priority to be displayed.
Heart rate is not counted correctly.	QRS detection type is not set correctly.	Change the QRS detection type.
	QRS detection threshold is not set correctly.	Adjust the QRS detection sensitivity.
	Waveform is too large or too small.	
	QRS detection threshold is changed.	
	QRS and pacemaker spikes are not distinguished.	Turn pacing detection [ON].
Respiration is not measured correctly.	Waveform is too large or too small.	Set the proper sensitivity.
	Respiration sensitivity is changed.	
	Impedance respiration measurement functionality is turned off.	Turn the impedance respiration measurement on.
Alarms		
No alarm.	Each alarm setting is set to OFF.	Turn on the necessary alarms (vital sign, arrhythmia, ST).
	Arrhythmia analysis is turned OFF.	Turn on the arrhythmia analysis functionality.
	On the bedside monitor, “Comfort Care” is set to On and	Change the “Comfort Care” and “Send alarms to network” settings on the bedside

	"Send alarms to network" is set to Off.	monitor. These settings cannot be changed on the central monitor.
	All alarms are turned off at the bedside monitor.	The central monitor cannot turn all alarm on or off. Turn all alarms on or off on the bedside monitor.
All alarms for a bed cannot be turned on or off together	-	
Review Windows		
Review Data is not displayed	The central monitor where the bed's data is saved is turned off.	Turn on the central monitor where the bed's data is saved.

7.2 ERROR MESSAGES

Message	Possible Cause	Action
Data Send Error	The data cannot be transferred from a bedside monitor to the central monitor for one or more of the following reasons. •The network cable is not connected firmly. •The network setting is incorrect. •The network cable is damaged or hub failure	Check the network connection condition.
COMMUNICATION LOSS	•The selected bedside monitor power is OFF or disconnected from the network. •The network communication is lost during sleep mode.	Check the patient condition and ensure the patient's safety. Then check the monitoring systems.
	The multiple patient receiver for the transmitter is disconnected from the network.	
Monitor Battery Weak	The battery pack that is installed in the bedside monitor is weak.	Change the monitor to AC power operation and charge the battery pack.
Parameter Not Available	The cable of an unavailable parameter is connected.	Disconnect the cable of the unavailable parameter.
Duplicate Transmitter	Two or more transmitters have the same channel.	Set all of the transmitters to different channels.
Duplicate Receiver	Two or more multiple patient receivers have the same channel.	Set all of the multiple patient receivers to different channels.
	Two or more beds whose data is received by the multiple patient receiver use the same channel number.	Change the channel number of the bed whose data is received by the multiple patient receiver on the Admit window.
Change Transmitter Battery	Weak transmitter battery.	Replace the batteries with new ones.
Check Device	A technical alarm is detected on the bedside monitor.	Check the bedside monitor status.

SIGNAL LOSS	Weak electric field strength of a wireless telemeter. The network communication is lost during sleep mode.	Check the patient condition and ensure the patient's safety. Then check the following: • Remaining charge of the transmitter battery • Transmitter antenna lead condition • Distance between the multiple patient receiver and transmitter
Telemetry not Connected	The connection between the telemetry device and bedside monitor is interrupted (for example by signal loss) during HiQ-View operation.	Check the patient condition and secure patient safety. Then, inspect the monitoring system for abnormalities.
HiQ-View Connection Failure	When the bedside monitor was restarted, HiQ-View could not be restarted for one of the following reasons. • HiQ-View could not be started because the telemetry device was already paired with another bedside monitor for HiQ-View. HiQ-View could not be started because of an incompatibility between the settings or patient information of the bedside monitor and telemetry device.	Check the status of the telemetry device and restart HiQ-View.
HiQ-View Setting Inconsistent	There is a discrepancy between the settings on the bedside monitor and the telemetry device.	Check the settings on the bedside monitor and telemetry device and change the settings as necessary
Monitor Busy	The bed is already being monitored by four other devices.	Change the network configuration so that the number of devices monitoring the bed (including the central monitor) is four or less.
	HiQ-View is performed using a bed (transmitter or vital sign telemeter) which is already being monitored.	The bed is automatically discharged when HiQ-View is ended.

Nihon Kohden Digital Health Solutions
R&D and Product Development Center
14 Bunsen
Irvine, CA 92618
U.S.A.

Telephone: +1 (949) 474-9207
Telefax: +1 (949) 474-8267
E-Mail: info@nklab.com

www.nkdhs.com

EC REP **NIHON KOHDEN EUROPE GmbH**
Raiffeisenstraße 10, 61191 Rosbach v.d.H., Germany
Telephone: +49 (0) 6003 827 0
Fax: +49 (0) 6003 827 599
E-Mail: info@nke.de

www.eu.nihonkohden.com

NIHON KOHDEN AMERICA
15353 Barranca Parkway
Irvine, CA 92618
U.S.A.

Telephone: +1 (949) 580-1555
Telefax: +1 (949) 580-1550
E-Mail: info@nihonkohden.com

www.us.nihonkohden.com