

iMEC Series

Patient Monitor Quick Guide



mindray

Thank you for purchasing Mindray Patient Monitor.

We have included this convenient Quick Guide to help you with the basic operations. For more details , please refer to the Operator's Manual.

Note:

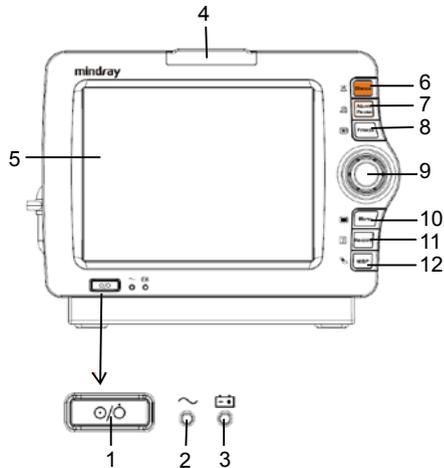
- Before attempting to install, operate or adjust this product, please save and read the Quick Guide completely.
- This manual is based on the maximum configuration and therefore some contents may not apply to your monitor. If you have any question, please contact us.



Comply with the requirements of the
Council Directive 93/42/EEC.

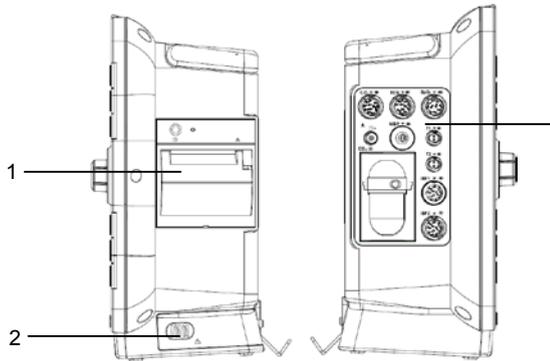
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Front View

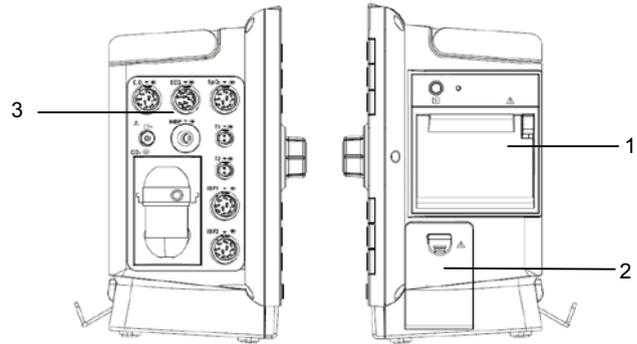


1. Power On/Off Switch
Press the switch to turn on the patient monitor. When the monitor is on, pressing and holding this switch turns the patient monitor off. An indicator is built in this switch. It turns on when the patient monitor is on and turns off when the patient monitor is off.
2. AC power LED
It turns on when AC power is connected.
3. Battery LED
On: when the battery is installed and the AC source is connected.
Off: when no battery is installed or the installed battery is malfunction, or no AC source is connected when the patient monitor is power off.
Flash: when the patient monitor operates on battery power.
4. Alarm lamp
When a physiological alarm or technical alarm occurs, this lamp will flash as defined below.
High level alarms: the lamp quickly flashes red.
Medium level alarms: the lamp slowly flashes yellow.
Low level alarms: the lamp lights yellow without flashing.
5. Display Screen
6. Press to silence all alarm sounds.
7. Press to pause or restore alarms.
8. Press to freeze or unfreeze waveforms.
9. Knob
10. If no menu is displayed on the screen, pressing it enters the main menu.
If there is a menu displayed on the screen, pressing it closes that menu.
11. Press to start or stop recordings.
12. Press to start or stop NIBP measurements.

Side View (iMEC 12/iMEC 10)



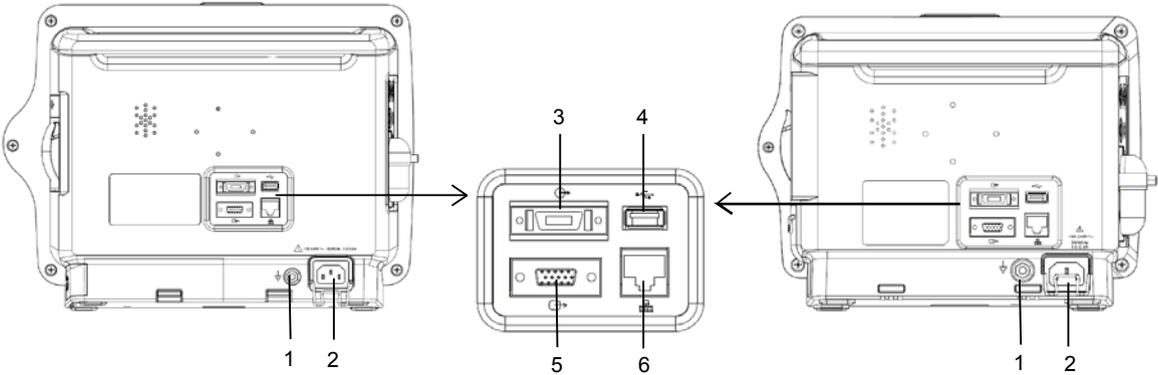
Side View (iMEC 8)



- 1. Recorder
- 2. Battery compartment
- 3. Connectors for parameters

Rear View (iMEC 12/iMEC 10)

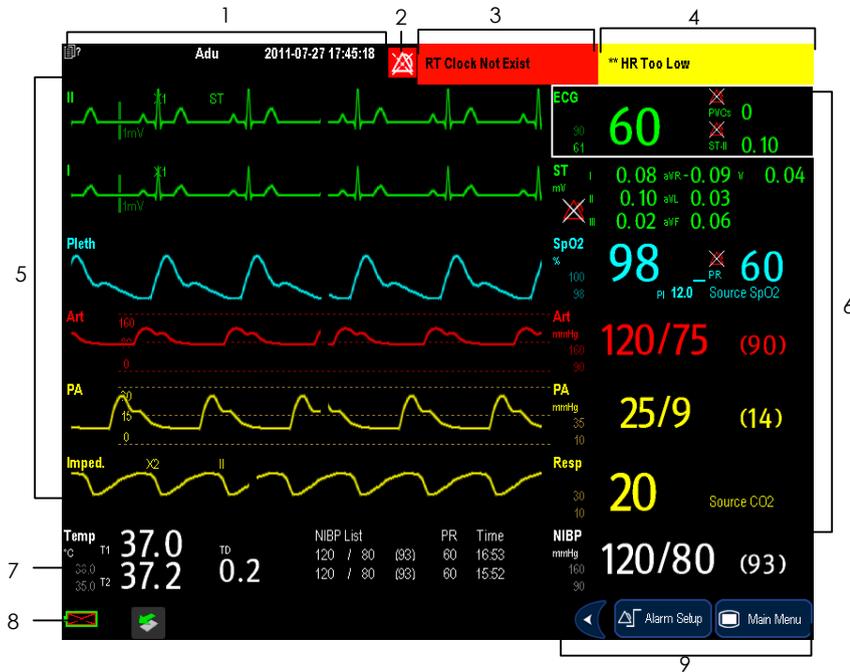
Rear View (iMEC8)



- 1. Equipotential Grounding Terminal
- 2. AC Power Input
- 3. Multifunction Connector
- 4. USB Connector
- 5. VGA Connector
- 6. Network Connector

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Display Screen



1. Patient Information Area
2. Alarm Symbols
3. Technical Alarm Area
4. Physiological Alarm Area
5. Waveform Area
6. Parameter Area A
7. Parameter Area B
8. Prompt Message Area
9. QuickKeys area

Using the Touchscreen

Select screen items by pressing them directly on the patient monitor's screen.

You can lock or unlock the touchscreen by pressing and holding the **[Main Menu]** QuickKey for 3 seconds. The  symbol is displayed if the touchscreen is locked. In this case, all touchscreen operations are disabled.

Also, you can use the QuickKeys at the bottom of the main screen to access fast to functions.

Setting the Screen

You can enter the **[Screen Setup]** window as shown below by selecting the **[Main Menu]**→**[Screen Setup]**→**[Screen Layout >>]**. In this window, you can allocate the positions of the parameters and waveforms. The parameters or waveforms whose positions are not allocated will not be displayed.



The ECG parameter and the first ECG waveform always display in the first row. The configurable areas can be classified as Area A, Area B, and Area C.

- In Area A, you can choose to display the parameters (having waveforms) and their waveforms. Each parameter and the associated waveform are displayed in the same row.
- In Area B, you can choose to display the parameters and their waveforms. When there is no parameter displayed in area C, both the parameters and their waveforms will be displayed in area B. Otherwise, only the parameters will be displayed.
- In Area C, you can choose to display all the parameters whose associated waveforms will not be displayed.

The screen can automatically adjust to ensure the best view based on your screen setup.

If no corresponding parameter or waveform is displayed on the monitor screen, you should perform the following inspections:

- Check the connection of the lead, cable, or sensor.
- Enter the **[Screen Setup]** window for the desired display configuration.

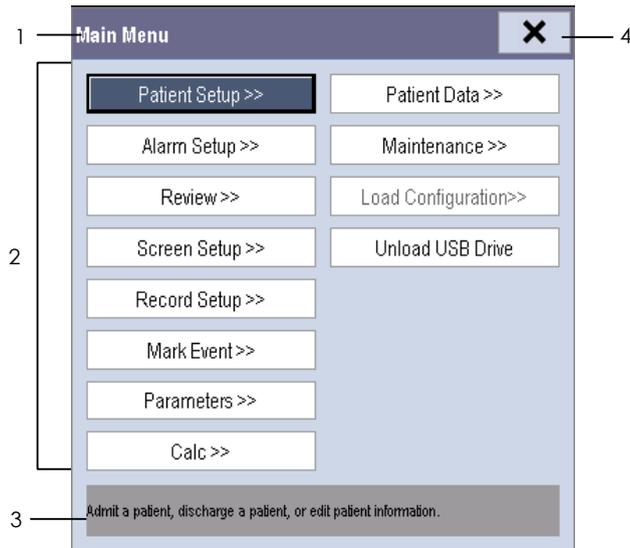


Note:

- The parameters whose positions are not allocated in the **[Screen Setup]** window will not be displayed. However, the monitor can still give alarms of these parameters.

Using the Main Menu

To enter the main menu, select the **[Main Menu]** QuickKey on the monitor's screen or the  hardkey on the monitor's front. Most of monitor operations and settings can be performed through the main menu.



Other menus are similar to the main menu and contain the following parts:

1. **Heading:** gives a sum-up for the current menu.
2. **Main body:** displays options, buttons, prompt messages, etc. The menu button with ">>" enlarges a secondary window to reveal more options or information.
3. **Online help area:** displays help information for the screen item that the cursor is positioned.
4. **Select to exit the current menu.**

Getting Started

Turning Power On

1. Before you start to make measurements, check the patient monitor for any mechanical damage and make sure that all external cables, plug-ins and accessories are properly connected.
2. Plug the power cord into the AC power source. If you run the patient monitor on battery power, ensure that the battery is sufficiently charged.
3. Press the power on/off switch on the monitor's front. The start-up screens are displayed, and the alarm lamp is lit in yellow. Then, the alarm lamp turns into red and turns off after the system gives a beep.
4. The monitor enters the main screen.

Starting Monitoring

1. Decide which measurements you want to make.
2. Connect the required patient cables and sensors.
3. Check that the patient cables and sensors are correctly connected.
4. Check that the patient settings such as **[Patient Cat.]**, **[Paced]**, etc. are appropriate for your patient.
5. Refer to the Operator's Manual for details of how to perform the measurements you require.

Disconnecting from Power

To disconnect the patient monitor from the AC power source, follow this procedure:

1. Confirm that the patient monitoring is finished.
2. Disconnect the patient cables and sensors from the patient monitor.
3. Make sure to save or clear the patient monitoring data as required.
4. Press and hold the power on/off switch. The patient monitor shuts down and you can unplug the power cable.



Note:

- Make sure that the operating environment of the patient monitor meets the specific requirements. Otherwise unexpected consequences, e.g. damage to the equipment, could result.
- Do not use the patient monitor for any monitoring procedure on a patient if you suspect it is not working properly, or if it is mechanically damaged. Contact your service personnel or us.

Changing General Settings

Setting up a Monitor

In situations where you install a patient monitor or change the patient monitor's application site, you need to setup the patient monitor as follows:

1. Select **[Main Menu]**→**[Maintenance >>]**→**[User Maintenance >>]**→enter the required password.
2. In the **[User Maintenance]** menu, select **[Monitor Name]**, **[Department]** and **[Bed No.]** and change their settings.

Changing Language

1. Select **[Main Menu]**→**[Maintenance >>]**→**[User Maintenance >>]**→enter the required password.
2. In the **[User Maintenance]** menu, select **[Language]** and then select the desired language.
3. Restart the patient monitor.

Adjusting the Screen Brightness

1. Select **[Main Menu]**→**[Screen Setup >>]**→**[Brightness]**.
2. Select the appropriate setting for the screen brightness. 10 is the brightest, and 1 is the least bright. When operated on the battery, you can set a less bright screen to prolong the use time of the battery. When the patient monitor enters standby mode, the screen brightness will be adjusted to the least bright automatically.

Showing/Hiding the Help

The patient monitor provides online help information. The user can display or hide the help as required.

1. Select **[Main Menu]**→**[Screen Setup >>]**.
2. Select **[Help]** and toggle between **[On]** and **[Off]**.

Setting the Date and Time

1. Select **[Main Menu]**→**[Maintenance >>]**→**[System Time >>]**.
2. Set the date and time.
3. Select **[Date Format]** and toggle between **[yyyy-mm-dd]**, **[mm-dd-yyyy]** and **[dd-mm-yyyy]**.
4. Select **[Time Format]** and toggle between **[24h]** and **[12h]**.



Note:

- Changing date and time will affect the storage of trends and events and may cause data missing.

Adjusting Volume

Alarm Volume

1. Select the [**Alarm Setup**] QuickKey→[**Others**], or [**Main Menu**]→[**Alarm Setup >>**]→[**Others**].
2. Select [**Alm Volume**] and then select the appropriate volume: X-10, in which X is the minimum volume, depending on the set minimum alarm volume, and 10 the maximum volume.

Key Volume

1. Select the [**Volume Setup**] QuickKey, or [**Main Menu**]→[**Screen Setup >>**].
2. Select [**Key Volume**] and then select the appropriate volume. 0 means off, and 10 is the maximum volume.

QRS Volume

The QRS tone is derived from either the HR or PR, depending on which is currently selected as the alarm source in [**ECG Setup**] or [**SpO₂ Setup**]. When monitoring SpO₂, there is a variable pitch tone which changes as the patient's saturation level changes. The pitch of the tone rises as the saturation level increases and falls as the saturation level decreases. The volume of this tone is user adjustable.

1. Select the [**Volume Setup**] QuickKey, or the ECG parameter window→[**Others >>**], or the SpO₂ parameter window.
2. Select [**QRS Volume**] or [**Beat Vol**] and then select the appropriate volume. 0 means off, and 10 is the maximum volume.

Managing Configurations

Entering the [Manage Configuration] Menu

1. Select [**Main Menu**]→[**Maintenance >>**]→[**Manage Configuration >>**].
2. Enter the required password and then select [**OK**].

Setting Default Configuration

1. Select [**Select Default Config. >>**] in the [**Manage Configuration**] menu.
2. In the [**Select Default Config.**] menu, select [**Load the Latest Config.**] or [**Load Specified Config.**].

Saving Current Settings

1. Select [**Save Current Settings As >>**] in the [**Manage Configuration**] menu.
2. In the popup dialog box, enter the configuration name and then select [**OK**].

Editing Configuration

1. Select [**Edit Config. >>**] in the [**Manage Configuration**] menu.
2. The popup menu shows the existing configurations on the monitor. Selecting [**Config. on USB drive >>**] will show the existing configurations on the USB drive. Select the desired configuration and then select the [**Edit**] button.

3. Select [**Alarm Setup >>**], [**Screen Setup >>**] or [**Parameter >>**] to enter the corresponding menu in which settings can be changed. The changed items of alarm setup will be marked in red.
4. You can select [**Save**] or [**Save as**] to save the changed configuration. Select [**Save**] to overwrite the original configuration. Select [**Save as**] to save the changed configuration in another name.

Deleting a Configuration

1. Select [**Delete Config. >>**] in the [**Manage Configuration**] menu.
2. The popup menu shows the existing user configurations on the monitor. Selecting [**Config. on USB drive >>**] will show the existing user configurations on the USB drive. Select the user configurations you want to delete and then select [**Delete**].
3. Select [**Yes**] in the popup.

Transferring a Configuration

To export the current monitor's configuration:

1. Connect the USB drive to the monitor's USB port.
2. Select [**Export Config. >>**] in the [**Manage Configuration**] menu.
3. In the [**Export Config.**] menu, select the configurations and [**User Maintenance Settings**] to export. Then select the [**Export**] button. A status message will report completion of the transfer.

To import the configuration on the USB drive to the monitor:

1. Connect the USB drive to the monitor's USB port.
2. Select [**Import Config. >>**] in the [**Manage Configuration**] menu.
3. In the [**Import Config.**] menu, select the configurations and [**User Maintenance Settings**] to import. Then select the [**Import**] button. A status message will report completion of the transfer.

Loading a Configuration

1. Select [**Load Configuration >>**] from the main menu.
2. The popup menu shows the existing configurations on the monitor. Selecting [**Config. on USB drive >>**] will show the existing configurations on the USB drive.
3. Select a desired configuration.
4. Select [**View**] to view the configuration details. In the popup menu, you can select [**Alarm Setup >>**], [**Screen Setup >>**] or [**Parameter >>**] to view the corresponding contents. The alarm setup items which are different than those currently used are marked in red.
5. Select [**Load**] to load this configuration.

The thermal recorder records patient information, measurement numerics, up to three waveforms, etc.

Starting and Stopping Recordings

To manually start a recording:

- Select the  hardkey on the front of either the patient monitor or the recorder module.
- Select the **[Record]** button from the current menu or window.

Automatic recordings will be triggered in the following conditions:

- Timed recordings will start automatically at preset intervals.
- If both **[Alarm]** and **[Alm Rec]** for a measurement are set on, an alarm recording will be triggered automatically as alarms occur.

To manually stop a recording:

- Select the  hardkey again.
- Select **[Clear All Tasks]** in the **[Record Setup]** menu.

Recordings stop automatically when:

- The runtime is over.
- The recorder runs out of paper.
- When the recorder has an alarm condition.

The battery is charged whenever the patient monitor is connected to an AC power source regardless of whether or not the patient monitor is currently on. Whenever the AC power is interrupted during patient monitoring, the patient monitor will automatically run power from the internal battery.

On-screen battery symbols indicate the battery status as follows:



Indicates that the battery works correctly. The solid portion represents the current charge level of the battery in proportion to its maximum charge level.



Indicates that the battery has low charge level and needs to be charged. In this case, the patient monitor provides an alarm message.



Indicates that the battery is almost depleted and needs to be charged immediately. Otherwise, the patient monitor shuts down automatically.



Indicates that no battery is installed.



Note:

- Take out the battery before transport or storage to avoid damaging the battery.
- Keep the battery out of the reach of children.
- Use only the battery specified by the manufacturer.
- Do not disassemble battery, or dispose of it in fire, or cause it to short circuit. It may ignite, explode, leak or heat up, causing personal injury.



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