

# AL- MUSTAQBAL UNIVERSITY COLLEGE DEPARTMENT OF BIOMEDICAL ENGINEERING

# **Bio-Electronics Design Lab BME 515**

Lecture 7

- Patient Monitor -

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#### Patient Monitor

Al- Mustaqbal University College





#### Patient Monitor





## Types of Patient Monitor



- > Central Monitor.
- Bedside Monitor.





# Types of Patient Monitor







Neonatal monitor



Adult monitor

## Measurement Capabilities



- Heart/Pulse Rate.
- > Electrocardiography (ECG).
- Oximetry.
- ➤ Non-invasive Blood Pressure (NIBP).
- Respiration Rate (RR).
- Temperature (TEMP).

## Theory

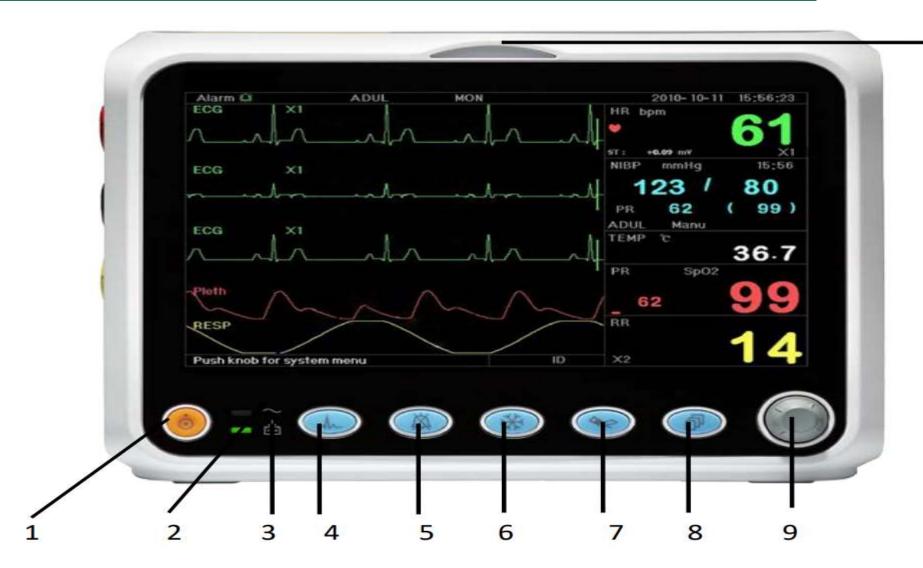


- The patient monitor collect the data by using various methods for a different parameters such as ECG, NIBP, Temperature, SpO2, Heart rate, Respiration rate . . . etc)
- The input data are amplify, process and display as a waveform, and/ or a numerical value.
- Alarm limits can be adjusted to desired levels, for alert the medical staff of undesirable health conditions.











- 1. Power switch: Press it for 3 seconds to start the monitor or turn off the monitor.
- 2. AC power indicator: When it is light it means that AC power supply is being used.
- 3. DC power indicator: When both AC and DC indicators are on, it means that AC power supply is applicable, and the battery is being recharged. If only DC indicator is on, it means that the battery is being used.



4. ECG lead.

5. Alarm silence.

6. Freeze: Press the key to freeze/unfreeze the waveforms.

7. NIBP: Press to start or stop NIBP measurement.

8. DISP: Click to shift the display modes or return to the Main Screen from other screens.

#### Alarm indicator





9. Navigation Knob: It is the major operating key of the system, which can be used to select functions or parameters.

10. Alarm indicator.

Indicator Color Alarm Level

Red flashing High priority alarm

Yellow flashing Middle priority alarm

Yellow light Low priority alarm

Green light Normal



Different ports are located in different positions of the monitor for operating convenience.

- > SpO2 Cable connector.
- > NIBP Cable connector.
- > TEMP Cable connector.
- > ECG Cable connector.







- ➤ DC Power supply socket indication with rated voltage and current.
- > Serial communication port which is used to network with central monitoring system.
- > USB port used for data uploading.





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