



**Heart-rate monitor cum ECG Sciencetech TechBook 2351** provides in-depth study of Electrocardiogram, ECG standard leads configuration, and the measurement of heart-rate i.e. number of ECG pulses (heartbeats) per minute. Sciencetech TechBook 2351 enables the Electrocardiogram observation by affixing Biomedical Electrodes to the human body in standard bipolar leads configuration. The Heart-rate monitor receives each ECG observation (heartbeat) i.e. detects the electrical action executed by the heart of a subject (human body) and displays the heart-rate as number of heartbeats per minute.

Sciencetech TechBook 2351 also monitors the abnormalities occur in human cardiovascular system which is Tachycardia (faster heart-rate) and Bradycardia (slower heart-rate) using visible controls. It also facilitates real time acquisition of raw data (ECG) and their corresponding measurements by its real time Analysis Software.

### Features

- Self contained and easy to operate
- 16x2 LCD display of heartbeats per minute
- On board both visible (LED) and audible (buzzer) heartbeat event indicator
- Separate test-points to observe ECG waveform after each block (in simulation mode (SM) pre-amplifier and filter are not in the function because data coming from the simulator is already filtered and amplified data, while in real time mode all the blocks will be in the function)
- In built Data Acquisition module with USB interface for Real time analysis
- On board one minute indicator
- User Selectable Heart-rate, Bradycardia limit, Tachycardia limit display
- On board Bradycardia and Tachycardia Indicator
- On board Bradycardia limit, Tachycardia limit adjustment
- User selectable buzzer for heartbeat indication
- On board Reset for display and One minute Timer reset

## Scope of Learning

- Study of electrocardiogram.
- Study of cardiovascular abnormality like Bradycardia, Tachycardia.
- Study of real time ECG.
- Software analysis of real time ECG data.

## Technical Specifications

<b>Measuring Range</b>	:	30-300 heartbeats per minute
<b>Accuracy</b>	:	±2 heartbeats/ minute
<b>Heart-rate Display</b>	:	16x2 LCD Display
<b>Tachycardia limit Range</b>	:	0-255 heartbeats per minute
<b>Bradycardia limit Range</b>	:	0-255 heartbeats per minute
<b>ECG Acquisition module</b>	:	Real time ECG acquisition with 200 samples/ sec 8-bit A/D Converter with USB interface
<b>Electrodes</b>	:	Surface or clamp (Ag-AgCl) electrodes
<b>Test Point</b>	:	7 nos.
<b>Dimensions (mm)</b>	:	W 326 x D 252 x H 52
<b>Power supply</b>	:	110V - 260V AC, 50/60Hz
<b>Weight</b>	:	1.5 Kg. (approximately)
<b>Operating Condition</b>	:	0-40°C, 85% RH
<b>Included Accessories</b>	:	ECG electrode Gel, 5 Pin din to 3 Banana Cable (2mm), USB Cable (male to male), Power Supply, ECG Electrodes (Clamp type) - 5 nos.

## Real time ECG Analysis Software

- ECG can be analyzed in real time during acquisition
- Continuous recording with heart rate and amplitude calculation
- Review and analysis of recorded ECG file
- Heart-rate display with QRS detection by visual indication