

# VPL-BIO-ECG

## Electrocardiograph Recording (ECG) Module



The VPL-BIO-ECG module is a versatile instrument which is specially designed to perform laboratory experiments and demonstration on ECG. The module can record the low-level voltages produced by the heart which is attached to the human limbs and chest.

The system uses various basic instrumentation and monitoring circuits. The user can analyze the signals at different sections of circuitry using oscilloscope or PC recorder. Also, an optional ECG Simulation module provides direct simulation of human heart.

### Features

- Has differential Amplifier:
  - Common Mode Rejection Ratio (CMRR): 80 dB
  - Gain: 120 dB
  - Sensitivity to 5 mV
  - Frequency Response: DC to approximately 1 KHz
- For protection against line power, safety devices has been incorporated which limits the input voltage.
- Control Switches for varying roll off frequencies and amplifier gain
- Optocoupler isolates the front end amplifier and reference ground from earth ground circuitry
- Selectable notch filter which allows 50Hz/60Hz filtering.
- Isolated Power Supplies to isolate the front end amplifier from the common earth ground supply (provides an additional margin of safety)
- Polarity Correction Circuitry enables the R wave to be either positive or negative; the output is always a positive signal
- Pulse Stretching Circuit uses the R wave as the signal and converts it into a rectangular pulse
- Tone Generator produces the tone whose on period is controlled by the Pulse Stretcher Circuit

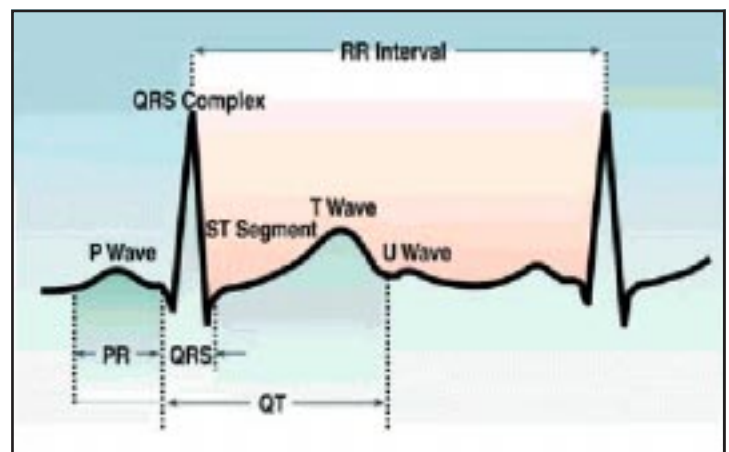
- Converts the pulse stretched signal into a DC level for the 1 mA meter
- Lead selector switch for selecting lead 1, lead 2, lead 3, during ECG measurement.
- Calibration 1mV facility
- Various instrumentation circuits can be individually tested which are fully explained in laboratory manual like Differential Amplifier, Opto Electronic components, Notch filters etc.

### Module Capability

- How the muscle recording affects the recording
- Effect of respiration on pulse rate
- Effect of poor electrode connection on a lead II recording
- Measuring the distance in millimeters between two adjacent R waves of a lead II tracing.
- Comparing leads I, li, III for differences in amplitude and periods between pulses
- Analyzing P-Q-R-S-T waves
- Many more capabilities

### Equipments Supplied

- ♦ Set of ECG electrodes and straps along with 5 terminal connector between the leads and ECG box
- ♦ Laboratory manual
- ♦ Biomedical disposal Accessories Package



Note: Specifications are subject to change without notice due to our constant efforts for improvement.