Portable Single-Arm Heart Rate Monitor

Team 5

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Portable Single-Arm Heart Rate Monitor

Purpose of Product:
• Portable heart rate monitoring and electrocardiogram

Features:
• Portable
• ECG data storage
• Single-arm monitoring
• Affordable
• Rechargeable—500 typical charging cycles
• Phone app—displays and analyzes ECG data
• Long-lasting battery—12 hours continuously
• 1 GB SD card included

Market:
• Worldwide
Key Requirements

Cost
- Sales Price: $199, Component Cost: $70, Assembly & Test Costs: $40

Environment
- Indoor, Outdoor, Mobile, Wearable
- Operating Temp Range: -20 to 40 C
- Operating Humidity Range: non-condensing

Power Input(s)
- Battery Power: Qty 1 of Li-ion, 4.2 VDC, 1000 mAh
- USB (for charging): 5 V, 0.9 A
- Power Efficiency: 90%, Operational Hours: 12 hours continuous

Major Functions, Quantities Measured, Displayed
- Measuring heart rate and displaying it on a cell phone via application
  - Bluetooth (Data Transfer)
    - Rate: 3 MBps, Range: 20 m
- Heart Rate Accuracy
  - HR: +/- 2 BPM, Range: 60 to 120 BPM
Block Diagram

Block Owners:
- Block A: Jingtao
- Block B: Luping
- Block C: Yarob
- Block D: Edward
- Block E: Boris
- Block F: Daniel