Test Plans for OXITRAK-5001

"Track the Rhythm, Keep it Beating"

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Test Plans Checklist

Hardware Test Plan Checklist				
Tested By			Date	
Procedure/ Expected result		Pass/Fail (P/F)	Actual Results	Comments
A - Mechanical Requirements				
a.	No external light allowed			
b.	Correct fitting of earlobe piece			
c.	Earclip piece isolated from outside environment			
d.	Packaged clip attaches to user's earlobe			
B - Electrical Requirements				
a.	Sensor circuit picks up infrared and red light			
b.	Photo detection circuit outputs correct voltage			
c.	Noise eliminated from photo detection output			
d.	Bandpass filter extracts signal from 0.8 - 3.0 Hz			
e.	Amplification circuit outputs readable value			

Firmware Test Plan Checklist			
Tested By		Date	
Procedure/ Expected result	Pass/Fail (P/F)	Actual Results	Comments
A - LED Circuitry			
a. LEDs turned on and off at correct intervals			
b. Values initialized correctly			
B - Heart Rate Detection			
a. Firmware tracks peaks of signal and detects pulse			
b. Firmware calculates accurate rate of pule			
C - SPO_2 Level Detection			
a. Firmware reads voltage signals from INFRARED and RED wavelengths signal			
b. Firmware interpolates signals between these two signals			
c. SPO2 levels calculated based on calibrated formula			
D - Bluetooth Communication			
a. Microprocessor pairs with OxiTrak app			
b. Microprocessor sends correct levels of heart rate			

c. Microprocessor sends correct SPO2 levels			

Software Test Plan Checklist			
Tested By		Date	
Procedure/ Expected result	Pass/Fail (P/F)	Actual Results	Comments
A – Bluetooth Module			
a. App communicates with Edison via Bluetooth			
b. App has reliable Bluetooth connection			
B – UI App Test			
a. App intuitive and interactive			
b. Unique user registration and login credentials			
c. Verification and notification of user credentials			
d. Landing page include diagrams of heart rate and oxygenated blood levels			
e. Settings menu icon easily recognized and accessed			
C – Emergency Algorithm			
a. App detects critical heart rate and oxygenated levels from data			

b. Threshold set for critical levels			
D – Storage and Database Requirements			
a. App stores the received data			
b. App stores data for few days			
c. User credentials validated from directory			
E – Regression Test			
a. No bugs introduced from additional emergency notification and geolocation feautures			
F – White Box Test			
a. Program structure is logical			
b. System features behave according to expectation			