

Traceability Matrix
Team 10 - COMP 3004

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ID	Requirement	Use Case	Design Elements	Test	Description
1	ON/OFF switch	Turn on Device, Turn off Device	Device, MainWindow	Run the simulator and press the power button.	The device's toggle function allows for it to be toggled on or off. MainWindow uses the power button to connect to Device and its toggle function and turns the device on or off.
2	Check when electrodes are in contact with skin, pauses and resumes timer.	Circuit check indicator (no skin contact)	MainWindow, Device	Turn on the device, then check the "apply to skin" checkbox.	The MainWindow uses an "apply to skin" checkbox to check when electrodes are in contact with skin. MainWindow informs Device that it is in contact with skin, and starts the timer. When the checkbox is unchecked, MainWindow pauses the display timer.
3	Three frequency options of 0.5Hz, 77Hz and 100Hz.	User change frequency	MainWindow.ui, Mainwindow, Device	Turn on the device and press the frequency button, observe frequency options on screen.	The MainWindow UI displays the frequency option chosen on the screen, which changes between the options when the frequency button is pressed. MainWindow records the frequency chosen for the session and sets the frequency for Device.
4	Three wave form options Alpha, Betta and Gamma.	User change waveform	MainWindow.ui, MainWindow, Device	Turn on the device and press the waveform button, observe waveform options on screen.	The MainWindow UI displays the waveform option chosen on the screen, which changes between the options when the waveform button is pressed. MainWindow records the waveform chosen for the session and sets the waveform for Device.
5	20, 40 or 60 minute countdown cycles to auto -off.	User change timer	MainWindow, Device	Turn on the device and press the timer button, observe timer options on screen.	The MainWindow UI displays the timer options on the screen, which changes between the options when the timer button is pressed. MainWindow records the time chosen for the session and sets the time for Device.
6	Large timer display. Waveform cycle starts when electrodes touch skin.	N/A	MainWindow.ui, MainWindow, Device	Turn on the device and choose a timer option. Check apply to skin checkbox and observe	The MainWindow UI displays a digital clock countdown timer on the screen when a time option is chosen and the device is applied to the skin and the waveform cycle begins.

				timer display on screen.	
7	0 - 500 μ A (microampere) current control (1-10): 50 μ A when incrementing and 100 μ A when decrementing	User change intensity	MainWindow, Device, MainWindow.ui	Turn on device and observe current meter on screen. Press up or down buttons to change current.	The MainWindow UI displays a meter that shows what level the current is at, and displays the different levels the user can use. When current levels are changed by pressing the up or down buttons, current level meter changes by 100 microampere increments, and MainWindow records what current level is chosen. MainWindow informs the device of the current level and the current is set on the device.
8	30 minute auto -off when not in use.	N/A	Device	Power on device and wait	The device has an idle timer that counts down whenever the device is not being used. Usage of the device resets the timer, so when the device is idle, the timer will count down and the device will shut off.
9	Battery charge indicator: device issues a warning at 5% charge and shuts down at 2% after issuing another warning.	Low Battery indicator	MainWindow, Device	Change battery percentage on the battery percentage spinbox, or use the device until battery is low.	The batter is shown in the top left, and goes down with usage of the device. When the battery gets low, a battery LED will indicate low battery. When the battery gets to 5% charge, a warning will pop up, and again at 2%.
10	User can choose to record a therapy and add to history of treatment.	User records session history	MainWindow, Device, Record	Start a session and press the record button.	A therapy session can be recorded by pressing the record button. The button allows MainWindow to know to record the session, and MainWindow creates a record at the end of the session, which is then added to the record of records in the Device.
11	Automatically and permanently disables itself should a single fault develop within the device causing the current to exceed 700	Device auto-disables itself	MainWindow, Device	Turn on the device and press the 700 μ A fault checkbox.	When the 700 μ A current level is reached, the device immediately powers off.

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