

Test	Test Description	Equipment Needed	Pass/Fail Criteria	Expected Outcome	Customer Need	Spec
Device Surface Temperature Test	This test will test the effect of the inner circuitry heat generation on the surface temperature of the hearing aid enclosure. A thermocouple will be placed on the outside surface of the product to collect temperature data for a designated period of time. This temperature data will then be analyzed to ensure that maximum temperature limits are not reached	Thermocouple	The device will fail the test if the measured surface temperature is over 110F. The device will pass if it is below 110F	This test will give an idea of what temperatures are generated by the circuitry and if safe temperature limits can be maintained.	CN11, CN12	S8
Ergonomic Compatibility Test	This test will test the comfort of the device when applied to the ear. A wide range of test subject will try on the device and give their qualitative feedback of comfort, feel, ergonomics, etc.	Human Test Subjects, disinfecting wipes to clean the prototype between trials	The device will fail if negative responses is over 40% of subjects surveyed	This qualitative test will determine weather or not the device is comfortable when worn.	CN2, CN4, CN11	S9, S17
Earpiece Weight Test	The complete device will be weighed on a scale to ensure that the total weight does not exceed maximum limits	Scale	The device will fail if it weighs over 15 grams	This test will prove that the device is not to heavy to be worn on a person's ear.	CN4, CN6, CN10, CN11	S10
Consumer Perception Test	This test will test consumer perception of the hearing aid to learn if it is something that they would be willing to purchase. Subjects will be interviewed at Imagine RIT after they are allowed to visually inspect the device.	Human Test Subjects	The device will fail if negative responses is over 40% of subjects surveyed	This test will prove if the product has viable market potential	CN3	S14, S15, S16
Ear mold Compatibility Test	The device will be connected to standard ear molds, domes, and tubes to ensure a satisfactory connection. The connection will be visually inspected for fit characteristics	Standard ear mold, ear dome, and ear tube	The device will fail if it does not effectively connect to the ear mold and ear tube	This test is to ensure that the final product is compatible and will attach to standard ear molds and ear tubes	CN9	S18
Micro USB Connector Feasibility Test	To test the feasibility of using the Micro USB as the main support for the connection between the transfer module and the round enclosure a force gauge will be used to measure the force required to pull the USB plug from the USB receptacle. The force gauge will also be used to apply a normal force to the transfer module and visually inspect the connection receptacle and housing for any stress related damages.	Force gauge	The device will fail if it takes less then 5 lb of force to remove the transfer module	This test will show weather or not the Micro USB connection can structurally support the main connection between the transfer module and round enclosure.	CN7	S7
Selector Button Feasibility Test	To test the effect of a standard push force (10 lb) on the selector button a test will be conducted by applying a force in each of the 5 directions ( push in, push right, push left, push up, push down). Stress and part breakages will be qualitatively observed	Force gauge	The device will fail if it takes less than 10 lb of force to damage the connection between the enclosure and selector button	This test will show if our enclosure and selector button support will be able to handle the standard human push force.	CN5, CN13	Feasibility