

Specifications

Spec #	Source	Specification	Direction	Units of measure	Marginal	Ideal	Notes	DRI
S1	CN1	Lowest level of sound detected	min	dB		0	lowest range of normal hearing	EE
S2	CN1	Frequencies amplified	max	Hz	300-3400	85-8000	marginal values are those used in radio, 85 is lowest male voice	EE
S3	CN1, CN6	Maximum amplification	target	dB	130		max considered safe	EE
S4	CN5	Levels of volume adjustment	max	levels		>10	adjusted in steps or continuous	EE
S5	CN7	Time to charge earpiece	min	minutes	<60	<30		EE
S6	CN7	Time to charge transfer module	min	minutes	<120	<30		EE
S7	CN7	Connects to standard USB 2.0 computer port	target		with adapter	yes		EE
S8	CN11, CN12	Maximum temperature at outside surface of device	min	oF	<110	<98		MEEE
S9	CN2, CN4, CN11	Range of adult ear size accommodated	max	percentile	25th to 75th	10th to 90th		ISE
S10	CN4, CN6, CN10, CN11	Weight of earpiece	min	g		<12	marginal values will depend on ergonomic info	ISE
S11	CN4, CN6, CN10, CN11	Weight of transfer module	min	g		<8	marginal values will depend on ergonomic info *may nor be applicable	ISE
S12	CN8	Earpiece battery life at maximum amplification	max	hours	>16	>48		EE
S13	CN4, CN11	Angle head can tip without the earpiece falling off (any direction)	max	degrees	>90	>135		ISE
S14	CN4, CN11	Earpiece stays in place during impact/vibration (from running)	max				need to define this spec	ISE
S15	CN3	Percent of surveyed people who identify a picture of the device as something other than a hearing aid.	max	percent	>60	>80	team should conduct surveys (at imagine RIT? thoughts?)	ID
S16	CN3	Percent of surveyed hard of hearing people who prefer the form of the new device to standard behind the ear hearing aids	max	percent	>60	>80	team should conduct surveys	ID
S17	CN3	Percent of surveyed hearing people who would use the device for Bluetooth or music listening	max	percent	>50	>70	team should conduct surveys	ID
S18	CN11	Percent of surveyed people who feel the device is comfortable to wear	max	percent	>50	>70	team should conduct surveys	ID
S19	CN9	Attaches to a standard ear tube and ear mold		binary	yes	yes	maybe should interview audiologist for final decision	ID
S20	CN13	Additional toggle switch		binary	no	yes	allows for expansion in subsequent projects without complete redesign of housing. ((may not be applicable for new design))	ID
S21	CN14	Manufactured cost (estimated)	min	\$	<2000	<1000	not as important in first round of prototyping, but should be considered	ISE
S22	CN15	Communicates by Bluetooth to cell phone or music player		binary	No	Yes	Optional, delete if necessary	EE
S23	CN16	Noise cancellation abilities		binary	No	Yes	Optional, delete if necessary	EE