Team #6
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Test Plan

Part 1

- Unit Tests
    - Test power supplied from Teensy provides 3.3 V
    - Test to see if Audio Shield can take in audio input. Can run simple code to see if any signal is read in by the Shield.
    - Test if Audio Shield can output a basic audio signal from the audio out jack.
    - Test if rotary encoder is sending signals to the Teensy 4.1
    - Test onboard LED for Teensy 4.1
- Verification Tests
    - Stereo signal can pass through the circuit
    - Test SMD LEDs
    - Rotary encoders are able to change the level of audio effect placed on the signal:
        - Able to boost the bass of the signal
        - Able to add tremolo effect to the signal
        - Able to add reverb effect to the signal
    - Rotary encoder click functionality is able to turn on/off the effects
- Validation Tests
    - Case protect the internal PCB
    - At least one audio effect is placed on the signal
    - Test if its portable
    - Test if it has a clean and intuitive user interface

Part 2

Unfortunately boards did not arrive on time, so all of these tests were done on our final prototype design which included all components that would be on the board and updated software with full functionality.

Test Case

Test Author: Cesar Chich-Saquic						
	Test Case Name:	Rotary Encoder- Toggle Test			**Test ID #:**	RE-T-01
	Description:	*Toggle on and off different audio effects with the click functionality of the rotary encoders.*			**Type:**	black box
Tester Information						
	Name of Tester:	Fedya Henrichs-Tarasenkov			**Date:**	12/4/25
	HW/SW Version:	HW v1.2 (Breadboard prototype with rotary encoders)			**Time:**	8:15 AM
	Setup:	*Plug in Teensy to power, provide audio input signal through input jack, ensure speaker is correctly plugged into output jack*				
STEP	**Action**	**Expected Result**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Toggle Bass boost	Bass LED turns on and tester can hear audible change in bass level of basic pass through signal.	x			
2	Toggle Rever	Reverb LED turns on and the tester can hear the reverb effect added to the basic pass through signal.	x			
3	Toggle Tremelo	Tremolo LED turns on and the tester can hear the tremolo effect added to the basic pass through signal.	x			
	Overall test result:		x			Each effect correctly toggled with the rotary encoder's click functionality. Correct LEDs toggled and the tester could hear each effect added to the signal.

Matrix Test

Test Author: Cesar Chich-Saquic				
	Test Case Name:	Rotary Encoder- Knob Test	**Test ID #:**	RE-KN-01
	Description:	Rotate each effect's rotary encoder knob to change the amplification level of each audio effect. Tester	**Type:**	black box
Tester Information				
	Name of Tester:	Fedya Henrichs-Tarasenkov	**Date:**	12/4/25
	HW/SW Version:	HW v1.2 (Breadboard prototype with rotary encoders)	**Time:**	8:40 AM
	Setup:	*Plug in Teensy to power, provide audio input signal through input jack, ensure speaker is correctly plugged into output jack, toggle each effect on before testing its amplification and toggle off when testing for that effect is done.*		

TEST	**INPUTS**	**EXPECTED OUTPUTS**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Rotate bass knob clockwise	Bass amplification should audibly increase as tester rotates knob	x			Hear more of a “thump” at lower frequency levels of audio
2	Rotate bass knob counter-clockwise	Bass amplification should audibly decrease as tester rotates knob	x			Hear less of a “thump” from lower frequencies
3	Rotate reverb knob clockwise	Reverb amplification should audibly increase as tester rotates knob	x			Reverb tail time increased leading to more of an echo effect on the audio
4	Rotate reverb knob counter-clockwise	Reverb amplification should audibly decrease as tester rotates knob	x			Tail time decreased which led to less echo and

						more of a clean pass through signal
5	Rotate tremolo knob clockwise	Tremolo amplification should audibly increase as tester rotates knob	x			Amplitude of low-frequency wave increases which leads to larger levels of volume fluctuations
6	Rotate tremolo knob counter- clockwise	Tremolo amplification should audibly decrease as tester rotates knob	x			Volume fluctuations audibly decrease until a clean pass through signal is reached
	Overall test result:		**x**			The tester was able to rotate knobs to increase/decrease effect amplification as expected.