Test Case

Test Author: A-Team (Cass Blum, Teresa Nguyen, Savannah Bedford, Angelina Patterson)				
	Test Case Name:	Illumi-not-i full system test	**Test ID #:**	Illumi-not-i-01
	Description:	Testing our subsystems that feature the RFID arming and disarming of the alarm system, checking the LiPo battery, along with the LEDs when implemented, and ensuring the accelerometer detects motion and the boost converter powers up the LED strips.	**Type:**	□ white box □ black box ☒ Both
Tester Information				
	Name of Tester:		**Date:**	
	HW/SW Version:	1.0	**Time:**	
	Setup:	Ensure the system's features are fully integrated.		

STEP	Action	Expected Result	PASS	FAIL	N/A	Comments
1	3.7V LiPol battery	- The ESP32-S3 powers on along with the LED strips.				

2	Accelerometer	- Timed shaker testing:
		  - >10s, serial monitor reads “Stealing!”
		  - <10s, serial monitor reads, “10s alarm timer set…”
		  - >2s, serial monitor reads, “Biking!”
		  - <2s, serial monitor does nothing
		  - >3s, serial monitor reads, “Stopped!”
		  - <3s, serial monitor reads, “Biking!”				

3	RFID Tag	- RFID is tapped, it arms the system. - RFID badge is tapped after arming, it DISARMS the system.				
4	Piezo Buzzer	Based on the accelerometer motion: - On when shaken >10s. - Off when shaken <10s. Timer resets and continues countdown.				
5	Boost converter	- Converts 3.7V to 5V. - Powers on the LED strips.				

6	LED strips	- LED strips are on. - The switch is flipped, and the LEDs light up. - The brightness of the LEDs is adjusted.				
	Overall test result:					

Matrix Test

Test Author: A-Team						
	Test Case Name:	LED strip behavior and power test	**Test ID #:**	LED-01		
	Description:	Verification of the LED strips lights up based on the input voltage of the boost converter. To demonstrate how the power system and LEDs behave under different supply conditions.	**Type:**	□ white box ⊟ black box □ _____		
Tester Information						
	Name of Tester:		**Date:**			
	HW/SW Version:	1.0	**Time:**			
	Setup:	Isolate the LED system and use a power supply to test the input with different number values 0 - 255 based on NeoPixel's RGB value settings				

TEST	**INPUTS**	**EXPECTED OUTPUTS**	**PASS**	**FAIL**	**N/A**	**Comments**
1	255	LEDs at max brightness.				
2	175	LEDs slightly dim from max brightness.				
3	90	LEDs start to dim or flicker				
4	50	LEDs are flickering or are about to turn off.				

5	0	LEDs should not turn on.				
	Overall test result:					

Test Author: A-Team						
	Test Case Name:	RFID badge test	**Test ID #:**			RFID-01
	Description:	Verification of RFID badge functionality. When the RFID badge is tapped it should be able to read the dedicated hex ID, as well as determine if the Illumi-not-i system is armed or disarmed.	**Type:**			□ white box ⊟ black box □ _____
Tester Information						
	Name of Tester:	Teresa Nguyen	**Date:**			05-12-2025
	HW/SW Version:	1.0	**Time:**			Is fake
	Setup:	Testing RFID functionality				
TEST	**INPUTS**	**EXPECTED OUTPUTS**	**PASS**	**FAIL**	**N/A**	**Comments**
1	RFID ID recognition	Serial Monitor gives approval message if correct badge, rejection message if incorrect badge.				
2	RFID arming the system	If Illumi-not-i is ARMED, serial monitor should read “locked!” when RFID badge taps. If time, add RFID lighting system to reflect behavior (flash red? orange?)				

3	RFID disarming the system	If Illumi-not-i is DISARMED, serial monitor should read “unlocked!” when RFID badge taps. If time, add RFID lighting system to reflect behavior (flash green? purple?)				
	Overall test result:					