Example Test Plan: LED 20

Test Author: Team 01				
	Test Case Name:	Verify Structural Integrity of 3D-printed LED20 Enclosure	**Test ID #:**	LED20-01
	Description:	*This test case assesses the durability and structural integrity of the LED20 die's 3D-printed enclosure under various stress conditions. The 3D-printed enclosure should withstand normal rolling, minor impacts, and moderate pressure without cracking, deforming, or causing internal components to shift or become damaged. These tests ensure that the enclosure is robust enough for practical use as a rolling die.*	**Type:**	□ white box ☑ black box □ _____
Tester Information				
	Name of Tester:	Henry, Brad, Caleb, Chris	**Date:**	12/2/2024
	HW/SW Version:	1.0	**Time:**	04:00 PM
	Setup:	*Ensure the enclosure is secure, correctly keyed, and all pegs inserted into corresponding holes, record any existing imperfections before starting and take baseline images of the enclosure for post-test comparison*		

STEP	**Action**	**Expected Result**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Roll LED20 onto a flat surface from a height of 1 foot	The device lands and comes to rest naturally				
2	Observe the impact of the role	The device is physically unaltered				
3	Repeat steps 1-2 for 50 rolls	The device is physically unaltered				
4	Take pictures of the device	The device is physically unaltered				
5	Drop LED20 onto a flat surface from a height of 3 feet	The device lands and comes to rest naturally				
6	Observe impact of a drop	The device is physically unaltered				
7	Repeat steps 5-6 for 30 drops	The device is physically unaltered				
8	Take pictures of the device	The device is physically unaltered				
9						
	Overall test result:					

Example Matrix Test (for varying parameters)

Test Author: Team 01				
	Test Case Name:	Verify LED20 Die Face Illumination with Orientation Detection	**Test ID #:**	LED20-02
	Description:	*This test case verifies that all embedded LEDs in the LED20 correctly illuminate the upright face of the die after experiencing SMD when it is oriented upright on a flat surface. This test ensures that the LED correctly identifies the orientation of the die and activates only for the face in the position.*	**Type:**	□ white box ☑ black box □ _____
Tester Information				
	Name of Tester:	Henry, Brad, Caleb, Chris	**Date:**	12/5/2024
	HW/SW Version:	1.0	**Time:**	5:00 PM
	Setup:	*Ensure ESP32-C6 has power, LSM6D032 is correctly reporting data, all LEDs operational*		

TEST	**INPUTS**	**EXPECTED OUTPUTS**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Roll LED20 on flat surface	Device lands and comes to rest naturally				
2	Examine upright face of die	Upright face is illuminated				
3	Record number rolled and P/F					
4	Repeat Steps 1-3 until all faces of die have been rolled 10 times	Upright face illuminates every time				
	Overall test result:					