Team 16
ECE411 Fall 2025
Week 10 Homework - Test Plan

Part 1

Unit Tests

- Test power supply provides 12V to voltage regulator
- Test power supply provides 5V to ESP32 Feather

- Test motor driver receives 12V from power supply
- Check that motor driver is functional
- Check output of motor driver

- Check for 3.3V at IR sensor
- Check continuity between board and IR sensor
- Check that IR sensor is functional– ESP32 reads IR sensor

Verification Tests

- Hand being sensed by IR sensor will power the motor

Validation Tests

- Brush stays attached to motor shaft
- Dust is removed from hands
    - Hands are cleaner than before

Part 2

Test Author: **Wyatt Bilodeaux**						
	Test Case Name:	Function test			**Test ID #:**	
	Description:	*We are testing to see if the project functions as expected.*			**Type:**	Black Box
Tester Information						
	Name of Tester:				**Date:**	
	HW/SW Version:	1.0			**Time:**	
	Setup:	*Fresh start power cycled.*				
STEP	**Action**	**Expected Result**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Provide power	No white smoke.				
2	Place hand near IR sensor	Motor starts spinning.				
3	Place fingers on brush	Motor continues to spin.				
4	Remove hand from IR sensor area	Motor stops spinning.				
5	Check fingers	Fingers should be cleaner.				
	Overall test result:					

Test Author: **Wyatt Bilodeaux**							
	Test Case Name:	Power supply test		**Test ID #:**			
	Description:	Verify correct voltages are being supplied where required.		**Type:**			Black Box
Tester Information							
	Name of Tester:			**Date:**			
	HW/SW Version:	1.0		**Time:**			
	Setup:	The project sat to discharge any power in capacitors.					
TEST	**INPUTS**	**EXPECTED OUTPUTS**	**PASS**	**FAIL**	**N/A**	**Comments**	
1	12V into Voltage Regulator	5V out of regulator.					
2	5V into ESP32	3.3V to IR sensor.					
	Overall test result:						