Test Case

Test Author: Team 5				
	Test Case Name:	Power Supply Testing	**Test ID #:**	PS-TC-01
	Description:	*Using Bifurcation, and a current limited lab power supply use the onboard jumpers to safely test power delivery to all sections of the circuit*	**Type:**	■ white box □ black box □ _____
Tester Information				
	Name of Tester:	Bucanan Howard	**Date:**	12/4/24
	HW/SW Version:	Ver 4/ Ver 1.0	**Time:**	6:00 PM
	Setup:	*Variable PSU, board with buttons and display*		

STEP	Action	Expected Result	PASS	FAIL	N/A	Comments
1	No Jumpers, Barrel Jack Plugged in	5 V on cathode of the diode	■			
2	Jumper to ESP32 plugged in	5V at Power pin of ESP 32, current draw increased	■			
3	Jumper to Screens Plugged in	Screens power on, current draw increased	■			Reset required to see image on screen
4	Plug in Select Button	Onboard LED on buttons turns on		■		V_{com} on Nmos stack incompatible with power supply
5	Probe Button signal pin in	3.3 volts on each button data pin	■			
6	Connect all jumpers and start game	Display lights up at full brightness as do button LEDs		■		Increase current limit to 250 mA Pass on re-test
	Overall test result:		■			Core functionalities power as specced, hardware change required for the button LEDs

Matrix Test (for varying parameters)

Test Author: Team 5				
	Test Case Name:	Directional Button Functions	**Test ID #:**	DB-MT-01
	Description:	Test that the 4 directional buttons function as intended.	**Type:**	□ white box ■ black box □ _____
Tester Information				
	Name of Tester:	Demetri Van Sickle	**Date:**	12/4/24
	HW/SW Version:	4.0/1.0	**Time:**	6:40pm
	Setup:	4 directional buttons, main board, 5V supply, display		

TEST	INPUTS	EXPECTED OUTPUTS	PASS	FAIL	N/A	Comments
1	Select button pressed at reboot	Start screen transitions to game screen	■			
2	Select button pressed at game	Select screen entered	■			
3	Exit Button Pressed	Game exits	■			
4	Left Button Pressed	Cursor scrolls left	■			
5	Right Button Pressed	Cursor scrolls right	■			
6	Up Button Pressed	Screen Brightness Increases	■			Double check schematic for silk screen assignments
7	Down Button Pressed	Screen Brightness Decreases	■			
	Overall test result:		■			

Test Case

Test Author: Team 5						
	Test Case Name:	On/Off Switch Testing			**Test ID #:**	SW-TC-02
	Description:	*Test that the voltage regulator correctly regulates all incoming voltage to output 5 Volts DC, that the on/off switch properly functions and activates and/or deactivates the ESP32 based on its position, and that the LEDs provide proper feedback for incoming wall voltage connection and switch position.*			**Type:**	■ white box □ black box □ _____
Tester Information						
	Name of Tester:	Daniyil Kashkan			**Date:**	12/4/24
	HW/SW Version:	Ver 4/ Ver 1.0			**Time:**	7:20 PM
	Setup:	*12V cable converter, 5V voltage regulator, LEDs with resistors, on/off switch (7101J1V3QE2 C&K)*				
STEP	**Action**	**Expected Result**	**PASS**	**FAIL**	**N/A**	**Comments**
1	Plug Cable into a 120V AC Wall Socket	120V AC converted to 5V 2A DC; first LED lights up	■			Converted to 12V 2A DC, which is acceptable
2	Flip the Switch Position	Closes or opens the connection; second LED turns on/off	■			
3	Probe Voltage Regulator	Takes in 12V (from step 1), outputs 5V at all times	■			Minimum of 7V input required
4	Probe the ESP32	Turns on when switch is closed and off when switch is opened	■			Requires 7V min for proper 5Vin
5	Disconnect Wall Socket Cable	The entire device, including both LEDs, shuts off	■			
	Overall test result:		■			All tests correctly passed, switch circuit ready to be applied to the rest of the device