| **Test** | **FSR**  **Paragraph #** | **Owner** | **Status** | **Success Criterion** | **Methodology** |
| --- | --- | --- | --- | --- | --- |
| Buck Converter 12 -> 5 V | 3.2.3.3.1 | RF | Succesful | Intakes 12 V DC outputs 5 V DC | Measured with multimeter |
| Buck Converter 5 -> 3 V | 3.2.3.3.1 | RF | Succesful | Intakes 12 V DC outputs 3 V DC | Measured with multimeter |
| Buck Converter 5 -> -5 V | 3.2.3.3.1 | RF | Succesful | Intakes 5 V DC outputs -5 V DC | Measured with multimeter |
| Wave Gen Powers On | 3.2.3.1.5 | YH | Succesful | Outputs voltage when provided 5 V supply power | Measured with multimeter |
| Wave Gen Amplitude | 3.2.3.1.5 | YH | Succesful | Outputs 0.5, 1, and 2 V successfully | Measured with multimeter |
| Wave Gen Frequency | 3.2.1.3 | YH | Succesful | Outputs frequencies 1, 20, and 30 Hz | Measured with oscilloscope |
| Wave Gen Output Shape | 3.2.1.3 | YH | Succesful | Produces sine, square, and triangular waves at all 3 amplitudes and frequencies | Measured with oscilloscope |
| Wave Gen Noise | 3.2.3.2.1 | YH | Succesful | Output signal is moderately accurate | Measured with oscilloscope |
| Ammeter | 3.2.1.4 | PZ | Succesful | Able to read 0.5 A of current | Measured with multimeter |
| Ohmmeter | 3.2.1.4 | PZ | Succesful | Able to read 100 ohms and 10k ohms | Measured with multimeter |
| Duty Cycle | 3.2.3.1.5 | YH | Succesful | Can produce a square wave with 50% duty cycle | Measured with oscilloscope |
| App Connects to Bluetooth | 3.2.1.1 | LDS | Succesful | App connects to ESP32 | Observation from app and code terminal |
| App Receives/Sends Data from/to ESP32 | 3.2.1.1 | LDS | Succesful | ESP32 reacts to commands sent from the app / App displays message from ESP32 | Observation from app and code terminal |
| App - Multimeter Function | 3.2.3.1.3 | LDS + PZ | Succesful | App displays correct parameter with correct value | Observation from app and code terminal |
| App - Oscilloscope Function | 3.2.3.1.3 | LDS + PZ | Succesful | App displays accurate graph and can display requested parameters | Compare to actual oscilloscope |
| App - Waveform Gen Function | 3.2.3.1.3 | LDS + YH | Succesful | App takes in appropriate settings and communicates with ESP32 to output correct signal | Observation from app, code terminal, and oscilloscope |
| App - Power Supply Function | 3.2.3.1.3 | LDS + RF | Succesful | App triggers Lab Kit to output power | Measured with multimeter and observed from app |
| Switching Menus Within App | 3.2.1.1 | LDS | Succesful | Can switch to a different menu within app while not disabling previous action | Observation from app and ESP32 |
| App Works on IOS | 3.2.1.1 | LDS | Succesful | App is downloaded and operates with all functionality | Observation from phone |
| App Works on Android | 3.2.1.1 | LDS | Succesful | App is downloaded and operates with all functionality | Observation from phone |
| ADC Power | 3.2.1.2 | PZ | Succesful | ADC powers on and interprets analog signal into binary output correctly | Observation from |
| ADC Speed | 3.2.1.2 | PZ | Succesful | ADC reads voltages fast enough to produce a smooth sine wave of at least 60 Hz | Observed through use of application and real oscilloscope |
| ADC Amplitude | 3.2.1.2 | PZ | Succesful | ADC can read between 0, 2.5 and 5 V | Observation from app and code terminal |
| ESP32 Power | 3.2.3.1.1 | RF | Succesful | Turns on with correct input signals | Observation code terminal |
| ESP32 Communicates With App | 3.2.1.1 | Team | Succesful | ESP32 communicates via Bluetooth and sends/receives data from the app | Observation from app and code terminal |
| ESP32 Communicates With Wave Gen | 3.2.3.1.5 | Team | Succesful | ESP32 sends correct information to waveform generator | Observation from app, code terminal, and oscilloscope |
| ADC Communicates With ESP32 | 3.2.1.2 | Team | Succesful | ESP32 correctly reads digital input from ADC | Observation from code terminal |
| ESP32 Communicates With Power Supply | 3.2.1.5 | Team | Succesful | ESP32 triggers circuit to output power | Observation from multimeter and terminal |
| Kit runs at max current/voltage for 30 minutes | 3.2.4 | Team | Succesful | Kit can run at max outputs for extended period of time without catastrophic device failure or inappropriately excess noise | Validated by validating everything else |