

Environmental Test Report

Date of Testing: Dec 7, 2024 → Dec 8, 2024

Test Engineer: Jesse DeWald (JD)

Equipment Under Test: VxMark / VSAP with VotingWorks Modifications

Overview

This report summarizes results from environmental testing performed to confirm that the EUT can withstand expected operating and storage conditions. Testing included exposure to low temperatures (outdoor nighttime environment) and elevated temperatures (an indoor environment with artificially increased heat). All tests passed, providing high confidence that the product will pass more rigorous testing.

Test Objectives

- Validate that the EUT operates correctly within a specified temperature range.
- Confirm that no permanent damage or functional degradation occurs under conditions representative of typical outdoor cold exposure and indoor heat conditions.

Test Setup

- **Low-Temperature Exposure (Outdoor):**
 - Test conducted during nighttime hours in an outdoor environment.
 - Ambient temperature recorded at 0°C to +3°C
- **High-Temperature Exposure (Indoor):**
 - Test conducted in a closed room with a heating unit set to maximum output.
 - Ambient temperature recorded at +30°C to +32°C.
- **Sample Size:** 1 unit

Test Procedures

1. **Outdoor Cold Exposure:**
 - EUT placed outside for 2 hours and was exposed to naturally occurring cold temperatures.
 - Functional tests (e.g., power-on, operational checks) were performed before, during, and after the outdoor exposure to confirm stability.
2. **Indoor High-Temperature Exposure:**

- EUT was then tested in a controlled indoor environment for 2 hours with a heater operating at its highest setting.
 - Multiple temperature measurements were recorded to ensure stable high-temperature conditions.
 - Functional tests were performed before and after heat exposure to verify performance consistency.
3. **Stabilization and Recovery Checks:**
- Following both test conditions, the units were returned to ambient laboratory conditions.
 - Final functional tests confirmed no latent issues remained after temperature extremes.

Acceptance Criteria

- No visible damage or deformation.
- EUT must power on and operate within normal specifications during and after both cold and hot exposure periods.
- Post-exposure tests must show no performance degradation.

Results

- **Low-Temperature Test (Outdoor):** No visible damage or operational issues. EUT remained fully functional after the prolonged outdoor exposure.
- **High-Temperature Test (Indoor with Heater):** No signs of overheating or performance reduction. EUT operated normally and retained full functionality after heat exposure.

Conclusions

EUT passed the environmental testing scenario, demonstrating reliable operation under both naturally occurring low outdoor temperatures and artificially elevated indoor temperatures.

This provides high confidence that the EUT will pass the more rigorous standards-based testing.