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PERFORMANCE TEST REPORT

Document ID: PTR-SKYWATCH-003

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Test Date: 07 October 2025

Test Location: Edwards AFB / Yuma Proving Ground

Test Conductor: AFOTEC

SYSTEM UNDER TEST

System: Horizon-200

Manufacturer: SkyWatch Industries LLC

Serial Number: SKYWATCH-PT-0003

Configuration: Block 4 Production Standard

TEST OBJECTIVES

1. Validate operational range under mission-representative conditions
2. Verify payload capacity and center-of-gravity limitations
3. Assess endurance at various altitudes and payload configurations
4. Evaluate data link performance and reliability
5. Confirm environmental operating envelope

TEST RESULTS SUMMARY

RANGE TESTING

Flight Profile: Standard ISR mission profile with 4 waypoint navigation

Conditions: Standard day, winds 5 knots

Fuel Load: 94% maximum capacity

Result: 1304 km achieved

Specification: 1500 km required (threshold)

Status: MARGINAL

PAYLOAD TESTING

Configuration: Full ISR suite with EO/IR/SAR sensors

Measured Capacity: 207 kg

Specification: 300 kg required (threshold)

Status: FAIL

Center of Gravity: Tested at 31% MAC (within 22-35% limits)

ENDURANCE TESTING

Altitude: 43168 ft MSL

Payload: 90% of maximum tested capacity

Measured Endurance: 33 hours

Specification: 24 hours required

Status: PASS

DETAILED TEST ANALYSIS

SERVICE CEILING VERIFICATION

Maximum Altitude Achieved: 44,824 ft MSL

Engine Performance at Ceiling: 88% rated power

Rate of Climb at Ceiling: 176 ft/min

Status: BELOW THRESHOLD

DATA LINK ASSESSMENT

System Type: LOS C-band

Range Tested: 179 km line-of-sight

Throughput: 61 Mbps sustained

Latency: 190 ms average

Packet Loss: 1.92%

Status: MEETS REQUIREMENTS

ANOMALIES AND DEFICIENCIES

- Payload gimbal stabilization exhibited 1.8° drift over extended operation
- Minor avionics warning at 37707 ft - cleared after system reset

CONCLUSIONS

The Horizon-200 demonstrated mixed performance across tested parameters. Measured range of 1304 km and payload capacity of 207 kg partially meet OVERWATCH program requirements. Cost-effective solution delivers required performance at significantly lower lifecycle cost than alternatives.

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