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PERFORMANCE TEST REPORT

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Test Date: 29 June 2025

Test Location: Edwards AFB / Yuma Proving Ground

Test Conductor: AFOTEC

SYSTEM UNDER TEST

System: Pathfinder-LR

Manufacturer: Meridian UAV Corporation

Serial Number: MERIDIAN-PT-0010

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 9 knots

Fuel Load: 93% maximum capacity

Result: 1721 km achieved

Specification: 1500 km required (threshold)

Status: PASS

PAYLOAD TESTING

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

Measured Capacity: 344 kg

Specification: 300 kg required (threshold)

Status: PASS

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

ENDURANCE TESTING

Altitude: 36707 ft MSL

Payload: 86% of maximum tested capacity

Measured Endurance: 29 hours

Specification: 24 hours required

Status: PASS

DETAILED TEST ANALYSIS

SERVICE CEILING VERIFICATION

Maximum Altitude Achieved: 45,562 ft MSL
Engine Performance at Ceiling: 86% rated power
Rate of Climb at Ceiling: 84 ft/min
Status: VERIFIED

DATA LINK ASSESSMENT

System Type: SATCOM Ku-band
Range Tested: 178 km line-of-sight
Throughput: 58 Mbps sustained
Latency: 121 ms average
Packet Loss: 0.44%
Status: MEETS REQUIREMENTS

ANOMALIES AND DEFICIENCIES

No significant anomalies noted during testing.

CONCLUSIONS

The Pathfinder-LR demonstrated satisfactory performance across tested parameters. Measured range of 1721 km and payload capacity of 344 kg meet or exceed OVERWATCH program requirements. Modular architecture enables rapid capability insertion and future growth beyond current requirements.

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