

PERFORMANCE TEST REPORT

Document ID: PTR-FALCON-007

Classification: UNCLASSIFIED // FOR OFFICIAL USE ONLY

Test Date: 21 September 2025

Test Location: Edwards AFB / Yuma Proving Ground

Test Conductor: AFOTEC

SYSTEM UNDER TEST

System: Raptor-MQ

Manufacturer: Falcon Defense Systems Inc.

Serial Number: FALCON-PT-0007

Configuration: Block 2 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 2 waypoint navigation

Conditions: Standard day, winds 9 knots

Fuel Load: 93% maximum capacity

Result: 1739 km achieved

Specification: 1500 km required (threshold)

Status: PASS

PAYLOAD TESTING

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

Measured Capacity: 341 kg

Specification: 300 kg required (threshold)

Status: PASS

Center of Gravity: Tested at 32% MAC (within 22-35% limits)

ENDURANCE TESTING

Altitude: 37636 ft MSL

Payload: 73% of maximum tested capacity

Measured Endurance: 27 hours

Specification: 24 hours required

Status: PASS

DETAILED TEST ANALYSIS

SERVICE CEILING VERIFICATION

Maximum Altitude Achieved: 42,100 ft MSL
Engine Performance at Ceiling: 86% rated power
Rate of Climb at Ceiling: 67 ft/min
Status: BELOW THRESHOLD

DATA LINK ASSESSMENT

System Type: Hybrid SATCOM/LOS
Range Tested: 208 km line-of-sight
Throughput: 43 Mbps sustained
Latency: 138 ms average
Packet Loss: 1.42%
Status: MEETS REQUIREMENTS

ANOMALIES AND DEFICIENCIES

No significant anomalies noted during testing.

CONCLUSIONS

The Raptor-MQ demonstrated satisfactory performance across tested parameters. Measured range of 1739 km and payload capacity of 341 kg meet or exceed OVERWATCH program requirements. Proven reliability and extensive operational heritage make this a low-risk selection for the OVERWATCH program.

Test Director: LTC S. Johnson
QA Representative: L. Kim

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