

# PERFORMANCE TEST REPORT

**Document ID:** PTR-FALCON-002

**Classification:** UNCLASSIFIED // FOR OFFICIAL USE ONLY

**Test Date:** 11 June 2025

**Test Location:** Edwards AFB / Yuma Proving Ground

**Test Conductor:** IOT&E;

## SYSTEM UNDER TEST

**System:** Raptor-MQ

**Manufacturer:** Falcon Defense Systems Inc.

**Serial Number:** FALCON-PT-0002

**Configuration:** Block 1 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 3 waypoint navigation

**Conditions:** Standard day, winds 6 knots

**Fuel Load:** 91% maximum capacity

**Result:** 1759 km achieved

**Specification:** 1500 km required (threshold)

**Status:** PASS

### ***PAYLOAD TESTING***

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

**Measured Capacity:** 336 kg

**Specification:** 300 kg required (threshold)

**Status:** PASS

**Center of Gravity:** Tested at 27% MAC (within 22-35% limits)

## ***ENDURANCE TESTING***

**Altitude:** 42740 ft MSL

**Payload:** 89% of maximum tested capacity

**Measured Endurance:** 23 hours

**Specification:** 24 hours required

**Status:** FAIL

## DETAILED TEST ANALYSIS

### ***SERVICE CEILING VERIFICATION***

**Maximum Altitude Achieved:** 47,052 ft MSL  
**Engine Performance at Ceiling:** 85% rated power  
**Rate of Climb at Ceiling:** 167 ft/min  
**Status:** VERIFIED

### ***DATA LINK ASSESSMENT***

**System Type:** SATCOM Ku-band  
**Range Tested:** 159 km line-of-sight  
**Throughput:** 47 Mbps sustained  
**Latency:** 158 ms average  
**Packet Loss:** 1.35%  
**Status:** MEETS REQUIREMENTS

## ANOMALIES AND DEFICIENCIES

- Data link intermittent dropouts during high-G maneuvers (documented as known issue)

## CONCLUSIONS

The Raptor-MQ demonstrated satisfactory performance across tested parameters. Measured range of 1759 km and payload capacity of 336 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 J. Morrison  
**QA Representative:** D. Williams

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