Aircraft Qualification Checklist - M210v1

This document may be used to certify and or qualify for the following aircraft:

DJI Matrice 210, Version 1, with dual payload

This qualification checklist is published by the Center for Disaster Risk Policy, Florida State University as part of the Florida Unmanned Aircraft System Working Group, Air Operations Branch, State Emergency Response Team.

Aircraft Qualification Checklist Assigned To:

Pilot's Name: _____

Home Unit/Agency: _____

Home Unit/Agency Phone: _____

Evaluator's Final Verification

To be completed **only** when you (the evaluator) are recommending the trainee for certification.

I verify that (pilot name) _____ has successfully performed and demonstrated all training tasks set forth in this checklist for the aircraft listed on page one. With this verification, I attest this pilot is competent and capable to operate this aircraft and should be considered for qualification.

Evaluator's Printed Name: _____

Evaluator's Signature: _____

Title: _____

Home Agency/Org: _____

Home Agency/Org Phone: _____

Home Agency/Org Email: _____

Date Verified: _____

Agency Certification

I certify that (pilot name) _____ has successfully met all qualifications for the aircraft listed on page one. The certification and/or qualification has been issued. This completed checklist may serve as proof of this certification and/or qualification.

Certifying Official's Printed Name: _____

Certifying Official's Signature: _____

Title: _____

Home Agency/Org: _____

Home Agency/Org Phone: _____

Home Agency/Org Email: _____

Date Certified: _____

About this Aircraft Qualification Checklist

The Florida UAS Aircraft Qualification Checklist (AQC) has been developed to provide an agency/organization centered certification of small unmanned aircraft systems (sUAS) operators on specific aircraft and payload and is part of Florida's effort to accurately type UAS teams and resources.

This AQC lists the tasks required to be demonstrated for the aircraft listed on page one. Each pilot must be observed completing all tasks and demonstrate the required knowledge and skills for the aircraft.

Qualified evaluators observe trainees during training, exercises, and real world incidents, and record successful performance in this ACQ.

Successful performance of all tasks will result in a recommendation to the home agency that the pilot be certified or qualified in the specified aircraft. It is the final determination of the pilot's home agency to accept this recommendation and issue certification or qualification in the specified aircraft. Neither Florida SERT, the Florida UAS Working Group, nor the Center for Disaster Risk Policy have the authority to issue this model certification to a pilot.

DJI Matrice 210 V1 (M210) Specific Tasks

Group A: Preflight

Description: Prepare aircraft for flight operations

Note: Evaluate only numbered **Tasks.** Do not evaluate bullets (if present) – they are examples only.

Action: Unpack and assemble aircraft and systems

Task	Evaluator Initial/Date
M210.A.1. Assemble aircraft, controllers, GCS tablets, etc.	
M210.A.2. Assemble payloads • *Zenmuse X4S, Zenmuse XT, Zenmuse XT2, Zenmuse Z30, etc.* • *Additional strobes, payload delivery, etc.*	

Action: Link GCS software to aircraft

Task	Evaluator Initial/Date
M210.A.3. Connect GCS software such as DJI Pilot to the aircraft from all controllers. • *Verify telemetry and video feeds from both camera payloads*	

Action: Perform preflight checks

Task	Evaluator Initial/Date
M210.A.3. Using a checklist or other job aid, conduct a thorough preflight check of the aircraft	

Group B: Flight Operations

Description: Perform in-flight maneuvers and operations in a safe and effective manner.

Note: Evaluate only numbered **Tasks.** Do not evaluate bullets (if present) – they are examples only

Action: **Takeoff**

Task	Evaluator Initial/Date
M210.B.1. Arm the aircraft	
M210.B.2. Perform takeoff • *Lift off and hover* • *Perform control check*	

Action: **Perform basic flight operations**

Task	Evaluator Initial/Date
M210.B.3. Climb/Descend • *Perform vertical climb/descent* • *Performs climbs/descents while in forward flight*	
M210.B.4. Yaw • *Demonstrates yaw control in hover and coordinated/forward flight*	
M210.B.5. Directional control • *Demonstrates directional control on command* • *Responsive to instructor commands*	

Action: **Ground Reference Maneuvers**

Task	Evaluator Initial/Date
M210.B.6. Pilot flies the aircraft in a rectangular pattern in reference to ground markers. During each leg, the pilot ascends or descends to a new designated altitude. Each leg should be smooth and accurate.	
M210.B.7. The pilot maneuvers the aircraft in a circle around a marked location on the ground, while keeping the nose of the aircraft pointed at the marked location.	
M210.B.8. The pilot establishes a hover at a minimum altitude of 20' AGL directly over a marked point located at least 100' from the pilot's physical location.	

Action: Close Approach

Task	Evaluator Initial/Date
M210.B.9. The pilot maneuvers the aircraft within 5 feet of a solid obstacle and maneuvers horizontally and vertically on request. The pilot demonstrates appropriate preparation and risk mitigation.	

Action: Targeted Approach

Task	Evaluator Initial/Date
M210.B.10. The pilot maneuvers the aircraft to bring payload sensors to bear on targets placed on horizontal and vertical surfaces. The pilot demonstrates planning of the approach and departure from the targets to minimize risk.	

Action: Basic Search

Task	Evaluator Initial/Date
M210.B.11. Pilot demonstrates proper RPIC actions for performing a hasty search. • *Plan a hasty search via UAS, given information* • *Perform hasty search via UAS* • *Alternate between inside/outside*	
M210.B.12. Crewmember demonstrates proper sensor operator actions while performing a hasty search. Transfer of control of sensors is accomplished. • *Demonstrate operation of sensor, given direction by PIC/instructor* • *Demonstrate manipulation of sensor (brightness, zoom, etc.)*	
M210.B.13. Crewmember demonstrates proper visual observer actions while performing a hasty search. • *Demonstrate professional SA of relevant airspace* • *Responsive to PIC/AO/instructor commands*	

Action: EO Sensor Operations

Task	Evaluator Initial/Date
M210.B.14. Pilot demonstrates proficiency in aiming the EO sensor at targets requested while utilizing sensor pitch and aircraft yaw.	
M210.B.15. Pilot demonstrates proficiency in manipulating all sensor controls, including camera settings and functions in video and still image modes. • *Exposure, focus control, video captioning.* • *Free and follow modes, transfer of control, and payload linking are demonstrated*	
M210.B.16. Pilot discusses appropriate sensor use cases.	

Action: FLIR Sensor Operation

Task	Evaluator Initial/Date
M210.B.17. Pilot demonstrates proficiency in aiming the FLIR sensor at targets requested while utilizing sensor pitch and aircraft yaw.	
M210.B.18. Pilot demonstrates proficiency in manipulating all FLIR sensor controls, including camera settings and functions in video and still image modes. • *Temp alarm, isotherm, and high/low gain*	
M210.B.19. Pilot discusses appropriate sensor use cases.	
M210.B.20. Pilot demonstrates proficiency with mixed/MSX mode of operation. • *Demonstrates manipulation of one sensor vs. another* • *Responsive to instructor commands*	

Action: Payload Operation

Task	Evaluator Initial/Date
M210.B.21. Pilot prepares the payload for takeoff	
M210.B.22. Pilot demonstrates proficiency in usage of all aircraft payloads. • *Drop mechanism, strobes, gas meter mounts, etc.*	
M2ED.B.23. Pilot demonstrates ability to share aircraft video feed via HDMI.	
M210.B.24. Pilot demonstrates ability to share payload controls with a sensor operator while maintaining situational awareness.	

Action: Approach and Landing

Task	Evaluator Initial/Date
M210.B.25. Battery status is appropriate. • *Confirms bird is inbound for landing due to battery status or intent to land*	
M210.B.26. Pilot prepares aircraft for landing • *Demonstrates orientation of the payload to protect the lens or other fragile components*	
M210.B.27. Pilot demonstrates appropriate directional control • *Demonstrates directional control on command* • *Demonstrates attention to detail in landing procedures* • *Responsive to instructor commands*	

Action: Emergency Procedures

Task	Evaluator Initial/Date
M210.B.28. Loiter and Hold ● *The RPIC will place the UAS into LOITER flight mode, holding current position and altitude* ● *Responsive to instructor commands*	
M210.B.28. Abort to Ground ● *PIC assumes manual control of aircraft and descends into an immediate landing* ● *Responsive to instructor commands*	
M210.B.30. Abort to Launch / Abort to Home ● *PIC assumes manual control of aircraft and lands at launch site* ● *Responsive to instructor commands*	
M210.B.31. Log Last Location ● *The PIC and AO will immediately log all information regarding current location of aircraft: lat/long, altitude, distance from home, etc.* ● *Responsive to instructor commands*	
M210.B.32. Render UAS Safe ● *PIC demonstrates safety and responsibility in approaching downed aircraft* ● *PIC evaluates aircraft, batteries, and props for viability* ● *Responsive to instructor commands*	

Group C: Post-flight

Description: Perform post-flight operations in a safe and effective manner.

Note: Evaluate only numbered **Tasks.** Do not evaluate bullets (if present) – they are examples only

Action: Shutdown

Task	Evaluator Initial/Date
M210.C.1. Approach and Landing	
M210.C.2. Demonstrates appropriate safety Procedures • *Calls for Neutral Throttle* • *Presses aircraft power button until powered down*	

Action: Data Management

Task	Evaluator Initial/Date
M210.C.3. Obtain micro SD cards from all payloads and preserves data.	
M210.C.4. Performs quality control (QC) Data • *Insert micro SD card into the SD card reader* • *Insert SD card into reader device/laptop* • *Browse data for any recognizable issues*	
M210.C.5. Ensure Data is Received by Data Manager • *Confirm delivery and receipt via communication*	

Action: Pack up aircraft

Task	Evaluator Initial/Date
M210.C.6. Ensure all components are in the 'off' position	
M210.C.7. Place aircraft and all accessories correctly within the aircraft hard case.	
M210.C.8. Ensure no pieces or components are missing from the aircraft package.	