

Flight Controller Selection Engineering Checklist

PX4 / ArduPilot | SkyPulse Technologies Ltd. | Version 1.0 - 2 October 2026

Record requirements and primary-source evidence before selecting a board. This checklist is a planning aid, not a flightworthiness certification or report of hardware testing.

1. Mission and configuration

Vehicle, payload, environment, firmware, required modes and compute workload. Define measurable acceptance criteria.

Requirement / evidence: _____

2. Firmware and recovery

Exact board revision, target, release and bootloader. Confirm required features and drivers; record image checksum and recovery steps.

Requirement / evidence: _____

3. Sensing and redundancy

IMUs, shared power/buses, vibration isolation, mounting, calibration and temperature behavior. Identify what is not redundant.

Requirement / evidence: _____

4. Interface allocation

Allocate GNSS, compass, receiver, telemetry, actuators, cameras and companion connection. Check signal levels and port ownership.

Requirement / evidence: _____

5. Power and installed system

Operating input conditions, protection, polarity, transients, startup and peak load. Include carriers, cooling, GNSS, adapters and harness.

Requirement / evidence: _____

Validation and release record

6. Companion workload and cooling

Confirm OS, storage, drivers and accelerator configuration. Measure sustained workload in the installed enclosure; do not substitute peak benchmark claims.

Requirement / evidence: _____

7. Communications and recovery

Verify port mapping, protocol, baud rates and expected connection result. Define response to companion restart, lost link and unusable application data.

Requirement / evidence: _____

8. System bill of materials

Compare the complete installed configuration and dated costs. Record replacement strategy, vendor support and configuration backups.

Requirement / evidence: _____

Release checks

☐ Primary sources and revision-specific specifications checked

☐ All connected interfaces and electrical limits checked

☐ Firmware and application versions recorded

☐ Acceptance tests and open questions recorded

☐ Engineering reviewer and release decision recorded

Reviewer: _____ Date: _____

Open issues / release decision: _____

Sources and integration guidance

docs.sky-pulse.org | PX4 selection guide | ArduPilot hardware directory

Documentation example only. Remove propellers for bench setup and follow the current manufacturer instructions. This checklist does not establish flight readiness.