MCS-001

Linux Mission Control Station

INTRODUCTION

MCS-001 is a Linux-based mission control station for drones and other unmanned platforms, built for field operators who need a fast, reliable control loop, live situational awareness, and flexible system integration. It supports Wi- Fi command, telemetry, and video workflows, enabling long-range operations up to 6–10 km in line-of-sight deployments when used with a compatible air unit and matched antennas. MCS-001 is designed to integrate with the TAK ecosystem and supports ATAK-based mission workflows, allowing operators to combine vehicle position, team awareness, map overlays, and mission data into one operational view. As a Linux platform, MCS-001 is open for customization and rapid deployment of mission applications, while maintaining a compact, field-ready controller form factor for daily unmanned operations.

FEATURES

- Linux-based mission control platform for unmanned systems; supports customization and rapid app deployment.
- ATAK workflow support for situational awareness and mission coordination within the TAK ecosystem.
- Wi- Fi control/telemetry/video link support for IP-based unmanned workflows.
- Long-range Wi- Fi operations up to 6–10 km (typical LOS deployment with compatible air unit and antennas).
- Designed for fast operator response: optimized control loop for real-time piloting and mission actions.
- Mission-ready UI: clear display of link status, vehicle status, and operational prompts for field use.

- Supports common autopilot integration patterns for telemetry and command (implementation depends on vehicle/air unit).
- Video workflow support over IP for live pilot view and payload viewing (stream type depends on air unit).
- Network flexibility: supports infrastructure mode and direct link operation depending on deployment needs.
- Field reliability features: connection monitoring and operator alerts for degraded link conditions.
- Control flexibility: configurable buttons/switches/aux controls for arming, modes, camera triggers, and payload actions.
- Channel mapping support to match different vehicle control conventions and operator habits.
- Operator safety checks: startup state prompts (throttle/switch) to reduce accidental activation.
- Calibration utilities to maintain control accuracy over time (sticks/aux controls).
- USB Type- C for charging and service connectivity.
- Data and configuration management: profile-based setup for fast vehicle switching (workflow dependent).
- Firmware upgrade support for feature improvements and compatibility updates.
- Deployment-friendly: supports field servicing and quick recovery procedures (workflow dependent).
- Integration-friendly: supports external peripherals through standard interfaces (option/configuration dependent).
- Range and robustness depend on antenna placement, RF environment, and regulatory limits; system is designed for best-practice antenna deployment.