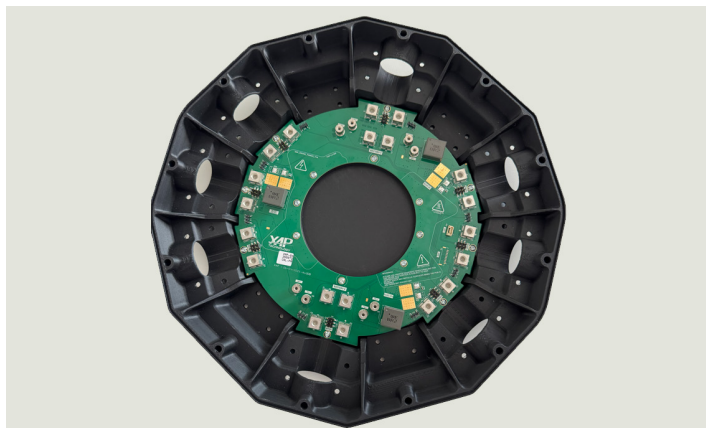


DRONE POWER DISTRIBUTION BOARD



EMBEDDED ELECTRONICS DESIGNED FOR REAL OPERATING CONDITIONS

XAP develops and manufactures embedded electronics systems for mission-critical environments where reliability, thermal stability and operational continuity are non-negotiable.

Designed for heavy UAV platforms operating in defense, aerospace, security and industrial environments, the XAP Drone Power Distribution Board is not a conventional power PCB. It is a modular embedded power backbone engineered to support high-current propulsion architectures while simplifying integration, maintenance and field operations.

The platform was developed around a simple requirement: deliver stable and secure onboard power distribution regardless of UAV configuration, propulsion topology or mission profile.

By integrating the electrical infrastructure directly into the board architecture, XAP significantly reduces external converters, complex harnesses, floating wiring and potential failure points — improving both reliability and maintainability in severe operational environments.

The board has been specifically engineered for heavy multirotor UAVs operating under sustained high-current loads, where thermal management and energy continuity become structural system constraints rather than secondary considerations.

INDUSTRIAL UAV POWER DISTRIBUTION & EMBEDDED ENERGY MANAGEMENT

HIGH-CURRENT POWER DISTRIBUTION FOR HEAVY UAVS:

Continuous high-current operation without voltage collapse.

REDUNDANT TRIPLE-CHANNEL POWER ARCHITECTURE:

Each power function is implemented through three independent redundant channels. A single channel failure does not interrupt mission operation.

FULL EMBEDDED POWER MANAGEMENT:

Integrated synchronous DC/DC converters generate stabilized +5V, +12V and +24/28V rails directly from the main battery system.

REDUCED WIRING COMPLEXITY:

CAN bus and PWM signals are distributed directly through dedicated arm connectors, eliminating floating wiring and reducing integration risks.

FIELD MAINTENANCE ORIENTED DESIGN:

Complete UAV arms can be replaced without disassembling the electronic core architecture, minimizing downtime during operations.

THERMAL LOAD DISTRIBUTION:

Dual battery inputs and distributed current circulation improve heat dissipation across the board and reduce localized connector overheating.

RAPID SYSTEM ADAPTABILITY:

The architecture supports multiple multirotor topologies and allows rapid voltage adaptation depending on payload requirements.

TYPICAL APPLICATIONS

Heavy hexacopter and octocopter UAV platforms
Defense and surveillance drones
Industrial aerial systems
Long-endurance UAV architectures
Agricultural heavy-lift drones
Modular aerospace UAV platforms
High-current propulsion systems
UAV platforms requiring rapid field maintenance



► DRONES: **DRONE POWER DISTRIBUTION BOARD**

POWER DISTRIBUTION ARCHITECTURE

Power channels	6 MOSFET channels (3 pairs)
Architecture	Triple redundant independent power paths
Max current per channel	166 A continuous
Maximum Bus Voltage	100V

AUXILIARY POWER OUTPUTS

DC/DC Controller	STMicroelectronics
Number of converters	3 independent controllers
Input voltage range	6V to 75V
Available Outputs	+5V / +12V / +24V or +28V (15 A)
24V / 28V Selection	Configurable by resistor
Inductors	8.2 μ H — Isat 36.4 A

FILTERING & PROTECTION

CAN Common Mode Filtering	Available
Onboard termination for CAN resistor	Available
Overcurrent protection for auxiliary power and output DC/DC	Yes
Under voltage protection for auxiliary power and output DC/DC	Yes

CONNECTORS

Battery connectors	4 x [pod M5 160 A] 2 per battery
Motor power	16 x [pod M5 160 A] 2 per motor
Motor PWM	8 x [3 pins header 2.54mm] 1 per motor
Motor CAN	8 x [2 rows 6 contacts 2.54 mm] 1 per motor
Auxiliary output	8 x [pod M3 50 A] 2 per outputs

ENVIRONMENTAL & COMPLIANCE

Operating Temperature	-40°C to +85°C
Critical Components Qualification	AEC-Q200
Production Level	Volume production ready

PRODUCT SPECIFICATIONS

Product Type	Stand-alone PCB
Date & Revision	April 2026 - VIA
Product variants	Available
Manufacturer	XAP Technology

REFERENCES

PS0583	DRONE POWER DISTRIBUTION BOARD
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