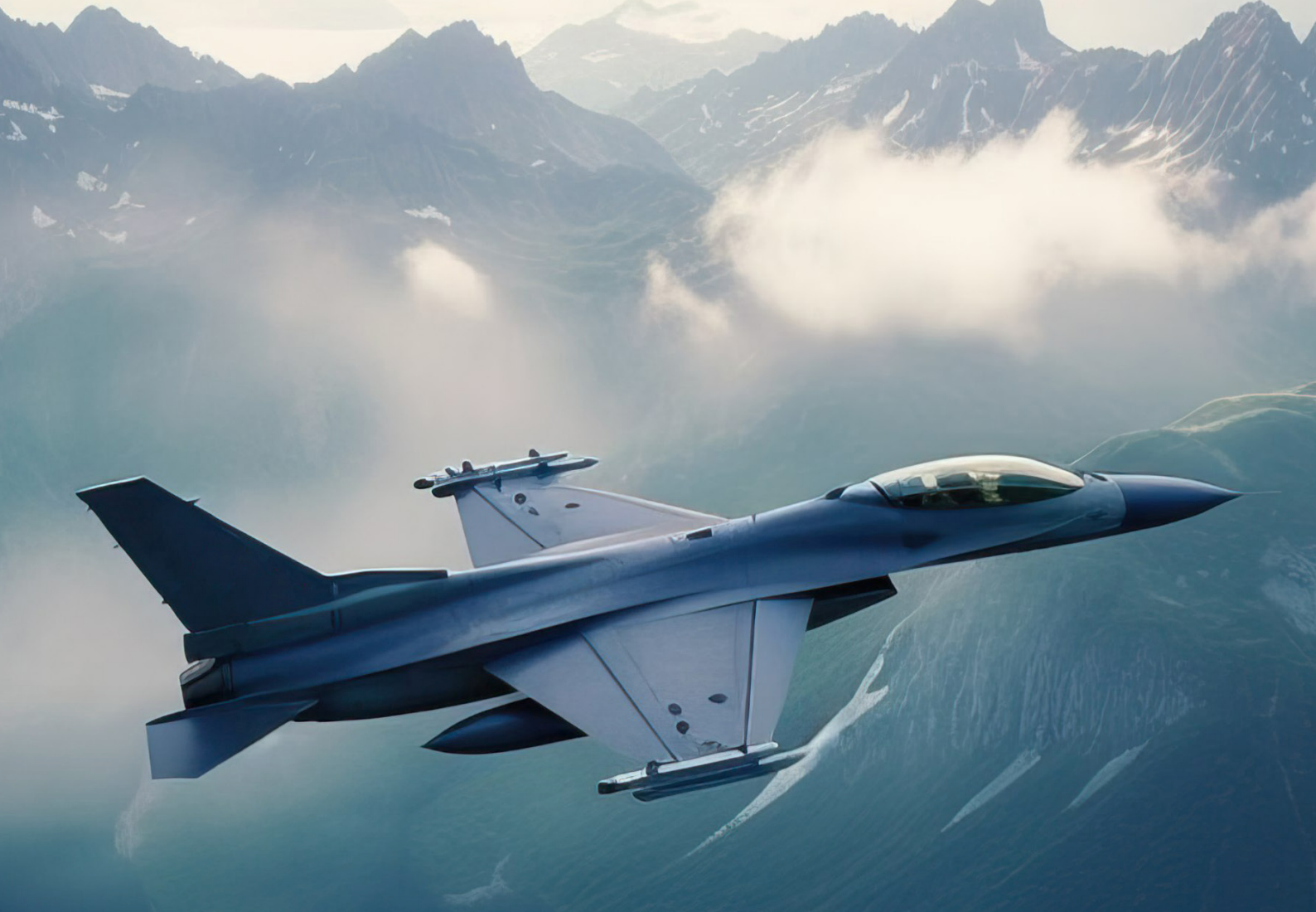
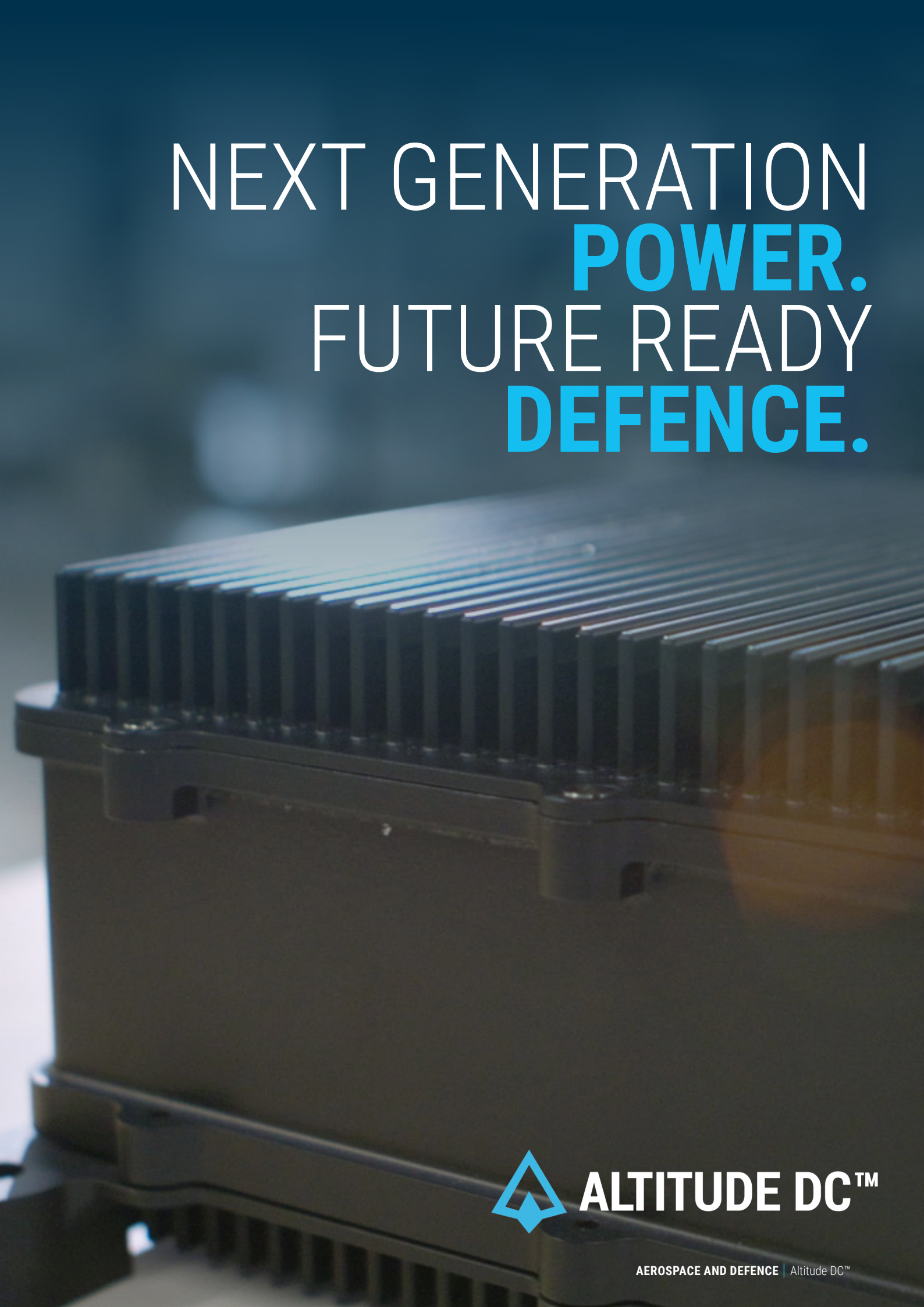


HIGH VOLTAGE
POWER CONVERSION

COMPACT. MODULAR. SCALABLE.

TT Electronics

ALTITUDE DC™


NEXT GENERATION
POWER.
FUTURE READY
DEFENCE.
ALTITUDE DC™

”[Next-generation] aircraft face significant restrictions in range and payload capacity… Although they offer zero emissions during flight, their limited range makes them suitable only for short-haul flights currently. Extending their range without compromising performance is a key focus of our R&D efforts.” Julian Thomas, engineering director for TT Electronics

FUTURE AEROSPACE POWER CONVERSION BUILDING BLOCKS (FABB)

As the aerospace industry shifts towards hybrid, electric, and hydrogen-powered aircraft, the demand for innovative, high-voltage power conversion solutions has never been greater. Our Altitude DC product rises to this challenge, offering a revolutionary approach to power conversion that empowers the next generation of aircraft.

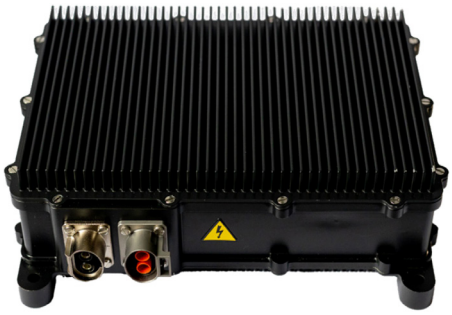
OVERCOMING THE CHALLENGES OF ELECTRIFICATION

Next-generation aircraft can’t sacrifice performance for sustainability. OEMs face a major hurdle in developing sustainable aircraft: achieving sufficient energy density in storage systems, especially at altitudes between 15,000 and 50,000 feet. Traditional power converters contribute to excess weight, diminishing aircraft performance and efficiency. Furthermore, the lengthy turnaround time for power converter design and qualification – often exceeding two years – hinders the rapid pace of aerospace innovation.

OUR SOLUTION

MODULAR DESIGN FOR ACCELERATED DEVELOPMENT

Our modular design significantly reduces turnaround time and cost. This streamlined approach allows for faster design iterations and simplifies the qualification process, enabling you to bring your aircraft to market quicker.



HIGH-VOLTAGE EFFICIENCY FOR OPTIMISED PERFORMANCE

By utilising high-voltage DC power, Altitude DC reduces the overall weight of your aircraft by decreasing the number of power converters required. This translates to improved performance, increased range, and enhanced payload capacity.

RELIABLE POWER FOR UNCOMPROMISING ALTITUDE

Engineered to deliver reliable power at altitudes between 15,000 and 50,000 feet, Altitude DC ensures consistent performance throughout your aircraft’s entire flight envelope.

FLEXIBLE, SCALABLE DC-DC CONVERTERS

- Power range: 500W to 10kW
- Input Voltages: 270-400-540-800VDC
- Output Voltages: 20-28-48V DC
- Up to 1500V Isolation input and output
- Single or multiple output options
- Electrical modules can be connected to extend the power rating
- Status monitoring, with short circuit and over voltage protection
- Custom packaging available
- Various cooling options available to suit application

RELATED CERTIFICATIONS

- ISO 9001
- AS9100
- ISO 14001
- Nadcap
- UL Cable Approval
- PC-A-610D
- J-STD-001
- ITAR Registered

LAUNCH UNIT

- Input: 800Vdc nominal
- Output: 28Vdc nominal
- Power: 1kW
- 96% efficiency

KEY TECHNICAL SPECIFICATIONS

PARAMETER	VALUE
Input Voltage	800 Vdc
Output Voltage	28 Vdc ± 2%
Output Power	1kW
Maximum Current	36 Amps
Operating Environment Temperature	-40 ˚C to +70 ˚C
Efficiency	96%
Protection Features	Status monitoring, with short circuit and over voltage protection
Cooling Method	Passive (Configurable)
Environmental Protections	D0-160

EUROPE
Manchester, UK
Nottingham, UK
+44 (0) 1706 334 842

AMERICAS
Kansas, US
+1 913 747 6111

POWERING THE FUTURE OF AEROSPACE

Embrace the future of flight with the TTE Altitude DC™ series. Our high-voltage DC-DC converters provide the power, efficiency, and flexibility needed to propel the next generation of aircraft. Contact us today to explore how the TTE Altitude DC™ can elevate your aerospace power conversion solutions.