

# High efficiency bidirectional power conversion technology

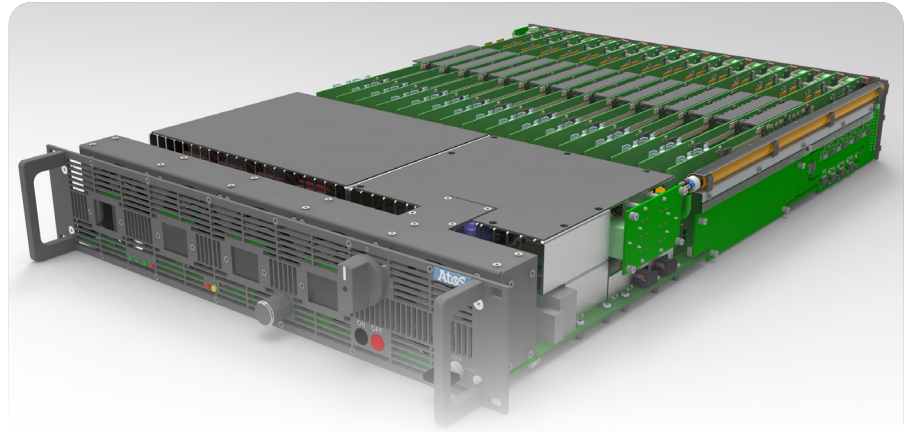


**Atos**

# Digital innovation for better power testing solutions

With the shift towards battery electric and hybrid vehicles, cost and time-to-market are particularly critical for all companies in the automotive and e-mobility industry, while every component must be tested to optimise quality and reliability.

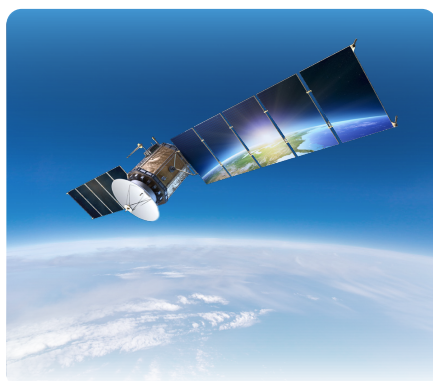
Atos delivers groundbreaking power conversion and testing technologies that fit the operational and accuracy needs of the e-mobility industry. To meet rapidly evolving and challenging development targets, Atos is using the latest technologies such as GaN and SiC MosFET for efficient power conversion topologies. This ensures very high switching frequencies and high-speed control loop reaction times. Extremely light and compact, the Atos testing solutions can include up to 20 kW and 16 independent channels inside a single 19" 2HU device, which can be reconfigured on the fly with a software-defined platform.



Operational efficiency on the factory floor is ensured with a digital architecture that protects against cyberattacks, scalability with series and parallel capabilities, and standard-compliant interfaces (communication, software and electric). And native energy-saving features allow manufacturers to achieve their environmental targets



# Space-grade technology for your automotive journey



The space industry has a pioneering history of advanced power testing for ultraefficiency and endurance. Since 20 years, Atos provides high-efficiency testing solutions for spacecraft, including for mega constellations. Long experience in the space industry and advanced approaches to power testing are highly relevant for the automotive industry. Atos space-proven technology is highly adaptable to power testing in the automotive industry.



# 4 key advantages



## Digitalization

Products adaptations that typically require hardware changes are now done via software, even remotely. This enables a broad range of applications with one platform.

- Easy adaptation to changing testing requirements
- New features are added instantaneously via software upgrades
- The equipment is always up-to-date with the latest software version

**100%**  
software defined



## Efficiency

The efficiency of the technology contributes to the efficiency of the overall solution and thus contributes to decarbonization. High power efficiency results in energy saving due to low heat dissipation and thus in lower CO<sub>2</sub> emissions. Digital technology solutions make Atos' software-defined power technology achieve up to 95% efficiency through:

- Bidirectional power supply with energy recuperation sent back to the grid (source and sink mode)
- Dynamic power factor correction
- Special magnetics with integrated coils for high efficiency
- Water cooling possibility

**95%**  
Efficiency



## High-speed transient response

A quick response during testing enables faster throughput and future applications. Atos' innovative architecture allows for an incredible performance with high speed transient response, using multi-mega sample ADCs and tailored control methods, for highly responsive conditions such as battery testing with:

- SiC (silicon carbide FET)
- GaN (gallium nitride FET)
- Timing control resolution – 1 $\mu$ s

**1 $\mu$ s**  
timing control  
resolution



## Accuracy

The level of precision required is not the same for all projects. Therefore, the precision of our technology is adaptable to your needs. We accommodate control scenarios with an accuracy of 0.05% on a full range scale.

- Constant voltage, constant current, constant power, constant resistance
- Specific U/I characteristics
- Fast change of control parameters

**0.05%**  
full range

# About Atos

Atos is a global leader in digital transformation with 109,000 employees and annual revenue of c. € 11 billion. European number one in cybersecurity, cloud and high performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos is a SE (Societas Europaea), listed on Euronext Paris and included in the CAC 40 ESG and Next 20 Paris Stock indexes.

The [purpose of Atos](#) is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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Let's start a discussion together



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