



INTRO

ENGINEERING THE FUTURE

○ **Recognition:** FastLogic, a symbol of excellence, is one of Poland's most advanced, privately held **electronics research and development centres**. Established in 2012, still with **100% Polish independent capital**, we have been at the forefront of modern electronics, primarily focused on **high-throughput data transmission** and processing for wired **telecommunication** systems, as well as **medical** and **military** systems. Our commercial contracts for domestic and foreign industry entities have solidified our reputation for reliability and commitment. FastLogic's research and development services are provided for companies worldwide, especially in the USA, EU (GER, DK), and Poland (Polish state-owned companies). We are proud to hold four certifications, including ISO 9001:2015, ISO27001:2022, AQAP2110:2016, and ISO 14001:2015, all of which have been continuously maintained for many years. **Our long-term hardware R&D partnership** with Polish companies in the **national strategic sector** is a testament to our commitment to building lasting and reliable relationships.



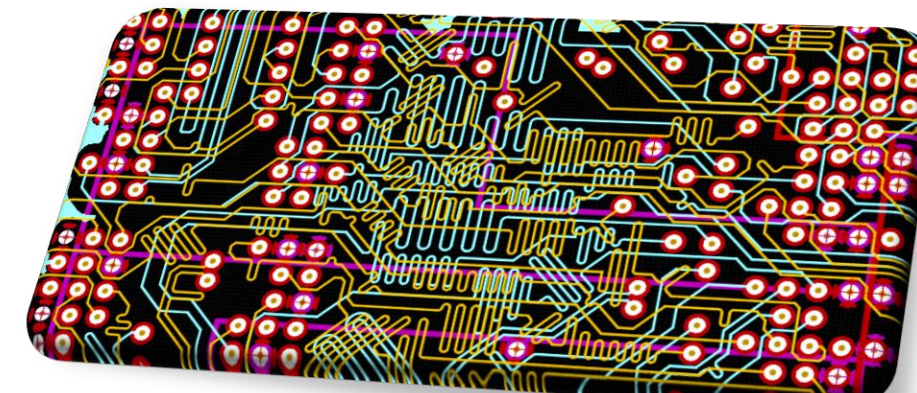
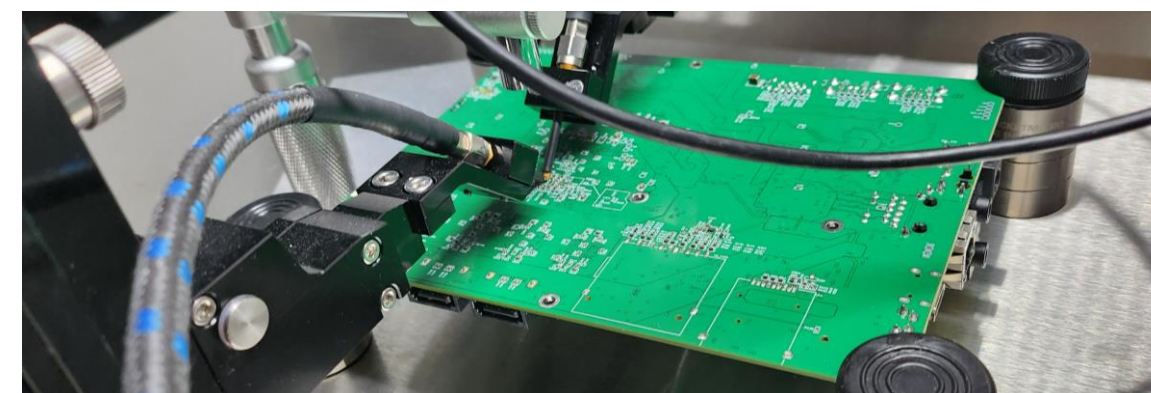
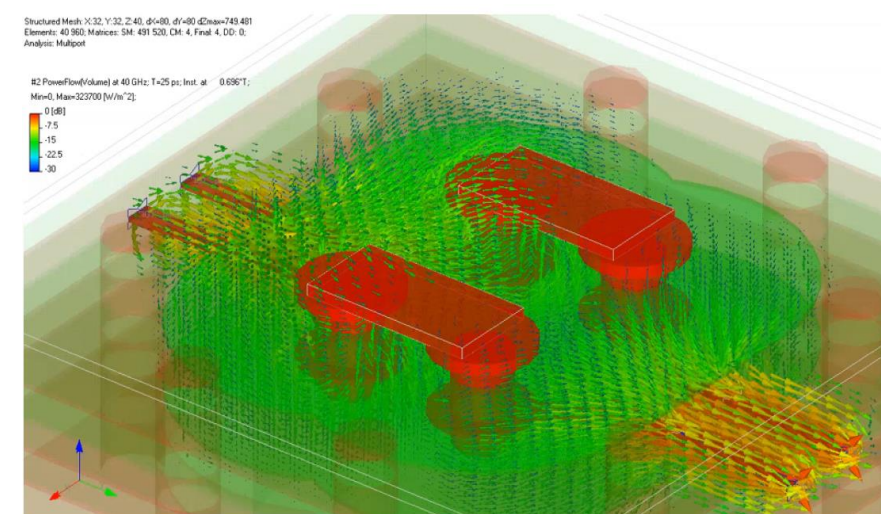
○ **Quality and Staff:** The staff of FastLogic includes about **30 qualified engineers** of different specialities and experiences from the scope of electronics, with an average engineer experience rate of over six years in the industry. The company has four main divisions: **hardware, embedded software, adaptive computing (FPGA)** and **project management** independent teams. Due to its business model, FastLogic is a company strongly oriented to satisfying customer needs and **delivering successful projects** on time and within budget. As a company with a well-established position in the market, **FastLogic applies the most up-to-date industrial standards** and uses recognized tools and practices along with **continuously improved internal design and management processing models**.

Quality certificates:

- **ISO 9001:2015** – The quality management system at the FastLogic meets the requirements of ISO 9001:2015 for: scientific and laboratory research, development, design and production in electronics and software development;
- **ISO 27001:2022** – The information security management system at the FastLogic meets the requirements of ISO 27001:2022 for: scientific and laboratory research, development, design and production in electronics and software development;
- **AQAP 2110:2016** – The quality management system at FastLogic meets the requirements of AQAP 2110:2016 in the field of: scientific and laboratory research, development work, design, and production in the field of military electronics and software.
- **ISO 14001:2015** - The PN-EN ISO 14001 standard contains requirements for an environmental management system, the fulfillment of which can help organizations achieve environmental and economic goals. The basic task of the standard is to support environmental protection and prevent pollution.



○ **Facilities for Professional Development:** FastLogic's R&D centre is on the 4th floor of CB Synergia (Lodz, POLAND) building A and has 640m² of **A-class office space**. The area has been divided into several zones: open space for up to 40 engineers, electronics laboratory, workshop, multiple conference rooms, CxO and BD, and PM rooms. The office is well-equipped with IT equipment – including PCs and laptops - with different OS (depending on the project or personal needs), additional monitors, multimeters, oscilloscopes, and other tools handy during hardware or software development – **typical for an advanced hardware company**. In the open-space zone, sub-zones are dedicated to independent hardware, software, and adaptive computing (FPGA) teams. The company is running its own server room located within the office. Dell servers are used for repositories, continuous integration, and other dedicated services (individual per project). Separate parts are computational servers dedicated to simulations and synthesis of FPGA systems, **3D full-wave EM / PCB simulators** for running miscellaneous numerical tools, etc. IT premises contain **two computational servers:** (1) 120-core Intel Xeon, 768GB RAM for multi-variant parallel problems (e.g., FPGA synthesis) and (2) 24-core AMD ThreadRipper, 128GB RAM for quick and direct simulations and synthesis.



○ **Technical Excellence:** The laboratory is a **separate ESD-protected zone** within the office, where the whole area has been furnished with ESD-protected furniture, such as desks or cabinets, as well as high-class measurement devices. The laboratory has several stands for **PCB inspection** (a stereoscopic microscope with video registration feature), **time-domain measurements up to 3.5GHz** (40GS/s oscilloscope with s-e and differential probes), **frequency domain measurements up to 40GHz** (VNA, cables, microprobes, etc.), **power-integrity stand** (high dynamic range oscilloscope with VRPs), FPGA launch desks and power-domain measurements (oscilloscopes, high-voltage and current probes, power analyzers, etc.).

FastLogic also has a workshop where prototype production and basic PCB assembly testing occur. The workshop allows manual and semi-automatic PCB assembly for prototyping and very low-volume production (specialized systems).

Looking ahead, the company is set to launch its own **PCB assembly prototyping line in Q1/Q2 2025**. This strategic move is expected to significantly enhance the company's independence and agility in research and development projects, particularly in critical and strategic sectors.

○ **Entrusted Experts for the most demanding and strategic projects:** FastLogic's facilities enable the vast majority of electronics development tasks **to be carried out internally**. This ensures efficiency and guarantees **complete control over the intellectual property**, providing a **sense of security to our stakeholders**.

○ **FastLogic's company presentation:** where You can find out updated details about our organization;

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Meet FastLogic

- **Independent Original Design Manufacturer** and **Technology Vendor** established in 2012.
- One of a kind **team of experts, engineers** with academical background, able to **solve wide area of high-tech problems**.
- Full-stack electronic device development center with expertise to create both customized embedded HW and SW, supporting **each stage of product development**.
- Infrastructure and great **in-house lab** dedicated for rapid prototyping and precompliance.

○ **FastLogic's company portfolio:** where You can learn about our successful reference projects from a variety of applications, sectors and different complexities – done in the past;

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Frequency domain Signal Integrity and Power Integrity testing

Wide-band PCB material model extraction

Aim: Extraction of wideband **dielectric models** and **copper roughness** up to 40GHz for the purposes of systematic approach of high-speed interconnects design;

Scope: Signal Integrity simulations (2D/3D), **HW** design of impedance coupons; **Measurements** of scattering parameters and TDRs of interconnects for wide-band simulation models extraction.

Challenges: SI/PI simulations for very high-speed PCB design, 1.92mm coax launch design, matching simulations and measurements in range of up to 40GHz.

Key competences: SI/PI tools & simulations and SI/PI measurements up to 40GHz of bandwidth, special purpose coupons, launching and testing (OIF-CEI).

HW Technology: multi-layer board Measurements using coax and mic.

SW Technology: -

Quantity: -

Customer: Worldwide

○ **FastLogic's Laboratory:** where we are giving You an insight into our signal and power integrity laboratory – probably one of the best in Poland, being the world's state-of-the-art lab in the field;

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Capabilities - Signal Integrity

- **Channel Characterization:** Extraction of scattering parameters (frequency domain) of complete interconnects (ball-to-ball) or their parts. Budgeting of losses using tools provided within IEEE370 and appropriate inter-operability standards (IEEE802, OIF-CEI, etc.).
- Measurements** of jitter, noise and eye-diagrams for interconnects with active nodes.

[Animated Version Link \(180MB\)](#)

○ **FastLogic's additional values presentation:** where we periodically update and show our key advances and values for our customers that are a consequence of our continued evolution.

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Additional Values 2024-2025 - military

Versal AI Edge and Prime SoCs

AMD's advancements in adaptive computing and RFSoC are poised to revolutionize the a&d industry by providing high-performance, AI-driven solutions that enhance edge computing together with integrated RF path.

<https://www.amd.com/en/resources/case-studies/snowflake-yaddle-md.html>

AMD Premier Partnership: As a Premier Partner of AMD, FastLogic gains access to the most up-to-date technologies presented by AMD, as well as follow-ups, updates, road maps, and early releases. FastLogic's partnership area covers especially the adaptive computing and adaptive embedded computing part of the AMD business, formerly Xilinx. AMD is at the forefront of adaptive computing technologies, offering advanced solutions that are highly relevant to the aviation and defense industry. On the right there are some of the latest innovations from AMD and their potential applications in aerospace & defence. **FastLogic is your ultimate technology integrator, having direct access to the essential tools, knowledge, and dedicated expert support from AMD.**

AI Inference: Equipped with next-gen AI engines, these SoCs deliver up to 3x higher TOPs-per-watt, essential for high-performance AI applications in defense.

Preprocessing and Postprocessing: The combination of FPGA logic for preprocessing and Arm CPUs for postprocessing ensures robust handling of complex data and decision-making processes required in defense systems.

These SoCs are well-suited for applications such as threat detection, autonomous surveillance systems, advanced signal processing for communications, and real-time data analysis in aerospace systems.

Adaptive Computing in Defense and Aerospace Applications

AMD's adaptive computing technologies are leveraged across various defense and aerospace applications:

- **Autonomous Systems:** The high-performance AI capabilities of Versal AI Edge SoCs enable advanced autonomous systems, including unmanned aerial vehicles (UAVs) and robotic systems for surveillance, reconnaissance, and aerospace operations.
- **Signal Intelligence (SIGINT):** The preprocessing and postprocessing capabilities of Versal SoCs and RFSoCs are critical for intercepting and analyzing communication signals, providing vital intelligence for defense and aerospace operations.
- **Cybersecurity:** The robust computational power of Alys accelerators aids in real-time threat detection and response, enhancing cybersecurity measures for defense and aerospace networks.
- **Flight Systems and Simulations:** The adaptability and high processing power of AMD's SoCs and accelerators facilitate advanced flight simulations, avionics systems, and real-time data processing in aerospace applications.

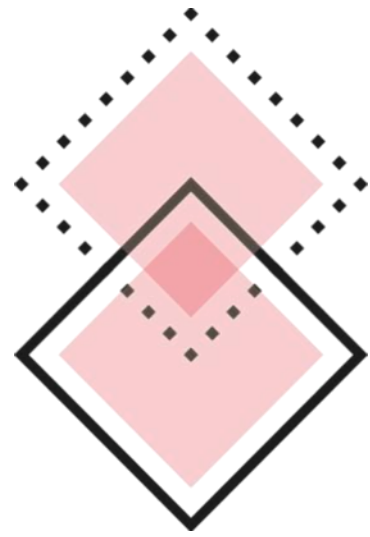
By integrating these adaptive computing solutions, defense and aerospace organizations can achieve higher performance, improved efficiency, and enhanced security in their operations, ensuring technological superiority in critical missions.

AMD Adaptive Computing Partner PREMIER

<https://www.xilinx.com/alliance/memberlocator/1-3owt8h.html>

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