

KEY FACTS

- ⊗ 15+ years of innovation
- ⊗ Patented technology
- ⊗ Users in 20+ countries

COMPETENCIES

- ⊗ Test & Measurement
- ⊗ Functional Test
- ⊗ JTAG / IEEE 1149
- ⊗ IJTAG / IEEE 1687
- ⊗ FPGA Design
- ⊗ Testability & DFT
- ⊗ Embedded Test
- ⊗ BERT / HSIO Test
- ⊗ Test Instrumentation
- ⊗ Boundary Scan
- ⊗ Flying Probe Test
- ⊗ Electronics Design
- ⊗ Embedded Software
- ⊗ Fault Management
- ⊗ Service & Maintenance
- ⊗ FPGA / SoC / MCUs
- ⊗ VHDL / Verilog

BUSINESS OVERVIEW

We have a deep and almost unbearable passion towards three things: FPGAs, testing, and innovation. Testonica invented and brought to market Embedded Virtual Instrumentation technology, a library of IEEE1687 reference benchmarks, and a pioneering IC health monitoring technology.

Today, thanks to over 15 years of industrial experience with hundreds of solutions delivered worldwide, we possess a huge in-house library of test & measurement instrumentation IPs forming a solid basis for a fully automated test system. Our everyday deep focus on FPGAs invites customers to order tailored FPGA-based designs of any kind. IJTAG-related IC DFT test access and network design is also our prime competence.

WE OFFER

- ⊗ Functional test firmware and SW development
- ⊗ DFT/IJTAG design/development services and consultancies
- ⊗ FPGA design and product bring-up services
- ⊗ JTAG / Boundary Scan test program development
- ⊗ Test program development for Flying Probe testers
- ⊗ Test strategy optimization and testability improvement
- ⊗ Design of embedded systems: HW and SW
- ⊗ System health monitoring and fault management solutions

We take care of everyday test and development needs as well as challenging quality issues

Quick Defect Screening for

- ⊗ Prototyping
- ⊗ Production
- ⊗ Lifetime
- ⊗ Maintenance



FPGA-BASED DEVELOPMENT

We have in-depth expertise in the following FPGA-based solutions and methodologies:

- ⊗ VHDL and Verilog design languages
- ⊗ High-Level Synthesis (HLS) methodology
- ⊗ AMD/Xilinx, Intel, Lattice, Microchip, Efinix
- ⊗ ModelSim and QuestaSim simulators
- ⊗ ChipScope, SignalTAP II, Reveal Analyzer
- ⊗ Designing with SoC FPGA (ZynqUS+, Arria10)
- ⊗ Designing with soft-processors from Xilinx (Microblaze) and Intel (NIOS II)
- ⊗ High-speed design with multi-gigabit transceivers
- ⊗ Buses: PCIe, SATA, AXI, Avalon, AXI-Lite
- ⊗ Memory controllers: DDR3, DDR4
- ⊗ Ethernet MAC interfaces, EtherCAT

EMBEDDED SW DEVELOPMENT

- ⊗ Linux drivers and Userspace applications
- ⊗ Bare-metal applications, bootloaders
- ⊗ Embedded SDKs, ELDK
- ⊗ Petalinux, Yocto, FreeRTOS, lwIP

ELECTRONICS / HARDWARE DESIGN

- ⊗ Digital electronics design and bring-up
- ⊗ Analog and power electronics
- ⊗ Preparation for production
- ⊗ Functional and production test
- ⊗ Prototype validation and certification
- ⊗ DFT and test strategy optimization

REFERENCE PROJECT EXAMPLES

- ⊗ Advantest: FPGA-based reference system for pre-silicon validation of a target IJTAG DFT infrastructure
- ⊗ AST SpaceMobile: Functional and production test solution for an adaptive multiband satellite platform
- ⊗ CERN: Full-stack development from FPGA to GUI of custom Bit Error Rate Test equipment on FPGA for testing and certification of communication channels of LHC/CMS
- ⊗ European Space Agency (ESA): 8-core processor on FPGA with integrated instant failure avoidance and health management system incl. optimized telemetry; applications for Xilinx Versal SoC FPGA
- ⊗ European Spallation Source (ESS/ERIC): Embedded multi-board SoC-FPGA-based control system with high availability and remote management incl. custom-built EtherCAT FMC module
- ⊗ Dozens of smaller scale engineering projects and solution deliveries in the range of 5-50K EUR

TEST & MEASUREMENT, DFT ANALYSIS

Development of automated production test solutions and technologies is our core business. We help customers by contributing with:

- ⊗ Functional Test & Measurement, Embedded Instrumentation (Quick Instruments)
- ⊗ JTAG/Boundary Scan test development, deployment, support, training (Goepel)
- ⊗ Flying Probe test program generation, deployment, support, training (Takaya)
- ⊗ Board testability and DFT analysis with various test strategies and test methods: AOI, ICT, BST/JTAG, FPT, EFT etc. (TestWay Express)
- ⊗ Handling Flying Probe and X-Ray inspection equipment incl. support and maintenance
- ⊗ Repair station software handling: CAD viewer, fault tickets (QuadView)
- ⊗ Test access procedures for IJTAG instruments, retargeting, ATE patterns, IJTAG network design, extraction and insertion (Tessent)
- ⊗ FPGA-driven PCBA test using automatically generated test firmware (Quick Instruments)
- ⊗ Processor-driven PCBA test and programming via JTAG (QITOS)
- ⊗ Ultra-fast in-system flash programming
- ⊗ Test and validation of gigabit links and high-speed interfaces
- ⊗ At-speed testing of high-speed devices, DDR memories and interfaces
- ⊗ Defect screening using stress / load / parametric test / BERT / FERT
- ⊗ Fault tolerance, FDIR, and system health management

