

ELECTRONIC Development



FIELDS

Electronics industry, instrumentation and measurements, automobiles, railways, aeronautics, navy, military, medical, general public, telecommunications, home automation, energy management, etc.

Our engineering and design department designs boards, sub-assemblies and complete electronic products intended for production volumes ranging from single units to mass production.

SKILLS

> ANALOG ELECTRONICS :

- Acquisition and measurements : conditioning, amplification, filtration, sampling, multiplexing.
- Power electronics : switching, actuator control, energy conversion, dimmers.
- Embedded, stand-alone and low consumption systems.
- HF electronics.
- Optoelectronics.

> DIGITAL ELECTRONICS :

- Microprocessors, DSP : ARM, MicroChip, etc.
- Programmable logic : schematic representation, VHDL.
- Digital bus and protocols : ModBus, TCP/IP, Ethernet, Wi-Fi, Bluetooth, ZigBee, I2c, CAN, LIN, ARINC, USB, RS232, RS485, etc.

> STANDARDS AND REGULATIONS :

- Electromagnetic compatibility (EMC)
- Electrical safety, Low Voltage Directive (LVD)
- Intrinsic safety (ATEX)
- Climatic, sealing.
- Impacts and vibrations.

> EMBEDDED SOFTWARE :

- Design methodology : MCSE, UML, etc.
- Languages : C, C++, etc.
- Operating system : Linux, etc.
- Real time and multitasking : μ Cos II, etc.
- Process control and supervision.
- Acquisition systems.
- Signal processing.
- Feedback control, automatic control.
- Man/machine interface.
- Communication systems.

> MECHANICS :

- Special cabinets and boxes : sheet metal working, machining.
- Facings and mounting plates : painting, engraving, Lexan, etc.
- Integration : assembly, cable routing.

SERVICES

> CONSULTANCY :

- Technical preliminary project, feasibility study.
- Systems architecture.
- Preparation of specifications, technical specifications.
- Technical expertise.

> STUDY AND DESIGN :

- Target cost electronic and mechanical design.
- Modelling and simulations : electrical, electronic, thermal.
- Calculation of uncertainties and differences.
- Product FMECA.
- Schematic capture, placement and routing.
- Software development.
- Definition and justification of definition documents.
- Manufacture and development of prototypes.

> TESTS AND QUALIFICATIONS :

- EMC investigation.
- Prototype tests and support for normative tests.

> INDUSTRIALISATION :

- Testability analysis, Design For Test, test plan.
- Calculation of production costs.
- Testing and manufacturing methods file.
- Technical support for production by return to workshop.

MAIN RESOURCES

- Software development tools (compiler, emulator : CCS, C18, MPLAB, ECLIPSE, GCC, etc.)
- VHDL compiler : Xilinx, ALTERA.
- Electronic CAD CADENCE.
- Mechanical 3D CAD SolidWorks.
- Logical and analog simulation tools PSPICE.
- Prototyping workshop.
- Electronic laboratory : LF/HF generators, spectrum analyzer, precision multimeters, digital oscilloscopes, protocol analyzers, logic analyzer, etc.
- IEMC instrumentation : conducted and radiated emissions, fast burst transients, etc.
- Electric safety testers : insulation, continuity, dielectric.
- Hot/cold climatic chambers.

