

# IMP-Telecommunications Technological Profile



IMP-Telecommunications is a recognized Southeast European embedded systems design house. As a successor of Michael Pupin Institute's Telecommunications Lab., it leverages more than 25 years of experience in designing customized DSP-based embedded solutions. During all these years the company remained at the cutting edge of technology, providing innovative solutions to its customers. Accessibility of Michael Pupin Institute's research teams and long-term cooperation with Belgrade's School of Electrical Engineering makes IMP-Telecommunications capable to tackle even the most demanding research and development projects. Additionally, membership in Serbian embedded cluster "embedded.rs" enables the company to supplement its fields of expertise as well as to establish larger development teams by cooperating with other member companies.

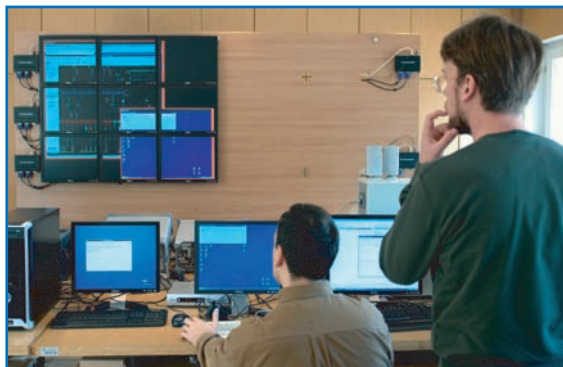
Our design team is fully capable to encompass complete embedded systems' design cycle, transforming product idea into production-ready prototype. State-of-the-art development processes and highest quality standards we are applying result in consistent performance and distinctive products. Our contacts with major electronics distributors, PCB manufacturing companies, mechanical parts producers, and EMS providers, as well as our experience in production processes organization makes the difference when it comes to rapid prototyping and manufacturing contracts.

Following list provides a brief overview of our expertise:



## System Design:

- Complete turnkey design
- Requirements analysis
- Conceptual design
- Embedded systems architecture
- Hardware/software co-design
- Object-oriented design
- Design space optimization



## Hardware Design:

- Analog design
- High-speed digital design
- RF & microwave design
- MCU/DSP design
- FPGA/CPLD design
- Power circuits design
- Power management
- User interface design
- System interfaces (incl. optical & high-speed)

## DSP Algorithms Development:

- Filtering & frequency domain analysis
- Adaptive signal processing
- Wireless & copper physical layer implementations
- Broadband communications
- Multirate processing & SDR
- Sound/speech processing
- Image & video processing
- DSP/FPGA implementations

## Software Design:

- Algorithms development
- Boot loaders
- Device drivers
- RTOS design/development
- Communication stacks
- TI DSP/BIOS
- Embedded Linux, Android
- GUI design
- Board support packages



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## Microwave/EMC Design:

- Advanced computer modeling
- Software development for EM and circuit analysis
- EMC-aware hardware design
- EMC debugging of intersystem and intrasystem problems
- Microwave passive components design
- Antenna design
- Signal processing techniques in EM analysis
- EM environmental effects analysis

## PCB Design:

- Rigid, Flex and Rigid/Flex Boards
- Multilayer Boards
- Buried/Blind Vias
- HDI Design
- High-Speed & Microwave Design
- Design for EMC
- Design for Manufacturing & Testing
- Quickturn & high volume PCB manufacturing
- European & Far East PCB suppliers

## Industrial Design:

- Design with respect to functional, ergonomic and aesthetic aspects of the product
- Conceptual design ideas
- Selection of materials
- Visualization
- 3D and physical modeling
- Mechanical design issues solving
- Production of industrial prototypes

## Prototyping & Manufacturing:

- Local high capacity assembly houses
- SMD 0201 and mBGA capability
- Rapid prototyping of mechanical parts
- Mold making, injection molding, die casting
- Supply chain management
- Development of test jigs
- Automated test systems development

## Added-Value Product Design Services:

- Industrial Design of device aesthetics
- Rapid prototyping of mechanical parts
- Electromechanical co-design
- Design for manufacture

## Market expertise:

- Public Security
- Defense
- Power Utilities
- Telecommunications
- Transportation
- Industrial automation
- Broadcast Video
- Entertainment/Gaming



IMP-Telecommunications is a member of Texas Instrument's EMEA Design House Network of recognized and well-established companies.



IMP is a founder member of the Serbian ICT cluster ICT-NET.

