



FPINSTRUMENTS

Electronics and embedded systems design

2020 III



FP Instruments - **Skills & Tools**

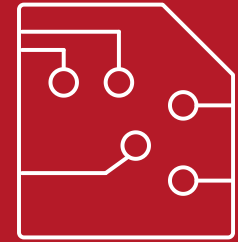
www.fp-instruments.com

 **TEXAS
INSTRUMENTS**
Design Network



Hardware Design

- Analogue circuits (sensors frontends, audio, power amplifiers, ADCs/DACs)
- Multilayer PCB layout
- Microcontroller applications (Cortex M3, M4, PIC)
- Embedded processors (Cortex A5, A8, A9, A53)
- Low power systems (MSP430, Cortex M0, PIC)
- Digital Signal Processing (TMS320C55xx, TMS320C674x, Blackfin)
- High speed (serial ATA, DDR3, USB3.0, CSI, DSI)
- Application specific communication interfaces (ex. MBUS, KNX, Dali)
- Radio communications (BT4.0, WiFi, GSM, custom)
- Industrial systems
- Design for EMC compatibility



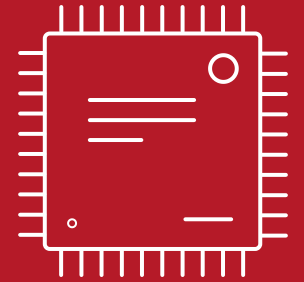


• FPGA Design

- VHDL / Verilog
- Xilinx / Lattice devices

• Embedded Firmware

- **Bootloaders**
 - configuration, customization and porting for hardware platforms
- **Barebone**
 - peripheral drivers, protocol stacks and application code
- **Operating systems**
 - Embedded Linux, Embedded Android, eCOS, FreeRTOS, RTX, uC/OS, system interfaces, protocol stacks, development of device drivers, hardware dependent code and application code



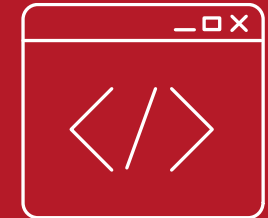


Casing Design

- Plastic
- Metal
- Keyboard design

Software

- C/C++
- C#
- iOS and Android
- QT
- Firemonkey/Delphi
- Objective C
- Java
- Design and development of user interfaces





• Signal processing and control

- Adaptive filters (echo cancellation, noise control, line equalization, beam forming)
- Signal analysis in time and frequency domain
- System identification and modelling
- Sound and voice compression
- Industrial control
- Nonlinear control
- Adaptive control
- Biometrics

• Security

- Digital security hardware
- Embedded cryptography





• Testing and certification

- Hardware functional testing, development of automated test equipment
- Software functional testing

• Prototype production

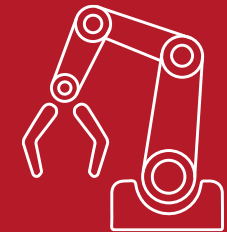
- In house – pick and place machine, stencil printer and vapor phase oven
- Third party

• Batch production

- Third party

• Additional services

- Turn-key product design
- Graphical design, industrial design



Tools

- **Hardware design:**
 - Altium Designer
 - PSpice
- **Software design:**
 - Eclipse/GCC, IAR Embedded Workbench, Code Composer Studio,
 - VisualDSP++
- **Hardware based debug probes:**
 - J-Link, Tektronix DPOs
- **Version Control Systems:**
 - Subversion, Git
- **Project management:**
 - Jira, Confluence, MS Project, Sharepoint





FPINSTRUMENTS

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*"We combine experience with scientific background,
high level of knowledge with great design skills and
prototyping capabilities.*

And we do it all with passion."



Thank You

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