Development Services

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Your niche

- Standards-based wireless solutions are dominantly based on application-specific integrated circuit (ASIC) technologies.

When the quantities targeted are relatively smaller, FPGA-centric solutions may have a stronger business case.

While the production cost per unit for ASIC solutions is quite low, the upfront development cost and time may be prohibitive.

- Insyab on the other hand provides self-contained non-ASIC FPGA-centric solutions.

- Nonetheless, many of our core IP modules, i.e. register transfer level (RTL) codes, can be integrated into a typical ASIC design process.

- This offers our customers higher degrees of flexibility as they may choose to go to an ASIC if quantities eventually scale.
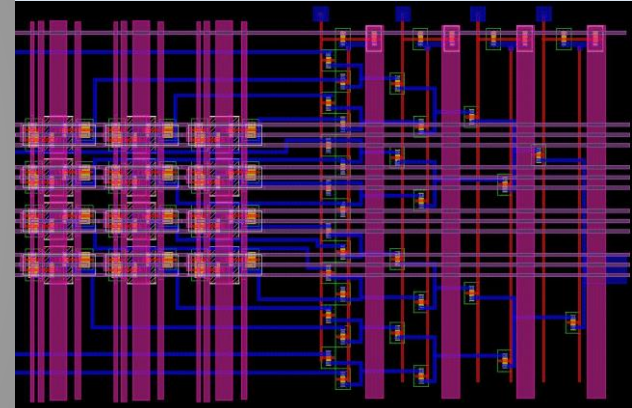
Our toolkit

All software codes are available for licensing.

Wireless IP Cores

- Fully-synthesizable field-proven RTL PHY designs

Firmware & Drivers

- Application programming interfaces (API) and drivers for industrial-grade peripherals (USB3.0, SPI, I2C, GPIF/GPIO, …)
- Specialized VHDL cores along with C APIs for calibration and control of full-duplex RF chipsets from Lime Microsystems and Maxim

Evaluation and test environments

- BladeRF software defined radio (SDR) from Nuand, and MicroSemi SmartFusion2 FLASH-based SoC-FPGA
- Full-duplex support with up to 2x60 Mbps burst rates and 2x45 Mbps sustainable rate host-to-host

One-stop shop

- Printed circuit board (PCB) design
  - Develop schematics, PCB layouts, and trace routing
  - Management of prototype fabrication and testing
- Mechanical product design
  - Parts design for plastic injection, aluminum injection, molding, sheet metal, and machined parts.
  - Design validation using stack up analysis, static simulation, modal simulation, and thermal simulation (heat dissipation)
  - Design against International Protection ratings (e.g. IP67).

Real-time seamless connectivity.

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