

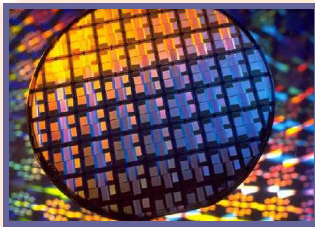
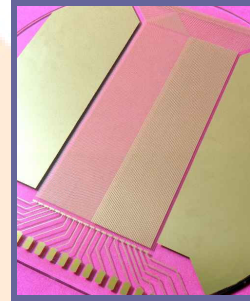
The **Moortec** team, located within a CMOS foundry, provide a unique mix of design service skills enabling YOU to optimise the costs of your chip development.

Moortec implement specifications and designs at **chip-level**, **circuit board-level** and **test board-level**.

- We are specialist in both **analog/mixed-signal** and **digital** systems and sub-blocks.
- We are experts in the design of new **IP blocks** or the re-design/characterisation of legacy blocks.
- We can help 'formalise' FPGA designs ready for cost effective manufacturing.

Analogue IP Design and Delivery

- Ultra low power/low voltage mixed signal and analog/RF IC design.
- Block level simulation, post layout simulation, modelling (Verilog-A).
- Floorplanning and layout.
- Sub-threshold design.
- Inductor design/synthesis.
- BSIM3 Spice model awareness.
- Chip Architecture (power supplies, pads, floorplan, substrate).
- Design/layout for low noise considerations
- Chip level design methodologies (ESD, supplies, substrate noise, packaging, thermal).



Digital Design

- Digital IC design and verification
- RTL Coding (Verilog/VHDL).
- Synthesis, equivalence checking.
- System level integration.
- DFT methodology (JTAG, BIST, Scan Insertion), ATPG, production test vector generation), test insertion.
- Clocking structure.
- Block architecting.

Verification/Test

- Mixed-Signal Verification/Validation
- Digital SoC Verification/Validation
- Assertion/Transaction Based Verification
- Regression testing
- Self Checking Testbenches
- Test harness design
- Scripted corner/montecarlo simulation
- FIB and failure analysis facility

Design Examples

- Low jitter PLLs (<10pS <=1GHz).
- Crystal oscillators -150dBc @ 10 kHz.
- Sigma-Delta modulator (1 bit single loop 4th order COBAN 20KHz 50 x oversampling).
- Special IOs e.g. ESD, SERDES, PCI, USB.
- Low noise amplifiers (RF, baseband, fully differential op-amp).
- Voltage Regulators (3v-1.9v, <=10mA) distributed.
- CMOS low voltage Band Gap voltage reference.
- Broadband VCO's (up to 6GHz) cross coupled and Colpitts using on chip inductor.
- High speed prescalers up to 13GHz.

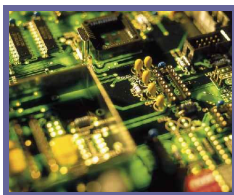
Technologies

- CMOS 0.6um to 65nm
- High Speed Bipolar
- SiGe

Tools

- Dolphin, Tanner, Cadence, Synopsys, MatLab, Pspice, Hspice, LogicVision, Catena.

Supporting Board-Level Design



PCB Design

- Application/Demo/Evaluation/Test board design
- Hardware design / PCB Layout
- Embedded Software/Firmware design
- FPGA (Xilinx/Altera) - Verilog, VHDL
- Test: Labview, Characterisation, Certification and Compliance testing