

Proficiency in Mixed Signal Chip Design

CUSTOMER INFORMATION

More often than not, mixed signal ICs are faced with harsh requirements in an industrial environment. It's varying supply voltages, different load conditions, tight requirements on signal processing, highly sensitive amplifiers or AD converters that have to be provided or met.

MAZeT GmbH, a Jena-based company, has acquired an extensive know-how and expertise during many years of active involvement in the field of sensor signal processing, especially optical sensors. For this reason, MAZeT is able to capitalize on a variety of established and verified analog and digital circuit blocks designs when requested to handle design work for specific custom circuitry.

Circuit blocks and IP:

- ▶ Operational amplifiers for different requirements (rail-to-rail input/output, cascaded, differential-differential amplifier)
- ▶ Hysteresis comparators, SC comparators (auto-zero offset compensation)
- ▶ Programmable LED drivers (output current digitally adjustable)
- ▶ 8-bit/10-bit ADCs / DACs
- ▶ High/low side drivers with current limitation and short-circuit detection
- ▶ Bandgaps, EEPROMs, Flashes, RAMs
- ▶ Photo diodes in CMOS

Application know-how:

- ▶ Evaluation circuits for capacitive and resistive sensors (voltage-frequency converter, resistance-frequency converter, resistance bridge), and HALL sensors with internal offset compensation
- ▶ Saving of calibration values by Zener zapping or with internal EEPROM or Flash
- ▶ Multi-channel transimpedance amplifiers, e.g. 12-channel type with static DC offset compensation and programmable transimpedance
- ▶ Automated offset and gain feedback control, e.g. compensation of 250 mV offset with factor 1000 gain and useful signal of 3mV
- ▶ Receiver circuits for optical fiber cables and custom-designed photo diodes
- ▶ Stray light compensation
- ▶ Detection and processing of smallest currents (nA range)

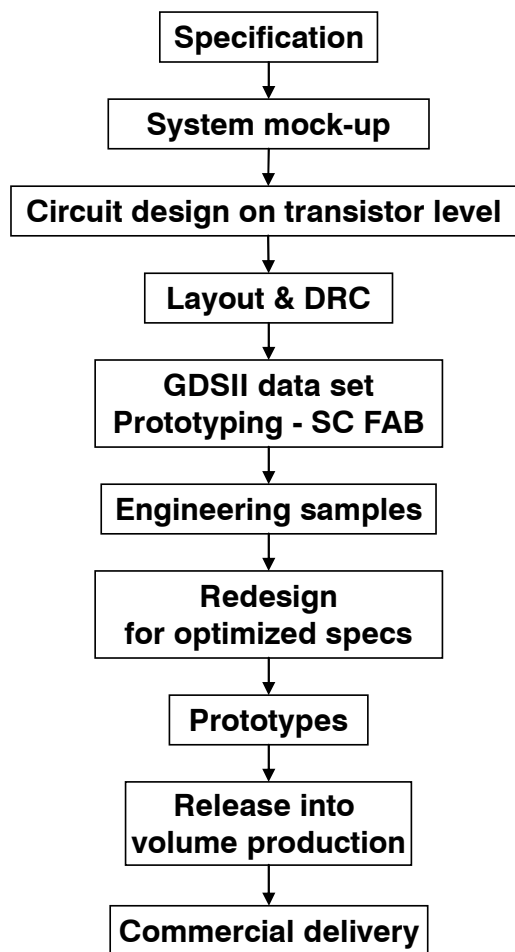
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To handle analog, digital or mixed signal designs, MAZeT uses advanced modern versatile technology for cost-efficient, technically sophisticated solutions to the problems of its Customers.

Analog Design Tools:

- System modelling (MAT-LAB, MATH-CAD, Spectre HDL, Verilog A)
- Design input: Cadence Design Frame Work
- Simulation (analog & mixed signal): Spectre, SpectreS, Verilog
- Layout + Verification: Virtuoso, Dracula, Diva

Design Flow



MAZeT's scope of offerings comprises services of any kind from initial system concept and drafting of performance specifications to the complete chain of development phases until prototype ready state, including production and commercial volume delivery.

For further information, please visit our web pages at <http://www.MAZeT.de>
or contact one of our sales offices!