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TURNKEY ANALOG, RF AND MIXED-SIGNAL ASIC SOLUTIONS

Managing the complete product life cycle, from design requirements to high-volume production

Innovation on chip!

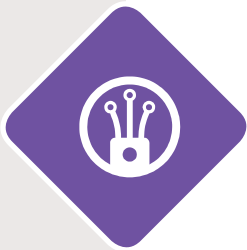
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Experts in Analog, RF and Mixed-Signal IC Design



Wireless data transmission systems have been developed at AnSem since its founding in 1998, making AnSem the leading European independent wireless design center. We cover all aspects of a total solution for wireless systems across a wide frequency range.

- Full radio concept, architecture and IC circuit design
- DSP-based and hardwired PHY modem implementations
- In-house SW tools for system and IC architecture design
- State-of-the-art validation lab
- From 40 KHz for Ultrasonic over all ISM bands to 6 GHz for professional radio



Wired data transmission communication systems are developed for high-speed (optical) backend and broadband home networking and industrial busses. AnSem has a large collection of Serdes cores, as well as analog front ends for home access and home networking.

- SerDes front ends and IOs from 622 Mbps to 10 Gbps
- MIPI PHY interfaces
- High-speed home networking: HomePNA, G.Hn
- Solutions for the smart grid: G3 and Prime
- Analog front ends and line drivers for OFDM communication



Low-power design in handheld and battery operated systems for consumer applications is well known, but can also be applied in industrial sensors and medical implants. AnSem has been pioneering low-power IC and system design combined with expertise in other domains.

- Ultra-low-power wake-up receivers
- Remote control for configuration of medical implants
- 200 MHz radio operating from a battery with as little as 0.9V
- Low-power building blocks for the power management of digital ICs
- Ultra-low-power deserialisers (serdes) up to 6 Gbps



High-voltage circuit designs are useful for low-power applications in medical, industrial and automotive products. AnSem's deep knowledge of the high-voltage or BCD transistors and processes, combined with special design techniques for low-power consumption, provide optimal solutions.

- MI inductive links for short-range energy and data transfer
- Automotive building blocks
- MEMS drivers
- Bus and cable drivers
- Power management building blocks: DCDC converters, SMPS, Capacitorless LDOs



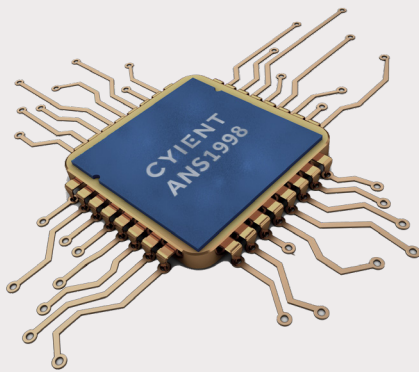
Data acquisition design solutions are always tailored to the specific requirements of each ASIC. AnSem's broad library of building blocks is the ideal starting point to bring the highest performance and fastest development time to custom ASIC solutions for sensors and MEMS.

- Arrays of MEMS switches
- Pipeline, SAR, delta-sigma and cyclic ADC
- Current steering DAC
- Wheatstone bridge interface for strain gauge sensor
- High-precision (V, T) drivers and signal conditioning for multiple types of sensors and MEMS

ANALOG, RF AND MIXED-SIGNAL IC DESIGN AND ASIC SUPPLY

With more than 20 years of hands-on experience, AnSem, a Cyient company, manages the complete product life cycle, from design requirements to high-volume production for clients across the world!

ASIC Advantages



- Smaller PCB footprint
- Lower power consumption
- Increased system performance
- Lower system cost
- Higher reliability
- System know-how protection

ASIC Markets



Advanced IC Design & Turnkey ASIC Solutions

Advanced IC Design

AnSem offers advanced IC design services to (fabless) semiconductor companies and OEMs.

AnSem collaborates with the customers' IC design groups on IC definition, design, layout and prototype evaluation.

Advanced IC Design for Semiconductor Companies



Definition Phase

AnSem works closely with customers, tailoring the specific ASIC requirements to the detailed system needs.

The chip architecture and circuit topologies are studied and defined, and testability, reliability and qualification requirements are discussed. Then, a final ASIC specification is agreed upon with the customer.



Development Phase

AnSem's team of expert engineers executes the design, circuit simulations and layout with the latest EDA tools.

Our large analog IP library of proven building block designs, supplemented by the IP libraries of our silicon and IP partners, form the basis for a fast development timeline, meeting customer's time-to-market requirements.



Prototype Manufacturing

AnSem takes responsibility for manufacturing of the prototypes, coordinating all activities with silicon and packaging suppliers.

The GDS II database is submitted to the foundry. Silicon manufacturing can be done through multi-project wafers or with a multi-layer mask. The prototypes are included in the final production package.



Turnkey ASIC Solutions

AnSem offers affordable, full turnkey ASIC solutions to system OEMs for small and medium production volumes. AnSem remains involved during the complete product life cycle, serving as a true one-stop-shop for its customers.

Turnkey ASIC Solutions for OEM Companies



Prototype Evaluation

The prototypes are extensively tested and validated in AnSem's fully equipped, in-house evaluation laboratory.

A test setup is developed, and the electrical parameters are verified against the specification over the full voltage and temperature range. The customer validates the prototypes in the application.



Industrialization

AnSem takes responsibility for the industrialization process. The prototype design is made ready for volume manufacturing.

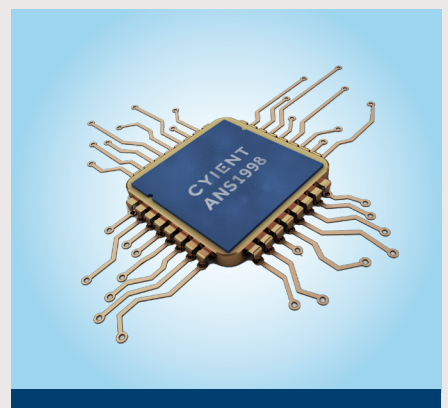
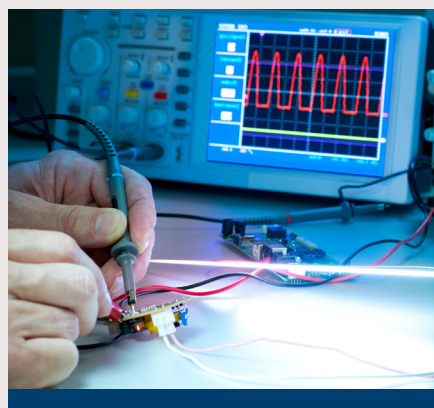
The production wafer and final test programs are developed on the selected ATE machine. The required reliability and qualification tests are performed, and the product is released for manufacturing.



ASIC Supply

AnSem provides full supply chain management services during the entire lifetime of the ASIC and manages the inventory and delivery.

We take in orders from customers, manage the ASIC supply chain with our subcontractors (foundry test and packaging), continuously monitor the yield and product quality, and finally ship to the customer.



About AnSem, a Cyient Company

Acquired by Cyient Ltd. in April 2018, AnSem, a Cyient company, is Europe's leading fabless analog ASIC design service company, designing and delivering state-of-the-art analog, RF, and mixed-signal integrated circuits to customers worldwide. Founded in 1998 and based in Leuven, Belgium, AnSem is an ARM- and TSMC-approved design partner that specializes in the development of advanced integrated circuits for wired and wireless data transmission, sensor data acquisition, ultra-low power, and high-voltage applications. AnSem is ISO 9001 and ISO-13485-2016 certified and is a proven and trustworthy development partner for ambitious and visionary customers reaching for leadership in global markets.

To find out more, please visit the AnSem website at www.ansem.com

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