

SystemFacts

HICore 1 - Safety System-on-Chip

- TÜV-certified up to SIL 3
- Safe up to PL e
- SIL 3-certified integrated circuit (IC), operating system and middleware
- Optional: graphical engineering tool with FBD language
- Fully redundant 1oo2D architecture
- Interference-free COM system

Standards

- IEC 61508 Edition 2, part 1-7
- IEC 61131
- EN 13849-1
- EN 60601

Applications

HICore 1 is the chip-based programmable safety system for customised solutions, providing flexible SIL 3-compliant safety solutions that can be tailored to the most diverse customer applications



HICore 1

Shorter time to certification - shorter time to market

With HICore 1, HIMA is offering a complete, TÜV-certified hardware and software package, as well as selected functional safety services.

For customers who require IEC 61508 certification for their application, HICore 1 can make this otherwise complex certification process faster and easier. HICore not only optimises the 'time to market', but it also cuts costs. That's because the high integration density of the HICore architecture means that fewer additional components have to be purchased. Passive cooling and just-in-time programming also serve to significantly optimise costs.

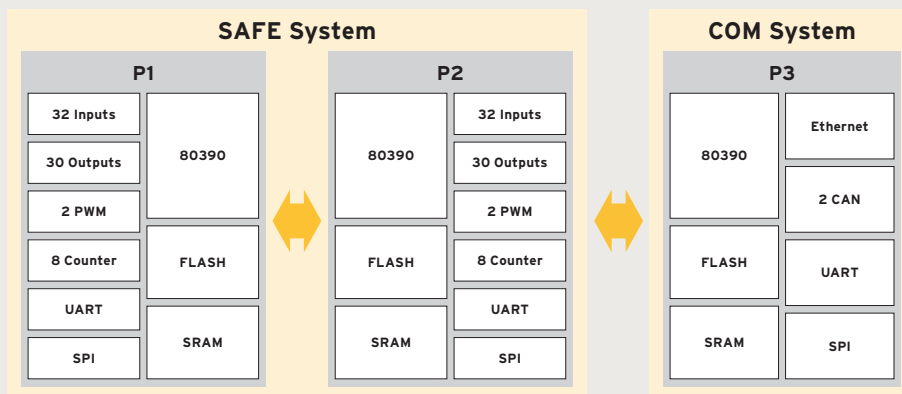


SAFETY
NONSTOP

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HICore 1 architecture

HIMA's HICore 1 architecture is based on a redundant 1oo2D microprocessor system with DC80390 processor cores. Thanks to an additional microprocessor, the integrated communication subsystem operates independently and interference-free. All three embedded microprocessors feature individual, integrated data and program memories, separate on-chip debugging units, and communication interfaces. Integrated comparators, memory protection units, programmable watchdogs, power supply monitoring and other features allow HICore 1 to fulfil all functional safety requirements of the IEC 61508 standard.



High integration density of HICore 1 architecture

Services

With more than 33,000 TÜV-certified systems installed over the course of 40 years, HIMA is a reliable partner for functional safety. This experience and know-how is available with every HICore 1 Safe System-on-Chip and related consulting services:

- Functional safety consulting
- Customer product certification
- Component selection
- PCB development
- Software development
- HIMA LIFECYCLE SERVICES

Features

- Energy-efficient, high-performance DC80390 (8-bit) processor cores
- Optimised MCS-51 (8051) instruction set
- Maximum pulse: 135 MHz
- Memory "SAFE System":
 - 2 x 256 KB Flash
 - 2 x 64 KB SRAM
- Memory "COM System":
 - 512 KB Flash
 - 128 KB SRAM
- Core voltage: 1.8 V
- I/O voltage: 3.3 V
- Typ. power consumption: below 400 mW (with all outputs active)
- Operating temperature: -40°C to +105 °C
- Storage temperature: -55°C to +150 °C
- Enclosure: FPBGA256

I/Os

- 32 safe digital inputs
- 8 safe counter inputs
- 30 safe digital outputs
- 2 safe PWM outputs
- Safe, redundant SPI for additional I/Os

Interfaces

- SPI
- UART
- 2 x CAN bus
- Ethernet

Development environment

- IAR workbench
- logi.CAD (online test capable)