

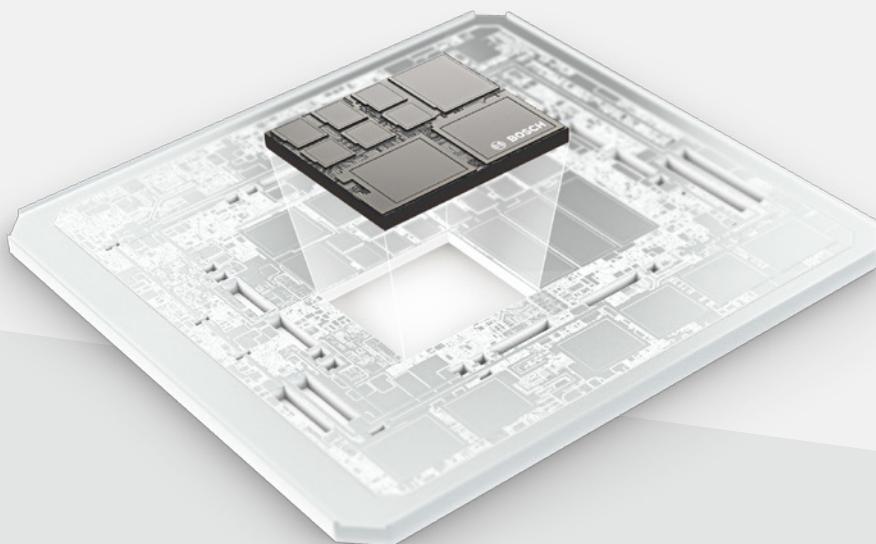
Automotive control units for powertrain and active safety

Generic Timer IP module (GTM)



BOSCH

Invented for life



PRODUCT BENEFITS

- ▶ Enables real-time control loops
- ▶ Deterministic multi-threaded architecture
(8 threads per RISC unit)
- ▶ Programmability (special purpose RISC/ALU)
- ▶ Scalable and configurable architecture
- ▶ Easy integration due to generic interfaces and hierarchical architecture
- ▶ SystemC model support for in-system verification and early software development
- ▶ Supports model-based development

5 ns

input and output resolution for high-precision data capturing and data signal generation

up to
1,500 MIPS

@200 MHz clock frequency for high data processing speed and precise process control

TASK

The Generic Timer IP module (GTM) ensures accurate multi-input data acquisition and multi-output signal generation in automotive powertrain and active safety applications or in industrial closed-loop applications.

FUNCTION

Digital input signal changes are captured in real-time by the GTM and used together with digitized analog signals for computation. The powerful programmability by high level language (C) allows to generate virtually any output signal shapes with complex pulse-width modulation (PWM). Multiple programming channels can act in parallel while still ensuring synchronous signal generation.

VARIANTS

Due to the modular design of the GTM a multiplicity of configurations are possible. These configurations are adjustable to the requirements of the customers.

TECHNICAL CHARACTERISTICS

PWM generators*	up to 192 resolution > 12 bit at any frequency
Outputs*	up to 96 24 bit resolution (included in 192 PWM generators)
Programmable cores*	up to 10 (with up to 8 channels each), working fully in parallel with no CPU load
Inputs*	up to 64 digital 24 bit filter for every input
Deliverables	VHDL source code, test environment (test bench and integration tests), SystemC executable model for in-system verification and early software development, documentation, application notes, serial communication protocol software drivers

* larger configurations upon request

