

32-bit Microcontroller Integrating 32-Message Buffer CAN MB91270 Series

A 32-bit RISC microcontroller integrating CAN with a built-in 32-message buffer. Adopting a high-performance, low-power-consumption FR60Lite core as the CPU, it is optimal for control applications in vehicle-mounted devices.

Overview

This product is a 32-bit RISC microcontroller integrating CAN with a built-in 32-message buffer. Using a 32-bit RISC CPU, FR60Lite as the core, various interfaces including a CAN controller, LIN-UART, and I²C as well as resources that are optimal for controlling vehicle-mounted devices such as timers, A/D converters, and PPGs are incorporated.

This product adopts a LQFP100-pin package and has pin arrangements that enable replacement from our 16-bit microcontrollers. It is optimal for products intended to improve the performance of various applications that had been realized with 16-bit microcontrollers as well as vehicle-mounted products.

Features

Fig.1 presents a block diagram, **Fig.2** pin assignments, and **Fig.3** a functional block diagram for this product.

The resources integrated in this product deliver the following features:

■ FR60Lite core

This product adopts an FR60Lite core, which is instruction-compatible with the FR series. The FR60Lite core is our 32-bit RISC CPU core that simultaneously realizes high performance and low power consumption.

■ CAN controller

It conforms to Part A and Part B of CAN specification version 2.0. 32-message buffers for data and ID are incorporated with sequencing. Communication speed up to 1Mbps is supported.

■ Various timers

- 16-bit free-run timer×4 channels
- Input capture×8 channels
- Output compare×8 channels
- 8-/16-bit PPG×16 channels (when 8-bit is selected)
- 8-/16-bit up-down counter×2 channels
- 16-bit reload timer×3 channels

Photo 1 External View



■ Various interfaces

- LIN-supporting UART×7 channels
- I²C interface×3 channels
- External bus interface

■ High-speed A/D converter

This product mounts 24 channels of sequential conversion type A/D converter, which realizes conversion time of 3μs and 10-bit resolution.

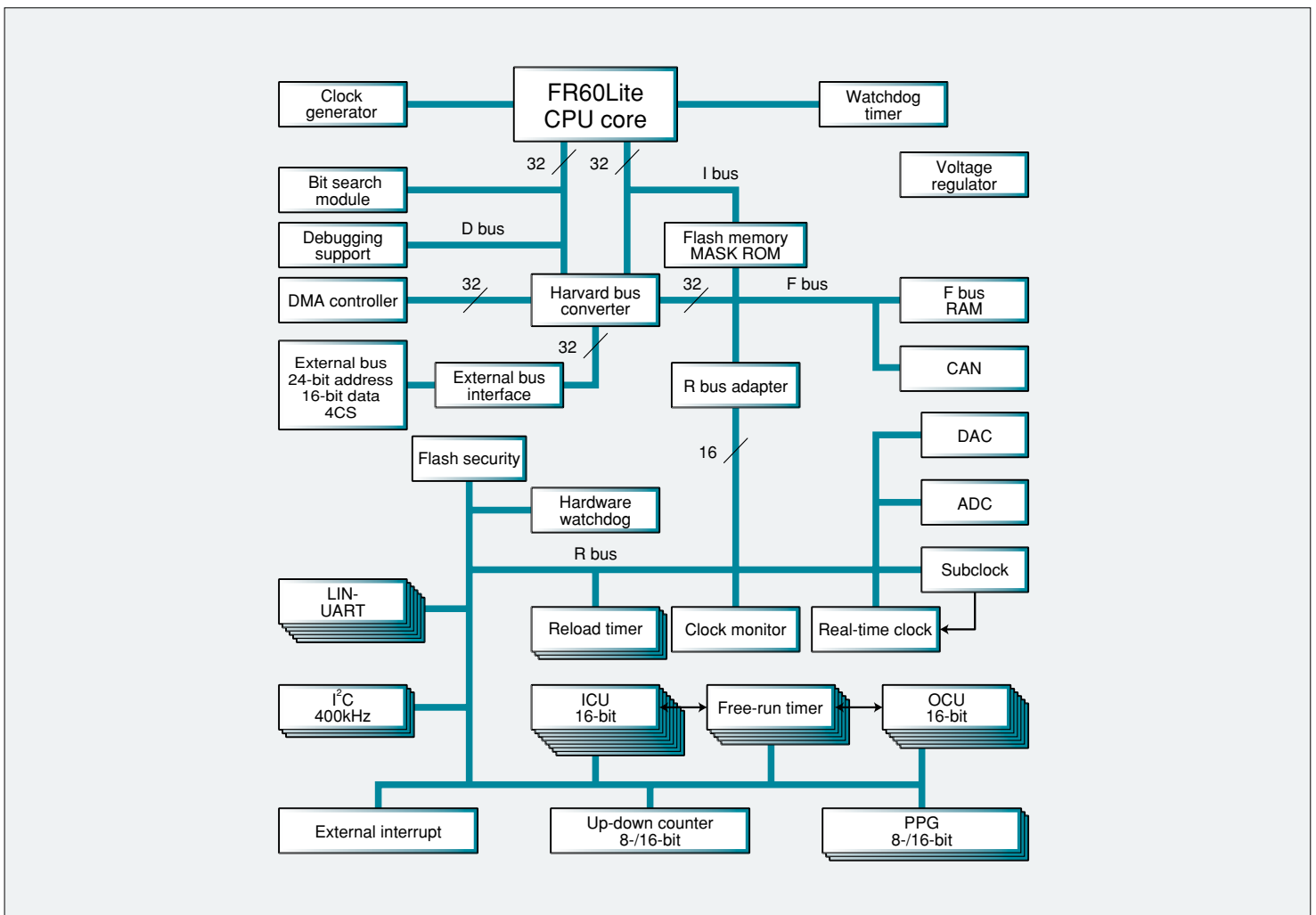
■ Other peripheral functions

- External interrupt×16 channels
- DMAC×5 channels
- Real-time clock
- Watchdog timer
- Low power consumption mode: Sleep/stop function
- Power-supply voltage: 3.5V to 5.5V
- Package: FPT-100P-M05 (LQFP-100pins)

We are also currently developing MB91F272 (FLASH product).

- RAM: 10Kbytes
- ROM (FLASH): 256Kbytes

Figure 1 Block Diagram



Development Environment

This product is supported by SOFTUNE™ V5/V6, a FUJITSU integrated software development environment, as are the conventional FR series. The SOFTUNE V5/V6 application software is designed to simplify programming tasks in order to meet the diversified needs of program designers.

Fig.4 presents the development environments centering on the Software Workbench and Table 1 lists the available development tools. *

NOTES

* SOFTUNE is a trademark of FUJITSU LIMITED.

Figure 2 Pin Assignments

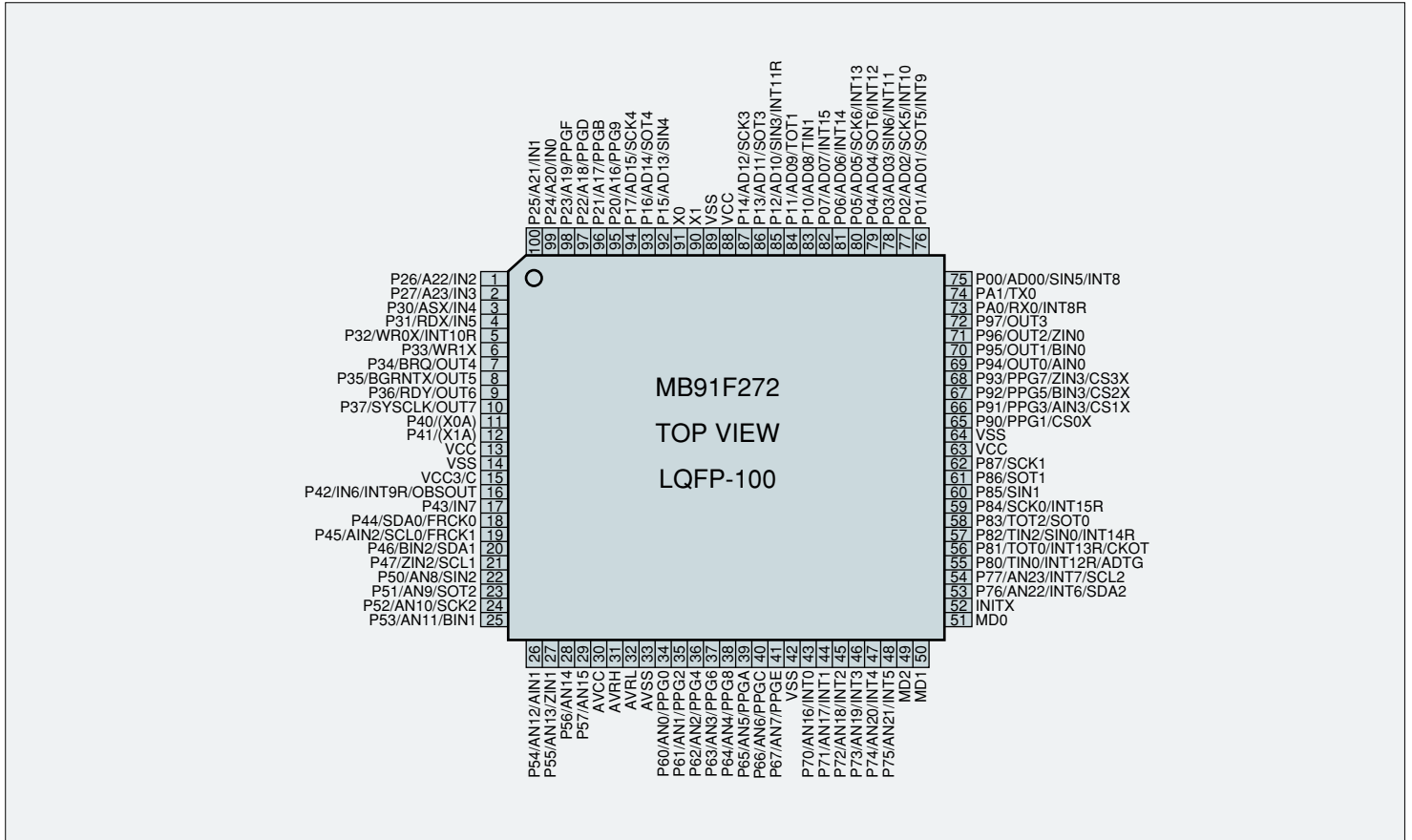


Table 1 Development Tools

Hardware	Emulator	MB2198-01
	Adapter board	MB2198-130
	Evaluation board	Currently under development
Software	SOFTUNE V5/V6 Workbench	
	SOFTUNE V5/V6 C compiler	
	SOFTUNE V5/V6 assembler	
	SOFTUNE V5/V6 C/C++ analyzer	
	SOFTUNE V5/V6 C checker	
	SOFTUNE V5/V6 REALOS/FR	

Figure 3 Functional Block Diagram

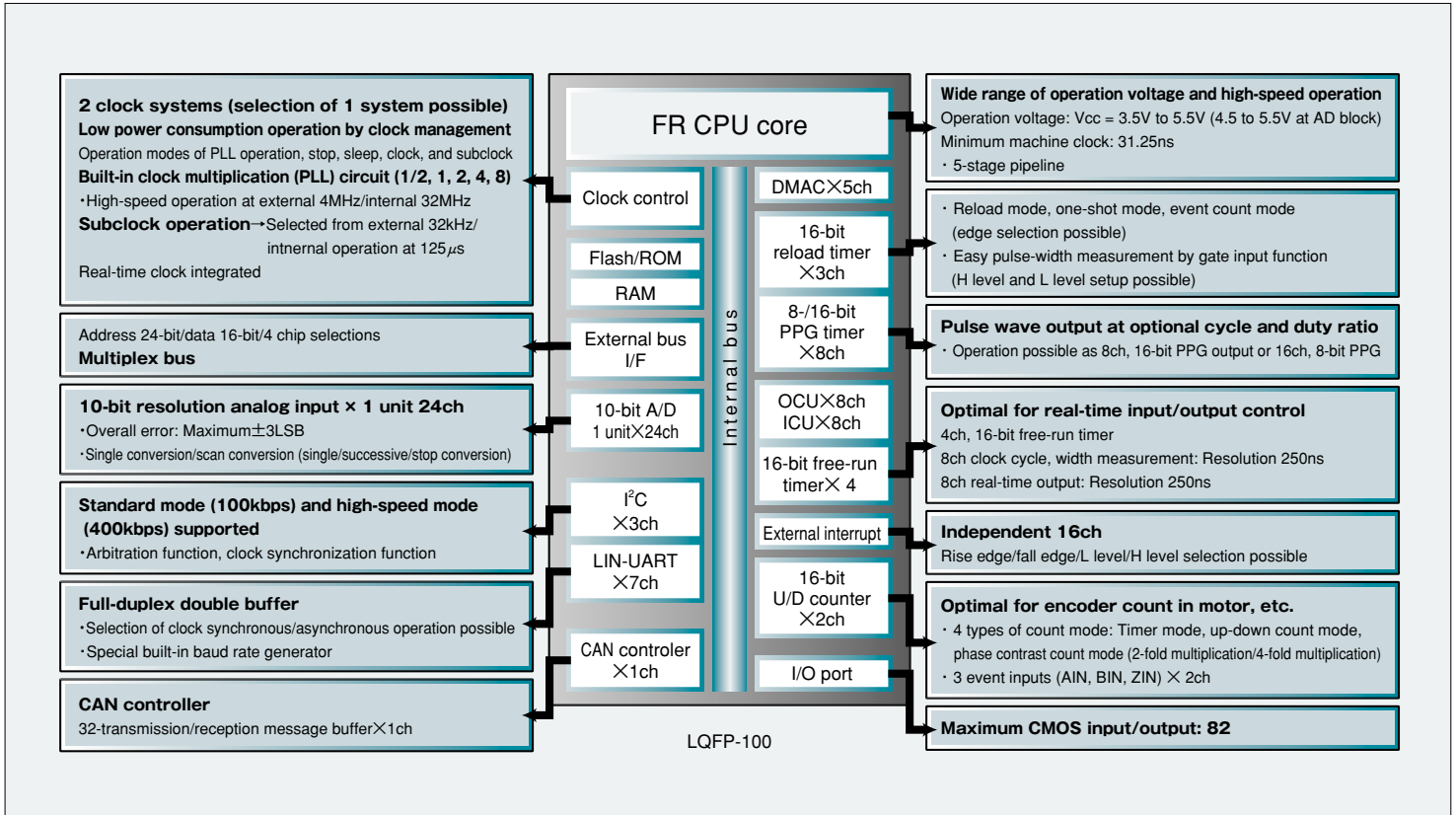


Figure 4 Development Environments Centering on SOFTUNE Workbench (Windows version)

