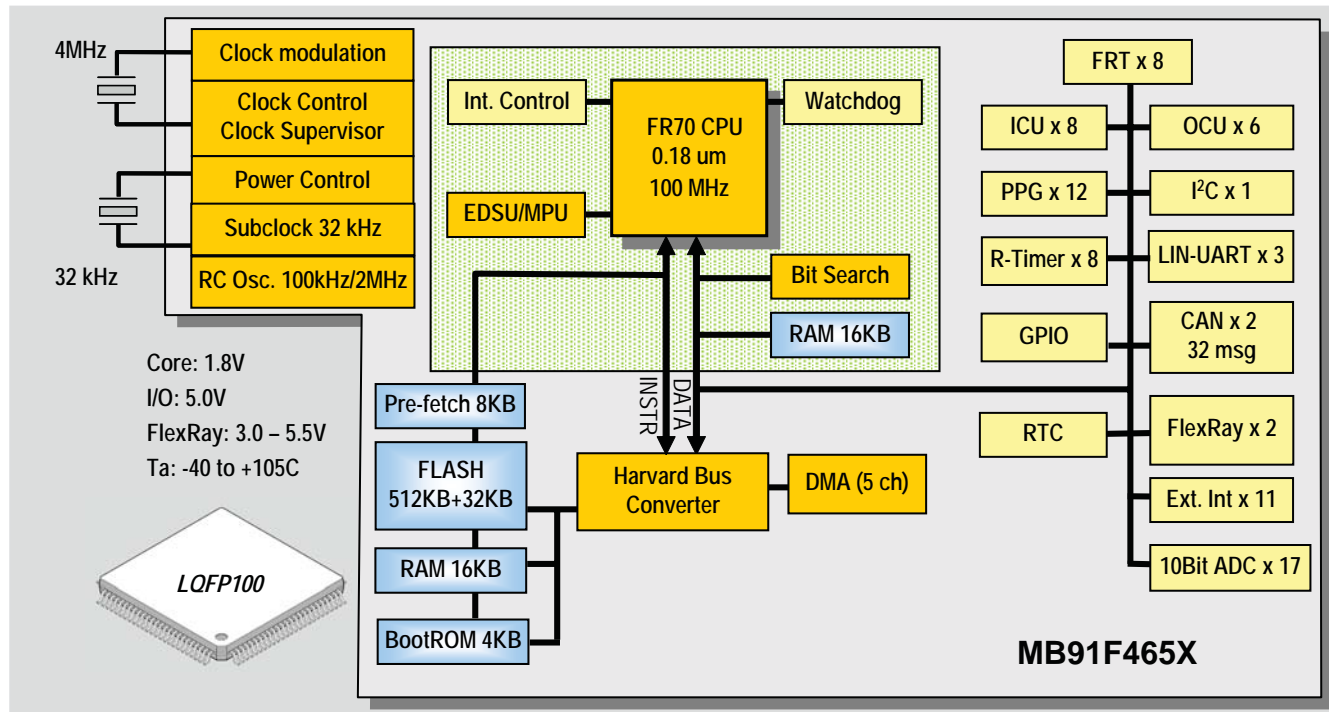


# FlexRay™ — The Ultimate Automotive Network

## The Fujitsu MB91F465X and MB88121C



### ► Description

The new FlexRay protocol opens the door for future automotive applications (such as x-by-wire) that require enhanced safety features compared to current automotive network systems.

The first applications that will deploy FlexRay are chassis and powertrain applications, preparing the ground for the first x-by-wire applications. Fujitsu is working to support the development of next-generation automotive-by-wire applications.

A fully integrated FlexRay microcontroller MB91F465X, as well as the FlexRay application-specific standard product

(ASSP) MB88121C, are available from Fujitsu. The ASSP device provides generic host interfaces for a wide variety of host processors.

The FlexRay integrated microcontroller is manufactured in 0.18µm embedded Flash technology, enabling it to run at more than 100MHz system clock. To fit the requirements of automotive applications, the devices feature full 5-volt operation capabilities for I/Os, analog parts and supply voltage, while the core itself will run at 1.8 volts from an integrated regulator.

### ► Applications

- Brake-by-wire
- Steer-by-wire
- Stability control systems
- Data backbone

# The Fujitsu MB91F465X and MB88121C

## ► Features

- 10Mbit/s
- Real-time capabilities
- Fault tolerant
- Bus guardian
- Redundancy
- Scalability
- Time triggered
- Synchronous and asynchronous transmission
- Bus or start topology

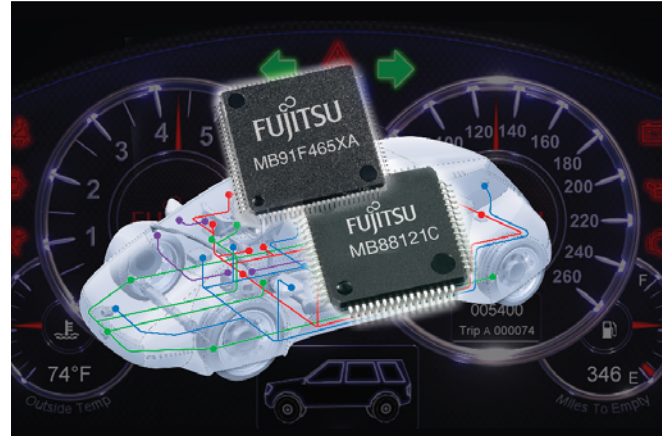
## Development Environment

- Starter kit for 16- and 32-bit host microcontrollers
- Softune workbench for software development
- In-circuit emulators

## ► Specifications

### MB91F465X

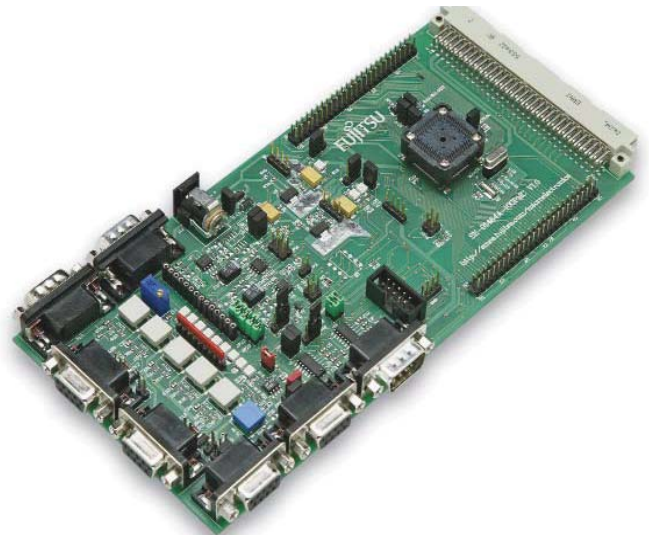
- 3.0-5.5 volt supply range
- 544kB Flash memory
- Flash security: read-out protection
- 32kB RAM
- Max. 100MHz operating frequency
- Hardware watchdog
- 1 FlexRay interface with 2 channels
- CAN: 2 channels with 32 message buffers each
- LIN-UART: 3 channels including FIFO function
- 10-bit ADC: 17 channels
- PPG: 12 channels
- Output compare unit: 6 channels
- Input capture: 8 channels
- Watchdog function: 1 channel
- I<sup>2</sup>C: 1 channel
- External interrupts: 11 channels
- Reload timer: 8 channels
- RTC can operate on external 4MHz or 32kHz crystals
- Package: 100-pin LQFP



- Support for OSEKTime
- FlexRay driver software from partners
- Compliant with AUTOSAR

## Development Environment: Software and Tools

- Fujitsu FlexRay driver (FFRD)
- Free license for evaluation purposes
- Source code delivery
- DECOMSYS::COMMSTACK
- Software examples
- SK-91F465X-100PMC starter kit



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