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The following document contains information on Cypress products. Although the document is marked with the name “Spansion”, the company that originally developed the specification, Cypress will continue to offer these products to new and existing customers.

**Continuity of Specifications**

There is no change to this document as a result of offering the device as a Cypress product. Any changes that have been made are the result of normal document improvements and are noted in the document history page, where supported. Future revisions will occur when appropriate, and changes will be noted in a document history page.

**Continuity of Ordering Part Numbers**

Cypress continues to support existing part numbers. To order these products, please use only the Ordering Part Numbers listed in this document.

**For More Information**

Please contact your local sales office for additional information about Cypress products and solutions.

**About Cypress**

Cypress (NASDAQ: CY) delivers high-performance, high-quality solutions at the heart of today’s most advanced embedded systems, from automotive, industrial and networking platforms to highly interactive consumer and mobile devices. With a broad, differentiated product portfolio that includes NOR flash memories, F-RAM™ and SRAM, Traveo™ microcontrollers, the industry’s only PSoC® programmable system-on-chip solutions, analog and PMIC Power Management ICs, CapSense® capacitive touch-sensing controllers, and Wireless BLE Bluetooth® Low-Energy and USB connectivity solutions, Cypress is committed to providing its customers worldwide with consistent innovation, best-in-class support and exceptional system value.

# MB9A130LB Series

## 32-bit Microcontroller FM3 Family

### Fact Sheet



MB9A130LB Series are highly integrated 32-bit microcontrollers dedicated for embedded controllers with low power consumption mode and competitive cost. MB9A130LB Series are based on the ARM Cortex-M3 Processor with Flash memory and SRAM, and has peripheral functions such as Motor Control timers, ADCs and Communication Interfaces.

## 1. FEATURES

- **32bit ARM Cortex-M3 Core**
  - Processor version : r2p1
- **Clock**
  - Maximum clock frequency : 20MHz
- **Base Timer** : 8 channels (Max.)
- **Multi-function Timer** : 1 unit (Max.)
  - 16-bit free-run timer ×3channels/unit
  - Input capture ×4channels/unit
  - Output compare ×6channels/unit
  - A/D activation compare ×1channel/unit
  - Waveform generator ×3channels/unit
  - 16-bit PPG timer ×3channels/unit
- **Watch dog Timer** : 1 channel (SW) + 1 channel (HW)
- **Multi-function Serial Interface**
  - Selectable from UART/CSIO/I<sup>2</sup>C
  - MB9AF131KB/132KB: 4 channels(CSIO & I<sup>2</sup>C is Max 3ch)
  - MB9AF131LB/132LB: 8 channels
- **Real Time Clock** : 1 unit
- **External Interrupt Controller Unit**
  - MB9AF131KB/132KB: 6 pins(Max.) + NMI 1 pin
  - MB9AF131LB/132LB: 8 pins(Max.) + NMI 1 pin
- **12-bit A/D Converter**
  - MB9AF131KB/132KB: 6 channels (1 unit)
  - MB9AF131LB/132LB: 8 channels (1 unit)
- **Low Power Consumption Mode**
  - 6 low power consumption modes supported
  - SLEEP mode/TIMER mode/RTC mode/STOP mode/Deep stand-by RTC mode/Deep stand-by STOP mode
- **General Purpose I/O port**
  - MB9AF131KB/132KB : 37 (Max.)
  - MB9AF131LB/132LB : 52 (Max.)
- **Built-in CR**
- **Debug**
  - Serial Wire JTAG Debug Port (SWJ-DP)
- **Low Voltage Detector**
- **Clock Super Visor**
- **Power Supply** : 1.8 to 5.5V

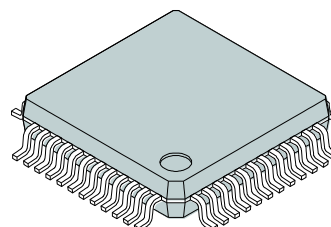
## 2. PRODUCT LINEUP

| Part number<br>Parameter | MB9AF131KB/LB | MB9AF132KB/LB |
|--------------------------|---------------|---------------|
| Flash<br>(Byte)          | 64K           | 128K          |
| RAM<br>(Byte)            | 8K            | 8K            |

## 3. ORDERING INFORMATION

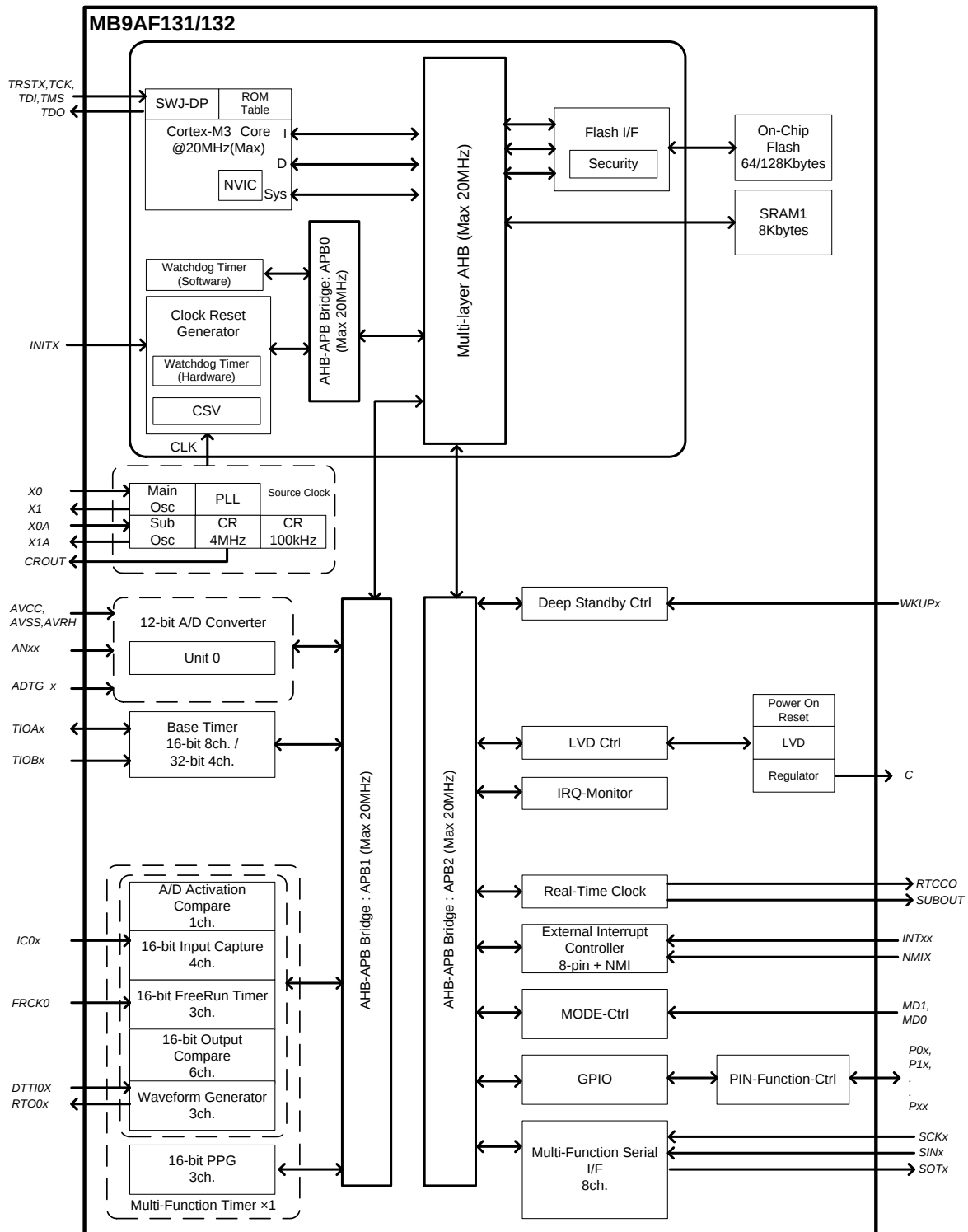
| Part number    | Package                                              |
|----------------|------------------------------------------------------|
| MB9AF131KBPMC  | Plastic • LQFP(0.5mm pitch),48-pin<br>(FPT-48P-M49)  |
| MB9AF132KBPMC  |                                                      |
| MB9AF131KBQN   | Plastic • QFN(0.5mm pitch),48-pin<br>(LCC-48P-M73)   |
| MB9AF132KBQN   |                                                      |
| MB9AF131LBPMC1 | Plastic • LQFP(0.5mm pitch),64-pin<br>(FPT-64P-M38)  |
| MB9AF132LBPMC1 |                                                      |
| MB9AF131LBPMC  | Plastic • LQFP(0.65mm pitch),64-pin<br>(FPT-64P-M39) |
| MB9AF132LBPMC  |                                                      |
| MB9AF131LBQN   | Plastic • QFN(0.5mm pitch),64-pin<br>(LCC-64P-M24)   |
| MB9AF132LBQN   |                                                      |

## 4. PACKAGE EXAMPLE OF REFERENCE



Plastic • LQFP, 64-pins  
(FPT-64P-M38)

## 5. BLOCK DIAGRAM



# Mouser Electronics

Authorized Distributor

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## Cypress Semiconductor:

[MB9AF132KBPMC-G-SNE2](#) [MB9AF132LBQN-G-AVE2](#) [MB9AF132LBPMC-G-SNE2](#) [MB9AF132LBPMC1-G-SNE2](#)  
[MB9AF132KBQN-G-AVE2](#) [MB9AF131KBQN-G-AVE2](#) [MB9AF131LBQN-G-AVE2](#) [MB9AF131KAPMC-G-UNE2](#)  
[MB9AF132LBPMC-G-UNE2](#) [MB9AF131LAPMC1-G-UNE2](#) [MB9AF132LAPMC1-G-UNE2](#) [MB9AF131LBQNG-AVE2](#)  
[MB9AF131KBQNG-AVE2](#) [MB9AF131LAPMC1-G-SNE2](#) [MB9AF131KAPMC-G-SNE2](#) [MB9AF131KBPMC-G-SNE2](#)  
[MB9AF131LBPMC1-G-SNE2](#) [MB9AF131KAQN-G-AVE2](#) [MB9AF131KAPMC-G-105-UNE2](#) [MB9AF131LBPMC-G-](#)  
[SNE2](#) [CY9AF131KAPMC-G-SNE2](#) [CY9AF131KAQN-G-101-AVE2](#) [CY9AF131LAPMC-G-SNE2](#) [CY9AF132LAPMC-G-](#)  
[SNE2](#) [CY9AF132LBPMC-G-UNE2](#) [CY9AF131KAQN-G-108-AVE2](#) [CY9AF131KAPMC-G-XXX-SNE2](#)  
[CY9AF131KBPMC-G-SNE2](#) [CY9AF131KAPMC-G-105-SNE2](#) [CY9AF132KAPMC-GE1](#) [CY9AF131LBQN-G-AVE2](#)  
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[CY9AF132LAQN-G-AVE2](#) [CY9AF132LAPMC1-G-UNE2](#) [CY9AF131KAQN-G-109-AVE2](#) [CY9AF132LAPMC1-GE1](#)  
[CY9AF131LAPMC1-GE1](#) [CY9AF132KAPMC-G-SNE2](#) [CY9AF131LAPMC1-G-UNE2](#) [CY9AF132KBQN-G-AVE2](#)  
[CY9AF131KPMC-GE1](#) [CY9AF132LBPMC1-G-SNE2](#) [MB9AF132LAPMC1-G-SNE2](#) [CY9AF131LBPMC1-G-SNE2](#)  
[CY9AF131LBPMC-G-SNE2](#) [CY9AF132KAPMC-G-103E1](#) [CY9AF132LBQN-G-AVE2](#) [CY9AF132KBPMC-G-SNE2](#)  
[CY9AF131KBQN-G-AVE2](#) [CY9AF131KAQN-G-AVE2](#) [CY9AF131KAPMC-G-UNE2](#)