

MS500

ULTRA-LOW POWER, ADVANCED SECURITY, HIGH SCALABILITY

The MS500 is an ARM® Cortex-M0™ based RISC Microcontroller with Hardware Security Block for embedded applications featuring a High Level of Integration and Low Power Consumption.

With its Ultra-Low Power, High Performance and Connectivity options, it is ideal for Internet of Things, Fintech Security, Smart Metering, Smart Grid, Biometric and HSM (Hardware Security Module)

KEY APPLICATIONS

• Internet of Things

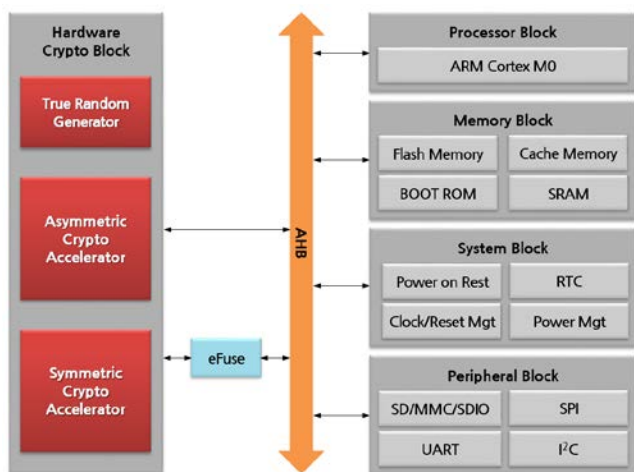
- Wearables & Portable
- AMI for Smart Grid
- Smart Medical
- Smart Healthcare
- Smart Automotive
- Smart Factory
- Smart Retail

• Fintech Security

- FIDO
- Biometric
- Smart Payment/Banking
- HSM

FUNCTIONAL DIAGRAM

This diagram shows the superset of features for the MS500 microcontroller.



KEY FEATURES

32-BIT ARM® CORTEX™-M0 CPU

- Up to 100 MHz operation frequency.
- Built-in Nested vectored interrupt controller (NVIC) for fast deterministic interrupt processing.
- Wake-up Interrupt Controller (WIC) allows automatic wake from any priority interrupt at ultra-low power sleep mode support
- Included Instruction Cache Controller & Smart DMA Controller for increase CPU M0 performance

MEMORIES

- 64 KB SRAM
- 8 KB Boot ROM
- 1 MB Internal Flash Memory
- 8 KB Instruction Cache Memory
- 128 Byte eFuse

CRYPTO BLOCK

- Asymmetric Crypto Accelerator
 - Offloads asymmetric algorithm processing.
 - RSA used to encrypt up to 2048
 - ECC up to 512
- Symmetric Crypto Accelerator
 - AES128/256, SHA1/SHA256
 - ARIA 128/192/256
- TRNG (True Random Number Generator)
 - Designed for compliance with FIPS 140-2 and IPS 140-3 (draft).
 - High-speed operation.

INTERFACE

- Three SPI Master/Slave Interface
- Three UARTs with DMA support and full modem control
- Four I²C bus interfaces
- SDMMC card interface supporting for eMMC 4.41, SD 3.01 and SDIO 3.0 host interface
- SDIO 3.0 Slave Interface.
- Up to 41 Fast GPIO pins with configurable

SYSTEM LOGIC

- Power On Reset Logic
- Two 2-channel General Purpose Timers.
- Programmable Watchdog Timer.
- Ultra-low power RTC (Real-Time Clock)

SECURITY FUNCTION

- Secure Boot
- Secure Storage

MAIN SUPPLY VOLTAGE

- 1.8V (± 10%) Supply Voltage
- 3.3V (± 10%) Supply Voltage

PACKAGE INFORMATION

- 60-pin LGA
- Ball Pitch: 0.35 mm
- Package Width × Length: 6 mm×6 mm

DEVELOPMENT TOOLS

The MS500 development environment consists of a comprehensive set of development tools and software to help users implement the best solution according to their needs.

DEVELOPMENT HARDWARE TOOLS

- TBD

SOFTWARE DEVELOPMENT KITS (SDK)

- FreeRTOS

SOFTWARE DEVELOPMENT ENVIRONMENT

- GNU ARM Embedded Toolchain
- GNU ARM Eclipse

More information about MS500, development tools and technical documents, please visit <http://www.e-wbm.com> or email to info@e-wbm.com.

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