

SAMA5D27-SOM1 System on Module

System Integration Simplifies MPU Design and Reduces Time to Market

Summary

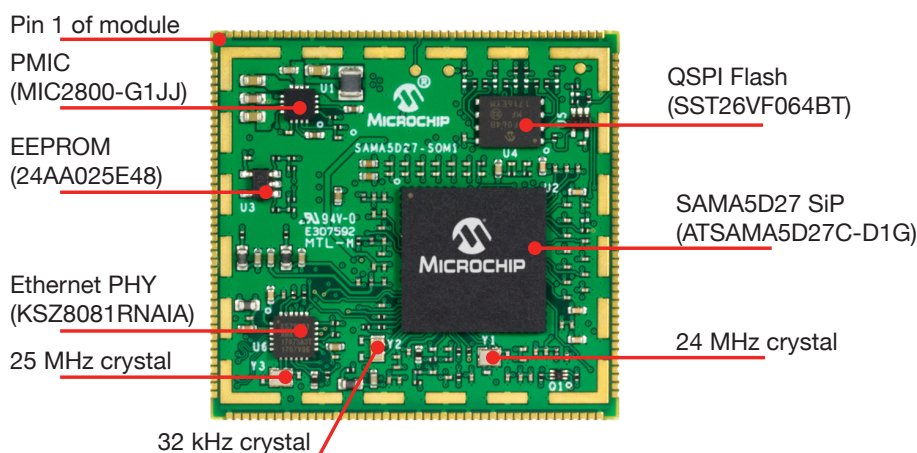
Microchip's ATSAMA5D27-SOM1 integrates the basic components for an MPU-based system with an SAMA5D27-D1G System-in-Package (SiP) MPU into a single module. Starting with the System on Module (SoM) as a design base greatly simplifies the MPU design effort. With its integrated DDR2 SDRAM, the SiP eliminates the board layout and design risk of interfacing high-speed SDRAM signals and also reduces EMI concerns. A single 3.3-volt power supply and ease of solderability enables rapid prototyping. Besides shrinking board dimensions, the SoM can reduce the number of PCB layers, significantly lowering the system cost. The SoM makes it easy for you to get product to market faster with lower design risk.

Operational Specifications

- Dimensions: 40 x 38 mm, hand solderable 0.8 mm pad spacing
- Main operating voltage: 3.3V $\pm$ 5%
- Temperature range: -40°C to 85°C
- Multiple interfaces and I/Os for easy application development

Key Applications

- Smart HMI/control panels (white goods, alarm systems, etc.)
- IoT/secure gateways
- Image processing application
- Handheld device



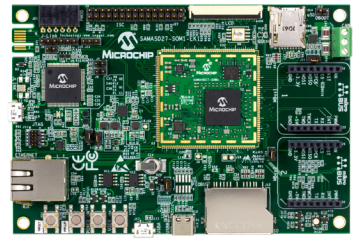
Key Highlights

- **Simplified board design** – The SoM includes the most commonly used system components, simplifying baseboard design. Design and manufacturing files (Gerbers, schematics, etc.) can be downloaded free of charge from www.microchip.com/mpu
- **Rapid prototyping** – A single 3.3-volt power supply and a single-sided PCB with hand-solderable 0.8 mm pad spacing enables rapid prototyping.
- **Plug and play Linux®** – Download the SD card image for the ATSAMA5D27-SOM1-EK1 from www.Linux4sam.org and be running Linux in no time. Access the Linux environment from your console.
- **Lifetime commitment** – Microchip's customer-driven obsolescence policy* allows you to design a SoM without worry.

*Microchip has established long-term supply contracts with Winbond to ensure a lifetime DDR2 SDRAM supply.

Support

The ATSAMA5D27-SOM1-EK1 Evaluation Kit provides a convenient hardware development platform for the entire SAMA5D2 SiP family and the SoM1. Microchip supports the SAMA5D2 family in the mainline Linux OS distribution. Software development support is available on www.linux4sam.org, including demo images and support for AT91 Bootstrap, U-Boot and the Buildroot and Yocto build systems. A SAMA5D2 software package provides driver and demo code example support for RTOS and bare metal software development.



Baseboard Features

Characteristics	Specifications	Components
Memory	One QSPI Flash (unmounted)	Tested with Macronix MX25L25673GM2I-08G
Crypto	One CryptoAuthentication™ device	ATECC508
USB Com Port	One USB host One USB device One USB HSIC	Connector USB Type-C™ Connector type microAB 2-pin header (not populated)
Ethernet	One Ethernet interface	RJ45 connector
CAN	One CAN interface	ATA6561
Video	One LCD RGB 24-bit interface One ISC 12-bit interface	50-pin FPC connector 2 x 15 male connector
Storage	One standard SD card interface One microSD card interface	3.3V/1.8V power switch –
Debug Port	One J-Link-OB and J-Link-CDC One JTAG interface	SAM3U microcontroller with embedded J-Link firmware –
Board Monitor	One RGB (Red, Green, Blue) LED Four push button switches	Power on, reset, wakeup, user free –
Expansion	One tamper connector One Pmod connector Two mikroBUS™ interfaces	10-pin male connector 6-pin female connector 2 x 8-pin female connector
Board Supply	From USB A and/or USB J-Link-OB	5 VDC
Power Saving	SuperCap	–