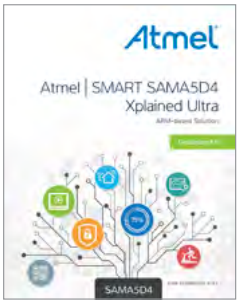
# SAMA5D4 Xplained Ultra

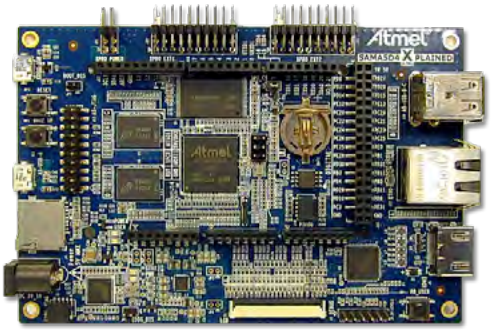

Introducing the Atmel® | SMART ARM®-based SAMA5D4 Xplained Ultra demo board. This evaluation kit is a fast-prototyping and low-cost evaluation platform for Atmel's SAMA5D4 Cortex®-A5-based microprocessor (MPU) design. You can download a Linux distribution from linux4sam.com that includes the Linux Kernel 3.10 with LTS (long-term-support). The build incorporates both Linux Mainline and Yocto support. An Android KitKat port will be available in December 2014 on http://www.AT91.com/android4sam. For bare-metal developers not using an operating system, Atmel offers a complete C software package including many examples to get you started fast.

The board comes with an HDMI port and a rich set of ready-to-use connectivity and storage peripherals. There are expansion headers for easy customization, including the headers for Arduino Shields and Xplained Wings. You can use the USB device connector to power the board as well as to program and debug it. Last but not least, the SAMA5D4 Xplained Ultra embeds a unique MAC address and serial number which will ease the connection to an Ethernet network.

## Key Features




- SAMA5D44 Cortex-A5 Microprocessor
- 512MBytes DDR2 memory
- 512MBytes NAND Flash memory
- 1 EEPROM with a unique MAC address and serial number
- LCD connectors
- 10/100 Ethernet MAC with PHY and connector
- Three USB connectors (2 Host and 1 Device)
- One HDMI connector
- 1x SD/eMMC and 1x MicroSD slots
- Arduino R3 Shield and Xplained Wing compatible expansions headers
- Power measurement straps



## SAMA5D4 Processor

Atmel | SMART ARM Cortex-A5-based MPUs provide a balance of capabilities with a rich set of devices that meet your every industrial design need. The SAMA5D4 offers seamless technology for Internet of Things (IoT), consumer, and industrial applications. This includes control panels, communication gateways, imaging terminals, and more.

To learn more or order one, please visit:
http://www.atmel.com/tools/SAMA5D4-XPLD.aspx

# SAMA5D4 Xplained Ultra

Operating at 840DMIPS (Dhrystone MIPS), the SAMA5D4 MPU is ideal for any high-performance, secure and cost-sensitive industrial application. High performance computing needs are supported by ARM NEON™ and a 128kB L2 cache which increases the overall system performance. The SAMA5D4 is an ideal fit for low-cost user interface (UI) applications that require video playback. The high-grade security features allow you to protect any system against counterfeiting or software theft, while enabling secure data storage and transfer.

**High Performance** designed to complement the power of the ARM Cortex-A5 core, the SAMA5D4 delivers 840DMIPS and features an ARM NEON engine for accelerated signal processing for multimedia and graphics. NEON is a 128-bit SIMD (single instruction, multiple data) architecture extension.

**Enhanced User Interfaces** The SAMA5D4 integrates a 720p 30fps hardware video decoder for accelerated video playback using low
power that supports today's mainstream video standards.

**Connectivity** The SAMA5D4 series embeds a wide range of advanced communication peripherals and security, making it ideal for Internet-connected systems.

**Advanced Security Features** The SAMA5D4 includes features to prevent cloning of your application as well as to secure your communications and data storage.

**Safety** The SAMA5D4 includes functions which ease the implementation of safety standards like IEC61508.

**Low System Cost** with its high level of system integration, the SAMA5D4 provides maximum flexibility, while minimizing the need for expensive additional components.

| Features | SAMA5D41 | SAMA5D42 | SAMA5D43 | SAMA5D44 |
|---|---|---|---|---|
| vFPU/Neon/L2 Cache | Yes | Yes | Yes | Yes |
| DDR Bandwith | 16-bit | 32-bit | 16-bit | 32-bit |
| 720p Video HW Decoder | No | No | Yes | Yes |
| LCD Controller | Yes | Yes | Yes | Yes |
| Camera Interface | Yes | Yes | Yes | Yes |
| 10/100 EMAC | x2 | x2 | x2 | x2 |
| Crypthography | AES/3DES, RSA/ECC | AES/3DES, RSA/ECC | AES/3DES, RSA/ECC | AES/3DES, RSA/ECC |
| Advanced Security(1) | Yes | Yes | Yes | Yes |
| Packages | BGA289 (14X14) | BGA361 (16x16) | BGA289 (14x14) | BGA361 (16x16) |

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