

DATASHEET

µQseven System-on-Module

64-bit Quad-core ARM Cortex-A53
featuring the Allwinner A64 application processor



70x40mm
µQseven



Secure
Element



64-Bit
CPU



4x 1.3 GHz



up to 2GB



Gigabit
Ethernet



7x USB2.0



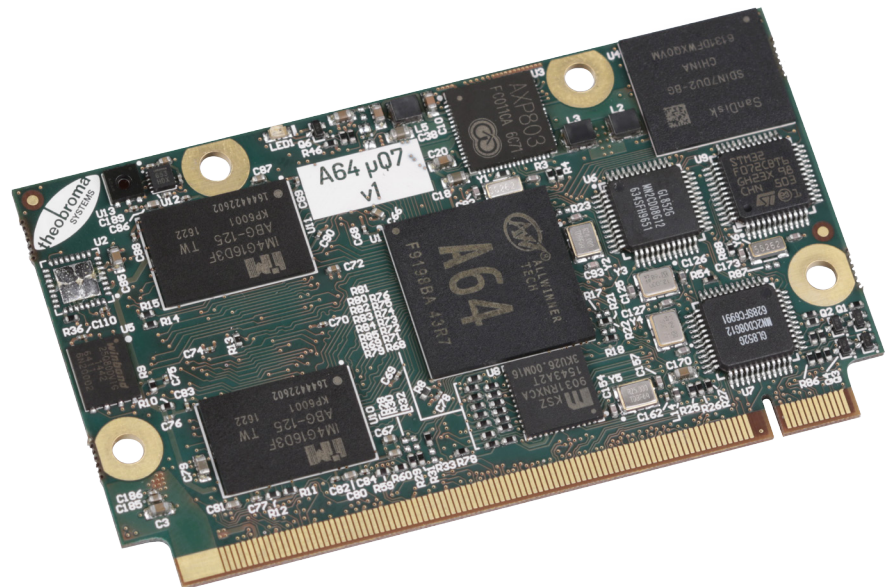
CAN



HDMI 4K



MIPI-DSI



Future-proof your design with an ARMv8 64-bit CPU

The **A64-μQ7** brings the latest iteration of the ARM architecture to the industrial embedded market. 32-bit applications are seamlessly supported while 64-bit code can take full advantage of the new CPU architecture, like the larger address space for better address randomisation and a modernised instruction set.

- Four ARM Cortex-A53 cores (fully symmetric design)
- On-chip Gigabit Ethernet controller
- Advanced power management

The **A64-μQ7** module is not just another system-on-module: it is a building block for the realisation of state-of-the-art devices featuring the pre-requisite peripherals for flexible connectivity and rich user interfaces. It is backed by our professional services to offer a all-in-one solution for your development project, if desired.

Designed to address today's security challenges of connected applications

With the increasing importance of networked and connected applications—whether the target market is Smart Metering, Industry 4.0 or if building the next Internet-of-Things—new security challenges have arrived. The secure identification of individual field-deployed devices, secure key storage and the establishment of secure communication channels are today standard requirements in most applications.

Whether you are looking for a trusted solution for license-management, need protect your brand and intellectual property, or want to securely store and transmit application assets, our **A64-μQ7** module offers a solution by integrating an advanced security module from STMicroelectronics:

- Smart-card silicon and operating system compliant to the JavaCard 2.2 and Global Platform 2.2.1 specifications
- Active and passive countermeasures to physical tampering and data extraction
- Differential power analysis (DPA) and differential fault analysis (DFA) countermeasures against side channel attacks
- Supports cryptosystems based on both RSA and ECC algorithms

Building a secure solution from the application through the middleware integration to the back-end is never a trivial task. This is why a seasoned engineering team at Theobroma Systems, which successfully has built multiple Common Criteria evaluated products, is ready to provide professional services and engineering consulting for the development of secure products built on this μQ7 module.

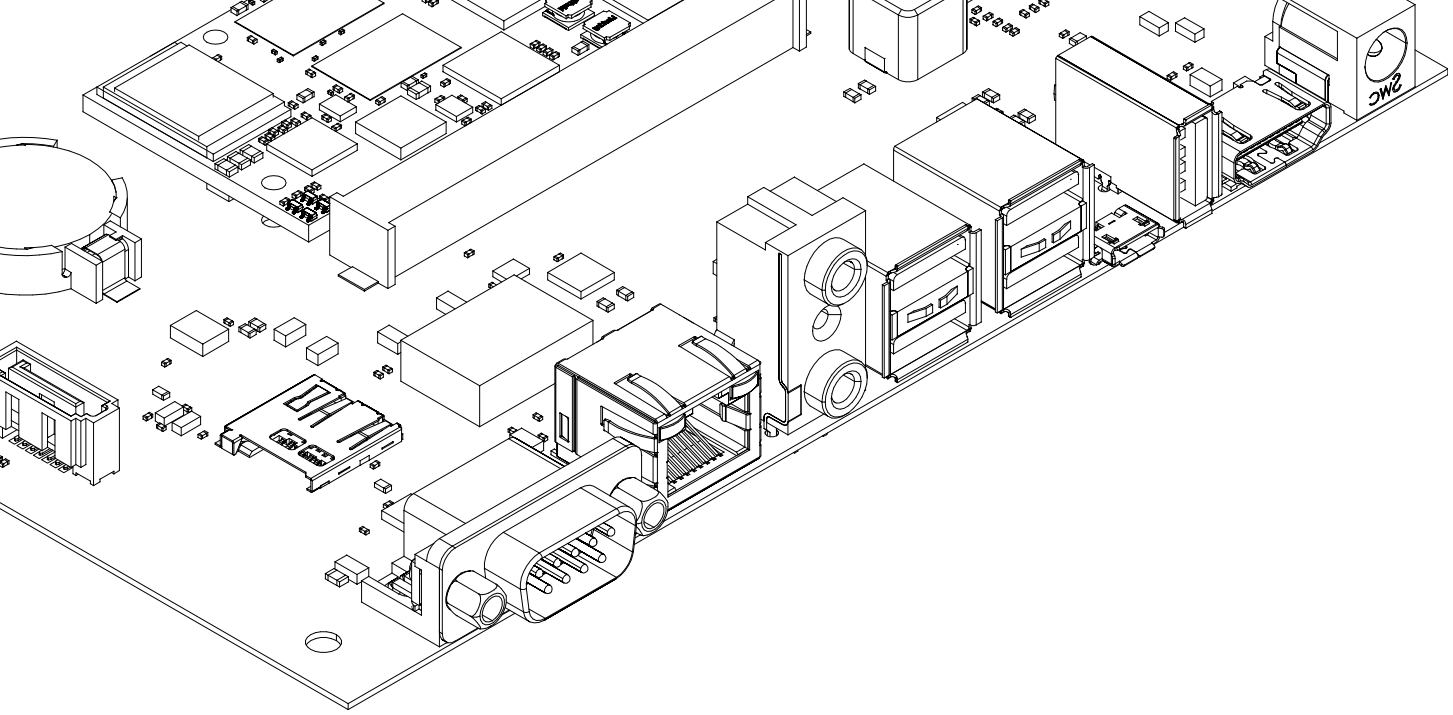
Baseboard and starter kits available

Mini-ITX baseboard, suitable for ARM-based Qseven and μQseven modules, is available for evaluation and development purposes.

- Get a quick start in the evaluation of our μQseven module.
- Use our baseboard as a readily available reference design.

Technical Summary

Form factor	μQseven
Processor	Allwinner Technology A64 Quad-Core ARM Cortex-A53, up to 1.3 GHz 64KB L1 cache and 512KB L2 cache ARM Mali 400 MP2 GPU Multi-format video encoding/decoding co-processor Crypto Engine AES accelerator
Memory	DDR3, up to 2GB on-module
NOR Flash	Up to 16MB SPI NOR flash on-module
eMMC Flash	Up to 64GB eMMC on-module
Ethernet	10/100/1000 Mbps (with an on-module triple-speed GbE PHY)
USB	7x USB 2.0 (one dual-role port)
Display	HDMI 1.4, up to 4K @ 30fps MIPI DSI, up to 1920x1200 @ 60fps
CAN	On-module communication offload controller for CAN
Additional Interfaces	UART, 8x GPIO, I2S, I2C, SMBus, SPI, FAN
Security Module	Global Platform 2.2.1 compliant JavaCard environment On-module state-of-the-art, EAL4-certified smartcard controller Note: Custom board variants may exclude the security-module option.
Operating Systems	Linux Android
Power Management	Dynamic frequency and voltage scaling for thermal and power management
Power Supply	Operates directly from a single 5V supply
Consumption	< 5W
Operating environment	Commercial 0°C to 85°C Extended temperature ranges are available on request.
Dimensions	70mm x 40mm (2.75" x 1.575")



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