

Quixant

Think outside the box



QMax-2 ULTIMATE POWER. ULTIMATE PERFORMANCE.

- Drives up to ten monitors (up to ten 4K monitors)
- AMD Ryzen™ Embedded V1000 SoC with integrated AMD Radeon™ Vega graphics
- Optional discrete Quixant Graphics Card Module (QGC2) range available incorporating AMD Embedded Radeon™ E9260 or E9550 GPUs to boost graphics performance
- Advanced PCI Express® Gen 2 gaming technology

Ultra high-performance AMD Ryzen™ Embedded V1000 SoC

The AMD Ryzen™ Embedded V1000 SoC combines Quad 64-bit AMD Zen cores (supporting up to eight simultaneous threads) with AMD Radeon™ Vega graphics with up to 11 CUs. This combination provides unrivalled CPU and graphics processing power for gaming applications. The integrated graphics can drive four DisplayPort 1.4 monitors in full 4K resolution.

Optional Quixant Graphic Card Module (QGC2)

QMax-2 can be specified with several optional discrete Quixant Graphics Card Modules (QGC2), supporting up to 8GB of GDDR5 SGRAM, which work in combination with the integrated graphics to boost graphics performance to “consumer games console levels”. By specifying the optional discrete QGC2 modules, QMax-2 can support up to a total of ten independent monitors (up to ten 4K monitors).

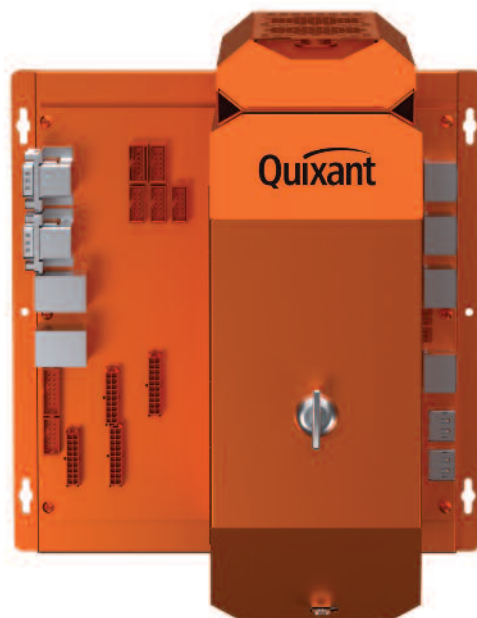
Quixant Gaming Ecosystem®

QMax-2 leverages Quixant’s Gaming Ecosystem®, integrating advanced I/O, NVRAM, communication and security features. This includes up to 32MB high speed PCI Express® Gen 2 NVRAM with accelerated hardware mirroring and CRC operations, support for 64 digital inputs and outputs, up to 16 intrusion inputs and 8 PCI Express® QxCom serial ports.

Newly featured in QMax-2 is the QxATS Advanced Tracing Subsystem which accelerates the development process by providing realtime logging and tracing.

QxVDR (Video Decoder and Rendering software suite) provides hardware accelerated decode of videos incorporating alpha transparency, with the ability to synchronise with a variety of multimedia sources. QxVDR offers a complete and integrated software suite for videos, audio and LED patterns.

QxLED is an integrated hardware and software solution incorporated into the QMax-2 enabling multiple RGB LED strips to be driven in real time.



Advanced Security Features

Advanced hardware security engine incorporating 256-bit PCIExpress® Gen 2 AES hardware encryption/decryption (128/256-ECB/CBC), AMD PSP and SME, hardware RSA 2048 engine, embedded TPM, hardware lock mechanism, built-in unique serial number and SHA-1 acceleration chip.

Complete Software Suite

Device drivers, gaming protocols including SAS 6.02, secure customisable BIOS. Full support for Windows Embedded/IoT and Linux.

Long supply lifetime

Embedded design with 5 year supply lifetime from launch.

Patented secure thermal solution

The QMax-2 introduces Quixant’s next generation enclosure to the QMax family. Service ability is enhanced by mounting the fans in an external module while, through intelligent thermal engineering, QMax-2 remains cool and quiet despite the high performance on offer.

Market compliance

Meets the requirements of GLI-11 and all major global gaming jurisdictions.



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QMax-2 General Features

APU

AMD Ryzen™ Embedded V1000 SoC

Quad 64-bit Zen Cores

- Multi-threaded architecture supports up to 8 threads
- Core frequencies up to 3.35GHz (up to 3.8GHz with boost)
- Up to 2MB L2 Cache and 4MB L3 Cache

Integrated AMD Radeon™ Vega graphics

- Up to four independent HD/4K displays from the APU with support for DisplayPort 1.4
- Up to 11 Compute Units
- Hardware accelerated 4K video encoder/decoder

Optional QGCM2 Discrete Graphics Card Module

Two discrete graphics card module options:

QGC2-A2

- AMD Embedded Radeon™ E9260 GPU
- 4GB GDDR5 SGRAM
- Up to five independent displays (five 4K displays)
- Hardware accelerated 4K video encode/decode

QGC2-A3

- AMD Embedded Radeon™ E9550 GPU
- 8GB GDDR5 SGRAM
- Up to six independent displays (six 4K displays)
- Hardware accelerated 4K video encode/decode

Main Memory

- 2 x DDR4-3200 SODIMM sockets
- Up to 32GB main memory

Quixant Gaming Features

64-bit PCI Express® Gen 2

Up to 32Mbytes of NVRAM

- Battery packed SRAM
- Lithium primary or optional Lithium Pentoxide rechargeable cells
- Hardware accelerated memory bank mirroring, copying, verification and CRC support
- Four independent physical banks
- 5-year battery life

Battery powered logging processor

- 16 intrusion inputs (including jumper supervision)
- Supports standard and opto switches
- Date/time stamped recording of 64 events
- Board power status handling
- Double programmable watchdog timers
- Battery voltage monitoring & warning
- Automatic meter handling

Up to 64 digital inputs

- Configurable hardware debounce filtering Trigger on rising or falling edges, or both
- Input pulse width screening for pulse devices

Up to 64 digital outputs

- detection and reporting of open and short circuits
- output overload protection

Quixant Advanced Tracing System (QxATS)

- System tracing implemented in hardware
- Fixed or very low CPU utilisation
- Simultaneous hardware and software events tracing over Ethernet
- Hardware trigger for system freezing
- Fully manageable by an external software tool (ALCE Tool)

Quixant Video Decoder and Renderer (QxVDR)

- Low CPU utilisation video decoding engine hardware accelerated with alphas transparency
- Can synchronize up to 16 videos simultaneously with LED and Audio
- Alpacas tool for video compression and multimedia integration

Quixant LED software suite (QxLED)

- for designing LED patterns, LED live view and LED pattern simulation - Alpacas software tool.
- QMax-2 can drive several RGB LED strips simultaneously - no need for external hardware

- All-in-one solution
- Revolutionary AMD Ryzen™ Embedded V1000 processors
- Supports up to ten 4k Ultra HD monitors
- Embedded roadmap = 5+ years availability
- Single +12V or +24V (nominal) power input
- Removable CPU tray and customisable backplane

Security

- Hardware AES128/256 - ECB/CBC
- Hardware RSA 2048 engine
- Secure key storage
- Unique electronic serial number
- SHA-1 chip / EEPROM write protection support
- TPM security device
- Authentication (hardware lock mechanism)
- AMD Secure Memory Encryption (SME)
- AMD Platform Security Processor (PSP)

Communication Interfaces

8 x PCI Express® Gen 2 QxCom™ serial ports

- Ready to use for SAS protocol handling
- 9-bit management in hardware
- Hardware timestamping of arriving bytes
- RS232, RS485, ID003, TTL and dual ccTalk interfaces

3 x PCI Express® Gigabit LAN controller (1 x internal, 2 x backplane)

- 1 x Gigabit LAN interface internal for system tracing (QxATS)

12 x USB ports

- 8 x USB ports to backplane (2 x USB 3.0, 6 x USB 2.0)
- 2 x USB ports to front panel (USB 3.0)
- 2 x internal USB ports (USB 3.0)

Meter Power detection /PSU control

SPI header for clock serial peripherals (e.g. SEC meter) or LED strips

I2C Interface

iButton interface

4 x LED strips dedicated interface (to drive 4000+ LED RGB)

Power Requirement

12V or 24V single voltage input

Storage

- 2 x Front panel CFAST sockets up to 6GB/s
- 2 x SATA III sockets up to 6GB/s (SATA DOM, SSD, HDD)
- 1 x SD 3.0 compliant card socket on front panel
- 256Bytes of user EEPROM storage (optional up to 128KB)

Audio

High Definition Audio

- 7.1 Audio Channels
- 2 x stereo 18W/ channel digital amplified outputs

BIOS

- QxBOOT accelerated BIOS security
- Hardware controlled chain of trust
- Hardware validation of BIOS via secure hash algorithm
- BIOS validation of boot drive via secure hash algorithm
- Write-protection of BIOS ROM
- Fully customisable

Software

Full software support for Windows Embedded/IoT and Linux

- 32 and 64-bit OS support
- C/C++ and .NET libraries
- Example code and demo software available

Communication and peripheral drivers and APIs

- SAS 6.02 serial port driver (with 9-bit support)
- JCM ID003, MEI, ccTalk (including MD100 and JCM Vega devices support)
- Futurelogic, Money Controls, Ithaca
- iButton, I2C devices, generic SPI, SEC Meter



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