

# Quixant

Think outside the box

## QMax-2i Scalable Performance. Ready to Play!

- Drives up to nine independent monitors
- High performance and long supply lifetime  
Intel® Core™ embedded processor
- Optional Quixant Graphics Card to further boost graphics performance
- Ready-to-play gaming middleware

### High-Performance and Long Supply Lifetime Intel® Core™ Embedded Processor

Driven by the powerful and reliable Intel® Kaby Lake-H processor, QMax-2i delivers sustainable computing support to fuel a gaming machine. Ranging from dual core quad thread to quad core eight thread, we offer configurable processor options including i3, i5 and i7 to suit customer's distinct requirements. All of the processor configurations are equipped with an Intel® HD Graphics 630 engine to drive three independent 4k display output.

### Optional Quixant Graphic Card Module

Aside from the CPU's integrated graphic engine, QMax-2i also supports optional Quixant Graphic Card module for delivering stunningly seamless 3D graphic experience. The controller options include the state-of-the-art AMD Embedded Radeon™ Vega and nVidia Quadro P1000.

With these add-on Quixant Graphic Card modules, QMax-2i can support up to a total of nine independent displays that brings dazzling visual effect to your gaming machine.

### Quixant Gaming Ecosystem®

QMax-2i leverages Quixant's ready-to-play gaming middleware, 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 64 time-stamped event logs and 8 PCI Express® QxCom serial ports.

QxVDR (Video Decoder and Rendering software suite) provides hardware accelerated video decoder with alpha transparency.

QxVDR offers a complete and integrated software suite for videos, including video compressor and Unity plugin.



### Advanced Security Features

Advanced hardware security engine incorporating 256-bit PCIExpress® Gen 2 AES hardware encryption/decryption (128/256-ECB/CBC), 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 customizable BIOS. Full support for Windows Embedded/IoT and Linux.

### Long supply lifetime

Embedded design with 5year+ supply lifetime from launch.

### Patented secure thermal solution

The QMax-2i 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-2i 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-2i General Features

## CPU

### 7th Generation Intel® Core™ Processors

#### Dual to quad 64-bit Cores

- Multi-threaded architecture supports up to 8 threads
- Base frequencies up to 3.0GHz (up to 3.7GHz with boost)
- Up to 8MB Cache

#### Integrated Intel® HD Graphics 630 controller

- Up to three independent HD/4K displays from the CPU
- HDCP 2.2 copy protection
- Intel® Quick Sync Video hardware encoding/decoding

## Optional Discrete Graphics Card Module

### QGC2-A2

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

### QGC2-A3

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

### QGC2-A4

- NVIDIA Quadro P1000 GPU
- 5GB GDDR5 SGRAM
- Up to four independent displays (four 4K displays)
- Hardware accelerated 4K video encoding/decoding

## Main Memory

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

## Quixant Gaming Features

### 64-bit PCI Express® Gen 2

#### Up to 32Mbytes of NVRAM

- Battery backed 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 Video Decoder and Renderer (QxVDR)

- Low CPU utilisation video decoding engine hardware accelerated with alpha transparency
- Can play up to 16 videos simultaneously
- Alpaca tool for video compression and multimedia integration

## All-in-one solution

- High Performance Intel® Core™ processor
- Supports up to nine 4k Ultra HD monitors
- Embedded roadmap = 5+ years availability
- Single +12V or +24V (nominal) power input
- Removable CPU tray and customizable backplane

## Security

- Hardware AES128/256 - ECB/CBC
- Secure key storage
- Unique electronic serial number
- SHA-1 chip / EEPROM write protection support
- TPM security device
- Authentication (hardware lock mechanism)

## 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)

### 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)

#### I2C Interface

#### iButton interface

## Power Requirement

12V or 24V single voltage input

## Storage

- 2 x Front panel CFAST sockets up to 6Gbps
- 2 x SATA III sockets up to 6Gbps (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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