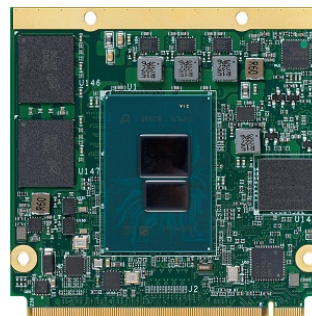


**Qseven® Module with Intel Atom® x7000RE Series Processors**

# PQ7-M31

- Intel Atom® x7000RE series processors
- Onboard LPDDR5 SDRAM up to 16GB
- Support 24-bit LVDS, HDMI/DP output
- Four PCI Express Gen 3 lanes, two USB 3.0, six USB 2.0, two SATA 3.2
- Options for eMMC 5.1 storage
- Support industrial operating temperature range from -40°C to +85°C



## Specifications

### CPU

Intel Atom® x7835RE, 8x cores, 1.3GHz, 12W TDP

Intel Atom® x7433RE, 4x cores, 1.5GHz, 9W TDP (default SKU)

Intel Atom® x7213RE, 2x cores, 2.0GHz, 9W TDP

Intel Atom® x7211RE, 2x cores, 1.0GHz, 6W TDP

### Memory

Onboard 2G/4G/8G LPDDR5 with 4800 MT/s

Single channel, 32bit x2

In-Band ECC

### Storage

Onboard eMMC 5.1 flash up to 256GB

### DisplayPort Interface

#### LVDS

24-bit dual-channel LVDS up to 1920x1200 @ 60Hz

#### DisplayPort | HDMI

DisplayPort 1.4 up to 8K (7680x4320) @ 30Hz / 4K (4096x2160) @ 60Hz;  
or HDMI 2.0b up to 4K (4096x2160) @ 60Hz

### Ethernet

1x Intel® I226-IT

### Audio

Intel® High Definition Audio integrated in SoC

### I/O Interfaces

#### PCIe

4x PCIe Gen3

#### USB

2x USB 3.0, 6x USB 2.0

#### SATA

2x SATA 3.2

#### Other I/O Interfaces

1x CAN (option), 1x I<sup>2</sup>C, 1x HDA, 1x PWM, 1x SMBus, 14x GPIO, 1x UART,  
1x WDT, 1x FAN Control

### Video

#### GPU Feature Support

Intel® UHD Graphics driven by Intel X<sup>e</sup> architecture  
OpenGL 4.6 / OpenCL 3.0 | HW accelerated video  
decoding HEVC/H.264/MPEG2/VP9/VC-1/WMV9/MJPEG |  
Encoding HEVC/H.264/VP9/MJPEG HDCP 1.4/2.2 for 4K  
premium content protection

#### Embedded BIOS

AMI UEFI with Fast Boot support | Display Auto Detection |  
Flash Update | Password Lock | OEM Logo for startup screen

### Mechanical and Environmental

#### Form Factor

Qseven® 2.1

#### Dimension

Qseven module, 70 mm x 70 mm

#### Operating Temperature

Industrial: -40°C to +85°C, w/ 0.5m/s airflow

#### Humidity

0-95% RH operating, non-condensing

### Power

#### Standard Input

5V DC ±5%

#### Power Management

ACPI 5.0 compliant | Fully Integrated Voltage Regulator (FIVR)

#### Operation System

Microsoft® Windows 10 IoT Enterprise LTSC 2021 (64-bit),  
Linux by project request: Yocto LTS kernel 2022

## Block Diagram

### PQ7-M31

