Qseven® Module with Intel® x7000E Series Processors, Intel® Processor N Series, and Intel® Core™ i3 N-series Processors

PQ7-M21

- Power-efficient Intel Atom® x7000E series and Intel® Processor N series, and performance and value balanced Intel® Core™ i3 N-series processors (formerly Alder Lake-N)
- Onboard LPDDR5 SDRAM up to 16GB
- Multiple display support (24-bit LVDS/eDP, HDMI/DP)
- Four PCIe Gen 3 lanes, two USB 3.2 and up to six USB 2.0
- Two SATA 3.2, onboard eMMC 5.1, onboard TPM

Specifications

CPU
Intel Atom® x7425E, 4x cores, 1.5GHz, 12W TDP
Intel Atom® x7213E, 2x cores, 1.7GHz, 10W TDP
Intel Atom® x7211E, 2x cores, 1.0GHz, 6W TDP
Intel® Processor N50, 2x cores, 1.0GHz, 6W TDP
Intel® Processor N97, 4x cores, 2.0GHz, 12W TDP
Intel® Processor N200, 4x cores/4x threads, 1.0GHz, 6W TDP
Intel® Core™ i3-N305, 8x cores/8x threads, 1.8 GHz, 15W TDP

Cache
6MB L2; 6MB Intel Smart Cache (Core i3 N-series & Processor N series)

Memory
Onboard 4G/8G/16G LPDDR5 with 4800 MT/s
In-Band ECC (Intel Atom SKUs)

Storage
Onboard eMMC 5.1 flash up to 256GB

DisplayPort Interface
LVDS | eDP
- 24-bit single-/dual-channel LVDS up to 1920x1200 @ 60Hz;
- or eDP 1.3 (4096x2160p @ 60Hz) (signal shared with LVDS via BOM selection)

DisplayPort | HDMI
- DisplayPort 1.4 up to 8K (7680x4320) @ 30Hz / 4K (4096x2160) @ 60Hz; or HDMI 2.0b up to 4K (4096x2160) @ 60Hz (signal shared with DP by jumper or active connector on carrier board)

Ethernet
1x Intel® I226-IT

Audio
Intel® High Definition Audio

I/O Interfaces
PCIe
4x PCIe Gen3

USB
2x USB 3.2, 6x USB 2.0

SATA
2x SATA 3.2

Other I/O Interfaces
1x CAN bus (edge finger, USB to CAN bus via BOM option), 1x i²C, 1x HDA, 1x SMBus, 14x GPIO, 1x PWM, 1x UART (edge finger), 1x WDT, 1x Fan Control

Video

GPU Feature Support
- Intel® UHD Graphics driven by Xe® architecture
- OpenGL 4.6 / OpenCL 3.0
- 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
0°C to +70°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)

Power Consumption
6W~15W (CPU)

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

*All information provided is subject to change without notice. Last updated: November 9, 2023