

PQ7-M108

Intel® Atom™/Pentium®/Celeron® processor ("Apollo Lake") based Qseven module with LPDDR4 SDRAM up to 8GB and on-board eMMC

FEATURES

- Intel® Atom™ processor E3900 series, Intel® Pentium® processor N4200, and Intel® Celeron® processor N3350 (codenamed Apollo Lake)
- On board LPDDR4 DRAM up to 8GB
- 24-bit LVDS, HDMI/DisplayPort output
- Four PCI Express x1 lanes
- Support three USB 3.0 or USB 2.0
- On board eMMC 5.0 (optional)
- Support a wide -40°C to 85°C industrial temperature range

Portwell's PQ7-M108 is designed with Intel® Atom™ processor E3900 series, Intel® Pentium® processor N4200, and Intel® Celeron® processor N3350 (codenamed Apollo Lake), featuring higher graphic performance and greater memory bandwidth than the previous platform.

ORDERING GUIDE

AB7-3116Z	PQ7-M108-N3350-4G-0G. Intel Apollo Lake CPU(1.1GHz, 2C, 2M, 6Watts). 4GB Dual-Channel LPDDR4. No eMMC
AB7-3118Z	PQ7-M108-E3930-4G-0G. Intel Apollo Lake CPU(1.3GHz, 2C, 2M, 6.5Watts). 4GB Dual-Channel LPDDR4. No eMMC
AB7-3146Z	PQ7-M108-N4200-8G-0G. Intel Apollo Lake CPU(1.1GHz, 4C, 2M, 6Watts). 8GB Dual-Channel LPDDR4. No eMMC
AB7-3151Z	PQ7-M108-E3950-8G-0G. Intel Apollo Lake CPU(1.6GHz, 4C, 2M, 12Watts). 8GB Dual-Channel LPDDR4. No eMMC
AB7-3195Z	PQ7-M108-E3940-4G-0G. Intel Apollo Lake CPU(1.6GHz, 4C, 2M, 9.5Watts). 4GB Dual-Channel LPDDR4. No eMMC
Custom	PQ7-M108-xxxx-xG-xG. Intel Atom E3950/E3940/E3930/Pentium N4200/Celeron N3350. Custom with options for memory and eMMC
Accessories	
B8309030	Heat spreader for PQ7-M108 series (APL-E series use)
B8308940	Heat spreader for PQ7-M108 series (APL-N series use)



GENERAL

Processor	<ul style="list-style-type: none"> Intel® Atom™ E3950, 4 cores, 1.6GHz/2.0 GHz, 12W TDP Intel® Atom™ E3940, 4 cores, 1.6GHz/1.8 GHz, 9.5W TDP Intel® Atom™ E3930, 2 cores, 1.3GHz/1.8 GHz, 6.5W TDP Intel® Pentium® N4200, 4 cores, 1.1GHz/2.5 GHz, 6W TDP Intel® Celeron® N3350, 2 cores, 1.1GHz/2.4 GHz, 6W TDP
Chipset	Integrated
Memory	<ul style="list-style-type: none"> Up to 8 GB LPDDR4 at 2133/2400 MT/s Dual memory channel support ECC
Storage Devices	On board eMMC 5.0 flash up to 64 GB
BIOS	AMI UEFI BIOS
Ethernet	<ul style="list-style-type: none"> 1x Intel® i210AT (commercial) 1x Intel® i210IT (industrial)
Expansion Interface	4x PCIe x1

I/O INTERFACE

USB	<ul style="list-style-type: none"> 4x USB 2.0 4x USB 3.0
Audio	Intel® HD Audio integrated in SoC
SATA	2x SATA 3.0 (6 Gbit/s)
SDIO	1x SDIO 3.0 (4bit)
Serial Port	2x SPI, 1x I ² C, 1x SMBus, 1x LPC

DISPLAY

Graphics Controller	Intel® Gen 9 LP Graphics supporting DirectX 12 OpenGL 4.3 OpenCL 2.0 OpenGL ES 3.0 HW accelerated video decoding HEVC/H.264/MVC/MPEG2/VP9/VC-1/WMV9/MJPEG and encoding HEVC/H.264/MVC/VP8/MJPEG
Display Interface	DDI0 / DDI1 <ul style="list-style-type: none"> 24-bit dual-channel LVDS up to 1920x1200@60Hz or eDP 1.3 supporting up to 3849x2160@60Hz DisplayPort 1.2 up to 4096x2160@60Hz or HDMI 1.4b up to 3840x2160@30Hz

Mechanical & Environment

Dimension	70(L) x 70(W) mm; 2.75"(L) x 2.75"(W)
Power Supply	5V DC ±5%
Environment	Operating Temperature <ul style="list-style-type: none"> Commercial: 0°C to 60°C Industrial: -40°C to 85°C Humidity <ul style="list-style-type: none"> Operating: 5-90% RH, non-condensing Storage: 5-95% RH (and operating with conformal coating)

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