



## Q7-B03

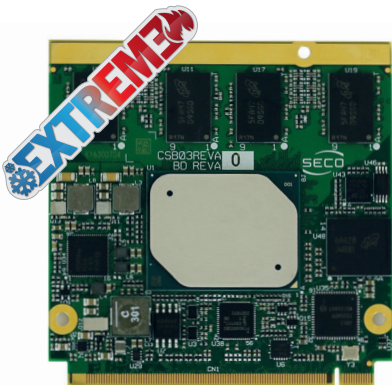
Qseven® Rel. 2.1 compliant module with the Intel® Atom™ E39xx family, Intel® Celeron® N3350 and Intel® Pentium® N4200 (formerly code name Apollo Lake) SoCs

High graphics performance and extreme temperature for low power designs

Apollo Lake

### HIGHLIGHTS

- Compliant to the most recent Qseven® rel. 2.1 specs
- Extreme graphics for low power embedded applications
- 4K HW decoding and encoding of HEVC(H.265), H.264, VP8, SVC, MVC
- Industrial grade and connectivity capable
- Support for the most popular operating systems



### MAIN FIELDS OF APPLICATION



Internet of Things



Biomedical/ Medical devices



Digital Signage - Infotainment



HMI



Automotive



Gaming



Industrial



Visual Computing



Mobile devices



Multimedia devices

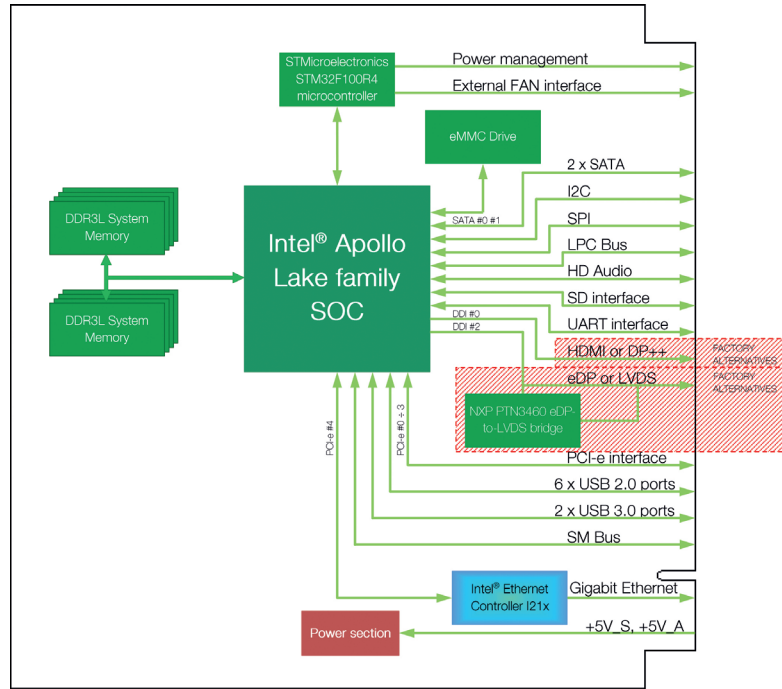
### FEATURES

Processor	Intel® Atom™ <b>x5-E3930</b> Dual Core @1.3 GHz (Burst 1.8GHz), 2MB L2 Cache, 5.5W TDP Intel® Atom™ <b>x5-E3940</b> Quad Core @1.6 GHz (Burst 1.8GHz), 2MB L2 Cache, 9W TDP Intel® Atom™ <b>x7-E3950</b> Quad Core @1.6 GHz (Burst 2.0GHz), 2MB L2 Cache, 12W TDP Intel® Pentium® <b>N4200</b> Quad Core @1.1GHz (burst 2.5GHz), 2MB L2 Cache, 6W TDP Intel® Celeron® <b>N3350</b> Dual Core @1.1GHz (burst 2.4GHz), 2MB L2 Cache, 6W TDP	PCI-e	4 x PCI-e Root Ports (including the PCI-e port used for Gigabit Ethernet controller)
Max Cores	4	Audio	HD Audio interface
Max Thread	4	Serial Ports	1 x UART, TTL interface
Memory	Dual Channel Soldered Down DDR3L-1866 memory, up to 8GB	Other Interfaces	I2C Bus LPC Bus SM Bus SPI interface Watch Dog Timer Thermal / FAN management Power Management Signals
Graphics	Integrated Gen9-LP Graphics controller, with 18 Execution Units 4K HW decoding and encoding of HEVC(H.265), H.264, VP8, SVC, MVC	Power Supply	+5Vdc and +5Vsb (optional)
Video Interfaces	eDP interface or Single/Dual Channel 18/24bit LVDS interface through eDP-to-LVDS bridge HDMI or DP++ interface	Operating System	Microsoft® Windows 10 Enterprise (64 bit) Microsoft® Windows 10 IoT Core Linux (64 bit) Yocto (64 bit) Android (planning)
Video Resolution	HDMI, eDP: Up to 3840 x 2160 (4K) DP++: Up to 4096 x 2160 LVDS: Up to 1920 x 1200	Operating Temperature*	0°C ÷ +60°C (Commercial version) -40°C ÷ +85°C (Industrial version)
Mass Storage	2 x external S-ATA Gen3 Channel SD interface Optional eMMC drive soldered onboard	Dimensions	70 x 70 mm (2.76" x 2.76")
Networking	Gigabit Ethernet interface Intel® I210 or I211 Controller (MAC + PHY)	*Measured at any point of the heatspreader/heatsink during any and all times (including start-up). Actual temperature will widely depend on application, enclosure and/or environment. Upon customer to consider specific cooling solutions for the final system.	
USB	6 x USB 2.0 Host Ports 2 x USB 3.0 Host Ports (*)  (* ) Second USB 3.0 Host port can be exploited only using Qseven® Rel. 2.1 compliant Carrier boards		

# Q7-B03

Qseven® Rel. 2.1 compliant module with the Intel® Atom™ E39xx family, Intel® Celeron® N3350 and Intel® Pentium® N4200 (formerly code name Apollo Lake) SoCs

## BLOCK DIAGRAM



## ORDERING INFORMATION

PN*	DESCRIPTION
QB03-1240-1210-C1	Q7 - Apollo Lake - CPU Intel Celeron N3350, DDR3L 4GB (8 chip x 4Gb), eMMC 32GB, eDP, DISPLAYPORT, Ethernet Contr. I210 - Commercial
QB03-1440-2110-C1	Q7 - Intel Celeron N3350 (step B1) "Apollo Lake" (2M Cache, up to 2.40 GHz) / TDP 6 W, DDR3L 8GB (8 chip x 8Gb), eMMC 32GB, LVDS,HDMI, Ethernet Contr. I210 - Commercial
QB03-2240-2110-C1	Q7 - Intel Pentium N4200 "Apollo Lake" (2M Cache, up to 2.50 GHz) / TDP 6 W, DDR3L 4GB (8 chip x 4Gb), eMMC 32GB, LVDS,HDMI, Ethernet Contr. I210 - Commercial
QB03-2400-1110-C1	Q7 - Apollo Lake - CPU Intel Pentium N4200 (step B1), DDR3L 8GB (8 chip x 8Gb), eDP, HDMI, Ethernet Contr. I210 - Commercial
QB03-2400-2110-C1	Q7 - Intel Pentium N4200 "Apollo Lake" (2M Cache, up to 2.50 GHz) / TDP 6 W, DDR3L 8GB (8 chip x 8Gb), LVDS,HDMI, Ethernet Contr. I210 - Commercial
QB03-3240-2110-I1	Q7 - Intel Atom E3930 "Apollo Lake" (2M Cache, up to 1.80 GHz) / TDP 6.5 W, DDR3L 4GB (8 chip x 4Gb), eMMC 32GB, LVDS,HDMI, Ethernet Contr. I210 - Industrial
QB03-4240-2110-I1	Q7 - Intel Atom E3940 "Apollo Lake" (2M Cache, up to 1.80 GHz) / TDP 9.5 W, DDR3L 4GB (8 chip x 4Gb), eMMC 32GB, LVDS,HDMI, Ethernet Contr. I210 - Industrial
QB03-5240-2110-I1	Q7 - Intel Atom E3950 "Apollo Lake" (2M Cache, up to 2.00 GHz) / TDP 12 W, DDR3L 4GB (8 chip x 4Gb), eMMC 32GB, LVDS,HDMI, Ethernet Contr. I210 - Industrial
QB03-5440-2110-I1	Q7 - Intel Atom E3950 "Apollo Lake" (2M Cache, up to 2.00 GHz) / TDP 12 W, DDR3L 8GB (8 chip x 8Gb), eMMC 32GB, LVDS,HDMI, Ethernet Contr. I210 - Industrial

\*Additional configurations may be available. Please inquire for more information.

## ACCESSORIES

PN	DESCRIPTION
QA42-0000-1111-I0	Carrier Board for Qseven® rel. 2.0 Compliant modules on 3.5" Form factor - DisplayPort - 2nd Ethernet Port - LVDS - Debug Port
QA42-0000-2111-I0	Carrier Board for Qseven® rel. 2.0 Compliant modules on 3.5" Form factor - HDMI - 2nd Ethernet Port - LVDS - Debug Port
QA42-0000-1121-I0	Carrier Board for Qseven® rel. 2.0 Compliant modules on 3.5" Form factor - DisplayPort - 2nd Ethernet Port - eDP - Debug Port
QA42-0000-2121-I0	Carrier Board for Qseven® rel. 2.0 Compliant modules on 3.5" Form factor - HDMI - 2nd Ethernet Port - eDP - Debug Port
QA30-Q7XDK-0000	Qseven® Cross Platform Development Kit 2.0
QA42-Q7XSK-1000	Q7 - Cross Platform Starter Kit 2.0 - DP++ - eDP
QA42-Q7XSK-1100	Q7 - Cross Platform Starter Kit 2.0 - DP++ - LVDS, 7" touch display included
QA42-Q7XSK-2000	Q7 - Cross Platform Starter Kit 2.0 - HDMI - eDP
QA42-Q7XSK-2100	Q7 - Cross Platform Starter Kit 2.0 - HDMI - LVDS, 7" touch display included
QB03-DISS-1-C-PK	Q7-B03 Heat Spreader (PASSIVE) for Commercial temp. range CPUs Packaged
QB03-DISS-1-I-PK	Q7-B03 Heat Spreader (PASSIVE) for Industrial temp. range CPUs Packaged
QB03-DISS-2-C-PK	Q7-B03 Heat Sink (PASSIVE) for Commercial temp. range CPUs Packaged
QB03-DISS-2-I-PK	Q7-B03 Heat Sink (PASSIVE) for Industrial temp. range CPUs Packaged
QB03-DISS-3-C-PK	Q7-B03 Heat Sink (ACTIVE) for Commercial temp. range CPUs Packaged
QB03-DISS-3-I-PK	Q7-B03 Heat Sink (ACTIVE) for Industrial temp. range CPUs Packaged

