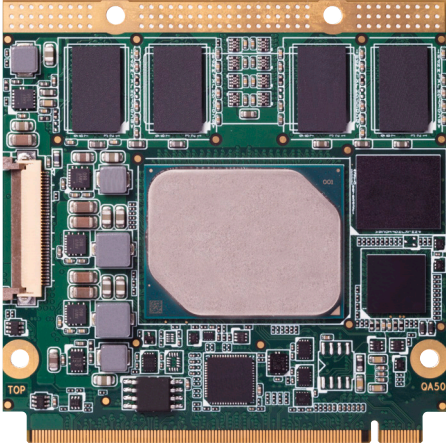


# HIGHEST QSEVEN PERFORMANCE

## conga-QA5

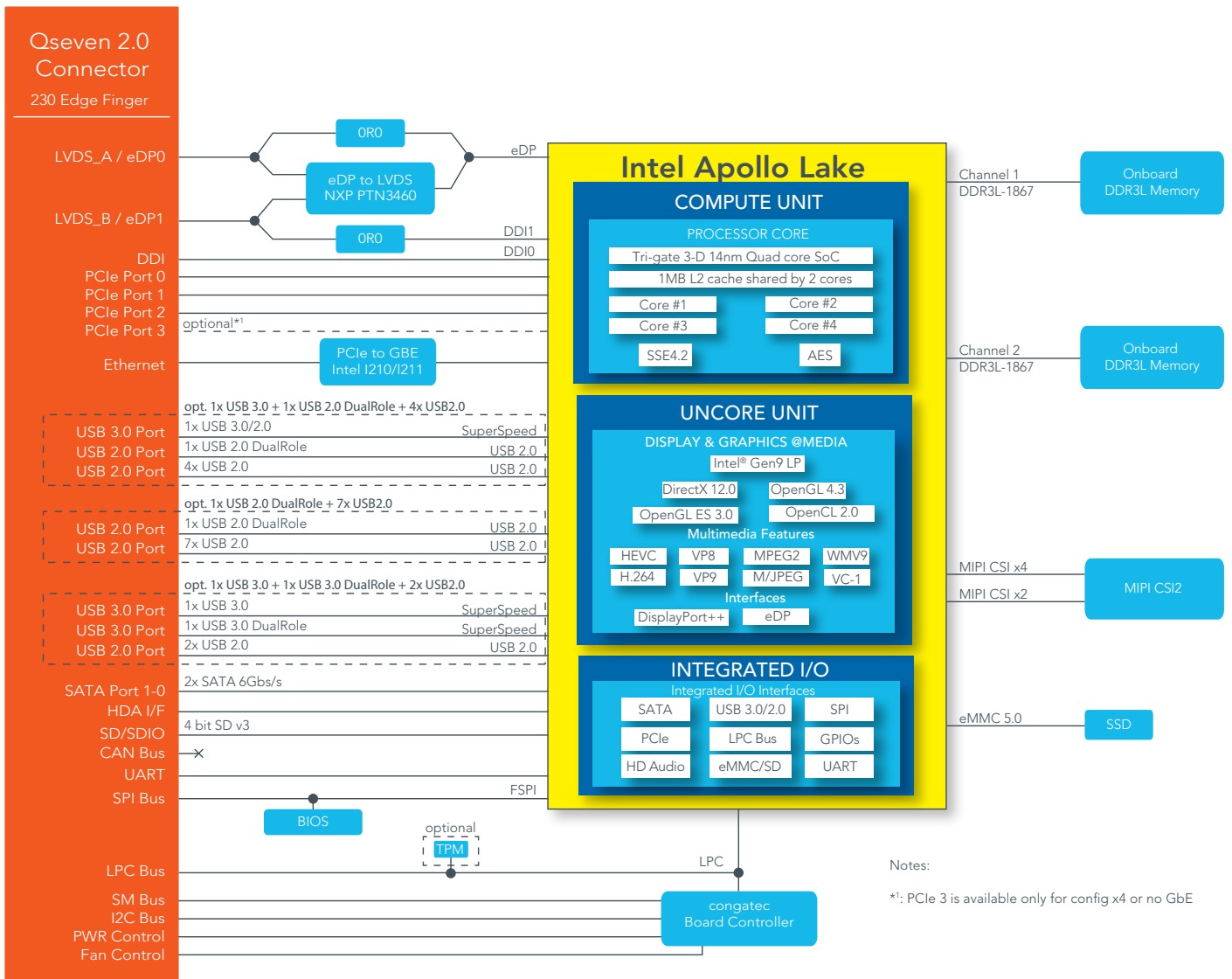


- Intel® Atom™ Quad Core processor on Qseven
- Intel 9<sup>th</sup> generation (Gen 9) LP graphics
- Up to 4k resolution (4096x2160@60Hz)
- 4K Codec Decode & Encode for HEVC, H.264, VP8
- Fast I/Os: SATA3, USB 3.0 and PCIe 2.0



Formfactor	Qseven Form Factor Rev. 2.0 compliant   70x70 mm					
CPU	Intel® Atom™ x7-E3950	2.00 GHz (Burst)   1.6 GHz Clock	Quad Core	L2 cache 2MB	12W TDP	
	Intel® Atom™ x5-E3940	1.80 GHz (Burst)   1.6 GHz Clock	Quad Core	L2 cache 2MB	9W TDP	
	Intel® Atom™ x5-E3930	1.80 GHz (Burst)   1.3 GHz Clock	Dual Core	L2 cache 2MB	6.5W TDP	
	Intel® Pentium® N4200	2.50 GHz (Burst)   1.1 GHz Clock	Quad Core	L2 cache 2MB	6W TDP	
	Intel® Celeron® N3350	2.40 GHz (Burst)   1.1 GHz Clock	Dual Core	L2 cache 2MB	6W TDP	
	Intel® Celeron® J3455	2.30 GHz (Burst)   1.5 GHz Clock	Quad Core	L2 cache 2MB	10W TDP	
DRAM	Dual Channel   up to 8GB onboard DDR3L with 1867 MT/s					
Chipset	Integrated in SoC					
Ethernet	Intel® I210 (Industrial) / I211 (Commercial) Gigabit Ethernet Controller					
I/O Interfaces	3x PCIe Gen2   1x USB 3.0/2.0   5x USB 2.0   2x SATA3   SDv3   LPC Bus   SMBus   I2C Bus   UART					
Mass Storage	eMMC 5.0 onboard flash up to 64 GByte					
Sound	Intel® High Definition Audio (Intel® HD Audio)					
Graphics	Intel® HD Graphics 500 with support for 4k Ultra HD displays   DirectX 12   OpenGL 4.4   OpenCL 2.0   OpenGL ES 3.0   HDCP 1.4 (wired), HDCP 2.0 (wireless)   Video decode hardware acceleration including support for 4kp60 HEVC (H.265), H.264, MVC, VP8, VP9, VC-1, WMV9, JPEG/MJPEG   Video encode hardware acceleration including support for 4kp30 HEVC (H.265), H.264, MVC, VP8, JPEG/MJPEG.					
LVDS	18/24-bit Single/Dual Channel LVDS Interface, resolutions up to 1920X1200@60Hz   VESA standard or JEIDA data mapping Automatic Panel Detection via EDID/EPI   shared with eDP 1.3 supporting up to 3840x2160@60 Hz (option)					
Digital Display Interface (DDI)	DP++ up to 4096x2160@60Hz					
MIPI-CSI	1x MIPI-CSI x4 and 1x MIPI-CSI x2					
congatec Board controller	Multistage watchdog   non-volatile user data storage   manufacturing and board Information   board statistics I2C bus (fast mode)   400 kHz   multi master   power loss control					
Embedded BIOS Features	AMI Aptio® UEFI 2.x firmware   8 MByte serial SPI with congatec Embedded BIOS features OEM Logo   OEM CMOS Defaults   LCD Control Display Auto Detection   Backlight Control   Flash Update					
Power Management	ACPI 5.0 compliant   Smart Battery Management					
Operating Systems	Microsoft® Windows 10 IoT Enterprise   Microsoft® Windows 10 IoT Core   Microsoft® Windows 10   Linux   Yocto					
Power Consumption	Typ. application 6W...12W					
Temperature	Commercial:	Operating: 0 to +60°C	Storage: -20 to +70°C			
	Industrial:	Operating: -40 to +85°C	Storage: -40 to +85°C			
Humidity	Operating:	10 to 90% r. H. non cond.				
	Storage:	5 to 95% r. H. non cond.				
Size	70 x 70 mm (2¾" x 2¾")					

# conga-QA5 | Block diagram



# conga-QA5 | Order Information

Article	PN	Description
conga-QA5/E3950-8G eMMC32	015500	Qseven module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 8GB 1866MT/s DDR3L onboard memory and 32GB eMMC onboard flash
conga-QA5/E3940-4G eMMC16	015501	Qseven module with Intel® Atom™ x5-E3940 quad core processor with 1.6GHz core frequency up to 1.8GHz, 2MB L2 cache, 4GB 1866MT/s DDR3L onboard memory and 16GB eMMC onboard flash
conga-QA5/E3930-2G eMMC8	015502	Qseven module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz, 2MB L2 cache, 2GB 1866MT/s DDR3L onboard memory and 8GB eMMC onboard flash
conga-QA5/E3950 4G eMMC16	015503	Qseven module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 4GB 1866MT/s DDR3L onboard memory and 16GB eMMC onboard flash
conga-QA5/i-E3950 8G eMMC32	015510	Qseven module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 8GB 1866MT/s DDR3L onboard memory and 32GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C
conga-QA5/i-E3940 4G eMMC16	015511	Qseven module with Intel® Atom™ x5-E3940 quad core processor with 1.6GHz core frequency up to 1.8GHz, 2MB L2 cache, 4GB 1866MT/s DDR3L onboard memory and 16GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C
conga-QA5/i-E3930 2G eMMC8	015512	Qseven module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz, 2MB L2 cache, 2GB 1866MT/s DDR3L onboard memory and 8GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C
conga-QA5/i-E3950-8G eMMC32 eDP	015513	Qseven module with Intel® Atom™ x7-E3950 quad core processor with 1.6GHz core frequency up to 2.0GHz, 2MB L2 cache, 8GB 1866MT/s DDR3L onboard memory and 32GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C. With eDP display output instead of LVDS
conga-QA5/N3350 4G eMMC16	015522	Qseven module with Intel® Celeron™ N3350 dual core processor with 1.1GHz core frequency up to 2.4GHz, 2MB L2 cache, 4GB 1866MT/s DDR3L onboard memory and 16GB eMMC onboard flash
conga-QA5/N4200-8G eMMC32	015523	Qseven module with Intel® Pentium® N4200 quad core processor with 1.5GHz core frequency up to 2.50GHz, 2MB L2 cache, 8GB 1866MT/s DDR3L onboard memory and 32GB eMMC onboard flash
conga-QA5/J3455-4G eMMC16	015524	Qseven module with Intel® Celeron® J3455 quad core processor with 1.5GHz core frequency up to 2.30GHz, 2MB L2 cache, 4GB 1866MT/s DDR3L onboard memory and 16GB eMMC onboard flash
conga-QA5/i-CSP-T	015530	Passive cooling solution for Qseven module conga-QA5 with lidded Intel Atom processor. All standoff are M2.5mm thread.
conga-QA5/i-CSP-B	015531	Passive cooling solution for Qseven module conga-QA5 with lidded Intel Atom processor. All standoff are with 2.7mm bore hole.
conga-QA5/i-HSP-T	015532	Standard heatspreader for Qseven module conga-QA5 with lidded Intel Atom processor. All standoff are M2.5mm thread.
conga-QA5/i-HSP-B	015533	Standard heatspreader for Qseven module conga-QA5 with lidded Intel Atom processor. All standoff are with 2.7mm bore hole.
conga-QA5/CSP-T	015534	Passive cooling solution for Qseven module conga-QA5 with open silicon Intel Pentium and Celeron processor. All standoff are M2.5mm thread.
conga-QA5/CSP-B	015535	Passive cooling solution for Qseven module conga-QA5 with open silicon Intel Pentium and Celeron processor. All standoff are with 2.7mm bore hole.
conga-QA5/HSP-T	015536	Standard heatspreader for Qseven module conga-QA5 with open silicon Intel Pentium and Celeron processor. All standoff are M2.5mm thread.
conga-QA5/HSP-B	015537	Standard heatspreader for Qseven module conga-QA5 with open silicon Intel Pentium and Celeron processor. All standoff are with 2.7mm bore hole.
<b>Accessories</b>		
conga-QEVAL 2.0	007003	Evaluation platform for Qseven 2.0
conga-QKIT	077455	Starterkit for Qseven including conga-QEVAL, conga-LDVI/EPI, conga-FPA2, Dual DVI-D ADD2 Card, ATX power supply, ...
conga-Qseven/SBM3	025485	Mobility Starter Kit
conga-MCB/Qseven Cable Kit	14000041	Complete cable kit for Qseven mini carrier board
Qseven MXM Connector Aces	400018	Socket for Qseven Carrier Boards. 10pcs package. ACES standard type, SMT, lead free, 230 positions, 0.50mm pitch, 7.8mm height.
conga-LDVI/EPI	011115	LVDS to DVI converter board for digital flat panels with onboard EEPROM

This Datasheet should be read in conjunction with "[Errata sheet - congatec xA5 designs](#)", available in the document section of congatec's webportal.