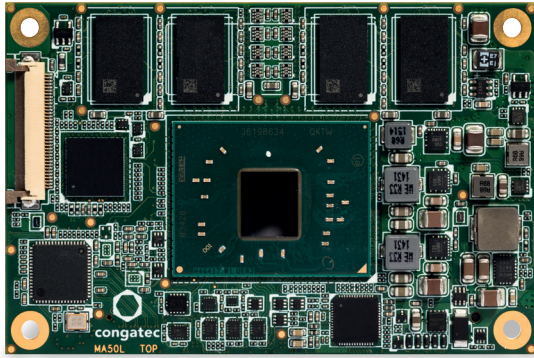


# POWERFUL AND SMALL

## conga-MA5

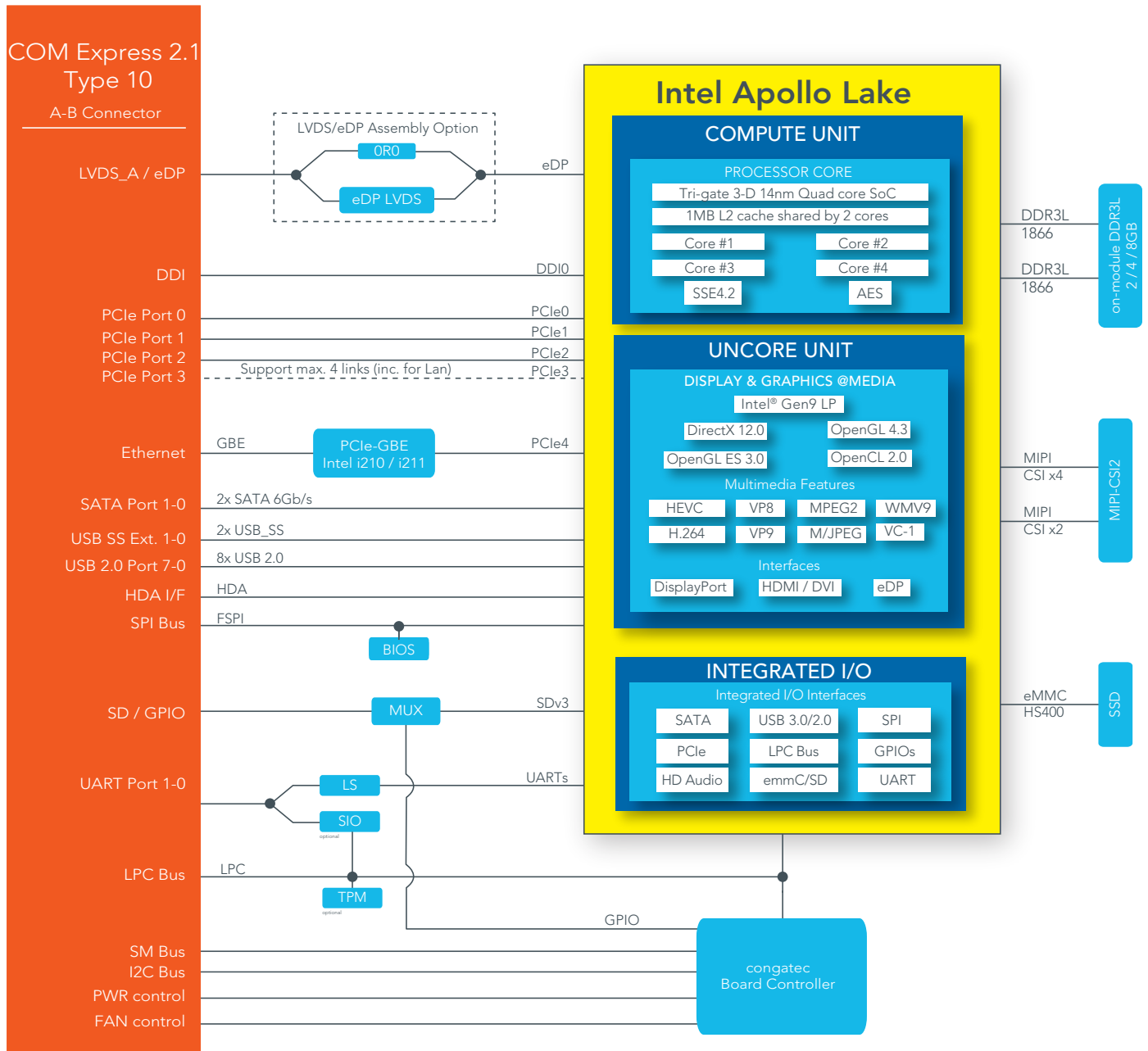


- 5<sup>th</sup> Gen. Intel® Atom™ processor family
- COM Express Mini Type 10 module
- Intel 9th generation (Gen 9) LP graphics
- Up to 4k resolution (4096x2160@60Hz)
- 4K Codec Decode & Encode for HEVC, H.264, VP8

**COM**  **Express®**

Formfactor	Formfactor COM Express® Mini   (55 x 84 mm)   Type 10					
CPU	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 1MB	6W TDP	
	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 1MB	6.5W TDP	
DRAM	Dual channel onboard DDR3L memory support for up to 8 GByte at 1866MT/s					
Chipset	Integrated in SoC					
Ethernet	Intel® I210 (Industrial) / I211 (Commercial) Gigabit Ethernet Controller					
I/O Interfaces	4x PCIe Gen2   2x USB 3.0/2.0   6x USB 2.0   2x SATA3   SDIO   LPC Bus   SMBus   I2C Bus   2x UART					
Onboard storage	eMMC 5.0 interface up to 128GB					
Sound	Intel® High Definition Audio (Intel® HD Audio)					
Graphics	Intel® HD Graphics Gen 9   PAVP 2.0   H.265/HEVC   VP9   OpenCL 2.0   OpenGL 4.3   OpenGL ES 3.0   DirectX12   HDCP1.4					
LVDS	18/24-bit Single Channel LVDS Interface, resolutions up to 1200X1024@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	DisplayPort 1.2 up to 4096x2160@60Hz or HDMI 1.4b up to 1920x1200@60Hz					
congatec Board Controller	Multistage watchdog   non-volatile user data storage   manufacturing and board Information   board statistics I <sup>2</sup> C 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					
TPM	Infineon's Trusted Platform Module (TPM 2.0/1.2) SLB 9665/9660 option					
Power Management	ACPI 5.0 compliant   Smart Battery Management					
Operating Systems	Microsoft® Windows 10 Enterprise   Microsoft® Windows 10 IoT Core   Linux Yocto   Android					
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	55 x 84 mm (2.17" x 3.31")					

# conga-MA5 | Block diagram



# conga-MA5 | Order Information

Article	PN	Description
conga- MA5/E3950-8G eMMC32	048000	COM Express Mini Type10 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-MA5/E3940-4G eMMC16	048001	COM Express Mini Type10 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- MA5/E3930-2G eMMC16	048002	COM Express Mini Type10 module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz 2MB L2 cache   2GB 1600MT/s DDR3L onboard memory and 16GB eMMC onboard flash.
conga- MA5/i-E3950-8G eMMC16	048010	COM Express Mini Type10 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 16GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga- MA5/i-E3940-4G eMMC16	048011	COM Express Mini Type10 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- MA5/i-E3930-4G eMMC16	048012	COM Express Mini Type10 module with Intel® Atom™ x5-E3930 dual core processor with 1.3GHz core frequency up to 1.8GHz 2MB L2 cache   4GB 1600MT/s DDR3L onboard memory and 16GB eMMC onboard flash. Industrial grade temperature range from -40°C to 85°C.
conga- MA5/N4200-8G eMMC32	048020	COM Express Mini Type10 module with Intel® Pentium® N4200 quad core processor with 1.1GHz core frequency up to 2.50GHz 2MB L2 cache   8GB 1866MT/s DDR3L onboard memory and 32GB eMMC onboard flash.
conga- MA5/N3350-4G eMMC16	048022	COM Express Mini Type10 module with Intel® Celeron™ N3350 dual core processor with 1.1GHz core frequency up to 2.3GHz 2MB L2 cache   4GB 1600MT/s DDR3L onboard memory and 16GB eMMC onboard flash.

## Coolings

conga- MA5/i-CSP-T	048050	Passive cooling solution for COM Express Mini Type10 module conga-MA5 with lidded Intel Atom processor. All standoffs are M2.5mm thread.
conga- MA5/i-CSP-B	048051	Passive cooling solution for COM Express Mini Type10 module conga-MA5 with lidded Intel Atom processor. All standoffs are with 2.7mm bore hole.
conga- MA5/i-HSP-T	048052	Standard heatspreader for COM Express Mini Type10 module conga-MA5 with lidded Intel Atom processor. All standoffs are M2.5mm thread.
conga- MA5/i-HSP-B	048053	Standard heatspreader for COM Express Mini Type10 module conga-MA5 with lidded Intel Atom processor. All standoffs are with 2.7mm bore hole.
conga- MA5/CSP-T	048054	Passive cooling solution for COM Express Mini Type10 module conga-MA5 with open silicon Intel Pentium and Celeron processor. All standoffs are M2.5mm thread.
conga- MA5/CSP-B	048055	Passive cooling solution for COM Express Mini Type10 module conga-MA5 with open silicon Intel Pentium and Celeron processor. All standoffs are with 2.7mm bore hole.
conga- MA5/HSP-T	048056	Standard heatspreader for COM Express Mini Type10 module conga-MA5 with open silicon Intel Pentium and Celeron processor. All standoffs are M2.5mm thread.
conga- MA5/HSP-B	048057	Standard heatspreader for COM Express Mini Type10 module conga-MA5 with open silicon Intel Pentium and Celeron processor. All standoffs are with 2.7mm bore hole.

## Accessories

conga-MEVAL	065400	Evaluation carrier board for Type 10 COM Express modules
conga-LDVI/EPI	011115	LVDS to DVI converter board for digital flat panels with onboard EEPROM
COM-Express-carrier-board-Socket-5	400007	Connector for COM-Express carrier boards   height 5mm   packing unit 4 pieces
COM-Express-carrier-board-Socket-8	400004	Connector for COM-Express carrier boards   height 8mm   packing unit 4 pieces