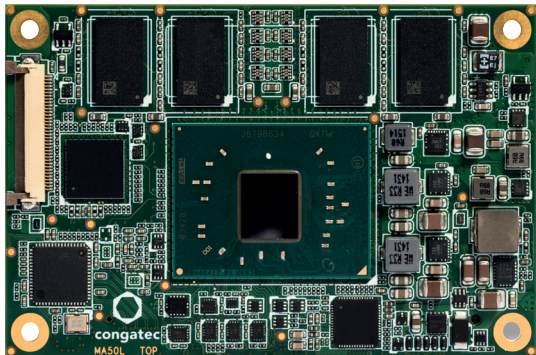


POWERFUL AND SMALL

conga-MA5

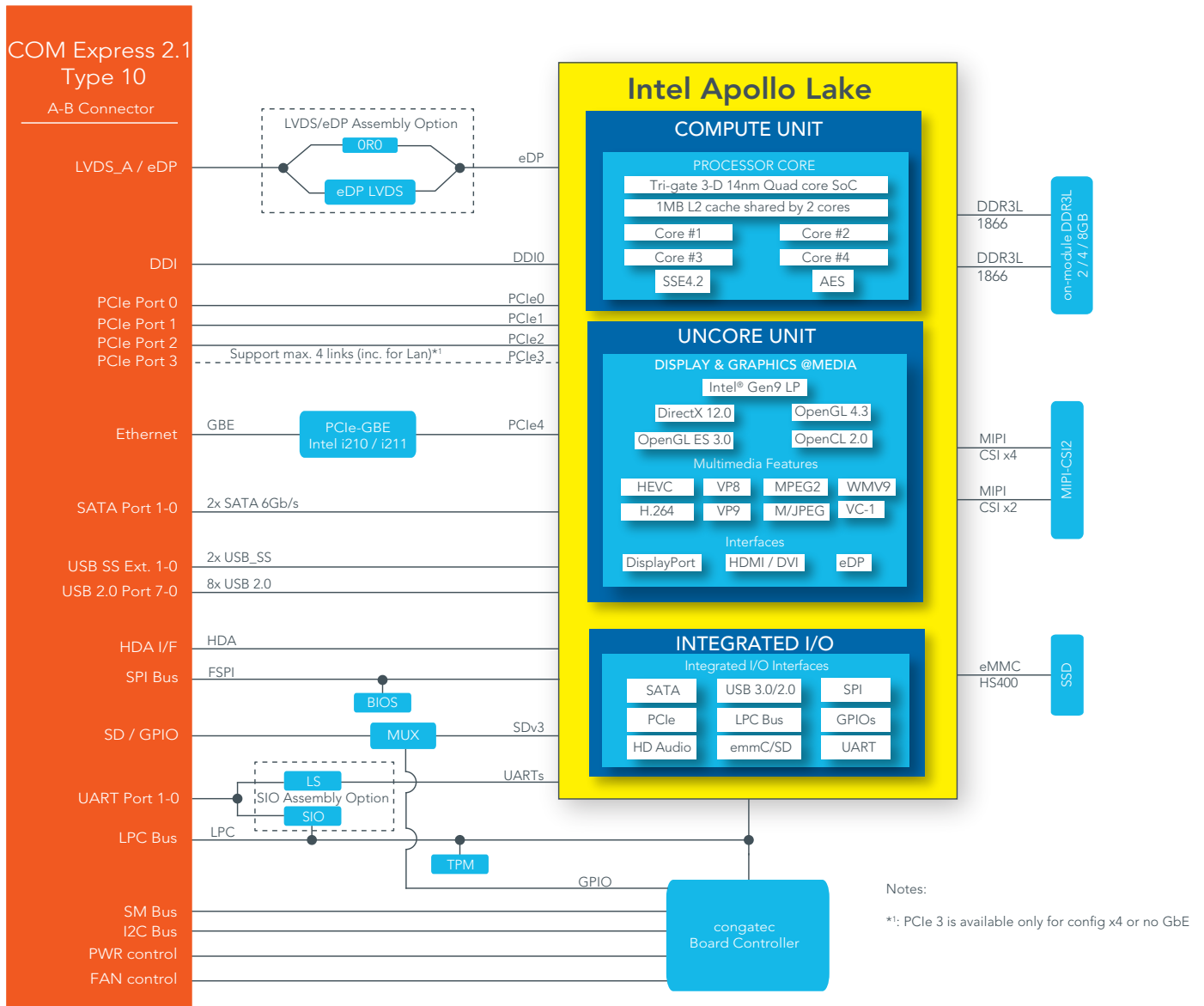


- 5th Gen. Intel® Atom™ processor family
- COM Express Mini Type 10 module
- Intel 9th generation (Gen 9) LP graphics
- Up to 4k resolution (4096x2160@60Hz)
- 4K Codec Decode & Encode for HEVC, H.264, VP8

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 2MB | 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 | 9.5W TDP | |
| | Intel® Atom™ x5-E3930 | 1.80 GHz (Burst) 1.3 GHz Clock | Dual Core | L2 cache 2MB | 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 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 Channel LVDS Interface, resolutions up to 1280x1024@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 3840x2160@60Hz | | | | | |
| congatec Board Controller | Multistage watchdog non-volatile user data storage manufacturing and board Information board statistics I ² 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 Microsoft® Windows 10 IoT 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 1833MT/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 1833MT/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 2.4GHz 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 |

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