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| **Reader Enquiries:** | **Press Contact:** |
| **congatec** | **congatec** |
| Dan Demers | Janene Rae |
| Phone: 858-457-2600 | Phone: 858-457-2600 |
| [dan.demers@congatec.com](mailto:dan.demers@congatec.com)  [www.congatec.](http://www.congatec.)us | [janene.rae@congatec.com](mailto:janene.rae@congatec.com) [www.congatec.us](file:///\\NAS5000\Kunden\congatec\01-PR\www.congatec.us) |

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Press release

Size-optimized congatec SMARC 2.1 carrier board makes Intel Atom® processor based 3.5-inch SBCs modular

**Application-ready congatec COM/carrier combo**

**San Diego, CA, 28 May 2020 \* \* \*** congatec – a leading vendor of embedded computer technology – announces its brand new conga‑SMC1/SMARC-x86 3.5-inch carrier board. The new size-optimized SMARC 2.1 carrier board in 3.5-inch form factor is application-ready and off-the-shelf deployable in small to mid sized series in combination with any congatec SMARC Computer-on-Module available to date. Tailored to make 3.5-inch SBC designs modular, it is optimized for the Gen 5 Intel Atom®, Celeron® and Pentium® processors (codenamed Apollo Lake) as well as future low power x86 generations. Its slot for SMARC 2.1 processor modules provides processor socket independent scalability, making OEM solutions highly flexible and long term available. With fewer layers, the PCB design of the 3.5-inch carrier is less complex and less expensive compared to a full-custom design. Another benefit of the carrier board is the capability to rapidly implement customizations, which ensures high custom design efficiency: Adding or deleting specific interfaces is fairly fast for best time to market, comparatively simple, cost efficient and offered from lot sizes of around 500 boards per year. For ultra-efficient high volume projects, fusion of the congatec COM/carrier combo is an attractive option. SMARC module customers can even get free access to the carrier board schematics as support for own carrier board designs.

“Computer-on-Modules have the capacity to bring modularity to the entire embedded, industrial and IoT computing world. This size-optimized SMARC 2.1 carrier board in 3.5-inch form factor is just the starting point of our design roadmap to make embedded computing even more modular. Together with our carrier board design partners in various sectors, congatec can offer tremendous benefits to any standard embedded form factor, with the potential to disrupt established vendors in markets such as embedded motherboards and SBCs as well as modular edge server and backend systems such as CompactPCI Serial, PXI or VME/VPX,” explains Martin Danzer, Director Product Management at congatec.

The new conga-SMC1/SMARC-x86 excels with its audio codec and USB-C implementation that is specifically optimized for Intel Atom processor technology. It is furthermore also optimized for MIPI cameras, which can now be connected directly and without any additional hardware. Thanks to two MIPI-CSI 2.0 connectors, it is even possible to develop systems that provide three-dimensional vision and can therefore also be used for situational awareness in autonomous vehicles. Combined with processor-integrated support for artificial intelligence and neural networks, this commercial off-the-shelf (COTS) platform offers everything developers need for smart vision systems. Comprehensive software support with precompiled binaries completes the new COTS offering.

**The feature set in detail**

The new size-optimized conga-SMC1/SMARC-x86 SMARC 2.1 carrier board in 3.5-inch form factor is scalable across the entire Intel Apollo Lake processor range, from Intel Atom® (E3950, E3940 and E3930) to Celeron® (N3350) and Pentium® (N4200) processors. On a footprint measuring just 146 x 102 mm, the conga-SMC1/SMARC-x86 offers dual GbE, 5x USB and USB hub support as well as SATA 3 for external hard drives or SSDs. For custom expansions, the board offers a miniPCIe slot as well as an M.2 Type E E2230 slot with I2S, PCIe and USB, and an M.2 Type B B2242/2280 with 2x PCIe and 1x USB. An integrated MicroSim slot for IoT connection is also provided, next to specific embedded interfaces such as 4x UART, 2x CAN, 8x GPIO, I2C and SPI. Displays can be connected via HDMI, LVDS/eDP/DP and MIPI-DSI. The board further offers two MIPI-CSI inputs for camera connection. Sound is implemented via an audio jack. The board comes with full Windows and RTS hypervisor support. For the open source community, congatec also offers precompiled binaries with a suitably configured bootloader, appropriately compiled Linux, Yocto and Android images, plus all required drivers that are available to congatec customers on GitHub. The carrier boards are available in the following SMARC Computer-on-Module configurations:

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| **Processor** |  | **Cores** |  | **Intel® Smart Cache [MB]** |  | **Clock/ Burst**  **[GHz]** |  | **TDP [W]** |  | **Graphics Execution Units** |
| **Intel Atom® x7-E3950** |  | 4 |  | 2 |  | 1.6 / 2.0 |  | 12 |  | 18 |
| **Intel Atom® x5-E3940** |  | 4 |  | 2 |  | 1.6 / 1.8 |  | 9 |  | 12 |
| **Intel Atom® x5-E3930** |  | 2 |  | 1 |  | 1.3 / 1.8 |  | 6.5 |  | 12 |
| **Intel Pentium® N4200** |  | 4 |  | 2 |  | 1.1 / 2.5 |  | 6 |  | 18 |
| **Intel Celeron® N3350** |  | 2 |  | 1 |  | 1.1 / 2.4 |  | 6 |  | 12 |

More information about the new size-optimized conga-SMC1/SMARC-x86 SMARC 2.1 carrier board in 3.5-inch form factor can be found at: <https://www.congatec.com/en/products/accessories/conga-smc1smarc-x86/>

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**About congatec**

congatec is a rapidly growing technology company focusing on embedded computing products. The high-performance computer modules are used in a wide range of applications and devices in industrial automation, medical technology, transportation, telecommunications and many other verticals. congatec is the global market leader in the computer-on-modules segment with an excellent customer base from start-ups to international blue chip companies. Founded in 2004 and headquartered in Deggendorf, Germany, the company reached sales of 126 million US dollars in 2019. More information is available on our website at [www.congatec.com](http://www.congatec.com) or via [LinkedIn](https://www.linkedin.com/company/455449), [Twitter](https://mobile.twitter.com/congatecAG) and [YouTube](http://www.youtube.com/congatecAE).

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