Press RELEASES

PR-Nr. 03 – 07. July 2020

TDK announces world's lowest-power PDM microphone, T3902

T3902 is a 64.5dB SNR/120dB AOP digital microphone in a 3.5 x 2.65 x 0.98 mm package, optimized for mobile devices, wearables, headsets, TV remotes and more

High performance microphones offer high SNR at a frequency bandwidth up to 20kHz and very low power (AlwaysOn) 185 µA ultra-low power mode

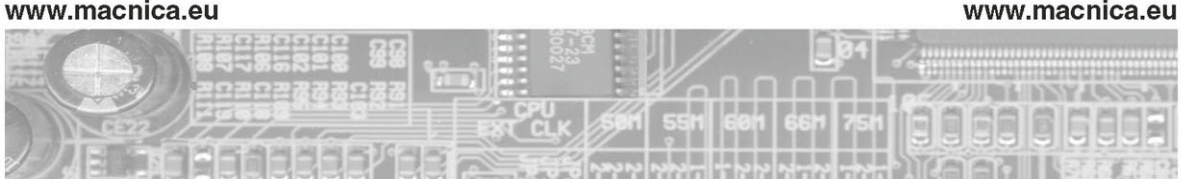
Supports far-field communication (video and phone conference) while enabling clear audio capture in loud conditions

June 16, 2020

TDK Corporation (TSE: 6762) introduces the InvenSense T3902, the world's lowest power Pulse Density Modulation (PDM) microphone for mobile, IoT and other consumer devices. The T3902 is an ultra-low power, low noise, multi-mode bottom-port MEMS microphone, enhancing voice-based services which are now commonplace in many devices and homes. The microphone offers an exceptionally efficient 185 µA ultra-low power mode, high SNR of 64.5 dB, and high Acoustic Overload Point (AOP) of 120 dB in a 3.5 mm x 2.65 mm x 0.98 mm package. The microphone's Always-On functionality in low-power mode enables immediate accessibility upon wake command.

TDK's new T3902 microphone enables OEM partners to differentiate their product offerings by improving the consumer experience with reduced power consumption. This is especially critical to wearable and IoT designs where reduced board space and battery size are key factors to enabling a small form factor as well as providing a flexible and efficient (low power AlwaysOn) system design.

"The T3902 is the lowest-power PDM microphone on the market today and has been developed to meet the growing demands of the high performance, ultra-low power audio markets," said Kieran Harney, Managing Director – Audio Products at InvenSense, a TDK



Group company. "With this newest microphone product offering, we continue to be committed to bringing to market a strong portfolio of disruptive, high-performance, innovative products that improve end-user experience and empower new and exciting use cases in IoT and mobile devices for our customers and partners."

Glossary

- PDM: Pulse Density Modulation
- AOP: Acoustic Overload Point
- IoT: Internet of Things
- OEM: Original Equipment Manufacturing

Main applications

- Mobile Devices
- Wearables
- Tablets/Displays
- Ruggedized Computers
- STD/Smart TVs
- Remote Controls

Key features

- 3.5 × 2.65 × 0.98 mm surface-mount package
- Low power: 185 µA in Low-Power Mode
- Extended frequency response from 36 Hz to >20 kHz
- Sleep Mode: 12 µA
- High power supply rejection (PSR): −97 dB FS
- Fourth-order Σ-Δ modulator
- Digital pulse density modulation (PDM) output
- Compatible with Sn/Pb and Pb-free solder processes
- RoHS/WEEE compliant

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Pricing and Availability

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About TDK Corporation

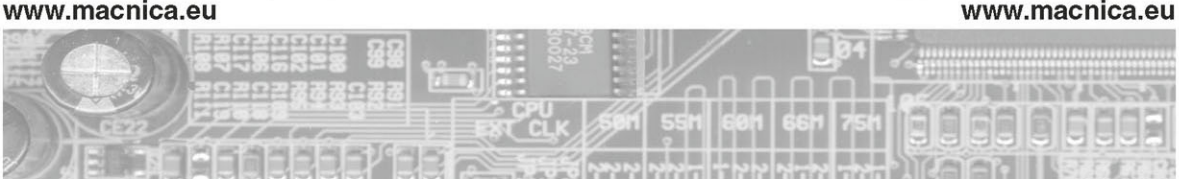
TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately "Attracting Tomorrow." It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products.

TDK's comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda.

TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2020, TDK posted total sales of USD 12.5 billion and employed about 107,000 people worldwide.

About InvenSense

InvenSense, Inc., a TDK Group company, is a world leading provider of MEMS sensor platforms. InvenSense's vision of Sensing Everything® targets the consumer electronics and industrial areas with integrated Motion, Sound, and Ultrasonic solutions. InvenSense's solutions combine MEMS (micro electrical mechanical systems) sensors, such as accelerometers,



gyroscopes, compasses, microphones, and ultrasonic 3D-sensing with proprietary algorithms and firmware that intelligently process, synthesize, and calibrate the output of sensors, maximizing performance and accuracy.

InvenSense's motion tracking, ultrasonic, audio, fingerprint, location platforms and services can be found in Mobile, Wearables, Smart Home, Industrial, Automotive, and IoT products. InvenSense became part of the MEMS Sensors Business Group within the newly formed Sensor Systems Business Company of TDK Corporation in 2017. In February of 2018, Chirp Microsystems joined the InvenSense family through its acquisition by TDK. InvenSense is headquartered in San Jose, California and has offices worldwide. For more information, go to invensense.tdk.com.

About Macnica Europe GmbH

Macnica's European headquarter was originally established in the UK in 2006, and moved to Germany in July 2008, to increase efficacy of its service for European customers.

By it's acquisition of the Munich based company Scantec Mikroelektronik in 2014 Macnica Europe formed a powerful semiconductor distribution with headquarters in Munich and Ingolstadt and numerous sales offices in Europe offering an attractive and competitive portfolio of highly sophisticated devices.

Macnica provides end to end support from design-in to production through its global service network to its customers, regardless of the final destination of the product shipment to customers' manufacturing locations.

About Macnica, Inc.

Macnica was established in 1972 as a semiconductor distribution company headquartered in Yokohama, Japan, and has over 80 sales offices worldwide in eastern Asia, Europe and the USA. Total number of employees is over 3,000 and its consolidated revenue for fiscal 2018 was approximately US$ 5 B.

Macnica is famous for having an excellent engineering team of more than 900 application support engineers, IC designers and software developers with strong focus on providing technical support for its customers including custom design services. Macnica is continuing to extend its presence globally by having successful partners in strategic areas in the electronics market.