

## MEMS Sensors

# TDK announces new 3-axis accelerometer, finalizing transition of SmartAutomotive™ non-safety product family to 105°C

- New: 3-axis MotionTracking™ accelerometer for non-safety automotive applications
- Automotive qualified up to 105°C based on AEC-Q100 grade 2
- Includes two independent interrupt lines and extended FIFO for reduced power consumption
- Pin-to-pin and register compatible across TDK's full line of inertial sensors

January 09, 2024

TDK Corporation (TSE:6762) today announced the InvenSense SmartAutomotive™ IAM-20381HT high-temperature monolithic 3-axis MotionTracking accelerometer for non-safety automotive applications, such as navigation, infotainment systems, telematics, and more. The launch represents a full transition of the InvenSense SmartAutomotive non-safety product line to 105°C.

The IAM-20381HT is part of a fully-compatible, multi-axis, multi-grade portfolio of SmartAutomotive products. With this release, TDK confirms its leadership in driving the inertial sensors market for both safety and non-safety automotive applications. The IAM-20381HT will be available at distributors worldwide by February 1, 2024.

"With this launch, TDK completes the transition from temperature grade 3 to grade 2 of the entire SmartAutomotive non-safety product line," said Alberto Marinoni, Senior Director Product Marketing Automotive at InvenSense, a TDK Group company. "Now TDK provides a complete lineup of pin-to-pin and register-compatible inertial sensors for automotive while ensuring scalability of customer applications up to 105°C."

The new stand-alone 3-axis MEMS accelerometer is offered in a thin 3 x 3 x 0.75 mm (16-pin LGA) package and is automotive-qualified based on AEC-Q100 Grade 2. The IAM-20381HT also features two programmable independent interrupt lines, wake-on-motion functionality, and a FIFO up to 4096-bytes, which can lower the traffic on the serial bus interface and reduce power consumption by allowing the system processor to burst-read sensor data and then go into a low-power mode. Such features enable a variety of motion-activated functions such as anti-theft, vehicle security, and driving style data recording.

TDK will demonstrate this and other technologies at the Consumer Electronics Show (CES) from January 9-12, 2024, in Las Vegas. Find TDK in the CES Central Hall (LVCC) at booth #20521.

For additional information and collateral, please visit [invensense.tdk.com/smartautomotive](https://invensense.tdk.com/smartautomotive) or contact InvenSense Sales at [sales.us@tdk.com](mailto:sales.us@tdk.com).

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### Glossary

- IMU: Inertial Measurement Unit
- 6-axis: 3-axis Gyroscope + 3-axis Accelerometer
- 3-axis: 3-axis Gyroscope or 3-axis Accelerometer
- MEMS: Micro-Electro-Mechanical Systems

- DK: Developer kit
- EV: Evaluation board
- LGA: Land Grid Array
- FIFO: First in First out

### Main applications

- Lift Gate Motion Detection
- Tilt Measurement
- Infotainment and Navigation Systems
- Car Alarm
- Telematics
- Insurance Vehicle Tracking
- Drive Style Recording

### Main features and benefits

- Automotive-qualified based on AEC Q100 Grade 2 qualification test methods
- Thin 3 x 3 x 0.75 mm (16-pin LGA) package
- 16-bit digital-output accelerometer
- Accelerometer: X-, Y-, and Z-axes acceleration sensors with a user-programmable full-scale range up to  $\pm 16$  g
- User-programmable digital filters for accelerometer and temperature sensor
- Embedded self-test
- Two embedded configurable interrupt lines
- Wake-on-motion functional
- Final test over temperature
- Pin-to-pin and register-compatible across with IAM-20680HT, IAM-20680HP, IAM-20380HT, IAM-20381
- EV\_IAM-20381HT evaluation board compatible with DK-Universal-I

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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 2023, TDK posted total sales of USD 16.1 billion and employed about 103,000 people worldwide.

### About InvenSense

InvenSense, a TDK Group company, is a world-leading provider of Sensing Solutions. InvenSense’s vision of Sensing Everything® targets the consumer electronics and industrial areas with integrated Motion, Sound, Pressure, and Ultrasonic solutions. InvenSense’s solutions combine MEMS (micro electrical mechanical systems) sensors, such as accelerometers, gyroscopes, compasses, microphones, barometric pressure sensors, and ultrasonic time-of-flight sensors 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, IoT, Robotics, and many more types of products. InvenSense became part of the MEMS Sensors Business Group within the Sensor Systems Business Company of TDK Corporation in 2017. In April of 2022, Chirp Microsystems formally merged with InvenSense. InvenSense is headquartered in San Jose, California and has offices worldwide.

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You can download this text and associated images from <https://invensense.tdk.com/news-media/tdk-announces-new-3-axis-accelerometer-finalizing-transition-of-smartautomotive-non-safety-product-family-to-105-c>.

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