MEMS Sensors

TDK shakes up robotics market with next-generation SmartRobotics™ platform, TDK RoboKit1

- Platform includes a 6-axis IMU, pressure sensor, magnetometer, temperature sensor, embedded motor controller, ultrasonic ToF sensors and industrial IMU sensor module
- Compatible with all ROS1 and ROS2 requirements

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TDK Corporation (TSE: 6762) announces the newest solution to the SmartRobotics™ product family, TDK RoboKit1. The next-generation robotic development platform enables quick prototyping and development for robotic developers, designers, and enthusiasts, by providing a robust hardware platform accompanied by full ROS1 and ROS2 compliant drivers and software algorithms.

TDK continues to dominate the robotics industry by advancing the market with quintessential sensors, controllers, batteries, and components. TDK RoboKit1 will be offered both as a stand-alone development platform as well as a full robot reference design. The board will consist of a range of TDK technology, including a 6-axis IMU, capacitive barometric pressure sensor, digital I²S microphone (x4), temperature sensor, embedded motor controller, and magnetometer. Depending on which version of the platform is purchased, the board will also be joined by TDK's industrial IMU sensor module via flex cables as well as a full robotic chassis and 3D printed casing, allowing all end customers to develop a fully functional robotic reference design.

"TDK's vision is to promote problem-solving solutions that integrate technology from across the TDK companies. TDK RoboKit1 provides innovative hardware from multiple TDK group companies, but also provides full software stacks and algorithms that solve real robotics problems," says Peter Hartwell, CTO of InvenSense. "This is truly a first of its kind and will help fast track robotics at any point during the development process, creating feature value that will set customers apart from their competition."

The TDK RoboKit1 is available to order now through distribution channels worldwide. Availability for shipping is targeted for mid Q1 2022.

TDK will be introducing the TDK RoboKit1 during the 2022 CES Virtual Press Conference For more information, please visit https://www.invensense.com/robotics/.

Glossary
- ROS: Robot Operating System
- 6-Axis: 3-Axis Gyroscope + 3-Axis Accelerometer
- IMU: Inertial Measuring Unit
- ToF: Time of Flight

- MEMS: Micro Electrical Mechanical Systems

Main applications
- Industrial Robotics
- Consumer Robotics
- Drones

Key features and benefits:
- Ultra-low noise and exceptional relative accuracy
- Ultra-low power
- Best gyroscope temperature stability
- Obstacle detection for any color objects in all lighting conditions
- Floor type and cliff detection using ultrasonic sensors
- RoboVac algorithm using IMU data for heading computation
- Robot Motor Control APIs
- “Hi TDK” keyword spotting with noise filter and noise cancellation
- ROS1 and ROS2 drivers for all on-board sensors
- BLE enabled Windows and Android Apps for sensors and algorithms evaluation and data collection

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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 2021, TDK posted total sales of USD 13.3 billion and employed about 129,000 people worldwide.

About InvenSense
InvenSense, Inc., a TDK Group company, is a world leading provider of performance SmartSensing 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 www.invensense.tdk.com.

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