



QTM-SMR10

Wireless and Wearable
Mobile for Frontline Worker Safety

ZEROKEY
SPATIAL INTELLIGENCE

ZeroKey's QTM-SMR10 is a wireless and wearable location sensor that ensures frontline worker safety by harnessing millimeter-accurate 3D positioning data to digitally twin operations in real-time. The hyper-accurate 3D location data captured by the QTM-SMR10 allows businesses to monitor when workers enter dangerous areas and perform real-time collision detection and avoidance with AGVs and equipment.



Hyper-Accurate, Always Available Positioning

ZeroKey technology achieves a positioning accuracy of 1.5mm by using ultrasonic signals for ranging between devices.



Real-Time Audio and Vibration Alarming

Reliable, real-time detection of unsafe situations is essential for preventing injury in dynamic industrial environments. The QTM-SMR10 alerts users immediately when their proximity to other devices is within a configurable minimum distance and when static or dynamic geofenced zones are breached. An audible alarm, vibration motor, and LED alert light signal breaches in real-time.



Wireless and Wearable in Industrial Environments

Equipped with a high-speed microprocessor, advanced radio, and rechargeable battery, the QTM-SMR10 is capable of 24-hour wireless operation in any mode. The durable clip secures the sensor to any piece of clothing to ensure frontline workers are always protected.



Push Button for Event Triggering and Recording

The device features a push button that allows users to mark their position or to start and stop external processes in custom applications.



Self-calibrating

Automated calibration allows network localization to be completed rapidly with no need for manual survey measurements. The device is compatible with small or large-scale deployments, allowing for easy scalability and reuse of components in a larger network.

Key Features

- Interoperable with all Quantum RTLS devices
- 1.5mm 3D position accuracy¹
- Unit to unit proximity alert through vibration and audio alarm
- Supports up to 20m range per mobile
- Automated network calibration
- Configurable static or dynamic geo-fenced zones
- 24-hour battery life (typical)
- Open-API and extensible plugin interfaces for seamless integration





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System Specs

Operability	Compatible with all Zerokey Quantum RTLS devices
Power Source(s)	Rechargeable Li-po 450 mahr Micro-USB for recharge
Mounting	Clip or Lanyard
Temperature (Active)	0° to 60°C
Temperature (Recharge)	5° to 45°C
Humidity	5 to 95% non-condensing Free from ice & snow
Accuracy	Up to 1 mm, 2.5 mm typical
Dimensions (mm)	47 x 72.7 x 19.3 (47 x 90 x 33.6 w/clip)
Weight (gm)	30
Latency (Mobile Position)	<100 ms (Proximity)
Battery Life	18 to 31 hours ²
Type Approval	USA - FCC Canada - IC (ISED) Japan - MIC Korea - KC European Union - CE AUS/ NZ - Ctick
Certifying Body	TUV HK
Ingress Protection	None
U/S Frequency	50 kHz +/- 0.1kHz
Safety Approval	EN62368-1:2024/A11:2017

Max Ultrasonic SPL	115 dB
RF Band	2.401 to 2.486GHz
RF Output Power	-20 to +8dBm
RF Sensitivity	-92dB
U/S Range	Up to 20m
RF Range	Up to 45m
Recharge Time	4 hours
USB Rate	12 mbps
Connectors	Micro USB
Indicators	Tricolor LED, Piezo Audible Beeper Haptic Vibration
Switches	Multi-function - push button
Processor	ARM Cortex-M4F @ 64MHz
Update Rate Ultrasonic	0.2 to 20Hz
Update Rate Inertial	20Hz
Position Update	Up to 20Hz

† Pat. US 9/977,113, US 10/051,599, US 10/448,357, US 10/627,479, US 10/736,075, US 10/893,502, CN109073740B, KR102252251B1, US 15/339,885, US 15/982,750, US 16/031,553, US 16/560,543, US 16/820,445, US 16/919,822.

See <https://zerokey.com/patents> for a complete list of patents applicable to this product.

1. Under unobstructed conditions with view to 6 anchor nodes configured in an ideal network geometry.
2. Dependent on device update rate v. 122022 *Information subject to change