DropTag®EVENT: a low-cost end point device for condition monitoring

**Description**

DropTagEVENT is our low-cost, high-volume end-point device. It can be fixed to any asset, from packages and shipments (inside or outside the box), through to vehicles and plant equipment. It is designed to run from a single coin cell battery, waking when critical events occur, logging them at high resolution, and then returning to our patent-pending low power mode to maximise battery life.

DropTagEVENT connects with Bluetooth Smart devices (eg the latest smartphones), using them as communication hubs to stream the DropTagEVENT data back to a secure server via their own cellular or wifi connectivity.

All event data includes a digital signature for device authentication and audit, and role based access ensures that DropTag data can only be accessed by those users with the correct ownership and permissions.

The DropTag service comprises further data analytics, automated reporting and alerting via SMS and email. Configurable user ‘dashboards’ are available to provide each user group with the appropriate asset status information. Informed decisions can then be made, eg delicate instrumentation can be re-calibrated before it’s deployed or key mechanical parts can be replaced before they actually fail. Whatever the use-case, DropTag provides affordable condition-monitoring to everyone.
Use Cases

- Ship DropTagEVENT inside a parcel, and both the receiver and logistics operator can check how well the parcel has been carried using their own smartphone
- Use DropTagEVENT to monitor temperature excursions while also monitoring shock events, for pharmaceutical and other cold chain applications
- Attach DropTagEVENT to a vehicle windscreen to enable better quantified risk models. We’re able to analyse driver behaviour, thereby providing accurate risk optimisation and enhanced insurance premium pricing
- Attach DropTagEVENT to a leased tool to find out how often it is being used and whether it’s being used outside approved operating procedures

DropTagEVENT is a part of the DropTag family of connected devices and services

Form Factor
- Weight: 22 g
- Size: 58 x 58 x 11 mm

Sensors
- Vibration Sensor 12 bit resolution, 3 axis, 12g range
- Shock Sensor 12 bit resolution, 3 axis, 400g range, 12 bit resolution
- Relative Humidity Accuracy ±2%, Resolution 0.7%RH
- Temperature Resolution 12 bit (0.04°C), Typical Accuracy <1.0°C at 0°C to 70°C ambient

Onboard Algorithm Options
- Freefall Detection & Impact characterisation
- Driver Risk Profiling
- Temperature and Humidity Excursion alerting including time-at-temperature
- Custom Vibration Events for Condition Monitoring

Device Longevity
- 10-1000 events captured depending on raw data requirements
- Battery life: 20 to 90 days depending on desired event configuration

Security Protocols
- Elliptic Curve Cryptography (ECC) digital signature (used in CFR Part 21)
- AES session encryption

Features
- Smartphone apps for data retrieval and local DropTag®EVENT configuration
- Sensed Flight Mode currently under development
- Deployable Secure Server System for event capture, analytics, and alerting

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