ZENDUIT

# ZenFalcon

**CELLULAR 2G OR 4G LTE-M / NB-IOT**

## FEATURES

- High-precision GPS/GLONASS tracking device
- WiFi Positioning for Indoor Asset Tracking
- 1 x Analog Input, 2 x Digital Inputs, 1 x Switched Ground Digital Output, 1 x Ignition Digital Input, Switched Power Out
- I²C Sensor Interface
- Weatherproof and ultra-rugged IP67 Housing with compact and ergonomic design
- Flexible Power Options – 3 x AA Batteries with up to 7 years battery life or wired to permanent power
- Built-in Battery Meter for remote Battery Life Monitoring and Remaining Life Predictions

## OVERVIEW

Feature-rich battery-powered or powered GPS tracking device with customizable inputs/outputs, I²C Sensor Interface, and WiFi Positioning for indoor and outdoor asset tracking and sensor monitoring applications.

## APPLICATIONS

Indoor/Outdoor Asset Tracking

Sensor Monitoring

Cold Chain

Pump Control

Pulse Counting

Door Open / Close

Run Hours Monitoring

Preventative Maintenance

Theft Recovery

**DATASHEET**

Learn more at www.zenduit.com

## CONNECTIVITY

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|---|---|
| **2G** | 2G: SARA-G350-02S-01<br>850/900/1800/1900 MHz |
| **4G LTE-M / NB-IoT** | uBlox SARA-R410M Modem operates on all major global LTE-M and NB-IoT bands.<br><br>Supported LTE bands:<br>1*, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 26*, 28<br>(*roaming bands) |
| **SIM SIZE & ACCESS** | Internal Micro 3FF SIM |

## BATTERIES

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| **USER-REPLACEABLE BATTERIES** | 3 x AA |
| **BATTERY LIFE** | Up to 7 years of battery life at once daily heartbeats / 1-year battery life at once hourly heartbeats. |
| **SUPPORTED BATTERY TYPES** | Lithium (LiFeS2)<br>Lithium Thionyl Chloride (LTC) |

## LOCATION

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| **MODULE** | uBlox EVA-M8 |
| **CONSTELLATION** | Concurrent GPS / GLONASS |
| **CHANNELS** | 72 Channel High Sensitivy Receiver |
| **TRACKING SENSITIVITY** | -167dBM industry-leading tracking performance |
| **ASSISTNOW OFFILINE** | GNSS aiding data (such as ephemeris, time, coarse position) for a faster Time To First Fix (TTFF). |
| **LOW NOISE AMPLIFIER** | GPS signals are boosted by a unique low-noise amplifier (LNA) allowing operation where other units fail. |
| **WiFi POSITIONING SYSTEM** | Indoor asset location using Wifi Positioning Systems. Cell tower fallback for positioning when no networks are nearby |
| **CELL TOWER LOCATION** | Cell tower fallback for positioning when no WiFi and/or networks are nearby. |

## POWER

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| **INPUT VOLTAGE** | Flexible Power Options:<br>5 - 16V DC (max)<br>3 x AA Cell Battery holder fitted.<br>Screw terminals for line power. |
| **SLEEP CURRENT** | <10uA*<br>*Average current in lowest power configuration |
| **BACK-UP BATTERY** | If line power is connected and batteries are also installed, device will fall back to the 3 x AA cells if external power is disconnected. |

## MECHANICS/DESIGN

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| **DIMENSIONS** | L 135 x W 90 x H 35 mm |
| **WEIGHT** | 163g<br>232g with batteries |
| **HOUSING** | ABS Polycarbonate Plastic |
| **IP RATING** | IP67 rated housing ensures device can withstand fine dust, high-pressure spray, submersion for 30 mins in 1m of water, and extreme temperatures. |
| **INSTALLATION** | Compact and Concealable. Multiple installation options for covertly and easily securing the device to assets with screws, bolts, cable ties, rivets, and more. Caters for a number of cable glands (2 fitted as standard) to allow for waterproof cable entry to the housing. |
| **OPERATING TEMPERATURE** | -20°C to +60°C<br>For operation in extreme temperatures use LTC Batteries. |
| **GPS ANTENNA** | Internal |
| **CELLULAR ANTENNA** | Internal |
| **3-AXIS ACCELEROMETER** | 3-Axis Accelerometer to detect movement, acceleration, high G-force events, and more. |
| **DIAGNOSTIC LED** | Diagnostic LED signifies operation status. |
| **FLASH MEMORY** | Store weeks of records if device is out of cellular coverage. Storage capacity for over 10 days of continuous 30-second logging. |

## INTERFACES

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| **ANALOG INPUTS** | 1 x 0-30V Analog Inputs,<br>Auto Ranging, 12-bit ADC<br>0-5V range: 1.22mV precision<br>0-30V range: 7.32mV precision |
| **DIGITAL INPUTS** | 2 x Digital Inputs with configurable pull-up/down<br>0-48V DC input range<br>On/Off thresholds:<br>Pull-up enabled: low at 0.8V, high at 1.0V<br>Pull-down enabled: low at 2.0V, high at 2.4V<br>Can be used for pulse counting. |
| **DIGITAL OUTPUTS** | 1 x Switched Ground Digtal Output<br>Easily wired up to control external devices and circuits, for example to turn a lighting tower on / off. |
| **IGNITION** | Digital inputs can be used as an ignition input to log run hours. |
| **$I^2C$** | $I^2C$ (inter-IC communications) is an interface commonly used in sensor modules. |
| **SWITCHED POWER OUT** | Used to control the 3.3V power to external sensors and peripherals. Load limited and short circuit protected. |

## SMARTS

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| **AUTO-APN** | Auto-APN allows the device to analyze the SIM card and select the correct APN details from a list that is pre-loaded in the device's firmware. |
| **BATTERY LIFE MONITORING** | Built-in Battery Meter for monitoring battery use and remaining life predictions. |
| **ENVIRONMENTAL MONITORING** | Interface with a range of sensors such as temperature, humidity, moisture, depth, and more. |
| **GEOFENCING** | Create custom geofences and alerts if an asset enters or leaves specific locations. |
| **GEOFENCE DOWNLOAD TO DEVICE** | Geofences can be downloaded directly to the device from Telematics Guru for enhanced location-based actions and alerts.<br>Maximum of 100 Geofences with up to 100 points per geofence. |
| **IMPACT DETECTION** | Configure impact-detection alerts when g-forces are exceeded by a user-defined threshold. |
| **PERIODIC OR MOVEMENT-BASED** | Configure parameters to send updates based on set time intervals (1x, 3x, 5x a day, etc) or when movement occurs. Adaptive tracking technology detects when the device is on the move and increases the update rate, providing detail when you need it while conserving battery when stationary. |
| **PREVENTATIVE MAINTENANCE** | Set reminders based on distance traveled and run hours to reduce maintenance and repair costs. |
| **REAL-TIME TRACKING** | Device remains continuously connected while on the move for real-time asset tracking.*<br>*Optional when device is externally powered. |
| **THEFT RECOVERY** | Switch to Recovery Mode in the case of theft or loss to activate real-time tracking at 30-second intervals for asset retreival. |
| **RUN HOUR MONITORING** | Capture run hours based on movement to understand and optimize asset utilization. |
| **SLEEP MODE** | Stationary devices enter sleep mode, switching the update rate to only twice per day until movement occurs to conserve battery life and optimize data usage (when powered by batteries). |

## DEVICE MANAGEMENT

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| **FLEXIBLE CONFIGURATION** | Configure device parameters such as heartbeat rate, movement and accelerometer settings, and more to fit any tracking application. |
| **OEM SERVER** | Manage, monitor, configure, debug, update, and restart devices remotely from our cloud-based device management system. |

## INTEGRATION

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| **THIRD-PARTY INTEGRATION** | Webhook, TCP or HTTPS, Direct and Data Splitting Integration Options |

## SECURITY

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| **DATA SECURITY** | Military-level AES-256 Encryption from device to OEM Server to protect the integrity and confidentiality of telematics data.<br><br>Data forwarded to third-party systems is sent via HTTPS for end-to-end security. |

## WARRANTY

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| **MANUFACTURER'S WARRANTY** | One year manufacturer's warranty. |

## CERTIFICATIONS

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| **Please contact us for a full list of compliance specifications and documentation for your region.** | **4G** - FCC, ISED, CE (Doc)<br>**2G** - CE (Doc) |

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