



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



I<sup>2</sup>C 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



# Falcon

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

## OVERVIEW

Feature-rich battery-powered or powered GPS tracking device with customizable inputs/outputs, I<sup>2</sup>C Sensor Interface, and WiFi Positioning for indoor and outdoor asset tracking and sensor monitoring applications.

## APPLICATIONS



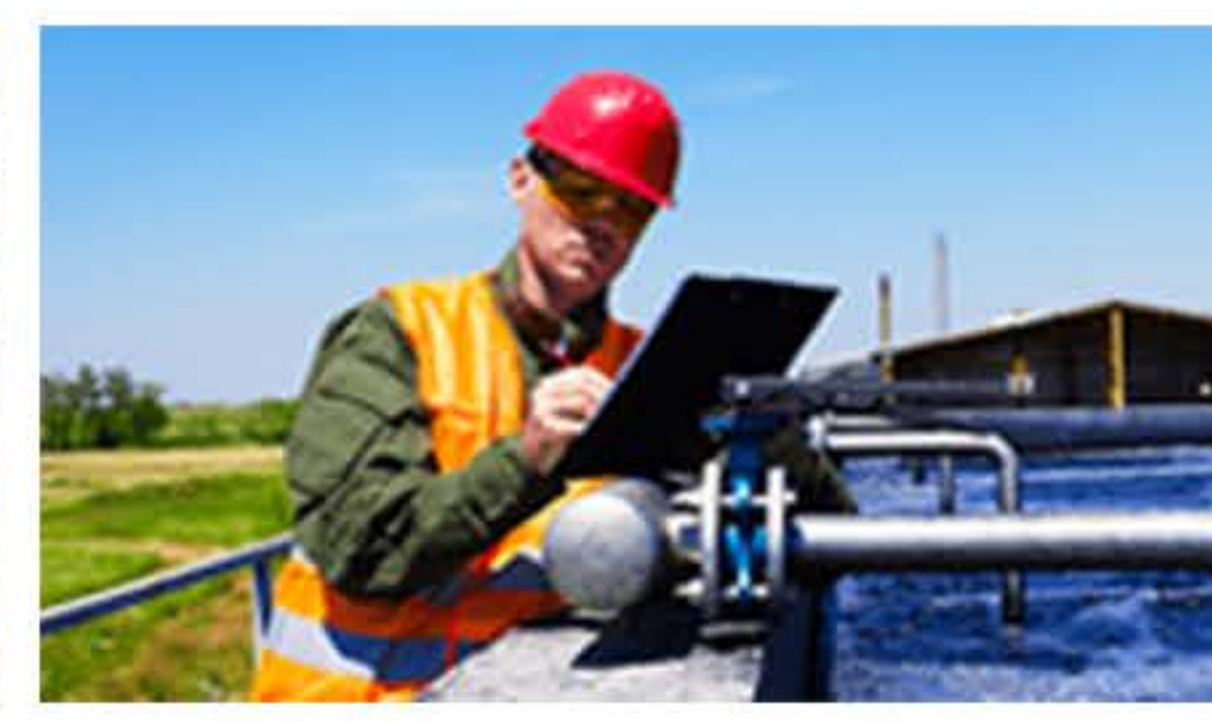
Indoor/Outdoor Asset Tracking



Sensor Monitoring



Cold Chain



Pump Control



Pulse Counting



Door Open / Close



Run Hours Monitoring



Preventative Maintenance



Theft Recovery

## CONNECTIVITY

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

## BATTERIES

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

## LOCATION

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

## POWER

<b>INPUT VOLTAGE</b>	Flexible Power Options: 5 - 16V DC (max) 3 x AA Cell Battery holder fitted. Screw terminals for line power.
<b>SLEEP CURRENT</b>	<10uA* *Average current in lowest power configuration
<b>BACK-UP BATTERY</b>	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

<b>DIMENSIONS</b>	L 135 x W 90 x H 35 mm
<b>WEIGHT</b>	163g 232g with batteries
<b>HOUSING</b>	ABS Polycarbonate Plastic
<b>IP RATING</b>	IP67 rated housing ensures device can withstand fine dust, high-pressure spray, submersion for 30 mins in 1m of water, and extreme temperatures.
<b>INSTALLATION</b>	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.
<b>OPERATING TEMPERATURE</b>	-20°C to +60°C For operation in extreme temperatures use LTC Batteries.
<b>GPS ANTENNA</b>	Internal
<b>CELLULAR ANTENNA</b>	Internal
<b>3-AXIS ACCELEROMETER</b>	3-Axis Accelerometer to detect movement, acceleration, high G-force events, and more.
<b>DIAGNOSTIC LED</b>	Diagnostic LED signifies operation status.
<b>FLASH MEMORY</b>	Store weeks of records if device is out of cellular coverage. Storage capacity for over 10 days of continuous 30-second logging.

## INTERFACES

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

## SMARTS

<b>AUTO-APN</b>	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.
<b>BATTERY LIFE MONITORING</b>	Built-in Battery Meter for monitoring battery use and remaining life predictions.
<b>ENVIRONMENTAL MONITORING</b>	Interface with a range of sensors such as temperature, humidity, moisture, depth, and more.
<b>GEOFENCING</b>	Create custom geofences and alerts if an asset enters or leaves specific locations.
<b>GEOFENCE DOWNLOAD TO DEVICE</b>	Geofences can be downloaded directly to the device from Telematics Guru for enhanced location-based actions and alerts. Maximum of 100 Geofences with up to 100 points per geofence.
<b>IMPACT DETECTION</b>	Configure impact-detection alerts when g-forces are exceeded by a user-defined threshold.
<b>PERIODIC OR MOVEMENT-BASED</b>	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.
<b>PREVENTATIVE MAINTENANCE</b>	Set reminders based on distance traveled and run hours to reduce maintenance and repair costs.
<b>REAL-TIME TRACKING</b>	Device remains continuously connected while on the move for real-time asset tracking.* *Optional when device is externally powered.
<b>THEFT RECOVERY</b>	Switch to Recovery Mode in the case of theft or loss to activate real-time tracking at 30-second intervals for asset retrieval.
<b>RUN HOUR MONITORING</b>	Capture run hours based on movement to understand and optimize asset utilization.
<b>SLEEP MODE</b>	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

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

## INTEGRATION

<b>THIRD-PARTY INTEGRATION</b>	Webhook, TCP or HTTPS, Direct and Data Splitting Integration Options
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## SECURITY

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

<b>MANUFACTURER'S WARRANTY</b>	One year manufacturer's warranty.
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## CERTIFICATIONS

<b>Please contact us for a full list of compliance specifications and documentation for your region.</b>	<b>4G</b> - FCC, ISED, CE (Doc) <b>2G</b> - CE (Doc)
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Learn more at [www.zenduit.com](http://www.zenduit.com)

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