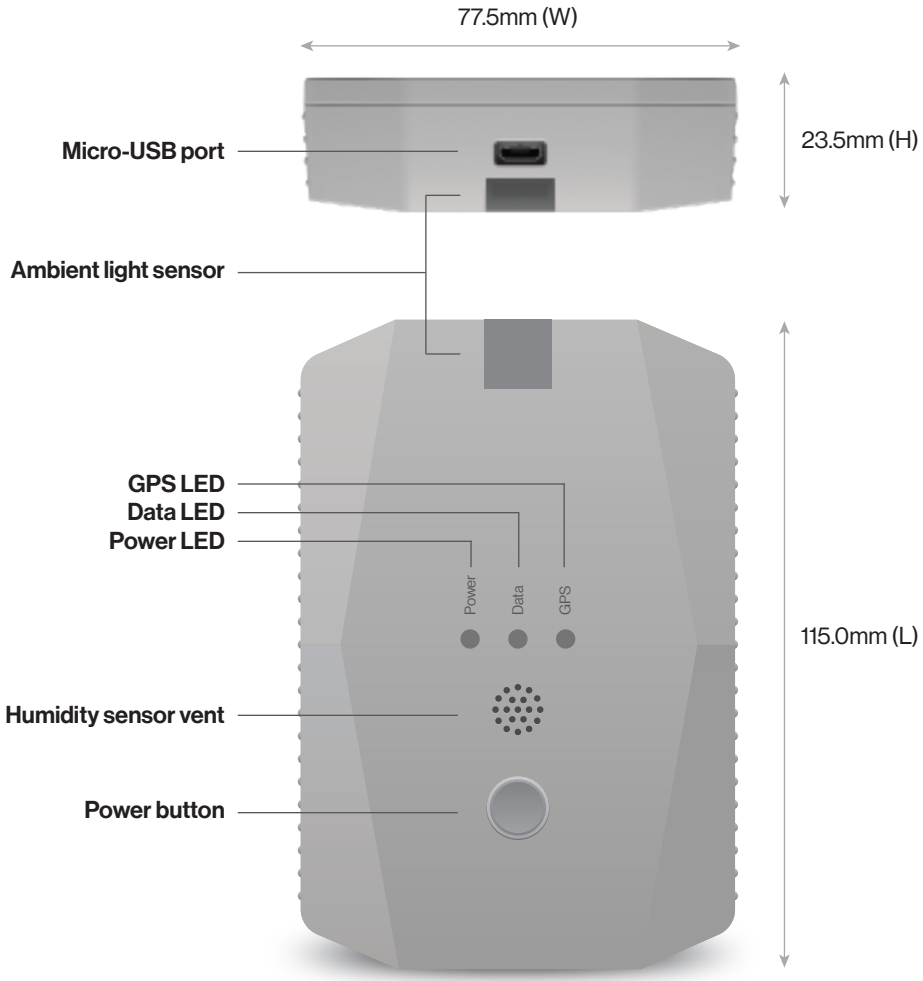
Description

Solving business challenges is tough enough without having to figure out complex sensor solutions. Get right to the data you need to solve those challenges with the Verizon Critical Asset sensor. The solution is built to tackle many different IoT use cases from tracking a mobile asset to monitoring an indoor environment.

Interfaces



Verizon Critical Asset Sensor

Specifications

Radios

Name	Description
Modem	Cat-M1 (QCOM 9206) - Band 13
GPS & GNSS	GPS 1575.42 MHz (L1) GNSS 1602 MHz
Mobility	Yes

Certifications

Name	Description
Environmental	RoHS
Regulatory (i.e. FCC, CE)	FCC: Part 15, 22, 24
Cellular	Verizon Open Development Certified

Enclosure

Name	Description
General (i.e. Industrial)	Industrial
Dimensions	115.0mm (L) x 77.5mm (W) x 23.5mm (H)
IP6X	IP66 - Rated as "dust tight" and protected against heavy seas or powerful jets of water.
Shock & vibration	3ft onto concrete / up to 500Hz random 1.25G rms

Environmental

Name	Description
Operational temperature	- 20 ºC - 75 ºC
Storage temperature	- 20 ºC - 75 ºC
Humidity	<95% non-condensing

Verizon Critical Asset Sensor

Specifications

Sensors

Name	Description	Condition
Accelerometer	3-axis: +/- 2g, vibration: 0-500hz	Shock, vibration, orientation
Gyroscope	Yes	Angular velocity
Temperature	-20 ºC - 75 ºC +/- 0.5 ºC	
Humidity	0% - 95% RH	
Pressure (Barometer)	300 - 1100 hPA	
Ambient light	0k - 64k lux	Open box

Interfaces

Name	Description
Power	Micro USB

Battery

Name	Description
Battery	4000mAh Rechargeable Li-oN

Battery life estimates*

Sensor read frequency	Reporting frequency	Estimated battery life
15 min	15 min	14 days
15 min	1 hr	90 days
15 min	4 hrs	180 days
15 min	24 hrs	360 days

Name	Description
Battery Charge Time	4 hrs from 0 - 80%

**Battery life may vary*

Indicator/Buttons

Name	Description	Condition
LED	3 LED programmable	Battery, LTE connectivity, GPS
Button	Touch sensitive (power/reset-long press, data transmit-short press)	

Specifications

Sensor reads/reports

Name	Description	Condition
Sensor read frequency	Fixed	1 - 525600 min
Sensor data report frequency	Fixed	1 - 525600 min

Sleep modes

Name	Description
Deep sleep	Yes
Out of coverage sleep	Yes

Firmware update

Name	Description
Application FOTA	Yes
Local (USB)	No

Alerts

Name	Description
Sensor: instantaneous	On all sensors via programmable threshold via API
GPS jamming detection	No

Remote device configuration

Name	Description
Sensor read configuration	Yes
Reporting configuration	Yes
Activate/deactivate	Yes

Verizon Critical Asset Sensor

LED System Function

Power LED

State	LED Color	LED Description
Power ON	🔴🟡🟢	**1.** Cycles through all colors for 3 seconds **2.** Device power up: • LED ON, color indicates battery level **3.** Battery level indicator: • Red ON: below 20% charge • Yellow ON: 20% - 40% charge • Green ON: 40% - 100% charge
Power OFF	🔴🟡🟢	**1.** Flash/cycle all colors for 3 seconds **2.** Device will power OFF
Charging	🔴🟡🟢	**1.** Blink rate: 1 second ON/1 second OFF **a.** Red: below 20% charge level **b.** Yellow: 20% - 40% charge level **c.** Green: 40% - 99% charge level **2.** Green ON: 100% fully charged

GPS LED

State	LED Color	LED Description
Acquiring GPS location	🟢	Blink rate: 1 second ON/1 second OFF
GPS location acquired	🟢	ON: GPS location has been acquired

Data LED

State	LED Color	LED Description
Network search	🟢	Blink rate: 200ms ON/1800ms OFF
Register/idle	🟢	Blink rate: 1800ms ON/200ms OFF
Data transfer	🟢	Blink rate: 125ms ON/125ms OFF

FOTA LED Sequence

State	LED Color	LED Description
FOTA Update	🟢	**1.** FOTA in progress: Power and GPS LEDs rapid blink (0.5 seconds ON/0.5 seconds OFF). **2.** Once the firmware update is complete, the device will perform power-on-reset (power OFF and back ON)
40% - 100% battery charge	🟢	Green short, fast blinks
20% - 40% battery charge	🟡	Yellow short, fast blinks
Below 20% battery charge	🔴	Red short, fast blinks

When FOTA update is complete, LED returns to charging-only sequence.