

SMARTbox nano

IoT Gateway for GPS Tracking with OnBoard Sensors

SMARTbox nano is a battery-powered cellular gateway with integrated sensors. Designed for use in industrial environments, it provides the ideal solution for companies that want to track and monitor goods and assets. SMARTbox nano leverages Cumulocity's IoT cloud and the Cloud of Things, allowing customers to easily integrate this data into one platform.



Keyfeatures

- GPS tracking
- Wi-Fi Location Determination
- OnBoard: Temp, Feuchte, Beacon Support
- Universal cloud platform for easy handling
- SIM-free selection



FUNK



NBIOT / LTEM	B1 B2 B3 B4 B5 B8 B12 B13 B18 B19 B20 B25 B28 B66 B71 B85 B103
2G	B2 B3 B5 B8
Regions	WorldWide
4G LTE (optional)	optional LTE Cat 1 B1(2100) B3(1800) B7(2600) B8(900) B20(800)
Bluetooth	Protocol: Bluetooth v4.2 BR/EDR and BLE specifications NZIF receiver with -97 dBm sensitivity Class-1, Class-2 and Class-3 transmitter
Wi-Fi	Protocol: 802.11 b/g/n (802.11n up to 150 Mbps) Frequency Range: 2.4 GHz ~ 2.5 GHz

Location Services



GNSS	GPS, GLONASS, BeiDou, Galileo, and QZSS
Wi-Fi	Wi-Fi location by Google API (<10m)
Cells	Cell location service through Google API (<200m)
Tracking	Location services: · Wählbare Optionen (GNSS-WiFi-Cell, WiFi-GNSS-Cell, WiFi, GNSS) Tracking by: · Start (selectable acceleration threshold and deceleration time – max 127s) · Stop (selectable acceleration threshold and deceleration time – max 2048s) · Motion (selectable acceleration threshold and deceleration time – max.12s)

Sensors



Movement	· Motion 3-axis accelerometer, $\pm 2g$ / $\pm 4g$ / $\pm 8g$ / $\pm 16g$ · Continuous operation · Data rate 1hz (up to 5300 Hz possible) · Shock detection
Battery	2.8% Accuracy of RSOC
Temperature	Temperature accuracy · -0.5 between 15°C and 40°C · -1 from 0°C to 15°C and from 40°C to 60°C · -2 from -40°C to 0°C and from 60°C to 85°C
HACCP	· Temperature detection according to EN12830 and humidity · Storage of 96 temperature values per day, publication in the cloud 1 x daily

Sensors



Humidity	• Motion 3-axis accelerometer, $\pm 2g$ / $\pm 4g$ / $\pm 8g$ / $\pm 16g$ • Continuous operation • Data rate 1Hz (up to 5300 Hz possible) • Shock detection
Atmospheric pressure	Pressure sensors: 300-1100 hPa • The recording interval of the sensor readout can be selected from 10 sec. to 3 hours, max. 96 logs for intermediate buffering, until transmission to the cloud
Air quality	• Air quality index (IAQ): 00,500 according to the guidelines of the German Federal Environment Agency See also: Air data Federal Environment Agency

IAQ Index	Air Quality	Impact (long-term exposure)	Suggested action
0 – 50	Excellent	Pure air; best of well-being	No measures needed
51 – 100	Good	No irritation or impact on well-being	No measures needed
101 – 150	Lightly polluted	Reduction of well-being possible	Ventilation suggested
151 – 200	Moderately polluted	More significant irritation possible	Increase ventilation with clean air
201 – 250	Heavily polluted	Exposure might lead to effects like headache depending on type of VOCs	Optimize ventilation
251 – 350	Severely polluted	More severe health issues possible if harmful VOC present	Contamination should be identified if level is reached even w/o presence of people; maximize ventilation & reduce attendance
>351	Extremely polluted	Headaches, additional neurotoxic effects possible	Contamination needs to be identified; avoid presence in room and maximize ventilation

• The recording interval of the sensor readout can be selected from 10 sec. to 3 hours, max. 96 logs for intermediate buffering, until transmission to the cloud

CO ₂ , VOC	• eCO₂: Equivalent CO₂ (eCO₂) emissions • eTVOC: Equivalent total volatile organic compounds (eTVOC) • The recording interval of the sensor readout can be selected from 10 sec. to 3 hours, max. 96 logs for intermediate buffering, until transmission to the cloud
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Beacon	Beacon Support: · Temp / Humidity / Light: iB004N Plus SHT LT · Temp / Humidity: iB003N-SHT · Distance: 0...2m ACN_Range · Max. 20 beacons in parallel connection · To integrate additional beacons, contact Pssystec
LED	Signal LED: · Off - the device is in sleep mode · Slow flashing - The device is operational and in power saving mode
USB	USB 2.0 HS programming, logging and tracking of the device

Battery / Lifetime



Consumption	Silence: 50µA Skiing mode: 12mA Operating mode: 150 mA
Accumulator	· Rechargeable NIMH LSD 5500 / 6000mAh · >7Monate@1Nachricht per day · Optional: Charge the device by Qi standard or by USB interface The USB must support a minimum current of 500mAh.
Primary cell	· 6000mAh LiFES2 primary battery · >5Jahre@1Nachricht per day · Turn on: Hold the magnet in the marked area for 4-6 seconds. The LED flashes briefly at the beginning. Remove the magnet for at least 5-7 seconds. LED flashes during the 5 seconds and lights up permanently for a short time at the end. The device is turned on. · Switch off: Hold the magnet in the marked area for 4-6 seconds. Remove the magnet for at least 5 seconds. LED flashes during the 5 seconds, quickly at the end. The device is switched off.

MANAGEMENT PLATFORM



Supported Platforms	Telekom Cloud, Cumolocity IoT, AI, Mindsphere, ooredoo, Telia, ... und mehr
Communication	MQTT, LWM2M OMA, https, TLS, TCP, UDP, HTTP
Access	Bi-directional communication
OTA	yes
FOTA	yes



GENERAL

Dimensions	99.7 x 55.2 x 28
Weight	89g battery
Assembly	By magnetic base or wall mounting using M4 screws and 16kg
LTE Ant.	Onboard
WiFi Ant.	Onboard
SIM card	Onboard
BLE Ant.	Onboard
GPS Ant.	microSim / eSim option
Operation-T/H	Accumulator: Charging: 10~45°C Discharge: -20~60°C Max. 85% Primary cell: -55° C to +85° C
Warehouse T	-40...85° C / Max. 85% / Battery / Primary cell: -55° C to +85° C
IP Class	IP67
Approval	
Conformance	2014 / 53 / EU (Radio Equipment Directive) Funk EN301511 v12.5.1 EN301908 v13.1.1 EMC (Electromagnetic Compatibility) EN 301489-1 v2.2.0 General Part EN 301489-52 v1.1.0 DIN EN 61326-1 - 2018-09 Safety DIN EN 61010-1:2020-03; VDE 0411-1:2020-03 Cybersecurity EN 18031:2024
Guarantee	1 year

Remote Manager

(Remote Management) Third-Party

IoT Platforms

Fleet management:

Activate, monitor and diagnose

Your devices from a single point of view –

your desktop or mobile app

Monitor the health of your networked

by creating diagrams of various

Evaluate widgets. Here you will find a large selection of evaluation options available.

Cockpit:

Creating a threshold monitor,

Events, critical alarms, alerts, and reports

Open API:

Generate notifications or use

simply use the REST API from the cloud platform to

Provide your third-party systems with all the data.



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