

## TECHNICAL SPECIFICATIONS

# IoT X

Model No. MR 816

### Accessible and Reliable Monitoring

SkyCell IoT X is a wireless multi-use data logger designed for reliable pharma shipment monitoring. Lightweight, durable, and compact with an industry-leading long battery life, it ensures cost-effective tracking of critical environmental conditions during transit.

### Key Features

- **Location Tracking**

Near real time location tracking using our established gateway infrastructure.

- **Sustainability and Reusability**

Meet sustainability goals by assessing, refurbishing, and reintroducing the loggers into the supply chain.

- **Shipment Monitoring**

The SkyCell IoT X logger ensures precise temperature monitoring from  $-40^{\circ}\text{C}$  to  $+75^{\circ}\text{C}$ , providing actionable insights to safeguard the integrity of the pharmaceutical payload and enabling timely interventions through milestone-based tracking.



### Internal Temperature Sensor

Measurement Range	<b><math>-40^{\circ}\text{C}</math> to <math>+75^{\circ}\text{C}</math></b>
Accuracy	<b><math>\pm 0.2^{\circ}\text{C} &gt; 0^{\circ}\text{C}</math>, <math>\pm 0.3^{\circ}\text{C} &lt; 0^{\circ}\text{C}</math></b>
Calibration	<b>Three point calibration at <math>-20^{\circ}\text{C}</math>, <math>0^{\circ}\text{C}</math>, <math>+30^{\circ}\text{C}</math> Traceable to national standards (as NIST, UKAS, DAkkS or equivalent)</b>
Recalibration	<b>Every 12 months</b>

### Internal Humidity Sensor

Measurement Range	<b>0..100%</b>
Accuracy	<b>2% RH</b>
Resolution	<b>0.1% RH</b>
Amount of Stored Readings	<b>8'192 (equals to 57 days at 10 min measurement interval)</b>

### Mechanical Specification

Weight	<b>35g</b>
Dimensions	<b>64 x 38 x 10 mm</b>
IP Rating	<b>IP67 (waterproof, submersible up to 1 meter for 30 minutes)</b>
Flammability Rating	<b>UL94 HB</b>

### Operating Specification

Battery Life	<b>1y (up to 2y with custom configuration)</b>
Mount	<b>Optional holder with adhesive tape and screw holes/cable tie mount</b>
Operating Temperature Range	<b><math>-40^{\circ}\text{C}</math> to <math>+75^{\circ}\text{C}</math></b>
User Interface	<b>1x RGB LED 1x push button</b>



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## Wireless Communication

Transmission Interval	<b>10 minutes (custom configuration on request)</b>
Connectivity	<b>Fully automated readout via SkyCell's LoRa gateway network or via IoT X Connect</b>
Wireless Communication Standards	<b>LoRa, BLE</b>
Frequency Band	<b>2.4 GHz global ISM band 2.4 to 2.48 GHz</b>
RF Transmission Power	<b>max. 12.5 dBm/ 17.8 mW TX power</b>

## Approval

Airline Approval	<b>Approved by major airlines as cargo tracking device complies with EASA, AMC1 CAT.GEN.MPA.140, 2019</b>
Conformity	<b>CE, FCC</b>
EU directives	<b>2014/30/EU Electromagnetic Compatibility (EMC) 2014/53/EU Radio Equipment Directive (RED) 2014/45/EU Low Voltage Directive (LVD) 2015/863/EU on the Restriction of Hazardous Substance (RoHS3)</b>
FCC ID	<b>2A2SN-SKYCELL816</b>

Standards	<p><b>EN 301 489-1 V2.2.3 (EMC)</b>  <b>EN 301 489-17 V3.2.4 (EMC)</b>  <b>EN 300 328 V2.2.2 (Radio)</b>  <b>EN 62368-1:2014+A11:2017 (Electrical Safety)</b>  <b>EN 50663:2017 (RF Exposure)</b>  <b>EN 63000:2018 (RoHS)</b>  <b>FCC Part 15 C : 15.203 (Radio)</b>  <b>FCC Part 15 C : 15.205 (Radio)</b>  <b>FCC Part 15 C : 15.207 (EMC)</b>  <b>FCC Part 15 C : 15.209 (EMC)</b>  <b>FCC Part 15 C : 15.247 (Radio)</b>  <b>47 CFR Part 2.1091 (RF Exposure)</b>  <b>RTCA DO-160, Section 21, Category H (RF radiated emissions)</b>  <b>UN38.3 (Battery)</b>  <b>UL 1642 (Battery)</b></p>
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**One logger for your entire supply chain:** SkyCell IoT X is a long-lasting logger providing an uninterrupted timeline of temperature and milestones.

