1. SKYCELL SAVY SENSOR OVERVIEW

The SkyCell Savy Sensor is a wireless data logger for measuring, and recording various environmental conditions, such as temperature. Data is logged in defined intervals, when in proximity of a SkyCell gateway the data is uploaded to the SkyCell cloud.

SkyCell Savy Sensor

Product Name:	SkyCell Savy Sensor
Product Model(s):	800
Wireless connection:	BLE 5.0, 2.4 GHz, max. 4 dBm/ 2.5 mW TX power NFC, 13,56 MHz, passive mode only
Power supply:	Internal button cell battery, CR2477 3 Volt, 950 mAh, max. 270 mg lithium content
Temperature range:	-30 .. 80 °C operational -40 .. 80 °C storage, transport
Manufacturer:	SkyCell AG Hardturmstrasse 11, 8005 Zurich, Switzerland

SkyCell Gateway

Different gateways can be used:

- Stationary SkyCell Savy Gateway
- SkyCell mobile application using a tablet/ mobile as gateway

Further instructions are provided in the according gateway user manual.

SkyCell Cloud

Depending on the application, multiple SkyCell front ends/ applications are provided to view/ process the logged data:

- SkyNet web application
- SkyCenter mobile app
- SkyCell SECURE web application
- SkyShip mobile app

Further instructions are provided in the according front end/ application user manual.

2. DEFINITIONS AND ABBREVIATIONS

BLE	Bluetooth low energy
NFC	Near field communication

3. REFERENCES

- Radio Equipment Directive 2014/53/EU, European Union (EU)
- Part 15 - Radio Frequency Devices, Federal Communications Commission (FCC)
- DO-160, Environmental Conditions and Test Procedures for Airborne Equipment, RTCA
- UL 1642, Safety Lithium Batteries, UL Standard
- UN 38.3, UN manual of tests and criteria, United Nations

4. OPERATING INSTRUCTIONS

Storage of Sensor

If not in use and to preserve battery lifetime, store the sensor at room temperature.

Start Logging/ Configuration

To configure and start the logging functionality, the sensor has to be initializes using the according mobile application. The configuration has to be initialized via NFC. The location of NFC antenna is indicated on the label on the back side of the sensor.

Data Logging/ Read Out

Temperature data is logged and stored on the sensor in defined intervals. The sensor can store data of at least 6 months without a connection to a gateway.

The sensor regularly scans if a SkyCell gateway is in proximity. If a connection to the SkyCell gateway can be established, the logged data is uploaded to the SkyCell cloud.

A gateway has a range of approximately 50 meters depending on the location of set-up.

Battery Lifetime/ Battery Exchange

The battery lifetime depends on the configuration and use case. The design guarantees >6 months operation, but depending on the use case more than 12 months can be achieved.

Battery exchange is only allowed by authorized and trained personnel.

5. DISPOSAL

Electronic devices are recyclable and do not belong in the household waste. Dispose of the product at the end of its service life in accordance with applicable laws. Remove any batteries and dispose of them separately from the product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

6. EU – DECLARATION OF CONFORMITY

SkyCell AG declares that SkyCell Savy Sensor, Model Nr. 800 complies with the essential requirements and other relevant provisions of directive 2014/53/EU. A copy of the declaration of conformity is available on request.

7. FCC COMPLIANCE STATEMENT

FCC ID: 2A2SN-SKYCELL800

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
CAUTION: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
– Reorient or relocate the receiving antenna.
– Increase the separation between the equipment and receiver.
– Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
– Consult the dealer or an experienced radio/TV technician for help.
This equipment has been tested and meets applicable limits for radio frequency (RF) exposure. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

8. AIRLINE APPROVAL

The SkyCell Savy Sensor is approved by several airlines, a detailed list of airline approvals can be provided upon request.

Power

The SkyCell Savy Sensor operates with one internal standard Lithium coin cell battery, type CR2477. As the coin cell has a lithium metal content less than 1 g the SkyCell Savy Sensor is not subject to all of the provisions of the DGR. As such the SkyCell Savy Sensor can be safely transported by aircraft as a non-DGR and no marking or documentation is required for a consignment.

The CR2477 coin cell battery has passed tests according to UL 1642 and is certified according to the UN38.3 standard for safe transport. Documentation can be provided upon request.

Radio Frequency Transmission

The SkyCell Savy Sensor is categorized as a portable electronic device (PED).

The SkyCell Savy Sensor uses a low-powered wireless communications with a EIRP < 100 mW or 20 dBm and as such not require an automated radio suspension in flight. However the SkyCell Savy Sensor has an intrinsic feature that no transmission is initiated, unless a gateway is identified in proximity.

The SkyCell Savy Sensor meets in all modes of operation the RF radiated emissions limits defined in RTCA DO-160, Environmental Conditions and Test Procedures for Airborne Equipment, Section 21, Category H. As such ensuring that the RF systems and sensors of an aircraft are not interfered with.

9. CHANGE HISTORY

Document No.	Date	Changes
GBL-PMO-SOP-002.0-D	11-NOV-2021	New Document
GBL-PMO-SOP-002.1	11-NOV-2021	Released Document
GBL-PMO-SOP-002.1-D	08-DEC-2021	Operation temperature range changed to +80 °C Battery lifetime added & airline approval clarified Confidentiality removed. Wording changed from battery to “coin cell battery”.
GBL-PMO-SOP-002.2	09-DEC-2021	Released Document

10. APPROVAL

	Name, Function	*Date*	*Signature*
Author	**Luzian Hürlimann** Project Manager IoT	09-Dec-2021	Luzian Hürlimann
Review	**Mark Lehmann** Senior PMO Manager	10-Dez-2021	Mark Lehmann
Approval	**Nico Ros** CTO	09-Dez-2021	Nico Ros