SEKSTANT™
Global Guidance


# Sekstant Gateway
## **Data Sheet**

MAERSK
CONTAINER INDUSTRY

The Sekstant Gateway is a fully encapsulated and rugged secure communication device specifically designed for the marine environment according to MCIs reefer standards.

The Sekstant Gateway is designed to be mounted on the outside of the reefer with a self-tightening nut. It includes the antennas, global LTE cellular technology with 2G and 3G fallback, GNSS as well as Bluetooth Low Energy.

Connected to the Star Cool Reefer controller system, the Sekstant Gateway together with the Sekstant platform form a unique ecosystem to remote control, update and monitor the Star Cool reefer.

A simple device user interface, combined with a mobile app, enables the user to quickly monitor the state of the device and troubleshoot if necessary.

**Features & Benefits**

- One-piece design enables rapid installation and reduced complexity.
- Truly global LTE connectivity with 2G and 3G fallback.
- Global positioning feedback. GNSS receiver (GPS / QZSS, GLONASS, Galileo, BeiDou).
- Simple user interface combined with mobile app ensures fast monitoring and troubleshooting.
- Fully automated commissioning process.
- Rugged design for harsh marine environments (IP66 and IP67).
- Easy replacement and installation of battery (shared with the reefer controller).
- Secure communication on all interfaces.

## Power Supply

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|---|---|
| Power supply input voltages | 18-36V AC/DC, 13W max. (50/60Hz +- 2.5Hz) |
| External fuse needed | No |
| External battery backup input voltage range | 6-15V DC |
| Shared battery supply with Star Cool reefer controller | Yes<br>Note: Battery with higher capacity needed to operate reefer controller and Gateway. |
| Polarity protection | Yes |
| Over and under voltage protection | Yes |

## Wireless Connectivity

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|---|---|
| 2G GSM (SMS, GPRS, EDGE) | QUAD band GSM/GPRS<br>(850/900/1800/1900 MHz)<br>SMS, GPRS, EDGE |
| 3G UMTS (HSPA, HSPA+ Cat8) | Seven Bands UMTS (WCDMA/FDD):<br>800, 850, 900, 1700/2100 (AWS), 1800, 1900 and 2100 MHz<br>(bands 1, 2, 4, 5, 8, 9, 19) |
| 4G LTE Cat 1 | Wide band LTE support<br>Twelve Bands FDD-LTE: 700, 800, 850, 900,<br>1700/2100 (AWS), 1800, 1900, 2100, 2600 MHz<br>(bands 1, 2, 3, 4, 5, 7, 8, 12, 18, 19,20, 28) |
| Bluetooth Low Energy | BLE 5.0. |
| SIM technology | MFF2 eSIM (soldered). |

## Digital Inputs & Outputs

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|---|---|
| Serial communication | - Reefer controller communication via RS232<br>- RS485 |

## Global Positioning

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|---|---|
| GNSS technologies | GPS / QZSS, GLONASS, Galileo, BeiDou.<br>Concurrent reception of up to 3 GNSS. |
| Geofences | Remote geofence updates.<br>Geofences with up to 10 vertices - Up to 2.000 individual geofences supported. |

## Commissioning, Troubleshooting & Service

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|---|---|
| Commissioning | Automatic commissioning process without user interaction. |
| Troubleshooting | Sekstant Assistant App via mobile phone.<br>Multicolor LED. |
| Device user interface | Multicolor LED on gateway for gateway operation verification. |

## Security

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|---|---|
| Secure communication | Yes. On RS485 and all wireless interfaces. |

## Environmental Specifications

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|---|---|
| Storage conditions | -40°C to +85°C (-40°F to 185°F) , 15-100% relative humidity. |
| Operating conditions | -40°C to +75°C (-40°F to 167°F), 15-100% relative humidity.<br>Marine environment with direct sun exposure, industrial pollutants, cleaning/ washing, urban areas.<br>Salt laden air and sea spray, according to EN 60068-2-52 (severity level 1). |

## Physical Specifications

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|---|---|
| Ingress protection class | IP 66<br>IP 67 |
| Mounting method | One-hole mounting (27mm hole).<br>Fully integrated and protected into Star Cool reefers via communication plate. |
| Mechanical concept | One-piece design.<br>No additional antenna is needed |
| Dimensions | 289.3 x 126.4 x 26/64.1 mm<br>11,4 x 5,00 x 1,02 in |

## Approvals / Directives / Regulatory / Compliance

| | |
|---|---|
| Approvals | - FCC/IC<br>- CE<br>- RED<br>- RoHS<br>- WEEE |

**USA:**
FCC ID: 2AUZI-819628A
Contains FCC ID: QIPPLS62-W

FCC statement
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.

Notes: Changes or modifications not expressly approved by the manufacturer 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.

RF Exposure Information
This device meets the government's requirements for exposure to radio waves.
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.
This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

**Canada:**
ISED ID: 25568-819628A
Contains IC: 7830A-PLS62W

ISED Notice

This device complies with Innovation, Science and Economic Development Canada license-exempt RSS standard(s). Operation is subject to the following two conditions:

(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en

- This Class B digital apparatus meets all requirements of the Canadian InterferenceCausing Equipment Regulations.
- Cet v numérique de la classe B respecte toutes les exigences du ReglementCanadien sur le materiel brouilleur.
- This device complies with Industry Canada RSS Appliance radio exempt from licensing.

ISED RF Exposure Statement
This device complies with ISED RSS-102 RF exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the IC RSS-102 RF exposure limits, human proximity to the antenna shall not be less than 20cm (8 inches) during normal operation.

Cet appareil est conforme aux limites d'exposition aux rayonnements de la CNR-102 définies pour un environnement non contrôlé. Afin d'éviter la possibilité de dépasser les limites d'exposition aux fréquences radio de la CNR-102, la proximité humaine à l'antenne ne doit pas être inférieure à 20 cm (8 pouces) pendant le fonctionnement normal.

**Europe:**
EMC, Safety, and Radio Equipment Directive (RED) Compliance
The CE mark is affixed to this product to confirm compliance with the following European Community Directives:

- Council Directive 2011/65/EU and its amended directive 2015/863/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment;
- CouncilDirective2014/53/EU on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

Maersk Container Industry AS, declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. The declaration of conformity may be requested at https://ipaper.ipapercms.dk/MCI/sekstant/declaration-of-conformity/ .

Restriction of the Use of Hazardous Substances (RoHS)
Maersk Container Industry AS, Certificate of Compliance 2015/863/EU Maersk Container Industry AS, confirms that its embedded products comply with the chemical concentration limitations set forth in the directive2015/863 of the European Parliament (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment - RoHS).

This Maersk Container Industry AS, product does not contain the following banned chemicals:
- Lead, [Pb] <1000 PPM
- Mercury, [Hg] <100 PPM
- Cadmium, [Cd]<100 PPM
- Hexavalent Chromium, [Cr (VI)] <1000 PPM
- Polybrominated Biphenyl, [PBB] <1000 PPM
- Polybrominated Diphenyl Ethers, [PBDE] <1000 PPM
- Bis(2-Ethylhexyl) phthalate (DEHP): <1000 ppm
- Benzylbutylphthalate(BBP): <1000 ppm
- Dibutylphthalate(DBP):<1000 ppm
- Diisobutylphthalate(DIBP):< 1000 ppm