



SYS-D14-MED INSTALLATION, USE AND WARNINGS MANUAL

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1 Preliminary information

1.1 Device description

The **SYS-D14-MED** device is a gateway enclosed in a metal box with a heat sink.

The **SYS-D14-MED** allows the connection between the LAN (local area network) and the device to which it is connected via ETH or WiFi, also implementing some cybersecurity measures (such as antivirus and firewall).

Its purpose is to isolate the LAN (local area network) from the device to which it is connected. The **SYS-D14-MED** give to the user the possibility to take log files from the system, analyze them and upload them to a central repository, helping to create a remote inventory database.

The technology developed by **SECO S.p.A.** for the **SYS-D14-MED** device can be used and applied in various fields, such as:



Digital Signage
Infotainment



Edge
Computing



Robotics

1.2 Recipients

This manual is intended for ordinary people and installers (expert users).



Important! The user must read this manual before start with any kind of operation.

1.3 Warranty

The warranty shall be **voided** in the event of:

- failure to comply with safety regulations;
- tampering with the device;
- changes to the safety conditions established by the Manufacturer in the device management software;
- improper use of the device;
- use of the device by untrained and/or unauthorized personnel or failure to respect duties, as indicated in the manual;
- changes or repairs carried out by the user without written authorization from the Manufacturer;
- partial or total failure to comply with the instructions;
- defects in the mains power supply (electricity, power supply, etc.);
- poor maintenance;
- use of non-original spare parts;
- exceptional events such as floods, fires (if not triggered by the device).

The complete warranty terms are set out in the sales contract.



Important! The Manufacturer is not liable for improper use of the device.

2 Identification

2.1 Manufacturer identification

MANUFACTURER	SECO S.p.A
Address	Via Achille Grandi n°20 52100 Arezzo – Italy Tel: +39 0575 26979 Fax: +39 0575 350210

2.2 Device identification

Device	SYS-D14-MED
Serial number	YYMMXXXXX
Year of manufacturing	2020

2.3 Device identification plate

The device is equipped with an **identification plate** located on the side. The plate features the device identification information to be reported to **Seco S.p.A.** if necessary.



Caution! It is strictly forbidden to remove the identification plate and/or replace it with other plates.

3 Technical specifications

3.1 SYS-D14-MED device hardware specifications

The table below features the board hardware specifications:

Processor	Atom E39xx
Memory	Up to 8 GB RAM
Mass Storage	Up to 64 GB eMMC
Network connection	• 3x GBE • Wi-Fi + Bluetooth module on M.2 Key E (INTEL® WIRELESS-AC 9260, 2230) - Hot Spot e Access Point functionality • WiFi/BT Antennas PULSE W1043
USB	2x USB 3.0 Host ports, Type A
Video	2x Mini DP connector (only used to set-up the BIOS and debugging)
Power Supply model	Manufacturer: EDAC Power Electronics Co., Ltd.; P/N: EM10681V (22) (class.1)
Power connector	Jack 3.5mm
RTC Battery	Not rechargeable Lithium battery CR2032
Operating System	Edgehog OS Linux
Operating temperature in user environment	0 °C ÷ +40 °C**
Operating humidity in user environment	5 % ÷ 85 %
Transport / storage room temperature range	- 10 °C ÷ + 50 °C
Transport / storage relative humidity range	5 % ÷ 90 %
Atmospheric Pressure	70 kPa ÷ 106 kPa
Altitude	Up to 2000 m
Max Freq. Oscillators	32.678 KHz; 19.2 MHz; 25 MHz; 1.8 GHz

IP insulation grade	IP20
Type of installation	Fastening with screws



Attention! **The values indicated refer to the **maximum temperature of the environment of use** of the device. It is the customer's responsibility to verify that the temperature remains within the admissible range indicated in this manual and, if necessary, adopt any passive cooling solution together with an application-dependent cooling system that can ensure that the heat sink temperature will not damage the device itself and/or the connected mechanical parts.

3.2 Software Specifications

D14XXYY.BBB software version, where:

- XXX is 000 in standard version and assumes other values in customized versions
- YY is the revision
- BBB is the BIOS version

Software version is released on the SECO website <https://www.seco.com> and is always updated and available, even in later versions.

3.3 CE reference directives

SECO S.p.A. places the device on the market, equipping and providing it with:

- CE marking as IT device
- Declaration of Conformity
- User manual

Please also note that the device has been designed according to the following Directives:

- 2014/30/EU Electromagnetic Compatibility Directive
- 2014/53/EU (RED) (Where applicable, depending on the versions)
- 2012/19/EU (WEEE)
- 2011/65/EU (RoHS)

the device also meets the requirements of the following standards:

- IEC 62368-1 ed. 3.0
- IEC 60601-1 ed. 3.1
- IEC 60601-1-2 ed. 4
- IEC 60601-1-6:2010 + A1:2013

- IEC 62366:2007 + A1:2014

During the IEC 60601-1-2 ESD test it might be happening monitor DP video interface splash. It is normal because DP video interface will be used only for maintenance and updating.

3.4 FCC disclaimer

This device complies with the FCC Rules and Contains Transmitter Module FCC ID: 2ALZB-D14MED

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 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.

3.5 IC disclaimer

This device complies with the IC Rules and Contains Transmitter Module IC: 22688-

D14MED This Class B digital apparatus complies with Canadian ICES-003.

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.

CAN ICES-3(B)/NMB-3(B)

This device complies with Industry Canada's licence-exempt RSSs. 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 d'Industrie 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;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de rf.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

4 Safety devices

4.1 Warnings



Caution! It is the user's responsibility to apply preventive and protective measures, in accordance with the legislation of the country of installation and use of the device.



Caution! Only use the power supply, screw for ground connection, power cord and antennas supplied by the manufacturer.



Caution! Only connect certified peripherals / devices to the device.



Important! Operations on the device must be carried out by specialized and authorized personnel only.



Caution! Always disconnect the electrical power supply before carrying out any work on the device.



Caution! Check that the electrical voltage meets the values indicated in this manual before connecting the device.



Caution! Disconnect the device from any power source before cleaning.



Warning! The enclosure of the device must be cleaned only with a dry cloth.



Caution! Do not pour liquids of any kind on the device. This may cause fires and/or electric shocks.



Caution! Keep the device away from exposure to moisture values outside the admissible range indicated in this manual.



Caution! The device must always be fixed to a machine before proceeding with any type of operation and/or use.



Caution! To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.



Caution! It is strictly forbidden to modify the appliance in order not to compromise the characteristics relating to the declared requirements.



Caution! Make sure that any part of the device cannot come in contact with an unconscious, anaesthetized or incapacitated patient.



Warning! Keep the device at a distance > 20 cm from the human body (SAR requirements).



Warning! It is strictly forbidden to cover the device during operation.



Warning! It is strictly forbidden for the patient/operator to touch the device during operation.



Warning! Personnel training is a responsibility of the manufacturer of the device to which the SYS-D14-MED will be connected.



Warning! Earth connection must be made correctly and the screw must not loosen during use.

4.2 Safety pictograms affixed on the device and used in the manual

The device and the manual are equipped with symbols, as indicated in the table below:

PICTOGRAM	DESCRIPTION
	CE marking
	FCC mark
	Danger of hot surfaces! Skin burns in case of contact. Do not touch with your hands or other body parts
	Symbol used to identify important warnings for the safety of the user and/or of the device
	Symbol used to identify important warnings regarding electrical hazards
	Symbol used to indicate the need to consult the instruction manual before using the equipment
	Warning! Read the manual before use
	Symbol used to indicate the need to consult the instruction manual before using the equipment
	Protective earth

	WEEE/RAEE Indicates the separate collection of electronic and electrical equipment according to Directive 2012/19/EU.
	Symbol on the packaging of the device indicating the upper and lower
	Transportation temperature limit
	Symbol on the packaging of the device indicating that it must be protected from the rain
	“This way up” symbol on the packaging of the device
	“Fragile, handle with care” symbol on the packaging of the device
	“Use no hooks” symbol on the packaging of the device

5 Characteristics and components of the device

The **SYS-D14-MED** device is a gateway enclosed in a metal box with a heat sink.



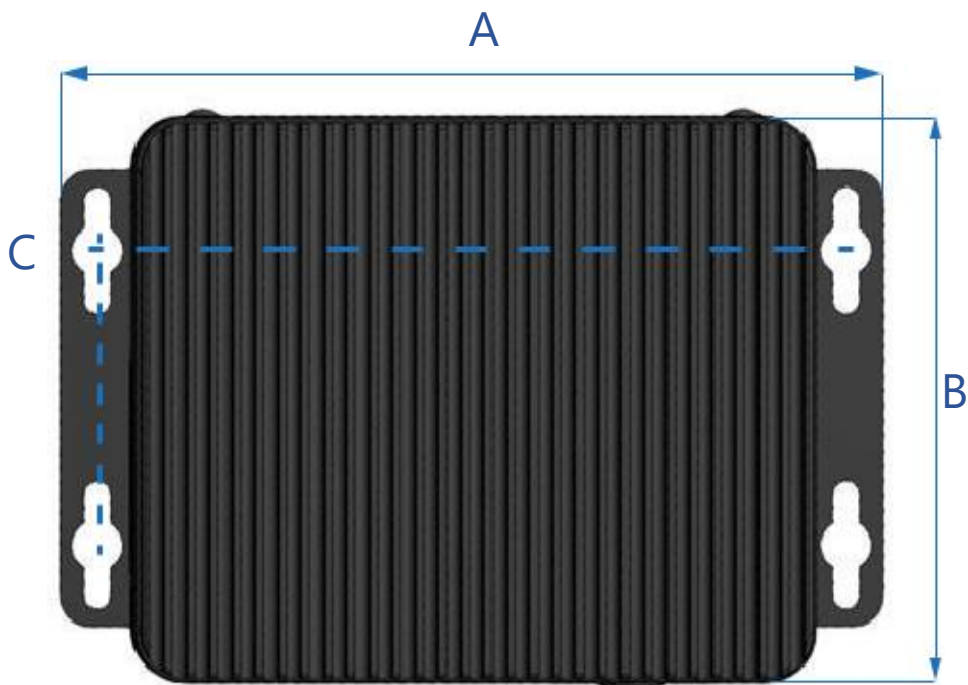
Caution! When running, the device can reach very high temperatures, causing the danger of burns when in contact with the heat sink.

A back cover with 4 universal fastening points is fastened to the connection frame.

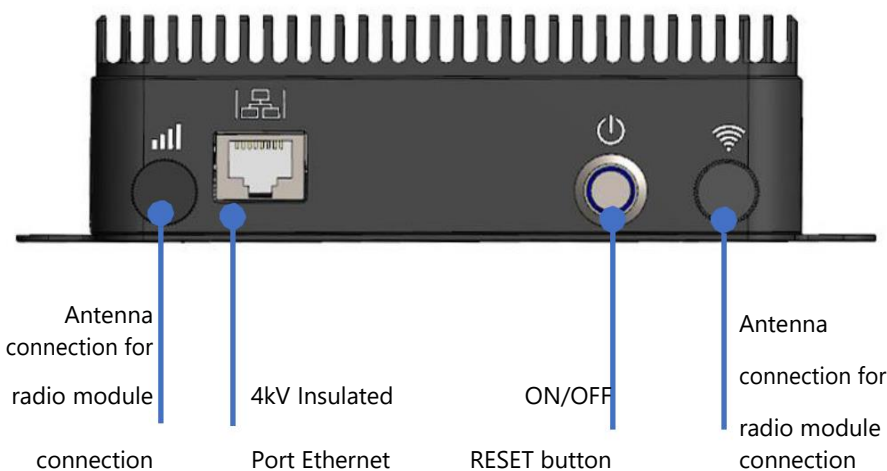
The inserts are the only fastening system to integrate the device on any of the customer's machines.

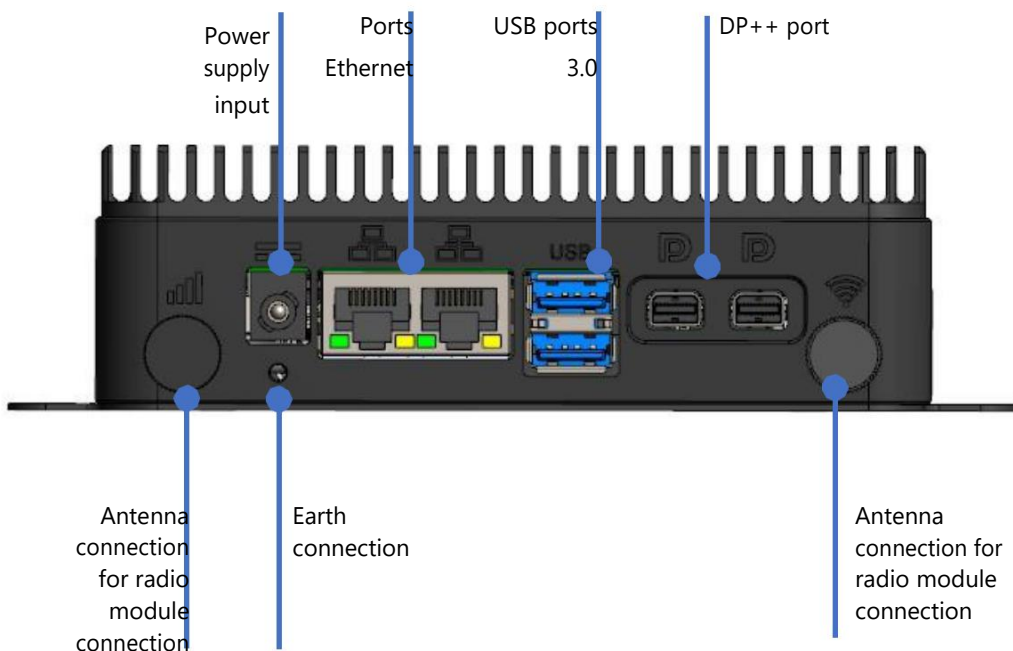
5.1 Measurement layout

Length (A)	162.3 mm
Width (B)	111.8 mm
Height	42.2 mm
Centre-to-centre distance of fastening holes (C)	147 mm (side A) / 58 mm (side B)



5.2 Components





6 Permitted environmental conditions

6.1 Transport and storage environmental conditions

The table below features permissible environmental conditions for transport and storage.

Room temperature range	- 10 °C ÷ + 50 °C
Relative humidity range	5 % ÷ 90 %

6.2 Operating environmental conditions

Use of the device and of associated control systems that differ from those listed below is **not** permitted.

In particular, the installation and operation environment must **not** be:

- Exposed to environmental temperatures exceeding 0 °C to + 40 °C;
- Exposed to limit areas of 2,000 m.a.s.l.;
- Exposed to excessive humidity (minimum 5%, maximum 85 %) and rapid changes in relative humidity (above 0.005 p.u./h);
- Exposed to corrosive fumes;
- Exposed to excessive dust;
- Exposed to abrasive dust;
- Exposed to oil vapours;
- Exposed to powder or gas explosive mixtures;
- Exposed to salt air;
- Exposed to vibrations, impacts or abnormal shocks;
- Exposed to weather conditions beyond the limits permitted or dripping;
- Exposure to unusual transport or storage conditions;
- Exposure to high or rapid thermal changes (above 5K/h);
- Presence of nuclear radiation.



Caution! Environmental conditions that differ from those specified may seriously damage the device. Positioning the device in environments that do not correspond to those indicated shall render the warranty null and void for the parts to be replaced.

SECO S.p.A. shall not be held liable if these instructions are not complied with.

7 Installation

7.1 Installing the device

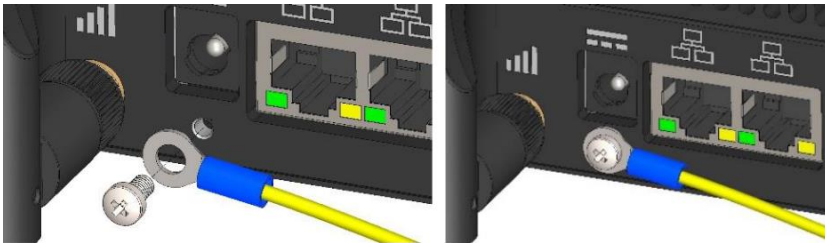
To electrically connect and switch on the device, follow the procedure below:

- 1 Connect supplied antennas to the device screwing them into the SMA connector.

Antennas

- PN: W1043

- 2 For earth connection, using the screw supplied, tighten the eyelet of the yellow-green cable of the power supply to the hole under the power connector as showed in the following images:



Screw

- type: M3 TC
- width l=4mm
- compliant UNI 7687-77 - DIN 7985

- 3 Connect the power supply to the device using the jack connector supplied. Once inserted, turn the connector clockwise in order to lock it in place.
- 4 Using the power cord supplied, connect the power supply to the mains to power the device.

Power cord

- PN: GJ37020

- 5 Press the **ON/OFF** button on the device.

The power button is backlit by a LED when the device is on.

The device does not generate system messages, error messages or fault messages.



Warning! Only use the power supply supplied by the manufacturer.



Warning! Earth supply mains connection must be made correctly and the screw must not loosen during use.



Warning! For the earth connection, use only the type of screw supplied by the manufacturer.



Warning! Only use the power cord supplied by the manufacturer.



Warning! Only use the antennas supplied by the manufacturer.



Warning! Do not install the device with the heatsink facing down.



Warning! Do not cover the heatsink during use.



Warning! Be sure to fix the device by fastening the screws.

To install the device properly on the destination machine, follow the procedure below:

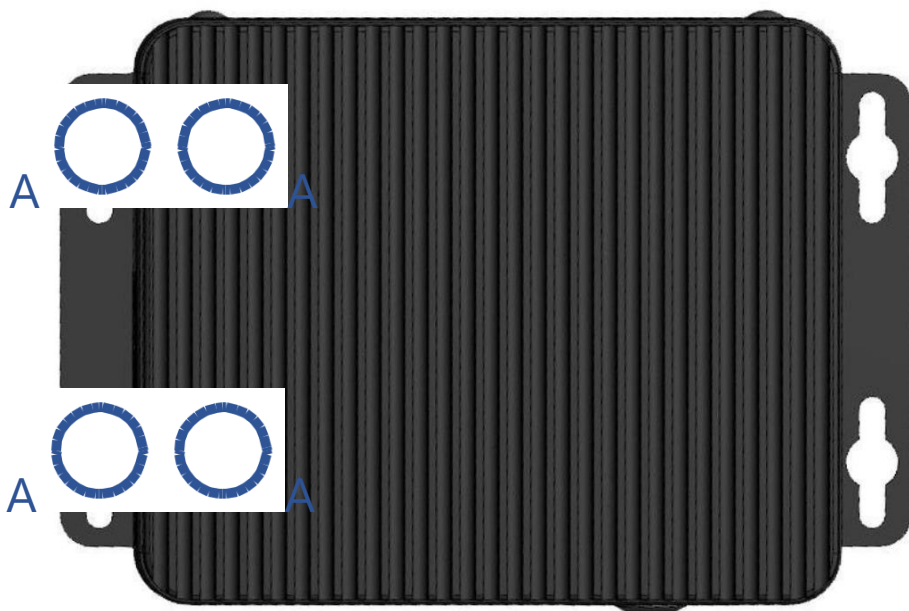
- 1 Make sure the electric connection on the destination machine is off and the electric power supply is disconnected from the device.
- 2 Proceed to fasten the device to the destination machine, using the relative screws in points **(A)**, indicated in the figure.
- 3 Proceed with the electrical connection of the device.
- 4 Proceed to electrically connect the destination machine.

For **wallmount** installation, follow the procedure below:

- 1 Make sure the electric connection on the destination machine is off and the electric power supply is disconnected from the device.
- 2 Note: for wallmount configuration turn the device to keep the sink fins upright. Proceed to fasten the device to the wall, using:
 - expansion screws**
 - material: Nylon
 - type: SX5-SP 6X40mm
 - hole diameter: 6mm
 - hole depth: 40mm
 - screws**
 - type: 4.5 x 60mm cylindrical head
 - plain washer**
 - internal diameter 4.3mm
 - external diameter 16mm
 - width 1.6mm
 - compliant with ISO 7089 in points **(A)**, indicated in the figure.
- 3 Proceed with the electrical connection of the device.
- 4 Proceed to electrically connect the destination machine.

To install the device properly on **metal sheet/part/wall**, follow the procedure below:

- 1 Make sure the electric connection on the destination machine is off and the electric power supply is disconnected from the device.
- 2 Proceed to fasten the device to the wall,
using: **screws**
 - type: M4**flat washer**
 - internal diameter 8.4mm in points **(A)**, indicated in the figure.
- 3 Proceed with the electrical connection of the device.
- 4 Proceed to electrically connect the destination machine.



7.2 Versions available

The **SYS-D14-MED** device is available in different versions that integrate various configurations of the single board “SD14”.

Below the table with the main configurations of the device:

SYS-D14-MED-3XXX-XXXX-CX	Option CPU Apollo Lake Intel Atom E3930
SYS-D14-MED-4XXX-XXXX-CX	Option CPU Apollo Lake Intel Atom E3940
SYS-D14-MED-5XXX-XXXX-CX	Option CPU Apollo Lake Intel Atom E3950
SYS-D14-MED-X1XX-XXXX-CX	Option RAM 2 GB
SYS-D14-MED-X2XX-XXXX-CX	Option RAM 4 GB
SYS-D14-MED-X3XX-XXXX-CX	Option RAM 8 GB
SYS-D14-MED-XX1X-XXXX-CX	Option eMMC 16 GB
SYS-D14-MED-XX2X-XXXX-CX	Option eMMC 32 GB
SYS-D14-MED-XX3X-XXXX-CX	Option eMMC 64 GB
SYS-D14-MED-XXX1-XXXX-CX	Option no storage module M2
SYS-D14-MED-XXX2-XXXX-CX	Option storage module M2 32 GB
SYS-D14-MED-XXX3-XXXX-CX	Option storage module M2 64 GB
SYS-D14-MED-XXX4-XXXX-CX	Option storage module M2 128 GB
SYS-D14-MED-XXX5-XXXX-CX	Option storage module M2 256 GB
SYS-D14-MED-XXX6-XXXX-CX	Option storage module M2 512 GB
SYS-D14-MED-XXXX-1XXX-CX	Power supply unit
SYS-D14-MED-XXXX-X1XX-CX	Option no Wi-Fi / BT module
SYS-D14-MED-XXXX-XWXX-CX	Option Wi-Fi / BT module

The “X” in SYS-D14-MED-XXXX-1XX0-CX can be 0-9, A-Z, a-z or blank based on the OS and the installation methods.

The “X” in SYS-D14-MED-XXXX-1XX0-CX refers to the revision number.

8 Maintenance

User should clean the product with a dry cloth when necessary, based on his visual inspection.



Caution! Disconnect the device from any power source before cleaning.



Warning! The enclosure of the device must be cleaned only with a dry cloth.

After cleaning, the user should check that the product is still correctly installed.

9 Waste disposal

Electrical equipment no longer in use must not be thrown away with normal municipal waste. The substances and materials it contains must be disposed of separately in an appropriate manner. The device must be disposed correctly as it is a waste of electric and electronic equipment (WEEE).

10 Electromagnetic Compatibility

This device needs to be installed and put into service in accordance with the information provided in the user manual.

WARNING: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the device, including cables specified by the manufacturer. Otherwise, degradation of the performance of this device could result.

The device is intended for use in the electromagnetic environment specified in the following tables. The user should ensure that it is used in such an environment.

CAUTION: The device complies with the limits for devices contained in the reference standards. However, the device may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to mitigate this effect by reorienting or relocating the devices.

Electromagnetic emissions		
The device is intended for use in the electromagnetic environment specified in the following tables. The user should ensure that it is used in such an environment.		
Emissions Test	Compliance	Electromagnetic Environment Guidance
RF emissions CISPR 11	Group 1	The device uses RF energy for its internal and system interface functions. Its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The device must emit electromagnetic energy to perform its intended function. Electronic equipment located nearby can be affected.
Harmonic emissions IEC 61000-3-2	Class D	The device is suitable for use in all establishments including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations/flicker emissions IEC 61000-3-3	Compliant	

Electromagnetic immunity

The device is intended for use in the electromagnetic environment specified in the following tables. The user should ensure that it is used in such an environment.

Immunity Test	Test Level EN 60601-1-2
Electrostatic discharge (ESD) EN 61000-4-2	± 8 kV Contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV Air
Electrical fast transient/burst EN 61000-4-4	± 2 kV Input AC power port ± 1 kV Signal ports
Surge EN 61000-4-5	± 0,5 kV, ± 1 kV Line-to-line ± 0,5 kV, ± 1 kV, ± 2 kV Line-to-ground
Power frequency magnetic field EN 61000-4-8	30 A/m (50 Hz, 60 Hz)
Voltage dips, short interruptions and voltage variations on the input lines EN 61000-4-11	0% U _T ; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% U _T ; 0,5 cycle and 70% U _T ; 25/30 cycles Single phase: at 0°
Voltage interruptions EN 61000-4-11	0% U _T ; 250/300 cycles

RF Electromagnetic immunity

The device is intended for use in the electromagnetic environment specified in the following tables.
The user should ensure that it is used in such an environment.

Immunity Test	Test Level EN 60601-1-2	Compliance Level	Electromagnetic Environment Guidance
Conducted RF EN 61000-4-6	$3 V_{RMS}$ 150 kHz to 80 MHz $6 V_{RMS}$ in ISM and amateur radio bands between 150 kHz to 80 MHz	$3 V_{RMS}$ 150 kHz to 80 MHz $6 V_{RMS}$ in ISM and amateur radio bands between 150 kHz to 80 MHz	Portable and mobile RF communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance $d = 1.2 \cdot \sqrt{P} \text{ (MHz to 10)}$
Radiated RF EN 61000-4-3	$3 V/m$ 80 MHz to 2,7 GHz	$3 V/m$ 80 MHz to 2,7 GHz	$d = 1.2 \cdot \sqrt{P} \text{ (MHz to 10)}$ 80MHz
	$3 V/m$ (Proximity fields)	$3 V/m$ (Proximity fields)	$d = 2.3 \cdot \sqrt{P} \text{ (800 MHz to)}$ 800MHz 2,5GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in meters (m).

Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol:



Recommended separation distance between portable and mobile radiocommunication devices and the device
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Note:

- (1) At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
- (2) These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

