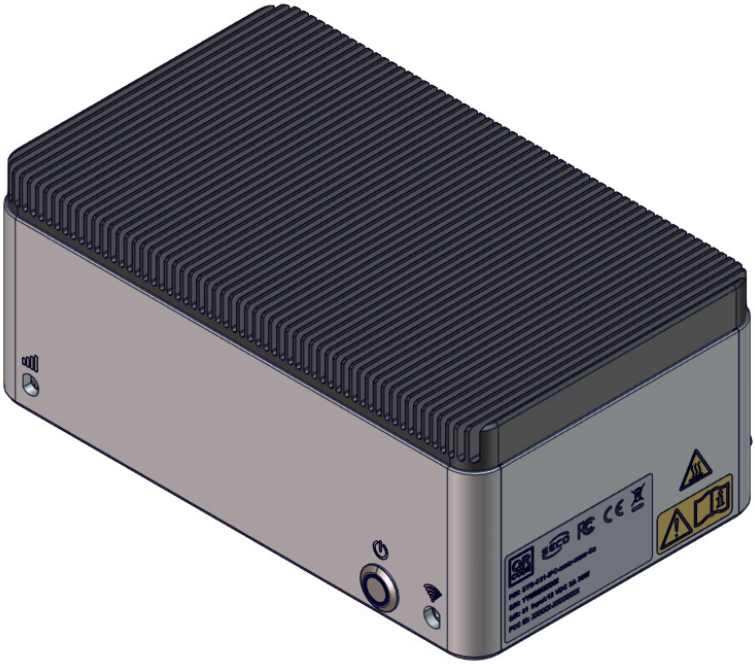


PICTOR
INSTALLATION, USE AND WARNINGS MANUAL

Edition: 04 - 2021

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1. Preliminary information

1.1 Device description

The **PICTOR** device is a gateway enclosed in a metal box with a heat sink.

The **SECO** board intended for this system is based on the **Rockchip RK3399 Processor**, placed inside a finned box enclosure.

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



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	PICTOR
Serial number	YYMMXXXXX
Year of manufacturing	2022

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 PICTOR device hardware specifications

The table below features the board hardware specifications:

Processor	Rockchip RK3399 processor, 2x Cortex®-A72 MP cores + 4x Cortex®-A53 MPCores, up to 1.8GHz, 64-bit architecture
Memory	Soldered-down LPDDR4 memory, up to 4GB total, 64-bit interface
Mass Storage	SPI Flash (alternative to CAN Controller #1) eMMC 5.1 Drive soldered on-board microSD slot
Network connection	Up to 2 x Gigabit Ethernet ports Optional soldered on-board M.2 1216 WLAN 802.11 a/b/g/n/ac + BT 5.0 module Optional on-board LTE Modem
USB	1 x USB 3.0 Type-C port (Alternate mode with DP) 1x USB 3.0 Host port on Type-A socket 2 x USB 2.0 Host ports on Dual Type-A socket Up to 2 x USB 2.0 Host ports on internal pin header
Connector	2 x RS-232 or RS-485 ports
Video	LVDS Single / Dual Channel interface HDMI 4K interface DP 1.2 interface on USB Type-C connector (alternate mode)
Operating System	Linux Yocto Android (under development)
Type of installation	• Fastening for integration use on industrial machine using threaded pins directly on the mechanical plate; • Table top free installation; • Fastening for table top or wall mounting using: **VESA 75** standard 75 x 75mm wheelbase support **VESA 100** standard 100 x 100mm wheelbase support
Power Supply	+12 V DC 24 V DC External Power supply Unit recommended by the manufacturer: • DELTA AD-090A24AA F-A and EDAC POWER EA10681N*
Battery model	Lithium battery CR2032
Operating temperature in user environment	0 °C ÷ +50 °C**
Exposed to limit areas	**2000 m.a.s.l.**
Humidity	10~95% @40°C non-condensing

ATTENTION
***This power supply is to consider only in the temperature usage range within 0°C ÷ +40°C.**

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

C31XXXYY.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 **C31** 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**
- **FCC - Part 15 Certification**
- **Declaration of Conformity***
- **User manual***

*These documents are available after a request to the manufacturer.

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

- **2014/30/EU** Electromagnetic Compatibility Directive.
- **2009/125/CE** Ecodesign
- **2012/19/EU** (WEEE).
- **2011/65/EU** (RoHS).

The device also meets the requirements of the following standards:

- **EN 62368-1:2014+A11:2017**
- **EN 55032:2015+A11:2020**
- **EN 55035:2017+A11:2020**
- **EN IEC 63000:2018**
- **EN 62326:2013**

3.4 FCC disclaimer

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 of the device.

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.

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.



LITHIUM BATTERY WARNING
Caution! Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.



CAUTION
Only use the accessories 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 or VESA 75 or VESA 100 standard fixing support before proceeding with any type of operation and/or use.

CAUTION
This equipment must only be connected to a supply main 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
It is strictly forbidden to cover the device during operation.

WARNING
Personnel training is a responsibility of the manufacturer of the device to which the PICTOR will be connected.

WARNING
Make sure that the fixing nut on the functional earth connection is correctly fixed to the pin on the back of the device.

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**
	**Danger of hot surfaces!** Skin burns in case of contact. Do not touch with your hands or other body parts.
	**Caution!** Risks deriving from not reading the instructions.
	**RAEE** Indicates the separate collection of electronic and electrical equipment according to Directive 2012/19/EU.
	Symbol used to indicate the need to consult the instruction manual before using the equipment.

5. Characteristics and components of the device

The **PICTOR** device is a gateway enclosed in a metal box with a heat sink.

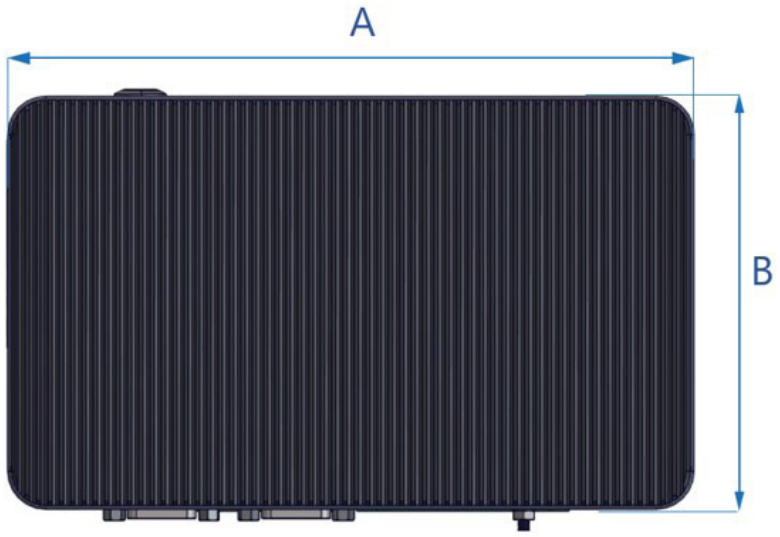
CAUTION
When running, the device can reach very high temperatures, causing the danger of burns when in contact with the heat sink.

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

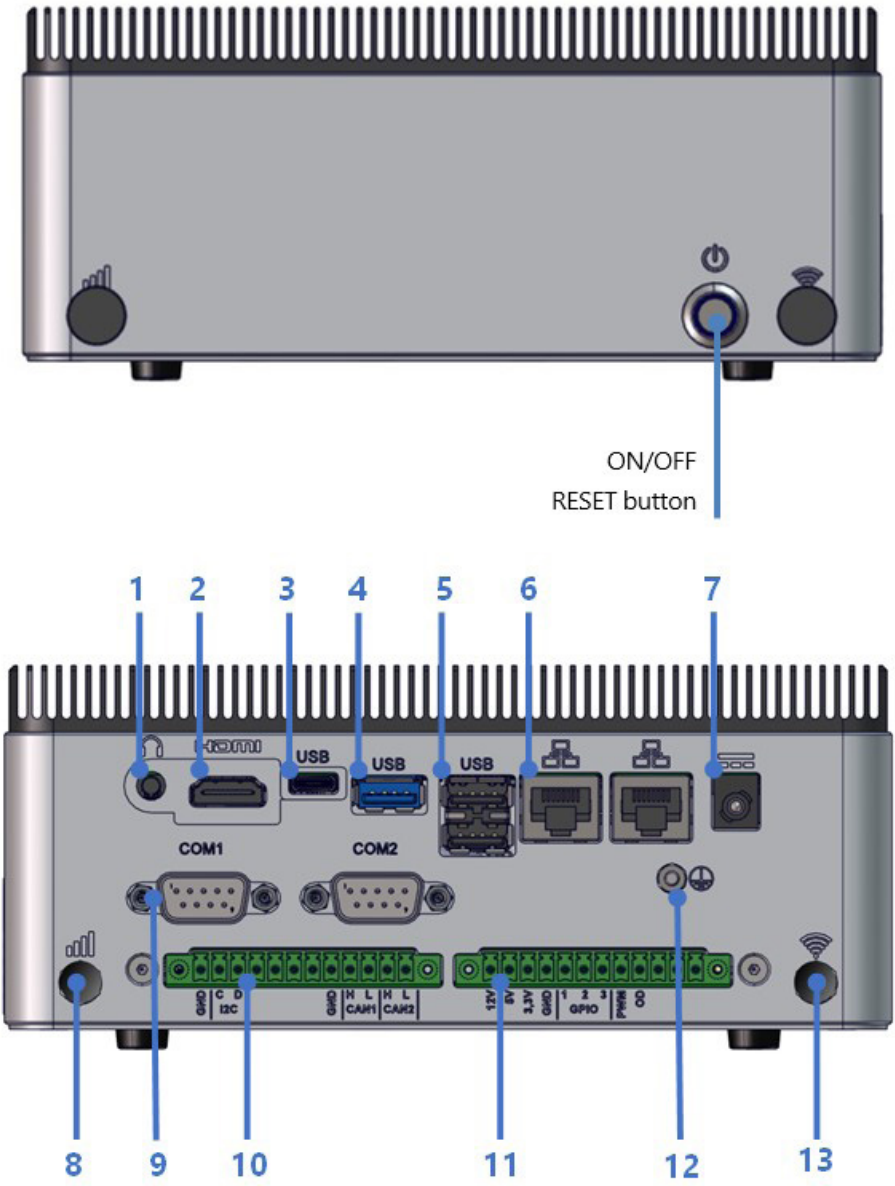
The inserts are the only fastening system to integrate the device on any of the customer's machines.

5.1 Measurement layout

Length (A)	181 mm
Width (B)	106 mm
Height	73 mm
Centre-to-centre distance of fastening holes (C)	86 mm



5.2 Components



POS	DESCRIPTION
1	Jack audio
2	HDMI port
3	USB connector type-C Alternate mode with USB 3.0 and HD Video DisplayPort
4	USB connector type-A, prot. 3.0
5	USB connector type-A, prot. 2.0
6	Ports Ethernet
7	Power supply input
8	Antenna connection for radio module connection
9	DB9-M type connector used for the RS-232/RS-485 bus
10/11	12-pole comunication bus/signal connector: • 1x CAN • 8x GPIOs • 1x SPI • 1x I2C • 1x 5V • 1x 3.3V • 1x 12V • 3x GND
13	Screw connection for functional earth connection
14	Antenna connection for radio module connection

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	0 °C ÷ + 50 °C
Relative humidity range	10 % ÷ 95 % @40°C non-condensing

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 + 50 °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

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 power supply provided DELTA AD-090A24AA F-A and EDAC POWER EA10681N. If other power supply will be used, referring directive of usage's destination.

WARNING
For the functional earth connection, use only the fixing system supplied by the manufacturer.

WARNING
Be sure to fix the device by fastening the screws (if it will be mounted on wall/ machine).

WARNING
The product may only be installed in class B environments (residential, commercial and light industrial), in accordance with the EN 61000 series of standards. Its installation in class A environments (heavy industry), could lead to malfunctions of the device itself due to the presence of high electromagnetic disturbances.

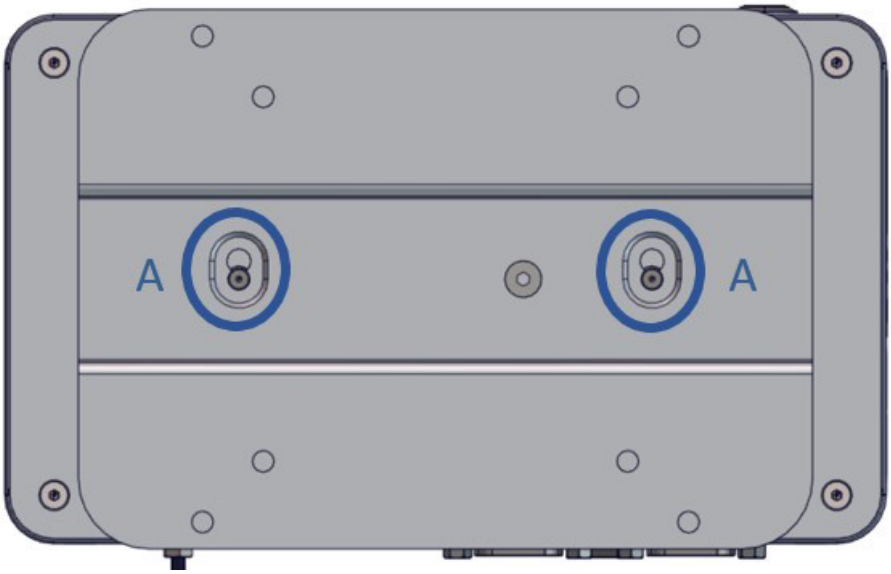
In order to install the device, make sure that the incoming electrical power supply complies with the following values:

Power supply	Only use power supply **LPS** that are certified according to safety standards, pursuant to the regulations in force in the country of use (EN 62368-1). Only use certified power supplies, capable of delivering a power limited to 100 Watts (maximum limit) in normal operating conditions and also in fault conditions. + 12 V DC 5A 
Minimum power required	60 W

SECO recommends the use **DELTA AD-090A24AA F-A** and **EDAC POWER EA10681N** power supply.

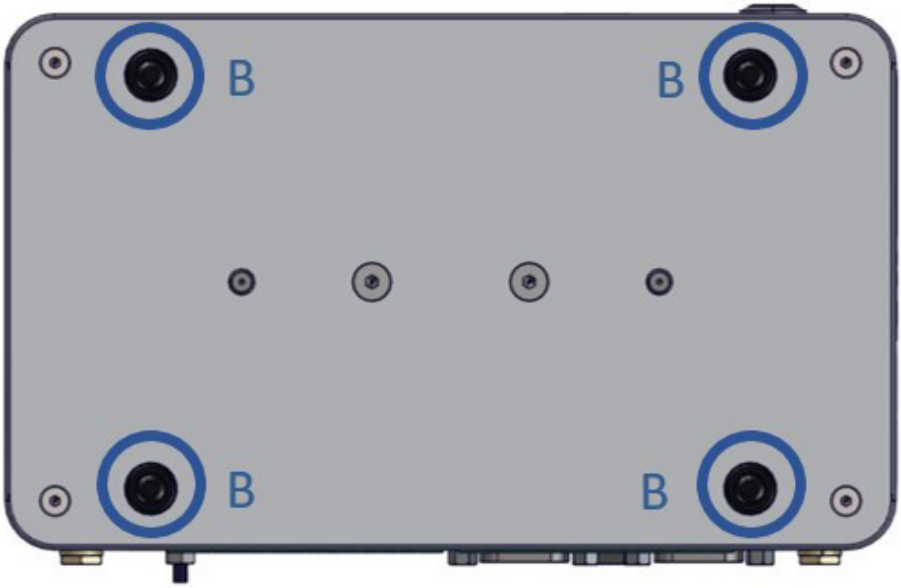
To install the device properly on machine/wall/sheet/other with VESA support, follow the procedure below:

1	Make sure the electric connection on the destination machine is off and the electric power supply is disconnected from the device;
2	Prepare the machine/wall/sheet/other making 4 holes spaced according to the VESA standard hole spacing;
3	Fix the VESA bracket to machine/wall/sheet/other, using 4 screws that will be screwed in matching the VESA holes in the plate with the 4 holes made in step **2** (the VESA bracket must be mounted as shown in the image below);
4	Take the device and match the 2 PEMs **A** present on the bottom of the device to the 2 slots of the VESA bracket previously fixed as explained in point **3**, insert them one inside the other;
5	Slide the device downwards so that the PEMs **A** will be in corresponding position with the narrowest part of the slots and will thus be, fixing itself stably.
6	Proceed to connect the electric supply to the device. Once inserted, turn the connector clockwise in order to lock it in place;
7	Proceed to electrically connect the destination machine.

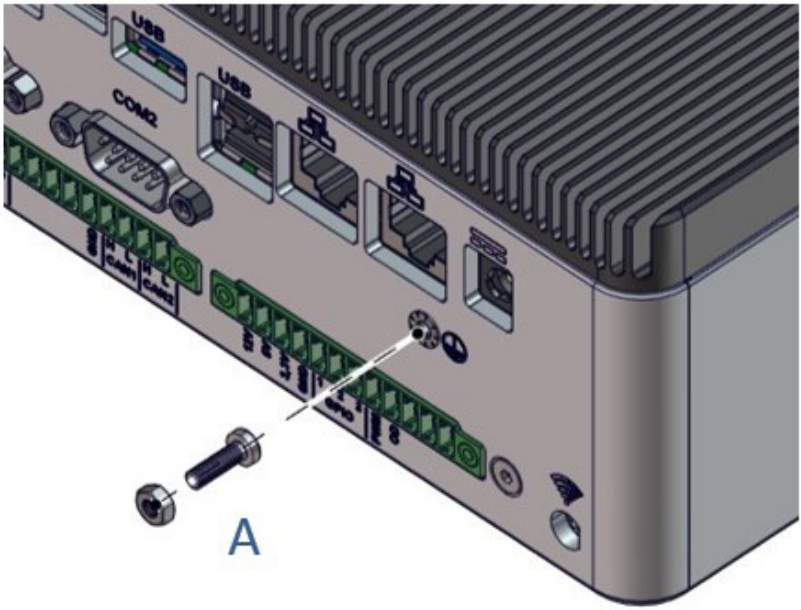

A
A

To install the device properly on **table/plane surface**, 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 positioning the device taking care to leave enough space around and that the support fit foots **(B)** have enough grip on the surface;
3	Proceed to connect the electric supply to the device. Once inserted, turn the connector clockwise in order to lock it in place;
4	Proceed to electrically connect the destination machine.



After the installation's procedure, depending to the final destination of the device usage, may connect the grounding removing the screw A, as shown in the figure below:



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

7.2 Versions available

The **PICTOR** device is available in different versions that integrate various configurations of the single board “C31”.

Below the table with the main configurations of the device:

SYS-C31-IPC-0000-0000-Cx	Primary
SYS-C31-IPC-1xxx-xxxx-Cx	Opt CPU Rockchip RK3399 commercial
SYS-C31-IPC-x1xx-xxxx-Cx	Opt RAM LPDDR4 2GB 2 banchi A1
SYS-C31-IPC-x2xx-xxxx-Cx	Opt RAM LPDDR4 4GB 2 banchi A3
SYS-C31-IPC-xx1x-xxxx-Cx	Opt eMMC 5.1 MLC 8GB - extended
SYS-C31-IPC-xx2x-xxxx-Cx	Opt eMMC 5.1 MLC 16GB - extended
SYS-C31-IPC-xx3x-xxxx-Cx	Opt eMMC 5.1 MLC 32GB - extended
SYS-C31-IPC-xx4x-xxxx-Cx	Opt eMMC 5.1 MLC 64GB - extended
SYS-C31-IPC-xxxx-1xxx-Cx	Opt No Modem LTE (2nd USB on int.header) + No WIFI/BT C0+C5
SYS-C31-IPC-xxxx-2xxx-Cx	Opt No Modem LTE (2nd USB on int.header) + WIFI/BT C0+C4
(Only after a specific request to the manufacturer)	
SYS-C31-IPC-xxxx-x0xx-Cx	NO OPERATING SYSTEM INSTALLED
SYS-C31-IPC-xxxx-x1xx-Cx	Android
SYS-C31-IPC-xxxx-x2xx-Cx	Linux
SYS-C31-IPC-xxxx-xx0x-Cx	NO mounting plate
SYS-C31-IPC-xxxx-xx1x-Cx	VESA standard mounting plate

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).

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