H860C

- Disassembly Guide of UD7 H860C (see page 3)
- Manual of UD7 H860C (see page 35)

The List of UD7 Devices H860C

UD7-LX 20

Disassembly Guide

This step-by-step guide shows you how to skillfully disassemble IGEL UD7 model H860C.

Pay attention to Safety Instructions 7 (see page 4)!

WARNING

- The disassembly of the device must only be carried out by an electrically qualified person.
- Touching live parts can cause danger to life and limb from electric shock.
- Disconnect the device from the power supply before the disassembly.
- Disconnect all peripherals from the device before the disassembly.
- Use only insulated tools for the disassembly.

Read this guide carefully and in full and perform the steps in the given sequence.

Safety Instructions

WARNING

- The disassembly of the device must only be carried out by an electrically qualified person.
- Touching live parts can cause danger to life and limb from electric shock.
- Disconnect the device from the power supply before the disassembly.
- Disconnect all peripherals from the device before the disassembly.
- Use only insulated tools for the disassembly.

CAUTION! Note on industrial safety: Use suitable gloves to protect against injury.

Please read the following safety instructions in full before starting with the disassembly of the device.

Read these instructions carefully and save them for future reference.

- All cautions and warnings on the equipment should be noted.
- Lay this equipment on a stable surface during set up. A drop or fall could cause damage.
- The warranty will be invalidated if the device is damaged during installation or replacement of system expansions.
- Use the original power adapter and power cord only.
- Make sure the power adapter and power cord are laid so that people do not step on them. Do not place anything over the power adapter or power cord.
- Disconnect this equipment from the main supply before cleaning. Do not use liquid or spray detergent to clean. Clean only with a wipe or cloth.
- Before opening the device, first, switch it off and then disconnect the power plug. Observe the specification in the user manual.
- If the equipment is not used for a long time, disconnect the equipment from the main electric supply to avoid damage by transient overvoltage.
- Make sure that no liquids leak into the device (danger of electric shock, fire, short circuit).
- Do not insert foreign objects into the device (danger of electric shock, fire, short circuit).
- If one of the following situations occurs, have the equipment checked by service personnel:
  - The power adapter, power cord or plug is damaged.
  - The equipment has been exposed to moisture.
  - The equipment does not work well, or you cannot get it working according to the user manual.
  - The equipment has been dropped or damaged.
  - The equipment has obvious signs of breakage.
- Do not leave this equipment in an unconditioned environment. Storage temperature below -20 °C (-4 °F) or above 60 °C (140 °F) may cause damage to the equipment.
- Do not use this equipment in an unconditioned environment. Unless otherwise stated in the technical specifications, operational conditions may not exceed the following limits, it may damage the equipment:

- Vertical usage:
  Temperature: 0 °C to 35 °C, 32 °F to 95 °F
  Humidity: 20 % to 80 %, non-condensing
- Horizontal usage (only with optional rubber feet, no VESA mount):
  Temperature: 0 °C to 35 °C, 32 °F to 95 °F
  Humidity: 20 % to 80 %, non-condensing

- To avoid overheating in the horizontal position, use the optional rubber feet and tilt the device to the left so that the power button is on the left-hand side.
- Note that even in closed rooms local temperatures may increase, for instance in case the device is exposed to strong sun radiation. Protect the device from external heat sources.
- Ensure that air is free to circulate through the product. Do not use in a poorly ventilated place. Do not cover it with a cloth or place it on soft ground. Objects surrounding the device may block the airflow. Keep a minimum distance of 20 cm around the device for sufficient ventilation.

Lithium Battery Caution

- The lithium battery (button cell) installed in the device may only be replaced by authorized, specially trained personnel.
- Contact your supplier or the manufacturer for servicing and repairs.
- Danger of explosion if the battery is incorrectly replaced. The lithium battery may only be replaced with a battery identical or equivalent to the one recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

Excessive Sound Pressure

Excessive sound pressure from ear-/headphones can cause hearing damage/hearing loss. Adjustment of the volume control as well as the equalizer to other settings than the center position may increase the ear-/headphones output voltage and therefore the sound pressure level. The use of factors influencing the ear-/headphones output other than those specified by the manufacturer (e.g. operating system, equalizer software, firmware, driver) may increase the ear-/headphones output voltage and therefore the sound pressure level.

UL 62368

This equipment must be grounded. The power cord for the equipment must only be connected to socket-outlets providing earthing connection.

For the latest product information, visit www.igel.com[1].

1 https://www.igel.com/

Tools and Equipment

Set up the following tools before you begin with the disassembly:

- Hammer
- Phillips screwdriver, slotted screwdriver
- Cutting pliers, pliers or similar
- Stanley knife or similar

CAUTION! Note on industrial safety: Use suitable gloves to protect against injury.

In the following image, you see the examples of the appropriate tools for disassembly:

Positioning the Device of UD7 H860C

→ Place the device on a soft and slip-resistant surface.

Foot Stand

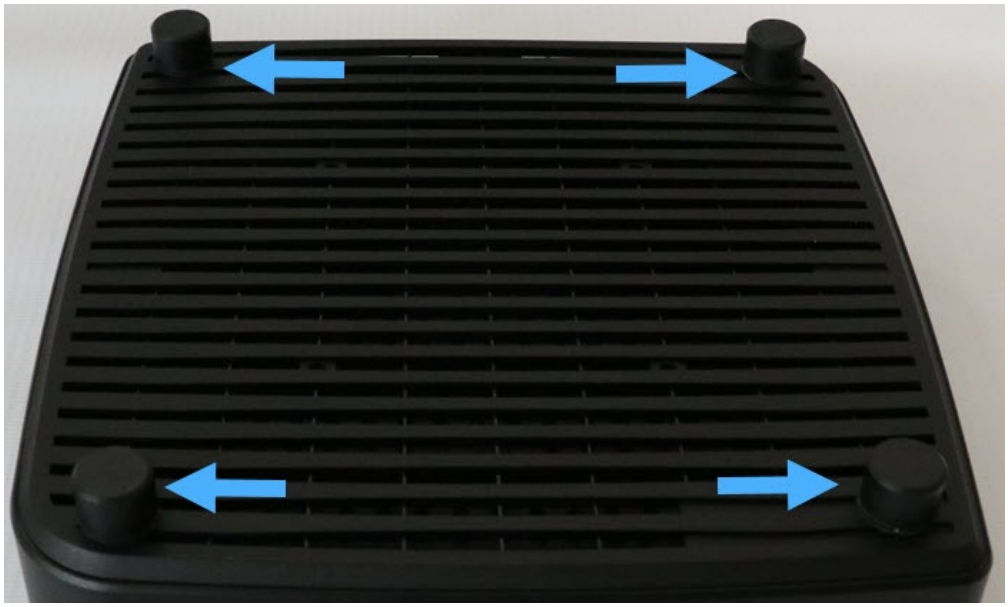
1. Loosen the hand screw on the foot stand to detach it from the device.

2. Remove the four rubber feet from the foot stand.

Rubber Feet (If Available)

The rubber feet are glued to the device.

→ Bend the rubber feet in one direction to detach them.



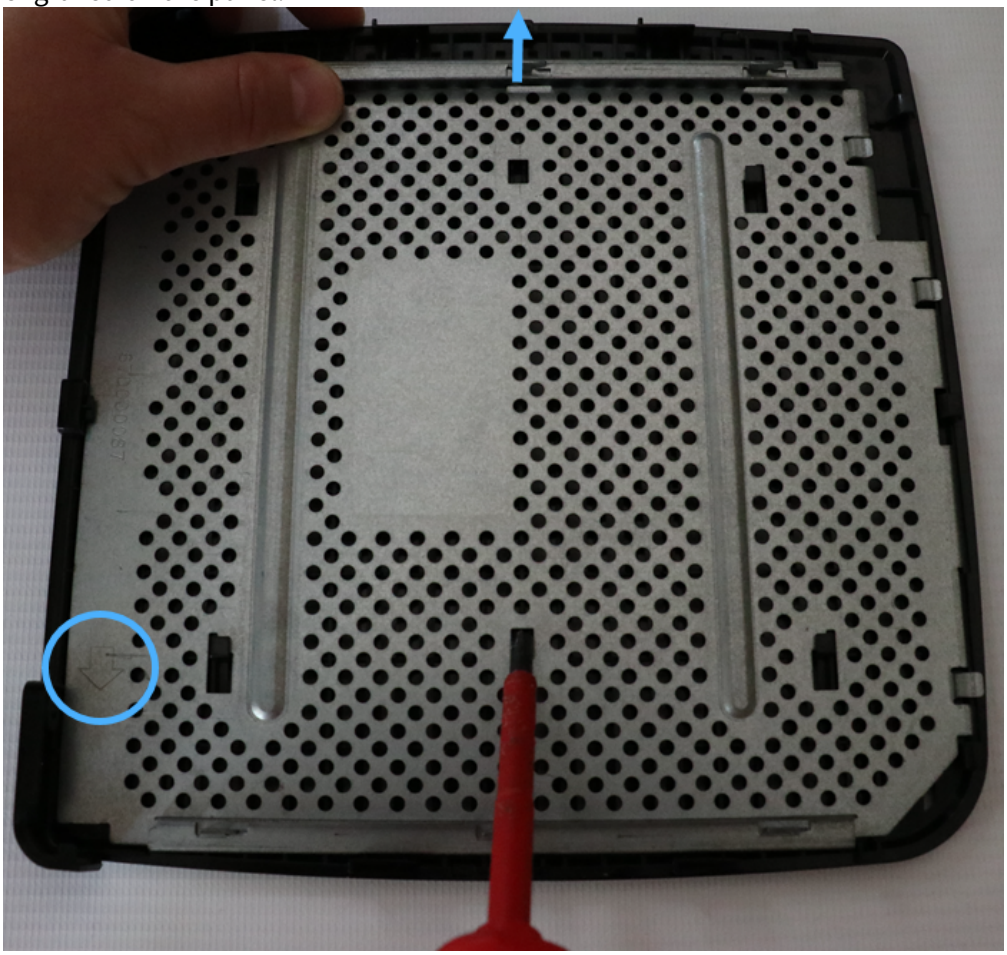
Upper Cover

1. Loosen the two screws on the rear side of the device.

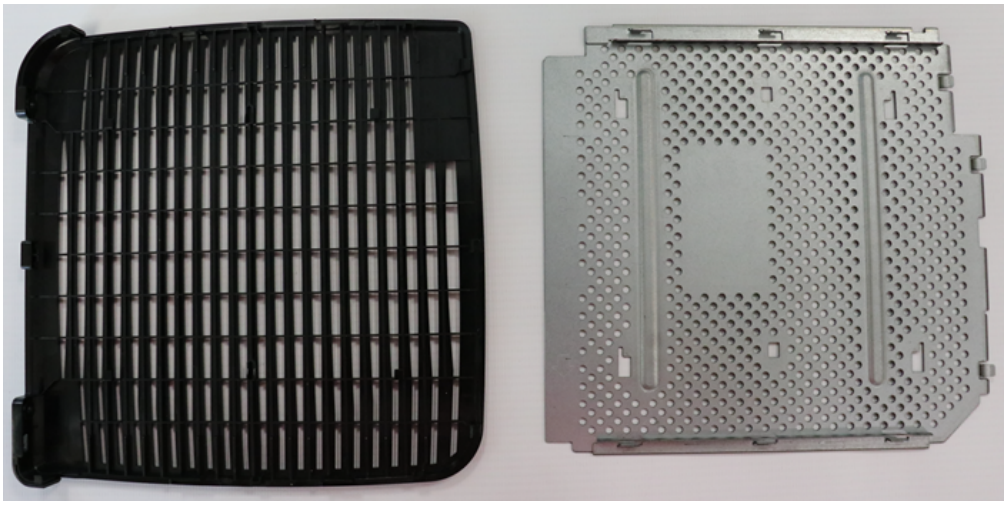
2. Push the upper cover backwards to remove it from the device casing.

Metal Panel of UD7 H860C

1. Lever the metal panel up and push it in the direction opposite to the one indicated by the arrow engraved on the panel.



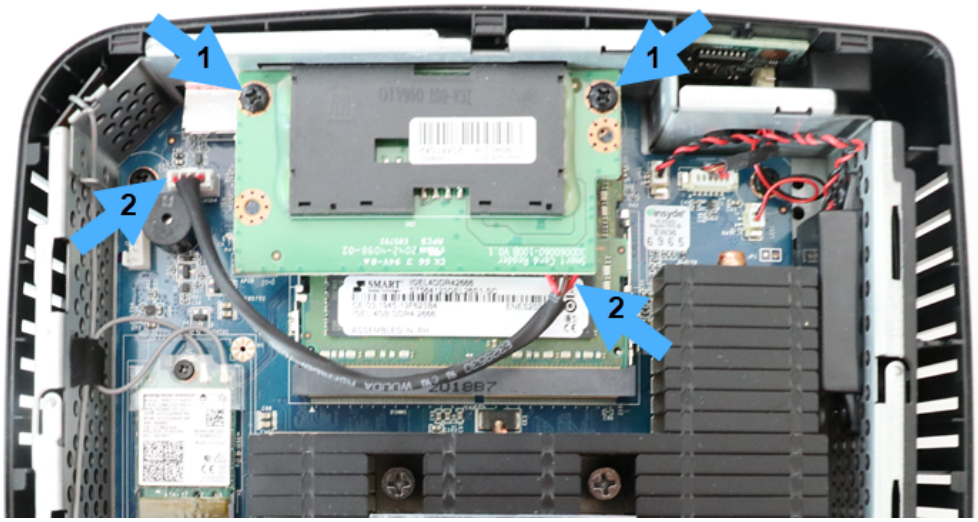
2. Remove the metal panel.



Smartcard Reader (If Available)

This section is only relevant if the smartcard reader is integrated in the device.

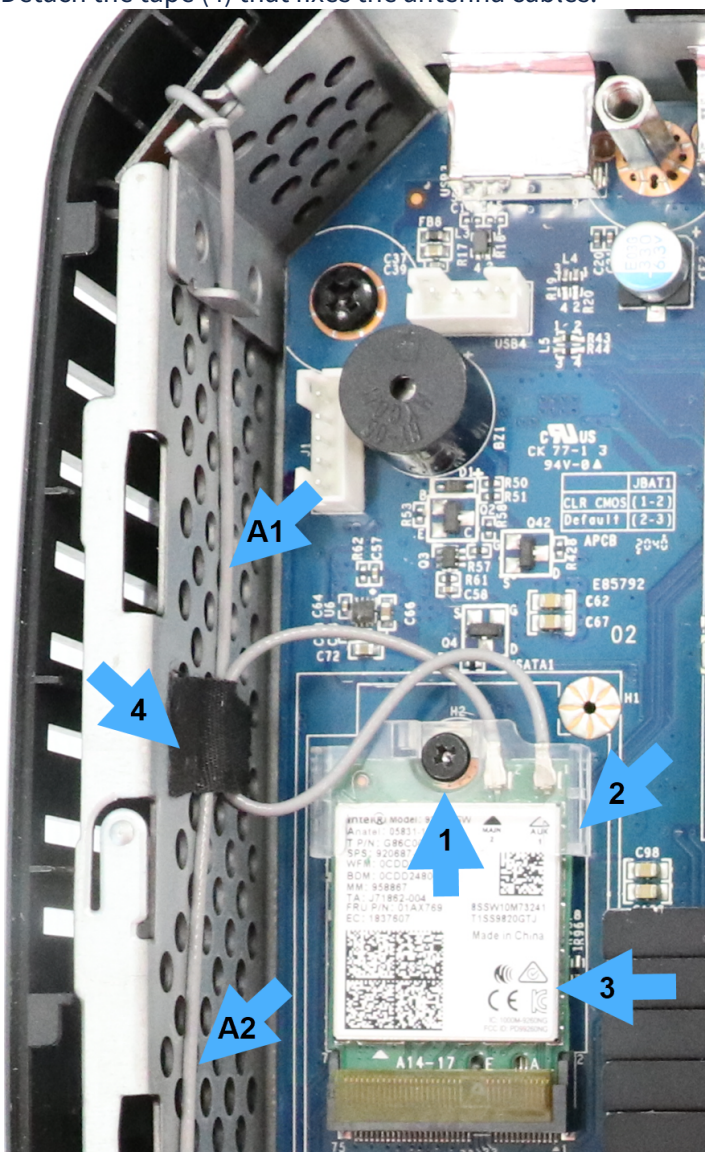
1. Loosen the two screws (1) to remove the smartcard reader.
2. Disconnect the cable plugs (2).



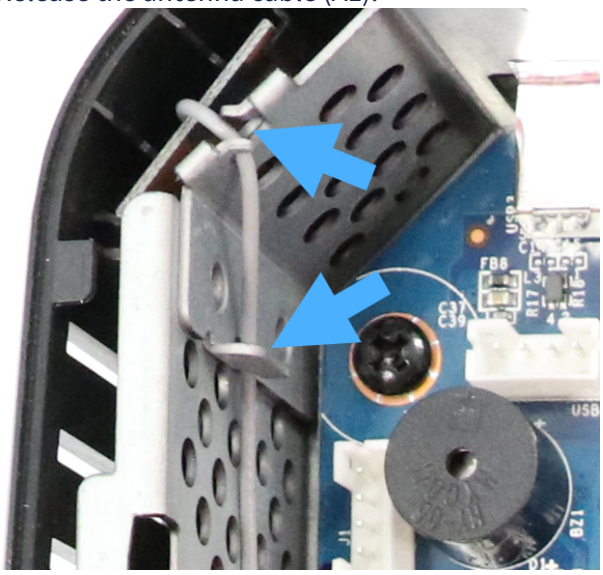
WLAN and Bluetooth Module (If Available)

This section is only relevant if your UD7 device has optional Intel® 9260 Wireless-AC WLAN and Bluetooth, which is installed ex-factory only.

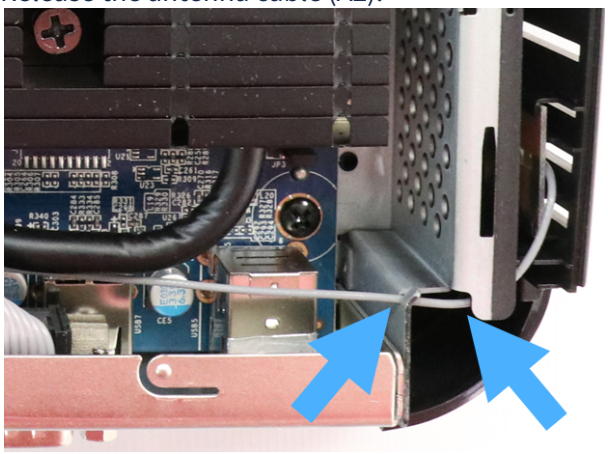
1. Remove the screw (1).
2. Remove the plastic cover (2).
3. Disconnect the antenna cable (A1) from the AUX jack (marked on the WLAN and Bluetooth module as **1**) and the antenna cable (A2) from the MAIN jack (marked on the module as **2**).
4. Remove the WLAN and Bluetooth module (3).
5. Detach the tape (4) that fixes the antenna cables.



6. Release the antenna cable (A1).

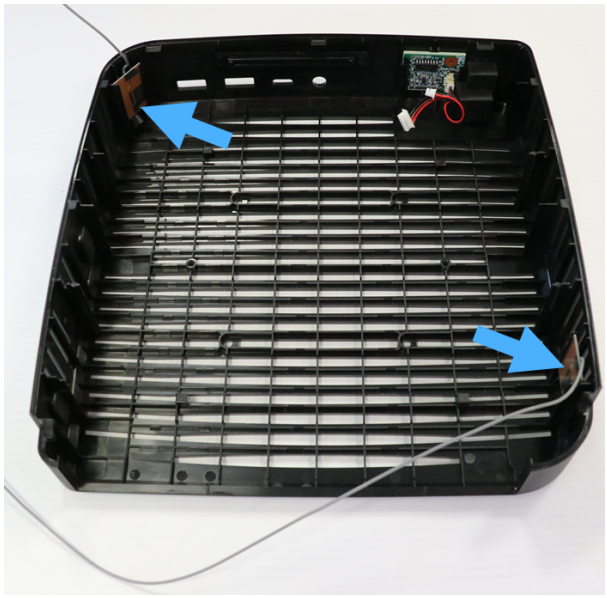


7. Release the antenna cable (A2).



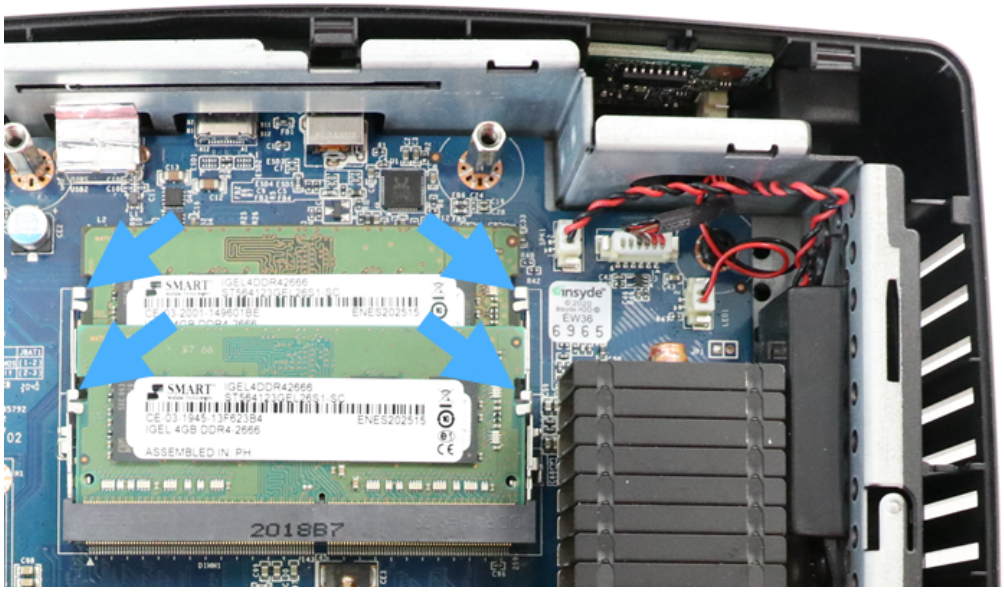
8. Remove the mainboard and chassis, see Mainboard and Rear Outer Casing 2 (see page 18) and Bottom Cover and Chassis (see page 22).

9. Remove the PCB antennas.



Mainboard and Rear Outer Casing

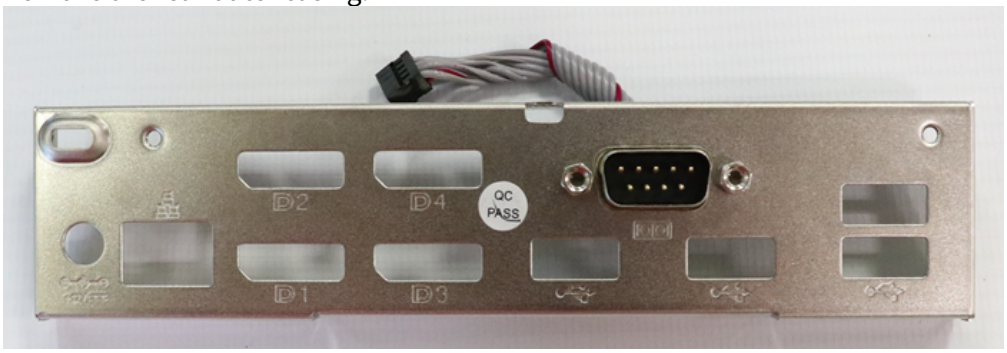
1. Push the retaining clips carefully aside to remove the memory.



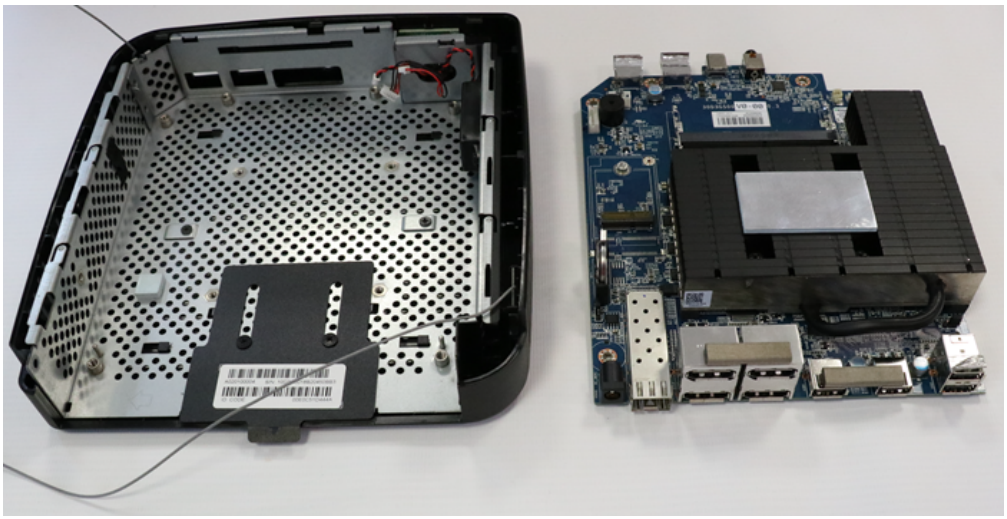
2. Plug out the tactile sensor (1), LED (2), speaker (3), and serial port (4) cables.

3. Loosen the six screws and the two standoffs.

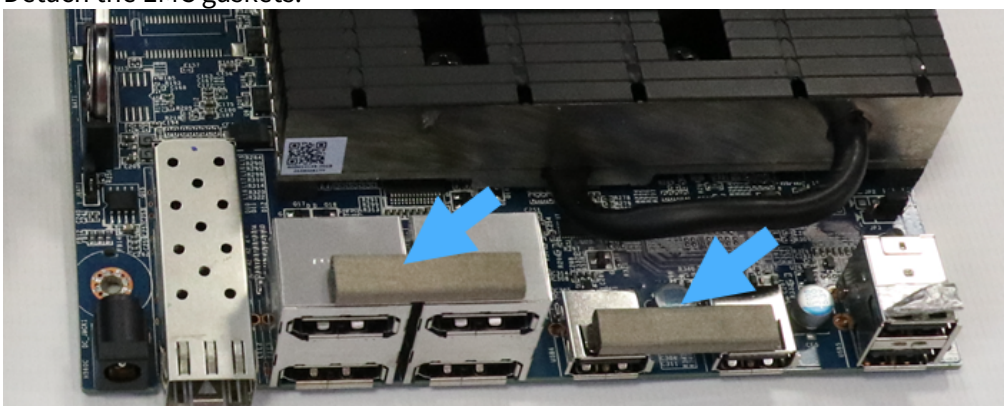
4. Remove the rear outer casing.



5. Remove the mainboard from the chassis.

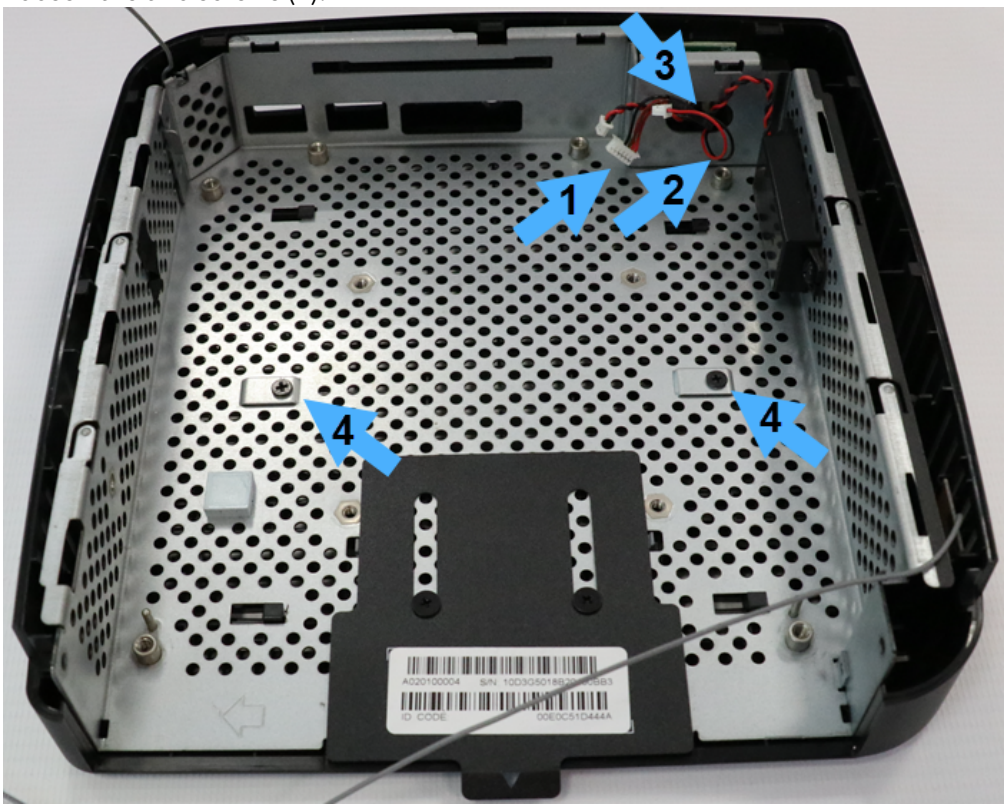


6. Detach the EMC gaskets.

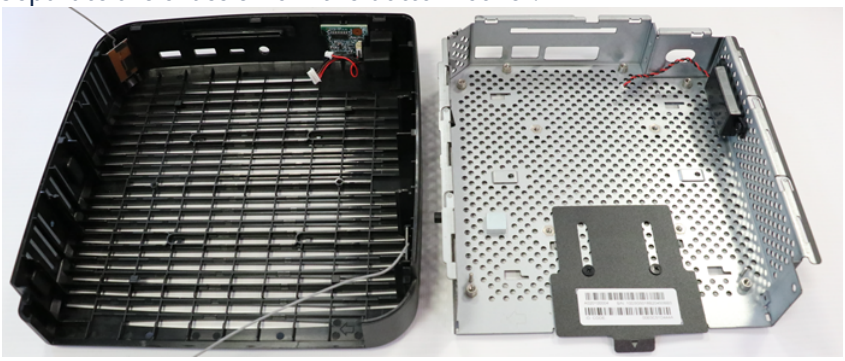


Bottom Cover and Chassis of UD7 H860C

1. Thread the tactile sensor (1) and LED (2) cables through the opening (3) in the chassis.
2. Loosen the two screws (4).

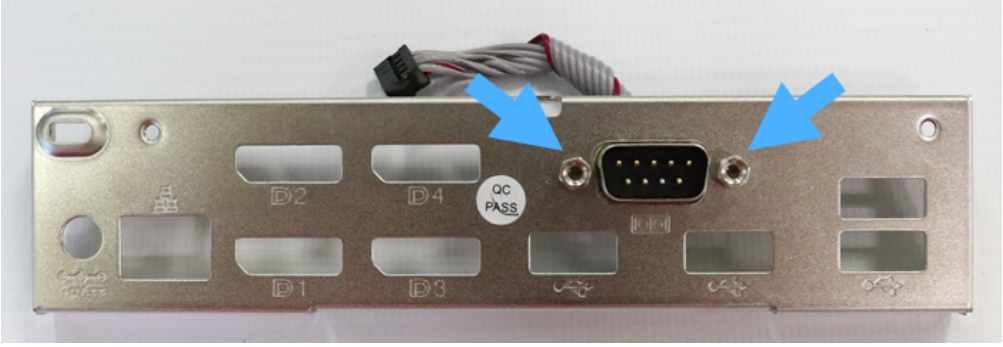


3. Separate the chassis from the bottom cover.



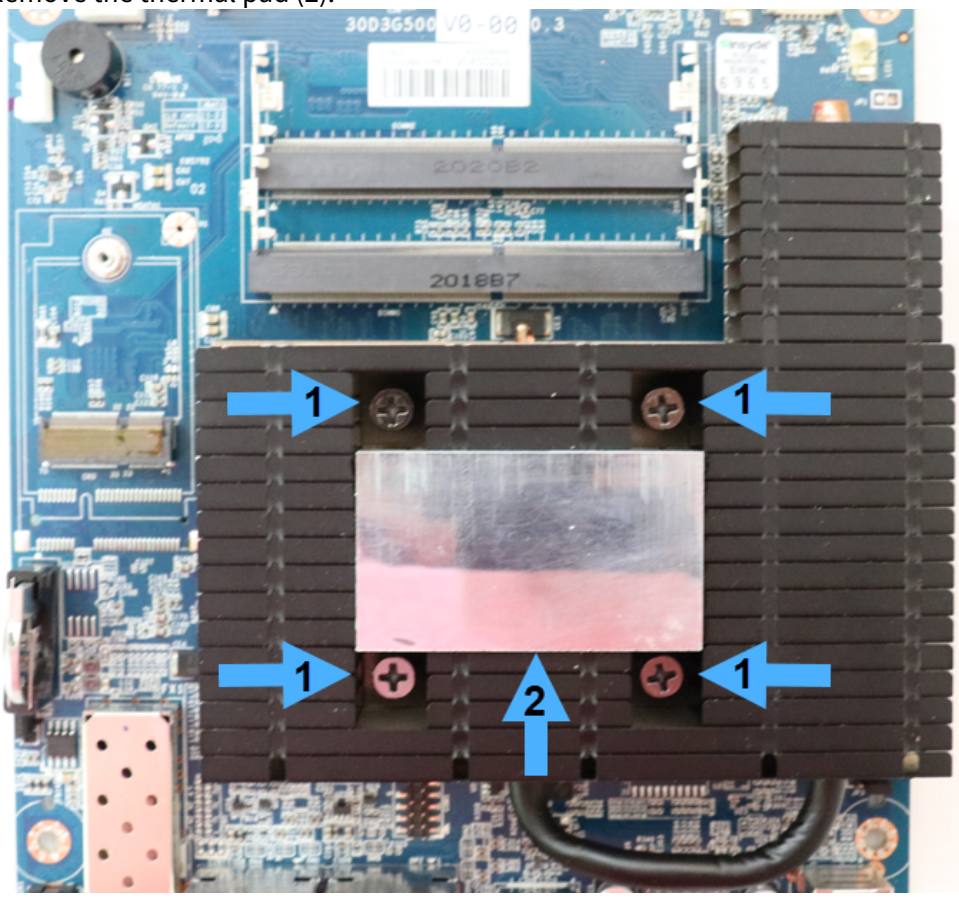
Serial Port

→ Loosen the two bolts to remove the serial port.

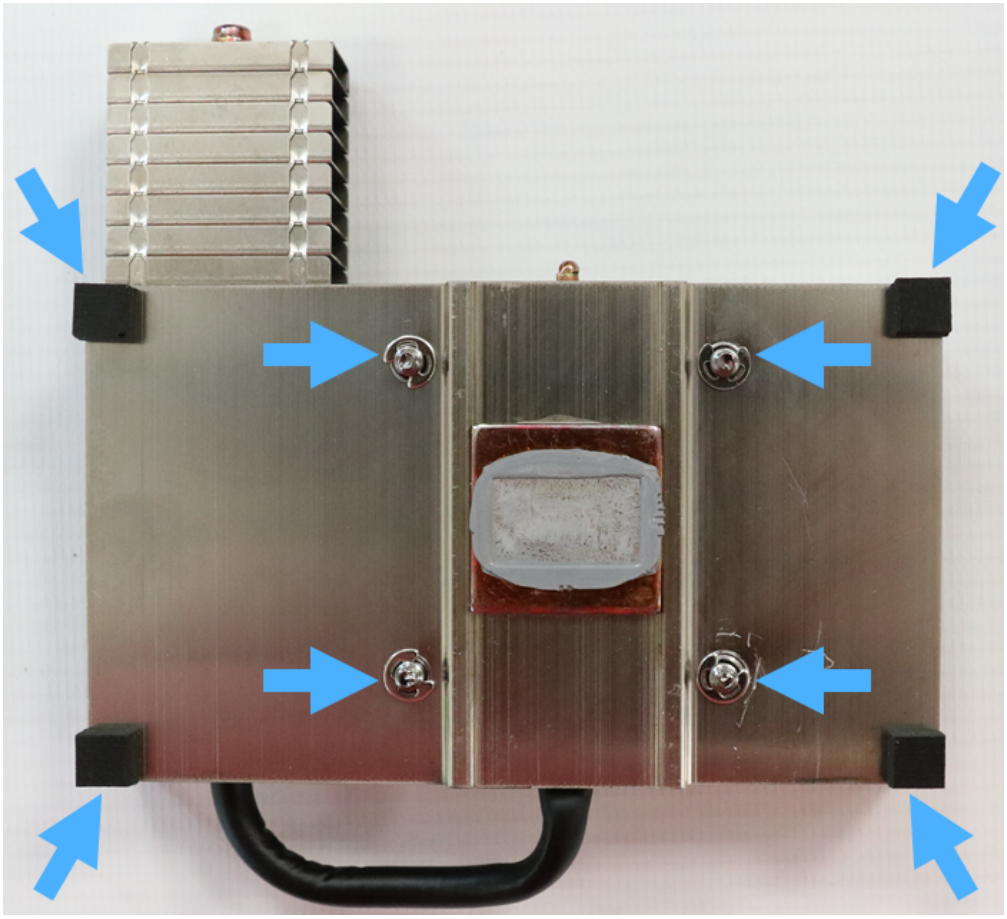


Heat Sink

1. Loosen the four screws (1) to remove the heat sink.
2. Remove the thermal pad (2).

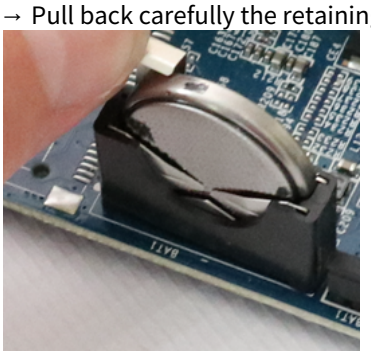


3. Remove the screws and spacers.



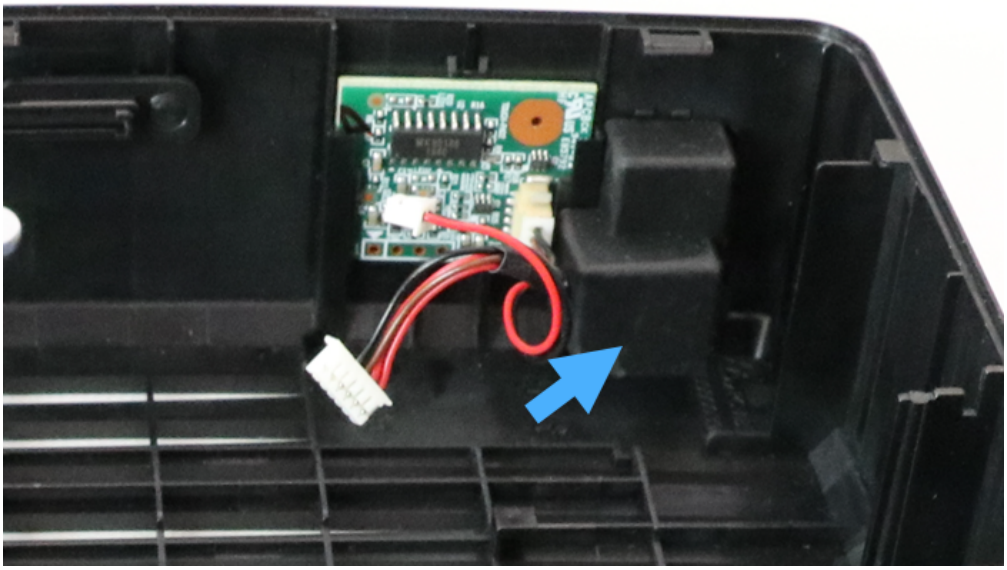
Battery

→ Pull back carefully the retaining clip and lift the battery out of the socket.

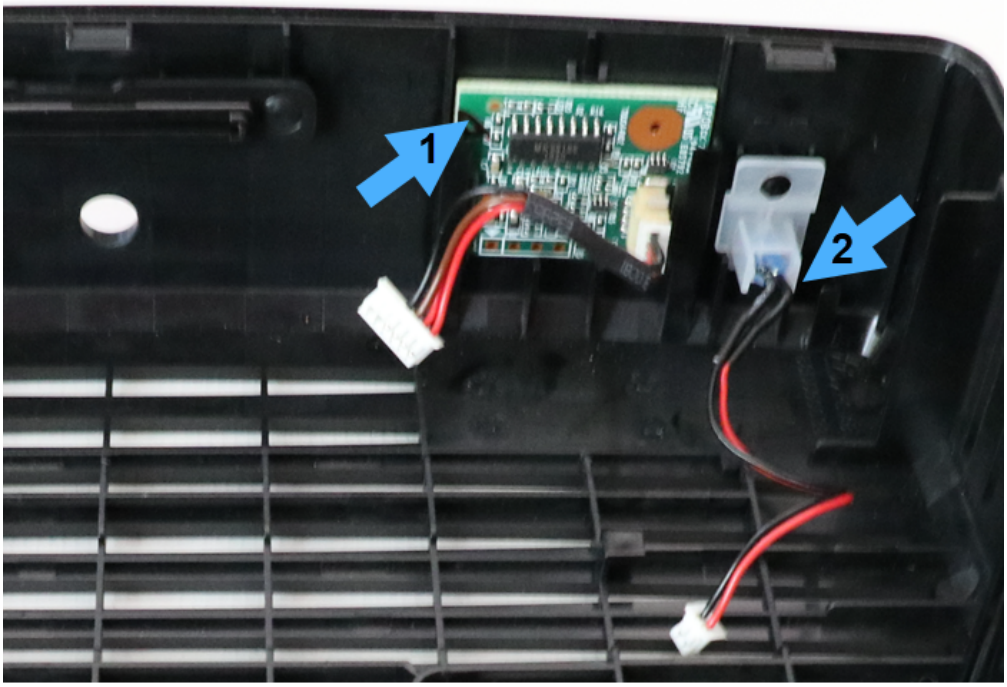


Tactile Sensor and LED of UD7 H860C

1. Detach the rubber cover.

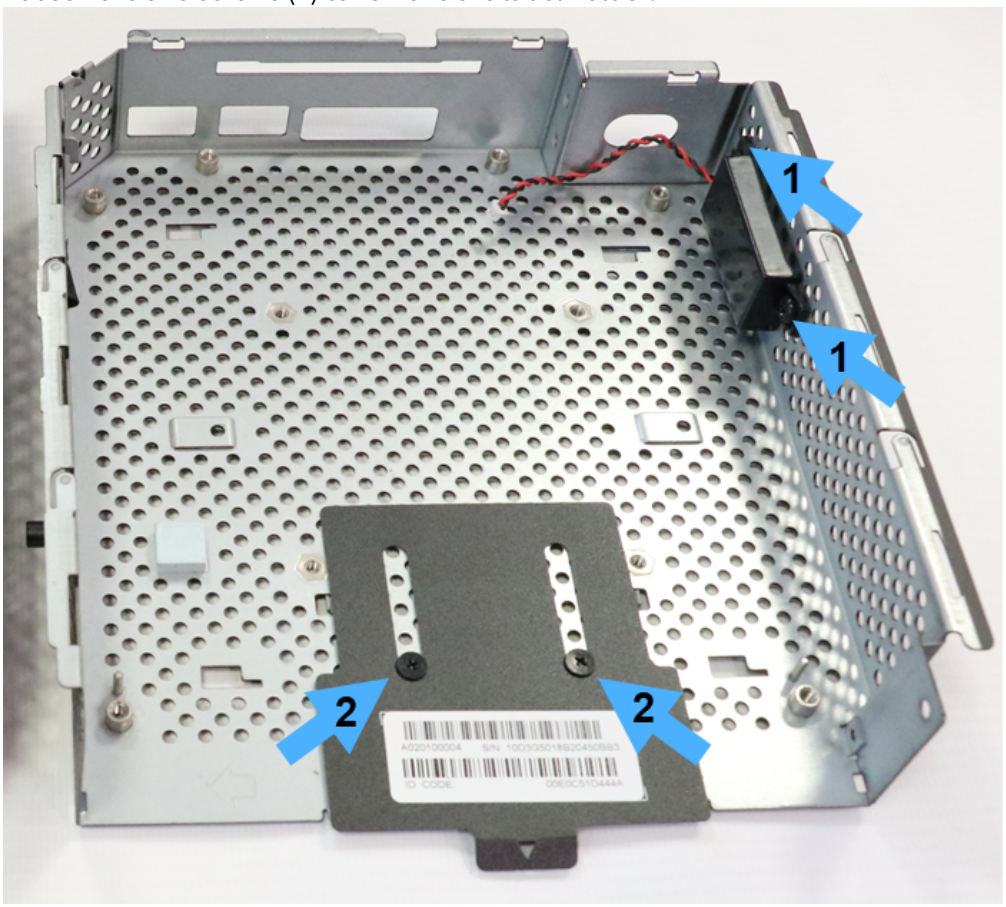


2. Pull the tactile sensor (1) up and out.
3. Pull the LED (2) out of the socket.



Speaker and Label Holder

1. Loosen the two screws (1) to remove the speaker.
2. Loosen the two screws (2) to remove the label holder.



Power Supply Cable

→ Remove the attached cable from the adapter and discard it.

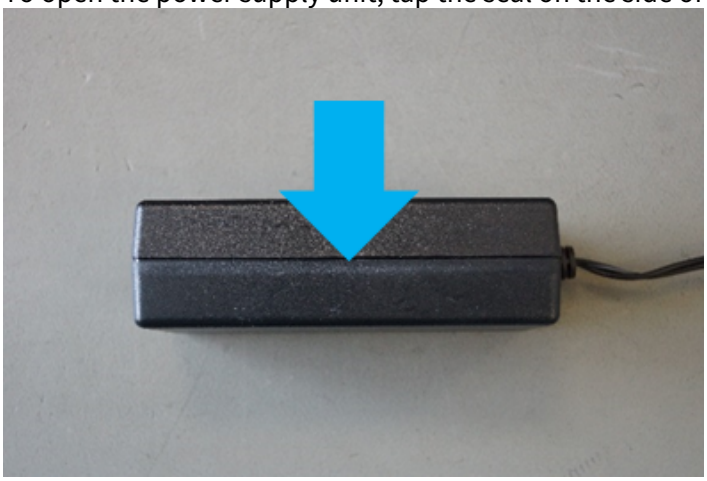
Power Supply Unit

These instructions are intended solely for recycling organizations for disposal purposes only! After opening the power supply unit, it must no longer be used.

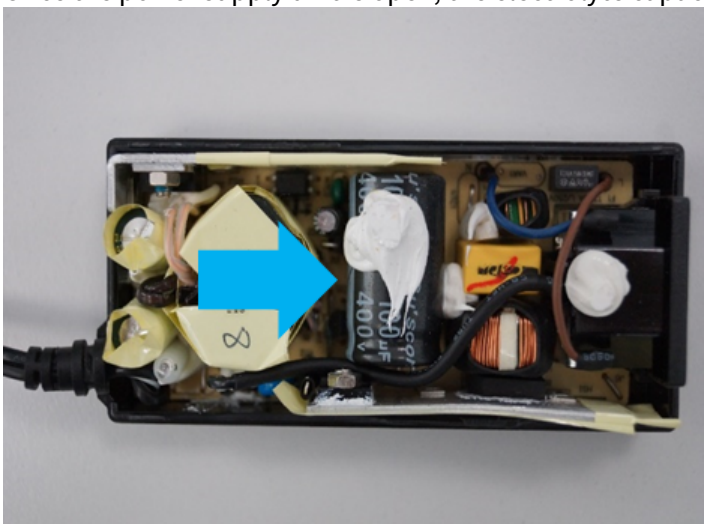
WARNING

- The disassembly of the device must only be carried out by an electrically qualified person.
- Touching live parts can cause danger to life and limb from electric shock.
- Disconnect the device from the power supply before the disassembly.
- Disconnect all peripherals from the device before the disassembly.
- Use only insulated tools for the disassembly.

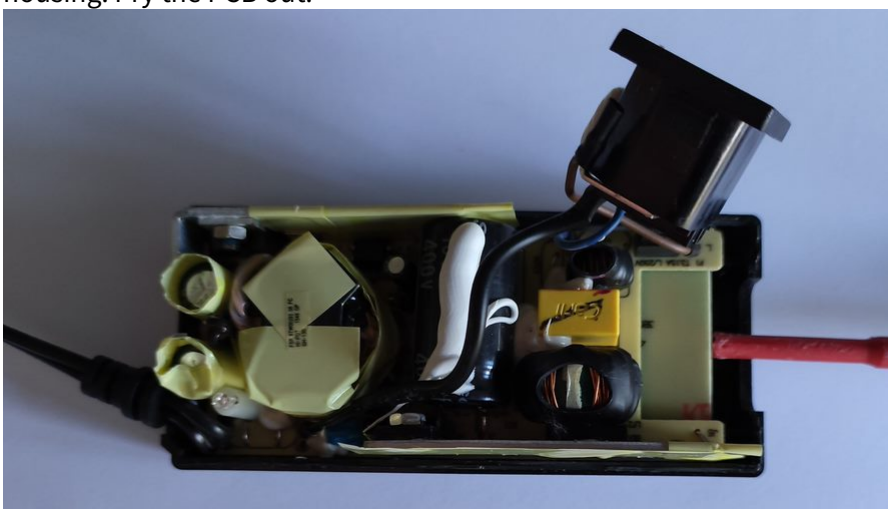
1. To open the power supply unit, tap the seal on the side of the plastic outer cover with a hammer.

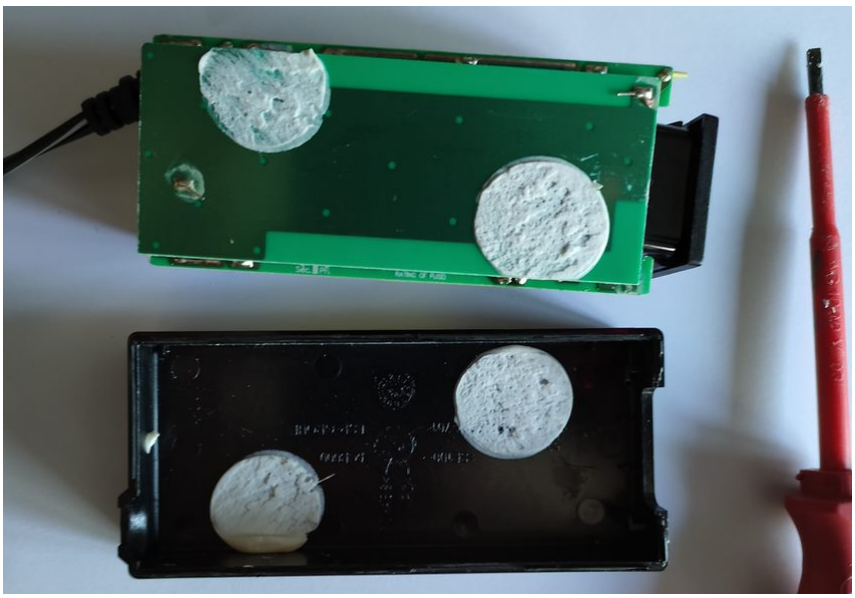


Once the power supply unit is open, the electrolyte capacitor is accessible.

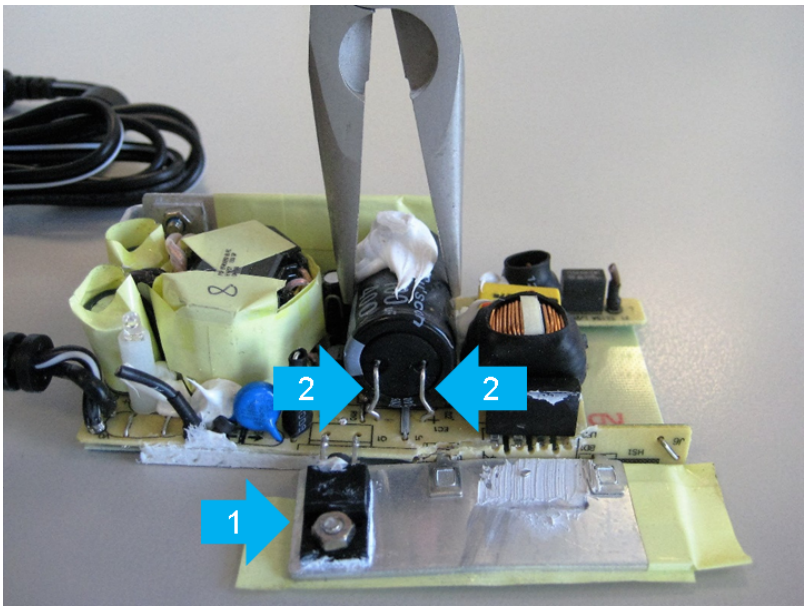


2. To remove the PCB from the housing, drive a slotted screwdriver between the PCB and the housing. Pry the PCB out.





3. Press down the side cover (1) of the inner shell.
4. Release two metal legs (2) on the capacitor with pliers.
5. Remove the capacitor using flat pliers.

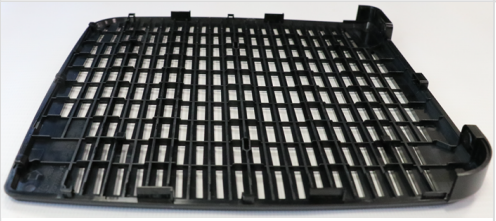


Discard the plastic housing, the capacitor, and the board separately and in an environmentally friendly way.

Disposal

After you have disassembled the device completely, carefully dispose of the individual parts.

Plastic Parts over 25g

	bottom cover
	upper cover
	foot stand

Electronic Parts

Note for components requiring selective treatment listed in Annex VII of the European WEEE Directive, Directive 2012/19/EU of the European Parliament and of the Council on waste electrical and electronic equipment (WEEE)

As a minimum, the following components must be removed:

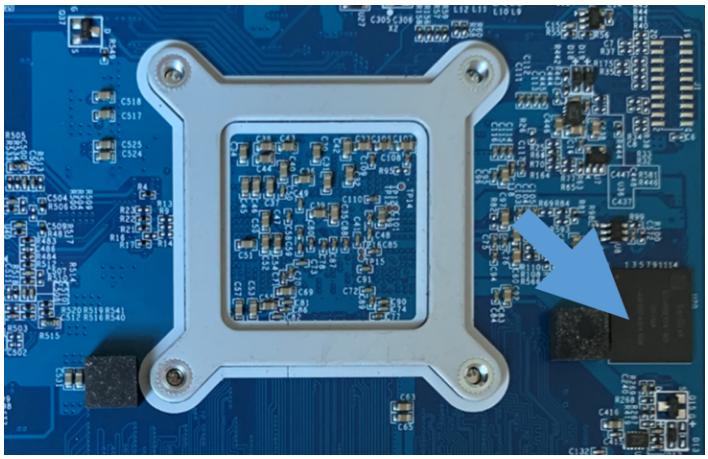
- Printed circuit boards if the surface of the printed circuit board is greater than 10 square centimeters (see Smartcard Reader (If Available) of UD7 H860C (see page 14), WLAN and Bluetooth Module (If Available) of UD7 H860C (see page 15), Mainboard and Rear Outer Casing 2 (see page 18), Power Su (see page 30)of UD7 H860C (see page 18)ply Unit 4 (see page 30))
- Button cell (seeof UD7 H860C (see page 30)Battery 4 (see page 26))
- External electriof UD7 H860C (see page 26) cables (see Power Supply Cable 3 (see page 29))

- Electrolyte capacitors contof UD7 H860C (see page 29)ining substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume) (see Power Supply Unit 4 (see page 30))

These components shall be disposed of of UD7 H860C (see page 30)r recovered in compliance with Directive 2008/98/EC.

Data Protection

Please note that the product contains one mass storage device (see picture below), which is soldered to the rear side of the mainboard. This needs to be treated according to the appropriate data protection laws.



Manual

UD7 H860C datasheet:

For the BIOS user manual, see H860C BIOS User Manual.pdf.

Information

Copyright – Copyright Publishing. All Rights Reserved

Disclaimer

This manual and the information contained herein only serve for information purposes. IGEL Technology GmbH reserves the right to modify, delete or alter any data and information contained herein.
The latest version of this document is provided online under https://wiki.test.toolchain.igel.kreuzwerker.net/hardware .
IGEL Technology GmbH is not liable and does not guarantee the correctness and completeness of the information contained in this document, including product and software description.

IGEL is a registered trademark of IGEL Technology GmbH. All hardware and software names are registered trademarks of the respective manufacturers. Errors and omissions excepted. Subject to change without notice.

IGEL Technology GmbH
Hermann-Ritter-Str. 110
28197 Bremen, Germany
Tel.: +49 421 52094 0
Fax: +49 421 52094 1499
info@igel.com[2]

2 mailto:info@igel.com

Safety Instructions

Read these instructions carefully and save them for future reference.

- All cautions and warnings on the equipment should be noted.
- Lay this equipment on a stable surface during set up. A drop or fall could cause damage.
- The warranty will be invalidated if the device is damaged during installation or replacement of system expansions.
- Use the original power adapter and power cord only.
- Make sure the power adapter and power cord are laid so that people do not step on them. Do not place anything over the power adapter or power cord.
- Disconnect this equipment from the main supply before cleaning. Do not use liquid or spray detergent to clean. Clean only with a wipe or cloth.
- Before opening the device, first, switch it off and then disconnect the power plug. Observe the specification in the user manual.
- If the equipment is not used for a long time, disconnect the equipment from the main electric supply to avoid damage by transient overvoltage.
- Make sure that no liquids leak into the device (danger of electric shock, fire, short circuit).
- Do not insert foreign objects into the device (danger of electric shock, fire, short circuit).
- If one of the following situations occurs, have the equipment checked by service personnel:
    - The power adapter, power cord or plug is damaged.
    - The equipment has been exposed to moisture.
    - The equipment does not work well, or you cannot get it working according to the user manual.
    - The equipment has been dropped or damaged.
    - The equipment has obvious signs of breakage.
- Do not leave this equipment in an unconditioned environment. Storage temperature below -20 °C (-4 °F) or above 60 °C (140 °F) may cause damage to the equipment.
- Do not use this equipment in an unconditioned environment. Unless otherwise stated in the technical specifications, operational conditions may not exceed the following limits, it may damage the equipment:
    - Vertical usage:
      Temperature: 0 °C to 35 °C, 32 °F to 95 °F
      Humidity: 20 % to 80 %, non-condensing
    - Horizontal usage (only with optional rubber feet, no VESA mount):
      Temperature: 0 °C to 35 °C, 32 °F to 95 °F
      Humidity: 20 % to 80 %, non-condensing
- To avoid overheating in the horizontal position, use the optional rubber feet and tilt the device to the left so that the power button is on the left-hand side.
- Note that even in closed rooms local temperatures may increase, for instance in case the device is exposed to strong sun radiation. Protect the device from external heat sources.
- Ensure that air is free to circulate through the product. Do not use in a poorly ventilated place. Do not cover it with a cloth or place it on soft ground. Objects surrounding the device may block the airflow. Keep a minimum distance of 20 cm around the device for sufficient ventilation.

Lithium Battery Caution

- The lithium battery (button cell) installed in the device may only be replaced by authorized, specially trained personnel.
- Contact your supplier or the manufacturer for servicing and repairs.
- Danger of explosion if the battery is incorrectly replaced. The lithium battery may only be replaced with a battery identical or equivalent to the one recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

Excessive Sound Pressure

Excessive sound pressure from ear-/headphones can cause hearing damage/hearing loss. Adjustment of the volume control as well as the equalizer to other settings than the center position may increase the ear-/headphones output voltage and therefore the sound pressure level. The use of factors influencing the ear-/headphones output other than those specified by the manufacturer (e.g. operating system, equalizer software, firmware, driver) may increase the ear-/headphones output voltage and therefore the sound pressure level.

UL 62368

This equipment must be grounded. The power cord for the equipment must only be connected to socket-outlets providing earthing connection.

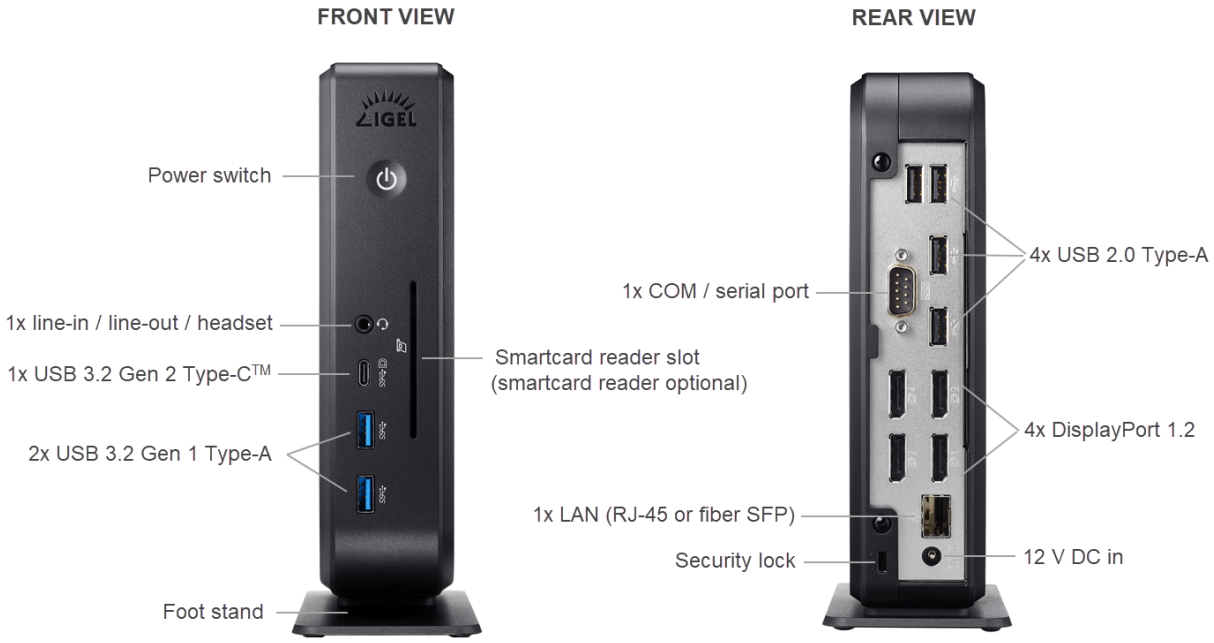
For the latest product information, visit www.igel.com[3].

3 https://www.igel.com/

IGEL UD7 H860C: Technical Specification

In the following article, you will find technical details for IGEL UD7 model H860C, its typical energy consumption, operational conditions, and options for mounting.

IGEL UD7 H860C Connections



Part List

- Endpoint device
- Foot stand
- Power supply with integrated DC cable
- AC power cord

CAUTION! Strictly follow the power connection note below:

1. Connect all accessories, e.g. mouse, keyboard, screen (not part of the equipment), and Ethernet.
2. Connect the AC power cord with the receptacle of the power supply.
3. Connect the DC cable with the DC in receptacle on the rear side of the device.
4. Connect the other end of the AC power cord with a suited mains socket.
5. Switch on the device with the touch sensor on the front side.

IGEL UD7 H860C Technical Specifications

System

Available operating systems	IGEL OS 11
Management	IGEL Workspace Edition[4], registration required
Processor	AMD Ryzen Embedded V1605B, Quad-Core 2 GHz up to 3.6 GHz *Security & Safety > _SvIncludeLibrary > Versions of Security & Safety > (1-en) Security & Safety (Document) > (1-en) Security & Safety > (1-en) AMD Secure Processor* and *Security & Safety > _SvIncludeLibrary > Versions of Security & Safety > (1-en) Security & Safety (Document) > (1-en) Security & Safety > (1-en) AMD Memory Guard* activated

Memory

RAM	2x 4GB SO-DIMM DDR4 2666 MHz
Storage	8 GB (onboard eMMC)

Graphics

Chipset	AMD Radeon™ Vega 8 Graphics
Video memory	2 GB (can be set up in BIOS to max. 4 GB for the optimal 4K video decoding)
Ports	4x DisplayPort 1.2
Supported resolutions	4x 4K @60 Hz incl. audio support
Supported video compression standard	H.264 H.265 (HEVC)

4 https://www.igel.com/igel-solution-family/igel-workspace-edition/

Network

Ethernet	optional: 10/100/1000 Ethernet RJ-45 or fiber optics small form factor pluggable (SFP); for laser class 1 optical transceivers only
Wireless	optional: integrated Intel® 9260 Wireless-AC (802.11ac WLAN and Bluetooth 5.1); support for *IGEL OS > Versions of IGEL OS > (11.09.310-en) IGEL OS > (11.09.310-en) IGEL OS Reference Manual > (11.09.310-en) Network 1 > (11.09.310-en) LAN Interfaces > (11.09.310-en) Wireless > (11.09.310-en) Default Wi-Fi Network*

Audio

Chipset	Realtek ALC256 HD Audio
Ports	1x 3.5 mm (1/8-inch) TRRS audio jack (CTIA standard) (line-in / line-out / headset)
Speakers	1x internal

Interfaces

USB 3.2 Gen 1 Type-A™ (SuperSpeed USB)	2x front
USB 3.2 Gen 2 Type-C™ (SuperSpeed USB)	1x front Load to max. 7.5 W. Support for alternate mode DisplayPort 1.4 ⚠ DisplayPort 4 is disabled when Type-C™ is connected to a monitor.
USB 2.0 Type-A	4x rear
DisplayPort 1.2	4x rear
LAN	1x rear
Line-in / line-out / headset	1x front
12 V DC in	1x rear

Security lock	1x rear
Smartcard reader	optional: 1x front (built-in HID Omnikey 3121)
Serial	1x rear (incl. 5 V power supply)

Dimensions and Weight

Device (DxWxH), upright	204 x 68 x 206 mm (with foot stand) 196 x 48 x 196 mm (without foot stand)
Device weight	1.19 kg (without foot stand) 1.25 kg (with foot stand) 1.52 kg (with foot stand and external power adapter)
Packaging (DxWxH), horizontal	225 x 275 x 95 mm
Packaging weight	0.31 kg

Environmental Conditions

Strictly follow safety instructions and respect environmental conditions!

Cooling	fanless convection
Operating temperature	vertical (without VESA mount): 0 °C – 40 °C, 32 °F – 104 °F vertical (with VESA mount): 0 °C – 35 °C, 32 °F – 95 °F horizontal (with optional rubber feet only): 0 °C – 35 °C, 32 °F – 95 °F
Operating humidity	20 % – 80 %, non-condensing

Electrical Data

Power supply	external
Power supply AC input	auto sensing 100 – 240 V / 50 – 60 Hz
Power supply DC output	12 V / 5 A (60W) External Power Adapter Level VI, UL/IEC 62368-1

Power consumption	Excl. WLAN: 5.90 W (idle) / 0.36 W (sleep) / < 0.29 W (off) (@230 V, 50 Hz) 5.73 W (idle) / 0.35 W (sleep) / < 0.28 W (off) (@115 V, 60 Hz) Incl. WLAN: 6.62 W (idle) / 0.36 W (sleep) / < 0.29 W (off) (@230 V, 50 Hz) 6.43 W (idle) / 0.35 W (sleep) / < 0.28 W (off) (@115 V, 60 Hz)

Options for Device Mounting

VESA mount	for mounting on the back of a monitor vertical mounting only! If you additionally require a cable mount solution, see Mini-PC Cable-Caddy[5].* (see page 39)
Rubber feet	for horizontal placement of the device

Optional

Integrated smartcard reader	for secure smartcard-based authentication
VESA mount	for mounting on the back of a monitor
Rubber feet	for horizontal placement of the device
USB-to-parallel adapter	for connecting peripherals that require a parallel port
USB-to-serial adapter	for connecting peripherals that require a serial port
Integrated WLAN / Bluetooth	for wireless connectivity

Tip
For UD7 devices H860C, IGEL recommends the following adapters:
– for connecting a monitor that requires a DVI port:
- Mini DisplayPort to 2 Port DVI-D MST Hub from LINDY[6] in combination with the DisplayPort to Mini DisplayPort Adapter from LINDY[7]
- DisplayPort to HDMI Active Adapter from Plugable[8] (requires an additional HDMI-to-DVI adapter cable)

At lower resolutions (up to 1920 x 1200 @60 Hz), a passive DisplayPort-to-DVI adapter can also be used.

5 https://www.leuprecht.de/mini-pc-cable-caddy/
6 https://www.lindy-international.com/Mini-DisplayPort-to-2-Port-DVI-D-MST-Hub.htm?websale8=ld0101.ld020102&pi=41731&ci=20
7 https://www.lindy-international.com/Mini-DP-to-DP-Adapter.htm?websale8=ld0101.ld020102&pi=41089&ci=80
8 https://plugable.com/products/dp-hdmi/

* Non-binding 3d-party product reference

Regulatory Compliance Information

FCC Compliance Statement

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.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Supplier's Declaration of Conformity

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.

View the Supplier's Declaration of Conformity under https://wiki.test.toolchain.igel.kreuzwerker.net/hardware (see page 46).

WEEE and Battery Waste Note

In accordance with EU directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) and Directive 2006/66/EC for waste batteries, customers and manufacturers are responsible for returning and recycling their old equipment and batteries. Based on this, all IGEL thin clients (including the battery) labelled with a WEEE and battery waste seal will be taken back and disposed of at no charge by IGEL Technology. The Customer is obliged to delete personal and business data on the devices before using this Collection Service.

Contact our Collection Service by filling out the RMA form on https://support.igel.com/csm . An IGEL service employee will contact you to arrange a collection date for the unit.

For US customers, IGEL offers options to recycle unwanted IGEL thin clients. More information can be found on our website https://www.igel.com/terms-conditions .

Supplier's Declaration of Conformity

Supplier's Declaration of Conformity

We (Manufacturer/Importer)
IGEL Technology GmbH
(company name)

Hanna-Kunath-Str. 31 28199 Bremen Germany
(address)
declares under our sole responsibility that the product.

Equipment: Thin Client
Model No.: IGEL-H860C

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

47 CFR, Part2, Part 15 and CISPR PUB. 22

Applicable to ANSI C63.4 – 2014

Signature: Date: 03. March 2021
Full name: Matthias Haas TEL: +49 421 520940
Title: Chief Technology Officer FAX: +49 421 520940 1499

American local supplier:
Company Name: IGEL America Sales Corporation
Address: 540 Howard Street, San Francisco, CA 94105
TEL: +1 845 589 5900 FAX: +1 845 589 8912
URL: https://www.igel.com/