M250C

- Disassembly Guide of UD2 M250C (see page 3)
- Manual of UD2 M250C (see page 27)

The List of UD2 Devices M250C

UD2-LX 50, 51, 52

Disassembly Guide

This step by step guide shows you how to skillfully disassemble IGEL UD2 model M250C.

Pay attention to Safety Instructions of UD2 M250C !

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.

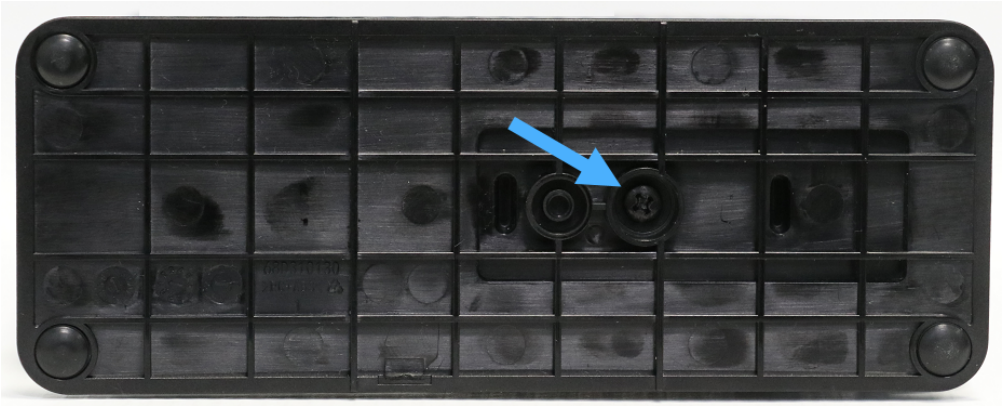
In the following image, you see the examples of the appropriate tools for disassembly:

Positioning the Device

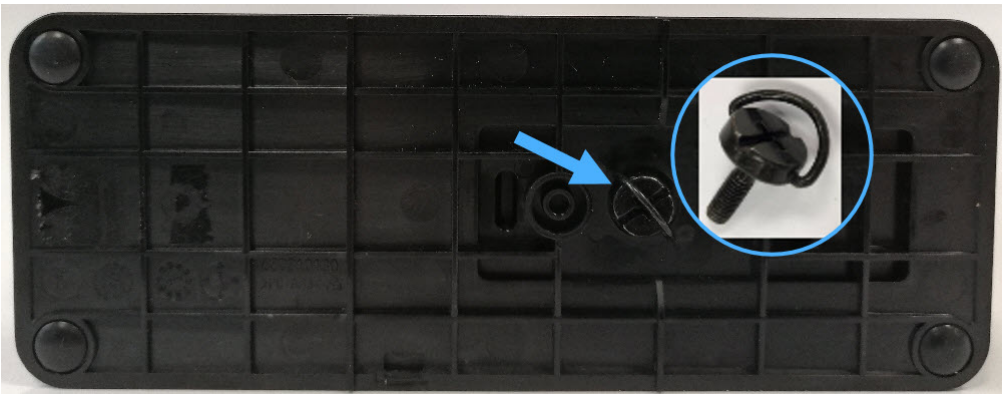
→ Place the device on a soft and slip-resistant surface.

Foot Stand of UD2 M250C

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



   Hand Screw



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

Rubber Feet (If Available) of UD2 M250C

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 upwards to remove it from the device casing.

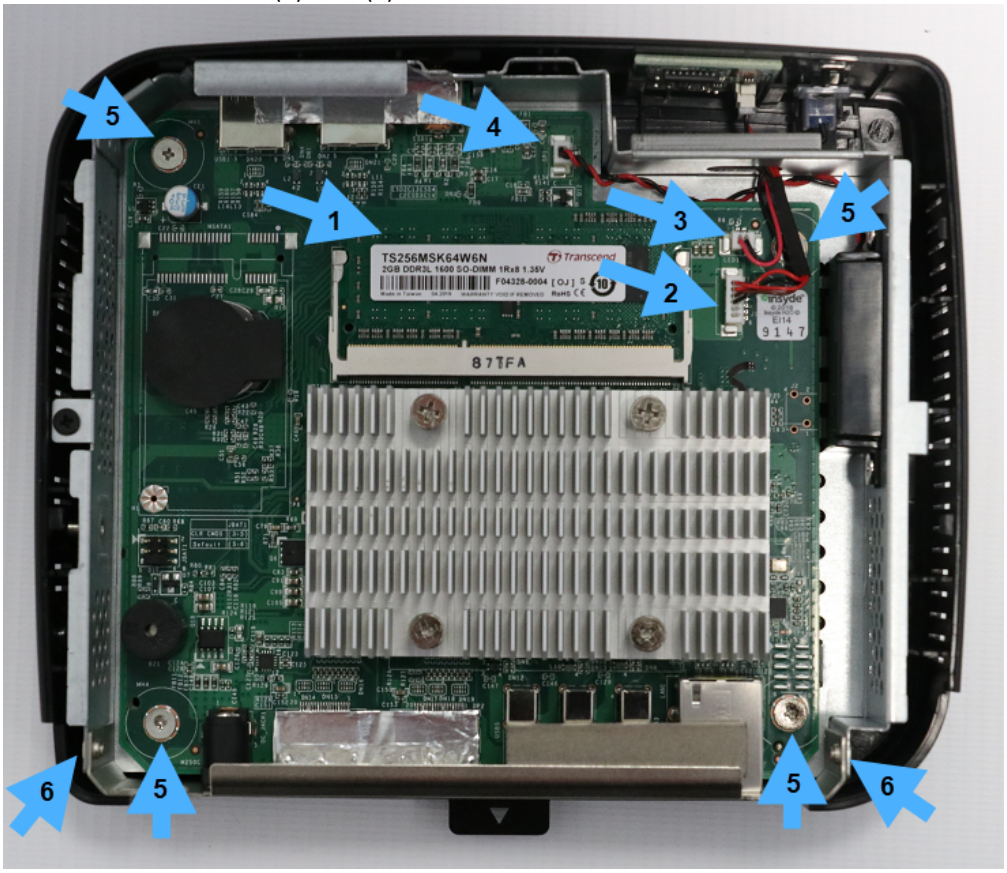
Metal Panel

1. Loosen the two screws that fasten the metal panel to the upper cover.

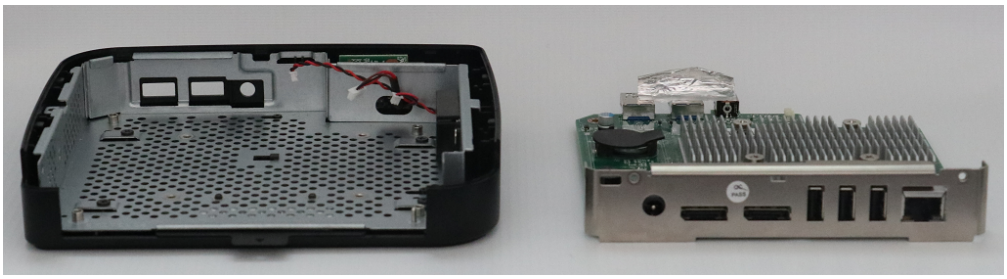
2. Push the metal panel in the direction opposite to the one indicated by the engraved arrow and remove the panel.

Mainboard and Rear Outer Casing

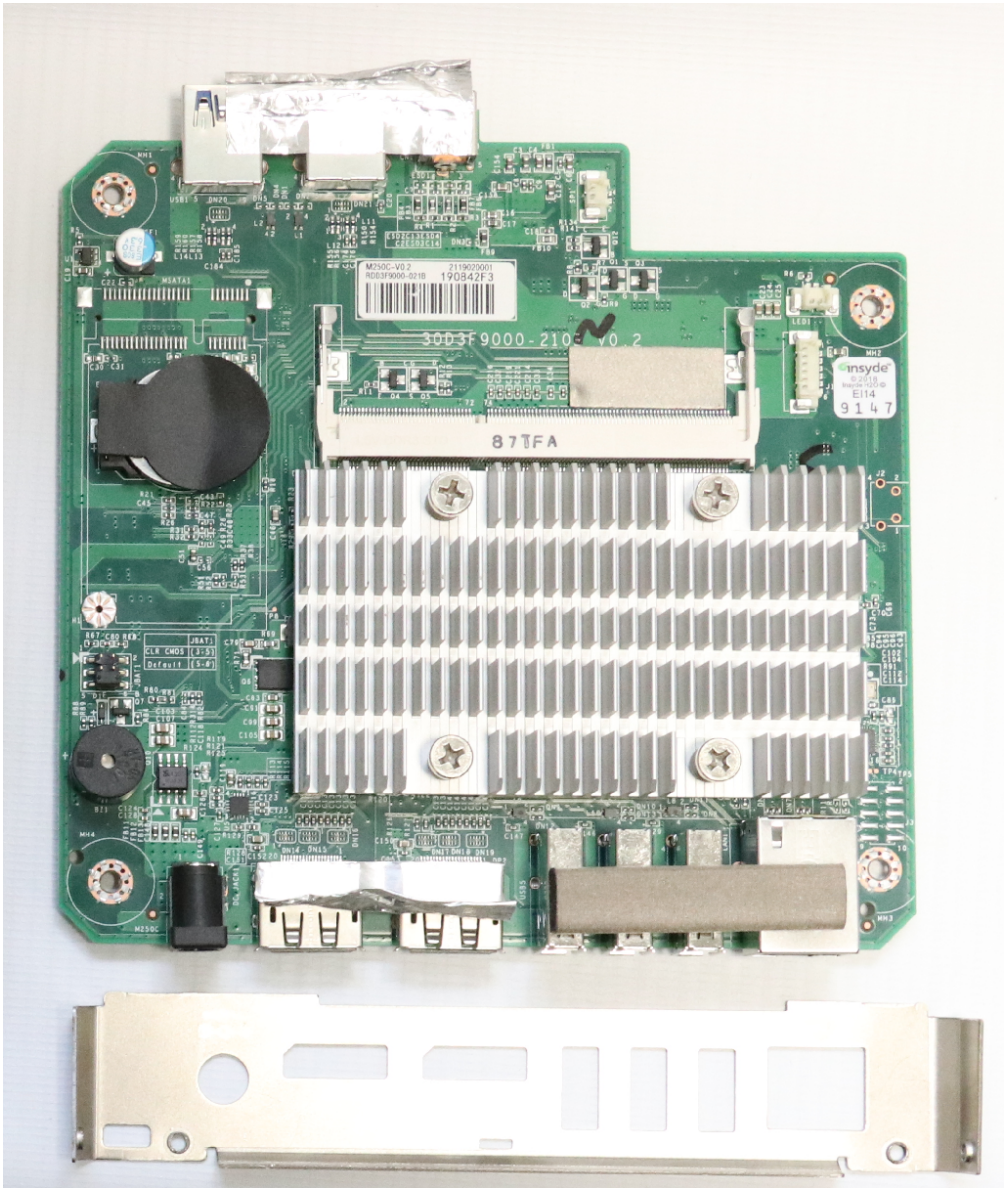
1. Remove the memory (1).
2. Plug out the tactile sensor (2), LED (3) and speaker (4) cables.
3. Loosen the six screws (5) and (6).



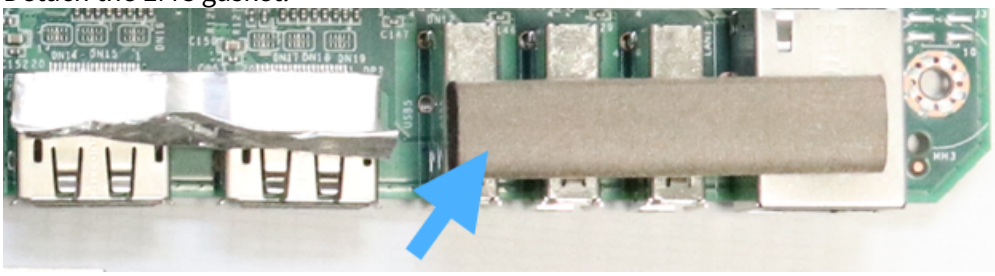
4. Lift the rear outer casing and remove it together with the mainboard from the chassis.



5. Detach the rear outer casing from the mainboard.

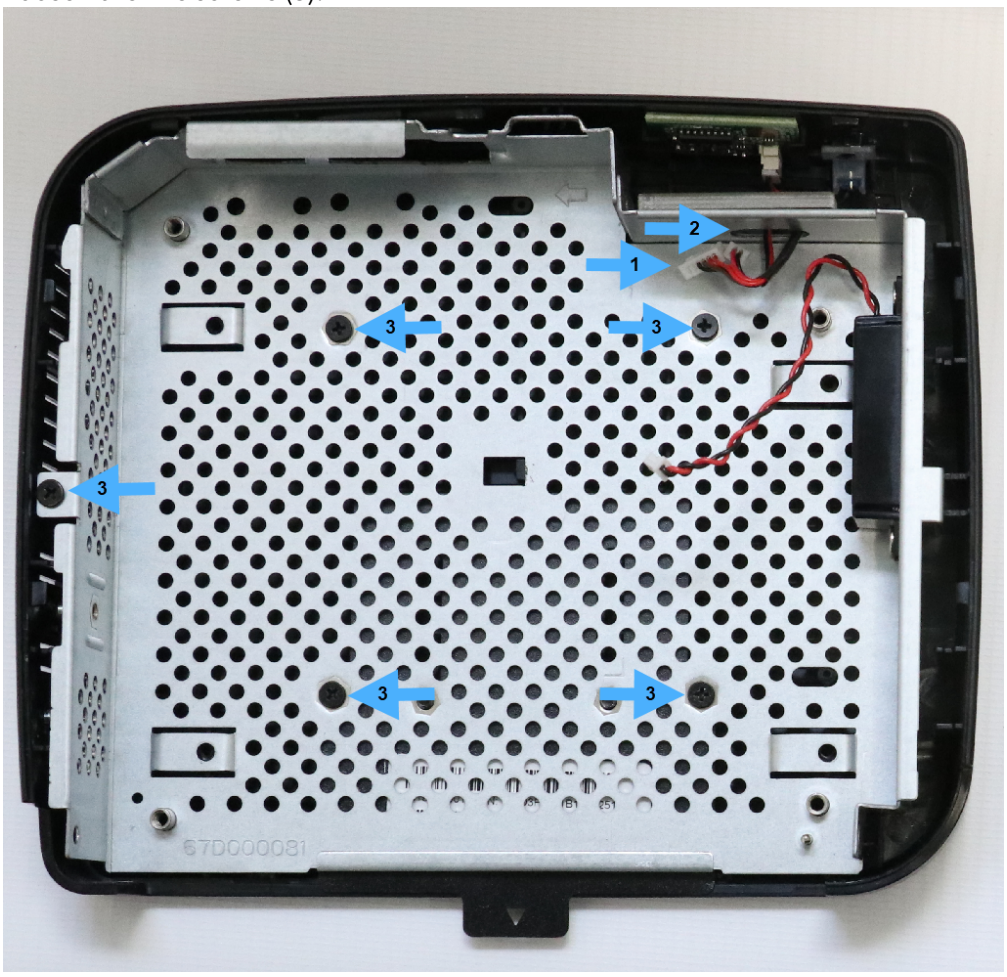


6. Detach the EMC gasket.



Bottom Cover and Chassis

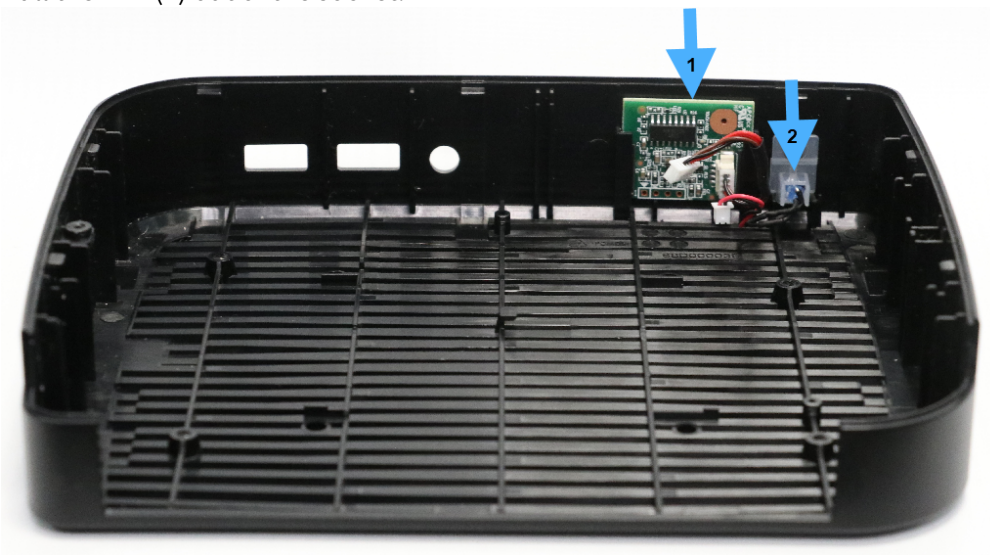
1. Thread the tactile sensor and LED cables (1) through the opening (2) in the chassis.
2. Loosen the five screws (3).



3. Separate the bottom cover from the chassis.

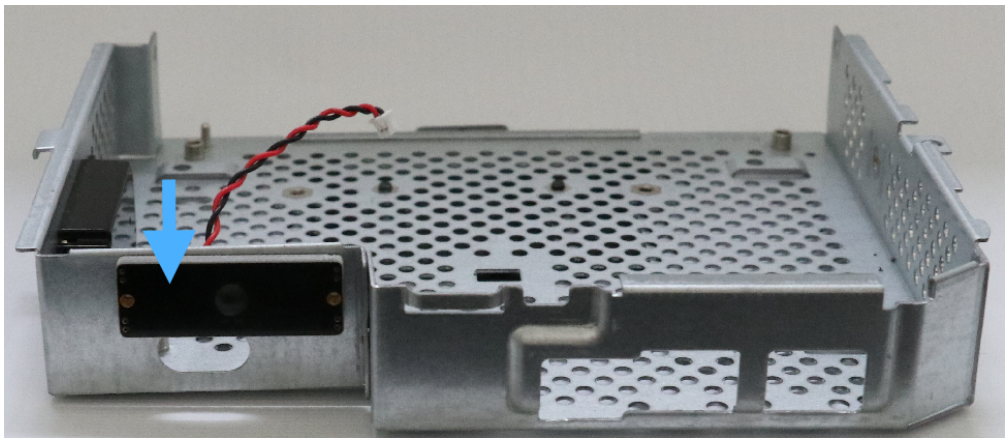
Tactile Sensor and LED

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



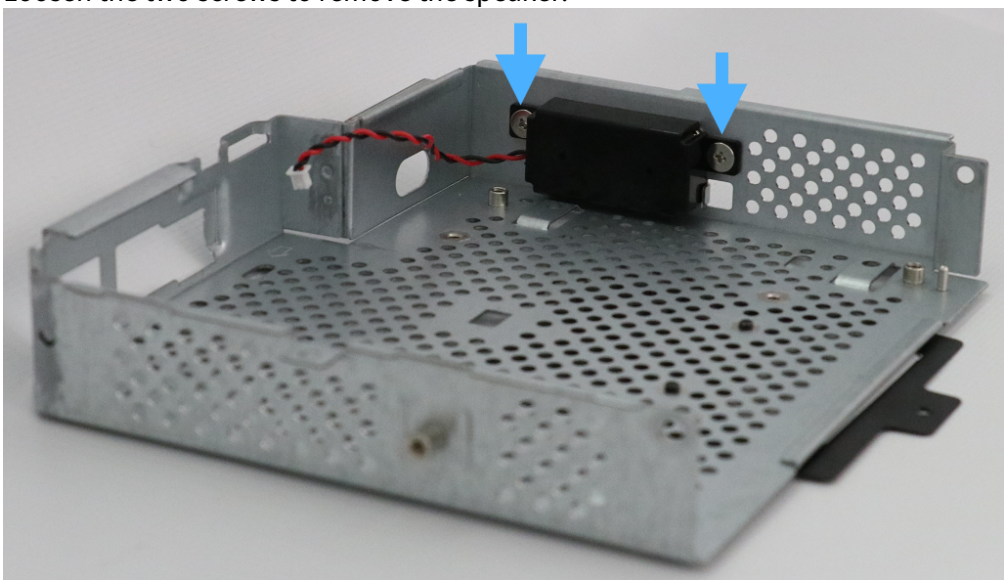
Transponder

→ Remove the transponder from the chassis.

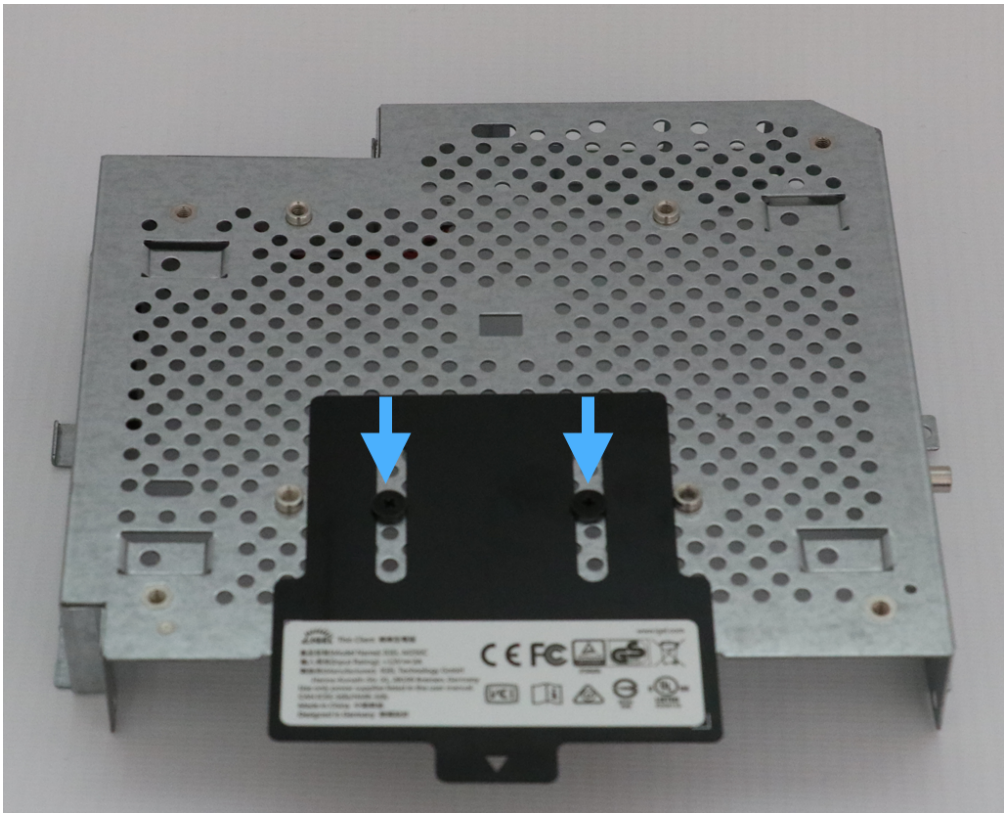


Speaker and Label Holder

1. Loosen the two screws to remove the speaker.

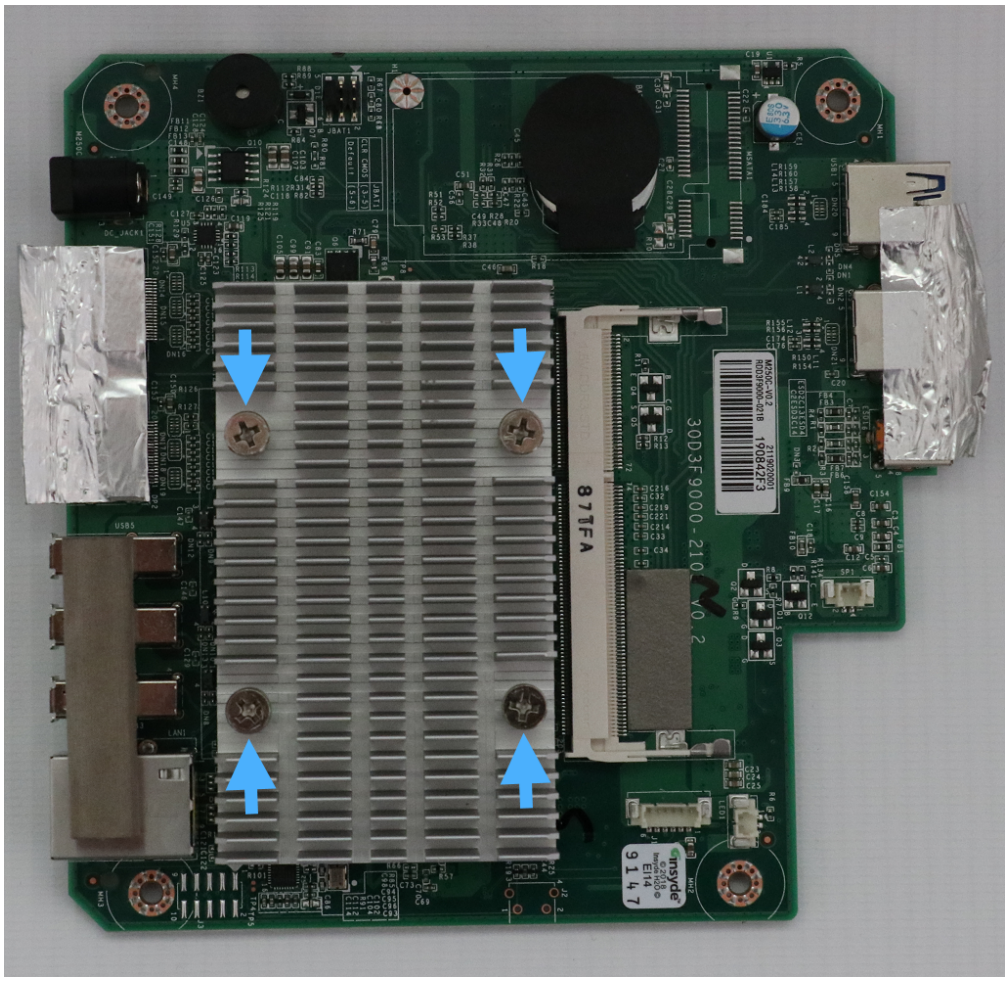


2. Turn the chassis around and loosen the two screws to remove the label holder.



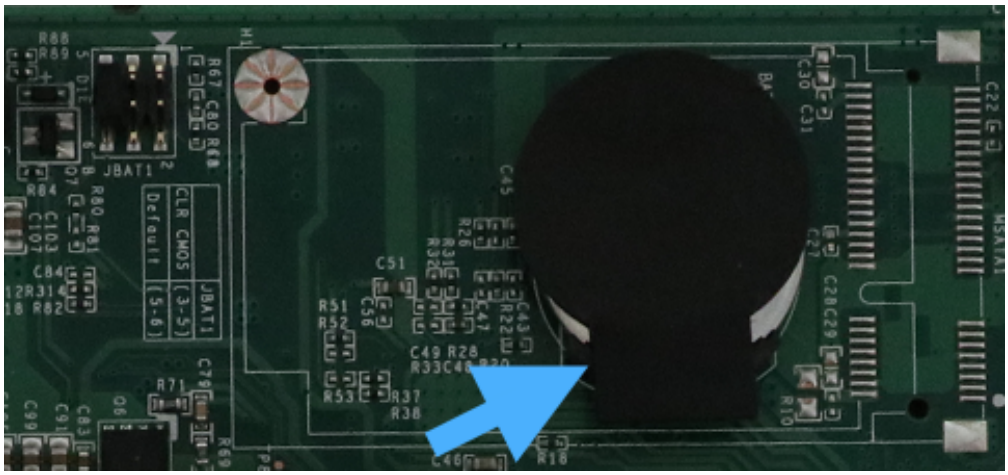
Heat Sink

→ Loosen the four screws to remove the heat sink.



Battery

→ Pull the battery cover to remove the battery out of the socket.



Power Supply Cable

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

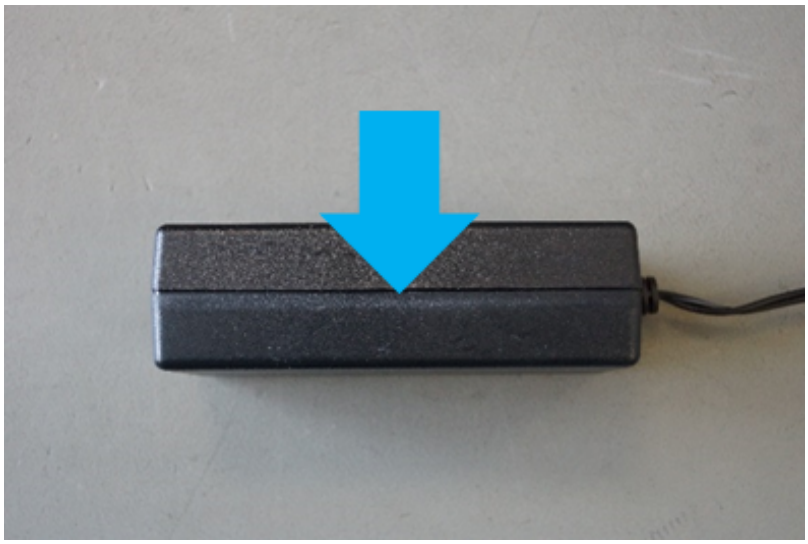
Power Supply Unit

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

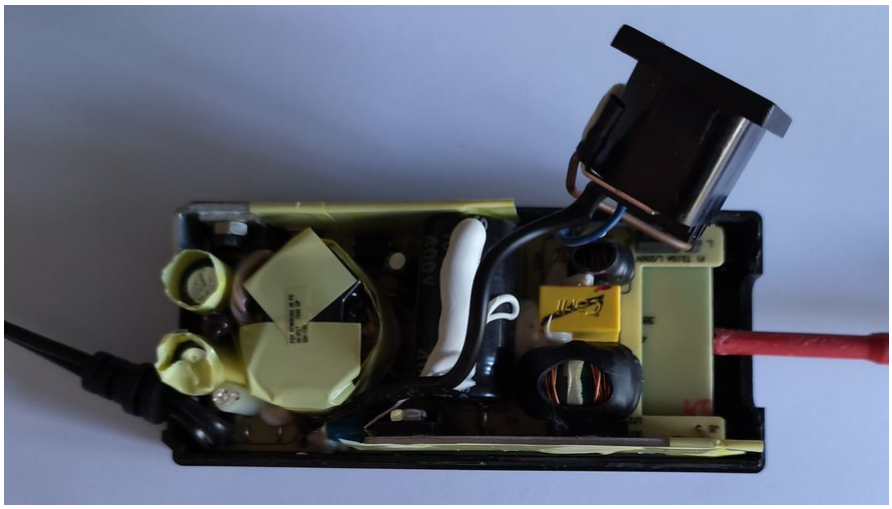
- The disassembly of the device must only be carried out by an electrically qualified person.
- Touching live parts can cause danger to life and limb from electric shock.
- Disconnect the device from the power supply before the disassembly.
- Disconnect all peripherals from the device before the disassembly.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

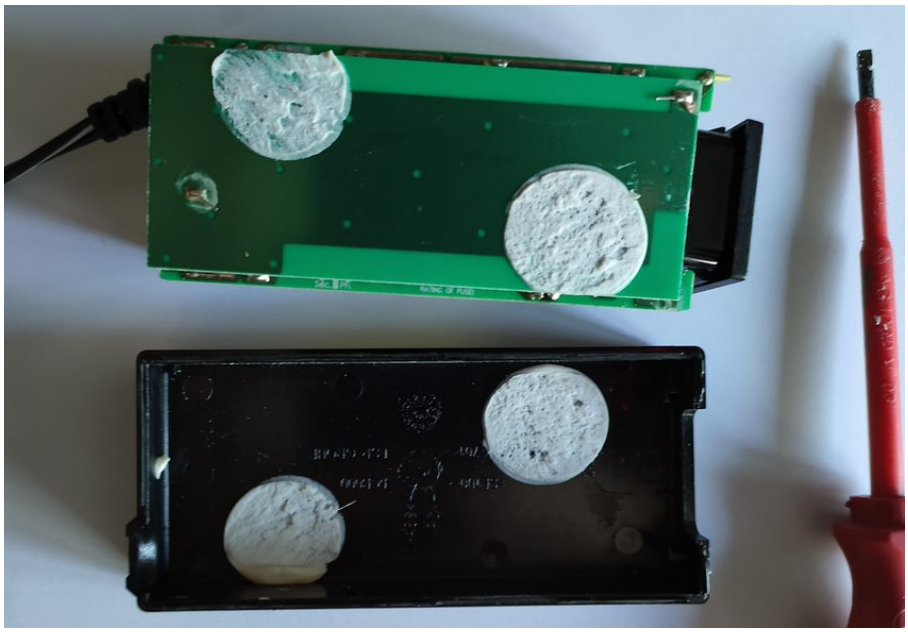
1. To open the power supply unit, tap the seal on the side of the plastic outer cover with a hammer.



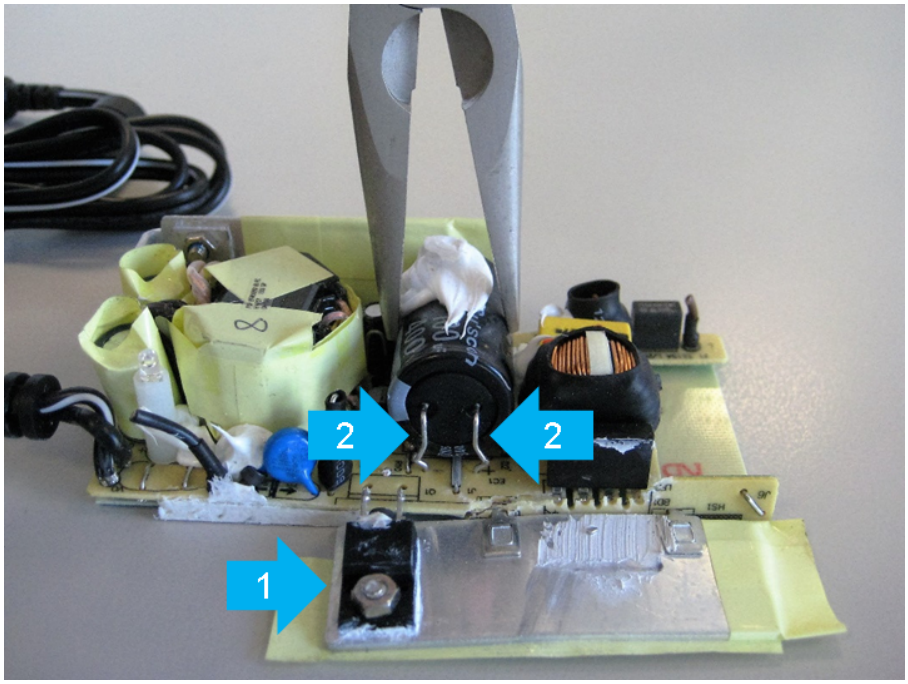
Once the power supply unit is open, the electrolyte capacitor is accessible.

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)

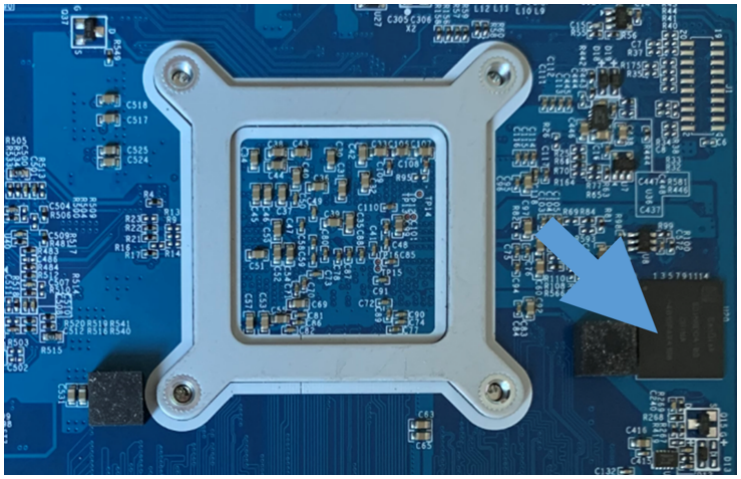
As a minimum, the following components must be removed:

- Printed circuit boards if the surface of the printed circuit board is greater than 10 square centimeters (see Mainboard and Rear Outer Casing of UD2 M250C (see page 12), Power Supply Unit of UD2 M250C (see page 22))
- Button cell (see Battery of UD2 M250C (see page 20))
- External electric cables (see Power Supply Cable 1 (see page 21))
- Electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume) (see Power Supply Unit 2 (see page 22))

These components shall be disposed of or 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

UD2 M250C datasheet:

For the BIOS user manual, see M250C 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.

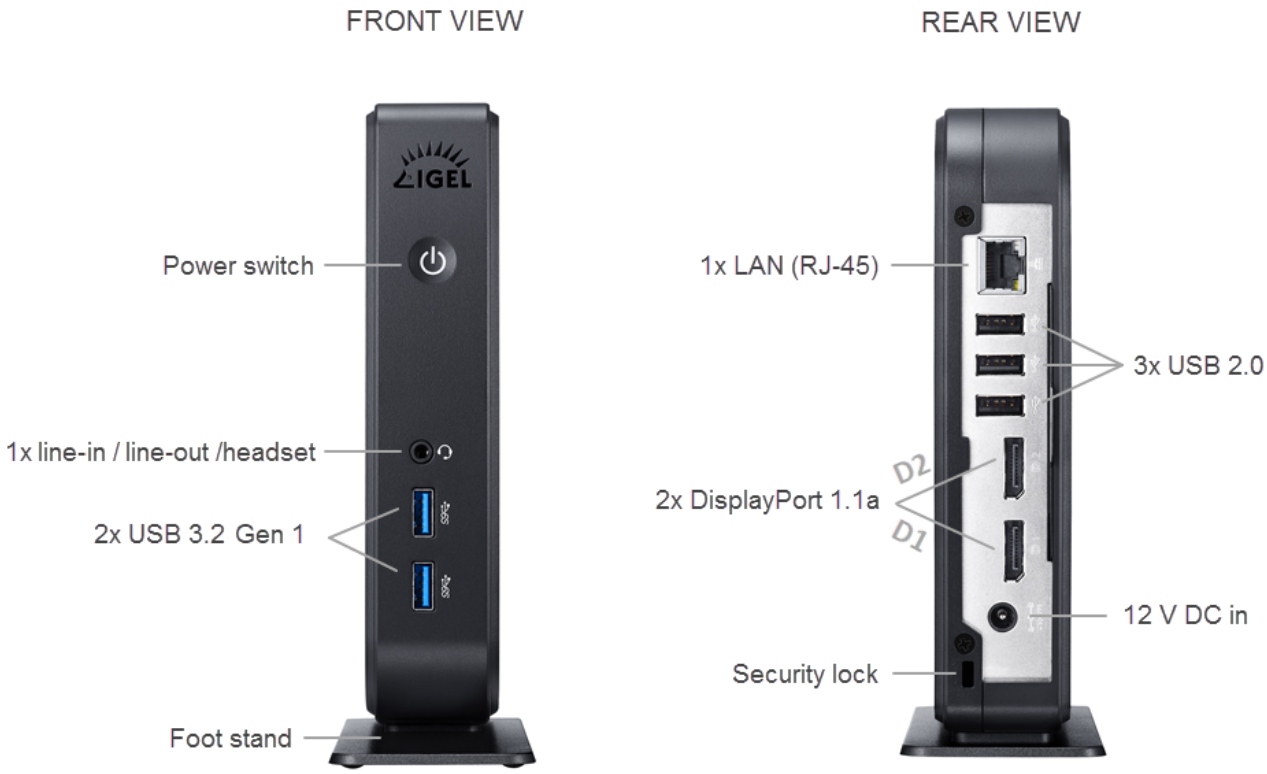
For the latest product information, visit www.igel.com[3].

3 https://www.igel.com/

IGEL UD2 M250C: Technical Specification

In the following article, you will find technical details for IGEL UD2 model M250C, its typical energy consumption, operational conditions, and options for mounting.

IGEL UD2 M250C 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 UD2 M250C Technical Specifications

System

Available operating systems	IGEL OS 11
Management	IGEL Workspace Edition, registration required
Processor	UD2-LX 50, 51: Intel Atom x5-E8000 Quad-Core 1.04 GHz up to 2.00 GHz (turbo boost frequency) system on a chip (SoC) UD2-LX 52: Intel Celeron N3160 Quad-Core 1.6 GHz up to 2.24 GHz (turbo boost frequency) system on a chip (SoC)

Memory

RAM	2 GB (1x 2GB SO-DIMM DDR3L 1600 MHz) or 4 GB (1x 4 GB SO-DIMM DDR3L 1600 MHz)
Storage	UD2-LX 51, 52: 8 GB (onboard eMMC) UD2-LX 50: 4 GB (onboard eMMC)

Graphics

Chipset	Intel HD Graphics
Video memory	128 – 512 MB shared memory
Ports	2x DisplayPort 1.1a
Supported resolutions	2560 x 1600 @60 Hz (dual view) Accelerated video decoding support for resolutions up to 2x WUXGA (1920 x 1200) or 1x WQHD (2560 x 1440)

Supported video compression standard	H.264 H.265 (HEVC)

Network

Ethernet	10/100/1000 Ethernet (RJ-45 connector)

Audio

Chipset	Realtek ALC897 or ALC888S 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 (SuperSpeed USB)	2x front
USB 2.0	3x rear
LAN	1x rear
DisplayPort 1.1a	2x rear
12 V DC in	1x rear
Security lock	1x rear
Line-in / line-out / headset	1x front

Dimensions and Weight

Device (DxWxH), upright	155 x 57 x 183 mm (with foot stand) 147 x 37 x 176 mm (without foot stand)
Device weight	0.71 kg (with foot stand) 0.68 kg (without foot stand) 1.04 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: 0 °C – 40 °C, 32 °F – 104 °F horizontal (with optional rubber feet only): 0 °C – 40 °C, 32 °F – 104 °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 / 3 A External Power Adapter Level VI, UL/IEC 62368-1 (A140-1120300N)
Power consumption	4 W (idle) / 0.5 W (sleep) / < 0.3 W (off) (@230 V, 50 Hz)

Typical Energy Consumption (ENERGY STAR, 7.1)

E_{TEC}	15.83 kWh (per year, @230 V) 15.51 kWh (per year, @115 V)
$E_{TEC, max}$	33.0 kWh (per year, @230 / 115 V)

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[4].* (see page 31)

4 https://www.leuprecht.de/mini-pc-cable-caddy/

Rubber feet	for horizontal placement of the device

Optional Accessories

VESA mount	for mounting on the back of a monitor
Rubber feet	for horizontal placement of the device
Active DisplayPort-to-DVI adapter	for connecting a monitor that requires a DVI port
USB-to-serial adapter	for connecting peripherals that require a serial port
USB-to-parallel adapter	for connecting peripherals that require a parallel port

* 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 38).

ENERGY STAR Note

IGEL Thin Clients with a preinstalled operating system support ENERGY STAR® Power Management configuration upon shipment. The power-saving mode for the display is managed via local setup. By default, it is activated after 10 minutes of inactivity. Reactivation from standby mode can be done by moving the mouse or pressing a key on the keyboard, while off mode can be controlled via the Ethernet connection (Wake-On-LAN).

ENERGY STAR Program

Power managing your ENERGY STAR qualified thin client can save up to 100 kWh annually or 25 € ($28) per year. These energy savings are equivalent to a preventing of over 60 kg (132 lbs) CO_2 emissions per year.

To learn more about Power Management for your workplace, please go to https://energystar.gov/powermanagement[5].
ENERGY STAR is the government-backed program that helps us all save money and protect our environment with energy-efficient products and practices. Go to https://energystar.gov[6].

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 .

5 https://www.energystar.gov/products/low_carbon_it_campaign/put_your_computers_sleep
6 https://www.energystar.gov/

Supplier's Declaration of Conformity

Supplier's Declaration of Conformity

We (Manufacturer/Importer)

IGEL Technology GmbH
(company name)

Hanna-Kunath-Strasse 31, 28199 Bremen, Germany
(address)

declare under our sole responsibility that the product

Equipment: IGEL UD2 Thin Client Computer

Model No.: IGEL-M250C

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: February 13th, 2019

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/

Relevant Documents

Directive 2009/125/EC Ecodesign Requirements