System Upgrades and Repairs

ESPRIMO G5010 /G9010

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Category	System Upgrades and Repairs

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System Upgrades and Repairs

We recommend printing out the relevant sections of this chapter prior to installation as the device for installing/removing hardware components needs to be switched off.

The following illustrations may differ from your device, depending on its configuration and features.

If you have received any further documents with your device, you should read these through carefully.

Please note the following instructions before installing/removing system components:

- The device must be switched off when installing/removing components and it must not be in power-saving mode.
- Disconnect the mains plug before opening the device.
- After unplugging the mains plug, discharge the remaining voltage by pressing the activation button.
- Remove all externally connected cables.
- Take care not to pinch any cables when installing/removing components.
- Please ensure that the installed components that might heat up intensely during operation do not exceed the permitted operating temperature.

During a system expansion or a hardware upgrade, it is possible that the BIOS must be updated. You can find more information in the technical information provided for your device.

Information on the installation and removal of components

Please pay attention to the locking mechanism (indentations and centring pins) when installing hardware components.

Note that some components on the mainboard may be very hot if the device was in use shortly before the case was removed.

Utmost care is required during installation and removal to avoid damaging components.

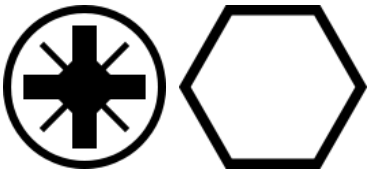
Never use items with sharp edges (screwdrivers) to lever them out.

Parts with Electrostatic Sensitive Devices (ESD)
can be identified by a corresponding label.
When dealing with boards with ESDs, the following points must always be observed:



- Always ensure there is a static discharge (e.g. by touching a grounded object) prior to commencing with the work.
- The devices and tools being used must not be statically charged.
- Only touch the components along the edges or on the areas marked in green (contact points).
- Contacts and electronic components must not touch when handling components equipped with ESD protection.

Screws and tools




Screw: M3 x 4.5
Screwdriver: Hexagon-head size 5
Screwdriver: Pozidriv PZ 2




Screw: M3 x 3.5
Screwdriver: Phillips PH 1




Screw: M2.5 x 6.0
Screwdriver: Phillips PH 1




Screw: M2.5 x 4.0
Screwdriver: Phillips PH 1 (not essential)

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Removing the foot stand for vertical operation (if any)

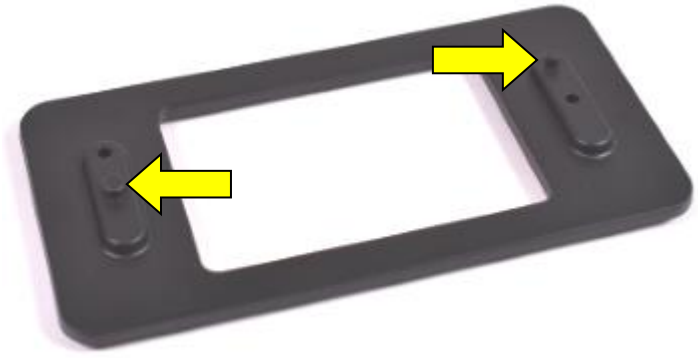
Required work steps:
- none

Required tools:
- Screwdriver: Phillips PH 1



► Remove the two M2.5 x 6.0 screws on the underneath of the foot stand and remove the latter.

Pedestal:



Installation:

► All the steps for assembling the pedestal must be performed in the opposite sequence.
The proper orientation of the pedestal is specified by the two guide pins (yellow arrows).

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Casing: opening

Required work steps:
- Removing the foot stand for vertical operation (if any)

Required tools:
- Screwdriver: Phillips PH 1 (ESPRIMO G5010)
- None (ESPRIMO G9010)

- Disconnect the mains plug from the mains outlet.
- Remove all cables connected to the computer.
- Discharge the remaining voltage by pressing the mains switch (for minimum of 3 seconds).

ESPRIMO G5010:



- Remove the two M2.5x6.0 screws on the reverse side of the system.

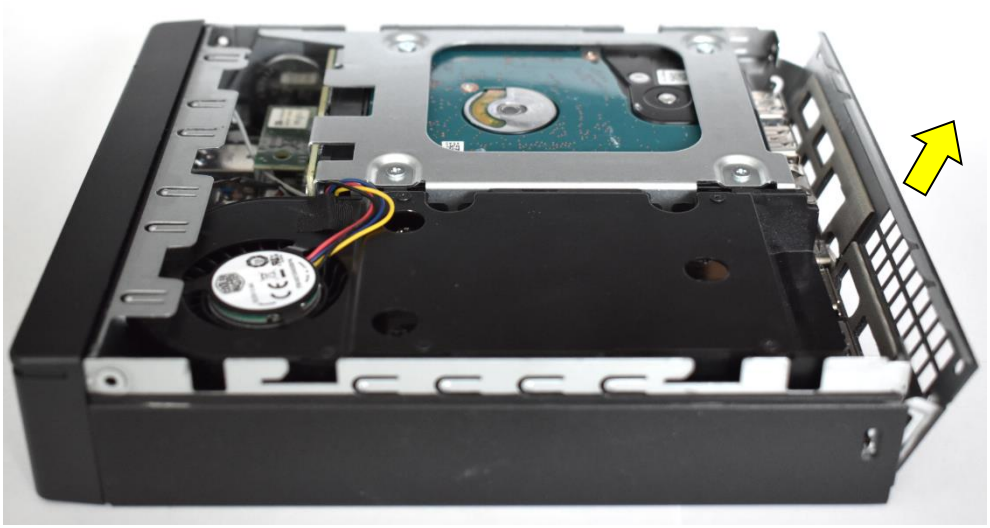
ESPRIMO G9010:



- Remove the two knurled thumb screws on the reverse side of the system. This can be done by hand or, alternatively, with a Phillips PH 1 screwdriver.



- Slide the case cover backwards by approx. 1 cm (1).
- Lift the cover up by the front edge and remove it (2).

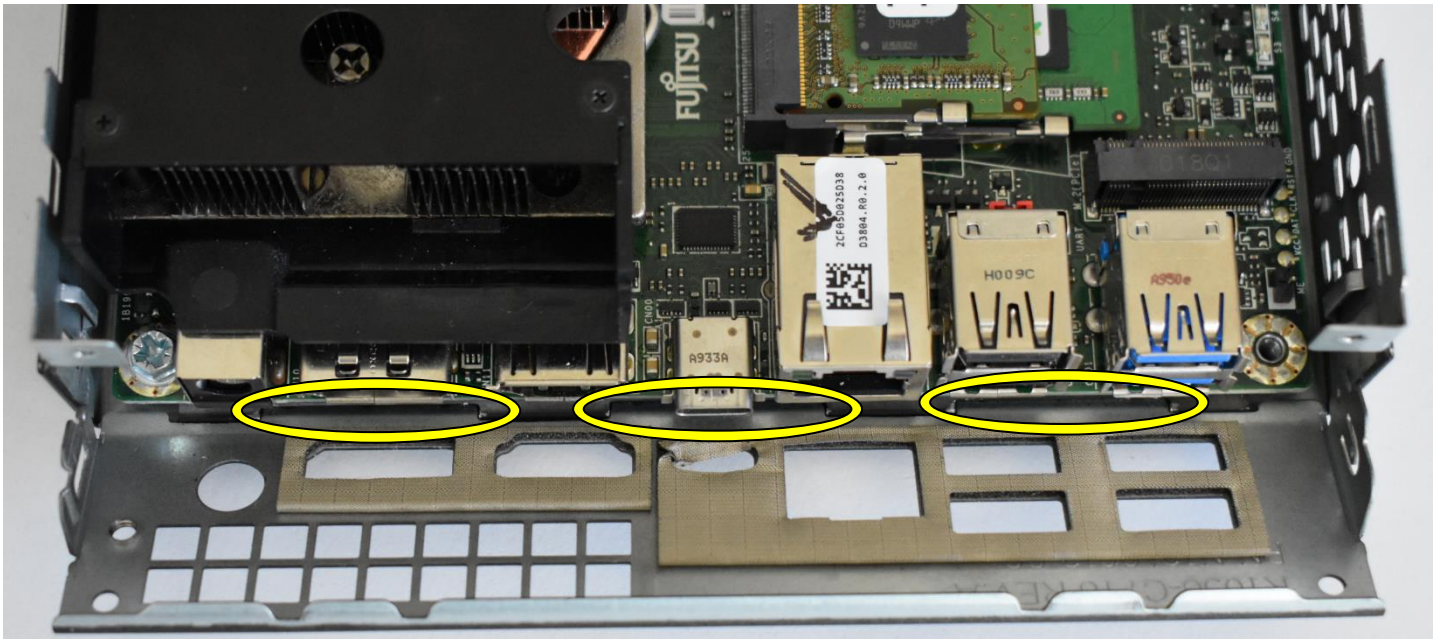


- Remove the I/O shield on the reverse side as shown by the arrow.

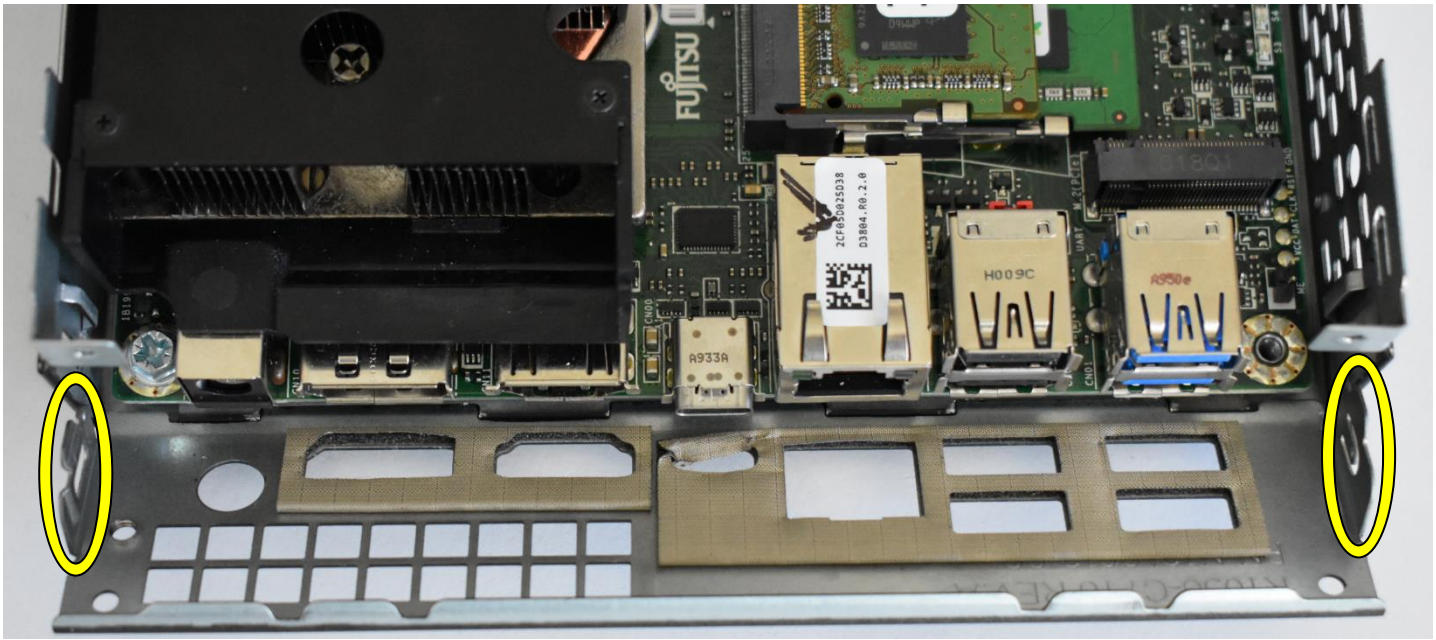
System without case cover and I/O shield:



Installation:



► When attaching the I/O shield, make sure that its three tags are properly inserted in the corresponding grooves in the case.



► When raising the I/O shield, its two side tabs must run along the edge of the case.

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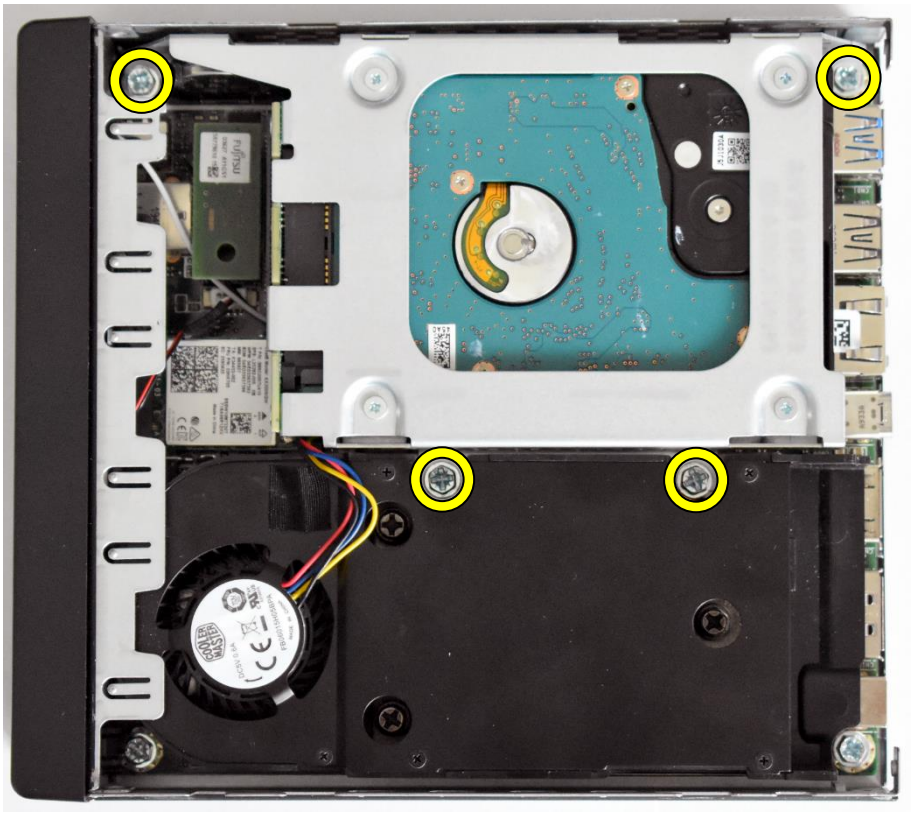
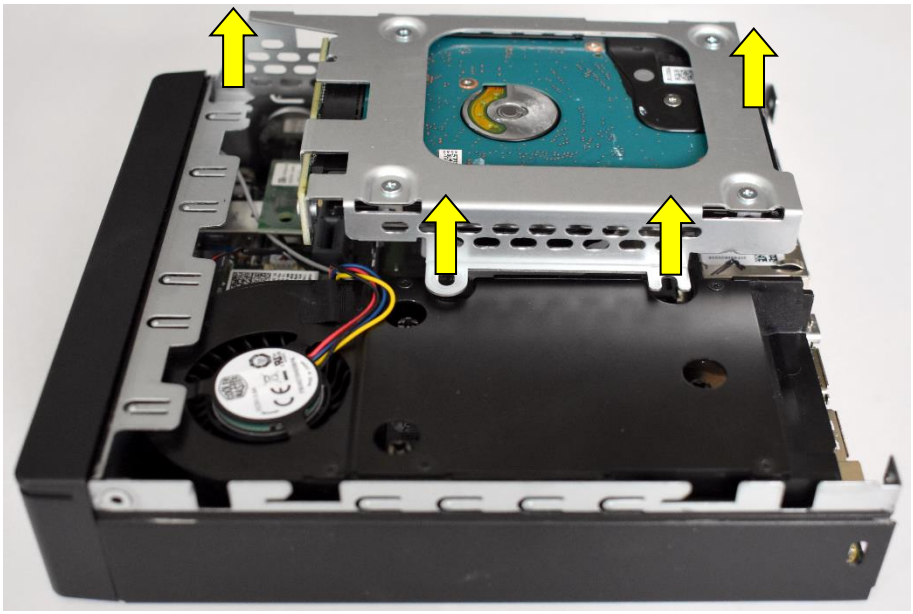
Removing the disc drive bracket (optional)

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening

Required tools:
- Screwdriver: Hexagon-head size 5
  or
- Screwdriver: Pozidriv PZ 2



► Remove the four M3 x 4.5 screws from the disc drive bracket.



► Lift the disc drive bracket vertically out of the system.

System without disk drive mount:



Installation:

- To assemble the disc drive bracket, perform all steps in reverse order.

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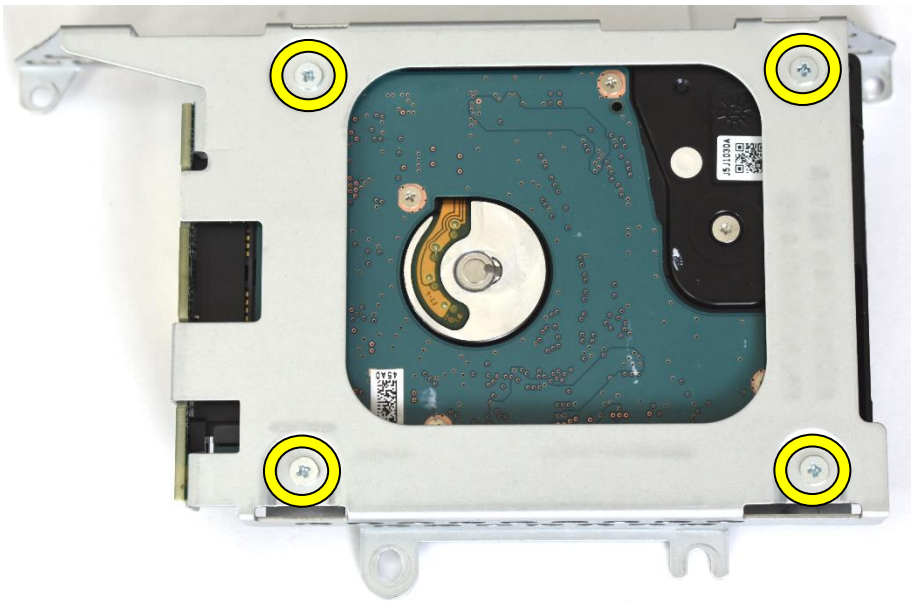
Removing the 2.5” disc drive from its bracket

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)

Required tools:
- Screwdriver: Phillips PH 1

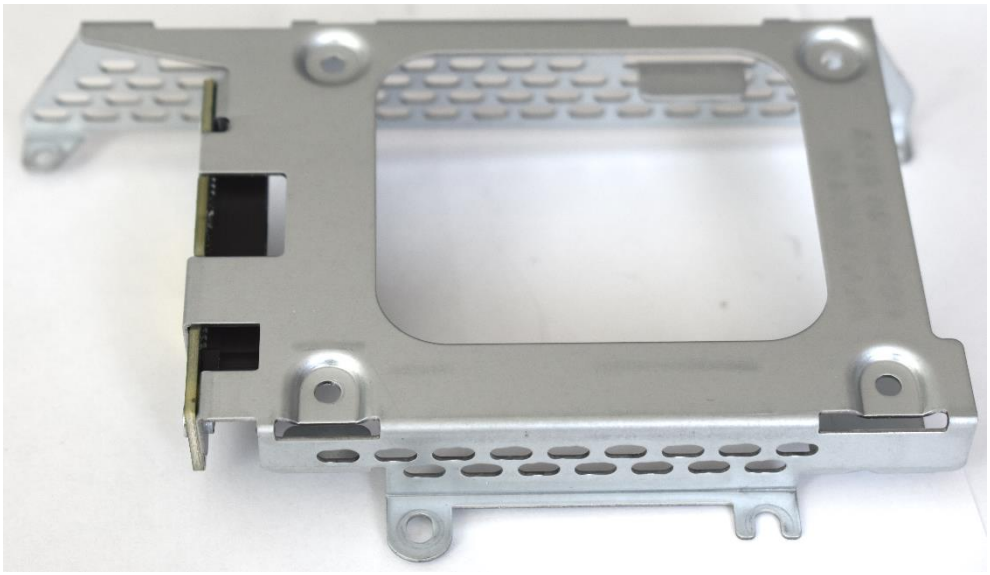


► Remove the four M3 x 3,5 screws.



► Pull the 2.5” disc drive out of its bracket.

Disk drive mount without disk drive:



Installation:

- To install the 2.5" disk drive, all the steps must be performed in the opposite sequence. Only 2.5" disk drives with a height of 7mm can be installed.

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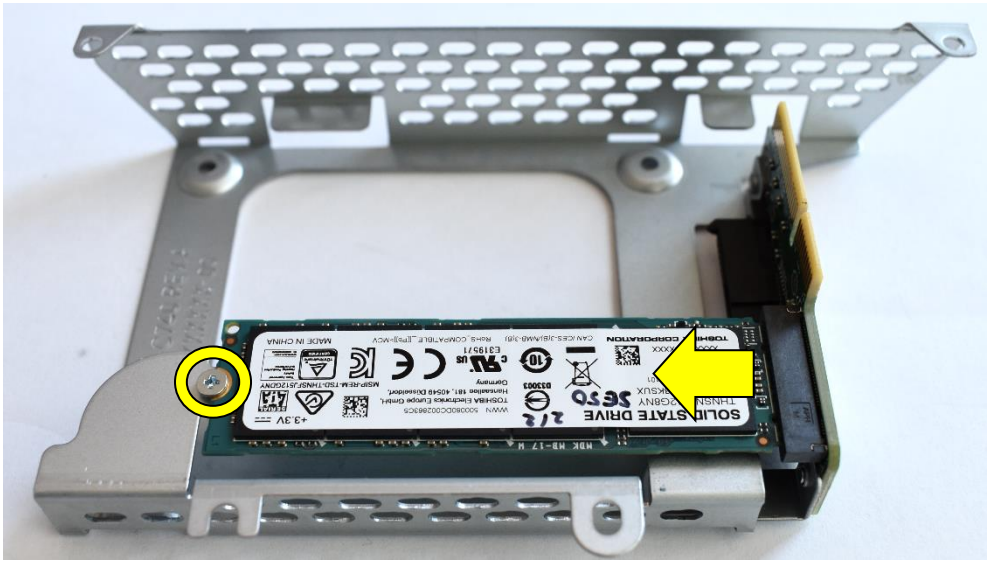
Removing the M.2 SSD from the disc drive bracket

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)

Required tools:
- Screwdriver: Phillips PH 1



► Remove the M3 x 3.5 screw holding the M.2 SSD unit in place, and pull the latter out of its slot.

M.2 SSD:



Installation:

► To install the M.2 SSD, perform all steps in reverse order.

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Removing the riser card

Required work steps:

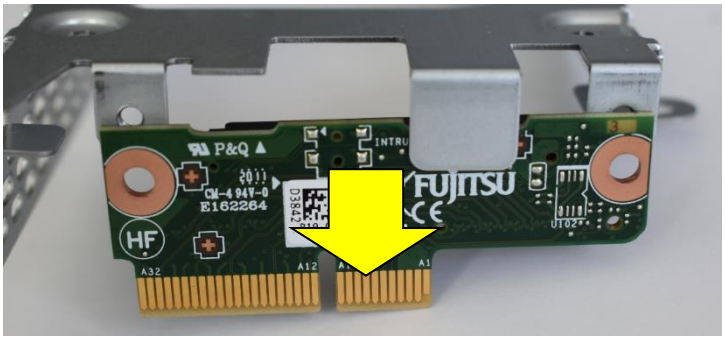
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Removing the 2.5” disc drive from its bracket (if any)
- Removing the M.2 SSD from its bracket (if any)

Required tools:

- Screwdriver: Phillips PH 1



► Remove the two M3 x 3,5 screws.



► Pull the riser card out of the disc drive bracket.

Riser card ESPRIMO G5010:



Riser card ESPRIMO G9010:



Installation:

► To install the riser card, perform all steps in reverse order.

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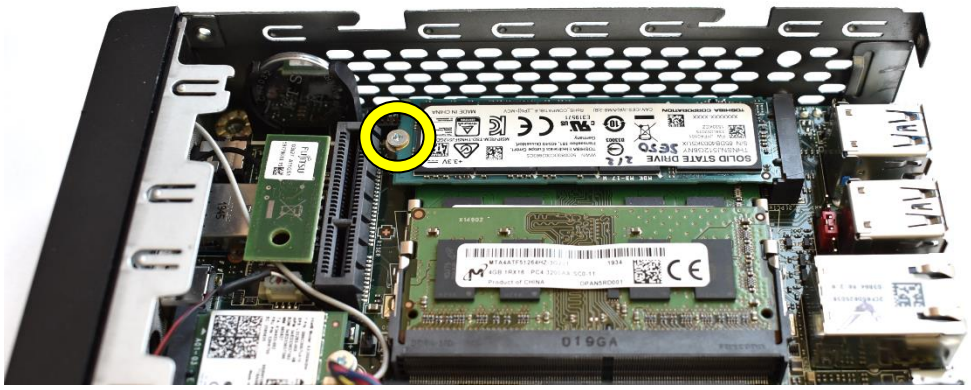
Removing the M.2 SSD unit from the mainboard

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)

Required tools:
- Screwdriver: Phillips PH 1



► Remove the M3 x 3.5 screw holding the M.2 SSD unit in place.
The M.2 SSD unit will lift up.



► Pull the M.2 SSD out of its tray.

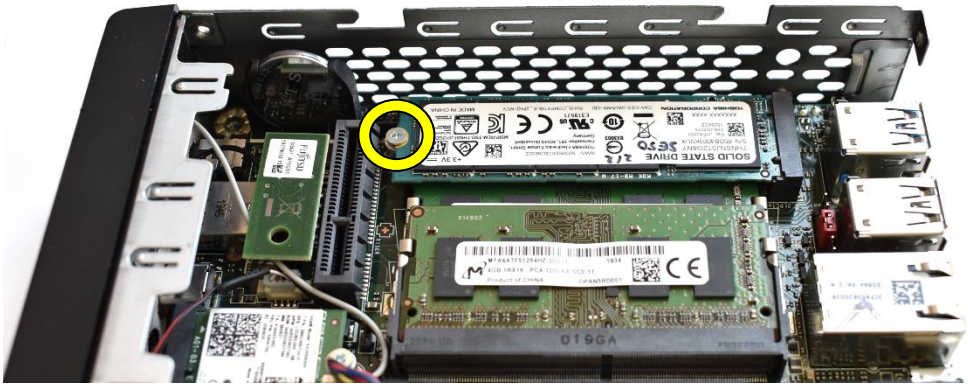
M.2 SSD:



Installation:



- Insert the M.2 SSD unit obliquely into the slot. In doing so, pay attention to the coding/notch (yellow circle). Only touch the module on the outside edges, as is shown in the figure.



- Press the M.2 SSD unit down and secure it with an M3 x 3.5 screw.

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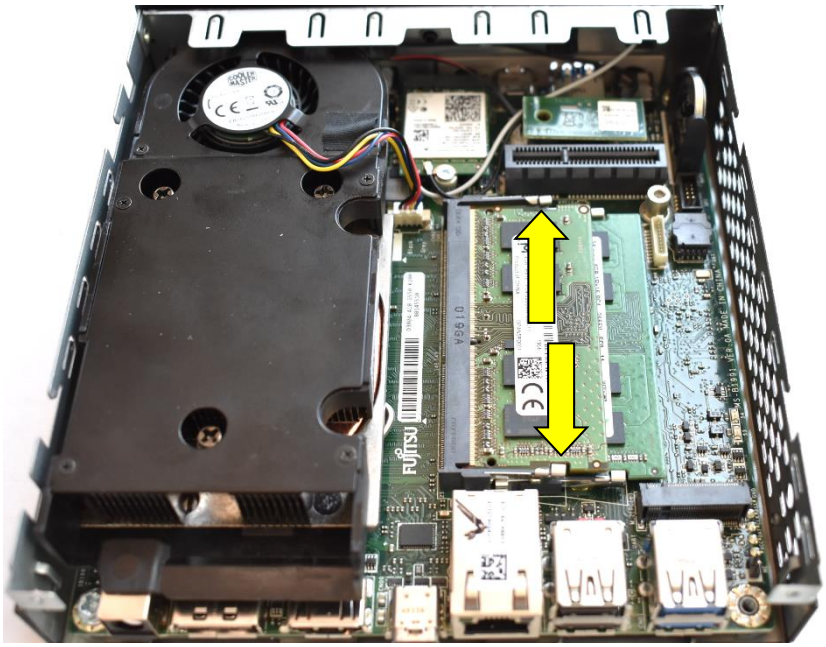
Removing the memory module

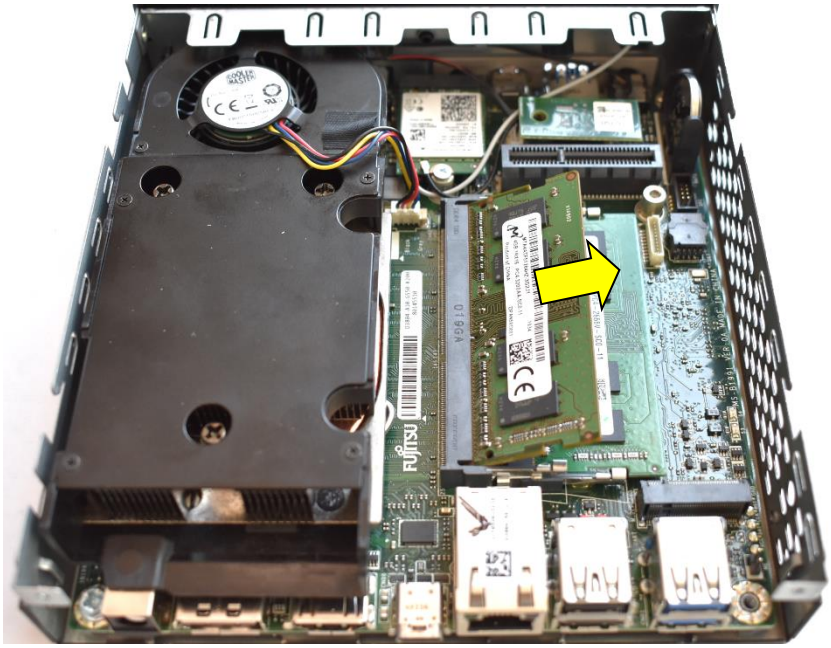
Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Removing the M.2 SSD unit from the mainboard

Required tools:
- none

Upper memory module:

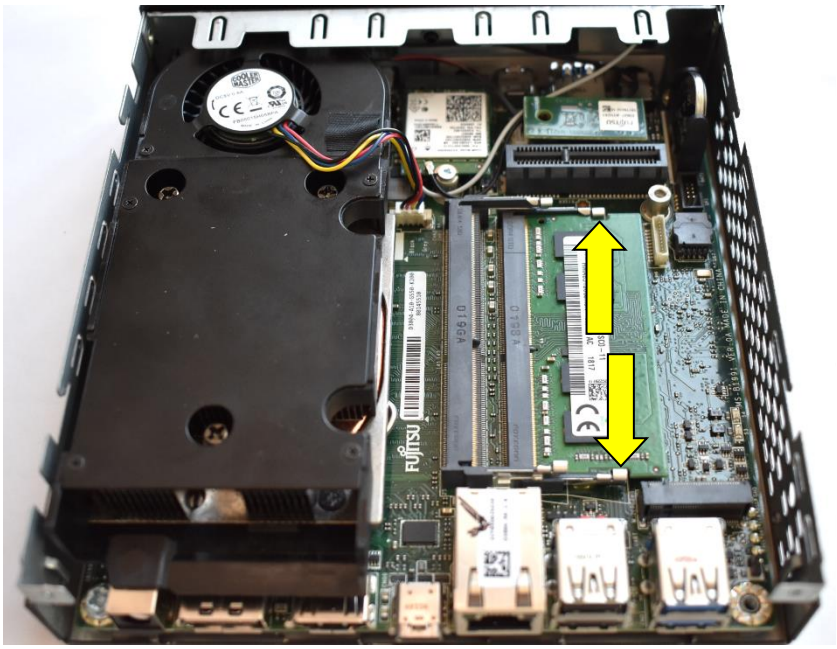


► Unlatch the memory module by pressing both the lock mechanisms to the side.
The memory module swings up.

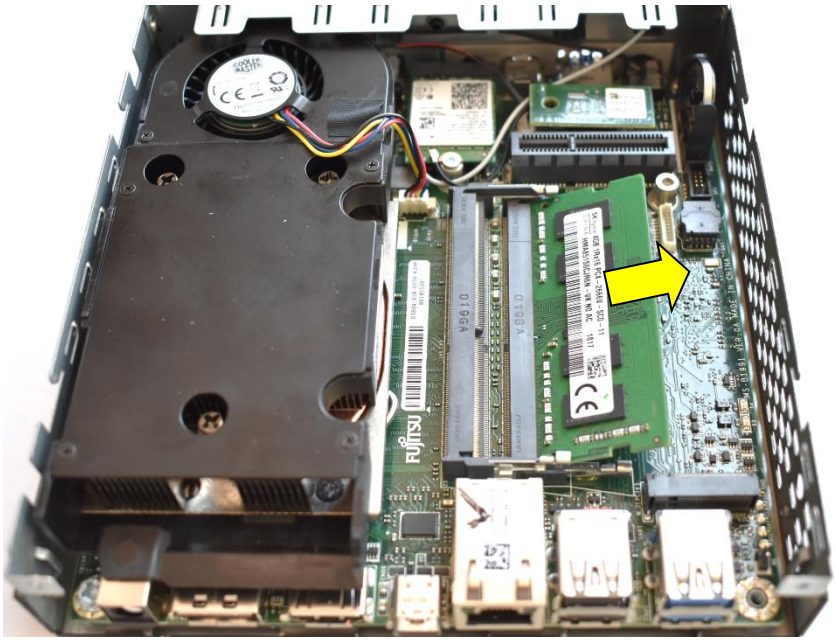


► Pull the memory module out of the base.

Lower memory module:



► Unlatch the memory module by pressing both the lock mechanisms to the side. The memory module swings up.

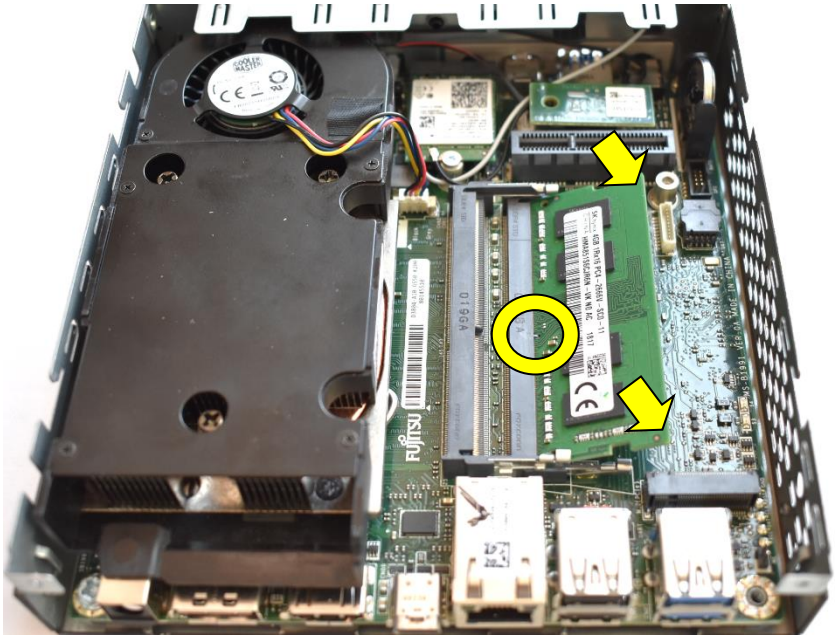


► Pull the memory module out of the base.

Motherboard without memory modules:



Installation:



- Insert memory diagonally and pay attention to the notch during the process (yellow circle).
- Push down the memory unit until it engages. To do so, do not press on the middle of the memory module, but rather on the outer edges (yellow arrows).

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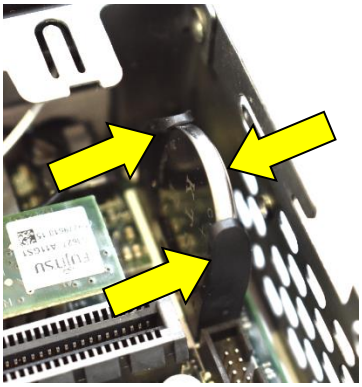
Removing the CMOS battery

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)

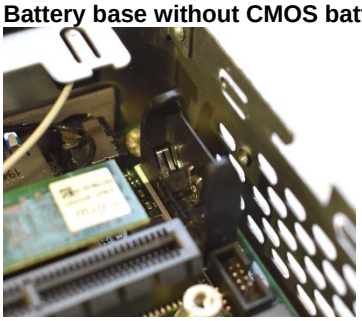
Required tools:
- none

The improper exchanging of the lithium battery can result in a danger of explosions!
The lithium battery may be replaced only by an identical battery or by a type recommended by the manufacturer.
Do not dispose of lithium batteries in the household waste. They must be disposed of in accordance with the local regulations, as hazardous waste.
Caution - pay attention to the proper polarity when exchanging lithium batteries. The plus terminal must be at the top!

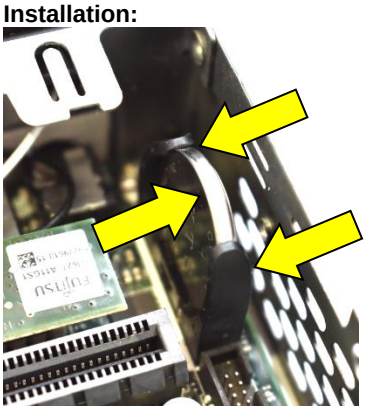


- Push the battery towards the inside of the device while holding the battery tray against it. The battery will pop out of the tray.
- Remove the battery.

Battery base without CMOS battery:



Installation:



- Insert the battery obliquely into the tray and press it while holding the battery tray against it.

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Binding Support Bulletins for disassembly

SB-PC-10016
Minimum requirements for the proper completion of hardware repairs on deskbound systems

SB-PC-11009
Damage to the mainboard due to improper handling during repairs

SB-PC-11001
Information about mainboard (spare parts) replacement with LGA115x, LGA1366 and LGA2011-x sockets

SB-PC-15002
WIN8x & WIN10 - Replacement product key for repaired devices

For any information about ESD, please refer to the web-based training course “ESD in electronics“

For Service Partner only (login required)

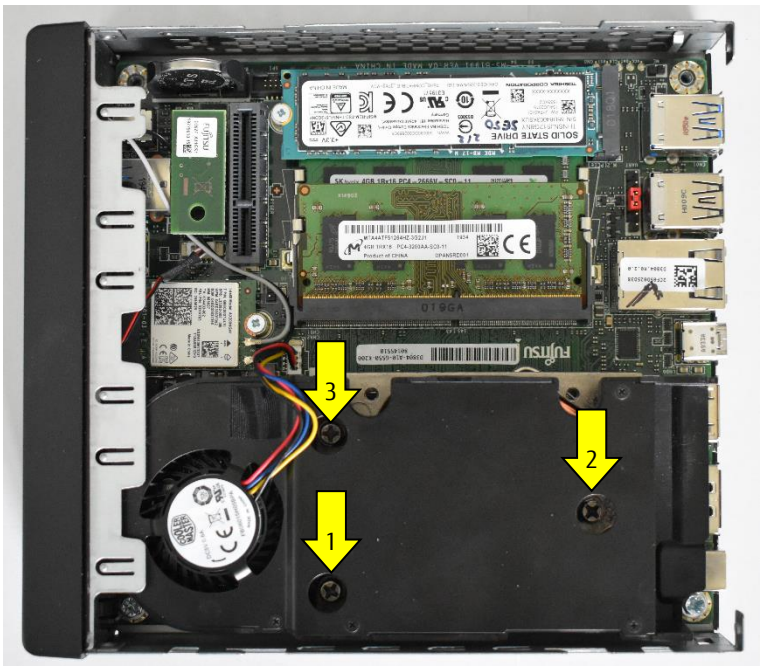
Removing the heat sink

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)

Required tools:
- Screwdriver: Phillips PH 1



► Disconnect the fan cable from the mainboard.



► Loosen the screws in the sequence 1-3 a bit and continue to do this until all the screws are completely undone.

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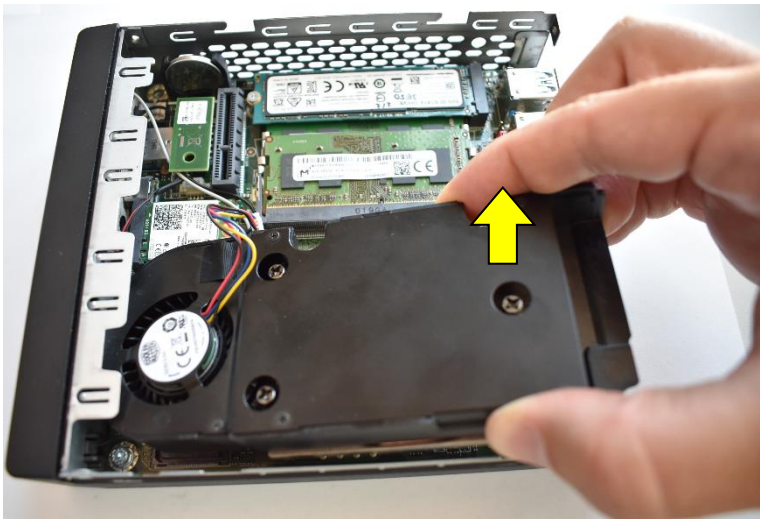
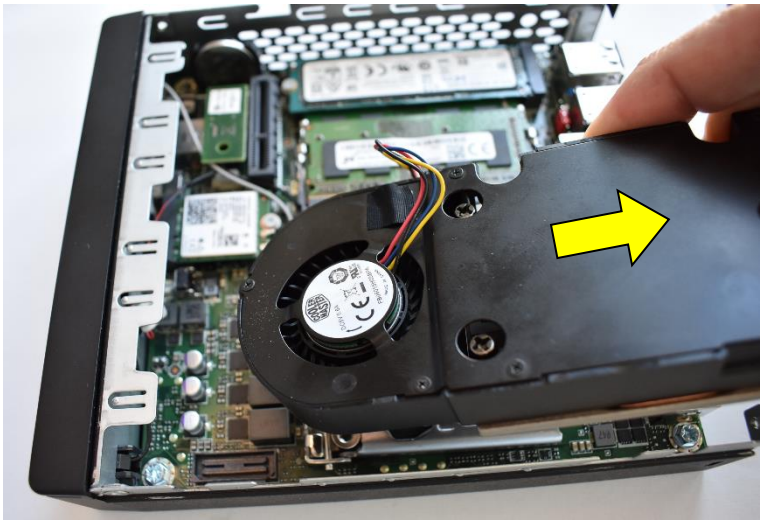
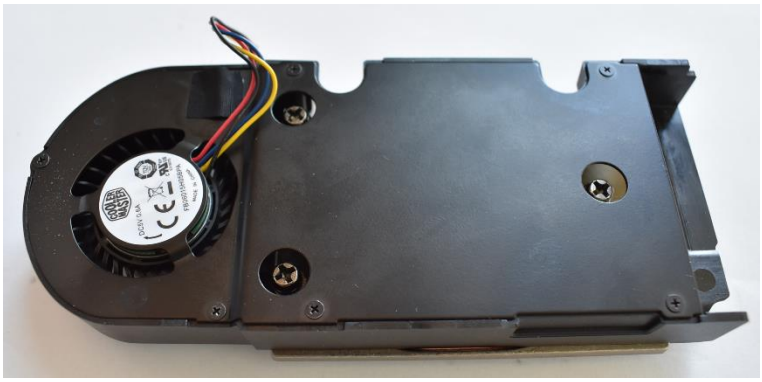


► Lift the cooling element as shown by the arrow.



► Lift the cooling element out of the system in the arrow direction.

Heat sink:



Installation:

► All the steps must be performed in the opposite sequence to install the heat sink.
► Do not forget to replace any missing or dried up heat conductive paste, if necessary.

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Removing the CPU

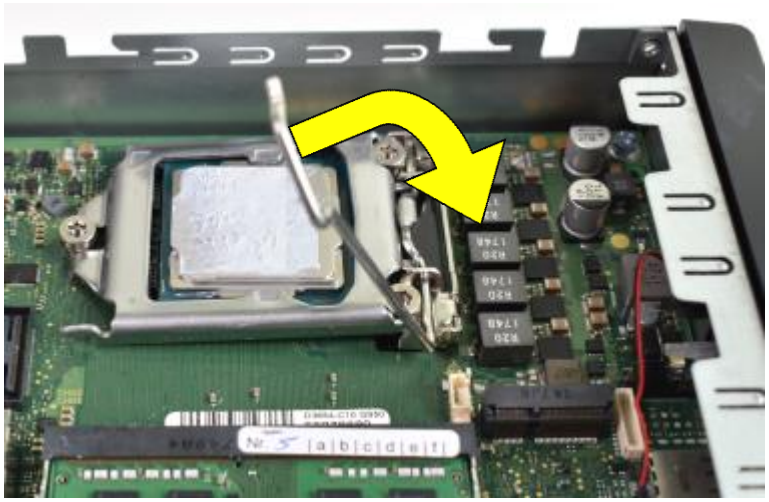
Please refer to the Support Bulletin SB-PC-11001 ("Information concerning exchange of mainboard (spares) with LGA115x or LGA1366 sockets")!

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Remove the heat sink

Required tools:
- none



► Unlock the CPU by pressing the lever down a bit moving it to the side.



► Open the CPU mount.

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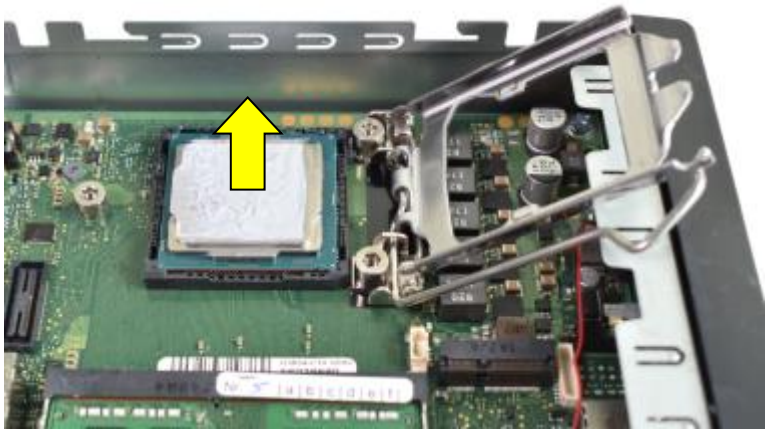
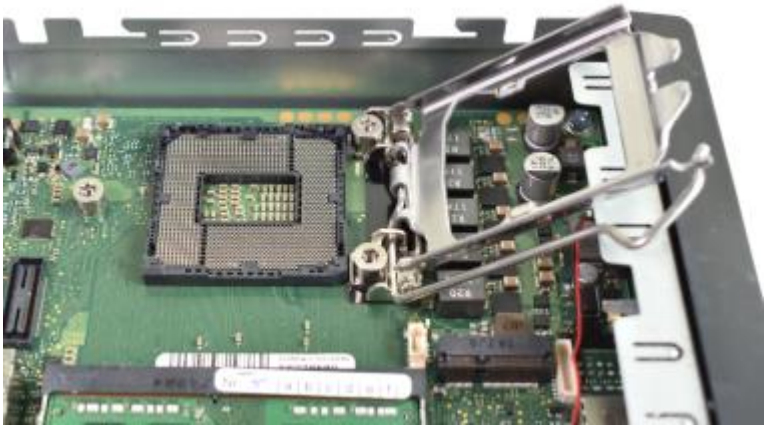


► Lift the CPU out of the base.

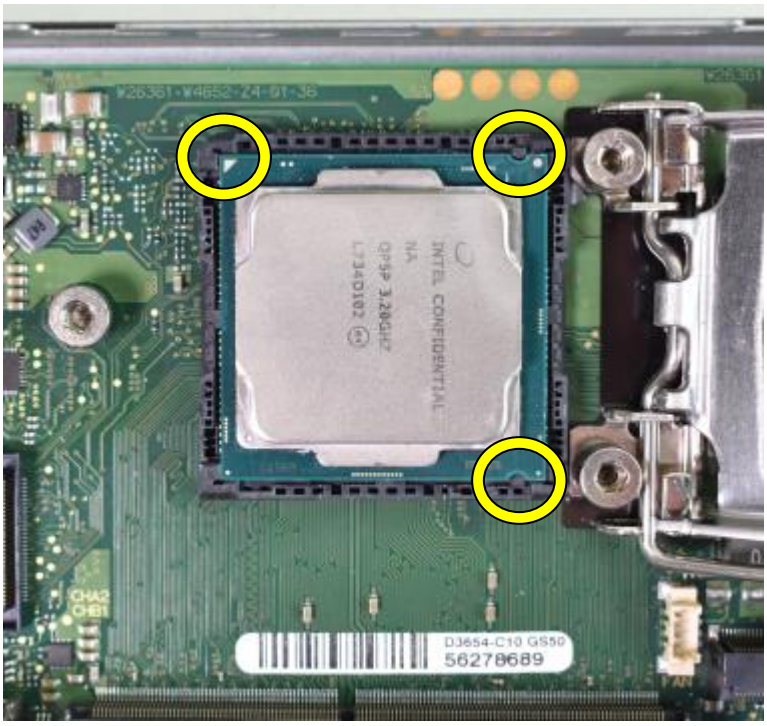
System view without CPU:





► When you send the mainboard back, equip the CPU base with the proper protective covering.

Installation:



- Pay attention to the correct coding when inserting the CPU.
- Lock the CPU again using the opposite sequence of steps.
- Do not forget to replace any missing or dried up heat conductive paste, if necessary.

Service Partner only

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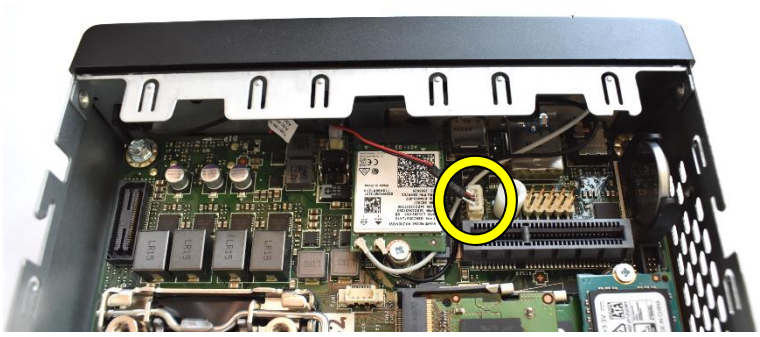
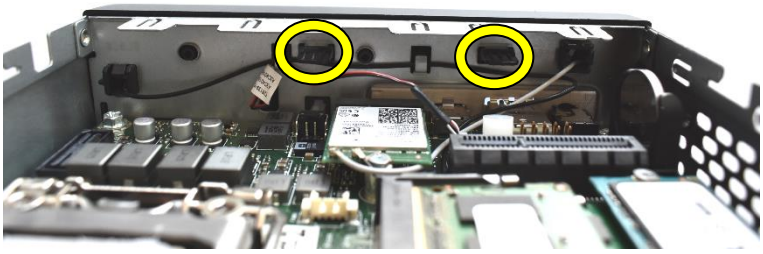
Removing the front panel

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Remove the heat sink

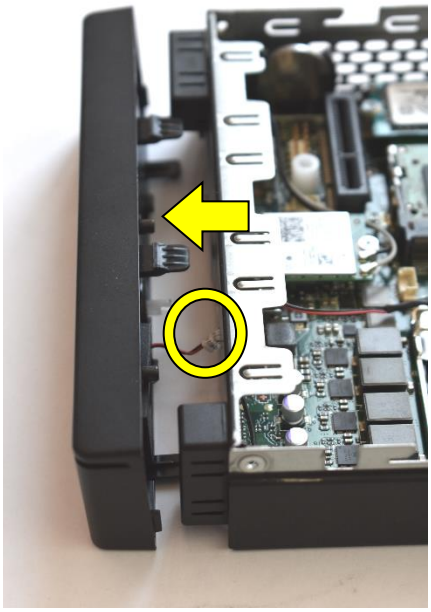
Required tools:
- none

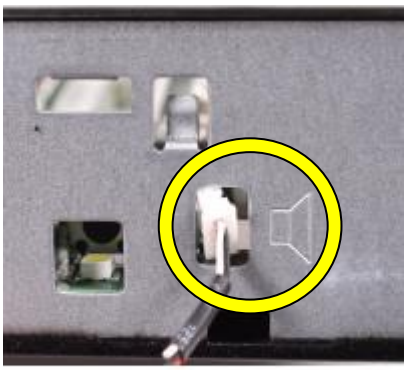


► If a loudspeaker is installed, detach the loudspeaker cable from the mainboard first.



► Push down simultaneously on the two circled tabs and towards the front to unlock the front panel.





► Remove the front panel towards the front and pull out the optional loudspeaker cable through the opening marked with the circle at the same time.

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Front panel with optional loudspeaker:

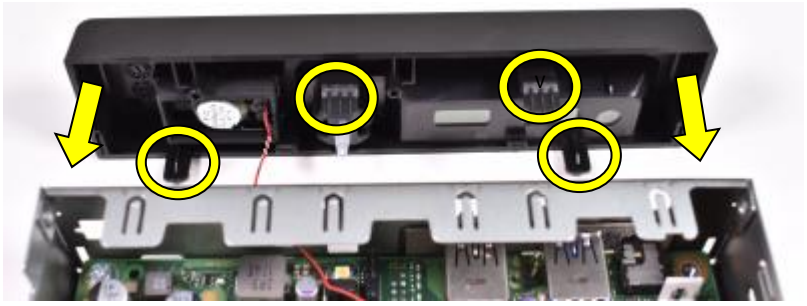


To find out how to remove the speaker from the front panel, please refer to Chapter Removing the speaker.

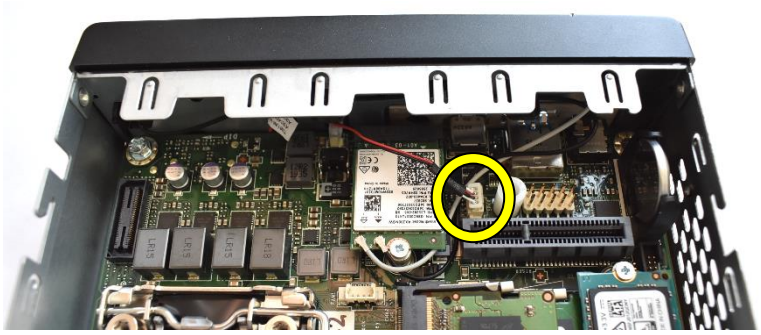
Installation of the front panel:



- If a loudspeaker is installed, then the loudspeaker cable will first need to be directed through its provided opening. The cable label must also be pushed through the opening.



- The front panel is just being pushed onto the chassis from the front. The four nibs (yellow circles) must be engaged carefully.



- Plug the optional speaker cable into the mainboard.

Service Partner only

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Removing the speaker

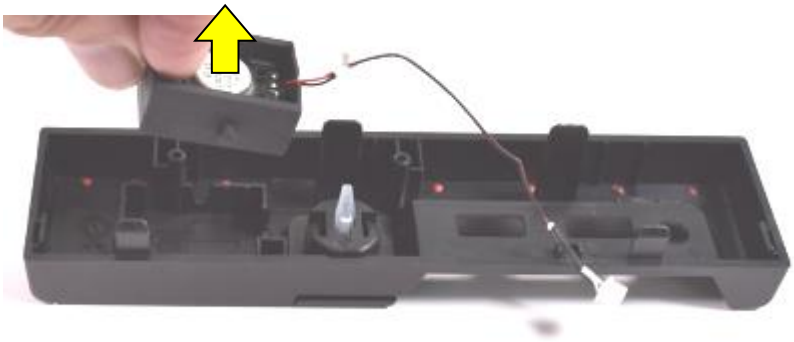
Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Remove the heat sink
- Remove the front panel

Required tools:
- none

Front panel with loudspeaker:



► Lift the loudspeaker including the rubber by pulling on one side and release it from the front panel.



► Lift the speaker with the rubber frame out of the front panel.



► Remove the speaker from the rubber frame. Please ensure that the loudspeaker membrane is not damaged.

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Rubber frame and speaker:



Installation:

- All the steps must be performed in the opposite sequence to install the loudspeaker in the front panel.

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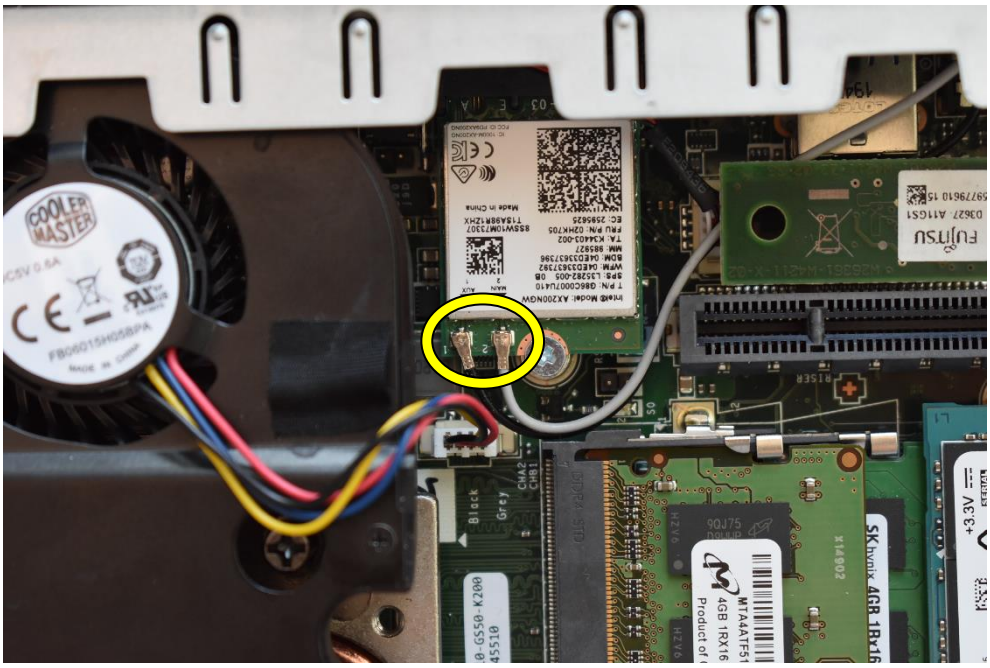
Removing the M.2 WLAN/Bluetooth module

Required work steps:

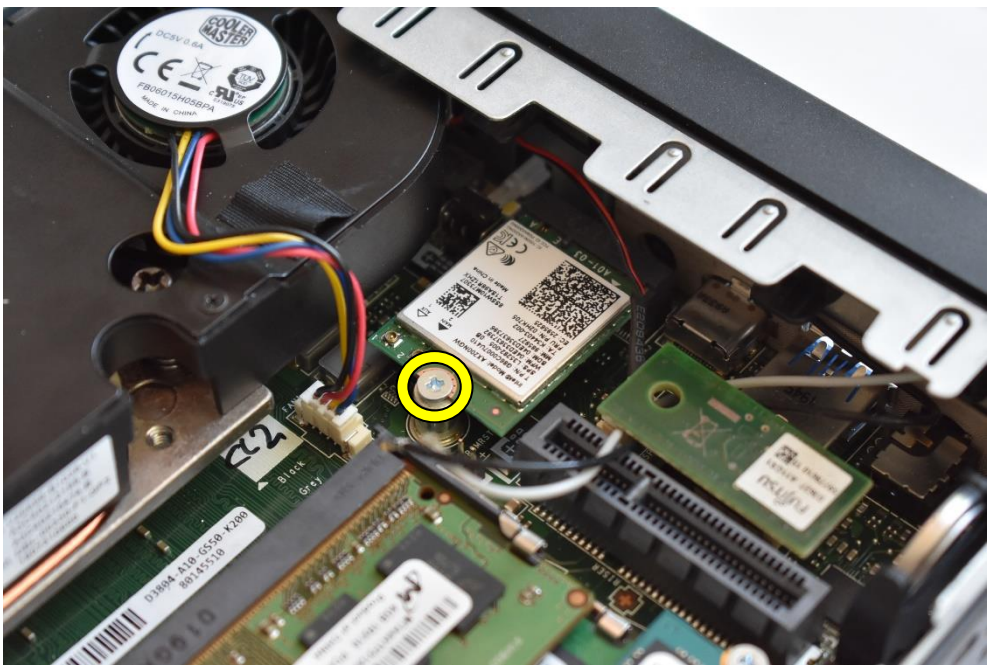
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)

Required tools:

- Screwdriver: Phillips PH 1
- Tweezers (recommended for antenna cable)



► Remove the antenna cable from the M.2 WLAN/Bluetooth module.



► Remove the M3 x 3.5 screw holding the M.2 WLAN/Bluetooth module in place. The M.2 WLAN/Bluetooth module will lift up.

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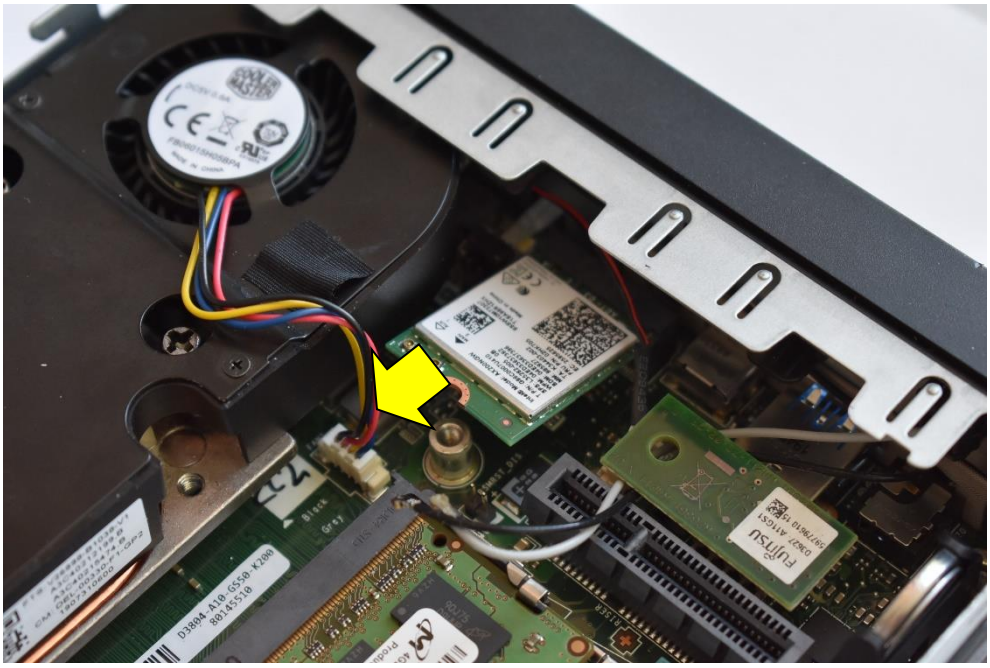
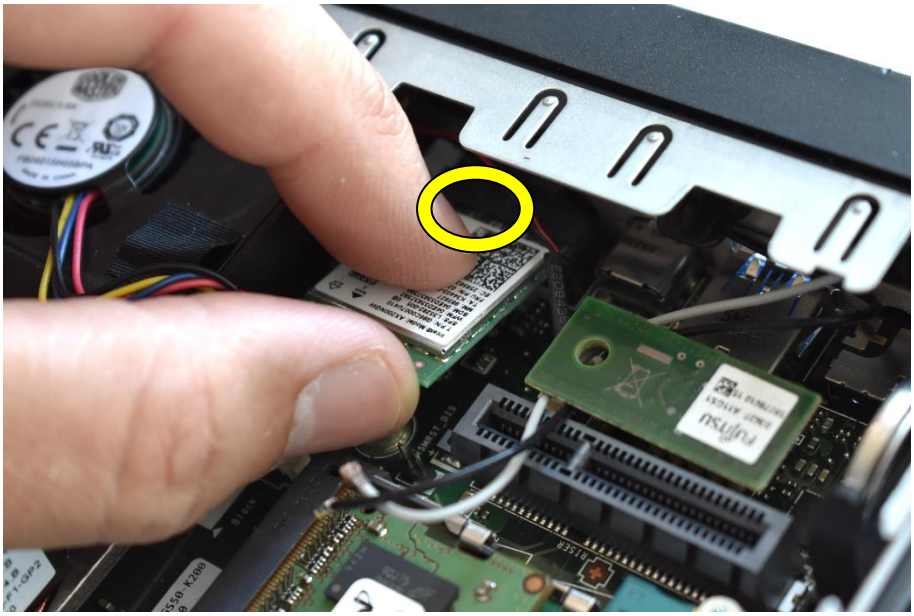


► Pull the M.2 WLAN/Bluetooth module out of the base.

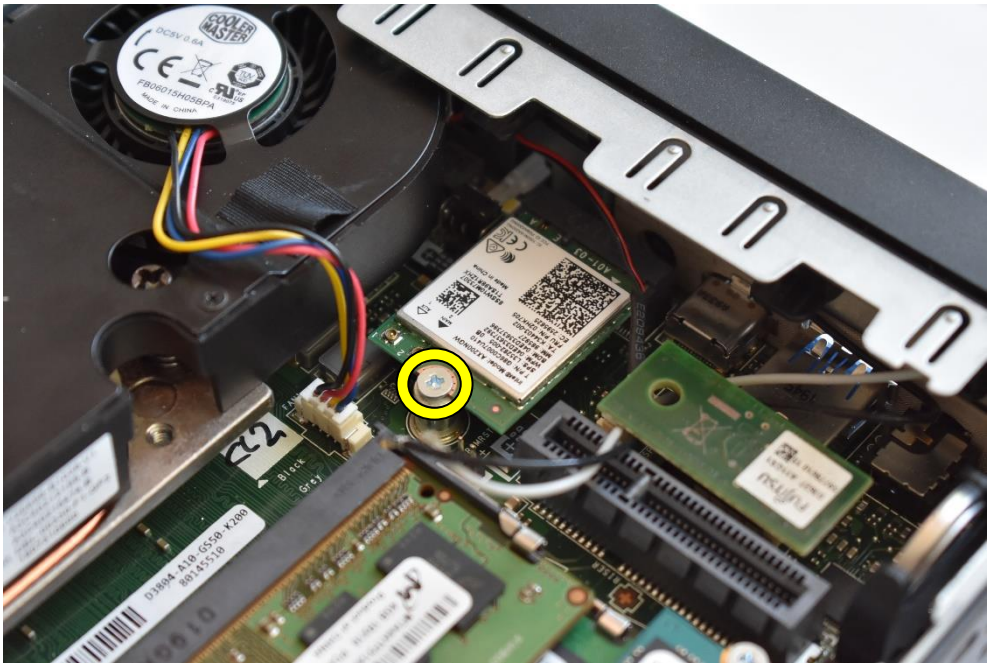
M.2 WLAN/Bluetooth module:



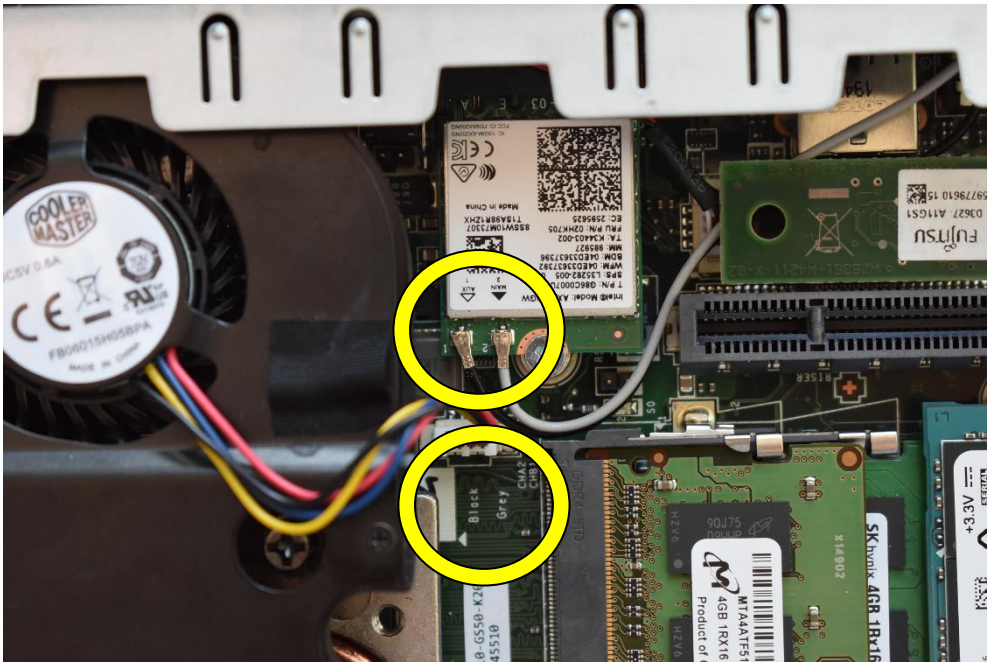
Installation:



► Insert the M.2 WLAN/Bluetooth module obliquely into the slot.
In doing so, pay attention to the coding/notches (yellow circle).
Touch the module only by its outside edges or the adhesive part, as is shown in the figure.



► Fasten the M.2 WLAN/Bluetooth module with an M3 x 3.5 screw.



► The grey and black antenna cables must be connected each to the correspondingly marked connector.

The marking of the cable colour on the WLAN/Bluetooth module does NOT match the correct wiring. The correct wiring is printed on the mainboard. In addition, make sure that the antenna cables do not cross the riser slot.

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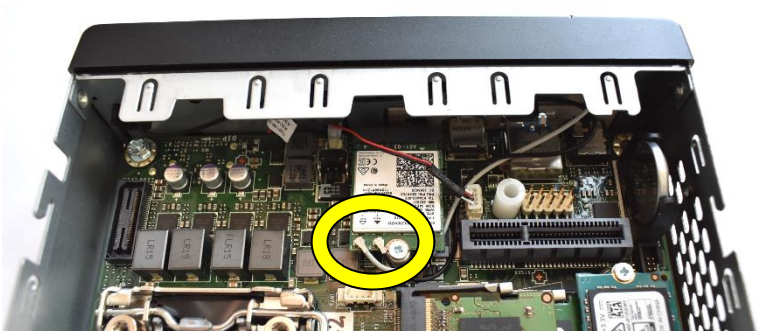
Service Partner only

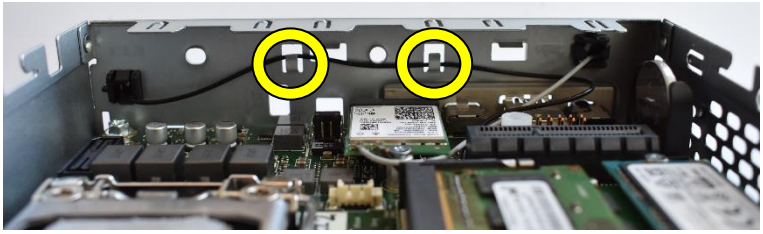
Removing the dual band antennas and cables

Required work steps:
- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Remove the heat sink
- Remove the front panel

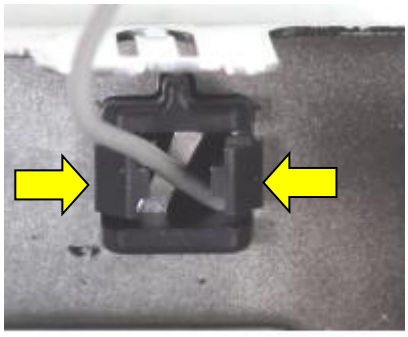
Required tools:
- Tweezers

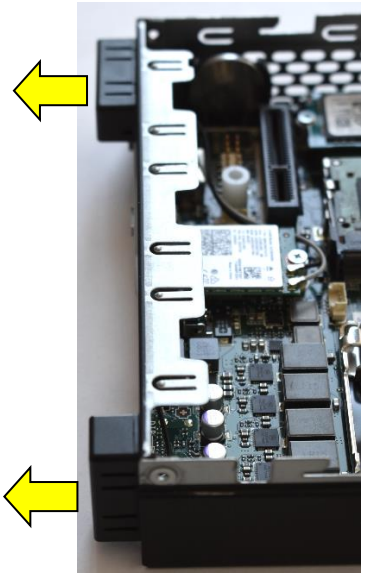


► Remove the antenna cable from the M.2 WLAN/Bluetooth module.



► Unhook the black antenna cable from the hook (yellow circles).





► Inside the case, press the two tabs of the antenna modules together and remove the latter by pulling them forward.

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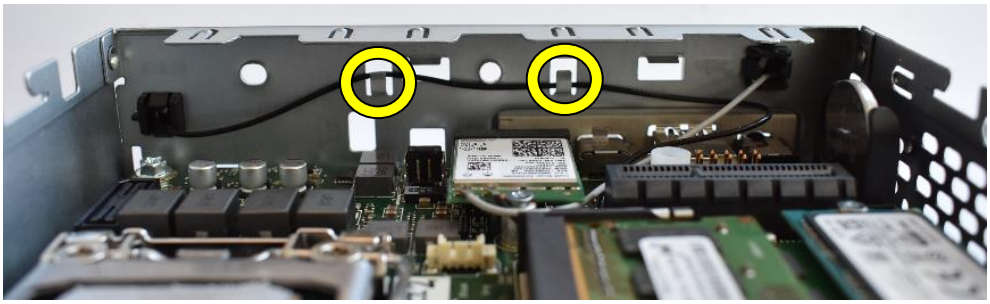
Installation:

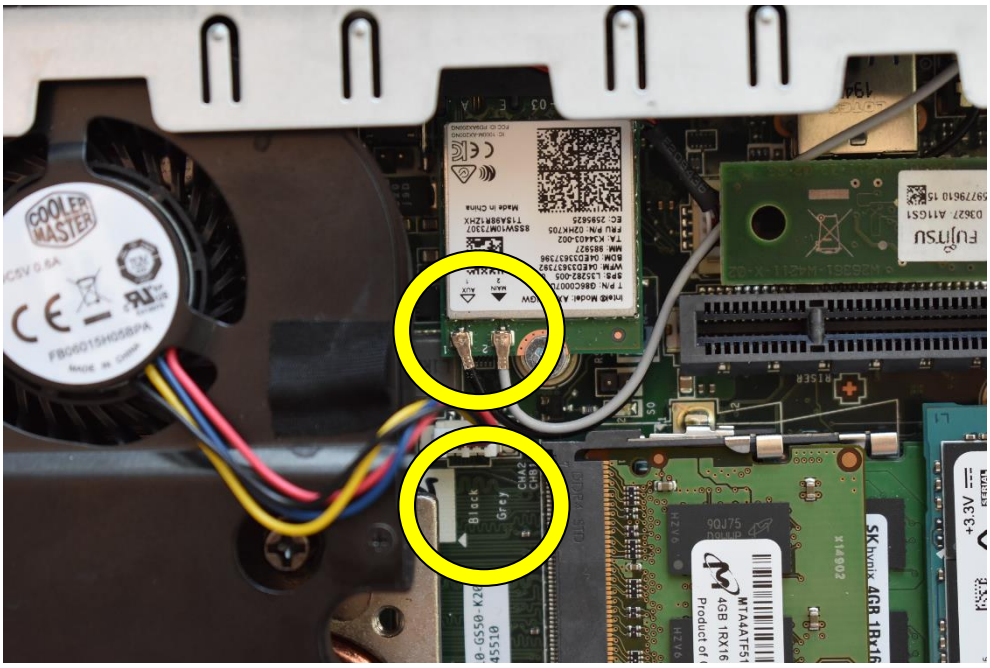




- Observe the colour-coding of the antennas.
  The slots for the antennas are clearly visible on the front side and marked in “BLACK“ and “GREY“.
- Push the antenna cables through the openings in the case and pay attention to the guide lugs (yellow circles).



- Suspend the black antenna cable from the hook (yellow circles).



- The two antenna cables must be connected to the plugs provided on the WLAN/Bluetooth module.

The marking of the cable colour on the WLAN/Bluetooth module does NOT match the correct wiring. The correct wiring is printed on the mainboard. In addition, make sure that the antenna cables do not cross the riser slot.

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Removing the mainboard

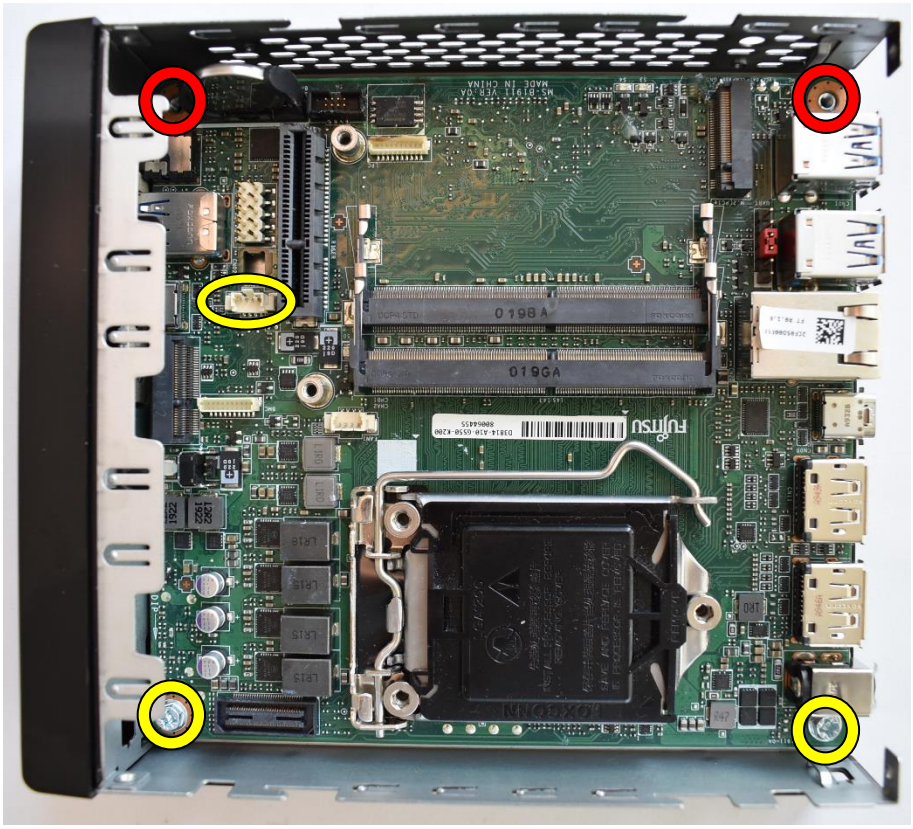
Please refer to the Support Bulletin SB-PC-11001 ("Information concerning exchange of mainboard (spares) with LGA115x or LGA1366 sockets")!

Required work steps:

- Removing the foot stand for vertical operation (if any)
- Casing: opening
- Removing the disc drive bracket (optional)
- Remove the heat sink
- Removing the M.2 SSD unit from the mainboard
- Removing the M.2 WLAN/Bluetooth module
- Remove the memory module
- Remove the CPU

Required tools:

- Screwdriver: Hexagon-head size 5
  or
- Screwdriver: Pozidriv PZ 2



- ► Detach the cable for the optional loudspeaker, if present.
- ► Remove the four M3 x 4.5 screws. If the optional drive bracket was installed and removed beforehand, the two screws circled in red will not be there.

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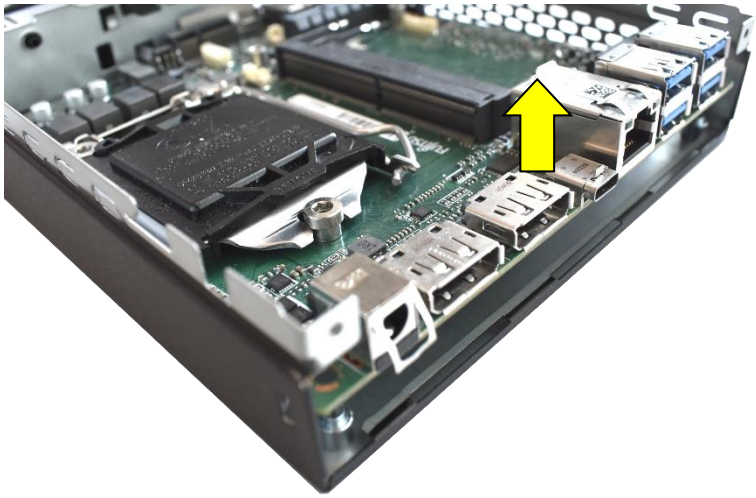
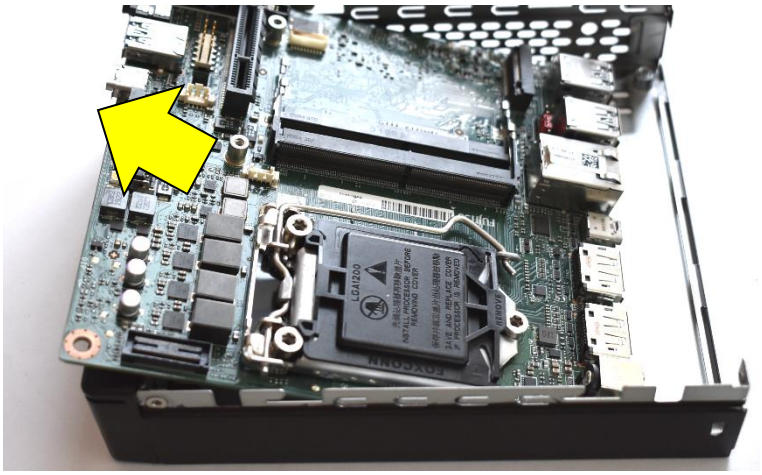


- Lift up the mainboard by about 1cm by the reverse side.



- Push the mainboard backwards by about 2cm.



- Now pull the mainboard forward and remove it by pushing it upwards.

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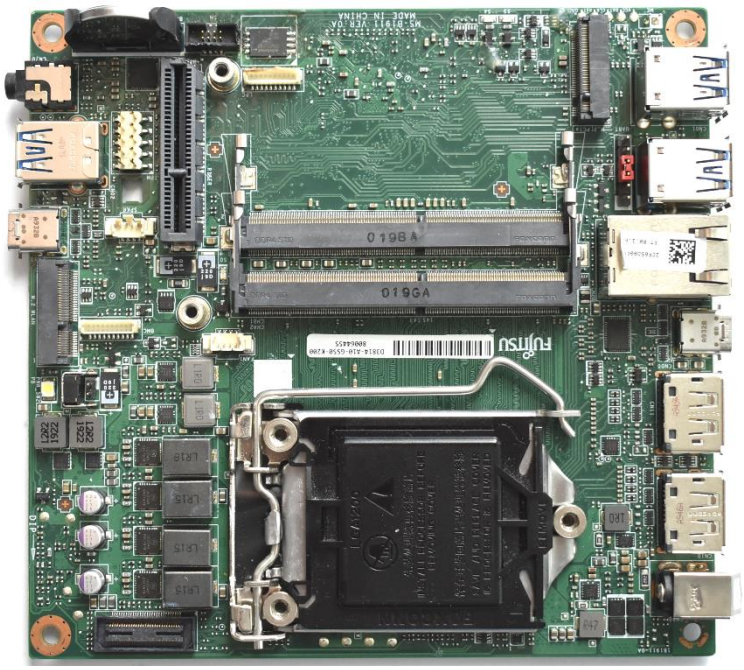
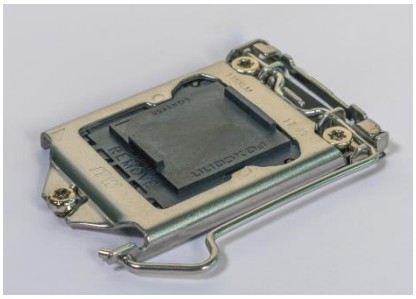
System without mainboard:



Mainboard:





► When you send the mainboard back, equip the CPU base with the proper protective covering.

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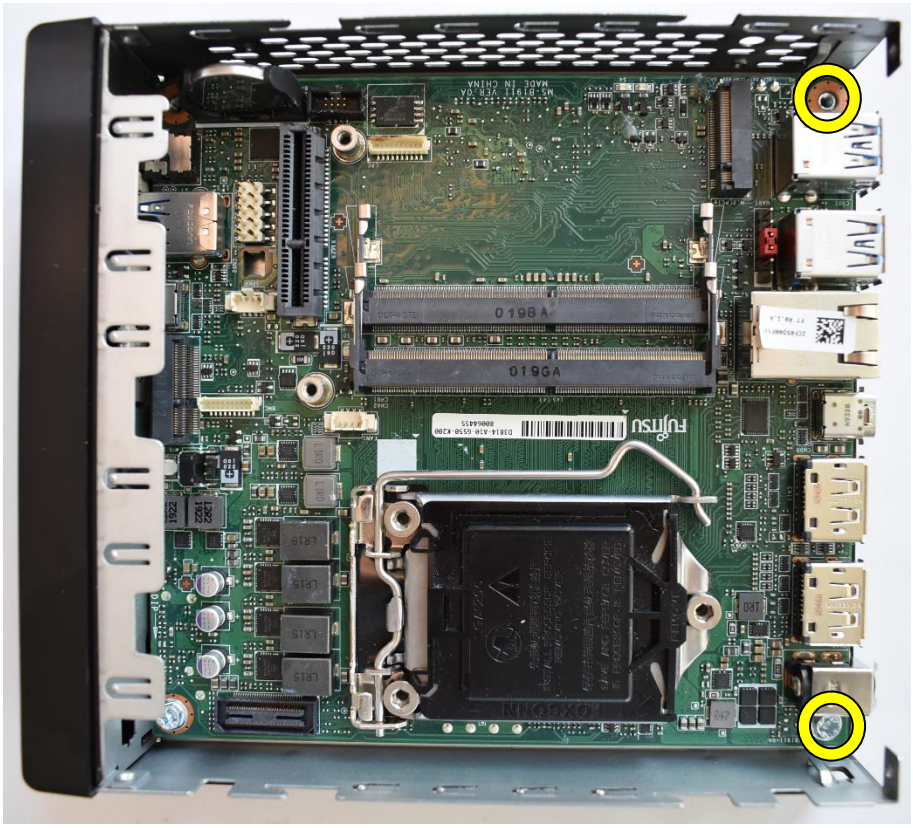
Installation:

- Reinstall the mainboard in reverse order.
- Do not forget to replace any missing or dried up heat conductive paste, if necessary.



Boardlocks:



- The final position of the mainboard is defined by two boardlocks.

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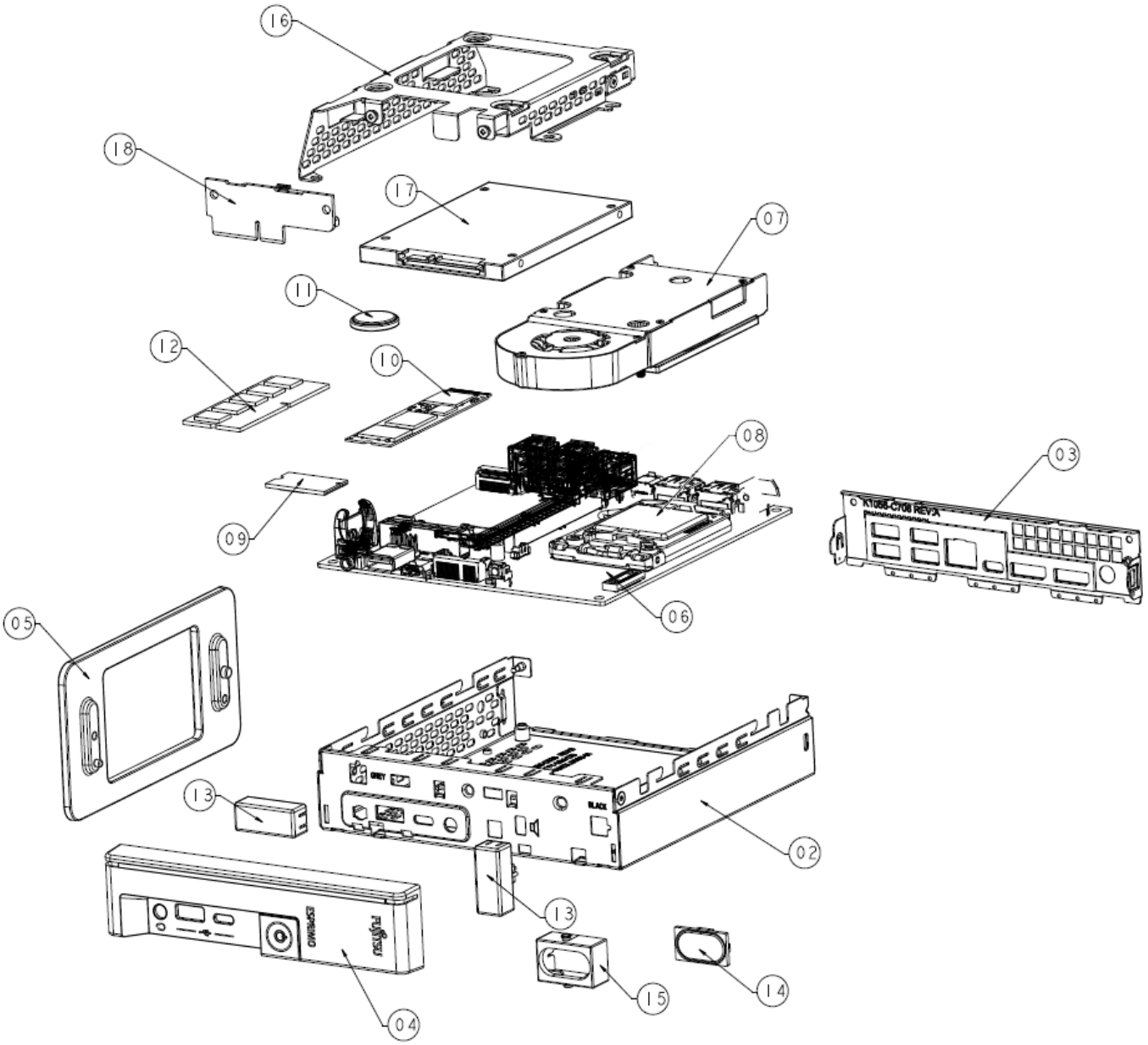
Spare parts ESPRIMO G5010 / G9010

Pos.	Spare part	Internal designation	Parts that can be replaced by customers	Parts that can be replaced by the service team	Upgradeable	Repairable
01	Housing cover	Integral part of: CHASSIS KIT FUTURE PC	x			
02	Case	Integral part of: CHASSIS KIT FUTURE PC		x		
03	I/O panel	Integral part of: CHASSIS KIT FUTURE PC	x			
04	Front panel	Integral part of: CHASSIS KIT FUTURE PC		x		
05	Foot	Integral part of: CHASSIS KIT FUTURE PC	x			
06	Mainboard	depending on the device configuration		x		x
07	Heat sink	depending on the device configuration		x		
08	Processor	depending on the device configuration		x	x	
09	WLAN/Bluetooth module	depending on the device configuration		x		
10	M.2 SSD	depending on the device configuration	x		x	
11	CMOS battery	BT-Battery CR2032	x			
12	Main memory	depending on the device configuration	x		x	
13	Dual band antennas	depending on the device configuration		x		
14	Loudspeaker	depending on the device configuration		x	x	
15	Rubber frame	depending on the device configuration		x	x	
16	2.5“ HDD case	depending on the device configuration	x		x	
17	2,5“ HDD/SDD	depending on the device configuration	x		x	
18	Riser board	Riser card	x		x	



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Disposal information for recycling companies

These instructions are for the complete dismantling of a Fujitsu product. All materials can thereby be disposed of according to their provision in the EC directive 2012/19/EC (Waste Electrical and Electronic Equipment (WEEE)).

Product group: Desktop

Model: ESPRIMO G5010 / G9010

Materials which must be disposed of in a special manner		
Designation	**Remarks**	**Quantity**
Printed circuit boards With a surface area greater than 10 cm²	Mainboard	1
	Depends on the system configuration:	
	Memories	1-2
	M.2 Module	0-2
	SSD	0-1
	HDD	0-1
	Power supply S26113-E631-V75-1	1
Batteries	Lithium button batteries CR2032 (included on the mainboard)	1
Components containing mercury	Not included	
Liquid crystal displays (if applicable, together with the casing) with a surface area greater than 100 square centimetres and backlit displays with gas discharge lamps	Not included	
Cathode ray tubes	Not included	
Capacitors containing PCBs (PolyChlorinated Biphenyls)	Not included	
Electrolytic capacitors which contain critical substances (height > 25 mm; diameter: > 25 mm or proportional similar volumes).	Power supply S26113-E631-V75-1	1
External electrical cables	Not permanently connected to the device	
Gas discharge lamps	Not included	

Materials which must be disposed of in a special manner		
Designation	**Remarks**	**Quantity**
Plastics which contain brominated flame retardant	This product may contain plastic components containing brominated flame retardants. To the best of our knowledge, we provide this information for sorting them out. The position of the plastic components can be visually identified by their typical design function on the product (as shown in the disassembly manual). Many of these components (> 25 g) are bromine-free. Irrespective of this, these components are marked in accordance with ISO 11469 (usually marked directly on the plastic). A typical marking looks like this: > Polymer abbreviation - FR(xx) < i.e. > PC+ABS FR (40) < Code numbers for flame retardants (FR(xx)) can be found in ISO 1043-4. Codes for some brominated flame retardants: 14 Aliphatic/alicyclic brominated compounds 15 Aliphatic/alicyclic brominated compounds with antimony compounds 16 Aromatic brominated compounds (excluding brominated diphenyl ether and biphenyl) 17 Aromatic brominated compounds (other than brominated diphenyl ether and biphenyl) containing antimony compounds 22 Aliphatic/alicyclic chlorinated and brominated compounds 42 Brominated organic phosphorus compounds Plastic components weighing less than 25 grams may contain brominated flame retardants. These smaller plastic components are located in the entire PC system. These include, above all: Fans, fans in the power supply, speakers and components on PCIe cards.	
Chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC) or hydrofluorocarbons (HFC), hydrocarbons (HC)	Not included	
Toner cartridges, liquid and paste-like, and colour toner	Not included	
Asbestos waste and components which contain asbestos	Not included	
Components which contain fire-proof ceramic fibres	Not included	
Components which contain radioactive substances	Not included	