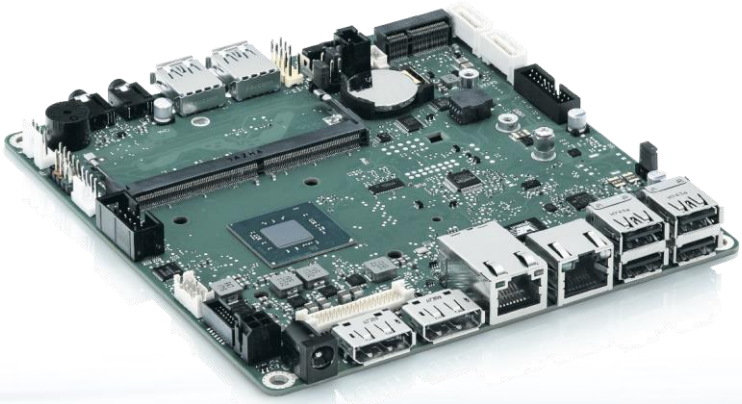
ASSEMBLY
INSTRUCTIONS



SMARTCASE™ S500 &
Motherboard D3544-Sx

SMARTCASE™ S500 & D3544-Sx - ASSEMBLY INSTRUCTIONS

Technical data are subject to change without prior notice. Kontron accepts no responsibility with regards to technical or editorial mistakes or omissions.

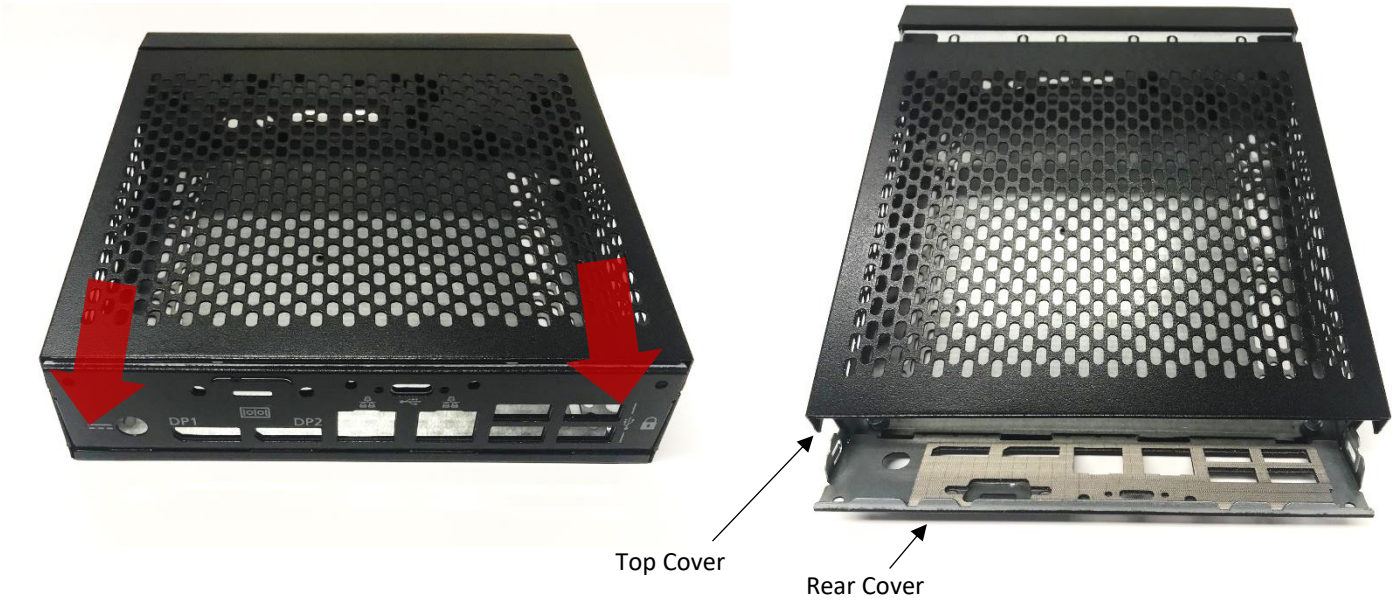
Delivery Kit & Accessories: Screw Overview

Assembly Screws

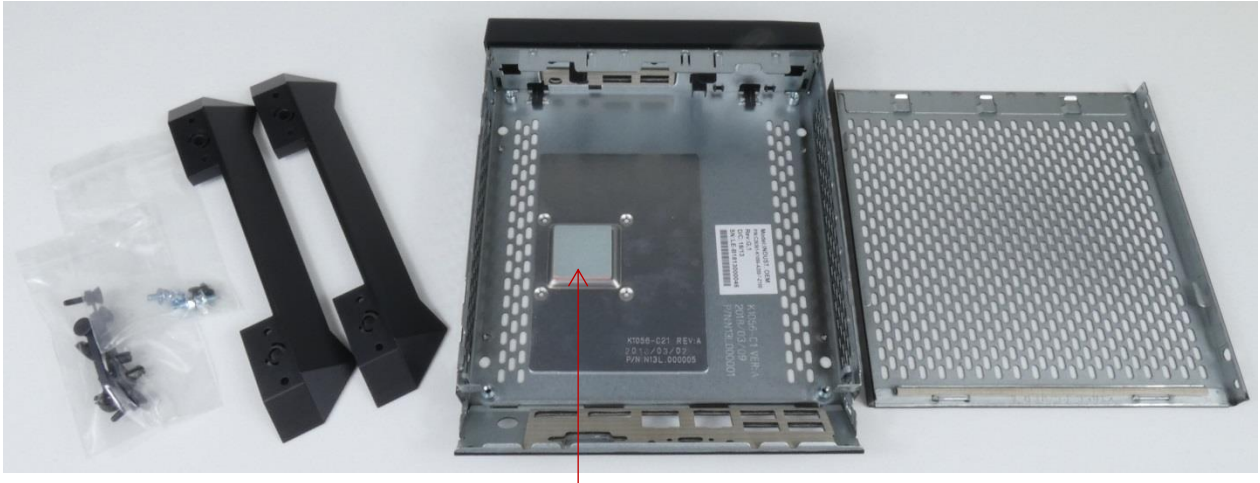
Type	Amount	Mandatory Assembly Torque	Note
M2.5 x 6mm	4	0.4Nm	for foot assembly (delivered in plastic bag)
M2.5 x 6mm	2	0.4Nm	for chassis rear cover (delivered in plastic bag)
M3 x 4.5mm	4	0.6Nm	for motherboard assembly (delivered in plastic bag)
M3 x 3mm	1	0.3Nm	Hexagon bolt (“assembly nut”) for M.2 SSD module assembly (pre-installed on motherboard)
M3 x 3.2mm	2	0.2Nm	Screw for M.2 SSD/WLAN module assembly (pre-installed on motherboard)
COM screws UNC4-40	2	0.6Nm	Screw for optional COM cable (included in cable kit F5000-K007)
M2.5 x 6mm	2	0.4Nm	Screw for optional USB-C cable (included in cable kit F5000-K008)

Step 1 Preparing the Chassis

Open the chassis with two hands by putting some pressure on your thumbs to push the cover reverse.



Remove top cover and unpack the accessories.

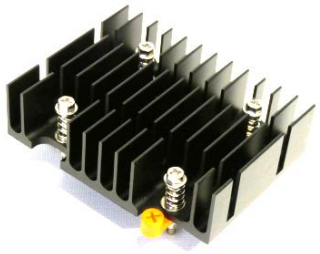


(Chassis kit content)

Remove protective foil of heat spreader pad!

Step 2 Installing the Heatsink

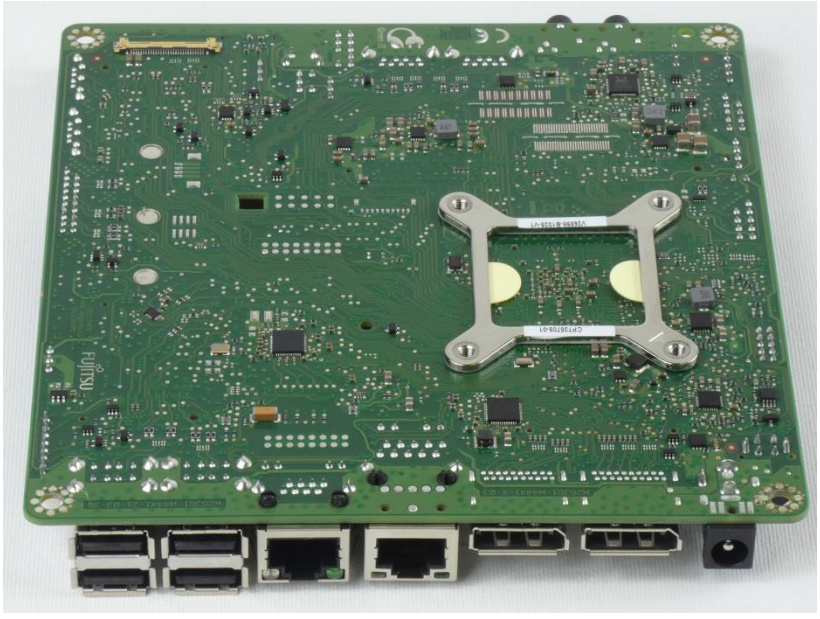
Kontron provides both a passive and an active heatsink solution, and a common mounting backplate.



Mounting Backplate

Do **not** remove the insulating foil of the backplate, otherwise the motherboard may be damaged due to possible short circuit

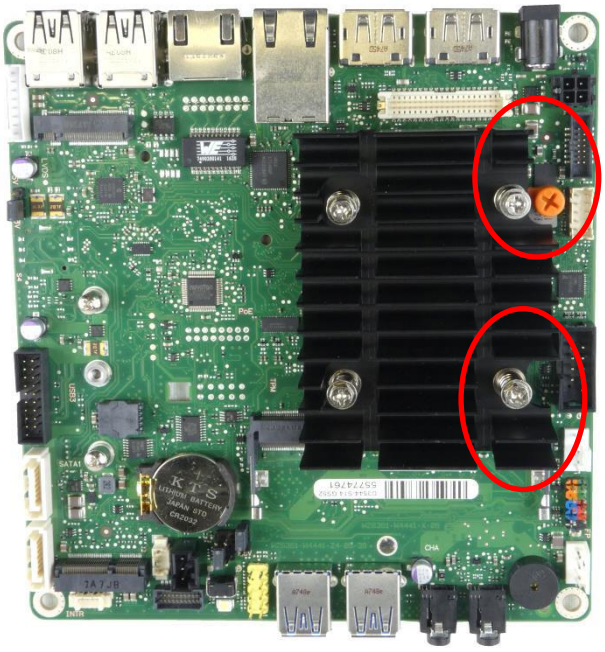
Before assembling the motherboard into the chassis, it is recommended to install the optional onboard components like cooler, memory, M.2 module, etc.



(backplate position)

Note: Mounting holes are asymmetrical!

Passive Heatsink



Note:

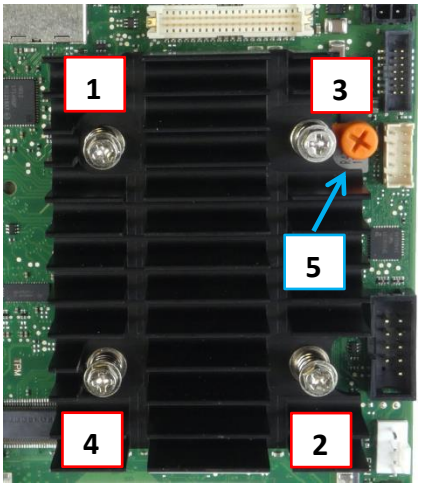
Recommended mounting torque for heatsink screws: 0.6Nm (max. 0.8Nm)

Passive heatsink positioning:

Gaps of the passive heatsink must be located towards the border of the motherboard

Mounting Backplate:

Do **not** remove the insulating foil of the backplate, otherwise the motherboard may be damaged due to possible short circuit



- Hold the heatsink with one hand so that it doesn't tilt while installing the screws
- Assemble all 4 screws according to the order shown. Each screw can be tightened immediately!

Note: The coloured plastic part (#5) as shown above is no longer implemented!

Active Heatsink

Note:

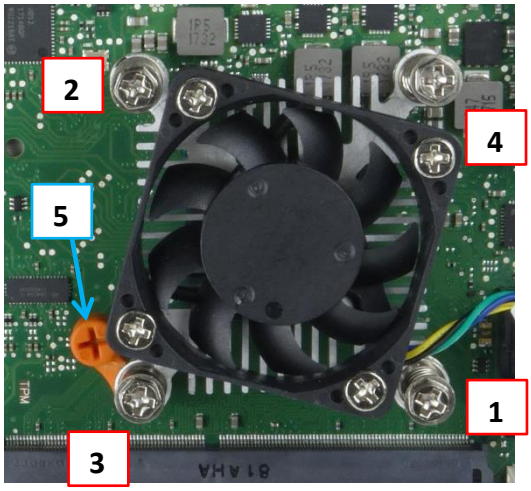
Recommended mounting torque for heatsink screws: 0.6Nm (max. 0.8Nm)

Active heatsink positioning:

Heatsink must be positioned according to picture

Mounting Backplate:

Do **not** remove the insulating foil of the backplate, otherwise the mainboard may be damaged due to possible short circuit

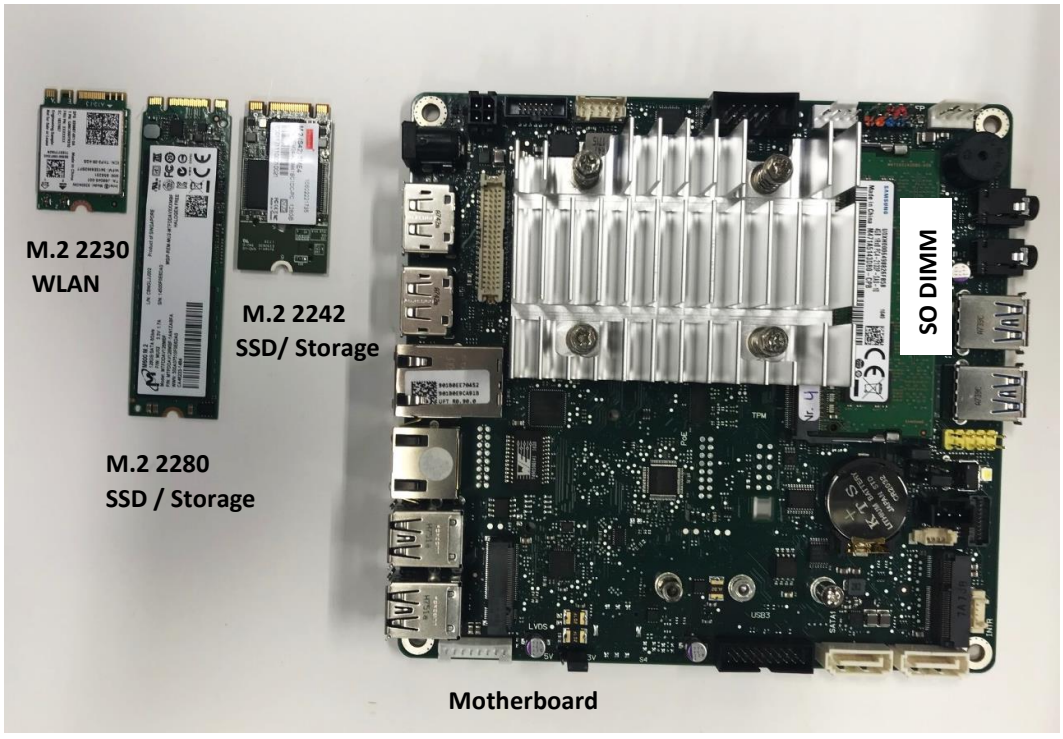


- Hold the heatsink with one hand so that it doesn't tilt while installing the screws
- Assemble all 4 screws according to the order shown. Each screw can be tightened immediately!

Note: The coloured plastic part (#5) as shown above is no longer implemented!

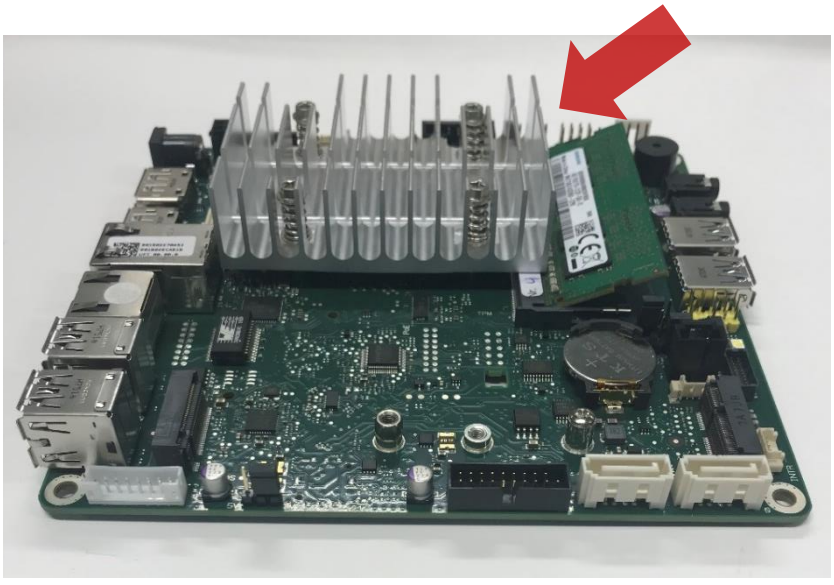
Step 3 Inserting additional Modules (Memory / M.2 / ...)

The following picture shows some possible modules



Attention: Do not touch any pins! Touch the memory at the outer edges only.
Do not stick a barcode onto any modules!

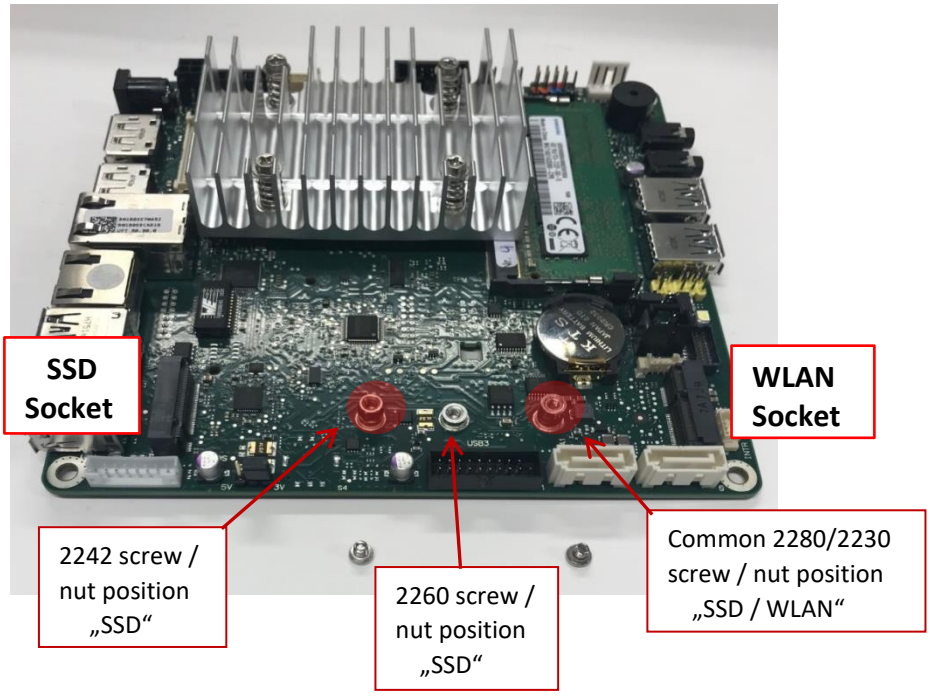
The following procedure is recommended in order to ensure secure electrical contact:



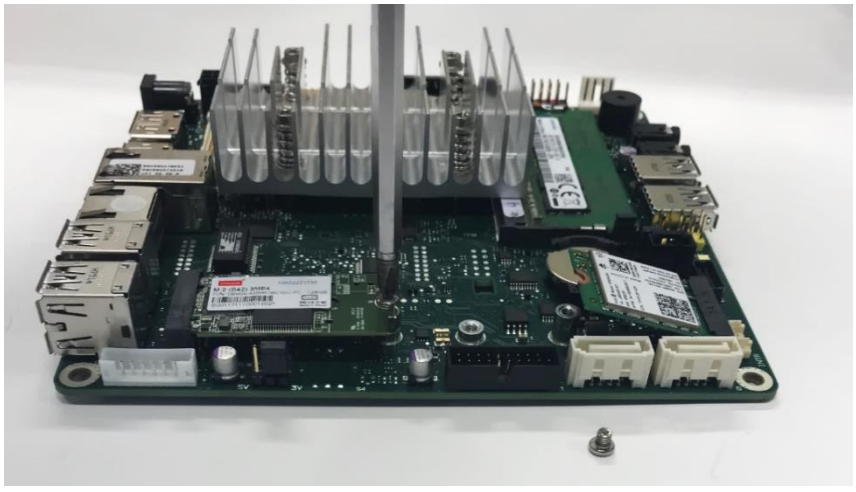
- First insert the lower memory angular and pay attention to the notch!
- Remove the memory again completely from the DIMM socket!
- Insert memory again
- Press down the memory until it fits
- Do not press in the middle of the memory, but press down on the outer edges only
- Install the upper memory in the same way as the lower one

WLAN Module / M.2. Module assembly

First remove the pre-installed M.2 mounting screws.



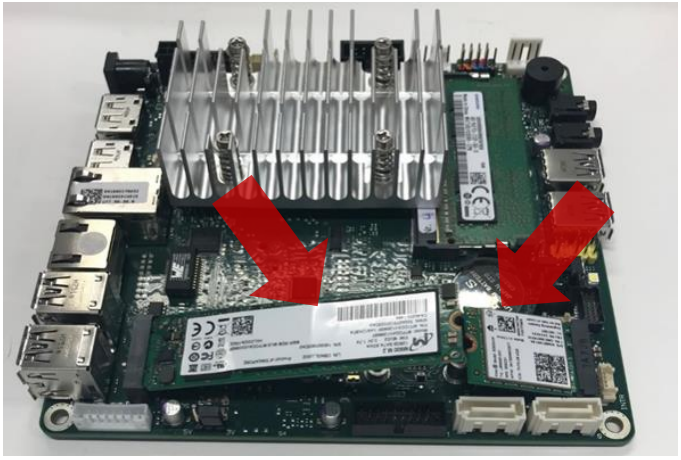
Insert M.2 module angular into the socket (while paying attention to the coding / notch).
Both modules, as shown in the picture, have to be touched on the outer edges only.



For the M.2 SSD (left socket), the assembly nut and screw are pre-installed for a “2242” module.
In order to install a 2260 module, the 2242 assembly nut has to be moved to the 2260 position first.
For a 2280 module, the 2242 assembly nut has to be removed, and the M.2 WLAN (2230) nut (soldered onboard) is used for both M.2 2230 WLAN and M.2 2280 SSD

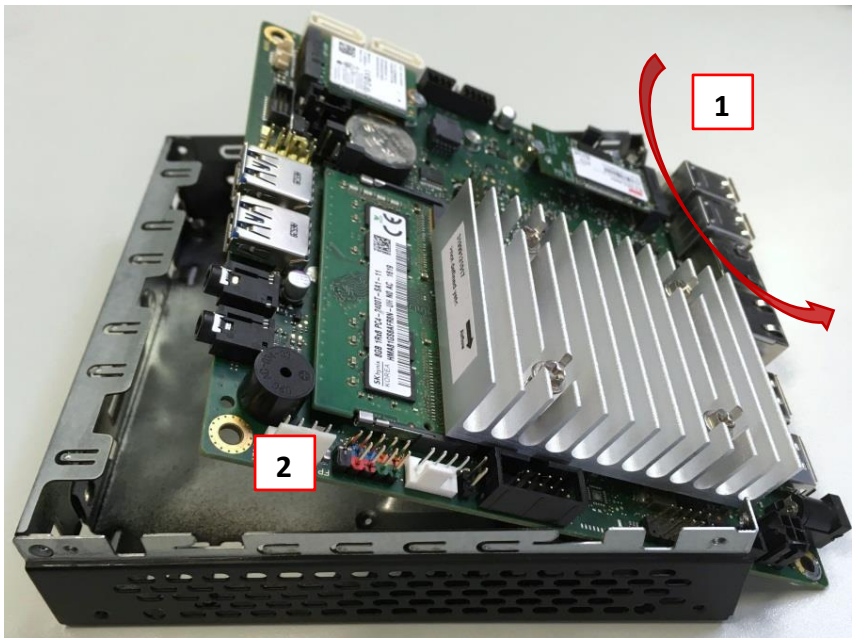
Mandatory torque for the M.2 screws is 0.2Nm, and 0.3Nm for the nut (hexagon bolt).

Sample installation M.2 2280 SSD module and M.2 2230 WLAN module:

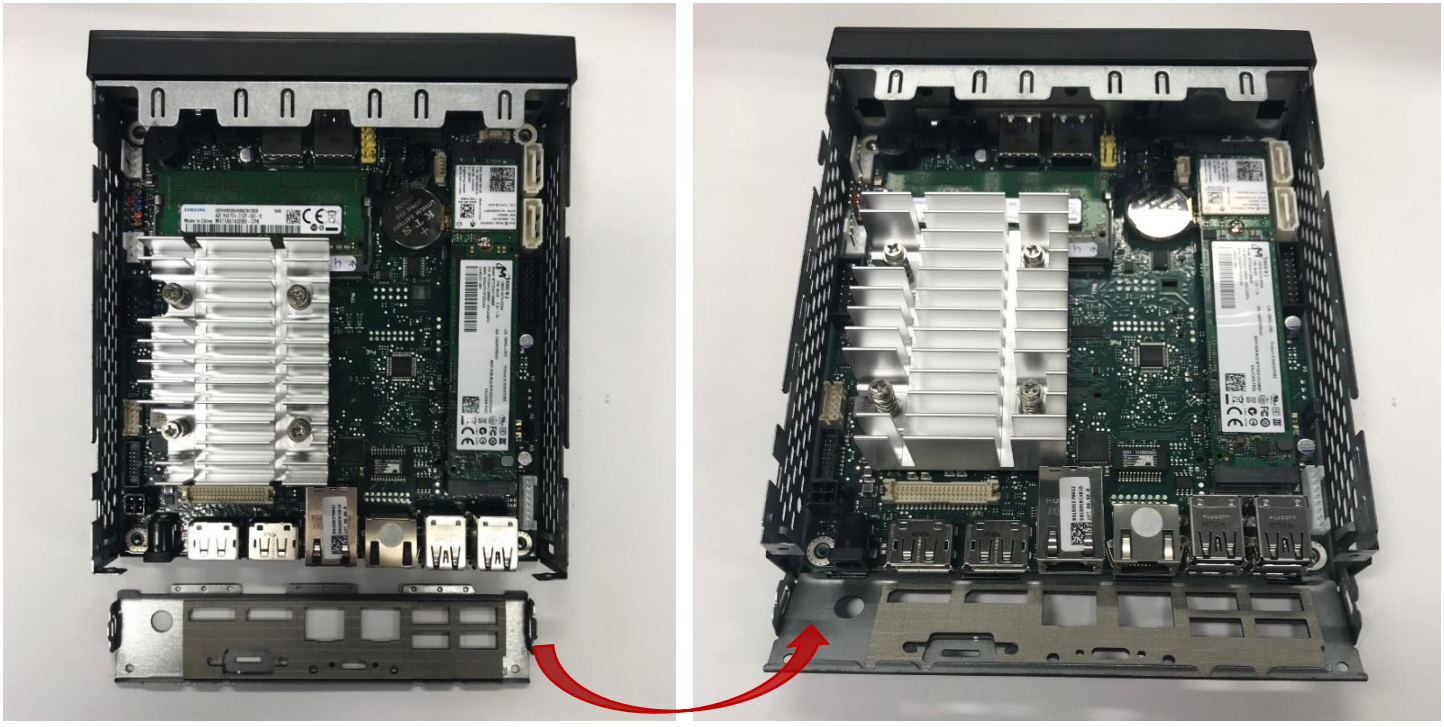


Important note:
The pre-installed 2242 assembly nut (hexagon bolt) has to be removed first!

Step 4 Motherboard Assembly

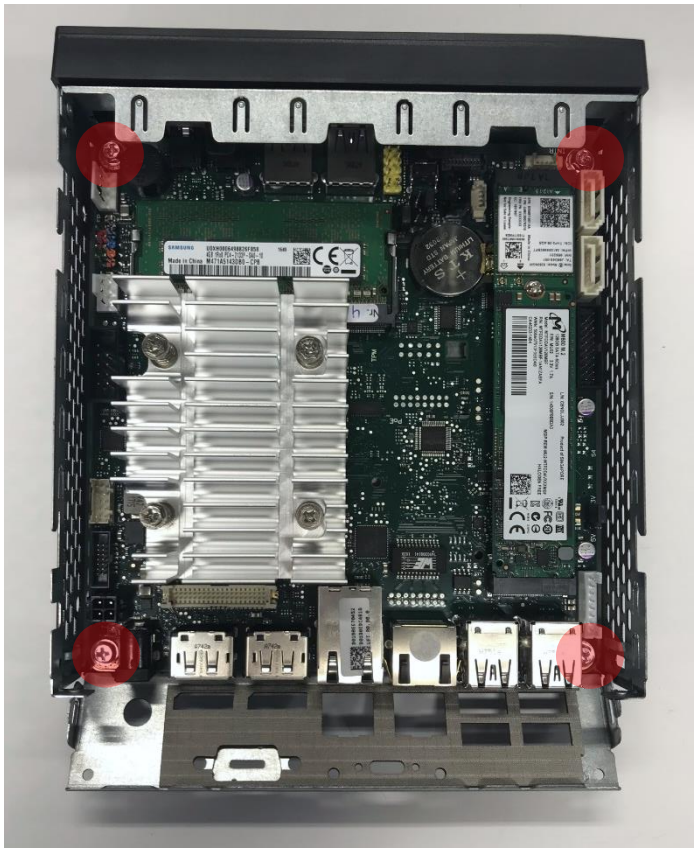


1. Slide in the motherboard as shown (rear chassis side)
2. Move it carefully to the final position
   Take care of the heat spreader pad! Protective foil must be removed first!



Insert the chassis rear cover as shown above.

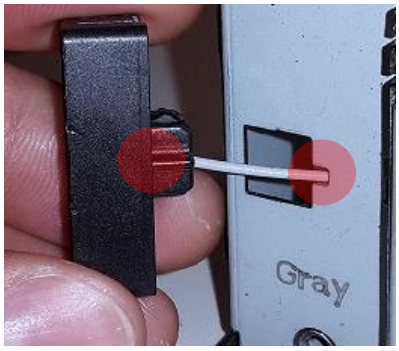
Push down the motherboard carefully while the four mounting holes fit onto the chassis nuts.
Assemble the four mounting screws (M3 x 4.5, included in the SMARTCASE chassis kit).
Mandatory torque = 0.6Nm



Installing WLAN Antennas (optional)

Please check the color-coding of the antennas. On the chassis front side the antenna bays are marked *black* respectively *gray*.

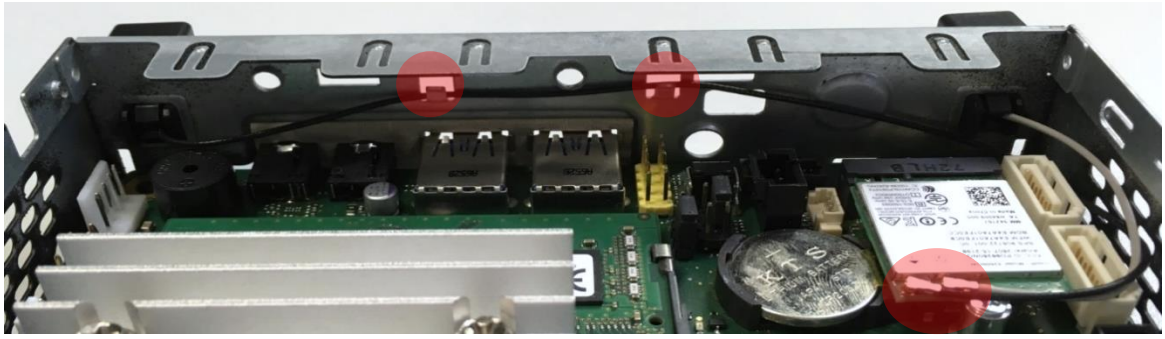
Please note that the plastic front bezel has to be removed first.



Push the antenna cables completely through the opening in the housing and pay attention to the antenna cable notch (see red circles).

Carefully install the WLAN antennas. The metal plate must not be bent.

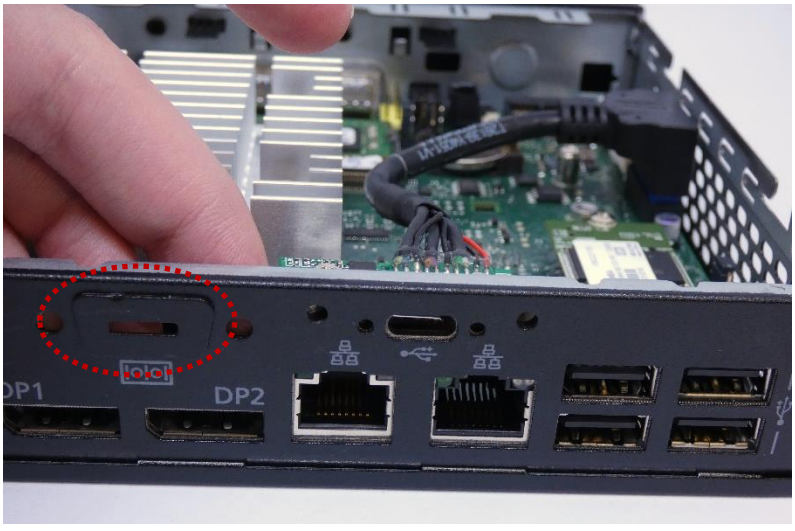
Insert the black antenna cable in the hooks (see red circles), and then plug the black antenna cable to socket #1 of the M.2 WLAN module. Plug the gray antenna cable to socket #2.



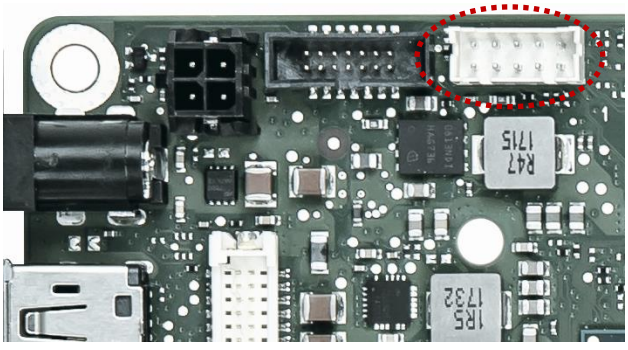
Note: Consider correct installation / position of the antenna cable in order to avoid possible collision with the USB Typ- C connector

Installing COM Cable/Connector (optional)

COM cable F5000-K007



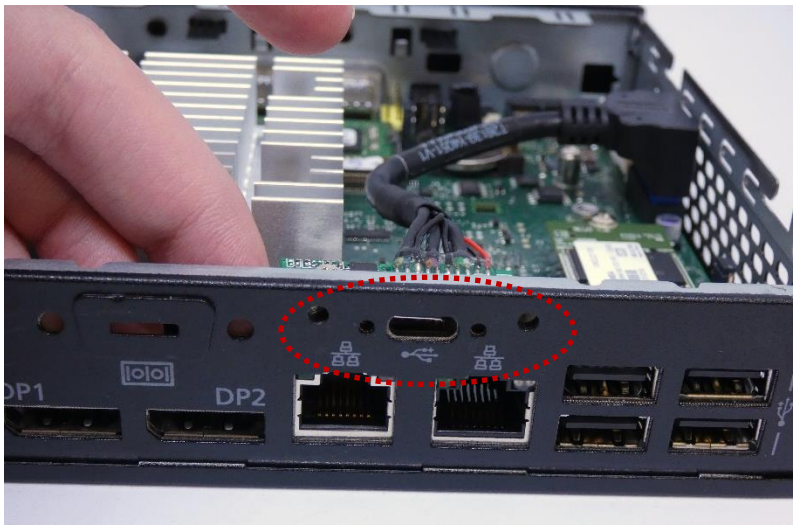
Remove carefully COM metal cover first (use of screwdriver recommended).
Insert white cable connector to the appropriate motherboard connector



Install the Sub-D connector of the cable to the chassis rear cover (specific COM screws UNC4-40).
Mandatory torque = 0.6Nm

Installing USB Type C Extension Cable (optional)

USB cable F5000-K008

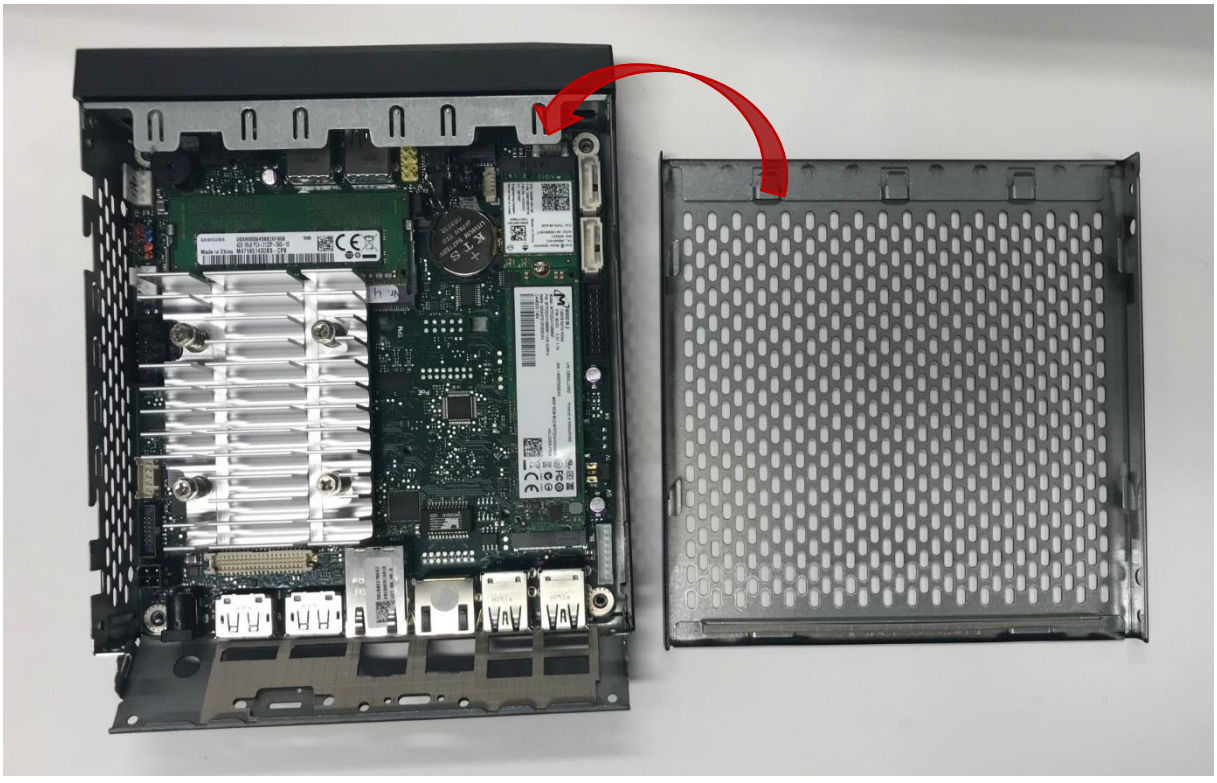


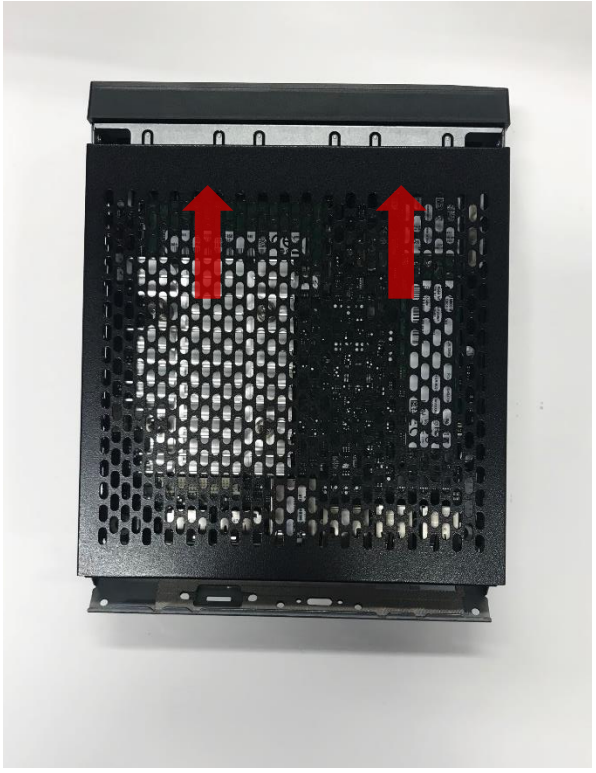
Install the USB Type C bracket to the chassis rear cover (screws M2.5 x 6).
Mandatory torque: 0.4Nm
Then connect the USB cable connector to the appropriate motherboard connector.
The USB cable should be bent slightly as required

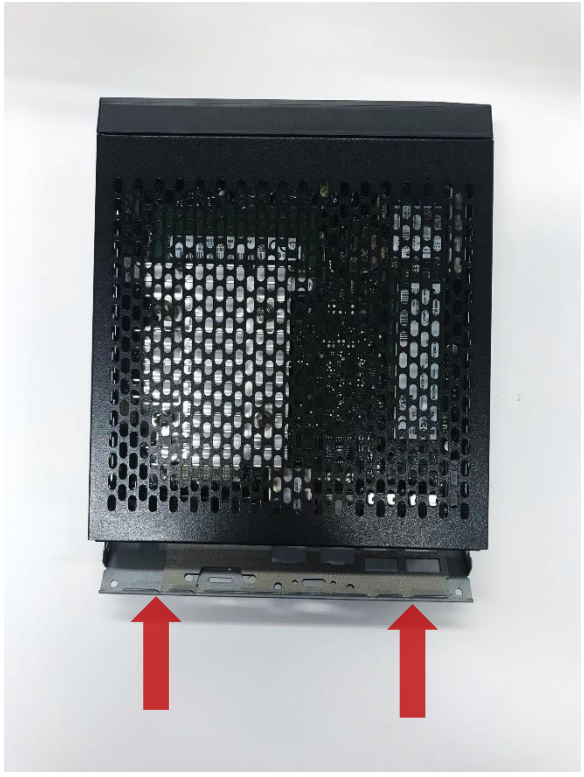
Note: Take care of the WLAN antenna cable, if installed. It must not be pinched/damaged by the USB connector.

Step 5 Closing the Chassis

Slide the cover on top of the chassis pushing it forward.
Some pressure may be required.



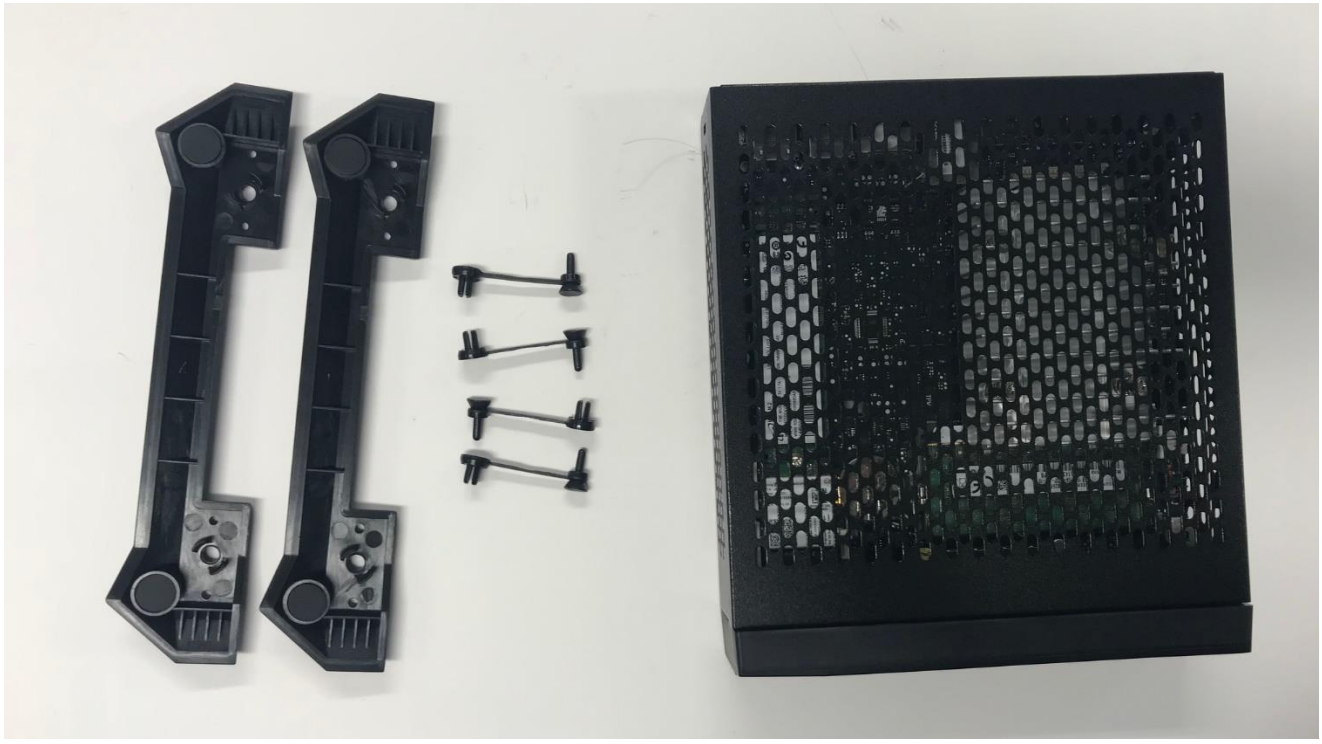




Close the chassis rear cover using the screws (M2.5 x 6) included in the SMARTCASE chassis kit.
Mandatory torque: 0.4Nm

Step 6 Adding Stands

The desk stands included in the chassis kit can be used either for horizontal or vertical use.
They can be fixed by plastic clips, in addition there are screws included for more secure stand assembly.



Insert the clips into the holes of the stands.

Install the stand to the chassis and fix them by the clips.
Optionally, the stands can be secured by the screws (M2.5 x 6).
Mandatory torque: 0.4Nm

Vertical Stand Position

Horizontal Stand Position

About Kontron

Kontron is a global leader in IoT/Embedded Computing Technology (ECT). As a part of technology group S&T, Kontron, together with its sister company S&T Technologies, offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall.

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