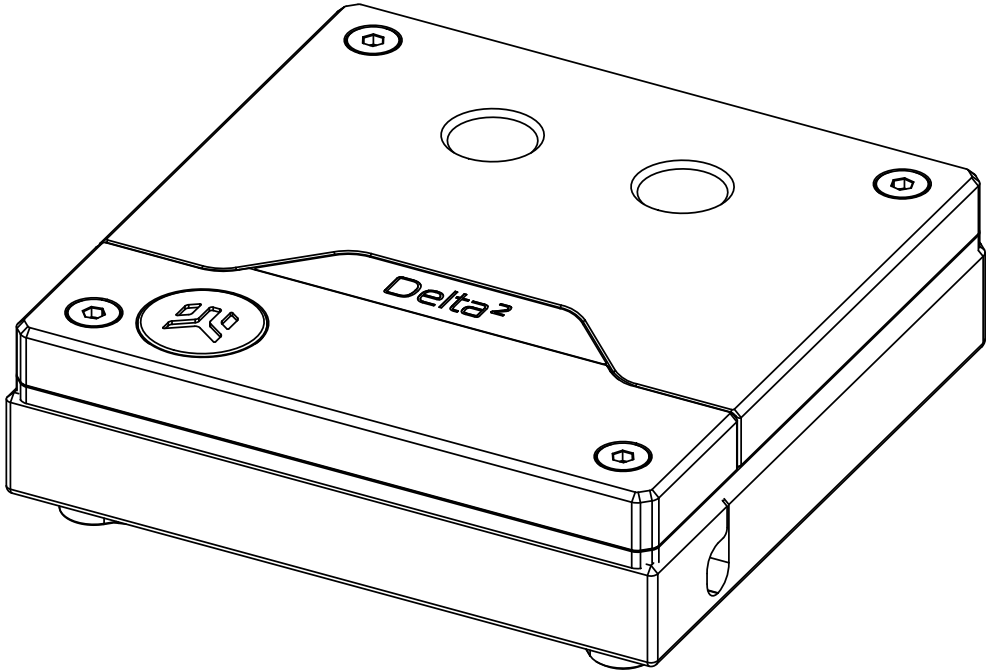
EK-Quantum Delta² TEC D-RGB

CPU WATER BLOCK



USER GUIDE

You may not use or facilitate the use of this document in connection with any infringement or other legal analysis You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning Intel products described herein. You agree to grant Intel a non-exclusive, royalty-free license to any patent claim thereafter drafted which includes subject matter disclosed herein.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

All product plans and roadmaps are subject to change without notice.

The products described may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer or learn more at intel.com.

Intel disclaims all express and implied warranties, including without limitation, the implied warranties of merchantability, fitness for a particular purpose, and non-infringement, as well as any warranty arising from course of performance, course of dealing, or usage in trade.

TABLE OF CONTENTS

1 SYSTEM REQUIREMENTS

1.1 CPU REQUIREMENTS

The liquid cooling subsystem requires an Intel 12th, 13th and 14th generation CPU from the list:

Intel® Core™ i7-12700KF Processor (25M Cache, up to 5.00 GHz)
Intel® Core™ i7-12700K Processor (25M Cache, up to 5.00 GHz)
Intel® Core™ i5-12600K Processor (20M Cache, up to 4.90 GHz)
Intel® Core™ i5-12600KF Processor (20M Cache, up to 4.90 GHz)
Intel® Core™ i9-13900KF Processor (36M Cache, up to 5.80 GHz)
Intel® Core™ i9-13900K Processor (36M Cache, up to 5.80 GHz)
Intel® Core™ i9-13900KS Processor (36M Cache, up to 6.00 GHz)
Intel® Core™ i7-13700KF Processor (30M Cache, up to 5.40 GHz)
Intel® Core™ i7-13700K Processor (30M Cache, up to 5.40 GHz)
Intel® Core™ i5-13600KF Processor (24M Cache, up to 5.10 GHz)
Intel® Core™ i5-13600K Processor (24M Cache, up to 5.10 GHz)
Intel® Core™ i9-12900K Processor (30M Cache, up to 5.20 GHz)
Intel® Core™ i9-12900KF Processor (30M Cache, up to 5.20 GHz)
Intel® Core™ i9-12900KS Processor (30M Cache, up to 5.50 GHz)
Intel® Core™ i5-14600K Processor (24M Cache, up to 5.30 GHz)
Intel® Core™ i5-14600KF Processor (24M Cache, up to 5.30 GHz)
Intel® Core™ i7-14700K Processor (33M Cache, up to 5.60 GHz)
Intel® Core™ i7-14700KF Processor (33M Cache, up to 5.60 GHz)
Intel® Core™ i9-14900K Processor (36M Cache, up to 6.00 GHz)
Intel® Core™ i9-14900KF Processor (36M Cache, up to 6.00 GHz)
Intel® Core™ i9-14900KS Processor (36M Cache, up to 6.20 GHz)

1.2 POWER REQUIREMENTS

The System power supply should be able to have the following capabilities:

- Additional 200W to power the cooling subsystem
- 850W or higher capacity (depends on GPU (Graphic Processing Unit) and other components)
- PCIe (Peripheral Component Interconnect Express) 2x4 (8-pin) power connector directly connects to power supply

Note: Do not use Y cable adapters coming from GPU, motherboard connected to any other component. Dedicated point-to-point Power Supply to EK-Quantum Delta² TEC D-RGB device power cable required.

1.3 USB (UNIVERSAL SERIAL BUS) PORT REQUIREMENTS

Use the supplied cable to connect the micro-USB port in the cooler to the (FP-USB) connecter in the motherboard

USB ports are available on the motherboard, referred to as Front Panel USB (FP-USB)

Note: Motherboards might have either a single or multiple front panel USB connectors. Any available front panel USB connector will work. It can also be connected to any regular USB port using a USB-A to micro-USB cable.

1.4 CHASSIS REQUIREMENTS

The EK-Quantum Delta² TEC D-RGB solution is compatible with a ATX (Advanced Technology eXtended) Chassis.

Note: The Chassis should have enough space for the entire liquid cooling kit (pump, radiator) and the heatsink block.

1.5 COMPONENT REQUIREMENTS

The Cryo liquid solution has the following components:

- Condensation controller (already installed on the cooling block)
- Heatsink or a cooling block
- Pump
- Radiator
- Host running Windows 10 or Windows 11 64-bit Operating system

1.6 CABLING AND ELECTRICAL REQUIREMENTS

The condensation controller requires the following connections. Connect and disconnect only when PSU and host power are off.

Attention: Do not hot plug.

12V ATX power (2x4 PCIe) Direct power cable connection to power supply unit (PSU)

Factory Default Connection:

- 1x 2-pin connector between the heatsink and condensation controller
- 2x 2-pin sensor connectors
- 1x 2-pin fan RPM monitor connector (power sourced separately and directly from power supply unit)
- 1x 2-pin pump RPM monitor connector (power sourced separately and directly from power supply unit)

USB connection (cables are included):

Cryo cooler controller board micro-USB port connected to the motherboard FP-USB or any available USB port.

2 INSTALLATION

2.1 HARDWARE INSTALLATION

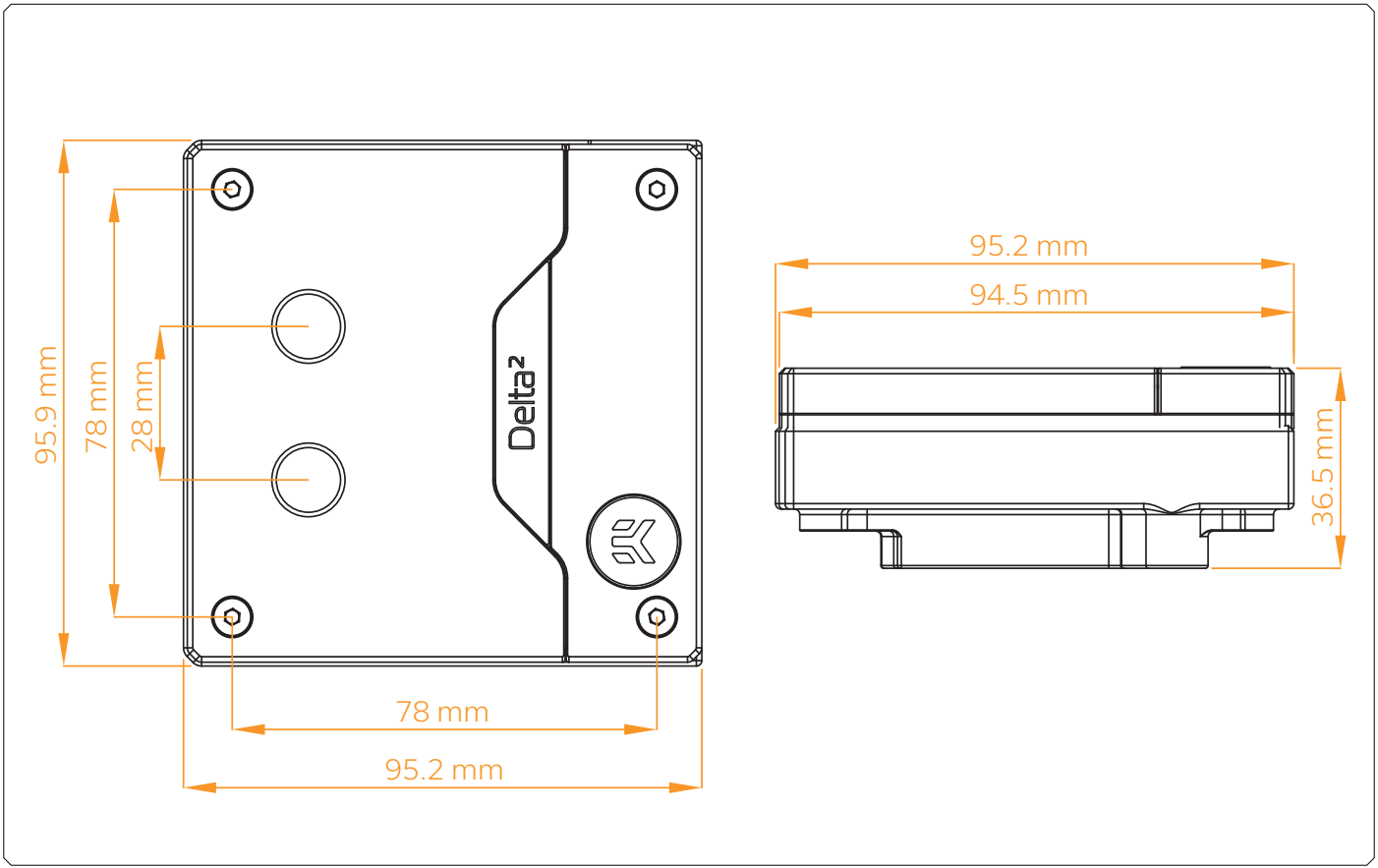
Power-off and remove AC power from the PC host power supply before attaching power to the EK-Quantum Delta² TEC D-RGB sub-system.

The hardware installation should in the following sequence:

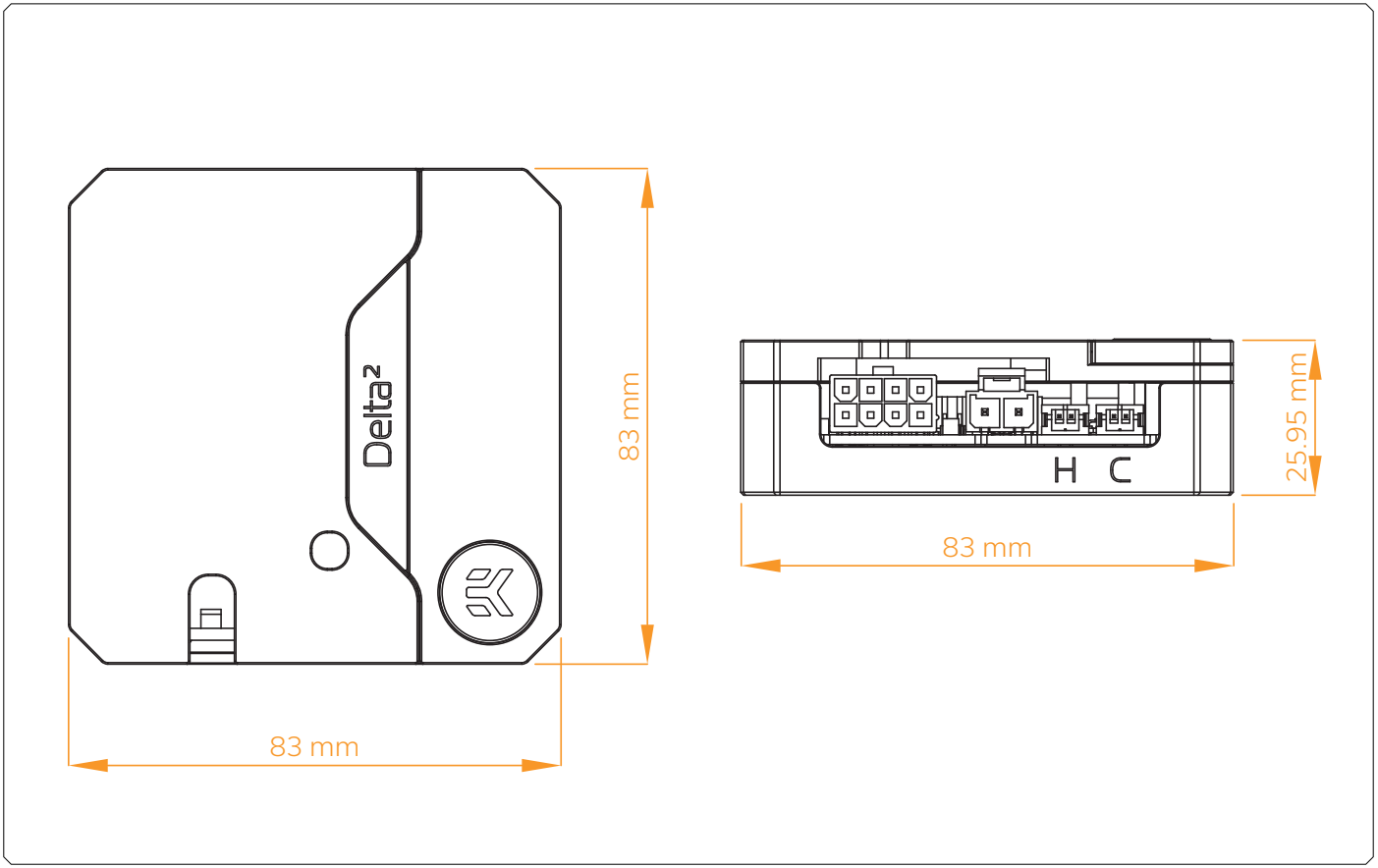
- Radiator
- Pump
- Fence
- Heatsink block (Use thermal paste)

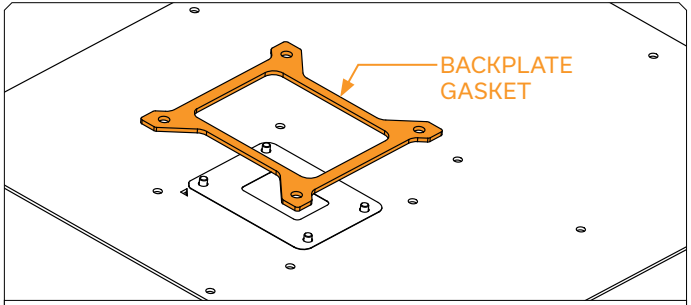
Note: The EK-Quantum Delta² TEC D-RGB sub-system requires that the radiator fans and pump to be connected directly to Cryo Controller board using the manufacture recommended cable harnesses. The Cryo Cooling sub-system does not interact with the motherboard-controlled fan or pump control connector headers.USB connection (cables are included):

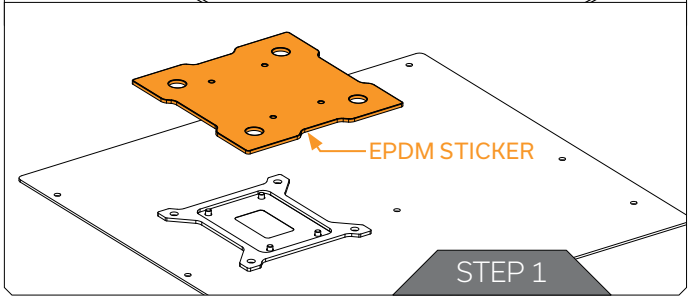
2.1.1 WATER BLOCK DIMENSIONS



2.1.2 CONTOLLER CASING DIMENSIONS



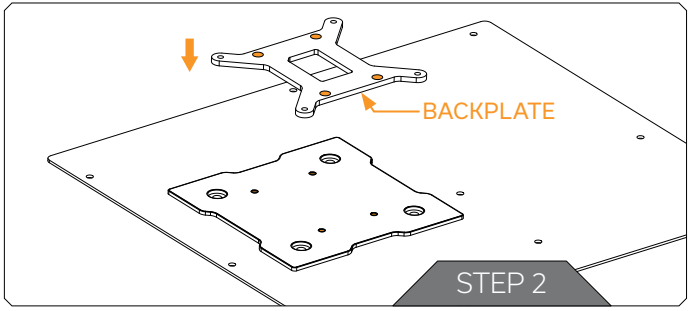




2.1.3 PREPARING THE MOTHERBOARD

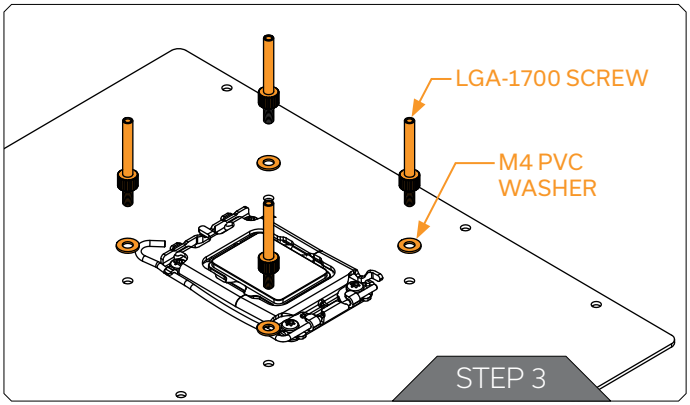
STEP 1

Prepare the box containing mounting mechanism with screws. Find a Backplate gasket and EPDM sticker at the bottom of the box. Place Backplate gasket on the back side of the motherboard and stick EPDM sticker on the top of backplate gasket. Be careful with correct position of the EPDM sticker.



STEP 2

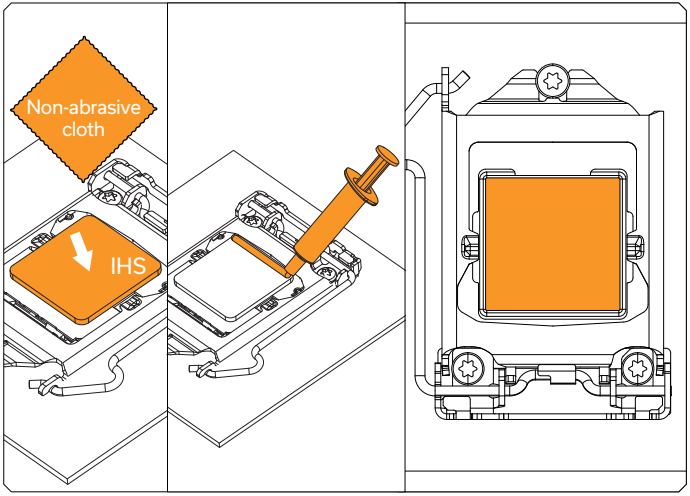
On the backside of the motherboard place a backplate over the glued sticker. Align four (4) openings in applied backplate with four (4) screws on stock backplate.



STEP 3

Install four (4) supplied specific LGA-1700 screws into four (4) M4 threaded stubs on the already installed backplate. It's mandatory to put M4 PVC washer underneath each of the M4 thumb screws. Tighten the screws to the backplate until you reach the end of the thread. Using tools (such as pilers) is not recommended.

Do not overtighten the screws.



2.1.3.1 APPLYING THERMAL COMPOUND

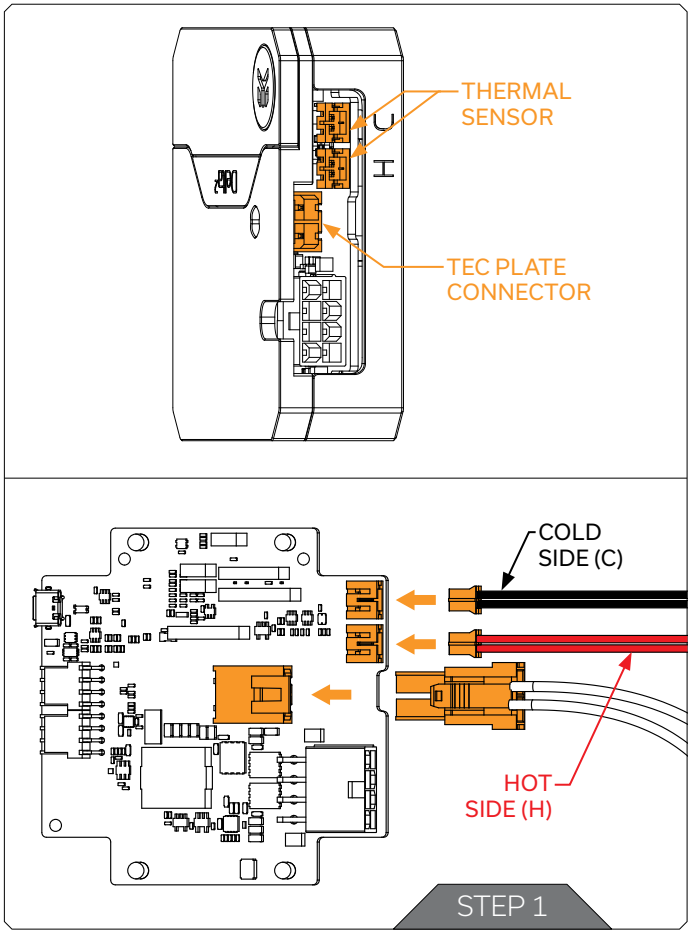
Wipe the CPU's contact surface (by using non-abrasive cloth or Q-tip, as shown on sample photo)

Apply the enclosed EK-TIM Ectotherm thermal grease (thermal compound) on the CPU heat spreader – IHS – as shown in the image. The layer of the thermal compound must be thin and even in thickness over the entire surface of the IHS.

The excessive or uneven application of thermal grease may lead to poor performance!

EK-TIM Echotherm (information)

Type	Low viscosity
Electrical conductivity	No
Optimal working temperature	+100 to -50 °C
Thermal conductivity	8,5 W/mK
Density	3 g/cm³



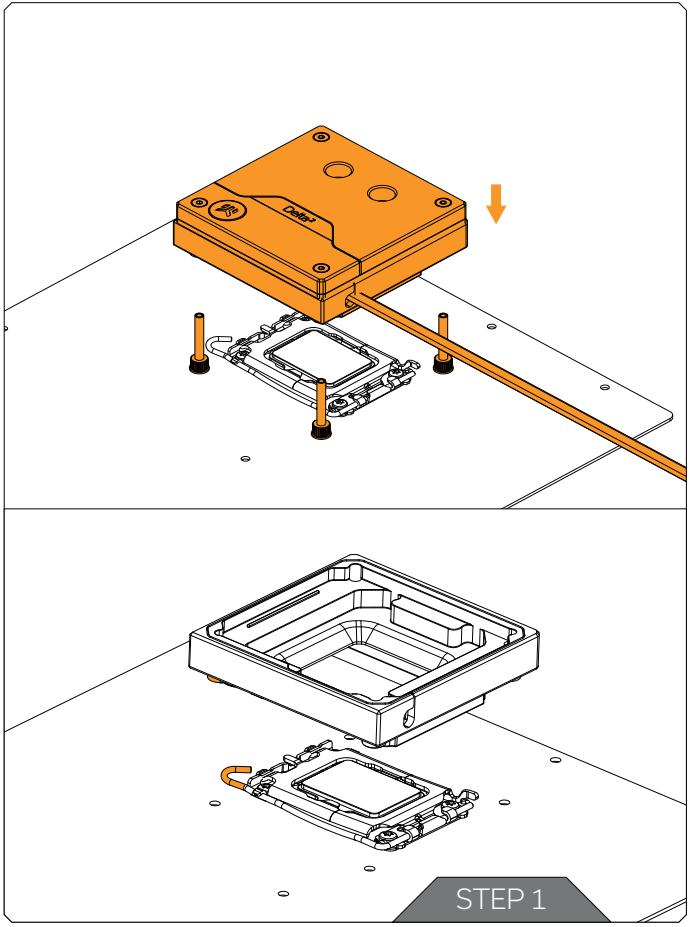
2.1.4 ASSEMBLING WATER BLOCK AND ELECTRONICS

STEP 1

Plug in electronics of water block to PCB

- 2 Thermal sensors H and C (white connectors – 2pin)
  - Red cable – Hot side (H)
  - Black cable – Cold side (C)
- TEC plate sensor (black connector connector – 2pin)

> In case of removing the Thermal sensors, EK recommends the use of pliers. Make sure to hold the Thermal sensor on the plastic header, not the wire!



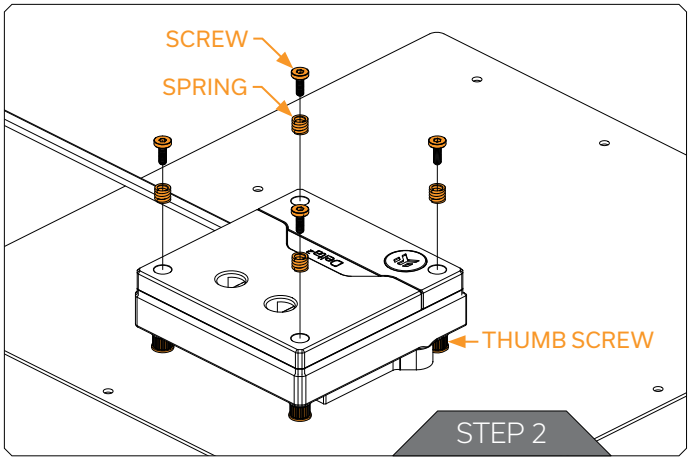
2.1.5 PLACING / ATTACHING THE BLOCK ON THE MOTHERBOARD

STEP 1

Carefully align your EK-Quantum Delta² TEC water block with pre-installed mounting mechanism above the Intel socket with pre-installed CPU.

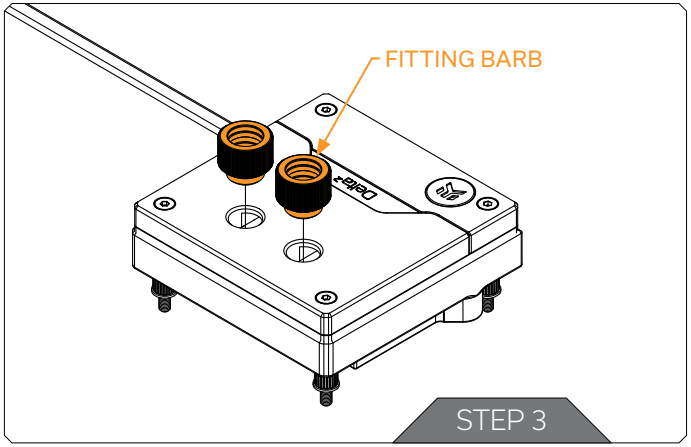
CAUTION: The protective sticker must be removed from the coldplate.

Align shape of insulation with the shape of the insulation. Keep attention on the shape of ILM mechanism lever.



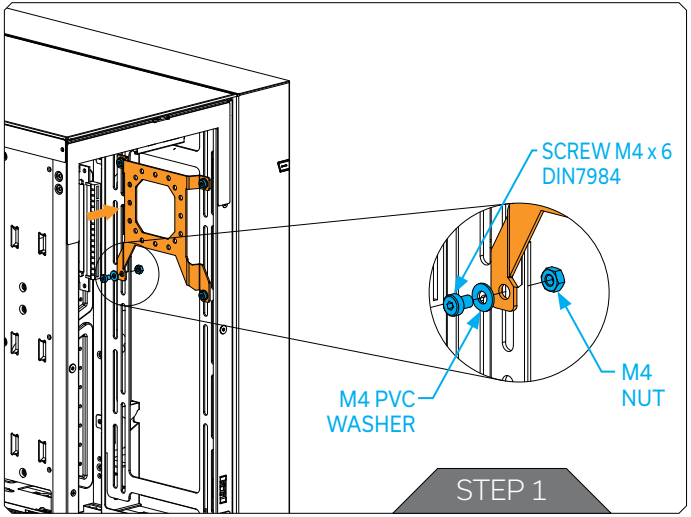
STEP 2

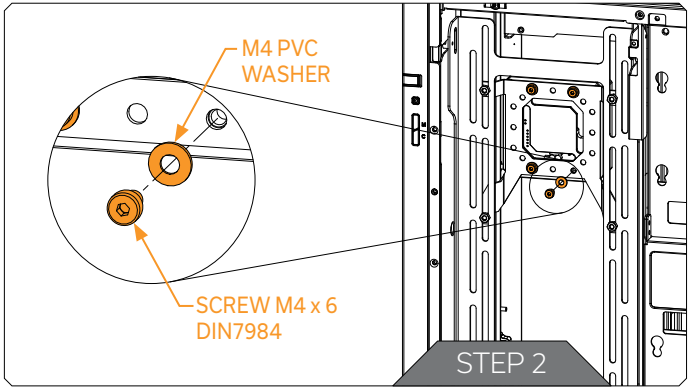
Place an enclosed compression spring and screw over each M4 thumb screw. Start fastening screws in cross pattern until finger tight.



STEP 3

Tighten the fitting barbs in clockwise direction until the gasket underneath is compressed. EK-Quantum Delta^2 TEC water block is using the G1/4 fittings.





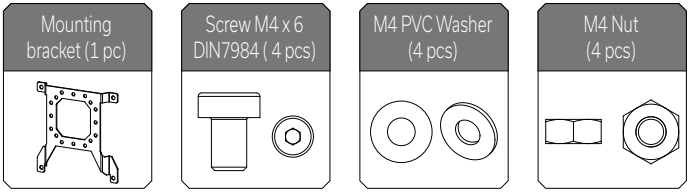
2.1.6 ATTACHING THE EK-QUANTUM DELTA² TEC CONTROLLER - USING MOUNTING BRACKET

STEP 1

First, mount the supplied mounting bracket into the PC Chassis using four (4) M4 x 6 Screws, M4 Washers, and Nuts.

The mounting bracket can be also installed onto the Fan or Radiator with the standard hole spacing (105 mm). In these cases, the EK-Quantum Delta² TEC Controller Case must be installed prior securing the bracket.

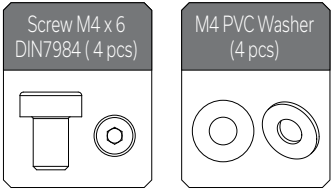
For this step you will need:



STEP 2

After securing the bracket, attach the EK-Quantum Delta² TEC Controller Case onto the bracket using four (4) M4 x 6 DIN7984 Screws and M4 PVC Washers.

For this step you will need:



2.1.7 TESTING THE LOOP

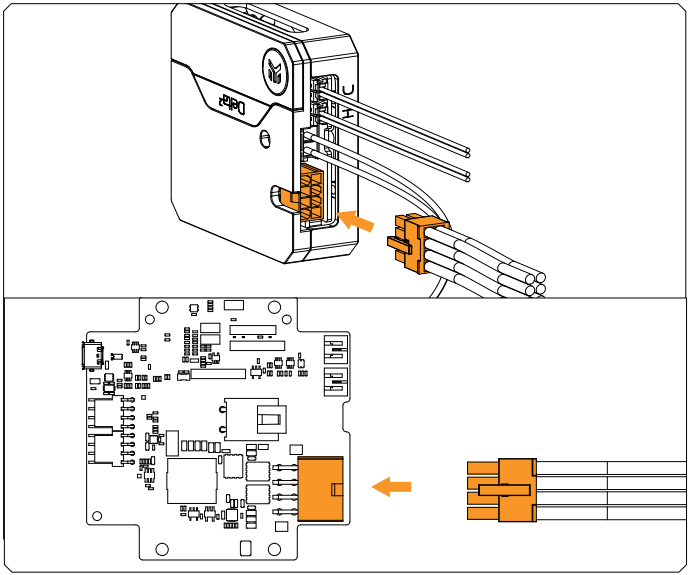
To make sure the installation of EK components was successful, we recommend you perform an air pressure leak test using EK-Loop Leak Tester (https://www.ekwb.com/shop/ek-loop-leak-tester-flex) or alternatively a 24-hour coolant leak test.

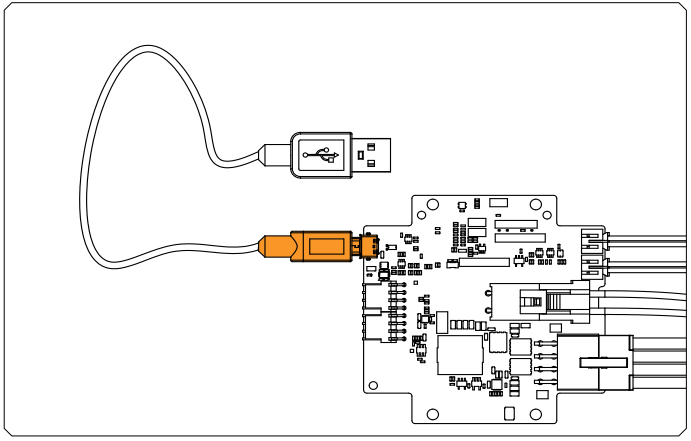
When your loop is complete and filled with coolant, connect the pump to a PSU outside of your system. Do not connect power to any of the other components. Turn on the PSU and let the pump run continuously.

Inspect all parts of the loop, and in case the coolant leaks, fix the issue and repeat the testing process. Ensure that all hardware is dry before the system is powered on, to prevent any damage.

2.1.8 CONNECTING THE TEC PLATE ELECTRONICS

Plug the 8-pin PCIE connector from the power supply to the conector on EK-Quantum Delta^2 TEC WB PCB.

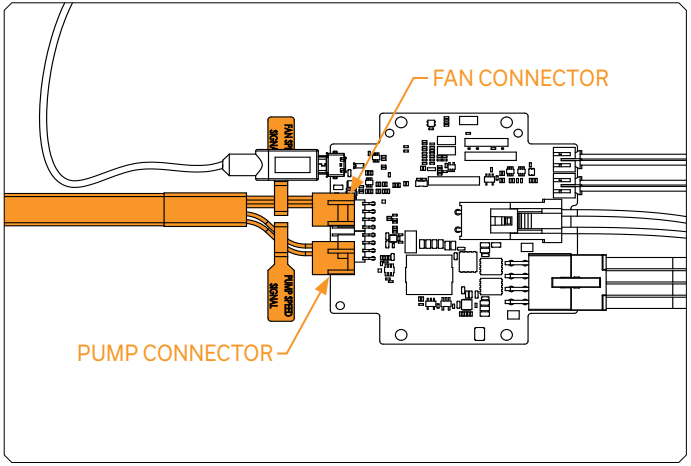




2.1.9 ESTABLISHING CONNECTION BETWEEN CONTROLLER AND MOTHERBOARD

The communication connection must be established when the water block with electronics is mounted.

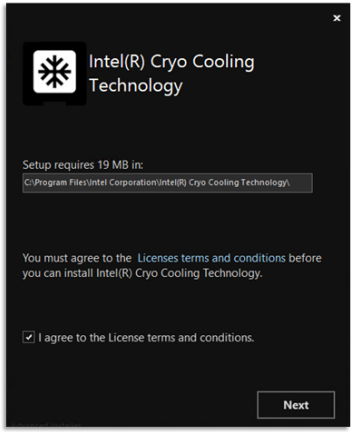
Use the USB-A to micro-USB cable which is included in the package. Connect the micro-USB to the controller as it is shown in the picture.



2.1.10 ESTABLISHING CONNECTION WITH THE FAN-S AND PUMP

Using the EK-Quantum Delta² TEC power cable, connect the Fan-s and Pump connector on the EK-Quantum Delta² TEC controller (Shown in the picture).

The other side of the EK-Quantum Delta² TEC power cable must be connected with the Fan-s and Pump.

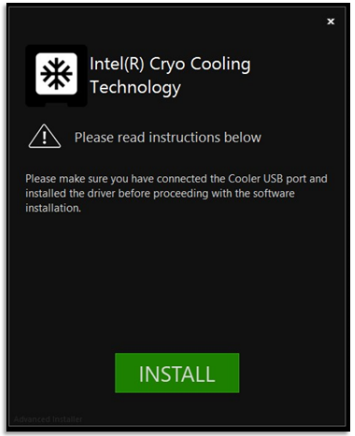


2.2 SOFTWARE INSTALLATION

link: https://www.intel.com/content/www/us/en/download/715177/intel-cryo-cooling-technology-gen-2.html

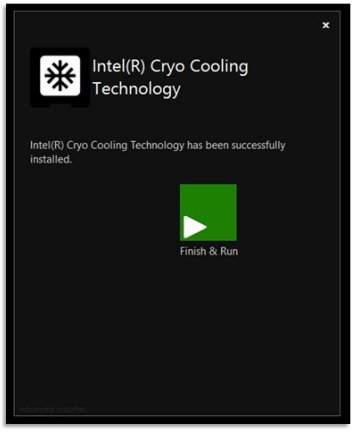
The installer will first check for pre-requisites before installation begins. The installer confirms the following that includes:

- Requests user permission to install Intel® Cyro Cooling Technology with elevated privileges
- Compatible PC host with Intel CPU device
  - Installer requires access to your device to install local application
  - Installer will only continue only for compatible devices
  - Installer will stop the installation process without installing any software if no compatible Intel CPU device is detected
- .NET framework
  - Installer will provide guidance to install .NET which is required to run the Intel® Cyro Cooling Technology Software
- Accept the license agreement to proceed with the installation, then click **Next**
- Continue next page
- If the installer confirms that the processor is not supported, the installer will stop the installation. If this occurs, click **Exit** to close the installer
- Continue next page

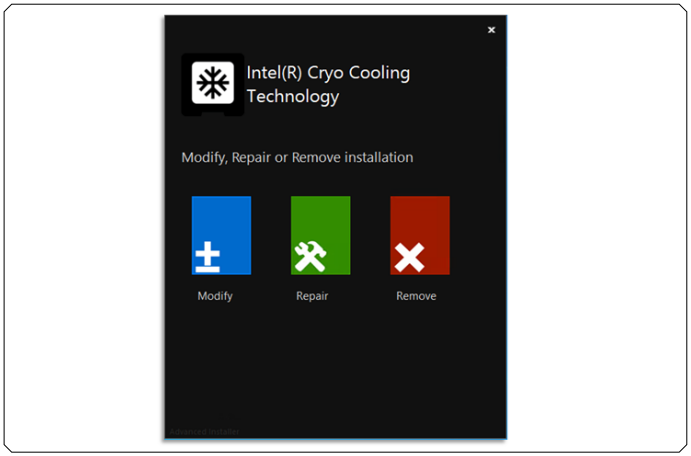


The installer will continue to install if the PC host contains:

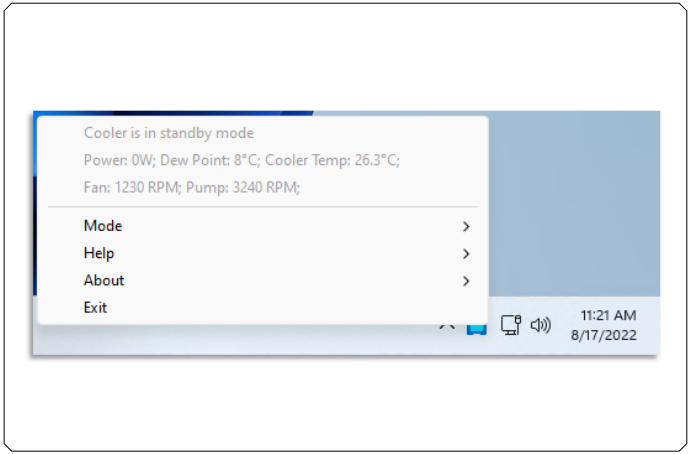
- an Intel CPU that is 12th generation K series or later
- a supported cooling solution is present and properly connected
- If these configuration items are not confirmed, the Install button will be disabled
- Otherwise, the Install button will be enabled
- Click **Install** to continue
- Continue next page



- Once the installation has completed, click **Finish & Run**
- Continue next page

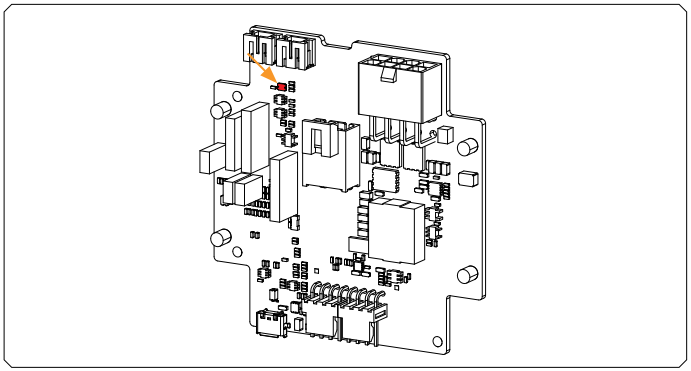


- Run the installer after the initial installation to Modify, Repair or Remove the installation as needed
- Continue next page



2.2.1 EK-QUANTUM DELTA² TEC D-RGB FEATURES & FUNCTIONALITY

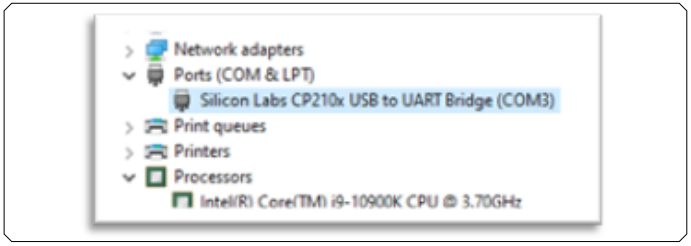
- Successful software installation is confirmed by a blue icon in the windows taskbar
- A blue icon indicates that the Cryo Cooling hardware is in "Standby" mode and functioning as expected
- Standby mode means that the radiator pump and fans are running without sub-ambient cooling
- If the Cryo Cooling icon is red or is not present, refer to the "Troubleshooting" section in this document
- Click on the Cryo Cooling taskbar icon to access the following Cryo capabilities and information (excludes any PC host status or data:
    - EK-Quantum Delta² TEC D-RGB Status
        - Dew Point
        - Cooler Temp
        - EK-Quantum Delta² TEC D-RGB, 2nd generation only
            - Fan RPM
            - Pump RPM
    - EK-Quantum Delta² TEC D-RGB Functions
        - Mode
        - Help
        - About
        - Power
- If the Cryo Cooling icon color is not blue or is not visible, refer to the "Modes of Operation" section in this document for more information
- Refer to the "Features" section for a more detailed description of EK-Quantum Delta² TEC D-RGB features



2.2.2 INSTALLATION VERIFICATION

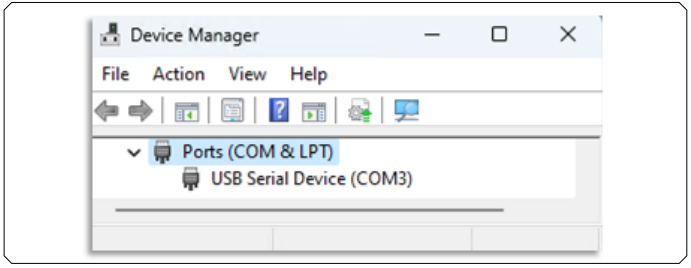
Boot the system with the cooler connected. After booting the system, the cooler should display a solid red LED (Light Emitting Diode) light.

The Windows OS should now recognize a new USB device.



2.2.2.1 EK-QUANTUM DELTA² TEC D-RGB GENERATION 1 DRIVER

Launch the device manager to verify the following device is installed:



2.2.2.2 EK-QUANTUM DELTA² TEC D-RGB GENERATION 2 DRIVER

Launch the device manager to verify the following device is installed:

2.2.2.3 EK-QUANTUM DELTA² TEC D-RGB DRIVERS

- Screenshots above show expected driver status with no issues
- If a yellow exclamation mark is displayed, right-click on the device with yellow exclamation, then click on Update Driver.
  - Windows OS will attempt to locate, download, and install any current and compatible drivers

- If Windows OS does not install the driver, then manually install it from the following link:

Cryo Cooling Generation 1 driver (public link):
CP210x_Universal_Windows_Driver.zip

Cryo Cooling Generation 2 driver:
Microsoft* driver is available directly from Microsoft* Windows OS updates and other Microsoft update methods (no direct link)
Reboot the PC host to initiate device connection that is expected to detect the EK-Quantum Delta² TEC D-RGB sub-system and install the required device driver

- If the USB device is not recognized in Device Manager:

  Refer to the "Troubleshooting" section in this document for guidance:

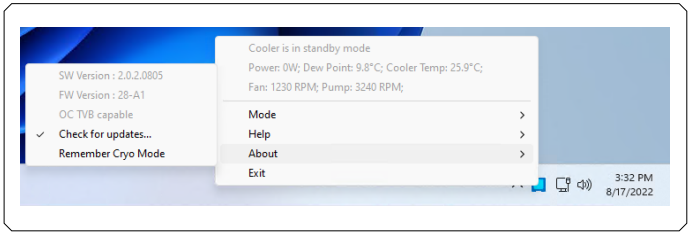
3 MODES OF OPERATION

3.1 THREE MODES OF OPERATION

Operating Mode	Status Description	Controller LED Indicator
Standby	• **Standby mode (no sub-ambient cooling)** • EK-Quantum Delta^2 TEC D-RGB capabilities are **disabled** • EK-Quantum Delta^2 TEC D-RGB **disables** sub-ambient cooling • Cryo cooling radiator fans, and pump to provide typical liquid cooling capability **without** sub-ambient cooling	**Blue – slow blinking**
Cryo	• **Cryo cooling mode [regulated]** • EK-Quantum Delta^2 TEC D-RGB capabilities are **enabled** • EK-Quantum Delta^2 TEC D-RGB **dynamically controls** sub-ambient cooling, fans, and pump to provide maximum regulated sub-ambient cooling to avoid condensation on cpu heatsink surfaces	**Green – slow blinking**
Unregulated	• **Cryo cooling unregulated mode** • EK-Quantum Delta^2 TEC D-RGB capabilities are **enabled** • **Warning!** EK-Quantum Delta^2 TEC D-RGB enables **maximum unregulated** sub-ambient cooling that **increases condensation risk** on cpu heatsink surfaces due to low temperatures below dew point • **Warning!** This mode allows users to force the sub-ambient cooler to maximum power state (within device safety limits) increasing condensation risk on cpu heatsink surfaces and surrounding areas. **This can cause permanent system damage.**[1]	**Purple – fast blinking**
Offline	• Occurs during system boot or resumes from low power states. • Also occurs if the controller is uninstalled, improperly installed, or damaged. • If the red led remains on after booting it indicates a subsystem failure (see "trouble shooting" section for help)	**Red – solid**

[1] Unregulated Mode may cause condensation, which could result in an electrical short circuit that can cause damage to your computer or create a safety hazard. To minimize this risk, confirm that the provided Cryo Cooler CPU shroud is securely installed to form an airtight seal between the motherboard and the cooler water block. Continuous monitoring is required on any system or component surface to safely and immediately remove wetness by a clean wick/dry material. By using unregulated mode, user acknowledges and accepts all the risks associated with operating in this mode. Unregulated Mode will attempt to restrict the minimum CPU temperature from falling below dew point but there is NO WARRANTY that this will be successful in all occurrences.

4 FEATURES



4.1 CHECK FOR UPDATES (AUTOMATICALLY)

When this option is checked, Cryo Cooling software will check for the latest version of the software and notify users to download and update.

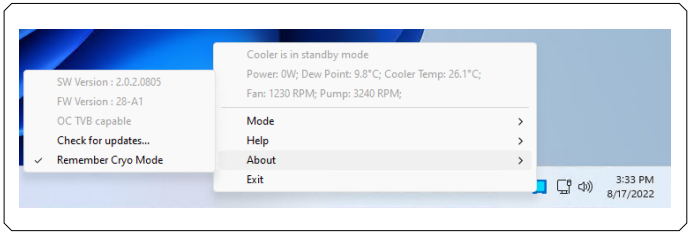
4.2 MANUALLY CHECK AND DOWNLOAD UPDATES

EK-Quantum Delta² TEC D-RGB software can also be downloaded manually.

To download the latest EK-Quantum Delta² TEC D-RGB software installer to confirm that the latest available software is installed:

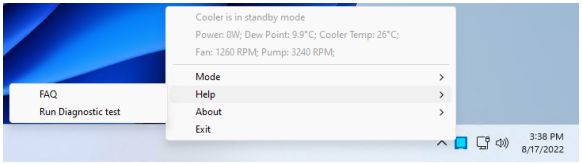
https://www.intel.com/content/www/us/en/download/715177/715179/intel-cryo-cooling-technology.html

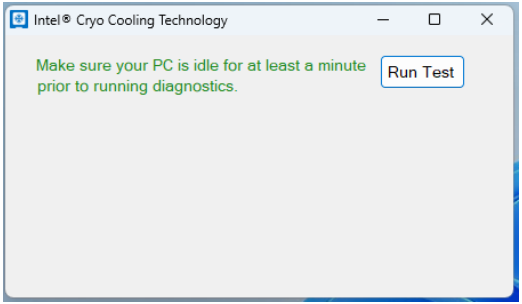
The latest software supports both EK-Quantum Delta² TEC D-RGB Generation 1 and 2

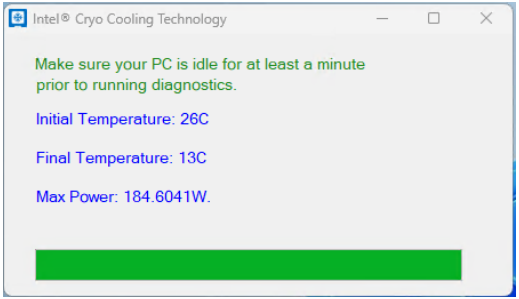


4.3 REMEMBER CRYO MODE

When this option is checked, Cryo Cooling software will remember the "Cryo" mode selection upon system power on, reboot and resume from sleep.







4.4 DIAGNOSTIC TEST

When this option is clicked, Cryo Cooling software will run a sub-system diagnostic to confirm sub-system health.

- Total diagnostic time is less than 30 seconds
- A report is created to share with the EK-Quantum Delta^2 TEC D-RGB sub-system manufacture
- Care was taken not to log personal identifiable information
- Review the log and remove any details that you do not wish to share
- Diagnostic test log location and name example:
  - C:\temp\logs\
  - sac.diagnose.YYYY-MM-DD.log
  - YYYY-MM-DD is the Year, Month, and Day the diagnostic was run

4.4.1 RUN DIAGNOSTIC TEST

4.4.2 DIAGNOSTIC RESULTS (PASS EXAMPLE)

- Built-in Self Test passed with cooling and power meeting expectations

4.4.3 DIAGNOSTIC RESULTS (FAILURE EXAMPLE)

- Built-in Self-Test failed with cooling and power **not** meeting expectations

5 TROUBLESHOOTING

5.1 TROUBLESHOOTING

Problem	Possible Cause	Corrective Action
Cryo Cooler switches itself from Unregulated mode to Cryo mode	Not an error. This is a protective cooler response to prevent excessive condensation from Unregulated mode operation without any workload or User interaction for 10 minutes	• None
Red LED does not go away when booting the computer	Software not installed or working properly	• Confirm that the latest software version is installed • Install, reinstall, and reboot system • The red LED should be on while the system boots and then transition to standby (slow blinking blue)
Red LED does not go away when booting the computer	Power supply not connected properly	• Confirm that the controller board 8-pin (2x4) PCIe connector is connect properly to the ATX PSU (Power Supply Unit)
Red LED does not go away when booting the computer	Thermoelectric cooling module not connected properly	• Confirm that the cooling module 2-pin black connector is connected properly to the cooler board (factory preinstalled)
Red LED does not go away when booting the computer	Temperature sensor malfunction	• Contact support • All devices are factory tested prior to shipping
No cooler LED light ON	Cooler controller USB port not connected	• Confirm that the cooler board USB port is connected according to the installation instructions
Red LED turns ON while using the system after a while	An overheating condition has been detected. Potentially because of an installation issue, pump failure, or radiator fans not running. The cooling system will enter standby mode to protect itself.	• Confirm that the fans and pump are connected to an always-on power source and not controlled by the motherboard dynamic fan/pump control system • Reboot the system and check functionality after correcting the condition

Problem	Possible Cause	Corrective Action
Red LED turns ON and system hibernates	An extreme overheating condition has been detected on the cooling subsystem, potentially because of an installation issue, pump failure, or radiator fans not running. The PC will enter a low power state to protect itself.	• Check your installation, check that the fans and pump are connected to always-on power sources • Fan and pump should not be controlled by the motherboard dynamic fan/pump control system • Reboot the system and check functionality after correcting the condition

5.2 ERROR MESSAGES

Error	Possible Cause	Corrective Action
An error occurred while running the test: Please Contact Support	Running diagnostics test with an active workload or after the system is in Cryo or Unregulated mode for too long	• Confirm that the system is idle without high activity • Wait at least two minutes until the temperature stabilizes and try again • Contact support if error persists
This cooling solution is not supported on this processor. Please uninstall the application	Using the Cryo cooler with a non-supported configuration Depending on Cryo cooler model, only specific Intel® 10th, 11th, and 12th generation CPUs (computer processor) are supported	• Confirm your Cryo cooler generation and use only Intel® supported processors • Contact support if error persists
Unable to establish connection with cooler or cooler is offline	Cryo cooler USB port is disconnected, or driver is not installed	• Confirm that the USB port is connected, and driver is installed as described in the manual • Confirm that the cooler has a proper USB cable connection • Contact support if error persists
Unable to establish connection with service or Cryo Cooling service is not running. Please start the service	Stopped Cryo cooling service by accident or other reason	• Navigate to Windows Services and restart the Intel® Cryo Cooling service, or reboot your PC • Contact support if error persists

Error	Possible Cause	Corrective Action
Power supply disconnected from cooler	ATX 12V power supply cable not connected properly to the cooler	• Confirm that the controller board 8-pin (2x4) PCIe connector is connect properly to the ATX PSU (Power Supply Unit) and that your PSU has an additional 180W+ peak power for Cryo Cooler function • Contact support if error persists
TEC not connected to the cooler	The sub-ambient cable is disconnected	• Confirm that the cooling module 2-pin black connector is connected properly to the cooler board (factory preinstalled) • Contact support if error persists
Hybrid sensor Failure	Cooler sensor failure	• Reboot PC. If the issue persists, power off the PC, disconnect power from the Cooler • Contact support if error persists
Temperature sensor failure. Error CF1, CF2, CF4 Standby; Transition from Cryo or Unregulated mode to Standby	Internal temperature cooling module, sensor and/or water pump failure	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, and the copper spreading block and the CPU • Confirm that the installation is correct and thermal grease has been applied properly • Confirm fan and pump function and flow rates, or other installation issues • Confirm that temperature sensor wire (factory installed) is securely connected to Cryo Cooler controller • Confirm that the cooling module 2-pin black connector is connected properly to the cooler board (factory preinstalled) • Contact support if error persists

Error	Possible Cause	Corrective Action
Overheating condition or thermal sensor failure – Errors OT1, OT2 – please shut down system and check the cooling system integrity	The measured cooling block temperature exceeds 80 °C (should not happen in normal operation). This could be caused by fan failure, pump failure, coolant leak, or other serious failure of the water-cooling loop, or it could be because of thermistor failure or detachment. This error also drops the Cryo controller into "Standby" mode	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, and the copper spreading block and the CPU • Confirm fan and pump function and flow rates, or other installation issues • Confirm the thermal sensor integrity and connection • Confirm PC chassis subcomponents and motherboard integrity • Contact support if error persists
Overheating condition detected, Error OT3, system will be shutting down in 5 seconds.	Estimated cooling block temperature exceeds 90 °C (should never happen). Temperatures at this level could indicate imminent failure of the water-cooling loop and potential permanent damage to the system. This should not be possible unless multiple simultaneous failures of the cooling system have occurred (e.g., pump failure, coolant leak, thermistor failure, CPU or OS failure, etc.). This error initiates a system shutdown.	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, and the copper spreading block and the CPU • Confirm fan and pump function and flow rates, or other installation issues • Confirm the thermal sensor integrity and connection • Confirm PC chassis subcomponents and motherboard integrity • Contact support if the error persists
Cooler controller error detected, Error CB1, the system will hibernate in 10 seconds.	Hardware failure of the sub-ambient controller power regulation.	• Reboot PC. If the issue persists, power off the PC, disconnect power from the Cooler • Contact support if the error persists

Error	Possible Cause	Corrective Action
Sensor health issue detected, Error DT1 or TD2 please shut down and verify that the cooling system is installed properly.	The measured sensor (thermistor) and estimated temperatures for the copper spreading block are out of spec. This could be caused by a failed or improperly installed thermistor, or by an improper installation of the cooler on the motherboard.	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, the copper spreading block, and the CPU • Confirm fan and pump function and flow rates, or other installation issues • Confirm the thermal sensor integrity and connection • Confirm PC chassis subcomponents and motherboard integrity • Contact support if the error persists
Cryo Cooler Notification UI (User Interface) is not running. Error "Missing Notification app." Cryo transitions to Standby	Intel® Cryo Cooling software failure	• Restart Intel® Cryo Cooling Notification UI, or reboot your PC • Contact support if the error persists
Temperature sensor is not working, Error TD1, please shutdown the system and check all connections.	Thermistor failure	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, the copper spreading block, and the CPU • Confirm fan and pump function and flow rates, or other installation issues • Confirm the thermal sensor integrity and connection • Confirm PC chassis subcomponents and motherboard integrity • Contact support if the error persists
Your sub-ambient is malfunctioning - please contact support.	TEC resistance is too high. This could be caused by loose wiring connections or internal failure of the sub-ambient module.	• Remove PC power and confirm the cooling system integrity • Confirm that the cooling module 2-pin black connector is connected properly to the cooler board (factory preinstalled) • Contact support if the error persists

Error	Possible Cause	Corrective Action
Error CB2. Unregulated mode suspended after an extended period of inactivity due to risk of condensation damage. The transition from Unregulated to Cryo mode.	CPU idle (power <25 W) for more than 10 minutes with cooler in Unregulated mode	• Expected behavior
Error CB2. The unregulated mode continues functioning after an extended period. Board remains in Unregulated mode.	CPU non-idle (power >25 W) for more than 10 minutes with cooler in Unregulated mode	• Expected behavior
Poor thermal resistance to ambient – e.g., bad fan or bad pump – Error CF3 check installation	Insufficient cooling by water loop detected. Could be partially blocked or failed fan(s), low flow rate (pump issue), coolant leakage, or other installation issue.	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, the copper spreading block, and the CPU • Confirm fan and pump function and flow rates, or other installation issues • Confirm the thermal sensor integrity and connection • Confirm PC chassis subcomponents and motherboard integrity • Contact support if the error persists
Fan error CF6, Pump error CF7 -Transition to Standby	An extreme overheating condition has been detected on the cooling subsystem, potentially because of an installation issue, pump failure, or radiator fans not running. The PC may enter a low power state to protect itself.	• Remove PC power and confirm the cooling system integrity • Confirm cooler mounting integrity including the physical connection between the water block, TEC, the copper spreading block, and the CPU • Confirm fan and pump function and flow rates, or other installation issues • Confirm the thermal sensor integrity and connection • Confirm PC chassis subcomponents and motherboard integrity • Contact support if the error persists

6 SUPPORT AND SERVICE

In case you need assistance, please contact:
http://support.ekwb.com/

EKWB d.o.o.
Pod lipami 18
1218 Komenda
Slovenia - EU

7 SOCIAL MEDIA

EKWaterBlocks

@EKWaterBlocks

ekwaterblocks

EKWBofficial

ekwaterblocks