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CORINTIS HARDWARE 2026

THERMINATOR – CORINTIS THERMAL TEST AND VALIDATION INSTRUMENT FOR DATA CENTER COOLING

Contact us at sales@corintis.com

Accelerate thermal testing with Therminator

The Therminator is a benchtop testing device for rapid pre-silicon thermal testing and cooling validation. It emulates the thermal behavior of an integrated circuit (IC) by using a physically similar test vehicle (TTV), allowing engineers to validate their cooling solutions.

DESCRIPTION

The Therminator uses spatial power density information from the powermap to control the array of heating elements on the Thermal test chip (TTC) to emulate the thermal characteristics of the IC chip. Temperature sensors in each heating element on the TTC measure the local junction temperature of the chip to provide a real-time heatmap of the chip surface. A cooling device, of the user's choice, is mounted on the TTV to cool the TTC down.

The powermap of the IC chip under test is uploaded to the device through the Display unit (DU). The control software allows the user to run several tests, cycle through various power maps, or run transient experiments. User can select multiple RTDs to compare them on the plot and save the data. Test results can be exported in standard, portable formats (CSV) and analyzed with common open-source packages.

PHYSICAL OVERVIEW

Length: 428 mm
Width: 300 mm
Height: 143 mm

Weight: 11 kg
Color: Black
Material: Anodized aluminum

TECHNICAL OVERVIEW

Current range: 50 A
DC power capacity: 2000W*
Output voltage: 48 V
Input voltage supply: 90-264 V(AC)

DISPLAY OVERVIEW

Screen size: 13.3 inch
Operating system: Linux
Display: IPS touch
Resolution: 1920x1080

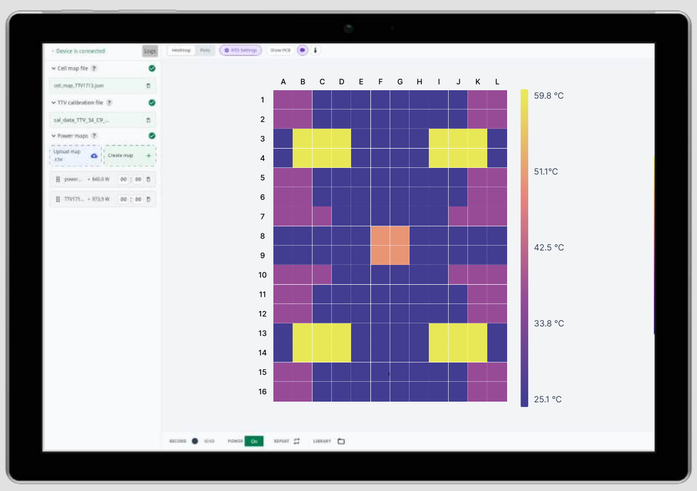
REQUIREMENTS

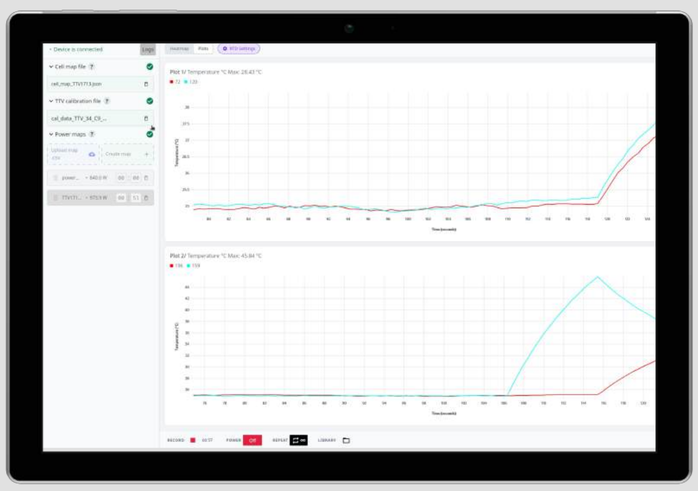
The device is powered by plugging into the power grid through 2x single-phase power cable, one each for two power supply units.

It is required by the client to have each power cable plugged into a different power grid socket line to not trip the circuit breaker.

Experiment control

- Load cell map & TTV calibration files to define sensor layout and ensure accurate temperature data.
- Apply multiple power maps with custom time ranges to simulate static & transient heating scenarios.
- Select RTDs for side-by-side comparison using live plots.
- Record & save the experiment data at any moment for later review.





**DC capacity of up to 4KW available end of 2026*

The Therminator is currently uncertified and undergoing certification process.

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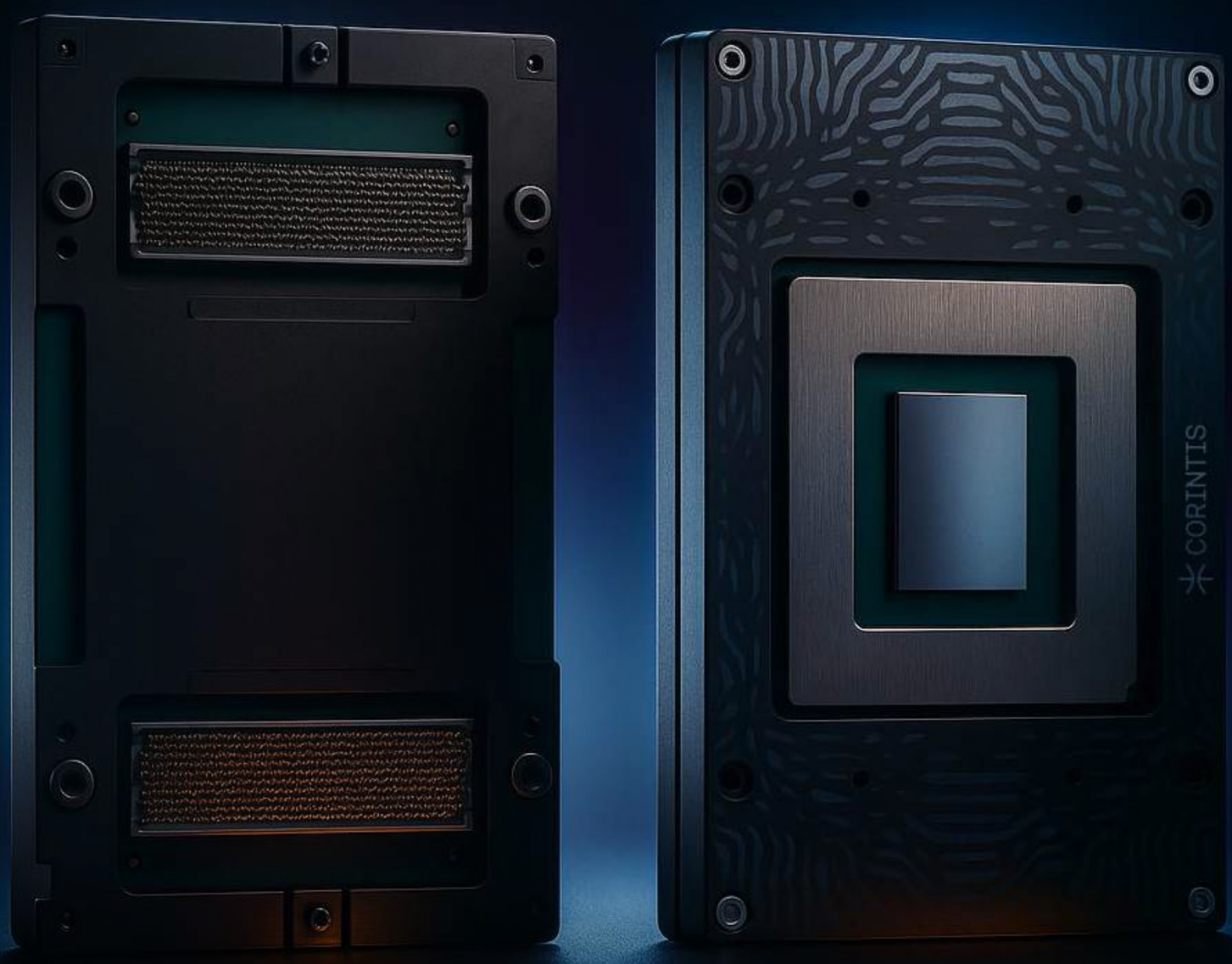

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CORINTIS THERMAL TEST VEHICLES - MIMIC ANY POWER DISTRIBUTION ON THE CHIP WITH TTVS

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CHINOOK TTV

The Chinook Thermal Test Vehicle is a Chip-on-Board package, which hosts a single full-reticle-sized Thermal Test Chip. The TTV package is based on Open Compute Project standard and utilizes their standards for electrical connectors and mounting points.

DESCRIPTION

TTV package designed to replicate real processor behavior under thermal conditions. TTVs are used to test cooling solutions, validate thermal management systems, characterize TIM stability during power cycling, and calibrate measurement tools without relying on functional silicon. It is made compatible with the Therminator.

TTV CONFIGURATION

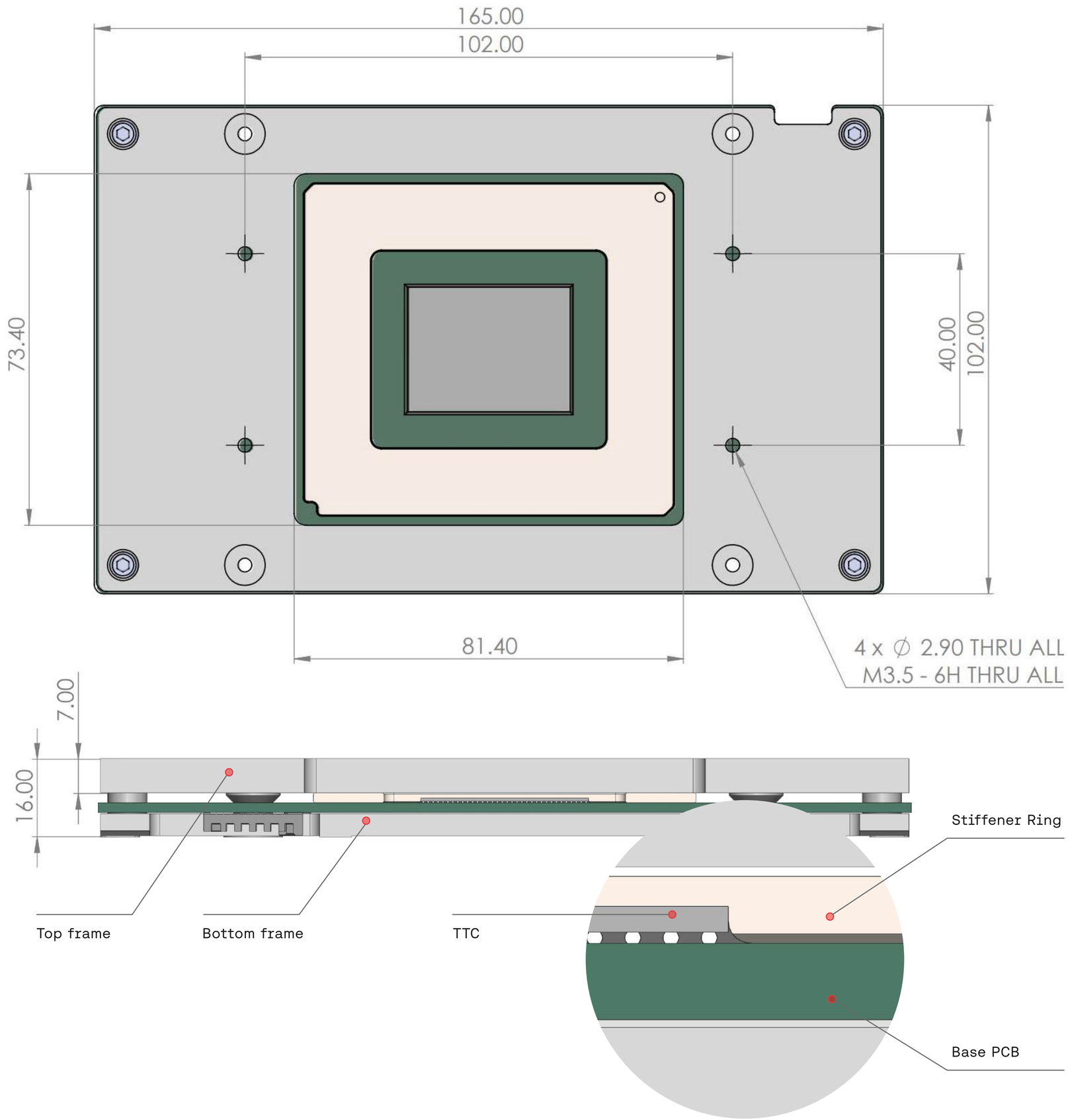
It consists of PCB substrate and Thermal Test Chip (TTC). The TTC implements a dense, tiled heating array designed to emulate heterogeneous power maps typical of real semiconductor dies.

TTV length: 165.00 mm
TTV width: 102.00 mm
TTV thickness: 16.00 mm

Frame opening length: 81.40 mm
Frame opening width: 73.40 mm
Frame thickness: 7.00 mm

Mounting holes hor. distance: 40.00 mm
Mounting holes ver. distance: 102.00 mm

Mounting holes depth: 7.00 mm thru all
Mounting holes class: M3.5 - 6H thread



TTC Configuration

The TTC is composed of an array of 2 × 2 mm² cells laid out in a grid across the reticle-scale die. Each cell integrates a thin-film resistive heater and a thin-film Resistance Temperature Detector, enabling direct, local measurement with sub-degree resolution and fast transient response.

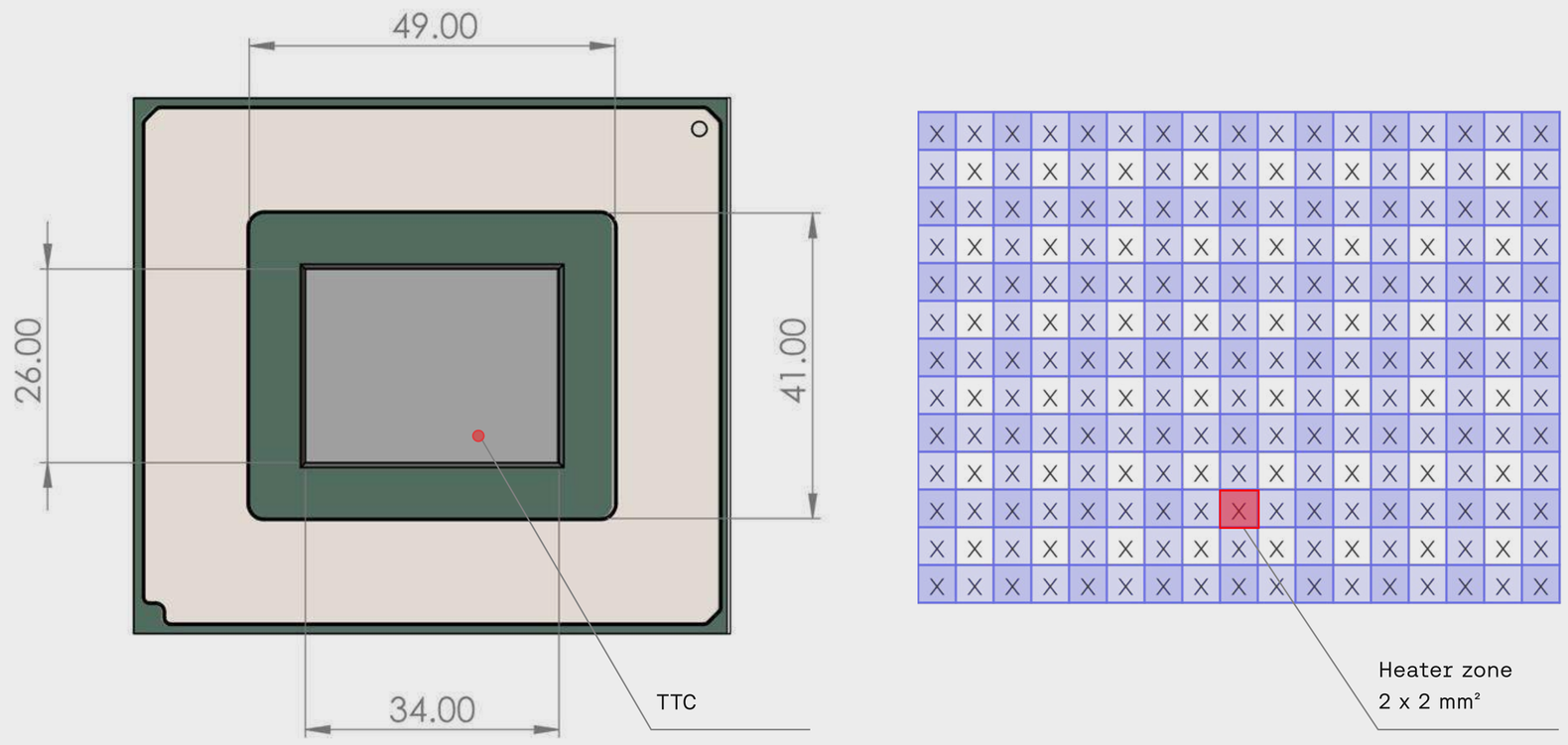
TTC die length: 34 mm
TTC die width: 26 mm

MAXIMUM POWER DENSITY

TTC heater: 10W/mm² [40W]

TEMPERATURE

Recommended max. continuous operating temp.: 100 °C
Max. peak temp.: 120 °C



Temp. detectors locations are marked by 'x' across the TTC.

The TTV image is for reference only; actual device may vary.

Contact us at sales@corintis.com for the detailed datasheet.

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BLIZZARD TTV

The Blizzard Thermal Test Vehicle (TTV) is a high-power, multi-die Thermal Test Vehicle designed to replicate the thermal behavior of advanced XPU + HBM architectures with exceptional spatial resolution. Engineered for system-level cooling validation, it delivers realistic, high-density heat emulation in a robust, integration-ready platform.

DESCRIPTION

The TTV enables accurate cooling validation, TIM characterization, power cycling tests, and thermal model calibration without relying on functional silicon. It is made compatible with the Therminator.

TTV CONFIGURATION

The package features 10 silicon Thermal Test Chips (TTCs) flip-chip mounted onto an organic interposer substrate. This assembly is soldered to a base PCB, which interfaces with the Therminator via two dedicated connectors. Top and bottom frames provide structural support and the primary cooling system mount.

TTV length: 165.00 mm
TTV width: 102.00 mm
TTV thickness: 16.00 mm

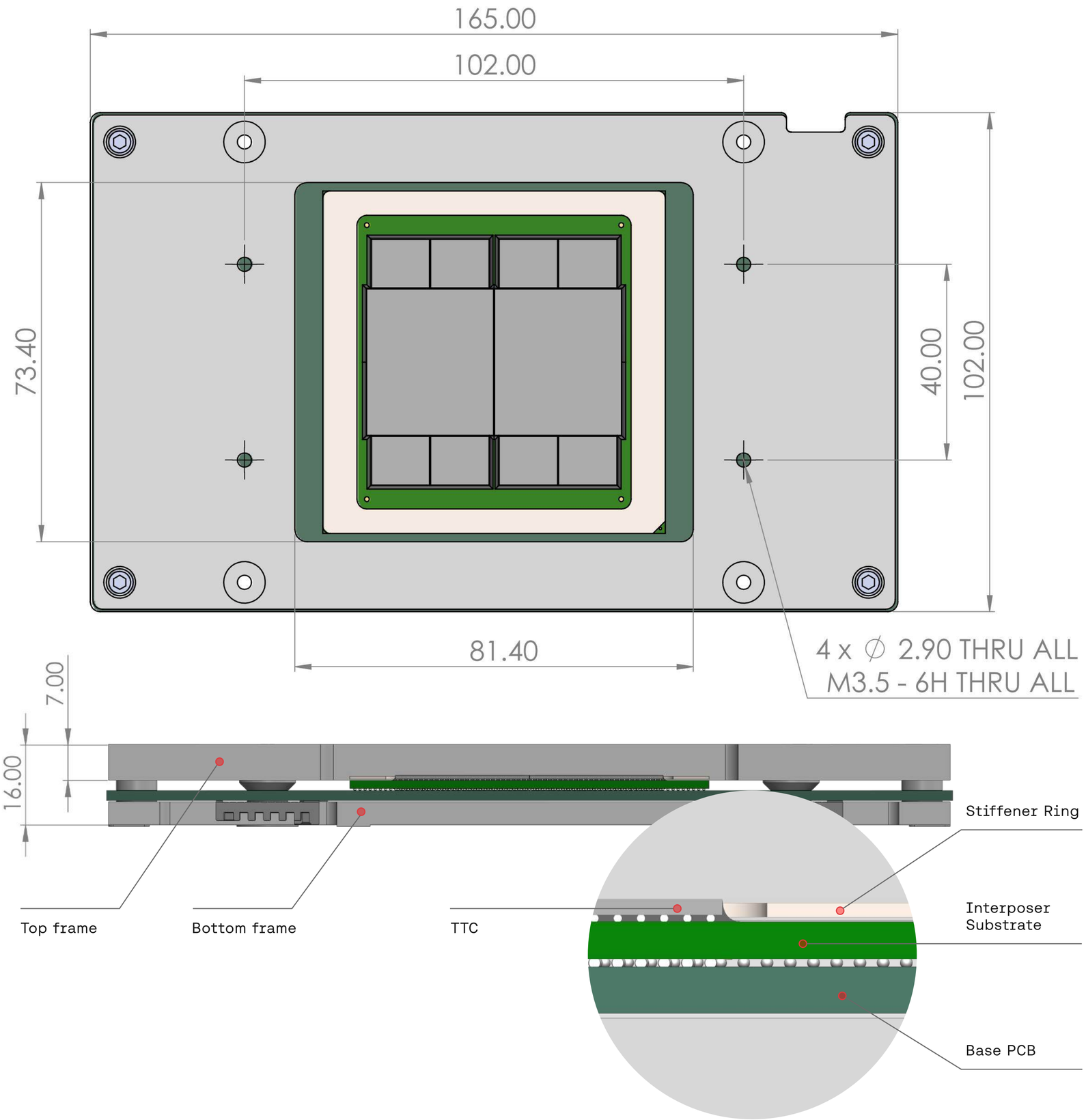
Substrate length: 70.00 mm
Substrate width: 70.00 mm

Silicon area length: 50.30 mm
Silicon area width: 52.15 mm

Frame opening length: 81.40 mm
Frame opening width: 73.40 mm
Frame thickness: 7.00 mm

Mounting holes hor. distance: 40.00 mm
Mounting holes ver. distance: 102.00 mm

Mounting holes depth: 7.00 mm thru all
Mounting holes class: M3.5 - 6H thread



TTC Configuration

Thermal Test Chips are diced out of silicon wafers composed of an array of unit cells. Each unit cell, of 2x2mm², contains one heater and one Resistive Temperature Detector (RTD).

XPU dies: 2 units
XPU die length: 30 mm
XPU die width: 26 mm

HBM dies: 8 units
HBM die length: 10 mm
HBM die width: 12 mm

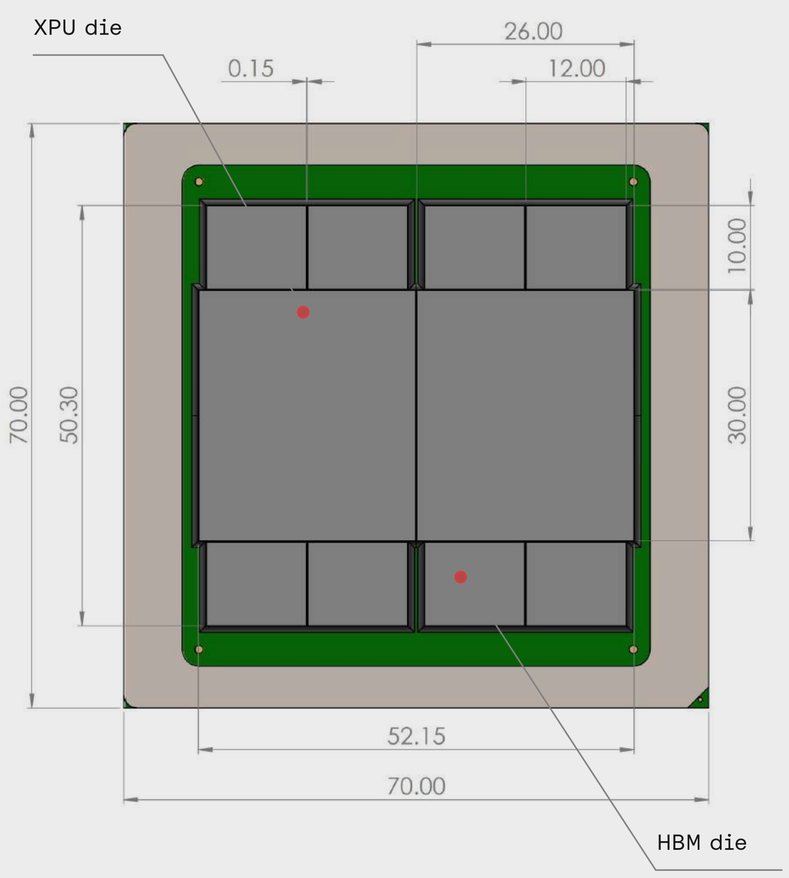
Die-to-die spacing: 0.15 mm

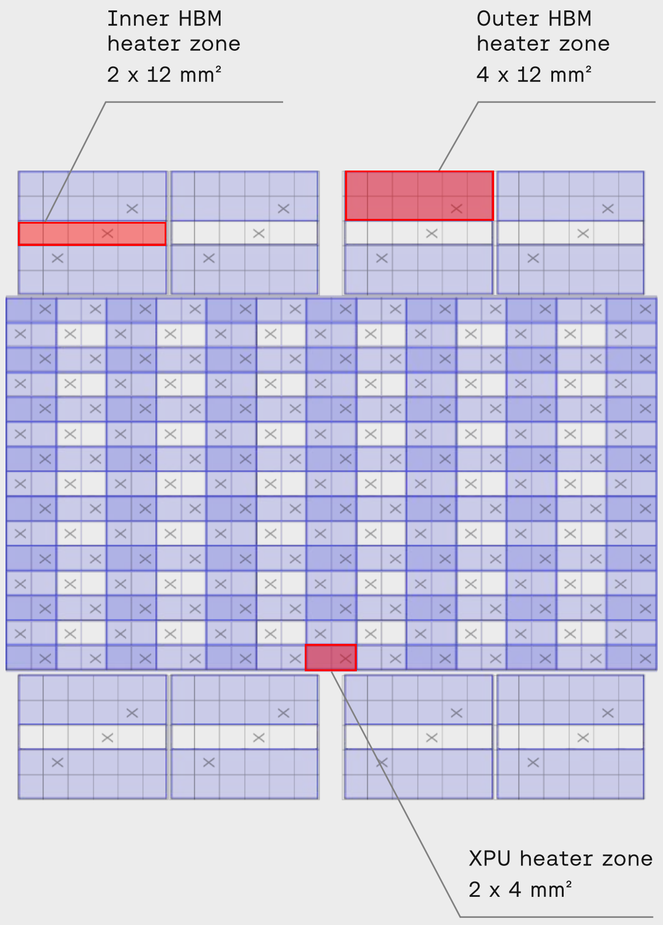
MAXIMUM POWER DENSITY

XPU heater: 10W/mm² [80W]
HBM outer heater: 0.7 W/mm² [34W]
HBM inner heater: 2.9 W/mm² [70W]

TEMPERATURE

Recommended max. continuous operating temp.: 100 °C
Max. peak temp.: 120 °C





Temperature detectors locations are marked by 'x' across the TTCs.

The TTV image is for reference only; actual device may vary.

Contact us at sales@corintis.com for the detailed datasheet.

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ROBIN HOOD TTV

The Robin Hood Thermal Test Vehicle (TTV) is a high-power, multi-die platform designed for realistic thermal emulation of advanced chip architectures. Specifically configured to mirror the NVIDIA Rubin die arrangement, it provides the precision and density required for rigorous system-level cooling validation.

DESCRIPTION

The TTV enables accurate cooling validation, TIM characterization, power cycling tests, and thermal model calibration without relying on functional silicon. It is made compatible with the Therminator.

TTV CONFIGURATION

The package features 12 silicon TTCs and 10 silicon structural chips flip-chip mounted onto an organic interposer substrate. This assembly is soldered to a base PCB, which interfaces with the Therminator via two dedicated connectors. Top and bottom frames provide structural support and the primary cooling system mount.

TTV length: 165.00 mm
TTV width: 102.00 mm
TTV thickness: 16.00 mm

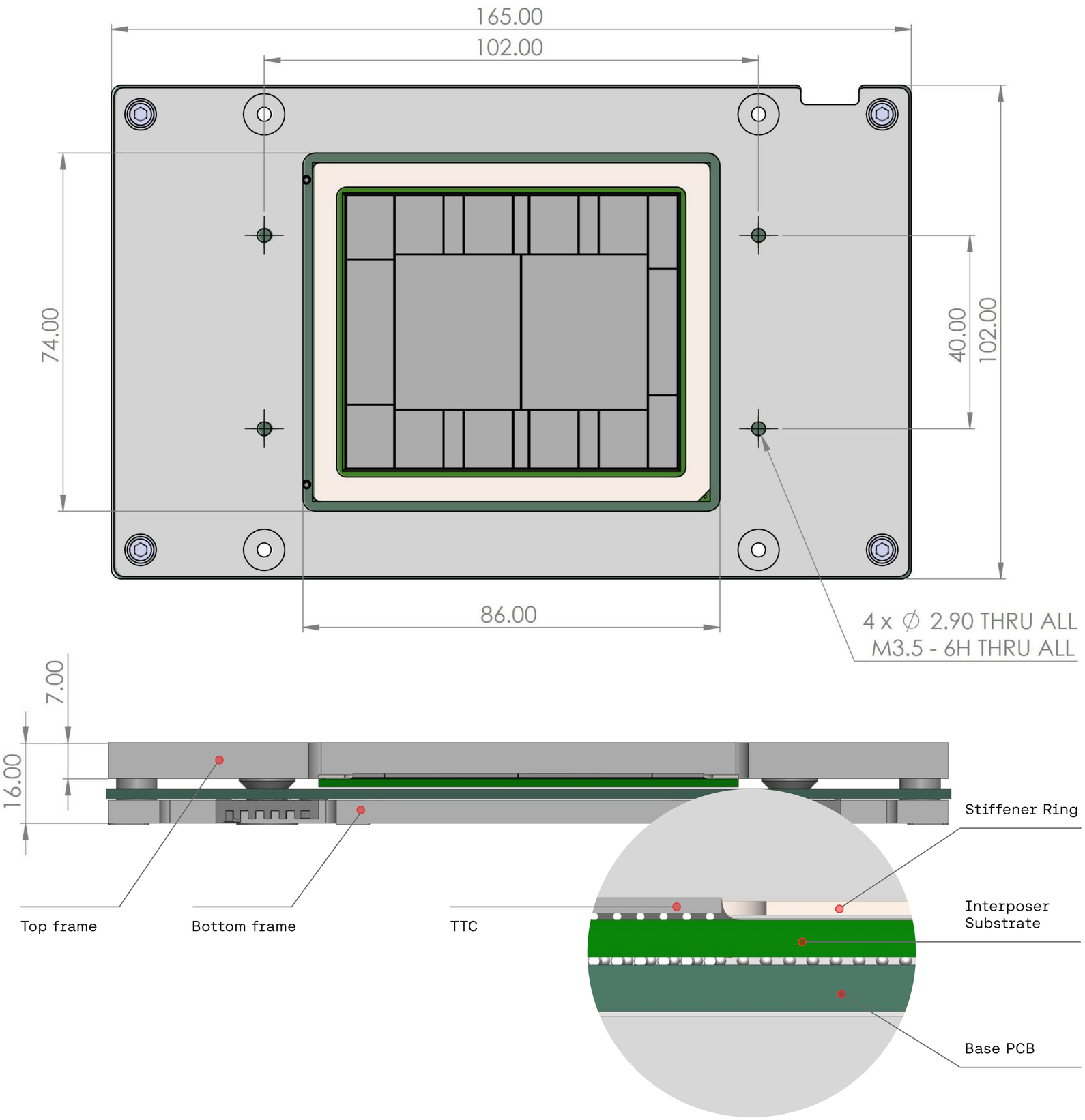
Substrate length: 82.00 mm
Substrate width: 70.00 mm

Silicon area length: 68.45 mm
Silicon area width: 56.30 mm

Frame opening length: 86.00 mm
Frame opening width: 74.00 mm
Frame thickness: 7.00 mm

Mounting holes hor. distance: 40.00 mm
Mounting holes ver. distance: 102.00 mm

Mounting holes depth: 7.00 mm thru all
Mounting holes class: M3.5 - 6H thread



TTC Configuration

XPU dies: 2 units
XPU die length: 32 mm
XPU die width: 26 mm

HBM dies: 8 units
HBM die length: 10 mm
HBM die width: 12 mm

IO dies: 2 units
Length: IO-A 26 mm; IO-B 30 mm
Width: IO-A 6 mm; IO-B 10 mm

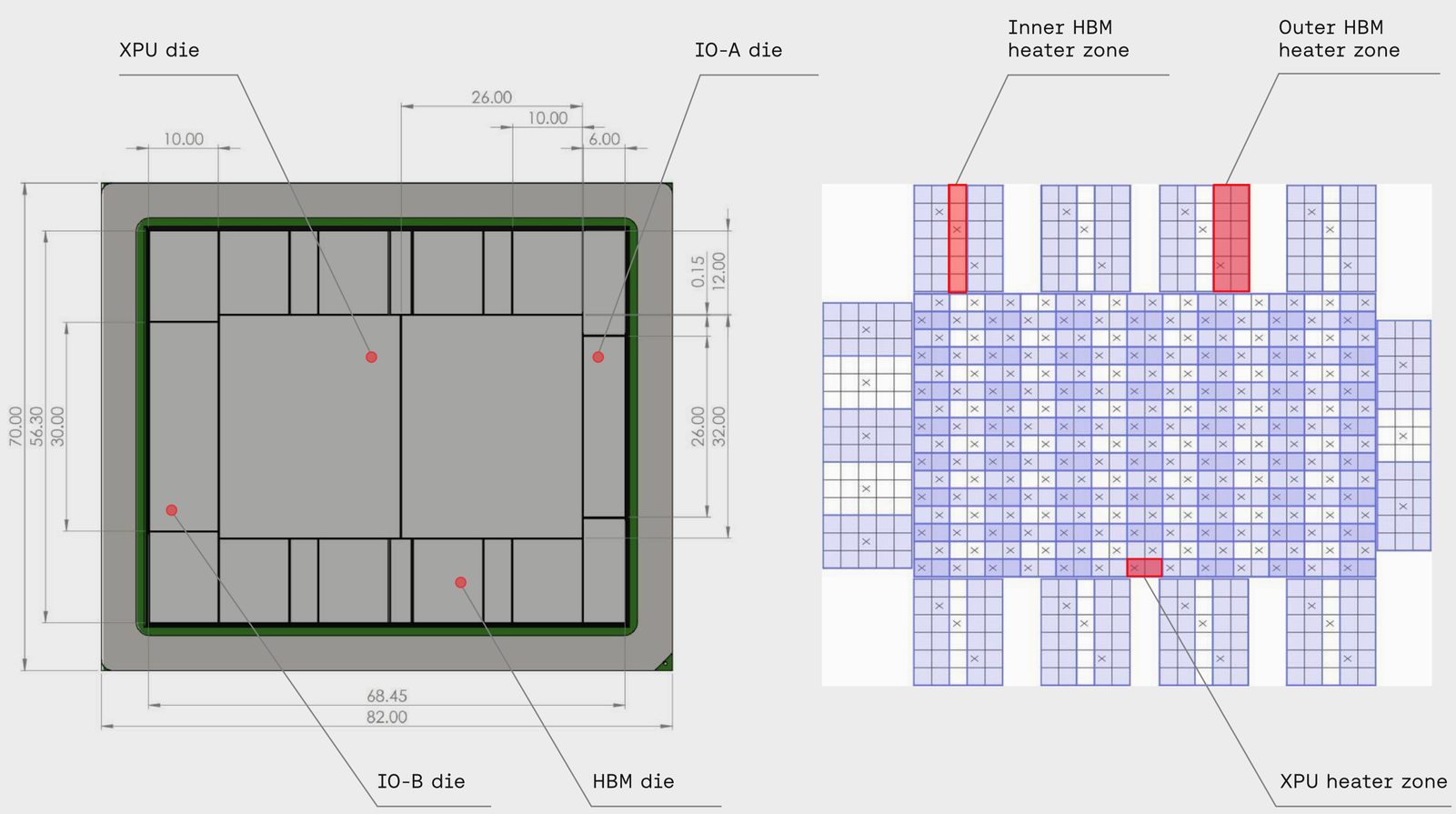
Die-to-die spacing: 0.15 mm

MAXIMUM POWER DENSITY

XPU heater: 10W/mm² [80W]
HBM outer heater: 0.6 W/mm² [30W]
HBM inner heater: 2.5 W/mm² [60W]
IO A outer heater: 1.1 W/mm² [67W]
IO A inner heater: 1.1 W/mm² [40W]
IO B per heater: 1.1 W/mm² [67W]

TEMPERATURE

Recommended max. continuous operating temp.: 100 °C
Max. peak temp.: 120 °C



Temperature detectors locations are marked by 'x' across the TTCs.

All dimensions and technical specifications are preliminary and subject to change without notice.

Contact us at sales@corintis.com for the detailed datasheet.