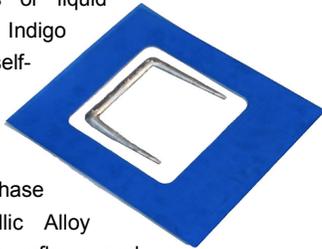


Indigo Xtreme™

Engineered Thermal Interface

for AMD FX,™ Phenom,™ and Athlon™

Indigo Xtreme™ is an Engineered Thermal Interface (ETI) that fits neatly between a CPU lid and heat sink or water block to keep CPUs cooler. Unlike greases, metallic thermal interface pads or liquid metal alloys, Indigo Xtreme is a self-contained and sealed structure, deploying a Phase Change Metallic Alloy (PCMA) which reflows and fills surface defects on the CPU lid and heat sink. The resultant interfacial layer is void-free and robust, with low thermal contact and bulk resistance.



Important: Unlike most thermal interface products, the Indigo Xtreme form-factor is optimized for each application.

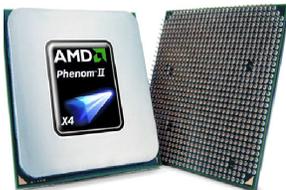


Attempting to use Indigo Xtreme with CPUs or heat sinks other than those specified may result in degraded performance or failure of the interface (See: Supported Hardware).

Supported Hardware

Supported CPUs:

All lidded AMD FX,™ Phenom™ and Athlon™ Processors



Supported heat sink/water block types:

In general, heat sink/water blocks that contact entire surface of CPU lid are compatible with Indigo Xtreme.



Unsupported heat sink types:



Heat sinks that do not contact entire surface of CPU lid, or surfaces with channels between mounting base and heat pipes, are incompatible with Indigo Xtreme. Please see our compatibility document and other application notes for installation tips specific to your cooler at: <http://www.indigo-xtreme.com/documentation.html>



Prior to the installation and reflow of Indigo Xtreme, **Do Not** disable the Thermal Control feature that protects your CPU from overheating.

ETI Kit Contents

The Indigo Xtreme ETI is offered as part of an Engineered Thermal Interface Kit. This kit includes several cleanroom-grade surface cleaning products for (2) complete installations.

The ETI kit includes:

- Indigo Xtreme ETIs (2 installations)
- Cleanroom-grade dry wiper cloths
- Indigo Xtreme Clean™ (sample size)
- Pair of powder-free nitrile gloves
- Detailed Installation Guide



Check the condition of the ETI kit before installation; if any problem is found, contact Enerdyne Solutions for a replacement.

Installation Steps:



Read entire instructions before beginning installation. Computer operating system must be installed prior to use. Contact Enerdyne Solutions if you have any questions.

1. Motherboard, CPU and Heat Sink/Water Block Removal:

Remove the motherboard (from the PC case) and all heat sink clips and support mechanisms from the motherboard. Remove the CPU from the motherboard socket and place on a non-abrasive, lint-free surface for cleaning.



Motherboard and clip support removal will facilitate proper alignment of the ETI to the CPU lid and heat sink. It is recommended that all heat sink mounting hardware be re-installed during

Step #9.

2. Thermal Interface Compound Removal:

Using the supplied dry wiper cloth, apply pressure to thoroughly remove any existing interface grease from the CPU lid and heat sink. Clean with fresh areas of the wiper cloth until no visible residue is detected on the wiper.



If removing metal pad or liquid metal TIM residue, refer to manufacturer's specific cleaning methods.

3. Put on Gloves:

Prior to the final degreasing step, the supplied powder-free nitrile gloves must be worn to prevent any finger oils or contaminants from contacting the CPU lid, heat sink and ETI surfaces and to prevent skin contact with Indigo Xtreme Clean™.

4. Degrease CPU lid and Heat Sink/Water Block Surfaces:

Saturate a dry wiper cloth with Indigo Xtreme Clean™; use ~1/2 trial size bottle per ETI installation; thoroughly wipe the CPU lid; repeat with the heat sink interfacial surfaces. Continue to wipe each surface with fresh areas of the wiper until no visible residue is detected on the wiper. Wipe all surfaces of any visible lint, fibers, or particulates.



Be prepared to wipe the CPU lid and heat sink surfaces immediately upon saturating each dry wiper cloth as the Xtreme Clean™ solvent will quickly evaporate. When finished, seal the used wiper in the ETI kit clear bag. New CPUs or heat sinks must be degreased as well. Use only the supplied Indigo Xtreme Clean™ for the degreasing step.



Use the Xtreme Clean™ solvent in a well-ventilated area. Avoid contact with plastics (such as keyboards, computer cases, cooling fans, some water block housings, coolant tube fittings, cables, etc.). Also, avoid contact with elastomers (coolant tubing, gaskets, etc.).

5. CPU Installation:

Install the CPU in the motherboard. Refer to motherboard or CPU installation instructions.



The ETI can only be applied after correct installation of the CPU.

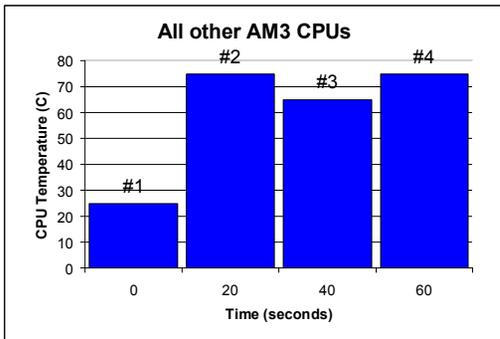
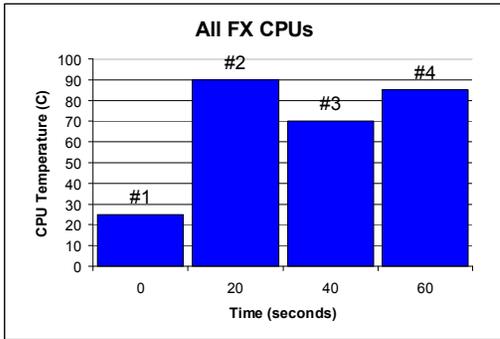
6. Indigo Xtreme Handling:



The Indigo Xtreme ETI may be handled on the blue surfaces only. ETI installation requires a lint-free environment.



Do not remove the clear Top and Bottom liners prior to the specific installation step. Do not bend, flex or puncture any portion of the ETI. Keep solvents away from the ETI.



Avoid any bumping or excessive pressure on the heat sink/water block and keep the computer in the horizontal position while cooling down.



If the average core temperature does not follow a similar temperature profile as seen in the previous graphics, then improper reflow may have occurred. Proceed to "Removal" and re-install a new Indigo Xtreme ETI.

#	All FX CPUs	Other AM3 CPUs
1	PC is off (at room temperature), motherboard is in a horizontal position, and all pumps and fans are unplugged.	PC is off (at room temperature), motherboard is in a horizontal position, and all pumps and fans are unplugged.
2	Upon booting into BIOS, displayed CPU temperature will steadily rise to a peak temperature of ~80-90°C.	Upon booting into BIOS, displayed CPU temperature will steadily rise to a peak temperature of ~75°C.
3	Following the peak, CPU temperature will slowly drop to a bottoming point of ~70-75°C. However, during descent, CPU temperature may stabilize for a moment at ~80°C. Continue to watch the temperature until it drops to a bottoming point of ~70-75°C.	Following the peak, CPU temperature will slowly drop to a bottoming point of ~65-70°C. However, during descent, CPU temperature may stabilize for a moment at ~70°C. Continue to watch the temperature until it drops to a bottoming point of 65-70°C.
4	Following the bottoming point, the CPU temperature will slowly rise again. Once CPU temperature has reached ~85°C, shut down computer; allow PC to cool for at least 10 minutes (for heat sinks) or at least 20 minutes (for water blocks) before booting and connecting fans and/or pumps.	Following the bottoming point, the CPU temperature will slowly rise again. Once CPU temperature has reached ~75°C, shut down computer; allow PC to cool for at least 10 minutes (for heat sinks) or at least 20 minutes (for water blocks) before booting and connecting fans and/or pumps.

Removal

To disassemble, release the clamping force from the heat sink/water block. The ETI may then be removed (intact) by first slowly peeling each corner. The ETI is designed to adhesively capture excess alloy (from differences of CPU lid/heat sink interfacial roughness and planarity) on their surfaces.

Any residual adhesive on the CPU or heat sink/water block may be removed with acetone, xylene, or Xtreme Clean and a clean wiper or cotton cleaning swab. Residual alloy is best removed by wetting a swab with solvent and gently rotating the swab to loosen and collect the alloy particles.



Indigo Xtreme is a single-use interface product and any removal of the heat sink (pre/post-reflow) will require a new ETI. All interface material and adhesive residue must be removed and the CPU and heat sink re-cleaned prior to the re-installation of a new ETI.

Storage

Store Indigo Xtreme at room temperature conditions of 72°F (22°C) and 50% R.H., preferably in the original sealed enclosure.

References

The Material Safety Data Sheet (MSDS) for Indigo Xtreme Clean™ can be found at: <http://www.indigo-xtreme.com/documentation.html>

Contact us for more information about this or other Indigo Xtreme applications at our website: <http://www.Indigo-Xtreme.com>

Disclaimer

Enerdyne Solutions is not responsible for any damages due to external causes, including but not limited to, improper use, accident, neglect, alteration, repair, improper installation, improper testing, or damages caused by overclocking.

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Indigo Xtreme is a trademark of:

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S O L U T I O N S

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