THE ULTIMATE FORCE

STAY COOL

BE TUF

MOTHERBOARD

SABERTOOTH Z77

CONFIDENTIAL

Agenda

- What is “TUF” Series
- TUF’s Milestone
- SABERTOOTH Z77, Enlist!
  - TUF Thermal Armor
  - Dust Defender
  - TUF Thermal Radar
  - Lucidlogix Virtu MVP

What is "TUF" Series

TUF /tʌf/, stands for ***The Ultimate Force***.

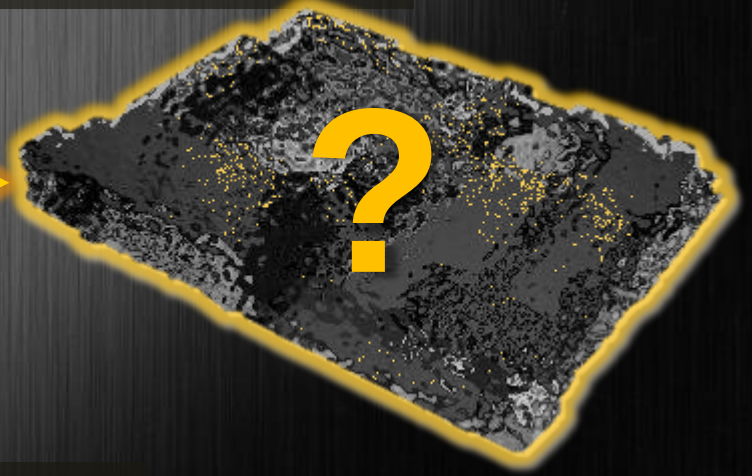
TUF Series has a "***tough***" image and delivers preeminent **stability**, all-round **compatibility**, and extreme **durability**, providing the most ***reliable*** computing experience.

TUF's Milestone

	2010	2011	2012
Intel	LGA2011		
	LGA1155		
AMD	AM3+		

SABERTOOTH X79 - Received dozens of media awards in 1 month after launched

SABERTOOTH P67 -
Won the iF product design award



SABERTOOTH 990FX -
The best selling AMD board on e-tailer

Buzz
5x Winner for AMD Motherboards
Customer Choice Award

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Inspiring Innovation · Persistent Perfection

SABERTOOTH Z77,

Enlist in the WAVES!!

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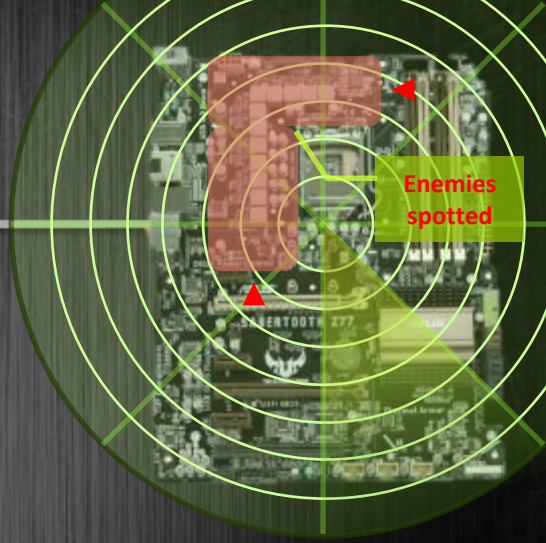
THE ULTIMATE FORCE

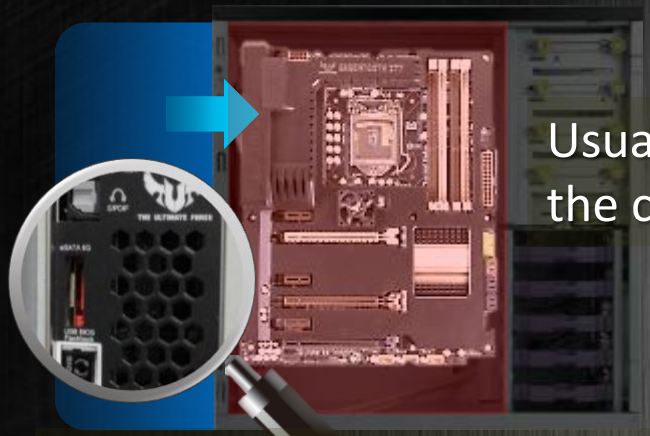
TUF Thermal Armor

All new complete Thermal Solution

Thermal Armor (1/5)

Exceptional VRM Area Cooling Solution





Usually, temperature outside of the chassis is cooler than inside.

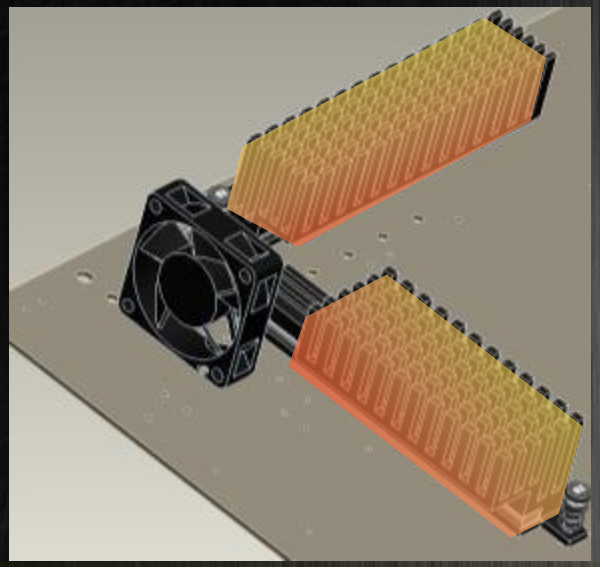
I/O shield with the radiator grille design leaves room for cold air circulation.

Cold Air Intake!

Asst. I/O Fan draws cold air from outside the chassis into VRM area for more efficient cooling.

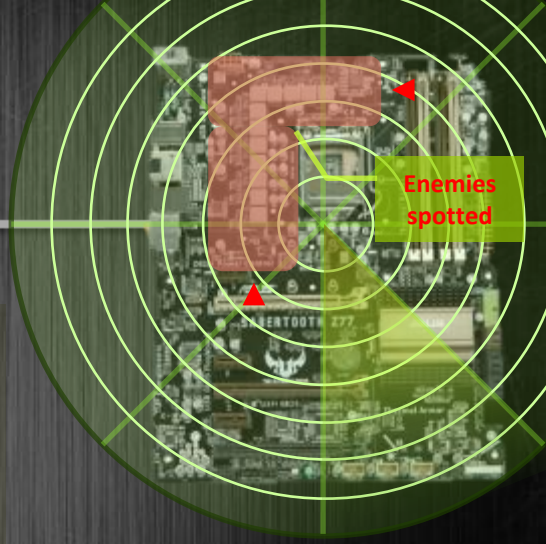
Thermal Armor (2/5)

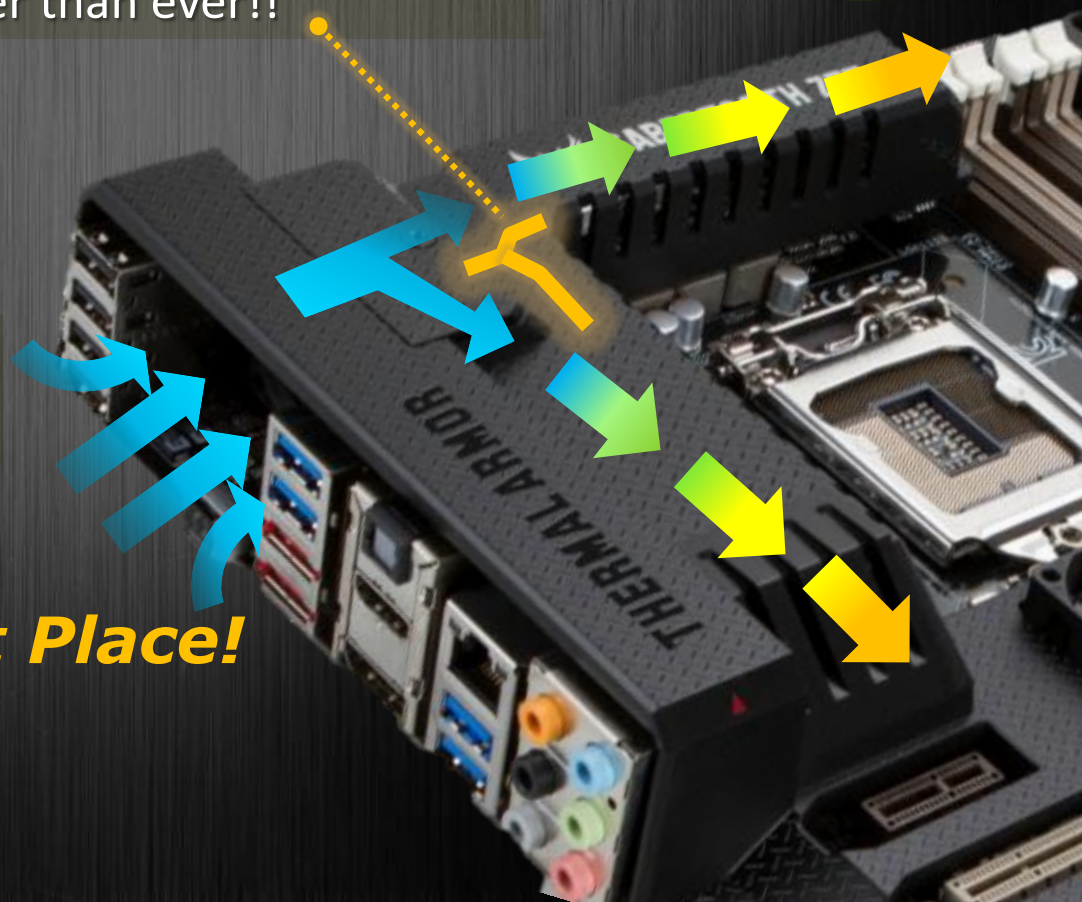
Shunt Design



Via the special **shunt design**, cold air goes through the heatsink and dissipates heat faster than ever!!

Heatsink brings heat up to the surface form critical components.

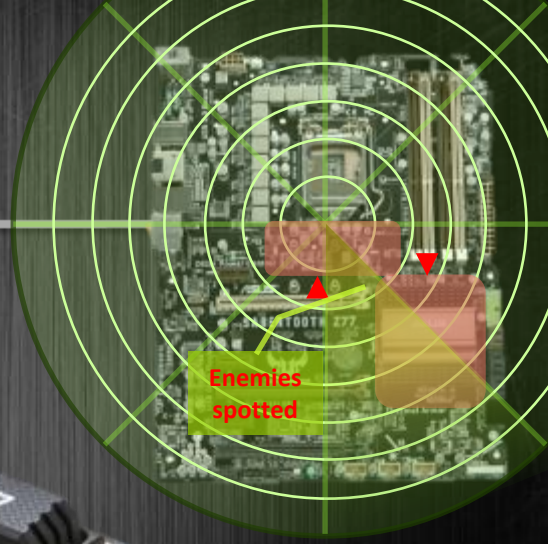




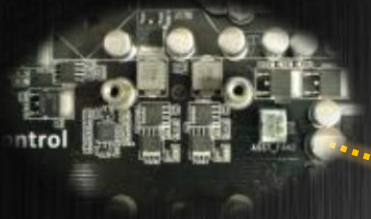
Direct Cold Air to the Right Place!

Thermal Armor (3/5)

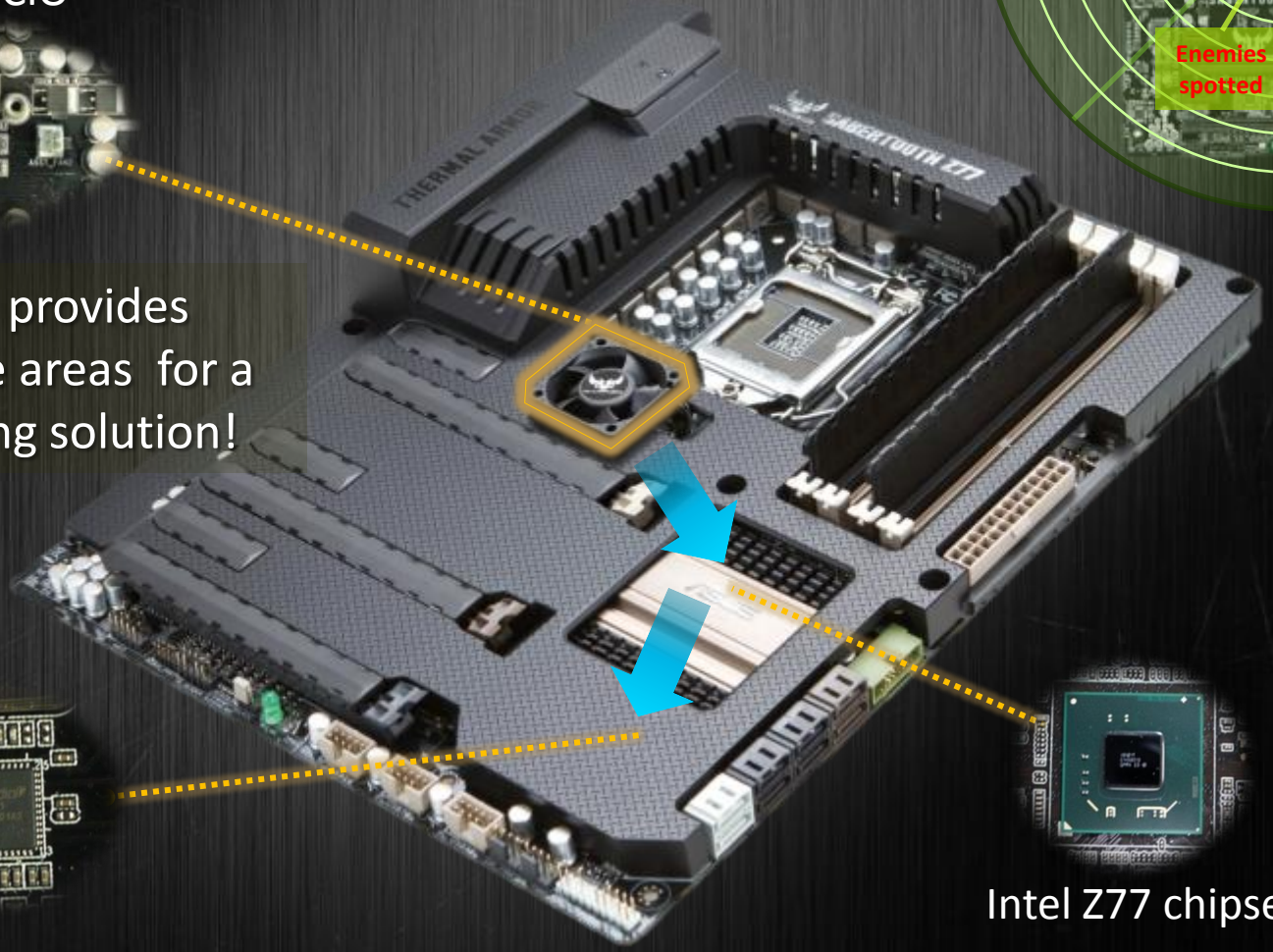
Complete Cooling Solution

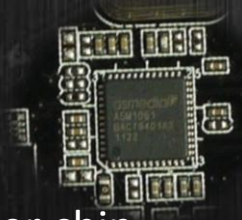


VCCSA/VCCIO*



Asst. Cover Fan provides airflow to these areas for a complete cooling solution!





SATA6G
controller chip

Intel Z77 chipset

*VCCIO is the logic power supply of CPU clock. VCCSA is the power supply for the System Agent.

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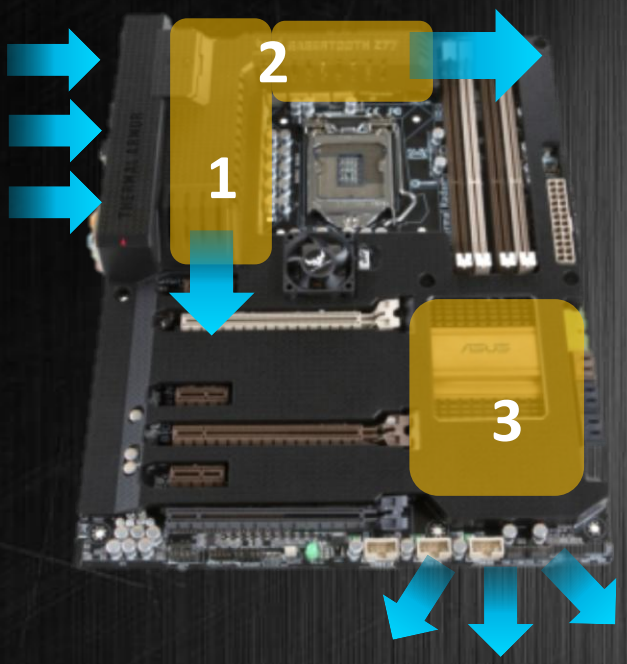
TUF Thermal Armor (4/5)



Tested under Extreme Conditions!

	Without Thermal Armor (°C)	With Thermal Armor (°C)	ΔT (°C)
1. Vcore area MOSFETs	74	63	11
2. (VRM) Driver ICs	68.9	59.6	9.3
3. PCH Area	68.4	63.2	5.2

ULTIMATE COOL FOR THE LONGEST COMPONENT LIFESPAN

14% Cooler!

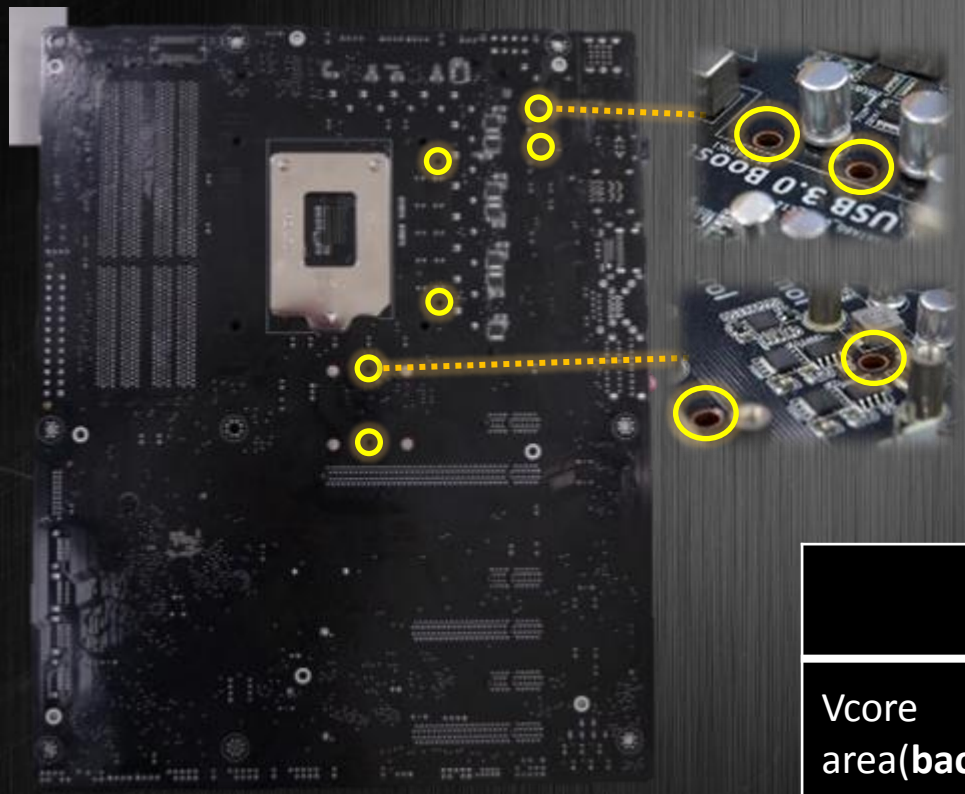
Test config.: SABERTOOTH Z77/Intel Core i7/Kingston DDR3 4-DIMMs/EAH5970*2/Water Cooling/Full loading@PTU100%

Circulation Matters (5/5)

Convection Hole

Watch out for hidden enemies at the back!!!

Convection Hole design facilitates airflow of the back of motherboard.



Direct the airflow to back of motherboard

	Without Thermal Armor *(°C)*	**With Thermal Armor** *(°C)*	**ΔT** *(°C)*
Vcore area(**back**)	62	**54**	**8**

Effectively brings down the temperature!

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THE ULTIMATE FORCE

TUF Thermal Radar

Cutting-edge Thermal Solution

TUF Thermal Radar

Fan Overtime

It's an exist technology in consumer electronics, allows the fans to *continue working for a few minutes* to take away the heat remaining on the key components for longer durability.

Power Supply

Hi-end chassis

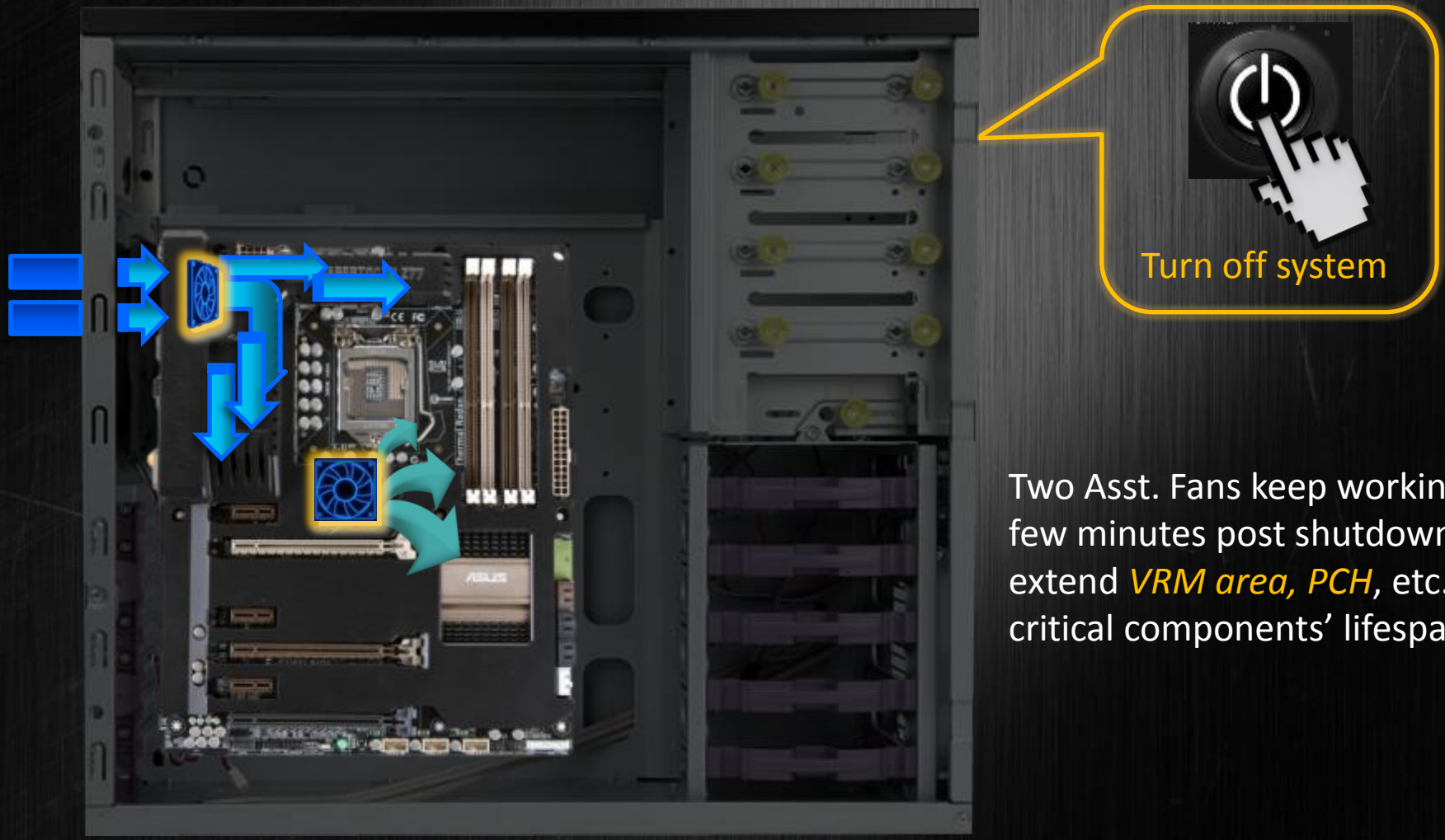
Induction cooker

Projector

NOW, 1st on MB Industry!

TUF Thermal Radar

Fan Overtime

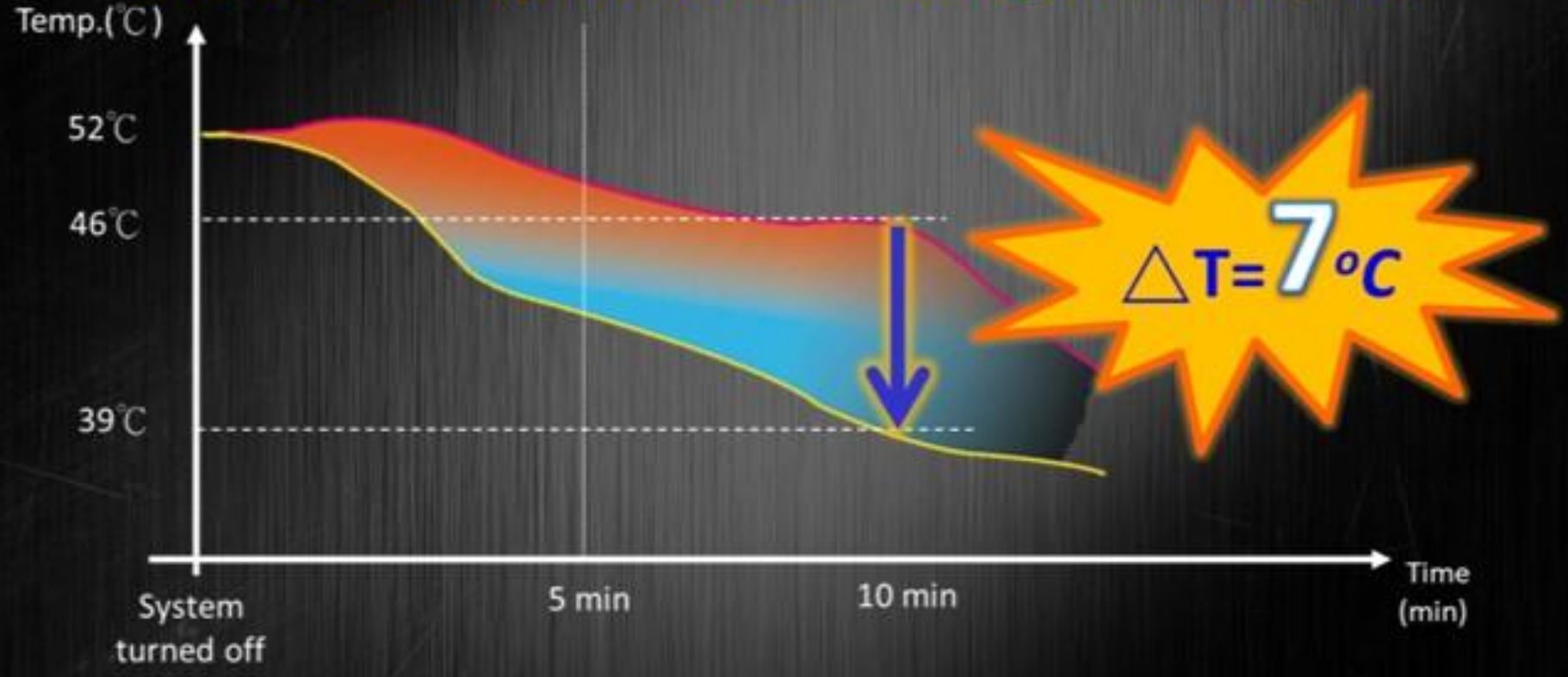


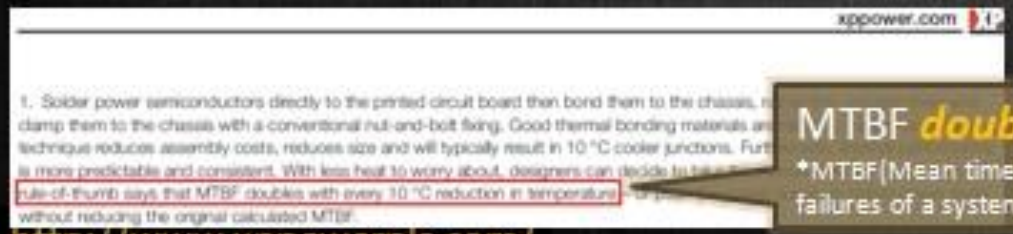
Two Asst. Fans keep working in few minutes post shutdown to extend *VRM area, PCH*, etc. critical components' lifespan.

TUF Thermal Radar

Fan Overtime

Lower Temperature = Longer Lifespan




xppower.com

1. Solder power semiconductors directly to the printed circuit board then bond them to the chassis, n
clamp them to the chassis with a conventional nut-and-bolt fixing. Good thermal bonding materials ar
technique reduces assembly costs, reduces size and will typically result in 10 °C cooler junctions. Furt
is more predictable and consistent. With less heat to worry about, designers can decide to
rule-of-thumb says that MTBF doubles with every 10 °C reduction in temperature
without reducing the original calculated MTBF.

MTBF ***double*** with every ***10 ℃*** reduction in temperature

*MTBF(Mean time between failures) is the predicted elapsed time between inherent failures of a system during operation. **Longer MTBF typically stands for better durability.**

http://www.xppowerplc.com/

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Dust Defender

Repel the Dust, Expand the Lifespan

Dust Defender (3/5)

Covers of Critical Slots & Connectors for Better Protection

Cover of
PCIe slot

Cover of
Memory slot

Cover of
USB connector

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Dust Defender (4/5)

Optimal Functioning of Slots & Connectors

- Resist dust to build up with native protection
- Keep golden finger from particles for better signal
- Effectively extend slot & connector lifespan

TUF is the 1st to bring this dust-defend concept into the motherboard industry!

THE ULTIMATE FORCE

Lucidlogix Virtu MVP

Increase Up to 60% Graphics Performance

What's New in Lucid Virtu MVP?

HyperFormance™ - Perfectly combines the performance of discrete graphics cards with fast computing iGPU.

No More Waste of Your Processor Graphics When Using Discrete Card!

Thanks!