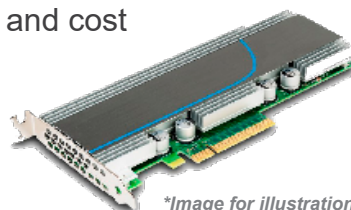# PCIe Cooling

Expert Thermal Management of PCIe Cards

PCIe (Peripheral Component Interconnect express) cards are the industry standard for high bandwidth communication between computer devices, the motherboard, and other hardware. To maintain optimal speed of data transfer, thermal management of PCIe cards is critical.

ATS has created aluminum extrusion profiles specifically for this form factor. The extrusions are off the shelf and do not incur any tooling charges. ATS will create cooling solutions for all PCIe sizes and next-generation device connections, including cards with built-in solid-state drives (SSD). **There is no design NRE on the the first PCIe cooling solution.* There is no NRE on off the shelf aluminum extrusion profiles.**

WHAT ATS CAN PROVIDE

» PCIe specific aluminum extrusion profiles, off the shelf, no tooling

» Variety of exisiting designs from years of experience cooling PCIe cards

» Efficient design process based on prior experience with PCIe form-factors

» System airflow analysis and cooling requirements

» Cooling solutions optimized for both performance and cost
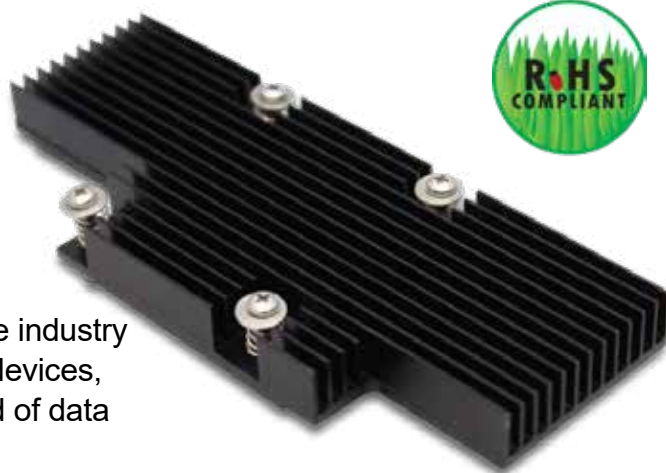
» Rapid prototype turnaround

*Tooling charges may apply, depending on the solution.

APPLICATIONS

» **PCI-SIG**
  Members use PCIe cards that need thermal management

» **Smart NIC**
  Network interface cards

» **Solid-State Drives (SSD)**
  SSD included on PCIe form-factor

» **Accelerator Cards**

» **Edge Computing**

» **Video Capture Cards**

COOLING CHALLENGES

» **PCIe cards have multiple devices with variable heights & cooling requirements**

» **Heat sink height & weight limited by PCIe card slot**

» **Ambient air temperature not controlled**

» **System-level airflow ambiguity**

Image for illustration purposes only

PCIe SPECIFIC EXTRUSIONS

	MPN	L (mm)	W (mm)	H (mm)	# of Fins	R @ 200 lfm (°C/W)	R @ 200 lfm (°C/W) Ducted
	ATS-EXL74-300-R0	300	70	15	28	2.4	1.1
	ATS-EXL117-300-R0	300	234	12.5	66	1.1	0.6
	ATS-EXL118-300-R0	300	50.7	12.3	17	4.0	2.3
	ATS-EXL119-300-R0	300	95	14	35	2.1	1.0
	ATS-EXL120-300-R0	300	80	14	26	2.4	1.4
	ATS-EXL121-300-R0	300	60	14	20	3.2	1.8