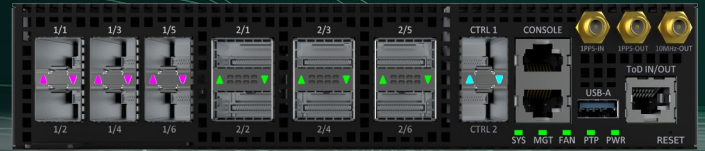# Advanced Programmable Switches

APS Networks

Thermal Management is essential for network equipment

The applications for electronic devices and systems widely vary. Data centers are tightly packed with thousands of compute and communications devices and ensuring heat does not adversely affect or permanently damage such elements is vital. In other application domains, custom designed circuit cards may be embedded inside machines to offer control or to support communications. The working environment may be at elevated temperatures.

High-speed, high performance electronics generates heat and more specifically certain switch ASICs, CPUs or gearbox ICs may require heat mitigation. In other cases, especially in the synchronization circuitry involved in 1588/PTP, electronics must be kept at a stable temperature for accurate operation.

APS Networks and its design partners have the experience, knowledge and the tools required to design solutions that manage thermal aspects correctly. Of course applying brute force solutions, for example making overly large circuit boards, using spacious mechanical housings, adding massive cooling fans for maximum airflow, having bulky and expensive heat sinks or even the use of liquid cooled devices is easy, but is all this needed?

Our products are designed with the knowledge and proven experience to make the right design decisions up front. Optimization in this area balances thermal management versus the size of the solution, cost of the solution and eventually the reliability and performance.
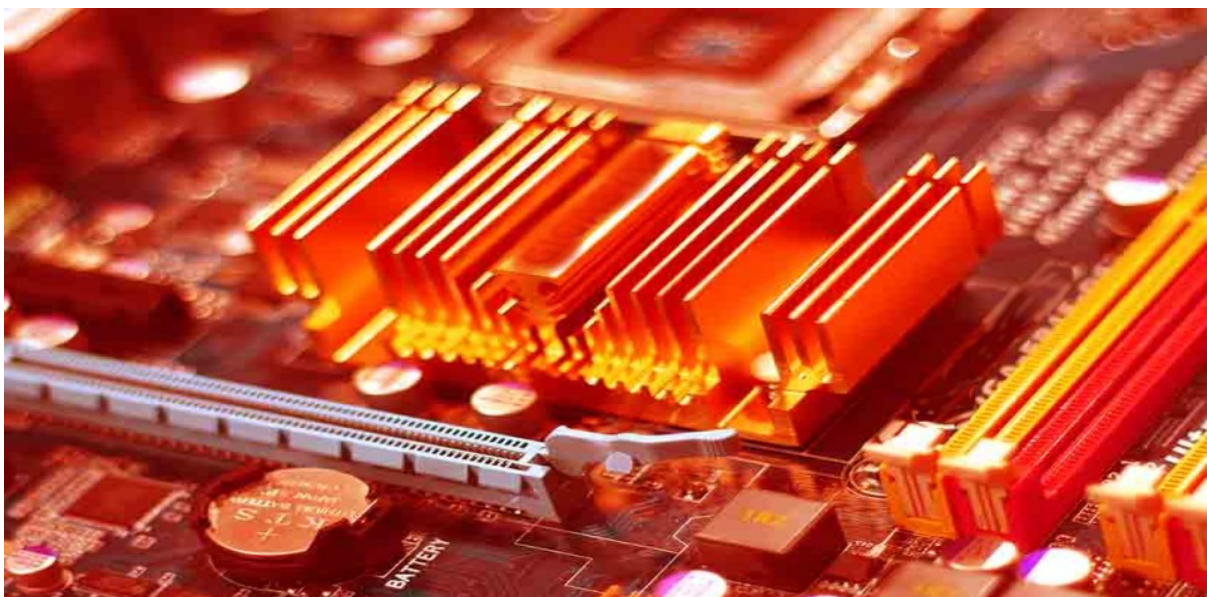
Why APS Networks?

Security by Design
Our switches are designed based on the security by design principles. We have full control of our hardware supply chains and have Software Bill of Materials (SBoMs) in place for all software used. Further security features all for use of our products in Critical National Infrastructure (CNI).

Programmability with P4
The innovative technology of the Intel Tofino chipset offers unlimited open networking possibilities by the use of P4 programming language, featuring in-band telemetry and mega scale data center switching. P4 is easy to access, it enables hardware offloading of protocols, arbitrary tagging of packets, and controlling behavior based on individual data pattern matches. The switch has a non-blocking switching capacity of 2.0 Tb/s and is capable of complex protocol processing at wire speed.

Innovative Designs
Our technologies provide the ultimate, stable and supported platform for open network innovation. And our dedicated hardware solutions are built around enabling the latest open technologies to serve vertical industry needs. Open technology enables hardware and software diversity: reducing risk and lock-in to tardy vendor roadmaps.

Made in Europe
Our switches are produced in Europe, as the final manufacturing will be done in Belgium, and most of the components are provided by European suppliers. The printed circuit boards (PCBs) come from Austria and most of the design is done in The Netherlands.

We Deliver!

Modularity
All our new models can be upgraded with a daughter board, supporting a full range of Precision Timing Protocol (PTP) profiles. For the CPU you have the choice of AC or DC power supplies with front to back (port to power) and back to frond (power to port) airflow. The PSUs are of Titanium-grade, to provide the highest possible power efficiency levels.

PTP Timing & Synchronization
Our advanced programmable switches are the first to deploy the Tofino chipset with a time synchronization function, which is an essential capacity in the field of telecommunications as well as in media and entertainment. This feature enables

Efficient Power Consumption
The switches are equipped with low-consumption CPUs and energy-efficient PSUs and Fans. The intelligent automatic control system recognizes and manages the operating mode to reduce the power consumption to an optimized minimum, in particular when not in use.

Certification/Traceability
APS Networks and its design partners have invested in simulation tools to augment our capabilities and our engineers have a high level of expertise in designing products that not only meet but exceed requirements in these areas and most importantly we have a track record of largely passing the first time. That saves time, avoids rework and ultimately cuts costs.

Contact our Design Experts to help you choose your switch: +31 35 689 1989