

Tyan Tempest EX Motherboards Scale IoT Analytics from the Data Center to the Network Edge

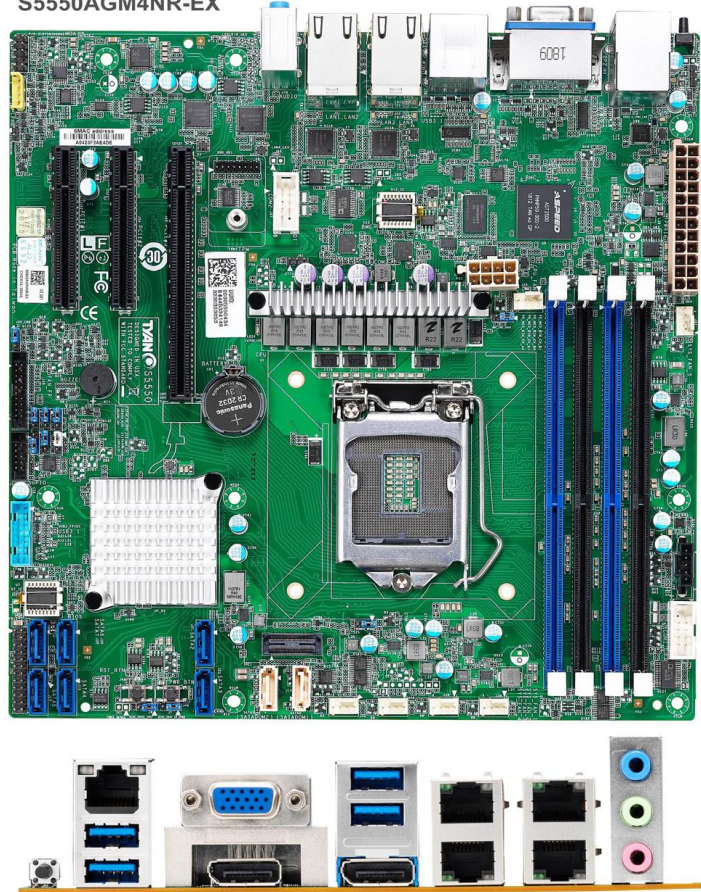
By Charles Chen,
Tyan Computer Corporation
Director, Tyan Product Planning and
Marketing Division

Data analysis tasks are moving towards the edge of networks to provide shorter response time and better IoT user experience. To support such fast-growing needs, Tyan Computer's Tempest EX motherboards are the ideal choice to build up edge systems that bridge compute, storage, and networking resources with compact form factors, a wide range of operating temperatures, and long product supply lifetime. Based on Intel® Atom®, Core™, and Xeon® processor technologies, the Tyan's portfolio of Tempest EX motherboards provides various options of on-premises servers, local gateways, and edge devices for IoT implementation.

Tyan's Tempest EX S5550-EX is a single-socket server motherboard that is targeted at on-premises server appliance development and supports the Intel® Xeon® E-2200 series processor with up to 8 multi-threaded cores and 95 watt power consumption to provide outstanding performance in a 9.6" x 9.6" micro-ATX form factor. The motherboard is also equipped with four 1000Base-T LAN ports, three standard PCIe slots, eight SATA 6G ports, as well as audio and display port interfaces.

The Tempest EX S5550-EX server motherboard supports up to 128GB unbuffered ECC DDR4 2666/2400 memory for intensive data analytics operations. The platform provides a seven-year supply lifecycle and wide operating temperature range of 0-55 °C which are highly required for most embedded IoT applications.

S5550AGM4NR-EX



The Tyan Tempest EX S5550-EX single-socket server motherboard equips chipsets up to the Intel Xeon E-2200 series to deliver powerful IoT data analytics compute at only 95 W.

The Tempest EX S5555-EX single-socket embedded workstation motherboard, based on 9th generation Intel® Core™ i3, i5, or i7 processor technology, is designed for embedded appliances. The Tempest EX S5555-EX benefits from the energy efficiency enabled by Intel Core™ processors with integration of multiple video outputs (two display ports and one DVI-D port), 7.1 channel high definition audio, and onboard storage options (two SATA DOM and NVMe M.2) in a Micro-ATX form factor, the server motherboard is an ideal platform for embedded workstation applications.

In addition to the seven-year supply lifecycle and wide operating temperature range of 0-55 °C, Tyan's Tempest S5555-EX mother-board has also been certified with EMC Class B which allows embedded systems based on the motherboard to be deployed in office environments.



The four DDR4 dual in-line memory module (DIMM) slots in Tempest EX S555-EX further boost embedded system's storage credentials.

Intel's Xeon processors integrate a suite of technologies that optimize data analytics in mixed-criticality environments like the Industrial IoT edge. Intel® Virtualization Technology (Intel® VT-x), Intel® VT-x with Extended Page Tables (EPT), and Intel® Virtualization Technology for Directed I/O (Intel® VT-d). These features help partition data analytics workloads from other

mission-critical functions, while also ensuring the security, reliability and performance of memory and peripherals.

Tyan's scalable Tempest product line demonstrates how standards-based platforms powered by robust processors efficiently meet the demands of enterprise analytics compute at the IoT edge. These products also highlight how x86-based embedded systems provide the flexibility to run high-performance analytics and conventional software elements on a single processor.

Leveraging embedded platforms, the Tyan Tempest line also allows developers to efficiently reuse hardware and software components from edge to cloud, thus reducing costs and minimizing time to market.