

One Stop Systems & TMGcore Two-Phase Liquid Immersion AI Transportable Supercomputer



OSS
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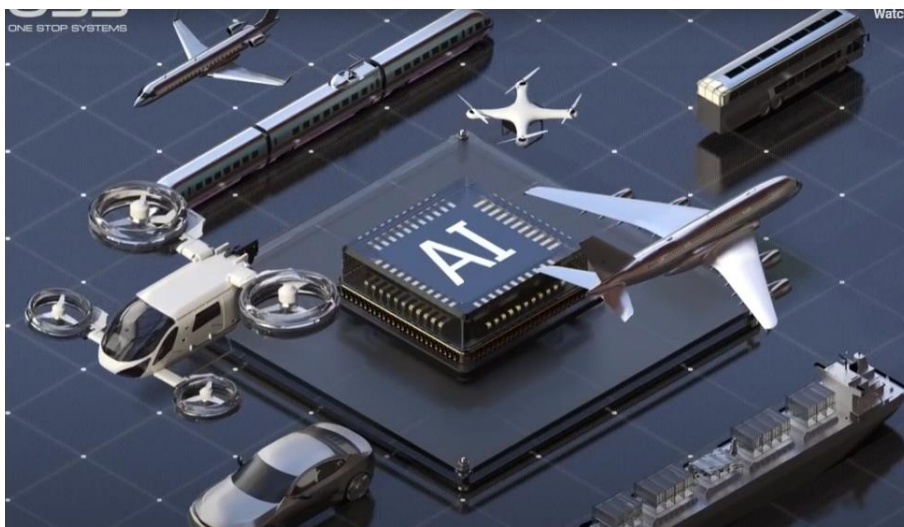
TMGcore

Posted by Mike Heumann on November 21, 2022.

[One Stop Systems, Inc.](#) and [TMGcore, Inc](#) introduced a two-phase liquid immersion-cooled version of the OSS [Rigel Edge Supercomputer](#) at this year's SC22. Rigel is the first edge product of its kind to use the highest-performance [NVIDIA HGX™ platform](#) powered by NVIDIA A100 Tensor Core GPUs and the [NVIDIA NVLink®](#) GPU interconnect in place of traditional PCI Express GPUs. Rigel also has planned upgrades to the latest [NVIDIA H100 Tensor Core GPUs](#). OSS intends to launch multiple liquid-cooled versions of Rigel two-phase immersion starting in the first quarter of 2023.

One Stop Systems, Inc. designs and manufactures AI Transportable edge computing modules and systems for AI data set capture, training, and large-scale inference in the defense, oil and gas, mining, autonomous vehicles and rugged entertainment applications. The dense form factor makes Rigel ideally suited for deployments in tight spaces available at the edge, such as an electronics bay of autonomous vehicles, within mobile command centers, and under seats of helicopters.

AI Transportables differ from traditional edge AI infrastructure in how they deploy the latest highest-speed data center-class processing, input/output, networking and storage technologies for operation in harsh and rugged environments. AI Transportables meet stringent, highway and mil-spec requirements for shock and vibration, redundancy, operating temperature ranges, altitude ranges and uninterrupted power. In AI Transportable edge applications, power is critical. Rigel supports a flexible power enabling a wide range of ground station and vehicle-supplied power. AI Transportables is the fastest growing segment of edge computing. The edge computing market is expected to grow at a compounded [annual growth rate of 17.8 percent to \\$101.3 billion by 2027](#). (Click image for video of Rigel supercomputer.)



The [Rigel Edge Supercomputer](#) was showcased as it operates within TMGcore's [EdgeBox 4.5](#). The EdgeBox 4.5, as a two-phase liquid immersion cooling technology solution, enables the Rigel to operate at data center-class computing levels not otherwise achievable at the edge. Two-phase immersion cooling is many orders of magnitude more thermally efficient compared to traditional air-conduction cooling and makes Rigel more rugged due to the shock and vibration-dampening effects of the fluid. The absence of fans and heatsinks allows the overall system size, power consumption, and noise level to be dramatically reduced.

